RECOVERY

An Endangered Species Newsletter

Published by the Canadian Wildlife Service January 2002 #19

Recovery Highlights

Tracking turtles

This winter, a Nova Scotia wildlife group is inviting the public to visit its website to track the migration of three leatherback turtles [www.seaturtle.ca]. Scientists with the Nova Scotia Leatherback Turtle Working Group have satellite tagged several leatherback turtles (*Dermochelys coriacea*), designated by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) as endangered, in the waters off Cape Breton Island this summer.

The group tracks the turtles using satellite telemetry to gain a better understanding of the species' movements and behaviour. The group has tagged and tracked 15 turtles since launching the program in 1999.

Protecting habitat

Wildlife in southwestern Nova Scotia has received valuable assistance from the federal government's Habitat Stewardship Program for Species at Risk. The program contributed $127,000 to the South West Nova Biosphere Reserve Association to support several recently completed activities, including information collection, community workshops on stewardship, and the development of a media presentation that is being displayed in museums, schools, and public locations.

The project also helped strengthen recovery efforts for species at risk in Kejimkujik National Park and National Historic Site in southwestern Nova Scotia. The park is working to recover the nationally threatened Blanding's turtle (*Emydoidea blandingi*) and the endangered piping plover (*Charadrius melodus*), and to maintain viable populations of Coastal Plain flora. Learn more about the federal government's Habitat Stewardship Program online [www.speciesatrisk.gc.ca].

PHOTO: LINDSAY HATCHER, LTWG

Researchers are tracking Nova Scotia sea turtles by satellite.

Taking flight

In fall 2001, an ultralight aircraft piloted by two Canadians led a captive-raised flock of whooping cranes (*Grus americana*), designated as an endangered species, on an experimental migration across seven states from Wisconsin to Florida.

In preparation for the fall journey to the Chassahowitska National Wildlife Refuge (NWR) in Florida, biologists trained 10 young whooping cranes to follow the aircraft this summer at the Necedah NWR in Wisconsin.

Inside

Saving Ontario's mussels

BY DAVID WYLYNKO

The plight of mussels at risk of extinction in southwestern Ontario has been gaining greater attention in recent years, thanks largely to the efforts of an Environment Canada scientist committed to mussel conservation.

Janice Smith, a biologist at the National Water Research Institute in Burlington, Ontario, has undertaken extensive research on mussels in the lower Great Lakes region. Her work has contributed to the placement of five mussel species on Canada's national list of species at risk, and helped initiate Canada's first ecosystem-based recovery plan for an aquatic system.

The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) began designating molluscs at risk in 1996. The five Ontario designations, all in the endangered category, are: the wavy-rayed lampmussel (*Lampsilis fasciola*), northern riffleshell (*Epioblasma torulosa rangiana*) and rayed bean (*Villosa fabalis*), designated in 1999, and the mudpuppy mussel (*Simpsonaias ambigua*) and snuffbox (*Epioblasma triquetra*), designated in 2001.

The main threat to these species is likely habitat disturbance, largely in the form of agricultural runoff that reduces the availability of clean, silt-free aquatic habitat.

Smith became interested in mussel conservation in 1995, because of the globally rare status of this group of aquatic invertebrates. She has since spent several field seasons surveying historical mussel sites in the Grand, Thames, Sydenham and Ausable rivers, aided by Shawn Staton, a graduate of the University of Guelph.

PHOTO: SHAWN STATON

Biologist Janice Smith holds up northern riffleshells and kidney shells.

The research was part of work she carried out in conjunction with Dr. Gerry Mackie, a zoology professor at the University of Guelph, with funding from the Endangered Species Recovery Fund (ESRF) (see p. 3 for more details on the Fund). Smith and her associates also wrote the status reports for COSEWIC that led to the designation of the five Ontario species.

Smith then began using the mussels as indicators of the health of the rivers, and in 1999 joined other agencies in the development of an ecosystem recovery plan for the Sydenham River. This Carolinian Zone river supports an incredible variety of aquatic life, including several species that are found nowhere else in Canada. The recovery team is focusing on 14 listed species that occur in the river, including eight fishes, the five mussels, and one turtle, the nationally threatened spiny softshell turtle (*Apalone spinifera*).

A native of Winnipeg, Smith graduated with a degree in Zoology from the University of Manitoba.She has worked at the Institute for the past 21 years, spending part of that time designing "mussel watch" programs for measuring contamination in rivers. By 1990, Smith realized that mussel species were in decline and switched her focus. "I thought it was time to change my tracks and think about conservation."

David Wylynko is a communications consultant with West Hawk Associates.

Recovery is a free newsletter providing information and views on the recovery of species at risk. The views expressed in this publication do not necessarily reflect the policies of Environment Canada.Contents may be reprinted without permission, although credit would be appreciated. Anyone wishing to be put on the mailing list should send his or her name, mailing address, and language of choice to *Recovery*, Canadian Wildlife Service, Environment Canada, Ottawa, Canada, K1A 0H3.

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

Anyone wishing to submit an article is invited to contact France Gauthier of the Canadian Wildlife Service at france.gauthier@ec.gc.ca or (819) 994-2431.

The editors reserve the right to determine which articles are published and to edit them for content and length. Coordinated by the Canadian Wildlife Service.

Edited and designed by West Hawk Associates Inc.

National Library of Canada cataloguing
Recovery (Ottawa, Ont.)
Recovery: an endangered species newsletter

Issued also in French under title: Sauvegarde
ISSN: 0847-0294
1.Endangered species—Canada—Periodicals. 2.Rare animals—Canada—Periodicals. 3.Rare plants—Canada—Periodicals.
I.Canadian Wildlife Service II. Title
QL84.24.R43 574.5'29'097105 C92-070287-2

Environment Canada
Canadian Wildlife Service
Environnement Canada
Service canadien de la faune

Endangered Species Recovery Fund:
Supporting a diverse array of projects

Many diverse recovery projects are funded each year under the Endangered Species Recovery Fund (ESRF), a joint Environment Canada-World Wildlife Fund (Canada) program to help species at risk in Canada. In 2001-2002, the program funded 58 projects covering species designated by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) as endangered, threatened, and of special concern across Canada. This article provides a snapshot of four of these projects:

- **Grizzly bears**: Gordon Stenhouse of Alberta's Foothills Model Forest is leading this five-year project, which began in 1999. The aim of the project is to link scientific results to successful land-management strategies. The researchers are examining the movement patterns of the grizzly bear (*Ursus arctos*), a species of special concern, and relating them to human uses of the landscape. The project also aims to provide management tools that will be used to monitor the success of management actions and hence ensure that grizzly bear conservation is being achieved.

- **Reptiles at risk**: Ron Brooks of the University of Guelph is leading a research team to help several reptile species in Ontario. These species include the threatened spiny softshell turtle (*Apalone spinifera*), the threatened eastern fox snake (*Elaphe vulpina gloydi*), and the five-lined skink (*Eumeces fasciatus*), a species of special concern. In 2000, the team made an unprecedented inventory of the snakes, turtles, and skinks of Rondeau Provincial Park. This year, the team is beginning to identify key threats to these species. The park is a unique remnant of the shoreline-wetland-forest communities formerly common in southern Ontario.

- **Fern species**: Daniel Gagnon of the Université du Québec à Montréal is identifying the microhabitat characteristics of four rare fern species, including the endangered blunt-lobed woodsia (*Woodsia obtusa*) and American Hart's-tongue fern (*Asplenium scolopendrium var. americanumand*), a species of special concern. The results will serve to model the microhabitat requirements of the four species in order to predict the effects of habitat disturbances or changes. Scientists hope to use these predictions to devise conservation strategies.

- **Piping plover**: Geraldine Arsenault of the Bouctouche Dune Irving EcoCentre is leading a project to conserve the endangered piping plover in New Brunswick. Under the program, local volunteers are patrolling beaches to prevent piping plover nests and chicks from being disturbed. The volunteers also approach private landowners about protecting suitable plover nesting habitat on their property. Scientists consider these efforts necessary to help increase piping plover numbers.

For more information, visit the Environment Canada ESRF site [www.cws-scf.ec.gc.ca/es/esrf/esrf/html] or the World Wildlife Fund ESRF web site [www.wwf.ca/en/cons_pgms/ESRF/].

The grizzly bear is a species of special concern on the COSEWIC list of Canadian species at risk.

PHOTO: TERRY PARKER / URSUS PHOTOGRAPHY

Bowhead whale strategy released:

Long-term conservation, ecosystem approach planned for Eastern Arctic population

This winter, a conservation strategy for the endangered Eastern Arctic population of the bowhead whale (*Balaena mysticetus*) will be published. The strategy sets out to improve the population's status by using an ecosystem approach and focusing on long-term conservation issues.

The strategy is a joint effort of the Nunavut Wildlife Management Board, the World Wildlife Fund (Canada), and Fisheries and Oceans Canada. The short-term conservation objectives are to:

- identify and protect important areas used by bowhead whales;
- establish a long-term monitoring and research program combining both traditional knowledge and science;
- ensure a sound, sustainable and continuing Inuit subsistence harvest of bowhead whales;
- ensure that human activities do not adversely affect bowhead whale populations or their habitat;
- communicate this conservation initiative to the public in Nunavut and beyond.

The Eastern Arctic whales actually consist of two separate sub-populations. An estimated 300 whales constitute the Hudson Bay/Foxe Basin population. Although about 350 whales have been estimated to occur in the Baffin Bay/Davis Strait population, an updated estimate is needed.

PHOTO: SUE COSENS

Scientists have prepared a strategy to conserve the endangered Eastern Arctic population of the bowhead whale.

Wood bison recovery plan approved

A national recovery plan has been approved for the wood bison (*Bison bison athabascae*), designated nationally threatened in Canada. The plan's general goal is to re-establish a minimum of four viable, healthy, free-roaming wood bison populations in their original range and other herds where the potential exists. Another main goal is to establish long-term cooperative management programs for wood bison wherein rural communities and Aboriginal people can play an integral role.

An estimated 3,536 wood bison exist in Canada that are free of brucellosis and tuberculosis (diseases that struck the species in the early 20th century). Of these bison, there are about 2,828 individuals in six wild populations, and 708 individuals in four captive breeding herds.

The main threats to the species include habitat loss due to industrial and agricultural development, increased human access to its habitat, disease, loss of genetic diversity, and predation by wolves. Once published, the plan will be posted on the RENEW website [www.speciesatrisk.gc.ca/sar/efforts/index.htm].

Scientists launch beluga recovery

Federal government scientists are preparing to draft a recovery strategy for the endangered Southeast Baffin Island-Cumberland Sound population of the beluga whale (*Delphinapterus leucas*) in 2001-2002, starting with a stakeholder workshop to be held this winter.

Fisheries and Oceans Canada will produce the plan in cooperation with the Nunavut Wildlife Management Board and other concerned agencies. The population has suffered dramatic declines due to over-exploitation by commercial whalers, and an estimated 1,500 individuals remain. The present subsistence hunt is being carefully managed to ensure that it does not prevent the recovery of the population.

Caribou committee proposed

A national technical committee is being proposed to oversee the regional development of recovery strategies and action plans for the boreal ecotype of the woodland caribou (*Rangifer tarandus caribou*). In 2000, the Committee on the Status of Endangered Wildlife in Canada designated the population nationally threatened.

Boreal woodland caribou face significant threats: habitat loss and fragmentation; human disturbance and increased predation; and a low reproductive rate. Throughout most of its range, which is the expansive boreal forests of northern Canada, the population's numbers and distribution have decreased. Boreal forests are increasingly being modified through the lumber and oil and gas industries.

The national committee would facilitate the preparation of a national recovery strategy, earmarked for completion by May 2002. The national strategy would connect regional strategies and action plans in an overall framework as provincial and territorial agencies and national parks implement the recovery actions at the regional scale. These recovery strategies and action plans are being developed in consultation with affected Aboriginal peoples, significant stakeholders, and other groups as appropriate.

The national technical committee would also facilitate the sharing of data and techniques, and provide a forum for addressing cross-border issues. As well, the national process would help ensure that a broad perspective on the status of woodland caribou is maintained.

Recovering Newfoundland plants

A multi-species recovery plan has been drafted for a pair of plant species endemic to Newfoundland. The endangered Long's braya (*Braya longii)* and threatened Fernald's braya (*B. fernaldii*) occur only on a narrow strip of limestone barren habitat on the extreme western portion of the Great Northern Peninsula.

Habitat loss and low numbers prompted a team of scientists to undertake the recovery of these plants. The plan's main goal is to secure the long-term persistence of both species.

Six primary strategies have been identified to achieve these goals:

- scientific research;
- population monitoring;
- critical habitat assessment and protection;
- *ex situ* conservation;
- education and stewardship;
- restoration and species reintroduction.

Conserving these plants will help preserve parts of the limestone barren habitat, which has been largely transformed to gravel pits and rubble.

Updates

Workshop held

The National Recovery Working Group held a workshop with non-government organizations and national Aboriginal groups on August 20-21 in Ottawa to discuss changes to the national recovery process. A workshop report is available from the Recovery secretariat [e-mail: RENEW-RESCAPE@ec.gc.ca].

Report released

The annual report of the national recovery program (RENEW) was released in September by the Canadian Endangered Species Conservation Council. The report provides details on the status of recovery teams and planning, expenditures, and participating organizations working to save Canada's species at risk. For more information, visit this website: [www.speciesatrisk.gc.ca/sar/efforts/index.htm].

Assessing species

The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) met November 26-29 in Ottawa to assess which wildlife species should be added to the national list of species at risk. Candidate species are those suspected of being at risk of extinction or extirpation at the national level.

The committee recently released a prioritized candidate list. At present, it is a preliminary list, with some taxonomic groups more strongly represented than others. COSEWIC species specialist groups are developing more complete lists for their respective taxa. The list is dynamic, and even when relatively complete it will be updated as new information becomes available.

The national list of species at risk now includes 387 wild species. To download the candidate list, or to learn about other COSEWIC activities, visit this website [www.cosewic.gc.ca].

Monitoring migrations:

Ham operators assist scientists in search for wild species in migration

Wildlife researchers are beginning to discover that the hundreds of thousands of amateur radio enthusiasts in North America may be available to help them monitor wild species in migration.

For the third consecutive year, radio operators in the U.S. were listening for burrowing owl (*Athene cunicularia*) signals during the migration of this bird, designated by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) as endangered in Canada.

Helen Trefry, a wildlife technician with the Canadian Wildlife Service (CWS), first solicited the aid of radio amateurs in the spring of 1998, when burrowing owls fitted with VHF transmitters the previous fall in Alberta and Saskatchewan were migrating north from their wintering grounds. Amateur ham operators reported signals in Arizona, Texas, and Arkansas, but were not able to confirm them on the ground as coming from Canadian owls.

CWS scientist Geoff Holroyd, the project leader, and Trefry broadened the 2000/2001 winter search effort for transmitter signals by flying over southern Texas and central Mexico. They found three burrowing owls in southeast Texas and two in Mexico.

The Canadian scientists are thankful for the ongoing assistance of the ham operators in helping them learn more about the migration route and wintering areas of this declining owl. Their assistance is contributing to the international awareness of the owl's plight.

Find out more at this website: [http://members.aol.com/homingin/index.html].

Researchers map biodiversity

As part of the Georgie Basin Ecosystems Initiative, scientists in B.C. are conducting a unique inventory to systematically identify, map, and evaluate remnant rare and ecologically fragile terrestrial ecosystems.

These include wetland and riparian ecosystems, older forests and woodlands, dune, spit and cliff ecosystems, coastal bluffs, and native grasslands.

Under the Initiative's Sensitive Ecosystems Inventory, teams of ecologists, biologists, geographers and soil scientists are applying air photo interpreting skills and field survey techniques to produce baseline mapping of the ecologically unique lowlands surrounding the Strait of Georgia. Both hardcopy and digital maps are being produced. The Georgia Basin lowlands occupy an area of 9,000 square kilometres.

They have exceptionally high biological diversity values, and are home to many rare and endangered plants and animals. Intense development pressure has caused the fragmentation and loss of many of these rare and fragile ecosystems.

The Sensitive Ecosystems Inventory information is used to support regional, district and municipal land-use planning processes, the acquisition and protection of critical habitat, park plans, private land stewardship efforts and various other conservation strategies, such as the Garry oak ecosystem recovery initiative. To learn more, contact Jan Kirkby [jan.kirkby@gems9.gov.bc.ca] or contact as well Peggy Ward [peggy.ward@ec.gc.ca]. Visit the website at [srmwww.gov.bc.ca/rib/cbs/sei/].

New findings in swan research

Trumpeter swans reared by their own parents are better able to follow ultralight aircraft than cygnets raised by human handlers, recent research suggests. For his thesis, completed in 2000, University of Guelph student Wayne Bezner Kerr set out to investigate whether early experience affects the development of a bird's ability to follow aircraft.

Four groups of trumpeter swans (*Cygnus buccinator*) were raised under four different combinations of hatching and rearing conditions.

Researchers trained one group reared by humans and one initially reared by their parents to follow an ultralight aircraft 10 days after hatching. Meanwhile, they isolated another group reared by humans, and one initially reared by the parents, from human contact 10 days after hatching.

Between 10 days and 80 days after hatching, the cygnets initially reared by their parents demonstrated a significantly lower preference for human handlers and the aircraft compared to cygnets hatched in an incubator and initially reared by humans.

However, at 90 days of age, the cygnets reared by their parents followed the aircraft better in flight than the cygnets reared initially by humans.

The findings could influence how scientists teach migration, an increasingly important aspect of some species' recovery.

New Publications

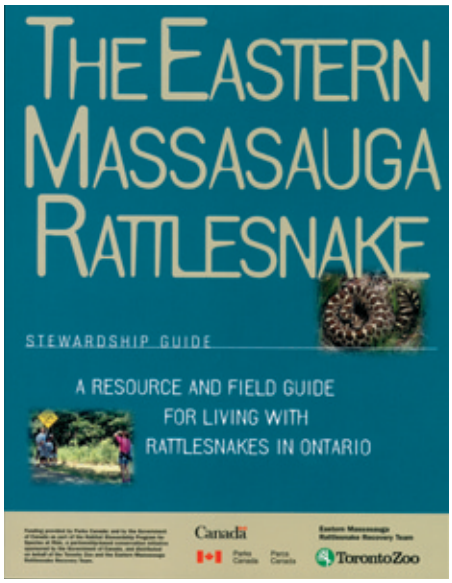
Bowhead Whale Conservation Strategy. To be published by Fisheries and Oceans Canada, this strategy describes the conservation approach being initiated for the nationally endangered Eastern Arctic population of the bowhead whale (*Balaena mysticetus*). To learn more, contact Sue Cosens at the department's Freshwater Institute [cosenss@dfo-mpo.gc.ca].

The Eastern Massasauga Rattlesnake Stewardship Guide. Published in fall 2001 by the Eastern Massasauga Rattlesnake Recovery Team, this booklet describes ways to identify, safeguard, and help recover this threatened reptile. Learn more online [www.terraplex.com/sin].

The Endangered Banff Springs Snail Poster. Jointly published in spring 2001 by the Canadian Wildlife Service and the Parks Canada Agency, this poster features a colourful photograph of one of these tiny snails, designated as endangered in Canada. The free poster can be ordered electronically by submitting the form available online at [www.speciesatrisk.gc.ca/sar/order_e.htm].

Pandas in the Wild 2001 Status Report. Published by the World Wildlife Fund, this report provides current information on the status of the giant panda in the wild, the threats to its survival, and conservation hopes. Learn more online [www.wwfcanada.org/en/store/ps_products.asp].

RENEW Annual Report #11. Released in fall 2001 by the Canadian Endangered Species Conservation Council, this annual report summarizes recovery efforts for wildlife designated nationally extirpated, endangered, and threatened. It is available in hard copy form and online [www.speciesatrisk.gc.ca/sar/efforts/index.htm].



The Eastern Massasauga Rattlesnake Stewardship Guide.

Awards

Projet Rescousse, Verdun won a 2001 Phénix de l'environnement award in Montreal, for the group's efforts to raise corporate funds for wildlife conservation projects, including the creation of a web site and posters publicizing the plight of the river redhorse (*Moxostoma carinatum*), a fish designated as a species of special concern.

La Corporation de gestion de la Forêt de l'Aigle in Maniwaki, Québec received the 2001 Forest Stewardship Recognition Program National Award of Excellence, presented by Wildlife Habitat Canada, for the company's efforts to achieve sustainable forestry and conserve forest biodiversity.

Monte Hummel, president of the World Wildlife Fund (Canada), recently received the J.B. Harkin Conservation Award, presented to Canadians who have served the cause of conservation with distinction.

Site Seeing

Endangered Species Recovery Fund:
[www.cws-scf.ec.gc.ca/es/esrf/esrf/html].
[www.wwf.ca/en/cons_pgms/ESRF/].
General Status Ranks of Wild Species in Nova Scotia, 2001:
[www.gov.ns.ca/natr/wildlife/genstatus/].
Ontario species at risk 2001 update:
[www.mnr.gov.on.ca/MNR/fwmenu.html].
RENEW Annual Report #11
[www.speciesatrisk.gc.ca/sar/efforts/index.htm].
Species at risk in Quebec:
[www.menv.gouv.qc.ca/biodiversite/especes/index.htm].
Whooping crane migration map:
[www.bringbackthecranes.org/new/migration_map.html].

Radar reveals bird's secretive behaviour

BY ALAN BURGER

The marbled murrelet is an unusual and secretive seabird that nests in the concealed canopy of old-growth forests. Most species of seabirds nest in large colonies, on cliffs or in burrows and crevices on offshore islands. In B.C., some of the highest densities of marbled murrelets (*Brachyramphus marmoratus*) nest on southwest Vancouver Island, in an area that consists of relatively undisturbed old-growth forest mixed with more fragmented, managed valleys.

Since 1990, with funding from the Endangered Species Recovery Fund and other sources, wildlife biologists at the University of Victoria have been studying the habitat use and behaviour of this unusual bird, designated threatened in Canada. A key feature of this research is the development of high-frequency radar as a tool for counting and monitoring marbled murrelets.

During the mid-1990s, we deployed radar at the mouths of watersheds, where murrelets are easily picked out with radar in the pre-dawn twilight, as they cross the open sky between the ocean and the forest en route to visiting their nests. Radar has now become a standard inventory tool for murrelets, used across their range from Alaska through central California.

In more recent years, in collaboration with Trudy Chatwin of the B.C. Ministry of Water, Land and Air Protection we extended the use of radar to habitat analysis. We used radar counts of murrelets made over three years at 20 watersheds in Clayoquot Sound to examine the relationships with habitat available in these watersheds and the impacts of logging.

The results were revealing. We found that we could reliably predict marbled murrelet habitat preferences. Murrelet numbers were best correlated with the area of low-elevation old-growth forest remaining in each valley. In several areas that had experienced substantial logging, murrelet counts were significantly depressed compared to areas of intact old-growth forest. We also found that murrelets did not pack into the remaining forest in higher densities. Overall, this suggests that as clearcut logging reduces areas of old-growth forest, murrelet numbers will decline.

PHOTO: GUS VAN VLIET

In B.C., research conducted in recent years shows that marbled murrelets are less numerous in fragmented forest than in intact old-growth forest.

In 2001, in collaboration with Connie Miller-Retzer of the B.C. Ministry of Water, Land and Air Protection and the Weyerhaeuser forest products company, we are examining the effects of forest fragmentation on the relative abundance of murrelets and that of their predators. We are surveying murrelets using standard audio-visual techniques at forest patches in both undisturbed forest (Carmanah-Walbran Provincial Park) and highly fragmented forest surrounded by clearcuts and immature stands (Klanawa, Sarita, Sproat, Nitinat and other watersheds). Our preliminary results show that the detections of murrelets are lower and relative densities of predators higher in the fragmented patches, compared with the more pristine forests.

In 2002, we plan to use radar counts to determine whether watersheds with significantly depleted and fragmented forests contain lower numbers of murrelets than would be expected were these areas left intact.

"Using Radar to Estimate Populations and Assess Habitat Associations of Marbled Murrelets" was published in fall 2001 in the Journal of Wildlife Management. This paper describes the findings of marbled murrelet (Brachyramphus marmoratus) habitat studies by author Alan Burger and his University of Victoria research team. To learn more, contact Professor Burger [aburger@uvic.ca].