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HABITATS

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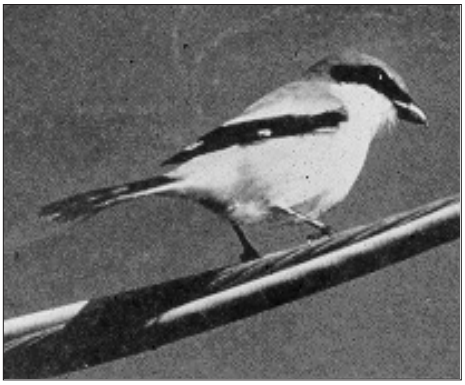
The Loggerhead Shrike: A Threatened Species

By Pierre Laporte, Canadian Wildlife Service



The Loggerhead Shrike, a threatened species
Photo: D.M. Zimmerman

At the turn of the century, the Loggerhead Shrike was considered to be a common bird in southwestern Quebec and it nested there regularly, but in the last twenty or thirty years the number of birds frequenting the northeastern United States and southern Canada has declined significantly. Canadian Wildlife Service biologists have compiled enough data to confirm the alarming situation of this species in Quebec. While the species was still considered to be fairly widespread in the early 1970s, a certain drop in its numbers was noted, though it is hard to tell exactly why that occurred.

An analysis of the annual observation constances for the species reveals the progression of the decline. In addition, the decrease in the number of mentions of breeding, in conjunction with the increase in the number of bird watchers, shows how significant this decline has been. Between 1980 and 1990, only 13 instances of breeding were reported, and the current population must be less than a dozen breeding pairs in Quebec.

The situation of the Loggerhead Shrike is particularly puzzling because we don't know the exact cause of the decline. The loss of habitat may be associated with it, but the decrease in the species has occurred more quickly than the disappearance of habitat. We know that the Loggerhead Shrike frequents very wide open spaces like meadows, pastures, and abandoned fields where there are hedges and thorny bushes. Marginal farmland is also an important area for the species, and many available habitats are not occupied.

It has been shown that organochlorine pesticides such as DDT can delay the development of hunting behaviour in the young and cause eggshells to thin. Nonetheless, contamination levels do not seem to be high enough to affect reproductive success. Moreover, the use of this type of pesticide has been forbidden since the 1970s, but still the population has continued to dwindle. The number of traffic accidents has also been cited as a possible explanation.

The competition of the Loggerhead Shrike with other species may also play a role in this gradual decline. Birds such as the American Kestrel, the Eastern Kingbird and the European Starling share part of its ecological niche. Its reproductive success is not in question, since the average number of fledglings is high compared with that of other passerine species that are not suffering drops in population. A brief analysis of the population dynamics data currently available shows that the mortality rate of the young in their first year seems to be a key factor in the problem. Yet there is still little data available for estimating the significance of this parameter.

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Canada

In recent years, major efforts have been made to locate breeding couples in Quebec with a view to filling an information gap and taking corrective measures. The efforts consisted in systematically inspecting all the known nesting sites of the species to see whether or not breeding pairs were there and, in particular, determine habitat availability. In 1990, a major location effort found only one breeding pair. In 1991, two pairs were found, one of them in the same sector as in 1990. This is very important because no birds had returned to a nesting site in over 15 years.

Other studies and steps are planned but seem to be premature in the current situation. It may be a good idea to use telemetry to study the movement and fate of young birds after they leave the nest. Research on the situation of migrating birds in wintering areas where the Loggerhead Shrike is in competition with resident birds should also be encouraged.

Although organochlorine contamination is relatively minor, it may be worthwhile examining whether other types of contamination can be better characterized in order to recommend specific habitat management techniques for the species, even though habitat availability does not seem to be a limiting factor. Finally, there are arguments for thinking about re-introducing the species, either by releases similar to those for the Peregrine Falcon, or by artificially increasing the productivity of natural pairs. But these measures will be of limited success as long as we have insufficient knowledge of the causes of the decline of the species.

Towards Integrated Management of the Islands of the Varennes Archipelago

By Luc Bélanger, Canadian Wildlife Service

Grazing and repeated trampling by cattle is one of the causes of the serious damage to the islands' plant cover exposing the soil over large areas and accelerating riverbank erosion.
Photo: Canadian Wildlife Service

The concept and means of habitat conservation in Québec have changed over the course of the last few years. Initially, conservation invariably meant acquiring and managing valuable wildlife areas. In most cases, the purpose of such initiatives was to protect a particular species or group of species.

Although this approach is still widely used, and often appropriate, preserving habitats and the wildlife associated with them is now done in other ways, including restoration of deteriorated habitats or, in the case of habitats deemed to be marginal but widespread, by encouraging human activities that are not harmful to the resources of the habitat.

These conservation methods, which no longer necessarily involve site management, can be put into practice under agreements made directly with the owners. Moreover, all the animal and plant communities in the environment must be considered as a whole. Conservationists now speak of habitat conservation from an integrated management perspective, an ecosystem approach, or a global landscape approach. But what actually lies behind these words and wishes?

A large number of archipelagos, comprising over 300 islands, are to be found along the St Lawrence between Lake St Francis and Trois Rivières. Though situated in one of the regions of Québec the most severely affected by urban expansion, industrialization and often very intensive farming, these islands are nonetheless home to extremely diverse flora and fauna.

For several years now, the Canadian Wildlife Service (CWS) has been seeking to preserve these habitats through its network of national wildlife areas and migratory bird sanctuaries (see Habitats, Vol. 2, No. 2). The

islands of the Contrecoeur Archipelago are a good example. More recently, the CWS, under the St Lawrence Action Plan, has established a habitat restoration program and has taken steps to promote more integrated management of human activities in these habitats, in order to reduce the impact of these activities on wildlife and the ecosystem in general.

Two of the main environmental stresses that affect island habitats in the St Lawrence are riverbank erosion and certain farming practices that severely damage plant cover and greatly limit wildlife potential. Although agricultural areas (pasture, fields of forage crops or grains) have a lower wildlife value than natural habitats, they are still used as nesting sites both by waterfowl and other species of birds.

The large number of hectares covered by farmland means that it represents a habitat that should not be neglected in a global species conservation plan. This is particularly true for some threatened species that have a limited range or whose numbers have dropped sharply in the last few years in Québec, such as the Blue-Winged Teal and the Vesper Sparrow. Since over 5,000 ha of farmland is available merely on the islands between Montreal and Trois Rivières, the implementation of an integrated management program for these two resources represents a very worthwhile conservation effort. To this end, it is essential to develop and evaluate integrated management techniques that, while not restricting farmers, provide some benefits to wildlife.

As part of the conservation comonent of the St Lawrence Action Plan, an agreement was reached in 1991 between Transport Canada authorities (Canadian Coast Guard, Laurentian Region) and Environment Canada (CWS, Québec Region) concerning the land of the Varennes Archipelago, a few kilometres east of Montreal. This archipelago stretches over 3.5 km and comprises four islands with a total of 105 ha: Masta, St Patrice, Grande Île and Aux Fermiers islands.

The agreement gives the CWS the authority to preserve the natural heritage of the islands and enhance the wildlife potential by undertaking work to restore the plant cover and riverbanks. Transport Canada remains the legal owner of the islands, however, and pursues its activities on them, as well as maintaining equipment or infrastructure to ensure the safety of marine navigation.

The islands of the Varennes Archipelago have long been used for farming, since historical records show that, in the 18th century, farmers cut a good amount of hay there every year. Today the islands are still used for agricultural purposes, chiefly as pasture for cattle. From spring until fall, a hundred head of cattle roam freely over the islands. Grazing and repeated trampling by cattle is one of the causes of the serious damage being done to the islands' plant cover, exposing the soil over large areas and accelerating riverbank erosion.

In view of this impact, the Canadian Wildlife Service, in conjunction with Ducks Unlimited (Canada), has proposed an integrated management plan for the islands' varied resources. Obviously, the easiest thing would have been to forbid cattle to use the islands. But that would have deprived us of a unique opportunity to assess an integrated management technique involving wildlife and agriculture that is already in use in the western part of the continent, but for which we have no agronomical or wildlife data for Québec, i.e. intensive management of pasture land.

In short, the challenge was to confine the cattle on a smaller area while supplying them with food and water on a suitable grazing site. It was felt that with this type of management, it would be possible to limit the cattle's use to only 50 ha, or a little less than half the total area of the islands in the archipelago.

The selected area is to be subdivided, with electric fencing, into five enclosures of about ten hectares each. A central watering point will always be available to the animals. These grazing units will be used in alternation during the same season, to ensure that the animals always have an abundant supply of forage with superior protein quality.

The sectors thus protected from overgrazing by the cattle (50 ha) will be either designated as conservation areas, especially if they provide a habitat for species deemed vulnerable or having a limited range (e.g. Sharp-Tailed Sparrow, Long-Billed Marsh, Lesser Bittern), or else restored in order to replant cover using indigenous plants such as Reed Canary Grass. Another important aspect of the project will be the comprehensive protection of the riverbanks, whether along the shore or around the edges of ponds within the archipelago, which are very rich in flora and fauna. Thus, the movement of the cattle will be restricted to the central part of the islands and a protective border will be established using electrified wire around the ponds and along the banks. It is essential to maintain this green strip, because it is of vital importance to the full range of fauna (birds, fish, mammals, batrachians, etc.).

The integrated resource management program for the islands of the Varennes Archipelago is both an assessment project and a demonstration project of an integrated resource management technique in an agricultural environment. Over the next few years, the Canadian Wildlife Service and Ducks Unlimited (Canada) intend to pursue their applied research at Varennes, and initiate other similar pilot projects in other areas, within the framework of the Eastern Habitat Joint Venture (North American Waterfowl Management Plan) and the St Lawrence Action Plan.

A number of techniques will thus be assessed and adapted to the Québec context. All the elements of the rural landscape must be taken into consideration, so as to ensure that whatever actions are undertaken reflect a global approach towards the

conservation of habitats and all the species associated with them. Close contacts between farmers and well-established local organizations will, in our view, guarantee the full success of a similar integrated resource management program implemented on a larger scale.

Waves generated by ships with deep draft sailing through the Seaway are showing signs of very severe erosion on the Islands of the Varennes Archipelago.
Photo: Luc Bélanger

Restoring the Banks of the Islands of the Varennes Archipelago

The banks of the islands of the St Lawrence between Trois Rivières and Montreal are showing signs of very severe erosion (see *Habitats*, Vol. 2, No. 1). A large percentage (70 to 90 percent) of this erosion is directly caused by the waves generated by ships with deep drafts sailing through the Seaway. The islands of the Varennes Archipelago are no exception. They are situated, on average, less than 400 m from the Seaway, and their banks are seriously eroded.

As an example, Île au Beurre, which originally constituted the far eastern tip of the archipelago, has been completely eroded over the last decade, and all that remains is a shoal. A study conducted for the Canadian Wildlife Service, the St Lawrence Centre and the Canadian Coast Guard found that the rate of erosion of the shores of the archipelago varied between 1.5 and 2.9 m per year. Between 1964 and 1983 alone, over 30 m were lost, or about 10 ha, i.e. 10 percent of the current surface area of the islands of the archipelago.

Over the next few years, the Canadian Wildlife Service, working with other St Lawrence Action Plan partners, hopes to restore the shores of the islands in the Varennes Archipelago. Of course, for cost reasons it is impossible to act on the entire shoreline of all the islands. Two priority sectors have thus been identified, each measuring about 100 m and playing a key role in protecting the ponds inside the archipelago.

The restoration methods being considered are not the same as those generally used on the mainland (lining with stones). We will be making use of ecotechnology -- caissons, logs and fascines. These new techniques are much more natural and far easier to use on an island. They are already being evaluated on other sections of the river, and once their effectiveness and durability have been established, they may be used by non-governmental organizations (NGOs) to protect and preserve other major habitats of the fluvial stretch of the river that are suffering erosion problems. The Canadian Wildlife Service hopes to produce a technical guide to restoring eroded riverbanks some time in the next few years.

Project to Restore and Preserve the Carleton Tidal Lagoon

By Guy Savoie, Municipality of Carleton

Carleton is a small town on Baie des Chaleurs in the Gaspé. It has close to 3,000 inhabitants and the annual municipal budget is about $2 million.

The town's residents, proud and concerned with their quality of life, have spared no effort to improve their environment. Although the municipality has limited financial means, it has

The Common Tern colony of the Carleton sandbar represents the second largest concentration of terns in the Gaspé, with over 840 pairs.
Photo : Éditeur officiel du Québec

Under its Environmental Partners Program, Environment Canada defrayed the costs of an observation tower.
Photo: Guy Savoie

made major acquisitions of public land over the past decade; this has allowed it to take systematic, exemplary action in rehabilitating urban spaces.

Close to the town centre is a tidal pond or lagoon, called a barachois in the Gaspé. Formed by two arms of the sea -- the Carleton sandbar and the Larocque sandbar -- this tidal lagoon, which has a very productive ecosystem, has been subjected to a variety of harmful human influences since the early part of the century; this has included the operation of a sawmill, construction of a panoramic highway, dumping of all kinds, and wastewater disposal since the 1960s. With the years, the environment has seriously deteriorated.

The Town of Carleton, along with local partners, has undertaken the arduous task of restoring this fragile habitat that is so important to the environment. To achieve the desired results, a new wastewater treatment system first had to be built away from this area at a cost of $9 million.

In 1990, the municipal government acquired the Common Tern nesting site at the far southern end of the Carleton sandbar. This colony represents the second largest concentration of terns in the Gaspé, with over 840 pairs.

In response to concerns expressed by many citizens, local authorities resolved to safeguard part of the town's ecological heritage by taking concrete steps to protect and develop this species.

The presence of humans on the site during the breeding season disturbed the birds; moreover, their nests, left defenceless, were very vulnerable to predators such as the Herring Gull and the Great Black-Backed Gull.

As part of a project to protect wildlife habitat, the town first designated the tidal lagoon as a conservation area in its new urban development plan. After two years of laying the groundwork, the town was able to acquire the site with the financial assistance of the Fondation de la faune du Québec (FFQ--the Quebec Wildlife Foundation) and Hydro Quebec.

The memorandum of agreement with the FFQ also provided for the construction of a chain-link fence in order to control access to the terns' nesting site.

In a second phase, 1990 saw another major player become involved in the project. Environment Canada showed a strong interest and doubled the available funding. Under its Environmental Partners program, this federal department committed itself to contributing the same amount ($92,805) as already agreed to for the acquisition and protection of the site.

Environment Canada's involvement defrayed the costs of an observation tower, six interpretation signs, and several landscaping and cleanup jobs in the vicinity of the site.

In conclusion, the first phase of the project to restore and preserve the Carleton tidal lagoon has been a success, thanks in large part to the generosity of its financial partners. The Common Tern now has a protected site, and its development has provided Carleton with a new tourist attraction.

Non-Governmental Organizations and Regional County Municipalities

By Gilles Piché, Development Planner, L'Islet RCM

It is essential to get non-governmental organizations (NGOs) more actively involved in the regional county municipality (RCM) planning, consultation and co-ordination process. As head of Land-Use Planning of an RCM, I believe we would benefit greatly from NGO involvement.

It goes without saying that every development planner has a duty and a responsibility to become familiar with the nature and goals of the organizations operating daily within the territory of the RCM and forming part of its social fabric.

Understanding the role of RCMs and how they fulfil their mandates by serving local municipalities, the general public, and other community organizations requires a good knowledge of the traditional ways in which municipalities work in Quebec.

It must be recognized that municipal government was given a broad and difficult mandate when the legislators decided in the early 1980s to implement the idea of regional planning of land-use development.

First Generation of Development Plans

The mayors of the municipalities that make up each RCM in Quebec, unaccustomed to talking to each other, meeting and co-ordinating their efforts, had to draw up a regional development plan for the first time.

Having to identify, define and specify land-use planning objectives and directions for the region, as well as negotiate the various policies and actions of government departments and agencies came as a shock to municipal politicians who traditionally considered things on a local level, and radically changed their analysis and depth of reflection.

Most of this first generation of development plans in Quebec sketched a good picture of the prevailing situation, but suggested very little in the way of concrete steps to improve or prevent its deterioration.

The main problem was to persuade people to accept the existence of the RCM while preserving the good will of the mayors seated around the table. Land-use planning and development problems among municipalities were therefore left unresolved more often than not, out of respect for local autonomy.

Some communities worked together while others placed too much emphasis on collecting data without really bothering to define the planning and intervention context.

In short, planning has so far been based chiefly on the objective of regulating land use rather than on achieving better-integrated spatial organization among municipalities.

This first generation of development plans was very significant for each region of Quebec. It helped us get to know each other and identify the main players in our area, as well as their interests in land-use planning issues.

Methods had to be invented, and ways of co-ordinating efforts in certain key areas had to be worked out. Mayors came to understand that the RCM could be useful in progressing some issues through the government process. It is not a perfect way of operating, but it has helped translate and transmit the desires of the community on many occasions.

In more concrete terms, as far as the natural environment is concerned, efforts were made to identify areas of interest or zones to be protected that might include habitats to be preserved and enhanced, without necessarily knowing the parameters of their future development.

Lacking details, the plans did not result in appropriate enhancement, nor the conservation and protection contemplated when these areas or zones to be protected had been identified.

While the intention was laudable, perhaps we had trouble translating the communities' desires in this respect; our glaring lack of knowledge and expertise on how to achieve our goals is perhaps a good explanation. One thing is certain: we would definitely have appreciated hearing the views of groups and individuals, as they would have helped us define our goals more precisely.

The Role of NGOs and Individuals

NGOs and individuals can be very useful to RCMs when the time comes to justify the reasons for, and urgency of, certain actions. They are responsible in part. But how can they become really involved? The following points may help them in this regard.

First of all, interested parties in the community must be identified, and requests or well-documented, comprehensible briefs must be submitted to them. It is also important to know how municipal government works, and to realize that the elected representatives of a municipality or RCM must hold a public meeting at least once a month.

At these meetings, people should not hesitate to exercise their right to ask questions or express opinions. A well-presented point of view always deserves to be heard.

Second Generation of Development Plans

RCMs are already looking ahead to a second generation of development plans which, in all likelihood, will better incorporate environmental management planning and intervention.

Over the next few years, the RCMs will have to determine their actions on the basis of an overall vision that integrates land-use planning, development prospects, and preventive management of environmental problems.

The time has now come to think of development in terms of giving priority to the renewal of resources and the quality of the natural environment.

Non-governmental environmental organizations must be encouraged to contribute to and participate actively in work at the municipal level so that the expectations of our respective milieus regarding any issue related to environmental management of areas or sites of particular interest to our communities can be specified.

In this context, NGOs have a responsibility as major players to make their views heard and to demand to be consulted by the municipalities and RCMs when regional development plans come up for review, which is very soon. All the players in a region should work together to make wildlife habitat conservation and protection a common practice.

It is up to NGOs to pay particularly close attention to the upcoming review of regional development plans and the soon-to-be-held public consultations.

Plants that Need Protecting

By Francis Boudreau, Quebec Department of the Environment

The Quebec Department of the Environment, which is responsible for the flora component of the Act respecting threatened or vulnerable species, has just published a background document entitled A Heritage Worth Saving: Threatened or Vulnerable Plants, listing the 374 species of endangered vascular plants in Quebec.

The criteria used to assess and select species are explained. An overview of the species is given, by composition, geographic distribution, habitat and range in Quebec. The brochure also lists species by administrative region, by habitat.

Endangered vascular plants represent 15 percent of Quebec's total flora, and 20 percent of its indigenous flora. Most of the endangered species are found in about 20 localities, 219 of them in just five localities. There are 12 species of trees, 23 of shrubs and 339 herbaceous plants. Half of the plants selected grow in wetlands, chiefly along the St Lawrence.

The Ministry wants to inform organizations and the public of the existence of these endangered plants in order to secure their assistance in helping to curb threats to the survival of the species and prevent their disappearance. This brochure should help to achieve this by promoting greater awareness of threatened or vulnerable flora.

It was written by Gildo Lavoie, of the Conservation and Ecological Heritage Branch of the Quebec Ministry of the Environment, and can be obtained from the Ministry's Communications Branch.

A Heritage Worth Saving: Threatened or Vulnerable Plants

This is the title of a recently published four-page brochure on the preservation of threatened or vulnerable plants and wetlands. It is intended as an educational activity for teachers and pupils in the last year of elementary school or first year of secondary school.

The brochure highlights the main aspects of the problem of threatened or vulnerable species and their habitat. The nature and importance of wetlands, particularly riparian environments, are discussed, and what is meant by a vulnerable or threatened plant is explained.

The example cited to illustrate the problem concerns the marshes and riverine woodlands of the fluvial section of the St Lawrence. Pupils learn about the need to protect these habitats, and wetlands in general, where close to half the threatened or vulnerable plant species of Quebec are to be found.

The brochure is available in French and English from the regional offices and the Communications Branch of the Quebec Ministry of the Environment. It has also been included in the magazine Projet arbre 1992, put out by the group Action nord-sud, and distributed in most schools in Québec.

News Briefs

News on the Eastern Habitat Joint Venture

For 1992, Quebec received $636,000 from the US government's Migratory Bird Conservation Commission, under the Eastern Habitat Joint Venture. This sum, coupled with American non-federal funding and a contribution by Canadian and Quebec partners of $167,000, represents an operating budget of $1,711,000.

Major wetlands along the shores of the Ottawa, St Lawrence and Saguenay rivers will be acquired. McLaurin Bay, Du Milieu Island and St Fulgence Marsh are among the projects that have been announced.

Wildlife habitat development work is also continuing on Lake St Pierre and in Abitibi.

Restoring the Riverbank on the Beaupré Coast

The Fondation de la faune du Québec [Quebec Wildlife Foundation] is proud to be supporting the Côte de Beaupré environmental committee in its work to create riparian habitats along the St Lawrence in eastern Quebec for the second year in a row.

The committee has succeeded in doing in the field what all too often remains only on paper: negotiating and signing an agreement with each owner of riverfront property, including precise, appropriate development drawings, controlling the work and cost of contractors, securing the participation of numerous volunteers and financial partners, and evaluating the effectiveness of the work and making improvements as required.

This should serve as a model for rational, natural restoration of the banks of the St Lawrence. In two years, the Fondation de la faune du Québec will have invested $54,000 in this project.

National Wildlife Areas–1992 Activities

By Pierre-Denis Cloutier, Canadian Wildlife Service

National Wildlife Areas

After recently establishing a network of national wildlife areas and launching a public awareness campaign, the Canadian Wildlife Service has begun its new season of activities.

Network

As planned, visitor reception and information booths have been set up in the network's easily accessible wildlife areas (five of the eight). The most recent, brand-new booth will be opened this summer at the Pointe de l'Est National Wildlife Area on the Magdalen Islands.

Cap Tourmente

Services to the public are available every weekday until November 1.

Planned activities include an introduction to wildlife photography, animal painting and sculpture, and astronomy (Perseid Night).

Isle-Verte Bay

Two naturalists will provide interpretation and reception services from June 24 until the end of August.

A new exhibition will be set up at Girard House, and services will be provided on the Dike Trail. There is a wildlife area information booth on the Wharf Road, and tourists can also visit the very interesting area of the Des Vases River.

Pointe de l'Est

From the beginning of July until Labour Day, a naturalist will be available to help people discover this magnificent yet little-known wildlife area.

The Échourie and Saltwater Marsh trails will be used to help illustrate the wildlife and habitat of the area. Visitors will also be invited to go on a six-hour discovery walk to the marshes and the sea. But be forewarned -- this is for real outdoor nuts only!

The new season will also be the occasion for opening an information booth.

Lake St Francis and Pointe-au-Père

Information booths and marked trails will help people get to know the natural environment of these two wildlife areas and discover the flora and fauna found there.

Publications

For more information about the Loggerhead Shrike in Quebec:

The Loggerhead Shrike. Information sheet published by the Association québécoise des groupes d'ornithologues and the Canadian Wildlife Service, 1992.

Robert, Michel and Pierre Laporte. Situations historiques et actuelles de la Pie-grièche migratrice au Québec. Progress Notes No. 196, December 1991.

Calendar of Events

August 13 to 16, 1992. Imagine The True Nature of Quebec, 21st Conference of the Canadian Wildlife Federation. Organized by the Union québécoise pour la conservation de la nature in conjunction with FOSEM, the Club des ornithologues de Québec, the Linnean Society of Quebec, the Canadian Wildlife Service, and the Quebec Ministry of Recreation, Fish and Game. Information: Diane Pagé, (418) 628-9600, Fax (418) 626-3050.

October 27 to 30, 1992. Rediscovering America, the Natural Environment of the Nineties, 11th Annual Conference of the Natural Areas Association. At the University of Indiana, Bloomington, Indiana. Information: 402 West Washington Street, Room W267, Indianapolis, Indiana 46204.

November 16 to 20, 1992. Partners in Stewardship, 7th Annual Conference on Research and Management of Resources in Parks and on Public Lands. At the Marina Hotel, Jacksonville, Florida. Information: The George Wright Society, P.O. Box 65, Hancock, Michigan 49930-0065.

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.

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