INTERNATIONAL WOLF

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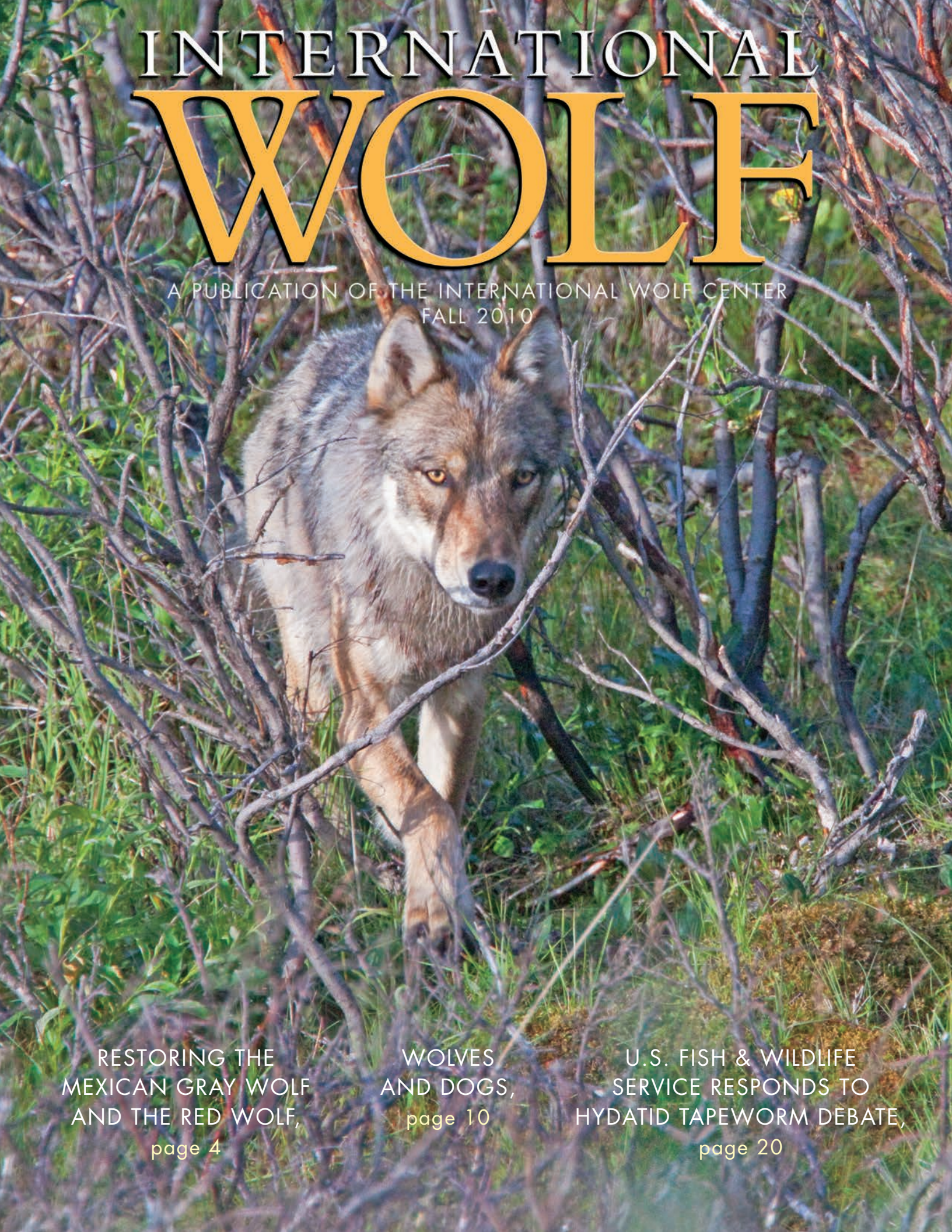
FALL 2010



INTERNATIONAL
WOLF
THE QUARTERLY PUBLICATION OF THE INTERNATIONAL WOLF CENTER
VOLUME 20, NO. 3 FALL 2010

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by Jess Edberg

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Photo by Bernard Marschner.

Wolf looking for snowshoe hares in the willow thickets of the Plains of Murie in Denali National Park, Alaska.

You can view more of Marschner's images on his flickr page: http://www.flickr.com/photos/70363861@N00/

Dotty Weber

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Center Celebrates 25th Anniversary

The International Wolf Center kicked off its 25th year of teaching the world about wolves June 18–20. Over 700 guests enjoyed special anniversary discounts on admissions and unique programs to commemorate the milestone.

"We wanted to use the weekend to thank our members, our guests and the community for their support over the last 25 years," said Mary Ortiz, executive director of the Center.

Highlights of the weekend included a presentation by David Mech on his research of arctic wolves on Ellesmere Island, a beaver dissection and a drawing for several donated prizes including an autographed basketball from the Minnesota Timberwolves of the National Basketball Association.

"I thought the anniversary weekend turned out very well," commented Mary Milleker, 10-year member of the Center. "There was much thought given to involving the public whether it be with programs, demonstrations, drawings, children's activities to keep the kids busy and even lunch. The wolves were very accommodating also."

Guests on Friday night listened to David Mech's presentation with images and stories from his annual trips to Ellesmere Island as well as plans for his 25th trip this summer.

"It was great to see all of the people that showed up," said Steven Birkemeyer, 14-year member. "I was surprised by the number of people that came for the first time, and how they were surprised at what the Center had to offer."

Wolf Curator Lori Schmidt helped an audience curious to learn more about a common prey animal for wolves by dissecting a beaver and describing the nutritional parts of the animal before feeding it to the Exhibit Pack Saturday afternoon.

"The beaver dissection was all new to me, so that made it interesting to watch," added Birkemeyer. "Who knew something a beaver's size could have a 20–30 foot intestine."

The move to establish the Center 25 years ago was sparked by the public's rousing response to the award-winning *Wolves and Humans* exhibit created by the Science Museum of Minnesota and exhibited across North America. It was installed at the Center's new educational facility in Ely, Minnesota, in 1993. ■

Top: A lucky winner of a wolf plush toy from the Wolf Den Store.
Bottom: Lori Schmidt, wolf curator, dissects a beaver for a group of curious guests.

From the Executive Director

Why Wildlands? Why Wolves?

"Why wilderness?
Because we like the taste of freedom.
Because we like the smell of danger."

—Edward Abbey,
environmental activist and author

In 1750, about 200,000 wolves roamed what are now the lower 48 states. In the early 1900s, the Bureau of Biological Survey authorized the shooting, trapping and poisoning of wolves—almost to extinction. States followed suit and instituted their own bounty systems aimed at removing wolves and many other predators. In total, these efforts extirpated wolves from most of the contiguous United States. The very last wolf in Yellowstone National Park died in 1930. The Endangered Species Act of 1973 and an enlightened public helped the wolf make a significant recovery over the past 37 years in many areas of its former range.

Mary Ortiz

After so much effort was expended to remove wolves in the past, why have we worked so hard in recent years to bring them back?

Examples abound of predators helping to regulate the impact of herbivores on vegetation. In Yellowstone National Park, continuing studies show wolves are now significantly changing both landscape and wildlife populations. Over-browsing by elk and bison had curtailed the growth of aspen, willow and cottonwood trees, so no shoots or saplings could survive. Without an apex predator, the population of coyotes exploded and competed for food with bald eagles and hawks. This effect is known as a "trophic cascade," in which a change affecting one species higher up the food chain indirectly affects those lower down. With more wolves and fewer ungulates, the vegetation has returned, bringing back many species of birds and even enriching stream ecosystems.

The presence of large carnivores, then, can influence the flora and fauna of an ecosystem and help to keep it in a more natural and diverse state than in areas where no dominant predators exist.

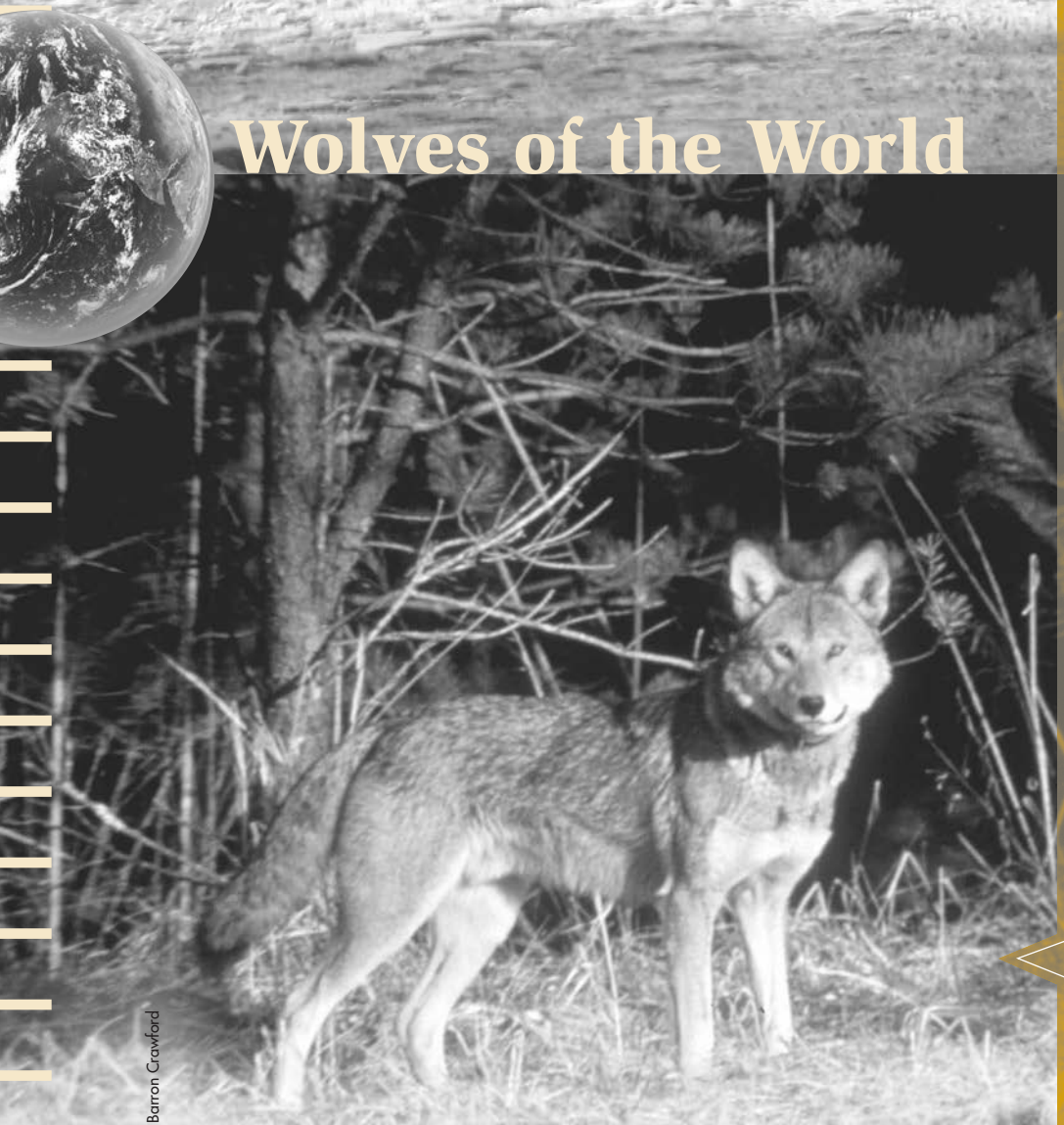
Wolves have become a symbol of our desire to protect the last wild places. The internationally acclaimed book *Last Child in the Woods* by Richard Louv inspired growing discussions on "nature deficit disorder" of children in this civilized world. The symbolic and emotional value of wolves inspires children, teachers and other adults to reconsider the need for wild places for predator survival and for human imagination and adventure. Like a charismatic teacher, the wolf—real and symbolic—entices us to protect the ecosystems it inhabits and wild places in general.

Without large carnivores, that "smell of danger" Edward Abbey mentions is lost, and we know that wilderness is no longer truly wild. To preserve wildlands, we must continue to find ways to reconcile the physical, economic and psychological needs of human beings with the requirements of wolves and other apex predators to the benefit of both, as well as to the benefit of a multitude of other species with which we share the planet. ■

Information and some text from "Why do we need large carnivores?" Wolves and Human Foundation, www.wolvesandhumans.org, July 14, 2010.

Mexican Wolf Interagency Field Team

Wolves of the World



Barron Crawford

EDITOR'S NOTE:

Although wolves have made a remarkable comeback in the Northern Rockies and in the Upper Midwest, two wild populations, the Mexican gray wolf in the Southwest and the red wolf in the Southeast, struggle for long-term survival under intensive U.S. Fish and Wildlife Service management programs. International Wolf *contributor Cornelia "Neil" Hutt interviewed the recovery coordinators for each of these programs about the challenges they face and what we can do to participate in the effort to save the Mexican wolf and the red wolf from extinction in the wild.*

VITAL STATISTICS AT A GLANCE

Scientific Name: *Canis lupus baileyi*

Common Names: Mexican gray wolf, lobo

Physical Characteristics: Smallest of North American gray wolf subspecies. Weight 50-90 pounds (23-40 kg). Fur contains color variations of brown, black, gray and white. Relatively short, pointed ears.

Original Range: Central Mexico through Arizona and New Mexico including portions of western Texas. Likely occurred as far north as southern Utah and southern Colorado.

Present Range: Blue Range Wolf Recovery Area (BRWRA) in east-central Arizona and west-central New Mexico.

Status: Endangered/experimental nonessential.

Prey: Primarily elk, some deer, javelina, antelope and small mammals.

Social Structure: Lives in family groups or pairs (packs). Average litter is four to seven pups once a year.

Mexican Gray Wolf

Mexican Wolf Interagency Field Team

"A deep chesty bawl echoes from rimrock to rimrock, rolls down the mountain, and fades in to the far blackness of the night. It is an outburst of wild defiant sorrow, and of contempt for all the adversities of the world."

—Aldo Leopold

Interview with Bud Fazio, Mexican Gray Wolf Recovery Program Coordinator, U.S. Fish and Wildlife Service

NH: *What is the current status of the Mexican Gray Wolf Recovery Plan?*

Fazio: The 1982 Mexican Gray Wolf Recovery Plan is currently under revision and will incorporate the latest in science and data to establish a long-term recovery vision for this wolf subspecies throughout its historical range. Although the interagency field team has done good work each year, the present plan has shown mixed results. Thus the team will develop an annual work plan to focus restoration and management at the field level. Interagency coordination is under review as well.

NH: *How many Mexican gray wolves are alive in the wild? How many are in captivity?*

Fazio: The number of wolves in the wild within the Blue Range Wolf Recovery Area (BRWRA) varies each year and has declined to a minimum 2009 end-of-year count of 42 wolves. In May 2010, the radio-collared population consisted of 27 wolves dispersed among 10 packs and one single wolf. The captive breeding program for Mexican gray wolves numbers over 300 wolves distributed among more than 40 facilities across the United States and in Mexico (a binational effort).

NH: *What are the primary threats to Mexican wolves?*

Fazio: We are concerned about low pup survival and the ability of the BRWRA wolf population to grow, expand and stabilize. Further investigation will determine whether we must address disease, human-caused mortality, prey availability or other factors in the near future.

NH: *Why should Mexican wolves be restored and protected?*

Fazio: Mexican wolves are among top predators within ecosystems in the Southwest and Mexico, along with jaguars and mountain lions. Health and balance in ecosystems depend, in part, on the roles and presence of their top predators. Ecosystems are most healthy when all their interrelated parts are functionally active. Whether in ungulate population maintenance, competition with other predators such as coyotes, or other functions, Mexican gray wolves play important roles in ecosystem balance.

NH: *What are the next steps to secure the future of the Mexican gray wolf?*

Fazio: The U.S. Fish and Wildlife Service (USFWS) is undertaking a structured exercise to determine which wolf entities are best recognized under the Endangered Species Act of 1973, as amended. The USFWS will decide whether to officially recognize the Mexican gray wolf as: (1) a subspecies, (2) a distinct gray wolf population, or (3) simply a gray wolf of the southwestern United States. Concurrently, the USFWS is moving forward with efforts to revise the Mexican Gray Wolf Recovery Plan, develop an annual field work plan, and work with partners

toward new forms of interagency coordination. The USFWS is also planning to convene two panels of scientists to assist with a recovery planning team and a recovery implementation team.

NH: *Describe your greatest personal challenges as the coordinator of the Mexican Gray Wolf Recovery Program.*

Fazio: My greatest challenges are finding common ground and working to build trust among people and agencies with extremely varied views and feelings about Mexican wolves, including their natural history, restoration, management and monitoring. This includes helping people and agencies learn we really can work together to find new ways of doing business to address the needs of both people and wolves. This means sitting down with the people most opposed to wolves to hear, understand and act on their concerns.

NH: *Has your experience as the coordinator of the Red Wolf Recovery Program influenced your job as the coordinator of the Mexican Gray Wolf Recovery Program?*

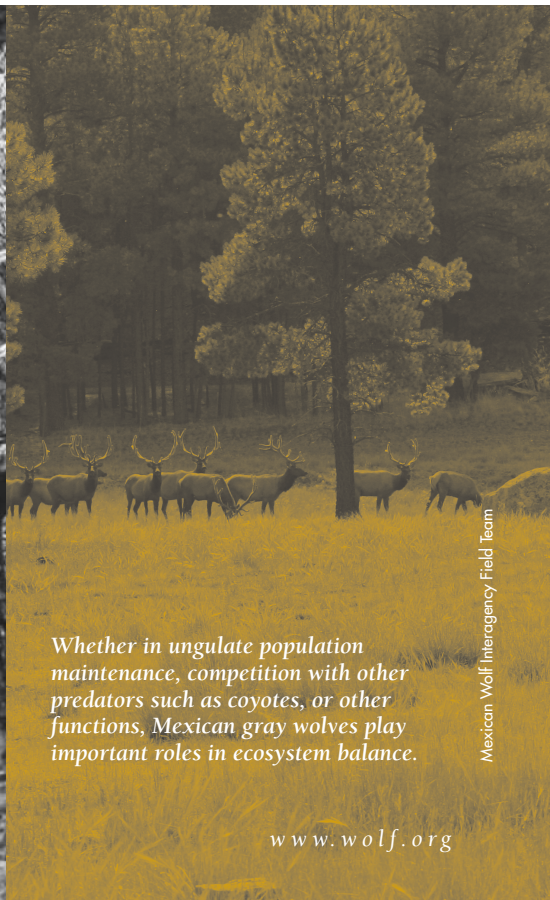
Fazio: I have great respect for the biologists and outreach staff of the Red Wolf Recovery Program and for the Red Wolf Coalition, a nonprofit group making a big difference by talking with people and assisting in red wolf recovery. I am blessed to have worked eight years with folks dedicated to red wolf recovery prior to my moving to Albuquerque, New Mexico, one year ago. Red wolves live in an area composed of approximately 65 percent private land. The Red Wolf Recovery Program and its staff taught me the importance of sitting down with landowners and land managers to discuss issues important to them. This is time well spent because it allows us to know each other well enough to find solutions to challenges of maintaining wolves on both public and private land. In the Southwest, Mexican wolves live primarily on public land, with portions divided into grazing allotments. Personal contact by me and other USFWS and interagency staff is vital to developing working relationships with those directly affected by Mexican wolf restoration. These contacts develop trust, understanding and the ability to work together to resolve incredibly complex issues.

NH: *Are anti-wolf attitudes changing to acceptance of wolves in the Southwest?*

Fazio: Opposition to Mexican wolf restoration remains strong where wolves can affect people directly. People living with wolves worry about the safety of their families and their pets and livestock. County commissioners, other representatives and ranchers remain concerned about the economic effects of wolves on local livestock operations. Resource agencies and environmental organizations need to effectively address these matters with assistance, solutions, support, information and education for people living directly with wolves. So, with regard to acceptance of wolves by people in the Southwest, we must do more to address the needs of people affected directly by wolves, while at the same time help all people understand the challenges and solutions of managing wolves, livestock

The captive breeding program for Mexican gray wolves numbers over 300 animals distributed among more than 40 facilities across the United States and in Mexico.

Mexican Wolf Interagency Field Team



Whether in ungulate population maintenance, competition with other predators such as coyotes, or other functions, Mexican gray wolves play important roles in ecosystem balance.

Mexican Wolf Interagency Field Team

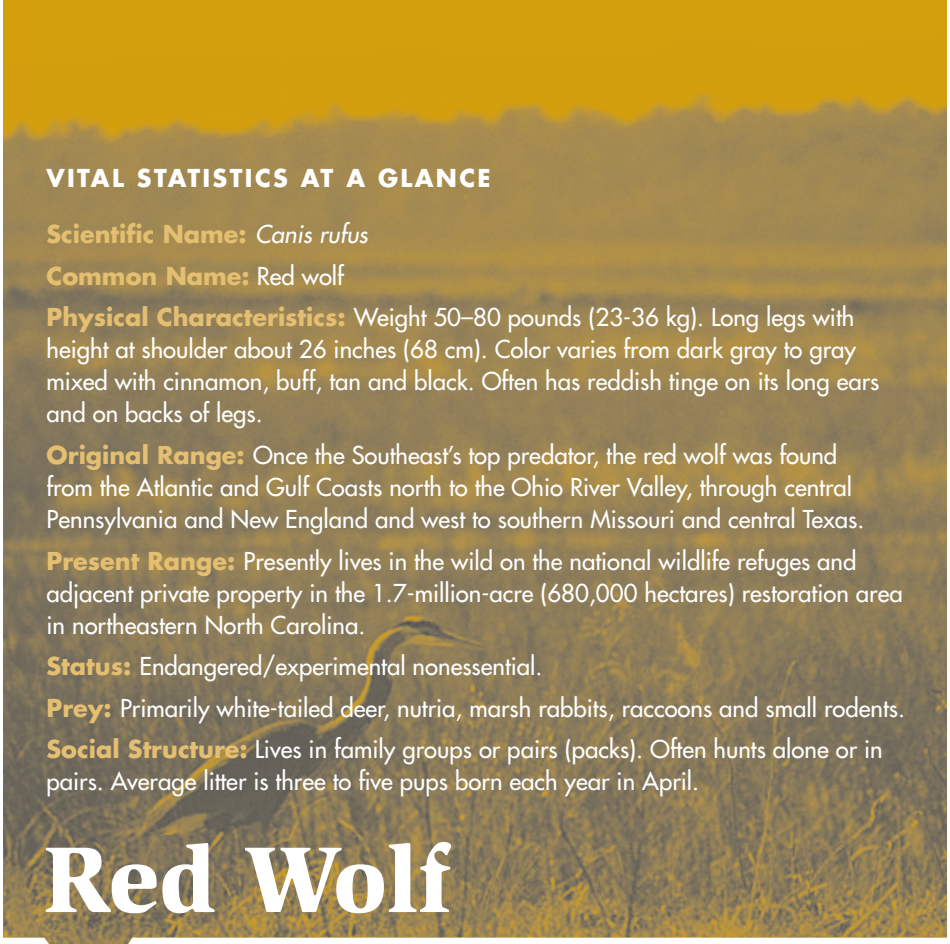
and wildlife together. Helping people understand the behavior and movements of wolves, wildlife and livestock is a step forward. I am encouraged that many of those opposed to Mexican wolf restoration are good, decent people, willing to sit down and talk about wolves, management strategies, and what they feel is truly important. It is through these discussions that strategies and methods can become solutions to very complex challenges.

NH: *Where can readers learn more about the Mexican gray wolves and the efforts to restore them?*

Fazio: Go to the USFWS Mexican gray wolf Web site (http://www.fws.gov/southwest/es/mexicanwolf/) and learn all you can. An Internet search will show you a wide range of viewpoints about Mexican gray wolf restoration.

NH: *How can readers help ensure the future of the Mexican wolf?*

Fazio: First, educate yourself on the natural history, behavior, current status and historical range of Mexican gray wolves. Taking time to hear and read about the viewpoints of people who support and oppose wolves will inform you about how to respond or help. It's important to express your views, pro or con, about Mexican wolves to those entities able to affect the outcome of Mexican gray wolf restoration and recovery—government agencies, public representatives, non-profit groups, private groups or science and research organizations. Share your time, ideas, strategies, solutions and funds with organizations, agencies and individuals assisting with recovery of the Mexican gray wolf, its habitat, its prey, its legal support, educational needs and science research. Readers can also donate funds through the Fish and Wildlife Foundation's "Interdiction and Incentives Fund" designed to assist ranchers with proactive, livestock depredation prevention measures. This fund can be used in combination with other private or public funds to compensate livestock growers for animals lost to wolves. I encourage you to act on whatever you learn and to get involved.



Chris Crowe

VITAL STATISTICS AT A GLANCE

Scientific Name: *Canis rufus*

Common Name: Red wolf

Physical Characteristics: Weight 50–80 pounds (23-36 kg). Long legs with height at shoulder about 26 inches (68 cm). Color varies from dark gray to gray mixed with cinnamon, buff, tan and black. Often has reddish tinge on its long ears and on backs of legs.

Original Range: Once the Southeast's top predator, the red wolf was found from the Atlantic and Gulf Coasts north to the Ohio River Valley, through central Pennsylvania and New England and west to southern Missouri and central Texas.

Present Range: Presently lives in the wild on the national wildlife refuges and adjacent private property in the 1.7-million-acre (680,000 hectares) restoration area in northeastern North Carolina.

Status: Endangered/experimental nonessential.

Prey: Primarily white-tailed deer, nutria, marsh rabbits, raccoons and small rodents.

Social Structure: Lives in family groups or pairs (packs). Often hunts alone or in pairs. Average litter is three to five pups born each year in April.

Red Wolf

"A long time ago, the howl became a word, a name. Wa'ya to the Cherokee, to whom the mountains also listened in the old time. Son of the wind; companion to Kana'ti; father of Ani'-Wa'ya, the Wolf people, principal clan. Familiar spirit to hunters. Perfect walker. Far traveler. Revenge taker and altruist. Unseen shape between the trees. Shy shadow from the long past."

—Christopher Camuto

Interview with Dr. David Rabon, Red Wolf Recovery Program Coordinator, U.S. Fish and Wildlife Service

NH: *Explain the plan to restore the red wolf.*

Rabon: The U.S. Fish and Wildlife Service (USFWS) Red Wolf Recovery Program uses the Red Wolf Recovery/Species Survival Plan (Recovery Plan) and an Adaptive Management Plan in restoring red wolves. The Recovery Plan established a recovery goal of three disjunct, reintroduced red wolf populations large enough for natural evolutionary processes to work. The goal includes preserving 80 to 90 percent of the species' genetic diversity for 150 years and establishing a wild population of approximately 220 animals and a captive population of approximately 330 animals. Currently, wild red wolves exist only in eastern North Carolina. The Adaptive Management Plan provides a strategy to assess, control and manage hybrid-

ization between red wolves and coyotes, a nonnative species to North Carolina or the eastern United States.

NH: *Is the plan succeeding? What are the major challenges to the red wolf's long-term future?*

Rabon: The Recovery Plan and the Adaptive Management Plan have demonstrated notable successes in red wolf restoration. Recovery Plan implemetation has created a population of more than 100 red wolves ranging across nearly 1.7 million acres of the red wolf recovery area in eastern North Carolina. Adaptive Management Plan implementation has established a working protocol for controling and managing hybridization between red wolves and coyotes. However, substantial challenges to the long-term future of red wolves remain, and the challenges are not limited to the extant population. The adverse effects of climate change and associated sea-level rise and land subsidence are among the greatest challenges affecting the long-term future of red wolves in eastern North Carolina. Additionally, these effects could alter prospective reintroduction sites throughout the southeastern United States. Habitat fragmentation and human attitudes toward top-level predators are also major challenges to red wolf restoration.

NH: *How many red wolves are alive in the wild? How many are in captivity?*

Rabon: With the completion of the 2010 whelping season, the number of known red wolves in the wild is 117. This total includes 78 known adults and yearlings, and 39 pups from eight litters whelped this year. About 180 red wolves live in 42 captive facilities across the United States.

NH: *Why should red wolves be restored and protected?*

Rabon: Every species has intrinsic worth. In addition to the obvious aesthetic value, the red wolf plays a practical and positive role in maintaining healthy and balanced ecosystems. Restoring red wolves also enhances the Earth's biodiversity. There are cultural and economic implications in restoring red wolves as well, whether it is revering the wolf for its skills or what it represents in nature to the economic benefits of ecotourism or reducing crop damage caused by prey species. At the very least, there may be an ethical obligation to right past wrongs and learn from mistakes that can only be realized or actualized with the restoration of red wolves and other predators.

NH: *What are the primary threats to red wolf restoration?*

Rabon: Interbreeding between red wolves and coyotes, a primary threat to North Carolina's red wolf population, is being successfully reduced by adaptive management strategies. Sea-level rise associated with climate change, habitat fragmentation, and premature and human-induced mortality also threaten red wolf restoration.

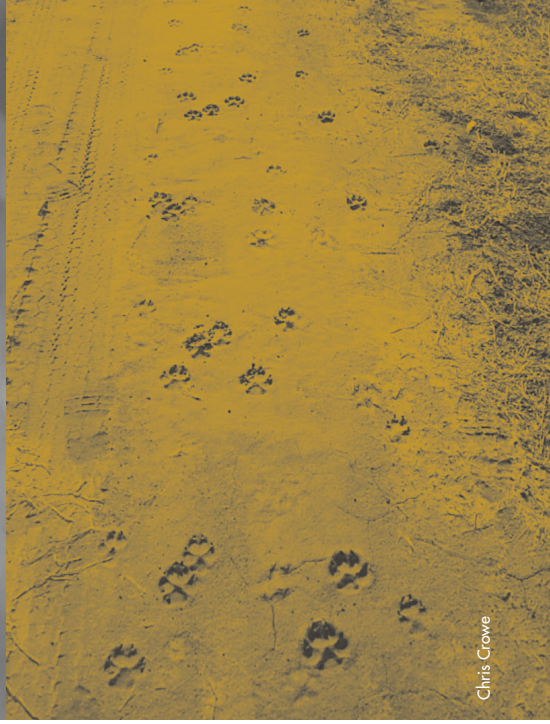
NH: *Describe the important next steps to secure the future of the red wolf?*

Rabon: The Red Wolf Recovery Program and partners, such as the Red Wolf Coalition (www.redwolves.com), educate and inform the public and elected officials about the importance

Barron Crawford

Habitat fragmentation and human attitudes toward top-level predators are also major challenges to red wolf restoration.

Brad McPhee, Point Defiance Zoo and Aquarium



Chris Crowe

of red wolves and other apex predators and their contribution to a balanced, healthy environment. To show that top predators and humans can coexist, we promote ecotourism expansion and eco-related businesses as well as "green" growth and development in "red wolf country" rural communities. Additionally, we must improve and strengthen the Red Wolf Recovery Program to gain and maintain public and political trust and support for reintroducing additional red wolf populations. The red wolf's future is largely in the hands of the American people. The USFWS can protect the species under the Endangered Species Act of 1973, but the overall success of this and future reintroduced red wolf populations will be defined by the American people's understanding of the wolf's value and by support of its restoration and conservation.

NH: *Are anti-wolf attitudes changing to acceptance of wolves in the Southeast?*

Rabon: Local opposition to red wolf restoration remains, although tolerance and even acceptance appear to have increased since the red wolf was first restored to eastern North Carolina in 1987. Some people living in the red wolf recovery area remain concerned for their safety and the safety of their families, pets and livestock. The Red Wolf Recovery Program's responsibility is to be responsive to the concerns of citizens most affected by the presence of wolves. It's essential to educate and inform the public about the history and behavior of red wolves, the issues of managing wolves, the presence of coyotes and their interaction with wolves and the benefits of restoring and conserving red wolves.

NH: *Where can readers learn more about red wolves and the efforts to restore them?*

Rabon: Visit the USFWS Red Wolf Recovery Program Web site at www.fws.gov/redwolf and follow our efforts on our blog at http://trackthepack.blogspot.com. Also, visit the Red Wolf Coalition's Web site at www.redwolves.com.

NH: *How can readers help ensure the future of the red wolf?*

Rabon: Here's a list of what you can do.

- Educate yourself! Learn all you can about red wolf restoration and management issues. The more you know, the more effective you will be in building support for red wolf conservation.
- Get involved! Support red wolf conservation and recovery efforts at the local, regional and national levels.
- Donate your time or money to organizations or programs that benefit red wolves through education, advocacy, conservation and research. Example: the Red Wolf Coalition. Check out www.crowdrise.com/enclosure/fundraiser/redwolfcoalition to support a major project!
- Inform elected officials, lawmakers and organizations of the importance of, and your support for, red wolf conservation and wildlife protection programs.
- Vote for elected officials who support wildlife and land conservation initiatives and programs.
- Experience it! Visit places where red wolves live, whether it is one of more than 40 zoos or captive facilities across the United States that participate in the captive-breeding program or driving, hiking, biking or paddling in one or all of the national wildlife refuges within the red wolf recovery area of eastern North Carolina. ■

Cornelia Hutt is an educator and a writer. She is an International Wolf Center board member, a member of the International Wolf *Advisory Committee and chair of the Red Wolf Coalition board of directors.*

Wolves and Dogs
Like Oil and Water

by JESS EDBERG

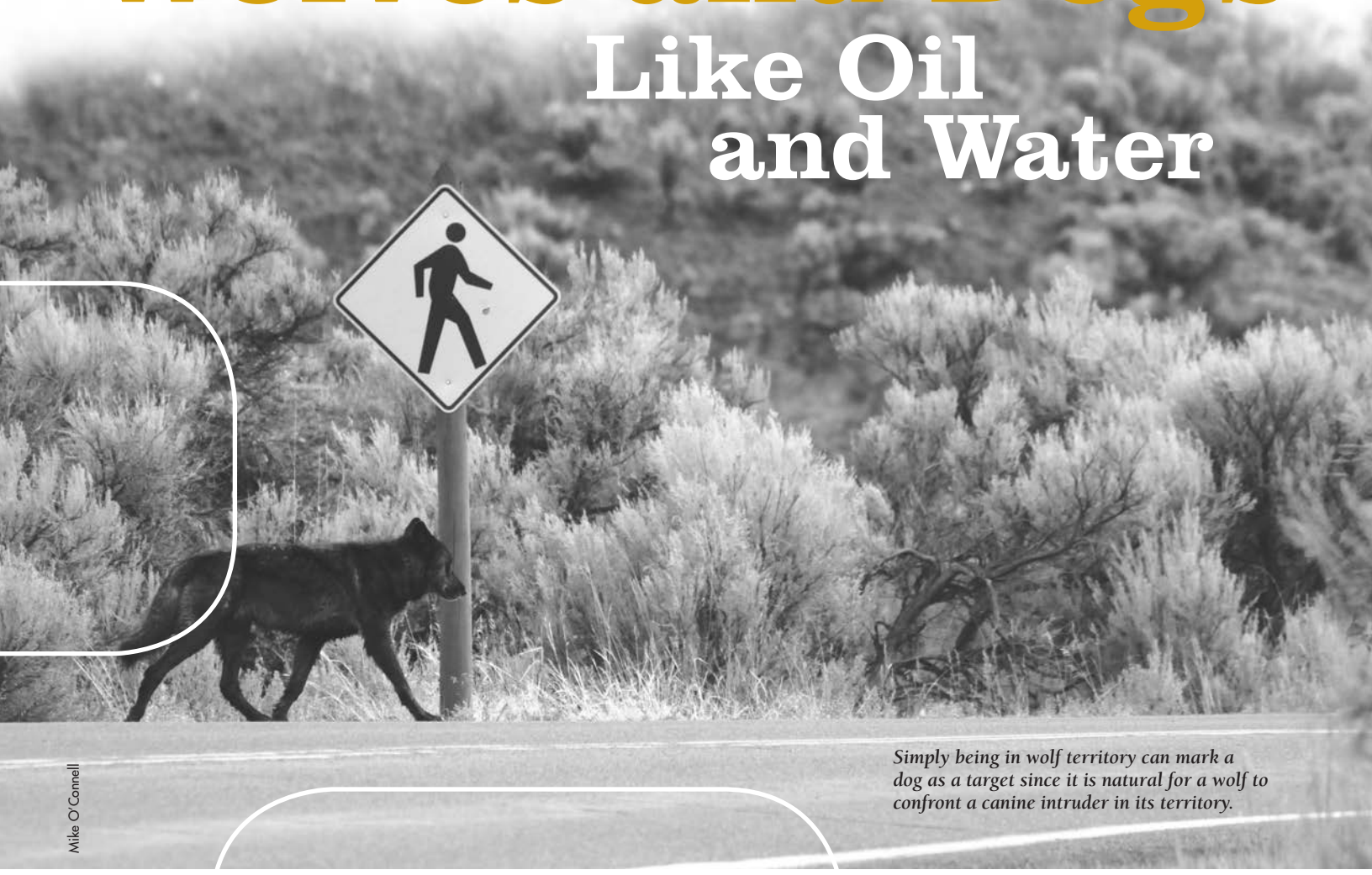
information services director, International Wolf Center

It is well known that wolves are territorial in nature and will aggressively defend their home ranges from other wolves. What may not be as well known is that wolves will also defend against and attack domestic dogs that live in or visit their territories. Although domestic dogs do not have instincts for territorial behavior as strong as those of the wolf, wolves often perceive dogs as a threat.

Domestic dogs typically do not hunt for their food or fight each other for space when kept as pets. However, the root of this behavior is firmly established in the wild wolf, and regardless of breed, the presence of a dog sniffing about can initiate an unpleasant encounter with the wolf's territorial instincts.

Generally speaking, pet owners living in and visiting wolf country have a good handle on how to prevent negative interactions between their furry family members and wild wolves—or any wildlife for that matter. Yet inevitably each year, wolves kill numerous dogs around the world.

In 2009, wolves in the Great Lakes states of Minnesota, Wisconsin and Michigan dispatched 37 dogs, and in the Northern Rockies (Montana, Idaho and Wyoming), wolves took 24 dogs. Although the incidence of wolf attacks on dogs in these areas is low relative to the number of wolves present (an esti-



Mike O'Connell

Simply being in wolf territory can mark a dog as a target since it is natural for a wolf to confront a canine intruder in its territory.

mated 6,000 combined), that should not diminish the impact the loss of each pet had on its owner.

Additionally, the emotional response to dog depredation by wolves, and subsequent media reporting, can be a significant factor in influencing public opinion about wolves.

There are a variety of ways a dog can get into a life-threatening situation with a wolf or a pack of wolves. Additionally, not all dogs are seen as a threat; some are viewed as prey. Unfortunately, many of the circumstances that end in the loss of a dog could have been prevented.

Simply being in wolf territory can mark a dog as a target since it is natural for a wolf to confront a canine intruder in its territory. Keeping a dog on a leash when hiking in the wilderness or walking in a rural area may reduce the chances of an encounter by keeping the pet in a more open area. When dogs are allowed to roam and investigate away from their owners, an approaching wolf may not be seen. The same danger exists when dog owners allow their pets outside to relieve themselves when staying or living in an area with wolves.

A fence or kennel may also help avoid depredation; however, the height of the fence or the presence of a roof makes a difference. This past winter, for example, a small dog was taken from its kennel just outside Ely, Minnesota. Although the small-breed dog did have a door to go indoors, the height of the fence was lower than five feet, and a predator was able to get in, snatch the dog and escape within a matter of seconds, presumably by jumping over the fence. Tracks indicated a wolf was the culprit.

In some cases it is difficult to determine what criteria wolves use to distinguish whether a dog is a threat or a meal. Evidence suggests that larger-breed dogs such as black labs are usually seen as competition based on their size since they are closer in stature to a wolf, whereas smaller dogs such as pugs are viewed as a food source because they look more like the wolf's prey such as rabbit or beaver.

Regardless of the reason for the attack, in many cases, the dog is partially or wholly consumed.

Hunting dogs are especially at risk for predation by wolves as these dogs are often encouraged to roam ahead and often out of sight of the owner. Bear hunting dogs are the most common type of hunting dog casualty and include breeds such as redbone and Plott's hounds and Rhodesian ridgeback. Traditional training of this category of dogs typically involves a summer field training season, which coincides with the use of rendezvous sites by wolves. During this training, dogs are encouraged to locate the scent of a bear, track it and tree it. Some owners use radio collars on their dogs to keep track of where they travel. Unfortunately for the dogs and their owners, bears and wolves often inhabit similar ecosystems in North America. Even a pack of six dogs may be no match for the intense territorial drive in wolves.

In areas where hunting with dogs is allowed and wolves are present, wildlife officials have developed guidelines for hunters to maximize hunting success while minimizing damage to their dogs.

Livestock-guarding dogs are also at greater risk for encountering wolves that investigate pastures or paddocks for potential food sources. Livestock-guarding dogs have been used for millennia to protect a variety of livestock against wolves and other predators. Traditional breeds include the

Carissa Winter

Ann Mayo-Kiely

Bear hunting dogs, like the Rhodesian ridgeback, are the most common type of hunting dog casualty.

Italian Maremma, Pyrenean Mountain dog, Polish Tatra sheepdog and Anatolian shepherd. These dogs are not trained to attack, but instinctively protect, deterring predators by placing themselves between their charges and an intruder and alerting nearby shepherds or owners to any disturbance. Livestock-guarding dogs are bred for this strong protective behavior, which may put them at greater risk for depredation.

Compensation programs vary regionally, nationally and internationally. In some areas of North America, owners are compensated when their hunting dog is lost to wolf depredation. Compensation also exists for many livestock-guarding dog owners around the world. However, for the vast majority of global dog owners who lose a pet to wolf depredation, compensation is not available.

What can dog owners do to prevent a situation where their companion pet may be seriously injured or killed? As mentioned above, keeping a dog close and preferably tethered when exercising goes a long way in preventing a negative encounter with wolves. As with other wildlife, wolves can become accustomed to vehicular or pedestrian traffic on a road or trail within their territories. Typically, wolves utilize the same thoroughfares as humans, yet slip out of sight when people approach. Keeping a dog from wandering out of sight may significantly decrease the chance of a wolf attack.

Being an alert owner may also prevent attacks. By avoiding areas with fresh signs of wolves or known rendezvous sites, owners put distance between their dogs and wolves.

What about at home? Living in wolf country has responsibilities just as living in grizzly bear or mountain lion country does. There are steps humans must take to prevent wolf and human contact such as storing food and waste securely and out of reach of animals, feeding pets in a secure area or indoors, and housing pets in a secure area if kept outdoors or allowed to roam.

Many people choose to allow their dog to roam freely in "the yard," while they themselves enjoy the outdoors. Although this may be a safe practice 90 percent of the time, keep in mind that for some dogs, a squirrel, rabbit or deer is too tempting to ignore. Once the dog runs off and out of sight, the safety the owner provided is null and void.

There are also cases where a wolf exhibits bold or aggressive behavior toward a dog even with the owner present or close. It is important to understand that the behavior directed toward the dog is not necessarily directed toward the human. The wolf's territorial nature drives the behavior to eliminate competition—in some cases at all costs. This could mean wolves suppress their natural avoidance behavior toward humans to protect their resources.

In a few cases, wolves have had experience with humans and dogs leading to a loss of that avoidance behavior. In these cases, the wolf may approach the dog even when on a leash held by the owner. It is essential that any wolf exhibiting fearless, bold or aggressive behavior in the presence of a human be reported to the authorities.

Owning a dog is a significant commitment. With this commitment comes great responsibility to safeguard the pet from avoidable dangers. In most cases, wolf depredation can be avoided with minimal work by the owner. ■


Scott Austin

Wolves view smaller dogs such as pugs as a food source because they are similar in size to a wolf's prey.

There are steps humans must take to prevent wolf and human contact such as feeding pets in a secure area or indoors, and housing pets in a secure area if kept outdoors or allowed to roam.

Tracking the Pack

The Changing of the Guards: Transitioning a Wolf into Retirement

by Lori Schmidt, wolf curator, International Wolf Center

During the summer of 2010, the International Wolf Center celebrated its 25th anniversary as an organization whose mission is to "Teach the World about Wolves." The wolf care program has been managing wolves for 21 of those 25 years, and the reality is, the wolves have taught the staff about pack dynamics, rank order and the importance of detailed management plans.

The most recent management decision relates to the aging and ultimate retirement of Shadow, an arctic wolf born May 8, 2000, which has been the dominant pack leader since September 2002. Shadow's littermate Malik, the lowest ranking member of the Exhibit Pack, was transitioned into retirement in November 2009 due to pack aggression deemed too intense for his safety. Malik has been living alone waiting for Shadow to lose status, decline in rank and be transitioned into the Retired Pack to live his remaining years in a stress-free environment.

Retiring a dominant wolf is complicated. If the wolf is psychologically strong, but physically weakening, it may overcompensate by exerting its dominance over the lower-ranking wolves to maintain its position, creating tension in the pack. This is the scenario the Center has been monitoring since spring 2010. Grizzer, the second ranking male, began showing subtle signs of testing behavior toward Shadow. It was Grizzer's behavior that caused staff to formulate a more defined plan.

Wolves cycle hormones with the seasons, even in an exhibit where

continued on page 14

Center Develops Proactive Plan for Shadow

When making a major decision such as retirement of one of the Center's ambassador wolves, the logistical plan needs to ensure enough staff to provide observational data that can be used to interpret not only the retired wolf but also the residual members of the pack. In 2002, when the 1993 litter was retired, a group of students attending an ethology course proved instrumental in interpreting MacKenzie's final decline as the dominant female. In planning for Shadow's retirement, the circumstances were different than they were with the 1993 litter. Experience with retiring wolves taught us that the psychological signs of a dominant wolf's decline occur much sooner than the physical. Shadow has been showing these signs since spring 2010. Rather than wait for Shadow, a very dominant wolf, to lose his status physically, we had the opportunity to be more proactive and choose a date for his retirement that would maximize behavioral observations. The date chosen, June 26, 2010, coincided with the start of a wolf ethology course, allowing 18 students to participate in the behavioral observations of this management plan. Data gathered from these students will be shared in the next installment of Tracking the Pack.

Galen Sjostrom

Shadow's energy level decreased as he tried to keep up with younger packmates.

The Changing of the Guards

continued from pg 13

Galen Sjostrom

wolves are spayed and neutered. The summer heat and humidity, coupled with a peak in nurturing prolactin hormone, is a logical time to make changes to pack dynamics. Another key component to an effective plan is the interpretation of the impact on the remaining pack members. If a wolf is not aggressively deposed, such as Malik was, there might be issues with separation anxiety. Maya and Shadow are closely bonded as the dominant pair, and Maya may respond with an intense focus on the Retired Pack, or may redirect anxiety to existing members. Eventually, Maya will likely pair bond with another male in the pack.

The male rank order may show some intensity as the remaining three wolves posture for status, but Maya as the dominant female will have a significant influence on Shadow's successor. At this point, Aidan has the strongest bond with Maya even though he was a recipient of some intense dominance behavior. To view the current status of the ambassador wolves, go to www.wolf.org and view the wolf logs, YouTube videos, and podcasts discussing the Center's management of the captive wolves. ■

CORRECTION:

In Amaroq Weiss' article "Lookin' for Wolves in All the Right Places" (summer 2010) we mistakenly said: "In October 2006, a female wolf and her pups captured in Montana for livestock depredations were relocated to northern Idaho, and from there, she migrated into eastern Washington." The author had notified us that those wolves were actually captured in "February 2002," but we missed the correction. We regret the error.

Center Receives $193,000 for Minnesota WolfLink Project

In late May 2010, the International Wolf Center was notified it will receive $193,000 from Minnesota's Environment and Natural Resources Trust Fund for its Minnesota WolfLink project. The bill containing the appropriation was based on project recommendations from the Legislative-Citizen Commission on Minnesota Resources, passed by the Minnesota Legislature with bipartisan support and signed by Governor Tim Pawlenty May 15.

The three-year Minnesota WolfLink project will use the Center's award-winning distance learning program to educate and talk in real-time with students who will virtually visit the Center from their classrooms around Minnesota. It will fund the creation of foreign-language and Braille versions of wolf curricula and supply Wolf Loan Boxes classroom teachers can use to share wolf pelts, bones and other artifacts with students.

"I always like working with the International Wolf Center," said Pete Royer, director of the Little Crow Telemedia Network, which provides interactive television, Internet and video-conferencing capabilities for 19 school districts in west-central Minnesota. "I believe the distance learning programs may be the only way some kids would ever see the Center. With declining budgets and fewer field trips, distance learning fills a niche the students and teachers are really drawn to."

Generated by profits from the Minnesota State Lottery, trust fund dollars are constitutionally dedicated by Minnesota voters to ensure a long-term, stable source of funds for protecting and enhancing the state's environment and natural resources, even during times of challenging budget situations for the state.

Minnesota WolfLink was one of 71 individual projects funded around Minnesota from a total appropriation of $26.1 million.

"We're honored to receive this funding from the trust fund and the state of Minnesota," said Mary Ortiz, executive director of the Center. "Our educators are excited to present 100 free, interactive programs to at least 2,500 students, teachers and others from across the state. Wolf curricula in other languages and the loan boxes will help us reach out to new audiences." ■

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Thank You!

Personal Encounter

A Case of Mistaken Identity?

by Ronald Schultz

I have found from experience a person cannot learn all there is to know about wolves, or probably any other species, in one's lifetime. I have been working with gray wolves for more than 28 years, and every year I learn and observe something new about this great predator. I would like to share a unique observation a co-worker and I made while checking out a wolf den in north-central Wisconsin.

On a mild winter day in mid-February, co-worker and dear friend Randy Jurewicz and I were snow-shoeing on an old logging trail through a rolling hardwood stand bordered by a ridge of hemlock to the west and a creek bottom lined with alder and balsam fir to the south. As we approached the hemlock stand, we noticed deer and wolf tracks coming down the ridge heading into the thick stand of balsam fir. As we examined the tracks, we could see two wolves had been in pursuit of a fleeing white-tailed deer. As we followed the bounding tracks of the three animals into the thick balsam, we could hear what sounded like an animal or animals departing the other side, heading toward the creek bottom. Shortly after entering the balsam stand, we found a very fresh deer that had been killed by the two wolves. This explained what we heard leaving the stand as we approached. One or both of the wolves were, no doubt, feeding on the kill and retreated to the creek bottom as we approached.

The deer, which we later learned was female, had been mostly consumed by the pair of wolves. All that remained was the spinal column with skull attached, rib cage and several leg bones and hooves. It appeared the wolves chased the deer into the thick fir stand where she was unable to fend off the attacks.

As we searched the area, we discovered that the

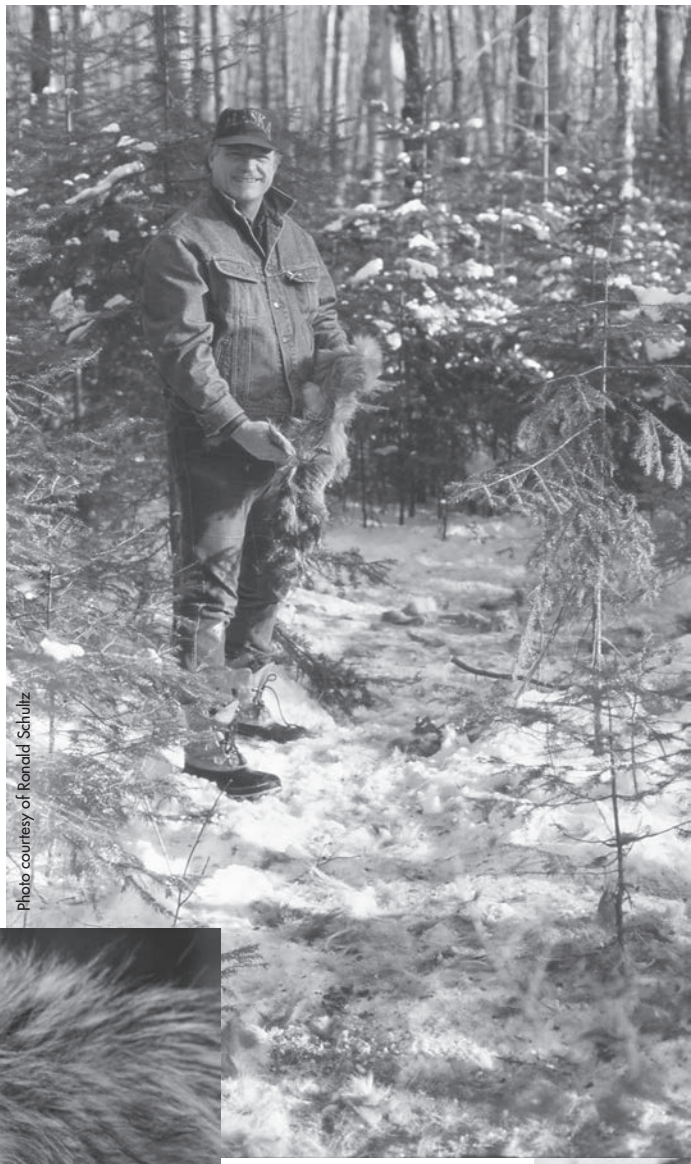
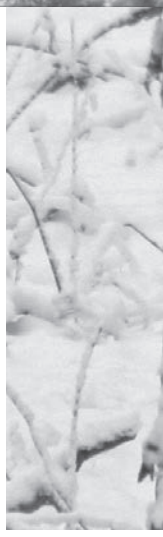


Photo courtesy of Ronald Schultz

Deb Wells

Ronald Schultz makes a unique observation while walking along a logging road.



wolves had left the kill only to return on several occasions. When we finished examining the kill site, we followed the wolves' tracks to where they had left the kill earlier. The wolves' tracks were heading toward the den. The two wolves then crossed the logging road down from where we had come. In the middle of the road, where the two animals had crossed, we noticed a pile of snow. The basketball-sized snow pile had been constructed by one of the two wolves and the animal topped it off by urinating on it.

As we both looked at the small pile of snow in wonder, I did what any curious person would have done; I kicked the pile with my foot. As the snow flew, mainly in one direction, to our surprise, out came the fetus of a deer. We then began examining the site with a less aggressive approach, carefully using our hands to dissect the pile of snow. We discovered that under where the fetus had lain, was a layer of wolf hair, and under the hair, it appeared that the snow may have been somewhat padded down. The deer fetus was completely intact with the exception of several small cuts on its nose. It appeared that that a wolf carefully carried the fetus to this site, gently packed down some snow, pulled out some body hair, laid it over the prepared snow, laid the fawn fetus on the hair, covered it with snow, and then urinated on the top of the snow pile.

It has been documented that wolves cache organs and food from their prey and they have been known to bury their pups when they die at an early age, but I have never seen nor read about such an unusual cache as this one. This could have just been another food cache the wolves planned to consume at a later time, but I believe there may have been more to it. With the careful preparation of this cache site, I believe it could have been possible that the wolves—or a wolf—noticed the fetus while consuming the deer and thought it was one of their own. They then took the scentless body and buried it on their way to check out the den, just like they may have done with one of their own pups. ■

Ronald Shultz has worked for the Wisconsin Department of Natural Resources on the wolf program for the last 28 years, trapping and monitoring the population. He has an interest in nonlethal control techniques to prevent wolf depredation and has tested shock collars and scent marking. He is now testing the use of a simulated wolf pack to move rendezvous sites away from farms. He majored in wildlife management and biology at Eastern New Mexico University and the University of Wisconsin Stevens Point and holds an associate degree in machine tooling from Wisconsin North Central Technical College.

Mary Anne Bourque

Wolf Tracks

Lake Superior Zoo Opens Wolf Exhibit

by Holly Henry

The Lake Superior Zoo, in Duluth, recently acquired three male Mexican gray wolves from the Wildlife Science Center, in Forest Lake, Minnesota. The wolves were born as part of a research project for testing a reproductive enhancement technique for a Mexican wolf species recovery program.

The wolves are now settling into their new home in a specially designed exhibit at the zoo. Director of Education and Animal Management Leslie Larsen said the wolves are a perfect fit for an area that used to be a yard for hoovestock. "We wanted to have a new exhibit for the 2010 season, and we had the opportunity to fill one of our larger exhibit spaces with something significant," she explained. "Over time, our hoovestock yard suffered from animals that enjoyed eating foliage, which put undue stress on the soil, causing erosion."

When the St. Louis County Soil and Water Conservation District confirmed the erosion, zoo staff decided to exhibit animals that can be viewed well on the hillside but not cause the same erosion as caribou or deer.

Building an appropriate exhibit for the wolves was not without its challenges. This was the zoo's first renovation of a space since management was transferred from the city to the zoological society last year, so there was pressure to get it right. While Larsen acknowledged on the surface it was a relatively simple exhibit to create, the nature of wolves presented unique circumstances. Wolves are both good diggers and climbers, so fencing had to be buried properly and without angles conducive to climbing.

Larsen and her staff looked to others who have housed wolves to help with the project. "Some of the experts in the field pointed us to zoos that have good kennels or that have learned from their mistakes in how they built their exhibit," she said. "In the zoo field, it is our responsibility to our peer organizations to share this type of information. That way in the long run, we can all create the best possible living space for our animals. We wanted to make sure we did our homework."

Part of that homework involved consultation with the International Wolf Center. Larsen consulted with the Center when first exploring whether to exhibit parent-reared or human-reared wolves. "Again, it's facilities like the International Wolf Center that have been doing this for years that we should turn to as the experts to guide us," she said. The zoo decided to exhibit human-reared wolves because they are more acclimated to humans and may adjust to life in a zoo more easily than parent-reared wolves.

The staff at the zoo will continue to learn about care of the wolves from other facilities, including the International Wolf Center. The zoo's veterinarian will also spend time at the Wildlife Science Center to participate in wolf exams to learn more about how to work with wolves specifically during physical exams and anesthesia procedures.

Larsen said the entire Lake Superior Zoo staff feels honored and privileged to have the wolves on exhibit. "It is our hope that through this exhibit we can educate people and help them better understand these symbolic animals," she said. "Predator-prey relationships in nature are very complex. By being able to learn more about wolves, we can perhaps help people better understand them and their role in nature." ■

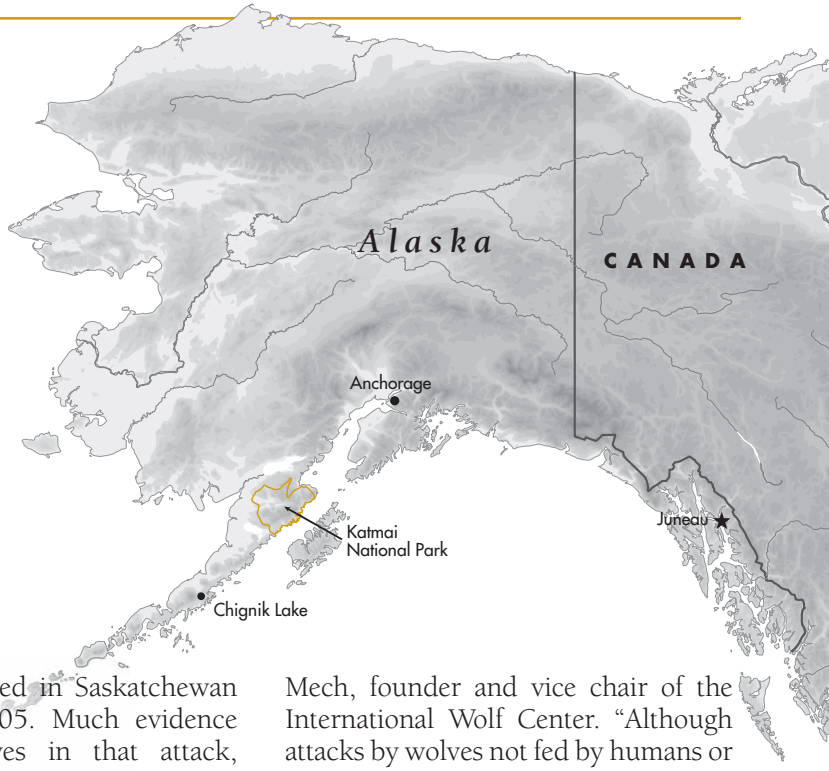
Holly Henry is a former journalist. She now works as the events and promotions manager at the Lake Superior Zoo.

Photos courtesy of Lake Superior Zoo

The Lake Superior Zoo recently acquired three male Mexican wolves for a newly renovated exhibit space.

Jackie Fallon

Questions Remain about Fatal Attack on Alaskan Runner



Was 32-year-old Candice Berner caught off guard while running outside the tiny village of Chignik Lake, Alaska, and attacked by animals March 8, 2010? Was this "small and mighty" special-ed teacher, as her father described her, lulled by music and in a meditative state that prevented her from trying to defend herself? What other creatures besides wolves could have killed her? These and several other questions may never be answered. What is known, however, is that the 4-foot, 11-inch-tall Pennsylvania native was found by snowmobilers soon after she died surrounded by large canid tracks and with at least one wolf seen nearby.

Although large dogs would seem to be the only other candidate for the attack, their involvement has been ruled out. Alaska Department of Fish and Game biologist Lem Butler, who spent eight days investigating the area, stated: "While I was in the village, all of the dogs stayed very close to town. All were friendly and well socialized." After Butler checked the canid tracks in the area, he stated, "I found no evidence to support the idea that dogs roam loose away from the village, that dogs were using the area where Candice was killed or that dogs were at the site of her death. Based on my experience in the area, I also doubt that dogs would live long if they spend significant periods away from the village. Each winter I receive several reports of wolves killing dogs in villages."

Authorities have pretty well concluded that wolves were the culprits in this upsetting incident, and that appears to mark the second exception to the long-standing statement: "No fatal attacks by healthy wild wolves have been documented in North America." The first exception, still disputed by some as a wolf kill, was that of 22-year-old student Kenton Carnegie, who died in Saskatchewan in November 2005. Much evidence pointed to wolves in that attack, although some biologists believed a bear might have been involved. (See *International Wolf,* summer 2006.)

"We know that wolves in other countries, especially India, have regularly preyed on humans, particularly children," stated wolf authority David Mech, founder and vice chair of the International Wolf Center. "Although attacks by wolves not fed by humans or habituated to them are rare, they are not out of the question. Any large carnivores, including dogs, have the capacity to kill or injure humans, and one must always be careful around them, especially when with children." ■

U.S. Fish and Wildlife Service Weighs in on Hydatid Tapeworm

Editor's Note: This past spring, folks opposed to wolves in the Northern Rockies proposed that because wolves (like coyotes, foxes, and dogs) carry the hydatid tapeworm (Echinococcus granulosus), *the prevalence of this parasite would increase and endanger the public.* International Wolf *carried a short Q & A about this parasite in its summer issue. Here we present a more thorough summary of relevant information in the form of a letter written by the deputy director of the U. S. Fish and Wildlife Service in reply to a constituent.*

David Cartier

Dear Constituent:

Thank you for your letter of February 12, 2010, to Senator John Barrasso regarding the tapeworm, *Echinococcus granulosus (E.g.)*, and requesting information about the presence of *E.g.* in Wyoming and efforts to alert the public about possible human health risks. Senator Barrasso has asked the U.S. Fish and Wildlife Service (Service) to respond directly to you and we apologize for the delay.

Echinococcus granulosus is a small tapeworm (about one-quarter inch long) that lives in the intestine of canids (wolves, coyotes, foxes, and dogs) as an adult or in various tissues of ungulates (moose, elk, deer, cattle or sheep) in its developmental stage. Eggs shed by the adult worm pass into the environment in canine feces, are consumed by ungulates during grazing, develop into cysts (hydatid cysts, usually in lungs or liver, but can occur in other locations), and are returned to a canine host by consumption during predation or scavenging. The parasite poses no health risk to the canine host, and only rarely causes enough tissue damage to affect ungulate health.

Although wolves reintroduced to Yellowstone and central Idaho were treated with drugs to destroy *E.g.*, wolves in these ecosystems currently have a relatively high prevalence of the parasite. The source of the parasite in these ecosystems is not known. *E.g.* may have been already present at low levels in resident coyotes, foxes, and/or dogs, may have been brought in by dogs or naturally dispersing wild canids, or inadvertently brought in with reintroduced wolves.

E.g. poses a very low health risk to people. Humans can be exposed through inadvertent ingestion of infective eggs (note that not all eggs are infective). This usually results from contaminated hands after working with infected canids or canine feces. Human exposure is most common in rural communities when dogs are fed or otherwise scavenge raw offal from infected domestic animals or hunter-killed wildlife. Once established in a dog-livestock cycle, parasite prevalence in areas close to humans can dramatically increase human exposure. The Centers for Disease Control indicate that most infections do not cause symptoms in humans, especially when exposed to a low infective dose. Hydatid cysts usually occur in the lung or liver, but can also occur in other tissues. *E.g.* is usually treated with anthelmintics (drugs to kill parasites) and surgical removal of the cyst.

Humans have existed with *E.g.* presence for decades, with very few human cases being reported, particularly in areas with better hygiene and education. *E.g.* is common in most sheep-raising areas of the world. Most North American cases are associated with native villages feeding sled dogs raw infected wildlife organs. Wildlife maintains the disease on the landscape, permitting infection of domestic dogs which pose the greatest risk to humans. Most outbreaks in humans are managed by education about the parasite life cycle and the important role of domestic dogs, proper hygiene, and appropriate veterinary care of dogs. Such management greatly decreases or eliminates human cases.

The public should treat all wildlife, including canids, as potential vectors of disease. *E.g.* is just one of many zoonotic diseases (diseases transmissible to humans) in wildlife. When handling canids or canid feces, we recommend wearing gloves, not smoking, eating or drinking, and washing-up afterwards. These simple precautions decrease exposure to a negligible level. These types of public health advisories are appropriate for those engaged in wolf hunting or other wildlife pursuits that include handling of any canine species, tissues or scat. We also recommend not feeding uncooked wild or domestic ungulate organs to dogs and maintaining proper veterinary care of dogs and their parasites.

State fish and wildlife agencies advise the public on these routine precautions in the handling of wildlife tissues and scat. For example, Idaho Fish and Game, Montana Fish, Wildlife and Parks and Washington Department of Wildlife all provide specific information about *E.g.* on their respective websites, which are easily accessible by the public. In order to further raise awareness of this issue, we intend to distribute this letter to our partners and post it on the Northern Rocky Mountain gray wolf website.

I hope this information is useful. If you need further assistance, please contact me or Mr. Steve Guertin, the Service's Mountain-Prairie Regional Director at 303-236-7920. ■

Sincerely,

Deputy Director

cc: Senator John Barrasso

David Cartier

Elk, caribou, deer and moose are the usual intermediate hosts of the hydatid tapeworm.

Members Matter

Starting Young: Developing an Affinity for Wolves

by Fran Howard

As a four-year-old, it didn't take Erin Kelm long to figure out wolves were getting a bad rap. She had been hearing about the big bad wolf for years. "All the children's stories had bad wolves in them," said Erin, now 11 years old. The wolves in fairytales such as Little Red Riding Hood and The Three Little Pigs epitomized the stigma of the wolf as an undesirable character. "When I was young, I felt bad for wolves because people would say wolves are bad. They kill cattle and stuff," said Erin, who lives in Charleston, South Carolina. She still feels bad for wolves, but she's doing something about it.

A member of the International Wolf Center since 2005, Erin has been sending a large portion of her hard-earned allowance to pay her membership dues since she was six years old. Sometimes the money arrived in cash—both dollars and cents. "It's not hard to part with the money," Erin noted. "I love wolves. I do it for them." Erin receives $2.50 in spending money per week and another $2.50 her parents send directly into a savings account. In return, Erin keeps her bedroom clean, vacuums and dusts the lower level of the family's home, vacuums out one of the cars and cleans a bathroom.

"I honestly struggled at times with her decision to save her allowance money for the $35 annual fee, which was a lot of money for her," said Erin's mother Jackie Kelm. "Erin's brother would be buying Lego ships and toys, and she'd be sending her allowance off to the International Wolf Center. It took her time to save that much allowance money. She would put birthday money with it, too, which helped. She was so insistent on using it to help the wolves that I just let her go ahead."

But how does a six-year-old find out about an organization like the International Wolf Center? Word of mouth. A friend of the Kelm family and member of the Center, Kate Piersanti mentioned the International Wolf Center to Erin's mother after Erin started to develop an affinity for wolves.

Today, the blonde-haired, lanky Erin knows more about wolves than most adults. "I have tons of books on wolves," she said. "Once a long time ago when the tribes hunted wolves, they would use the skins for clothes and blankets because they honored wolves." A straight-A student, Erin was one of 150 students accepted into the Charleston School for the Arts this year out of an

Jackie Kelm

Erin's bedding sports a wolf design, and wolf posters plaster the walls of her room.

applicant pool of 700. Her favorite subjects to draw, not surprisingly, are wolves. A fan of Animal Planet as well as any show on wolves, Erin also gets a lot of her information on wolves from *International Wolf* magazine and the Center's Web site. Erin's bedding sports a wolf design, and posters plaster the walls of her room, where a wolf paw impression also hangs. "A wolf's paw can be as big as an adult person's hand," she beamed.

Erin remembers her first wolf encounter, which was shortly after she became a member of the Center. She and her family had traveled to Ohio to visit an aunt and uncle. While there, they visited a private wolf refuge where Erin got up close and personal with a wolf. "We were with a group and had a tour guide," she recalled. "We got to put our hands flat up to the cage, and the wolves would lick us. It was lots of fun."

Not long after that first encounter, Erin announced to her mom she was part wolf and began taking on a wolf's persona. "I used to crawl around the room and howl like a wolf," she said. "I liked doing it. It was fun."

Erin's interest in wolves, however, has evolved dramatically since then. "I want to do something that involves wolves and animals when I grow up," she noted. Her options include, but are certainly not limited to, becoming a veterinarian specializing in conservation medicine or a wildlife biologist. But for now, she just plans to continue to help wolves through her membership in the Center. "The International Wolf Center is one of the best ways to help wolves," she said. "I'm not old enough to help wolves on my own yet." ■

A student of Charleston School for the Arts, Erin's favorite subjects to draw are wolves.

"A member of the International Wolf Center since 2005, Erin has been sending a large portion of her hard-earned allowance to pay her membership dues since she was six years old."

Fran Howard is a freelance writer and editor based in Saint Paul, Minnesota, specializing in science, wildlife conservation, business, veterinary medicine, and agriculture. She is also the consulting editor for International Wolf, *a Minnesota Master Naturalist volunteer and the author of 30 children's books on nature-related subjects.*

A Look Beyond

The Future of Wolf Restoration

by Mike Phillips

The tremendous success with wolf recovery in the Great Lakes states (Minnesota, Michigan and Wisconsin) and the Northern Rockies (Montana, Wyoming and Idaho) indicates that recovering the species in the southwestern United States (Colorado, New Mexico, Arizona and Utah) is doable. This claim is bolstered by two recent studies that revealed tremendous potential for gray wolves to occupy the Southwest in numbers and with a distribution that would more than satisfy the spirit and intent of the Endangered Species Act.

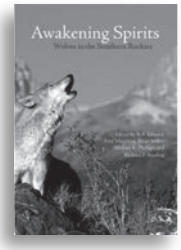
Specifically, the studies determined that under current habitat conditions, probably more than 1,000 wolves could inhabit the southwestern United States. This area includes two refugia of high quality and highly secure habitat that is currently unoccupied: the Grand Canyon ecoregion and the Southern Rocky Mountains ecoregion. If one combines these with the Blue Range Wolf Recovery Area, where efforts have been underway for over a decade to restore Mexican wolves, then more than enough high-quality habitat exists to restore wolf populations that would persist indefinitely.

Reintroducing wolves to the Grand Canyon ecoregion, a place that enjoys the largest potential for wolves in the southwestern United States, and the Southern Rocky Mountains ecoregion represents an outstanding opportunity to recover the animal throughout a significant portion of its range as mandated by the Endangered Species Act.

Moreover, these two reintroductions would reconnect wolves along the spine of the continent—the Rocky Mountains and Sierra Madres—from Mexico through Canada and into Alaska. Noted wolf biologist David Mech concluded the following when considering such a vision: "Ultimately then this restoration could connect the entire North American wolf population from Minnesota, Wisconsin and Michigan through Canada and Alaska, down the Rocky Mountains and into Mexico. It would be difficult to overestimate the biological and conservation value of this achievement."

A rare opportunity exists to recreate the evolutionary potential of wolves, as well as reestablish the role of wolves as a keystone species with strong ecological interactions throughout the Rocky Mountain West. Evolutionary and ecological restoration will be hindered if we limit wolf recovery to the success in the Northern Rockies and the Great Lakes states. Additional reintroductions in the Grand Canyon and Southern Rocky Mountain ecoregions are clearly called for as important steps in returning the gray wolf to its rightful place as an important and fascinating part of our nation's ecological past and future. ■

Mike Phillips has been involved in wolf conservation since first working for David Mech in 1980. He currently serves as the executive director of the Turner Endangered Species Fund and serves on the International Wolf Center's board of directors.



Author's note: The essay above draws heavily on chapter 11 (Potential for and implications of wolf restoration in the Southern Rocky Mountains) of a new book about wolf restoration: Awakening Spirit: Wolves in the Southern Rockies *(Fulcrum Press, Golden, CO).*

Dotty Weber