

INTERNATIONAL WOLF

A PUBLICATION OF THE INTERNATIONAL WOLF CENTER
SPRING 2011



THE SCIENTIFIC CLASSIFICATION OF WOLVES:

Canis lupus sroupus, page 4

THE WOLVES OF TRANSYLVANIA, page 8

WOLF '06 OF LAMAR CANYON, page 13



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INTERNATIONAL WOLF

THE QUARTERLY PUBLICATION OF THE INTERNATIONAL WOLF CENTER
VOLUME 21, NO. 1 SPRING 2011

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Readers' Responses

The winter 2010 issue of *International Wolf* sparked several comments, both positive and negative (see executive director's letter page 3). Below are a few representative examples of the responses.

"While I do applaud the good works the International Wolf Center does for the welfare of our wolves, I do also have to highly condemn the proposal of offering money for the blood of wolves. You MUST know that anytime a bounty is put on any animal it is but a short while before the situation gets out of hand. Please try to put that one-plus million dollars to better use." — V. H.

"L. David Mech's article 'Considerations for Developing Wolf Harvesting Regulations' was a shocking read. Snaring and trapping might be a more acceptable method of wolf control, but in my opinion cause unnecessary pain, suffering and distress. Suggesting that killing of wolves should be allowed through February, which would reduce populations as pregnant females could be taken out, is abhorrent. Trying to make killing of pups more publicly acceptable by allowing them to grow larger so they no longer look like pups is underhanded. I realize some level of wolf control is necessary but am extremely disappointed the International Wolf Center would publish and advocate such ideas as are contained in this article. Very disappointing." — K. D.

"The articles written by Dave Mech and Jim Hammill caused this reader to stop more than once and think about what I thought I knew about current gray wolf issues. The fact these articles presented concise and varying points of view on hunting/trapping was brilliant. This issue of *International Wolf* will cause its readers to question current practices and possibly even think about what is best for the wolf. I welcome a healthy debate, even from our fiercest critics. This issue gets my vote as one of the best, with the possible exception of the red wolf issue." — K. W.

"Enjoyed your winter 2010 issue."
— C. N.

"Hi Mary. Your question about films rang a chord with me. I used to be a fan of horror movies and books, and I'm losing my taste for them. The ones like 'Saw' are fine, as humans are the only victims. But time and time again, I've read or seen depicted some kind of animal torture/killing in this medium before the victims start being human. It's gotten so I worry with each new story that I'm going to come across something like this, leading me to give up horror altogether. This kind of repeated image must have lingering effects, especially on young adults and kids." — T. H.



From the Executive Director

Articles in the winter issue of *International Wolf* looked at controversy surrounding delisting wolves from the federal Endangered Species List. That controversy involves the probability that state management plans in the United States will allow hunting of wolves as a game species.

The articles caught readers' attention and touched off some vigorous responses, both positive and negative! Those who know the International Wolf Center well understand the organization does not take positions on wolf issues. Some Center members and others wrote in dismay, thinking the Center was taking a pro-hunting stand. Others wrote to thank us for opening dialogue on this controversial topic. Thank you to everyone who responded to these articles.

To clarify, we publish information on many sides of wolf issues, including hunting of wolves. However, we understand three articles in the same issue focusing on the topic of wolf hunting gave to some readers the appearance the Center supports wolf hunting. While each of these articles presents information about some aspect of wolf hunting, none of them represents an organizational position on this controversial subject.

You may have noted Dr. L. David Mech wrote the article, "Considerations for Developing Wolf Harvesting Regulations..." in his role as a federal government wolf biologist. It was reprinted from another publication. While he discussed the realities of wolf hunting policy, he did not advocate for hunting. The article gave a picture of the issues wildlife managers will likely face in creating policy to manage wolf populations while satisfying the diverse interests of hunters, wolf protectionists and the general public.

The International Wolf Center's work is to support the survival of wolf populations using science-based and objective education. We believe well-informed individuals, including wildlife managers, can make the best decisions regarding the wolf's survival.

In the future, we will frame issues such as this one in more context. We will be clearer that articles do not express the opinions of the Center, and we will include varying perspectives. Truly, an involved and educated public working with wildlife managers can make a difference in the survival of wolves.

This dialogue is an essential one. I encourage you to keep reading, listening, writing and talking about wolf issues. You will find more opportunities for discussion on this topic in future magazines. Please continue to send your comments and concerns to me via email at mortiz@wolf.org, or mail them to me at the International Wolf Center, 3410 Winnetka Ave. No., Minneapolis, MN 55427, or call me at 763-560-7374 ext. 222. We value your contribution. ■

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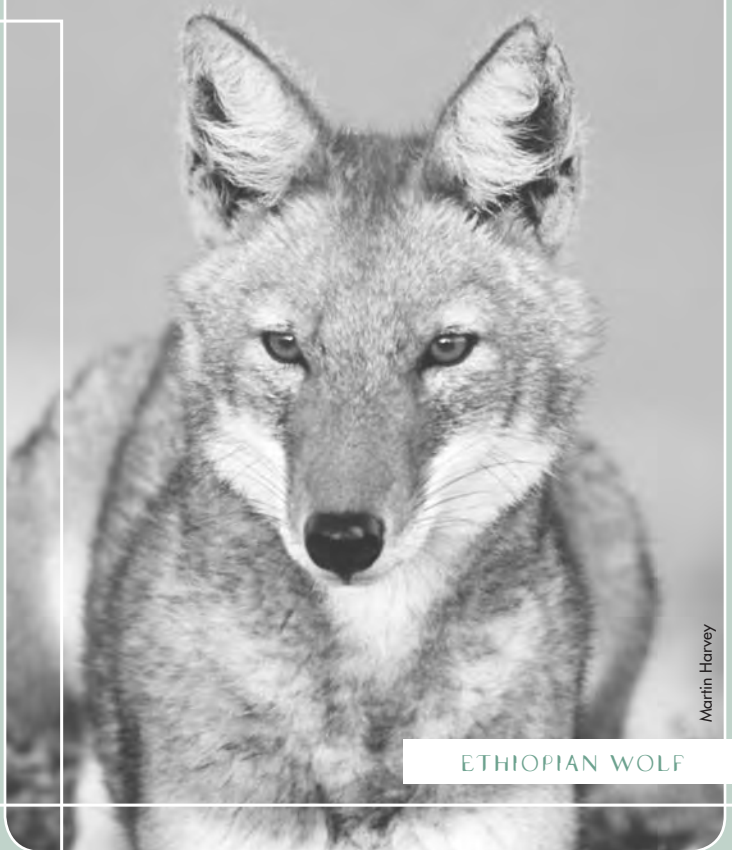
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The Scientific Classification of Wolves:

*Canis
lupus
soupus*

by L. DAVID MECH

Gray wolf, timber wolf, red wolf, eastern wolf, brush wolf, arctic wolf, Mexican wolf, maned wolf, Ethiopian wolf, etc., etc. How many kinds of wolves are there? And what are the differences? This is a really good question, and the answer is getting more complicated all the time.

Let us start by going back a few years to the way science looked at wolves more traditionally—before the days of the new field of molecular genetics. Molecular genetics examines the actual DNA of animals and tries to classify them according to genetic similarities.

Before the advent of molecular genetics, scientists classified wolves (and other animals) based on their physical traits (morphology). With wolves, it was primarily coat color and skull measurements. These characteristics, of course, basically reflect the animal's genetics but only indirectly.

One major problem with this older approach is that there is a certain amount of judgment in assessing phys-

ical characteristics. Thus some classification scientists (taxonomists) were “splitters” and others “lumpers.” Splitters tended to separate groups more finely, whereas lumpers tended to lump smaller groups into larger clusters. However, there was no objective basis for determining which approach might be correct or more informative.

Scientists who classified wolves in North America were splitters. Old World scientists had pretty well recognized that there were 8 geographically distinct races, or subspecies of wolves in Europe and Asia. However, North American scientists split New World wolves into 24 subspecies. This is how there came to be so many common names for North American wolves, for example, the eastern timber wolf, the arctic wolf, the Mexican wolf, the great plains wolf, etc. Scientifically, the subspecies or races have three parts to their name (Example: *Canis lupus baileyi*, the Mexican wolf), but all the subspecies are of the same basic gray-wolf species, *C. lupus*.

However, wolves are great travelers. Ear-tagged or radio-tagged wolves have dispersed from the natal packs in the range of one subspecies across the ranges of two or three other races. The current record is a wolf in Finland that traveled a straight-line distance of 655 miles, or 1,092 kilometers. This potential to travel calls into question the existence of so many subspecies with small ranges.

Thus it made good biological sense when in 1995 the eminent canid taxonomist, Ron Nowak, published a reclassification of North American wolves. He lumped the 24 originally recognized subspecies of North American wolves into 5. In reality, whether one recognizes 24, 5 or 3 North American races of wolves, a wolf is a wolf is a wolf. Science has not demonstrated any basic behavioral differences among any of these races,

nor has any scientist even proposed that such behavioral differences exist among wolf races.

So far I have only been discussing the gray wolf, *Canis lupus*, which is the most widespread wolf worldwide. The other type of North American wolf that has traditionally been recognized is the red wolf, *Canis rufus*, of the southeastern United States. Scientists still disagree about the true identity of the red wolf. Some think the red wolf is a cross between the gray wolf and the coyote (*Canis latrans*—also called the “brush wolf” in some places). Others have proposed that the red wolf is just another race of gray wolf, while still others believe the red wolf is a valid entity of its own.

From a worldwide perspective, we must also consider both the maned wolf and the Ethiopian wolf. The maned wolf (*Chrysocyon brachyurus*) of

South America is not really a wolf; it is still a member of the Canidae, or dog family, but it is not part of the wolf branch of that family, despite its common name. The Ethiopian wolf (*Canis simensis*), on the other hand, may actually be a wolf. Traditionally scientists thought the animal was a jackal (similar to a coyote), but recent genetic study seems to indicate it is a wolf. Some scientists, however, still think it is a type of jackal.

So much for the less complex aspects of wolf taxonomy. The complications have arisen because of the relatively new field of molecular genetics. Molecular-genetic studies are a powerful and valuable tool to add incisive information about the relatedness of one group of wolves to others. Mere appearances can be deceiving as the similarities between fish and whales attest. Molecular-genetics stu-

dies, however, examine the actual DNA of animals and thus potentially reveal their true genetic relatedness. These genetic studies use chemicals to amplify the DNA found in blood, hair, skin or even intestinal cells that slough off in feces. A special, high-tech machine then presents a sort of photo of parts of the DNA that can be examined.

Problems with the molecular-genetics approach arise, however, from several sources. First the field is relatively new and thus still being tested by the usual scientific processes like replication, competing interpretation and the continuing addition of new information. In addition, the issue of subjectivity or personal interpretation of the data is still a problem. Relatedness itself is a matter of degree. Except for twins or other multiple individuals arising from the same egg and sperm, every individual is genetically unique.



Greg Koch

RED WOLF



David Cantier

COYOTE

Every wolf pack is genetically distinct on a larger scale, and every wolf population is distinct on a still larger scale, etc. Thus where does one draw a line to group genetically similar entities as special enough to call them different?

Furthermore, how much weight should be given to results of various genetic tests relative to physical traits such as skull measurements that have a genetic basis but whose genetics have not been examined? For example, with one genetic test, some 38 percent of 88 Minnesota wolves tested have a kind of DNA the same as, or similar to, that of coyotes. This particular type of DNA has nothing to do with any physical or behavioral trait. Wolves with this coyote-like DNA mate with those having wolf DNA and form packs like all the other wolves in the population. They look and act like all the other wolves. Are the wolves with the two types of DNA the same species? What if other genetics tests show they differ, but the animals show no physical or behavioral differences and can freely interbreed? What if the two types also inhabit different but overlapping areas?

The last is precisely the case with a proposed new species of wolf called the eastern wolf (*Canis lycaon*). This wolf lives from far southeastern Canada west to southwestern Ontario, northern Minnesota and Manitoba and is currently referred to as the “eastern wolf.” In northern Minnesota and in adjacent Ontario, those wolves live closely and mate with wolves whose DNA (on this particular test) is the same as those in Alaska and northwest Canada. However, the eastern wolf has been proposed as a separate species. Not only that, but also some of the genetic tests indicate that the eastern wolf evolved in North America, along with the coyote, whereas the gray wolf evolved in Asia. Furthermore, the eastern wolf genetics examined were identical to those of the red wolf.

So is the eastern wolf the same as the red wolf? If so, does the red wolf cross with the gray wolf in Minnesota? That’s what this reasoning and those tests imply. There is a hitch, however. The hitch is that the red wolf does not look like Minnesota wolves, and

Are the wolves with the two types of DNA the same species?

What if other genetics tests show they differ, but the animals show no physical or behavioral differences and can freely interbreed?

skulls of red wolves can be distinguished from those of eastern wolves and of Minnesota wolves.

If this all seems confusing, that’s because it is. And adding to this confusion is the fact that both the red wolf and the eastern wolf can and do hybridize with coyotes, but there’s no record of the gray wolf of western Canada and Alaska interbreeding with coyotes. (The experiment has never been tried in captivity.) The much larger size of the eastern coyote compared to all other coyotes is a reflection of these interactions. Also the fact that the eastern wolf and the red wolf can hybridize with coyotes may be further evidence the three evolved together in North America or at least are closely related.

Recently geneticists in India discovered that three genetically distinct populations of wolves lived adjacent to each other with no physical barriers and no apparent interbreeding. The geneticists proposed that two of these types be considered new species. However, the scientists presented no data or claim that these animals differed physically or behaviorally. Before the scientific community accepts new species designations, it usually requires additional research and information.

What does all this mean in terms of understanding basic wolf biology and behavior? Actually not much. The aphorism “a wolf is a wolf is a wolf” is highly appropriate in this regard to anyone except the taxonomist.

Regardless of what they are called or what differences the current genetic testing shows, wolves throughout the world are pretty much the same in basic appearance and behavior. The strong implication here is that when it comes to the great majority of the wolf genome that codes for basic wolf appearance and behavior—the DNA that has not been tested—gray wolves are essentially all the same. As to the races or subspecies of gray wolves, or the proposed new species, time and much more study will tell. Meanwhile, the classification of wolves to most members of the public will remain a mystery and an enigma probably best embodied in the not-so-scientific name, *Canis lupus soupus*. ■

L. David Mech is a senior research scientist for the U.S. Geological Survey and founder and vice chair of the International Wolf Center. He has studied wolves for 50 years and published several books and many articles on them. He is also a member of the International Wolf Advisory Committee.

The Wolves of Transylvania



by ALAN E. SPARKS

*A captive Eurasian wolf
near Zarnesti, Romania.*

Sitting on rigid benches in the stark, cold classroom, bundled in winter coats and hats, the small group of sixth graders listens attentively as Simona Buretea describes ways to publicize the presentation they will give to the village next week. The meager heat from a wood stove is lost in the immensity of the large, whitewashed classroom. Hanging crookedly on the wall is a tattered map of the world, depicting nations that haven't existed for half a century.

Through the tall windows, which rattle and sing as gusts of wind seek entry through the loose fittings and cracked panes, can be seen the spectacular panoramic view that graces this small Transylvanian mountain village of Pestera. Farmhouses are scattered on rolling hillsides or perched precariously along the spines of ridges, seeming to hang in the thin, invisible air that blows cold from the snow-capped peaks beyond. As the students walk to school, which is an hour-and-a-half journey for some, their hearts quicken from more than just the exertion and the beauty of the scenery...for they hear stories.

It is a thawing spring day in 2003. Simona is the public awareness officer for the Carpathian Large Carnivore Project (CLCP), a non-governmental organization that conducted research in Romania on the behavior and eco-

logy of wolves, bears and lynx from 1993 until 2003 to help conserve the unique natural heritage of the region. She has commissioned the students to investigate stories going around the village about wolf attacks on people. No computer or Internet is available to aid this task—the children must query their relatives and friends, discovering who told whom what, trying to trace the stories back to the sources.

The 27,000 square miles of forest carpeting the Carpathian Mountains of Romania, which cradle the Transylvania plateau like a giant arm, contain the most significant populations of large carnivores in all of Europe west of Russia. Around 2,500 wolves live in Romania (over 15 percent of Europe's wolf population, excluding Russia), and about 5,000 European brown bears and 1,800 Eurasian lynx live there as well, even though, with 22 million people residing in a little more than the same area, Romania is about four times more densely populated than Minnesota.

It is commonly believed in Romania that wolves are dangerous to humans. The fear is rooted in wolf-attack stories that circulate until they become unverifiable folklore. An investigation of 41 such stories in the last half century confirmed eight were based on factual events, but in every case the wolf was either rabid or injured, or trapped or cornered and defending itself from

attack. There were no serious injuries to humans.

At their presentation the students of Pestera report their results to a rather boisterous and skeptical audience: none of the wolf-attack stories could be verified. Historically, however, there are significantly more official reports of wolf attacks in Eurasia than in North America, possibly due to millennia of wolves being habituated to the proximity of humans—including the scavenging of human corpses left during frequent wars. But some researchers believe most cases involved rabid or captive wolves, or wolves defending themselves.

The wolves of Romania are "Eurasian wolves," *Canis lupus lupus*, a subspecies which prior to the 20th century ranged over most of the vast super-continent—from Western Europe and Scandinavia eastward through Russia, Central Asia, southern Siberia, Mongolia, the northern Himalayas and China—but now reduced in extent due to human persecution and loss of habitat, especially in the West. The Eurasian wolf is believed to descend from canids that migrated from the North American continent across the Bering Strait when it was land or ice, possibly in multiple waves beginning at least two million years ago. After evolving into wolves, some migrated back to North America, possibly also in multiple waves.

Like elsewhere, wolves in Romania help maintain the diverse composition and dynamics of the ecosystem.

But also like elsewhere the long-term prospects for large predators depend on human values.

Clouds enshroud Carpathian Mountain peaks near the village of Poienile de Sub Munte in the Maramures region of northern Romania.



Rob Brooks

Eurasian Lynx

The 27,000 square miles of forest carpeting the Carpathian Mountains of Romania, which cradle the Transylvania plateau like a giant arm, contain the most significant populations of large carnivores in all of Europe west of Russia.

Alon E. Sparks

The wolf's ancestry

The modern gray wolf subspecies of northern and central North America probably descend from a relatively recent wave, as gray and Eurasian wolves are more closely related to each other than to smaller wolves inhabiting the southern fringes of wolf range on each continent. As in North America, the average size of wolves in Eurasia varies geographically, generally increasing toward the north. The Romanian wolf is of intermediate size, most adults weighing between 75 to 130 lbs (34 to 60 kg). Average pack size (around five) and territory sizes (between 80 and 300 sq km; 50 to 186 miles) tend to be smaller than typical of most wolf populations in northwestern North America.

After World War II nearly 5,000 wolves lived in Romania, ranging over most of the country. Livestock depredation was excessive, so the Communist government sought to reduce predators via hunting and trapping and the use of poisons and bounties. By 1967 the wolf population had fallen to about 1,550—although, like coyotes in America, jackals began to invade lowland areas where wolves had been eradicated. Then the new dictator, Nicolae Ceausescu, an avid bear hunter, instituted rigorous measures aimed at promoting his quarry, including banning poisons and firearms and protecting habitat.

Wolves and their wild prey benefited, and their numbers began to rebound. When the Communist regime fell in 1989 the protections ceased, and the large predators soon faced the same pressures that had decimated their numbers in most of the rest of Europe. Conforming to European biodiversity and conservation goals, Romania restored protection to wolves in 1996, although limited hunting is allowed, and enforcement is problematic.

Today the carnivores of Romania are relatively tolerated despite Romania's being a developing country (average per capita net earnings about \$3,300 per year in 2008; lower in rural areas) with an economy significantly dependent on livestock. Agriculture

accounts for about 12 percent of the economy, employs about 30 percent of the labor force and in the Carpathians still sets the rhythm for an ancient way of life. Rolling slowly along the country roads are horse-drawn carts carrying towering loads of hay or bundles of sticks for firewood, or groups of peasants to work the fields. Cows, horses, goats and sheep are still herded through the main streets of villages and towns, frustrating the drivers of cars rushing to meet their appointments in the hectic pace of the “new economy,” which is just beginning to challenge the ancient rhythms.

But whether marching to old rhythms or new, it is the attitudes formed over centuries of coexistence and conflict with livestock that still dominate the feelings about wolves in

Romania. Wolves and bears take about 1.2 percent of the 5 million sheep that graze the mountain pastures during late spring and summer. This loss is a significant burden to people so dependent on livestock (compensation is not provided). Antipathy toward wolves results, but a campaign to eradicate every last wolf never occurred in Romania. Wolves that attack livestock may be legally killed if evidence is provided, and some are illegally shot, snared or poisoned. However, the primary defense against predators is the use of large, aggressive shepherd dogs. Portable electric fences have also been shown to be very effective, although they are beyond the means of most shepherds.

While wolves will prey on vulnerable livestock, and occasionally on

dogs and small animals such as hares and rodents, the primary diet of most wolves most of the time in Romania consists of the three wild ungulate species: roe deer (*Capreolus capreolus*), red deer (*Cervus elaphus*) and wild boar (*Sus scrofa*). There is no evidence suggesting wolves in Romania are limiting wild ungulates at depressed levels (although recent heavy poaching may be); nevertheless, wolves can be perceived as competing with human hunting (a source of much needed foreign revenue).

Managing wolves

Romania is divided into over 2,200 game areas managed to maintain game populations at levels determined according to environmental and social conditions. Hunting quotas are set

A captive male wolf keeps a wary eye on approaching human visitors near Zarnesti, Romania.



Steffen Leiprecht

per area, and when predation of wild ungulates or livestock is considered too high, wolves are also targeted. Yet managers do allow significant numbers of wolves in the areas, consistent with national conservation goals, and many hunters in Romania accept this, both because they value predators as game and because they believe predation improves the health and trophy quality of other game species.

Like elsewhere, wolves in Romania help maintain the diverse composition and dynamics of the ecosystem. But also like elsewhere the long-term prospects for large predators depend on human values. Viable wolf range in Romania is essentially saturated. Around 30 percent of wolf mortality is caused by intraspecific strife, about 300 wolves a year are legally shot (the total hunting/lethal-control quota for 2009-10 was 466), an unknown number poached, and there have been proposals to allow landowners to kill wolves regardless of whether they are actively depredating on domestic

animals. Nevertheless, while there has been a modest decline recently (probably due to increases in livestock and poaching of wild ungulates), the wolf population has been relatively stable over the past dozen years, and it is the destruction of suitable habitat that is the greatest threat now facing wolves in Romania.

For such a densely populated country, the amount of undeveloped land is remarkable. People primarily dwell in cities, towns and villages, and suburban sprawl is rare. The forests, however, are permeated by access roads for logging, hunting and livestock, and many wolves live close to humans. In the late 1990s a radio-collared wolf ranging the forests adjacent to the large city of Brasov was discovered routinely entering the city at night with her pack to raid a trash dump for food, most people never aware of their presence. Since opening to the West, the natural beauty of the Romanian Carpathians is attracting new residents and tourists,

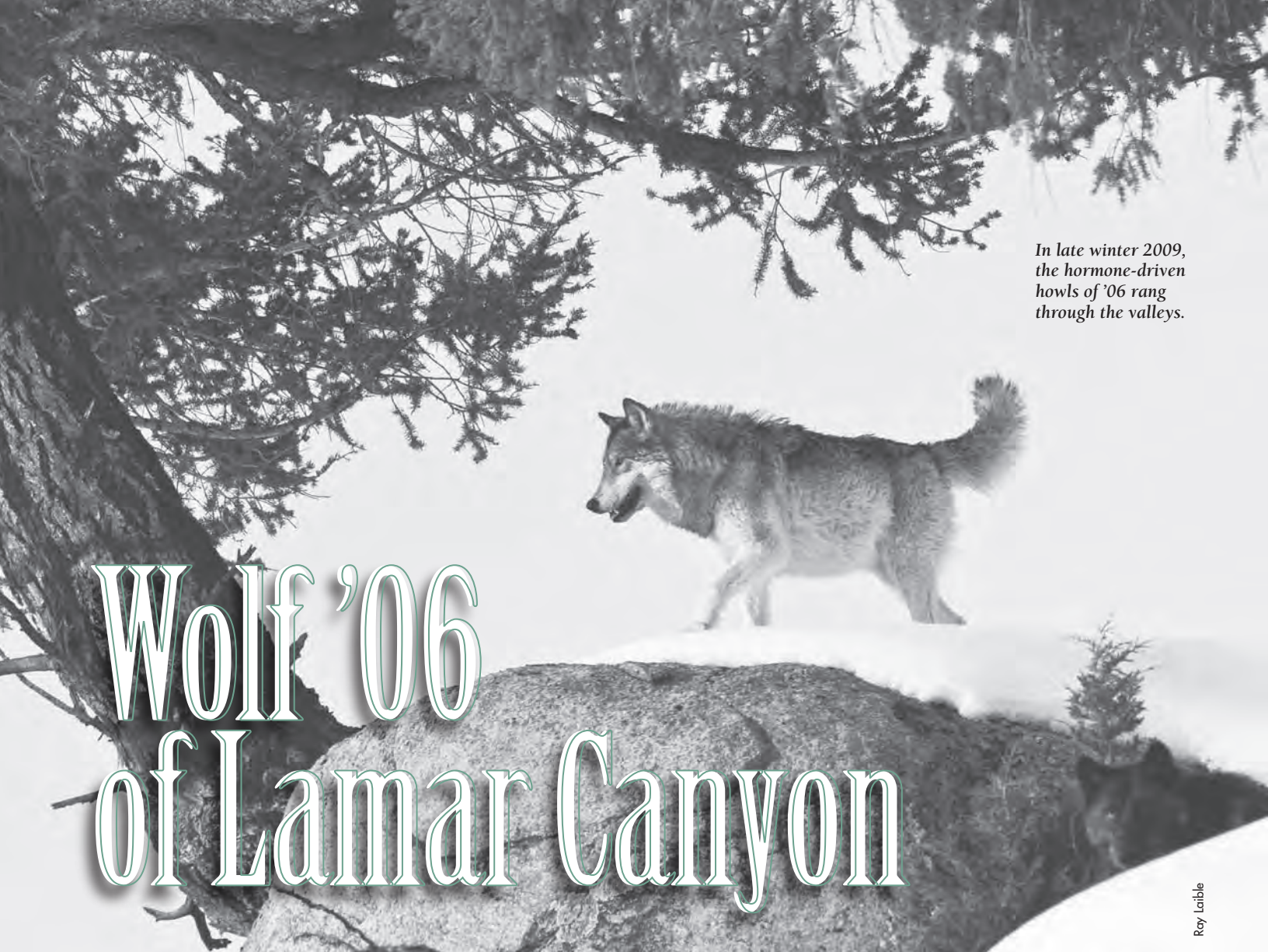
leading to increased development of infrastructure, roads and summer homes.

In southeast Transylvania lies the ex-factory town of Zarnesti, which is at the center of recent efforts to realize economic benefits from the presence of wolves and other wildlife. To tap the lucrative ecotourism market, a tour-guide training program and businesses such as guesthouses, horseback riding and mountain-bike rentals have been established. While a small beginning, the local revenue generated by tourists attracted to the region's natural heritage—and especially the elusive large carnivores—already exceeds the costs of depredation and livestock protection. Consequently, local attitudes toward wolves have turned more positive. However, as long as people bearing the costs aren't always the ones realizing benefits, controversy will remain about the merits of this equation.

The case of the real Transylvanian wolves, as opposed to those so horrifically depicted in mythic images, demonstrates an ancient, yet evolving, coexistence between people and wolves even under difficult economic circumstances rife with potential conflict. While the presence of wolves in Romania presents challenges, economic benefits are being realized and conflicts resolved through increased understanding of wolf behavior and awareness of the needs of the people who share the remarkable landscape. ■

© 2010 Alan E. Sparks has lived and travelled extensively in Central and Eastern Europe, writing, teaching English, and working on wildlife research and ecotourism projects; he is the author of *Dreaming of Wolves: Adventures in the Carpathian Mountains of Transylvania*.





In late winter 2009, the hormone-driven howls of '06 rang through the valleys.

Wolf '06 of Lamar Canyon

Roy Laible



by LAURIE LYMAN

Yellowstone National Park is a paradise for wolf watchers like me, so after I retired from teaching, my husband and I bought a house just outside the park, close to the fabled Lamar Valley. We now spend most of our time there, and it's a rare day we're not out, no matter what the weather. Aided by our spotting scopes, we can step into the lives of wild wolves, getting to know specific wolves, their personalities and their relationships to other wolves.

The year 2010 may be remembered for many things, but for us avid wolf watchers, it was the year of the '06 female. A granddaughter of the legendary 21M and 42F of the famous Druid Peak pack, she was born to the Agate Creek pack in the spring of '06—thus her unofficial name.

A New Breeding Female

We first noticed the '06 female in the fall of 2008 as her natal pack broke up, leaving her to survive on her own or perhaps to find a mate. When the 2008 breeding season began, the surrounding valleys reverberated with her howls as she begged for attention. She definitely attracted the opposite sex, and we spent days watching the males fight over her. However, although we observed '06 with five different males, she didn't find a partner or produce any known pups.

In late winter of 2009, her hormone-driven howls rang again through the valleys, this time reaching the ears of wolf 755M, a black male spending time with five females from the legendary Druid Peak pack. Ravaged and weak from mange, these females chased '06

Roy Laible

off, but they couldn't persuade 755M to stay with them. She kept him in her sight, even bedding one time on the yellow line in the middle of the Lamar Valley Road so she could keep track of him and the females. The drama increased when 755M was joined by his brother, 754M. We observed '06 in close encounters with both, and the wolves became a threesome. Wolf '06 had won two males, her status as a breeder and her own territory in the Lamar Valley at last!

With the birth of four pups in late April 2010, the Lamar Canyon pack was officially established. Those of us lucky enough to watch this wolf family knew the coming summer would make any wolf biologist envious. Maturing into a strong leader, a mighty hunter and provider and the good mother of four rambunctious pups, '06 ran the outfit. Hardly a day passed without a memorable story. My close comrades and I invite you to share three '06 adventures from our daily field journals.

Bear Problems

*(May 9, 2010 —
pups 2 weeks old)*

About 9:30 a.m., another wolf watcher called me on his field radio saying a grizzly sow and two yearling cubs were in the den area—and '06 was attacking a cub! When the bear approached the den, '06 torpedoed out of the entrance, right into the cub. The bear and the wolf rolled head over heels down the hill. "'06 was fully extended and looked like she was flying," reported the observer, adding he had never seen anything like it. Mama bear hurried to defend her baby, gently licking it after its scare.

The wolf and all three bears moved to the area below the den, and for hours, the chase and standoff continued with '06 barking continuously in a high-pitched tone. Running back and forth, she lunged at the bears to get them to chase her. After leading them far to the left of the den, she suddenly

cocked her head, apparently hearing something above her. With her concentration off the bears, they took the opportunity to attempt escape, but their route went back toward the den. She was oblivious. She had found something she needed to roll in—probably bear scat! As she rolled, we watched the bears get ever closer to the den. When '06 realized she had taken her eye off the ball, she took off like a rocket.

Launching herself into the intruders again, she got them to follow her to a meadow well away from the den. But by now, the bears and wolf were exhausted. Mama bear tried to bed with her cubs, but to keep the bears moving, '06 started lunging and barking again. A few yards farther down, the bears relaxed a bit to enjoy some grazing, and '06 sat down to rest her weary body, content to watch them as long as they kept moving. Once satisfied they were leaving, she moved up the hill where she could see both the den and the bears.

*On May 9, 2010, a grizzly sow
and two yearling cubs inspected
the area of '06's den.*



As the bears disappeared from sight behind a forest, '06 jumped up and hustled down the hill into the trees. Soon she emerged and headed for the den as the bears continued east. Satisfied they were out of her hair, she took the long road home, checking every nook and cranny, searching and sniffing every rock.

For seven long hours, she had successfully defended her pups and worn out both the bears and her observers! It was time for us to go home and rest up for the next day—and the next adventure of the great '06 wolf.

A Remarkable Hunt (July 26, 2010 — pups 3 months old)

A slow start to the day changed suddenly as '06 (the “stealth wolf!”) came charging out of the trees, hot on the hooves of a cow elk and calf. Perhaps sensing wolves can't attack and tread water at the same time, the elk ran for deep water in the creek. But she underestimated '06's tactical skill! Getting between the cow and her calf, '06 feinted toward the calf, drawing the mother elk in closer to her. In a flash, '06 caught and killed the cow and then turned to the calf. Although the young

calf gave her more trouble than the cow, she soon got it, too.

Alone with a banquet that would last the pack several days, '06 rested before she opened the carcass and began her meal. The carcass was on the creek edge, so she had to stand in the water to eat. The ledge above the creek made her wary because she couldn't see over the top. Several times she climbed the bank to look around. Sure enough—a coyote! Seeing that wolf all alone made the coyote courageous, and it boldly approached. Chasing it off in a hurry, '06 headed back up the hill to the den.

She returned in a few minutes with no pups and what seemed to be a quizzical look on her face. Stomach bulging, she started caching food here and there, traveling to the trees east and west of the den, choosing her hiding places carefully. She disappeared along a rocky ledge, but at 7:30 p.m., she was back on the elk cow carcass, noticeably smaller now than it had been at noon! Still alone, '06 continued to work this whole meal by



A slow start to the day changed suddenly as '06 came charging out of the trees, hot on the hooves of a cow elk and calf.

herself. When we left at dark, she was still eating, but what remained of the carcass floated out of sight in back of a small knoll.

The calf carcass was on an island and most likely would not drift away. The wolf may have known that and left the remains there deliberately. We hoped the two adult males would come after dark and help her manage this meal. In the past week, '06 had made three kills on her own, and I reflected that those guys had better hurry and step up to the plate. I wished '06's father, the legendary 113M, had been around to see his girl hunt. I like to think he would have been so proud.



Roy Laible



With the birth of four pups in late April 2010, the Lamar Canyon pack was officially established.

Mother and Pups (August 2, 2010 — pups 3.5 months old)

At first light, the pups led '06 and the two males toward the creek. The adults intended to hunt, but the pups, old enough now to show independence, had different ideas and would not be left behind. So it was “yahoo and merrily through” the meadow below the den! As playful as her pups, '06 showed the youngsters their mother's strength and speed. Svelte, fit and muscular, she ran like a greyhound, twisting and turning. What a mom!

A bull elk grazing to the east saw the wolves and went on alert, raising his head to show off his six-point antlers. When '06 spotted the big guy, she went into a stalk with fewer than 200 yards (183 m) between them. Then the chase was on! Three of the pups went right along with their mom, thoroughly enjoying their first hunt. But after sizing the old boy up

and deciding he was too strong even for her, '06 broke off the chase.

Now it was “hidey-ho-and-away-we-go” back to the meadow flats with reckless abandon. The pups raced down to explore the fascinating creek. Water play was great, but falling off the cut bank was even better. The adult males, more serious about hunting, tried to get the pups back to the den, but mom didn't help! She kept romping with her babes until at last, four pooped puppies straggled up the hill and home. Finally the adults could start hunting.

The Saga Continues (October 3, 2010 — pups 5.5 months old)

It is 81 degrees today, but in the bitter cold of winter, I will look back with longing for these warm days. Day before yesterday, we spotted '06 eating

a bear cub! And speaking of other wildlife, the beautiful coyotes taking advantage of wolf kills get almost as much camera attention from visitors as the wolves. A copy of the book *I Am Somebody, Too* should be dedicated to the coyotes!

Frequently '06 crosses the public road without looking, paying no mind to cars and people, and I sometimes fear for her safety. She has filled our notebooks with thrilling wolf behavior—and she still does, almost every day! We have so much to look forward to in the months ahead. ■

Laurie Lyman, a former teacher, is a veteran Yellowstone wolf watcher. Her knowledge about the wolf packs and of the individual wolves of the northern tier of the park has made her a valuable assistant to Yellowstone wolf researcher and expert Rick McIntyre.



Tracking the Pack

Planning for Pups

by Lori Schmidt, wolf curator,
International Wolf Center

The International Wolf Center has chosen to rotate new pups through the Exhibit Pack every four years, and while the new set of pups is not scheduled to arrive until 2012, the planning for pups began in 2010.

The first management decision relates to the wolves we will acquire. Since 1989, the Center's management policy has been to manage spayed and neutered wolves, which requires we have an alternative source for pups. We have adopted this management strategy for two main reasons. First, it has been our experience spaying and neutering calms some of the inherent rank-order aggression characteristics of captive wolves. We empha-

size the word "calm" because as you know if you have been following the wolf logs and YouTube videos during fall 2010, spaying and neutering certainly does not eliminate dominance aggression.

Second, we have been managing multiple subspecies. The Center's Retired Pack contains arctic wolves (*Canis lupus arctos*) represented by Shadow and Malik. The Exhibit Pack contains great plains wolves (*Canis lupus nubilus*) represented by Grizzer and Maya and northwestern wolves (*Canis lupus occidentalis*) represented by Aidan and Denali. With multiple subspecies, our ambassador wolves rep-

resent wolves in the wild. Given the geographic distance between these subspecies in the wild, inter-subspecies breeding would not likely occur in the wild.

The number of wolf subspecies and the whole subspecies concept is very subjective. (See "The Scientific Classification of Wolves: *Canis lupus* *soupus*," this issue.) However, currently there are five recognized subspecies of gray wolf in North America: the three previously mentioned, which currently serve as ambassadors for the International Wolf Center, and two additional subspecies, the eastern timber wolf (*Canis lupus lycaon*) and the Mexican wolf (*Canis lupus baileyi*). The Mexican wolf is considered endangered, with approximately 200 individuals in

captivity serving as breeding stock for future release into the wild. The management of wolves used for release requires they not be handled by people so they retain a strong aversion to humans.

The management philosophy at the International Wolf Center has always been to socialize wolves to maximize natural behavior, allowing visitors to enhance their knowledge of wolves and making it easier for wolf care staff to provide ambassador wolves with veterinary care. The Center is currently researching captive facilities in North America for a representative eastern timber wolf, which if obtained would allow the Center to educate the public about four of the five subspecies in North America. If a facility is identified, a detailed analysis of the parents' veterinary records will be conducted to ensure the pups receive strong antibodies from their mother. If an eastern timber wolf is not identified, the plan is to search for a great plains wolf with a black phase.

The Center will also be selecting pup nannies for the 2012 litter. A prerequisite program is required unless people have previously participated in the nanny program. Check out the "Wolf Seminars" link under the "Programs" tab on the Center's Web site to learn more about the Planning for Pups seminars offered this summer. ■



International Wolf Center

The Center has managed three subspecies since 2008. In this photo, Maya represents the great plains subspecies, Malik represents the arctic subspecies and Aidan represents the northwestern subspecies. Could there be four subspecies represented in 2012?



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Wolf Tracks

On a Learning Adventure in Denali National Park

by Jess Edberg, information services director,
International Wolf Center

Visiting Denali National Park last September was an experience of the senses. The visual beauty of the region coupled with being immersed in the daily ecological lessons we experienced urged us to shed the trappings of modern society—to unplug from technology and recharge with nature.

Most of the 400,000 annual visitors to Denali spend their time in what is referred to as the “front country,” the first 15 miles (24 km) of the park’s road (called Park Road). This area provides services to guests such as a visitor center, gift shop, interpretive

displays and some of the only maintained trails systems in the park.

After mile 15, travel by road is restricted to park-contracted buses. This often prevents visitors with limited time from leaving the main entrance area. However, if you have the time and resources, a trip outside the front country is highly recommended.

Denali National Park has one road extending 92 miles (148 km) to the remote seasonal village of Kantishna, established in 1905 as a gold-mining camp. The road winds its way through the northeastern portion of the park leaving the rest of its roughly six million acres (over two million hectares) roadless: a true wilderness.

Park Road is paved until mile 15 where a vehicle turn-around is available. This is the end of the road for the casual visitor. Beyond Savage River, the public is allowed to travel into the

heart of the park only by authorized park buses. From here is where our trip into true wilderness began.

Imagine starting your Adventure Learning Vacation with us in the boreal forest of spruce, birch and aspen creating a canopy of gold and green above you. The spruce trees seem to shrink and a bull moose wanders the transitioning landscape grunting in hopes a receptive female will respond and join his harem. Within a few short miles, the boreal forest quickly transitions to treeless, arctic tundra. Migrating birds fill the sky with sound, motion and color. A crisp, earthy scent is in the air.

As the tundra takes over, grizzlies gorge on end-of-season blueberries, soapberries and crowberries, preparing for the long sleep. At the next rest stop, you taste for yourself the fruits of the wilderness from shrubs bordering the scenic view.

A Persian tapestry spreads out as far as the eye can see. It is woven with gold, red and purple leaves from hardy tundra vegetation. Complementing the bright colors are muted grays, oranges and greens from the myriad mosses and lichens. Accentuating the rolling topography are tendrils of a silty glacial stream, braiding its way through the



Jess Edberg

tapestry on a long journey to some larger body of water. Then in the background at 20,320 feet, Denali rises up, white and tall as if a giant asleep under a beautiful fabric of tundra had awoken.

It is amazing the foothills and valleys we traveled through can hide such a prominent feature as Denali, or "The Mountain" as some call it. Part of the 600-mile-long (966 km) Alaska Range, Denali is the highest point in North America.

Uniquely adapted to the snow-capped mountains and hills—and the reason the park was created in 1917—Dall sheep graze on lichens as they nimbly navigate the high ledges and granite cliffs. They are the only white mountain sheep in the world.

Fall has beckoned Denali's inhabitants to prepare for the long, bitterly cold winter. Caribou migrate to their winter ranges deep in the park as the wolf, ever a nomad, follows.

Denali is one of the world's best places to see wolves. The wide, open expanse of tundra allows an unobstructed view with or without the aid of a spotting scope. In some cases, the wolves come to you.

"Two wolves ran along the road, right toward our bus and passed us," noted a recent visitor to the park. "As the first wolf ran by, he looked up at me, and for the first time I could see what a truly wild, dangerous, beautiful animal he was—just from his eyes. That the wild, dangerous, beautiful world remains here unchanged is food for the soul, and that is what Denali means to me."

This visitor's statement encapsulates the effect Denali has on its human guests. There are few places like this left in the world, where true wilderness exists regardless of the presence of humans.

It is an amazing experience to visit a place like Denali National Park, let alone guide others in their own exploration. Cultivating an interest in these wild places where wolves live helps the Center fulfill its mission to promote wolf survival. As an educator and guide for the Center's Adventure Learning Vacations, I am honored to be able to share such life-changing experiences with participants.

When will you experience—see, smell, hear, taste and feel—true wilderness?

Could it be on our August Isle Royale National Park backpacking expedition; immersed in wolf and moose ecology, backcountry navigation and camping? Or will it be on a trip to Yellowstone National Park, which not only offers the sensory experience of being in a wild place but also the familiar amenities of home?

The choice is yours. To find out more about the Center's Adventure Learning Vacations, visit www.wolves.org. ■

Norm Bishop



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Book Review

The World of Wolves: New Perspectives on Ecology, Behaviour and Management

M. Musiani, L. Boitani, and P. C. Paquet (eds.)

by L. David Mech

Wolf populations have proliferated in several areas and so have wolf books. The latest book is a good one. This compendium, *The World of Wolves*, covers a variety of fast-moving and controversial areas such as canid genetics, effects of wolves on ecosystems, climate change, hunting of wolves by snowmobile and non-lethal methods of minimizing livestock depredation. A great deal of new and interesting information resides in this book, far more than this review can cover. Several of the article authors are well experienced in their specialties: Luigi Boitani, Robert Wayne, Doug Smith, Rolf Peterson, Paul Paquet, Dean Cluff, and Olof Liberg along with numerous associates. The material reflects that.

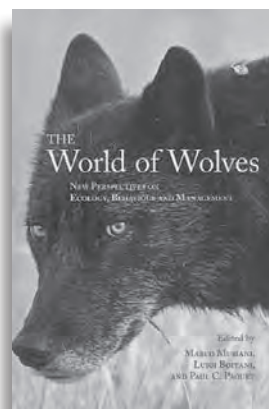
The editors' own words nicely portray the mission and scope of this book:

"Wolves' future will depend largely upon decisions made by people that in turn are based upon attitudes and emotions, in addition to ecological findings. Our mission with this book is to contribute to the examination of the human/wolf interface. We wish to evaluate the biological issues with the intent of providing counsel on how to ease conflict and promote the coexistence of wolves and humans."

"This book uses research sample cases from Eurasia and North America to explain the key role played by wolves in community ecology of natural ecosystems and of systems where domestic animals and people are also present. It also analyzes the pivotal role always played by wolves in wildlife management and conservation biology programs, due

both to the species' ecological relevance and to passionate human attitudes and conflicts with wolves."


The book is replete with figures, maps, tables, very attractive pencil drawings (by Susan Shimeld) and 32 pages of striking colored photos: wolves fighting, feeding and fending off grizzly bears; wolves chasing elk and closing in on bison; wolves scattering ravens; and wolves just looking charismatic in their scenic environments. The book also has an adequate index. No index is perfect, and neither is this volume's, but at least the book includes one.



The material this work covers should be of interest to all serious students of wolf ecology, behavior, conservation and management.

Although some of the reading might be beyond most lay people, enough of this book's content is suitable for the general reader that I can recommend it. ■

L. David Mech is a senior research scientist for the U.S. Geological Survey and founder and vice chair of the International Wolf Center. He has studied wolves for 50 years and published several books and many articles on them. He is also a member of the International Wolf Advisory Committee.



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with great surprise I realized what
I was looking at; six sets of
eyes were staring back at me from
100 feet away. And then, there was
a muffled half-bark followed by
a deep, smooth, heavy sound rising
in the air. None of the other

Personal Encounter

Keeping Wolves and Visitors Safe in Yellowstone

by Nathan Varley

Shortly after we passed a wide bend in the Gibbon River, I saw cars lining the sides of the road. I pulled the bus off and announced, "This is it—what we have been waiting for." About 45 minutes earlier, a happy visitor mentioned an elk had been taken down by wolves after a standoff in the river. The bus loading went rather quickly after what had been a slow and quiet September morning with occasional distant glimpses of wolf pups wandering in tall grass. I wondered what would, if anything, come of this visitor's tip. The number of cars meant some attraction remained, and the gamble to build up expectations during the long drive over the Central Plateau of Yellowstone might just pay off. We hastened down a long row of tall lodgepole pines shielding the river.



Jim Peaco/NPS

The information had seemed good. The fellow said wolves had chased a bull elk to the river, and after some battle, succeeded in taking it down. They were feeding when he left. He had seen three: a black, a white and a gray. This color combination had to be the Canyon Pack—the very pack whose pups we were watching 30-some miles (48 km) away. I was hoping the

gray male and possibly the white breeding female would still be feeding. My experience with the Canyons led me to expect the black, the breeding male 712M, to be gone. He was oddly timid and shied away from humans, while the other two were among very few wolves in the park to actually tolerate people nearby. The gray was bold, except in matters with 712M, where he is decidedly the subordinate.

We pierced a wall of people who stood silently in awe of the spectacle

before them. A beautiful gray wolf stood shoulder deep in moderately flowing water. An enormous antler arched over his head with the graceful tines facing upstream. His chin alternated drops of water and blood. Camera shutters tittered with each flex of his muscles, each ripple of tall guard hairs flowing down his back, aloft and stubbornly dry above the current. His gold eyes gleamed against the sparkle of sunlight from the surface of the river.

"Which wolf is this?" someone asked. I whispered he has no name or number. He's just the adult gray male of the Canyon Pack. She looked perplexed, like no wolf of this stature could be so generically described. I shrugged and recalled some folks I

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knew had nicknamed him “Big Sexy,” but I didn’t mention it.

The wolf tugged at flesh on the side of the bull and occasionally looked around. As expected, he did not seem to mind the onlookers. The white female was gone. Holes along the haunches might have indicated she had eaten, but we were too late to see her. Deep in the spruce beyond the river, I imagined the black hiding in the shadows of the forest, waiting for darkness to eat while his packmate fed to the delight of many in the full sun and easy flow of the river.

At that moment the gray wolf burst from the water. Droplets fell around him as he bounded to the far side, onto the grassy bank, and away. A clap from the trees along the nearside preceded several rangers wading in. The boldest wolf I have ever seen was just scared away by a loud clap. The show was over. The rangers looped a rope around the antlers and a winch tugged the carcass to shore, over logs, to the edge of the road. It would be moved to a safer place for the wolves to feed. With thousands of traveling visitors, the park roads become hazardous thor-

oughfares because of attractions like this. We had watched only 10 or 12 minutes, but it was a sight nobody would forget.

Where the rangers took the carcass I did not know. It would be nearby I was told as the bull was winched up the ramp into the back of a pickup. Rangers have their hidden places for such things, places only they and wolves know about. Despite interrupting the feed, the new carcass placement will ensure a full and thorough scavenging ecology with no risk to the animals or people. These Canyon wolves have experienced this before, and would know where to look. The whereabouts of certain carcass dumpsites is a valuable bit of information for a wolf living in a wilderness bisected with roads. Unfortunate collisions with automobiles may mean a bison, moose, or other easy meal may appear at these sites, in addition to their own relocated kills.

As we loaded back into the bus, I pictured the wolves following their noses toward the bull. I thought it would be just after dark when the cool, damp air carried scent for miles through the forest. The white finds it first, I thought, leading out in front as is common for her. The gray follows and resumes rending flesh from the abdomen where he had left off before bounding out of the river. Lastly, the black amorously slips out of the darkness to a place along the hind end where some of the most readily available muscles lie, and the three commence to swallowing the meat of their kill. ■

Son of park rangers, Nathan Varley, Ph.D., is a wildlife biologist who grew up in Yellowstone Park. With his wife Linda, he operates The Wild Side, LLC, a wolf-watching adventure company, described at www.wolftracker.com. Nathan’s continuing adventures are chronicled at www.yellowstonereports.com.



A beautiful gray wolf stood shoulder deep in moderately flowing water. An enormous antler arched over his head with the graceful tines facing upstream.

Dave Holland

A Look Beyond

Boreal Breakthrough

Conservation Groups and Logging Companies Agree to New Protections on 178 Million Acres

by Matt Jenkins

Editor's Note: This article was reprinted from Nature Conservancy Magazine, Autumn 2010, with permission. "The boreal" is slang for "the boreal forest."

Canada's [b]oreal—a vast, 1.4 billion-acre swath of spruce, pine and aspen—extends from Canadian prairies north to the edge of the Arctic Circle. The forest is home to woodland caribou and wolverines, and about a third of it is covered by wetlands that provide crucial habitat for migratory waterfowl. It is also a huge source of timber and pulpwood for global markets: Hundreds of millions of acres of the Canadian boreal are leased to logging companies, which use the trees to make everything from lumber to tissues.

Efforts to protect the boreal got a huge boost in May, however, when The Nature Conservancy and eight other environmental organizations—including Greenpeace and Forest Ethics—signed a conservation agreement with a group of Canada's largest logging companies, including Weyerhaeuser and Abitibi Bowater. The deal calls for a three-year moratorium on logging and road building in more than 70 million acres of prime caribou habitat and for the development of a long-term strategy to balance timber harvest and environmental protection throughout the boreal.

The 178 million acres covered by the agreement—an area larger than Texas—spans the continent from Newfoundland to British Columbia. "It's a huge piece of geography," says Conservancy forest ecologist Ronnie Drever.

Ultimately, the land will be managed under a spectrum of levels of protection: Some lands will be completely off-limits to logging; other areas will be sustainably logged.

The Conservancy has been working with several of Canada's First Nation indigenous groups to help create a network of protected areas in the Northwest Territories. The new agreement will allow for expanded cooperation with First Nations—whose members live in some 600 towns and villages across the boreal—in deter-

mining how to manage forestlands into the future.

The Conservancy will bring its scientific expertise to the process of identifying which areas of the boreal are most ecologically sensitive and in need of protection, as well as crafting a boreal-wide blueprint for sustainable forest management. "Science is going to be critical to the implementation of this agreement," says Drever. "It's what is going to hold us accountable to the promises and commitments that we're making today."

The Conservancy has helped broker several data-sharing agreements that will lead to the consolidation of scientific information from both logging companies and environmental organizations to create a database that can be used for conservation planning throughout the boreal.

One big focus of the planning effort is an attempt to encourage forest practices that will help in the fight to slow climate change: Scientists estimate that boreal forests are the second-largest pool of stored carbon on the planet after the oceans, and that they hold 11 percent of the global carbon. ■



A new conservation agreement in Canada has suspended logging in an area of forest larger than Texas. The deal will protect habitat for wolves, endangered woodland caribou and other species.

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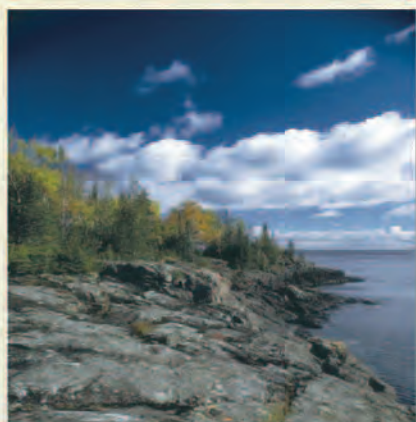
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