RECOVERY
An Endangered Species Newsletter
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Alien species threaten ecosystems

BY RENEE WISSINK

What do Newfoundland and the Queen Charlotte Islands (Haida Gwaii), British Columbia have in common? At first glance, not much! Seven thousand kilometres apart, they are archipelagos occupying locations off the mainland. One is boreal, the other rainforest. Compare their flora, from Newfoundland's slow growing black spruce to the giant Sitka spruce of B.C., and the differences become glaring.

There is, however, an ominous common characteristic. Both are island systems susceptible to invasion by alien species. Alarmingly, both may be facing 'invasional meltdown.'

Invasional meltdown is a recently coined term that refers to the compounded interactions of each successive and successful wave of alien species benefiting from the previous introduction of the other. The Great Lakes is a case in point. Once zebra mussels (*Dreissena polymorpha*) were introduced and established there, then other related Ponto-Caspian species such as the round goby (*Neogobius melanostomus*), which also arrived in ships' ballast water, found an environment conducive to their establishment.

PHOTO: JOHN GOSSE

In Newfoundland, the American marten may be vulnerable to the effects of 'invasional meltdown.'

Invasive species, along with habitat destruction, are considered one of the major causes of extinction and ecosystem change. Newfoundland and Haida Gwaii are examples of island ecosystems that, recent evidence indicates, are increasingly vulnerable to the effects of such invasions. For example, as part of the recovery program for American marten (Nfld. Pop.) (*Martes americana atrata*), students conducting a small mammal survey near Little Grand Lake during the summer of 1999 found a species they couldn't identify. Turns out, the newcomer was the red-backed vole (*Clethrionomys gapperi*). How the vole got to Newfoundland from mainland Canada is a mystery. But experts predict that it will thrive and impose stress on the island's natural ecosystem.

Some species, like snowshoe hares (*Lepus americanus*) in Newfoundland, were introduced intentionally while others like Norway rats (*Rattus norvegicus*), stowaways on ships into Haida Gwaii, were transported unintentionally. Regardless, on both archipelagos nearly half the mammal species are now non-native. On both islands, introduced herbivores - Sitka-black tailed deer (*Odocoileus hemionus sitkensis*) on Haida Gwaii and moose in Newfoundland - are altering succession patterns. Browsing has so altered the structural diversity of the understorey in both systems that some passerines have a hard time finding camouflaged nesting sites safe from red squirrels (*Tamiasciurus*

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Inside

PROFILE

A man, a plan, a recovery success story

BY JAMES HRYNYSHYN

The chain of events that culminated in the 1999 downlisting of the peregrine falcon (*anatum*) (*Falco peregrinus anatum*) from nationally endangered to threatened can be traced back to a meeting in Madison, Wisconsin in 1965.

According to Richard Fyfe, it was at this meeting that scientists first confirmed the connection between the pesticide DDT and declining numbers of falcons in Canada and the U.S. "That's when we first realized there was a problem," he said.

But it was the work of Fyfe himself, as a biologist with the Canadian Wildlife Service (CWS), which sparked the recovery of this majestic raptor in North America. For these efforts, and a lifetime of conservation work, Richard W. Fyfe was recently named a member of the Order of Canada.

In 1970, shortly after Canada banned DDT, Fyfe took some of the last wild falcon chicks into captivity, raising them on his farm near Edmonton, as part of a CWS project. The birds were eventually relocated to Canadian Forces Base Wainwright, where they thrived under Fyfe's care. "I've always been involved with birds of prey ever since I can remember," said Fyfe.

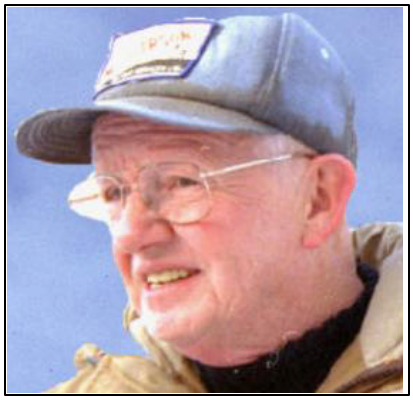

PHOTO: COURTESY EDMONTON JOURNAL &R. FYFE

Retired Canadian Wildlife Service biologist Richard Fyfe has been named to the Order of Canada.

It wasn't easy at first. Skeptics denounced the idea of captive breeding and release of the falcons. But history has validated the undertaking. Thirty years and a successful series of releases to the wild later, the peregrine falcon is recolonizing its habitat, from the Yukon to the Maritimes, and south through the U.S. midwest.

Today, Fyfe agrees with the decision by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) to downlist the raptor. "In my mind there's no question that the bird is coming back and has recovered in most of the country," said Fyfe, 68, who is still keeping an eye on the falcons from his home in Fort Saskatchewan, Alberta.

On the other hand, he added, both the cause of the falcon's problems and the solutions were relatively straightforward. Saving other species at risk may involve more than the elimination of a persistent organic toxin and some careful captive breeding. Whatever strategies are required, a common element will be the commitment of biologists like Fyfe.

James Hrynyshyn is a communications consultant with Ottawa-based West Hawk Associates Inc.

Alien species

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hudsonicus), a notorious nest predator introduced to both places. Introduced mink in Newfoundland are driving native muskrat to rarity while introduced raccoons on Haida Gwaii create havoc in colonies of ground nesting seabirds like ancient murrelets (*Synthliboramphus antiquus*), designated as nationally of special concern.

Islands are conventionally thought to possess fewer species than the mainland. In fact, islands are hotbeds of evolution, and of great benefit to biodiversity. Scientists have calculated that if the world's land mass was one great super-continent, then there should only be an estimated 2,000 species of mammals. As a result of physical segregation, in large part due to islands of various sizes and degrees of isolation, the actual number of mammalian species is much higher. If we value the ecological integrity of unique insular ecosystems like Haida Gwaii and Newfoundland, then we must become an ecologically literate society, act responsibly, and legislate a comprehensive biosafety act. Introductions, like extinctions, are forever.

Renee Wissink is a park ecologist with Terra Nova National Park in Newfoundland.

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The newsletter is also accessible at: www.cws-scf.ec.gc.ca/es/recovery/archive.html

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Marten reserve announced:

Core habitat protected

The Newfoundland government recently announced the creation of a reserve to protect the American marten (Nfld. population) (*Martes americana atrata*), designated as nationally endangered in Canada. The reserve, which will encompass nearly 1,500 square kilometres, is located in the Little Grand Lake area approximately 20 kilometres southeast of Corner Brook.

The reserve was announced in the fall of 1999 and involves three levels of protection. It consists of the combination of a provisional ecological reserve, a public reserve, and a wildlife reserve.

The 742 square kilometre provisional ecological reserve includes two areas: the main one surrounds Little Grand Lake and extends northeastward, while a smaller portion is located along the western shoreline of Grand Lake. Activities will be banned in the reserve that could compromise the natural condition of the site, such as logging, mining, roads, trails, and new cabin development.

In the 178 square kilometre public reserve, forestry activities and most general Crown land uses will be prohibited. Mineral exploration and development will be allowed to continue. Hunting, except for snaring and trapping, will be permitted. In the 575 square kilometre wildlife reserve, some activities such as snaring and trapping will not be allowed to continue. Mineral exploration, development, and in the southern part limited wood harvesting, may occur but under permit.

For both the public and wildlife reserves, the provincial government is drafting guidelines to minimize the impact of mineral exploration and development on the marten. The Newfoundland population was listed as nationally threatened in Canada in 1986, and uplisted to endangered in 1996. The population is estimated to contain about 300 marten.

In 1995, a recovery plan was approved for the marten by the committee on the REcovery of Nationally Endangered Wildlife (RENEW). A multi-stakeholder recovery team working to implement the plan hopes to increase the free-living marten population in Newfoundland so it doesn't become extinct.

The information in this article is drawn primarily from a press release issued October 15, 1999 by the Government of Newfoundland/Labrador.

RENEW Update

Working group to clarify definition of "critical habitat"

The National Recovery Working Group, established in 1998 by the Canadian Wildlife Directors Committee to develop a new framework for recovery, is currently working to clarify the term "critical habitat,' a central concept to the recovery of species at risk.

The working group is proposing to define critical habitat as "that (minimum) portion of the habitat that is essential for the survival of a species." This definition is proposed as the basis for a species-specific description, which would in turn be used to delineate critical habitat on maps. The description of critical habitat for a particular species may well vary from place to place, and over time.

Recovery teams created under the National Recovery Program (RENEW) are key to the description and delineation of critical habitat, since these teams house the expertise on the species in question. The amount of habitat that is required to ensure a species' survival will be closely tied to the goal of the Recovery Strategy for that species. This goal establishes, to the best of our knowledge, requirements necessary to removing a given species from the extirpated, endangered and threatened categories.

Protection of critical habitat should not alter uses of the habitat that are not detrimental to the species. In some cases, changes will be necessary in order to maintain, or restore, the capacity of the land to "support" the species at risk. There are a number of mechanisms for protecting critical habitat, ranging from stewardship and partnership agreements, to changes in land-use practices, formal programs, policy or regulation.

In terms of RENEW recovery plans, the updated recovery plan for the Vancouver Island marmot will be published next spring. The Acadian flycatcher/hooded warbler and king rail plans were conditionally approved and are now being revised to meet the stated conditions. Plans for Kirtland's warbler, prothonotary warbler, massasauga rattlesnake and piping plover are awaiting approval. After having been formally reviewed, the wood bison and peary caribou plans are being revised. A number of other plans, such as those for the American chestnut, American ginseng, Long's and Fernald's brayas, and plans for the Sydenham and Grand rivers are at various stages of development.

For comments or questions contact Simon Nadeau (simon.nadeau@ec.gc.ca) or Mary Rothfels (mary.rothfels@ec.gc.ca) of the Canadian Wildlife Service or by fax at (819) 994-3684.

COSEWIC and CITES UPDATES

COSEWIC Update

Committee adopting new criteria

The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) released the updated list of Canadian Species at Risk following its annual meeting held in Ottawa May 1-5, 2000. The list now includes 353 wild species in various risk categories. Since 1978, COSEWIC has considered more than 510 species.

New listings include the interior B.C. population of the tailed frog, a rare species found in fast-running mountain streams, which was listed as endangered, and the tubercled spike-rush, which was listed as threatened. The spike-rush, along with 10 other Coastal Plain plant species previously listed by COSEWIC, is found in Canada only in a small number of unique wetland habitats in Nova Scotia.

The Committee is re-assessing the List of Canadian Species at Risk according to quantitative criteria based on those developed by the World Conservation Union (IUCN). The Committee hopes to complete its re-assessment of all listed species by the fall of 2000 or early in 2001. David Green, COSEWIC chair, said the Canadian list is being modelled after the IUCN system in order to make the listing of species more consistent. "We want to be able to point to these numbers with a level of confidence in their accuracy," said Green. As well, adopting a modified version of the IUCN criteria will make it easier for COSEWIC to report its assessments in a standardized way.

PHOTO: ©DOUG WECHSLER

Listed as nationally endangered in 2000, the B.C. population of the tailed frog is found in fast-running mountain streams.

The re-assessments will affect species categorized on the Canadian list as endangered or threatened. In completing the re-assessments, COSEWIC will take into account considerations used in the IUCN evaluations. These include factors such as determining the number of populations of a species in its Canadian habitat and the degree of isolation of these populations, the size of a given population and how it fluctuates, and whether the species is in decline and the likely timeline of its decline. COSEWIC will also continue to consider all other aspects and information concerning the status of a species. For more information, visit the COSEWIC website [www.cosewic.gc.ca].

CITES Update

Whale meat proposals rejected

BY CHARLES DAUPHINÉ

Proposals to open up trade in whale meat were rejected in Kenya this April at the 11th Conference of the Parties to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

Proposals by Norway and Japan to transfer some large populations of minke and gray whales from Appendix I to Appendix II to allow international trade in meat and other products were rejected. In making this decision, a significant proportion of the CITES parties chose to continue to respect the International Whaling Commission's global moratorium on whale hunting.

Due to concerns that the approved sale of stockpiled ivory to Japan in 1999 may have stimulated increased poaching in some countries, Botswana, Namibia, and Zimbabwe withdrew their proposals for further ivory sales. Elephant populations in these countries will remain on Appendix II and trade in non-ivory products like hides and leather goods will be allowed. South Africa's elephant population was also transferred from Appendix I to Appendix II to allow sale of non-ivory products. All other African and Asian elephant populations are on Appendix I.

To better determine if the one-time ivory sale has led to increased poaching, the elephant range states agreed to participate in a comprehensive program to monitor levels of poaching and illegal trade and their impact on elephant populations. The results of the monitoring program will be assessed in three years at the next meeting of the CITES parties.

CITES considered proposals involving nearly 60 species of plants and animals, and accepted over half of them. Notably, a proposal from Cuba to sell stockpiled hawksbill turtle (*Eretmochelys imbricata*) shells to Japan was rejected. Proposals by the U.S. to transfer the gyrfalcon (*Falco rusticolus*) from Appendix I to II and to place the spotted turtle (*Clemmys guttata*) on Appendix II, both species that occur in Canada, were rejected.

Charles Dauphiné is the Scientific Authority, Wildlife Trade and International Coordination, with the Canadian Wildlife Service, Hull, Québec, Canada. For more information, visit the CITES Canadian website [www.cws-scf.ec.gc.ca/cites].

ESRF Update

Fund supports 60 projects in 2000

Securing habitat for a plant in Quebec and conserving interdependent species in Alberta are the objectives of two initiatives receiving support in 2000 from the Endangered Species Recovery Fund (ESRF).

In Quebec, the Quebec Society for Wetland Conservation is working to protect the habitat of van Brunt's Jacob's Ladder (*Polemonium vanbruntiae*), a plant listed as nationally threatened in Canada. The society is negotiating land set-asides on private property throughout the plant's Quebec habitat, a conservation approach that has secured 130 hectares of habitat since 1997. Under the current project, the society will continue securing the plant's remaining habitat through agreements with landowners.

In Alberta, researchers at the University of Alberta are continuing a study into the mutualistic relationship between soapweed (*Yucca glauca*), listed as nationally threatened, and the yucca moth (*Tegeticula yuccasella*), a pollinating agent for soapweed. Scientists are determining the natural history of both species to help devise strategies for the conservation of mutualistic systems. The public has taken an interest in the project, which started in 1999. People tour the soapweed's habitat during flowering and have developed a corresponding sense of stewardship for grasslands on their own property.

The ESRF is supporting 60 projects in 2000. ESRF, sponsored by Environment Canada and the World Wildlife Fund Canada, has approved $714,890 for the program in 2000, including contributions from the federal government's Millennium Fund. Since 1988, the ESRF has provided over $5 million in support of projects on more than 100 different species at risk. All applicants must obtain at least half their funding from another source.

PHOTO: LINE COUILLARD

With ESRF help, conservationists are working to protect the habitat of van Brunt's Jacob's Ladder (*Polemonium vanbruntiae*), a plant listed as nationally threatened in Canada.

International cooperation assists owl

BY GEOFF HOLROYD AND TROY WELLICOME

Conservation of the burrowing owl is assuming a greater urgency in Canada, due to its continued decline and the 1995 decision by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) to uplist the owl's status to nationally endangered.

The Burrowing Owl Recovery Team's membership has grown and diversified in recent years to include a greater number of university researchers and agricultural representatives. However, the recovery team lacks information on the owl's migration and winter range and survival. At present, little is known beyond the fact that burrowing owls head south from Canada in autumn. (It is unknown where the owls spend their winters). The owl is not listed as a "Migratory Bird" in the 1916 convention between Canada and the U.S.; consequently, there has been little formal discussion between the Canadian Wildlife Service and the U.S. Fish and Wildlife Service about the conservation of the owl.

Contact between Canada and the U.S. regarding burrowing owls has been consistent but informal. In 1992, Canadian researchers made important contributions at the First International Burrowing Owl Symposium in Seattle. In fact, the proceedings' editor credits Canadians for being the catalyst for the meeting.

After a couple of informal meetings, a Second International Burrowing Owl Symposium was held in Ogden, Utah, in September 1998. Over a two-day period, 150 researchers, wildlife managers, and conservationists heard more than 35 scientific presentations. Participants unanimously agreed that the owl was declining over most of its range in western North America. In response, the U.S. Fish and Wildlife Service initiated a status review scheduled for completion by 2001.

Presentations on burrowing owls have also been made at meetings of the Canada/Mexico/U.S. Trilateral Committee for Wildlife and Ecosystem Conservation and Management, and the Canada/U.S. Framework for Cooperation on the Protection and Recovery of Wild Species at Risk. Following the 4th meeting of the Framework working group, at the invitation of the U.S. Fish and Wildlife Service, the Canadian Wildlife Service submitted a request of activities that the U.S. could undertake to assist with the recovery of the burrowing owl. Canadian scientists are hopeful that a major international initiative will result from cooperative effort, and provide much needed assistance to this species in North America.

Geoff Holroyd and Troy Wellicome are research scientists with the Canadian Wildlife Service in the Prairie and Northern Region.

Recovery in the new millennium

What will species at risk recovery in Canada be like in 50 to 100 years? As we embark on a new century, the editors of Recovery asked wildlife experts representing governments, corporations, universities, and non-government organizations for their views.

Monte Hummel, President, World Wildlife Fund Canada, Toronto

"By 2050 I expect to see a much longer list of Canadian species at risk of extinction, with many more plants and invertebrates at risk than at present. The list of species which have been recovered (and downlisted) as a result of major and well-funded, sustained recovery programs, will also be much longer than today. But I also see a huge annual price-tag just to sustain small populations of native species in relic examples of critical habitat in southern Canada – a veritable Noah's Ark of reserves and pocket parks for species after species. This picture of the settled landscapes results from our inability to practise truly sustainable development, to achieve an ecologically viable balance between human needs, and those of native species."

Fred Cooke, Biology Professor, Simon Fraser University, Burnaby

"There's going to be increasing habitat loss, assuming human development occurs the way it has. I'd like to see more emphasis on the global status rather than the Canadian status. Some of our priorities have to do with protecting species that really are very frequent elsewhere, particularly in the U.S., and probably shouldn't get so much of our attention. We also need better assessments of the measures of trend analysis, particularly demography. We have very little idea of changes in fecundity and survival rates of species in trouble. Those are exactly the things that have been put in place in Britain already. That means increasing amateur-professional connections in order to get good trend analysis."

Mike Pearson, Ph.D. candidate, University of British Columbia, Vancouver

"One of the key things is strengthening protection on private lands. A great number of species occur on private lands, and right now they are afforded very little protection. In the long term, the threat of introduced species is also very serious. The rate of introduction is high and increasing, and while most have no real impact, some are catastrophic. In the general public, the scale of that threat is under-appreciated and the government response, in terms of policy and legislation, is lacking. In terms of aquatic species, I think that we've come a long way, but a lot of the effort applies to new development, when there's quite a bit of restoration work left to do. And there's a danger of people viewing restoration work as a panacea, which could weaken our resolve to protect existing habitat."

"We will have to cooperate with the people who are working the landscape, be they individuals, farmers, cattle-ranchers, forestry companies or mining companies, and see what we can do to reclaim the diversity of those areas."

Julie Gelfand, Executive Director, Canadian Nature Federation, Ottawa

Jim Duncan, Acting Chief of Biodiversity Conservation, Manitoba Department of Conservation, Winnipeg

"I think we're heading in the right direction. The Accord for the Protection of Species at Risk (an agreement approved-in-principle by federal, provincial, and territorial wildlife ministers in 1996) has really harmonized our efforts and identified some of the major gaps in our individual and collective programs. But we have to learn how to better prevent species from becoming at risk in the first place.

On the one hand, we can't avoid the nitty-gritty details that are tied to individual parcels of land – if you don't have the patchwork of participation by individual landowners, your grand ecosystem-based approach isn't going to work. But we also have to look at multiple-species-at-risk recovery plans and the many different levels of biological organization at play. For example, you need to consider the consequences of reintroducing a population of an extirpated species like the black-footed ferret. Is the genetic makeup of the core source population well suited to the environmental conditions of the reintroduction site? In the future, it's inevitable that we are going to find out there are more species at risk in need of greater protection and management. The more you look the more you find. But that shouldn't be automatically looked at as an indicator of conservation failure, because, while we enhance our ability to protect species, we should be looking to expand our basic knowledge of biodiversity."

Robert Décarie, Biodiversity Advisor, Canadian Pulp and Paper Association, Montreal

"Certainly, we see the recovery process as a cooperative effort right from the start. We need to have a team of scientists who have the proper scientific tools to assess what is happening, but also to have on board some stakeholders, not in a defensive position to protect some turf, but to bring in their knowledge of the land and the species.

Forest companies have had biologists on board for many years, and they sometimes know as much as or more about the area they manage and about human impacts on wildlife than provincial or federal governments. If you want to tackle the habitat issue, you have to have people at the table to see the constraints and potential economic impact, and to present alternatives. One area that will require expansion is the ecosystem approach.

As well, we also need to do applied research to exactly understand what kind of intervention a species can withstand, and what kind it cannot. That should allow fewer species to be at risk."

COMMENTARY

Julie Gelfand, Executive Director, Canadian Nature Federation, Ottawa

"We're going to have to move away from species-based conservation to ecosystems-based conservation plans in a given landscape. And we will have to cooperate with the people who are working that landscape, be they individuals, farmers, cattle-ranchers, forestry companies or mining companies, and see what we can do to reclaim the diversity of those areas.

We're not going to be able to do it one species at a time and nor should we. Working on species that are about to fall off the edge of the table is in my opinion the most cost-ineffective way to deal with species at risk. I think we need to look a lot closer at species that are more common but vulnerable in order to ensure we don't let those species get into the endangered category. That will be more useful to the ecosystem than dealing with the last 30 pairs of a species of a bird, for example."

Peter Miller, Legal Counsel, Imperial Oil, Calgary

"Our vision is based on a voluntary, cooperative model, very different from the American experience, without resort to punitive sanctions. I think we've crossed the watershed here, where we as a society are focused on the need for preservation of the environment and I see resource development and agriculture activities, and all human activities, managed in a way that respects species and habitats.

I see us making smart decisions in support of sustainable development which allow us to develop the resources of the land while at the same time preserving essential components of the environment. I see us getting beyond the crazy cat and mouse game of fighting over every road, bridge and tree that's to be cut. It's not productive for society and it's a painful, frustrating process where every major project faces constant opposition.

As a society, we have learned that we need some longer-range strategic planning, and must integrate land management with good science. We also see a good business opportunity here to breed and to export so that we can repopulate and enhance populations just as we have with the swift fox and wolves in the United States."

John Riley, Director of Conservation Science and Stewardship, The Nature Conservancy, Toronto

"Our detailed knowledge of species diversity will still be developing and, as at present, the official legal listing and ranking of species and community types will be lagging significantly behind the available knowledge of our biodiversity. We will, however, have much more expert knowledge of species and habitat types that are rare, where they're located and the viability of those occurrences. I expect that emerging information technologies will enable us to much more readily define and agree on the portfolio of sites that could, if preserved, most efficiently accommodate and sustain all our rare species and community types. In fact, this consensus on site portfolios is critical to our being able to act energetically to secure landowner support and in some cases secure outright some of these sites for conservation. We're entering into an era of conservation blueprints that will serve as biodiversity libraries, and will map our common interests in on-ground conservation."

"I think we've crossed the watershed here, where we as a society are focused on the need for preservation of the environment and I see resource development and agriculture activities, and all human activities, managed in a way that respects species and habitats."

Peter Miller, Legal Counsel, Imperial Oil, Calgary

Kathy Feemark, Ecologist, Environment Canada, Hull

"We will have consciously evolved our cultures to become more eco-centric. approaches which effectively interface science with decision-making will have been developed, and be routinely used. These techniques will, in particular, apply to land use for conserving biodiversity generally as well as more specifically to the conservation of species at risk, habitats, and other natural elements. It will be applied to both public and private lands in concert with the need to meet social and economic requirements. We will have developed and begun implementing conservation strategies that are linked across global to local scales."

Alex Wilson, Manager of Collections, Nova Scotia Museum of Natural History, Halifax

"Many conspicuous and/or attractive creatures like right whales and Atlantic puffins have been relatively easy to popularize and use as icons for conservation. But in the future we will have a much more difficult time convincing the public to invest our resources in recovery efforts for less "showy" species (like obscure invertebrates, mosses and lichens). It will likely become more commonplace to direct our conservation efforts towards whole communities rather than single species. On a more positive note, it may well be that we can influence the decision-makers of tomorrow with strong and well developed environmental education programs throughout the school system. Concepts like sustainable development and biodiversity will hopefully have matured to the point that they are part of the fundamental thinking of future generations."

Jim Noble, Executive Director, Nunavut Wildlife Management Board, Iqaluit

"The recovery of endangered species in Nunavut and the rest of Canada's arctic regions stands at a crossroads in the year 2000. One path leads to potential disaster for many northern species, the other to a promise of practically full recovery in the next 50 to 100 years. Those who would walk the road to disaster ignore the human causes of global warming, the spiraling rate of global pollution and the urgent need for national and international cooperation on these and related transboundary issues. Those wishing to follow the alternate road recognize that decisive and immediate action must be taken on these issues, so that full recovery can be provided an opportunity for success. Those operating within and among particular ecosystems must seize this opportunity. In Nunavut, that means ongoing compliance with the principles of conservation, active cooperation between managers and harvesters, full consideration of scientific knowledge and traditional knowledge (*Qaujimajatuqangit*), aand sufficient funding to assist such cooperation and to sustain such consideration."

Sprague's pipit soars with prairie spirit

BY BRENDA DALE

The most accurate picture of a Sprague's pipit would be a speck in a clear blue sky over a stretch of native grassland.

Sprague's pipit (*Anthus spragueii*)is a true prairie species. No need or interest in a song perch for this bird. They climb, facing the wind, to a great height above the plains, circle overhead and then pause, wings outstretched to pour out their happy song -"CHEER, Cheer, cheer."

This circling and singing ritual can last from a few minutes to three hours. Then they fold their wings and hurtle towards the prairie below, open their wings at the last instant, skim a short distance just above the grass and drop beneath its cover. They forage, build their domed nest, or tend their young unseen by human eyes.

Sprague's pipit was Blue listed (may be at risk) in Alberta in 1996, and listed as nationally threatened in 1999 by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). Once one of the most common prairie species, its overall losses are unknown but the decline has been nearly steady since researchers began collecting Breeding Bird Survey data in 1966. Its trend line resembles a staircase: each drop is followed by a short period of stability or partial recovery during moist periods and then the bottom falls out again. Losses over the 32-year period since 1966 are 7% per year.

Reasons for the decline are clear. Sprague's pipit is restricted to North American native prairie. Less than 20% of native grassland remains and conversion to other agricultural uses continue. Not all of the remaining grassland is usable or useful. For example, small tracts (less than 150 ha) may not be as attractive and pipits that inhabit them are more vulnerable to nest predation and brown-headed cowbird nest parasitism (the cowbird replaces or supplements host egg (s) with their own which may result in fewer host young being raised). Grazing practices are also a factor. Heavy grazing reduces numbers. Pipits are also less tolerant of grazing in periods of drought. Market fluctuations in prices of cattle or grain influence grazing pressure, and therefore the amount or condition of pipit breeding habitat.

PHOTO: © R.&N. BOWERS/VIREO

Sprague's pipit, listed as nationally threatened in Canada, is a prairie bird that likes to soar in the sky and pour out a happy song.

Sprague's pipit makes little or no use of exotic grasses like smooth brome or crested wheatgrass. Native grasslands invaded by exotic species are also less attractive. Conservation programs like Canada's Permanent Cover Program or the American Conservation Reserve Program use mainly non-native plant species and do pipits little good. Haylands are sometimes attractive but usually unproductive since the harvest period coincides with peak pipit breeding periods. Habitat loss or degradation is also extensive on the southern U.S. wintering grounds.

The news is not all bad. Pastures in good to excellent "range condition" are occupied by more pipits than sites in poor condition. Rotation grazing systems seem to sustain at least as many pipits as season-long grazing. If rotation systems allow the landholder better profit, and allow the land to remain in grass, then the species may benefit from this practice. Sprague's pipit is still common in areas where well managed extensive native prairie remains. Private ranches and crown grazing lands appear to be the stronghold of the pipit and many other declining grassland bird species. Management of grassland that makes a rancher successful in the long term also makes for successful Sprague's pipits. Certainly, the key to present and future Sprague's pipit populations is good stewardship of native grasslands in North and Central America.

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