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

Volume 14, No. 2 1985

N. B. NATURALIST ISSN 0047-9551

N. B. Naturalist carries articles and reports pertaining to the natural history of New Brunswick *AND* is published quarterly by the New Brunswick Federation of Naturalists. Subscription rates: in Canada and U.S.A. $10; other countries $12; single issues are available for $2 a copy, plus postage.

Articles are invited in both official languages, and will be printed in the language in which 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. Contributions should be sent to:

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

Deadlines for submission of articles, notes and illustrations are January 1, April 1, July 1 and October 1. Line drawings and cover illustrations should be in black ink and in the size they are to appear in print.

Deadlines for sightings and observations for "Nature News" are December 1, March 1, June 1 and September 1.

Advertising rates available on request.

LE NATURALISTE DU N.-B. ISSN 0047-9551

On peut lire dans *Le Naturaliste du N.-B.* des rapports touchant l'histoire naturelle du Nouveau-Brunswick. C'est une publication trimestrielle éditée par la Fédération des naturalistes du Nouveau-Brunswick. Abonnements: au Canada et aux États-Unis $10; aux autre pays $12. On peut se procurer cette revue à $2 l'exemplaire plus les frais postales.

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Dates limites de présentation de vos articles, réflexions, avis et dessins: les 1er janvier, 1er avril, 1er juillet et 1er octobre. Les dessins au trait 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.

Tarifs publicitaires disponibles sur demande.

Cover Illustration
Point Wolfe estuary, Fundy N. P.,
and Tern Island, Kouchibouguac N. P.,
by Michelle Audette.

Illustration de la couverture
L'estuaire de la Point Wolfe, P. N. de Fundy
et l'Ile aux sternes, P. N. de Kouchibouguac,
par Michelle Audette.

From the Editor

Especially this year, since it is the centennial of National Parks, New Brunswickers should be appreciative of our good fortune that not one, but two, National Parks are located in our province. Many of us have been privileged to hike, camp, watch birds, photograph, swim, take part in interpretive events or just simply relax in Fundy or Kouchibouguac, or both of those magnificent parks.

When travelling in other parts of Canada, we invariably end up visiting a national or provincial park. Representing a special aspect of Canada, each is at once a museum, a sanctuary, a wild, unspoiled, unhurried world, with all its features preserved. Their greatest value is the objective that the parks should remain protected places – our wisest investment for the future.

As part of the Federation's observance of the centennial, this issue is dedicated to our National Parks. We are indebted to Parks Canada for providing a wealth of information, for the beautiful cover illustration drawn especially for this magazine and assistance in various ways. Particularly, we would like to thank Harry Beach from Kouchibouguac and Stephen Woodley from Fundy for coordinating the parks' input. You will find contributions from park biologists, wardens, junior high school students and the Minister of the Environment.

As of the last issue the Federation again assumed sole reponsibility for production of the *N. B. Naturalist/Le Naturaliste du N.-B.* Because of constraints on its funding and staff time, the New Brunswick Museum is no longer directly involved. We very much thank the museum for its participation during 1983 and 1984. As you can imagine, this change places a greater burden on our Federation. Please make an effort to encourage others to join us. A larger membership makes it more feasible to produce a quality magazine.

Our publication is getting better and we want to continue doing a good job. Luckily, we have been getting assistance from some very good people. Marilyn Rudi and Robert Rangeley have just agreed to contribute a new column – "Seashore Strolls" – the first of which appears in this issue. Alas, the very special "Bugs!" column has concluded. We thank Tony Thomas for his most informative articles that have enlivened these pages the past two years. We are planning to have more of this type of column, perhaps on different subjects.

We hope you will enjoy this issue and wish you a happy summer. Be sure to visit our National Parks to help celebrate the centennial.

Mary Majka and David Christie

From the President

This year marks important anniversaries for our parks systems, the 100th for National Parks and the 50th for New Brunswick Provincial Parks. However, because of recent spending cutbacks by both levels of government, National Parks no longer provide guided walks by trained interpreters and Provincial Parks have dropped their interpretive program entirely. We should certainly continue to let our politicians know how much we support the educational importance of park interpretive programs.

Perhaps some of our members would volunteer to provide programs and lead walks in the parks. That would be a useful way to tell people about the importance of conservation as well as to spread the word about our local clubs and the federation. It would be useful if clubs could conduct some of their field trips in the parks to increase public awareness about the importance of parks. In this regard the Provincial Parks have offered free summer camping with utilities for a few volunteers who would help provide occasional programs and walks, especially at New River Beach and The Rocks. Please contact Eric Hadley (453-2509) if you are interested.

A reply to our November letter, regarding Canadian Wildlife Service cutbacks, was finally received from the Minister of Environment, Mme Suzanne Blais-Grenier, on April 1. It is obvious that the many letters of protest brought to the attention of the Minister have had some effect, the most important for us being the continuation of the monitoring of effects of forest pesticides and a strong position on acid rain.

It is important, however, to continue to send strong messages to our Government, indicating that we must maintain a strong Department of Environment with emphasis on an unpolluted environment and protection of wildlife. Please write to the Minister, with copies to the Prime Minister and your local M.P. supporting the important work of the Canadian Wildlife Service, their responsibility for migratory birds, endangered species and international obligations towards wildlife. You could congratulate the Minister for her reinstatement of the forest pesticide monitoring program. Point out how much we value our wildlife and that more, not less, basic research and environmental monitoring is required to ensure that potential ecological problems are detected before they seriously affect wildlife and humans as well.

Hal Hinds

1985 – THE CHALLENGE:

CELEBRATING 100 YEARS OF HERITAGE CONSERVATION IN YOUR COMMUNITY

Stephen Woodley

Our Past

The year 1985 marks one of Canada's most important heritage anniversaries, the centennial of national parks. The federal government took the first step in developing our widespread system of national parks in 1885, by setting aside for public use a 26 square kilometer parcel of land near Banff. It was there that workers building the Canadian Pacific Railroad had literally stumbled on a basin pool fed by a hot spring, known today as the "Cave and Basin Hot Springs".

Since the first legislation was passed to establish "Rocky Mountain Park" at Banff, the national parks system has grown to become the largest in area in the world. It now claims 31 magnificent National Parks, 70 National Historic Parks, ten Heritage Canals, hundreds of Historic Sites, and also protected rivers.

Why Are We Celebrating?

The development of our parks system is a remarkable achievement. Thus, we are celebrating and recognizing the accomplishments of the past century, looking forward to the next hundred years of service, and taking the opportunity for a major effort to enlighten all Canadians on the work of the national parks today.

"One hundred Years of Heritage Conservation", the theme of centennial celebrations, is meant to acknowledge and encompass not only federal, but also provincial, municipal and private preservation efforts. The greatest success has come from an unexpected source. Individual Canadians and hundreds of local organizations all across Canada have come forward to fight for and preserve their heritage.

An Invitation for 1985

Used as a focus, the National Parks' Centennial provides an opportunity to recognize, promote and improve our national heritage in all its natural, historic and cultural forms.

Many celebrations across the country will mark this important event. There will be a series of unveilings of plaques by the Historic Sites and Monuments Board of Canada and a number of historic pageants are planned or proposed. Strong emphasis will be placed on events in the National Parks and their local communities.

Major capital projects coinciding with the Centennial include: the restoration of the Cave and Basin, the birthplace of Canada's National Parks; a major restoration and opening of new facilities at Batoche National Historic Park in Saskatchewan; other major openings in Wood Buffalo, Kluane, Pukaskwa and Kouchibouguac National Parks; and the reopening of the restored Ottawa Locks.

What's Happening in New Brunswick?

Some centennial celebrations have already taken place in Fundy and Kouchibouguac National Parks and in our Historic Sites. For the rest of the year, you can look forward to the following:

100 Kilometer Challenge. In 1985, a challenge is issued to walk 100 km of hiking trails in Fundy and Kouchibouguac. Hikers can pick up a passport at either park and log their hikes. Upon completion of 100 km hikers will receive an award and have their name placed on an honor roll.

Fundy National Park Guidebook. To mark centennial, a guidebook to Fundy is being published. It is full of photographs and information on tides, plants, history, animals, what to do in the park, and more. The book will be sold through the Fundy Guild outlets at the park.

Speakers Bureau. During 1985, Fundy, Kouchibouguac and Historic Sites New Brunswick will have a group of speakers ready to talk to any interested group. Topics will include park management, Peregrine Falcon re-introduction, salmon re-introduction, the role of National Parks, and many more. Interested parties should contact the parks for details.

Fundy's Come Home Picnic. To celebrate the hundredth birthday of National Parks, Fundy will be having a party. All present and former park staff and their families are invited to a "Come Home Picnic", the afternoon of June 30. There will be singers, balloons, cake and a good time.

Fundy Heritage Awards. Many people and groups have made outstanding contributions to Fundy since it began in 1948. In 1985, a Heritage Award has been inaugurated to recognize these groups and individuals.

Kouchibouguac Centennial Christmas Bird Count. To close out centennial celebrations with a little fun, Kouchibouguac National Park is challenging the province's naturalists to come to the park December 21 and attempt to double the 27 species recorded on last year's count.

And More. 1985 will be a year-long celebration in New Brunswick. There will be parade floats, hundred-year-old costumes, school essay contests and a special edition of Fundy's park newspaper. Park interpreters will focus their programs around the centennial theme and get all park visitors into the heritage celebrations.

THE NATIONAL PARKS SYSTEM, A DEVELOPING PHILOSOPHY

Stephen Woodley and Harry Beach

In its one hundred year history, the Canadian system of National Parks has evolved both in size and philosophy. The evolution of park management runs almost parallel to the development of environmental thought in Canadian society.

In 1885, when an Order-in-Council set aside the hot springs at Banff, the lands were simply "reserved from sale or settlement or squatting" because the springs "promise to be of great sanitary advantage to the public and in order that proper control of the lands surrounding the springs may remain vested in the crown..." The idea was somewhat clarified two years later when the Rocky Mountain Parks Act was passed. It reserved an expanded area as "a public park and pleasure ground".

It was not until 1930 and the passing of the National Parks Act that a strong preservation role for parks was entrenched. This idea arose in a time of dwindling wildlife and natural areas. It was expressed in the often quoted:

> "The parks are hereby dedicated to the people of Canada for their benefit, education and enjoyment... and such parks shall be made use of so as to leave them unimpaired for the enjoyment of future generations."

That dedication clause sets the guiding tone for the management of national parks.

With the sharp rise in park use and the developing environmental awareness of the 1960's, parks faced new challenges. In response, a series of policy documents were developed. The latest policy received cabinet approval in 1978. It sets out clear guidelines for park management, development limits and appropriate visitor use.

Such an evolution of park philosophy has left Canada with a range of development within its park system, from the Banff townsite, which gets millions of visitors yearly, to northern parks like Kluane, which only gets a few hundred.

As the family of parks developed, there was a realization of a need to define an organized park system. Consequently in the 1970's, park planners began to look at Canada as a mosaic of ecological regions. The country was divided into 39 terrestrial and nine marine "natural regions", based on vegetation, geology, geomorphology and oceanography. Each region is to be represented by at least one national park.

Presently there are 31 national parks, the most recent additions being Mingan Islands (in Quebec) and North Yukon National Parks. However, some regions have double representation and so far only 23 of the terrestrial regions are represented. A great deal of further work is required to complete the system, especially in the north and the marine natural regions.

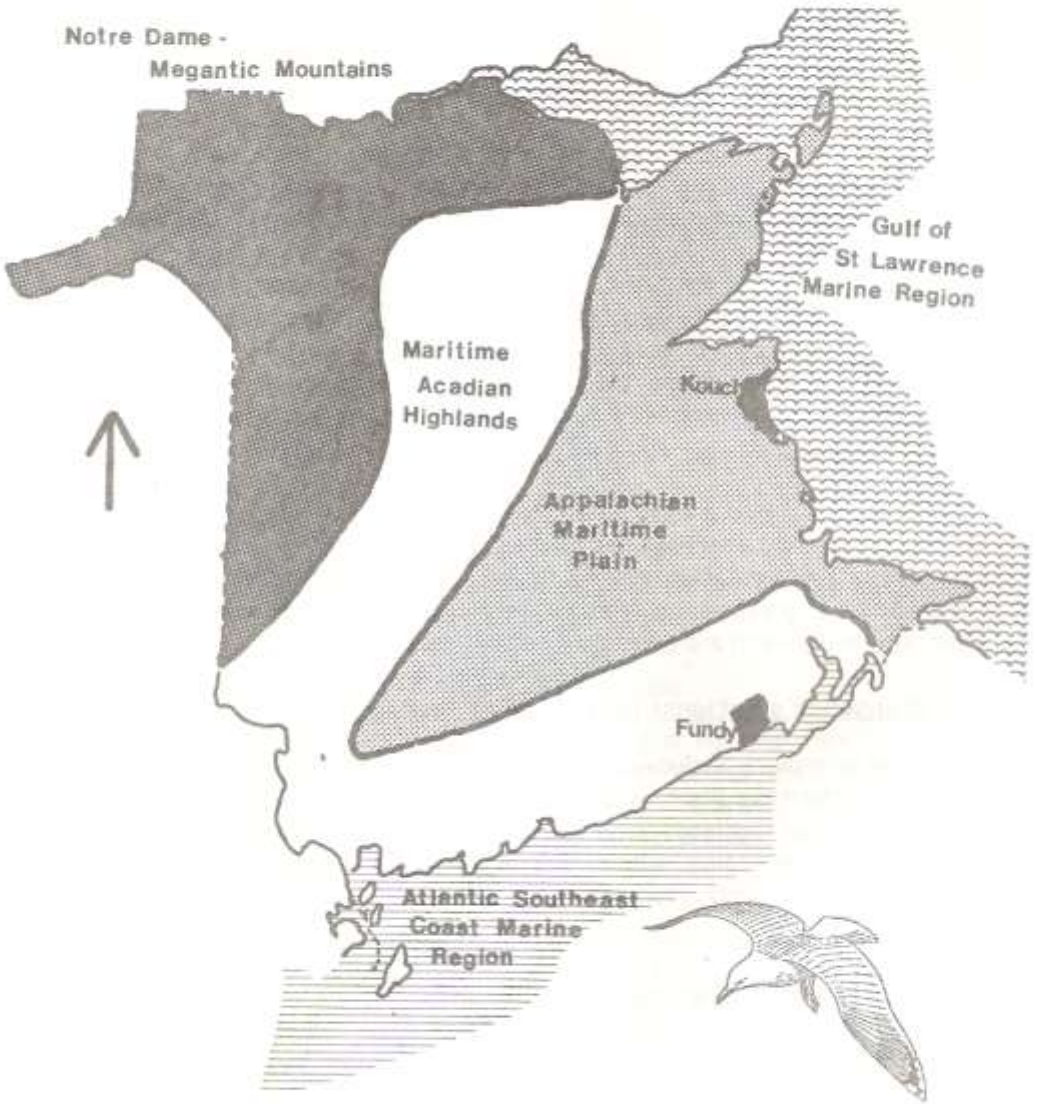
New Brunswick's National Parks – What they Represent

New Brunswick includes portions of three natural terrestrial regions, the Appalachian Maritime Plain, where Kouchibouguac National Park is located, the Maritime Acadian Highlands, where Fundy National Park is found, and the Notre Dame–Mégantic Mountains. Although not represented in New Brunswick this third region is spectacularly represented by Forillon National Park on the Gaspé Peninsula of Québec.

Two natural marine regions front New Brunswick's shorelines, the Gulf of St. Lawrence Marine Region, which is partially represented within the boundaries of Kouchibouguac, and the Atlantic Southeast Coast Marine Region which fronts

NATIONAL PARKS NATURAL REGIONS

REPRESENTED IN NEW BRUNSWICK



Fundy and would be spectacularly represented in the proposed West Isles Marine Park in the Bay of Fundy.

Fundy – the Acadian Highlands

The great Bay of Fundy tides wash against a coastline of rugged cliffs, broken by only a few small rivers with gravelly beaches at their mouths. From the shore, the land in Fundy National Park rises rapidly to an elevated rolling, plateau typical of the Acadian Highlands, a portion of the Appalachian Mountain chain. The plateau is deeply cut by the rugged V-shaped valleys of the two main rivers, which once brimmed with salmon.

The vegetation includes a range of Acadian forest types, from red spruce–yellow birch mixed woods to black spruce boglands and maple–beech forest on the higher hills. Thirty-eight species of mammals inhabit the park including Moose, deer, bear, fox, Raccoon, Beaver, and Coyote. White-tailed Deer are the most readily observed. About one hundred species of birds nest in the park and another hundred pass through on migration. There are 17 species of reptiles and amphibians.

As forest clear-cuts surround the park boundaries, Fundy is increasingly becoming an "ecological island". The park is relatively small, yet within its boundaries are large numbers of species, both rare and representative, and fine examples of both young and old forests. Its 207 square kilometers will be of increasing value in years to come as other areas become progressively more developed and man seeks more closeness to nature.

Kouchibouguac – the Appalachian Maritime Plain

The outstanding feature of Kouchibouguac National Park is a barrier island system which stretches, in a gentle arc, across the broad embayment of Kouchibouguac Bay on Northumberland Strait. Standing as a rampart against a sometimes violent sea these barrier dunes protect an intricate network of lagoons, estuaries and salt marshes.

Four brackish tidal rivers, the Kouchibouguac, the Black, the St. Louis and the Portage dissect the park. Estuarine waters thus venture to the heart of the park and result in a dynamic interaction of marine and terrestrial plants and animals.

Wetlands, raised peat bogs, salt marshes and cedar swamps are a major part of the park's environment and home for many of the 25 species of orchids found in Kouchibouguac. The natural forces of forest evolution function in large tracts of Acadian forest, while old fields, evidence of past human use, slowly revert to their former forested state.

Such a variety of habitat brings a corresponding variety of wildlife. The lagoons are breeding and nursery areas for an army of marine creatures and are important stop-overs for large numbers of shorebirds and waterfowl during spring and fall migratiuons. The Piping Plover, an endangered species, chooses washover areas on the barrier dunes as nest sites. The largest colony of Common Terns in eastern Canada has developed on Tern Island, largely since establishment of the park. The Osprey, the park's largest breeding raptor, is common. Harbour and Gray Seals ply the adjacent waters and form a basking colony on park sand bars. Land mammals characteristic of the region such as deer, Moose, fox, Porcupine and hare are well represented in Kouchibouguac.

Three strong cultures, Indian, French and English, are prominent in the cultural heritage of this park.

Kouchibouguac National Park is a place for people and for nature; a place where one can relax and clear one's mind from the cares of the modern world; a place where natural processes are of more importance than exploitation and material gain; a place where as yet unappreciated forms of life are protected; a place for the future; a place to be thankful for, and to visit, in this the centennial year of national parks in Canada.

PIPING PLOVER OFFICIALLY ENDANGERED

The Committee on the Status of Endangered Wildlife in Canada recently announced that the status of the Piping Plover has been changed to "endangered", the category of highest concern. Previously, Piping Plovers had been classified as "threatened."

LE RÉSEAU DES PARCS NATIONAUX
UNE PHILOSOPHIE EN ÉVOLUTION

Stephen Woodley and Harry Beach

Au cours de ses cent années d'existence, le réseau canadien des parcs nationaux a beaucoup grandi et sa philosophie s'est également modifiée. L'évolution des pratiques de gestion des parcs s'est faite presque en même temps que l'évolution de la pensée écologique dans la société canadienne.

Par le décret de 1885 qui mettait à part les sources thermales de Banff, ces terres étaient tout simplement protégées de toute vente, de toute colonisation ou du squattage puisque les sources thermales promettaient de s'avérer bénéfiques pour le grand public et qu'on voulait ainsi confier à la Couronne le contrôle des terres avoisinantes. Deux années plus tard, cette idée se précisa davantage avec la promulgation de la Loi sur le parc des montagnes Rocheuses qui réservait un secteur un peu plus grand pour en faire un "parc public et un lieu de détente".

Ce ne fut cependant pas avant 1930, date de l'adoption de la Loi sur les parcs nationaux, que l'on confia aux parcs nationaux un mandat important en matière de conservation, et ce, à un moment où les ressources fauniques et les milieux naturels étaient en diminution. Le mandat des parcs nationaux est précisé dans un extrait souvent cité de la loi:

> "Les parcs nationaux du Canada sont par les présentes dédiés au peuple canadien pour son bénéfice, son instruction et sa jouissance... et les parcs nationaux doivent être utilisés de manière qu'ils restent intacts pour la jouissance des générations futures."

Cette dédicace donne le ton à la gestion des parcs nationaux.

Avec l'utilisation accrue des parcs nationaux et une plus grande sensibilisation aux questions de l'écologie qui s'est fait jour dans les années soixante, les parcs ont dû faire face à de nouveaux défis. Pour relever ces défis, on a mis au point une série d'énoncés de principes dont le plus récent a reçu la sanction du Cabinet en 1978. Ce document trace une ligne de conduite précise quant à la gestion des parcs, aux limites visant leur développement et à l'utilisation que les visiteurs doivent en faire.

Une telle évolution dans la philosophie des parcs nationaux laisse au pays toute une marge de manoeuvre pour ce qui est du développement de son réseau de parcs. Qu'il suffise de citer l'exemple de la ville de Banff qui attire chaque année des milliers de visiteurs par rapport à des parcs situés plus au nord comme Kluane où il ne vient que quelques centaines de personnes.

À mesure que la famille des parcs nationaux a grandi, on s'est rendu compte de la nécessité de définir et d'organiser un réseau de parcs nationaux. Par conséquent, au cours des années soixante-dix, les planificateurs des parcs se sont mis à considérer le pays comme une mosaïque de régions écologiques. En se fondant sur des aspects touchant la végétation, la géologie, la géomorphologie et l'océanographie, on a divisé le pays en 39 régions terrestres naturelles et en neuf régions maritimes naturelles. Chaque région devait être représentée par au moins un parc national.

À l'heure actuelle, le réseau compte 31 parcs nationaux dont les plus récents sont le parc de l'archipel de Mingan (au Québec) et le parc national du nord du Yukon. Certaines régions naturelles font l'objet d'une double représentation si bien que jusqu'à maintenant, seules 23 des régions terrestres sont représentées. Il reste encore beaucoup de travail à faire pour compléter le réseau surtout dans le Nord et pour illustrer les régions maritimes naturelles.

Les parcs nationaux du Nouveau-Brunswick – que représentent-ils?

Le Nouveau-Brunswick comprend sur son territoire des parcelles de trois régions terrestres naturelles, soit la plaine maritime des Appalaches où le parc national de Kouchibouguac est situé, les hautes-terres de la forêt acadienne maritime où se trouve le parc national de Fundy et enfin les monts Notre-Dame et Mégantic. Même si cette dernière région n'est pas représenté au Nouveau-Brunswick, on en a un exemple remarquable dans le parc national de Forillon qui se trouve dans la péninsule de la Gaspésie, au Québec.

Deux régions maritimes naturelles bordent les rives du Nouveau-Brunswick, c'est-à-dire la région maritime du golfe Saint-Laurent, en partie représentée dans les limites du parc de Kouchibouguac, et la région maritime de la côte sud-est de l'Atlantique sur laquelle donne le parc de Fundy et qui serait admirablement représentée dans le parc marin des îles de Fundy que l'on se propose d'établir dans la baie de Fundy.

Fundy – les hautes-terres de la forêt acadienne

Les grandes marées de la baie de Fundy déferlent sur un littoral de falaises escarpées qui n'est interrompu à l'occasion que par quelques petites rivières qui débouchent sur la baie par des plages de gravier. Depuis le rivage, le terrain du parc national de Fundy s'élève rapidement jusqu'à un plateau ondoyant, tout à fait caractéristique des hautes-terres acadiennes lesquelles font partie de la chaîne des Appalaches. Le plateau est largement tailladé par les vallées accidentées en forme de "V" des deux principales rivières du parc qui autrefois regorgeaient de saumons.

La végétation comprend certaines des essences propres à la forêt acadienne, dont les forêts mixtes d'épinettes rouges et de bouleaux des Alléghanys, les tourbières à épinettes noires et les forêts d'érables et de hêtres qui croissent sur les hauteurs. Trente-huit espèces de mammifères habitent le parc, notamment l'orignal, le chevreuil, l'ours, le renard, le raton-laveur, le castor et le coyote. Le cerf de Virginie est le mammifère que l'on y rencontre le plus souvent. Environ cent espèces d'oiseaux nichent dans le parc et un autre centaine d'espèces s'y arrête au moment de la migration. On trouve en outre dans le parc 17 espèces de reptiles et d'amphibiens.

À mesure que des coupes à blanc sont pratiquées à l'extérieur des limites du parc, Fundy tend de plus en plus à devenir un "îlot écologique". Malgré le territoire plutôt restreint du parc, celui-ci abrite un grand nombre d'espèces dont beaucoup sont à la fois rares et tout à fait typiques du milieu, et on trouve dans le parc des exemples de forêts toutes jeunes et d'autres qui sont parvenues à maturité. Avec les années, le territoire du parc – d'une superficie de 207 kilomètres carrés – prendra de plus en plus de valeur à cause du développement des régions environnantes et du retour à la nature.

Kouchibouguac – la plaine maritime des Appalaches

L'aspect le plus remarquable du parc national de Kouchibouguac, c'est sans doute son réseau de cordons littoraux qui s'étend comme un grand croissant tout le long de la grande échancrure que décrit la baie Kouchibouguac dans le détroit de Northumberland. Érigés comme un rempart contre les assauts parfois violents de la mer, les cordons littoraux protègent un ensemble complexe de lagunes, d'estuaires et de marais salés.

Quatre estuaires aux eaux saumâtres, soit les rivières Kouchibouguac, Black, Saint-Louis et Portage, traversent le parc. Leurs eaux saumâtres pénètrent donc

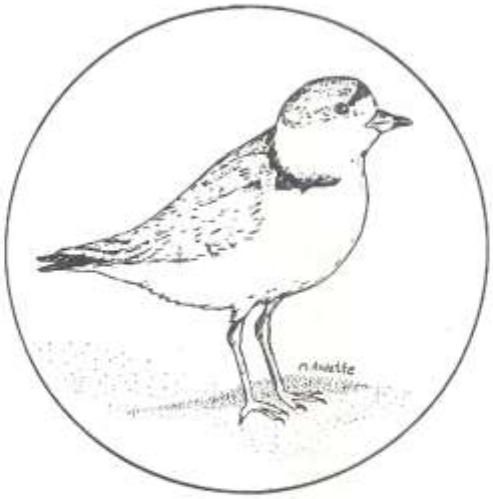
jusqu'au coeur du parc et suscitent une interaction dynamique entre les plantes et les organismes marins, d'une part, et la faune et la flore terrestres, d'autre part.

Milieux humides, tourbières ombotrophes, marais salés et cédrières occupent une grande partie du territoire du parc et abritent nombre des 25 espèces d'orchidées que l'on trouve dans le parc de Kouchibouguac. Les forces naturelles instigatrices de l'évolution des forêts sont à l'oeuvre sur de grandes étendues de la forêt acadienne tandis que des anciens champs – qui témoignent du passage de l'homme – reviennent tranquillement à leur état originel, la forêt.

Une telle diversité d'habitats attire nécessairement une faune tout aussi variée. Les lagunes sont le berceau d'une profusion d'organismes marins et au printemps et en automne, elles constituent une halte importante dans le trajet migratoire d'un grand nombre d'oiseaux de rivage et d'oiseaux aquatiques. Le Pluvier siffleur, une espèce menacée, privilégie les deltas de tempête sur les cordons littoraux pour y construire son nid. La plus grande colonie de Sternes pierregarins [communes] de tout l'est du Canada s'est installé dans les îles aux sternes, et ce, surtout depuis la création du parc. Le Balbuzard [aigle-pêcheur], le plus grand rapace qui niche dans le parc, se voit communément . Les Phoques communs et les Phoques gris s'ébattent dans les eaux avoisinantes et c'est d'ailleurs regroupés en colonies qu'ils se prélassent au soleil sur les dunes et les plages du parc. Des mammifères terrestres propres à la région comme le chevreuil, l'orignal, le renard, le porc-épic et le lièvre sont bien représentés dans le parc de Kouchibouguac.

Trois groupes ethniques importants soit les Micmacs, les Français et les Anglais font partie intégrales du patrimoine culturel du parc.

Le parc national de Kouchibouguac est un endroit mis à part pour les gens et la nature, un oasis où l'on peut se détendre et faire abstraction des préoccupations de la vie moderne. C'est un endroit où les processus naturels importent davantage que l'exploitation et les gains matériels; un endroit où des formes de vie encore inconnues peuvent être protégées. Kouchibouguac c'est un joyau préservé pour l'avenir, un endroit dont on peut être fier, un endroit à visiter en cette année du centenaire des parcs nationaux.



PIPING PLOVER IN KOUCHIBOUGUAC NATIONAL PARK

Harry Beach and Mike Savoie

The Piping Plover (*Charadrius melodus*) is a small shore bird that breeds on sandy beaches of the Atlantic coast and the Great Lakes as well as sandy beaches and alkaline flats of the prairies. It winters on the Atlantic coast from New Jersey to Florida and along the Gulf of Mexico. Every spring the Gulf of Mexico birds migrate to breeding grounds on the prairies while the Atlantic coast population moves north to nest from Virginia up to the Gulf of St. Lawrence. In recent years this Atlantic coastal population has shown a marked decline in numbers. At present the species is nowhere abundant and concern has been expressed for its future. The Committee on the Status of Endangered Wildlife in Canada has classified the Piping Plover in Canada as an "endangered" species. Since 1980 the Piping Plover has been legally protected from hunting and harassment under the Canada Wildlife Act. In the U. S. the Fish and Wildlife Service has proposed that the Great Lakes population be designated as "endangered" and the Atlantic and Prairie populations as "threatened" under the U. S. Endangered Species Act.

At most about 910 pairs of Piping Plover nest along the Atlantic coast of North America and only about 275 of these are found on the beaches of Atlantic Canada. Largest numbers are found in New Brunswick (100 pairs), Nova Scotia (70 pairs) and Prince Edward Island (60 pairs). Quebec has about 30 pairs, now restricted to the Magdalen Islands, and Newfoundland has about 15 pairs primarily in the southeast of the province. The species is no longer found along the edges of

its range, e.g. in places such as Sable Island, N. S., the north shore of the Gulf of St. Lawrence, and the southern part of the Gaspé peninsula.

The Piping Plover is threatened by reduced reproductive success, probably due to habitat change, disturbance of nesting birds, and direct destruction of eggs and young. The increasing use of beaches for recreational activities on the Atlantic coast no doubt is playing its part in keeping the Piping Plover population down. In recent years advocacy groups including the Canadian Nature Federation and the Prince Edward Island Natural History Society have sparked the interest of government agencies such as the Canadian Wildlife Service, the Nova Scotia Department of Lands and Forests, and Parks Canada. These agencies have begun monitoring and, in some cases, protection programs. Atlantic Canada's National Parks have a particularly important role to play in the protection of this endangered species in that Prince Edward Island National Park, the proposed coastal extension of Kejimkujik National Park, and Kouchibouguac National Park all harbour major nesting populations of Piping Plovers.

The Kouchibouguac Situation

Kouchibouguac National Park hosts at least 20% of the New Brunswick and about 6% of the Atlantic Canadian Piping Plover population. Piping Plovers were identified in the first park avifaunal inventories in the early 1970's. As the birds at that time were all located in more isolated areas of the park, little direct attention was paid to them until 1981 when the park natural resource conservation staff decided to take a more careful look at the distribution of the species. A preliminary study in 1982 revealed that the population was larger than the first observations in 1973-74 had shown and that the principal nesting areas had shifted from the southern to the northern park beaches. In 1983 a contract

Piping Plover Nesting Statistics for Kouchibouguac National Park

Area	Number of Pairs		
	1973	1982	1983
North Richibucto Dune	3	0	1
Tern Island	1	1	1
South Kouchibouguac Dune	3	2	4
North Island*	1	1	1
North Kouchibouguac Dune	2	11	12
North to Portage River	1	0	1
Portage River north to Park Boundary	0	1	1
TOTAL	11	16	21

* attached to South Kouchibouguac Dune in 1973

researcher completed an in-depth resource management study which confirmed the findings of the 1982 study and which reported on the nesting success of the species in the park.

For the most part the preferred locations for breeding territories were expansive areas recently washed over by storm waves. These sites offer good visibility and the small nest scrapes with their usual clutch of four eggs were concealed among a litter of shell fragments and cobbles. The increase in pairs nesting on North Kouchibouguac Dune may be a response to the infilling of an inlet and the associated increase in washover area since 1976; the drop on the North Richibucto Dune might be related to the increased stability of that barrier. At present the greatest nesting activity is on the most remote section of the park coastline. Of the 21 nests observed in 1983, 16 (76%) hatched young successfully. A total of 56 eggs hatched (72% eggs laid) for an average of 2.8 hatched eggs per nest. The fledgling rate was a minimum of 60% of chicks hatched and 1.53 young fledged per pair. Of nests that hatched chicks, 92% fledged young. These findings compare well with observations from other nesting areas in Atlantic Canada and at present the Piping Plover appears to be doing well in Kouchibouguac National Park even though little protection has been specifically directed at the species. However, the Piping Plover is not a stationary resource. Its nesting areas are now known to shift in response to the often rapid geomorphological changes that occur in coastal dune environments such as that in Kouchibouguac National Park.

As the Piping Plover nests on sandy beaches, a major summertime "habitat" for park visitors and their pets, it is potentially subject to direct physical or indirect behavioural distrubance. Dogs and humans on foot or in vehicles have the potential to destroy nests and eggs, either accidently or on purpose. The presence of park visitors very close to a nesting bird could keep it from normal incubation activities. The problem for Kouchibouguac National Park is to secure the protection of the species with minimal interference to park visitor enjoyment.

A manaagement plan for Piping Plover in Kouchibouguac National Park has been prepared. It provides for regular monitoring of nesting activity to ensure that park staff have early warning if nesting shifts from the more isolated segments of park beach to the busier visitor-use area near Kellys Beach. Because of the remoteness of most Piping Plover nests and the hatching of most chicks prior to peak tourist use, closing the breeding areas to human access by physical barriers will only occur if drastic shifts in nesting areas occurs. The plan stresses strict enforcement of traffic and pet regulations and a contingency plan for area closure if populations shift to more popular parts of the park beaches.

SALMON RETURN FOR CENTENNIAL IN FUNDY

Duane West

Central to local celebrations of 100 years of the national park idea in Canada will be Atlantic Salmon, maybe 100, swimming through the Point Wolfe Dam in Fundy National Park. There has been a dam barring salmon access to the Point Wolfe River for over one hundred years, almost continuously since the 1820's.

While rivers in eastern North America with no more Atlantic Salmon are all too common, the Point Wolfe situation was unique. The period of industrial activity which wiped out the salmon run was over and two thirds of the Point Wolfe watershed found itself within the boundaries of Fundy National Park by 1948.

Salmon didn't get a chance to return naturally to the Point Wolfe, however, like they did to the park's second major river, the Upper Salmon. As old logging dams at the mouth of many rivers became obsolete, they were allowed to deteriorate and washed out. Ironically, the Point Wolfe dam was maintained because it was in the National Park. Through the early years of the Park, the Point Wolfe covered bridge and log dam became a key identity element – Fundy National Park to many visitors and even park managers.

By the 1970's the evolving concept of parks as preserving ecosystems, not just scenery, combined with public recognition of regional declines in Atlantic Salmon numbers focused attention on the issue. A resource management plan approved by Parks Canada in 1981 promises a resolution of the apparent conflict. Soon the salmon will once again return to the Point Wolfe River, through the dam.

In order to re-establish a salmon population in the river, Parks Canada and the federal Department of Fisheries and Oceans embarked on a four-year stocking program in 1982. Fingerlings are raised at the Saint John Fish Culture Station from brood stock gathered from the Big Salmon River west of the Park. In the fall, they are flown to selected pools along the river by helicopter and dropped from a suspended monsoon bucket (a large canvas bucket with a trap-door bottom, normally used for fire fighting). This summer, the first salmon are expected to return to their adopted river as grilse (salmon which have spent one winter in salt water and have now returned to spawn).

The salmon were to pass through a hole cut through the dam last summer. At least two salmon could not wait and got a jump on celebrations and entered the river last fall. Howver, late winter ice damage to the dam is necessitating modification of plans to crib up the fish passage. Probably only remnants of the old Point Wolfe Dam will be preserved and the salmon will have unobstructed passage up the centre of the river.

In the Point Wolfe this year, Atlantic Salmon will be rediscovering a river that is part of *their* heritage.

PEREGRINE FALCON REINTRODUCTION TO FUNDY

Duane West

Birdwatchers will be searching the skies and cliffs of the Bay of Fundy for Peregrine Falcons this summer as a reintroduction program at Fundy National Park enters its fourth year. The release is part of a national program coordinated by the Canadian Wildlife Service to reintroduce peregrines to their former home range.

As many as eight juvenile peregrines will be released, starting in late June. The peregrine chicks are kept in a large box attached to the cliff. They will be fed from above through a food chute, so that they are not disturbed by people. Their living space is divided by a wooden baffle – should they be frightened, they can seek refuge at the back, while the front provides a fine view of their surroundings. After about two weeks the bars of the box are opened and the young are free to fly and return as they wish.

Depending on their progress, they may remain in the area for up to three weeks. During this period, food will continue to be provided at the box. This is the key to the "hacking" method. It allows young birds food and refuge while they learn to hunt and fend for themselves.

Fundy National Park's hacking site can be viewed from a safe distance by visitors to the Point Wolfe area of the Park. A telescope and exhibit on the project are provided. Park staff members are frequently on hand to discuss the project. During the past three years, thousands of visitors have been able to observe one of the more "public" hacking sites in Canada.

The peregrine release program in Atlantic Canada is coordinated by Bruce Johnson, a biologist with the Canadian Wildlife Service. The Fundy National Park release is handled by the Park's Warden Service, who ensure the safety and care of the young birds.

These graceful, sleek hunters were once common throughout North America and survived centuries of plunder by game-keepers, falconers and egg collectors. But during the past 30 years, falcon populations around the world have rapidly and drastically declined, victims of chemical pesticides and industrial pollutants.

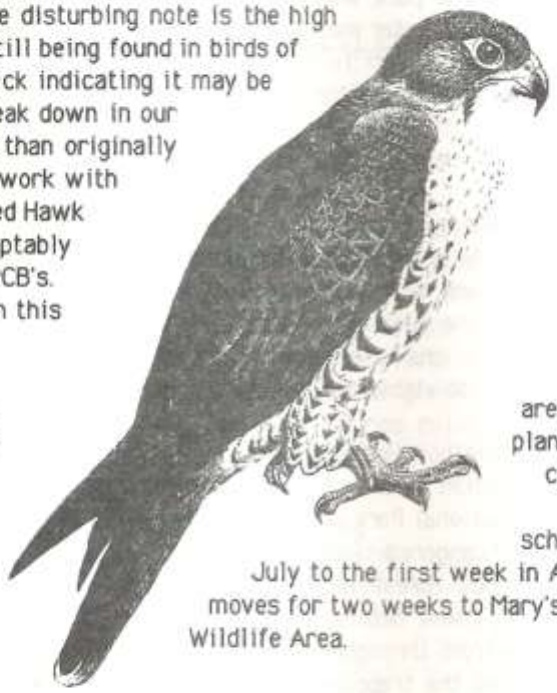
Peregrines are extremely vulnerable to DDT pollution. They fail to reproduce when DDE, a breakdown product of DDT, reaches 20 parts per million in their eggs. Ducks and Herring Gulls do not suffer reproduction losses until DDE levels reach 100 ppm and chickens are affected only by much higher levels.

In the past few years, pesticide levels in the environment have declined, and some success has been achieved in breeding falcons in captivity. The next step has been to find appropriate sites for releasing the birds, where there is an adequate, clean food supply and relative security from predators. Ideal sites are former nesting areas, usually coastal cliffs. Historically the Bay of Fundy was the most important peregrine breeding area in the Maritimes. Peregrine Falcons nested in Fundy National Park near Point Wolfe until 1948.

The success of the reintroduction program may not be known for several years. First-year mortality is high and peregrines do not breed until two or three years of age. Birds returning from their southern wintering grounds may not nest at the fledging site but instead choose a ledge some distance away.

There are encouraging signs. Several peregrines were spotted in the upper bay last summer, one adult and at least two immatures. Whether they were Fundy birds or strays from New England or Quebec is uncertain. In the United States and Britain, peregrine populations have shown spectacular recoveries.

A more disturbing note is the high concentration of pesticides still being found in birds of prey in Maine and New Brunswick indicating it may be taking residues longer to break down in our northern environment than originally anticipated. Preliminary work with unhatched Sharp-shinned Hawk eggs from Fundy found unacceptably high concentrations of DDT and PCB's. More research and monitoring in this area are clearly needed.



If you are not already a regular fan, why not plan to catch the special, peregrine centennial air show at Point Wolfe this summer. It's tentatively scheduled from the first week in July to the first week in August and after that, usually moves for two weeks to Mary's Point in the Shepody National Wildlife Area.

Provincial Parks Celebrating Too

Not only for National Parks is 1985 a significant year. New Brunswick's Provincial Parks are celebrating their 50th anniversary this year. Information on the provincial system will be highlighted in the next issue.

THE MARTENS RETURN

Duane West

It's mid-April and eight American Marten await their fate in separate cages in the forest of Fundy National Park. Maybe by now they realize the park wardens who bring them food and water daily have no sinister motives for keeping them caged. Memories of their original territory on the headquarters of northern New Brunswick's Upsalquitch River must be fading since they were captured in February. The misty coastal stand of century old red spruce and yellow birch is beginning to feel more like "home".

This theory is the reasoning behind the gentle release method being used to reintroduce marten to Fundy National Park. Allowing the relocated marten to acclimatization period before release into new habitat seems to reduce the distance they disperse before setting up a new range. In many other marten reintroduction programs rapid and long distance dispersal from the sites selected resulted in failure to establish viable new populations.

The gentle release method is being tried in two Atlantic Region National Parks on the advice of Canadian Wildlife Service biologist, Myrtle Bateman. It was first used in Terra Nova National Park in Newfoundland where the island's unique subspecies of marten is endangered. Fundy National Park is the second candidate site because its coniferous forest has matured under the Park's protection mandate to the point sufficient habitat exists to support a marten population again. Marten were gone from throughout southern New Brunswick by about the 1920's, unable to withstand the trapping and habitat encroachment of the boom years of the 1800's.

At the end of April the lone male from this year's group will be released along with any females which didn't give birth tro young in the cages. The released marten will each carry a small collar with a radio transmitter and two shiny ear tags. For the first five or six months, the radios will allow park wardens to monitor each individual animal's movements in and out of the park and the area of their individual territories. Of the six released last spring two are known to have established themselves within the Point Wolfe valley by fall.

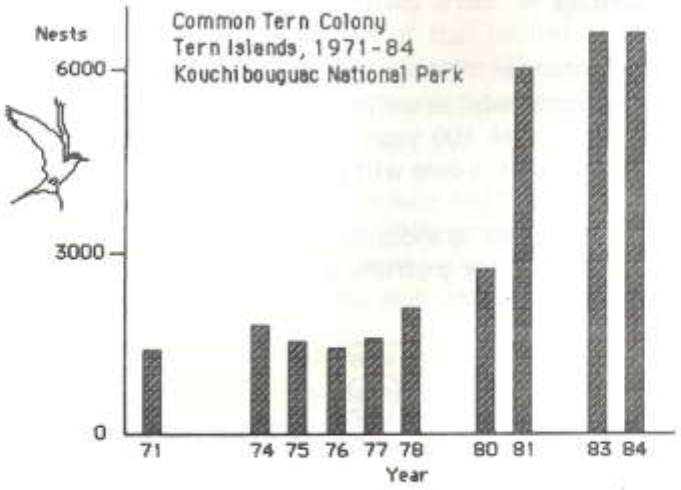
This year it is also hoped that the radio locations will allow the placing of male marten, trapped this summer, into the established territories of females released earlier in the spring. Hopefully this mid-summer match-making will additionally ensure that marten go forth and multiply through what remains of their former habitat in the Caledonia Highlands of southern New Brunswick.

Most visitors to Fundy National Park will never see a marten but anyone who is fortunate enough to glimpse this, the most attractive member of the weasel family, should experience a personal celebration of 100 years of heritage conservation.

TERN ISLANDS - THE LARGEST COMMON TERN COLONY IN N. B.

Harry Beach

In many of its nesting colonies, the Common Tern (*Sterna hirundo*) has been showing signs of decline in recent years. In 1971 the Canadian Wildlife Service conducted a nest count on a fairly large tern colony in Kouchibouguac National Park. At that time the Tern Islands colony hosted 1419 Common Tern nests. Since that time the Warden Service of the Park have fairly regularly inventoried the colony. In so doing they have amassed a remarkable record of rapid growth. From the 1419 nests found by Peter Pearce in 1971 the colony now stands at nearly 7000 nesting pairs. The spectacular growth of the colony is illustrated in the chart printed below. The Tern Islands colony is now thought to be the largest Common Tern colony in eastern Canada.



THE SECOND CENTURY OF HERITAGE CONSERVATION

Excerpts from remarks by Hon. Suzanne Blais-Grenier,
Heritage Day luncheon, Ottawa, Feb. 18, 1985

It is our pleasant task to greet a new century of Canadian dedication to the preservation of this country's heritage resources. One hundred years ago, Sir John A. Macdonald established our first national park in Banff, Alberta. That act of immense foresight made wilderness protection a government priority – a priority that has remained vibrant for 100 years.

Today, Canada has at least one national park in every province and territory. As well, the country is dotted with historic sites and plaques. The heritage we are preserving is the envy of the world and our commitment to preserving it is second to no other nation's. That commitment is alive and well in 1985.

The government of which I am a member is committed absolutely to the notion of preserving that national essence that we call "our heritage." Whether that takes the form of ten thousand square miles of verdant forest or of the old brick railroad station that welcomed new Canadians to what our forefathers called "The Last Best West," we believe our children and grandchildren should have the opportunity to experience it firsthand. But we do not believe that the realization of such experiences should be financed solely from government coffers.

To do so would be to negate the desire to contribute that has been voiced by the private sector and to disregard the contributions of volunteers in the struggle to preserve our heritage.

The second century of heritage conservation in Canada will mark a new beginning in inter-governmental as well as public-private participation. More will be accomplished in the next 100 years: more parks, more historic sites, more public recognition. But what is done will be done jointly.

My dream is to see our grandchildren enjoying the heritage contributions made by us... not merely "us" the government, but all Canadians.

FUNDY'S MOST NUMEROUS BIRDS

David Christie

What nesting birds do you think are most common in Fundy National Park? Robin? Black-capped Chickadee? Redstart? White-throated Sparrow? Evening Grosbeak? Remember that the park is 95% forested and that spruce and fir dominate three quarters of that area. Birch and maple are dominant in the rest of the woodland. The most common non-forested habitats are floodplain alder thickets, old fields growing up with shrubs and small trees, and recreational areas such as the campgrounds, golf course and lawns.

Before reading further, take a pencil and paper and write down your guesses for the top five species. If at least four of your choices turn out to be in the top ten consider yourself a good judge of bird populations in New Brunswick.

To carry out its mandate of permitting our National Parks to be "made use of so as to leave them unimpaired for the enjoyment of future generations" Parks Canada needs information about the natural resources that are its responsibility. Consequently, basic natural history surveys and other studies are carried out in each park.

It is as a result of one survey that I can tell you about the most common birds of Fundy Park. In 1979 Brian Dalzell and I conducted censuses of breeding populations at 18 locations in the park and calculated population densities for each area. For example, we found from 12 to 36 pairs of Dark-eyed Juncos per square kilometre in our coniferous forest study areas. By considering the average population of each habitat and the amount of that habitat in the park, one can roughly estimate the total population of each species. The estimated population of juncos was 2,500 pairs. Did you choose junco as one of the most common birds in the park?

I hope you picked some warblers, because eight of the ten most numerous birds in the park belong to that group and, of the species I mentioned in the first paragraph, only American Redstart is among the first ten. White-throated Sparrow, Evening Grosbeak and Robin, and also Dark-eyed Junco, rank in the top twenty.

Generally, smaller birds, such as warblers, occupy smaller territories than larger birds, so there can be more of them in an a given area. Also, at this latitude, birds which are year-round residents are usually not as numerous as the

most common migratory birds, since most of our habitats cannot support large numbers during the winter.

Thus, although our study did not start early enough in the spring to make a good estimate of chickadee numbers, New Brunswick's provincial bird is well down the list. In fact, Boreal Chickadees outnumber Black-capped as nesting birds in the park.

You've waited long enough for the answers. Our census indicated that, of about 110,000 pairs of birds breeding in the park, the ten most common species during 1979 were:

Bay-breasted Warbler	20,000 pairs
Blackburnian Warbler	14,000 pairs
Tennessee Warbler	7,700 pairs
Yellow-bellied Flycatcher	6,900 pairs
Black-throated Green Warbler	6,700 pairs
American Redstart	6,200 pairs
Magnolia Warbler	5,600 pairs
Swainson's Thrush	4,700 pairs
Yellow-rumped Warbler	4,100 pairs
Ovenbird	3,600 pairs

Nature is not static and with much young growth filling up forest openings created by the spruce budworm, it is likely that birds such as American Redstart and Magnolia Warbler have increased their numbers whereas Bay-breasted Warbler which prefers a closed conifer canopy may have declined somewhat since 1979. Never-the-less, all these species should be easy to find if you visit the park this summer.

Gastropods have a single shell that is usually coiled. They are generally known as snails, and include such groups as periwinkles and whelks. The coiling of the shell is not very obvious in species such as slipper shells and limpets. Some species are vegetarian; others are predatory and prey on bivalves. Most are capable of moving around by crawling on their single foot.

Bivalves have two shells that are attached by a ligament, and in many species the two shells can be pulled tightly together to enclose and protect the animal. Although the two shells may be found still attached together on the beach, more commonly only a single shell will be found. Some species of bivalves attach themselves permanently to a location, but many are capable of moving through sand or mud, and some bore into wood or even rock. Most bivalves are filter feeders. They include some of our most important shellfish food items, including clams, oysters, scallops, mussels and quahogs.

The seashells of the park are characteristic of the Magdalen faunal pocket, the name given to the warmer waters of the shallow southern part of the Gulf of St. Lawrence which contain many species (e.g. quahog, oyster) that are uncommon in colder waters to the south (south shore of Nova Scotia, Bay of Fundy, Gulf of Maine), and that do not become common again until in the vicinity of Cape Cod.

The information given here covers the seashells of the park. My own information is more detailed for the outer beaches than for the lagoon shores where my coverage was patchy. I have included observations from two earlier studies (Bowen and Rivard 1972 and Patriquin and Butler 1976; respectively abbreviated as BR and PB) which were concerned primarily with the invertebrates of the lagoons. The reader is referred to field guides and other reference works for detailed information and assistance in identification.

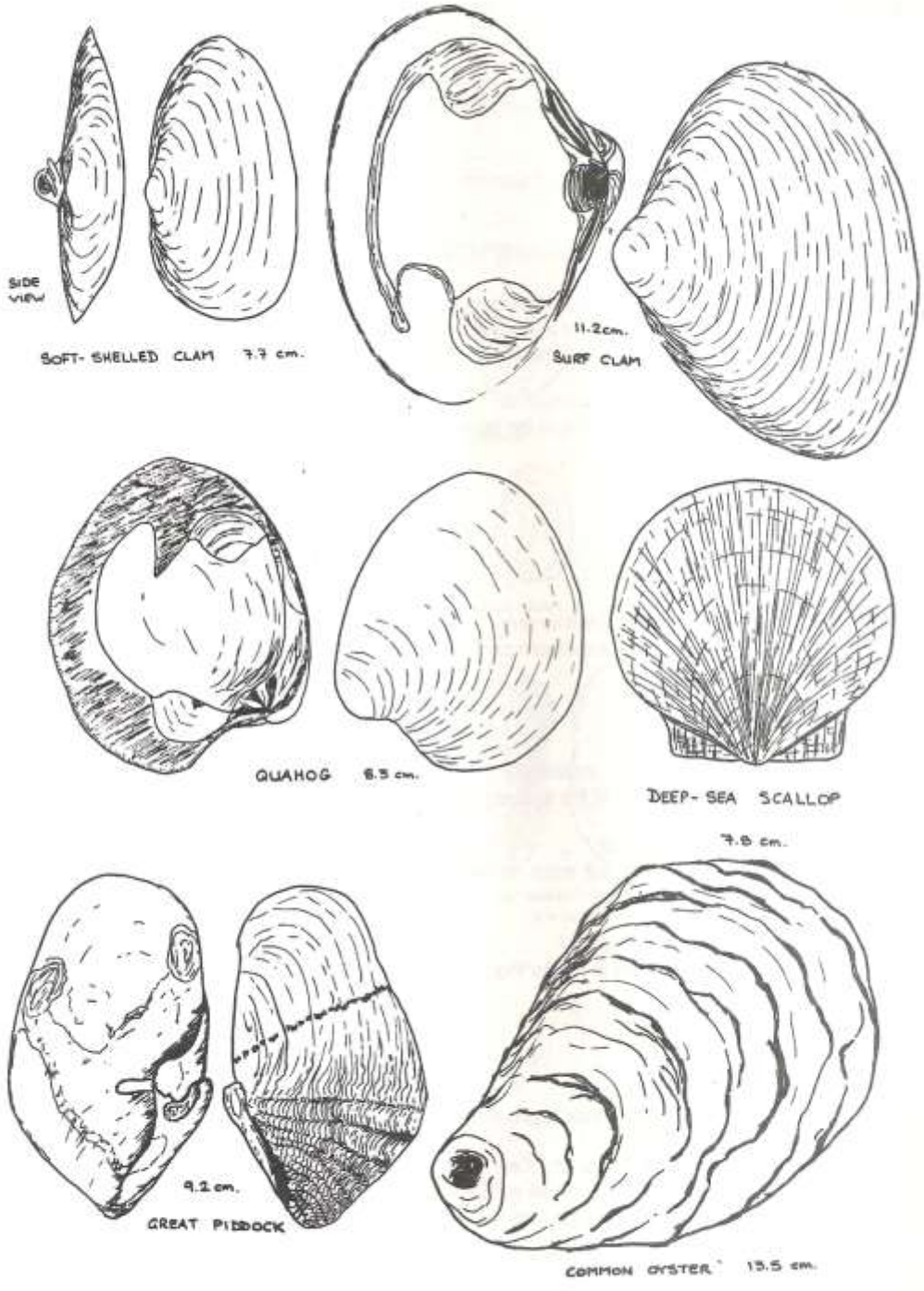
Common and Obvious Shells

COMMON PERIWINKLE (*Littorina littorea*)
Very common along the outer beaches and the dune shorelines of the lagoons; an intertidal species.

COMMON SLIPPER SHELL *(Crepidula fornicata)*
Outer beaches, most commonly in the northern portion of the park.

NORTHERN MOON SHELL *(Lunata heros)*
Fairly common on all ocean beaches and in the lagoons. Live moon snails are often seen on the bottom of lagoons or near shore on the ocean coast, where they plough through the upper surface of sand or mud. Predatory.

Common, obvious seashells of Kouchibouguac National Park, by Brooke Clibbon.
(Size noted is greatest dimension of the shell drawn; larger or smaller individuals may be found.)



WAVED WHELK *(Buccinum undatum)*
Fairly common on the outer beaches from Pointe-Sapin to south of Portage River; predatory.

BLUE MUSSEL (*Mytilus edulis)*
Very common on the outer beaches; also occurs commonly in the lagoons (BR, PB). Blue Musells attach themselves to rocks and wharves by means of strong threads they produce.

RIBBED MUSSEL *(Modiolus demissus)*
Fairly common on lagoon shoreline of South Kouchibouguac Dune. Common in the lagoons (BR, PB).

HORSE MUSSEL (*Modiolus modiolus)*
Fairly common on the outer beaches, particularly in the northern half of the park.

DEEP-SEA SCALLOP *(Placopecten magellanicus)*
Fairly common on the outer beaches. The shells that wash up may be there naturally, but they may also be shells that were dropped overboard by scallop boats.

COMMON OYSTER *(Crassostrea virginica)*
Fairly common on the outer beaches. Also in the lagoons and the rivers, where they are tidal (PB).

QUAHOG *(Mercenaria mercenaria)*
Fairly common on the outer beaches.

FALSE QUAHOG *(Pitar morrhuana)*
Fairly common on the outer beaches.

FALSE ANGEL WING *(Petricola pholadiformis)*
Uncommon on the outer beaches of the southern part, but fairly common in the northern part of the park.

SURF CLAM (*Spisula solidissima)*
Very common on the outer beaches.

ARCTIC WEDGE CLAM *(Mesodesma arctatum)*
Fairly common on the outer beaches of the southern portion of the park.

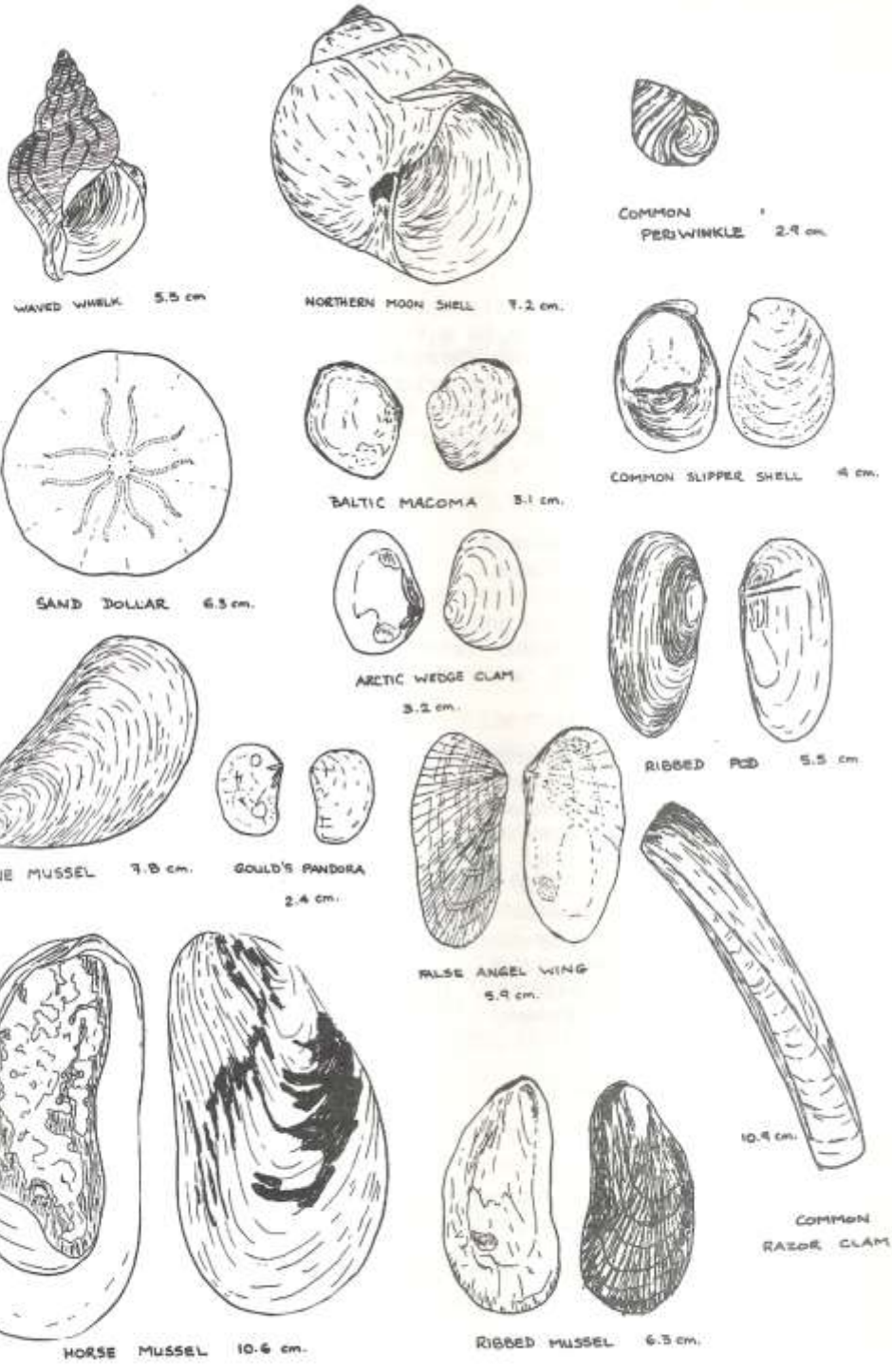
BALTIC MACOMA *(Macoma balthica)*
Uncommonly on the outer beaches but much commoner on the mudflats of Portage River lagoon; very common in the lagoons (PB).

COMMON RAZOR CLAM *(Ensis directus)*
Fairly common on the outer beaches in the northern part of the park.

RIBBED POD *(Silique costata)*
Fairly common on the outer beaches.

SOFT-SHELLED CLAM *(Mya arenaria)*
Very common on the outer beaches, on the lagoon shores and in the laboons.

TRUNCATE SOFT-SHELLED CLAM *(Mya truncata)*
Identification tentative; the shells are not as abruptly truncated as would be expected for this species. I found this presumed species fairly commonly on the outer beaches throughout the Park.


WAVED WHELK 5.5 cm
NORTHERN MOON SHELL 7.2 cm.
COMMON PERIWINKLE 2.9 cm.
SAND DOLLAR 6.3 cm.
BALTIC MACOMA 3.1 cm.
COMMON SLIPPER SHELL 4 cm.
ARCTIC WEDGE CLAM 3.2 cm.
RIBBED POD 5.5 cm
BLUE MUSSEL 7.8 cm.
GOULD'S PANDORA 2.4 cm.
FALSE ANGEL WING 5.9 cm.
10.9 cm.
COMMON RAZOR CLAM
HORSE MUSSEL 10.6 cm.
RIBBED MUSSEL 6.3 cm.

GREAT PIDDOCK *(Zirfaea crispata)*
Fairly common on the outer beaches. This species bores into peat, clay or soft rock.

GOULD'S PANDORA (*Pandora gouldiana)*
Fairly common on the outer beaches of the northern part of the park; found once on South Richibucto Dune.

SAND DOLLAR *(Echinarachnius parma)*
This species is an echinoderm rather than a mollusc but is often considered to be a seashell. It is fairly common on the outer beaches of the northern part of the park.

As well as the common, obvious shells additional species occur in the park. Seven shells, including two freshwater bivalves, were rare but due to their size and/or distinctive markings, they were noticeable and quickly recognizable as being different and unusual. All were found on the ocean beaches. Fourteen others are generally small and easily overlooked. Some are common, some are scarce and most are difficult to identify. Many of those species occur in the lagoons, where I spent little time. Consequently, I have little personal experience concerning their distribution and abundance.

Rare but Obvious Shells

DOGWINKLE *(Thais lapillus)*
LITTLE COCKLE *(Cerastoderma pinnulatum)*
ICELAND COCKLE *(Clinocardium ciliatum)*
BLACK CLAM *(Arctica islandica)*
SHIPWORM (*Family Teredinidae)*
EASTERN ELLIPTIO *(Elliptio complanata)* [a freshwater species]
EASTERN LAMP-MUSSEL *(Lampsilis radiata radiata)* [a freshwater species]

Obscure Species

TORTOISESHELL LIMPET *(Acmaea testudinalis)*
CHINK SHELL *(Lacuna vincta)*
SMOOTH PERIWINKLE *(Littorina obtusata)*
ROUGH PERIWINKLE *(Littorina saxatalis)*
SWAMP HYDROBIA *(Hydrobia minuta)*
FLAT SLIPPER SHELL *(Crepidula plana)*
MUD DOG WHELK *(Nassarius obsoletus)*
NEW ENGLAND DOG WHELK *(Nassarius trivittatus)*
TRIPARTITE ODOSTOME *(Odostomia trifida)*
SALT-MARSH SNAIL *(Melampus bidentatus)* [should be looked for in the salt marshes]
PRICKLY JINGLE SHELL *(Anomia aculeata)*
GEM SHELL *(Gemma gemma)*
DWARF TELLIN *(Tellina agilis)*
ARCTIC ROCK BORER *(Hiatella arctica)*

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Patriquin, D.G. and C.R. Butler. 1976. Marine resources of Kouchibouguac National Park. Unpublished Applied Ocean Systems Ltd. report for Parks Canada, Kouchibouguac, N.B. 423 pp.

FROM FUTURE GENERATIONS:

As part of its observance of the National Parks Centennial, Fundy National Park sponsored an essay contest for grade 7 and 8 students in School Districts 17, 18 and 19. The theme was "Fundy National Park – the Next Hundred Years". Courtesy of Parks Canada and the student essayists, we are pleased to be able to print three of the winners, by Heather Scott, Grade 7 at Hampton Junior High, Carolyn Atkinson, Grade 8 (late immersion) at Sussex Junior High, and Jennifer McGrath, Grade 8 at Caledonia Regional High (Hillsborough).

FUNDY NATIONAL PARK – THE NEXT HUNDRED YEARS

Heather Scott

In 100 years time, when most towns and villages in New Brunswick have turned into industrial, pollution producing cities, with severe traffic problems and overcrowding, what will happen?

What will happen to our "Picture Province" when most of our beautiful trees have been cut down for wood stoves and building supplies and few are planted to replace those cut down?

I shudder to think what could happen if the modern world turns its back on nature, its creator. Nature determines our survival, and yet we pretend that we don't need it. We pretend that we are our own masters, that we can contradict the laws of nature.

Do humans need nature? Can they not survive without this ecological nuisance, that changes new plans for sophisticated shopping malls? No. The survival of all living things depends on the balance of all ecosystems. If we constantly pollute our air and waters, what will happen to wildlife, plants, and the human race? We dare not wait long to right this frightful wrong! What will the next 100 years bring? Will we still be around, to tell the tale of our powerful domain?

But there is hope for the future! In 100 years time Fundy National Park will remain unchanged. It will help fight the enormous task of making people aware of the immediate pollution problem in New Brunswick. Trying to keep our woodlands clean and wild for future generations will be difficult, but I am sure that Fundy Park, like other parks across Canada, will maintain this valuable goal.

Fundy Park will remind New Brunswick citizens of their heritage, remind them of their responsibility to nature, to wild animals and to their environment.

Blooming with flowers, wildlife and new ideas, Fundy Park will also provide a place for campers (and even those who prefer the lodge) to enjoy the beauty of nature. Animals, preserved in their natural habitats, will still be seen on nature trails. Beautiful lakes and gentle pools, veiled by forest leaves, will still attract the eager explorer.

For hundreds of years to come, Fundy National Park will protect wildlife and nature for the enjoyment and education of future generations. With this in mind, a new light burns for a more hopeful future to all.

LE PARC NATIONAL DE FUNDY – L'ANNÉE 2085

Carolyn Atkinson

Mon père et moi, nous sommes allés dans la direction du Parc national de Fundy en auto. Moi, je n'ai jamias vu cette région mais mon père a passé son enfance ici.

Oh! Les histoires qu'il me racontait tout le temps. Les histoires jolies de sa jeunesse quand sa famille est allée au Parc Fundy pour faire du camping et la pêche. Il a dit aussi qu'il y a des grands arbres dans le parc, et ces arbres sont parfaits pour grimper.

Imaginez ça! Pour moi c'est difficile parce que maintenant, dans l'année 2085, il n'y a pas d'arbres. Toutes les choses de nature autour de ma ville sont artificielles.

L'auto a roulé sur la rue encore mais, mon père et moi, nous étions presque là.

Mon père m'a dit que dans quelques minutes je vais voir qu'il y a des choses de beauté de reste sur cette terre.

J'ai rit et j'ai dit que c'est impossible! Mon père a seulement sourit et il a dit que je vais voir parce que le Parc Fundy et ses personnes sont spéciales.

Dans un bout de temps nous sommes arrivés. J'ai regardé autour de moi et mon coeur a battu avec enthousiasme.

Oh! Le paysage, il était beau. Tous les arbres étaient en couleur parce que c'était automne. C'était comme un gros feu avec toutes les couleurs brillantes et vivides.

Mon père et moi sommes sortis de l'auto. Sous mes pieds il y avait du gazon vert foncé. J'ai eu le désir ardent de courir sur ce tapis de velour, et c'était exactement ça que j'ai fait.

D'un côté, il y avait une pancarte qui montre qu'il y a une excursion à pied qui commence là. Papa et moi, nous l'avons pris.

Nous avons suivi les sentiers dans les bois et j'ai vu des choses que j'ai jamais cru existaient. Des choses comme des animaux et des plantes. Une fois, j'ai vu un cerf, et un autre fois, un écureuil. J'ai sourit avec du vrai plaisir.

Quand c'était le temps de partir, les larmes sont entrés dans mes yeux et j'ai demandé si nous pouvons revenir.

Papa a dit, "Oui!" Plus tard dans l'auto il a dit aussi que rien n'a changé avec son parc favori à cause du soin spécial donné par les employés dans le but de conserver la nature.

Moi? J'ai dit que maintenant, c'est mon parc favori aussi.

JOURNEYING INTO FUNDY'S FUTURE

Jennifer McGrath

Herring Cove - June 22, 1985

The beach is deserted. The day is cool and grey. A light drizzle mixes with the spray of the waves. A seagull calls forlornly into the wind.

Presently, voices are heard laughing and talking. A young naturalist leads a group of curious tourists to different tide pools explaining about the kinds of life found in them. Suddenly he straightens and, with a pair of binoculars, searches the surrounding cliffs. With a shout, the naturalist points out two young peregrine falcons stretching their wings.

Gradually the clouds are blown away and the sun changes the sky to blue. The waves, which had rolled onto the shore grumbling and hissing, are transformed

into horses with foaming manes and thundering hooves as they rush toward the beach rearing and plunging.

Point Wolfe - 1989

People line the river pointing and snapping pictures. The water is filled with leaping, glistening Atlantic salmon on their way to spawning grounds. As they approach the dam a huge tunnel opens. The fish surge through. Thanks to the help of concerned people, the salmon are victorious in their century-old battle against the dam.

New Brunswick - 1993

Park workers want to reintroduce wolves to the park. The idea is met with skepticism, doubt and scorn. Some people, however, are interested and are willing to help with the project.

The park puts the idea on hold. People are afraid of wolves. Perhaps if they knew more . . .

Tracey Lake at Fundy - 2015

A flock of birds gather in the branches of a tall maple. They flutter uneasily. Suddenly they burst into flight, winging swiftly away. A marten twitches its tail nervously and with a squeak, darts into the bushes.

The air is stifling and in the distance is a sound like a strong wind rushing through the trees... except there is no wind. A deer, her eyes ringed with white in her fear, swims to the far side of the lake. All the animals are running now. At the water's edge, a coyote turns and, crouching, bares his teeth at this unknown foe.

A spark, carried by the breeze, touches an old pine tree. It explodes into flame.

Between Tracey Lake and Bennett Lake four square miles have been destroyed.

Almost as soon as the fire is out, people begin working to help nature repair the damage. Wardens comb the area in air-buggies (these are like tiny helicopters)

searching for wounded animals. Clinics are organized for volunteer workers to explain what needs to be done and how to do it.

Fundy Park - June 22, 2085

The sun is setting, leaving the sky a mass of colours. Somewhere behind the hills lies Moncton with its tall skyscrapers, domes and brightly lit streets buzzing with skimmer crafts.

In Fundy the waves roll upon the shore. The trees dance to the song of the wind... and a wolf howls a song of joy and freedom to the moon.

The St. Croix Nominated as a Canadian Heritage River

The St. Croix River, New Brunswick, received special recognition in 1982 when it was designated by the Provincial Governement as the St. Croix Waterway Recreation Area. It has now been nominated for the Canadian Heritage River System as a "historically, naturally and recreationally significant river flowing through an outstandingly beautiful maritime river environment". The Province of New Brunswick is preparing a river management plan, upon which designation as a Canadian Heritage River will depend.

Following Parks Canada initiatives and "wild river surveys" during the 1970s, the Canadian Heritage River System developed from the work of an intergovernmental task force during 1979-1981. Heritage rivers will be operated cooperatively between Parks Canada and the respective provincial or territorial government. Where part of the river forms an international boundary, as in the case of the St. Croix, consultations will take place with United States agencies.

Nature News

Winter 1984-85

David Christie

This past winter began on the mild side but then was consistently cold for an extended period. The lack of any major thaw between late December and mid-February was a notable feature. Accordingly, there was heavier ice buildup in the upper Bay of Fundy than in most recent years and the small amounts of snow that most parts of the province received persisted a long time.

Winter, when many plants are dormant underground or as seeds, is a good time to study lichens but we have very few lichen-watchers, or at least lichen reporters. Anne Marceau and Michael Burzynski diddivert their eyes long enough from counting birds in Fundy Park Dec. 18 to spot a plant, Creeping Buttercup in bloom. Molly Smith had a Johnny-jump-up flower in her garden at Saint John West Feb. 23. The first Coltsfoot blossom at Saint John was not reported until March 27 this year (Cecil Johnston).

Mammals & Amphibians

Noting a white fox near St. Martins March 13, John Dunlop assumed he had seen a small, albino Red Fox until he learned that an Arctic Fox had escaped from a local fur-rancher.

Seals were in the news in southeastern N.B. this winter. What Mary Majka and I thought was a small Gray Seal was in the Shepody River at Harvey, Albert County, Jan. 7. One seal was in the Petitcodiac below the causeway at Riverview in mid-February (*Riverview This Week*) and Brian Dalzell saw a small Harbour Seal lying in the mud there Mar. 17. In early April two seals were lolling on the ice just above the causeway.

Most of our amphibians hibernate during the winter but the more aquatic species can remain active. David Clark reports four 6 cm Two-lined Salamanders swimming in a pool in a brook at Chamcook below 25 cm of ice Jan. 13.

Birds

Northern Fulmars were common in mid-December on the fishing banks SW of Grand Manan; hundreds were seen around St. Marys Ledge and about a dozen Northern Gannets were also in the area at that time (Rod Small, *fide* BDD).

The December flight of Canada Geese, which included hundreds crossing from Prince Edward Island to New Brunswick during the Cape Tormentine CBC Dec. 15, brought at least four flocks, totalling 249, down Washademoak Lake Dec. 29, the day following the Cambridge-Narrows CBC (Enid Inch). A good number of geese wintered over on open water around the islands above Fredericton, where Don Pheeney saw 100 Feb. 1. The earliest spring arrivals reported were two on the Saint John River near Oak Point March 2 (Don Malcolm). There were several reports along the Fundy coast March 11-14.

American Black Duck numbers held up fairly well at Moncton where there were still 145 on Feb. 8 and 180 on March 2, but Mallards declined to 40 and 25, respectively (BDD). The two Canvasbacks on the Saint John CBC were still present in Courtenay Bay Feb. 16 (Jaakko Finne). Two male King Eiders accompanied Common Eider flocks at St. Andrews between Jan. 11 and Feb. 28 (Clark). Lingering waterbirds, in addition to those observed on the CBCs, were two Great Blue Herons at Marys Point Dec. 13 (Doug White), three Ring-necked Ducks at Westfield Jan. 27 (Finne), and an American Coot at Waterside Dec. 4 (Rob Walker). From 80 to 100 Brant at Maces Bay Feb. 17 (Ian Cameron) were perhaps already on the way north.

The Cocagne River Bridge on Route 134 is a well known spot to watch ducks in eastern New Brunswick. Currents keep a patch of water open during mid-winter. On Jan. 14 an immature Great Cormorant was there (BDD). In addition to 220 Common Goldeneyes and 65 Common Mergansers Brian Dalzell found four Barrow's Goldeneyes, a specialty there, on Feb. 8 and on Mar. 9 there were seven. Other Barrow's reports were a female Jan. 22 and a pair Feb. 7 in mouth of the Upper Salmon River at Fundy Park (R. Walker *et al.*) and four at Westfield ferry Jan. 27 (Finne). A very large flock of 350 Common Mergansers were feeding frenziedly on some small fishes below the causeway at Moncton Feb. 11 (BDD).

A good number of Bald Eagles reported though the winter included observations in the Mamozekel River, Lepreau, Mactaquac, Gagetown-French Lake and Riverside-Albert areas, in adddition to those places having them on the CBCs. Sharp-shinned Hawks in northern areas were one at Sisson Ridge Feb. 1 (Erwin Landauer) and one at Oakland, near Stickney, March 3 (Ansel and David Campbell). A few Rough-legged Hawks began to move in late February and Red-tailed Hawk migrants were noted in several areas March 6-11. An adult Golden Eagle was spotted near Waterside Jan. 23 (DSC, Mary Majka *et al.*). The American Kestrel found on the Cambridge-Narrows CBC remained throughout the winter (Inch *et al.*). Three more Merlins were reported: St-Anselme Jan. 10 (BDD), Salmon River, Victoria County, Jan. 13 (Landauer) and Marys Point Feb. 3 (Mike Majka). A white phase Gyrfalcon was at Moncton Feb. 11 (BDD).

A very tame Ruffed Grouse entertained residents of Hawthorn and Shamrock Terraces in Fredericton this winter. Responding to calls ("chuck, chuck, chuck...") it would come running "like a Roadrunner" and could be fed from the hand. It ate crabapples, hawthorn fruits and sunflower seed. Despite a dangerous habit of chasing cars, "Chuck" eventually met his/her demise by flying into a picture window (Don Peacock & Peter Pearce). This species is currently at a high point of its population cycle. Don Gibson counted 12 in one apple tree at Mactaquac Feb. 17. Four of the more usually tame Spruce Grouse were seen by Louise Shonaman at Lepreau Feb. 8.

An immature Common Black-headed Gull was spotted at Saint John March 20 and later in the month two were there (Finne *et al.*). Several Thick-billed Murres were seen off Pt. Lepreau and two at Maces Bay Feb. 23 (SJNC). There was also a Dovekie at Maces Bay Feb. 25 (Mark Phinney).

The most unusual winter bird was the White-winged Dove which appeared at Doris Hatt's and Doreen Rossiter's bird feeders in Alma on Dec. 3 and remained there, in apparently good condition, through Dec. 21 (v.o.). Nearly as rare were the Varied Thrushes seen by Vivienne and Archie Bishop at River de Chute. The male was noticed Dec. 5, but three, apparently a male and two females, came to the feeder several times daily Dec. 6-26.

David Myles reports a Great Horned Owl feeding on a cat at Prince William in February. Later, he saw the owl eating suet on his bird feeder [!] and found the remains of a Ruffed Grouse probably killed by it. The few Snowy Owls were seen in the same areas as on the CBCs and at Saint John (v.o.) and Maugerville (R. Walker). The Pearces were thrilled to see a Snowy, which had been perched quietly on a fencepost at McGowans Corner Jan. 1, take off and catch what appeared to be a rat in a nearby farmyard. A Short-eared Owl was at Albert Feb. 5 (R. Walker). A Boreal Owl, northern counterpart of our common Saw-whet and very scarce here, was being harassed by three Gray Jays at Dark Lake, near Tuadook Lake, March 20 (Roger Jenkins), while a Saw-whet was at Oakland March 2 (Campbells).

Almost every winter a Belted Kingfisher is reported somewhere in New Brunswick but this year there were at least four: one at St. Andrews Dec. 3 and one at nearby Chamcook Feb. 24 (Clark), one at West River, near Alma, Dec. 14 (R. Walker), one at nearby Germantown Feb. 14 (Stella MacLean), one at Burntland Brook, near Everett, Dec. 14-16 (Jenkins), and one at Lakeville, Carleton County, Jan. 14 (Murray McCartney).

Horned Lark migrants began to appear in late February: 1 at Florenceville Feb. 22 (Jeanette Greene), 1 at Albert (R. Walker), and 2 at Arthurette Feb. 26 (Landauer). By March 5, 10 were at Keswick Ridge (Leona Keenan). A flock of 25 noisy American Crows at Lepreau Feb. 26 were a "sign of spring" for Louise Shonaman. The following day two crows noisily began to claim their nesting territory at Marys Point (DSC).

It was an unusual winter for American Robins. Many were on the move in late December and early January. As previously noted, a large number were migrating along the Bay of Fundy coast December 29, when 966 Robins were counted during the Saint John CBC. The previous day a group of six had been seen milling about "like typical October migrants" at The Whistle on the northern end of Grand Manan (BDD). In response to publicity about the Saint John Christmas Count, a number of flocks of Robins near the bay were reported to the museum: 30 on the Kingston Peninsula Dec. 24, 25 in North End Saint John Dec. 27, 88 at Lorneville Dec. 29, 150 at Gardners Creek Dec. 29-30, 800 at Red Head Marsh Dec. 30, and 100 on Campobello Island about Jan. 1.

There were still Robins on the move even later, for instance 14 at Alma Jan. 10 (Rossiter), 14 at Marys Point Jan. 14 (DSC & Mary Majka), several at Seal Cove in mid-January (Geraldine Nelson), 100 on the tidal flat at Mispec Beach Jan. 24 (Joyce Green), 3 briefly at Cambridge Feb. 12 (Joyce Thorne) and 25 to 30 at St. Andrews Feb. 24 (J. W. Williamson). In addition there were mid-winter reports of one or two Robins at numerous localities.

One expects such numbers as these to be related to food supply and indeed some of last fall's large crop of mountain ash berries still remained on the trees east of Saint John at the end of December. Christmas Counts in eastern Maine did not have large numbers of Robins but "surprising numbers" there in January and February included two coastal reports of 200+ (Bill Townsend, *Guillemot* 14:7). Hank Deichmann heard a radio report of eight Robins that turned up in Alberton, P.E.I. in mid February. In Nova Scotia, it was a good winter for Robins but, except at Pubnico, where there were 106 on the CBC, numbers were not so large as in southwestern New Brunswick.

One of Fredericton's Northern Mockingbirds was still surviving Feb. 20 (Harold Hatheway). A Brown Thrasher, a species not found on the CBCs, had been coming to a feeder at Upham for several weeks, when it was reported by Lynne Allaby Jan. 5. A late Water Pipit was at Fundy Park Dec. 5 (BDD).

Very few Bohemian Waxwings were reported to supplement the meagre showing on the CBCs, just one at Gagetown Jan. 30 (Janie Briggs) and 10 at Cambridge-Narrows Feb. 22 (Inch). Cedar Waxwings were more numerous than Bohemians in eastern Maine (*Guillemot*) and a few also appeared in New Brunswick: from 6 to 7 at Fredericton Jan. 30 to Feb. 7 (R. Walker and Pearces) and 12 at Rothesay Feb. 27 (Phinney). A flock of waxwings (species?) were feeding on hawthorn fruits at St. Andrews for about a month beginning in mid-February (Williamson).

Although there were not many Northern Cardinals on the CBCs, there were reports of at least five in Saint John during the winter, a pair at Gondola Point (Doug & Win MacAndrews), a female at Quispamsis (*fide* Frank Withers), and a pair at North Head (BDD and R. Walker). The Hartland Cardinal was still surviving in February (Florence Britton).

A Field Sparrow discovered during the Fundy Park CBC Dec. 18 remained in the park till Jan. 2 (Angus MacLean), a late Vesper Sparrow was there Dec. 2 (R. Walker), and a Sharp-tailed or Seaside Sparrow was still at Saints Rest marsh in Saint John Jan. 26 (Finne). In January, the most northerly White-throated Sparrows were individuals at Wicklow, near Florenceville (John Patterson), and at Hartland (Britton), while Dorothy Sleep had three at her feeder in Fredericton, where only one had been tallied on the CBC. A male Lapland Longspur was with Snow Buntings at Oakland March 8 (Campbells). Erwin Landauer had 200 Snow Buntings visit his feeder at Sisson Ridge Jan. 20. Other large flocks included 300+ at Moncton (Daryl Doucette), 300 at Marys Point (Ken Meyer & Frances Lane), 200 near Kingston (Bill Hayward), and 200 at Florenceville (Ford Alward).

Wintering Red-winged Blackbirds began to be supplemented by migrants March 2-15. Rusty Blackbirds, in additon to those on the CBCs, were one in Fundy Park Dec. 5 and one at Albert Feb.17 (BDD), two at an Aulac feeder from mid-January (*fide* Stu Tingley) and one at Bill Pineo's feeder at Cardigan, near Tay Creek, in January (Pearce). Some Common Grackles were still surviving at a feeder in Glassville in February (Marjorie Martinson), as well as in more southern areas. A few migrants began appearing in Fundy coastal areas March 2-14.

There was a moderate southward movement of Purple Finches after New Year's. In February Dave Smith had up to 23 at his feeder in Saint John. A couple of House Finches appeared: a male was at Sussex during February (Margaret Broomhead and Harriet Folkins) and another was seen several times at Williamstown, near Centreville, from Feb. 20 through March 24 (Jean and Paul Carmichael). Common Redpolls continued to be very scarce all winter but Peter

Pearce called it a "great winter" for American Goldfinches, Pine Siskins and Evening Grosbeaks around Fredericton and grosbeaks were very common at feeders in the upper Saint John valley (*fide* Carmichael). At Brian Dalzell's Moncton feeder goldfinches increased from 25 in early December to 90 on Feb. 20. On the other hand, there were relatively few of them along the Albert County coast (DSC *et al.*) and in the upper Saint John valley (Valley Naturalists).

Book Reviews

Fundy, Bay of the Giant Tides. By Michael Burzynski and Anne Marceau. 1984. Fundy Guild, Inc., P.O. Box 150, Alma, N. B. E0A 1B0. 32 pages, illustrated in colour; $6.95. (Also published in French as *Fundy, la baie aux marées géantes.*)

Reviewed by Mary Majka

A long awaited book that I am sure will find a place in every naturalist's library has just come out. I hasten to alert our members to be on the lookout for *Fundy, Bay of the Giant Tides.*

This is a "picture book" but a picture book with a difference. It brims with striking, carefully selected colour photographs. Clear, informative captions make the book valuable to those who are simply browsing through the illustrations. Although written in a light interpretive style, the text never-the-less contains many pertinent facts. The design and format are especially suitable for travellers who want to take this book home as a souvenir and for Maritimers looking for a lovely gift that will show off the interesting natural features of their own region.

Chapters, such as "A Story in Stone", "Ebb and Flow, "The Cadence of the Tides", "At Home in the Mud", "Wings over Fundy", and "In the Company of Whales", explain the special nature of the land and the living things that are influenced by the Bay. One marvels at how a mass of information could be so well integrated in a text that is beautifully written and often poetic.

This publication was an ambitious project of the Fundy Guild, a non-profit association working in cooperation with Fundy National Park. I am sure it will be widely received with great enthusiasm.

RED TIDES STRIKE NEW BRUNSWICK

Marilyn Rudi

In the summer of 1982, a Saint John woman purchased clams from a local retailer. After consuming several, she experienced an alarming and spreading paralysis; she was hospitalized close to death but recovered completely. She was New Brunswick's last reported case of paralytic shellfish poisoning (PSP) – and the victim of a complex chain of events in the aquatic food web.

PSP is caused by a natural phenomenon known as a red tide; red tides are caused by the mass reproductions of microscopic marine plants called dinoflagellates. These single-celled, photosynthesizing organisms undergo periods of rapid growth in the spring and summer when one plant may reproduce itself a million times. Under certain conditions, these "blooms" may occur in such concentrated numbers that the water is coloured; depending upon the variety, the colour may be shades of pink, yellow or blue. However, red is most common and so the phenomena are termed "red tides". Red tides are a worldwide affliction with many devastating effects on the marine environment.

In the Bay of Fundy, the waters are so turbulent that a "true" red tide rarely occurs. However, the species of dinoflagellate on our shores, *Gonyaulax excavata,* is one of 10 to 12 varieties worldwide that produce PSP. A true red tide (discolored water) need not occur in order for dangerous levels of this toxin to accumulate.

Filter-feeders – clams, mussels and oysters – and zooplankton feed upon the dinoflagellates. Curiously, they are immune to the deadly poison but in consuming the microorganisms become highly toxic themselves. The fact that the toxin is so devastating to vertebrates is probably accidental. The plants seem to produce it as a means of storing nitrogen for survival over the winter.

Biologist Dr. Alan White, Department of Fisheries and Oceans, St. Andrews, is the only scientist on the east coast conducting research into this problem which accounts for yearly closures of shellfish harvesting grounds and frequent fish kills. White is trying to determine the environmental cues which may forecast particularly intense red tide episodes. He is also testing methods of purifying toxic shellfish. Most shellfish do lose their toxicity over the winter; however, in certain areas, Crow Harbour is one, shellfish never detoxify due to the turbulent waters.

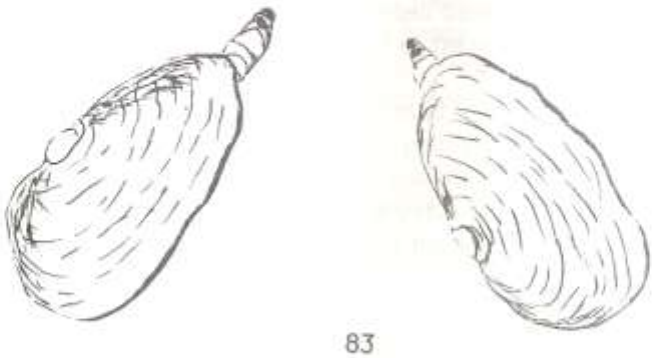
Very intense red tides occurred in New Brunswick from the mid 1970's to the early 1980's. In these years, toxin levels in shellfish peaked at 75 times the legal limit. The acceptable limit of PSP for human consumption is 80 micrograms toxin per 100 grams meat; levels of 6000 micrograms were found in this period.

The government has been testing shellfish since 1943 in New Brunswick. The Inspection Branch at Blacks Harbour checks harvesting grounds from Moncton to St. Stephen, including the islands. Beaches are sampled weekly. Thirty clams are taken, ground up and their toxin removed. This is then injected into mice. If the mouse dies in less than five minutes, the clams are dangerously contaminated. Processing plants are also closely monitored to ensure that exported clams are safe.

Despite careful surveillance, poisonings do occur. The beaches that are safe for clam digging are often overharvested while the closed ones support huge numbers of unmolested molluscs. The depressed economic situation often tempts poachers into restricted areas. As the Department has a built-in safety factor when determining closures, these poachers may assume they can safely mix clams from open and closed areas.

Toxic shellfish appear normal. The poison is tasteless, odourless and leaves no residue. Symptoms of PSP begin with tingling lips followed by numbness in the fingers and toes. The paralysis spreads and death by asphyxiation occurs within 12 hours. There is no known antidote. In moderate cases, people recover in 24 to 48 hours with no after effects.

Clams are big business in New Brunswick; if PSP could be eliminated, earnings would easily double. However, a solution is not within reach. Research focuses, instead, on predicting the serious episodes and safeguarding the public. Don't rely on the age-old adage: shellfish should not be eaten during the months that have no "r" in their name. Call the Fisheries Department's tollfree number listing open and closed areas: Zenith 08048 – and be sure!



LIVING RIVERS ADVENTURES

Daniel Hinds

Last summer, while visiting my dad in Canada, I decided to go to the Living Rivers program on the Tabusintac River in New Brunswick.

Well, first of all when I got off the plane from the states I found out that the airlines had lost my pack with all the things I had brought for camp. When the time came to go to the Tabusintac area my pack was still not found and we had to put together another pack full of all the essentials I needed. After this mix-up my dad drove me to the designated place.

Right when I got out of our van I loaded my pack into the camp bus and turned around. There were four teenagers laughing and talking, all with Heavy Metal tee shirts on. I was thinking to myself, "Why are these guys going to a nature camp?" But in the bus they introduced themselves and turned out to be nice guys.

The bus went to a dock where we loaded our packs on a motor boat. From there we went along the Tabusintac to the camp which was only acccessible by boat. The camp consisted of a small boat house, about 10 canoes, the main building which later in the season is a salmon fishing lodge, the boys' tent platform, and a campfire circle. When we docked, the teens and I put our belongings on our bunks and then went down to the lodge to meet the counselors and the other campers, three of whom were girls. I met the other campers and the counselors. The staff was made up of Whit, the head person, Clive, the owner of the lodge [during the salmon season] and about five other counselors. These people really made me feel at home.

The next week was filled with canoe trips up and down the river, environmental hikes, fishing expenditions, games and quiet times. We had a schedule that we sort of followed depending on the weather. I could write five pages for every day (I wouldn't want to but I could.)

One special day we took the boat back to the dock, loaded into a four-wheel drive pick-up and headed for a salmon fishing camp. The roads were super bad to keep away poachers. Once we arrived we were taken on a hike down the river aways. There was a guard house every half mile of the river with a warden and a German Shepherd. The camp had about two buildings with bunks and a kitchen. The

people who fished there have to pay thousands of dollars to keep the place working and to pay the guards. When we got to one pool a salmon jumped right in front of us. The place was magnificent.

The next week we spent touring the province. We saw a lot of parks and spectacular sites. These trips filled my mind with enough memories for that summer.

This camp along with a lot of other things showed me what the teenagers of Canada were like compared with my older brother and his friends. Leaving all these new people I had met and gotten used to living with was quite a shock. If you or someone you know is looking for a camp I highly recommend this educational and enjoyable experience.

Naturalists Thank National Parks

(and in turn receive a warm welcome)

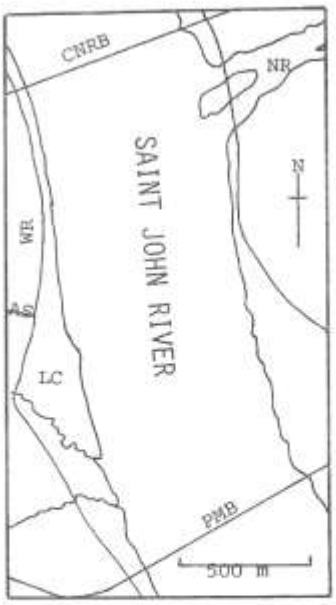
On the 4th and 11th of May a small group of Federation members ventured into "the wilds" of our parks and in commemoration of the National Parks centennial planted one hundred trees in each of our parks. It was great fun. At both plantings the weather cooperated, although on the morning of the 4th people coming to Fundy encountered 20 cm of fresh snow on the Caledonia Highlands.

In both parks we received a warm welcome. Not only were we treated to hot tea and coffee and doughnuts, but at Fundy a film "Steam, Schemes and National Dreams," about the founding of Banff National Park, was shown to the participants and in Kouchibouguac we were invited to tour the brand new Headquarters building, location-to-be of our 1985 annual general meeting. Members of the park staff helped with the planting and we departed happy in the knowledge that in 2085 some of the trees we planted may still be there, witnessing the Federation's efforts and spreading welcoming branches over picnickers – perhaps another generation of naturalists.

We are thankful to the provincial nursery at Kingsclear for providing the trees. – Mary Majka.

THE FREDERICTON WILDLIFE MANAGEMENT AREA

Peter A. Pearce



AS-Alexandra Street
CNRB-CNR bridge
LC-Loyalist cemetery
NR-Nashwaak River
PMB-Princess Margaret Bridge
WR-Waterloo Row

The Fredericton Wildlife (formerly "Game") Management Area is a quiet, esseptially natural place close to the city centre and within a kilometre of the Provincial Legislative Assembly Building. Established by the Lieutenant Governor-in-Council on 8 August 1962, it comprises 120 ha bounded as follows: on the northeastern side by the high water mark on the eastern bank of the Saint John River crossing in its course the mouth of the Nashwaak River; on the south by a vertical plane passing through the longitudinal centre of the Princess Margaret Bridge; on the western side by the eastern limit of Waterloo Row and the prolongation thereof; and on the north side by a vertical plane passing through the longitudinal centre of the Canadian National Railways bridge. Prior to 1962, muskrat trapping took place there and occasionally young ducks, hatched in nest boxes set up locally, were noted to be caught in the traps. The management area regulations now provide for complete protection of all the wildlife occurring there.

A rich spectrum of habitats is embraced in the area - the river itself, occupying much of the whole, sand bar, muddy shore, tangle and thicket, deciduous bottomland wood, field, and residential garden. Two small watercourses empty into the Saint John River. The treed southwest corner has been least influenced by man and supports mostly silver maple, willow, and alder, scattered butternut and elm being found on higher ground away from the river. A variety of other deciduous trees are present, many of them planted as ornamentals.

Some removal of cover has been occasioned in the past by road construction and the cutting of diseased elm and other trees. A landscaping plan has involved the planting of flowering crabapple, mountain ash, and Norway maple. Strategic plantings of shrubs have included hydrangea and late-flowering lilac. Planned placement of an attractive gate should prevent all but official vehicular access to the wilder section. Thereafter, it is to be hoped that all impulses to "tidy up" nature in the management area will be resisted.

Included is a small, shady, Loyalist cemetery of great historical interest, hard by the point on the shore where those early pioneers landed on 8 October 1783. Also present are a public "green," a young persons' ball field, and a boat-launching site. A small parking lot is accessed from Waterloo Row close to the foot of Alexandra Street.

Because of habitat diversity, wealth of edge, and strategic position along a natural migration corridor, the Fredericton Wildlife Management Area has been a particularly rewarding place to see birds. Two hundred and four species have been reliably identified there, an additional ten within 200 m of the boundaries. Some relative rarities to quicken the pulse of the local naturalist have been noted by the author and are tabulated below, other unusual birds seen close by including Gadwall, American Avocet, Baird's Sandpiper, Buff-breasted Sandpiper, Dovekie, and Orange-crowned Warbler. A considerable number of mammals, and reptiles and amphibians has been reported by those willing to spare time from observation of the feathered creatures, lists being available from the Fredericton Field Naturalists' Club.

It is interesting to consider whether the works of man have had much effect on bird frequentation of the area. Raw sewage was once pumped directly into the river in the Fredericton Wildlife Management Area. Establishment of a treatment facility in 1970 has ensured a much cleaner river. It has also resulted in a marked decline in use of the area by migrating waterfowl, gulls, and shorebirds. The best place to see gulls now is not off the "green" but at the mouth of the Nashwaak River, during the fall. Numbers of shorebirds attracted during migration in late summer are probably influenced by river level and the extent to which feeding habitat is exposed along the shore. Local hydrographic records indicate that Mactaquac hydroelectric dam, completed across the Saint John River 20 km above the city in 1968 has had no significant effect on low water levels during summer months downstream from the site. Perhaps because of shore slope characteristics, Devon Park, just northeast of the Fredericton Wildlife Management Area, has long been a better place at which to see shorebirds.

The Fredericton Wildlife Management Area has been and continues to be a quiet haven for hiker, naturalist, and artist. It has also served as an outdoor classroom for botany, wildlife, and forestry students at the nearby university. It is uncertain how the provincial government's new policy of taxing municipal parks will affect this and other such natural assets in the city. What is clear is that they are priceless and that their preservation should be safeguarded.

Leach's Storm-Petrel	23 October 1961
	22 September 1963
Canvasback	25 October to
	14 November 1965
Golden Eagle (2)	4 April 1969
Virginia Rail	14 September 1983
Purple Sandpiper	6 April 1969
Laughing Gull	15 to 25 September 1960
	2 August 1968
Common Black-headed Gull	15 November 1969
	30 November 1970
Black-legged Kittiwake	26 November 1961
	15 November 1969
Sabine's Gull	22 October 1966
Yellow-billed Cuckoo	23 September 1983
Western Kingbird	10 October 1960
Carolina Wren	6 to 10 October 1978
Prairie Warbler	23 October 1967
Connecticut Warbler	15 September 1978
Yellow-breasted Chat	13 October 1984
Blue Grosbeak	10 to 30 October 1976

Pope Visits Elk Island

Pope John Paul II paid a surprise visit to Elk Island National Park, near Edmonton, during his Canadian tour last fall. The visit to Elk Island was arranged on less than two hours notice. The Pope, who needed a quiet afternoon to relax in peace and solitude, spent three hours in the park, hiking along the trails and sitting beside the lake.

The park staff did not have a chance to meet the Pope. Park Superintendent Fred Bamber said, "Our parks are our natural heritage... they're one of the remaining areas of stability, and the visit from someone as prestigious as the Pope is helping to focus attention on Canada's heritage."

(Excerpted from *Parkscan*, volume 6, number 1, Jan.-Feb. 1985).

Salvage Dead Purple Martins

In late January, over 150,000 Purple Martins were colour-marked at five roosting locations in Brazil, but the dye is only detectable with a special ultraviolet lamp. Owners of Purple Martin colonies in Canada and the United States are asked to pick up any adult martins they find dead this year.

New Brunswick samples should be sent to the Natural Science Department of the New Brunswick Museum, 277 Douglas Ave., Saint John E2K 1E5, not to the United States. If you can arrange to take your specimens to the museum, put the whole bird in a plastic bag, freeze it and deliver it. If not, clip off both wings and mail them to the museum in a paper envelope. Keep each bird or set of wings separate and labelled with your name and address, the date and locality of collection, and the cause of death if known. The museum will arrange permits and proper shipment to the Bird-banding Office.

Events Calendar

June 8 - Trail Opening, Fundy National Park

On June 8, Fundy National Park will officially open a new loop trail connecting two former trails. The 6-km loop proceeds from the Laverty Fire Tower to beautiful Laverty Falls, down Laverty Brook to the Broad River and along the river to the Moosehorn Trail, which leads back to the fire tower.

September 4-8 — "Heritage Tomorrow"

"Heritage for Tomorrow," the Canadian Assembly on National Parks and Protected Areas will take place at the Banff Centre, Banff, Alberta, from September 4-8. Citizen's groups from across the country will discuss natural and cultural heritage topics and issues affecting the protection of heritage resources. For further information contact the Atlantic Canada coordinator, Janice Brown, Conservation Council of New Brunswick, 180 St. John St., Fredericton, N.B. E3B 4A9

NEW BRUNSWICK FEDERATION OF NATURALISTS
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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 naturel, et pour sauvegarder le patrimoine naturel du Nouveau-Brunswick.

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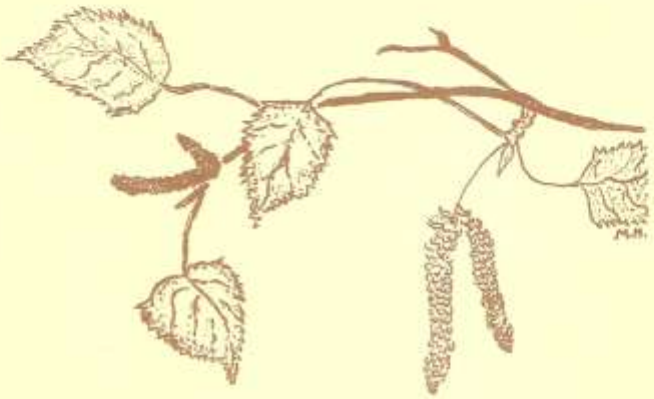

Published by: Publié par:

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