INTERNATIONAL WOLF

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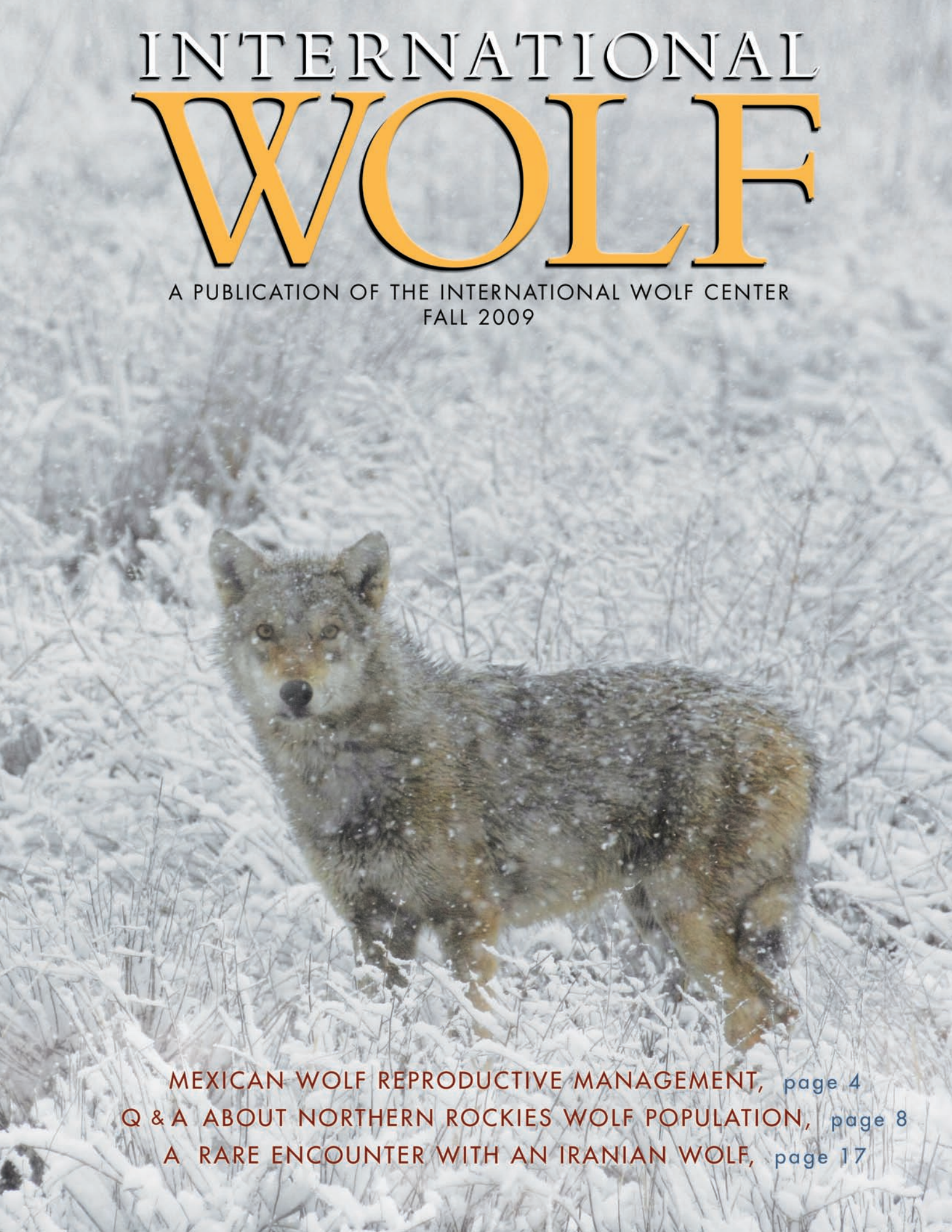
FALL 2009



INTERNATIONAL
WOLF
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Features


Jackie Fallon


Edwin Winkel

Departments

On the Cover

An Iranian wolf in northern Iran's Golestan National Park.

Photo by Edwin Winkel.

Edwin Winkel is a Dutch wildlife photographer and journalist, who specializes in photographing nearctic (North American) and palearctic (Eurasian) animals. Contact Edwin at hravn@home.nl.

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

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What secrets did the wolves of the High Arctic reveal?

Did the researchers find a wolf pack to observe? Did the pack have pups? Were abundant numbers of muskoxen and arctic hares present on the vast, rugged expanses of land here in the farthest reaches of the north?

Veteran Ellesmere biologists Dave Mech and Dean Cluff sought answers to these questions and more as they began Dave's 24th consecutive year of the Ellesmere Island Arctic Wolf Research Expedition July 3 – 17, 2009.

The study area where the two researchers spent two weeks is a region so remote that the nearest permanent human community is far to the south. Here, at 80 degrees north latitude, the sun never sets in summer – and in winter, 24 hours of darkness blanket the landscape.

To learn what secrets were revealed, follow Dave and Dean's notes from the field, http://internationalwolfcenter.blogspot.com/. ■

Dean Cluff

From the Executive Director

Change

By Mary Ortiz, Executive Director

"Nothing endures but change."
— Heraclitus, 540 BC-480 BC

Change is constant—it endures. On June 26, 2009, just a few weeks ago, the U.S. Fish and Wildlife Service (USFWS) reached a settlement agreement with plaintiffs in a lawsuit challenging the 2009 removal of the gray wolf from Endangered Species Act (ESA) protection in the Western Great Lakes. I suspect that by the time this article is in print, the court will have approved the agreement, and the USFWS will have provided an additional public review and comment period. During this 60-day period, wolves will be returned to threatened status in Minnesota and endangered status elsewhere in the region–again.

Mary Ortiz

The International Wolf Center is also in a state of change. Our exciting and challenging 24-year history includes many times of great change—the opening of an interpretive center, a building expansion, the launching of a Web site and the development of distance learning programs. Just last December, I was elected to be the new executive director by the Center's board of directors. While "new" is the correct description, "old" may be a better characterization! Well, let's just say "experienced." I have worked at the Center for more than 22 years in virtually every capacity except wolf curator. Lori Schmidt rightfully deserves that distinguished honor.

For me, the Center's future seems full of opportunity for exciting innovations in education about wolves and wildlands. Globally, education itself is changing. Virtual schools are becoming more common and can better reach diverse audiences including disabled children and adults, home-schooled students, and rural schools.

Through videoconferencing, educators at the Center can teach and talk with students who are able to see our wolf ambassadors in real time. However, visitors to the Center will never forget an experienced educator sharing personal knowledge about the wolf, or the real howl of a wolf close by. A 2008 report from the International Association for K-12 Online Learning (INACOL) stated, "The blended approach combines the best elements of online and face-to-face learning. It is likely to emerge as the predominant model of the future—to become far more common than either one alone." We at the Center are proud to present a blend of personal and virtual wolf experiences worldwide.

As Carol Burnett once said, "Only I can change my life. No one can do it for me." I would adapt the quotation to say, "Only we humans can change the future of wolves. No one else can do it for us." Our individual and collective concern for the survival of wolves must remain constant. ■

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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Captive Breeding and Reproductive Management of the Mexican Gray Wolf

by CHERYL ASA, PH.D.,
Director of Research, Saint Louis Zoo

Wild Canid Center

Because recovery and reintroduction programs are underway for several endangered canids in the U.S., now is an exciting time for those of us working with canids at the Saint Louis Zoo. To date, the most notable success has been the gray wolf's return to Yellowstone, initiated by translocating animals from Canada. But perhaps less widely known are programs for the Mexican gray wolf *(Canis lupus baileyi)*, a subspecies of the more familiar gray wolf; the red wolf *(C. rufus)*; and the island fox *(Urocyon littoralis)*, a smaller relative of the gray fox. The programs for these three species are notable because recovery has depended on captive breeding.

Mexican and red wolves were believed extinct in the wild, but the few captive individuals have served as founders in recovery of those species. When island fox numbers dropped in the late 1990's, captive breeding proceeded, while the causes of mortality were identified and mitigated to augment the number of animals available for reintroduction.

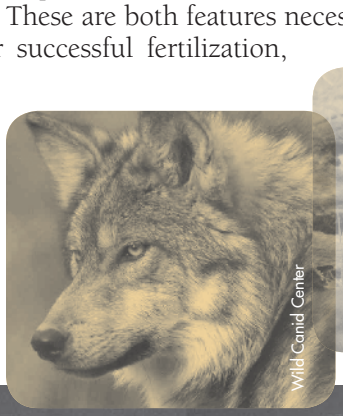
Our work with Mexican wolves began in 1990 when the U.S. Fish and Wildlife Service invited our lab to maintain a frozen semen bank. Since then we have collected semen from 65 males. Routine semen analyses prior to freezing each sample have produced a wealth of data that now serve as reference values. We rely mostly on methods developed and tested on domestic dog samples, but given the importance of each Mexican wolf sample, we needed to validate the techniques first. Although domestic counterparts are a good place to begin and a good reference point, they are not identical to their wild relatives, so validation is still needed.

Luckily for us, because the Mexican wolf is a subspecies of the gray wolf, we had a very closely related species that might help. Thus we developed a partnership with the Wildlife Science Center in Forest Lake, Minnesota, where there are gray wolves available for research. As improvements in handling and preserving dog semen are developed, we can evaluate whether they also represent improvements for wolf semen. We then apply the new

techniques to genetically valuable Mexican wolves.

Unexpected benefits of these studies were results that alerted us to a problem in Mexican wolf sperm. We noticed that generally gray wolf semen samples appeared to be of better quality than those of Mexican wolves, so we made statistical comparisons. The Mexican wolves had more abnormal sperm cells and fewer motile sperm. These are both features necessary for successful fertilization, which meant that our Mexican wolf males might not be fully fertile. In addition, semen quality was related to the degree of inbreeding in the Mexican wolves; that is, males that were more inbred had poorer quality semen. Although it is widely accepted that inbreeding can affect the health and even the survival of offspring, it had not been associated in wolves with something like sperm structure and function.

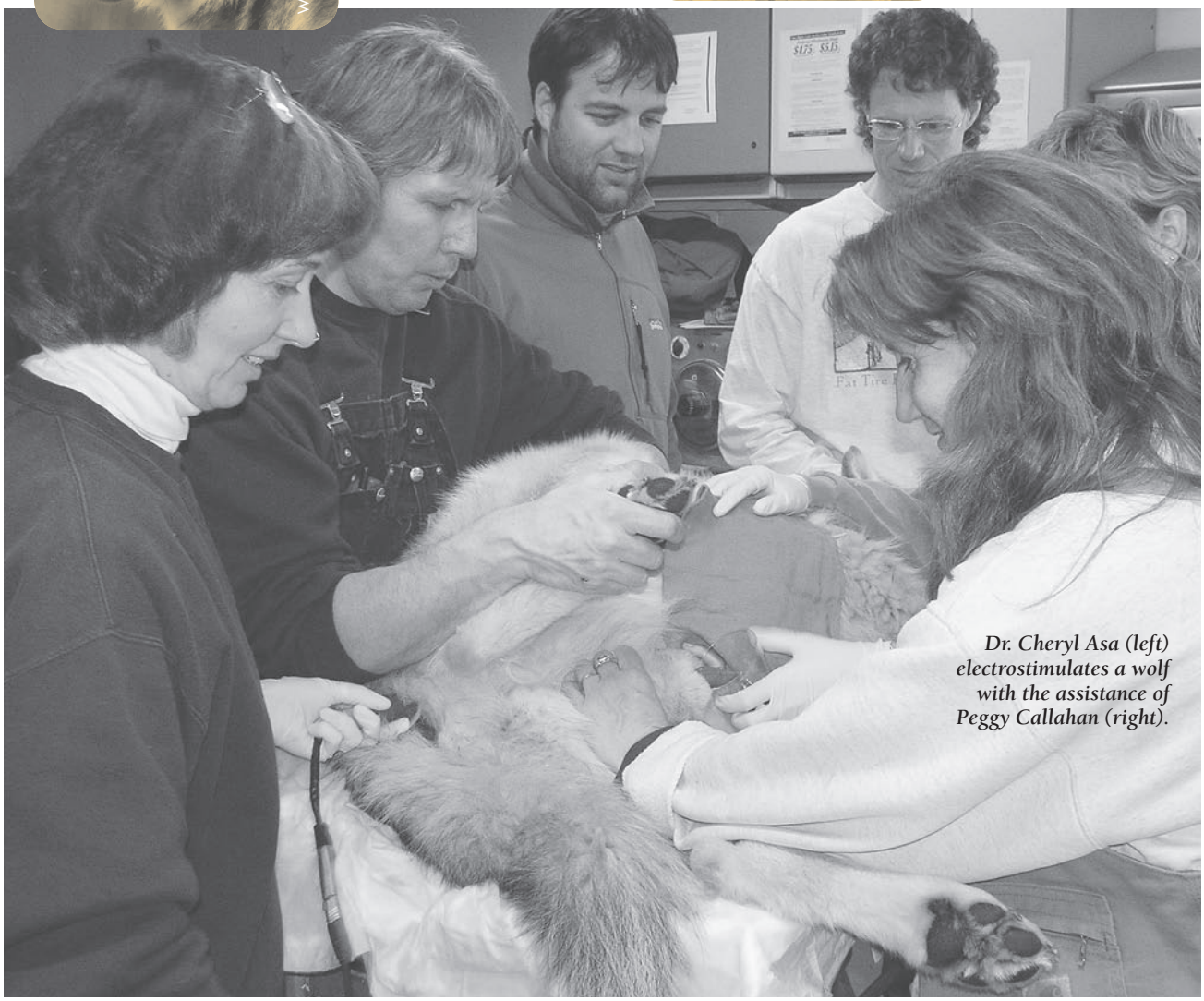
The current captive Mexican wolves are all descendents of six or seven original founders. This small number of founders in itself would be cause for concern, but compounding the problem, those founders were bred in three separate lineages before the recovery program was established. Not until the late 1990's, after each lineage could be verified by genetic testing as pure Mexican wolf, could wolves of


Wild Canid Center


Jackie Fallon


Jackie Fallon


Jackie Fallon


St. Louis Zoo staff

Dr. Cheryl Asa (left) electrostimulates a wolf with the assistance of Peggy Callahan (right).

different lineages be crossbred. As the offspring of lineage crosses reached puberty, we found that their sperm quality was as good as that of the gray wolves, further implicating inbreeding as responsible. One of our graduate students then used studbook records to analyze all the factors we could identify that might affect reproductive success. She found that sperm quality and inbreeding were two of the most important. These results emphasize how important it is to carefully manage the genetic composition of small captive populations.

As we continued to compare results from our wolf research to those from domestic dogs, a difference became obvious. Sperm cells from dogs remained motile much longer than sperm specimens from either gray or Mexican wolves, regardless of whatever degree of inbreeding they showed. Labs working with domestic dogs reported that dog sperm could survive for days, but samples from our wolves lived only for hours. To determine what might be responsible for the difference, we are collaborating with one of those labs to directly compare dog to wolf semen. We think the difference may be excess prostate fluid produced during electroejaculation, the technique necessary to collect semen from wolves while anesthetized. Too much of this fluid can damage sperm. Dog semen is collected by manual stimulation, which allows the part that contains the most prostate fluid to be separated from the rest of the sample. However, wolf samples have to be collected during anesthesia, so manual collection and prostate-fluid separation are not possible. If indeed the excess prostate fluid proves to be the problem, we will explore means to counter its effect.

Of course, banked semen is of little value if it cannot be used to inseminate females, so we also needed to develop methods for artificial insemination. For domestic dogs, the best day(s) of a female's ovulatory cycle for insemination is determined by samples collected each day. However, daily sampling is not feasible with wolves because daily anesthesia can be stressful. Instead, we use hormone treatment to stimulate estrus and ovulation for timed inseminations. We first tried the technique with gray wolves at the Wildlife Science Center and produced the first offspring from a wild species using this method. It had previously only been used in domestic horses and dogs.

The main purpose of the Mexican wolf semen bank is genetic insurance for the future. Artificial insemination is not routinely used in current breeding-management strategies. However, a few years ago it proved to be the best option for an unusual case. A female Mexican wolf that was very valuable genetically had been introduced to several males but had refused all of them. She finally bonded with an older male, although he was not a good genetic match. Still, because of her genetic value to the population, it was important for her to produce pups before she became too old. When we saw her mating with the male, we also inseminated her with semen from a male that was a better genetic match. The most we expected was a litter of mixed paternity. However, genetic testing showed that all three pups were sired by artificial insemination. Probably the older male was no longer fertile, but he remained important as a social partner. Perhaps more importantly, he did not seem to recognize that the pups were not his. He was very solicitous of the pups and proved to be an excellent dad. We could not have asked for more!

Until recently, only male gametes (sperm) could be preserved. However, with improvements in a special freezing process called vitrification, it became possible to cryopreserve eggs. Canids are not ideal for this approach, though, because their eggs have proven especially difficult to culture for fertilization outside a parent's body ("in vitro"). However, in the meantime, the Mexican wolf recovery program is concerned that some aging female Mexican wolves that are extremely valuable genetically have left few if any offspring. Even though their ova cannot be fertilized today using current methods, we can at least preserve them until successful methods are developed. We are optimistic since so many dog owners are willing to help fund the research.

First, we practiced the technique, which requires some specialized skills, on eggs from gray wolves at the Wildlife Science Center. Then we began vitrifying eggs and ovarian tissue from some of the most valuable Mexican wolf females rather than risk losing their genes entirely. We could not fertilize any of the eggs to determine whether handling and freezing had damaged them, but we could confirm they survived by thawing representative samples and testing them for viability. We were thrilled to see that they were indeed still alive, which

Unexpected benefits of these studies were results that alerted us to a problem in Mexican wolf sperm.

means those still preserved in liquid nitrogen can be considered candidates for in-vitro maturation and fertilization in the future.

Although these examples focus on enhancing reproduction, we sometimes have to control or limit reproduction. There currently is a moratorium on reintroducing additional Mexican wolves into the wild. That means there also has to be a moratorium on captive breeding since the captive population is at carrying capacity. In terms of animal well-being it is especially important that for wolves, that typically pair-bond for long periods, we not rely on separating males and females for the several months of the courtship and breeding season. To allow these pairs to remain together, we can use contraception to prevent pregnancy. The most commonly used product is Suprelorin (deslorelin: Peptech Animal Health, Australia), a compound that first briefly stimulates, then down-regulates reproductive hormones. Although it can be effective in either males or females, it is used more often in females because only one ovulatory event needs to be blocked rather than continual suppression of sperm production.

Recently there have been several cases of male wolves producing semen at unexpected times, resulting in pregnancies despite the breeding moratorium. Thus it will be important for us to systematically evaluate males to delineate their timing of sperm production. The results are critical to managers for determining when animals are fertile and need to be moved or contraception initiated to prevent unintended pregnancies. As this example shows, our role with the recovery program evolves to respond as problems emerge. By careful planning, we usually can also add to the general understanding of wolf reproductive biology as we solve the more immediate problem. We never have a chance to get bored! ■

Cheryl Asa, Ph.D., is the Director of Research at the Saint Louis Zoo in St. Louis, MO.


Jackie Fallon


Jackie Fallon


Jackie Fallon

Cheryl Asa

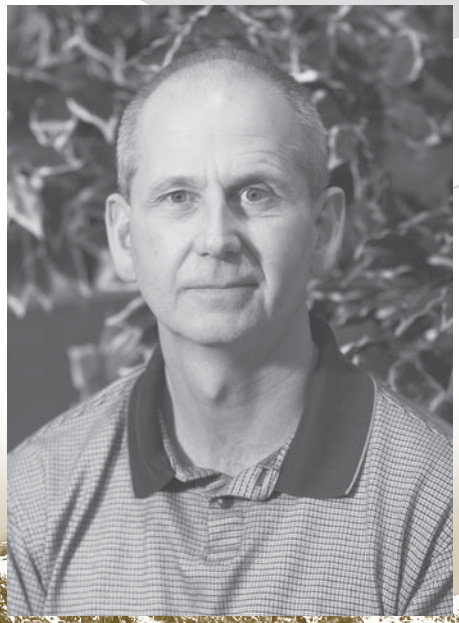
For artificial insemination, oocytes from female wolves must be carefully collected and preserved.

A Chat with Ed Bangs

EDITOR'S NOTE:

Ed Bangs, the U.S. Fish and Wildlife Service's Wolf Recovery Coordinator for the northern Rockies, has been at the epicenter of controversy over wolf recovery and management in the northern Rockies for more than two decades.

Here we present an interview with him about the recent delisting of that population.



Ed Bangs has studied wolves since 1976 and believes people management is much more complex than wolf management.

Bill Rogers

IWC: How many years have you been the U.S. Fish and Wildlife Service (USFWS) Wolf Recovery Coordinator for the northern Rockies?

Bangs: I worked with wolf issues as a refuge biologist in Alaska from 1976 to 1988. I've been working on wolf issues in the U.S. northern Rocky Mountains [NRM] for nearly 21 years now.

IWC: What is the current status of the NRM wolf population?

Bangs: In late 2008, the NRM wolf population was estimated to contain about 1,645 wolves in nearly 217 packs (two or more wolves with a territory). Ninety-five of these packs also classified as breeding pairs (packs confirmed to have at least an adult male, adult female, and 2 pups on December 31). The NRM wolf population is a three-part metapopulation, filling nearly all the core areas of suitable habitat in about 110,000 square miles of northwestern Montana, central Idaho and the Greater Yellowstone Area (GYA). The most distinct subpopulation in the NRM is the GYA, but the territories of persistent breeding pairs in GYA and central Idaho are often within 60 miles of each other, which is the average dispersal distance for NRM wolves. The GYA had 449 wolves as of Dec 31, 2008. Wolves have dispersed from and bred amongst all the three recovery areas. In addition, central Idaho and northwestern Montana are connected by routine dispersal to the contiguous western Canadian wolf population that contains 12,000 wolves in British Columbia and Alberta. Collectively, the NRM is distinct in the lower 48 United States because it is surrounded by large expanses of unsuitable habitat in Washington, Oregon, Nevada, Utah, Colorado, and the Dakotas.

IWC: Why do you support the delisting of the NRM wolf population?

Bangs: The Endangered Species Act (ESA) did its job and restored wolves to the NRM. However the ESA isn't a good tool to manage and conserve recovered wildlife populations. I strongly believe state and tribal management is the best tool for the future conservation of wolves. Just as those programs have benefitted elk, deer, black bears, and mountain lions, they offer the brightest future for conservation of recovered wolf populations in the lower 48 states. Wolves and all of us would benefit by taking wolves off their pedestal and considering them just one part of our nation's wildlife heritage.

IWC: What are the biological recovery criteria?

Bangs: Based on the most current science and thinking, the NRM recovery criteria have been modified and improved at least five times since they were first developed in 1980. The current minimum recovery criterion is a three-state wolf metapopulation with connectivity between the states. In each state, the wolf population must never go below 10 breeding pairs (an adult male and female that raise at least two pups until December 31) and 100 wolves in mid-winter and is managed for at least 15 breeding pairs and 150 wolves. This means if every state managed at the lowest possible level at the same time the theoretical lowest possible NRM wolf population (which is virtually impossible) would be over 45 breeding pairs and over 450 wolves. However, delisting was based on Montana's intent to manage for about 400 wolves, Idaho for over 520 wolves, and the continued USFWS management in Wyoming that will maintain about 300 wolves. Under the most pessimistic scenario, the NRM would still be managed long term for well over 1,000 wolves. In addition, the USFWS would initiate a review to determine if relisting is warranted if threats (such as excessive levels of human-caused mortality due to changes in state laws or regulations) significantly increase.

IWC: How were these criteria derived?

Bangs: Exhaustively—and throughout the 20-year process of recovery. The 1980 recovery plan simply had wolves (undefined numbers) being restored to the large blocks of public lands throughout the NRM where conflict is rare. The 1987 recovery team developed the first numeric criteria (simply 10 pairs capable of breeding in each of three small distinct recovery areas) using literature review, professional


Ann Rasberry

opinion, and peer review. In 1992 our chief scientist and recognized wolf expert, Dr. Steve Fritts, conducted a thorough scientific analysis that included reviewing all the literature and advice from 25 North American wolf experts. Dr. Fritts published his analysis in our 1994 Congressionally-mandated Environmental Impact Statement and in a peer-reviewed publication. The definition of a breeding pair was substantially modified based on his analysis. In 2001-2002, I repeated Dr. Fritts' analysis and received advice from 53 wolf and conservation biology experts from around the world. That analysis basically supported Fritts' conclusion but reinforced the necessity of either natural or man-induced genetic connectivity. In 2002 we began measuring recovery by each state to ensure equitable distribution, enhance natural connectivity, and increase the overall portion of wolves in the more distinct GYA. In 2008-2009 we further increased the number of wolves each state should manage for by 50% to provide additional safeguards. We also developed a signed agreement to enhance opportunities for natural genetic and demographic exchange and to monitor genetic diversity. To provide an additional safeguard, we guaranteed human-assisted migration management in the highly unlikely event it was ever needed.

IWC: Shouldn't the wolf population be much larger to avoid genetic inbreeding?

Bangs: No. Much smaller wolf populations than the NRM have done just fine for centuries. We deliberately maximized genetic diversity in the NRM through management relocations from 1999-2001; through the way in which we conducted the reintroductions to Yellowstone and central Idaho; and through providing for enhanced opportunity for natural dispersal. In addition, the 1,600 plus wolves in the NRM population are just a 400-mile southern extension of over 12,000 wolves in western Canada. There are absolutely no genetic problems now or in the future that could ever threaten the NRM wolf population unless the states fail to uphold their written commitments.

Some 1,600+ wolves now inhabit the northern Rocky Mountains

Chris Darimont

IWC: Can you cite any examples of small wolf populations persisting for 50-100 years?

Bangs: The list is virtually endless. Perhaps instead the question should be: "Is there a wolf population anywhere in the world in the past 100 years, no matter how small, that has gone extinct for any reason except deliberate prolonged persecution by people?" Wolves are not some fragile, frightened, timid animal on the edge of extinction. Wolf populations are unusually adaptable, resilient, bold, and tough as nails. Remember wolves are second only to people in having the greatest natural distribution on Earth.

IWC: Won't the individual states wipe out the wolf populations when they start managing them?

Bangs: I think they certainly could, as we Americans did it once by prolonged unregulated year-round shooting, trapping, and 'denning' (removal of pups from the den), including widespread use of poison. But it would take an extraordinary effort for several years to threaten the NRM wolf population again, and the public, including local residents, would never stand for it. If it even looked like the wolf population was being threatened, the ESA would mandate federal protection again. As a state colleague put it, "We know the world will be watching and we will do the right thing, just as we have with other wildlife species under our care."

IWC: Aren't wolf populations highly sensitive to overharvesting? If not, why not?

Bangs: Wolves are killed by people throughout the world, but wolf populations are amazingly resilient. Extensive research in Canada and Alaska, where wolves are liberally harvested, demonstrates that wolf populations can maintain themselves with a human-caused mortality of about 30% per year and under some circumstances can tolerate removal rates up to 50% per year. The wolf's natural social structure, reproductive rates, and unusual ability to disperse and find a mate make this animal resistant to over-harvest. Additionally, research has shown that depressed wolf populations can increase very rapidly (sometimes doubling) within a year or two.

IWC: Wolves were once exterminated throughout the West, so why couldn't this happen again?

Bangs: It could happen again, even more easily than it did in 1900, if Americans feel that wolves should be eliminated again. However, I can't imagine that ever happening because people's values have changed. The American public would never tolerate that type of government-sponsored extermination campaign again. Accurate information has allowed us to know and appreciate 'real' wolves much better than the pioneers' mythology. That being said, the public will demand wolves be managed to reduce conflicts to a tolerable level, and there are many areas where wolves will not be allowed to live because of chronic conflict.

IWC: What if you are wrong, and the states reduce the populations below recovery levels?

Bangs: I think that would be virtually impossible, but if it started to happen, I'd personally come back to kick some butts. But more importantly, the USFWS would be mandated to take over management. Secondly, the ESA allows for anyone to petition the USFWS to re-list wolves, and that decision has to be made solely on the best science and given the history. If the states blew their chance to shine, federal protection would be a certainty and would probably last for a very, very long time.

The Endangered Species Act (ESA) did its job and restored wolves to the northern Rocky Mountains.

Much smaller wolf populations than the northern Rocky Mountain population have done just fine for centuries.

IWC: We have heard that many scientists think the present northern Rockies population of at least 1,645 wolves isn't enough for wolves to persist. Are there differences between different kinds of scientists?

Bangs: I need to meet some of these kinds of scientists because I don't know any of them. Being labeled a 'scientist' doesn't really mean you know anything about wolves or wildlife conservation. Also, I'm sure you could find a scientist that still believes the Earth is flat and certainly ones that disagree with the theory of evolution. Scientists are just people, and they have personal opinions and biases just like anyone else–and sometimes they confuse their opinions with their expertise. I think it is very understandable and desirable that different people have different opinions. The very essence of science is to question, probe, and disagree. I can easily see someone saying that under this or that scenario, wolves might become threatened again. But I've also learned we all make better historians than prophets, and the history of wolves and wolf management is crystal clear: if you regulate people and prevent excessive levels of human-caused mortality, wolf populations will do just fine.

IWC: What about environmental organizations that disagree with delisting?

Bangs: Good for them. I'm a huge believer that it is the right and duty of all Americans to argue and lobby passionately for their beliefs. I also firmly believe that someone who wants no wolves has that same right. In the end it is the decisions that our society and system of government makes that count. We are a nation of laws. That being said, I believe in karma. When one side or the other starts bending the facts or tries to trick folks, all that side ends up doing is losing its credibility. I think Americans eventually see through a lot of that even if it takes them several years.

IWC: Why do you think they disagree?

Bangs: I'd like to believe most disagree based on their sincere personal opinions. Some also believe the states just can't be trusted, and given some of the political rhetoric I've heard from a few state politicians, I can understand that concern. Other people feel strongly about the wolf as a spiritual symbol, and they don't want to think wolves should be hunted by people. Hopefully only a very small minority are selfish promoters who see wolves for the membership, money, and media attention they can deliver. I'm among those folks who believe most people are basically doing their best to be honest and decent. The most interesting thing about wolves is that all the rhetoric and myth on all sides make it difficult to make an informed decision, which is why our program emphasized public transparency and honesty.

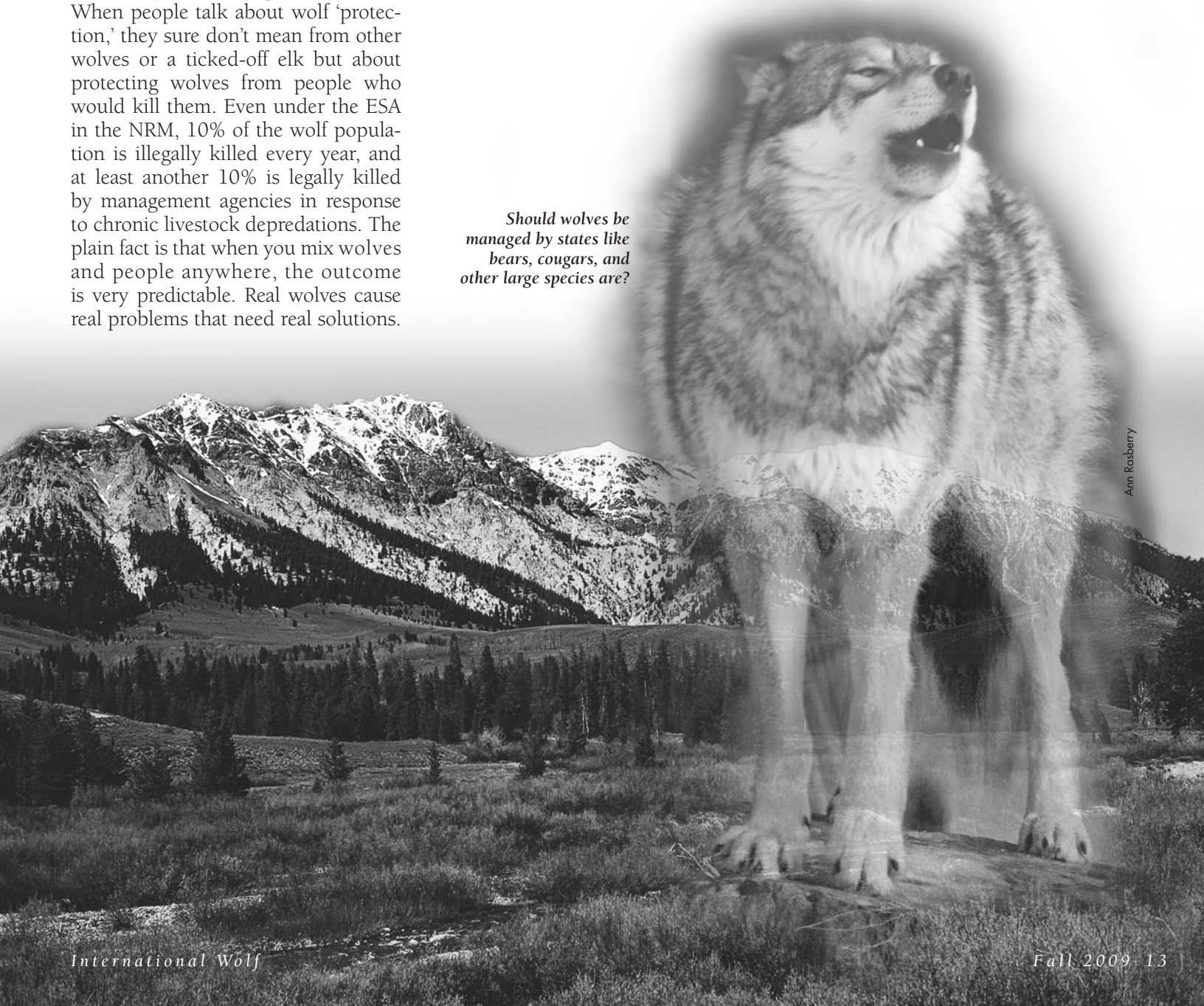
IWC: Are there conservation organizations that support delisting?

Bangs: Lots, and it would be difficult to find a conservation (i.e. the wise, sustainable use of resources) group that doesn't support state management of a recovered wildlife population. The states have an undeniable record of success for conservation of most wildlife species. That question also goes to what is considered a 'conservation' group, and on many issues I'd throw many livestock groups, water conservation districts, etc., in there. On the other hand, I think other groups that are more focused on other issues, such as animal rights organizations, are hard pressed to be considered wildlife conservation groups. I think a group can also support state or tribal management of wolves but simply disagree with the current approach to delisting. But the ESA requires the USFWS to make decisions based on the best science, and it is undeniable that the NRM wolf population is biologically

recovered. The one thing I've learned about wolves and wolf management is that it typically has nothing to do with real wolves. The debates about 'wolf issues' are usually about much deeper human symbolism and values, not the animal.

IWC: Wouldn't it be better for wolves in the long run if they were totally protected?

Bangs: I'm one of those who recognizes it is impossible and counter-productive to try to totally protect wolves. When people talk about wolf 'protection,' they sure don't mean from other wolves or a ticked-off elk but about protecting wolves from people who would kill them. Even under the ESA in the NRM, 10% of the wolf population is illegally killed every year, and at least another 10% is legally killed by management agencies in response to chronic livestock depredations. The plain fact is that when you mix wolves and people anywhere, the outcome is very predictable. Real wolves cause real problems that need real solutions. Humans simply won't let wolves continue to behave in ways that their society views as unacceptable. One of the things I admire about wolves is that they don't go sneaking around like they are ashamed of who they are. Instead, they are in your face. They walk down all the trails people like to travel on and into your pasture. They kill your livestock and then stand there to see if you'll do anything about it. They challenge humans to deal with a bold wildness and reality. There are some things our society will tolerate and some our society won't, so total protection is clearly a myth. The real question becomes, "How can we manage conflicts in a way that lets people appreciate wolves more, rather than, in the words of Theodore Roosevelt, condemning them as 'beasts of waste and desolation'?" I strongly believe state management, including regulated public hunting, has been hugely successful for other large carnivores and would be a much better model for conservation of biologically recovered wolf populations than the ESA. ■



Should wolves be managed by states like bears, cougars, and other large species are?

Ann Rasberry

Western Wolf Dispersal Means Inbreeding is Unlikely

BY JAY HUTCHINSON

Global Positioning Systems (GPS) collars have revolutionized the study of wolf dispersal by recording daily or hourly locations day, night, and in any weather, wherever the wolf goes.

Now that 14 years have passed since the gray wolf was reintroduced into Yellowstone National Park (Montana and Wyoming) and the Frank Church River of No Return Wilderness in central Idaho, many people have expressed the fear that these introduced wolves in the West will become inbred and less healthy. In fact, earlier studies in the western Great Lakes region of the Midwest have shown that young wolves disperse so widely that they can easily outbreed with wolves of different genetic stock. The current dispersal record is about 620 miles (1000 kilometers), and despite the fact that farms, rural roads, and even major highways are more prevalent in the Midwest than the West, wolves have been documented dispersing as much as 548 miles (882 kilometers) and 450 airline miles (724 kilometers) from their starting points (Summer 2004 *International Wolf*).

While the farthest point reached from the starting point can be substantial, as these figures show, satellite tracking and Global Positioning Systems (GPS) tracking have revealed that the totals of hourly, daily, or periodic travels of wolves are even more astounding. A wolf fitted with a satellite collar in central Minnesota was documented covering 2,636 miles over a 6-month period. In spite of the mileage she logged, she was killed near the place where her journey began. The farthest point she reached from her start was only 306 airline miles.

Now the reintroduced wolves in the West are also demonstrating their dispersal wanderlust. So far in the northern Rockies, young female wolf 341 has garnered first place for distance traveled—approximately 1,000 miles. She was tagged with a GPS/ARGOS collar on July 8, 2008 between Livingston and Gardiner, Montana, and for 9 months, through April 2009, was tracked over 5 states: Montana, west-central Wyoming, southeastern Idaho, northeastern Utah, northwestern Colorado, south-central Wyoming, and back to several locations in northwestern Colorado before she died near Rio Blanco, Colorado. The cause of her death is still under investigation.

William Rideg

The record for distance traveled by a wolf is 1,000 miles.

In recent years a few single wolves that dispersed from the reintroduced wolf packs in central Idaho have been seen in northeastern Oregon. But it was not until last summer that a breeding wolf pack was finally detected in the Umatilla National Forest of northeastern Oregon. As of July 2008, two adults and two pups were documented comprising this Oregon pack. It is very likely that the adults had dispersed more than a hundred miles from packs in central Idaho, illustrating once again that dispersal behavior will tend to ensure outbreeding and healthy offspring in the West's newly reintroduced top predator. ■

Jay Hutchinson is a writer and editor, retired from the U.S. Forest Service's North Central Research Station in St. Paul, Minnesota. Between travels he enjoys writing about various natural history subjects, including wolves.

Pups Learn Their Place in Exhibit Pack: Assortment of Subspecies Provides Unique Mix

by Lori Schmidt,
Wolf Curator, International Wolf Center

The International Wolf Center manages an Exhibit Pack of six wolves that represent three different generations with three different subspecies. The oldest wolves in our Exhibit are Shadow and Malik, *Canis lupus arctos* or arctic subspecies, born in May 2000. The next generation features Grizzer and Maya, *Canis lupus nubilus* or Great Plains subspecies, born in May 2004. Born in April 2008, Aidan and Denali represent *Canis lupus occidentalis*, also known as the northwestern or Rocky Mountain wolf. Aidan and Denali had a successful introduction, and weighed over 100 pounds at one year of age.

Management of non-related litters that are socialized and introduced to an existing pack of adult wolves is quite different from what would occur in the wild. Typically, a wild pack consists of parents and their offspring with the pack members growing up in the pack hierarchy and respecting their parents as the dominant pack members. In the Center's Exhibit Pack, there are more frequent ritualized dominance displays to maintain social rank order. Social behavior is still strong, but there is a tendency to see more gender-specific behavior to maintain status within the ranks. This behavior is interpreted weekly in the wolf logs, YouTube videos and podcasts posted at www.wolf.org.

If you have been following the Center's logs, you may have noticed that we are managing one female, Maya, in the Exhibit Pack. Maya's behavior became very intense after the introduction of the northwestern subspecies pups in August 2008. In the absence of another female in the pack, Maya became fixated on Aidan and began stalking and dominating him intensively. This behavior began in late fall, peaked during February and March, then calmed in the spring. In captive wolf management, we observe far more intensity between females than males. This may be due to the role of the female wolf in regulating litters as an intrinsic population control in the wild.

Since the Exhibit Pack contains three subspecies that would rarely be found in the same geographic range in the wild, there is no breeding at the Center in order to prevent creating a cross between subspecies. All wolves are spayed or neutered prior to one year of age. While there is some debate about the impact of spaying and neutering, our experience has shown that the ritualized dominance occurring within the pack is calmed by this management process. However, as Aidan experienced in the winter of 2008-2009, this behavior is not eliminated.

As the pups became yearlings, they were clearly conditioned to be submissive based on the behaviors of strong adult pack members, but as they reach maturity by two years of age, they will likely move up in the pack. To follow the rank order of the pack, check out the weblogs, YouTube and podcasts for more detailed analyses of life in the Exhibit Pack. ■

The International Wolf Center's Exhibit Pack of wolves is regularly on display at the center and on www.wolf.org.

International Wolf Center

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We lost a great friend and patron in May 2009 with the passing of Henry S. Crosby Jr. He will play a role in our future, as he was a member of our Alpha Legacy program. We honor his friendship, and we honor the individuals who have made gifts in his memory.

Thank You!

WOLVES IN IRAN

The Iranian Wolf: Meeting the Unexpected!

Text and photos by Edwin Winkel

Wild fantasies and huge expectations! As a wildlife photographer and journalist, that's what's always raging through my mind before I go on another trip. "Would it be possible to see this, and would it be possible to see that?" are questions I ask myself as I get prepared, and they deliver imaginings of very rare or hard-to-find animals just a few metres away from my camera. Experiences have taught me, however, that these wishes are quite naïve and that the actual list of seen species always turns out rather differently. But there's always something out there, destined to be found or seen, especially in an unexplored country like Iran.

Seventeen fellow Dutchmen and I were there in January 2009 by invitation from the Iranian Department of Environment (DOE) to count the wintering water birds and to explore the unknown. In the past our expeditions have proven to be very successful by revealing new wintering places for several bird species and even completely new birds in Iran. Before we spread out over the country in teams of two persons, we enjoyed a joint excursion in the central province of Fars. There we failed to find the endemic Pleske's ground jay, but we succeeded in seeing a good herd of Asiatic wild asses—one of the rarest mammals in the world!

On January 13, team member Martijn and I arrived in the province of

At first glance golden jackals might be mistaken for wolves, but they are smaller and a bit more coyote-like.

A herd of rare Asiatic wild asses in central Iran.

Wolves in Iran

SPECIES - *Canis lupus* (gray wolf)

SUBSPECIES – *Canis lupus pallipes* (desert wolf). Slightly larger subspecies *Canis lupus cubanensis* (Caspian Sea wolf or Caucasian wolf) may range in parts of northwestern Iran. *Canis lupus lupus* (Eurasian wolf) may occupy some portions of northeastern Iran.

ESTIMATED POPULATION – 1000, possibly more

TREND – Unknown

RANGE – approximately 80 percent of the country

HUMAN ATTITUDES – Because their diet includes livestock as well as wild prey, predators are both feared and hated. However, a more positive attitude toward wolves may be developing in some areas. Iranian wolves are elusive and seldom seen, especially in the rugged, forested regions of northern Iran. Thus Edwin Winkel's encounter in Golestan National Park was indeed an "unexpected meeting." Edwin's stunning photographs of the wild wolf gazing fixedly at him through the swirling snow are wildlife treasures.

Golestan in the northeast of Iran. The province is well known for its enormous diversity in habitats. In the northwest you can find vast areas of Turkoman steppe, and these are bordered on the west by the Caspian Sea. The Elbourz range is situated in the south, while in the east a combination of Hyrcanian forest (flora-type, once typical for the Caspian Sea region), mountainous regions and lush steppe dominates.

Martijn and I, accompanied by a selection of DOE employees, started the counts on the Turkoman steppes in the north where large freshwater lakes normally hold a lot of water birds. But not this year! Severe droughts had evaporated or diminished the enormous water bodies, and this left us with plenty of time to look around. Besides half the usual number of waterfowl, we met several red foxes and golden jackals and on the Caspian Sea itself, the rare and elusive Caspian seal.

After a week of fantastic birding and weather, we were offered a small break in Golestan National Park, Iran's first (1957) and most famous protected area, situated in the east of the province. The excursion was meant to be pure fun, but we were confronted with some bad omens. On the way to the park the car broke down, and we heard a voice on the radio predicting a lot of snow for the coming days. And gone were our beloved visions of gliding and soaring eagles and vultures we would have surely seen on a clear day. In the evening, when we finally entered the headquarters of the park to spend the night, it had already started to snow, and we feared the worst.

The next morning it was indeed winter wonderland. A thick layer of snow covered the bottom of the forest, and we watched wild boars digging to get through. This made for very nice scenery to observe and experience, but also for worse conditions to go out of the park. Martijn and I got a little depressed, and for a moment we considered staying in bed for the rest of the day. Not a realistic option when you're so far away from home, so 45 minutes later we were heading east for an attractive valley one and a half hours away.

Our driver had to work the car through a thick wall of snowflakes, and soon we noticed not everyone else had managed! Within ten minutes we saw three cars off the road, and one of them was actually upside down. Since Iranians love to drive like madmen and don't adapt to changing circumstances, Martijn and I felt like we could be next!

And then it happened! Through the windscreen I caught a glimpse of an animal that was crossing the road from the left to the right. The hind leg I saw resembled that of a German shepherd, and I immediately shouted, "Wolf to the right!" Driver Ali knew what was at stake and quickly opened all windows on the right side while hitting the brakes.

The wolf in the meantime had stopped also and was curiously watching us from a distance of about 45 feet. Both we and the canid were experiencing an indecisive vacuum for a couple of seconds, and then I knew in a heartbeat what to do. Make pictures! Martijn, who was on the right side of the car and in the best position to begin shooting, wasn't prepared yet, and I firmly asked him to back off! He luckily did, and I instantly pushed the button. Less than

a second, and 7 pictures later, the wolf also knew what to do–flee!

Next thing we realized the wolf was climbing the slope of the adjacent hill, and I got out of the car to follow its movements. I knew it would stop again to look at us and it did, but now from about 300 feet away. The thick snowflakes nearly swallowed the animal now, and I took a couple of record shots of the outline of the creature before it disappeared like a ghost.

The whole sensation had lasted less than half a minute but was more intense than any other encounter I had ever experienced with birds or other mammals. Back in the car my heart was pounding from excitement. While stumbling over the words, "Wolf, wolf!" I slapped everyone very hard on the shoulder just to share.

The wolf paved the way for a productive day despite the ongoing snow. We scored a handful of very interesting bird species and had another close encounter with a golden jackal, but my mind stayed with the wolf for the rest of the trip. And still, nearly every day, I sink into those wise and mystic eyes again, just to roam for a moment in their untamed wildness. ■

Edwin Winkel is a Dutch wildlife photographer and journalist. He favors alpine and arctic destinations and is specialized in nearctic (North American) and palearctic (Eurasian) animals. A nice selection of his work can be seen in the 2008 edition of Birds of Alaska by Robert H. Armstrong. You can contact Edwin at hravn@home.nl.

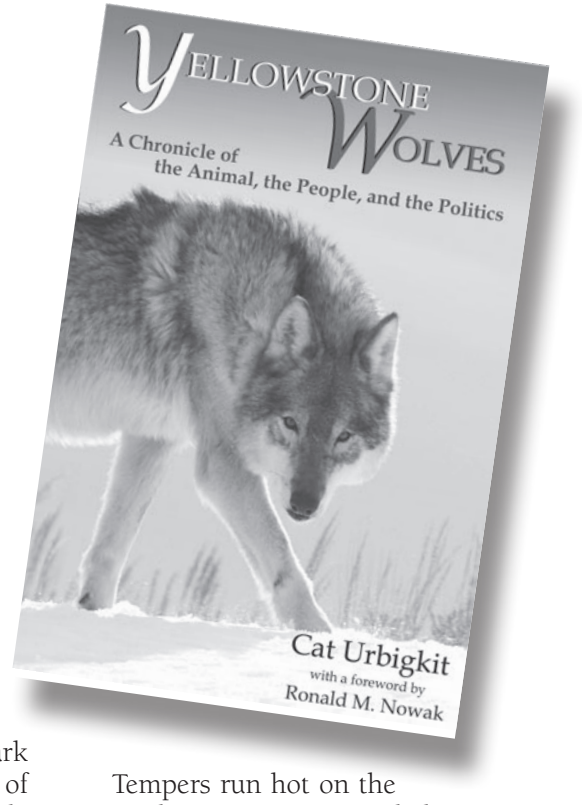
The Iranian wolf is not often seen and is rarely photographed.

And then it happened! Through the windscreen I caught a glimpse of an animal that crossed the road from the left to the right.

Book Review

Book Review of *Yellowstone Wolves*

By Patrick Bringley



Cat Urbigkit's riveting, provocative book, *Yellowstone Wolves*, examines a scientific question that in the pastures of Wyoming and the halls of federal court would turn into a full-blown fracas. If wolves had disappeared from Yellowstone National Park and its vicinity by the 1930s, as is generally believed, why did the park's visitors keep hearing and seeing wolves? The U.S. Fish and Wildlife Service provided one set of answers: the reported sightings were few and unreliable; the canids were dog-wolf hybrids or large coyotes; at best, the creatures were lone wolves who had found their way from a healthy Canadian population. Urbigkit, adopting a role of citizen-gadfly and plaintiff, put forward a competing explanation. The canids, she argued, were the improbable survivors of a native, ancient population of Yellowstone wolves. Furthermore – and here's the rub– the government's plan to reintroduce Canadian gray wolves to the park would drive a unique subspecies of wolf into extinction, a reprehensible and illegal act. It was a battle that Urbigkit and her allies would lose, but in this highly readable account the interested reader is invited to survey Urbigkit's evidence and question a government apparatus that, in her view, ignored and eventually rolled over its opposition. In the process of telling her side of the story, Urbigkit has written a gripping account of the unlikely alliances, courtroom battles, and frequently puzzling wolf activity that swirled around the government's landmark reintroduction effort.

Tempers run hot on the reintroduction issue – particularly among competing ranching and environmental interest groups – and it is a credit to Urbigkit that a reader who disagrees on important questions can still enjoy her work; count Ronald M. Nowak, the author of the book's own preface, as a skeptical admirer. Urbigkit, who works as a reporter and lives on a working ranch, is plenty used to having her motives questioned by her opponents. Nevertheless, with a clear-headed, counterpunching style, she mostly reserves her wrath for those who willfully sacrifice truth for politics, and only in the closing chapters does an unfortunate note of bitterness attend her lurid tales of livestock depredation at the jaws of newly introduced wolves. But the real story here isn't only, or even mainly, about wolves. It is the drama of a woman up against her government, the unlikely thrill of clashing legal propositions, and the limitations of brandishing scientific evidence like a righteous weapon. ■

Patrick Bringley lives with his wife in Brooklyn, New York. He is a former math student of Jerry Sanders, wolf buff, and is studying to become a history teacher.

Personal Encounter

Deer beating up on wolves?

By Patrick Durkin

Reprinted with permission from the Wisconsin State Journal
Wednesday, March 11, 2009

Researchers acknowledge a Wisconsin man's claim of witnessing rare white-tailed aggression has merit. Whether he's wielding a chainsaw in a cedar swamp or piloting an airplane above towering pines, Jim Hintz of Fifield is seldom surprised by wildlife he sees in Wisconsin's north woods.

This career logger routinely shares lunch with gray jays and chickadees. He also must sometimes nudge and work around winter-stressed deer eating treetops he's felled.

And earlier this winter he saw a moose wander by as he verified a property line with his GPS unit. In turn, two timber wolves once watched him operate his bulldozer from 10 yards away as they rested in cool dirt Hintz graded on a summer afternoon.

But Hintz, 66, barely believed his eyes Feb. 20 when several adult deer stopped eating maple buds and charged two wolves that appeared on a knoll 60 yards away.

"The smaller wolf didn't wait. It ran away," Hintz said. "The big one stayed and those deer just overhauled him. First they stood on their hind legs and batted him with their front hooves, and then some of them turned and kicked like mules with their back hooves. I'm sure they broke his ribs. He was whimpering and yelping. He got kicked from all sides.

"When he finally got out of there, he was limping really bad and dragging a leg. I actually felt sorry for him." Hintz said the incident began while he was using his skidder, a heavy 4-wheel-drive vehicle, to move logs from a timber project near Spillerberg Creek northwest of Glidden in Ashland County. He had been cutting maple and yellow birch there all winter, causing hungry deer to congregate in growing numbers. He estimated they numbered 30 to 35 by mid-February.

Hintz said deer often eat within 8 feet of him as he trims fallen branches with his chainsaw or hauls 100-inch logs with his skidder. He's the only human they tolerate. When the deer vanish, he knows visitors are approaching.

Hintz said he wasn't surprised when the wolves appeared Feb. 20. He often sees their tracks among the deer trails weaving through the cut. But the deer acted differently that day, he said. About 25 of them stayed unusually close to his skidder–and the younger deer crowded in as if seeking protection.

Hintz had to work slowly to avoid hitting them. Soon after the wolves appeared, at least six adult deer–four does and two bucks without antlers–charged them, he said. Hintz said two ran straight at the predators while at least four barreled down a nearby ridge.

"I doubt the whole thing lasted a minute," Hintz said. "They were all over that wolf. If I hadn't seen it myself, I'd think someone was telling a bald-faced lie."

continued on next page

Walter Loesberg

Jim Hintz

Courtesy of Patrick Durkin

Two veteran wolf researchers—Professor Dave Mech at the University of Minnesota and Dr. Michael Nelson of the U.S. Geological Survey's Wolf Project in Ely, Minn.– have no reason to doubt Hintz. Although they've never witnessed similar attacks in nearly 80 years of combined field work, neither expressed surprise.

Nelson once saw a deer face down three wolves until they left and Mech saw a deer leap over a wolf three times and mule-kick it each time it landed. Plus, they cited a case in which a wolf died after getting gored by a buck's antlers — and another died after a deer crushed its skull with a kick.

They also said wolves kill deer in only 20 percent of their chases. "People generally think wolves kill anything they want, but their success depends on the deer itself and the wolf's age and experience," Mech said. "Deer usually aren't aggressive, but I did see that one kick a wolf three times and chase it off."

Hintz, meanwhile, hasn't seen any wolves since the incident, even though deer continue to pound paths into the snow to reach freshly cut treetops.

"Before the incident, I never saw wolves back in there," he said. "I only saw their tracks from where they nosed around the treetops at night, looking for rabbits. These deer look to be in perfect shape. They're getting lots to eat. Maybe the wolves learned to leave them alone." ■

http://www.madison.com/wsj/home/sports/442552
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A Look Beyond

Introducing Your Child To Wolves

By Steve Grooms

The way we think about wolves has evolved dramatically over the decades and especially in recent years. We no longer fear wolves as Europeans did for centuries. On the other hand, well-informed wolf fans no longer speak of "alphas" or say that wolves "never" attack humans. That raises interesting issues when we introduce children to wolves. Are there guidelines for how we can help a child appreciate wolves?

I have some suggestions.

Expose your child to living wolves by patronizing good zoos and wolf centers. Children relate to living animals better than to book critters or taxidermy mounts. While watching wolves interacting in enclosures, help your child by explaining what they are doing. With older children you might point out how wolves in enclosures differ from wild wolves.

Read to your children about wolves, reading from a variety of sources. As your child matures, mix in books with messages that require a more complex view of wolves. It is pointless to ban such books as *Little Red Riding Hood* or *The Three Little Pigs;* they are part of the culture and your child will encounter them sooner or later. Instead, share them with your child at a time when you can make a little joke of the way people used to see wolves. Introduce your child to such hilarious contemporary books as *The True Story of the Three Little Pigs*. This lets you make the point that there are often two sides to a story.

Do not teach your child erroneous messages that you must later correct. You don't have to be politically correct with every statement, but you can avoid planting ideas that you will later need to dig up and discard. Just as you don't want to teach your child that wolves are a threat, you don't want to suggest that they are just shaggy dogs that would make great pets. You don't need to demonize wolves to make the point that they are powerful predators that have evolved to live in the wild.

Gently discourage your child from moralizing about animals, dividing them into "good" and "bad" animals. Create, if you can, a sense of awe for all creatures. As your child ages and can absorb more complex messages, talk about the ways animals interact in ecosystems, each animal with an important role to play.

Sooner or later, your child will ask if wolves attack humans. With small children, be totally reassuring (without actually saying that wolves "never" attack humans). As your child matures, add nuance to the message, for we know now that wolves under some circumstances have attacked and killed humans. Teach your child to enjoy and respect wild wolves without seeing them as slavering demons or as noble creatures that are too ethical to chomp a human.

Do not be afraid to tell your child the truth about predation. Little children are often shocked to learn that wolves tear apart beautiful deer. Yet it isn't necessary to lie. Point out that if wolves aren't occasionally successful at killing something, wolves and their pups will starve. As your child matures, you can even point out that most

Examining a pelt at the International Wolf Center helps youngsters gain knowledge and a deep appreciation of the wolf.

International Wolf Center

people in our society are carnivores who eat other lovely animals. When your child is sophisticated enough to understand the lesson, talk about how predators cull the sick, old and wounded from a prey population.

Feel no guilt about anthropomorphizing. Little children relate to wolves more readily if they can imagine them thinking, playing, solving problems, and otherwise engaging with their world as humans do. Books that ascribe human qualities to wolves are not actually false, for wolves share with humans many traits and types of behavior. They do express fondness for mates and pack members. They do teach each other. Wolves have ways of communicating that can be surprisingly sophisticated, even in the absence of speech. Don't worry, in other words, about reading a small child a book in which wolves talk. Talking wolves can help a child appreciate and understand wolves, and there is no risk that your child will grow up expecting to have a conversation with a wild wolf!

Above all, encourage your child to *care* about the natural world. If you do nothing else, convey to your child that the natural world is a boundless source of joy and wonder. The natural world is good and precious because it is all part of the grand tapestry of creation, each part contributing to the greater whole. If you can teach your child to love and respect the totality of creation, your child will surely appreciate the unique and fascinating world of wolves. ■

Note: the International Wolf Center is working on lists of books and videos that we consider especially appealing, accurate and educational. These will be listed on our web site: www.wolf.org.

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