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INTERNATIONAL WOLF

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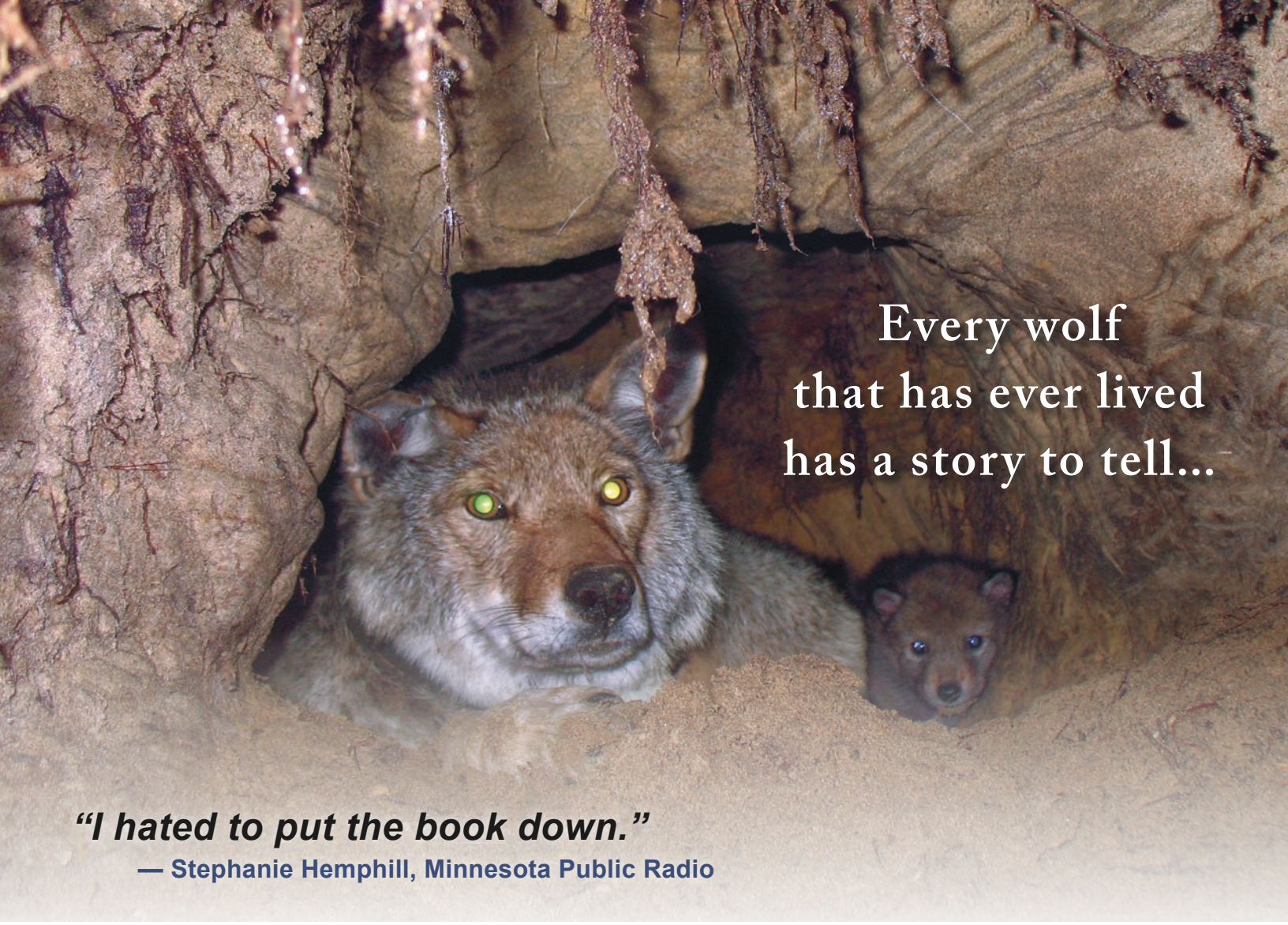
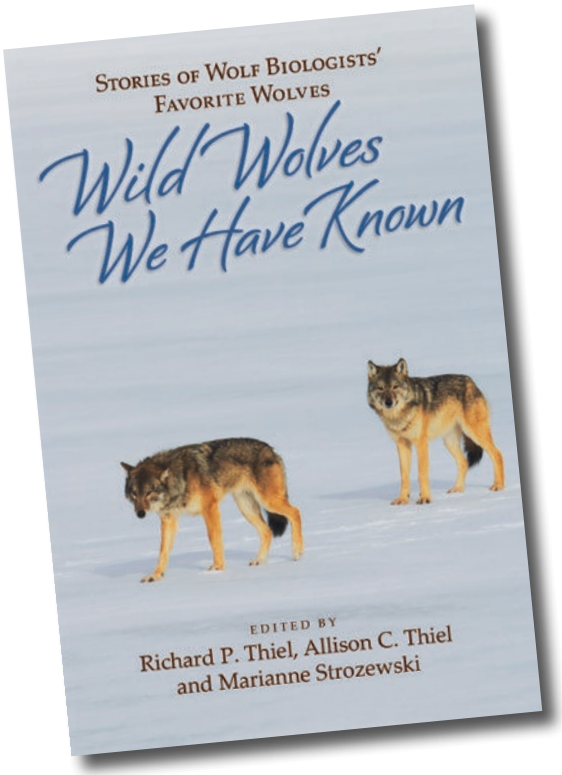


"I hated to put the book down."

— Stephanie Hemphill, Minnesota Public Radio



"These stories are more than words on a page. *They are threads of determination and resilience by author and wolf alike that help us understand the lives of wolves and in turn examine our own commitment to coexist with wildlife."*

—Kim Wheeler, Executive Director,
Red Wolf Coalition, Inc.

"If you've never encountered a wolf in the wild, read this book. *Once you meet these wolves, you will never forget them. And, perhaps, you'll come to understand why we must find room for the wolves to continue their story."*

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For Whom the Wolves Howl: The 20-year Anniversary of Wolf Reintroduction into Yellowstone

"If the wolves…could howl in gratitude," the article begins. If they could, they'd be thanking people like Bishop, a key figure in the restoration of wolves to the American west and the author of this retrospective look at that process. In the 20th-anniversary year of this remarkable restoration story, he reminds us of the challenges, the persistence and the personalities it took to assure future generations would know the wolves of Yellowstone.

By Norman Bishop

Teaching the World about Wolves

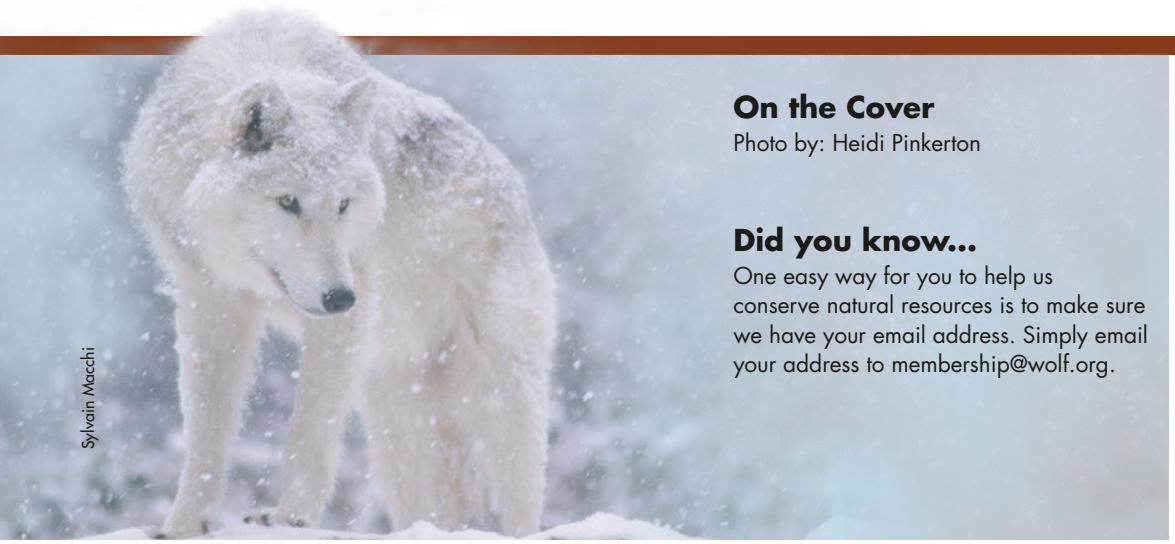
True appreciation of the natural world—and a commitment to protect it—start with environmental education, and we're never too young or too old to learn more about nature and wildlife. Here, Debra Mitts-Smith delves into the importance of understanding the natural world, and the specific whys-and-hows of teaching the world about wolves.

By Debra Mitts-Smith

Chasing Shanku: Wolf Research in the High Himalaya

On her trek across the harsh wilderness of the Changthang plateau in India, the author adds to our understanding of Himalayan wolves. Her beautifully told story takes us into the world of nomadic people who coexist with *Shanku* and illustrates the hard work and the joy of gathering data that may help assure the survival of some of the world's most mysterious wolf lineages.

by Lauren Hennelly



On the Cover

Photo by: Heidi Pinkerton

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Wolf Researchers Inform and Enrich the Center's Work

A remarkable pleasure in our jobs is the privilege to work with some of the world's apex wolf researchers. Our international symposia bring wildlife biologists from around the world. *International Wolf* magazine publishes those who have studied, protected and reintroduced wolves for most of their adult lives. We have been honored over the years to have several of this august group on the Center's board of directors, including Dave Mech and Rolf Peterson.

Rob Schultz

Nancy jo Tubbs

In 2016 the Center's temporary exhibit will feature Dave, the organization's founder and current vice chair, with stories, photos and memorabilia that could make the mind stretch, laughter erupt and hair stand up on the necks of the Center's visitors.

Today we're celebrating another long-time board member, Dr. Rolf O. Peterson, who is stepping off the Center's board to become an advisor to the Center. After retiring as a professor of wildlife ecology at Michigan Technical University in 2006, he began to spend even more time on Isle Royale, where he had begun leading wolf-moose research in the early 1970s. With his book, The *Wolves of Isle Royale: A Broken Balance,* and annual reports on the status of wolves and moose, Rolf and a team of dozens, including his wife Candy, have informed the world about this unique biological experiment.

The Isle Royale wolf population is at a crossroads. Today, a mated pair and their pup are the only remaining wolves on an island where the average population has been 25 and, at one point, reached up to 50. As the National Park Service contemplates the role it will, or will not, play in maintaining wolves on Isle Royale, the research Rolf and his team conducts is a reminder that prey availability is only one of many factors necessary to ensure continued survival of this wolf population.

Whatever the outcome, we know that Rolf will help detail the continuing, remarkable story of Isle Royale to its followers at the International Wolf Center and around the world. We remain forever grateful for his friendship and his leadership on our board. ■

Rob Shultz
Executive Director

Nancy jo Tubbs
Board Chair

From *The Wolves of Isle Royale: A Broken Balance* by Rolf O. Peterson

"Finally, on an optimistic note, the world is a fascinating and resilient place, and we should take hope from the fact that the wolf, thoroughly reviled even as recently as a generation back, has not only hung on across the planet but even prospered. Science had a role, to be sure, in focusing our attention and providing vital information. But what really mattered was that human values and attitudes changed, and entire societies decided that our archenemy was, after all, worthy of respect and honor. Probably we could apply this lesson more broadly, and the entire planet would flourish. "

MISSION

The International Wolf Center advances the survival of wolf populations by teaching about wolves, their relationship to wildlands and the human role in their future.

Educational services and informational resources are available at:

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Web site: www.wolf.org

National Park Service/ Neil Herbert

National Park Service/ Jim Peaco

For Whom the Wolves Howl

The 20-year Anniversary of Wolf Reintroduction into Yellowstone

By NORMAN BISHOP

National Park Service/ Diane Papineau

Truck carrying wolves driving through the Roosevelt Arch with school children watching, January 1995

National Park Service/ Jim Peaco

Wolf released in Rose Creek pen, January, 1996

National Park Service/ Jim Peaco

If the wolves of Yellowstone could howl in gratitude for living there instead of being pelted out on a Canadian trap line, they would be thanking a diverse team of dedicated, talented people whose efforts resulted in wolves being translocated to Yellowstone National Park in 1995 and 1996. But it took fifty years and a village to restore those packs.

Why was restoration necessary?

Yellowstone's wolves were nearly wiped out in the 1870s by elk poachers who poisoned elk carcasses to kill fur bearers. As early as 1897, some people questioned whether predators should be killed. But U.S. Army scouts, U.S. Biological Survey hunters, and park rangers killed 136 wolves between 1914 and 1926, finishing them off.

In 1933, National Park Service (NPS) ecologists proposed that (a) park managers should not interfere with biotic relationships prior to a properly conducted investigation (b) no native predator should be killed because it naturally kills other park animals to eat, and (c) native species exterminated from parks should be replaced. That proposal became part of park policy two years later.

In the first well-known suggestion that wolves should be restored to Yellowstone, Aldo Leopold demanded to know, in his 1944 review of Young and Goldman's *The Wolves of North America,* "Why... were not some of the uninjured animals used to restock the Yellowstone?"

Twenty-nine years later, the U. S. Congress passed the Endangered Species Act (ESA) of 1973.

The restoration process begins

The seeds of wolf restoration to Yellowstone were planted at a 1971 interagency meeting in the park convened by Assistant Secretary of the Interior Nathaniel P. Reed. Participants, Dr. Maurie Hornocker, Dr. Chuck Jonkel, and Dr. L. David Mech agreed that restoring wolves was a good idea, but weren't certain that there were no wolves in the area, so they contracted with Dr. John Weaver to study that question. He surveyed historical records and conducted intensive field surveys from 1975 through1977, found no wolves, and recommended reintroduction in his 1978 report, "The Wolves of Yellowstone."

Montana's wolves became protected under the 1973 ESA. A Northern Rocky Mountain Wolf Recovery Team led by Dennis Flath of the Montana Department of Fish, Wildlife and Parks drafted a recovery plan by 1980. The plan was redrafted in 1985, and finally approved by the U.S. Fish and Wildlife Service in 1987.

In 1979, a lone wolf near Glacier National Park in northwestern Montana was being monitored by students under the direction of Dr. Bob Ream at the University of Montana. In 1986, a pack denned in the park, and by 1992, 40 wolves in four packs occupied the area. Their presence informed Montanans that the wolves were coming. Today, 60 percent of Montana's wolves are located in northwest Montana, having originated by natural recolonization from Canada.

In 1987, NPS director William Penn "Bill" Mott suggested creating an Environmental Impact Statement (EIS) and began a wolf information program. Defenders of Wildlife regional representative Hank Fischer noted that Mott was a pivotal figure who got the NPS involved when no one else would. Mott's leadership allowed Park Service managers to be wolf advocates without fear of political reprisals. The "Wolves and Humans" exhibit, now hosted by the International Wolf Center in Ely, Minnesota, was displayed in Yellowstone for several months. When Mott suggested that compensating livestock growers for their losses would ease opposition to recovery, Fischer put that suggestion to work. From 1987 through 2010, Defenders of Wildlife reimbursed ranchers $1.4 million for livestock lost to wolves.

Congressional involvement and good science move restoration forward

Attempts to legislate restoration began with Utah Rep. Wayne Owens, assisted by wolf biologist Timm Kaminski. Owens floated a bill in 1987 to require the NPS to reintroduce wolves to Yellowstone, and another in 1989 to mandate an EIS. In 1990, Idaho Senator James McClure introduced a bill to reestablish wolves in Yellowstone and central Idaho. None

National Park Service/ Canter

National Park Service/ Jim Peaco

Mike Phillips, Jim Evanoff, USFWS Director Mollie Beattie, YNP Superintendent Mike Finley, and Secretary of the Interior Bruce Babbitt carrying first crate with wolf in it to the Crystal Bench pen.

of those bills passed — but in 1988, a House-Senate committee report noted that the return of the wolf to Yellowstone was desirable, and directed the NPS and FWS to answer several questions about recovery. In response, Dr. Steven H. Fritts was appointed Rocky Mountain Wolf Coordinator (later, chief scientist) and the Yellowstone Center for Resources produced a report entitled, "Wolves for Yellowstone?" in 1990.

In 1991, Yellowstone Center for Resources Director John Varley hired endangered-species expert Wayne Brewster, whom he called a "master bureaucrat," as his deputy to quarterback wolf recovery. Brewster worked with Dr. Fritts to underpin the recovery effort with solid science and precise compliance with the two major laws that governed the process: the ESA and the National Environmental Policy Act (NEPA), which mandated creation of an EIS on wolf recovery. Without their diligent work, wolf restoration simply would not have happened, and the EIS would not have withstood numerous lawsuits.

Brewster and Fritts also furnished critical technical support to the congressionally mandated 1991 Wolf Management Committee. One of that committee's alternative actions became the preferred alternative in the 1994 EIS. The science in the 1991 and 1992 "Wolves for Yellowstone" reports (1,334 pages total) produced under Brewster's direction provided a solid foundation for the EIS. That science was shared in the form of slide presentations with 400 audiences in the Yellowstone region, and summaries were distributed to thousands of university and high school classrooms across the U.S.

Advocates and activists make restoration reality

Suzanne Stone of Defenders of Wildlife observed that a lot of behind-the-scenes actions by many, many people made wolf recovery a success. For example, Renee Askins, the environmental activist who founded the Wolf Fund, used her disarmingly articulate and persuasive manner on key decision makers to court their support for wolf recovery. Denver-based FWS outreach specialists Sharon Rose and Georgia Parham led a decade-long media campaign in support of wolf recovery.

Hank Fischer, in his book, *Wolf Wars,* pointed out that FWS Rocky Mountain Wolf Recovery Program Coordinator Ed Bangs's persistence and enthusiasm not only won over the Fish and Wildlife Service, but reduced animosity from anti-wolf groups. Bangs's humor and easy-going manner disarmed many a wolf-recovery opponent.

Bangs has remarked that nearly everyone in wolfdom today was mentored by Dave Mech or someone he mentored. Steve Fritts was Dr. Mech's PhD student. Doug Smith and Mike Phillips were volunteer technicians with his project, as were Diane Boyd, Tom Meier, Kyran Kunkel and Timm Kaminski. Bob Ream, a co-worker with Mech in Minnesota, started the University of Montana Wolf Ecology Project in the early 1970s, and that project developed the talent that brought information and expertise to the northern Rocky Mountains.

Late in 1991, Congress directed the FWS to draft an EIS on wolf reintroduction into Yellowstone and central Idaho. Two-and-a-half years later — after FWS held 243 public hearings and open houses, and inserted 230,000 brochures in Idaho, Montana and Wyoming newspapers —180,000 comments from 50 states and 40 countries had been received and analyzed, and the EIS was signed in May 1994. A Record of Decision was issued in August. In November, Final Rules followed, and attention shifted to Canada for translocation of wolves to Yellowstone and central Idaho.

U.S. Attorney Margot Zallen, with help from many others, crafted the successful legal strategy that prevented a court-issued restraining order in 1995 and repeatedly prevailed in appeals court. FWS administrators figured out how to transfer federal funds to Canadian agencies and individuals. In 1996, when Montana Senator Conrad Burns diverted funds marked for wolf recovery to trout whirling disease, the project ran out of money mid-translocation. Suzanne Stone rescued the operation with about $80,000 of funds donated to Defenders of Wildlife.

The world's top wolf veterinarians, including Dr. Terry Kreeger of the Wyoming Game and Fish Department, Dr. Dave Hunter from Idaho, and Dr. Mark R. Johnson of the NPS, provided expert veterinary care and clearances. After broad consultation, Johnson designed handling protocols and the three holding pens for Yellowstone.

National Park Service/Sam & Mary Cissel

Bob Barbee, Yellowstone National Park superintendent, wrote, "The stars and planets lined up when Bruce Babbitt became Secretary of Interior. He led the Clinton administration's support. And FWS Director Mollie Beattie helped carry the wolves in."

Wolf reintroduction into Yellowstone took place only after a deal was cut with Idaho's Senator McClure. Wyoming Senators Simpson and Wallop allowed the recovery to move forward because it was the best deal Idaho and Wyoming were going to get. All three senators held out for the reintroduced wolf population to be designated "experimental non-essential" to assure management flexibility.

Dr. Rolf Peterson of Isle Royale fame noted, in retrospect, that restoration provided an unprecedented educational opportunity for Yellowstone visitors. Yellowstone Wolf Project Leader Doug Smith, who succeeded Mike Phillips in 1997, held up as unique the effort to restore Yellowstone to its natural condition, and added research to the list of opportunities provided by restoration. That research has resulted in a new book, *Wolves on the Hunt: The Behavior of Wolves Hunting Wild Prey*, by L. David Mech, Douglas W. Smith and Dan McNulty (Chicago U. Press, 2015).

John Varley wrote, "Ecologically speaking, wolf reintroduction is hands-down the most exciting thing to happen in the history of the national park."

Wayne Brewster commented as he exited the Rose Creek pen in northern Yellowstone, after letting the first two wolves out of their shipping containers on Jan. 13, 1995, "No one has ever done this before, and no one will ever do it again." Later he wrote, "Now our children and grandchildren will be able to decide first-hand if wolves are important, rather than forevermore being forced to get along without them."

I'll howl to that. ■

Yellowstone Delta Pack wolf

National Park Service/ Dan Stahler

Anyone who wants a more detailed look at the wolf restoration saga will find these resources invaluable:

Renee Askins's *Shadow Mountain*

Hank Fischer's *Wolf Wars*

Thomas McNamee's *The Return of the Wolf to Yellowstone*

Mike Phillips and Douglas Smith's *The Wolves of Yellowstone*

Carter Niemeyer's *Wolfer*, Douglas W. Smith and Gary Ferguson's *Decade of the Wolf*, Paul Schullery's *The Yellowstone Wolf: A Guide and Sourcebook*

The International Wolf Center special summer 1995 issue (Vol. 5, No. 2) of *International Wolf* titled, "The Reintroduction of Wolves to Yellowstone and Central Idaho."

Defenders magazine special winter 1994-95 issue (Vol. 70 No. 1) feature titled, "Wolves Return to the Rockies."

The entire winter 2005 issue of *Yellowstone Science* (Vol. 13 No. 1) chronicled "Ten Years of Yellowstone Wolves."

Back issues of *Yellowstone Science* are available at: www.nps.gov/yellowstone-science. Yellowstone National Park Wolf Project Annual Reports 1995 to present are at: http://www.nps.gov/yell/learn/nature/wolfreports.htm.

Annual reports for Northern Rocky Mountain Wolves are at: www.fws.gov/mountain-prairie/species/mammals/wolf. There, under "Background," there is a timeline of recovery and a copy of the 1994 EIS.

Acknowledgements:

Ed Bangs contributed hugely to the content of this article. Others who made it complete are Hank Fischer, Bob Ream, Suzanne Stone and Doug Smith.

National Park Service/ Jim Peaco

Black & gray female wolf in snow near Lamar River bridge.

Norman A. Bishop worked for the National Park Service 36 years, during which time he was the leader and supporter of wolf restoration in Yellowstone. Bishop was a reviewer of the 1990 and 1992 reports to Congress, "Wolves for Yellowstone?" He also contributed to the 1994 EIS, "The Reintroduction of Gray Wolves to Yellowstone National Park and Central Idaho." He is a co-author of "Yellowstone's Northern Range: Complexity and Change in a Wildland Ecosystem," published by Yellowstone National Park in 1997.

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Teaching the World About

By DEBRA MITTS-SMITH

In a world where super storms, droughts, energy concerns and the fate of numerous species dominate the headlines, the ability to distinguish between facts and opinions becomes increasingly important for those who are concerned about our planet. The need to understand the economic, cultural, legal and social ramifications of proposed solutions to environmental questions is imperative—and not just for adults. Environmental education and literacy are essential tools for understanding and appreciating the science, the beauty and the importance of our natural environment. Young people will inherit our world, and we need to provide them with the knowledge to be its stewards and the hearts to treasure its beauty.

What is environmental education?

The best type of environmental education does more than impart information. It fosters understanding and awareness of wildlife, plants, insects, eco-systems and geological formations. It provides young people with opportunities to learn by actively observing, exploring and questioning. At its best, environmental education includes both classroom learning and outdoor problem-solving activities—young people investigating nature's diversity and tackling real-world problems. Spending time in the field as an adjunct to classroom lessons is a foundation for lifelong learning.

US Fish & Wildlife Service/ Alaska Region

A balance between the intellectual experience of learning about wolves and the emotional ties that result from watching them is the essence of good environmental education.

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Wolves

Environmental education should not advocate particular viewpoints or policies; instead, it should impart scientific facts that lead to understanding and intellectual growth. Properly done, it helps students develop the critical thinking skills necessary for making informed decisions. It instills appreciation for the environment and commitment to turn decisions into thoughtful, balanced environmental policy. It exposes young people to the array of stakeholder beliefs, opinions and concerns that surround our most pressing ecological challenges. And it enriches lives with an understanding of the natural world.

Ginger Potter (2010), in "Environmental Education for the 21st Century" argues that environmental education outcomes must go beyond instilling awareness of our natural and environmental challenges to include a deeper understanding of the issues and a sense of personal responsibility for involvement in finding solutions.

Wolf education and environmental education

Education about wolves is an important part of environmental education. For many people, the wolf is an icon of the wilderness. The fall 2004 issue of *International Wolf* focused on wolf education in its past and present forms as well as its future direction. The articles in the 2004 issue showed wolf education to be dynamic, adapting its content and methods as scientific understanding, social attitudes and wolf numbers and status changed.

Educating the public about wolves requires more than scientific research to counter and discredit pervasive wolf stereotypes, myths and misinformation. Although science is the essential foundation of learning, the ambassador wolves at places like the International Wolf Center provide people the opportunity to observe real wolves. This experience often ignites young people's interest in nature, deepening their connection to wild animals and the natural world. A balance between the intellectual experience of learning about wolves and the emotional ties that result from watching them is the essence of good environmental education. The best wolf programs not only keep abreast of advances in scientific understanding of wolves and their role in the ecosystem, but also provide objective reports on the political, legal and economic effects of wolves living close to humans.

Over time, it is not just the content of wolf education that has changed. In the early days, wolf education was the realm of researchers and park rangers. Today, information about wolves is imparted by people from diverse backgrounds—from research scientists to volunteers and political lobbyists—and through platforms from classrooms to nature centers, zoos, websites and blogs.

While numbers and formats of resources have increased, so has the need to distinguish credible, accurate science from faulty data that conflates opinions with reality. Ideally, nature education programs—wolf programs in particular—should arm their participants with the critical thinking skills to question their sources and pursue accurate, credible information.


International Wolf Center


Darcy Berus

Environmental education and the learning experience

Environmental education today is surely more robust than it was in 2004. It includes formal, structured curriculum as well as informal, unstructured questioning, exploration and even play. It takes place in classrooms supported by books, films, artifacts, images and websites. Young people also access information about the environment at home, at school and almost anywhere else via the internet. But the preferred locations to learn about nature are places where one finds nature: backyards, gardens, forests and woods, and state and national parks. Even cityscapes have lessons to offer; hawks abound in fields but they also nest on the window ledges of skyscrapers.


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The International Wolf Center offers many kinds of learning experiences: on-site, outreach, field trips and webinars. Last year, IWC conducted outreach programs in more than 300 classrooms and nature centers in Minnesota's Twin Cities metro area. International Wolf Center Outreach Director Tara Morrison introduced young people to wolf biology, wolf behavior, wolf habitat, physical and social adaptations, predator/prey relationships, pack dynamics, the challenges wildlife face and the consequences of habitat loss on Minnesota wildlife.

Further, through lectures, exhibits and classes (on-site and online) on wolf communication, research methods, behavior and habitat, as well as human-wolf conflicts, International Wolf Center educators engage people of all ages in activities that foster interest and build connections with wolves. Many of these programs serve as a gateway to exploring other wildlife and the environment in general.

Environmental education also occurs in less formal contexts like a neighborhood park, a hike through the woods, a camping trip or even a child exploring the family's backyard. In formal settings, adults (educators, wildlife scientists, park rangers, scout leaders) determine the content and goals of the class; in informal settings, the child's questions about birds, insects, animals, rocks and plants guide the activities. The adult in these settings (teacher, scout leader, parent, grandparent, or even an older sibling) helps the child explore. In other words, the child's interests determine the "program" — what will be discussed and investigated. The interplay of teaching in formal and informal ways, followed by the student using new knowledge to explore nature, is an important goal of environmental education.

Experiential learning has always been essential to environmental education. Seeing a real wolf, even a captive one, evokes emotional responses in people of all ages. To observe how the wolf moves, to watch as it interacts with other wolves, and to hear it howling (and to learn how to howl) deepens a person's connections as it increases his or her appreciation, knowledge and awareness of the real animal.

Re-naturing the "denatured" child

Environmental education opportunities, especially those that take place outdoors, potentially do more than connect people with nature. In an age where technology and organized activities dominate the lives of most children, time spent outdoors is increasingly rare and important. Richard Louv, in his book, *Last Child in the Woods,* describes the "de-natured child" as a child who is disconnected from nature and who spends his or her days inside playing video games or watching TV. He argues that even young people who are involved in organized sports do not experience nature and the natural world on a deep level. Louv advocates getting young people outside, connecting with and experiencing nature as a way to mitigate an array of cognitive, emotional, social and physical issues from attention deficit disorder to obesity. For Louv and other advocates of environmental education, nature is part of a happy and balanced childhood.

Today's child may live a well-regulated life with free time dominated by extracurricular activities. As urban environments grow and green spaces disappear, it's more difficult to for young people to connect with the natural world. These

International Wolf Center

changes are accelerating, and need to be countered by increasingly engaging and creative programs and resources like those offered by the International Wolf Center.

The International Wolf Center introduces children to the natural world through the lives of wolves, giving them a foundation to help them explore nature and nurture their appreciation of the natural world.

Learning about wolves is only one step in creating an appreciation of the natural world—and a commitment to protect it. International Wolf Center programs and resources urge the student to look beyond the classroom and to go outdoors, to pause beside a pond, to watch a field for signs of life and explore the forest floor. The wolf is a captivating entry point to a vast, rich world that is being threatened by urban growth and human indifference. ■

For more information

Louv, R. (2006) *Last Child in the Woods.* Chapel Hill: Algonquin Books of Chapel Hill.

Potter, G. (2010). *Environmental Education for the 21st Century: Where Do We Go Now?* The Journal of Environmental Education, 41(1), 22-33.

The author, Debra Mitts-Smith, is as an adjunct professor in library and information science at the University of Illinois-Urbana-Champaign and serves on the International Wolf Center's magazine committee.

Wolves at Our Door

"Wolves at Our Door content is engaging and informative. We coexist with wolves in Minnesota, and it is important to learn about how they live in our environment," said one teacher after her class took part in the International Wolf Center's free outreach program for Twin Cities metro area K-12 students.

The *Wolves at Our Door* program gives students opportunities to learn about wolf biology, behavior and predator/prey dynamics, helping them understand the origins of myths about wolves and the nature of conflicts between wolves and humans. Educator Tara Morrison brings the wolf to life in the classroom as children get to feel a wolf pelt, handle a skull and see video of wolves in action.

Through use of facts and sound science, topics are explained and discussed with students from suburban and inner-city schools. Young people learn about the importance of habitat preservation and how loss of wilderness affects wildlife. Pre- and post-program test data show that these programs significantly increase students' knowledge and inform their perceptions of the controversial wolf.

Another teacher commented, "Wolves tend to have a bad reputation in Minnesota. This program helps students understand the truth about wolves, their value to wildlife and the concept of interdependence in ecosystems. It also reinforces our state science-education standards. The presentation style is interactive, using a variety of media to get the message across."

For more information or to schedule a program in the Twin Cities area, go to wolvesatourdoor.org.

Chasing Shanku

Photo: Dawa Tashi, local field assistant to the author

On a cold October morning, the author makes her first wolf-howl recordings in Tso Kar.

Wolf Research in the High Himalaya

Text and photos by LAUREN HENNELLY

Dust scattered upward into the wind as we drove across the valley. To the west, undulating hills followed the flatlands along the Indus River, slowly rising to become snow-capped giants. Our rattling jeep disrupted the stillness of a valley so vast it seemed we'd never reach our destination—a small, nomadic settlement on the shores of a sacred lake, surrounded by two peaks over 19,000 feet high.

We were traveling through the Changthang, a high-altitude plateau stretching from Tibet into the northwest corner of Jammu and Kashmir, India. It is a harsh place—one of the harshest on the planet—with high altitudes, difficult terrain and winters nine months long. Still, this region has a wealth of biodiversity and has been home to the nomadic Changpa, a local ethic group of Buddhist pastoralists, for more than 1,000 years.

Little is known about the wolves in this region and, generally, the wolves of India. The Himalaya harbors one of the oldest and most mysterious wolf lineages, thought to be isolated for 800,000 years. Due to their elusiveness and the challenge of conducting fieldwork in this region, research on these wolves is rare and genetic samples scarce. The Himalayan wolf is known to survive in only a few locations in India, Nepal and some regions of Tibet, and their distribution is largely undescribed in scientific literature.

It was there, in the Changthang of Ladakh, that I searched for wolves—seeking not just the opportunity to see a wolf; I wanted to hear them. With support from the Fulbright-Nehru Research program and the Wildlife Institute of India, I studied the acoustic structure of wolf howls. Over the course of 10 months, I trekked to remote villages tucked into the high Himalaya, waited diligently for government permissions, weaved through traffic in rickshaws to access city zoos, and followed wolves as they wandered across the Central Indian grasslands, all with one goal—to record the howls of Himalayan and Indian wolves in hopes of understanding possible behavioral differences among India's genetically distinct wolf lineages.

Along the dust-covered road to my first field site, a white, nomad tent stood strong against a cold wind. As I walked up to the tent, a cheerful nomadic woman greeted me with a warm smile. Her weathered, wrinkled face reflected her life as a pastoralist enduring the harsh

elements of the Changthang plateau.

Inside, the tent was cozy; colorful yak-wool rugs covered the ground, and the woman tossed cow dung into an iron stove. She poured steaming butter-salt tea into a cup embellished with dragons; I cradled it in my cold hands as Dawa, my local field assistant, asked the family in Ladakhi—the regional language similar to Tibetan—if they had seen any *Shanku* (wolf) recently.

"Wolves have killed two of our goats in the past three months near Tso Kar. But no, we haven't seen any wolf lately," murmured the woman's elderly father in Ladakhi.

Having finished our tea, Dawa and I said goodbye and headed back to the Jeep. Although this family hadn't encountered a wolf recently, livestock deaths caused by wild carnivores are a serious concern in the region. Depredation caused by snow leopards, wolves, feral dogs and Eurasian lynx can dangerously diminish a pastoralist family's income. Consequently, the locals still persecute wolves, mainly through retaliatory killings. *Changdung*, the local term for wolf pits, have been used for centuries to reduce the wolf population. The practice is believed to be abandoned today, but pastoralists still locate wolf dens during spring to kill the young pups, effectively eliminating the next generation.

Cold seeped into my five layers of jackets as nighttime approached. The brilliant turquoise waters of the lake, Tso Kar, lapped the salty shoreline, creating a sharp contrast to the earthy tones of the landscape. We set up our tents in a goat paddock, and for the next four weeks I searched for three wolf packs in Ladakh. Equipped with a microphone, a digital recorder and a speaker for playing recorded howls, I surveyed for wolves at their peak daily howling periods, morning and evening.

Each dawn, all the water in the camp was frozen solid. After drinking tea and warming our hands over a small fire, we began to survey. On most days, for four weeks, we saw no wolves—just a silent, treeless, empty landscape.

It's no real surprise it was difficult to find the wolves. In resource-scarce ecosystems such as the Mongolian steppe and the Arctic tundra, the home ranges of wolves can be huge, sometimes spanning more than 500 square miles. With no previous radio-collar studies on the wolves of this area, it is unknown how far these packs roam within their home range. Additionally, it is currently unknown how many wolves make their home in Ladakh, or even in India, as a whole. The wolves of India are considered an endangered species in a rapidly changing ecosystem, and baseline information such as population estimates and distribution are crucial to the development of effective conservation programs.

On the fourth morning in Tso Kar, we heard the hauntingly beautiful sound of wolf howls. I recorded their howls, and we watched the wolves gracefully climb to the top of a ridge, camouflaged to the earthy shades of the mountain and silhouetted against a sapphire sky. The wolves watched us as well, calmly observing at a distance before disappearing over the ridge to continue their daily activities across the vast valleys and high mountains.

Wolf in Ladakh

As I studied this family of four, I thought about how remarkable these animals are. Their eloquent adaptations have allowed them to survive in this cold, high-altitude landscape for thousands of years, and yet their survival into the next century is not certain. This research will provide important data on the wolves, from possible behavioral differences across wolf subspecies to scat samples that reveal insight into food habits and genetics.

With all of our research and assistance—developing new tools for conservation, helping mitigate wolf-human conflict and educating the public—we hope that the wolf's elusive howl will continue to echo across the Himalaya for years to come. ■

Nomadic tents

Kiang (wild ass) in Tso Kar, an important prey for wolves

Lauren Hennelly is a former Fulbright scholar affiliated with the Wildlife Institute of India. She has previously conducted fieldwork in Australia, New Zealand, India, Ecuador, and the U.S. She plans to pursue a career as a conservation biologist and to further study the ecology, evolution, and conservation of Asian wildlife, especially Asia's wolves.

The Changing Dynamics of a Pack of Wolves: 26 Years and Beyond

by Lori Schmidt

As the Center celebrates its 30th anniversary in 2015, it's a great time to review the changes in wolf pack dynamics that have made our work consistently fascinating.

The history of the Center's ambassador wolves dates to 1989, when the Center operated a summer-only exhibit in the U.S. Forest Service Voyageur Visitor Center in Ely, Minn. The display included four wolves born that year—two females named Raissa and Bausha, and two males, Ballazar and Jedadiah. These four served the early educational needs of the Center and later moved on to other exhibits. Some visitors may remember a smaller, seasonal exhibit that lacked a secondary fence, requiring the curator's duties to include overnight security during the first few summers of the seasonal exhibit.

In 1993, male pup Lucas and females MacKenzie, Lakota and Kiana were born and served as wolf ambassadors in the first year-around wolf exhibit at the Center. That year brought the grand opening of the present facility and the Wolves and Humans exhibit. Visitors enjoyed a few years of watching the pack dynamics of these four littermates, but in 1998 Kiana passed away. This loss not only affected the wolves, but also diminished the visitors' experience and changed the dynamics of the pack. The three remaining littermates remained on display, and the wolf-care team made plans to add more wolves to the pack and create new stimuli for the aging pack.

In 2000, a pair of male arctic pups—Shadow and Malik—was born. The pups were raised at the home of board member Nancy Gibson in southern Minnesota before making their way north to the Ely educational facility as six-week-old pups. They bonded with wolf-care staff and were incorporated into the exhibit pack in early August, 2000. For the first time, the Center was managing an uneven age structure and had successfully integrated non-related pups into the pack.

Nancy Gibson

Shadow and Malik – 2000

As time went on, Shadow and Malik matured into strong, healthy adults, while the 1993 litter of MacKenzie, Lucas and Lakota began to show signs of age. The natural aging process reduced their ability to keep up with the younger wolves, and by 2002, the entire 1993 litter had been moved to retirement in a more protected enclosure.

One thing we learned from the introduction of Shadow and Malik in 2000 was that older wolves have challenges dealing with young, exuberant and often "testing" packmates. The seven-year age difference between the 1993 litter and the 2000 litter was too great to allow smooth integration of the younger wolves. This prompted the Center's staff and veterinarians to implement a new, four-year rotation protocol for pup introductions.

In 2004, we integrated three pups believed to be representative of the Great Plains subspecies—male pup Grizzer and two non-littermate females, Maya and Nyssa. Initially we were concerned about introducing adult males without a female in the pack, but we were wrong. Shadow bonded successfully with the 2004 litter and proved to be an excellent pack leader, even displaying a parallel walk with Maya (bonded wolves walk shoulder-to-shoulder, often with

Lynn Rogers

Kiana, Lucas, Mackenzie and Lakota – 1993

Kathy Karns

Grizzer – 2004

Awen Briem

Denali – 2008

Ed Stimpson

Luna – 2012

synchronized steps) during the winter of 2005. The bond between Maya and Shadow presented a dilemma when we tried to separate the females for a five-day surgical recovery from a spaying procedure in the spring of 2005.

The issues we faced in 2005 prompted the wolf-care team to change the spaying timeline to five months of age instead of one year of age for subsequent female pups.

One other issue discussed during the management peer review was female dominance in captivity. There were several recommendations from other facilities, and most recommended managing only one female at a time. This prompted Center staff and veterinarians to select two male pups for the next four-year rotation.

In 2008, we integrated two male pups—Aidan and Denali—into the exhibit pack. These pups were captive-born, but had a genetic tie to free-ranging wolves in Yellowstone. The addition of these two pups allowed the Center to create a three-tiered age structure featuring three of the five North American subspecies.

Having a diverse exhibit pack, with the youthful exuberance of new pups and the endurance of the four-year-old wolves, kept the pressure of testing behavior off the eight-year-old arctic wolves. And true to wolf form, by the time the 2008 litter reached two years of age, the 2000 litter of Shadow and Malik were ready for retirement.

Our newest litter was born in 2012. There were many learning experiences with this litter of one female pup, Luna, and one male pup, Boltz, both believed to be representative of the Great Plains subspecies. Luna had some special needs that made staff wonder if she could manage with the larger, male packmates. If you view the International Wolf Center Youtube channel or have the opportunity to witness Luna's dominance over a deer carcass at a weekly feeding program, you will see that our concerns were unwarranted. We discovered that with some wolves, it's not the size of the canines, but the attitude behind them that matters

Now we're ready for a new adventure and a new pair of pups, likely to be males to avoid creating competition for Luna. Stay tuned to the Center's Youtube channel, webinars and wolf logs to learn more about each individual wolf and to meet the newest members of the exhibit pack in May of 2016. ■

Awen Briem

Boltz– 2012

INTERNATIONAL WOLF CENTER

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Susan Todd

In honor of the pups we have helped socialize, Aidan, Denali, Luna, and Boltz, and to all the wolves before and after them
Kerry and Alexis Sharp

In honor of Ms. Eleanor for her 8th Birthday
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Thank You!

Kelly Godfrey

"Surveying" the Tracks of Don Gossett

By David Kline

If you could look up the phrase "wolf enthusiast" in the dictionary, you'd probably find a photo of Don Gossett. In his active participation and unflagging enthusiasm, Don is more engaged than a typical member of the International Wolf Center.

As an eight-year-old boy, Don remembers being fascinated with all the school-library books he could find about wolves. Today, Don not only owns an exhaustive collection of wolf books, but he has enrolled in online wildlife courses through Oregon State University just for fun and personal enrichment.

Don is a U.S. Navy-trained surveyor with a bachelor's degree in physical geography from the University of Michigan and an associate's degree in forestry from Michigan Tech. In 2005, he applied for a surveying job in Ely and interviewed for it during his honeymoon trip to the Boundary Waters area. He took the job and has lived near the Interpretive Center for the past decade.

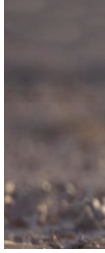
Today, Don is an avid photographer of our ambassador wolves. The Center has used many of his photographs for promotional purposes, including the 8x10 print for this year's "Wolf Sponsor" membership level. He is an active volunteer with the Wolf Care staff and always happy to do whatever he can to help the Center and its educational focus.

We're grateful for Don's time spent in support of the Center and for his membership. The International Wolf Center could not meet its goals and fulfill its mission without its members. Thank you, Don — and thank you, members! ■

Image of Boltz sent as a print to Wolf Sponsor and Alpha Wolf members in 2015.

Don's photos of the Center's ambassador wolves help us teach the world about wolf behaviors.

(Right) Luna sits on Denali, performing a mix of "stand over" and "squash" behaviors, both of which signify dominance over another animal.



Japanese Conference Draws on Experts to Address Reintroduction of Wolves

by Tracy O'Connell

International Wolf Center founder and board member Dr. David Mech was among three speakers at a series of five conferences held throughout Japan in June of this year. The speakers addressed the issue of prey animals such as sika deer and wild boars overrunning that country's natural areas and the potential of reintroducing wolves to help reduce their numbers.

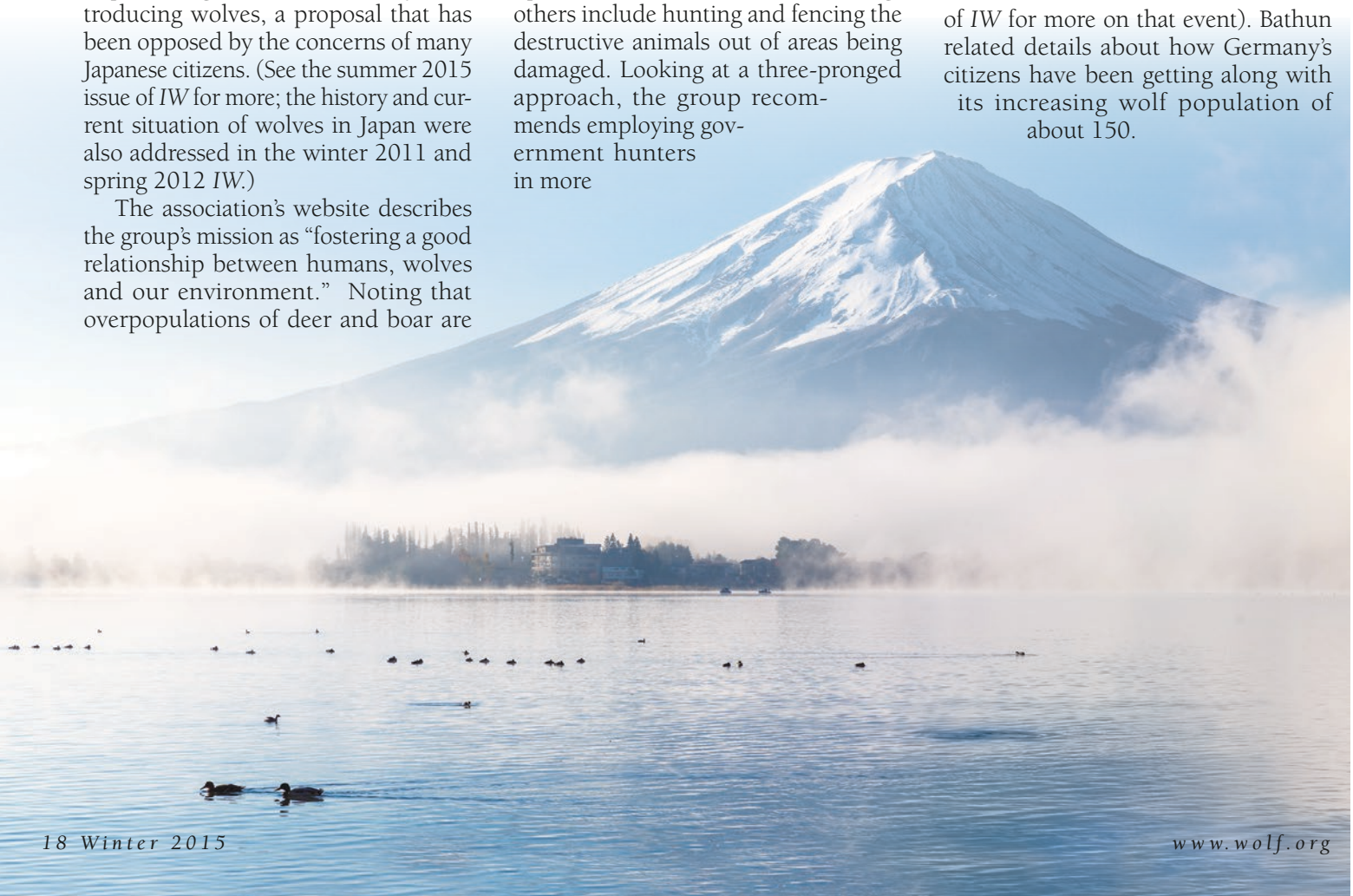
The conferences, held in various locations around the country, were sponsored by the Japan Wolf Association, a group founded in 1993 and dedicated to protecting the environment by reintroducing wolves, a proposal that has been opposed by the concerns of many Japanese citizens. (See the summer 2015 issue of *IW* for more; the history and current situation of wolves in Japan were also addressed in the winter 2011 and spring 2012 *IW*.)

The association's website describes the group's mission as "fostering a good relationship between humans, wolves and our environment." Noting that overpopulations of deer and boar are damaging foliage and sometimes killing large trees by girding them, Mech agreed with the group's support of proposed constraints on those two species. He added that a large wolf presence would be needed to reduce those potential prey populations.

Aside from damage to the environment, especially at World Heritage areas such as Mt. Fuji, increasing numbers of car accidents have resulted from deer and boar crossing highways, creating additional danger and expense for travelers.

Reintroduction of wolves is just one option the association is considering; others include hunting and fencing the destructive animals out of areas being damaged. Looking at a three-pronged approach, the group recommends employing government hunters in more populated areas to kill wolves that venture close to areas of human habitation, and fencing to keep the deer and boar out of sensitive ecological areas. Where at one time recreational shooting kept the deer and boar populations under control, an aging human population and declining interest in hunting has created the need to hire the job done—an expense that could be reduced by the introduction of wolves to more remote regions.

Also speaking was Markus Bathun of Naturschutzbund Deutschland, a German non-governmental organization devoted to conservation. Abbreviated in English as NABU (for Nature and Biodiversity Conservation Union), the 100-year-old organization with nearly a half-million members held a September event in Germany to recognize the place of the wolf in that country. (See "Wolves of the World" in the summer 2015 issue of *IW* for more on that event). Bathun related details about how Germany's citizens have been getting along with its increasing wolf population of about 150.




Thomas Krumenacker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Foundation for the Protection of the Arabian Leopard in Yemen


Andre DeCarie

ETHIOPIA

Apes and canines appear to be forming relationships that some suggest might replicate the manner in which early humans bonded with the ancestor of today's pet dog. Primatologist Vivek Venkataraman of Dartmouth College in the U.S. filmed gelada monkeys and Ethiopian "wolves" (a kind of jackal) over a period of two weeks, recording the monkeys' interactions with wolves that were hunting mole rats. The monkeys seemed unafraid of the wolves, which in turn seemed to be using the unafraid monkeys to get close to the rats for more successful hunting. The monkeys, meanwhile, showed fear around feral dogs, indicating that their trusting relationship did not extend to all canids in the monkeys' world.

Venkataraman said, "Ethiopian wolves appear to habituate the gelada herds to their presence through nonthreatening behavior, thereby foregoing the opportunity to prey upon vulnerable, juvenile geladas in order to feed more effectively on rodents."

In presenting this story, the website *The Inquisitr,* which describes itself as an internationally recognized news site read by more than 30 million people each month, points to another apparent example of ape-canid bonding. Hamadryas baboons living in a garbage dump outside of Ta'if, Saudi Arabia were seen in a video that has gone viral online, kidnapping infant feral dogs from their dens and raising them as pets. While the video shows the pups screaming in terror as they are dragged off by their tails or hind legs, they later seemed to choose their ape companions over leaving, and were seen as adults sitting peaceably alongside the apes like pets in a human family. The narrator of the British show *Animals Like Us*, in which the French-filmed footage was aired in 2011 or before, noted the dogs grew up to defend the baboons from intruders at night.

However, others doubted the veracity of the claim, pointing out, for example, that one of the wild dogs in the video seemed to be wearing a collar, while in Saudi Arabia dogs are typically not kept as pets. One doubter, *Psychology Today* blogger Dr. Hal Herzog, took on the assignment of tracking down the details, contacting researchers at a joint Saudi-American primate study effort in the area who were examining other aspects of the dump-site baboons. The researchers reported that while they had seen the apes steal kittens, they had not seen that dog-ape behavior.

Herzog believes that humans are the only species that takes on pets naturally, aside from odd pairings that can be seen in animal rehabilitation facilities, zoos and other artificial settings. He found the pups in the video to be a pariah breed called Canaan dogs, and suggested the interaction with apes would not be permanent; if the baboons left the site, the dogs would not follow.

Meanwhile, another blog, *The Naturalist's* Notebook, provides still photos from a 10-second video shot this year by a Cornell University student that reportedly shows baboons in Ethiopia near the edge of Lake Langano keeping wild dogs as pets.


Tim Leyland

Gelada monkey

ARMENIA

The *Armenian Weekly*, an English-language newspaper, relates the story of an Armenian American, Serda Ozbenian, a Fulbright Fellow in Armenia who brought to that country her knowledge of the treatment of wolves and bears in the U.S.

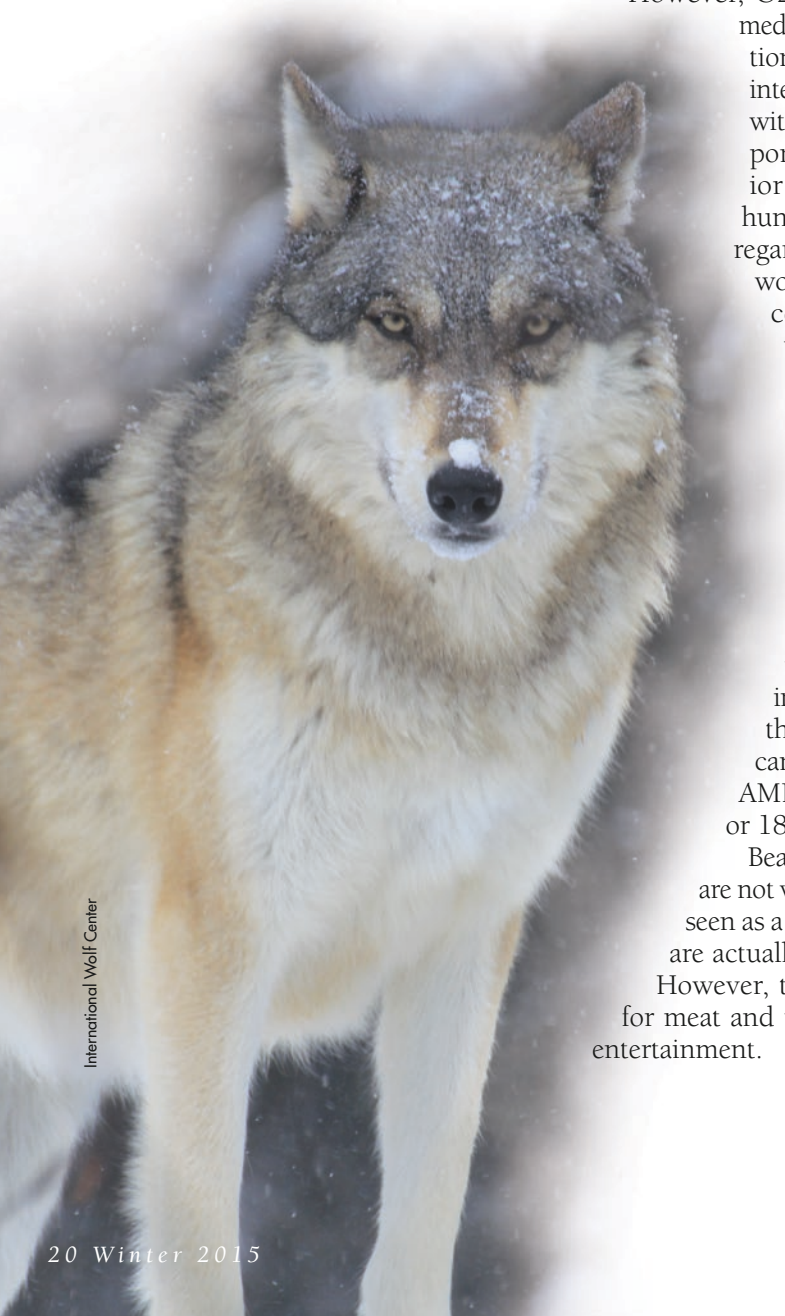
The executive director of the Armenian Environmental Network, Ozbenian has been involved with that country's environmental issues for eight years, but her personal focus is wildlife protection and avoidance of human-carnivore conflicts.

Her Fulbright work at present is on wolves and bears, to gather baseline information critical to the proper management of these animals, including their relative density and diet. She is conducting surveys to locate scat, hair, tracks, scrapes and food remains, and also conducting DNA analysis and wolf howling surveys.

Her research in 23 Armenian villages showed many people affected by negative encounters with predators did not support their eradication. One man called the loss of livestock to predation a "nature tax." Rather, villagers were frustrated by the lack of support from the present government, compared to times under the Soviet government when hunts were organized to control predation. What these communities need are the resources to build stronger sheds, roofs and fences, as well as to acquire sheep dogs, Ozbenian says.

However, Ozbenian also believes media coverage often sensationalizes human-wildlife interactions, most notably with wolves, and that this portrayal leads to behavior such as hailing wolf hunters as heroes and disregard for the suffering of wolves. She recently discovered the selling of wolf ovaries on buy-sell websites in Armenia, with the claim that they help with human infertility. It is said if the animal was alive when the ovaries were removed, treatment will be more effective. If it can be proven that this was the case (for instance by videotaping the removal) the ovaries can sell for up to 95,000 AMD (around $200 U.S. or 180 Euros).

Bears, on the other hand, are not vilified, and though still seen as a threat to farmers, they are actually a protected species. However, they are still poached for meat and trapped to be kept as entertainment.



International Wolf Center

GREAT BRITAIN

Rewilding efforts continue to be discussed here, with a concern similar to that voiced in Japan—curtailing the overabundance of prey animals. The online *News Hub* in July weighed the advantages of rewilding against the potential danger to livestock and humans, claiming that only eight humans across Europe and Russia had been killed by wolves in the half century leading up to 2002, some by rabid animals.

A collection of 26 pieces of original art portraying wolves has been on display in Bury St. Edmunds, a market town (a legal term differentiating it from a village or city) in the county of Suffolk, England. With a population today of just over 35,000, the community is said to be the place where King Edmunds was slain by Danes in the ninth century. According to legend, a wolf guarded the ruler's decapitated head, howling to lead supporters of the king to the site. (See more about this legend and the role of the wolf in British place names in the winter 2014 issue of *IW*). Today, the art venture is celebrated by the business community as a tourism initiative, with social media heralding the development of the various pieces—20 of them life-sized—and their placement. Stained glass, willow and plastic milk bottles are some of the materials that are helping to create the "Wolf Trail" exhibit installed in the community in July, to be taken down on St. Edmunds Day, November 20.

FRANCE

An "anti-wolf brigade" will protect livestock amid concerns that attacks are on the rise as the predators colonize new parts of the country. The Telegraph newspaper reported in July that 10 hunters will be trained and posted with livestock breeders suffering repeated attacks. About 8,500 sheep have been killed by wolves in France in the last 12 months. ■

Tracy O'Connell is associate professor emeritus of marketing communications at the University of Wisconsin-River Falls and a member of the International Wolf Center's communications and magazine committees.

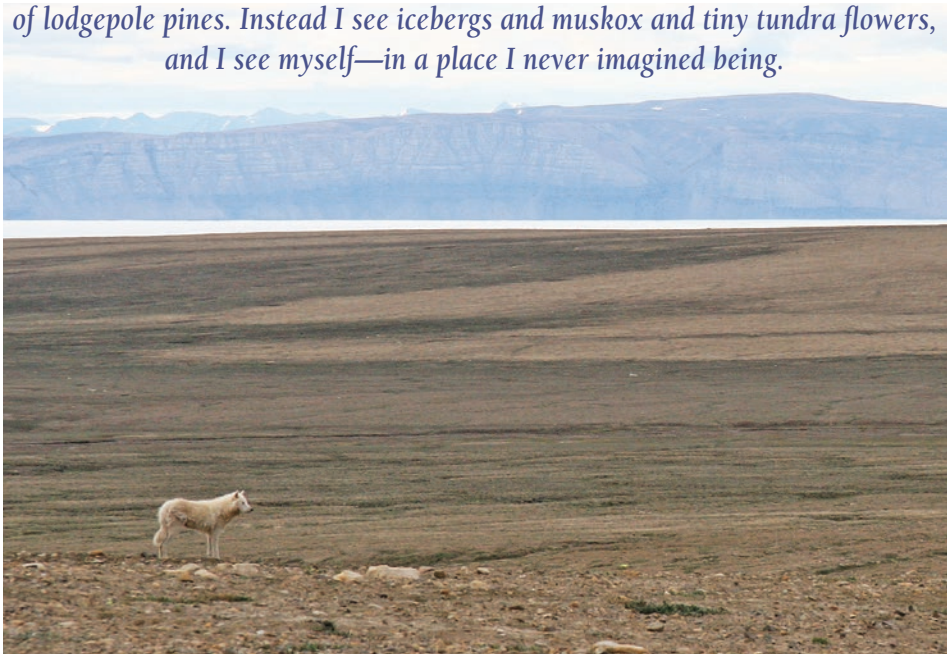
Personal Encounter

Locking Eyes with a Lifelong Dream

An encounter on Ellesmere Island

by Kira A. Cassidy

It's a few minutes after midnight, the sun is shining overhead and I meet the gaze of a wild wolf less than 15 feet away. The dark brown of his iris surprises me—it matches the rich fur of a bull bison, the bark of a Douglas fir, a bubbling thermal mud pot. But I'm not in Yellowstone National Park, I remind myself, where most wolves have an intense, golden stare. And the reflections I see in his eyes are not Old Faithful and elk, valleys of sagebrush and miles of lodgepole pines. Instead I see icebergs and muskox and tiny tundra flowers, and I see myself—in a place I never imagined being.



Kira Cassidy

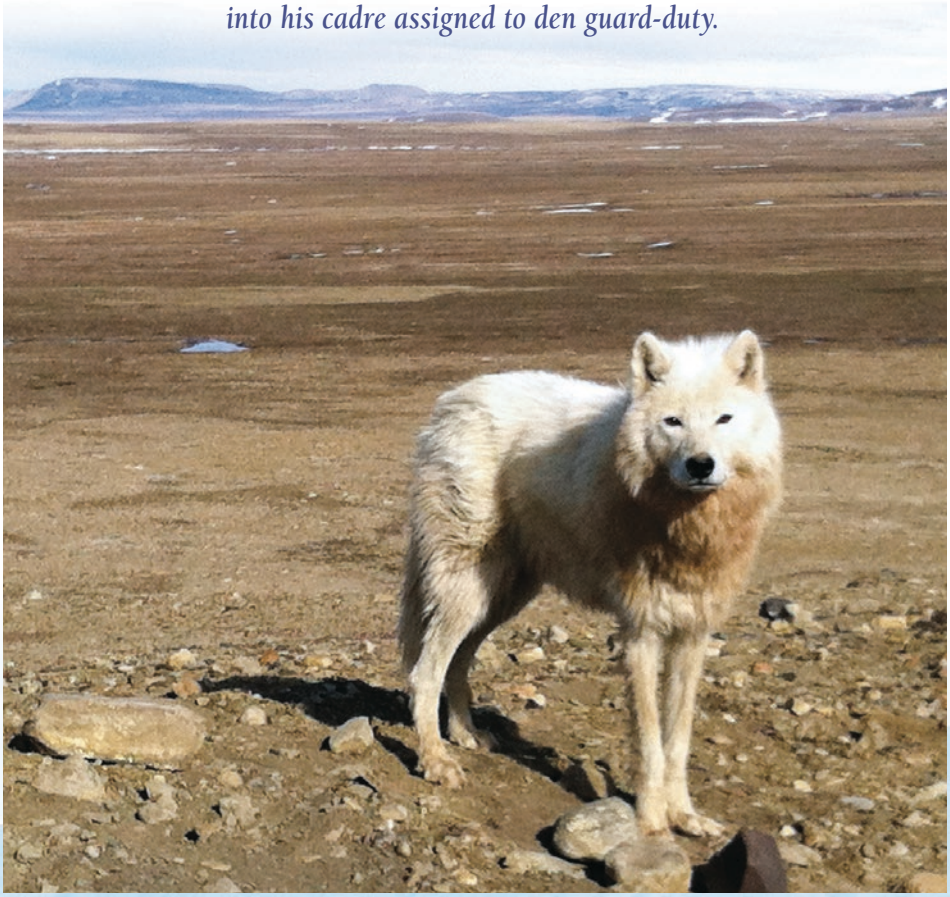
That place is Ellesmere Island—part of the northernmost Canadian province of Nunavut and closer to the North Pole than it is to the Arctic Circle. In wildlife circles the island is known for its arctic wolves—wolves that seem to have no fear of humans and have been studied by Dr. L. David Mech since 1986. Traveling to the island for a few weeks each summer, Dave observed nuanced behavior nearly impossible to discern in other places wolves are studied. In addition to collecting rigorous data on pup care and development, Dave was able to record the wolves hunting muskox and arctic hares. Those intimate observations were the catalyst for the BBC decision to travel to Ellesmere Island for its latest natural history program, and the reason I spent the summer of 2014 with Silverback Films, living with a pack of wild, arctic wolves.

Just getting to Ellesmere Island was an adventure in itself; travel took five flights over three days, each on a progressively smaller plane. The last flight was in the workhorse of the tundra, a Twin Otter. Capable of carrying about a dozen people, this one carried only two of us, and also our 2000-plus pounds of gear. Pressed between containers full of food, fuel, and camping and camera gear, I had my first glimpse of Ellesmere as the Otter broke out of the clouds and circled over the Eureka Weather Station, aiming for the dirt runway.

Because Silverback's goal was to film not only wolves hunting, but also their denning and pup-rearing behavior, we spent several days searching Ellesmere's Foshiem Peninsula for a wolf den. Once a den was located, we moved our camp out into the tundra about a kilometer (.62 miles) away. The first evening took quite a bit of set-up, as our camp included sleeping tents, a cook tent and small observation tent overlooking the den area, all on top of permafrost just 12 inches below the surface. It was almost midnight—although the sun hadn't moved from its overhead position—and we were too excited to sleep, so we decided to see what the wolves were up to. As we crested the hill between the den and camp, we could see two wolves at the den area and a third, the breeding female, coming aboveground briefly before going back to tend her subterranean charges. Content to watch from about 500 meters away, we sat with eyes glued to our binoculars. Not content to watch from afar was the breeding male. He spotted us, perhaps the only humans he had seen in his life, and started to travel calmly in our direction. He did not stop until he was 15 feet away.

Dean Cluff

He is now close enough for me to see his teeth, his toes, his eyes. He seems somewhat confused by us, but sniffs to put the pieces of this day together. He can smell all kinds of things, surely: the dinner we just cooked, the laundry detergent I use, spiking levels of dopamine from excitement. We look into each other's eyes, his brown ones with curiosity, my green ones—some of the only green on the tundra in early summer—with awe. He yawns and eventually beds about 20 meters away, facing back to the den, as if we are now recruited into his cadre assigned to den guard-duty.



Kira Cassidy

And I took my guard-duty seriously. Working in 12-hour shifts, the three Silverback crew members—Producer Jonnie Hughes, cameramen Mark Smith and Kieran O'Donovan—and I took turns watching the den. Eventually we saw two tiny pups emerge, followed by a third a day later. Far younger than any wolf pups I'd observed before, they could barely walk; they rather crawled around the entrance of the den. Their mother, now accustomed to our presence, nursed and cleaned them while we watched. Whenever the adults left the den to hunt we would split into pairs—two of us following the wolves on ATVs and two staying near the den to film the pups. Like a well-practiced fire drill, we were on ATVs following the wolves within five minutes of the wolves' decision to leave. Sometimes, sitting on the ATVs, we were tricked by a false start as the pack decided the timing wasn't quite right and promptly went back to sleep. Our bipedal figures did not seem to worry the wolves, nor did our machinery; they went about hunting as normal even with ATVs following in their wake.

The pack hunted mostly arctic hares and leverets (juvenile arctic hares). Eventually the breeding female joined the other four adults on hunting forays, leaving the pups at the den alone except for their invariably watchful human neighbors. As the pups grew they became more coordinated, running and playing

Kira Cassidy

with each other, though rarely venturing more than 100 meters from the den. The adults regularly visited our camp, sniffing the radio support cords, inspecting gear, once even stealing a sock from my tent guyline. I was able to retrieve the sock after following the beta female as she jauntily carried it away, continually glancing over her shoulder. Such interactions made it easy to understand how humans and wolves formed a partnership tens of thousands of years ago, learning to understand each other like no other two species on the planet.

In addition to the wolves, we often watched herds of muskox travel through camp, their shaggy coats shedding in long strands that were pushed along the ground by the wind and snagged by arctic willows—the only "tree" species on Ellesmere, growing less than two inches tall.

The arctic hares were a delightful surprise, as the 12-pound adults often stood and ran comically on their hind legs. The leverets were a constant presence around camp; I watched one litter from birth to weaning. Every 18.5 hours the leverets would appear from their hiding places and gather around the same, agreed-upon large rock. Their mother would come from over a mile away and nurse for less than one minute before leaving again—likely a strategy for keeping predatory attention away from her young ones. Feeling frisky after a good meal, the leverets would run and jump around for a few minutes, over my boots and tripod, even into our tents, before going back to hiding.

Just as we watched the leverets grow, we watched the wolf pups progress from tiny, brown, crawling creatures to creamy-tan, agile wolf pups—two more curious and exploratory than the third, but all three healthy and well-attended by the adults. After six weeks living on the tundra, watching and following that pack of wild, arctic wolves, travelling, eating and sleeping on their schedule, it was time to head home. I'd had an experience like no other and felt incredibly lucky.

As I locked eyes with a wild, arctic wolf that first sunny night, I saw not only a glimpse of his ancient, canine mind. I saw myself and everything that had led up to that moment—time spent driving the Yellowstone park roads, listening for radio signals or looking through a spotting scope at a new litter of Druid pups; a time when the arctic fascinated me to the degree that I would say it haunted me; a time when I would tell friends that if I planned a trip to Alaska, or anywhere else I considered arctic, my return ticket would likely not be used. I saw even further back, to myself as a child, when every book checked out of the library had an animal on the cover and every school project involved wildlife issues.

So while I'm happy to be home in Yellowstone with its abundant wildlife, thermal features and dramatic mountains, when I was fixed by an arctic wolf's stare, I knew, at that moment, there was absolutely nowhere else I would rather be. ■

Kira Cassidy is a research associate with the Yellowstone Wolf Project, where she started as a volunteer in 2007 and today specializes in wolf aggression and behavior. She completed her Master's degree at the University of Minnesota, studying wolf territoriality under Dr. L. David Mech.

All's Well that Ends Well? Wolf Recovery and Conservation in Italy

By Paolo Ciucci

In 1984, when I started as a student doing research on wolves in Abruzzo, the species had been legally protected in Italy for about a decade. The first-ever nationwide census of the species, carried out by Luigi Boitani and Eric Zimen in the early 1970s, depicted some 100-to-110 wolves living at low densities in just ten isolated, recluse mountain refuges scattered in limited portions of the Central and Southern Apennines.

Photo courtesy Paolo Ciucci

By no surprise, those numbers prompted the most dramatic conservation campaign ever witnessed in Italy. World Wildlife Federation International launched the "Saint Francis and the Wolf" campaign, tapping into the devotion of millions of Italians for the famous saint, even though they hardly knew what *un lupo*—a wolf—was. The wolf immediately became the iconic symbol of endangered species, and a poster featuring a wolf pack and the "Extinction is Forever" message (left) sold by the thousands.

The species attained legal protection in Italy and increasingly enjoyed the restoration of critical habitat, a proliferation of protected areas and most importantly, the reintroduction of their native wild prey, such as roe deer, red deer and wild boars. In fact, in addition to direct persecution, one of the main problems wolves had historically faced in Italy was the total eradication of wild prey due to the utter and persistent lack of science-based game management. Unbelievable as it seems, this was still occurring in Italy into the early 1980s. One might wonder how on earth predators like wolves have managed to survive in a prey-depleted country. While our friends and colleagues, the wolf biologists of North America, were keeping busy studying wolf-prey dynamics and the ecological role of wolves in pristine eco-

systems, we and our beloved Earthwatch volunteers were tracking Italian wolves at dumpsites located on the outskirts of mountain villages. We were interested in how many dumpsites they would visit in one night, how long they fed there and what they were eating.

Once in a while, wolves would kill a sheep or two to supplement their diet, but local shepherds knew their ways so well, and the livestock-guarding dogs were trained so properly, that depredations were tolerated as rare, accidental events.

Photo courtesy Paolo Ciucci

I felt uneasy tracking wolves at those dumpsites. Not only were the dumps filthy and constantly burning, but that foraging behavior hardly matched my ideal of wolves—or the work of a wolf biologist. Very few of us were aware at that time that the dumpsites were an unrecognized source of supplemental feeding for wolves on the verge of extinction.

As it turned out, things ended well. In the early 1990s I would be studying wolf predation patterns on wild ungulates in the Northern Apennines, an area where wolves had made their way back naturally, more than 40 years after their eradication. Because of conservation measures in the previous years, and due to the amazing travelling capability of dispersing wolves, the species gradually recolonized its historical range in the Apennines, eventually reaching the French Alps in 1992. Subsequently, they initiated the on-going, natural recolonization of the whole Alpine ecosystem, bringing wolves back to countries such as France, Switzerland and Germany, in places where wolves had been absent for more than a century. Today, more than 1,000 wolves live in Italy, and the population in the Apennines is approaching saturation levels throughout the species' historical range. And importantly, wolves in many areas are thriving almost exclusively on wild prey.

Although in a country with 202 people per square km (523 per square mile) we cannot expect wolves to play the same ecological role as in the Yellowstone or the Canadian wilderness, this is a remarkable conservation achievement. In a recent research project we conducted in the historical Abruzzo National Park, wild boar, red deer and roe deer constituted the staples of the wolf diet, supporting a relatively high density of more than five wolves per 100 square km (13 per 100 square miles)—and a few packs reached 9-to-11 members in early winter. This pack size was simply unimaginable back in the dumpsite era, when pack members were limited to the breeding pair and one or two of their current-year pups.

The dark side of the story concurrently shows that nationwide, an estimated 15-to-20 percent of all wolves are being illegally or accidentally killed each year by humans, and the lack of law enforcement or prevention is a clear indication that this level of human-caused mortality is being tacitly accepted by public authorities—and by an uninformed public, as well. This is a crystal-clear, working example of laissez faire or benign neglect management strategy.

Is it true then, in this case, that all's well that ends well? I would say we are halfway there, currently facing similar wolf management problems that other countries in Europe and elsewhere are experiencing with recovering wolf populations. Caution is needed in interpreting recent conservation successes with wolves in Italy, so we are ready to adequately address future conservation challenges.

Wolf recovery in Italy occurred relatively quickly—mostly due to wolves' marked ecological adaptability and resilience—even in the absence of any proactive conservation strategy. But cultural landscapes are clearly different from ecological ones in terms of wolf recovery. That's why I think that it was paradoxically much easier (and more romantic) to save wolves from extinction in the 1970s than it will be to manage their functional co-existence with, and enhanced acceptance by, humans in the years ahead. ■

Paolo Ciucci

David Sanders

The author, Paolo Ciucci, is a research scientist at the Department of Biology and Biotechnologies of the Sapienza University of Rome, Italy, where he also teaches courses in zoology and animal ecology. He earned a Master's in Wildlife Ecology and Conservation at the University of Minnesota in 1990 with Dr. L. David Mech and a Ph.D. in Animal Ecology at the University of Rome in 1994.He has been conducting research on large carnivores in Italy and abroad (U.S., Central African Republic, Jordan, Israel) and has authored several academic and popular articles on the ecology and conservation of wolves and brown bears.

Wild Kids

Meet the Pack

Ambassador wolf Luna is a Great Plains subspecies of the Gray wolf. Three-and-a-half years old, she is the only female in the exhibit pack at the interpretive center in Ely, Minnesota. Luna's confidence shows around the three males in the pack. Every Saturday night, the ambassador wolves get a deer carcass to eat. While the other wolves are eating, Luna tries to steal the food. When a wolf possesses food, it's theirs until they leave it or give it up to another wolf. But Luna has been observed trying to distract both Denali and Boltz as they are eating by approaching them and doing a playbow. Sometimes she will move closer to the feasting wolf and just lie down. Then the wolf will try to guard the carcass by showing Luna a lip curl to warn her to stay back. In response, Luna will casually look away, as if she is ignoring the feeding wolf. When the feeding wolf moves a slight distance away from the food, Luna quickly darts in and takes the food. Other times, in order to claim other wolves' food, Luna will distract them away or simply wait as long as she needs to until they finish.

Vocabulary

Behavior:
The way an animal or person acts in response to a particular response or stimulus.

Playbow:
A behavior used to invite play with another wolf. The front legs are stretched forward, the chest is low to the ground and the rear remains high in the air.

Ignore:
Refuse to take notice of or acknowledge.

Distract:
To divert attention from the original focus or interest.

Guard:
To protect desired objects from others.

Lip Curl:
The curl up of a lip to reveal teeth.

Foreleg Stab:
To swat or stab another wolf with the foreleg.

Winter is the easiest time for wolf tracking because in snow, the signs, including tracks, scent posts and scat are more visible.

A wolf trail is only about 5-to-10 inches wide. Look at the photo on this page and notice the wolf tracks are quite direct and linear compared to domestic dog tracks, which wander in different directions. With wide paws and long legs, a wolf is well-equipped to travel around its territory in the snow.

Wolves mark their territory through different kinds of scent-post markings, including urination and scat. The dominant wolf will mark with raised-leg urination. This is done by lifting a hind leg and squirting on vertical objects like trees and shrubs. A non-dominant wolf will urinate by squatting with its legs spread and squirting on the ground (female) or standing and squirting directly under him (male). Wolf scat is often deposited along a trail or at the junction of two or more trails. Wolf scat will contain hair from the food the wolf ate. Scat color can vary from dark to light, depending on what parts of a carcass the wolf has eaten. The scat will be darker when it contains remains of organs and muscle. Scats are lighter when they contain more hair and bones. ■

Scent marking by a dominant wolf (above) and non-dominant male wolf (right).

Photos: International Wolf Center

Double Puzzle

First: Unscramble each of the clue words right using the vocabulary words (opposite page).

PLBYAWO _ _ _ _ _ _ _
5

REGONI _ _ _ _ _ _
2

GURDA _ _ _ _ _
6

TAISTCRD _ _ _ _ _ _ _ _
3

LPI LUCR _ _ _ _ _ _ _ _
4

GOFRELE TABS _ _ _ _ _ _ _ _ _ _ _ _
1

Then: Copy the letters in the numbered cells to the cells below with the matching number to reveal what all these words have in common!

W	O	L	F						
		H		V					
1	2		3		4	5	6		

Books about Wolves for Young People

by Debra Mitts-Smith

If you have in your life a young reader who is fascinated by wolves, you might want to consider a holiday gift that offers "The Call of the Wild."

Each book on the list was chosen based on its status as a classic, the reputation of the author or illustrator, or its appeal to young people. Together, they cover a range of genres and audiences (from pre-school through young adult) and depict an array of wolves, from literary and folkloric wolves to more realistic or scientific representations of wolves. Books that feature literary wolves may contain misinformation—but sharing these stories with a young person creates opportunity for discussion about how literary and folkloric depictions of wolves differ from their real-world counterparts. Your holiday gift, at that point, becomes a lifelong gift of enlightenment about wolves and wilderness.

CLASSICS

The Call of the Wild and Other Stories by Jack London. Penguin Classics, 1981.

Julie of the Wolves by Jean Craighead George with pictures by Jon Schonherr. HarperTrophy: 1972.

Jungle Book by Rudyard Kipling with illustrations by Jerry Pinkney. New York: William Morrow and Co., 1995.

FOLK AND FAIRY TALES

Great Wolf and the Good Woodsman by Helen Hoover with woodcuts by Betsy Bowen. Minneapolis: University of Minnesota Press, 2005.

Little Red Riding Hood retold and illustrated by Trina Schart Hyman. New York: Holiday House, 1983.

The Three Little Pigs retold and illustrated by Barry Moser. Boston: Little, Brown and Co. 2001.

Peter and the Wolf retold and illustrated by Chris Raschka. New York: Atheneum Books for Young Readers, 2008.

NONFICTION

The Library of Wolves and Wild Dogs: The Red Wolf by Fred H. Harrington, Rosen Publishing Group, 2002.

National Geographic Kids Mission: Wolf Rescue by Kitson Jazynka with Daniel Raven-Ellison, National Geographic Children's Books, 2014

Wild Dogs: Past & Present by Kelly Milner Hall. Darby Creek Publishing, 2005.

CONTEMPORARY FICTION
(readers age 9 to 14)

Firstborn by Tor Seidler. New York: Atheneum Books for Young Readers, 2015.

Old Wolf by Avi, illustrated by Brian Floca. New York: Atheneum Books for Young Readers, 2015

Summer of the Wolves by Polly Carlson-Voiles. Houghton Mifflin Books for Children, 2012.

Wolf Brother by Michelle Paver (the first the series Chronicles of Ancient Darkness). London: 2004.

FRACTURED WOLF TALES–PICTURE BOOKS

The Three Little Wolves and the Big Bad Pig by Helen Oxenbury with illustrations by Trivizia

The True Story of the Three Little Pigs by Jon Scieska with illustrations by Lane Smith

Wolf Won't Bite by Emily Gravett. New York: Simon & Schuster, 2012.

Wolfie the Bunny by Anne Dyckman with illustrations by Zachariah Ohora. New York: Little Brown and Co. 2015.

Wolves by Emily Gravett. London: MacMillan, 2005.

PICTUREBOOKS—FICTION

Nutik, the Wolf Pup by Jean Craighead George with illustrations by Ted Rand. HarperCollins, 2001.

The Wolves are Back by Jean Craighead George with paintings by Wendell Minor. Dutton: 2008.

The book list was compiled and introduced by Debra Mitts-Smith, adjunct professor in library and information science at the University of Illinois-Urbana-Champaign

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MENS: #813P $28.95

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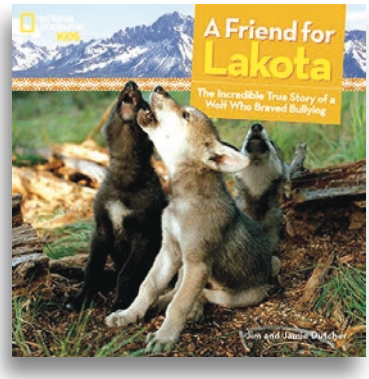
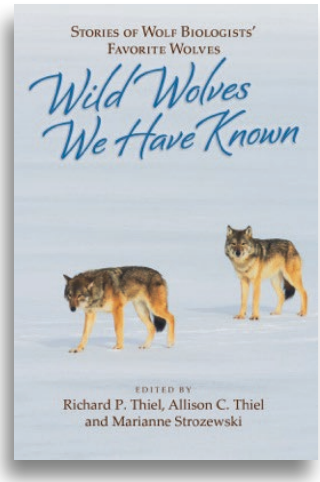


A Friend for Lakota Book
#892 $16.99
A National Geographic Kids book



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MENS: #762P

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Gray Wolf Canvas Sign

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Gray Wolf Cabin Sign

#7343 $42.95

Resin Wolf #568 $39.95

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