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Saint John, N.B. E2K 1E5
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Articles are invited in both official languages, and will be printed in the language they are received. The opinions expressed are those of the authors. Original material appearing in N.B. Naturalist may be reproduced without permission; credit lines would be appreciated.

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LE NATURALISTE DU N.-B.

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Votre concours serait fort apprécié. Prière d'envoyer vos articles à:

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Dates limites de présentation de vos articles, réflexions, avis et photos: les 1er janvier, 1er avril, 1er juillet et 1er octobre. Les dessins au trait et les photos de couverture doivent être préparés à l'encre noir et dans le format de publication.

Dates limites pour toute observation destinée à la rubrique "Nature News": les 1er décembre, 1er mars, 1er juin et 1er septembre.

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Cover Illustration
Blue Jay. Pen and ink drawing
by Annemarie Burzynski.
Courtesy Parks Canada.

Illustration de la couverture
Geai bleu; Dessin à la plume
par Annemarie Burzynski.
Une aimable reproduction de Parcs Canada.

From the Editor

"The best N. B. Naturalist yet," and "Let me say how much I enjoyed the last issue. The articles were excellent." are just two of the kind comments we've received about recent issues. Knowing that you enjoy this magazine and find it informative makes the effort worthwhile. Please keep those letters coming, especially with suggestions for improvement and, need I say it again, news and articles for publication.

I hope you will find this issue equally interesting. Certainly, there's lots to learn from its varied contents. We do want to illustrate other forms of life on the cover, but this year only four suitable drawings were received and all of them depicted birds. Please take that as a reminder to pick up your pen and put your artistic talent to work for the N.B. Naturalist this winter.

As this marks the end of my second year as editor I want to thank the people who have helped make the past eight issues possible, the writers, the artists and especially those who play a continuing role.

Members of the editorial committee (listed on the inside front cover) give advice and assistance on many subjects. The regular contributors of "Bugs!", "Rare Plants", and "Nature News" and the book review editor provide the backbone of the magazine. The New Brunswick Museum generously provides a typist as well as my time as editor. Finally Dave Smith and a team of Saint John Naturalists' Club members stuff and address hundreds of envelopes and mail each issue to you the readers. In 1983 they even collated and stapled the pages, but that onerous task now is carried out by our printer, Neill Printing of Saint John, which is responsible for the clear reproduction of the 1984 issues.

In my other role, as president, I would like to refer you to "Federation News" for information on activities during July-September and also to call your attention to the notice of a meeting to amend the Federation's by-laws (p. 130). Having a special meeting allows us to have the changes in effect in time for the 1985 elections.

Finally, a very happy yuletide season to you and best wishes for 1985.

Gayl Hipperson

THE VIRGINIA RAIL - AN ARTFUL DODGER

Jim Wilson

On the afternoon of September 10th, 1983, my daughter Patricia and a neighbour's son, Chad Coles, accompanied me on a walk at Saints Rest Marsh, on the western outskirts of Saint John.

High tide was at mid-day, and we chose that afternoon because it was an unusually high 'spring' tide, which would inundate virtually the entire area and force the many shorebirds usually present to the restricted dry area of the higher dunes.

We were walking slowly along the upper beach. On the left the sand fell off to the salt water of the Bay of Fundy, about 150 meters away. To our right, 25 meters distant, was the expanse of salt marsh being rapidly flooded by the rising tide. Most of it was already well under water.

As I glanced in that direction, I noticed a small dark bird take flight from a stand of sedges some 100 meters away. After leaving the protective growth, it fluttered weakly a few inches above the water, and gradually accelerated. It continued to fly parallel to the beach, then slowly began to arc the direction of its flight toward our position.

'Its a rail!', I exclaimed excitedly. 'Let's see what type of bill it has, so we can tell which one'. To our amazement, the bird continued to fly toward us, as if drawn by a magnet. As it drew closer, its obviously long beak and smallish size gave its identity - a Virginia Rail (Rallus limicola). We stood quietly as the bird crash-landed on the open sand a scant three meters from us, and turned a virtual somersault upon contact.

It quickly righted itself, and appeared to take stock of its rather unusual situation. Here was this marsh bird, normally furtive and elusive, sitting on a completely open expanse of beach, with only a few tiny tufts of grass and beach pea in the entire area. Its normally secure haunts were flooded and under water, and would not be available for at least a couple of hours.

It appeared not to notice us at first, and seemed preoccupied with sizing up its predicament. Then all at once it realized it was not alone. It stiffened, compressed its feathers, and began to cautiously walk away, pumping its head and neck in a series of jerky motions, similar to those of a grouse or a chicken. As soon as one of us moved, it shot toward the nearest clump of marsh grass, about a half meter in diameter, and disappeared.

We approached slowly, and in a minute or so the rail reappeared on the opposite side, pumping the head, and walking slowly out into the open. As soon as it spotted us, it streaked back into the tuft, and was again swallowed up.

I knew the Virginia Rail was a species long sought in the province by my birding friend Cecil Johnston, who lived a few kilometers away. We agreed that the kids would stand guard, and I would go to the nearest telephone as quickly as possible. As I hurried to the car, I looked back to see Patricia and Chad sitting stolidly near the tiny tussock, far out on the open beach.

Cec responded with enthusiasm, and twenty minutes later the four of us were cautiously closing in on the lair of the captive. Cecil led the procession, camera ready, and we watched as he warily circled the tussock. We fully expected to see our quarry scoot out at the last moment, but nothing happened. Cecil eventually walked over and kicked the grass, but still nothing happened. The bird had obviously gone - but where?

I shook my head in disappointment, then turned in annoyance to Chad and Patricia for an explanation. They clearly had not done what I had asked them to, yet they insisted they had not seen the bird leave. I then proceeded to examine the hiding place in detail, parting the grass and shaking the tops once again. Cecil was already scouring other clumps some distance away.

As I walked over to join him, Chad insisted 'But Mr. Wilson, if it went in, and didn't come out, then it has to be there!'. And with that he dropped to his knees beside the clump, and began to root in the old dead grass at the very bottom of the growth. 'Mr. Wilson - I see feathers!' brought me racing back moments later. Chad was pointing an excited finger at the brownish tail feathers of our quarry. The bird had wormed its way into the very centre of the patch, right on the sand, under a few strands of last year's growth. Indeed, it seemed to have gone into a state of 'semi-hibernation' which enabled me to reach down and with little difficulty, pick the bird up in my hands.

An incredulous Cecil walked over and proceeded not only to add a new species to his New Brunswick life list, but also to take a fine series of close-up photographs of an immature Virgina Rail, which by this time was active and struggling.

We soon released the bird to the protective custody of a larger stand of beach pea. Later in the day, several members of the Saint John Naturalists' Club were also successful in getting more than a glimpse of this elusive bird, much to their satisfaction.

The Virginia Rail is described by Squires (1976) as an 'uncommon summer resident in suitable habitat' throughout the province. It is normally found in freshwater marshes, which it shares with the more abundant Sora Rail - easily distinguished from the Virginia by its short stubby bill. Both rails return to us in late April or early May, and remain as late as mid October, with a few records well into the winter months.

This 'first-hand' experience was another example of those facinating encounters with wildlife which make birding such an interesting hobby here in New Brunswick.

Neck Road, Hammond River

DIFFERENCES BETWEEN TRACKS OF DOGS AND COUGARS

R.L. Downing and Virginia L. Fifield

(Reprinted with the authors' permission from Worcester Science Center Information Sheet.)

The identification of a large animal from its tracks can be difficult even for the experienced naturalist. Tracking conditions are rarely perfect. Even when conditions are good, certain popular misconceptions can sometimes prevent the less experienced from distinguishing the tracks of a cougar from those of a large dog. The following article describes some of these common mistakes and will aid in correct identification.

POPULAR MISCONCEPTIONS

Size

Many people never think of the possibility of a cougar being in their vicinity until they see a track so large that 'it couldn't possibly belong to a dog'. However, many dogs can make larger tracks than most cougars. Dogs are much more numerous, even in wild, out-of-the-way places, than Eastern Cougars. Most cougar tracks are only 3 - 3 1/2" wide, while many large dogs make a track larger than 4" .

Toenails

Another popular misconception is that dog tracks show toenails while cougars do not. Dog tracks can sometimes be followed for quite a distance before seeing good nail marks, especially where free-ranging dogs have had their nails worn short. Be extremely cautious in drawing conclusions based on the presence or absence of toenails. A dog with worn nails may have to sink 1/2" into mud or dust to leave clear nail marks. Cougars, on the other hand, can leave nail marks under almost any condition, especially if their footing is unsteady. Cougar nails, however, will leave thin marks because their claws are kept sharp, whereas the nail marks left by dogs are relatively broad. No nails are shown in the accompanying diagrams to avoid misleading the observer.

Shapes

Several people have said that they can recognize a cougar track because it is round, whereas a dog's track is long. Before making such a general statement, one should look at several thousand dog tracks of different breeds and then compare them with the hind foot track of a cougar. Cougar hind feet tend to be more long than wide, depending on how much the cougar spreads its toes.

If a cougar is walking normally, its hind foot track will overlap the front, thus the hind foot may make the only clear track.

IDENTIFYING TRACKS

Toes

The toes are relatively large in a dog (each is more than 44% of heel pad width) and relatively small in the cougar (less than 44% of heel pad width). Cougar toes tend to be tear-drop shaped, whereas dog toes are more rounded except for the 'corner' on the inside margin of the outer toes. All dog toes are nearly the same size, whereas the cougar has a little toe corresponding (left or right) to the little finger of the human hand in that they are non-symmetrical, whereas the dog foot is almost perfectly symmetrical unless the dog is turning. The human hand is a 'handy' device to compare with tracks--if the track has a leading toe, corresponding to your 'middle' finger, and a little toe, corresponding to your little finger, it may have been made by a cat. A cat's 'thumb' is vestigal and not seen in tracks. A walking dog generally keeps its toes quite close together (less than 1/4") while the cougar spreads its toes, usually at least 1/4" , and often, 1/2" apart. A running dog (especially in mud) will also spread its toes, however.

Heel Pad

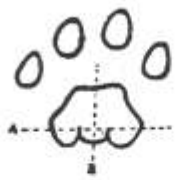
The most frequently cited difference between dog and cougar tracks is that the cougar has 3 prominent lobes at the rear of its heel pad whereas the dog tends to be straight across or curved slightly forward at the rear. The presence of 3 lobes at the rear of the heel pad is the best single criterion to look for; however, some breeds of dogs are very high at the rear-center of the heel (see cross section) and if the dog is sliding slightly in the mud, this high center may dig in deeper than the sides to produce a track that looks slightly 3-lobed. More attention should also be paid to the front of the heel pad. In the dog, the front of the heel pad is always rounded and slopes off gradually, whereas the cougar pad is squared off in both dimensions. The high point of the cougar heel is often near the front (look for the front edge of the heel to be nearly vertical), whereas the high point of a dog heel is always near the rear so that the front of the heel slopes gradually (see longitudinal section). Even a sliding dog or cougar makes a good impression at the front of the heel pad, if it sinks in far enough, and more attention should be paid to this feature. The heel pad of most cougars (even kittens) is at least half as wide as your palm. Many large dogs will be this wide too, but bobcats will have a heel pad less than half as wide as your palm, usually only 1 1/4" wide.

DIFFERENCES IN BEHAVIOR

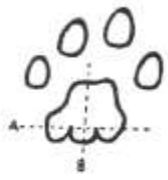
Dogs rarely travel alone, while cougars frequently do. A dog walking a road usually deviates from the path of least resistance only to urinate on roadside vegetation. Cougars (and bobcats) commonly weave back and forth usually making the best use of cover along the edges. Cougars and bobcats frequently leave the road while dogs usually stay on a road for long distances. Dogs and cougars may both 'scratch' where they urinate but dogs scatter debris after they urinate or defecate, while cougars neatly pile the litter with both hind feet. Dogs rarely walk along logs for any distance, while cougars and bobcats seem to seek out logs, wooden guardrails, and rocks, apparently because they can stalk prey from them without crackling the leaves. During snow, a useful cougar and bobcat search technique, even at highway speeds, is to scan the logs and rocks looking for the saw-tooth pattern signifying tracks along the top of a log. Such a pattern will not be made by a dog. Finally, dogs rarely go up or down extremely steep slopes or rocky cliffs, while both cougars and bobcats commonly do so.

CAUTION

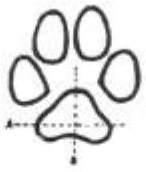
Whenever possible, look at a whole series of tracks before making up your mind; a single track in the mud, running, sliding, turning, or any other unusual situation can give you a faulty impression. If you look hard enough, you can find a good 'cougar' track in any dog lot, and vice versa. In other words, the two species make tracks that are near enough alike that an unusual movement or an unusual tracking surface may give you the wrong impression, so look at a lot of tracks before making up your mind. Speaking of impressions, if you are making casts, make as many as possible--you may need them to bring out all the key features. It's rare that one cast is clear enough to show all you'd like to see.



Cougar front track.

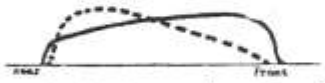


Cougar rear track.



Typical dog track.

Cross-section (A) of heel pads of dog (– – –) and cougar (——).



Longitudinal section (B) of heel pads of dog (– – –) and cougar (——).

TECHNOLOGIE DE L'ENVIRONNEMENT: UNE PREMIERE A BATHURST

Michel Blais

PRELIMINAIRE

La division technologie du Collège communautaire du Nouveau-Brunswick à Bathurst est la seule institution de la province dispensant actuellement un cours de technologie de l'environnement, option milieu naturel.

Le nouveau programme qui a débuté en octobre 1982 a connu une certaine popularité puisque 18 étudiants (es) graduaient en juin 1984.

OBJECTIFS DU PROGRAMME

Le programme de l'environnement offert par le Collège communautaire du Nouveau-Brunswick à Bathurst, assure à l'étudiant une solide formation technique et scientifique qui le rend apte à oeuvrer dans les différents secteurs reliés à l'aménagement et à la protection du milieu naturel.

Les nombreux stages sur le terrain permettront au futur technologue de visualiser et intégrer les connaissances acquises lors des cours théoriques et de développer ses aptitudes manuelles et son sens de l'observation en vue de lui apprendre à mieux connaître, à apprécier et à respecter le milieu naturel.

DUREE DU COURS

Le programme est d'une durée de deux ans et conduit au diplôme de technologie de l'environnement avec spécialisation dans le milieu naturel.

EXIGENCES D'ADMISSION

Une douzième année scolaire y compris Francais 122 et Mathématiques 112 (préférablement 122). L'étudiant devra avoir réussi 2 des 3 cours suivants: Biologie 102, Chimie 112 et Physique 112.

QUALITES REQUISES

Pour apprécier pleinement son travail diversifié et intéressant, l'étudiant doit posséder un intérêt marqué pour les sciences biologiques, le goût de travailler en pleine nature, un sens de l'observation très développé, une certaine dextérité, une bonne acuité visuelle et auditive et une facilité d'adaptation au travail en équipe.

DESCRIPTION DE LA TACHE

Le technicien de l'environnement en milieu naturel sera appelé à oeuvrer selon les saisons dans les domaines d'aménagement faunique, forestier et environnemental sur des projets diversifiés et intéressants au sein d'une équipe souvent multidisciplinaire.

Aussi, il pourra assister le biologiste, l'ingénieur forestier ou les chercheurs dans la réalisation de projets de recherche biologigue Avec cette expertise, il est aussi appelé à sensibiliser le public sur la conservation des richesses fauniques et floristiques que recèle notre patrimoine naturel.

DEBOUCHES

Les débouchés sont nombreux pour les titulaires d'un diplôme en technologie de l'environnement. Ce programme prépare en effet l'étudiant à travailler comme technicien en milieu naturel au niveau de l'aménagement et de la conservation de la faune et de la flore aux niveaux fédéral ou provincial; dans des industries qui utilisent des produits forestiers, soit la sylviculture, la pépinière ou autres...; dans des industries dont les opérations ont des effets polluants à l'air ou à l'eau; dans les firmes d'experts - conseils; dans des communautés urbaines impliquées dans les services de l'environnement.

PERSPECTIVES PROFESSIONNELLES

Au cours de la dernière décennie, le progrès de la technologie et de l'industrialisation ainsi que l'accroissement de la population a dégradé notre environnement de façon significative. La prise de conscience de la population et de nos gouvernements vise à mettre au point des politiques de la surveillance de l'exploitation des ressources fauniques, de l'amélioration d'habitats comme les rivières à saumon et les frayères à truites, d'inventaire et d'aménagement des populations de cerfs de Virginie, d'orignaux, de la gent ailée (canards, outardes...) et de nombreuses espèces de poissons et, enfin, de la surveillance et du contrôle du degré de la pollution de l'eau, de l'air et du sol.

En somme, les techniques d'aménagement de la faune et de l'assainissement de l'environnement sont devenues, ces dernières années, d'une grande importance. Les possibilités de carrières sont donc multiples pour le technologue en environnement.

INFORMATIONS SUPPLEMENTAIRES

Si tu désires recevoir de plus amples informations sur le contenu du cours, contacte Michel Blais, instructeur en Environnement, Collège communautaire du Nouveau-Brunswick - Bathurst, Case Postale 'I', Bathurst, N.-B. E2A 3Z2

Announcement!

NOTICE - SPECIAL GENERAL MEETING

A special meeting of the NBFN membership has been set for Wednesday, March 13, 1985 to consider proposed amendments to the Federation By-laws. The meeting will precede the monthly meeting of the Saint John Naturalists' Club at 7:30 p.m. in the New Brunswick Museum, Saint John.

The proposed amendments would change the composition of the Federation Board of Directors to conform with changes in the Canadian Nature Federation Board of Directors, and would replace the never-used system of election by mail ballots with elections by majority at the annual general meetings. Full text of the proposed amendments is available from NBFN Secretary, Ruth Rogers, RR #8, Moncton, E1C 8K2.

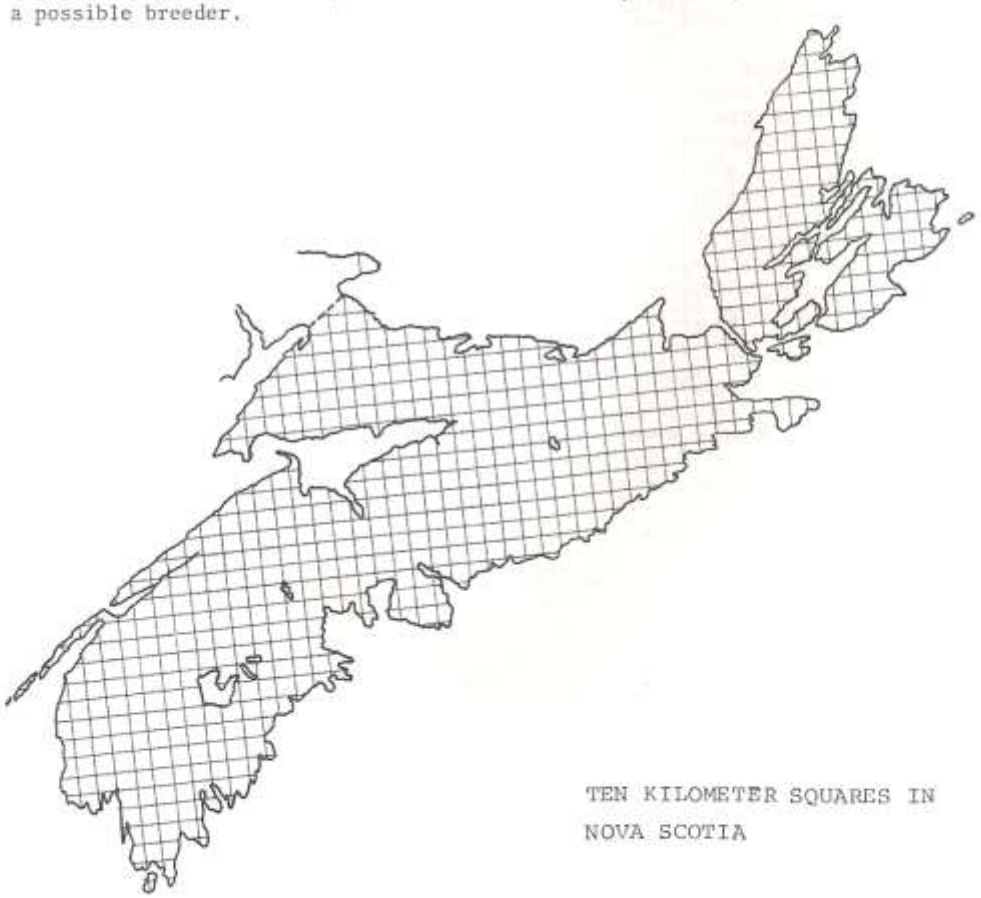
A BREEDING BIRD ATLAS IN THE MARITIMES?

Peter Payzant

[Reprinted with permission from N.S. Birds, Vol. 26, No. 3, July 1954]

An exciting new aspect to birding may be about to develop in the Maritimes. Following in the footsteps of successful work in Great Britain, New York, Ontario and elsewhere, Maritime birders may have the opportunity to take part in the compilation of a Breeding Bird Atlas for the Maritime Provinces.

A Breeding Bird Atlas is a book of maps. Each map shows the breeding range of a single species of bird, much like the maps in the field guides. Dots on the map indicate the breeding status of the species: a large dot indicates a confirmed record, a medium-sized dot a 'probable', and a small dot a possible breeder.



TEN KILOMETER SQUARES IN NOVA SCOTIA

The first atlas was completed in Britain in 1976, after five years of field work. Britain was divided into squares, 10 km on a side, and volunteer birders were assigned to each square. Between 10,000 and 15,000 people worked on the project over its five year life, spending hours out in the field looking for indications of breeding activity. The result was the first detailed record of what breeds where in Great Britain, and it was compiled almost entirely as the result of volunteer, and in most cases amateur, labour.

Other countries became enthused, and projects began in Europe, Australia, and North America. In Canada, atlas projects are currently underway in Alberta and Ontario, and are in the planning stages in Quebec and Saskatchewan.

The area to be covered by the atlas is divided into squares, usually 10 km on a side as in the British atlas. Each square is visited by a team of birders, who look for and record signs of breeding activity. No attempt is made to locate nests, partly because it takes too long, but mainly because it would disturb the breeding bird and might even lead to predation. Instead, the observers look for clues, such as food or nesting material being carried, presence of recently fledged young, and so on. A set of criteria are used to classify each observation into possible, probable, or confirmed breeding status.

Notes are kept on pre-printed cards which are sent to local coordinators at the end of the season. After the cards are checked by the coordinator, they are entered into a computer, which, in the end, plots a map of the data returned by the observers.

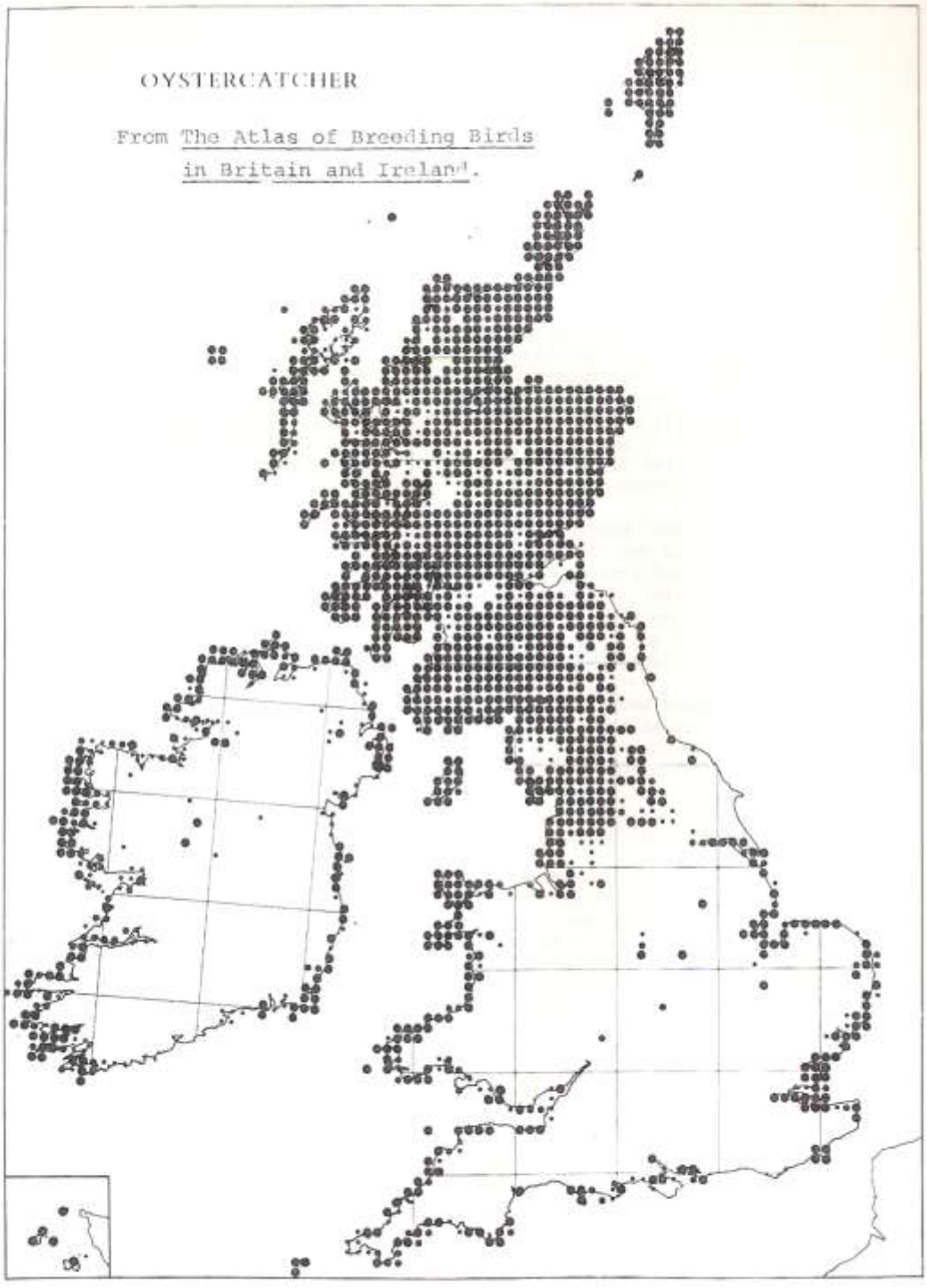
Because of the large areas covered, organizers generally plan on the field work taking five years. This may seem like a long time, but in terms of population dynamics it amounts to almost a snapshot in time. The atlas is valuable then as a source of baseline information. Ten or twenty years down the road, it will be a good guide as to how the populations of various species are changing. At present, it is almost impossible to make a convincing argument about changes in bird populations.

Another advantage to the atlassing technique is that data are collected for all atlases in almost exactly the same way. This means that meaningful comparisons can be made from region to region. For example, it will be possible to say almost for certain that Indigo Buntings for example, breed more widely in Ontario than they do in the Maritimes. Without carefully controlled field work this sort of statement would not be given much weight by the scientific community.

One of the most valuable aspects of the BBA project is that it documents areas of special habitat. If a bird is detected as breeding in only a few unique places in the atlas area, then these places should be kept in mind as needing protection when threatened by development. Also, of course, this may indicate that the species itself is in low numbers within the atlas area, and may be in need of protection as a 'threatened' or 'endangered' species.

OYSTERCATCHER

From The Atlas of Breeding Birds in Britain and Ireland.



A Breeding Bird Atlas project is a golden opportunity for birders to make a real contribution to the corpus of scientific knowledge about birds. You will be acknowledged in the pages of a major scientific work, and most importantly, one square (at least) on each of the two hundred odd maps will be Your Square. If it is filled in, it is filled in because you found evidence that a particular species was breeding in that square. If it is blank, it is blank because you looked and looked, and didn't see any sign of that species breeding.

What about the beginning birder, perhaps one who is a little unsure about his or her ability to correctly identify birds? This is all the more reason to get involved. Since this is a five year project, you can have a few years to go out with others and learn the ropes. Then, having acquired the necessary knowledge, you will be all set to lead a team into a square yourself. If you already can identify most of our birds, this is a chance to learn a new birding skill - very few of us at present have the ability to analyse bird behaviour to tell whether or not an individual is breeding.

Other reasons? Working on a square is a good excuse to go into unfamiliar territory and find out about new birding areas you may never have known existed. It gives you a good reason to get out into the field during a traditional lull in birding activity: late spring and summer. And then there is the thrill of 'square-bashing' or 'block-busting' - making a special trip to a remote or difficult area to quickly and efficiently survey it, and then leave - a special task requiring dedication and endurance.

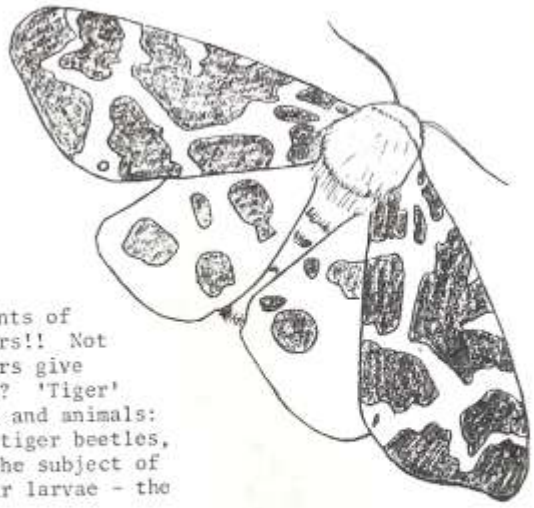
The Maritme Breeding Bird Atlas project will require the joint efforts of naturalist organizations in Nova Scotia, New Brunswick, and Prince Edward Island. Considerable support will be required from Government agencies, and a full time coordinator will have to be hired for at least part of the project. At present, it looks like the project will begin with a practice season next spring (1985), followed by the first actual field season in spring and summer of 1986.

The most important ingredient in a Breeding Bird Atlas project is volunteers. In order to decide whether we go ahead with the project or not, we need a good idea of how many people are interested in taking part. If you want to be included in this project, or if you just want more information, please get in touch with Peter Payzant c/o Nova Scotia Bird Society, 1747 Summer Street, Halifax, N.S. or David Christie, RR #2, Albert, N.B.

There is something for everyone in a Breeding Bird Atlas project. It is an ambitious and worthwhile task, and taking part in it would be a real milestone, not only for you as a birder, but also in the history of our organizations.

"Bugs!"

Tony Thomas



'BEARS' and 'TIGERS'

Family: Arctiidae

Bears are well known inhabitants of New Brunswick's forests...but tigers!! Not only do we have tigers, these tigers give rise to bears; or is it vice-versa? 'Tiger' is a common appellation for plants and animals: tiger lilies, tiger swallowtails, tiger beetles, tiger barbs, tiger finches, and, the subject of this article, tiger moths and their larvae - the woolly bears.

Several groups of moths are included within the family Arctiidae but the tiger moths are certainly the most colourful and perhaps the most interesting. Tiger moths have boldy patterned wings, the hind wings often coloured with black and scarlet, orange, yellow or white. Some of these brightly coloured moths fly in the daytime, adding further to the confusion between butterflies and moths.

Many tiger moths are unpalatable to both birds and bats because they contain certain poisons within their bodies. In some cases these poisons are obtained from the plants upon which the larvae feed, such as ragwort, milkweed, potato (leaves), foxglove and nettle. These plant toxins, themselves developed to protect the plant from herbivorous insects, are stored in the caterpillars and then passed onto the moths. Why the caterpillars themselves are not poisoned is a mystery. Certain tiger moths must manufacture their own poisons, as their larvae feed on non-poisonous plants yet produce poisonous moths.

With such a potentially effective protection against birds and bats, these insects have to practice the motto 'it pays to advertise'. Several species have camouflaged fore wings (cryptic colouration) which makes the moth inconspicuous when at rest. If, however, their resting place is discovered they slide the fore wings forward and expose the brightly coloured hind wings and abdomen that serve as warning colours to birds. Birds readily learn that these species are unpalatable. Tiger moths may be Mullerian mimics in the same way that yellowjackets are:a group of species which advertise their poisonous qualities by means of an easily recognizable colour pattern, making a single lesson of unpalatability serve as an example to all.

One of our common New Brunswick tiger moths, the saltmarsh moth (which, in spite of the name, is not restricted to salt marshes), has black spotted white wings and a bright yellow body dorsally. This colour pattern differs somewhat from the typical red, black, and orange tiger moths and the moth is probably not instantly recognized as being toxic. Its defensive strategy is correspondingly different. If disturbed while resting in the usual manner, with wings roof-like over its body, it makes no attempt to escape. It simply raises its wings above its body, curls its abdomen into a c-shape and falls to the ground, lying on its side playing possum - apparently an easy prey. However, immediately on hitting the ground it bubbles noxious secretions from thoracic glands behind the head and above the wing bases. This liquid is toxic and repellent to would-be predators. Histamines, alkaloids, and traces of cardenoline heart poisons have been identified in the thoracic secretions of the garden tiger moth which is also a New Brunswick species but which is decidedly rarer than the saltmarsh moth.

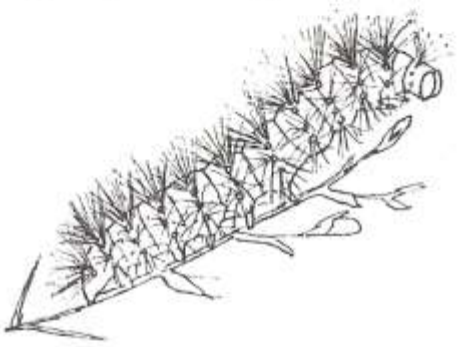
Colours and patterns are great advertising materials for daylight hours and birds, but what about protection from bats at night when colours are ineffective? Tiger moths still have to communicate their unpalatability to would-be predators. When the predator is a bat, communication is via sound. Tiger moths produce high frequency pulses of sounds which were originally thought to jam the bat's radar and thus prevent the bat from pinpointing the exact location of the moth. It has since been shown that these sounds are for recognition; the bat learns to recognize these sounds as coming from an unpalatable insect and it takes evasive action. Coupled with this ability to produce sounds is the moth's ability to hear the supersonic sounds of the sonar hunting mechanism of the bat. Thus, when the tiger moth hears the bat's sound it responds with its warning call and, if the bat is experienced, the moth is spared.

As we should come to expect in nature, this defensive mechanism against bats is copied by a palatable species. One of our New Brunswick tiger moths, the adult of the familiar banded woolly bear, is edible but mimics the

poisonous species by producing a sound that is indistinguishable from that of the poisonous species, and thus gains protection from experienced bats - an unusual case of Batesian mimicry.

Tiger moths usually lay their eggs in clusters of about 100; the larvae usually remain in a group at first and then later scatter to feed singly. In one of our local species, the fall webworm, the larvae live gregariously in a tent or web. These larvae are regarded as highly destructive pests of hardwoods, especially of orchard trees. The tent invariably encloses the end of a branch and as such is readily distinguishable from the true tent caterpillar whose webs are always in the forks of branches or in the crocks of young trees. The fall webworm was accidentally introduced into Europe during the 1940's; it is now firmly established and is a pest species.

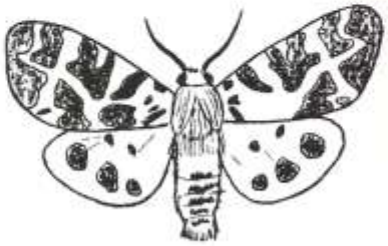
None of the other tiger moth larvae live in tents and many of them are the well known woolly bears. As their name suggests, these caterpillars are densely clothed in hairs. The hairs do not originate from the entire body surface but radiate out from tubercles on the caterpillars' segments. More like spines, the hairs probably serve as a defensive mechanism against birds and parasitic wasps. When threatened, woolly bears roll up into a tight flat coil hiding their soft ventral surface and presenting a mass of spines to the attacker. Many species of woolly bears overwinter as larvae and the black-ended bear or banded woolly bear is sometimes quite common in the fall as it runs over the ground searching for winter hibernating quarters. Superstition has it that long black ends on these woolly bears foretell a long winter.



Larvae of the cinnabar moth, in contrast to the woolly bears, are boldy marked with numerous black and orange bands and have no obvious hairs. The larvae and moths are among the most unpalatable species of insects and are invariably rejected as food by vertebrates, although predaceous ground beetles find them tasty. Cinnabar moth larvae feed in groups on the flower heads of tansy ragwort (Senecio jacobaea). At such times the larvae are extremely conspicuous and their gregarious behaviour probably serves to maximize their warning colours. Cinnabar moths are European but were deliberately released in New Brunswick in 1970 and 1971 in an attempt to control tansy ragwort - a harmful weed.

The ruby tiger-moth, a native also found in Europe, varies in appearance in different parts of its range. In Scotland the moth is completely brown, and in New Brunswick it tends towards being all brown with some red in the hindwing. Its common name applies more suitably to the southern European population which has ruby-red forewings.

Among the relatively few tiger moths found in New Brunswick it is unfortunate that two of the largest and most spectacularly coloured species are rather rare: the garden tiger moth, a holarctic species, and the St. Lawrence tiger moth, which is confined to North America.



NATURAL AREAS PROJECT

The New Horizon's Nature Conservation Association would like your help with their major project, The Identification of Critical Natural Areas in N.B.

We would like as many people as possible to become members of our association. Simply send us a list of all the natural areas you visited most frequently during the past few years. Your contribution to our project will indicate your desire to become a member of our association and contribute to our store of knowledge. At the same time you will be helping the cause of protecting our important natural areas.

Please take a few minutes to write out a description of your favorite areas including the location, reason for visiting, any special significance of the areas and the owner's name if possible.

Your help will be gratefully appreciated.

Send to: New Horizons Project
Conserver House
180 St. John Street,
Fredericton, N.B.
E3B 4A9

Rare New Brunswick Plants

DENIZEN OF THE PINES

PINE-DROPS (PTEROSPORA ANDROMEDEA)

Hal Hinds

My first view of this unusual plant was of a dark, hairy, reddish-brown dried-up stalk with globular capsules along its length. It was on Curry Mountain near Fredericton in the fall of 1977. I had never seen the plant, but I knew right away what it must be because of its resemblance to the more common Pine-sap (Monotropa hypopitys). Only this year in early July did I finally see the plant in full, glorious flower near the same spot as before.

It stood nearly a meter high, unbranched, scaly at the base and otherwise leafless. All along the stem hung many nodding, white, urn-shaped flowers whose fragrance reminded me of lily-of-the-valley. That was an exciting moment for me, especially since I had brought guests with me from Maine, New Hampshire and Illinois to see a plant that Dr. Fernald from Harvard University had pronounced 'very local and probably largely extinct with us'.

Dr. Patricia Roberts-Pichette had first found the plant in New Brunswick in 1962 on Keswick Ridge among hemlocks. Later, I found a few seed stalks on the south end of Keswick Ridge under mature white pine, and also in a similar situation in the valley of the Restigouche River.

Pine-drops always occurs with conifers, and in the east, in stands of the Eastern White Pine. Apparently the plants are involved with the roots of conifers and also with mycorhizal fungi. These fungi, which produce the familiar pored mushrooms or boletes (mostly Suillus spp.) are symbiotically associated with the conifers and enable them to better absorb water and mineral nutrients from the soil. The fungus gets its supply of energy and certain vitamins from the conifers. The exact relationship of Pine-drops is uncertain. It may be partly a root parasite and partly saprophytic.

The Curry Mountain station for Pine-drops was nearly destroyed recently when the road was widened. The University of New Brunswick has stewardship of the Curry Mountain property but were negligent in their concern for this important sanctuary. To accept stewardship of a sanctuary is a serious responsibility. The Department of Transportation was allowed to cut a great, ugly, gash in the side of the mountain. In the process many trees were destroyed and erosion encouraged, which further undermines and topples more trees. Blasting operations destroyed several large white pines at the base of the mountain, that had been host to the Pine-drops.

The Keswick Ridge population of Pine-drops should be protected with a special preserve that extends from about 1/2 km below the Mactaquac Dam along the steep escarpment to the site of the old McKinley Ferry Landing. Many rare and vulnerable plants would be protected in such a preserve. The work of the New Horizons Committee, the Identification of Critical Natural Areas in New Brunswick, should help in the creation of such preserve.

LIVING RIVERS PROGRAM CELEBRATES TENTH BIRTHDAY

Tabusintac, N.B.--- Sixty invited guests from New Brunswick, Quebec, Maine, and Massachusetts convened at the Wishart Point House in Tabusintac, New Brunswick on Friday afternoon, August 10th, to honor the first decade of the Living Rivers Program. The occasion was marked by the presentation of the first Living Rivers Conservation Award, an annual prize awarded to that individual from the region who demonstrates a long-standing commitment to conservation.

This year's recipient was William C. Hooper, Fisheries Biologist for the New Brunswick Department of Natural Resources. Hooper has been active in salmon conservation and fish culture in the province, and has been instrumental in providing fishing access for senior citizens and the disabled. On his own time, he is an active proponent of conservation education, and has been effective in establishing Living Rivers as a cooperative program with the Department of Natural Resources and other provincial and federal agencies.

Following the anniversary celebration, Living Rivers hosted an international workshop on environmental education (August 12-15). Five participants attended from overseas, including Great Britain, Brazil, and the Turks and Caicos Islands. The 30 guests examined strategies for conservation in rural areas while visiting natural areas of the Tabusintac region.

Also in August, Living Rivers hosted 18 naturalists from the Montreal area for a natural history workshop, August 18-22. Representatives from the Catharine Traill Naturalists Club explored the Tabusintac River and estuary while learning about the natural environments of New Brunswick. They also toured a peat mining operation and pulp mill, gaining first-hand knowledge of the resources important to the province.

The Living Rivers Program is a conservation camp for youths of the Atlantic Provinces, Quebec, and neighboring states. It is the oldest program of the Atlantic Center for the Environment, the environmental division of the Quebec-Labrador Foundation, a private, non-profit Canadian and US organization with headquarters in Ipswich, Massachusetts and Montreal.

Nature News

SUMMER 1984

David S. Christie

At first wet, later dry, and above all hot and humid in the middle, this summer seemed to give everyone something to complain about, especially with respect to biting insects,which were more numerous than usual in many parts of the province. If they bothered you a lot be glad at least that you didn't become bald like some Blue Jays reported herein.

There is one correction to the Spring 'Nature News'. The Red Phalaropes (p. 103) were seen by Jeremy Forster, not by Peter Pearce, who was actually the person who sent in the report.

Mammals

Coyotes seem so numerous and widespread that I hesitate to mention them again. We heard them howling at Mary's Point almost every evening all summer and saw one being 'mobbed' by a group of eight crows (at first I thought they were after an owl) August 17. I was reminded that they are not so universally common when Jim Wilson reported seeing one for the first time, August 18. It was walking across the mudflats from Taylors Island towards the mainland on the western outskirts of Saint John.

A Black Bear stole the show from the birds on the early morning bird walk at the Florenceville fish hatchery during the Federation's annual meeting June 9th.

Birds

A pretty early Greater Shearwater was seen a few miles off Saint John on June 1 (Henrik Deichmann). Later in the summer at least six of the rarer Manx Shearwaters were among pelagic birds east of Grand Manan Aug. 20 (Peter Pearce et al). Angus MacLean mentioned the first record of Northern Gannet for Fundy National Park, a couple of birds seen offshore September 5.

A species that may soon breed for the first time in New Brunswick is the Snowy Egret. This beautiful, small white heron nests as far north as southwestern Maine and has become a regular spring visitor here. In some years recently, a few have stayed all summer, principally around Saint John. This year, two of three at Red Head Marsh June 1 were 'interested in one another ' (Wilson). Two were seen regularly at Saints Rest Marsh, Saint John, June 21 to July 16 (Cecil Johnston) and one was again seen at Red Head August 12 (Wilson). Another Snowy remained at Castalia Marsh on Grand Manan throughout June and July (DSC et al), but the two that had been at Hall's Creek, Moncton, apparently disappeared in early June (Lowell Brine).

Other egrets reported this summer were a Cattle Egret at East Saint John June 3-4 (David Putt), another at Harvey, Albert County, June 13 (Ken Dubberke) and a Great (Common) Egret at Daniel's Marsh, near Hopewell Cape, June 25 (Mike Majka). Two Least Bitterns, a rare and local breeder, were reported in the New Horton section of Shepody National Wildlife Area June 20 (Peter Barkhouse).

There were a few reports of waterfowl spending the summer outside their breeding range. The lone Brant mentioned in the last issue remained at least until June 9 at Hampton where there was also a male Lesser Scaup the same day (Wilson). Another Brant was at Bathurst June 13 (Pearce) and an Oldsquaw was at Buctouche Bar June 29 (Mark Phinney). Of four Canada Geese on the Saint John River near Florenceville June 10, one wore a numbered, bright yellow neck collar (NBFN). Because we could only read three of four characters its exact origin could not be determined but it was probably banded in New York State.

It was interesting to observe the plumage changes of a Greater Scaup drake that spent the summer at Mary's Point. For a month and a half after his April 30 arrival he sported contrasting black and white plumage with irridescent head and blue-gray bill, but then gradually darkened until by late July his bright yellow eye stood out as the only distinctive feature on the sombre brown and blackish bird. At the beginning of September his sides were beginning to lighten but visiting observers were still having a hard time to identify him, since the field guides generally do not illustrate the dull eclipse plumages of male ducks.

Peter Hicklin, who is studying Common Eiders at the Wolves (a group of small islands in the Bay of Fundy) reports poor reproductive success this year. Apparently because of a shortage of herring in the area, there was an abnormally high rate of gull predation, resulting in an almost complete loss of eider young. An adult and a subadult Bald Eagle, flushed from big pines, put on a nice display for field trip participants at Riverbank, near Florenceville, June 10 (NBFN). Joyce Thorne and her family saw a Bald Eagle at Cambridge-Narrows several times this summer and in mid-August she watched an adult going through all sorts of manoeuvers with an immature following suit in what she felt 'appeared to be a training session'. Eventually they disappeared across the lake with the adult still in the lead. Bald Eagles were seen occasionally in the Tobique Valley (fide Wilma Miller) and one adult was at Nepisiquit Lake in Mount Carleton Provincial Park July 25 (Wilson). A report of two Golden Eagles comes from Miramichi Lake, near Napadogan, June 12 (Lorna and Kevin Maddox).

A Merlin summered at Mary's Point for the second consecutive year (Majkas). Others were reported near Red Head June 4 (Deichmann) and at Nictau Lake in Mount Carleton Provincial Park July 24 (Wilson). Seven of eight Peregrine Falcon young (two groups of four each) fledged successfully from the release site in Fundy National Park this summer (Steve Woodley). By July 30, the first one appeared around the shorebird roosts at Shepody Bay.

The Yellow Rail, our rarest breeding rail, is not an easy species to find unless it is calling at night. The best location in the province for finding them is in the Tintamarre National Wildlife Area, north of Sackville. This summer Enid Inch was lucky enough to hear its 'tik-tik, tik-tik-tik' call from a marsh at Gagetown late in the evening of August 2 and 8.

A pair of Piping Plovers nested again this summer at Waterside (Roland Chiasson), their only Bay of Fundy breeding site, and 20 were spotted June 29 at Buctouche Bar where there were also 12 Willets (Phinney). An Upland Sandpiper in northern New Brunswick was seen June 15-16 between West Bathurst and South Tetagouche (Pearce et al.). A couple of Wilson's Phalaropes spent some time in June at Saints Rest Marsh where Cecil Johnston reported two on the 12th and one on the 21st. On August 11 four, which by that date may have migrated here after breeding elsewhere, were seen there by Jim Wilson who also found one at Red Head Marsh August 22.

Most unusual bird of the summer was an American Avocet seen first at Fredericton June 10 by Don Gibson and Owen Washburn. On June 12 possibly the same bird was found between Sheffield and McGowans Corner (Jeremy Forster, Rob Walker and MacLean). An interesting variety of shorebirds was present there then. In addition to the Avocet there were breeding Killdeer, Spotted Sandpiper and Common Snipe as well as two each of Greater Yellowlegs, White-rumped Sandpiper and Semipalmated Sandpiper.

The presence of small numbers of non-breeders makes it difficult to pinpoint the arrival of the first southbound migrant shorebirds. At Castalia, Brian Dalzell reports that the first Short-billed Dowitcher arrived June 25, whereas he was less sure of the status there of a Semipalmated Plover and three Least Sandpipers the same day, and called 12 Black-bellied Plovers June 23 'probably non-breeders'. Mark Phinney's observations at Buctouche Bar June 29 included a few possible migrants: a Semipalmated and two Black-bellied Plovers, and singles of Ruddy Turnstone, Semipalmated Sandpiper, Sanderling and Short-billed Dowitcher. By July 8 there were 'lots' of dowitchers at Saints Rest (Johnston) and by July 15, 4000 Semipalmated Sandpipers at Mary's Point (Mike Majka).

The scarcer fall migrants reported were three Stilt Sandpipers at Saints Rest Aug. 11 (Wilson), an adult Western Sandpiper at Mary's Point Aug. 1 (DSC and Mary Majka) and an adult Baird's Sandpiper at Grande Anse, near Dorchester, July 16-17 (Stuart Tingley).

Quite a large proportion of the shorebirds at Mary's Point did not roost on the beach this year but went elsewhere. For example, of the peak 1500 Short-billed Dowitcher and 200,000 Semipalmated Sandpipers feeding on the mudflats August 4 only 50 dowitchers and 30,000 sandpipers remained on the beach at high tide. The dowitchers mainly chose a shallow water area of the impounded New Horton marsh while many sandpipers went to bulldozed fields on

the dykelands along the Shepody River. Those habitats were temporarily more attractive than the beach. As more vegetation becomes established in the marsh and when the reshaping of dykelands is finished the beach should again be the preferred roosting site.

A control program which this year reduced the number of large gulls breeding at Petit Manan Island, Maine, has resulted in increased numbers of terns and Laughing Gulls nesting there, and of Laughing Gulls visiting Machias Seal Island, seven being seen June 12 (Steve Daniel et al). The latest Iceland Gulls reported at Moncton were six on June 8 (Dalzell). A Black-legged Kittwake was at Bathurst Harbour June 13 (Pearce) and a few non-breeding subadults remained around the Grand Manan Channel, where five were seen June 12 and two July 13 (DSC et al.). A Caspian Tern was at Red Head June 6 (Deichmann).

On May 29 Brian Dalzell visited the Dalhousie Colony of Ring-billed Gulls and estimated at least 250 nests of Ringbills along with about 120 nests of Herring Gulls. Chris Majka sends information on Ring-billed Gulls in New Brunswick from Al Smith of the Canadian Wildlife Service: In a 1983 survey, 995 nests were estimated in six colonies, 300 at Dalhousie, 406 at Bathurst and 289 at four sites between Tracadie and Neguac. This is quite an increase from the first nine nests discovered at Bathurst by Hilaire Chiasson in 1965 and the 40 known there in 1972.

Whip-poor wills are rather locally distributed in the province and the only ones reported this summer were one or two calling at 4:30 a.m. June 6 near McGowan Corner (Deichmann) and another calling at Cambridge-Narrows from about June 7-21 (Doris Appleby and Thornes). Rob Walker saw Chimney Swifts entering the chimney of his home in Harvey so on June 17 he climbed onto the roof to investigate. A nest about 3.7 m below the chimney top contained one egg. Checking later in the summer, Rob reports that a predator in the dark chimney would certainly be frightened away by the loud, grating noise made by the five young he found clinging near the nest.

Unusual flycatchers reported were a Willow at Southern Head, Grand Manan, June 13 (DSC), a Western Kingbird at Cambridge-Narrows June 16 (Appleby), a Scissor-tailed at Machias Seal Island June 9-10 (Daniel et al.) and another (or the same) at the Whistle, Grand Manan June 20 (Allison and Janice Naves).

Enid Inch writes that it was reported in the Daily Gleaner that some Purple Martin colonies in the Fredericton area were not doing well this year, but she says that around Gagetown and Cambridge-Narrows all the well established houses were full to overflowing and at least two new houses had a few tenants. Likewise, Mr. Garnett at Douglas Harbour reports having 100 pairs with a growing colony of 25 pairs at his next door neighbour's. Enid writes that the Martins had not been much in evidence at Cambridge since the young had

begun to fly but that about 8:00 a.m. September 2nd about 45 gathered on the wires 'intermittently taking off and circling overhead, then coming back to the wires' for about half an hour 'until suddenly they were gone'.

In the Saint John Naturalists' Club Bulletin (Sept. 1984, pp. 5-6) Gayl Hipperson writes about the occurrence of bald-headed Blue Jays: 'The first call came Aug. 7 from Sandy Pt. Road. Mrs. Day reported a Blue Jay with no head feathers carrying on an otherwise normal life at the feeder. I put it down to just one of those things - until I got a second call Aug. 16. Mr. Montague in Westfield had a couple of jays with no neck feathers and another with a bare head. This time I stumbled through the possibilities, dismissing one bird pecking another and nutritional problems almost immediately, wondering a little longer if jays had some weird moult pattern (but not really able to see how they could afford, heatwise, to lose all the head feathers at once), and finally supposing some sort of skin or feather parasite could be at work on the Blue Jays of southern New Brunswick. When the third call came in, Aug. 20 from Shirley Foren in St. Martins, I decided to call the Canadian Wildlife Service in Fredericton, and explained the problem to Dan Busby. I nearly dropped the phone when he exclaimed that he, too, had a bald jay at his feeder! As I had with the first call, he had been mildly curious but thought it an individual oddity. With reports of half a dozen birds from Saint John, though, he was determined to get to the bottom of it.

'And he did. Calls to parasitologists at U.N.B. and Memorial University in Newfoundland resulted in the expert opinion that a particularly heavy infestation, probably favored by the hot, humid weather this year, of a mite or tick was responsible for denuding the jays. The birds are not able to preen the parasites from their heads, making the effects most noticeable there. All birds carry a healthy complement of external parasites at the best of times, and to tell whether the baldies are suffering from a mite or tick is impossible without examining an infected jay. Those who know say the parasites are often very host specific - meaning those that like jays wouldn't touch a robin, for instance - so whatever it is is unlikely to sweep through other birds at the feeder.

'Since then we have had reports of two more affected Blue Jays at Musquash, leading us to conclude that bird brains they may be, but feather-headed they are definitely not!'

A House Wren was seen at Machias Seal Island June 9 (Daniel). Eastern Bluebirds continue to be quite rare. A female was seen in Fundy Park June 9 (Walker), a pair were investigating a hole in a maple at Somerville June 14 (Diane Clark), another pair were feeding young in a nest box on White Head Island, Grand Manan, July 14 (Barry Attridge) and finally seven perched on wires along the road between Brockway and Lawrence Station July 28 (DSC). The last area is often good for bluebirds.

Northern Mockingbird reports this summer included birds possibly nesting in at least three areas of Fredericton (Pearce) where they have not been seen as frequently in the past as at Saint John and Moncton. On June 9 a Brown Thrasher nest, containing four young, was found in a brush pile at Lower Brighton, near Hartland (Arthur Bryant). Another thrasher was seen at Mispec July 8 (Will Astle).

Warbling Vireos are fairly common in Carleton County where at least five were heard singing near Florenceville during events of the Federation's annual meeting June 9-10 (NBFN). Others were reported at or near Hartland, Woodstock, Hampton and Moncton. Donald Kimball found 'plenty of Scarlet Tanagers everywhere' in the Black Brook area, southwest of St-Quentin and discovered three nests there during June.

A large flight of Blue Grosbeaks that reached Nova Scotia during the spring missed New Brunswick in May but two females were discovered in June, one at Woodman's Point, near Westfield, June 4 (Deichmann) and one at Stoney Creek June 10 (Mary Fownes). Indigo Buntings included three males singing in the Black Brook area July 3 (Kimball) and a pair undoubtedly nesting at Alma in early July (MacLean et al.)

A Clay-coloured Sparrow, very rare this far northeast, was exhibiting territorial behaviour at Black Brook June 3 and 10, and another was seen 11 km away during the same period (Kimball). We've known since 1964 that Fox Sparrows are breeding in northwestern New Brunswick but despite the fact that they are quite common in many of the highland areas no one has been able to find a nest until this year. Don Kimball made the discovery of one with three eggs at Black Brook June 4.

Because of a heavy cone crop this year White-winged Crossbills are numerous in northwestern areas such as Black Brook where Don Kimball reports 'an incredibly heavy density; you can't go anywhere without hearing dozens'. They were conspicuous in the Green River watershed at the beginning of July (DSC). At Grand Manan, only a few crossbills were around in mid June (DSC) but by August 19-25 they were 'quite conspicuous and very vocal' (Pearce). Small numbers were scattered in other areas.

Flora

The evergreen cone crop is exceptionally heavy in northern New Brunswick and at Grand Manan this year and is good in quite a lot of other areas too. It's the first time in several years that I can recall such a good crop over a large area. Generally in recent years the spruce and fir have been too stressed by spruce budworm defoliation to produce many cones.

The current abundance of Coltsfoot along the lumber company roads of northern New Brunswick is amazing when one remembers the plant's status about 25 years ago when it occurred mainly around a few coastal towns. Modern road

construction methods produce an excellent bare, gravelly seed bed for the Coltsfoot and large, fast moving vehicles suck the seeds along behind them, far into the forest.

Plants were a special point of interest during the annual meeting field trips June 9-10. The rarest seen was the Black Raspberry (Rubus occidentalis) pointed out by Hal Hinds on Oakland Mountain near Florenceville. It was known from only three locations in the province. At Plymouth, near upper Woodstock, the Plantain-leaved Sedge Carex plantaginea was the rarest but was overshadowed by the large banks of Maidenhair Fern, Goldie's Fern, and Blue Cohosh. At Riverbank one vine of Riverbank Grape was as large as a man's forearm.

Observations

DSC - David Christie
NBFN - N.B. Federation of Naturalists
et al. - and others

MAINE AUDUBON SOCIETY REPORTS...

The gull control program on Petit Manan and Green Islands was extremely successful, with approximately 300 pairs of terns returning to nest within a week after the last gulls were removed. In addition, nearly 60 laughing gulls (a small fish eating relative of the herring gull) have returned to the island to nest. Over 400 gull nests were treated with the poison DRC 1339 on May 17, 22, and 27 and 668 gulls were removed. All areas on Petit Manan Island that were being used by nesting terns had been taken over by the gulls. As of June 9, there were no active gull nests on Petit Manan Island. Poisoning the gulls, rather than spending the entire summer harassing and shooting the birds left the nesting eider duck colony intact. Over 200 eider nests should hatch successfully. The tern colony will be carefully monitored by the College of the Atlantic this summer. Now that the large gull colony has been removed from the two islands, only a few birds will have to be removed each year to encourage the terns to remain. (This program is carried out by the U.S. Fish and Wildlife Service.)

Book Reviews

Rare and Vulnerable Species in New Brunswick. by Stephen R. Clayden, Donald F. McAlpine and Carol Guidry. 1984. Publications in Natural Science No. 2. The New Brunswick Museum, Saint John, New Brunswick. 95 pp. Maps. $ 5.00.

Reviewed by Hal Hinds

The more we know about our provincial biota (plants and animals), the more optimistic we can be of their preservation. Our law makers demand considerable evidence of vulnerability and/or rarity of a species before they enact protective legislation. Likewise, conservation foundations must have as much factual information as possible about the distribution of the plants and animals they seek to protect. The recent publication, Rare and Vulnerable Species of New Brunswick, is exactly the kind of compilation of information that is needed in New Brunswick to help convince our legislators that certain of our biota need special protection: endangered species status, and/or special management of their habitat.

Rare and Vulnerable Species of New Brunswick covers eight groups of organisms: plants, molluscs, insects, fishes, amphibians, reptiles, birds, and mammals. For each group an overview is provided concerning the general depth of information available for New Brunswick, as well as species accounts with identification, distribution, habitat and vulnerability information. A dot map of the known distribution of each species in the province is provided.

An important service of this publication is to point out how little we know about all but the largest and most conspicuous of our plants and animals. Most of the algae, fungi, mosses, lichens and smaller animals, especially invertebrates, are in need of further study. Their status in New Brunswick is still largely unknown.

Rare and Vulnerable Species of New Brunswick is also an important compilation of the literature on our provincial biota. Each section has a list of important references as literature cited in the discussions. This is a reference I would recommend for resource librarians, legislators, teachers, students and naturalists. There is a wealth of important information compiled by theses authors which previously had been very difficult or impossible to obtain.

Les plantes vasculaires rares du Nouveau-Brunswick. Par Harold R. Hinds. 1983. Musée national des sciences naturelles. Syllogeus 50, 41 p. + cartes.

N.B. Un compte rendu de cette publication bilingue a paru en anglais dans le dernier numéro du Naturaliste du N.B. A review of this bilingual publication appeared in English in the last number of the N.B. Naturalist.

Compte rendu par Stephen Clayden

Les naturalistes du Nouveau-Brunswick ont raison d'être fiers que l'auteur de cette publication soit un des nôtres. Hal Hinds est conservateur de l'herbier et chargé de cours au département de biologie à l'université du Nouveau-Brunswick à Fredericton. Au mois de juin dernier, il a été élu vice-président de la fédération des naturalistes du N.B. lors de la réunion annuelle à Florenceville. On peut s'attendre à ce qu'il apporte à nos activités ses compétences particulières en botanique aussi bien que son expérience générale en matière de conservation.

La publication à l'examen fait partie d'une série de listes annotées de plantes vasculaires rares des provinces et des territoires du Canada. Ces études se sont réalisées dans le cadre d'un projet au Musée national des sciences naturelles, Division de la Botanique, qui a eu pour but de rassembler les meilleurs informations disponibles sur la distribution et les conditions ('status') des plantes rares au Canada. Les listes sont destinées aux législateurs, aux conservationnistes et aux naturalistes qui doivent veiller à la protection des plantes rares et de leurs habitats.

L'organization de la liste suit de très près le modèle établi par les autres numéros de la série. Pour chaque espèce rare, des informations concises sont présentées sous les rubriques suivantes: le nom scientifique et ses synonymes (les noms vulgaires ne sont pas indiqués, étant donné le manque d'uniformité dans leur application), les sources des données, la distribution en Amérique du Nord et au Nouveau-Brunswick, renvois à des cartes publiées, l'habitat, et les conditions de l'espèce à l'extérieur du Nouveau-Brunswick. En plus, des cartes de distribution pour chaque espèce sont regroupées à la fin du texte.

Plusieurs erreurs typographiques et de traduction se sont glissées le texte; d'ailleurs la traduction du texte anglais est en générale plutôt malhabille. Ceci n'est sûrement pas de la faute de l'auteur, mais il est regrettable quand même que la correction des épreuves n'ait pas été plus attentive. Pour n'en signaler que quelques erreurs: dans la table des matières, la position et la pagination de 'Bibliographie' ne sont pas correctes; à la page 6, la première colonne, à l'exception des deux premières lignes, est répétée en entier à la page 7; à la page 10, on lit que '...le lotissement domiciliaire et industriel dans la région de Saint-Jean entraînera problablement la disparition de Corema conradii et de Solidago caesia'.

Pour 'entraînera probablement' il faut substituer 'a vraisemblablement entraîné'. Le mot anglais 'bog' est souvent traduit comme 'marécage' ou même 'marais', tandis que 'tourbière' est le terme courant.

Selon la définition adoptée: 'une plante est dite rare lorsqu'elle présente qu'une faible population dans la province...qu'elle soit limitée à une aire réduite ou dispersée sur une vaste région'. L'application de ce critère a permis d'identifier quelque 206 espèces rares au Nouveau-Brunswick, soit à peu près 15% de la flore indigène de la province. L'ancolie sauvage du Canada (Aquilegia canadensis) serait un exemple d'une espèce dont la distribution est très restreinte au Nouveau-Brunswick. Elle est connue seulement de Dalhousie mais n'y a pas été observée depuis 1945. D'autres plantes rares, comme la rénoncule de Gmelin (Ranunculus gmelinii var. hookeri), se retrouvent à plusieurs endroits dans la province mais ne sont nul part abondantes.

Le sort de l'ancolie sauvage n'est malheureusement pas un cas isolé. En fait, il y a 26 espèces sur la liste dont les dernières récoltes ou observations sur le terrain datent d'avant 1965. Le barrage hydroélectrique à Mactaquac à lui seul semble avoir entraîné l'extinction au Nouveau-Brunswick d'au moins trois espèces. Le grand dommage, c'est que les populations menacées par l'inondation auraient pu être transplantées hors de danger, si seulement un inventaire floristique avaient été entrepris avant la construction.

Beaucoup de naturalistes s'étonneront sans doute à constater tant de plantes peu familières sur la liste. Par exemple, les familles des Graminées et des Cypéracées (les Carex et leurs alliés) comptent pour le quart du total des espèces. En revanche, il y a peut-être lieu d'être optimiste que certaines espèces que la plupart des naturalistes qualifierait de très rares (plusieurs Orchidées, entre autres) ne figurent pas sur la liste - c'est-à-dire qu'elles sont plus répandues qu'on ne suppose.

Personnellement, j'espère qu'un bon nombre de naturalistes se fera l'agréable devoir d'obtenir cette publication gratuite (voir les détails dans le dernier numéro du Naturaliste du N.B.) et de se lancer dans l'apprentissage des plantes rares et des espaces verts exceptionnels de leurs régions. C'est par de tels actes que nous pouvons arrêter la tendance actuelle vers l'extinction d'espèces et la destruction de plus en plus rapace de nos ressources naturelles.

the Department of Natural Resources has a responsibility to better define 'blackbird' (European Starling, Red-winged Blackbird, Common Grackle, and Brown-headed Cowbird are those included in the General Hunting License).

Federation Directors have received numerous calls and letters concerning the twelve-month license, and have encouraged local organizations and individuals to express their concern to the Acting Minister.

IT'S KOUCHIBOUGUAC FOR '85!

We're helping Parks Canada celebrate their centennial by centering our 1985 annual general meeting around the national park facilities at Kouchibouguac. We'll keep you informed as things take shape.

SPRING BIRDATHON

Watch for details of this joint Federation/Museum fund-raiser... one day next May, top birders throughout the province will be scouring hill and dale to list as many birds as they can in a 24 hour period. Backed by sponsor's pledges (that's where you come in!) the event promises to be not only a competitive bit of birding fun, but a painless way to financially support the Federation and the Natural Sciences Department of your provincial museum.

SUMMER CAMP SCHOLARSHIP

The NBFN scholarship fund was established to provide financial encouragement to young New Brunswickers interested in the environment. In the spirit of the fund, the Federation is offering an annual award of $100.00 to a New Brunswick applicant attending the Living Rivers Program in Tabusintac, N.B. Living Rivers is an environmental and conservation camp for youths 11 to 17 run by the Atlantic Centre for the Environment, the environmental division of the Quebec-Labrador Foundation - a private, non-profit Canadian and American organization with headquarters in Ipswich, Mass. and Montreal. The camp attracted international attention, and has been widely praised for its work in environmental education. The NBFN award will be administered by the Quebec-Labrador Foundation.

CANADA WORKS PROJECT REPORT

This summer our Federation was involved in a new venture which not only benefits our members but the general public as well.

Our application, called 'People and Wildlife', for a job creation grant was supported by the Canadian Wildlife Service. We received $13,000 for upgrading and construction of trails and signs in two sections of Shepody National Wildlife Area. At Mary's Point a parking lot and a trail are now in place and a lovely path leads to a viewing area and a beach. Signs and information panels guide the visitors, who also can sign their names in a guest book (estimated number of visitors this summer surpassed 1000).

At Germantown the 7 km long trail (on the opposite side from Hwy 114 which leads to Fundy National Park) has been almost completed. Here many bridges had to be constructed or repaired over small brooks and wet spots and quite a few board walks make the travel pleasant and comfortable for bird watchers and hikers. With more and more people frequenting those areas, the trails are a great improvement.

Next year the NBFN plans to apply again, providing jobs for local residents and continuing our worthwhile project. - Mary Majka.

News Release

ENVIRONMENT CANADA NEWS RELEASE

NEW HUNTING RESTRICTIONS ANNOUNCED
FOR BLACK DUCKS

OTTAWA -- New regulations to reduce hunting pressure on Black Duck populations in eastern Canada took effect in the 1984 hunting season.

Black Duck populations have been declining throughout their ranges since 1955. Although the rate of decline varies from a high of 80 percent since 1951 in southwestern Ontario to very little change in the Maritime provinces, the overall trend is consistent.

Factors leading to the steady decline include habitat deterioration, hybridization and competition with the Mallard Duck, and hunting pressures.

As part of a coordinated federal-provincial plan to pinpoint the causes of the Black Duck decline, bag limits will be reduced across the species range for a period of five years beginning in 1984. Reductions will be greatest in Ontario with smaller changes in the Maritimes; the limit in New Brunswick is now three per day. These changes will allow wildlife management agencies to assess the effects of harvest regulations on both the number of birds killed and on the overall health of the populations.

A similar U.S. program was begun in 1983. Both countries will cooperate in carrying out improved monitoring and assessment of Black Duck nesting populations and productivity as well as studies to better understand the impact of hybridization with Mallards on the Black Duck population.

The Canadian Wildlife Service and its provincial counterparts will undertake an awareness program to help migratory game bird hunters distinguish the Black Duck from look-alike species.

Club News

KENNEBECASIS NATURALISTS' CLUB

The Kennebecasis Naturalists' Club enjoyed the following calendar of monthly events, an excellent program planned by Evelyn Robinson:

Feb. - Tour of Potash Mine at Penobsquis - not even a spider sighted!
Mar. - Film on the Great Blue Heron - a beautiful NFB film we read about in N.B. Naturalist!
April - Hike to a Sugar Camp - white-tailed deer and maple candy on the snow.
May - Tour of Bob Bezzant's fast growing ornamental nursery, Spruce Arbor in Sussex.
June - A Bicentennial effort - a booth at the two day Heritage Fair with displays of birds and their nests, mammals, and plants, with emphasis on wild edible plants.
July - Toured Winston Bronnum's Animal-land admiring his sculptures in a natural setting. Jumbo, the worlds largest elephant, was in a preliminary construction stage, a project commissioned by the city of St. Thomas, Ont. for their bicentennial celebrations next year.
Aug. - A picnic in our new Sussex Burton Park by the river. Members enjoyed a variety of concerts which marked the opening of a Bandstand, another bicentennial event.
Sept. - A trip to Kings Landing - our most senior member, past the age of 90, had never been there!
Oct. - Guided hike in Fundy Park with a pot luck supper in a summer kitchen.
Nov. - Gerald Walsh, a Moncton horticulturist, addressed our group.

- Harriet Folkins

MONCTON NATURALISTS' CLUB

Under the leadership of Fred Lloyd, the Moncton Naturalists' Club has been rejuvenated in the past four years. The group now has its meetings at the Moncton Museum, normally on the second Wednesday of the month, from September through May. Field trips are held periodically throughout the year.

A number of members are assisting the museum by conducting nature activities for its Saturday children's program. The annual Christmas Bird Count has been a project since the club's formation in December 1961. Last year, the club provided ground transportation between Moncton Airport and Sackville for people attending the Canadian Nature Federation conference.

In May of this year, Fred Lloyd handed over the reins to newly elected club president Onide Maurice, who is assisted by vice-president Roy Wilks, secretary Donald Cormier and treasurer Francis Daigle. Brian Dalzell maintains the club records of bird observations and I serve as representative on the N.B. Federation of Naturalists board of directors. - David Christie.

CANADIAN NATURE FEDERATION UPDATE

1984 Annual Meeting

The 1984 Annual Meeting went extremely well in all respects. The organization by our hosts, the Federation of British Columbia Naturalists, was superb, the setting in the beautiful campus of UBC was pleasant both for work and social events and, of course, the field trips against the rugged backdrop of mountains and sea were very rewarding. Attendance was slightly less than expected at about 180 registrants, perhaps due to the high cost of travel, but all that did get there certainly enjoyed themselves. Well done, FBCN!

Conservation Activities

a) Federal Wildlife Policy - Environment Canada is developing a comprehensive wildlife policy to apply to all relevant federal agencies and activities. We recently submitted a review of a background document on the policy which is to be available for public comment in the next few months.

b) West Coast Offshore Exploration - A federal-provincial environmental assessment panel has been established to address impacts of oil exploration off the B.C. coast. Unfortunately the panel established a very tight deadline (September 4) for completion of the first phase of the review. We have notified the panel of our interest in participating in the review, conditional on an extension of the September deadline to allow us time for meaningful input.

c) Pearce Commission - CNF staff and directors are preparing a submission for a hearing of the Pearce Commission's Inquiry on Federal Water Policy to be held in Ottawa in December. We expect to concentrate on concerns related to threatened aquatic habitats.

d) Endangered species - The Canadian Wildlife Service may expand its endangered species activities. We were recently asked to review a proposal outlining the program and will participate in discussions with CWS officials in the next few weeks.

Cam Seccombe, C.N.F. Managing Director

INQUIRY SOUGHT INTO CARIBOU DROWNING

The Canadian Nature Federation, which represents 150,000 Canadian naturalists, has called on the Government of Quebec to carry out an independent public review of the recent drowning of some 10,000 caribou in the Caniapiscau and Koksoak rivers. Because the drownings occurred in a drainage system affected by water control structures operated by Hydro Quebec, the Nature Federation stresses the need to determine whether the utility is responsible for the loss of the caribou.

In an October 16 letter to Quebec Environment Minister Adrien Ouellette, the Federation stated that 'the significance of the loss of wildlife and the possibility that it could have been avoided make it essential that an independent body conduct a public review of the disaster.'

The caribou were carried to their deaths by flood waters during a period f heavy rain at the end of September. The animals, which were part of the 400,000-strong George River herd, were making a crossing in the annual migration to their winter feeding grounds.

As part of the massive James Bay hydroelectric development, Hydro Quebec maintains a dam and diversion system several hundred kilometres upstream from the crossing site.

Gregg Sheehy, a spokesman for the Nature Federation, stated 'we certainly believe that Hydro Quebec should be considered innocent unless proven guilty, but the facts must come out so that, if at all possible, such a tragedy can be avoided in the future.

CANADIAN NATURE FEDERATION MEMBERSHIP APPEAL

In an effort to expand its national membership, and at the same time help their affiliates - like us! - raise money, the CNF is offering a $5.00 rebate for every one of our members who becomes a NEW member of the CNF.

All you have to do is send your cheque for $20.00 (one year CNF membership) with your name and address to our NBFN treasurer (Dave Smith, 149 Douglas Ave., Saint John, E2K 1E5). The cheques should be made payable to the Canadian Nature Federation. Dave will send them off to the CNF and collect the $5.00 rebate for each new member. (Please note this only applies to NBFN members who become NEW MEMBERS of the CNF).

Membership in the CNF brings with it a subscription to Nature Canada, discounts from Nature Canada Bookshop, opportunities for travel with Canadian Nature Tours, and the satisfaction of supporting a strong continent-wide conservation movement.

'300 CLUB' GROWS

Notice is hereby given that the '300 CLUB' (prestigious association of those select few New Brunswickers whose provincial bird lists top 300), has increased its ranks by one.

On September 25, 1984, at the approximate hour of 11:45 a.m. on the island of White Head, Grand Manan, N.B.

MR. CECIL L. JOHNSTON

Observed, in the good company of other birders, namely Stuart Tingley, Brian Dalzell, and Jim Wilson, his 300th species in this province (a Lark Sparrow).

We join with the other 300 clubers (David Christie, Mary Majka, Mike Majka, and Peter Pearce), in extending our heartiest congratulations to Cecil as he enters the elite fraternity.

CHRISTMAS BIRD COUNT DATES

The National Audubon Society has announced the dates for the 85th annual Christmas Bird Count. Counts should be conducted on one day during the period December 15, 1984 through January 2, 1985. The results of over 1200 North American Christmas Counts are reported in the summer issue of American Birds, a publication of the Audubon Society.

To find the name of your local compiler consult the late winter issue of the N.B. Naturalist, which publishes between 25 and 30 New Brunswick counts each year. To start a new count or for any further information, contact David Christie, RR 2, Albert, N.B. E0A 1A0 (tel. 882-2100) or the Natural Science Department of the N. B. Museum, 277 Douglas Avenue, Saint John, N. B. E2K 1E5 (tel. 693-1196).

Nature News

HOLD THE PRESS ADDENDA -- David Christie

A number of reports, which should be mentioned at least briefly, were received after I had prepared and submitted "Nature News".

Spending the summer on the Sackville sewage lagoon was a male Ruddy Duck (Tingley), perhaps the same one seen there in 1983.

Additional rare shorebirds were a Western Sandpiper at Grande Anse August 14 (Tingley et al.); a Curlew Sandpiper July 29 (Clive Goodwin), a Stilt Sandpiper July 11, and a female Ruff June 29, all at Castalia (Dalzell); another Stilt Sandpiper at Waterside August 18 (MacLean); and a few Wilson's Phalaropes: a juvenile July 25 and an adult female August 10 at Castalia (Dalzell), two, then three juveniles at Dorchester Cape sewage lagoon August 14 and 25, and a juvenile at Sackville sewage lagoon August 30 (Tingley).

An adult Franklin's Gull, a very rare visitor this far east, was studied for 20 minutes at New River Beach August 17 (Margaret Rubega) and a similar bird was seen at Oak Hill, near Moores Mills, August 31 (Peter and Barbara Vickery). An adult and two juvenile Roseate Terns were at Long Island, Grand Manan, August 11 (Dalzell). That species has nested among the other terns at Machias Seal Island but was apparently not present there this year.

A Tufted Titmouse was spotted in May at Fredericton. Constantly singing, it remained for several weeks (Ted Colson, fide Pearce). One is tempted to believe that this individual may be the titmouse that spent the winter of 1982-83 in the same area of the city and, now resident there, is singing vainly in search of a mate.

Another southern bird, a Carolina Wren, was singing at Long Island, Grand Manan, August 11 but remained for only an hour (Dalzell). A pair of Northern Mockingbirds at Sackville this summer fledged three young from their first nesting and probably one young from the second (Reg Cormier, fide Tingley). The first evidence of Northern Cardinals breeding on Grand Manan was the observation of a male and two juveniles at a North Head feeder August 3 (Dalzell).

NEW BRUNSWICK FEDERATION OF NATURALISTS
277 Douglas Avenue, Saint John, N. B., Canada E2K 1E5 Tel.: (506)693-1196

LA FEDERATION DES NATURALISTES DU NOUVEAU-BRUNSWICK
277, avenue Douglas, Saint-Jean, N.-B., Canada E2K 1E5 Tél.(506)693-1196

The federation is a non-profit organization formed in 1972 to facilitate communication among naturalists and nature-oriented clubs, to encourage an understanding of nature and the environment, and to safeguard the natural heritage of New Brunswick.

La fédération est une organization sans but lucratif formée en 1972 pour faciliter la communication entre les naturalistes et entre les divers clubs axés sur l'étude de la nature, pour encourager une meilleure compréhension de la nature et de l'environnement natural, et pour sauvegarder le patrimoine naturel du Nouveau-Brunswick.

BOARD OF DIRECTORS/CONSEIL D'ADMINISTRATION

Past president/Ancien président:	Mary Majka	RR 2, Mary's Point Road, Albert, E0A 1A0
President/Président:	Gayl Hipperson	280 Douglas Avenue, Saint John, E2K 1E7
Vice-president/Vice-président:	Hal Hinds	Biology, UNB, Box 4400, Fredericton, E3B 5A3
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	Peter Pearce	(Fredericton Field Naturalists' Club)
	Harry Walker	(Miramichi Naturalists' Club)

FEDERATED CLUBS/CLUBS FEDERES

Chignecto Naturalists' Club	P.O. Box 1590, Sackville, E0A 3C0
Fredericton Field Naturalists' Club	5 Shamrock Terrace, Fredericton, E3B 2S4
Grand Lake Naturalists' Club	c/o L. Girouard, RR 1, Minto, E0E 1J0
Kennebecasis Naturalists' Society	P.O. Box 12, Sussex, E0E 1P0
Miramichi Naturalists' Club	276 Heath Court, Newcastle, E1V 2Y5
Moncton Naturalists' Club	82 rue Maple, Moncton, E1C 6A3
Saint John Naturalists' Club	277 Douglas Avenue, Saint John, E2K 1E5
Valley Naturalists	P. O. Box 95, Florenceville, E0J 1K0

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