INTERNATIONAL WOLF

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SUMMER 2003

INTERNATIONAL WOLF

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Features

Inf'l Snow Leopard Trust © The Nature Conservancy

Les Loups de Gevaudan, Steve Grooms

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International Wolf welcomes submissions of personal adventures with wolves and wolf photographs (especially black and white). Prior to submission of other types of manuscripts, address queries to Mary Ortiz, publications director.

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PHOTOS: Unless otherwise noted, or obvious from the caption or article text, photos are of captive wolves.

As A Matter Of Fact

What is the largest prey consistently eaten by wolves in North America that is *not* an ungulate (a hoofed mammal such as a deer, moose, caribou etc.)?

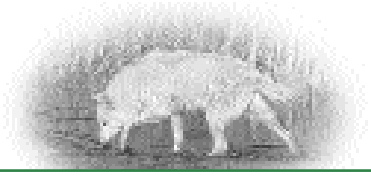
Jerry Murray

Beaver. The beaver, a large rodent, is an important food source for wolves in some areas. To catch a beaver, a wolf must find one that has traveled away from water, as beavers are much better swimmers than wolves! This means catching a beaver on land while it is looking for food, or catching one after it comes up through cracks in the ice in the spring and wanders too far from this hole. ■

New Question

Is the maned wolf really a wolf?

West Gate



From the Executive Director

Ely Center Celebrates Ten Years and Making Tracks

In June we will celebrate an important milestone for the International Wolf Center: 10 years ago the doors opened to our museum and education facility in northern Minnesota—the heart of wolf country in the lower 48. The opening marked a dream come true for board members, staff and volunteers who had labored long and hard to get to this exciting point. During the opening, hundreds of people toured the building, including then Governor Arnie Carlson, regional elected officials, other state and federal representatives and media members from near and far.

Walter Medwid

The buzz that surrounded the opening was tangible evidence of the public's fascination with the wolf. But the fact that the Center was located in a part of the state not generally characterized as pro-wolf added a curious element to the festivities. As the date approached, rumors surfaced that no one would visit the Center after the opening. An especially interesting rumor was that the Center would push to erect a 10-mile-long fence around Ely. What we were fencing in or out was never made clear.

Since June 1993 over a half million visitors have walked through the doors of the Center. They toured the *Wolves and Humans* exhibit, observed our resident pack of wolves, and participated in the many programs and field trips held throughout the year. Hundreds of thousands of visitors participated in our "meet the wolf" programs, where they handled wolf and prey artifacts, had a chance to ask that burning question about wolves, and were introduced to our resident pack. Thousands of children have climbed our bronze, life-sized wolf sculptures and in so doing have connected with wolves in a tangible way.

As we focused on teaching about the wolf, other benefits of the Center's presence became evident. In 1996 an economic impact analysis indicated that the Center generated over $3 million *annually* to the local and regional economies. Media coverage of the Center, especially in the Midwest, put Ely "on the map" for vacationers looking for new adventures and a unique learning experience. The Center also became a model that inspired visitors from around the world to explore whether a similar facility could provide educational and economic benefits in their own wolf country. The latest enquiry was from Romania.

The driving force behind the creation of the Center was Dave Mech, whose vision, passion and drive during many ups and downs kept the dream on track. His founding of the Center adds to his remarkable list of accomplishments and illustrates that one person can make a difference in the world. Complementing Dave's efforts were those of Nancy Gibson, whose passion for conservation and talent for fund-raising made the Center a reality.

The 10th anniversary of our education facility is a time to acknowledge the key partnership with you, the members of the International Wolf Center. Without your membership, your faithful renewals and your donations we could not celebrate this milestone and more importantly our work on behalf of wolves. ■

Laying the Foundations for Protecting Large Predators in China

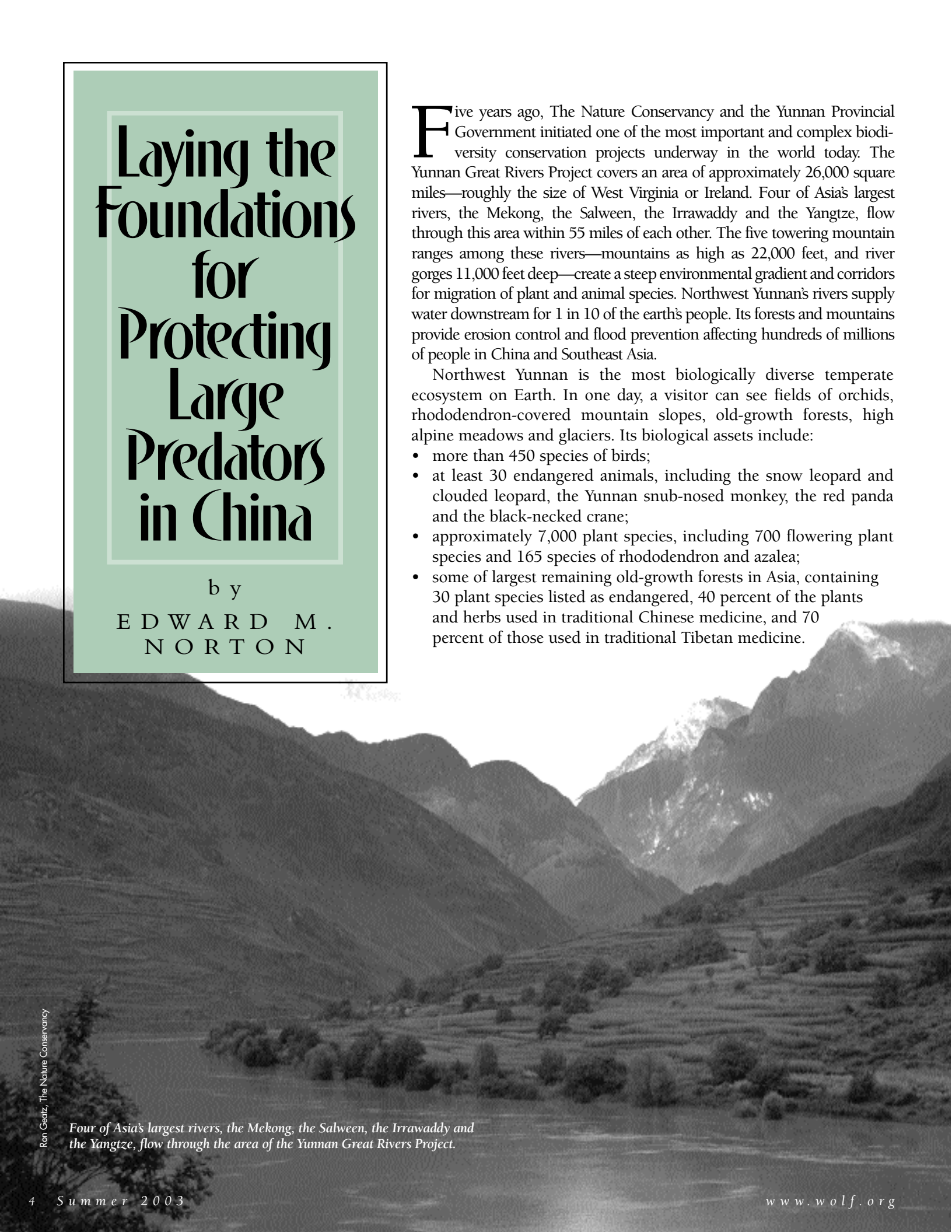
by

EDWARD M. NORTON

Five years ago, The Nature Conservancy and the Yunnan Provincial Government initiated one of the most important and complex biodiversity conservation projects underway in the world today. The Yunnan Great Rivers Project covers an area of approximately 26,000 square miles—roughly the size of West Virginia or Ireland. Four of Asia's largest rivers, the Mekong, the Salween, the Irrawaddy and the Yangtze, flow through this area within 55 miles of each other. The five towering mountain ranges among these rivers—mountains as high as 22,000 feet, and river gorges 11,000 feet deep—create a steep environmental gradient and corridors for migration of plant and animal species. Northwest Yunnan's rivers supply water downstream for 1 in 10 of the earth's people. Its forests and mountains provide erosion control and flood prevention affecting hundreds of millions of people in China and Southeast Asia.

Northwest Yunnan is the most biologically diverse temperate ecosystem on Earth. In one day, a visitor can see fields of orchids, rhododendron-covered mountain slopes, old-growth forests, high alpine meadows and glaciers. Its biological assets include:

- more than 450 species of birds;
- at least 30 endangered animals, including the snow leopard and clouded leopard, the Yunnan snub-nosed monkey, the red panda and the black-necked crane;
- approximately 7,000 plant species, including 700 flowering plant species and 165 species of rhododendron and azalea;
- some of largest remaining old-growth forests in Asia, containing 30 plant species listed as endangered, 40 percent of the plants and herbs used in traditional Chinese medicine, and 70 percent of those used in traditional Tibetan medicine.



Ron Gedz, The Nature Conservancy

Four of Asia's largest rivers, the Mekong, the Salween, the Irrawaddy and the Yangtze, flow through the area of the Yunnan Great Rivers Project.

The Northwest Yunnan Eco-regional Plan

Over the long term, the Chinese government plans to create 3.48 million acres of new nature reserves in northwest Yunnan. Nationwide, it seeks to protect roughly 12 percent of China's land area. China's leaders sought the partnership with the Conservancy—the first of its kind between an American nonprofit conservation organization and the Chinese government—largely because of the Conservancy's 50 years of experience designing and managing nature reserves.

The Conservancy's first step was to assess biodiversity priorities in northwest Yunnan, incorporating knowledge from local research institutes, rapid on-site ecological assessment, and GIS remote-sensing data. With this database and basic map of the area's biodiversity, we then began applying for nature reserve designation. At the same time, we also identified and developed conservation strategies to address the most serious threats to biodiversity, which are:

- overcollection of wood for cooking, heating and small commercial enterprises;
- timber harvesting for construction materials;
- unplanned and unmanaged tourism development, including environmentally destructive, costly and inefficient infrastructure development;
- unsustainable harvesting of wild plants and animals; and
- overgrazing.

In America, the Conservancy would address these threats by acquiring and managing land. For example, in Wyoming, the Conservancy has acquired large ranches that provide habitat for both large predators and prey. However, that strategy is not available in China. Thus, the Conservancy works with local people and the government across a spectrum of activities: nature reserve designation and protected area management, community engagement and education, poverty reduction, and local and national policies.

Approximately 3.1 million people live in the Yunnan Great Rivers Project area. Every existing and proposed Chinese nature reserve has large numbers of people living within the boundaries and immediately adjacent to it. Land within nature reserves has been intensively used for hundreds of years for grazing, fuel wood collection, timber for local housing construction, hunting, and collection of wild plants. Local communities retain "community forest" rights in proposed nature reserves.

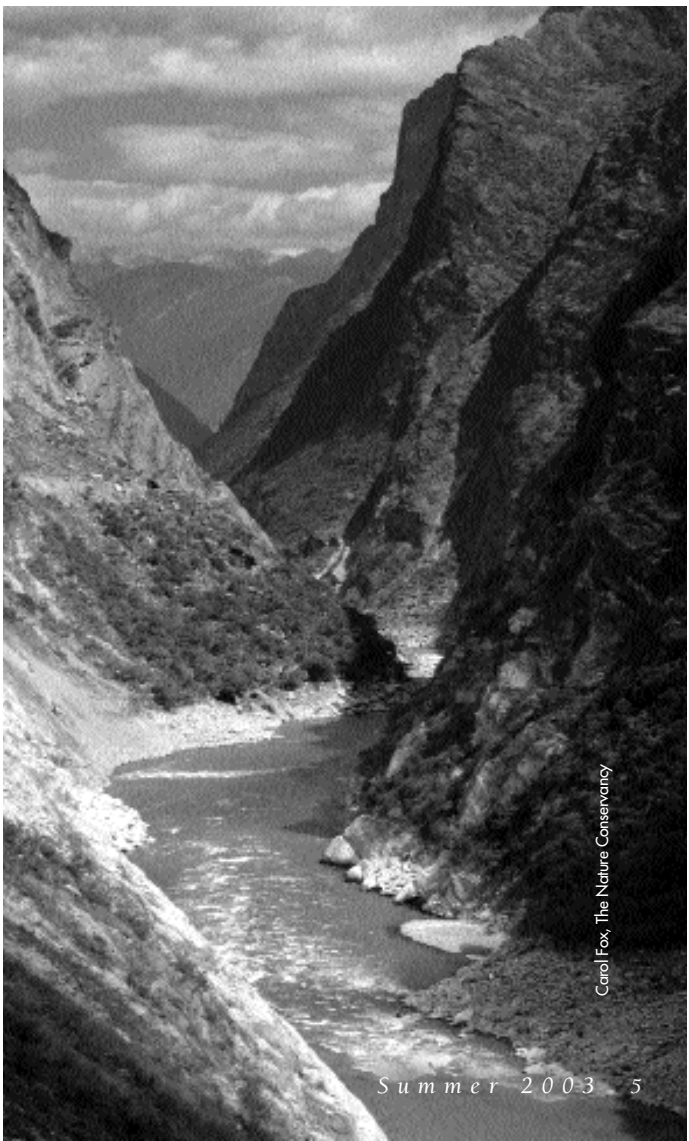
Poverty is the most urgent and fundamental threat to northwest Yunnan's natural and cultural resources. Nearly 500,000 people (16 percent of Yunnan's population) live below China's poverty line, earning less than $80 per year. The poorest people struggle to survive by exploiting the only available resource—the natural world around them.

In a massive effort to alleviate poverty and protect biodiversity in China's western provinces, the Chinese Central Government is investing heavily in tourism, infrastructure, reforestation and watershed protection. Overall, these government initiatives are genuinely interested in combining innovative strategies that benefit both local economies and the environment.

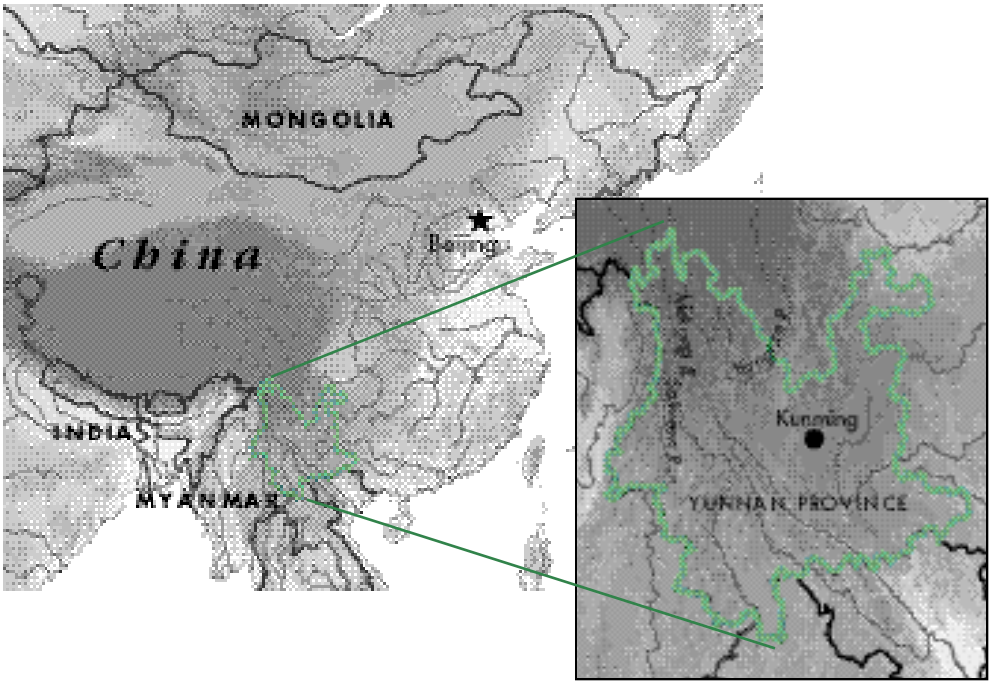
Community Engagement

We have found that schools are important local nodes and provide excellent means of communicating with different sectors of the community. To disseminate alternative energy strategies, we have installed demonstration projects in schools and are initiating an "education for sustainability" program in and around our project sites in northwest Yunnan. Some villagers already have an intuitive sense of the urgent need to reduce the threats to the sustainability of the environment that supports them. The challenge is to help these communities arrive at locally appropriate solutions and to assist them in removing obstacles to change.

The Yunnan Great Rivers Project also gathers information from local communities about their use of natural resources with an innovative project called Photovoice. Villagers photograph subjects of concern to



Carol Fox, The Nature Conservancy



them over the course of a year, explaining their photographic choices to facilitators who record the conversations. In one wetland area called Lashihai, Photovoice helped us establish that villagers were hunting the rare migratory birds in retribution for the birds' depredation of crops. With the local government we were able to develop a compensation system for this depredation, thus protecting the birds.

Protected Area Management

Improving protected area management by integrating scientific knowledge, policy on various levels and foreign experience is a fundamental step in protecting habitat for large predators, and to make this management effective, large predators such as wolves and leopards need to be studied. The Conservancy has already partnered with organizations that target specific species, such as the International Snow Leopard Trust (ISLT), and is seeking more partnerships with organizations that have expertise in studying, protecting and managing animals such as the wolf.

The Conservancy and the Chinese government's partnership with the ISLT is a model for work that could be done with groups knowledgeable about other large predators, such as wolves, bears, and clouded and spotted leopards. In June 2002 representatives from the ISLT came to northwest Yunnan to determine the status of snow leopards in the area and train local villagers and nature reserve workers to detect the leopards and record information. One of the bene-fits of working with an organization that targets a specific species is its data: ISLT has set up a Snow Leopard Information Management System (SLIMS) that consists of a systematic set of field methodologies for assessing snow leopard and prey abundance, and a relational database for storing and analyzing both the survey data and information on protected areas within snow leopard range. This allows for rangewide comparison and sharing of information.

The report of the ISLT's first season of fieldwork in northwest Yunnan demonstrates the complex relationships and the challenges of managing nature reserves to protect large predators:

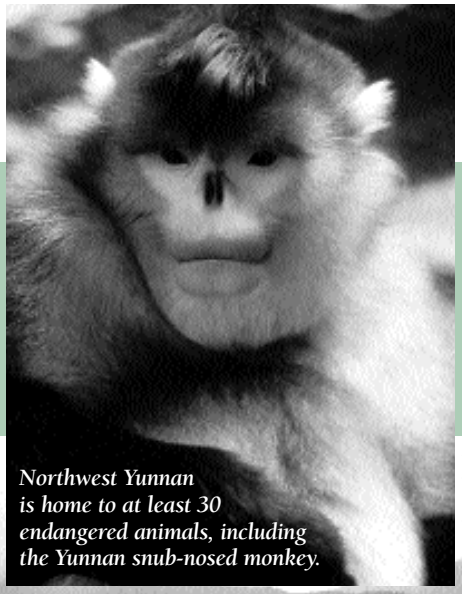
> The Meili Snow Mountains are of global importance for biodiversity. Tibetan and other ethnic minorities have been successful stewards of this diversity for millennia. However, large carnivores, in general, and leopards, in particular, have long been hunted for their skins, for use in Tibetan medicines, and as retribution for depredation on livestock. In China, this hunting pressure became particularly intense during the 1950's through the 1970's. Consequently, snow leopards are now very rare and anecdotal evidence suggests that current population levels are critically low. . . .
>
> There was consensus that leopards (either species) were less common than they used to be. Several mentioned that this might be due to the recent influx of wolves within the past 4-5 years. Some mentioned that the increase in wolf numbers coincided with the construction of bridges across the Lancang (Mekong) river. One interviewee commented that depredation of livestock by leopards used to be more common than by wolves.

What is most striking about this information is how little of it there is. Wolves and other large predators are still illegally hunted in China in retribution for livestock depredation. Because of high population density, livestock are widely dispersed, and land traditionally used for grazing overlaps more with wolf ranges than it does in the United States. In some areas locals are rewarded by their fellow villagers for bringing back dead wolves.

One of the consequences of having relatively densely populated protected areas and nature reserves is that natural resource use by those dependent on those areas is strongly affected by policy and policy enforcement. The Conservancy has made significant efforts to find out how people use natural resources, how threatening those practices are, and what alternatives those people have. The Conservancy's role in policy directly affects wolves in that we influence planning; for example, we encourage development for tourism away from core areas of biodiversity, protecting wolf habitat.

Wolves are still illegally hunted in China in retribution for livestock depredation.

Waverly Traylor



Northwest Yunnan is home to at least 30 endangered animals, including the Yunnan snub-nosed monkey.

Craig Kirkpatrick, The Nature Conservancy

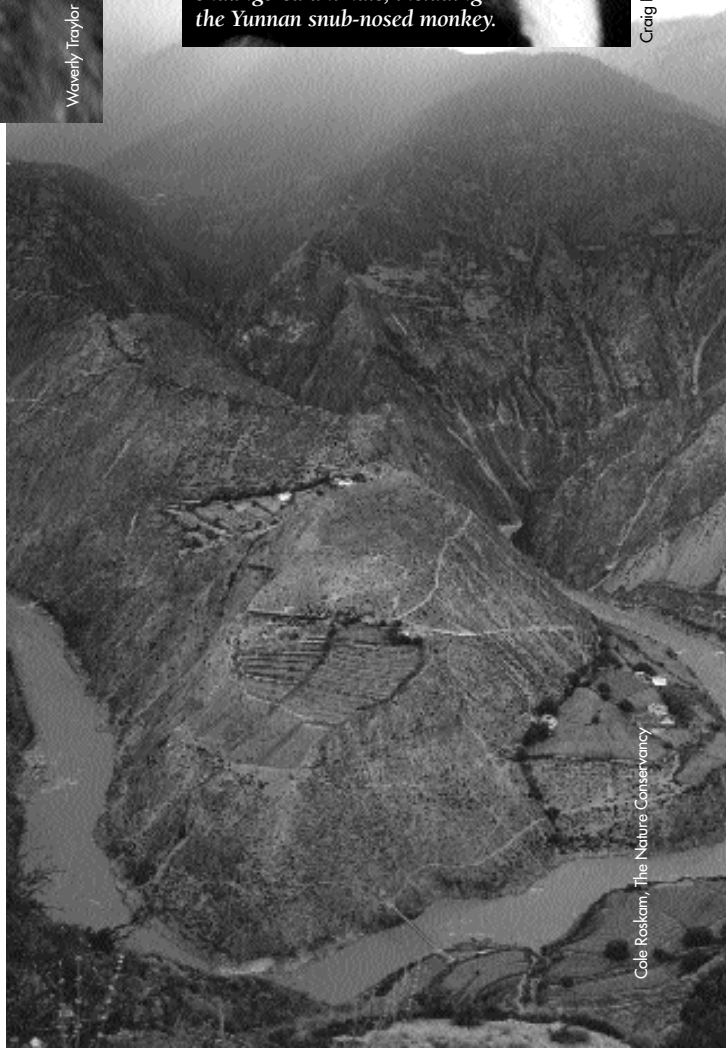
Future Strategies for Protecting Large Predators in China

Large predators have not fared well in recent Chinese history. In 1959, Chairman Mao Tse-tung condemned the tiger as an enemy of man, and government bounties, the growing market in tiger bones, organs and pelts, and loss of habitat decimated the tiger population. Villagers still report an occasional tiger in the Gaoligongshan Range between Myanmar and Yunnan, but those reports are not verified. Similarly, the existence of the snow leopard in northwest Yunnan is doubtful.

Based largely on anecdotal evidence, it appears that a ban on hunting and the confiscation of guns have resulted in recent increases in the number of wolves and bears. However, the Chinese governmental agencies for wildlife and resource management and the Chinese Academy of Sciences devote virtually no research to the study of large predators and their habitat and of measures necessary to protect these animals.

On the brighter side, the Chinese government at all levels is increasingly focused on protecting and managing large areas of land for biodiversity and ecological services and on large-scale restoration projects for areas that have been deforested. Also, both the government and the general population are beginning to exhibit a rising environmental consciousness. To date, the beneficiaries of this change in attitude have been species such as the Tibetan antelope and the Yunnan snub-nosed monkey, and not large predators.

Wolves, of course, are resourceful, resilient and adaptable animals. With the ban on hunting, the establishment of a system of large, intact protected areas, education and public acceptance of places where natural processes predominate, the chances for the survival of wolves in China are excellent. ■



Cole Roskam, The Nature Conservancy

Moon Gorge, Lancang River. Land within existing and proposed nature reserves has been intensively used for hundreds of years.

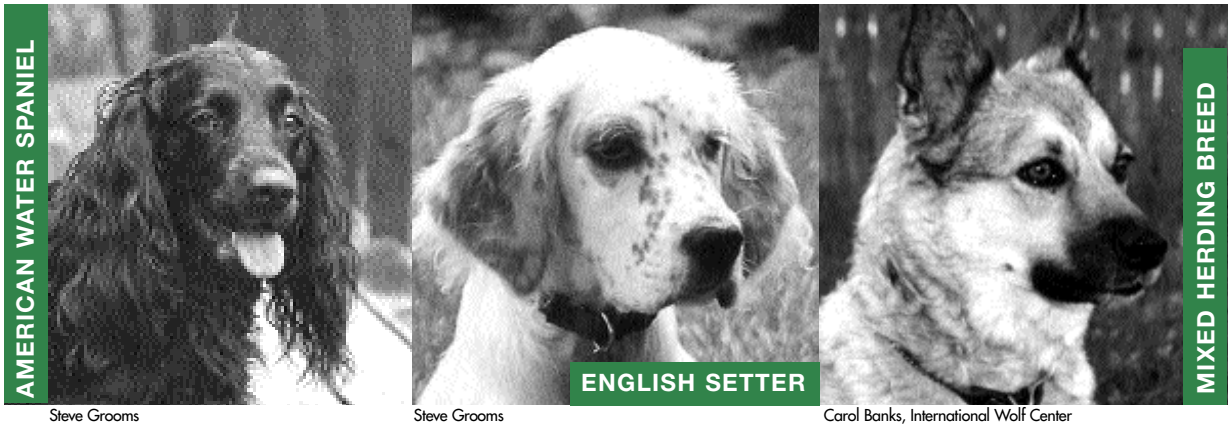
Edward M. Norton is the Senior Advisor to The Nature Conservancy's China Program and the Yunnan Great Rivers Project in Yunnan Province, China. During two decades of work as an advocate for protection of the natural environment and historic and cultural resources, he held positions with the National Trust for Historic Preservation and The Wilderness Society, and was the Founding President of the Grand Canyon Trust, and the Founding Chairman of the Board of Directors of The Rails-To-Trails Conservancy. He is the co-author of Reclaiming Our Heritage: What We Need to Do to Preserve America's National Parks.

The Mysterious Origins of

by STEVE GROOMS

One of the most important events in human history took place so long ago that we will probably never know exactly what happened. Somewhere, somehow, a group of early humans tamed the wolf. Life for humans and this tamed wolf—whose descendants we call dogs—has not been the same for either species since they began traveling together.

Nobody involved with that first domestication left any written records of it, yet the topic is so intriguing that scientists have worked hard to understand it. Historically, the most productive way to study the wolf-to-dog transformation has been examination of archaeological evidence, such as old bones. For example, in Israel 12,000 years ago a woman was buried with a puppy in her hands. That tells us something about what sort of dog lived then, and the woman's embrace of the puppy says much about how people and dogs related. However, archaeological analysis is limited by the incomplete nature of the evidence. Researchers know much about the ancient remains that have been discovered. What nobody can know is what potentially crucial archaeological finds still lie hidden in the ground.



Steve Grooms | Steve Grooms | Carol Banks, International Wolf Center

Much recent research is based on DNA analyses. DNA studies give researchers precise information about the relationships of animals. Because scientists know the rate at which genetic variations occur, DNA analysis can estimate the ways an animal evolved over time.

A recent issue of the journal *Science* (Nov. 22, 2002) presented three articles with new insights on old mysteries about the early evolution of dogs.

East Asia and the Original Dog

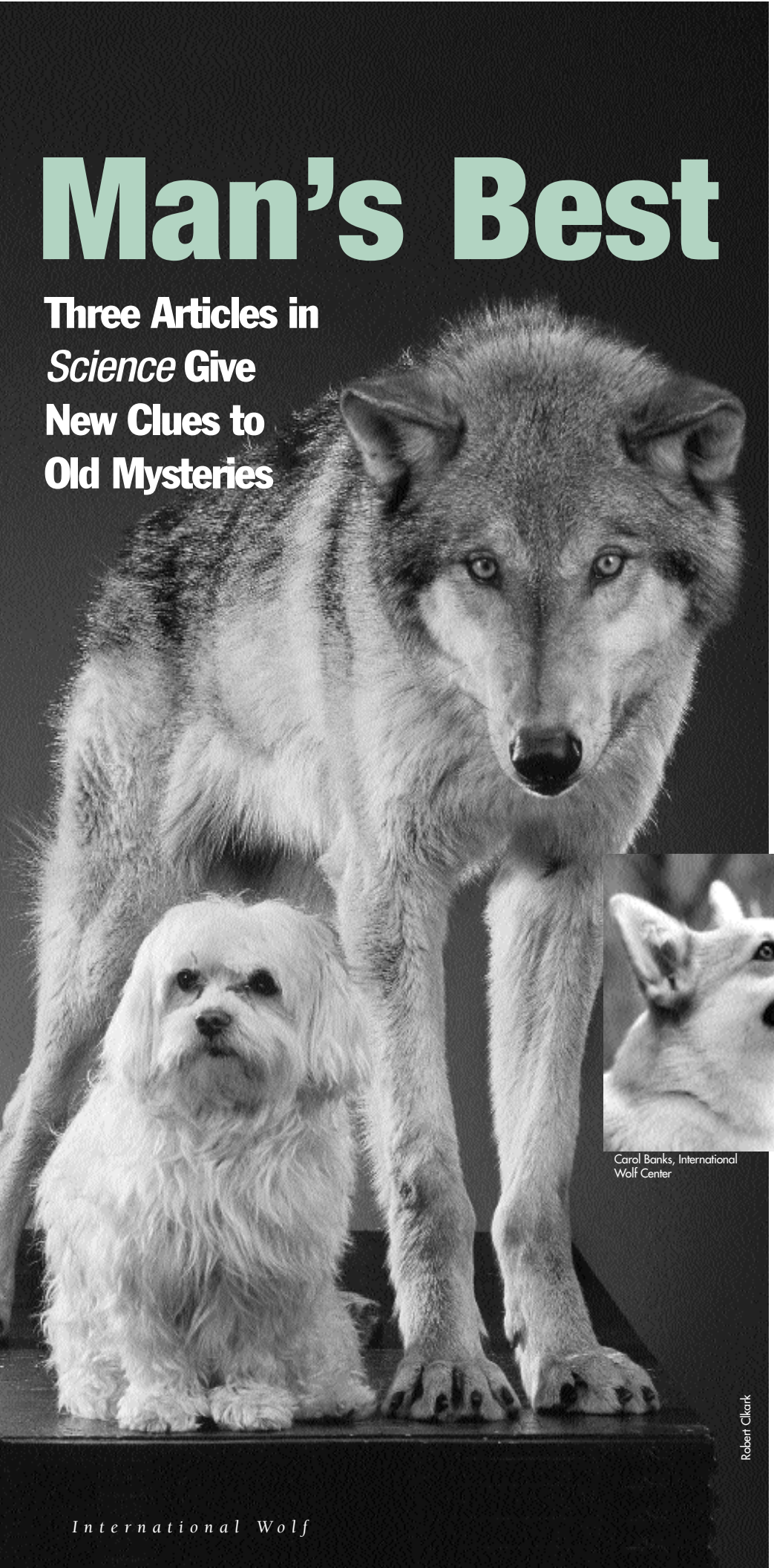
The first of the three *Science* studies addresses an old controversy about where dogs originally evolved. Archaeological finds have been used to argue variously that the earliest wolf-to-dog transformation took place in Europe, in Southwest Asia or in East Asia. Some researchers even hypothesize that dogs evolved in more than one location at different times. To explore these issues, Peter Savolainen of Stockholm's Royal Institute of Technology led a study of the DNA of 688 dogs from around the world.

Based on the great commonality of genetic material from these dogs, Savolainen and his colleagues concluded that all dogs descended from a single source. It was apparently not a common event for wolves to be tamed and bred in various locations in ancient times. This study suggests instead that one dramatic breakthrough created dogs, and all dogs today derive from that single original gene pool.

Where did that original domestication of wolves take place? Dogs from China show greater genetic variation than other dogs. That suggests dogs have existed in East Asia longer than anywhere else, for it takes time for genetic variation to appear.

Man's Best Friend

Three Articles in *Science* Give New Clues to Old Mysteries



Robert Clkark

Because scientists know how frequently DNA mutations occur, they can study the changes observed in early dogs and then project how long a span of history would be needed for those changes to appear. This analysis suggests all dogs developed from a single domestication of Chinese wolves approximately 15,000 years ago. This theory is further supported by the fact that Chinese wolves have certain features in their jaws that are not found in wolves from other regions, and these features are present in the jaws of dogs.

Origins of New World Dogs

A study headed by Jennifer Leonard at the Smithsonian's National Museum of Natural History explored the origins of New World dogs (the dogs of North, Central and South America). Leonard and her associates collected the remains of New World dogs that lived before the 15th century. That's when Europeans began bringing dogs to the New World, mixing the genes of those dogs with those of the dogs already here.

Carol Banks, International Wolf Center

Mary Austin

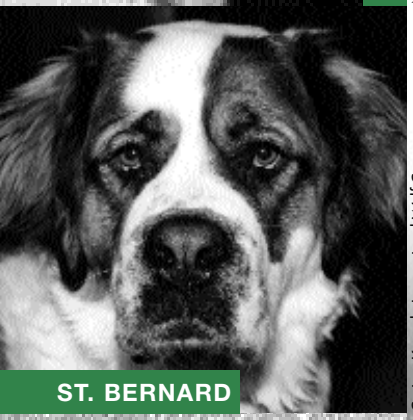
Where did the New World dogs come from? Since North America had its own early wolves, it is

GOLDEN RETRIEVER

George Knotek, International Wolf Center

AUSTRALIAN SHEPHERD

Mary Ortiz, International Wolf Center



ST. BERNARD

Carissa Knaack, International Wolf Center

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possible that early humans in the New World domesticated American wolves to produce the earliest New World dogs. But that is not what the DNA seems to show. By comparing the DNA of early New World dogs to the genes of wolves from both the New and Old Worlds, researchers found that New World dogs had most in common with gray wolves of the Old World. The dogs of the New World were not locally produced. They came with the late Pleistocene humans who migrated across the Bering land bridge 12,000 to 14,000 years ago. Leonard's work reinforces Savolainen's by pointing to the Old World as the source of all dogs.

By the time humans walked into the New World they had already developed a wide variety of dog types. Evidence suggests there was a robust and widespread network of trade in Paleolithic times that made it possible for early dogs to be spread rapidly across Asia and Europe and eventually to the New World.

Further analysis shows that New World dogs developed a unique DNA pattern, but that pattern later disappeared. That suggests New World dogs must have enjoyed a period of isolation when they could generate a unique genetic pattern. Its later disappearance suggests that Europeans suppressed the breeding of New World dogs in favor of the dogs they brought here.

This DNA analysis suggests all dogs developed from a single domestication of Chinese wolves approximately 15,000 years ago.

Evolution of Social Cooperation

The third study dealt with the impact of domestication and selective breeding on the ability of dogs to cooperate with humans. Brian Hare of Harvard and his colleagues ran an intelligence test on dogs, wolves and chimpanzees. The animals were challenged to find food hidden under one of several boxes. Based on general intelligence, chimps should have performed best on this test, and dogs the worst.

Hare's test had an additional element. A human assistant tried to show the test animals where the food was hidden by tapping that box, pointing to it or merely gazing at it. Remarkably, dogs were best at finding the hidden food when they had human assistance, beating both chimps and wolves.

Why? Chimps and wolves, smart as they are, lack something dogs have. Dogs have a particular skill that enables them to use subtle cues from humans, cues that are lost on chimps and wolves. Variations on the experiment proved that this ability is not acquired through learning but is an inherited quality of dogs. Selective breeding during the domestication process bestowed upon dogs an innate ability to work cooperatively with humans.

There is probably not a more important or unusual cross-species relationship than the remarkable partnership between humans and dogs. Dogs were the first species to be domesticated and the single species most heavily influenced by human needs and preferences. Science has much more to learn about the fascinating process by which humans transformed wolves into today's dogs. ■

Steve Grooms has been writing about wolf management since 1976. He is the author of the book The Return of the Wolf, *and serves on* International Wolf *magazine's advisory committee.*

Where the Wild Things Are Now

Isaac Babcock

Most young wolves eventually leave their natal packs in search of their own territory and a mate.

by NINA FASCIONE

"**When Wolves Move In.**" Headline from the *Oregonian*, Nov. 10, 2002

Newspaper headlines can adroitly sum up prevailing public attitudes. Such is the case with wolf recovery in the United States. In late November 2002, a gray wolf known as number 253, born into the Druid Peak pack in Yellowstone National Park's famed Lamar Valley, traveled at least 200 miles to the Logan area of Utah, only 25 miles north of Salt Lake City. Wolf 253 was discovered when a surprised trapper found him in a coyote trap and handed him over to state authorities. The fact that a wolf traveled this distance is not unusual. Most young wolves eventually leave their natal packs in search of their own territory and a mate. The reaction by state and federal wildlife authorities and the general public was also not unusual: the discovery of wolf 253 created much hysteria.

At the request of Utah officials, the U.S. Fish and Wildlife Service transported wolf 253 back to Wyoming and released him in Grand Teton National Park. The public reaction was similarly zealous. Wolf 253's travels elicited no fewer than 40 newspaper articles, letters to the editor, opinion pieces and television and radio reports espousing varied opinions about the first wolf to appear in Utah in approximately 70 years.

The interest in wolf 253 and federal actions did not surprise those familiar with wolf recovery efforts in the United States. A few years ago, a lone female wolf, number B45, traveled from central Idaho into eastern Oregon, the first confirmed wolf in that state in decades. The federal government trapped wolf B45 and took her back to Idaho, though officials stated at the time that they weren't in the wolf moving business.

Translocating wolves can cause problems. In both Oregon and Utah the dispersing wolves may have had mates. A second, smaller set of tracks was found where wolf 253 was trapped, indicating that he may have been paired and starting a pack with a female, who probably remains in Utah. Since wolves form monogamous pairs, separation is disruptive, especially for a dispersing wolf, for whom finding another mate is unlikely. Equally problematic is the possibility of aggression by other wolves wherever the dispersing animal is translocated to. Conservationists challenged the U.S. Fish and Wildlife Service, pointing out that wolf dispersal is a naturally occur-

ring phenomenon and key to wolf recovery in the United States. Indeed, to many the news was reason to rejoice: the road to wolf recovery in the lower 48 states has been a long one.

"**Wolf at the Door.**" Headline from the *Eugene Weekly*, Dec. 5, 2002

America's campaign in the 1800s and early 1900s to eliminate the gray wolf was successful by the standards of the day: fewer than 1,000 of the species were left in the lower 48 states by the 1960s. Since wolves were protected under the federal Endangered Species Act in 1973, wolf populations have rebounded in the Great Lakes region to more than 3,000 wolves in Michigan, Wisconsin and Minnesota. Wolf populations in the Northern Rockies recovered through natural recolonization of Canadian wolves to Montana and a government reintroduction of 66 wolves from Canada to Yellowstone National Park and central Idaho in the winters of 1995 and 1996. Those animals thrived, and biologists estimate there are now 650 or more wolves in Idaho, Wyoming and Montana.

Environmentalists and scientists believe this is good news. Like most living things, wolves play a role in the ecological systems they inhabit, and their return is triggering a series of environmental changes that appear to be restoring a measure of balance. Studies in Yellowstone show that coyotes were reduced by as much as 50 percent in areas where wolves were restored. State officials in Utah may want to take note of this, since there are so many coyotes in Utah that the state is considering a sterilization program to control their populations and potential impact on livestock. Ongoing research in Yellowstone is showing a correlation between wolf recovery and the recovery of key tree species such as aspen and cottonwood, attributed to a change in the foraging behavior of elk since the return of the wolf. Carrion left over from wolf kills is feeding a wide variety of species ranging from grizzly bears to carrion beetles. Most scientists believe that wolves strengthen the overall health of ungulate populations by weeding out the sick and infirm.

"**The Beef with Wolves.**" Headline from *AlterNet*, Jan. 6, 2003

On the other hand, wolves are not a problem-free species. While some fears about wolf recovery can easily be put to rest—wolves pose no real threat to human safety, for example—there are some legitimate concerns for those residing in wolf territory, particularly ranchers. Though livestock depredation has been relatively low, and Defenders of Wildlife maintains a program to reimburse ranchers for livestock lost to wolves, many feel that the challenges posed by wolves outweigh their ecological benefits. Those espousing this view seem to have a firm grip on the state and local legislatures in the West, and their influence is felt. A number of bills have been introduced across the country prohibiting wolf restoration or calling for wolf removal. Though at this stage federal authority supersedes state and local laws, the U.S. Fish and Wildlife Service has

Isaac Babcock

said it will begin the process to remove federal protections for the gray wolf this year. Once this occurs, wolf management will revert to the states. In Idaho, this means wolves will be managed by the same officials who last year passed a resolution calling for "the removal of wolves by whatever means necessary."

Under federal law, Wyoming, Idaho and Montana, the three western states with established wolf populations, are required to have management plans in place prior to federal delisting. States with no official wolf populations are not required to develop management plans, though some are stepping up to the plate anyway. Oregon has just held 15 public meetings around the state to obtain input on wolf recovery issues. The results of these workshops will be submitted to state authorities who will determine the future of wolves in that state. Hopefully the outcome will be a well-balanced management plan. With the arrival of wolf 253, Utah residents are now considering their options and discussing the need for a state wolf plan. A Utah state representative has proposed what he is calling the "Wolf Control Bill," which asks the Service to downlist wolves and revert control to the state. The bill will be debated this legislative session, and like all public discourse on this species, is bound to trigger a lively discussion.

"Problem or Welcome Home."
Headline from the *Medford Mail Tribune*, Dec. 5, 2002

Ultimately, though somewhat surprisingly, wolf 253 rejoined his original pack in Yellowstone. Perhaps this is a sign that no matter what laws we humans create, whether they support wolves or hinder their recovery, nature has a way of asserting its own will. Since November, there are rumors of another wolf that escaped from a trap in the same part of Utah. Last fall, a lone wolf was seen in eastern Washington briefly before it retreated to Idaho. A wolf was shot in Nebraska recently, though authorities are not sure whether it was a dispersing wolf or a released pet. Nonetheless, it appears that the species is fighting the odds and attempting to make a full recovery across the West. With expanses of habitat suitable for wolves in at least seven additional states, all wolves need is the chance to expand unhindered. Given a little tolerance on the part of humans and creative management plans that address the needs of both wolves and people, perhaps in the future there will be no need for attention-grabbing headlines. ■

Nina Fascione is the vice president of species conservation for Defenders of Wildlife and co-author of "Places for Wolves: A Blueprint for Restoration and Long-Term Recovery in the Lower 48 States."

Translocating wolves can cause problems. Since wolves form monogamous pairs, separation is disruptive, especially for a dispersing wolf, for whom finding another mate is unlikely.

Lynn and Donna Rogers, www.bearstudy.org

Ultimately, though somewhat surprisingly, wolf 253 rejoined his original pack in Yellowstone. Perhaps this is a sign that no matter what laws we humans create, whether they support wolves or hinder their recovery, nature has a way of asserting its own will.

Wolves to Wetlands: Nancy Gibson Does It All!

Tina Hildebrandt

Nancy Gibson, member of the International Wolf Center's board of directors, was presented with the 2002 Conservationist of the Year – Citizen Award on February 7, 2003, at the Minnesota's Conservation Awards dinner in St. Paul. This award from the Minnesota Waterfowl Association is "given when merited to recognize an individual, company or organization for their significant efforts and accomplishments, which achieve recognizable impacts for the betterment of Minnesota's wetland habitats, waterfowl and wetland wildlife." Gibson was honored in particular for her role in creating the Legislative Commission on Minnesota Resources' project *Restoring Minnesota's Fish & Wildlife Habitat Corridors*: "You created the initial partnership and provided much of the early vision that gave birth to the corridors project at a magnitude and scale never before seen in our state. Your ongoing support has been critical in the project's development and it is a key factor in the project's success."

And what would the International Wolf Center do without Nancy Gibson? A member of the Center's board of directors since 1987, Nancy poured her energies into obtaining the necessary funds to build the Center from the Minnesota State Legislature and private sources. Ever since the Center's building in Ely opened in 1993, Nancy has continued to secure appropriations and donations for improvements and programs.

Nancy wears several other hats. She is currently a naturalist for NBC affiliate KARE-TV in the Twin Cities, appearing regularly with all kinds of creatures from bats to musk-oxen. For 13 years she was a host for the PBS show "Newton's Apple," for which she won two Emmys. More recently Nancy has spent 12 years chairing the citizens' arm of Minnesota's Environmental Trust Fund. In that capacity, she has helped prioritize expenditures of millions of dollars each year for environmental needs. Amid these activities she found time to write her book *Wolves*, published in 1996.

However, Nancy feels most at home in the outdoors. Her travels have taken her to areas where she communed with gorillas and lived with arctic wolves. What she seems to enjoy most is guiding Center field trips each year to Yellowstone National Park and Canada's Northwest Territories to show other people wolves and help interpret wolf behavior and ecology.

How I Spent My Summer Vacation Learning about Wolves

Last summer I took a huge step forward. I drove two hours north from my home in Superior, Wisconsin, to Ely, Minnesota, for the Captive Wolf Management course at the International Wolf Center. This was my first real adventure in the vast and glorious wilderness world that was right in my own backyard.

Perhaps I thought the course was going to be a vacation. It is true that I never once thought about world politics, work or my daily routine. But it was more than a holiday. The course transported me to a timeless place vaster and more ancient than human civilization. I was truly humbled by the magnificent and awe-inspiring wilderness and the beautiful creatures that live within that world, particularly the wolf.

Wolves have been much maligned as dangerous animals known for their predatory behavior, yet through close observation I saw the social behavior that helps maintain the pack structure. It's this canid social behavior that makes the dog a person's best friend. We students learned the theories about wolves being the ancestors of dogs and participated in the Center's program titled "Canine Cousins," which demonstrated the similarities and differences between wolves and dogs.

The wolves at the Center have distinct personalities, with many parallels to human characteristics. Some were shy, some rambunctious, and others ready for retirement. I was truly amazed by the cycle of life—the ups and downs of behavior, the good days and the hard days, the synchronization with changing seasons. The wolves seemed at one with this cycle, and I kept thinking that people would be more content if they too were at one with it.

One of my favorite activities was learning to howl like a wolf and then hearing them howl in return! It was exciting to feel that I had truly communicated with wolves in their own language.

Another fascinating activity was tracking the wolves and learning about radio telemetry. Before leaving the Center I purchased a map of the Ely area, and I still track wild wolves through the Center's Web site on my home computer.

The weeklong course was just the beginning of my voyage of discovery. Upon returning home I continued studying wolves by taking the online Wolf Ethology course designed by Lori Schmidt. My "vacation" did not have to end. I learned about wolf communication, genetics, socialization, predatory behavior and management issues. The well-organized course was an enriching learning experience that complemented and expanded on my stay in Ely.

This was an adventure I am not likely to forget! ■

Diann Evans

Lori Schmidt and Maggie Croud demonstrating on dogs the similarities and differences between wolves and dogs during the "Canine Cousins" course, summer 2002.

Susan Loonsk is an artist and professor of art and art therapy at the University of Wisconsin-Superior. She is currently pursuing further studies in ecopsychology, and wilderness and wildlife management.

For information about the summer 2003 Wolf Ethology course, visit the Web site at www.wolf.org.

INTERNATIONAL WOLF CENTER

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Tracking the Pack

Visitors to the Pack

by Lori Schmidt, Wolf Curator, International Wolf Center

Life in captivity can sometimes become boring for wolves, and it is the Wolf Curator's duty to provide not only for the wolves' physical care but for their mental stimulation as well. This can be done in several ways including scheduling visits by wolf care staff, having dogs present for the summer "Canine Cousins" programs, and providing treats such as biscuits, pigs' ears, watermelons and frozen turkeys. Sometimes stimulating events occur on their own, as when native wildlife enter the enclosure.

I would like to focus here on the presence of native wildlife. Anyone who has been to the Center in winter or viewed the wolves on the Web cam has probably seen ravens in the enclosure. After the weekend "What's for Dinner" feeding program, there is usually food left over for the familiar scavengers to make a meal or two.

Usually, the ravens are agile enough to get away, but every so often the wolves get the edge and turn the scavenger into prey. This happened in December 2002. An entry in the wolf log posted at www.wolf.org read:

12-19-02

Program Specialist Jen Westlund writes: *"Today at about 2 pm the arctics got a raven. I didn't see the actual situation of how they got it, but Shadow was on top of the raven guarding it from Malik. They rolled on it, ripped off some feathers and took it up the hill. A group of ravens followed the wolves up the hill and displayed a very intense distress call."*

Over the years, the wolves have had many native visitors to their enclosure. Some had the same fate as this raven, others escaped. Here is a list of wildlife observed in the enclosure:

Red fox: squeezed under the gate, probably in search of a carcass, but never made it past the wolves.

Pine marten: came in through the treetops, stayed in the pen for several hours. The wolves frantically attempted to climb a tree to reach the marten, only to have it escape through the treetops while the wolves were having a midday nap.

A variety of small mammals: shrews, voles, mice, moles and red squirrels, but none as exciting as the Franklin's ground squirrels that make limited appearances in summer.

Birds, birds and more birds: chickadees, nuthatches, jays, finches, warblers, eagles, vultures, crows, woodpeckers, hawks.

Plan a visit to the Center's wolf enclosure to see wolves and so much more. ■

Left: After the wolves are done feeding, ravens scavenge the leftovers.

Below: Malik eyes ravens in the enclosure.

Nancy Schwartz, International Wolf Center

WOLVES IN SCANDINAVIA

No Wolf Hunts in Norway

by Neil Hutt

Wolf fans in Norway and Sweden are applauding the decision by Norway not to issue licenses for a wolf hunt in winter 2003. The Norwegian Directorate of Wildlife Management announced there is no basis for an official hunt. In winter 2001-02 Norwegian authorities sponsored hunts after receiving complaints of wolves killing free-ranging sheep. Wolf advocates unsuccessfully attempted to block the cull by appealing to the courts and by disrupting the hunts.

Norway and Sweden have made a joint commitment to establish a viable wolf population on the southern Scandinavian Peninsula, a region where wolves cross back and forth over the border between the two countries. Wolves in Norway and Sweden are recovering under the joint monitoring plan. According to Petter Wabakken, official coordinator of wolf monitoring in Norway (including those with territories across the Swedish border), 9 packs have been located so far in winter 2002-03. This is a small reduction from last winter when the status report listed 11 packs with 74 to 79 wolves. In addition, individual wolves and scent-marking pairs were located.

Wabakken's preliminary 2002-03 observations indicate the presence of eight to nine potential breeding pairs, approximately double the

This radio-collared wolf is the alpha male of the northernmost resident pair living near the Swedish-Norwegian border.

Ole Knut Steinset/SKANDULV

number of pairs a year ago. He hopes 2003 will be a record year for wolf reproduction in Scandinavia, with perhaps as many as 15 litters.

This is good news. Wolves had nearly vanished from Scandinavia by the 1960s, but a breeding pair with pups was discovered in 1983. By researching the genetic makeup of the parents, a team of scientists determined the pair had journeyed 620 miles from Finland to southern Scandinavia. With no other wolves in the region, however, the succeeding generations became inbred. Although biologists disagree about the long-term effects of decreased genetic diversity, some Swedish scientists feared that recycling of genes in an isolated population would cause its eventual extinction. But new variants of some genes appeared in a litter of pups born in 1991. Researchers discovered the "genetic rescuer" was a lone wolf, also from Finland.

In a little more than a decade, the wolf population of southern Scandinavia has grown to an estimated 98 to 114 wolves, according to the 2001-02 status report. While the increase in wolf numbers is encouraging to wolf advocates, the question arises whether a balance between the needs of wolves and humans can be achieved over the long term. Wolves must compete for habitat with logging and hunting interests. In addition, the threat of livestock loss makes it difficult to achieve an attitude of tolerance and acceptance by farmers.

Neil Hutt is an educator and International Wolf Center board member who lives in Purcellville, Virginia.

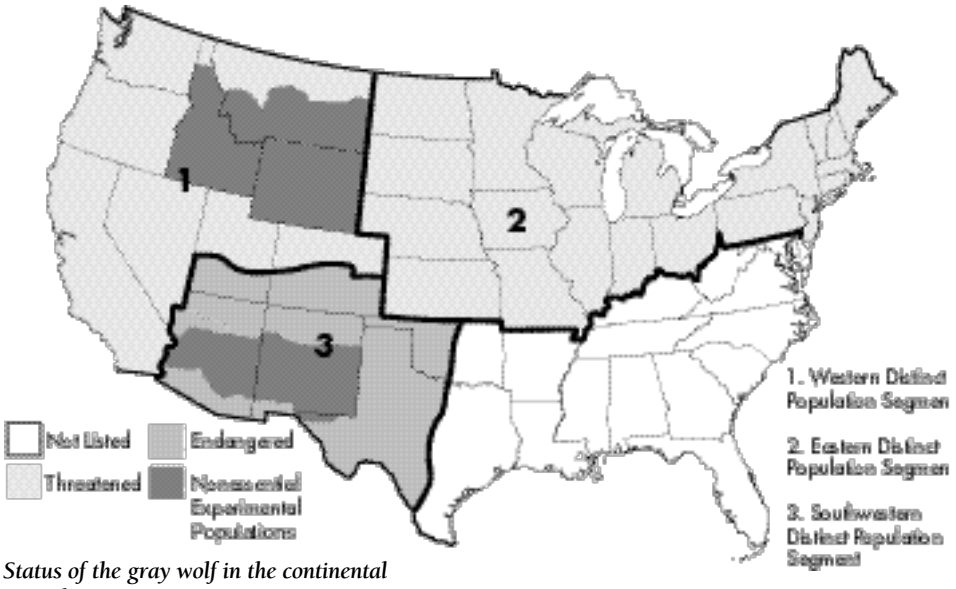
The author acknowledges the following sources of information:

- Petter Wabakken for the information on the monitoring and present status of wolves on the Scandinavian Peninsula. The results for winter 2002-03 are based on half the winter monitoring period. At this writing, fieldwork is still in progress.
- "Family Additions for Osterdalen Wolves," September 18, 2002; www.afterposten.no.
- "No Wolf Hunts This Winter," September 25, 2002; www.afterposten.no.
- www.anc.org (Animal Center News).
- "Lone Wolf Brings Pack Back from the Brink," *New Scientist,* November 20, 2002; www.newscientist.com.

WOLVES IN THE UNITED STATES

Wolves: A Step Closer to Delisting

by Walter M. Medwid
Executive Director,
International Wolf Center



Status of the gray wolf in the continental United States

In mid-March, the U.S. Fish and Wildlife Service took another step closer to moving the gray wolf off the endangered species list. There are now about 3,100 wolves in Minnesota, Wisconsin and Michigan, and close to 700 in Wyoming, Montana and Idaho, plus about 40 in Arizona and New Mexico. All gray wolves in the contiguous United States (except the Mexican gray wolf, which will remain as "endangered") are now classified as "threatened," rather than as the more protective "endangered." The threatened status allows for greater management flexibility, specifically the removal of wolves causing problems with livestock and pets.


William Rieley, Kishenehn Wildlife Works

This step was taken by the Service because of a "growing gray wolf population in the western Great Lakes states and a highly successful reintroduction program in the northern Rocky Mountains." This reclassification of wolves was accompanied by a ruling that expands the range of the endangered Mexican wolf recovery area to include all of New Mexico and Arizona and portions of Texas, Oklahoma, Colorado and Utah (see map). The Service also defined the gray wolf recovery zones as three "distinct population segments": eastern, western and southwestern. Wolf advocates had sought a separate northeastern population segment including Maine, New Hampshire, Vermont and New York, but the Service combined this region with the western Great Lakes population of wolves. A separate population segment in the Northeast would have required the Service to undertake a recovery program there. A strong push was also being made by a coalition of organizations for a federal wolf recovery program in the Southern Rockies. However, the Service indicated that no additional wolf reintroduction programs will be initiated; any such efforts will have to be undertaken by states or tribes.

In the West, the Service continued the nonessential experimental population status in portions of the Northern Rockies and the Southwest. This status allows the use of a variety of methods to reduce wolf and domestic animal conflicts.

With this announcement, the Service has indicated that it will begin the process to delist gray wolves in the eastern and western United States from the endangered and threatened species list and to turn management responsibilities over to the states.

For additional information:

Visit the News & Events section of the International Wolf Center's Web site at http://www.wolf.org, or the U.S. Fish and Wildlife Service's Web site at http://midwest.fws.gov/wolf.

Wolves Have Reached Recovery Levels in the Northern Rocky Mountains: How Does Delisting Happen?

by Ed Bangs

In 1974 the gray wolf in the Northern Rocky Mountains (NRM) was listed under the Endangered Species Act of 1973. The purpose of the act is to prevent species endangerment and extinction and to promote recovery. It requires the U.S. Fish and Wildlife Service to identify endangered and threatened species, to add those species to the endangered species list, and implement conservation measures to improve their status so they no longer need those protections. When recovery is achieved, the Service takes steps to remove (delist) the species from the list. An *endangered species* is any species, subspecies or distinct population that is in danger of extinction throughout all or a significant portion of its range, and a *threatened species* is any that is likely to become endangered within the foreseeable future.

Wolves, once common throughout North America, are protected under the Endangered Species Act because human persecution nearly eliminated them from the contiguous United States. By 1974, there were none left in the NRM. The act prohibited people from harming wolves and mandated that all federal actions seek to conserve and not jeopardize wolves. Ultimately, three distinct wolf recovery programs, in the Midwest, the NRM, and the Southwest, were initiated. The plan for wolf recovery in the NRM required at least 30 breeding packs be maintained for three successive years in Montana, Wyoming and Idaho. As of December 2002, that goal had been reached. That population of over 650 wolves has achieved recovery objectives. The Service could propose as early as this year that those wolves be delisted.

The Endangered Species Act contains several checks, balances and protections to ensure that any decision to delist a species is scientifically sound and will not result in it becoming listed again. The act requires that all decisions be based on the best scientific data available. The Service is mandated to examine all factors that may have caused a species to become threatened or endangered and to determine whether they are likely to do so again. The Service can propose delisting when it determines that the wolf population has recovered *and* when it is reasonably sure that it will not become threatened or endangered again if the act's protections are removed. A delisting proposal would include relevant data and a thorough analysis of the Service's rationale. It would be published, and extensive public and professional peer review would be requested. After public comment and any new information were analyzed, the Service could withdraw the proposal, modify it or finalize it.

If the wolf population were to be delisted, the Endangered Species Act requires a post-delisting monitoring period of a minimum of five years.

continued on next page

Lynn and Donna Rogers, www.bearstudy.org

Many people are concerned about what will happen to wolves if the Endangered Species Act protections are removed.

Jerry Murray

Many people wonder about the impact on big game if wolves are not delisted.

That monitoring provides a safety net to ensure that the species can sustain itself without the protection of the act. If wolves were to become threatened or endangered again, the Service could relist them by emergency order.

Wolves were eliminated through excessive human persecution. It appears that only excessive human persecution could eliminate them again. Regulating the level of human-caused mortality is the primary issue that must be resolved before delisting can be proposed. The Endangered Species Act requires that the Service determine that regulations, other than the act, will prevent unchecked human-caused mortality from once again driving wolves toward extinction. Wildlife mortality is typically regulated by state fish and wildlife management agencies. The Service requested Montana, Idaho and Wyoming to develop state wolf management plans so that wolves would be adequately conserved under state management. In addition, the Service believes that state wolf plans would help the public understand the consequences of delisting and would provide a solid administrative foundation for the Service's final decision.

In the NRM, Idaho has completed a wolf management plan. Montana and Wyoming should have their wolf plans completed this summer. As expected, development of a management plan is an emotional and intensely debated issue in these states. The states must strike the difficult balance between protection of livestock, state-managed big-game populations, wolf conservation and funding. The Service will review state laws and wolf management plans before delisting is proposed to ensure that the states will adequately conserve the wolf population. After public comment and any new information are analyzed, the Service will make its final decision. The wolf population in the NRM could be delisted as soon as 2005.

Many people are concerned about what will happen to wolves if the Endangered Species Act protections are removed, while many other people wonder about the impact on livestock and big game if wolves are not delisted. The delisting process will be well publicized and controversial, and will almost certainly result in litigation. The Service is confident, however, that the extensive safeguards required by the act for any delisting proposal will ensure that a viable wolf population will be conserved in the NRM in the foreseeable future. ■

Ed Bangs is the Wolf Recovery Coordinator for the U.S. Fish and Wildlife Service in Helena, Montana.

News and Notes

WOLVES: BEHAVIOR, ECOLOGY AND CONSERVATION. That is the title of a new wolf reference book, to be released in fall 2003 after 10 years in the making. Edited by L. David Mech and Luigi Boitani and featuring their work and contributions by 20 other top wolf biologists, the book will be published by the University of Chicago Press.

WOLF PROTECTION is being challenged by various western state legislatures and county boards who fail to realize the well-established legal precedent that the federal Endangered Species Act (ESA) supersedes local laws. While the wolf is listed under the ESA, it retains federal protection.

WOLF DEPREDATION COMPENSATION has a new source. For the first time, the federal government will pay Idaho residents compensation for livestock they believe were lost to wolves. The special appropriation to the state supplements compensation paid by Defenders of Wildlife for confirmed or probable losses to wolves.

MEXICAN WOLVES in the wild now number at least 40, according to the U.S. Fish and Wildlife Service. Eight packs and some loners currently inhabit the recovery area in Arizona and New Mexico, and pupping time at this writing (late February) is imminent. Restoration of the Mexican wolf has been greatly hindered by local animosity, which has resulted in at least 10 of the reintroduced wolves or their offspring being illegally shot. Despite this problem, however, the program appears to be on the verge of a solid reestablishment of a wolf population in the area.

WOLVES VERSUS MARMOTS. A controversy is brewing in the media and on the Internet over a proposal to control wolves on the 5 percent of Vancouver Island that supports the endangered marmot. Marmot mavens are pushing the proposal in order to promote marmot recovery while some wolf advocates object to any killing of wolves for any reason. (Wolves are not endangered on Vancouver Island or elsewhere in Canada.)

WOLF PREDATION ON ELK CALVES in Yellowstone National Park is the subject of a new study being conducted during the next three years. Some 35 to 50 newborn elk calves will be fitted with mortality-sensing radio ear-tags. University of Minnesota Ph.D. candidate Shannon Barber and assistants, directed by Drs. P. J. White and L. David Mech, will monitor the signals twice daily and home in on any that indicate mortality. Predators or their sign seen around the calf remains will yield evidence of the calf's cause of death.

WOLVES AND THE ECONOMY. The failing economy and state budget deficits are being used as excuses for several western states to forsake wolf recovery. Claiming state budget deficits prevent them from allocating funds for wolf management, the states are demanding federal monies for the federally mandated wolf recovery.

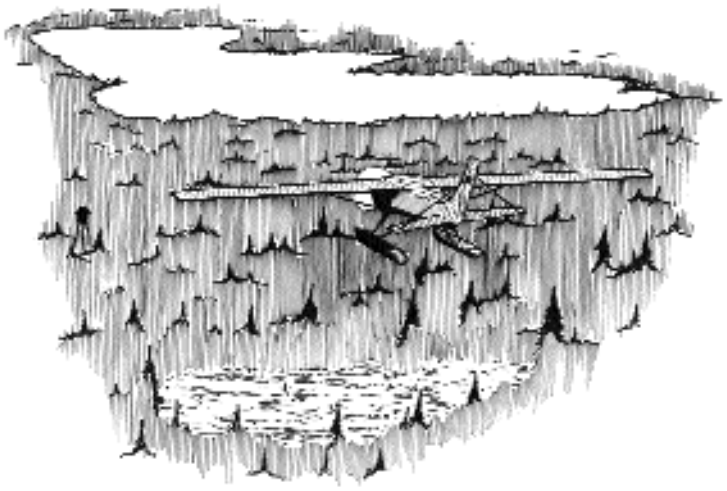
WOLF POACHERS BEWARE! Rewards totaling $20,000 are being offered by the U.S. Fish and Wildlife Service, the Center for Biological Diversity and Defenders of Wildlife for information about the shootings of Mexican wolves in October and December 2002. Report information to 480-835-8289. ■

Personal Encounter

Howling with the Faunce Pack, 1976

by Tom Meier

Illustrations by Luke Eidenschink



It was the Bicentennial Year, and the country was awash with the haunting tune of "The Hustle." Summer afternoons found me sitting on the hood of a red and white jeep, cruising slowly down the back roads of northwestern Minnesota, searching for wolf tracks in the sand. As a beginning graduate student at the University of Minnesota, I was helping Steve Fritts with his research in Beltrami Island State Forest. Steve, Gary Gorton and I set out every day to check old kill sites, collect wolf scats, locate packs and trap and radio-collar wolves. Steve had been doing this for four years, and it was time for him to return to campus to finish his Ph.D. degree. I was to stay on at Norris Camp, the most remote outpost of the Minnesota Department of Natural Resources, to gather more data through the summer and fall.

I had learned to recognize wolf sign, analyze the remains of dead deer, trap and tranquilize wolves, and track radio signals on the ground and from aircraft. I was having the time of my life. In my journal, I described three teal erupting out of the Rapid River in a flash of spray and blue feathers as we idled past them, searching for tracks and listening to Handel on the radio. The radio was among the few dependable parts of our Jeepster Commando, a "new" field vehicle that had come with me from the university. The jeep had done hard time on a bear research project, and we spent much of our time repairing it.

Among the advantages of flat country is great radio reception, and this was as flat as country gets. Northwestern Minnesota receives its radio mostly from outside the state, and we had our choice of country music from Jamestown or Fargo, North Dakota, CBC public radio or pop songs from Winnipeg. At noon, we tried to find a gravel pit or a bridge for a scenic backdrop while we ate lunch and listened to Paul Harvey's "News and Comment."

The vast, flat, mostly swampy land north of Red Lake had been cleared of people by the Federal Resettlement Administration many years earlier, and the forest was studded with old homesteads, with only the occasional lilac bush, rhubarb or asparagus patch to show that humans once lived there. Wolves seemed attracted to these openings. Our travels often brought us past the fire tower at Faunce, a former town that still appeared on the Minnesota highway map, although for decades Faunce had been just a fire tower.

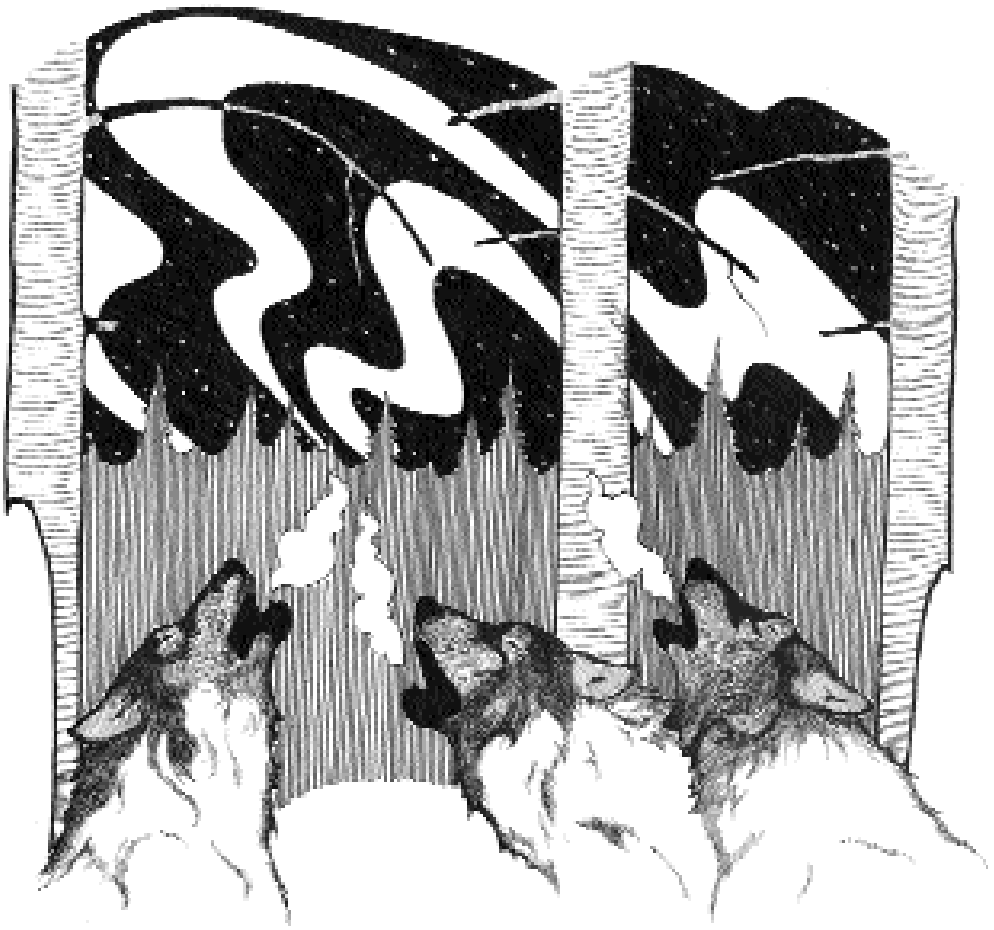
North of there lived the Faunce pack, with a radio-collared female wolf. We always stopped to climb the fire tower and check her signal. As the summer progressed, her pack seemed to settle in a rendezvous site a few miles northwest of Faunce, near an abandoned homestead called the Nelson Field.

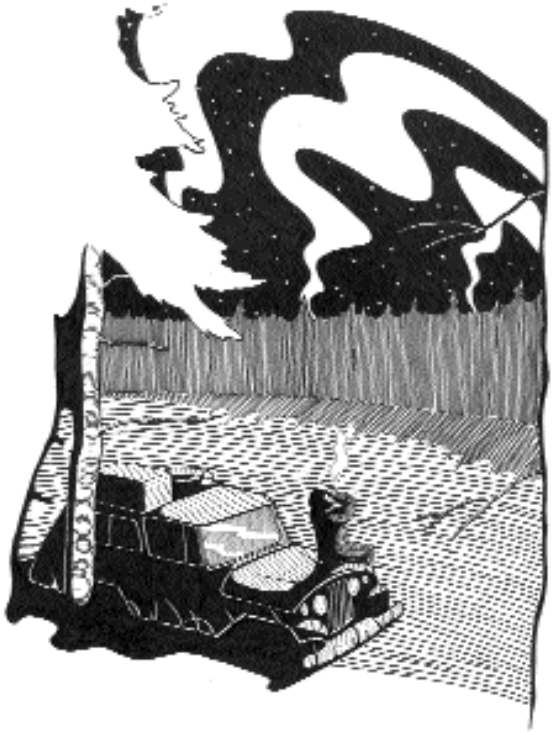
1976 was a year of record-breaking drought, and by late summer the state forest was closed to human entry to prevent fires. The little traffic that the forest gets had been almost completely cut off. Steve had gone south to the university, Gary had returned to his job with the DNR, and I was alone on the wolf project.

Howling is a good way to locate wolf packs and to learn if they have pups. In late summer, pups will

respond enthusiastically to anything resembling a howl, and often continue their crazed yapping until an adult silences them with a bark. It's a sound to make the hair stand up on the back of your neck and has surely contributed to the fear that humans have had of wolves over the years. But in my late-night howling trips, it was a strangely comforting sound. What scared me was to stand on some deserted roadside, 10 or 20 miles from the nearest human, break the silence with a howl, hear it echo off the edge of some far clear-cut, and be answered only with silence. Even a barred owl or whippoorwill was better than silence, punctuated by the ticking of the jeep's cooling engine. If wolves answered me, I felt comforted. I wasn't alone out there.

One night, after flying and locating the Faunce pack near the Nelson Field, I decided to head there to howl for pups. I drove the jeep east toward Faunce, then north through the woods to the edge of the old field. I parked and waited for the engine noises to fade. It was cold. I shivered and climbed onto the hood of the jeep to soak up the warmth. I lay back against the windshield and stared at the northern lights over the abandoned field. Finally, deciding that the noise of my arrival had faded, I howled at the sky. Silence. I howled again. The pups cut loose in front of me, in the dark field. An adult joined in behind me, another off to the side. The adults didn't try to silence the pups but kept howling. I don't know how many there were, but I was in the middle of them, and I howled with them. I was so close that I could feel my lungs resonate when I harmonized with a wolf somewhere behind the jeep. I wasn't alone tonight. The wolves howled, and I howled, and the northern lights moved.





Eventually, the wolves became silent. The dwindling heat from the engine kept me warm no longer, and I climbed back in the jeep and drove away, leaving the wolves to their field.

The odd assortment of skills that I learned that year in Beltrami turned out to be of lasting value. I have continued to capture wolves and radio-track them, from Denali National Park to the Golan Heights in Israel, during all the years since then. I've heard wolves howl many times, but I've never gotten used to the unearthly sound of a pack of pups yowling in the night. And I've never had an experience to match the time when I lay on that jeep and howled with the Faunce pack. ■

Tom Meier is wolf recovery biologist for the U.S. Fish and Wildlife Service in Kalispell, Montana. He has worked with wolves since 1976 in Minnesota, Alaska and Montana.

Luke Eidenschink lives in central Minnesota, where he does custom illustrations through his business, Legends Edge. He can be contacted at 320-293-3137.

On the Hunt

by Jess Edberg, International Wolf Center Intern

Humans use cash to acquire their food, but wolves have to pay for their groceries directly through hard work.

Lynn and Donna Rogers, www.bearstudy.org

Do you know how much your family spends on groceries each week? Humans work and use the cash they earn to acquire their food, but wolves have to pay for their groceries directly through hard work.

Wolves hunt in several stages. First, they must *locate* their prey. They can do this in a variety of ways. Wolves can use direct scenting—finding the scent of their prey and following it. They can have a chance encounter and just happen to come across prey animals. They can track their prey, and in open areas they can see it. Direct scenting is the most common way wolves find their food because they have a powerful sense of smell. Scientists think wolves can smell a prey animal up to one and a half miles away!

Second, wolves usually *stalk* their prey after they locate it. During the stalk, wolves try to approach the prey without being heard or seen. This can

WOLF WORK

PERSON: Jess Edberg

JOB TITLE AND DESCRIPTION: Diagnostic Laboratory Technician. Tasks include working in a laboratory that evaluates tissue samples of various wildlife species to detect disease. The technician prepares samples by classifying them, dissecting them (sometimes cutting apart a deer skull!), and labeling them. Keeping the lab clean, organized and stocked with supplies is also important.

TRAINING REQUIRED: Minimum two years of post–high school coursework involving lab procedures in courses such as chemistry, biology and animal anatomy. Bachelor's degree preferred.

SKILLS NEEDED TO DO THE JOB: Adherence to specific protocols and safety rules; ability to communicate detailed information, pay attention to detail, be organized, and train new employees.

ADVICE TO KIDS: Take extra science classes such as wildlife biology and animal anatomy and physiology. Practice following specific procedures by doing household chores routinely or following a homework study schedule. Try doing animal dissections, either with your class or as a science project.

Nancy Schwartz, International Wolf Center

Jess Edberg, a diagnostic laboratory technician, is currently an intern at the International Wolf Center.

be tricky depending on the direction of the wind and the wolves' location to the prey. Prey animals are wary and alert to their surroundings and, like wolves, have keen senses of smell and hearing, so wolves must be stealthy and controlled during the stalk.

During the third stage the wolves *encounter* the prey. The wolves and prey confront each other in a crucial moment: the prey's response to the wolves' closing in determines if the hunt continues. If the prey animal stands its ground, it is signaling that it has nothing to fear because it is healthy and confident that the hungry wolves are no threat. A healthy adult deer or moose is capable of defending itself effectively with sharp, pointy hooves.

This is why wolves are opportunists, meaning that they are most likely to catch the sick, weak, old and young animals because they take the least amount of work to hunt and kill, and bring the least risk. Because wolves eat every few days, they must not waste energy!

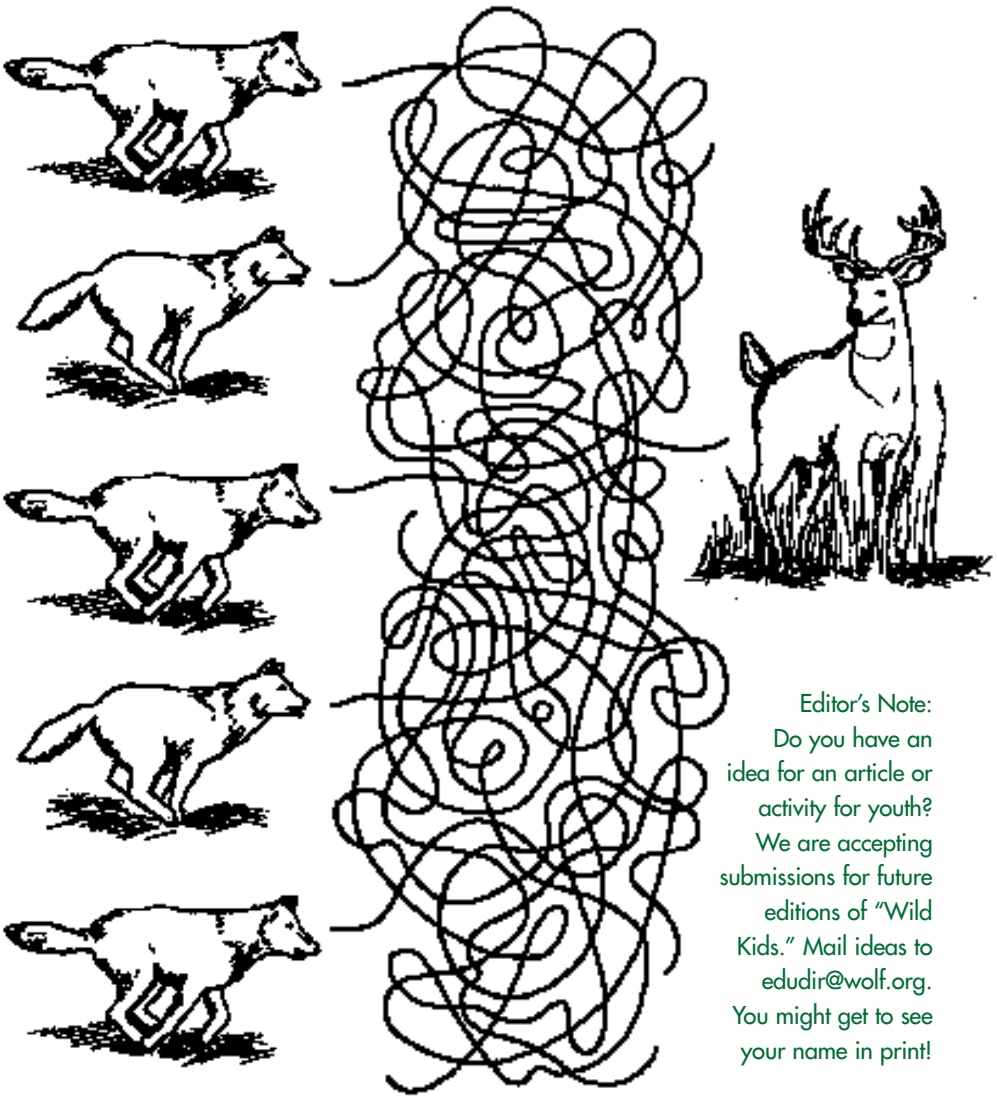
Usually wolves will continue the hunt only if their prey runs. This initiates the next stage: the *rush*. During this important stage the wolves must close in on their prey before it has the chance to sprint away. If they are able to catch up, the rush turns into the *chase*. The chase can last from 13 feet to 13 miles but is usually less than a mile.

Once the wolves are close enough, they will *attack*. The attack is the last stage of the hunt, but even after getting this far, a wolf may still not eat. A healthy, adult moose can easily shake off three wolves that are biting it! A wolf will typically bite the rump, neck or nose of the prey animal because these areas are the farthest away from thrashing hooves, which in one kick can kill a wolf. Wolves are sometimes injured or even killed when trying to catch food.

If the prey animal is large, there may be enough food for every member of the pack. In some cases, there may even be leftovers. A wolf may dig a hole in the ground and hide this extra food. Humans call these holes food caches. These caches provide the wolves with "midnight snacks" or possibly something to tide them over in times of hard hunting. ■

Try this: Which wolf gets dinner?

Can you guess which wolf finds the prey? Follow the lines to see if you're right!



Editor's Note: Do you have an idea for an article or activity for youth? We are accepting submissions for future editions of "Wild Kids." Mail ideas to edudir@wolf.org. You might get to see your name in print!

A Look Beyond

What Will the Future Bring?

by Liz Harper

My love of wild animals and wild lands began before I could walk. When I was three months old, my parents and I moved to Banff National Park in Canada, where we camped while my father attended art school. My parents have since told me that I loved being carried in a backpack through the park. This love has followed me through my per-sonal and profes-sional lives. As I think of the past, I cannot help but look into the future and wonder what will become of animals and the environment. Will the increasing human population continue to drive animals to extinction as it destroys their native habitat? Or will humans finally realize the preciousness of nature and begin to work together to save our last great places?

I find it comforting that I am not the only one contemplating these possibilities. Recently Dr. L. David Mech asked several broad thinkers (scientists, professors, and resource managers) to ponder the following statement and let him know how much they agree with it on a scale of 1 to 10, 10 being the highest agreement: "Given all that has transpired in the past 100 years in terms of technological development, human population trend, immigration, human dispersion on the land, the nature of our economic system, our energy use, and political trends, unless we soon see a drastic change in these factors, in another 50 to 100 years, the 48 states will harbor very few extensive natural areas. Wildlife will live mostly interspersed among human-populated areas, and only national parks, designated wilderness areas, and possibly some national forests, will host even halfway-natural ecosystems of any size."

The responses to his inquiry were chilling (see table). Of the 15 people who responded, 14 of them agreed at least moderately (5 or above) with the statement, at least for a portion of the United States, and 10 strongly agreed (8 or higher). In addition to giving scores, many of the respondents explained their feelings about this statement. Three believe that for certain ecosystems, the statement already applies to the situation today. For example, many biomes, such as the tallgrass prairie and California coastal scrub, are represented by only scattered remnants in a few parks and preserves.

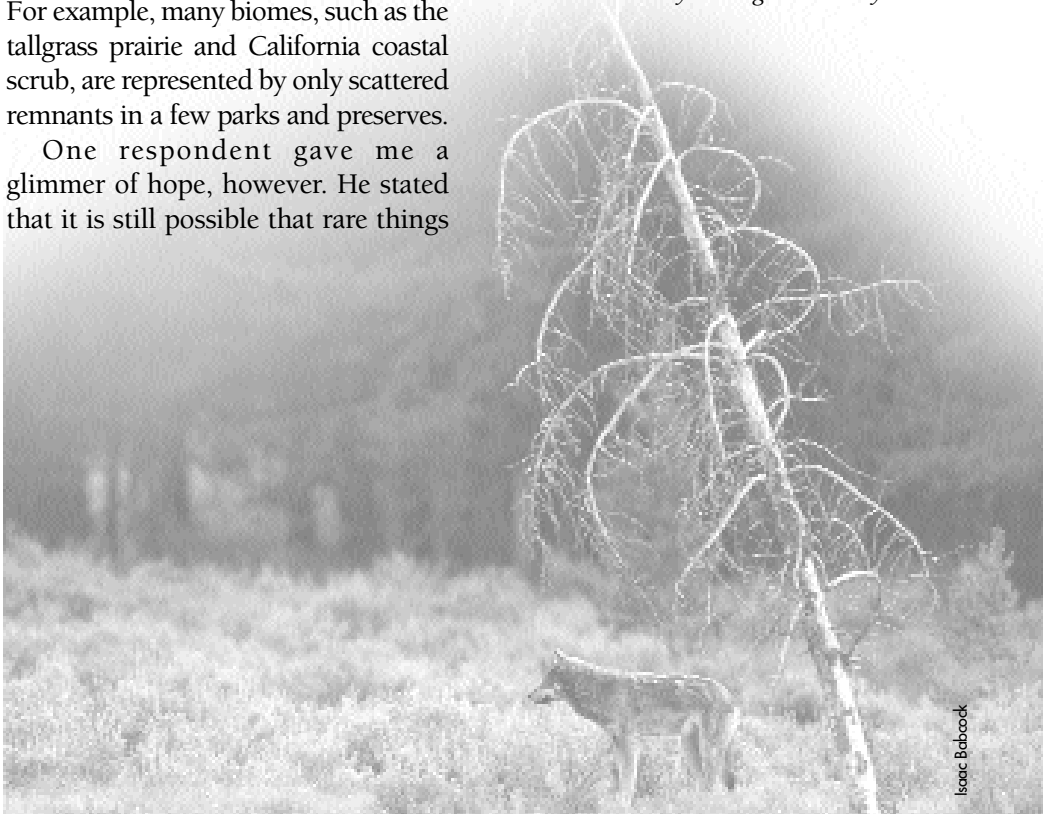
One respondent gave me a glimmer of hope, however. He stated that it is still possible that rare things will become more valuable to our quality of life and that public attitudes may change for the better. If wild animals and wild lands could become half as important to a majority of U.S. citizens as they are to me, maybe we could turn this trend of habitat destruction and animal extinction around. How can this change happen? Through education, as we "save only what we love, we love only what we understand, we understand only what we are taught" (attributed to Senegalese naturalist Baba Diome). ■

Responses to the statement, on a scale of 1 to 10, with 10 being the highest agreement

Rating	1	2	3	4	5	6	6.5	7	8	9	10
Number of responses*	0	0	1	0	1	0	1	1	5	1	4

* Additionally, one person scored the statement as a 7 for the eastern United States, and as a 3 for the western United States.

Liz Harper is a wildlife biologist and is currently doing herpetological surveys for the Minnesota Department of Natural Resources County Biological Survey.



Isaac Babcock