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

As A Matter Of Fact



nn and Donna

How many states currently have known breeding packs of wolves?

Breeding packs of gray wolves are known to exist in nine states (Alaska, Minnesota, Wisconsin, Michigan, Montana, Idaho, Wyoming, Arizona and New Mexico), but there have been verified sightings of single wolves in several other states, including Oregon, Washington, North Dakota, South Dakota and Missouri.

Breeding red wolves exist in North Carolina and several island propagation sites off the Atlantic and Gulf Coasts.



What are the jaw pressure and number of teeth of a wolf compared to a human's?

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From the Executive Director

espite the challenges we are facing in these belt-tightening times—especially for the not-for-profit sector—I am particularly pleased that the International Wolf Center is proceeding with several initiatives that will strengthen our education work in support of wolf survival.

Norm Bishop, a highly respected educator, adds to our outreach efforts in the greater Yellowstone region as the International Wolf Center's Field Representative (see Notes From Home, p. 15). Norm's mission is to provide accurate information on wolf matters in an arena where opponents of wolf recovery are perpetuating urban (or should I say rural) myths, especially those involving the wolf's impact on the elk population.

> Norm's fact-based articles, talks and letters to editors help keep the heated debate in that region of the country grounded in solid science.

> Also on the western front, the Center (along with representatives from the Cheyenne Mountain Zoo, The Denver Zoo, the Pueblo Zoological Society and the Albuquerque Biological Park) joined a newly formed wolf information network for the Southern Rockies. These five organizations have merged their education forces to serve as a clearinghouse of scientific information and a forum for diverse viewpoints on the possibility of wolf recovery in that region. A grant from the Turner Endangered Species Fund and support from the member organizations will aid the public's understanding of the issues as advocacy groups



Walter Medwid

press for the wolf's return. The zoos reach hundreds of thousands of people annually and provide an unparalleled education opportunity.

Closer to home, thanks to recent restricted grants, we will be establishing the position of outreach educator, based in our Twin Cities office. The goal of the position is to strengthen our education programs in this population center of the state and build a foundation of support for our outreach beyond the state's borders. And in a related matter, we are exploring a possible new home for the Minneapolis office. This site would give us a more visible face, facilities for conducting workshops and providing information to visitors, and a base for our outreach efforts.

Reading articles about wolves and noting the distortions that Norm Bishop is addressing in his new role remind me that although we have made great strides in wolf recovery, the ongoing educational challenges remain. Your support in the form of memberships, contributions and even purchases from our online store has helped us weather a challenging period. My sincere appreciation to you for that past support and my hope that we can count on it in the future as we see these new initiatives enhance our work on behalf of wolves.

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Educational services and

Dalter U. Ufedw 2



t is winter in northeastern North Carolina. The tourists are gone, the fishing is good, and this year's red wolf pups are old enough to be captured and radio-collared. I am the newest addition to the field team working with the U.S. Fish and Wildlife Service's Red Wolf Recovery Program. I am the youngest and currently the only female, and I am just learning the art of trapping. Capturing the wolves is the primary duty of the field team, so each day is a learning experience for me.

My opportunity to prove myself now stands in front of me on private property south of the Alligator River National Wildlife Refuge. During a radio-telemetry flight in the summer, as many as eight pups have been sighted with their parents and older siblings. These 9-month-old bundles of joy need new radio collars, just like their parents'. We have less than three days to accomplish the trapping, to accommodate the land manager's schedule. The pressure is on.

We set 18 foot-hold traps and draw a map of their locations. We see a lot of wolf sign, and we hope these youngsters, like most inexperienced wolf pups, will jump right into our traps. Three days just isn't very long to catch a litter of pups. I am going to be first on the trapline in the morning with the help of Amy, our trusty intern. It will be my first trapline check without one of the senior biologists. Whatever happens, I will have to handle it and not let anyone down. And people expect me to sleep tonight?

As we approach the first trap in the morning, our hearts sink. Nothing. A million different scenarios start running through my head. Did the animals move? Could they be sitting on a kill somewhere? Was the trap not set well? Or were the wolves just not interested and walked on by? Oh well, off to the next trap.

This time we strain hard to see something, anything—a mound of newly turned-over dirt, drag hook marks or, better yet, a scared-stiff wolf pup poised on the side of the road. Then, suddenly, there is something! I slam on the brakes and pull over. We are using drag hooks on our traps in lieu of staking them down solid, and the last thing we want to do is obscure the drag marks. I get close enough to see the hole where the buried trap had been and glance back at Amy

with a nervous but ecstatic nod. Along the edge of the road are the unmistakable marks of a drag hook sliding through the dirt. Then the marks take a sudden right turn into a fallow field.

We cross the field, following a trail of pushed-down grass. The drag is shaped like an anchor,

and as it moves across the ground, it snags vegetation until there is a huge ball of grass at the end of the chain. This trail leads us into a myrtle tree stand so dense we have to duck. A couple of meters away we see the wolf.

She has wrapped herself around the trunk of a myrtle tree and is lying at its base, watching our every move. As I approach her, she tucks in her tail and just lies there, waiting. Like a cat with a toy, she bats at the catchpole that I push toward her. She snaps once at the pole for good measure and then becomes passive. I place the catchpole loop around her neck. Then I muzzle her, take the trap off her and examine her foot. We pop her into a kennel and tote her to



Leslie Schutte holds a captured red wolf pup.

the truck. At the end of the day, a veterinarian and the field crew will weigh and measure her, affix the radio collar, vaccinate her, and draw blood samples for heartworm and other blood tests. I dare to hope I can repeat this success. Maybe the two

We strain hard to see something, anything—a mound of newly turned-over dirt, drag marks or, better yet, a scared-stiff wolf pup poised on the side of the road.

kennels in my truck won't be enough. Better stop these thoughts! I'll jinx myself and not catch anything else.

As I am resetting the trap, a truck comes into view. It is the land manager with the news that there is a "good-sized wolf with his foot in a trap in an intersection, gathering a crowd of onlookers." So much for the jinxing! I have to ask the curious crowd to back up away from the animal so I can get a look at him. He is a pup much bigger than the female and has wrapped himself in full view around a signpost. This wolf is not a happy camper, and I am none too pleased to have an audience.

As I work to restrain the wolf's head, I realize I am straddling a red wolf pup with my back to the crowd, so our audience gets to see our best sides. Then with the wolf safely in the

kennel, I realize that some PR work is in order. It turns out the audience is one of the landowners with his son and some guests touring his land. Bonus! He is impressed. It's a good demonstration of what we are doing and how we are doing it.

In the next hour, we discover three more traps missing. The day is wearing on, and I am out of kennels. It's time to call for reinforcements. Thankfully, my support arrives in under an hour, loaded with extra kennels. We find one pup in a trap near a deep canal, but thankfully the pup is not wet. A wolf dying in a trap from hypothermia in the dangerous December winds would be, to say the least, counterproductive to our mission.

The other pups have taken the traps across open fields, leaving little sign for us to follow and making our



After being radio-collared, this red wolf pup is ready to be released from the crate.

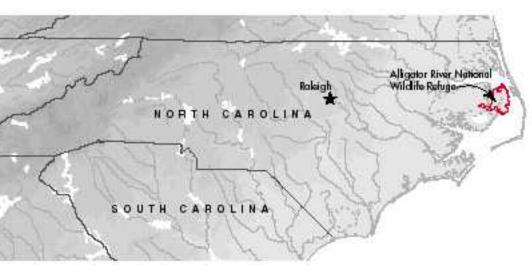


Sometimes a pup needs to be persuaded to leave the comfort of the crate.

Above: Karen Beck (left) and Leslie Schutte try to direct the pup away from the road.

Opposite: Having found its legs, the wolf pup runs off.

All photos: Courtesy of the U.S. Fish and Wildlife Service



searches long and exhausting. The team splits up to make the search more efficient. An hour passes before I finally see a recently traveled trail heading into the overgrowth lining the banks of a ditch. It opens up into a slightly treed area. Where the grass is matted down, it looks as if an animal has been hung up but has freed itself. I follow along the ditch, peering over every couple of feet. Hearing something move, I cross my fingers as I look down into the grassy ditch. There I see the rear end of a

wolf pup whose head is in a clump of grass. It reminds me of that classic child's game—If I can't see you, you can't see me. I can just hear the pup thinking, "She can't see me, she can't see me."

By the time I manipulate the pup up the side of the ditch, I am exhausted. I muzzle and blindfold him and press him to the ground. Then I attempt to cover his ears as I yell to let the others know I have found him. A team member comes to assist me. She helps me pick up the pup and put him across my shoulders because I am too tired to carry him. I can't even imagine what I look like coming out of the brush, a red wolf pup across my shoulders. This is a Kodak moment for sure. By the time we kennel him and rendezvous at the trucks, it is late. The day has flown by! And this is my job! Someone please pinch me.

I reset the traps for the night's activities with the potential of catching three more animals. Then we all load up our precious cargoes and caravan back to the office to process the fantastic five. By the time we arrive, it is dark. We unload the animals and set up to process them. I help with the first couple but then gladly give up my position for a seat on the workbench. As I lean back and watch the team work. I reflect on this day and feel a surge of pride. From all the trap sets, mine have taken four out of the five pups caught. This is, I learn, a new record. The rookie has set a record! I am too tired to gloat, but I reserve the right to do it later.



There I see the rear end of a wolf pup whose head is in a clump of grass. It reminds me of that classic child's game—If I can't see you, you can't see me.

We finish up and close down shop. The five pups will be spending the night with us to keep them out of the traps and to increase our chances of catching the last three pups in the litter. I am dying to get home, take a shower and crawl into bed. I am determined to be first on the trapline again in the morning.

The next morning we release the pups away from the traps in a timber-line, where they will probably lie low for the day. Then it's off to check the line. The first missing trap has good drag marks that lead right to a pup crouched under some bushes. We quickly kennel her and find another missing trap. The drag has left little sign, so off we go in search of our lost pup, number 7. We finally

find her lying in the middle of a flooded area, soaked to the bone. She is so cold that we put her in the truck and crank up the heat. As they warm up, wet wolf pups do not smell so good. I can't imagine what the inside of that cab smelled like.

But the dedication has paid off. In three whirlwind days, we have caught seven out of eight pups. Forgotten are the hours with no food, the raw December weather, the worry over the well-being of the pups. I have "cut my teeth" and earned the respect and trust of my teammates. I shouldn't gloat, but I will. Just a little.

Leslie Schutte works as a biological technician for the U.S. Fish and Wildlife Service's Red Wolf Recovery Program.

Jennifer Gilbreath releases a red wolf pup wearing its new radio collar.



A Brief History of Wolf Research

PART I

by STEVE GROOMS

Illustrations by Luke Eidenschink

Tolf research is a young field of science. For many centuries, wolves were seen as a problem to be eliminated rather than as animals that should be studied. Although wolves have only been studied for about seven decades, remarkable new technologies have given researchers amazing ways of understanding wolves. Each new research tool or technique has allowed scientists to find answers to new questions about wolves. Here is a brief history of research tools and techniques.

Snow Tracking

HISTORY: Snowshoes were developed in prehistory. Sigurd Olson, the Minnesota author and wilderness advocate, may have been the first trained observer to track wolves in winter and publish studies of what he learned about their behavior.

ADVANTAGES/DISADVANTAGES: While snowshoes are inexpensive, tracking wolves is costly in terms of the time and energy a researcher must invest.

RESEARCH ISSUES: Tracking wolves allows researchers to see precisely where wolves travel and to indirectly observe some behaviors, such as raised-leg urinations. Tracking gives insights into the ways wolves hunt and how they utilize their kills. Now and then a patch of gory snow marks the scene



Field Observation



HISTORY: Binoculars and spotting scopes are technology arising from Galileo's work in the 16th century. The first scientist to observe wild wolves objectively was Adolph Murie, whose *The Wolves of Mount McKinley* was published in 1944. Murie did his work in what is now Alaska's Denali National Park, where wolves could be seen from a long distance by human observers.

ADVANTAGES/DISADVANTAGES: Wolves live in low densities and move quickly through dense cover during much of their lives. Because wolves are so elusive and difficult to observe, field observation has historically required great expenditures of time to gain a few glimpses of wolves. Two major advantages of this technique are that wolves observed this way behave naturally, and the equipment itself is inexpensive.

RESEARCH ISSUES: Field observations of wolves in natural settings have concentrated on wolf dens, for they are the most productive setting for observing wolves. Only when raising pups at a den or rendezvous site does a wolf pack center activities on a single location. Thus the technique of field observation has mainly produced findings about social interactions and pack behavior around dens.

(Note: The second part of this article will discuss fresh applications of this traditional research technique, applications that are producing stunning and unanticipated results.)

Foot-hold Trap

HISTORY: Foot-hold traps were developed around 1600 and have been modified frequently since then. Recent innovations reduce the stress experienced by a live-trapped wolf and decrease the likelihood of damaging the wolf's foot.

ADVANTAGES/DISADVANTAGES: Live-trapping wolves is difficult work. Beyond that, trapping is both a science and an art. Successful trapping requires a canny sense of wolf behavior. Live-trapping remains about the only way to capture a live wolf for research purposes in areas too forested for darting or netting by helicopter.

RESEARCH ISSUES: A live-trapped wolf can be drugged and then quickly weighed, measured and analyzed for physical condition. Drugged wolves can be blood-sampled for studies of disease, parasites and condition. The wolf is then released, usually none the worse for the experience. Because trapping is an antecedent to other techniques, primarily fitting wolves with radio collars,

the ancient foot-hold trap remains crucial to wolf research in many areas.



HISTORY: From the 1930s through the 1970s, a major thrust of the scientific study of wolves involved examining wolf carcasses. Carcasses were available because of hunting, trapping and poisoning programs until wolves became protected, although wolves illegally or accidentally killed were still studied. Carcasses were examined for stomach contents, weight, size, condition, parasites, litter size (from examination of reproductive tracts of wolves that had given birth) and so on.

ADVANTAGES/DISADVANTAGES: Studying dead wolves is more convenient than studying living wolves, for obvious reasons. The limitation of this technique is that the study of wolf carcasses cannot address most of the important and interesting issues about wolf behavior.

RESEARCH ISSUES: The study of wolf carcasses has taken two main forms. Early in the history of wolf research, taxonomists —

notably E. A. Goldman — categorized wolves into a number of subspecies ("Arctic wolves," "buffalo wolves" and so forth). Their work relied heavily on measurements of wolf skulls and bones. Many of their findings have been revised by subsequent research. Scientists continue to learn from the study of wolf carcasses. It is important today to examine carcasses to assess the health of specific populations of wolves.

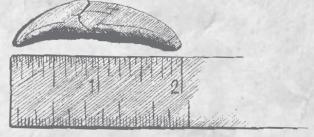


Studying Captured Wolves

HISTORY: Wolves have been kept in zoos for centuries, yet the notion that their behavior could be studied is a recent one, perhaps dating to five or six decades ago.

ADVANTAGES/DISADVANTAGES: Studying confined wolves is inexpensive and convenient. Confinement, however, limits the range of behavior that wolves can exhibit. For example, confined wolves do not hunt, kill prey or disperse. The fact that the living situation is artificial creates doubts about which observed behaviors are natural and which might be a result of the unnatural setting.

RESEARCH ISSUES: Much can be learned about social interactions and pack dynamics by studying wolves in confinement. Wolves are wolves, even if they live behind fences. Researchers studying captive wolves must always be careful to try to determine what behaviors are being affected by the captive situation.



Scat Analysis

HISTORY: Researchers have been examining scats, or droppings, since the 1940s.

ADVANTAGES/DISADVANTAGES: Scat analysis is relatively simple and inexpensive, although it is a limited technique.

RESEARCH ISSUES: Scat analysis tells researchers what wolves have been eating. Although it is a technique that answers just one question, the question is a critically important one. Seasonal changes in the contents of wolf scats have taught



researchers important lessons about the ways wolves depend on different prey animals at different times of year.

Aerial Observation

HISTORY: Small aircraft became relatively abundant after World War II. Hunters were using small aircraft to hunt wolves in the late 1940s. In the early 1950s, researchers began hiring small planes for their purposes, often employing the same pilots who flew for hunters. A pioneer in the use of small planes for wolf research was Minnesota's Milt Stenlund, a former board member of the International Wolf Center.

ADVANTAGES/DISADVANTAGES: Using airplanes in winter enables researchers to cover great distances and find wolf packs in rough country where travel by snowshoe would be painfully slow and inefficient. Wolves that have never been hunted from the air will ignore planes, even if they buzz around and follow the pack. Thus, airborne researchers can study wolves behaving normally. Obvious disadvantages to aerial observations include the hazards, discomfort and expense of flying small aircraft.

RESEARCH ISSUES: Much aerial research has been done on Isle Royale, a national park in western Lake Superior, where wolves have never been hunted. Wolf pack size can be easily assessed from the air in winter. Airborne researchers have observed some dramatic predator-prey engagements.



Editor's note: Part II of this article will appear in the next issue. It will discuss how electronics has revolutionized wolf research, and the dramatic progress in field observations.



HISTORY: Howling to wolves probably dates to the 1940s. By one account, Wisconsin biologists Bill Feeney and Clarence Searles were assessing wolf populations one winter night in Iron County. On an impulse, Feeney howled. When that howl was answered by two nearby wild wolves, the men were so alarmed that one of them shinnied up a tree. Howling was later refined as a research technique by Canada's Douglas Pimlott and others.

ADVANTAGES/DISADVANTAGES: Howling is fun and inexpensive, requiring no equipment and no great technique. It is a legitimate research tool, although one with a limited range of applications.

RESEARCH ISSUES: Howling is mainly used to assess wolf populations, particularly to locate den sites that then can be studied by other means. Howling has helped researchers monitor the progress of wolf restoration by showing which formerly empty habitat has been colonized by wolves. Howling also teaches lessons about wolf howling behavior.

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



Gray Wolves Heading to Defenders Seek Protections as Ranchers Howl

This article originally appeared in the San Francisco Chronicle, Tuesday, February 5, 2002. Reprinted with permission.

Sometime soon, perhaps within the next couple of years, gray wolves will make their way across mountains, valleys and streams into Northern California looking for new territory. \sim Wolf experts believe they're already on their way.

The migration is all but inevitable, wolf lovers believe, as inevitable as the push westward by humans searching for new lives.

To prepare for the wolves' stealthy arrival, an environmental group, Defenders of Wildlife, has petitioned the federal government to designate 16 million acres of national forests and parks in Northern California and southern Oregon as suitable wolf habitat for study and management purposes. They say the area—a swath of land nearly twice the size of New Jersey—could support as many as 500 gray wolves.

But the prospect of gray wolves (*Canis lupus*) returning to lands where they have been extirpated—trapped and shot—since the early 1920s is provoking conniption fits in many parts of the Klamath-Siskiyou region of Northern California, particularly among some of the region's sheep and cattle ranchers.

Backed by studies by biologists and historians showing that wolves once roamed throughout much of California, wolf advocates insist the animals are good for the environment: itself as the icon of their twin tormentors: the faceless federal government and the effete, treehugging environmentalists.

Angry Residents

Residents are already so angry over federal efforts to protect the spotted owl, the coho salmon and two species of sucker fish—efforts they say have hurt their livelihoods—that some are calling for secession. Siskiyou County is sprinkled with signs proclaiming it the independent state of Jefferson, a movement with roots in the early 1940s.

They are in no mood to greet still another endangered species into their midst, particularly the wolf, which some recall their great-granddaddies going to great effort to exterminate.

Ranchers, in particular, fear that wolves will turn to their livestock for survival, primarily picking off calves.

"To be honest I think it's stupid to bring wolves in these parts," said Harvey Hagedorn, 67, whose family has ranched near Yreka for more than a century. "Wolves need to eat something, which is usually deer, but the deer population is already

> way down thanks to the overpopulation of the cougar," which has been protected since 1990.

> Scientists who study wolf migration patterns say sightings of wolves in Washington and in Oregon are clear

evidence that they are headed into the Southern Oregon-Northern California region. In the last few years, environmentalists say, at least three wolves have made their way into eastern Oregon from Idaho. Two were killed by cars. One was shot, illegally. The wolves in Washington had made their way down from Canada.

Environmentalists, worried about the possibility of ranchers and

hunters shooting the first wolf arrivals to the area, intend to weigh in heavily when the U.S. Fish and Wildlife Service decides within the next few months whether to reduce protections for the gray wolf in California and other states.

Growing Population

The agency will consider downgrading the wolf's status from endangered to threatened, or delisting it entirely in some states, including California, from the Endangered Species list. With an estimated 3,500 wolves in the lower 48 states, officials say the species has made a spectacular recovery in many parts of the country, especially in Minnesota and Yellowstone National Park.

But when the wolf shows up on California's door, its supporters want a welcome mat of sorts. That is why they want a 16-million-acre region designated as suitable wolf habitat, coupled with the strongest protections under the Endangered Species Act. Whether they and the wolves will get them is an issue that will help define rural Northern California's future.

"We think the wolf should remain listed as endangered because we don't think the wolf can safely make it to California and form a viable population without these protections," said Nancy Weiss, California species associate for Defenders of Wildlife based in Sacramento. "The problem is whether humans will tolerate them, whether they will shoot them."

The likelihood of that happening apparently is high, to hear some ranchers and farmers talk.

"These eco-terrorists who propose these things never think of the consequences—when the ranchers and farmers kill the wolves, there'll be a big outcry," Hagedorn said.

Reimbursement Program

Defenders of Wildlife has a program to reimburse any rancher

California

by MICHAEL MCCABE

Wolves create balance in the ecosystem by, for example, dispatching coyotes and aging elk. Additionally, they argue, wolves would be a natural magnet, as they have been at Yellowstone National Park, for ecotourists hoping at least to hear an authentic wolf howl or two.

For some ranchers in these economically depressed areas, however, the wolf is fast establishing



for a documented loss resulting from a wolf kill, but most ranchers say that isn't nearly good enough.

Marcia Armstrong, executive director of the Siskiyou County Farm Bureau and the Siskiyou County Cattlemen's Association, says the problem is that cattle nowadays are bred to survive and prosper in the landscape and climate in which they are raised. Replacement cattle, she says, interfere with the genetic integrity of the herd.

"Our last remaining industry up here is agriculture, and it is already in trouble," Armstrong said. "Many people here suggest that wolves and maybe grizzly bears be introduced into the streets of San Francisco and Sacramento.

It seems like the problems with endangered species are always in the rural areas, and people with all the ideas about them live 400 miles away from the rural areas."

In Yellowstone Park, where 33 Canadian gray wolves were trapped and reintroduced in 1995 and 1996 amid bitter controversy, ranchers

and landowners living outside the park remain on edge, although others are reportedly becoming more relaxed about the program. Today, more than 200 wolves thrive in and around the park.

"We are not asking that wolves be reintroduced (in Northern California or southern Oregon), by helicopter or truck, from other areas, although many people are interpreting our petition that way," said Weiss of Defenders of Wildlife. "We are asking that the area be designated as one good for wolves and then to do further studies to determine whether the best way to bring them back is by reintroduction or natural dispersal."

Patrick Valentino, executive director of the California Wolf Center based in San Diego, added: "Without protection from the federal government, anyone can shoot wolves on sight.

"We think wolves should be allowed to recover naturally in their historic range, but there should also be a management plan in place to protect livestock—and the kids, if that worries people. But the record shows that no one has ever been killed or eaten by a wolf in North America."



INTERNATIONAL WOLF CENTER Notes From Home

Norm Bishop Joins Center's Educational Efforts

Torman A. Bishop, of Bozeman, Montana, has accepted the volunteer position as the International Wolf Center Field Representative for the greater Yellowstone region. Norm will focus his efforts on providing accurate information about wolves in the face of significant misinformation in the local media, in which letters often distort the role of the wolf and its impact on prey species. In addition to his writing, Norm will make presentations on the subject of wolves and Yellowstone, and serve as a resource on our wolf-viewing trips to the park.



Retired from 36 years with the National Park Service, Norm served in Yellowstone Park as an educator for 17 years. He received the National Park and Conservation Association's 1988 Stephen T. Mather Award, the Greater Yellowstone Coalition's 1991 Stewardship Award, and the Wolf Education and Research Center's Alpha Award. Upon his retirement in 1997, Norm received a Meritorious Service Award from the Department of the Interior, and an outstanding performance award as Resources Interpreter. He is a co-author of Yellowstone's Northern Range: Complexity and Change in a Wildland Ecosystem, published by Yellowstone National Park in 1997.

"In the controversial hotbed of the greater Yellowstone area, Norm provides a critically important resource in helping ground the wolf debate in science, not mythology," noted Walter Medwid, Center executive director.

Norm Bishop competes in Nordic skiing and has won Montana, western region and national masters cross-country skiing age-group championships. For summer recreation, Norm enjoys hiking, running, cycling and canoeing.



Rachel Brintnall and Laura Luke dressed as a trapper, a raven, Little Red Riding Hood and a wolf for the Wolf Week scavenger hunt at the Minnesota Zoo.

People and Wolves at the Minnesota Zoo

Over 7,000 people attended a very successful Wolf Week event hosted at the Minnesota Zoo with International Wolf Center sponsorship last fall.

Young visitors tried their talents at coloring and crafting wolf masks. For older children and adults, a scavenger hunt throughout the zoo was a highlight. Participants scoured the exhibits for wolf, raven, trapper and Little Red Riding Hood characters played by students from the School for Environmental Studies in Apple Valley, Minnesota. The characters asked each participant a question about wolves. When a correct response was given, a card was stamped, and the hunt was continued.

Ever heard of "Wolf Jeopardy"? Pick a category and level of difficulty was the name of the game, with many creative winners. "If I were a wolf, how much would I need to eat at each meal?" was the next question. Weights on a scale showed each human carnivore what a heavy wolf meal is really like: 22 pounds.

Learning can be fun was the clear goal at this event, accomplished in grand style. We can hardly wait until next year!

INTERNATIONAL WOLF CENTER Notes From Home

Thanks to a Dedicated Volunteer

n International Wolf Center thank you goes to a special volunteer, Chuck Purdham. A retired minister of the United Methodist Church, Chuck is married and

has three children. One of a few original representatives, he has been a volunteer and participant in the Center's speakers' bureau since 1989.

> "I enjoy teaching. When I add to that the excitement of talking about wolves, it becomes a very satisfying experience. It is also gratifying

> > to see the detailed preparation many teachers do before I come," remarked Chuck. Students and teachers alike enjoy his presentations, and he is often invited to return.

> > > A few of Chuck's many volunteer activities for the Center include giving campfire talks at county parks, speaking to children at schools, speaking at a booth at the Minnesota State

Fair and participating in Wolfin' Down books, a

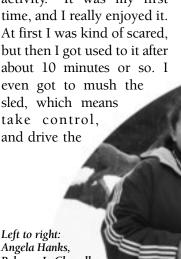
program at libraries to educate people about wolves. His dedication to keeping up-to-date on wolf issues takes him often to classes, seminars, Web sites and piles of printed information.

Regarding his volunteer experiences, Chuck reflected, "I am pleased to have participated in the expansion of meaningful services to the general public during my years as a volunteer. It has been a privilege to work with the International Wolf Center staff and tell the story of the wolves." We at the Center are grateful for Chuck's enthusiasm for education and sharing his knowledge with the world.

Heart of the Earth Visits the Center

"If it wasn't for this trip, I wouldn't ever have known any of this [information about wolves]. I had a great time and learned a lot of exciting things. I hope we can do this again," wrote Ann Marie Ratka from Heart of the Earth School. National Center for American Indian Education, Minneapolis, Minnesota. Ann, six other 10th-grade students and their science teacher, Mary Beth Carpenter, visited the International Wolf Center in January this year.

Rebecca LaChapelle listed dog sledding as her favorite activity. "It was my first time, and I really enjoyed it. At first I was kind of scared, but then I got used to it after about 10 minutes or so. I even got to mush the sled, which means take control.







Andrea Lorek Strauss teaches Heart of the Earth students (left to right) Angela Hanks, Alyssarae Dickenson and Rebecca LaChapelle how to use telemetry equipment to find a radio collar.

sled. That was my favorite part of the activity.

"My second favorite activity was learning about the wolves that live outside the Center. They have five wolves. Their names are



Chuck Purdam, long-time

International Wolf Center volunteer



INTERNATIONAL WOLF CENTER

Contributors

Thank You!

Lucas, Malik, Shadow, Lakota and MacKenzie. My favorite was MacKenzie because she is a black wolf, and so beautiful. We didn't get to see Lakota. She's a lower-ranking wolf, which means she gets picked on a lot by the rest of the pack. She was also injured two weeks before we came to the I.W.C., so I think she just needed time to heal, and wanted to stay away from the other wolves."

Financial support for participation in the program was given to the school through a grant from Heart of the Earth Survival, Inc., and winter clothing was donated by Galyan's of Richfield, Minnesota.



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Tracking the Pack

Caring for the Center's Wolf Pack

by Lori Schmidt, Wolf Curator

any visitors inquire about the daily care that the International Wolf Center's wolves, MacKenzie, Lucas, Lakota, Malik and Shadow, receive. Their care is defined in the Center's Wolf Curator Manual, which includes detailed protocols for staffing, training, safety, wolf handling and facility maintenance. This protocol abides by federal regulations set forth in the Animal Welfare Act administered by the U.S. Department of Agriculture (USDA). USDA veterinarians make spot inspections of our facility and review the Center's Veterinary Care Plan and the wolves' medical records and physical condition. The Minnesota Department of Natural Resources requires a permit to display captive wolves, monitors the exhibit for safe and humane confinement, and reviews protocols for emergencies such as natural disasters.

As previous articles have discussed, the wolves at the Center are socialized to humans. To maintain this socialization and monitor the wolves' health, a minimum of two handlers visit the wolves in their enclosure four to five times per week.

During the visits, handlers inspect each wolf for physical problems, such as bites or scrapes, and external parasites, such as ticks. Handlers also watch for behavioral issues and record their observations in the wolf log, which are later summarized and posted on our Web site at www. wolf.org.

We currently have eight people involved in the wolf care program. New wolf handlers must spend at least three months making visits outside of the enclosure so the wolves get to know them. After the wolves are familiar with the new

handler, the wolf curator and another wolf handler escort the person into the enclosure. If the wolves do not show signs of aggression toward that person, an additional three-month probationary period of visits inside the enclosure begins. To continue participating in the wolf care program after the probationary period, the handler must receive a rabies pre-exposure vaccination series and a tetanus booster.

If you would like to keep track of the wolves' daily care, go to the Web site at www.wolf.org and click on the Pack Page. ■

Captive Wolf Management Course

Would you like to learn more about managing a captive wolf exhibit? If so, join the International Wolf Center for a one-week session:

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For more information or for a program application, contact:

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Lucas is the alpha male of the ambas-sador pack.

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Wolves of the World

WOLVES OF CANADA

The Wolves of Algonquin Provincial Park

by Neil Hutt

Will we do nothing, just let it happen, lose the Algonquin wolf, just when we have discovered its uniqueness?

> —John Theberge and Mary Theberge, Wolf Country

n an August evening, 1,600 people gather at a campground amphitheater in Ontario's Algonquin Provincial Park. After an information session, a long motorcade winds through the darkness to a designated spot, where the visitors park and climb carefully out of

their vehicles. No doors are slammed; everyone speaks softly. They have come hear a sound that for centuries has inspired awe and fear, reverence and hatred—the howling of wolves.

Park interpreters have

conducted these public howls since 1963, attracting hundreds of visitors each year to the 7,725square-kilometer (about 3,000square-mile) park located four hours north Toronto.

Here the industrial urbanization of southern Ontario gives way to a natural landscape of waterways and forests. And here live wolves that have been the subject of long and intense research.

Called the Eastern Canadian wolf, or Canis lupus lycaon by some scientists, the Algonquin Park wolf has been the focus of recent genetic study and intense debate. Some work indicates that this wolf may be more closely related to the species Canis rufus, the red wolf, whose only range in the wild is now in northeastern North Carolina. Of grave concern in both populations is the potential for hybridization with coyotes.

Although the Algonquin wolves are protected within the boundaries of the park, wolves that stray outside the perimeter are regularly shot, snared or trapped. Each year, 35 to 40 park wolves die in this manner. There is no Endangered Species Act in Canada, and Ontario remains, in the opinion of many, the worst jurisdiction in North America for wolf protection. Outside the park, wolves may be hunted at

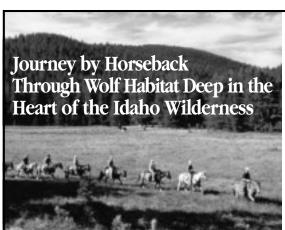






any time of the year by landholders or holders of a small-game license. No bag limits or quotas are imposed, and there are no requirements for reporting the "taking" of wolves. An estimated 150 to 170 wolves live in the park, but research indicates the population is not self-sustaining; that is, mortality rates are higher than birth rates.

In response to reports that the Algonquin wolf population has declined by half since the mid-1960s, Minister of Natural Resources John Snobelen recently established a yearround moratorium on the killing of wolves in 39 townships immediately surrounding Algonquin Park. Field researchers estimate that half of the 34 to 38 wolf packs within the park have ranges extending beyond park boundaries. Thus, Snobelen's decision was greeted with enthusiasm by wolf supporters. However, because the moratorium is



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The year-round moratorium on wolf killing exceeded the seasonal closures on hunting and snaring recommended by the Minister of Natural Resources Wolf Advisory Committee, which scientists and environmentalists view as a conservation success. For the full text of the committee's recommendations, see the Ontario Ministry of Natural Resources Web site at www.mnr.gov. on.ca/MNR/csb/news/ nov6fs201.html.

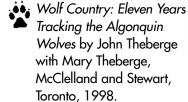
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set to expire in 30 months, pressure is mounting among environmental groups to make the minister's decision permanent.

Dr. John Theberge and his wife, Mary, authors of the book Wolf Country, have spent years researching the Algonquin wolf-its prey base (deer, beaver and moose), the high mortality rate and the environmental factors influencing its long-term survival. The Theberges pointed out that for the Algonquin wolves to be protected, they need an adequate core. In John Theberge's opinion, 30 months are not sufficient. "It is not long enough for a significant population recovery; ultimately a permanent ban must be implemented," Theberge said. "As well, if wolves are ever again subject to excessive killing, humans, not nature, will shape behavior and other characteristics of the future wolf population, and that constitutes a failure in park management."

The author thanks Dr. John Theberge for his help in preparing this article.

For more information, see:



Algonquin Wolf Advisory Group Recommendations Fact Sheet, Ontario Ministry of Natural Resources, www.mnr.gov.on.ca/MNR/ csb/news/nov6fs201.html. WOLVES OF THE UNITED STATES

Testing Tolerance

Wolf Y-206 and the Legacy of Yellowstone

by Neil Hutt

She has a rap sheet and a reputation as a livestock killer. Her mate is dead, and as the winter of 2002 turns slowly to spring in the Northern Rockies, Wolf Y-206, the breeding female of Montana's Gravelly pack, is alone. The breeding male was shot legally by federal wildlife officials in spring 2001 after the pack killed 35 sheep near Ennis, Montana. Y-206, along with her six pups and a yearling

male, was captured in June 2001 and held at Ted Turner's Flying D Ranch south of Bozeman, Montana.

Six months later, in December 2001, the wolves—all radio-collared—were translocated to the remote Yaak Valley in extreme northwestern Montana, where, it was hoped, they would not resurrect their

troubled past. As of late February 2002, five of the pups are still in the area where they were released. The sixth pup is 25 miles north, in Canada, and the yearling male, now nearly 2 years old, has disappeared into Idaho.

Y-206 didn't stick around long, either. She headed west, presumably on a quest for a new mate. Her journey has taken her across the state line and 80 miles into an isolated region in Washington with few sheep and cattle and no other wolf packs. The distance she has traveled is not remarkable; during much of the year, wolves are constantly on the move. Y-206's presence in Washington, however, is newsworthy; the last confirmed wolf sighting in the state was in 1991 (see International Wolf, Winter 1992).

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In late February 2002, Wolf Y-206 left Washington
State and crossed into British Columbia. Biologists
located her near a highway about 20 miles north of
the U.S. border. The juvenile male who had moved
into Idaho shortly after his release in Montana's
Yaak Valley has also moved into Canada.

The presence of Y-206 also provokes thought and discussion as wolves increase and expand their range in the Northern Rockies. Wolves have always held symbolic roles. Humans have demonized them as "beasts of waste and desolation," symbols of evil. Conversely, wolves have been revered as paragons of strength, endurance and skill. "I am a hunter's hunter," the red wolf says in Cherokee mythology.

Wolves are also symbols of untamed places, of wilderness. Y-206's parents were brought from Canada to Yellowstone in the mid-1990s. They were symbolic of a new attitude toward summit predators in general and wolves in particular. To an increasingly enlightened public, wolves were no longer viewed as vermin to be ruthlessly exterminated but as engineers of biodiversity, necessary to the ecological health of the regions they occupy.

Y-206's parents were part of the Northern Rockies wolf recovery effort, one of the 20th century's greatest conservation achievements. But Y-206, a daughter of the reintroduction success, is an example of the need to improve public understanding of the problems wolves can cause for people who live near them and of the need to develop strategies for managing wolf populations.

While many wolf advocates applaud the decision to allow Y-206 to wander freely in Washington, others are less enthusiastic. Wolf haters have long distorted the truth about wolves, but wolf advocates have also created myths that do not reflect the real wolf. Y-206 represents the need to distinguish between wolf persecution and responsible wolf management.

Meanwhile, as of late February 2002, Y-206 is still in Washington, where her movements are closely monitored by U.S. Fish and Wildlife biologists. If she remains in the state, she will enjoy full protection under the Endangered Species Act. Wildlife officials predict, however, that her travels will also take her to Montana or Idaho. In preparation for the wolf's removal from the Endangered Species list, both states are attempting to construct management plans consistent with maintaining viable populations of wolves and their prey while at the same time addressing the challenges faced by people directly affected by wolves.

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WOLVES OF THE UNITED STATES

Wolf Reclassification in the **United States: An Update**

by Nina Fascione

Tf the past 30 years of wolf Lonservation efforts in the United States have taught us one thing, it is that nothing is simple when it comes to this species. The current tortuous process is the federal reclassification of wolves under the Endangered Species Act. Despite the release of a proposed reclassification plan more than a year and a half ago, the final rule has yet to be released. The volume and complexity of the document, its political ramifications, the change

in administrations and several vacant positions at the Department of the Interior, including Fish and Wildlife director, have all contributed to the delay.

The wolf reclassification rule is presently under review in the Department of the Interior, and the U.S. Fish and Wildlife Service estimates the rule will be released late this spring, most likely to mixed reviews. The final rule will address gray wolf recovery throughout the

lower 48 states. It is expected to be significantly changed from the proposed rule, released in July 2000 (see "Understanding the Reclassification Controversy," International Wolf, Summer 2001). For example, there will likely be no distinct population segment (DPS) status for the northeastern states, as was proposed in the earlier document, reducing the number of DPSs in the United States from four to three. In the West, the boundaries for the Northern Rockies recovery area will probably be expanded to include most of the western states, with no change in the recovery goals. The southwest recovery area for Mexican wolves may be expanded.

Some aspects of the plan will remain the same as in the proposal. In the Great Lakes states, wolves are expected to be reclassified to threatened in Wisconsin and Michigan, where they are currently listed as endangered. The service has indicated that it will initiate delisting of the Great Lakes wolf population soon after the reclassification rule is finalized.

Wolf advocates are objecting to aspects of the final rule even before it is released. There had been

tremendous support for a northeastern DPS among both the scientific community and the general public, calls by conservationists for additional wolf recovery areas, particularly in the Southern Rockies and Pacific Northwest, and expectations that an expanded recovery area in the Northern Rockies would lead to increased recovery goals. None of these is expected to be in the final rule. Likewise, wolf opponents will find some aspects of the rule unappealing. Livestock interests want to see federal protections for wolves completely removed, rather than lessened, in Minnesota, Michigan and Wisconsin, as well

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Wolf Reclassification in the United States

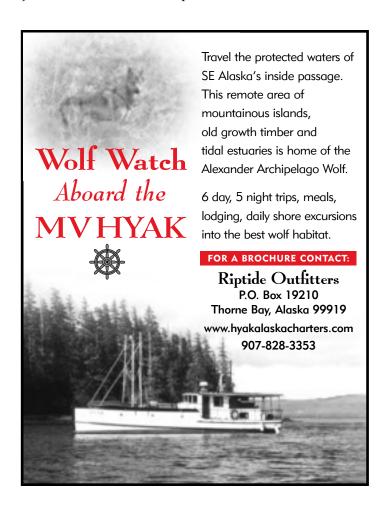
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as Idaho, Montana and Wyoming.

One point on which everyone can agree is that wolf conservation and management are complex issues involving myriad perspectives. Questions such as what constitutes wolf recovery and how do we best manage wolves in an ever more-crowded world are just some of the key issues that challenge wildlife managers, scientists, wolf advocates and the general public. This subject will continue to dominate the headlines in the upcoming year as states work to develop plans for managing wolves post-delisting, and the federal government moves forward with reclassification. Regardless of the final rule, it is safe to assume these issues will not go away. Rather than ending the wolf debate in the United States, reclassification might just be the beginning of a new chapter.

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

Nina Fascione is the director of carnivore conservation for Defenders of Wildlife and coauthor of "Places for Wolves: A Blueprint for Restoration and Long-Term Recovery in the Lower 48 States."



WildwKids

Open Wide!

by Kelly Burns

Remember your last visit to the dentist? Were you sitting in a big moving chair, light brightly shining, the dentist peeking into your mouth to examine your teeth? A dentist checks to make sure your teeth are healthy. Each tooth has to be inspected since each one plays an important job in how you eat your food.

Your teeth are your body's eating tools. Now I know what you are thinking, "Aren't my fork, knife, and spoon my eating tools?" These tools help out before the food gets into your mouth. Your teeth take over after that. Animals, on the other hand, have to do all the work with their teeth.

Teeth can do amazing things, like tear, hold, grind and rip. These actions help get food into an animal's body so it can be passed on to the stomach for digestion. The type of preparation a piece of food must go through to be ready for the stomach depends on what food the animal is eating.

An animal eating grass or branches has to bite, hold and pull. The front teeth performing the bite are called incisors. Molars perform grinding and chewing; they are teeth with big flat surfaces. A plant-eating animal is called an herbivore.

If an animal has to catch another animal for food, it might need to hold the prey with long, pointed teeth and cut it with sharp-edged teeth. These pointed canine teeth are tools for holding or tearing meat. A meat-eating animal is called a carnivore.

Sometimes animals have pointy teeth for tearing, and flat teeth for grinding. These animals are omnivores and eat both plants and animals.

Teeth are important keys to learning about an animal. By examining the teeth of an animal you can determine what kind of "eater" it is.



Once you know what food an animal eats, you can guess how it finds its food. A carnivore must hunt animals or find dead animals in order to eat. As long as the right plants are available, herbivores can graze or browse to get food. So the next time you walk outside, think about the kind of animal you would need to be to survive in your habitat. ■

Chew your food:

Think about how you eat each of the foods on this list. Do you bite from the front or side or use your back teeth?

- Carrot
- Corn on the cob
- Popcorn
- Chicken wing
- Apple
- Ice cream cone

Molars

Count them out:

Count how many teeth you have.

Guess how many teeth a wolf has.

What difference does it make how many teeth an animal has?

Be a dental detective:

Take a look in the mirror at your teeth and compare them to the diagram. Do you have canine teeth? Molars? Incisors? Based on what you found, what kind of an "eater" is a human?

Incisors

Canines

Book Review

by Jakki Harbolick

Dogs: A Startling New Understanding of Canine Origin, Behavior and Evolution by Raymond Coppinger and Lorna Coppinger Scribner, 2001

n Dogs: A Startling New Understanding of Canine Origin, Behavior and Evolution, Raymond and Lorna Coppinger offer, by turns,

charming personal narrative, objective theoretical treatise, and harsh ethnocentric criticism. Serious readers should prepare themselves to be entertained and educated. but also affronted by this peculiar mixture of scientific detachment and personal prejudice. Initially the reader's attention is captured by the book's preface and by the unusual dedication,

which is a funny, enigmatic miniature work of art. Readers who push on will find the tone rapidly shifting, however, as the authors settle down to the serious work of expounding their theories regarding the origin and evolution of dogs.

The Coppingers' basic premise is that dogs and wolves evolved separately from a common ancestor, and that humans did not create dogs by taming wolves, but rather dogs created themselves. The theory is that among dogs' now-extinct ancestors were some that were genetically predisposed to living near human habitations. Being less fearful, these "pre-dogs" were able to capitalize on their access to the three biological necessities for species success: food, safety and reproductive opportunity. The genetic predisposition toward tameness also, as a side effect, resulted in the physical changes that make dogs look like dogs, not wolves. From this relatively tame population of "village dogs," humans began to adopt and domesticate individuals. Natural breeds evolved based on envi-

ronment and human favor shown to individuals for good job performance, and additional artificial refinement of these natural breeds has led to the development of the modern dog.

The roles played by genetics, natural selection, environment and human influence cum interference are each examined in the

light of anecdotal and scientific evidence. Particularly intriguing, as a possible parallel for the authors' theories on canine evolution from wild wolf to village dog, is the account of what happened when a Russian fox fur farm began to breed its foxes for the characteristic of tameness. The chapters on developmental environment and on physical and behavioral conformation are equally fascinating, providing an in-depth, if optimistically biased, look at various working

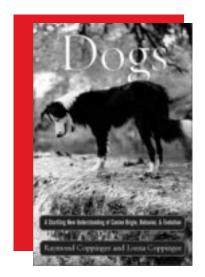
breeds and the ways in which their behaviors and bodies are shaped.

Within the scientific community, the Coppingers' book will perhaps spark debate and renew interest in the examination of long-standing theories. The broader readership stands to benefit as well, because despite some inconsistencies and contradictions within the text, the ideas and ideals presented are clearly intended to be educational.

However, the chapters on house-hold and assistance dogs are certain to provoke a far stronger reaction from all readers. Here, the Coppingers adopt a caustic, censorious tone, and their comments seem less critically constructive than derisive. The views and attitudes tend toward the extreme and inflammatory, which is unfortunate since this apparent loss of objectivity will inevitably undermine the credibility that was so painstakingly cultivated in previous chapters. The message is jeopardized.

Raising awareness of the perils of improper breeding and training is absolutely legitimate, but combative language only incites anger and will not lead people to work together toward a solution. And it is clear that the Coppingers, having spent their lives in the company and study of dogs, are in pursuit of solutions. Their eloquent, joyous portrayal of the science and theory of sled dog sport alone is convincing evidence of their ongoing enjoyment of and devotion to the world of dogkind.

Dog-lover Jakki Harbolick is a language arts and writing teacher. She lives in Leesburg, Virginia, with her husband, Pete, and their two children.



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News and Notes

Two NEW WOLF THESES have been produced. Sam Merrill completed his Ph.D. dissertation, "An Evaluation of the Use of Global Positioning System Telemetry in Studying Wolf Biology," and Dan MacNulty his master's thesis, "The Predatory Sequence and Patterns of Risk-Sensitive Foraging in the Wolf." Both students were advised by Dr. David Mech at the University of Minnesota.

WOLF IN AUSTRIA was killed by a hunter who thought the animal was a dog that had killed a red deer, according to the World Wildlife Fund Austria. This is the first wolf record in Austria since 1996. As European wolf populations continue to increase and proliferate, dispersers may be immigrating to Austria from the Czech Republic, Slovenia or Italy.

WIDAHO passed a milestone as the 17th draft of a wolf management plan was endorsed by livestock and ranchers' groups along with some environmental organizations during state legislative hearings. The plan, which advocates maintaining 15 breeding wolf pairs (about 120 wolves) in Idaho, has won approval from the senate and the house and now goes to the governor for approval.

DOG" was a suitable title for an incident in which the Thunder Mountain pack of nine wolves dispatched one of two mountain lion–hunting dogs that were left out overnight in the Northern Rockies on February 1. Wolves have killed several bear-hunting dogs in Wisconsin and several livestockguarding dogs in other areas.

Two WOLF CONFERENCES were held in April. The Midwest Wolf Stewards Meeting took place in Two Harbors, Minnesota, on April 3-4, 2002. The Western Wolf Conference met April 23-24, 2002, in Boise, Idaho.

WOLF ATTACKS ON HUMANS is the subject of a January report by the Norsk Institute, Norway. The report includes summaries of the relatively few confirmed attacks by non-rabid wolves on humans around the world and concludes that there have been more attacks in Europe and Asia than in North America. There are no documented cases of non-rabid, wild wolves killing a person in North America, and most incidents of wolf attacks there involved wolves habituated to humans.

at the Yellowstone Association Institute in the heart of Yellowstone's wolf range got off to a good start. The course on "Wolf Interactions with Their Prey" was scheduled by instructor Dave Mech to begin at 8:30 a.m. As the class assembled in the parking lot of the Institute's head-quarters, a pack of 13 wolves across the road began attacking a herd of 120 elk. Promptly at 8:30 a.m, the pack killed two elk while the whole class watched and Mech narrated!

AWOLF FROM FINLAND immigrated into northern Sweden and was radio-collared on February 1, according to Anders Bjarvall, the IUCN Wolf Specialist Group representative from Sweden. This is the first wolf ever radio-tracked in that part of Sweden. Genetics tests on the wolf's blood documented the animal's Finnish origin.



A Look Beyond

Wolf Management Zoning versus Human Management Zoning

by Dean Johnson

familiar with terms like land management and zoning. These are regulatory tools that have been constitutionally upheld in this country for more than a century. I was initially bemused upon seeing an article on "wolf management zoning" in International Wolf magazine. Then I recalled that this regulatory concept was initiated by Congress over a quarter-century ago.

We all get into our personal and professional comfort *zones* (pardon the pun) and often forget about the need for tolerance, balance and good judgment in the way we conduct ourselves. In fact, we humans do such a poor job of that that we have to create rules to plan for better cities and neighborhoods, to zone for compatibility and transition between land uses, and to manage and protect natural resources.

So what is so odd or novel about wolf zoning? Absolutely nothing. In fact, the concept is logical and should be far less complicated than "human zoning." We find it necessary and tolerable to protect home owners with a barrage of zoning techniques, such as enforcing minimum building separation and prohibiting incompatible land uses. We also protect farmers from "frivolous" claims against typical farm "nuisances," such as animal odors, late-night cultivating, and slow-moving vehicles, by enacting "right to farm" ordinances.

Wolf management zoning is underlain by Congress's guarantee of wolves' "right to live." The concept is simple. A "primary" wolf zone of natural habitat is established where human intervention is minimal. A "secondary" wolf zone is established on the fringe where wolves stray and human activity is more prevalent. Wolves' rights are more protected in the primary zone, while tolerance for straying wolves is balanced with humans' rights in the secondary zone.

In land use planning, we also struggle with strays. Today we hear a lot about "smart growth," a new and overused term that implies a magic potion may exist for an old problem—sprawl. Smart growth attempts to make urban areas more efficient and attractive, and a major lure for smart growth proponents is the prospect of containing sprawl. Sprawl, of course, is caused by straying humans.

Humans need to remember that balance is the key to survival for all things. We need to ask ourselves, "Who's the intruder here?" After invoking human management zoning to protect humans from each other, it is time we accepted wolf management zoning as a means to protect wolves from humans.

Dean Johnson has 25 years of experience in city planning in Minnesota. He is currently president of Resource Strategies Corporation, a land use planning and environmental planning consulting firm in Minnetonka, Minnesota.

Educators:

Bring Wolves Right Into Your Classroom







Our programs and resources provide opportunities for your students to learn about a great natural treasure and about the wildlands that are its habitat. Interdisciplinary curriculum helps students understand the connections between ecology, economics, government, technology and more.

Call 1-800-ELY-WOLF, ext. 25 or visit www.wolf.org for more information.

Speakers Bureau:

presentations tailored to age and interest

Wolf Loan Box:

artifacts and activities

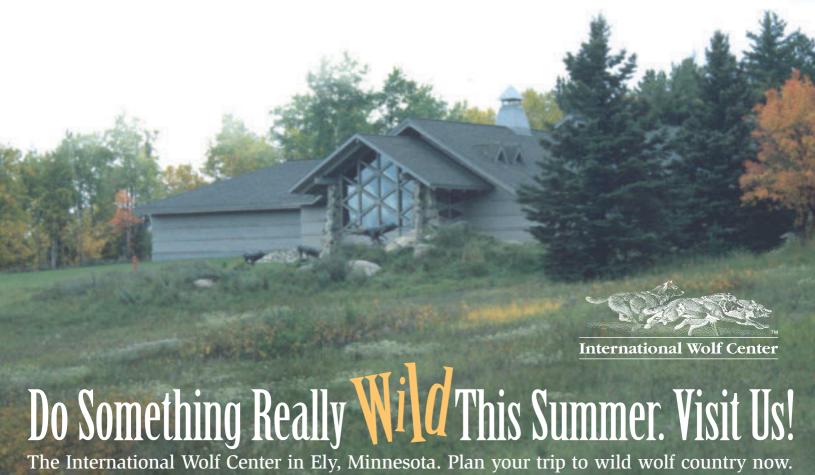
Curriculum Resources:

reinforce basic skills, fulfill national sciencelearning standards

Education tools:

track packs, wolf adoption kits, radio telemetry, plus videos, books, other classroom gides





meet our Ambassador Pack of wolves including two rare arctic wolves enjoy viewing the new wolf enclosure pond and rock landscaping trek through wolf habitat: track, hike, howl or journey to an abandoned wolf den learn about the similarities and differences between wolves and dogs through daily programs in July and August romp with the kids in our *Little Wolf* children's exhibit learn all about wolves and wildlands through a special speaker series

DAILY SUMMER HOURS:

May 10 - June 30 . . . 9 a.m. - 5 p.m.

July 1- Aug 31 9 a.m. - 7 p.m.

Sept 1- Oct 20. 9 a.m. - 5 p.m.

See www.wolf.org for information and program schedules. Phone: 1-800-ELY-WOLF, ext. 25



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