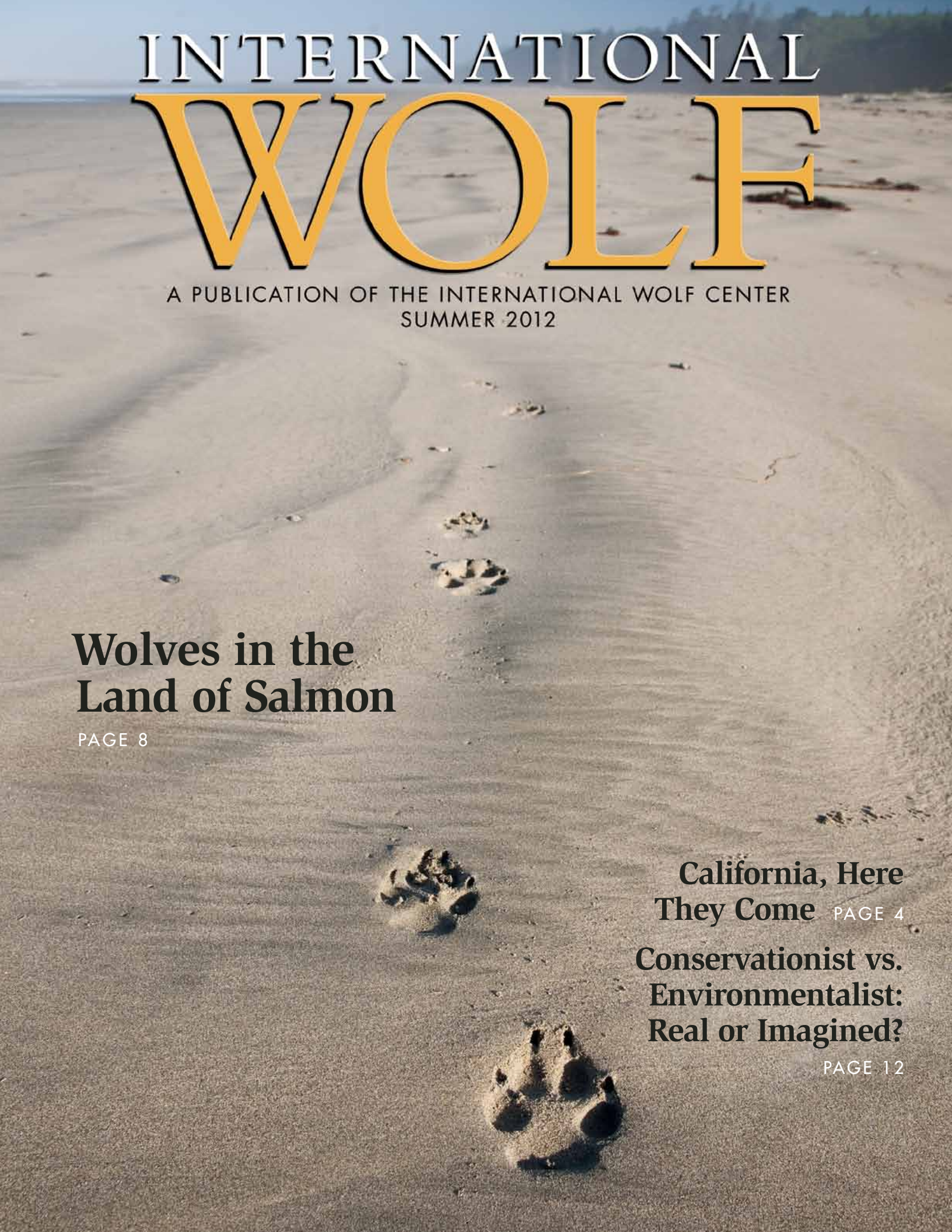

INTERNATIONAL WOLF

A PUBLICATION OF THE INTERNATIONAL WOLF CENTER
SUMMER 2012

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VOLUME 22, NO. 2 SUMMER 2012

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Tracy O'Connell

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David Moskowitz

Conservationist vs. Environmentalist: Real or Imagined?

Understanding what conservation and environmentalism mean in our social contexts and possibly working to change common perceptions of these terms are important for sustaining viable wolf populations.

Jerritt Johnston

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On the Cover

Photo by David Moskowitz

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Scat Award Created to Honor the Worst in Wolf Portrayal

The International Wolf Center created the Scat Award to call attention to the books, movies, advertisements and other promotional media that portray wolves in the most inaccurate, ridiculous and damaging light. Our intention is not to ridicule creative endeavors but to use these highly public opportunities as teachable moments to counter damaging myths and misinformation. Oh, and we might just have a little fun while we're doing it. So far, nominees for the 2012 Scat Awards include *The Grey* and popular author Jodi Picoult's new book *Lone Wolf*. For more on the Scat Awards go to www.wolf.org and click on the media tab. For podcast interviews with wolf experts regarding these nominees, go to www.wolf.org and click on podcasts. ■

From the Chair of the Board of Directors

A Founding Staff Member Disperses

A chorus of howls can be heard from the International Wolf Center's Board of Directors these days. The pack is both unsettled and congratulatory at the news that Executive Director Mary Ortiz is retiring after 25 years with our pack. It's been a privilege for our board members to work with Mary since she began as a volunteer in 1987 and a year later became a part-time employee at the organization's first office—a desk in the corner of her bedroom.

Nancy jo Tubbs

Mary founded the Center's departments, one after another, creating education programs, setting the first budgets, then establishing finance, membership, development, magazine, communications and retail functions. She has served many years as a member of the administrative staff and as executive director since late 2008.

Board members poured out their appreciation of Mary in notes recently. "I think the thing we will miss about Mary is the passion she brought for our mission," wrote one. "She successfully navigated the organization through one of the worst economic conditions since before the Center's existence."

Others wrote, "Mary has been the mainstay of the Center throughout its existence." And, "What always stands out to me is her obvious devotion to 'the wolf.' She seems to see the big picture." Another wrote, "When I think of Mary, I think loyal, trustworthy, dedicated, committed and most of all leadership." Others called Mary "the heart and soul of the Center," and said, "While we all understand and support her desire to retire at this juncture in her life, her presence will be sorely missed in the day-to-day workings of the Center."

Mary's friend, board member and former Chair Nancy Gibson summed up all our feelings this way: "Teamwork, or in our case pack work, was essential in the founding years of the International Wolf Center. We endured the challenges of survival by meeting budgets, creating programs and responding to the wolf's changing status. Now one of our packmates is dispersing into retirement. Mary has been a force behind much of the Center's success, and she leaves us with a strong foundation for the future. However, that doesn't erase the void in my heart when I know that her enthusiastic smile and upbeat attitude won't be part of the daily landscape of our work."

I join in this chorus of thanks with a smile. Mary accompanied us along this path, where we helped spark the wolf's recovery and bonded through the tough times; where we raised wolf pups and watched them grow into adult ambassadors; when the Center prospered in members, experience and wisdom; and where we laughed in celebration. Together, we did well. Mary has been a bright star. And we know that, in her, we will always have a friend. ■

Nancy jo Tubbs

Nancy jo Tubbs, Board Chair

Educational services and informational resources are available at:

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This November 14, 2011, photo from a hunter's trail camera appears to show OR-7, the young male wolf that wandered more than 750 miles (1,207 kilometers) across Oregon and California looking for a mate and new home. The Oregon Department of Fish and Wildlife reported GPS tracking collar data showed OR-7 crossed the border back into Oregon Thursday, March 1, 2012, returned to California March 31 and was last shown in northeastern Siskiyou County.

AP/Mail Tribune, Allen Daniels

CALIFORNIA, HERE THEY COME

Plans shape up to deal with wolves in the Golden State

EDITOR'S NOTE:

At press time, a lone wolf, after wandering into northern California for two months and then returning to Oregon, has once again returned to California. The media widely reported his visits, and California is making efforts to prepare should he return and bring friends. This article addresses what goes into this preparation, as well as what the expectation is that wolves will once again establish a permanent presence in California.

by TRACY O'CONNELL

In the waning days of 2011, a solitary wolf made history in the western United States by setting his paw in California. The media had been tracking this 2-year-old male, designated OR-7, for months in stories that spread around the world. He left his natal pack, named for its base near Imnaha, in eastern Oregon. The Imnaha pack later became the subject of controversy for its sizable toll on area livestock and the efforts put forth and then extinguished to destroy some of the pack including his sire, OR-4.

OR-7 was a media darling long before he was California bound. His GPS unit, attached in February 2011, showed his various travels including his route across the Cascade Mountains, a first for an Oregon wolf. Wolves have lived in Oregon since 1999 after dispersing there from Idaho. At press time, OR-7 had traveled more than 750 miles, (1,207 kilometers) including twists and turns.

"Without a mate, OR-7's ramblings will be for naught unless he returns to Oregon to establish a pack."

It is unlikely, were OR-7 a human authoring a blog, he would have gained a larger following. Under the headline "Revealed: Amazing journey of the amorous wolf," Britain's *Daily Mail* tabloid ran an embellished account of his travels, presumably in search of a mate. The conservation group Oregon Wild, deciding that OR-7 needed a more endearing name, launched a contest that drew several hundred suggestions from children as far away as Nigeria and Taiwan. The winner: Journey.

Twitter accounts posted messages from the wolf's point of view, notations such as: "Why is everyone so interested in my love life?" and "Left family, seeking a wife, eHarmony wasn't working."

Meanwhile, California, the most populous state in the United States, had been readying for the day when OR-7 or a compatriot crossed the northern border. Mark Stopher, senior policy advisor for the state's Department of Fish and Game, has been working on a wolf management plan for the past two years. "I hunt every year in Idaho, and started seeing wolf tracks in the snow," he noted, adding it was a "pretty cool" experience. "We started asking ourselves, 'What do we want to know? What questions do we need to answer?' "

Talking to counterparts in Oregon, Stopher was advised that wolves were a controversial issue and to plan ahead. Oregon's wolf management plan, posted on its state Department of Fish and Wildlife Web site, was crafted in 2005 and updated in 2010. It noted that beginning in 1999, with the arrival of the first Idaho wolves, local governments in northeastern Oregon responded with a "wolf summit," bringing together parties of interest.

Several counties initially called for wolves to be returned to Idaho. Resolutions were passed calling for consultation with local officials before wolves would be permitted to remain in their jurisdiction. In 2002, a series of four workshops allowed the Oregon Fish and Wildlife Commission to examine wolf issues, drawing upon nearly 30 speakers addressing political, social, economic and biological aspects of wolf management.

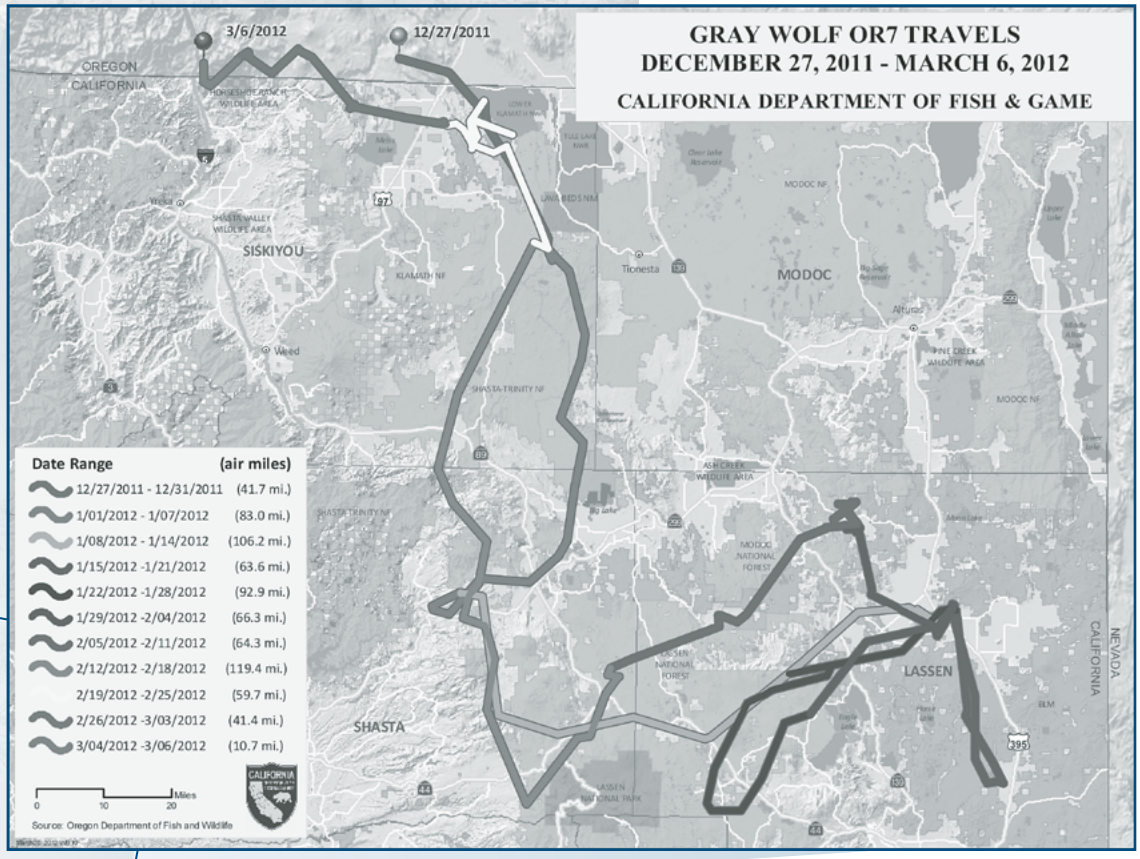
The experts predicted wolves would continue to disperse into Oregon and establish a permanent population. It was clear wolves would be as controversial in Oregon as in other states, and concern for the safety of livestock, big game herds, pets and humans were on the minds of those in attendance and at town hall meetings that followed, drawing thousands of comments and questions.

As he gathers information and looks to consult with others interested in the arrival of the wolf, Stopher also spends a lot of time on the phone as the department's point man for the media on the subject. Predictably, while the media salutes the return of this predator after nearly 80 years, not everyone shares the enthusiasm.

"We would like to put up a big shield to keep him out…If there were no regulations, my family would shoot him on sight," Jack Hanson, treasurer of the state cattlemen's association, was quoted as saying about OR-7 in the *SFGate,* the online *San Francisco Chronicle.*

"People will think it's great, and they'll go out and try to listen to them. Then they'll get back in their Volvos and drive back to their condominiums and leave us to deal with it," said Dan Gallardo, third-generation cattle rancher in Yolo County's Capay Valley, according to the *Sacramento Bee.*

California is the nation's third-largest producer of livestock, with more than 5.1 million head of cattle. According to the California Department of



"Looking back to the time when wolves formerly roamed the Golden State (the last one was reportedly killed near Lassen around 1920), Stopher believes the canids were widespread but never abundant, perhaps 'in the hundreds' statewide."

Food and Agriculture, the industry generated about $9.8 billion in 2010.

"It's unfair to ask people to live with this dangerous predator," Siskiyou County Supervisor Marcia Armstrong told the *Sacramento Bee*. "It's romantic, maybe, for urban people. But this affects our quality of life. It affects when we go out to get mail from the mailbox: Do we have to carry a gun?"

Letting wolves back in the Golden State would be a "catastrophic mistake," said Jeff Fowle, whose family has lost sheep, a mare and calves to the region's mountain lions, coyotes and bears. "This is just one more predator that we're going to be unable to control," he told the *Montreal Gazette*. "It's one thing that we're incurring an economic loss. But to watch a mountain lion or a coyote or a wolf make a kill...It's a torturous, cruel kill."

Stopher told the *New York Times* in an interview published January 27, "California has more people with more opinions than other states. We have

people calling, saying we should find him a girlfriend as soon as possible and let them settle down. Some people say we should clear humans out of parts of the state and make a wolf sanctuary."

Darrell Wood, 56, a sixth generation cattle rancher, was quoted as saying in the *Times* article, "I'm afraid somebody will step up and take this wolf's life in their own hands. There are huge state and federal penalties for killing a wolf." He also said he hoped no member of his family would do it.

Stopher noted that in the future a depredation compensation plan might be warranted as exists in many other places, but he doesn't see that being needed yet. Without a mate, OR-7's ramblings will be for naught unless he returns to Oregon to establish a pack. Plus, Stopher is quick to put in perspective the negligible impact of wolves on livestock where pack numbers do exist: The number of confirmed livestock deaths due to wolf predation is small compared to other causes of death.

Besides, Stopher doesn't think wolves will get a stronghold in California to the extent they have in other areas. "We have a lot of people and a lot of roads," he noted, adding that many wolves that disperse from a pack die before establishing themselves with a mate. Without a female to the south, the young male is not going to be able to establish a pack unless he returns to Oregon. If he goes east to Nevada, there are no wolves there; the Idaho wolves haven't migrated south of the mountains, keeping them a long way from Nevada's northern border, so far as anyone knows.

Nonetheless, his agency is responding. A Web site has been launched, which describes wolves and tracks OR-7's travels with a map and almost-daily updates (http://www.dfg.ca.gov/wildlife/nongame/wolf/). There are fact sheets to help people identify wolves from coyotes, a section on living with wolves and answers to frequently asked questions. A 36-page report released in December summarizes research and addresses legal and management implications of wolves. State biologists are receiving training on recognizing wolf kills and public meetings have begun with government officials in California's northern counties.

Dan Newcomb

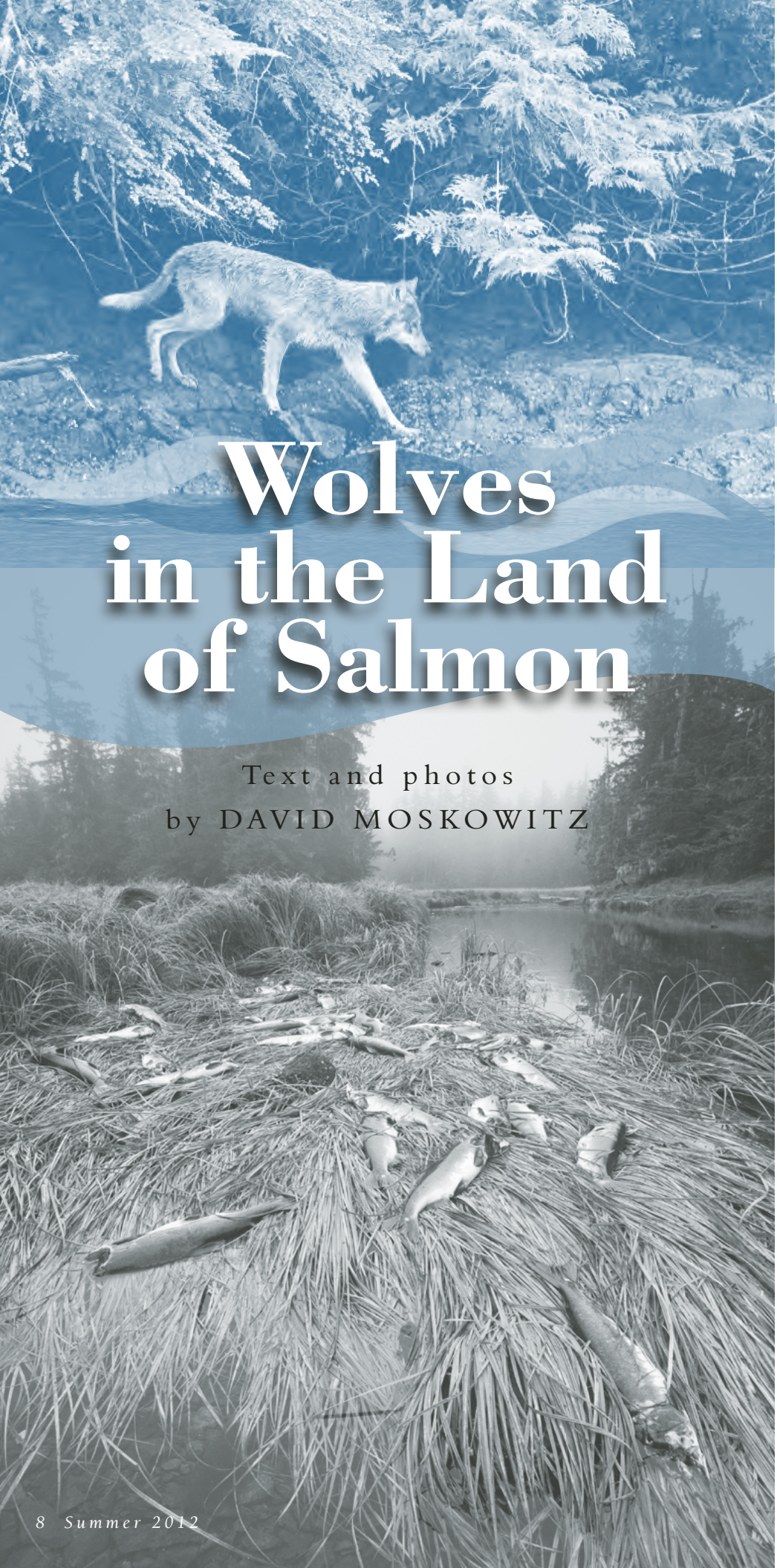
iStockphoto.com/Patrick Hufter

Looking back to the time when wolves formerly roamed the Golden State (the last one was reportedly killed near Lassen around 1920), Stopher believes the canids were widespread but never abundant, perhaps "in the hundreds" statewide. As is often the case with historical accounts, he believes many claims of wolf sightings were actually of coyotes.

Deer were not as prevalent in the state between 1800 and 1850 as they are today, which is another reason for limited wolf numbers during the earlier era. Would an increased population of deer be a draw for wolves today?

Meanwhile, many wait and watch as OR-7 picks his way, wondering where it will lead him. ■

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



Wolves in the Land of Salmon

Text and photos
by DAVID MOSKOWITZ

Editor's note: The following article is an excerpt from David Moskowitz's upcoming book about wolves in the Pacific Northwest, to be published in 2013 by Timber Press, Portland, Oregon.

The vast and inaccessible lands of British Columbia's central coast are home to the largest tracts of intact rainforest in the Pacific Northwest. Although threats to the area's ecological integrity continue to loom over this landscape, regional and global efforts at protection made great headway starting in the 1990s when conservation groups coined the name Great Bear Rainforest as part of their campaign to draw attention to the value and plight of the region. Among the most effective and innovative regional conservation organizations here has been Raincoast Conservation Foundation. Its research has shown that the story of wolves in the Great Bear is also, in large part, a story about salmon.

Doug Brown was the field station manager for Raincoast when I flew to Bella Bella, British Columbia, to visit the area in the fall of 2011. As striking and beautiful as this landscape is from the air, to really appreciate the Great Bear Rainforest you need to travel on water. On this particular day Doug landed the boat as quietly as possible along the shore, around a bend from the stream we had been monitoring for a couple of weeks. It was not fully light yet, and we were hoping to get to the edge of a meadow a little way upstream from the creek's mouth before the ravens that had been lingering in the area woke up and drew attention to our approach.

As Doug anchored the boat, I picked my way upstream slowly, scanning for salmon in the dim light. The tide was out, and the low water in the stream had left dozens of pink salmon splashing their way forward, in many places less than half submerged in the shallow water. Ahead I could see the silver shapes of salmon lying in the grass along the bank of the stream,

several dozen of them. As I approached, the distinctive signature of their slayer became clear: wolves. Each fish was either completely headless, or just the braincase had been carefully removed from the carcass. There was one large male pink salmon on the bank whose head was entirely intact. Odd, I thought, though in the frenzy of splashing fish and hunting companions I could imagine a wolf dropping the fish and heading back for another without consuming it. But then something happened that changed my opinion about why this fish still had its head. It flopped.

Doug approached behind me and surveyed the scene. We quickly moved toward the forest edge, one of us on either side of the stream to conceal ourselves and wait to see if the wolves might return.

This was not the first location where we had found signs of wolves feeding on salmon during the two weeks that I had been visiting. Several of the salmon-bearing streams we monitored had evidence of wolves visiting close to where the streams empty into salt water. Raincoast researchers had been monitoring these streams for a number of years, and some of the observations and data that led to the first extensive scientific exploration of the role of salmon in the diets of coastal wolves had occurred on these streams.

Chris Darimont, researcher and science director for Raincoast Conservation Foundation and the lead author of reports on the ecological role and conservation of wolves in the rainforest, has illuminated a very different picture of the life histories of wolves than has been described in other parts of North America. He and his field crews diligently observed the fishing methods of wolves in the Great Bear Rainforest, measured the importance of fish in wolves' diets, and looked at how this unusual food source influenced the carnivores' ecological relationships with other prey species. They discovered that salmon comprise 2 to 16 percent of the diet of wolves in the area but can make up a much higher percentage than this during the peak of the fall salmon runs when they can be the primary item in the diet.

Wolves select shallow streams where they can wade into the water easily. They generally face upstream, into the current, which allows them to approach upstream-swimming salmon from behind and carries the wolves' scent downstream and away from their quarry. They use both visual and auditory clues to find and home in on salmon swimming upstream. Once a salmon is located, wolves plunge their muzzles into the water to capture the fish with their teeth, then bring it to shore for consumption. In conditions where streams are very low, salmon are particularly vulnerable, and in these circumstances Doug Brown reported that wolves might approach from any direction. Only the head is

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For an article on how wolves in Brook Falls, Alaska, feed on salmon with amazing efficiency, check out the Spring 2009 issue of *International Wolf* at www.wolf.org.

typically consumed, though occasionally more of the carcass may be eaten if a wolf is scavenging along the shore rather than actually fishing or when salmon are scarce, such as at the beginning or end of a run.

Salmon provide several benefits for wolves. Foraging for salmon is far safer than attempting to subdue ungulates that can severely injure or kill wolves with their hooves. Because of the consolidated and predictable location of salmon, search time and energy devoted to finding food are also greatly reduced in comparison to searching for deer in the forest.

For wolves there is one potentially fatal drawback to feeding on salmon, however. Salmon host a parasite that canines (including domestic dogs) can contract from eating the fish. Doing so is usually fatal for canines if untreated. *Neorickettsia helminthoeca* is a bacteria-like organism that has a complex life cycle that includes passage through an intestinal fluke *(Nanophyetus salmincola)*, an aquatic snail (*Oxytrema* species), various species of salmonids, and salmon-eating mammals including wolves. Snails, infected with the fluke, are consumed by salmon and trout. In the fish the fluke is benign, found most abundantly in the muscle tissue and kidneys of the fish. When the fish is consumed by a mammal, the larvae embed in the intestinal tract and the bacteria are released, causing symptoms including persistent diarrhea and vomiting. Cysts of the infected flukes are expelled in the feces of the infected mammal. Foraging snails pick up these cysts and the life cycle begins again.

By only consuming the head of salmon, wolves reduce chance of exposure to this parasite, as the head is less likely to be infected than the rest of the fish. The brain is also a highly nutritious portion of the fish, so that in the

presence of such an abundance of food, wolves may be eating only the preferred portion of the fish. Bears may also occasionally select the head of salmon, but they typically consume the eggs and portions of the body as well. Systematic documentation of wolves eating salmon is recent, but the first regional documentation dates back to the late 1800s when a die-off of wolves in the Oregon Coast range was suggested to be a result of "salmon poisoning," perhaps infection with the parasite *N. helminthoeca*.

Research has documented salmon in the diets of both interior wolves and coastal wolves in southeast Alaska. Salmon was a larger part of the diet of coastal wolves, however. Historically, as in southeast Alaska, salmon were ubiquitous and abundant across the Pacific Northwest, including hundreds of miles inland along the entire Columbia River and Snake River watersheds. The range of salmon in the Columbia Basin has been greatly reduced, and the abundance of salmon in remaining stocks is much lower than it was in the past. It is likely that wolves across the region once made use of this valuable food resource, much as they do in areas where both wolves and salmon continue to coexist. ■

David Moskowitz, a professional wildlife tracker, photographer and outdoor educator, has been studying wildlife and tracking in the Pacific Northwest since 1995. He has contributed his technical expertise to a wide variety of wildlife studies regionally and in the Canadian and U.S. Rocky Mountains, focusing on using tracking and other noninvasive methods to study wildlife ecology and promote conservation. He helped establish the Cascade Citizen Wildlife Monitoring Project, a citizen science effort to search for and monitor rare and sensitive wildlife in the Cascades and other Northwest wildlands.

Land of Myth and Mystery

by Cornelia Hutt

Along the central and north coast of British Columbia is the largest intact temperate rain forest remaining on Earth. In this marine-dominated environment lives a distinctive and fascinating population of gray wolves. Adapted to a unique ecosystem where the land and sea are intertwined, these wolves inhabit both the mountainous mainland as well as a network of dozens of offshore islands. To access the islands and islets included in their territories, the wolves may swim as far as 8 miles (13 kilometers) in frigid, turbulent ocean water, crisscrossed with currents and tidal flows.

Like their kin everywhere in the Northern Hemisphere, the wolves of this chilly, fogbound archipelago depend for food on wild ungulates such as deer and moose. But in the remote coastal rain forests, the ocean's bounty provides a major dietary portion—clams, crabs, beached whales and seals, and in the fall, salmon.

One of the largest pristine areas on the central coast is called the Great Bear Rainforest. A principal organization working to prevent this ecological treasure from commercial exploitation and degradation is the Raincoast Conservation Foundation. But large-scale logging, fish farming and oil and gas exploration threaten the region (see also "Wolves, Caribou Lose Ground in Canadian Tar Sands," page 17) despite the advocacy of those who work to conserve these ancient forests as well as the ocean and the wildlife that have nourished them for millennia.

Suggested resources for further learning and information include:

Web sites:

Raincoast Conservation Foundation: www.raincoast.org

Pacific Wild: www.pacificwild.org

Interview with Ian McAllister: http://newswatch.nationalgeographic.com/2011/08/08/living-with-spirit-bears-great-bear-rainforest/

Books:

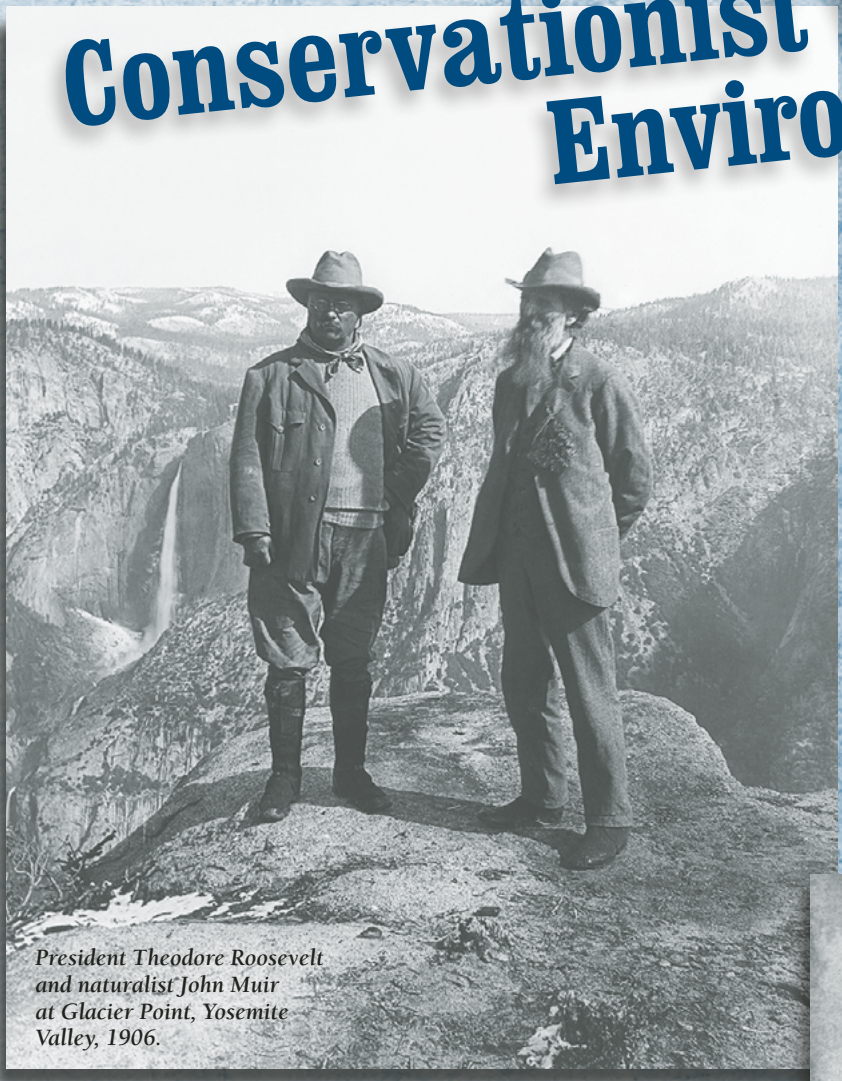
The Last Wild Wolves: Ghosts of the Rain Forest, by Ian McAllister with introduction by Paul C. Paquet and contributions by Chris Darimont, University of California Press, Berkeley, 2007.

The Golden Spruce, by John Vaillant, W.W Norton & Company, New York, 2005.

Article:

"Living with Spirit Bears: Great Bear Rainforest," *National Geographic*, August 2011.

Conservationist vs. Environmentalist:



President Theodore Roosevelt and naturalist John Muir at Glacier Point, Yosemite Valley, 1906.

Real or Imagined?

by JERRITT JOHNSTON,
director of education, International Wolf Center

Are you an environmentalist? Are you a conservationist? Is there a difference? If there is, what does it matter for the long-term survival of wolves?

First, why is this topic important for wolves? As wolves enter a new stage in their history in the United States, the work of ensuring their long-term survival might look different from the work of the last three decades. Fighting for protection of the animals, their reintroduction and social acceptance as they spread throughout some of their historical range might require a very different approach than stabilizing habitat or ensuring sufficient prey. Understanding what conservation and environmentalism mean in our social contexts and possibly working

Does it even matter for the long-term survival of wolves?

Daryl L. Hunter

to change common perceptions of these terms are important for sustaining viable wolf populations.

Conservation and environmentalism have very similar definitions in the dictionary. Both promote an ethic of stewardship of the natural world, and without the connotations many of us have come to understand, the terms might be considered synonymous.

But to most people who fall into one category or the other, they seem not to be. Upon being asked, most people who consider themselves conservationists or environmentalists see a clear distinction between the two labels, though the distinctions people draw are often different. Interestingly, among the people I spoke with for this article, the label environmentalist often has an edge of negative connotation—sometimes even among people who label themselves as one.

According to my very informal gathering of opinions, a general consensus develops regarding the characteristics of conservationists: People agree that conservationists are much more interested in preserving and managing a resource for future use, with "use" being the operative word. There is some sense among the people I spoke with that conservationists are much more willing to accept human impact on a resource as long as it will be there for future generations. There also seems to be agreement that conservationists are willing to fund and participate in direct service to preserve and manage the particular resource in which they are interested.

People also gather around general characteristics of an environmentalist. Most people I spoke with believe that environmentalists want to minimize or reverse the impact humans have on the natural world, and they take a holistic approach to environmental issues. People I spoke with also believe that environmentalists are often more comfortable advocating for public policy changes and using the legal system to achieve their goals.

Amy Ellwein, geologist and science education researcher at the Rocky Mountain Biological Laboratory, described a key tenet of environmentalism this way: "What people decide to do about known problems is tied up in our values. I don't think it is easy to deny that most environmental problems are caused by human consumption patterns and by human overpopulation."

In nearly every discussion I had on the topic, there was a moment that became charged, loaded with importance on the true weight of the topic. The "real" differences were divulged:

"Conservationists are more rural, and environmentalists almost all live in the city."

"Environmentalists are more pessimistic, and conservationists are more optimistic."

"Conservationists just want to preserve animals, so that they'll have something to shoot in the future."

"An environmentalist, from what I can see, is afraid to enjoy anything, because every human action destroys the Earth in some way."

"I think of conservation as what happened during an earlier time, like Roosevelt setting aside national parks."

That last comment sparks an alternative view of conservation. Jason Booth, vice president of development and communications at the Indian Land Tenure Foundation, draws attention to the fact that what many people see as one of the most important conservation acts of the 20th century, benefitted directly from displacement of native people from their homelands.

Evelyn Mercer

"Understanding what conservation and environmentalism mean in our social contexts and possibly working to change common perceptions of these terms are important for sustaining viable wolf populations."

"It's important that people understand the history of the conservation movement in America, in its full context," said Booth.

So, why is all of this important? Scott Yaich, Ph.D., director of conservation operations at Ducks Unlimited, answered the question this way: All of the people who truly care about the environment combined are a small segment of the overall population, and the artificial distinction between conservationists and environmentalists negatively impacts important work.

"This division has long bothered me, and it terribly weakens our ability to achieve goals that we share more closely and passionately with each other than we do with other segments of society," said Yaich. "Yes, there are some things that we are going to have to agree to disagree about along the way, but there is so much more in which we share a common interest."

So how would you label yourself? Is it necessary to label at all? Moving forward, can those of us who care deeply about wolves specifically and the environment as a whole find common ground with those who share a love of the natural world but enjoy it differently? ■

A Zoonotic is No Trip to the Zoo

by Lori Schmidt, wolf curator, International Wolf Center

The International Wolf Center will be raising pups during the spring and summer of 2012, but the logistical effort of pup management begins much earlier. Last summer, the Center conducted a program called Planning for Pups. This program was a prerequisite for individuals who will assist with the pup-socialization process. Part of the training in Planning for Pups included the discussion of zoontic diseases. By definition, a zoonotic disease can be transmitted between animals and humans. The Center's adult wolves are fed beavers, and beavers are carriers of a microscopic protozoan known as *Giardia lambia*. With beavers onsite, the wolf pups get the occasional beaver tail popsicle, which means the risk of contracting *Giardia* is present. Clinical signs of a *Giardia* infection include diarrhea and rapid weight loss in both humans and canids. Some research indicates that the strains of *Giardia* differ for humans and canids (*G. lambia* for humans and *G. canis* for wolves and dogs), but there have been some anecdotal reports of *Giardia* spreading to humans associated with scat collection in captive wolf facilities. It is standard practice to wear gloves and wash hands after any scat collection.

Awn Birem

International Wolf Center

International Wolf Center

Clockwise from upper left: Denali, as a 2008 pup at 14 days of age, comfortably settles into the wolf lab's routine; Center wolves receive road-killed deer as part of their diet. With the collection of roadkill comes the risk of ectoparasites such as ticks; Center adult wolves feed on beavers, and beavers are carriers of a microscopic protozoan known as Giardia lambia.

The wolves also receive roadkilled deer as part of their diet. With the collection of roadkill comes the risk of ectoparasites such as ticks. Two tick-borne diseases that have been identified in the Center's veterinary history are Lyme disease and Ehrlichiosis. Both are bacterial infections that can be treated with antibiotics, but they can require an intense regimin of treatment, and relapse or recurrence is possible. To reduce the risk, roadkill is frozen for at least two weeks prior to feeding, but it's the collection process that carries the highest risk.

Wolf pups have sharp teeth and toenails. The wolf care staff provides training and supervision during pup socialization; thus, scrapes or bites are sometimes unavoidable. Because the Center's captive wolves are vaccinated, risk from zoonosis, such as rabies or leptospirosis, is extremely rare. But bacterial infections can occur with a bite, scratch or even licking of the skin. The most common bacterial risk for people working with dogs and wolves is *Pasteurella canis*. To reduce this risk, we require pup care participants to wear long pants and a protective coat during all interactions with the wolf pups.

The biggest health concern we have during a pup year is not a zoonotic disease, however, but it can be lethal to wolf pups. This risk is from parvovirus. The virus was discovered in the late 1970s. It affects dogs, wolves and coyotes by attacking the gastrointestinal tract, causing loss of appetite, fever, vomiting and severe diarrhea. Infected animals become listless and dehydrated and can die within a few days. The virus tends to attack the fast-growing tissue of the intestinal tract, and wolf pups younger than 12 weeks are most vulnerable.

At the Center, we vaccinate against parvovirus at 6 weeks of age, but depending upon the immunities delivered through the colostrum of the lactating female to the pup in the first few hours of nursing, natural immunities in younger pups can vary. The issue with parvovirus is that it is a hardy virus and can be long-lived in the environment, lasting anywhere from one to seven months. In a public facility, any visitor could be exposed to the virus and carry it into the wolf lab. Since viruses are such an unknown factor, the Center's protocol includes rigid standards for pup care staff, such as bleaching shoes, avoiding unvaccinated dogs and minimizing contact with people who have known exposure to infected or recently vaccinated dogs.

Parvovirus is not only a risk for captive wolves; wolf pups in the wild have also been diagnosed with the disease. Reports from Isle Royale in the early 1980s identified a significant decline in the wolf population linked to a parvo-infected dog brought to the island. Wolf research has shown that surviving wolves developed immunity, but the disease was rediscovered on the island again as recently as 2007. In 2006, Yellowstone researchers began examining the parvo issue when wolf pup mortality rates neared 70 percent. Minnesota also has data to support the presence of parvo in the wild population, with pup mortalities averaging 50 percent long ago, before the population developed immunity. Due to the large amounts of virus particles shed in the feces of an infected dog (shedding lasts two weeks or more after exposure) and the longevity of the virus, exposure risk to wolf pups is high.

As you can see, planning and training logistics are required when raising wolf pups. These policies are in the best interest of the pups and will help ensure that they are healthy and robust as they grow into the Center's newest Exhibit Pack members. ■

Parvovirus is the biggest health concern during a pup year.

INTERNATIONAL WOLF CENTER

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Wolves of the World

Wolves, Caribou Lose Ground in Canadian Tar Sands

by Tracy O'Connell

The tar sands of west-central Alberta, Canada, have been in the U.S. news frequently this past year. Industry-sponsored commercials have urged popular support for an oil-extraction project as major U.S. companies have sought to bury a second massive conduit (called the Keystone XL Pipeline) under the plains states of the United States to transport Canadian oil to Gulf Coast refineries in Texas.

Environmentalists have squared off repeatedly against oil interests over this as approval of the measure has advanced, and been stalled, in both the U.S. Senate and the House of Representatives. However, resource extraction in Canada's boreal forest, and especially in the tar sands (termed "oilsands" in Canada) that lie under part of it, has long been underway, with consequences for endangered woodland caribou and wolves.

To help the caribou, Alberta's provincial government had previously spent $1 million (U.S.) over five years to reduce the predator population, killing an estimated 500 wolves in the Little Smoky River region through aerial shooting and strychnine poisoning, according to Canadian author Ed Struzik.

Discussion has been underway whether the woodland caribou should be considered endangered, rather than merely threatened. A new plan to save the woodland caribou has been in the works, both at the provincial and national level, with the public comment period stretched out from last fall through February of this year. Scientists argue that these plans are not sufficient to help the caribou in the long term, and have said the plans favor controls such as continued aerial shooting of wolves rather than habitat protection.

Meanwhile, in January, the head of the Ministry of the Environment, Peter Kent, weighed in again that Alberta's caribou did not need to be protected because Canadian caribou elsewhere were doing fine. He had refused to issue an emergency order to protect the animals, without reason, last summer and was ordered to do so by a federal court, following action by environmental groups to force his hand, Bob Weber of *The Canadian Press* writes. Rebuttals from scientists and First Nation groups focused on damage to the caribou-dependent First Nation way of life as well as on the health of the remaining herds.

What are tar sands, and what do they have to do with caribou and wolves? Writing for the *New Yorker* in

The Cooperative

To help caribou, Alberta's provincial government spent $1 million (U.S.) over five years to reduce predator population, killing an estimated 500 wolves.

Lily Whitebear

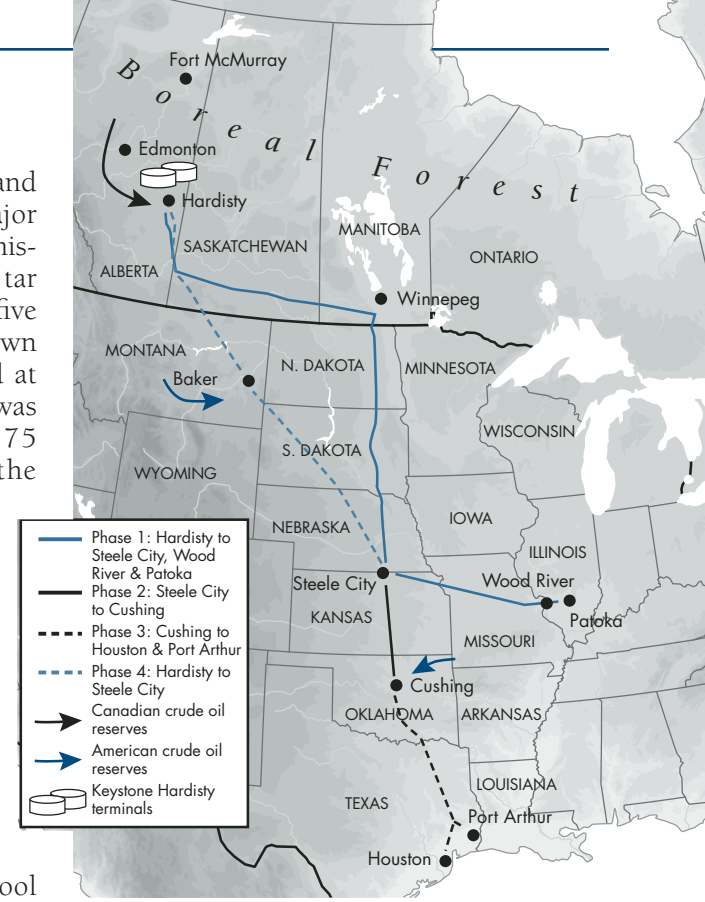
2007, Elizabeth Kolbert says tar sands look like dirt and smell like diesel fuel. They begin near the border of Saskatchewan, around the latitude of Edmonton, Alberta, and extend north and west almost to British Columbia, she adds, noting they underlie some 57,000 square miles (147,000 square kilometers), an area roughly the size of Florida. It is believed that they were pushed into their present location 70 million years ago by the uplift of the Rocky Mountains.

Tar sands consist of quartzite, clay, water and very heavy hydrocarbons known as bitumen, which can be converted into petroleum known as synthetic crude. They lie under a vast expanse of wilderness known as the boreal forest, 2.2 million square miles (nearly 5.7 million square kilometers) that stretch from British Columbia to Newfoundland, considered to be one of the three largest regions of forest left in the world (along with parts of the Amazon and the taiga region of Russia).

Kolbert notes the reservoir of synthetic crude possible from this site represents the largest source of oil outside of Saudi Arabia, larger than reserves in Norway, Russia and Kuwait combined. Four major oil companies received permission to start projects in the tar sands a decade ago. Writing five years later, she notes the town of Fort McMurray, situated at ground zero in this boom, was anticipated to receive $75 billion in investment in the next five years.

Kolbert notes the one-million-barrel-a-day output that existed as she wrote was expected to quadruple by 2015. Touring the site, she saw vehicles with 12-foot-tall (3.7 meters) tires rumbling by while periodic blasts loosened the sands.

Writing last October in *Yale Environment 360*, a publication of the Yale School of Forestry and Environmental Studies, author Struzik notes that continuing shrinkage of the caribou habitat as a result of this effort would lead to further endangerment of prey species, whether or not the predators are controlled. He argues, and cites others who agree, that wolf culling is a temporary solution to endangered prey species but not a permanent one.



The wolf population will continue to rebound even as more money is spent to control wolves, he and others say. The correct solution, they posit, is habitat management. Agreeing that preservation is needed in the long term, the provincial government's short-term solution remains predator control. Struzik fears that solution will be ramped up as Alberta attempts to maximize the benefits of resource extraction happening in the tar sands, where both mining and the prerequisite logging are ongoing.

As the environmental group Greenpeace explains on its Web site, tar sands mining requires the clear cutting of the ancient boreal forest. A highly complex ecosystem that supports a vast array of plants and wildlife including grizzly bears, wolverines and over a billion birds, the boreal forest is a source of fresh water for millions of Canadians. It is also home to hundreds of First Nation communities that depend on the forest for their sustenance, jobs and traditional activities. Many of the areas under development are subject to land claims and disputes.


Lily Whitebear

The boreal forest also has particular value as a storehouse of carbon, holding more than 47 billion tons in its trees and soil. When the forest is cut down and soils are disturbed by heavy machinery, this carbon is released. Last December the Web site ThinkProgress.org reported that tar sands mining has exposed about 232 square miles (more than 600 square kilometers) at the Athabasca River site.

While only part of this vast area of boreal forest with its underlying tar sand is currently being developed, continued expansion will further destroy caribou habitat. A three-year logging moratorium in another part of the forest forged between environmental groups and lumber companies in 2010 had the goal of allowing caribou numbers to rebound, but mining, which also involves clear cutting the forest, lies outside this ruling.

Resource extraction is expected to double over the next decade, meaning the possible destruction of 740,000 acres (299,467 hectares) of forest and a 30 percent increase in carbon emissions from Canada's oil and gas sector. The shooting down of the pipeline project means attention has shifted to laying a pipeline west to Canada's Pacific Coast where other terminals wait to take the tar sands oil to Pacific Rim markets.

Because of this intense logging and oil and gas development, there is too much good habitat for wolves and not enough for caribou, Struzik explains. "That may sound strange, but the old-growth forest that used to support both wolves and caribou is being carved up," he stated. Nearly 35,000 wells, more than 40,389 miles (65,000 kilometers) of seismic lines, and about 7,456 miles (12,000 kilometers) each of pipelines and roads have been built in caribou country, he says, in addition to the vast areas of forest that have already been logged.

The resulting open areas are good for moose, elk and deer, and along with them wolves. Woodland caribou, however, as their name implies, rely on old-growth forests. For decades, scientists have warned not to break up the forest. Thirty scientists commissioned by the Canadian government recommended in 2008 that forest cuts that favor wolves be reforested to help caribou survive.

Both Alberta and the federal government have plans to conserve caribou habitat, but scientists say Alberta's plan, which favors tar-sands mining, won't save the province's herds. The federal plan similarly allows for habitat loss for tar-sands regions as long as there is a plan to stabilize the local herds, which means continued slaughtering of wolves from helicopters. That could be as many as 25 wolves for every caribou calf, the *Canadian Press* cites Kent, head of the Ministry of the Environment, as saying.

A study by Global Forest Watch, sent in January to the federal government during a public-comment period on the proposed caribou-recovery strategy, found that industry alone has had an impact on nearly three quarters of the caribou range in British Columbia and more than half in Alberta. Caribou are sensitive to any disruption. U.S. researchers found the shy animals prefer less productive forests than areas rich in both food and human activity. Disturbance in other provinces—mostly caused by forestry—was much lower. The national average is 13.6 percent.

The Alberta Wilderness Association notes the woodland caribou *(Rangifer tarandus caribou)* is a subspecies that differs in form, distribution and status from the barren ground caribou *(Rangifer tarandus groenlandicus)* of the tundra and has been declining for 80 years.

Two forms exist in Alberta, the boreal and the mountain woodland caribou, the former distinguished by its seasonal migration between foothills and subalpine forests. Boreal woodland caribou prefer lowland areas in the more northern and eastern parts of their range and are more sedentary. Lichens found only in old-growth forests—that is, mature stands of spruce and pine 80 to 150 years old—constitute 70 percent of their diet.

As the concerns of oil and money play out against those of the environment, the future hangs in the balance for the region's caribou and wolves. ■

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

David Cartier

Both the provincial government of Alberta and the Canadian government have plans to conserve caribou habitat, but scientists say Alberta's plan, which favors tar-sands mining, won't save the province's herds.

Personal Encounter

Glassy-Water Morning

by Polly Carlson-Voiles

It was a quintessential glassy-water morning. Lake Vermilion was so still that trees lay across the surface in perfect reflection. I went out on my cabin deck and nestled into the quiet with my coffee, putting off the writing project that awaited me. Mornings like this are like meditation, and I reached with my senses to hear the raucous call of a piliated woodpecker, the flopping of a frog or fish along the shore, the stirring of a red squirrel in leaves. I couldn't take my eyes off the fiery reflections on the undersides of branches overhanging the water. It was six weeks after the 1999 blowdown in northern Minnesota, and I was getting used to the gap along our shore, the loss of a 150-year-old grandfather white pine.

Then, there was a splash. A large one. My eyes traced the rocks along the wild shore, a stretch of about 500 feet (152.4 meters) with no cabins, no roads, thickly tangled with overcrowded balsam, black spruce and aspen, the result of logging years ago. From the shadows of this shore, into the still, golden water, a shape swam straight out into the lake. Soon I could see a pair of tall reddish ears catching the sun. A deer. A doe. Where could she be going? The nearest shore ahead of her was an island approximately a quarter mile (0.4 kilometers) away. There were plenty of areas to swim to that were closer. I sipped my coffee and wondered.

Then, I heard another splash. Two deer, I thought. I reached for my binoculars. But before the binoculars were even raised, I took a breath. Not two deer. The second pair of ears was

"Then, I heard another splash. Two deer, I thought. I reached for my binoculars. But before the binoculars were even raised, I took a breath. Not two deer. The second pair of ears was furry, not so tall. A wolf!"

furry, not so tall. A wolf! And instantly, I understood. The deer's choice was to swim for her life.

Adrenalin pumping, I ran outside, grabbed my elder dog and popped her into the house. With binoculars in hand, I skidded down the winding wet path to the dock where I stood to watch. The tall reddish ears of the deer were now perhaps 30 to 50 feet (9 to 15 meters) ahead of the furry ears of the wolf. Smooth ripples rolled away from both deer and wolf, making an artwork of inverted "V"s following both of them. Not being able to keep both animals within my view, I soon gave up on the binoculars. Before long, the wolf was closing the distance. I could barely take a breath at this point for holding it. Who was I cheering for? And did it matter? Not a bit, I told myself. I was merely the privileged watcher of an ancient game. Which would be the stronger? Which would outlast the other? Did I want the wolf to gain a meal? Had it been isolated from its pack by the disruption of the blowdown, and was that the reason it was attempting this desperate act? Could the deer know she could find advantage in the long swim?

The wolf was gaining, moving now into the wake of ripples from the deer. I looked to see if a fishing boat or speedboat was coming from any direction to disturb this drama, but as unusual as it was on this busy lake, the wolf and the deer had the stage to themselves. With a sudden burst of speed from the wolf, the two heads were now side by side. That's when the lake exploded. There was a thrashing of white water, a chopping of long legs, sharp hooves, a loud resonant bleating from the deer. It seemed to go on and on. But, in truth, it was probably just seconds before I saw the animals separate, deer pulling ahead. This time the deer's tail was about six or eight feet (1.8 to 2.4 meters) ahead of the wolf's nose. But the wolf swam on. Again it gained on the deer. Again I held my breath, and again the water exploded with bleating and thrashing, waves now moving away from the disturbance in a widening circle. I wondered what the wolf could have in mind? Did it really think it was going to kill that deer out in the middle of the lake and drag her 300 feet (91 meters) back to the shore?

But, no. The wolf was beaten. The two heads continued swimming, but this time the wolf swam straight back toward our wild shore while the deer continued toward the island. I shifted my attention from wolf to deer, then back again. As the wolf neared the rocks, I put down my binoculars. It landed about 100 feet (30.5 meters) down the shore, breathing hard, shaking free of water, drops arcing around it, making a halo in the sun.

Impulsively I shouted, "Hey, wolf!" The wolf turned its head, shared a long look with me, then slipped soundlessly into the wall of trees. But had the deer made it to the island? I raised my binoculars again. She was pulling out of the water onto a small sand beach.

I had been witness to a granite truth. Survival is hard work for the wolf. Survival is hard work for the deer. The balance is the miracle. ■

Polly Carlson-Voiles lives with her husband, Steve, on a lake overlooking the Boundary Waters Canoe Area Wildnersss near Ely, Minnesota. She retired from teaching in the Minneapolis public schools a few years ago to live and write full time in this beautiful setting. Her first book, which she wrote and illustrated, is a picture book titled Someone Walks by; the Wonders of Winter Wildlife. *Her new book will be released in May 2012. A novel for ages 10 and up,* Summer of the Wolves *features a young orphan who has a life-changing encounter with a wolf pup. It explores experiences with wild and captive wolves, wolf research and the Boundary Waters Canoe Area Wilderness, while searching to find the fine balance between caring for wild animals and leaving them alone.*

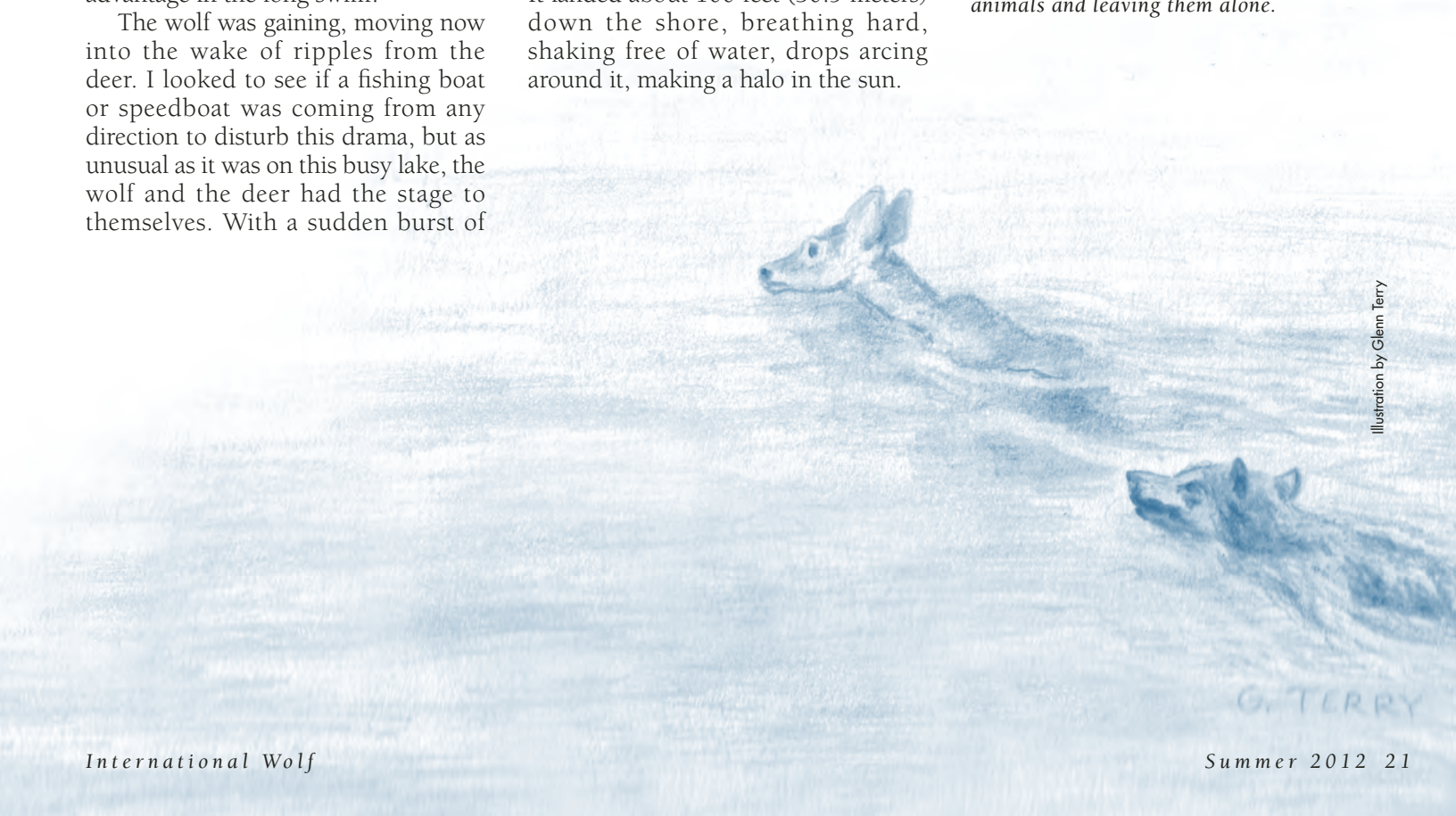


Illustration by Glenn Terry

Wild Kids

Sue Cockrell/The Davis Enterprise

Four of the founders of the Yummy Dummy Chocolate Company—from left, Rachel Foley, Bay Warland, Sara Pesavento and Rowan Foley—build a tower out of chocolate bars. With three of the young entrepreneurs headed to college this fall, the company will cease operations.

Sometimes Chocolate Can Be Good for Wolves

In 2005, seven young girls in California with a passion for chocolate and a desire to make a difference founded the Yummy Dummy Chocolate Company. With support from their families, the girls made, marketed and sold more than 30,000 chocolate bars. They also donated 100 percent of their profits.

Each of the girls chose where they wanted their profits to go. Bay Warland, Yummy Dummy co-founder and "researcher, chocolate lab," selected the International Wolf Center as the recipient of her share of the proceeds.

"We are young girls who want to make an impression on the world and support some of the organizations we believe in," Warland said. "We thought one way we can do that is to start a company and donate to charities of our choice. So at the end of each year, all seven of us girls had a board meeting and split up the profits, and then each of us chose where to send our individual portion. I chose the International Wolf Center because I think it is a great place to learn about nature and wolves."

Warland was first introduced to the Center by her aunt, a Minnesota resident who had purchased one of the Center's wolf adoption kits for Warland as a Christmas present years ago. Warland's adoption kit was for Grizzer, one of the Center's ambassador wolves. The kit included pictures and information about Grizzer and helped foster Warland's love for wolves.

Now that three of the founders are headed to college, the Yummy Dummy Chocolate Company has closed its doors—but only after donating more than $7,000 to charities around the world that address needs ranging from women's issues to the environment to the arts.

"Yummy Dummy has taught me so much," said Warland. "It taught me how to run a small company and how to use the profits to give back to the world."

As Warland's father, David, put it, "The girls learned a lot about business but also about giving." ■

Notes from the Field

For wolves, May means pups. Pups in the wild are born in late April or early May. When they are born, they weigh about one pound (0.45 kilograms), are blind and completely dependent on their mother. They stay in their den for the first three weeks of life and then start to explore outside. They grow very quickly and even start to go on hunting trips around the time they are 4 to 9 months old. What are baby animals doing near you? Get outside to find out. Learn more about wolf pups in the wild and the Center's new pups at www.wolf.org.

Ann Rasberry

Vocabulary

Litter: A group of offspring (babies) produced at one time by a mammal

Dominance: Showing power or higher social ranking

Elude: To get away or escape

Word Scramble

Unscramble the scrambled words. You can find the answers in the word bank (right).

Scrambled words

awp _____

aenicn ethet _____

nitsdigoe _____

tpadtnoiaa _____

ouacmegalf _____

klatsngi _____

Word Bank

adaptation

camouflage

canine teeth

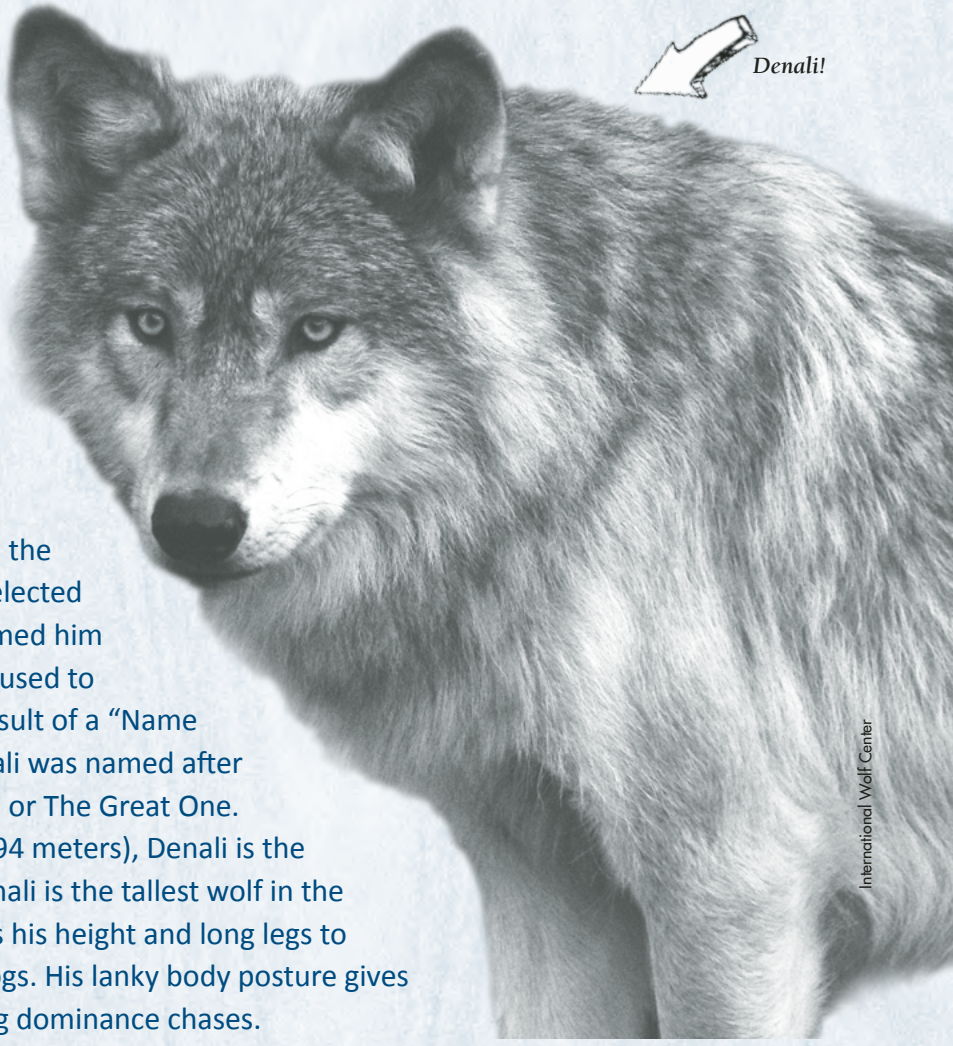
digestion

paw

stalking

Denali

The Great One



Denali was born on April 27, 2008, and since then has been part of the International Wolf Center's Exhibit Pack. The Exhibit Pack also includes Denali's littermate Aidan. Denali was the largest pup, when at 12 days of age he was selected from the litter. Initially, wolf care staff nicknamed him Redpaw in response to the red toenail polish used to identify him from his littermate, but as the result of a "Name the Pup" contest, he was named Denali. Denali was named after Mount McKinley in Alaska, now called Denali, or The Great One. At a height of approximately 20,320 feet (6,194 meters), Denali is the highest mountain peak in North America. Denali is the tallest wolf in the Center's Exhibit Pack. As an adult, Denali uses his height and long legs to pounce, run and leap around the rocks and logs. His lanky body posture gives him a great advantage in eluding Aidan during dominance chases.

A Look Beyond

What's "New" in Wolf Biology Over the Last 50 Years?

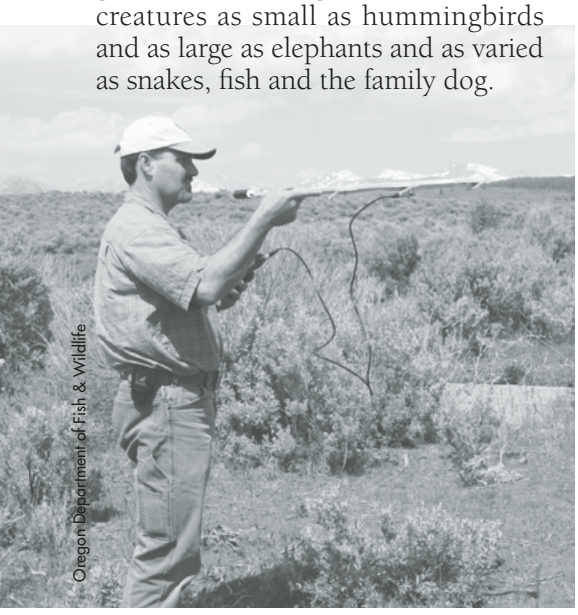
by Nancy jo Tubbs, chair of the International Wolf Center

Time flies, whether we are keeping up or not. Changes in vocabulary illustrate just how quickly the world of science is evolving. Think of the concepts and tools in common use today that were unknown when our grandparents were young. Here are just five of many that are significant to wolf biologists.

RADIO TRACKING

(Written about first in 1959)

A collar with a small radio transmitter has revolutionized wolf tracking and research. The signal is sent to the researcher's receiver allowing the biologist to triangulate on the animal's location or to home in on it from an aircraft. The newest collar uses a Global Positioning System (GPS) to read its location from satellites and store the information and email it to the biologist. Radio tracking has been used on creatures as small as hummingbirds and as large as elephants and as varied as snakes, fish and the family dog.



Oregon Department of Fish & Wildlife

GIS

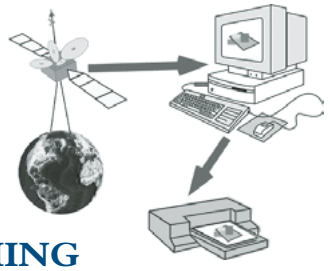
(First used by the U.S. Census Bureau in the 1960s)

Want to map whether a region is a suitable place for wolves to live? Geographic Information Systems (GIS) technology can help. It's a computer system that captures, stores, analyzes and displays data about a specific geographic area. For example, you could plug in census data regarding human population, maps showing the density of roads, codes indicating land use and type of forest and the results of field research showing the type and number of prey animals. Your formulas result in maps and charts that rate the suitability of the area for wolves. GIS is used in many other ways: to show how rainfall and pollution affect a bog, to design emergency evacuation routes from a city or to map the spread of disease on a continent.

DELISTING

(Endangered Species Act enacted in 1973)

Animals and plants protected by the Endangered Species Act can be removed from the endangered species list by the U.S. Fish and Wildlife Service and returned to management by the state after certain criteria are met. If the population size and growth are healthy, threats are eliminated or controlled and habitat is stable, the federal government can delist a species. In some areas, the gray wolf has been delisted, graduating along with others, including the bald eagle and the American alligator.



ONLINE PUBLISHING

(Began in the early 1990s)

Electronic communication speeds peer review, and e-publishing widens the dissemination of scientific articles on wildlife biology and nearly every academic and scientific field. A number of journals have moved to e-formats. Researchers now have instant access to reference materials by expert authors, and students use search engines to track down studies.

HAIR SNARES

(DNA profiling started in 1984)

Who's living in your back 40? One way to identify the animal inhabitants without setting a trap is to use a hair snare. For example, biologists may wrap a tree with barbed wire, then bait the spot. Hair caught on the barbs is analyzed at a DNA lab. The samples can identify the kind of animal, its gender, where it came from and how many animals frequented the site. ■

Dotty Weber