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HABITATS

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A New Image of Black Duck

By Marcelle Grenier and Daniel Bordage, Canadian Wildlife Service

The goal of the North American Waterfowl Management Plan (NAWMP) is to keep bird populations up by protecting their habitats. A number of joint ventures between Canada and the US have been set up in connection with NAWMP, including the Black Duck Joint Venture (BDJV) and the Eastern Habitat Joint Venture (EHJV).

The BDJV has identified three factors that might explain the decline in Black Duck populations in recent years: breeding with Mallard, harvesting by hunters and loss of habitat. Quebec has shown particular interest in remedying this situation, since Black Duck is the most abundant duck species in the province, estimated at over 200,000 pairs, about a third of the North American population. As an immediate first step, new restrictions were placed on hunting in the U.S. in 1984 and in Canada in 1985.

To follow the impact of these new regulations in terms of NAWMP objectives, a program to monitor breeding pairs was tested in several regions from 1985 to 1989, then implemented in most of the breeding range area of this species in 1990. Censuses in Quebec showed a significant increase in the nesting population between 1985 and 1990, followed by a decrease over the past two years.

In Quebec, the EHJV first focused on acquiring and restoring habitats appropriate for waterfowl in the St Lawrence River Valley. More recently, the program has been extended to the Boreal Forest region. Explanation of variations in the populations of waterfowl nesting in this area, which covers close to one million km² in Quebec, must obviously take into account major changes to the environment such as disturbance of forests (logging, forest fires, insect epidemics), hydro-electric development (reservoirs, draining of rivers, power lines), acid rain and climate changes.

Working through the BDJV and the EHJV, the Canadian Wildlife Service (CWS) has undertaken a study to assess the potential of the boreal forest for reproduction of Black Duck and other waterfowl species using this environment. More specifically, the study is intended to characterize potential habitats for reproduction of waterfowl by satellite imaging and then use the habitats thus identified to model their potential use by waterfowl and apply this to the area as a whole.

Once the model is working, it will be possible to assess the impact of environmental changes and even predict through simulation the impact of future disturbances or developments and of corrective measures. Computer support for analyses will make it possible to rapidly see the results of various scenarios.

Conclusive initial modelling tests using black and white aerial photographs were carried out in pilot sectors (Bordage et al. 1990). Habitats characterized using photo-interpretation were linked to the presence of Black Duck pairs or broods. Given the vast area to be covered and the high cost of habitat interpretation using aerial photographs, remote sensing by satellite presented an attractive alternative.

Remote sensing is defined as “the scientific discipline covering the body of knowledge and techniques used in the observation, analysis, interpretation and management of the environment based on the measurement of images obtained using airborne, spaceborne, land or sea-based platforms. As the name suggests, the information is obtained from a distance with no direct contact with the object” (Bonn et al. 1992).

SUMMARY

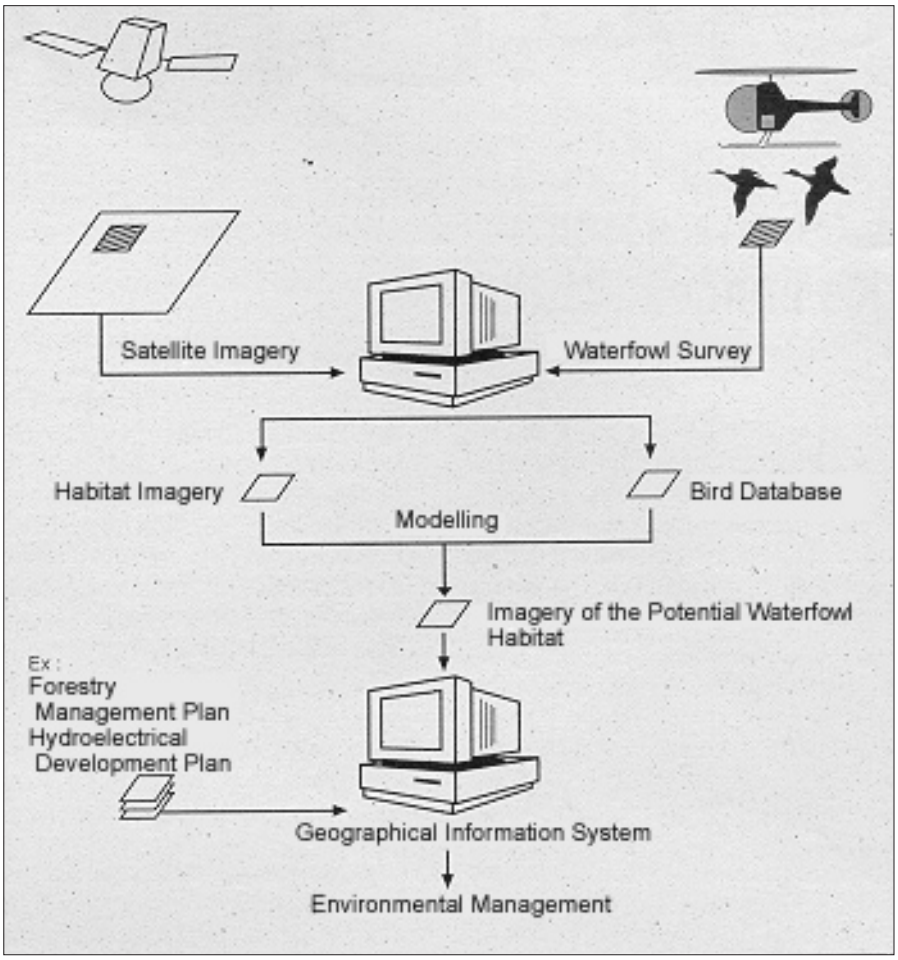
Canada

Given the size and number of habitats to be identified in this study, images obtained using the Thematic Mapper scanner on the Landsat-5 satellite were chosen. These images are sent continuously using very specific orbits, and it is thus possible to select images showing a particular region at a given time. Satellite-mounted scanners generate astronomical quantities of data. If we consider that the data in one Landsat-TM image would fill about 250 3½" diskettes, and Landsat satellites have been in operation with the MSS scanner since 1972, we can easily imagine the complexity of managing all this data.

These images are distributed commercially in Canada by Radarsat International Inc. They are in digital format, meaning that each point in the image is represented by a number that can be read by a computer. This number, known as the grey level, corresponds to the signal the satellite receives for a given object at a given wavelength.

Landsat-TM digital images are processed using special computer programs. There are a number of these on the market; the one used by the CWS is the PCI Inc. EASI/PACE. Habitat characterization is based on a classification methodology termed "supervised". The thematic mapper technician indicates on various parts of the image the corresponding label based on back-up data such as aerial photographs, forestry maps or any other recent document that might assist in interpretation. The quality and availability of complementary data thus play a major role in determining the accuracy of the classification as well as verification of the results.

Habitat characterization is intended to show the various types of land use that encourage the presence of Black Duck. Since little is known about the breeding ecology of this species in the Boreal region, in particular what motivates these birds to choose one site over another, habitat characterization must be further refined. Aquatic and riverfront habitats have been given priority in the current project.



Teledetection, Waterfowl Survey and Geographical Information System for a better Environmental Magagement

Special attention has been paid to the distinction between recent logging sites and regeneration areas in order to more accurately determine the impact of these changes on wildlife. It is also important to identify habitats which are of little or no interest to these species, such as peat bogs or areas of bare ground. This is only a brief description of the habitats to be characterized. A detailed breakdown of the various themes has yielded 17 different classes.

For the purposes of this study, which is aimed at developing models to predict the presence or absence of Black Duck, a base spatial unit had to be chosen, and this was arbitrarily set as a one-kilometre square area situated using the Mercator system (U.T.M.). Thus, for each 1 km² unit (100 ha), censuses confirm the presence or absence of birds, while remote sensing pinpoints the area (ha) or frequency of each of the habitats characterized. In order to identify habitat characteristics related to the presence of pairs or broods of each species, we have used a logistic regression model with the dependent variable derived from waterfowl census data and the independent variables from the habitat characterization.

The final result is that the model makes it possible, based on the habitats found, to estimate the probability that a Black Duck (or other waterfowl species) couple or brood will be found in each of the 1 km² units. Based on the habitats identified, we might for example calculate that a given km² of boreal forest has a 35% chance of containing a Black Duck couple.

By modifying the area of certain habitats, for instance by increasing the level of a body of water or decreasing the number of conifers (logging), we may then calculate a new potential value for the same square. It thus becomes possible to measure the avifauna value of a given environment, quantify the impact of a change to the environment and orient development prospects, at any point in the study area. Since the data are compiled in computer data banks which may be reconstituted into thematic images using a Geographic Information System (G.I.S.), we now have a versatile, efficient management tool: a new image of the Black Duck.

North American Waterfowl Management Plan

The North American Waterfowl Management Plan (NAWMP) was set up jointly by the United States and Canada with a view to restoring habitats and preserving abundant populations of ducks, geese, swans and other wildlife species.

Implementation of the Plan and funding of activities are carried out through joint ventures by federal, provincial and state governments along with major national and international environmental organizations such as Wildlife Habitat Canada, Ducks Unlimited, etc.

Four joint ventures are mainly concerned with areas of Canada. The Arctic Goose Joint Venture, in the far north, and the Black Duck Joint Venture in eastern Canada, are mainly concerned with research and population studies, while the Eastern Habitat Joint Venture and the Prairie Habitat Joint Venture focus on habitat protection.

Eelgrass Transplanting Pilot Project

By Denis Lehoux, Canadian Wildlife Service and **Richard Lalumière**, Groupe environnement Shooner

Eelgrass is a salt-tolerant plant which, in the early part of the century, grew abundantly in the St Lawrence Estuary. The plant was so plentiful that riverside residents gathered what they called “sea grass”, packaged it in bales and sold it for $15-18 a ton to be used in making mattresses or upholstering furniture. Apart from its commercial uses, eelgrass was considered one of the main sources of food for Brant Goose.

In 1932, eelgrass began to disappear from the Atlantic coast. By 1933, the epidemic had reached the St Lawrence and, in the space of a few years, had decimated most of the vast existing eelgrass beds. Very little is known of the actual causes for this sudden disappearance. Initially this necrotic phenomenon was blamed on a bacteria, but the disaster is now being attributed to a fungus that grows in the air chambers of leaves.

Even quite recently, knowledge of the actual situation of this species was extremely limited, being confined mainly to research conducted in the Isle-Verte area (Garneau 1984). Given the importance of this aquatic plant in the ecosystem, particularly for certain aquatic bird species, the Canadian Wildlife Service (CWS) undertook a series of multi-faceted research projects in 1989 under the St Lawrence Action Plan (SLAP).

Objectives

Research on eelgrass in the St Lawrence Estuary by the CWS and Groupe Environnement Shooner has enabled us to achieve the following four objectives:

- increase our knowledge of the abundance and distribution of this species in the Lower Estuary
- document certain aspects of its ecology
- develop technical expertise on transplanting methods specifically for eelgrass
- draw up a specific restoration plan for the Baie de L’Isle Verte National Wildlife Area (NWA)

Abundance and distribution

A study carried out in the summer of 1989 led us to estimate that there are some 3,000 ha of eelgrass beds in the Lower St Lawrence Estuary. The beds are concentrated in three main sites, two on the North Shore near Rivière des Outardes and between Manicouagan Point and Point Lebel and one on the South Shore near the Baie de L’Isle-Verte National Wildlife Area (NWA).

Although these areas are fairly large, they nevertheless seem much smaller than those previously observed for this species. In what is now the Baie de L’Isle-Verte Bay NWA alone, research by Michaud indicates that close to 3,500 tonnes of “sea grass” were gathered annually at the beginning of the century. Areas currently identified at Isle Verte would yield at most only about 200 tonnes, nearly 20 times less than during the period of peak growth of this species.

Ecology

Eelgrass is a halophyte species which, in the Lower St Lawrence Estuary, particularly around Isle Verte, grows in areas characterized by:

- a gentle slope of 0.1 to 0.2% flooded daily and located only in the lower hydrolittoral zone
- loamy sand substrate

Eelgrass Transplanting Project Pilot
Photo: Canadian Wildlife Service

• salt water with salinity of between 15 and 25 ppm

• current speed under 25 cm/sec; this is probably the most important of all criteria

Transplanting techniques tested

Various techniques were tested over two consecutive years, 1990 and 1991. The method using bare-root plants was compared to that using eelgrass sods. Fertilized seedlings were compared to those without fertilizer. Various forms or arrangements of transplants were tested in an attempt to determine whether a U-shaped transplant was better, that is, yielded a better survival and growth rate, than a round or grid-shaped arrangement.

Another goal was to determine the best time to carry out the different steps. Constraints imposed by the tide cycle were a constant consideration, limiting daily activities to only a few hours, and it was thus normal that an attempt be made to extend the planting period as late as possible in the summer. Test were accordingly conducted until mid-summer. It should be noted that all plants were taken from a donor bed located near the test sites.

Results of follow-up

Follow-up over close to two years yielded interesting conclusions on the various methods used, the most useful being:

• Sods and bare-root plants transplanted in the spring and sods planted in the summer survived satisfactorily for 400 days after transplanting. Annual mortality was low, but it is possible that sedimentation and ice movement during the winter could cause mortality as high as 50%.

• Bare-root plants transplanted during the summer had a high rate of mortality.

• Despite significant annual mortality, we may nevertheless expect net gains of from 2 to 4 times the planted area after two growing seasons.

• Recolonization of holes left by removal of plants was low.

• U-shaped and round arrangements with plants about 50 cm apart yielded the best results. Sedimentation was not excessive and growth in these units was considerable.

• Fertilization does not necessarily result in taller plants, but it was noted that fertilized areas produced 45% greater plant density.

In the light of tests conducted in the Lower St Lawrence Estuary over the past three years, it would appear feasible to conduct an eelgrass recovery program. The bare-root or sod techniques appear promising, and transplanting could take place during the spring-tide periods of April, May and June. One cautionary note should, however, be made: the sites of transplant extraction should be monitored to ensure that they are recolonized with eelgrass.

It should be noted that the ultimate objective of this program is not to transplant hundreds of hectares of this species. The costs involved in such an operation would surely be prohibitive and could in no way be justified. The fact that the plant appears inclined to gradually recolonize sites where it once flourished is one good reason militating against such a large-scale program. We do, however, believe that it would nevertheless be desirable to set up a more limited program aimed at recreating some of the conditions that would allow existing eelgrass beds to develop much more rapidly, for the benefit of the marine ecosystem.

Société de conservation, d'interprétation et de recherche de Berthier et ses îles (SCIRBI)

By Richard Papineau, SCIRBI

Created in 1985, the Société de conservation, d'interprétation et de recherche de Berthier et ses îles (SCIRBI) is a non-profit organization. Its board includes representatives of the municipalities of Berthierville, St Ignace de Loyola, Ile Dupas and St Geneviève de Berthier, which contributed grants to assist in setting up the Society. Also on the board are a representative of the Corporation du Président et des Syndics de la Commune de Berthier and six independent persons concerned with the conservation, interpretation and development of natural sites.

Mandate

To carry out its mandate, which is to enhance the natural value of Berthier and the islands, the SCIRBI plans to:

- develop an integrated resource management plan harmonizing nature interpretation activities, agriculture, controlled hunting and wildlife management
- conserve the rich potential of this wildlife habitat and the natural character of the site as a whole by limiting to a strict minimum any permanent development and the attendant visual impact
- promote research and the acquisition of scientific knowledge so as to gain a better understanding of this particular environment
- participate in the diversification of social, cultural and educational activities by residents of the region and the surrounding area

Activity area

SCRIBI's activities are carried on in the Berthier Islands. These islands, located on the north side of the St Lawrence River west of Lake St Pierre, make up three quarters of the Berthier-Sorel island archipelago.

Since these islands are used mainly by cottagers and for farming, they have remained fairly rural in nature, except in the western part. The Society's activities are thus confined mainly to the Berthier Commune, Milieu and Castors islands (west of Highway 158).

Operating and funding

At the present time, SCIRBI depends on its 12-member board, including a 4-member executive which is responsible for routine operations. They are supported by the board itself, whose members come from the farming, financial, legal, scientific and administrative areas, and who are united by a common attachment for their area. Having access to such a variety of resources is of great benefit to the SCIRBI and constitutes an important asset when dealing with the variety of problems it encounters. The presence of municipalities on the board also means they are involved in any projects, which thus have a much greater chance of success.

The Society has no permanent employees, and operations are carried out by volunteers, which occasionally results in delays in follow-up on key issues and in the completion of various projects. Support from members of municipal administrations has proved essential in the actual operation of projects.

Through the co-operation and partnerships developed over the years with many governmental, municipal and regional organizations and agencies, such as the Union des Producteurs Agricoles and the Société d'Ornithologie de Lanaudière, SCIRBI has been able to carry out concrete projects that have yielded tangible results.

Funding using income from the leasing of agricultural land on Ile du Milieu has unfortunately proved insufficient, and the scope of projects and future financial commitments by the Society might well hinder the development of SCIRBI's activities.

Nature guides have been hired under the CHALLENGE student employment program, but all other projects are carried out through grants from local sources.

Accomplishments

Despite its relative youth, SCIRBI has obtained results. In 1985, it had 350 nesting boxes built and installed by residents of Berthier and the islands. The operation was intended to raise public awareness of the bird populations of the area.

In the fall of 1986, it built a nature trail in the Berthier Commune. This project was made possible by assistance from the Corporation pour la Mise en Valeur du Lac Saint-Pierre (COLASP) and Employment and Immigration Canadac which, through an employment development program, made it possible for 27 former plant workers to assist in carrying out the work. In spite of sometimes difficult working conditions, these workers built a 2.1 km sidewalk and a 150 m foot-bridge, along with fencing in the entire area. During the winter of 1987, a private company completed construction of three observation towers, one of them 10 m high.

In the fall of 1987, SCIRBI bought a 180-ha parcel of land on Ile du Milieu. Its partners in this project were the Quebec Department of Recreation, Fish and Game (MLCP), the Office de Planification et de Développement du Québec (OPDQ), Wildlife Habitat Canada and Ducks Unlimited Canada. Controlled hunting is permitted on the island, which is leased to a farmer who can continue to plant crops on it.

Since the summer of 1988, with the assistance of the CHALLENGE student summer job programs, guides have been hired to take visitors through the nature trail. These naturalists play an essential role in the dynamic interpretation of nature and, through the quality of their explanations, have considerably increased use of the interpretation site by visitors.

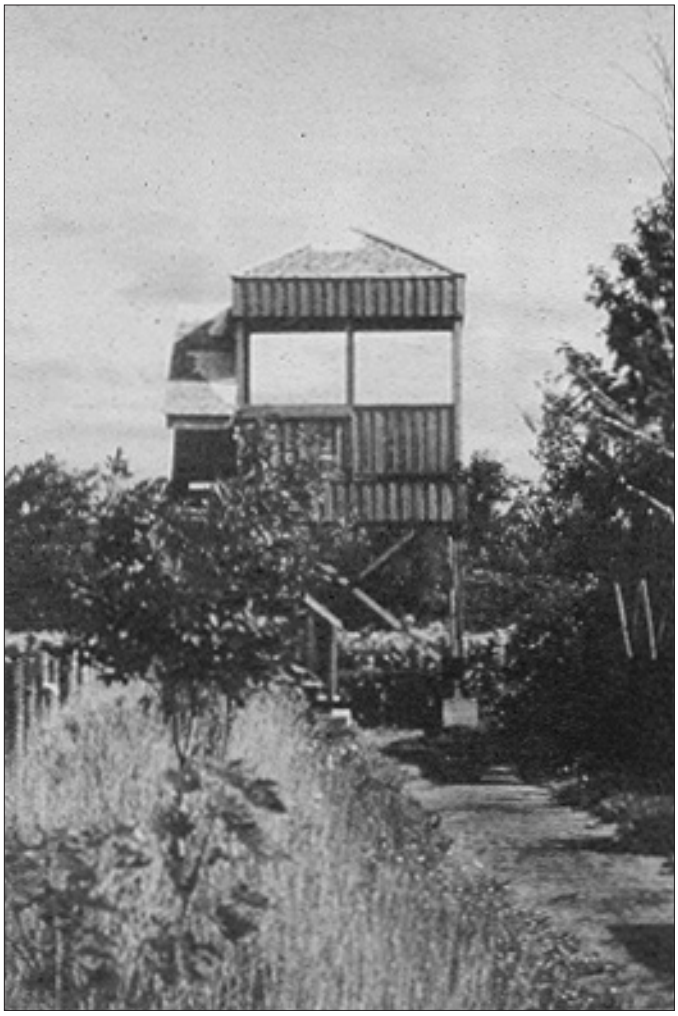
In Spring 1990, the Society obtained a grant from the Canadian Wildlife Service to draw up development and management plans in conjunction with the St Lawrence Action Plan. These two plans will be used by SCIRBI in orienting its development over the next ten years.

In the fall of 1991, as part of the section 25 job creation program, SCIRBI formed a multidisciplinary task force to produce high-quality documents including a marketing plan, a guide for naturalists, an interpretation guide on the marsh ecosystem for visitors, and field activities for school groups. This project equipped SCIRBI with a number of essential working and explanatory tools.

Since June 1992, the Society has been more active in the area, participating in shows and making greater use of the media, including the press.

Projects

SCIRBI and the Quebec Wildlife Foundation have acquired part of the Ile aux Castors, adjacent to Ile du Milieu. This 100-ha acquisition enabled SCIRBI to consolidate a 280-ha parcel of land used for farming and as a wildlife habitat at the mouth of Lake St Pierre.



One of the three Observation Tower built by the SCIRBI
Photo: J.M. Mateus

Following acquisition of this land, SCIRBI will set up and manage a vast wildlife development program in co-operation with Ducks Unlimited Canada and the MLCP with a view to stabilizing the waterfowl migration habitat, creating breeding areas for ducks and optimizing fish habitats. This project is also considered a priority in the Lake St Pierre area conservation and development plan drawn up by the MLCP. As part of the Canadian Wildlife Service's protection plan, this site has also been classified as of very high quality as a staging area for waterfowl.

The importance of this area thus extends well beyond the boundaries of the region and even the province. The Berthier Commune, Milieu and Castors islands are in fact one of the links in the chain that makes the Lake St Pierre area of such prime importance as a staging area for waterfowl using the Atlantic Flyway. For this reason, the project is entirely in line with the objectives of the Eastern Habitat Joint Venture, which is part of the North American Waterfowl Management Plan.

At the Lanaudière Socio-economic Conference held in April 1991, SCIRBI presented two projects to the provincial government, one for the construction of a nature trailer and the other for completion of the nature trail. Both projects were adopted. The OPDQ

agreed to provide a grant conditional on SCIRBI investing in the project and taking responsibility for administration costs.

The nature trailer will be a dynamic instrument for promoting the conservation and interpretation of nature. Its dynamic character is derived from the fact that it can be moved to wherever there are groups of people, thus going to the people rather than trying to attract them to a nature centre. We believe that this is a better way to carry out our educational mandate.

SCIRBI also provides educational services that are important to the young people of the region. This mission will be strengthened this fall by the development of educational programs by the Society, to be offered to course advisors in the natural sciences for the various school boards in the region.

Over the past six years, SCIRBI has carried out a number of projects which have required considerable efforts on the part of all concerned. In the coming years, the Society will be placing its emphasis on enhancing and consolidating the experience thus acquired.

News Briefs

Property tax exemptions

By J. C. Raymond Rioux, Provancher Natural History Society of Canada

Taxpayers preparing their income tax returns are often unfamiliar with the laws governing individual taxation and consequently fail to take advantage of all the exemptions to which they are entitled.

The same holds true for non-profit organizations managing natural sites, which are often unaware that legislators have provided various forms of assistance for them.

We recently used provisions of the Act respecting Municipal Taxation to request that all our property be removed from the assessment rolls of the two municipalities in which it was located. This request was granted, in accordance with Paragraph 10 of Section 204 of the Act, meaning that we no longer have to pay property taxes.

Only the Quebec Municipal Commission is authorized to grant such exemptions. The procedure to make such applications is quite simple, and a decision is usually rendered fairly rapidly. In our case, we proceeded as follows. We had a lawyer, who was a member of our Society, examine the provisions of the Act respecting Municipal Taxation to ensure that we met all the requirements of this Act. We provided this member, who acted in a volunteer capacity, with all relevant documents concerning the Provancher Society so that he have all the facts required to make this initial assessment. Once this stage was successfully completed, we contacted the offices of the Quebec Municipal Commission to make our official exemption request. We received clear, precise instructions on how to do this.

Once we had assembled all the required documents - the Charter of the Society, its bylaws, the latest financial statements, deeds for all property and sketches showing location, most recent tax bills, etc. - we forwarded all this information to the Commission secretary, together with a letter officially requesting the exemption.

The Act stipulates that the Commission shall send a copy of such requests to the municipalities concerned, asking that they pass an official resolution stating their position on the request and advise the Commission of this. On receipt of the resolution, the Commission sends a copy to the applicant for their information and then calls all parties involved to a meeting to be held in the municipality concerned.

The hearing is a fairly simple procedure. It takes place in a room made available by the municipality. In our case, one person had been mandated by the Municipal Commission to hear the application. Since the two municipalities involved were next to one another, both hearings took place on the same day, although in two different locations.

The commissioner assigned to the proceedings hears the parties, with a minimum of procedural formality. Some questions may be asked to clear up certain points, and the parties provide this information. The commissioner then adjourns the hearing and the matter is taken under consideration by the Commission. A few weeks later, the parties are advised of the decision.

We were obviously very pleased with the results of our undertaking, particularly as one of the two municipalities supported our application, since they were convinced that our request was legitimate, and thus expressed their interest in our activities in their area. The other municipality's only objection was that they feared that a precedent might be set which would eventually work against them. Fortunately this objection was not accepted, as was shown by the final decision.

We believe that other groups like ours could take advantage of the provisions of the Act respecting Municipal Taxation for exemption from property taxes. Legislators, in drawing up the Act, clearly felt that we were acting in place of the government to conserve and protect natural areas. They thus provided for a form of assistance which we feel is not to be neglected. But organizations must be made aware of the existence of these provisions.

For more information, we suggest you contact the Quebec Municipal Commission, 20 Chauveau Ave., Quebec City, Quebec G1R 4J3, telephone (418) 691-2014, or 2 Complexe Desjardins, East Tower, Room 3100, P. O. Box 6, Postal Station Desjardins, Montreal, Quebec H5B 1B1, telephone (514) 873-3031.

A field trip along the St Lawrence

By Christopher Gascon, Quebec-Labrador Foundation

The Quebec-Labrador Foundation organized a trip for six Lower North Shore residents to help them become more familiar with the various management methods for islands used for conservation purposes.

From the outset, these residents of Harrington Harbour and the Blanc Sablon area were highly motivated to become involved in conservation and in the development of migratory bird sanctuaries on the Lower North Shore.

These sanctuaries are important breeding sites for a variety of sea birds and contain some of the largest puffin populations in the Atlantic area. They are, however, under great pressure from uncontrolled visiting, egg collection and illegal hunting, for example.

The trip took place from September 28 to October 5, 1992, from Quebec City to Havre St Pierre, with stops at Rivière du Loup, Tadoussac, Sept Isles and Havre St Pierre, and enabled participants to see the ecotourism activities set up by various local organizations.

This practical experience and the lessons it provided on the management and development of island conservation sites will help participants play an active part in the conservation of migratory bird sanctuaries on the Lower North Shore.

The trip was financed by the Canadian Wildlife Service (St Lawrence Action Plan), the World Wildlife Fund and the Blanc Sablon Caisse Populaire.

Incorporated in Canada and the United States, the Quebec-Labrador Foundation is an independent, non-profit organization offering environmental research and education programs to rural communities in eastern Canada (eastern Quebec and the Maritime Provinces) and New England. Most of the environmental programs are administered by the Quebec-Labrador Foundation's Atlantic Environment Centre.

Piping Plover: Magdalen Islands population up

By Patricia Bell, ATTENTION FRAG'ILES

The Magdalen islands population of Piping Plover, an endangered species worldwide, increased significantly in 1992.

Following the fifth census carried out by the Association québécoise des groupes d'ornithologues (AQGO) in co-operation with the Canadian Wildlife Service (CWS) of Environment Canada and ATTENTION FRAG'ILES, François Shaffer, the biologist responsible for the CWS census, confirmed that 44 pairs nested on the islands in 1992 compared to only 38 the previous year. This represents an increase of approximately 16% in the population of these birds in the Magdalen Islands. The number of nestlings that lived to 25 days, the normal fledging age, was also up this year, with over 70 young birds as opposed to 55 in 1991. This increase far exceeded the expectations of the organizations involved.

For Mr Shaffer, several factors contributed to this increase. The installation of security barriers around many nests improved the chances of eggs hatching by preventing such problems as destruction of the nests by human activity (ATVs, trampling, etc.) It is also plausible that favourable weather conditions at the time of the birds' southward migration, as well as on their wintering grounds, worked in the birds' favour by reducing the death rate which is normally quite high at these times.

It may also be that some birds moved from the Maritime Provinces to the Islands, resulting in demographic changes. A final factor that appears to have benefited the plover is the co-operation of the population of the Magdalen Islands. A number of public awareness programs were carried out over the past four years to publicize the plight of the Piping Plover, and this no doubt resulted in greater compliance with warnings and prohibitions around breeding areas.

A research project to characterize feeding areas will also help us better protect these area. All in all, it would appear that the Piping Plover recovery plan is bringing results in the Magdalen Islands.

Environmental Citizenship in all its many forms

It is now recognized that the participation of individuals and groups is essential to ensure the sustained protection of the environment. But if individuals citizens are to be committed to sustainable development, they have to have sufficient information to make wise decisions, a clear, simple choice of environmental options and receive support for their efforts. These are the objectives of the Environmental Citizenship Initiative announced by Environment Canada last June.

This initiative is aimed at increasing public participation and offering assistance to groups and individuals seeking not only to learn more about the environment but to do more.

Five programs are being offered to help Canadians take concrete action for the environment. Some of them provide funding to encourage community projects, while others are intended to encourage the public to participate in activities that are beneficial to the environment.

Three existing programs have been integrated into the Environmental Citizenship Program: Environmental Choice, the Environmental Partners Fund and Canadian Environment Week, and two new programs have been created: the Environmental Awareness Program and the Community Assistance Program.

In the Quebec Region, Environment Canada has assigned a team to implement funding programs under this initiative using a «one-stop shopping» approach.

Information on these programs may be obtained from Environment Canada, Environmental Citizenship Initiative, 1141 de l'Église, 6th Floor, P. O. Box 10100, St Foy, Quebec G1V 4H5, (418) 648-3537, or 1-800-463-4311 if calling from outside Quebec.

Wildlife pathology research centre

In December, Environment Canada announced the creation of a network to share information on the health status and diseases of wildlife in Canada. This broad network will bring together specialists in veterinary medicine and wildlife biology to study the health and diseases affecting wildlife species.

The Wildlife Pathology Research Centre is an association of the four Canadian veterinary colleges: the Atlantic Veterinary College in Charlottetown, the Veterinary Medicine Faculty of the University of Montreal at St Hyacinthe, the Ontario Veterinary College in Guelph and the Western College of Veterinary Medicine in Saskatoon, along with the National Wildlife Research Centre in Hull.

The network was set up through a series of co-operation agreements between these colleges and Environment Canada, provincial and territorial governments and two private bodies, the Max Bell Foundation and the Canadian Wildlife Federation.

Federal expertise in wildlife toxicology will be represented by the Environment Canada National Wildlife Research Centre, which will provide a number of services including overall coordination of the program.

This initiative was born of the undertaking in the National Wildlife Strategy announced in the Green Plan in November 1991.

HABITATS is published and distributed free of charge by the Canadian Wildlife Service to facilitate exchanges of information between the various groups and individuals interested in habitat protection.

Those who wish to take part in this exchange and share their experiences in the various aspects of habitat protection may do so by writing articles and sending them to Francine Hone, at the Canadian Wildlife Service.

The opinions expressed herein do not necessarily reflect the view or policies of Environment Canada.

Mail for the Editor may be sent to the following address:

HABITATS
Environment Canada
Canadian Wildlife Service
P.O. Box 10100, 9th Floor
1141 de l'Eglise
St. Foy, Quebec
G1Y 4H5

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