

A close-up photograph of a wolf's head and shoulders in a snowy, winter environment. The wolf has thick, grey and brown fur and is looking towards the right. The background is a soft-focus snow-covered landscape with some evergreen branches.

INTERNATIONAL WOLF

A PUBLICATION OF THE INTERNATIONAL WOLF CENTER
WINTER 2011

**Unraveling the Biogeography
of Wolf-Like Canids in the
Horn of Africa, PAGE 4**

**Denali's Story: Nightmare
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INTERNATIONAL WOLF

THE QUARTERLY PUBLICATION OF THE INTERNATIONAL WOLF CENTER
VOLUME 21, NO. 4 WINTER 2011

Features



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Claudio Sillero-Zubiri



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Robert Van Bergen



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On the Cover

Mexican gray wolf (*Canis lupus baileyi*).
Photo by Jacquelyn M. Fallon

Jackie Fallon, education advisor to the Mexican Gray Wolf Species Survival Plan, conducts fieldwork with wolves in Yellowstone National Park as well as in the southwestern United States. She has been involved with wildlife conservation for nearly 25 years, and her work focuses on resolving conflict between humans and wildlife, particularly canids.

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Graphics Coordinator
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Consulting Editor
Fran Howard

Technical Editor
L. David Mech

Graphic Designer
Tricia Austin

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Publications agreement no. 1536338

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International Wolf welcomes submissions of personal adventures with wolves and wolf photographs. Prior to submission of other types of manuscripts, address queries to Tom Myrick, magazine coordinator.

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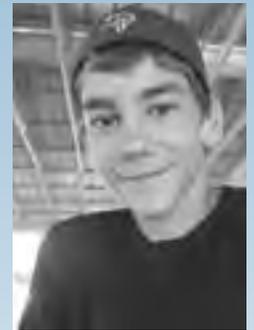
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Avery's Walk for Wildlife

In the summer of 2010, 14-year-old Avery Mikel decided to organize a fundraising walk in Nevis, Minnesota, to raise money to help birds affected by the Gulf oil spill. With the help of community members, Avery's Walk for Wildlife raised almost \$1,000.

In August 2011, Avery organized another walk. This time, he wanted to donate the proceeds of his efforts to support the International Wolf Center. The second Avery's Walk for Wildlife drew 60 participants and raised \$870, which Avery donated in support of wolves.

At a young age, Avery is already making a difference in his community. On behalf of all of us at the International Wolf Center, thank you, Avery, for your generosity and commitment. We have every confidence you will continue to do great work in support of wild animals around the world. ■



Avery Mikel



Courtesy of Naama Mikel

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From the Chair of the Board of Directors

Just the Facts Without the Spin

William Butler Yeats said, “Education is not the filling of a pail, but the lighting of a fire.”

People and organizations continually try to persuade us to their points of view, filling our pails to overflowing with their spin on an issue. And sometimes we subscribe to political parties, churches, or organizations because they fill our buckets with ideas we favor. I’m no different from most in that way.

But I especially respect groups that don’t try to “educate” me to their point of view, but rather offer opinion-free, in-depth information. These teachers stimulate my thinking. I respect a speaker who acknowledges that people may legitimately disagree. I like a newsletter that introduces me to the pros and cons of an issue.

At the International Wolf Center we strive to present objective information and not to take positions on the many juicy, controversial topics concerning wolves.

Should people own wolf-dog hybrids? Is it okay for the government to kill wolves that kill livestock? Should Montana and Idaho allow wolves to be hunted? Does climate change endanger arctic wolves? Go online and

you’ll find dozens of these discussions, some resembling blood baths.

Members of the Center’s board and staff have opinions on these topics, but in our work we keep our opinions to ourselves and do our best to educate on the issues. Our latest temptation to advocate was a proposal that we publicly favor delisting gray wolves, which does not include the Mexican gray wolf in the Southwest, from the endangered species list.

In the summer issue of *International Wolf*, we published arguments on both sides of the controversy: don’t delist because full recovery of the wolf has not been achieved in other than a few states and in only five percent of the wolf’s historical range in the lower 48; delist because the ESA states that when wolf populations reach sustainable numbers the species should be delisted, and delisting could help defuse the fury of those who have legitimate concerns that wolves take livestock and pets or kill game animals.

After intense discussion, we affirmed our non-advocacy position and recommitted to addressing hot-button issues with the unbiased approach of the educator.

I’m not implying that having an opinion is a bad thing. Perhaps we are drawn to groups and individuals whose thinking syncs with our own. But after them, don’t we next best trust those who give us the facts without bias or exaggeration—and without filling our buckets with their “truth?” ■

Sincerely,

Nancy jo Tubbs, Board Chair



Nancy jo Tubbs

INTERNATIONAL WOLF CENTER

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Unraveling the Biogeography of Wolf-Like Canids in the Horn of Africa



Thomas Krumnacker

Canis aureus lupaster.

by CLAUDIO SILLERO-ZUBIRI

“The cryptic African wolf: *Canis aureus lupaster* is not a golden jackal and is not endemic to Egypt.”

New genetic evidence reveals a new species of wolf living in Africa. Formerly confused with golden jackals, and thought to be an Egyptian subspecies of jackal, the African wolf shows members of the wolf lineage reached Africa about three million years ago, before they spread throughout the Northern Hemisphere.

We tend to think of wolves as a Northern Hemisphere species. The only other wolf on the African continent is the Arabian wolf, *Canis lupus arabs*, in the Sinai Peninsula, where a scatter of sightings has been recorded throughout the years. Having worked for many years on Ethiopian wolves (*Canis simensis*), a close relative of gray wolves, I have always been intrigued by their evolutionary links. I have often pondered what might have been the routes and associated land bridges that enabled Ethiopian wolf ancestors to reach the highlands of Ethiopia in the heartlands of the Horn of Africa.

Scientists have consistently placed Ethiopian wolves close to gray wolves and coyotes, with a common ancestor that might have lived a mere 100,000 years ago. Huddling by the fireplace under African skies, my associates and I have often had long conversations trying to undo that long winding road and wished-for fossil finds that might proffer the missing link we longed for. Sadly, such fossils are not abundant in North Africa, and at any rate, genetics

might arguably be a better approach to answer this kind of question today.

Having read the few accounts of large canids in North Africa that I could find in Oxford's libraries, I targeted a population of golden jackals in southern Egypt described as *Canis aureus lupaster* as a potential candidate to resolve the puzzle. As long ago as 1880, the great evolutionary biologist Thomas Huxley commented that golden jackals in Ethiopia looked suspiciously like gray wolves. The same observation was made by several 20th century biologists studying skulls. Nonetheless, the conventional scientific classification has not been changed, and *lupaster*—the golden jackal of southern Egypt—continued to be regarded as a subspecies of the golden jackal, albeit with a hovering question mark.

A few years ago, Yugal Tiwari, a young Indian biologist who was working in Eritrea, sent me a grainy picture, captured from a video he had filmed from the road while travelling in Eritrea's Danakil (see photo above). My interest was piqued, since it showed a young, lanky canid with large paws that could easily be a desert-dwelling wolf. The evidence was modest, but we published a short note in the hope that we could attract similar reports. Unfortunately, no additional information has turned up.



African wolf, *Canis aureus lupaster*, stands alert.

Yugal Tiwari

Fast forward a few years to a collaborative effort among biologists from the universities of Addis Ababa and Oslo to study the relationship between isolated Ethiopian wolf populations in the Highlands of Ethiopia, using DNA extracted from scat specimens. The specimens, including some from sympatric golden jackals, were shipped to a lab in Oslo for analysis. A while later, Eli Rueness, the scientist responsible for the analyses, contacted me with breathless excitement, saying that some of the samples looked like wolf DNA, but did not match anything in GenBank, the world's largest repository of genetic sequences.

Unwittingly, we had uncovered genetic evidence of a cryptic canid species that looked like a golden jackal but whose genetic code expressed something else. A cryptic species complex is a group of species that satisfies the biological definition of species—that is, they are reproductively isolated from each other—but whose physical traits are very similar (in some cases virtually identical). The species in a cryptic complex are typi-

cally very close relatives and in many cases cannot be easily distinguished by genetic studies.

Further analysis at Rueness' lab linked our cryptic "wolf" specimens in the highlands of Ethiopia to the sequencing of *lupaster*, 2,500 km (1,553 miles) to the north in Egypt. This finding unambiguously placed the ill-fitting Egyptian jackal and its close relatives from Ethiopia within the wolf species complex. It transpires that *lupaster* and its Ethiopian Highlands' relatives are not jackals but wolves in jackal clothing. Taxonomically these African canids are grouped with the Northern Hemisphere's gray wolf, Indian wolf and Himalayan wolf.

Recent genetic evidence suggests that the Indian and Himalayan wolves evolved separately within the modern wolf cluster, even before the gray wolf radiated throughout the Northern Hemisphere. Furthermore, not only did these two types of wolves originate before gray wolves radiated in northern latitudes, but the wolf's colonization of Africa also took place before the gray wolf radiation.



Lajos Nemeth-Boka

Arabian wolf, *Canis lupus arabs*.



Lajos Nemeth-Boka

The colonization of Africa by the ancestral wolf stock took place about three million years ago and is today embodied by the animal that has hitherto been called the Egyptian jackal.

The colonization of Africa by the ancestral wolf stock took place about three million years ago and is today embodied by the animal that has hitherto been called the Egyptian jackal. It was not the missing link for Ethiopian wolves that I had hoped for, but something just as intriguing. For me personally, this study showed the strengths of modern genetic techniques, demonstrating that old puzzles may be solved, and hidden biodiversity may be exposed in relatively unexplored regions.

The news of a wolf in Africa, which went viral once our paper in PLoS ONE was published, raised fascinating biological questions about how the new African wolf evolved and lived alongside not only the real golden jackals but also the vanishingly rare Ethiopian wolf. The latter is a very different species, of more recent origin, with which the new discovery should not be confused. But the African wolf discovery contributes to our understanding of the biogeography of Afroalpine fauna, an assemblage of species with African and Eurasian ancestry that evolved in the relative isolation of the highlands of the Horn of Africa.

The news of this new African wolf also raised issues of conservation importance. Golden jackals are regarded by the International Union for Conservation of Nature (IUCN) as a species of “least concern”—i.e.,

not threatened—but the newly discovered African wolf may be much rarer. Certainly, it has become a priority for both canid conservation and science to discover its whereabouts and numbers. It seems that the Egyptian jackal is urgently set for a name change, and its unique status as the only member of the wolf complex in Africa destines it to be renamed the African wolf. ■

Acknowledgements

* Rueness E.K., Asmyhr M.G., Sillero-Zubiri C., Macdonald D.W., Bekele A., Atickem A. Stenseth N. (2011) “The Cryptic African Wolf: *Canis aureus lupaster* is Not a Golden Jackal and Is Not Endemic to Egypt.” PLoS ONE 6(1): e16385. <http://www.plosone.org/article/info:doi%2F10.1371%2Fjournal.pone.0016385>

Professor Claudio Sillero-Zubiri is the chair of the IUCN/SSC Canid Specialist Group. Sillero-Zubiri is the deputy director of the Wildlife Conservation Research Unit (WildCRU) (www.wildcru.org) of the University of Oxford and works on conservation of threatened species, protected areas management and the mitigation of human-wildlife conflict. He has studied Ethiopian wolves since 1987 and founded the Ethiopian Wolf Conservation Programme (www.ethiopianwolf.org).



Rebecca Jakeral



Denali's Story: Nightmare Past Midnight

**Wolf-dog hybrid vies for
position of dominant male**

Text and photos
by ROBERT VAN BERGEN



PRELUDE

Denali, a wolf-dog hybrid, came to me quite unexpectedly five years prior to the following story. Let me first state, unequivocally, that I did not acquire a wolf-dog on some romantic whim. I had been asked to house him temporarily. He was 18 months old and 105 pounds (47.6 kilograms). He was also very wary and suspicious of everyone, including me. Though he wasn't aggressive, he was apprehensive, and I knew winning him over was going to require some guile.

Clearly, the way to his heart was through his stomach. I bought a couple of orders of chicken nuggets and put them on the floor of the garage, spacing them at 18-inch (45.7-centimeter) intervals in front of the door to his portable kennel. I opened the door and was met with the most intense stare I had ever seen on a dog. No barking, no snarling, no rushing the door—just a cold, unflinching stare. But he was hungry. I backed away from the opening and walked over to my workbench, pretending to ignore him while I busied myself with something.

In a painfully slow manner he crept to the front of the kennel and stepped out to sniff the temptation I had laid out before him. He first took one nugget and then another. I kept him in my peripheral view as he drew closer. He ate the last nugget and just stood there, looking at me with those intense eyes of his. As I pretended to ignore him, he suddenly pushed his nose into the palm of my hand, which was hanging at my side. Soon he was licking my hand. I spoke to him softly, asking if he wanted some more. His ears and eyes said, "Yes," but not to



Robert
Van Bergen's
beloved Denali.

**He was part Alaskan malamute,
Siberian husky, timber wolf and gray wolf.
Between his huge size and cold stare, Denali
had a stunning and imposing presence.
When we walked, we were noticed,
always and wherever we went.**

For more on wolf-dog hybrids, go to www.wolf.org and choose the News and Events tab to download the Fall 2009 issue of *International Wolf*. Look for "Wolf-Dog Crosses—Pet or Problem?" by Tracy O'Connell.

move too quickly. I complied, and the love affair started. From that day forward, I was his dominant male, my family his pack.

Denali was the epitome of a gentle giant. Terribly loving, he gave me his complete trust, and I gave mine to him. In the five years we shared, he never showed any aggression, ever, not to my wife, my kids, my grandkids or me. Denali and I walked, generally for an hour, every day for five years. I don't believe we missed more than a few days, save for our two-week cruise to Alaska.

Of all the dogs I have owned—and there have been more than 10 breeds—Denali was unique among them. He was part Alaskan malamute, Siberian husky, timber wolf and gray wolf. Between his huge size and cold stare, Denali had a stunning and imposing presence. When we walked, we were noticed, always and wherever we went. People were drawn to Denali like a moth to flame, but interactions with strangers were always on Denali's terms. He was never aggressive but always apprehensive. He was such a baby and such a lover with those he loved.

The end of our love affair was tragic and terribly heartbreaking. I do mourn, and will continue to mourn the loss of him for a very, very long time. I have since acquired a male golden retriever named Ruger. He, too, is as sweet and loving a dog as one could ever want. At 15 months and nearly 90 pounds (40.8 kilograms), he is still very much the playful puppy. He, like all my dogs, has full possession of my heart. I look forward to a very long and loving relationship with him.

I urge you to read my story and think long and hard before acquiring a wolf-dog. Do your research, and please go into it with your eyes wide open.



CANINE CHAOS

My story begins on the evening of May 25, 2010. This was the night my wolf-dog, Denali, would challenge my position as the dominant male. Little did I know that I would experience a hell unlike anything I had known before, and I had no clue what was about to happen.

Just like every night of the week, I returned home from work about 11:45 p.m. My first order of business was to get Denali from his kennel, let him out to relieve himself, feed him, give him lots of loving and just hang out with him for an hour and a half to two hours before putting him back into his kennel for the night.

But not tonight. It was 1:45 a.m. when I told him it was night-night time. I crawled under the kitchen table to hook his leash onto his collar. He emitted a low growl. Denali had been with me for five years, having been acquired at 18 months. I didn't think of his growl as a threatening one but rather a growl of noncompliance. I opted to loop his leash through the handle, gently dropping the loop over his head. I had done this before without incident—but not tonight.

As the leash touched the top of his head, he exploded into action. Less than two feet (0.6 meters) away, I could see in his eyes that this was no bluff. Growling, snarling, with his teeth bared, he rushed straight at my face. I turned away and immediately felt him snapping his powerful jaws at the side of my head three or four times. I felt his teeth sink into and through my left ear. I was in total disbelief at what was happening. Over and over again, I told him, "NO," while trying to grab his collar and get control over him.

Denali was, by anyone's standards, huge. He was 5-feet, 7-inches (1.7 meters) from the tip of his nose to the tip of his tail. He stood 30 inches (0.76 meters) at the shoulder, had a 22-inch (0.56-meter) neck, and weighed an estimated 150 pounds (68 kilograms) or so. He was formidable, to say the least.

As the leash touched the top of his head, he exploded into action. Less than two feet (0.6 meters) away, I could see in his eyes that this was no bluff. Growling, snarling, with his teeth bared, he rushed straight at my face.

I finally got ahold of his collar and got him off my ear before he could tear it completely off. I had felt my ear tearing and tried hard not to panic. Off my ear for only a second, he wrenched his head free and went for my left forearm. He sank his fangs in as deep as they would go twice, and I felt my bones compressing. I got hold of his collar again and pulled him off my arm. Surely this was over.

Not yet. Again, he tore himself from my grasp and then went for my right wrist. He sank his teeth in and started pulling on my arm. Now I was really scared, and worse, I felt myself weakening. In a final-ditch effort, I straightened my arms out in front of me. This brought his snarling face only inches from my own, but made it harder for him to bite my arms. I twisted his collar hard, trying to take some of the fight out of him. For what seemed like an eternity, I held on. I had control, and he just stood there growling. Keeping the pressure on, I backed out from under the table, opened the back door and led him down to his kennel. At first, I hesitated to let him go, afraid he might resume his onslaught. I reassured him that everything was okay, let go and backed out, closing him in.

I went back upstairs, and as I walked into the kitchen I became overwhelmed at what had just transpired. I felt weak in the knees and very light-headed, like I might pass out. Bracing myself on the back of a chair, I took some long, deep breaths. My heart was racing, and I felt like I couldn't slow it down. I stopped shaking and took a moment to assess the carnage. The floor was covered with blood. My neck and chest were covered in blood. My arms were a mess. I was going to have to make a trip to the emergency room. I had a long night ahead of me.

This whole time, my wife, Beth, was asleep in our bedroom just on the other side of the kitchen. She had suffered a stroke that February. I was afraid if I woke her and she saw all the blood, she might have another stroke. I decided to clean up before waking her. Cleaned up and with the bleeding slowing, I told her that Denali had gotten me good, and we needed to go to the hospital.

After four hours in the emergency room, we headed home. It was time to face the reality of what I must do with my best friend. The question was whether I could get a vet to put him down in his kennel or whether I would have to handle it. One vet was too busy, and the other wanted to quarantine him for 10 to 14 days. I couldn't wait that long to resolve this—no way. By then I'd make excuses for my friend and want to keep him. Despite what had just happened, my love for this dog was great. I loved him like I had loved no other dog, and I've had a lot of dogs in my life.

Ultimately, my son Brandon and I took Denali out to our campsite a few miles away. I took my Springfield 1911 and put a .45 slug in the back of Denali's head. To say I was devastated would be a gross understatement. My heart was broken beyond belief.

They say time heals. I'm still waiting. ■

Robert Van Bergen grew up in South Minneapolis, joined the Army in 1969 and served one tour of duty (12 months) in Vietnam. He and his wife, Beth, live in Shakopee, Minnesota, and have three children and six grandchildren. Van Bergen has worked as a high school custodian for the last 12 years. He is a poet, hobbyist, quilter, hunter and recreational shooter. He and Beth are avid photographers. They also sing at weddings and occasionally funerals. Besides family and pets, his passion is firearms.

Minnesota Wolf Management

What's changed in 10 years
without resolution to
legal status?

by DAN STARK

It has been more than 10 years since Minnesota adopted a wolf management plan in anticipation of wolves being removed from the federal endangered species list. Little has changed in the biological status of the wolf population over that time, but changes may be needed to address the evolving landscape of legal status, regulations, funding and agency participation in light of delisting in the near future.

Minnesota wolf population

The distribution of wolves in Minnesota has remained static for more than 10 years, even though the population has been protected under the Endangered Species Act (ESA) for most of that time. A population survey conducted during the winter of 2007-08, estimated the population to be between 2,192 and 3,525 with a point estimate of 2,921 wolves. Considering the margins of error on each survey, this estimate was statistically similar to estimates in 2004 of 3,020 and in 1998 of 2,450. The distribution of wolves was unchanged, covering approximately 35,000 square miles of northern Minnesota. The next survey will be conducted in winter 2012-13.

In the mid- to late-1990s, predictions were made that the wolf population would continue to expand as long as there were enough deer and limited human-caused mortality. However, the population did not continue to expand, and while deer abundance or

Gray wolf, *Canis lupus*.



human-caused mortality could be a partial explanation in some areas, it does not appear to be a full explanation in some other locations, suggesting that other factors, such as land-use patterns, disease, or wolf intolerance of constant human activity could also limit wolf distribution. It appears that most areas suitable for wolves in the state are now occupied and that wolf numbers and distribution will fluctuate around current levels depending on prey availability, human-caused mortality, potential disease factors and conservation of wildlands. Over time, a few wolves may establish in new areas as they become more tolerant of a human-dominated landscape, but in the near-term we anticipate that Minnesota's wolf population will fluctuate between 2,500 to 3,500 wolves.

The role of the ESA for wolves in Minnesota has run its course, biologically speaking, and there is really no current conservation benefit for the wolf population to remain protected under the federal law. Minnesota has established laws protecting wolves and will fully implement an approved wolf management plan when wolves are delisted. The Minnesota Department of Natural Resources adopted a goal for wolf management prior to developing the Minnesota Wolf Management Plan to "ensure the long-term survival of the wolf in Minnesota, and also resolve conflicts between wolves and humans."

Wolf depredation management

Although the wolf population is doing well and no longer in need of ESA protection, there is still a need for sound management to address conflicts that occur between wolves and humans. The primary type of conflict is livestock depredation. Each year there are about 200 complaints of depredation on domestic animals or pets, and about 100 incidents are verified as wolf. While typically less than 2 percent of farms within the wolf's range in

The role of the ESA for wolves in Minnesota has run its course, biologically speaking, and there is really no current conservation benefit for the wolf population to remain protected under the federal law.



Wolf Status in Minnesota. The shaded areas show the location of collared wolf pack territories near Ely, Minnesota.

Andre Decarie

Minnesota in any given year experience losses attributable to wolves, dealing with actual or potential losses has been ongoing since wolves were protected under the ESA in 1974. At first there was little these producers could do when cows, sheep or poultry were killed by wolves. Today livestock producers rely on Wildlife Services (WS) agents to euthanize wolves causing damage to livestock. The Minnesota Wolf Management Plan allows more flexibility for citizens to address livestock depredations but still considers the current WS program to be an important component of an integrated wolf-depredation management program. Although livestock husbandry and other non-lethal depredation management tools are an important component of an integrated approach, trapping and removing wolves that are causing depredation may help resolve conflicts and build tolerance for wolves when a livestock producer or pet owner knows that the problem will be addressed. Without the appropriate depredation response, people will be less supportive of wolves.

The Minnesota Wolf Management Plan was tested for a short period in

2007 and 2008 when wolves were previously delisted. During that time, there was essentially a seamless transition from federal to state management and no real change to the average number of wolves killed in response to livestock depredations. Individual livestock producers killed only 10 wolves under the provisions of state law that allows citizens to take wolves to protect livestock and pets during the period when wolves were federally delisted. Many of the components of the state's integrated depredation-management approach are already in place, which allows for a smooth transition. Minnesota Department of Natural Resources (DNR) conservation officers investigate depredation claims to verify losses so that producers can submit claims for reimbursement through the Minnesota Department of Agriculture (MDA). The MDA administers the compensation claim program and averages \$75,000 to \$100,000 in depredation claims each year. When livestock damage is verified to be caused by wolves, federal wolf trappers, based in Grand Rapids, Minnesota, trap and kill wolves causing depredation. In addition, WS provides valu-

able technical advice to livestock producers to prevent or mitigate wolf depredation.

Unfortunately, the future of the WS wolf-depredation management program in Minnesota is uncertain. This program has been in continuous operation since 1975 and employs a dedicated and highly experienced staff to address livestock-depredation complaints. However, past funding of this program has been uncertain, and more recently, the congressional earmark that mostly funded this program was eliminated. The Great Lakes' Wolf Initiative, as it was called, provided assistance for education, consultation with tribes, limited research and monitoring, and most important, assistance for producers and all citizens with wolf problems and concerns. Initially funded at \$1,050,000 in 2003 for WS in Minnesota, Wisconsin and Michigan, it was funded at \$727,000 in 2009; approximately \$209,000 of that was provided to WS in Minnesota. WS funded another \$100,000 to \$300,000 a year from the U.S. Department of Agriculture budget to implement this program, and the current estimated annual operating cost of the program is \$550,000. To lose this kind of funding prior to delisting does not bode well for livestock producers to be able to address wolf depredation conflicts. It also makes it difficult to plan how to proceed.

Wolves could be delisted in Minnesota in early 2012. This would allow the DNR to implement the Minnesota Wolf Management Plan. Under state law and the guidelines in the wolf plan, individuals may take wolves that are posing an immediate threat to livestock, domestic animals and pets. Although this may provide some benefit to pet owners and livestock producers to address wolf depredation conflicts, the wolf plan intends to utilize WS to continue to respond to verified cases of livestock depredation in Minnesota. If WS is not funded for wolf control, the DNR will have to explore other options such as using certified predator controllers.

The Minnesota Wolf Management Plan was tested for a short period in 2007 and 2008 when wolves were previously delisted.

During that time, there was essentially a seamless transition from federal to state management and no real change to the average number of wolves killed in response to livestock depredations.



John P. Herr

Wolf Season Provisions Changed

Before the 2011 Minnesota legislative session, the DNR was authorized by state law to develop a hunting season on wolves five years after their delisting. A revision in 2011 removed the five-year waiting period and authorizes the DNR to develop a season upon delisting but only after public comment. This may speed up the time frame when wolves can be hunted, although much planning must be completed prior to initiating a season.

Additional changes made during the 2011 Minnesota legislative session included adding wolves in the definition of small game in the Minnesota Game and Fish laws. This new definition means that if a wolf season were established, hunters would only need a small-game license to hunt wolves. If a season is developed, many details of permitting and regulating a wolf harvest remain to be worked out.

Although we know as much as, or more, about the biology and population dynamics of wolves as other wildlife with hunting seasons, we must still do our due diligence to develop a responsible wolf management structure. This approach will include assessing current monitoring and population modeling information to evaluate how a season might influence population dynamics of wolves in Minnesota. Also, hunting wolves will be controversial, and we must consider social factors and address public concerns about a potential season. The DNR is still in the very early phase of discussing a planning process on how to proceed with a potential wolf season. Through this process it is important that we consider all biological and social aspects of wolf management and conservation without diminishing the status wolves have gained through decades of educating the public about the role wolves play in the biodiversity of Minnesota's landscape.

Minnesota Wolf Genetics and Taxonomy

Another complication to the delisting of wolves in Minnesota is the ongoing taxonomic debate about what species of wolf occurs in the Western Great Lakes region. Some have indicated that there are two species of wolves, the gray wolf (*Canis lupus*) and the eastern wolf (*Canis lycaon*). The gray wolf is the species of wolf that has been described in Minnesota going back to the 1930s by Sigurd Olson. Wolves in Minnesota have been commonly referred to as timber wolves, which have always been considered a subspecies of the gray wolf. The timber wolf is somewhat distinguished by its smaller size, and it more commonly preys on white-tailed deer than the larger western and northern wolf subspecies.

The eastern wolf came on to the scene early this century when new genetic techniques were developed, which allow scientists to look more closely at the genetic relatedness of individual wolves. The variation and distinctness diagnosed by the scientists

made them think that because these wolves have coyote-like genetic markers, which are not found in contemporary coyote populations, they are from a line of North American canids that evolved separately from gray wolves but are closely related to coyotes and evolved from a common ancestor. These genetic markers are found to be a large component of the genetic makeup of wolves in Algonquin Provincial Park in southern Ontario, Canada, where it is believed that this species occurs in its “purest” form, albeit hybridized with gray wolves and coyotes. Some of the “eastern wolf” genetic markers are found in wolves in Minnesota also, so the recent delisting proposal includes a status review of the eastern wolf species to consider whether it should be classified under the ESA.

The concept of the eastern wolf as a separate species is not accepted by all geneticists and taxonomists and most recently might have been trumped by a comprehensive look at wolf genetics worldwide. A study by Bridgette vonHoldt and her colleagues looked at an extensive amount of genetic markers in wolves sampled in Minnesota and concluded that wolves here are predominantly gray wolves that have gene flow from

coyotes dating back about 600 to 900 years ago. On average, wolves in Minnesota possess about 85 percent gray wolf and 15 percent coyote genetic material, compared to wolves in southern Ontario that are approximately 60 percent gray wolf and 40 percent coyote. Other studies have indicated that there is very little, if any, current wolf-coyote hybridization in Western Great Lakes wolves, and unpublished data documented that gray wolves recolonizing the north-central forests of Minnesota killed coyotes as they reestablished those parts of the states. The vonHoldt study did not find any evidence to support that there is a unique North American wolf species that others have identified as the eastern wolf.

These studies raise spirited intellectual debate, but the reality is the wolves in Minnesota are the same wolves Sigurd Olson studied in the first scientific study of wolves in the world. The wolves protected by the ESA in the northern forests of Minnesota have expanded throughout the region and now occupy 35,000 square miles of forest in Minnesota, the north woods of Wisconsin and the entire Upper Peninsula of Michigan. The species debate will continue, probably for decades as more samples

are analyzed, new genetic techniques are developed and species concepts become more widely accepted. In the meantime, Minnesota’s wolf population is 3,000 strong and far exceeds all biological measures of recovery. Whatever the genetic composition of Minnesota’s wolves, their conservation and management has been a remarkable success story of the ESA. If we can’t remove ESA protections for a population of wolves that is such a great conservation success, it will be difficult to recover the nearly 2,000 threatened and endangered species listed under the ESA. ■



For more information about wolf management and to find a copy of the current Minnesota Wolf Management Plan, go to <http://www.dnr.state.mn.us/mammals/wolves/mgmt.html>.

Dan Stark is the large carnivore program leader for the Minnesota Department of Natural Resources Division of Fish and Wildlife and has considerable experience studying wolves in Minnesota, Arizona, and New Mexico.



Ray Liable



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In memory of Doug Mikolash, Kim Goodbrandson's brother:
 Kim's employees at Seven Oaks General Hospital

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In memory of my mother, Ann S. Powell:
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Thank You!



Tracking the Pack

The Benefit of Socializing a Dog to Wolves on Display

by Lori Schmidt, wolf curator,
International Wolf Center

During the summer of 2011, the International Wolf Center adopted a dog named Oscar from the Range Regional Animal Rescue in Hibbing, Minnesota. Usually wolves are territorial toward dogs and can be aggressive or even kill dogs when they run loose in the territories of wild wolves. The same can be true in captivity. In the past, however, the Center has had great success socializing a dog to the wolf exhibit for management purposes.

We never allow dogs to be in the same enclosure with adult wolves. Dogs are domesticated, a process of selection that has occurred over thousands of years creating a calmer version of their wild counterpart, often referred to as a perpetual juvenile mindset. Wolves in captivity are socialized, not domesticated, which means they can be raised to be tolerant of people, but behaviorally they have had no selection to reduce or calm instinctual behaviors.

So why choose a domesticated dog to help with a wolf exhibit? Dogs provide a good stimulus for adult wolves, triggering greeting behavior and stimulating them to be active with play bows at the fence and chasing behavior, which begins with the dog in the yard and ends with the wolf running alongside the fence. (To see these interactions, go to www.wolf.org and click on the video link for weekly YouTube postings.) We have also used dogs to help raise pups, with the dog instinctually knowing the body language necessary to encourage and enforce submission.

The innate fear response of wolves and dogs differs. Wolf pups can show fear avoidance behavior and express anxiety at a much younger age than dogs. Our records have documented wolf pups showing tucked tail and fear responses at 13 days of age, around the time

hearing begins. The fear response of dogs is believed to develop later, closer to 40 or 50 days of age. When the Center raises wolf pups, the dog will be accustomed to humans and help calm the wolf pups when the sights and sounds of a public display could stimulate fear.

When searching for a dog, we wanted a confident animal that didn't show anxiety when seeing the wolves. If a dog were to show fear, the adult wolves could identify that behavior as a weakness and display aggression through the fence. We also wanted a medium-sized dog

that would possibly be perceived as a juvenile by the wolves, resulting in less territorial response.

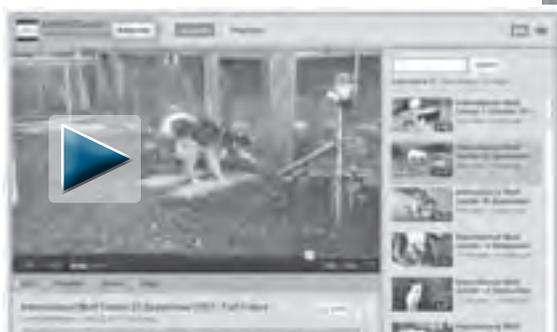
The most important selection criterion, however, was related to the dog's overall attitude, often determined by facial expressions. Oscar has a classic canine grin. We look forward to the addition of two new pups in May 2012, and Oscar will be a great addition to the pup-care team. ■

Denali displays the canine grin.



Kathy Rundquist

Oscar meets Denali through the fence. The hardware cloth protects the dog from injury.



Find the International Wolf Center YouTube channel at www.wolf.org.

Wolves of the World

Will the Mexican Wolf Again Become Part of Mexico's Wildlife?

A breeze of hope surfaces as reintroduction draws near

by Miguel A. Armella, Ph.D.

The Mexican wolf (*Canis lupus baileyi*), the smallest and most distinctive of North American wolves, disappeared from Mexico's wild landscape probably by the late 1970s.

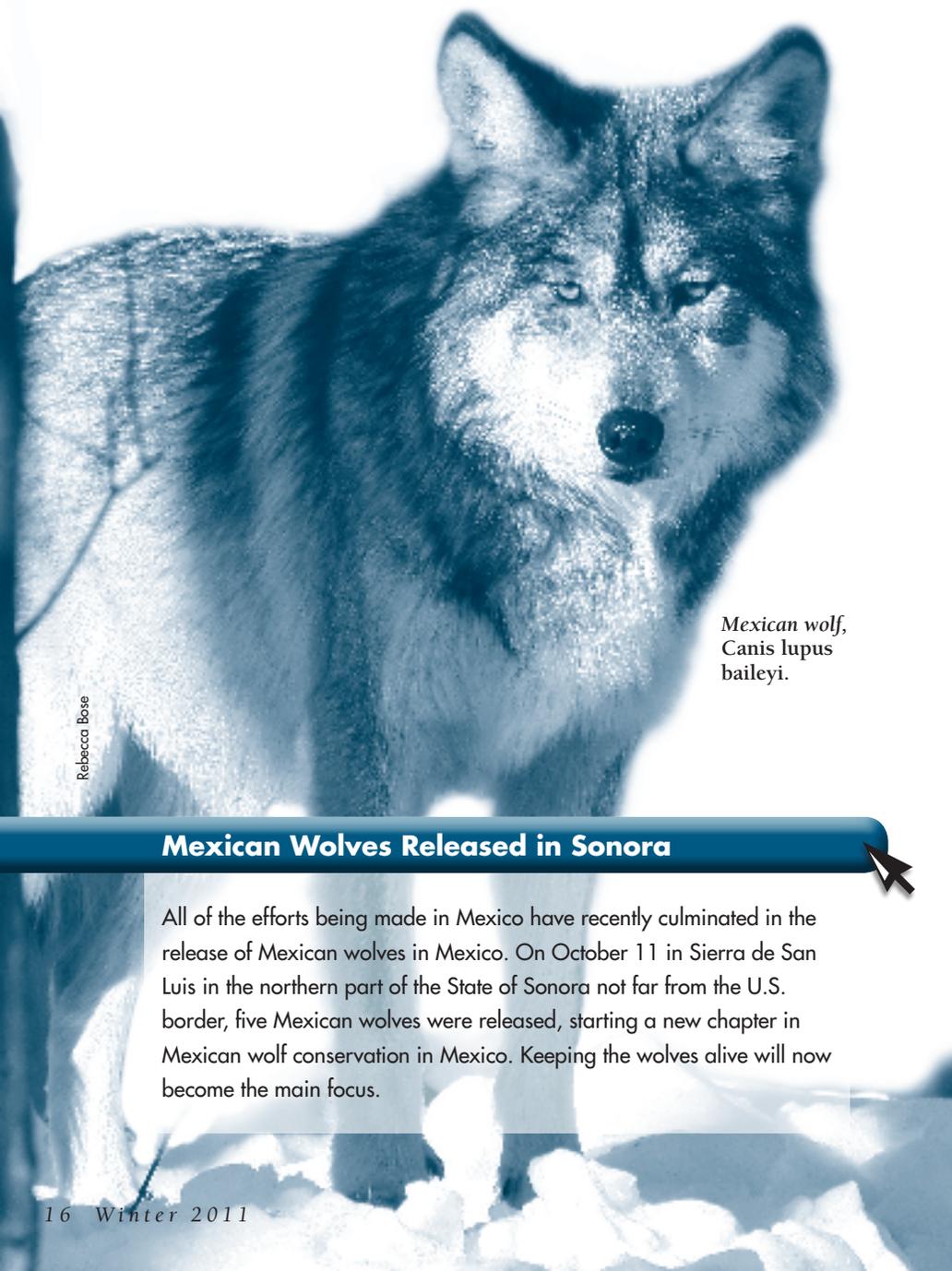
Similar to what has happened in much of the world with other wolves, ranchers' hunting and poisoning of the animals has caused their near-extinction, but they reached the southern State of Oaxaca (see map for original and proposed range) by following the top of the Sierra Madre (east and west) mountain range.

By 1976 a former American wolf trapper, Roy McBride, hired by the U.S. Fish and Wildlife Service (USFWS) under the Endangered Species Act (ESA), captured five males and one pregnant female in Mexico to start a breeding program. To do so, he needed the Mexican government's collaboration; this resulted in the formation of the binational Mexican Gray Wolf Recovery Team.

Since then and with the participation of many people, Mexico has kept a recovery program active, participating in the exchange of animals for the breeding program, performing genetic and reproduction research, and running educational programs along the north and center of the country where wolves once lived.

The situation today

Currently 17 Mexican facilities—zoos, exhibition parks and prerelease facilities—participate in the program. These facilities in conjunction with researchers from universities, veterinarians, non-governmental organizations and other interested people have formed a group to work not only on increasing the number of animals but also on ensuring their genetic strength. Meetings are held annually with American counterparts, alternating between the two countries. In



Mexican wolf,
Canis lupus baileyi.

Rebecca Bose

Mexican Wolves Released in Sonora

All of the efforts being made in Mexico have recently culminated in the release of Mexican wolves in Mexico. On October 11 in Sierra de San Luis in the northern part of the State of Sonora not far from the U.S. border, five Mexican wolves were released, starting a new chapter in Mexican wolf conservation in Mexico. Keeping the wolves alive will now become the main focus.

2011 the meeting took place in July in Mexico City.

According to the 2011 Mexican Wolf Studbook (Siminski, 2011), by 2011 there were 312 Mexican wolves with 67 (38 females and 29 males) in Mexican facilities. The non-governmental Organizaci3n de Vida Silvestre (OVIS) based in Monterrey, Nuevo Leon, developed, especially for this project, an intense rehabilitation program teaching these captive wolves to hunt for wildlife and make them less reliant on domestic prey. This program has had excellent success, with several packs now ready for life in the wild.

Mexico's president gives wolves a boost

Reintroduction efforts were stimulated in early 2007 when the just-inaugurated President Felipe Calderon named the Mexican wolf one of five priority species for conservation (along with the jaguar, golden eagle, sea turtle and marine caw). State-of-the-art technology and international experts were used to predict the best sites for reintroduction, and six areas were selected (see map). The Ministry of Natural Resources and Environment (abbreviated SEMARNAT in Spanish) sponsored detailed research in six locations to determine prey availability and public opinion about possible reintroduction.

From the survey of prey sponsored by SEMARNAT in 2008, one area located between the states of Sonora and Chihuahua was selected as the first priority to release wolves soon.

However, these surveys and more recent ones show the general public is not well informed about the conservation status of the Mexican gray wolf, although people are concerned about environmental conservation overall, and most support reintroduction and agree that the wolf must be rescued for ecological and ethical reasons.



Differences can be seen between rural and urban populations, however, with rural people less in favor of wolf reintroduction, especially in the north where cattle are still an important part of life. But even there perceptions differ. People over 60 years of age oppose wolf reintroduction; most claim to know about wolf attacks on humans or cattle, although few have witnessed one first hand. Younger people more readily accept options to preserve wolves, like reparation for loss of livestock and other financial incentives offered to ranchers.

Other challenges exist. Unlike in the United States, in Mexico there are no public lands, and federal or state parks are not big enough to hold wolf populations. Landowners must agree before wolves can be released within their property. Non-governmental organizations (like Naturalia A.C.) working in the area have had success communicating with some cattle-raising communities, especially using education programs with children. However, some ranchers who retain attitudes from the 1960s are

Differences can be seen between rural and urban populations, however, with rural people less in favor of wolf reintroduction, especially in the north where cattle are still an important part of life.

using political power to stop the program regardless of the benefits offered. In spite of this opposition, some ranchers have individually agreed not to kill wolves within their ranch boundaries, and others are willing to let wolves live on their property, thus providing enough contiguous land to keep at least a handful of wolf packs in the area.

While in the Northwest the social will is in question, new hope came

during the last binational meeting when a group of *ejidatarios* (farmers holding common land) from southern Nuevo Leon said they are prepared to receive wolves. They have been working for three or four years getting funds from government programs to improve the environment with the idea of developing ecotourism. They know it will not be an easy task, but they believe they can benefit. They and the communities they represent know the

importance of restoring natural balance and believe there is room in nature for everyone. This is a new plan and is being evaluated by environmental authorities.

Mexican wolves' reintroduction has been a long walk; however, thanks to the hard work of the government, academics, non-governmental organizations and many other people reintroduction is getting closer. A new walk to maintain wolf populations in relative harmony with humans will start again, but most important is the acknowledgment that the Mexican wolf has a place in its own country. ■

Acknowledgment

 Siminski, P. D., 2011. Mexican Wolf, *Canis lupus baileyi*, International Studbook. The Living Dessert, Palm Desert, California.

Miguel A. Armella, Ph.D., is a full professor and former head of the biology department at the Metropolitan Autonomous University (Universidad Autónoma Metropolitana), which is housed at a campus in Iztapalapa, a section of Mexico City. He has worked on the Mexican wolf recovery team since 2001 as an information and education officer.



Rebecca Bose

Young Mexican wolf.



Spencer Wilhelm

What's Happening Elsewhere in the World?

by Tracy O'Connell



Left to right: Nancy Gibson, Jackie Fallon, B. & C. Promberger, Don Zippert, Lynn Rogers, Roni Soler

The international pattern of wanting wolves versus wanting them gone continues apace in many nations of the world. Here is a brief summary of some of what is happening around the world:

JAPAN

 A group of citizens in Japan, where wolves were exterminated 100 years ago, is proposing reintroducing them to curb populations of deer and wild pigs that are decimating agricultural areas, according to the Web site *Infomongolia*. Some 83,000 Japanese have signed a petition in support of the move, circulated by the Japan Wolf Association, which was founded in 1993. If the plan is approved, the newcomers would be brought from Mongolia and China. The reintroduction proposal was slated to be the topic of an October 2011 symposium in Tokyo.

TIBETAN WOLF

 A rare Tibetan wolf delivered two pups in a zoo in India in July. *Canis lupus chanco*, also known as the Chinese wolf, Mongolian wolf, Steppes wolf or the woolly wolf, is believed to be a subspecies of the gray wolf found in parts of Tibet, central China, southwest Russia and the Himalayan regions of India, Nepal and Bhutan.

FRANCE

 The BBC reports that France's wolf population now numbers about 200 (20 packs). The progenitors are believed to have crossed the Hautes Alps from Italy over a decade ago, and they are expanding their territory to the north. The BBC's Christian Fraser reported September 6 that signs painted on the road in the area say, "NO to the wolf."

Fueling negative views have been hundreds of attacks that have killed more than 2,000 sheep this year, a 20-percent increase over last year. Reports indicate these numbers include sheep running over a cliff in fear or disappearing from the flock.

Critics claim lack of proof that wolves, rather than wild dogs, have done the killing and that exaggerations to claim compensation offered for wolf-killed livestock (130 euros or \$190 U.S.) have been made.

The predators have also appeared in the Pyrenees and in France's Massif Central Mountains, according to the British paper *The Guardian*, which in a July 27 opinion piece eloquently traced the history and many lines of argument surrounding the presence of wolves.

SWEDEN

 Swedish plans for a wolf hunt in the coming winter are under debate as opponents of a hunt seek closure from the European Commission, using words like "trickery" to describe Swedish claims that it will cancel the hunt. This follows a January 2010 hunt in which a 27-animal quota was set for harvesting, and thousands of hunters applied for a license. At the same time, poaching has been cited for half the wolf deaths in Sweden, with an estimate that wolf populations would be four times higher if the poaching had not taken place.

Sweden's wolves, whose ancestors immigrated from Finland after Swedish wolves became extinct in the 1970s, now number about 250 and are subject to inbreeding and skeletal issues.

NETHERLANDS

 The Web site *Expatica.com* predicted last year that it was a matter of time before wolves moved into the Netherlands, citing urbanization that has been "emptying out" rural areas, making space for the carnivores. The report quotes a Dutch game warden enthusing over the possible recolonization, but then saying it would be "going too far" to have them in his nature preserve.

In preparation for the anticipated arrival, a Web site, *Wolven in Nederland*,

has been created and tracks wolf travel in neighboring countries.

Edwin Winkel, who has written and provided photos for *International Wolf* magazine (Summer 2008), reports by email that a wolf was photographed and identified by passersby in the eastern part of the country near Duiven in late August. This is substantiated by Leo Linnartz, who works with Netherlands conservation organizations such as ARK Nature and maintains the *Wolven in Nederland* site.

It is unknown whether the wolf was someone's escaped pet or a disperser from Germany.

ESTONIA



Wolves killed at least 71 sheep on the Estonian island of Saaremaa in the Baltic Sea this year. Local sheep breeders claim an inability to protect their flocks and to absorb the losses, estimated at 43,000 euros.

A representative of Estonia's Environmental Assessment Agency estimates that only three wolves live on the island. A shepherd was quoted as seeking a wolf-free island.

Elsewhere in the nation, the first of four wolves to be tagged with a tracking device was successfully released in June.

BRITISH COLUMBIA, CANADA



Ranchers and First Nation hunters in British Columbia are feeling increased impact from wolf populations, according to the environmental Web site *Care2*. Countering this claim it was found that livestock deaths attributed to wolves amounted to 1 percent of total livestock numbers in the province, while larger numbers were due to other factors such as disease. The report drew more than 160 reader comments, posing a range of views. ■

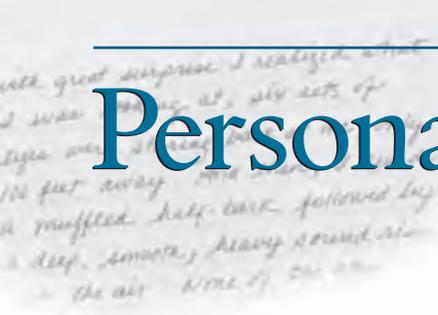
Tracy O'Connell, associate professor of marketing communications at the University of Wisconsin-River Falls, serves on the International Wolf Center's magazine and communications committees.



Lynn and Donna Rogers/www.bearstudy.org



William E. Rideg/Kishenehn Wildlife Works



Personal Encounter

Wolf Kill Reflections: Stories in the Snow

Text and photos by Steve Voiles

There are tales written in the snow, begging for interpretation, inviting us to uncover hidden stories about the natural events taking place all around us.

On December 11, 2010, a little before 1 p.m., a young wolf passed close enough to our northeastern Minnesota home to be photographed. In our experience, this was odd behavior. We live in the middle of wolf territory and count ourselves lucky to see them occasionally crossing the Fernberg Road, but we had never seen one come this close to our home, which is in a high, exposed location atop a rocky ridge. I was lucky to have my camera nearby. I clicked off a photo or two and then rushed toward the wolf to startle her and let her know she was too close. She quickly disappeared into the woods.

We were a little alarmed, not for ourselves but for the wolf. Wolves that habituate to human proximity are in danger of being shot. Though the law prohibits shooting wolves, it is not unknown for gun-shot wolf carcasses to be discovered. Local researchers have found cut radio collars tossed into the brush miles from the home territories of the study wolves that once wore the collars.

We had set out some suet for the birds. Had she been attracted to the suet or to the birds themselves? Her tracks came from the south in a steady walking pattern. She was alone. She had not been in pursuit of a hare or deer.

Wolves, born in late April or early May, attain an adult appearance within eight or nine months. Despite her size, she was still a pup. Perhaps she was just off on her own and hadn't

learned to avoid human habitation. It was curious.

Later in the afternoon, we improved our speculation about why the young wolf had come so near. In the middle of a stand of ancient white pines on the way to town about 200 feet (61 meters) back from the road, a crowd of ravens rose into the air as we passed. We knew there had to be a carcass of some kind attracting them. It was 10:30 the following morning before we returned to investigate.

It was a bright, clear day. This time a much smaller group of ravens retreated as we approached. The story was written in the snow. Three or four wolves had killed a deer. Tracks from a single deer could be seen, leading down a trail into a clear area beneath the pines. Wolf tracks converged from both sides. The deer had been killed right on the trail. It must have been quick and unexpected, because the deer's prints showed a steady, unhurried pattern right to the kill spot. There was no indication of a chase.

The trail was now marked with the wing prints of ravens. If we interpreted the marks correctly, the ravens had snatched bits of venison as the wolves



It was a bright, clear day. This time a much smaller group of ravens retreated as we approached. The story was written in the snow.

fed, and often when a raven attempted to land nearby, it had been rushed by one of the feeding wolves. In several places, double-wing prints appeared with little or no impression of the bird's body in the fresh snow. A hasty retreat left wing prints intersected by wolf prints.

We wondered whether feeding aggression at this kill site three-quarters of a mile (1.2 kilometers) from our home had driven the young wolf in our direction. The kill may have occurred late in the morning of the previous day, and we had seen the wolf shortly after midday. If this were true, the entire deer had been consumed in approximately 24 hours. Parts could have been dragged off and buried, but we could discover no paths or drag marks leading to caches within a few hundred feet (about 100 meters).



After 24 hours all the wolves left was the spine and part of a foreleg.

The area around the remains was packed and worn by a thousand claw marks where the feast had occurred. The snow showed little blood, and we were surprised to see very little deer hair. Had the wind blown it away? Had the hide been carried away mysteriously without leaving drag marks?

I happened upon a second wolf kill on the morning of April 16, 2011. I was driving in a couple of inches of snow on an unplowed road a mile and a half (2.4 kilometers) from my home when I saw a wolf dart from the road ahead into the trees. I stopped over a rise three-quarters of a mile (1.2 kilometers) away and carefully returned on foot with my camera. It was about 10:45 a.m.

The wolf did not reappear. It was probably watching me! The carcass I had seen minutes earlier was gone. Upon inspection I realized that this was not a road kill. There were blood patches in the north-side ditch and a drag mark that led across the road and into the trees on the south. Light snow was falling, but none of the marks were obscured. If a car had been involved, skid marks, human footprints and debris would have been evident. Even if it had happened an hour earlier, such tracks would have been visible. I had seen parts of the deer on each side of the road, but apart from the drag mark there were no blood spots or hair on the pavement. Patches of blood in the ditch were not snow covered. In the time it had taken for me to drive three-quarters of a mile (1.2 kilometers) and walk back, the wolf or wolves had pulled everything back into the woods. They were nearby.

I followed the drag mark into the edge of the thick trees and found the deer carcass just out of sight. I had obviously interrupted the feeding.



Drag marks from initial kill site.

I couldn't resist trying to read the evidence in the snow to piece together what had happened. There were two blood patches in the opposite ditch and tracks on the side hill, indicating the dimensions of the struggle. It

looked like the deer had been downed in one spot, but then momentarily had broken free and tried to run up the embankment, only to be dragged back down and killed a few feet to the west. The carcass had been dragged from the western spot across the road, and there was no drag mark between the two blood patches. Perhaps the missing hindquarter explained the other blood spot and had been left behind while the carcass was dragged across the road. That might explain why I had seen deer parts in both ditches. The deer may have been surprised on the road, impeded by the depth of the plowed snow in the north-side ditch and the steep embankment just beyond. There were blood spatters and tracks high up on the embankment. The deer had likely been caught from behind and pulled back down in the ditch where it was killed.

My wife and I returned three times in five hours to see the progression of the feed. After the first visit, the carcass was dragged some 400 feet (122 meters) away from the road. From tracks in the snow, it looked like other

wolves might have joined in the feed. It was a strange feeling to realize the wolves were undoubtedly watching us as we interrupted their feast.

The wolves had left little to examine. Obviously some bits had been carried



The wolves dragged the deer from the roadside kill site up a steep embankment.



A young gray wolf passed within yards of the Voiles' kitchen window.

off, but it was clear that the wolves had made use of virtually every bit of the deer in roughly 27 hours.

While the details of wolf/deer predation may seem grotesque to us, there is nonetheless a beauty in the skillful balance between these two species. The life and death interplay between wolves and deer is a remarkably successful cycle that has persisted for tens of thousands of years. The efficiency of the wolves' predation is matched by the efficiency of the deer's reproduction and evasive abilities as the two work out the survival of their intertwined species against a backdrop

of changing habitat and the vagaries of climate. The balance they have achieved is nothing short of amazing.

My wife and I observed a wolf working its way through the deep snow one icy January morning during my first winter living on the edge of the Boundary Waters Canoe Area Wilderness. It was well below zero, and I found myself worrying that the wolf might starve to death in the bitter, forbidding weather. Later we saw a deer picking its way through deep snow across an open ledge visible from our home. I was awestruck. How

Steve Voiles lives with his wife, Polly, on a high rocky ridge overlooking the forest around Moose Lake, a stone's throw from the Boundary Waters Canoe Area Wilderness in Minnesota. It is an ideal place for observing wildlife. Since his 2007 retirement from 30 years of teaching special education in the Twin Cities, Voiles has pursued writing and photography and a deeper understanding of nature and wilderness.

A Look Beyond

Wolves Without Borders Pilot Project is Big Hit With Kids

by Tara Johnson, program specialist, International Wolf Center

BEEP! BEEP! BEEP!
“I’ve got something,” a student from Babbitt, Minnesota, shouts to the rest of her team members.

The group is huddled so closely together that it is obvious the students heard the signal the receiver produced. They are buzzing with excitement as they track a hidden radio collar once used by wolf biologists in the field.

It’s part of a 2011 pilot project called Wolves Without Borders. This cross-cultural, hands-on learning opportunity gives elementary students a chance to collaborate with organizations in three different countries.

“It sounds louder when you face north,” a group member points out.

“Yeah, take 20 paces facing that direction,” another continues.

The eight fifth graders scoot along together in a blob, listening. The sound gets louder as they continue their four-point turn, spinning with the antenna pointed high.

“I think it’s close,” says one.

“Me, too!” exclaims another.

“Okay, if you are a ‘listener’ spread out and look for the collar,” instructs an International Wolf Center educator. “It’s got to be right around here. The beeping is really loud now.”

“There it is!” shouts a happy student.

There are lots of cheers.

“That’s harder than I thought,” one student concludes.

“I know,” another responds with wide, round eyes. “Can you imagine if there was a wolf in that collar?”

Wolves Without Borders teaches children the facts about wolves while giving them a chance to interact with students with diverse life experiences through interactive technology. During the five-month program, International Wolf Center educators connect three separate schools (pilot schools were in Minnesota, Canada and Mexico) using video conferencing technology to share research-based programs about wolves.

Students also

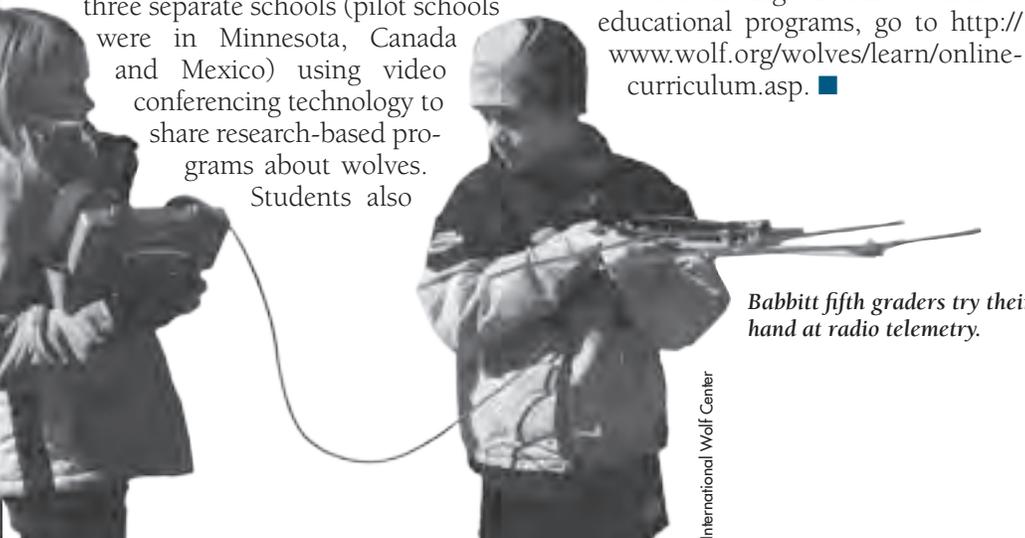
share their opinions and progress through an online blog called Posterous.

Center educators explore the factual and mythological sides of wolves with students. Lessons cover physical and social adaptations of wolves as well as research techniques biologists use, such as radio telemetry, to track wolves in the wild. These lessons are followed with radio telemetry exercises and a lesson in plotting telemetry data from wolves in or near the students’ regions using maps. The curriculum also embraces folklore and cultural views related to wolves. Students then venture out into their schools and neighborhoods to interview family and community members about their thoughts on wolves. The differences in responses can truly surprise the students.

At the end of the unit, students create a presentation to summarize what they learned and present it to Center staff.

The impact? More than half of the students’ opinions about wolves change based on their experiences.

The Center hopes to continue this project and build connections with more countries. Center educators recently created new online learning units for teachers as part of WolfLink™ education offerings. For more on these educational programs, go to <http://www.wolf.org/wolves/learn/online-curriculum.asp>. ■



Babbitt fifth graders try their hand at radio telemetry.