

RECOVERY

An Endangered Species Newsletter



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Landowners join recovery effort

BY ROBERT WENTING

Working in conjunction with its newest partner, the Canadian Cattlemen's Association, the recovery team for the loggerhead shrike (eastern pop.) is launching a new habitat stewardship initiative in Quebec, Ontario, and Manitoba.

The goal of this partnership will be to improve and maintain two thousand hectares of early successional short grassland that characterizes eastern loggerhead shrike (*Lanius ludovicianus migrans*) habitat in each of seven identified core areas in the three provinces.

Specific stewardship activities will include fencing to create cattle pastures, removal of overgrowths of trees and shrubs, and the production of a landowner-based eastern loggerhead shrike newsletter, videos, and a number of public service announcements for airing on local television stations.

These stewardship activities will be combined with continued monitoring of existing wild populations both in Canada



PHOTO: J. SCHUMACKER/VIREO

Landowners are joining a habitat stewardship initiative to restore two thousand hectares of loggerhead shrike habitat.

and the United States, field propagation of captive-bred pairs and the release of those pairs with their young (in partnership with cooperating landowners), plus other research activities necessary to the recovery strategy for this sub-species in Canada.

The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) listed the population as endangered in 1991. The recovery team's goal is to establish and maintain a viable population of this sub-species in Canada, so that its endangered status may be removed.

The Canadian breeding population,

while improved, remains dangerously low. In the year 2000, no birds were found in Quebec. In Ontario, 27 pairs were found on the Napanee Plain, seven on the Carden Plain, one in the Smiths Falls area, one on Manitoulin Island, and one in Bruce County. Eleven breeding pairs were located in the southeastern corner of Manitoba.

Recruitment of previous-year young into the breeding population appears to be low. Of 150 fledglings banded on the Napanee Plain in 1999, 12 were identified as having returned following migration in 2000. Interestingly, the

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RECOVERY WATCH

RENEW Update

Working group addresses recovery issues

A two-day meeting of the National Recovery Working Group, which includes government and non-government recovery experts shaping the national recovery program (RENEW), was held in October. The working group is occupied with a number of topics, including:

- prioritizing species for recovery;
- identifying critical habitat;
- grouping species for multi-species planning;
- developing guidelines for multi-species recovery plans;
- developing guidelines for recovery

- team appointment, composition, etc.;
- developing guidelines for recovery plan development and approval;
- developing requirements for management plans for species of special concern;
- incorporating aboriginal traditional knowledge into recovery;
- developing a plan for consulting on and communicating the evolving national recovery program.

More information on these meetings will appear in this box in subsequent issues of Recovery.



PHOTO: COURTESY CANADIAN WILDLIFE SERVICE

RENEW Report #9 1998-99 has won an APEX Award, presented in the U.S. for excellence in design, editorial content, and overall communications.

Captive-breeding, public outreach key to recovery

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Manitoulin pair was second-year birds, and no birds were found nesting on the island the previous year.

In 2000, 20 pairs of shrikes produced 42 young at captive-breeding facilities at McGill University and the Toronto Zoo. Reproductive success has improved each year since these facilities were estab-

lished in 1998. Late in the year 2000 breeding season, the recovery team began testing experimental technology and techniques as it considers releasing captive-bred birds into suitable and secure habitat in 2001.

In 1999, the recovery team coordinated production of the first of three

planned videos. This initial video is an introduction to the shrike and its habitat. The second will be on habitat stewardship, and the third will be on the captive propagation and release programme. Each will be distributed to property owners with identified shrike habitat and the potential for habitat recovery.

This year, the first of a series of 15-second public service announcements was produced for distribution to television stations in Manitoba, Ontario, and Quebec. This first announcement will identify the species, indicating that recovery efforts are underway, and will feature a toll-free number. A second announcement, for the spring of 2001, will ask people to report sightings.

The recovery team remains encouraged by the apparent adaptability of this sub-species and the demonstrated resolve of governments, non-government organizations, and, particularly, landowners to work together to help this unique bird.

Robert Wenting is a wildlife biologist with the Canadian Wildlife Service and chair of the Loggerhead Shrike Recovery Team (eastern pop.).

Recovery is a free newsletter providing information and views on species at risk. 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 views expressed in this publication do not necessarily reflect the policies of Environment Canada.

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



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Anyone wishing to submit an article is invited to contact Danielle Gagnon of the Canadian Wildlife Service at danielle.gagnon@ec.gc.ca or (819) 997-1687.

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Migratory scientist retires:

Many accomplishments punctuate 35-year career

BY DAVID WYLYNKO

Like many of the cross-border migratory species he knows so well, retiring Canadian Wildlife Service (CWS) biologist Charles (Chuck) Dauphiné has devoted a career to the U.S. and Canadian wilds. You could say cross-border migration is in his blood.

Stellar accomplishments punctuate his travels. They include landmark caribou research, the launch of a national program to recover endangered species, representing Canada at endangered species conferences around the world, and the stimulation of joint Canada-U.S. cooperation in cross-border species conservation.

September 19th 2000 was his retirement date. It was 35 years to that day that Dauphiné, having completed his Master's in Wildlife Biology at New York State University's College of Environmental Science and Forestry, came north to work for the CWS.

It was a homecoming of sorts. Dauphiné's grandparents lived in Canada before moving to the U.S., and he himself grew up in New York State near the border, visiting Canada often.

In the late 1960s, Dauphiné and three other CWS biologists studied a population of Barren Ground Caribou near Hudson Bay, which was in decline. "It was one of the more comprehensive studies of caribou biology ever done, and broke much new ground." He continued working on caribou in northern Quebec and in the national parks until 1978.

In 1978, Dauphiné took a supervisory position in Ottawa, heading a group that studied contaminants in the Great Lakes and wildlife in logged forests, and operated an interpretation program for the public.

In 1985, a cornerstone year, he became the endangered species coordinator at CWS headquarters. He also became the CWS representative to the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), the body that de-



PHOTO: COURTESY CHUCK DAUPHINE

Roving scientist Charles (Chuck) Dauphiné is winding up a stellar 35-year career.

cidates on the list of nationally endangered species. As well, he took on the responsibility of scientific authority for Canada in implementing the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the international organization regulating worldwide trade in endangered species.

1989 was another watershed year for Dauphiné, heralding three major initiatives. These were the launch of RENEW, the national recovery program he helped develop, the start of the *Recovery* newsletter, which he coordinated as part of his public outreach role, and the publication of *On the Brink*, which he co-authored. The book was the first comprehensive account of the endangered species problem, and did much to increase public awareness.

Throughout the 1990s, Dauphiné focused increasingly on CITES. His work with CITES has taken Dauphiné to Europe, Asia, South America, and Africa, trips that increased his appreciation for the challenges of global conservation.

He also helped with the development of the 1996 proposed endangered species act. The act didn't pass, but a new act is currently before Parliament.

Fittingly, one of Dauphiné's most recent assignments, beginning in 1996, was to help prepare a formal Canada-U.S. agreement to cooperate in conserving cross-border species. "The idea is to identify species at risk we share, and then determine how to help one another out to assist species at risk."

Summarizing his professional tenure, Dauphiné expressed great satisfaction with being able to work so long, and in so many varied roles, for the same organization. "Work was always interesting!"

Eventually, he and his wife Nan plan to resettle in the U.S. where their family resides. Both their two children, Julie and Jonathan, have moved south of the border. For now, Dauphiné will be content to continue his own migrations, visiting the U.S. and residing in Canada.

David Wylynko is a communications consultant with Ottawa-based West Hawk Associates Inc. [www.westhawk.com].

Conserving nature at regional and continental scales: a scientific program for North America

BY MICHAEL E. SOULÉ AND JOHN TERBORGH

This is an abbreviated version of an article published in the periodical BioScience October 1999. In the full article, the authors provide numerous examples to illustrate the essential role keystone species play in regulating ecosystems. Since these species tend to be carnivores that require large areas of habitat, such as bears and wolves, the authors argue that big, connected landscapes provide the most natural and effective way to achieve conservation, and discuss the steps necessary to reestablishing and sustaining these landscapes.

With a new millennium dawning, ecologists are documenting unprecedented worldwide habitat conversion driven by rapidly expanding human populations, powerful technologies, and irresistible economic incentives. But even as the biodiversity crisis becomes more apparent, the scale of conservation planning and implementation has remained largely unchanged. Conservation efforts are still relatively local, emphasizing islandlike preserves; the implicit premise is that biotic diversity can persist in isolated habitat reserves.

Over the past two decades, the science of conservation biology has shown that the island strategy, by itself, is inadequate to the formidable challenge of conserving most living species. The evidence that isolated reserves gradually lose native species, especially large mammals and carnivores, is overwhelming. The elements of the solution are known: bigness and connectivity. These two elements constitute the foundation for any meaningful program of wildlands or biodiversity conservation on a regional or continental scale. On-the-ground realization of a program of large core areas and landscape connectivity will, however, require research, planning, and bold advocacy at unprecedented scales.

One key scientific justification for large core reserves is that the architecture of viable regional conservation networks must, in most parts of North America, reflect the needs of keystone species, meaning those species whose influence is out of proportion to their abundance. Stable, functional wildland networks require keystone species, particularly large carnivores, to stabilize

prey and smaller predator populations and to help maintain ecological diversity and resilience in many ecosystems. If large carnivores are essential, then connected landscapes are the most natural and effective way to achieve conservation.

Mounting evidence indicates that top-down regulation is a common and predictable feature of many terrestrial as well as aquatic communities. Numerous empirical studies support the view that predation is a key process that regulates the numbers of both herbivores and "mesapredators" (mid-sized carnivores), and thereby stabilizes the trophic struc-

ture of many terrestrial ecosystems.

In parts of suburban and rural North America, the extirpation of large carnivores appears to have contributed to dramatic changes in mammal and plant populations. In the absence of wolves and cougars, for instance, deer, opossums, raccoons, feral cats, beavers, and other mammals have become notoriously abundant, to the point of becoming nuisances in many areas. In some eastern forests, overbrowsing of acorns and tree seedlings by white-tailed deer is clearly altering the pattern of tree regeneration and threatening some endangered plants.

The resurgence of the sea otter, which preys on sea urchin, has allowed for the recovery of the kelp forests that grazing urchin had stripped from the Pacific coast. PHOTO: PAUL NICKLEN / URSUS PHOTOGRAPHY



SPECIAL REPORT



PHOTO: TERRY A. PARKER / URSUS PHOTOGRAPHY

Maintaining natural linkages between core protected areas conserves the vast habitat needed by keystone species like the grizzly bear.

One of the classic examples of a carnivore-mediated keystone effect has been the recovery of the native sea otter (*Enhydra lutris*) from near-extinction along the Pacific Coast of North America and the otters' subsequent predation of sea urchin populations. In the absence of controls by otters, grazing urchins had stripped kelp forests and turned vast stretches of coastal waters into "urchin barrens." The resurgence of otters reduced urchin numbers and allowed the recovery of kelp forests and their associated invertebrate, fish, and seabird fauna.

Assuming that top-down regulation is a critical ecological phenomenon in many ecosystems, it is essential to define the conditions that support robust populations of large top carnivores. Big and secure areas are obviously necessary but are not sufficient. Indeed, isolated core areas, regardless of their size, are rarely, if ever, big enough to provide for the long-term demographic and genetic viability of these animals. Therefore, a vital element of region-based conservation programs is the maintenance or restoration of the population dynamics, interchange, and migrations com-

mon to the natural, pre-agricultural, and pre-industrial landscape.

The restoration of historical disturbance regimes across landscapes is also essential. Because many abiotic forces, including hurricanes and wildfires, are uncontrollable, wildlands networks must be large enough and appropriately configured to assure that no single disturbance event can eliminate most of a certain habitat type, such as old-growth forest. No such disturbance must be allowed to prevent recolonization of sites from which particular species have been extirpated or permanently perturb interactions among trophic levels.

Although it has proven difficult to demonstrate rigorously that any specific small-scale landscape linkage increases the movement of target animal species, the evidence suggests that, overall, promoting the movement of individuals between habitat fragments can increase the persistence of populations and local survival of species. Species differ in how they "see" and use a degraded or fragmented landscape. Consequently, solutions for connectivity must differ with the setting and the species. When designing landscape linkages, therefore, a cru-

cial first step is identifying which species the linkage is intended to benefit.

In many regions, reconnecting isolated core protected areas may be necessary just to achieve the bigness required to maintain ecological diversity and resilience. On a larger scale, inter-regional linkages, such as those envisioned by the Yellowstone to Yukon project (Yellowstone to Yukon Conservation Initiative 1998), are also needed. These linkages accommodate gene flow and dispersal of grizzly bears (*Ursus arctos*) and other wide-ranging species between the northern Rocky Mountains in the United States and northern Canada.

One of the more controversial tenets of regional conservation programs is that most core areas will require restoration of some kind, and some will require active management in perpetuity. Although restoration needs will vary from one region to the next, three key factors must be addressed in all restoration efforts: control of invasive exotic species, re-introduction or recovery of native species, and provision for the reestablishment of natural processes and disturbances. Many lands in North America have been so poorly managed for so long that it will take decades or longer to achieve a system of protected areas in which natural fire regimes, water flows, predator-prey interactions, and other ecological processes prevail. But without the restoration of natural conditions over large areas, achieving full or effective protection for biodiversity will not be possible.

The ideas summarized here owe much to the perspectives of the 30 biologists who participated in a Wildlands Project Science Workshop, which was held November 20-23 1997 in Tucson, Arizona, under the sponsorship of The Wildlands Project.

Michael E. Soulé [soule@co.tds.net] is Science Director for The Wildlands Project and is Professor Emeritus of Environmental Studies at the University of California, Santa Cruz. John Terborgh is a professor at the Center for Tropical Conservation [manu@acpub.duke.edu] at Duke University.

RECOVERY WATCH

Communities conserve “habitat connections”

BY JEAN LANGLOIS

Landowners and conservationists are cooperating to create a cross-border network of wildlife habitat between Algonquin Provincial Park in Ontario and Adirondack Park in New York State, two of the largest and oldest parks in eastern North America.

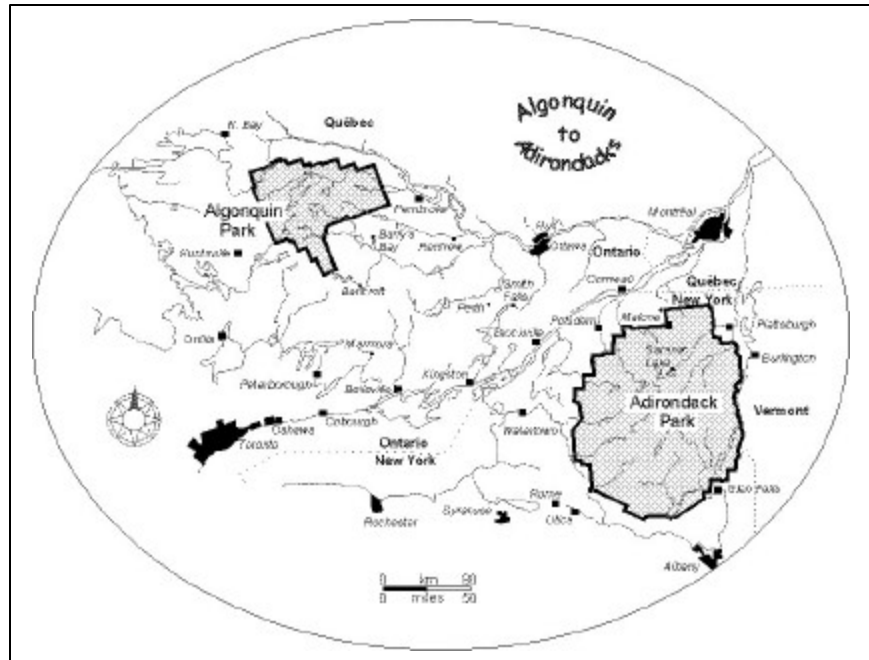
Called the “Algonquin to Adirondacks” (AtoA) initiative, landowners are setting aside land to connect these ‘core protected areas,’ which harbour important populations of both rare and common native species. For many of these species, particularly large mammals such as wolves that move along the north-south axis between the parks, maintaining this link is crucial for long-term survival (see Special Report p.4).

The Ottawa Valley chapter of the Canadian Parks and Wilderness Society (CPAWS-OV), which proposed the AtoA initiative in the early 1990s, considers the region ideal. Unlike the narrowing links further west in the Great Lakes system (i.e., at the junctions of Lake Ontario and Lake Erie, and of Lake Erie and Lake Huron), the Algonquin to Adirondacks range still provides a functional ecological link.

Centred on the rugged country of the Frontenac Axis, the region is characterized by high forest and wetland cover and relatively low human population and road densities. A satellite image shows that the area has the most tree cover in southern Ontario or upper New York State. Plus, the 1000 islands in the St. Lawrence River offer stepping stones for animals crossing the Seaway.

The broad range of organizations and individuals involved in the AtoA initiative jointly developed six operating principles, which follow in an abbreviated form:

- A Landscape Perspective: since management of the land around the parks influences the conservation value of the parks themselves, landowners can manage the land to maintain the integrity of the landscape as a whole;
- Stewardship: stewardship is caring for the land, and making choices about how to manage a property so as to maintain the land’s desired characteristics;
- Cooperation: scientists and landowners



Landowners and conservationists are creating a cross-border network of wildlife habitat between Algonquin Provincial Park in Ontario and Adirondack Park in New York State. Map by Ken Buchan.

must work together to combine conservation biology with the needs of the people living on the land;

- Not bound by borders: maintaining ecological integrity throughout the Algonquin to Adirondacks region requires that people transcend political boundaries;
- Flexibility: partners in the AtoA effort must acknowledge that they will have to learn as they go and be flexible in their planning;
- Long term change: achieving sustainable communities while maintaining healthy natural habitat is a long-term process, and achieving the AtoA vision will require many incremental changes.

In the area between these parks, development pressures are increasing as people move out from the major centres of Toronto and Montreal and as regional centres such as Kingston and Brockville grow. Two thirds of the region is private property, so voluntary private land stewardship

is the cornerstone of AtoA. Individual landowners are leading the way, looking at their property from a whole new perspective, talking among neighbours, and each playing a crucial role as part of the bigger picture.

This huge habitat connection will best be maintained, not by government policy or imposed regulation, but by the voluntary actions of thousands of individual landowners. Their new vision of landscape conservation is based on the shared belief that the cumulative effect of thousands of individual actions will keep this link alive throughout this century and into the future.

Jean Langlois [langlois@cyberus.ca] is executive director of the Ottawa Valley/Ontario chapter of the Canadian Parks and Wilderness Society and the Algonquin to Adirondacks coordinator. Those who desire more information can visit the web site [www.AtoA.org].

COSEWIC Update

Aboriginal knowledge to improve process

BY SARA GOULET

The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) is improving the assessment of species at risk in Canada by incorporating Aboriginal Traditional Knowledge into the process. Accurate assessments of species at risk are of particular importance under the proposed Species at Risk Act (SARA). Under the Act, resources for creating recovery and management plans would focus on species listed by COSEWIC as threatened or endangered.

Aboriginal Traditional Knowledge (ATK), or as it is also referred to Traditional Ecological Knowledge, is the knowledge base of the indigenous peoples of Canada who depend on the land for their long-term survival. Through observation and experimentation, holders of ATK continue to develop a dynamic

and innovative knowledge base of the land, the environment and the species within it.

A special task force has been established to design a process to bridge the gap between western and indigenous science, thereby making ATK available for incorporation into the functions of COSEWIC. The information and knowledge on species at risk obtained through ATK is not available in published materials. Thus it cannot simply be added to the current assessment procedures.

Bridging this gap is a necessary step in incorporating ATK effectively. Both the western and indigenous processes derive results through observation and experimentation, but use different means by which to interpret and record them. For example, academia trains western scientists to interpret results according to set standards in a written form, facilitating

communication and understanding within the academic community. In the same way, holders of ATK use different methods to interpret results for presentation to their community in an oral form. In addition, this interpretation is formulated in a broader context and takes into account associated spiritual beliefs.

Henry Lickers of the Environment Department for the Mohawk Council of Akwesasne, is heading up the task force. The COSEWIC Secretariat has also hired a coordinator on Aboriginal Traditional Knowledge to support and further the efforts of this group.

Sara Goulet is the Coordinator of Aboriginal Traditional Knowledge for the COSEWIC Secretariat at Canadian Wildlife Service headquarters in Hull, Quebec.

CITES Update

Criteria under review: Experts to consider recommendations this winter

BY BERTRAND VON ARX

The international body that regulates trade in endangered species has launched a review of its listing criteria.

The Conference of the Parties of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) has made plans to review the criteria for listing species at its latest meeting, held in Nairobi last April.

Species are listed under CITES in one of three Appendices, each of which imposes different levels of controls on imports and/or exports depending on the sustainability of the trade of the endangered species. Appendix I, which includes all species threatened with extinction and affected by trade, has the most stringent restrictions.

The current biological criteria for Appendix I include:

- small wild population;
- restricted area of distribution;
- declining individuals in the wild.

A species is listed in Appendix II if, although not necessarily now threatened with extinction, it may become so unless trade in specimens of such a species is subject to strict regulation.

A group of experts met this summer in Canberra, Australia to review the criteria. The group's aim is to review the scientific validity of the criteria, and to propose improvements where necessary. A report of this first meeting is available on the CITES web site [www.cites.org] for consultation (see notification 2000/51). The group welcomes comments.

In December of 2000, two CITES technical committees will meet in West Vir-

ginia, U.S.A. to consider the group's recommendations. The meeting will offer a forum for all those involved with CITES to express an opinion, including management and scientific authorities, enforcement agencies, conservation groups, and industry representatives.

Many other consultation rounds will be held, leading to a final report to be submitted at the next meeting of the Conference of the Parties in 2002.

Botanist Bertrand von Arx is Vice-Chairman, CITES Plants Committee, North American Region Representative, Scientific Authority for Plants, Canada and resides in Lumby, B.C. [vonarx@junction.net].

FEATURED SPECIES

Tracking the world's largest reptile

BY KATHLEEN MARTIN

In August 1997, several fishers and visitors to the mouth of Nova Scotia's Shelburne harbour witnessed the congregation of a dozen or more seemingly prehistoric creatures. Some of them hung, as large as beds, at the surface of the sea in the sunlight, their great ridged backs barely breaking the water's surface. The blunt heads of others poked out of the water like dark buoys or seals.

Many people correctly identified the animals as leatherback turtles (*Dermochelys coriacea*). However, reports of the animal's numbers seemed inflated—tall tales inspired by the world's largest reptile. Many leatherback turtles occurring in a small area for purposes other than nesting is highly unusual. It seemed unlikely that so many would be in Nova Scotia, where there were only 73 extant leatherback records.

But data collected in 1998 by a grassroots group now based at Dalhousie University, called the Nova Scotia Leatherback Turtle Working Group (LTWG), proved that the reports were not only possible, but were certainly true. The LTWG is a collaborative marine turtle research and conservation group involving commercial fishers and scientists. That summer, with the help of fishers and tour boat operators, graduate student and LTWG coordinator, Mike James, collected more than 170 geo-referenced sightings of leatherback turtles in waters off Nova Scotia. This research established the turtle as a regular visitor to Canadian waters.

The leatherback's presence in the North Atlantic holds a two-fold fascination for biologists. First, the species itself,

which has existed virtually unchanged for more than 100 million years, eludes science on many basic questions, including how quickly leatherbacks mature, where they mate, and their habitat needs.

Unlike all other marine turtles, the leatherback, which can grow to almost two metres in length and weigh more than one thousand pounds, does not have a hard shell, scales, or claws. Instead, its teardrop-shaped carapace is covered with a thick, oily, inky-blue skin, and is defined by the seven ridges that run its length.

The leatherback returns to land after its birth only to nest on tropical beaches. Male leatherbacks never return to land. The leatherback undertakes long migrations across entire ocean basins in search of jellyfish, its principal prey. As a result, it is a difficult species to study outside of the nesting beach context. Study of what the leatherback does at sea, however, is crucial to its recovery. Scientists believe that better knowledge of the turtle's migration patterns might have reversed the fortunes of the leatherback population in the Pa-



PHOTO: RACKER/COTTER/LTWG

By tracking the leatherback turtle, scientists hope to learn more about the world's largest reptile.

cific, which now faces imminent extirpation.

In 1981, the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) listed the turtle as endangered in the Canadian waters of the Atlantic and Pacific oceans. Thus, research done by the LTWG on turtles in Canadian waters, where threats include marine pollution and incidental capture in fisheries, is as crucial as it is fascinating. In September of 1999, James and LTWG fishers became the first in the world to satellite tag a leatherback turtle at sea, and the first to ever satellite tag a male leatherback. The tagged turtle gave scientists their initial insight into the movements of leatherbacks in Canadian waters.

In August of 2000, James and the LTWG team became the first in the world to satellite tag a female turtle at sea. The information obtained from her movements will add more shape to the puzzle of where the turtles go in the Northwest Atlantic, and when and where they are at risk. These turtles and others that the LTWG will tag in the future will hopefully provide the information necessary to ensure that the population devastation that occurred in the Pacific is not echoed in the Atlantic.

Kathleen Martin is the communications director for the Nova Scotia Leatherback Turtle Working Group. For information, visit the LTWG web site [www.seaturtle.ca].

Space for species

The leatherback turtle work of Mike James and the LTWG is one of four projects featured in *Space for Species*, an educational program for students in grades 6 to 9. Developed by the Canadian Space Agency, the Canadian Wildlife Service and the Canadian Wildlife Federation, this space-trekking, species-tracking program brings science and technology to life in the classroom. For more information, please call toll free: 1-800-563-WILD, or email: info@cwf-fcf.org.