

INTERNATIONAL WOLF

A photograph of a wolf standing on a snowy hill, looking towards the camera. Several ravens are flying around the wolf, some in the foreground and some in the background. The background is a blurred, snowy landscape.

A PUBLICATION OF THE INTERNATIONAL WOLF CENTER
WINTER 2016

**Lethal Wolf Control: Is It
Effective at Reducing Future
Livestock Depredations?**

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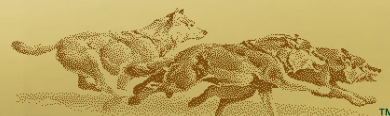
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International Wolf Center

INTERNATIONAL WOLF



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THE QUARTERLY PUBLICATION OF THE INTERNATIONAL WOLF CENTER

WINTER 2016



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JenniKate Wallace

Lethal Wolf Control: Is It Effective at Reducing Future Livestock Depredations?

Killing wolves to prevent livestock depredation is a controversial subject. Over ten years, studies in the U.S. have assessed the issue with varied and sometimes contradictory results. The author explores a thorny issue in detail, bringing to light the good reasons for ongoing research and a thoughtful approach to livestock depredation prevention.

By Liz Harper



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Jeff Goldberg

How Do States Estimate Their Wolf Populations?

PART 1 The Upper Great Lakes and Pacific Coastal States

Accurate population numbers are essential to effective wildlife management—but when the animals in question are free-roaming, low-density inhabitants of wild spaces, getting those numbers is not easy. In part one of a two-part series, Thiel and Boyd explain the methods used to collect population data on wolves, and how they vary with location, terrain and available technology.

*By Richard P. Thiel
and Diane Boyd*



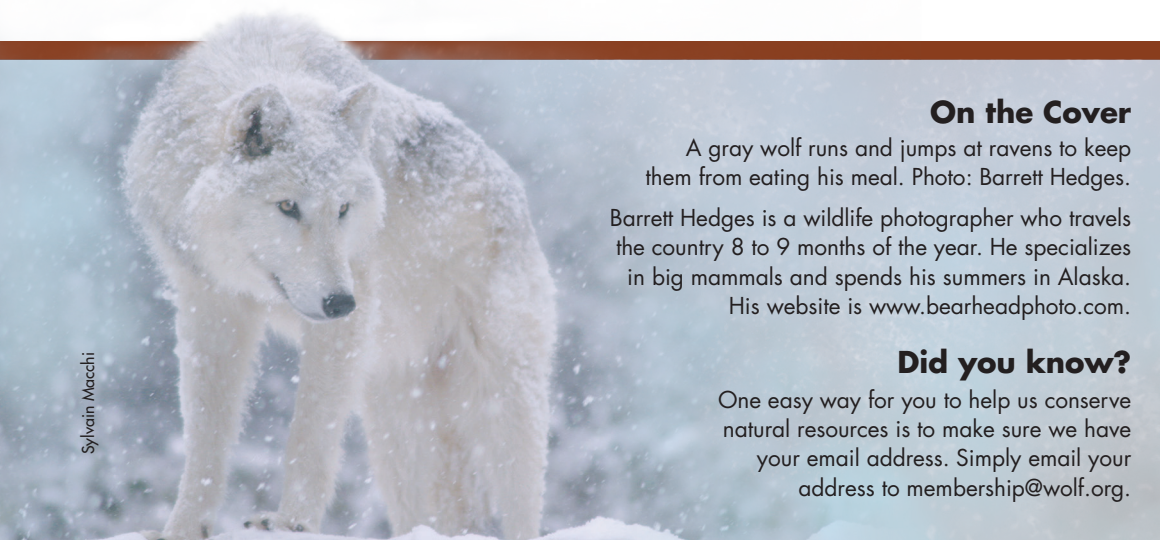
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National Park Service

Wildlands and the Wolf

Wildlands and preservation are important not only to the wolf, but to humans and other species, as well. The author explores the meanings of wildland, wilderness, and the places where humans and wild things intersect—those private lands that must be part of the habitat equation because they form the links between wild, protected areas.

by Fitz Fitzgerald



Sylvain Macchi

On the Cover

A gray wolf runs and jumps at ravens to keep them from eating his meal. Photo: Barrett Hedges.

Barrett Hedges is a wildlife photographer who travels the country 8 to 9 months of the year. He specializes in big mammals and spends his summers in Alaska. His website is www.bearheadphoto.com.

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INTERNATIONAL WOLF

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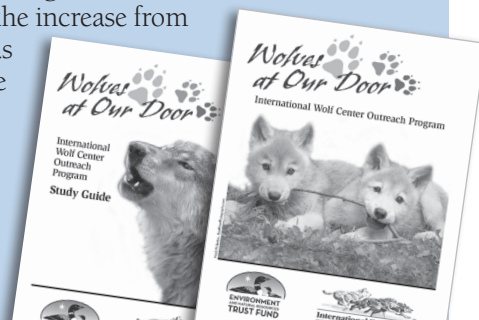
A+ for Wolves at Our Door

In 2014, the International Wolf Center received a grant from the State of Minnesota Environment and Natural Resources Trust Fund that enabled our educators to visit schools and nature centers in the Twin Cities metro area to present free programs to teach people about wolves.



Tara Morrison, the Center's outreach director, presented these unbiased, engaging programs to help students and others understand the complicated issues surrounding wolves, wolf conservation and wolf management. As a result of these presentations, approximately 13,900 students and about 600 staff members learned more about wolves! In all, 551 programs were presented at 77 schools and three nature centers, where students and teachers responded enthusiastically. Many metro area students have not had an opportunity to visit the International Wolf Center in Ely, Minnesota, or our northern Minnesota wolf habitat. This program enabled them to learn about wolves, view photos and videos, and handle artifacts such as a wolf pelt and wolf bones, moose and deer bones, and antlers. Many were intrigued by the fact that you could tell what a wolf had been eating by looking at its scat, or droppings.

Students were surveyed before and after the program to collect data on what they already knew about wolves and wolf issues, and what they thought about wolves. Survey data showed increases ranging from 9 percent to 48 percent from pre-program to post-program in knowledge of wolf facts, positive attitudes, and understanding of the issues between wolves and humans. (Where the increase from pre-program to post-program was not as high, we found students had scored quite high on the pre-program questions.) Of the teachers who participated in a post-program survey, 99 percent said they would recommend the program to other teachers. ■



CORRECTION: In the fall 2016 issue of *International Wolf*, the coyote in the image on page 28 was mislabeled as an eastern coyote. The animals pictured (L-R) are a wolf, a coywolf and a western coyote.

Let's Go Green and Wild for the Holidays

A few years ago, my parents gave me a pair of wildlife cameras for Christmas—the type often used by hunters to scout deer and other prey during hunting season. I'm not a hunter, so out of curiosity I hung them beside the creek in our urban backyard. To my surprise, they introduced me to an untamed group of neighbors I'd never met.



Rob Schultz

An enormous coyote passed through every couple of months. A pair of turkeys hatched an impressive 16 chicks this past spring. (They stop by with the family for lunch in my yard a couple of times a week.) I met the resident possum, several raccoons, an eight-point buck, a curious fox, lots of rabbits and a herd of squirrels.

In a sense, I've become a backyard citizen-scientist with a captivating new view of my world!

Each of us can search out gifts to get people engaged and passionate about nature—and perhaps inspire them to make a positive impact on the environment and wildlife, including wolves.

This holiday season, consider gifts for a greener world:

- Give an adventure trip; perhaps dog sledding or a guided desert hike.
- Adopt one of a kid's favorite megafauna species through an environmental organization.
- Buy a child's membership to a savvy conservation group.
- Invest in skis, snowshoes or winter camping equipment.
- Find a fascinating book on otters, eagles, wolves, bats or spiders.
- Missing someone? Buy a tree and plant it somewhere special in their memory.
- Fly out and find a window-mounted bird feeder.
- Help grow a terrarium, ant farm or indoor fairy garden.
- Give science board games like Earth-Opoly.

Sure, the holidays will include presents featuring Pokemon, Dory and the Star Wars Imperial Stormtroopers. But let's not forget the gifts that favor exploration and adventure and—just like wild things—howl, screech, chirp and call to a child's imagination. They're the ones that can give a kid a passion-building view of our real, wild and captivating world. ■



Rob Schultz
Executive Director

INTERNATIONAL WOLF CENTER

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

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Lethal

Wolf

Control:

Is It Effective at

Jeff Goldberg



Amanda Salm



By LIZ HARPER

Reducing Future Livestock Depredations?

Killing wolves in response to livestock depredation is a controversial subject, and there has been much disagreement on its effectiveness at reducing future depredations. A few studies completed in the U.S. in the last 10 years have assessed this issue with varied and sometimes contradictory results.

One of these studies received heavy media attention recently because it claimed that controlling wolves actually promoted future livestock depredations. The authors, Robert Wielgus and Kaylie Peebles, assessed 25 years of livestock depredation and wolf control data from Idaho, Montana and Wyoming furnished by the U.S. Fish and Wildlife Service's Interagency Wolf Reports and the USDA National Agriculture Statistics Service. The researchers used these data to create models to assess the relationship between wolf removal one year and livestock depredations the following year in wolf-occupied areas of each state. Their results did seem to suggest that killing wolves in response to depredation exacerbated the depredation problem. They claimed that removing wolves increased the next year's depredations by 4 to 6 percent until 25 percent of the wolf population was removed. After 25 percent of the population was removed, future depredations were reduced. The authors also found a correlation between the number of depredations and the number of wolves, indicating that an increase in the number of wolves may cause an increase in depredations.

Another research team challenged Wielgus and Peebles' findings and claimed that their models were flawed. Niraj Poudyal, Nadin Baral and Stanley Asah used the same data Wielgus and Peebles used, creating more robust models. They were unable to replicate the positive relationship between killing wolves one year and increased depredations the next. Instead, they found that killing one wolf reduced depredations the following year by 1.9 percent for cattle and 3.4 percent for sheep. They did, however, find that for every wolf killed there was a 2.2 percent increase in the expected number of sheep killed in the same year. This increase was temporary, however, as a reduction in depre-

dation was expected the following year. They also showed that an increase of one breeding pair of wolves led to a 2.7 percent predicted increase in the number of cattle depredations the same year.

The fact that these two studies used the same data but had very different results indicates a lack of robustness in methodology, or in the scale at which analyses were conducted. Poudyal et al. suggested that their study be replicated at the wolf-pack level to help test their findings.

Both of these studies assessed wolf depredation at a large scale (wolf-occupied territory in each state) as the nature of the data did not allow for analysis on a smaller scale. A more comprehensive study in Idaho, Montana and Wyoming by Liz Bradley and her team assessed effectiveness at the pack scale. This study provides robust evidence that killing wolves in response to depredations does reduce future depredations. Researchers in this study assessed 20 years of data on depredations and wolf removal involving packs of wolves (two or more wolves with established territories). They were able to determine pack involvement in a depredation through telemetry, as wolves were frequently collared prior to depredations, or during control efforts. Wolf removal was completed by USDA Wildlife Services staff by trapping, ground shooting or aerial gunning, or by landowners.

Bradley's team looked at three depredation-response scenarios: no wolf removal, partial-pack removal and full-pack removal. Their results indicate that recurring depredations were more likely during summer grazing. The median time between depredations was 19 days when no wolves were removed, 64 days when partial packs were removed, and 730 days when entire packs were removed. When compared to no wolf removal, full-pack removal reduced subsequent depredations 79 percent over five years and partial-pack removal by 29 percent over the same period. There was also a 7 percent increase in the probability of an additional depredation within five years for each wolf that remained in the pack after partial-pack removal. These results show that removal of an

entire pack is most effective at reducing future depredations. The study also found that partial-pack removal that occurred more than 14 days after a depredation was no more effective at reducing depredations than removing no wolves, and that there was only a minor difference if removal occurred more than seven days after a depredation. Partial-pack removal became more effective as more wolves were removed.

A study some colleagues and I did in Minnesota assessed 20 years of depredations and wolf control data at differing spatial and temporal levels, as well as for various ages and sexes of wolves removed. We assessed three depredation-response scenarios: no trapping, trapping with no wolves captured and trapping with wolf removal. We found that trapping, regardless of whether or not a wolf was captured, reduced future depredation rates, although differences were generally small. None of our analyses indicated that killing a high number of wolves led to a substantial reduction in future depredations at state or local levels. We also found that on localized clusters of farms, killing more wolves was followed by higher depredation rates the following year. Without pack-size information, we surmised that this may have been due to a higher number of wolves in the area or to learned behavior. We did find that attempting, but failing to trap wolves reduced depredation recurrence rates more than not trapping at all; that killing wolves was generally effective in response to depredations on sheep; and that killing at least one adult male wolf decreased the future depredation risk for cattle.

In our study, we did not know the proportion of each pack that was removed in response to depredations. In addition, Minnesota removal methods relied on government employees to trap and shoot wolves, methods more time consuming and less likely to remove entire packs than the aerial shooting method used in the West.



The effectiveness of lethal wolf control in response to livestock depredations has proven to be a complex issue dependent on numbers, ages and sexes of wolves removed, timing of removals, type of removals, species of livestock, care and housing of livestock, and a number of other factors.

All of these studies indicate that killing wolves leads to a reduction in depredation at some level. However, there are definite differences between the results from the West and those in Minnesota. For Idaho, Montana and Wyoming there seems to be good evidence that killing wolves in response to depredations is highly effective if the entire pack is removed. This is difficult to accomplish, as it requires knowledge of pack numbers and locations.

In Minnesota, removing wolves was less effective at reducing future depredations. This difference could be due to a number of factors: livestock management varies between the two areas; researchers in the West had access to extensive information on pack locations and composition that we did not have; and removal methods were different



Kat Vitulano Photos



Nico Pereira





(aerial gunning to remove most or all of a pack, trapping and removal, or ground hunting out West versus trapping and removal in Minnesota).

The effectiveness of lethal wolf control in response to livestock depredations has proven to be a complex issue dependent on numbers, ages and sexes of wolves removed, timing of removals, type of removals, species of livestock, care and housing of livestock, and a number of other factors. There have been arguments that public harvest of wolves could be used to reduce livestock depredation and wolf-control costs, but the results of these studies indicate that

factors that lead to successful depredation reduction would be difficult to obtain with a public harvest.

Because there does not seem to be one perfect solution to reduce livestock depredation, wolf removal will need to be monitored for effectiveness into the future. In addition, each region must use current research to make decisions that balance wolf management and conservation. ■

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Wildlife biologist Liz Harper completed her master's degree on wolf depredations at the University of Minnesota. Over the past 20 years, she has worked on a variety of projects including black-footed ferret reintroduction in Wyoming, the Minnesota wolf project and various assignments for the Minnesota Department of Natural Resources, the International Wolf Center, United States Fish and Wildlife Service, the Smithsonian Institution and Minnesota State University-Moorhead. She spends her free time traveling, hiking and birding.

How Do States Estimate Their Wolf Populations?



Cecile Senstebj

PART 1: The Upper Great Lakes and Pacific Coastal States

By RICHARD P. THIEL
and DIANE BOYD

One blustery morning in late January 1978, on a remote road eight miles east of the Minnesota-Wisconsin border, Dick Thiel gazed down at a set of gray wolf tracks made by a breeding pack of wolves—the first discovered outside of Minnesota and Isle Royale, Michigan in more than 20 years. Wisconsin's wolf population has since grown to more than 800 animals, and breeding packs of wolves have returned to seven additional states.

Knowledge of these population numbers is vital to effective wildlife management, but gaining that knowledge is not easy. Free-roaming wolves are frequently concealed, may be more active at night, live in very wild spaces, roam widely and exist in low densities. All wolf counts are made during winter when the populations are close to their lowest in the annual cycle after reproducing in spring and sustaining mortality throughout the year.

Direct counts of wolves are difficult; they're attempted when the area of census is small, as in the case of Isle

Royale National Park in Lake Superior. In Minnesota's 27,570 square-mile (70,579 square kilometer) wolf range, censuses occur in manageably sized subunits. Biologists extrapolate counts to estimate populations over the wolves' entire range.

Tools used to count wolves vary depending on funding, difficulty of terrain and weather conditions. Winter snow-track surveys, monitoring radio-collared wolves or a combination of these methods are standard. Citizen reports, carcass retrievals, trail cameras and other techniques are also used (see Table 1).

Managing wild animals is generally the business of individual states. Where wolves have been listed as federally endangered or threatened, the U.S. government allows states to select from scientifically accepted census techniques. A specific caveat exists in the intermountain west: censuses there must include the number of breeding packs present as of December 31 each year. Otherwise, each state has its preferred methods of estimating the numbers of wolves in its jurisdictions.

Table 1. Techniques used in estimating state wolf numbers.

State	Size of Range (km ²)	Interval	Snow Tracking	Radio-tracking		Reports	Aerial	Camera Traps	Extrapolate
				Number	Territory Size				
MN	70,579	annual ¹	X	X	X	X			X
WI	50,600	annual	X	X	X	X			
MI	43,000	annual ²	X	X	X	X			X
IR	544	annual	X	X	X		X		
WA	~9,000	annual	X	X	X	X	X	X	
OR	~8700	annual	X	X	X	X	X	X	

¹ For several decades, Minnesota's wolf estimates were made approximately every 10 years. In recent years these have been conducted annually.

² Michigan censuses roughly half its wolf range annually and extrapolates the remainder based on statistics.

We queried state biologists, asking how estimates are made in their states.

Upper Great Lakes (Minnesota, Michigan, Isle Royale)

By 1960, wolves were present only in northeastern Minnesota and Isle Royale National Park, Michigan. Today thousands of wolves exist in the forested expanses surrounding Lake Superior in Minnesota, Wisconsin and Michigan.

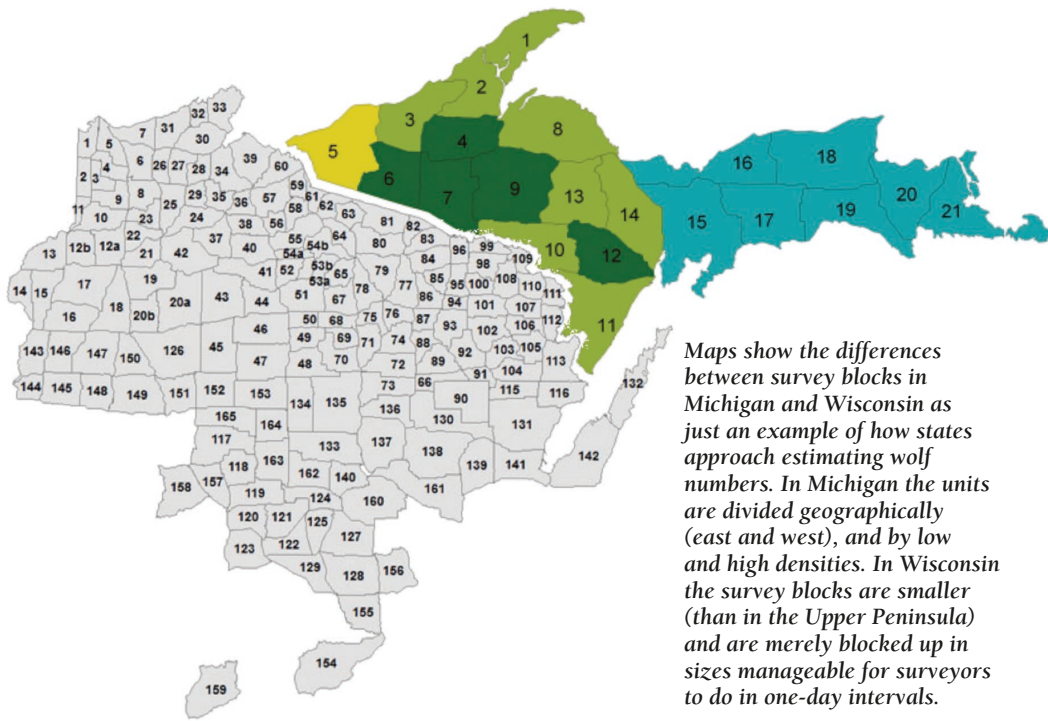
Minnesota

Formerly, the Minnesota Department of Natural Resources (DNR) estimated its wolf population about every 10 years. Intervals between censuses have decreased since about 2010. Minnesota DNR biologist John Erb explains the present approach. “I view the estimate like determining the outer boundary of a puzzle; how many puzzle pieces (pack territories) are in the puzzle, and how many wolves are on each puzzle piece.”

The size of Minnesota’s wolf range is determined by querying biologists, foresters and observers. Using pack-territory size based on 37 radio-collared wolf packs scattered throughout the wolf range during 2015-2016 and average wolves-per-pack within subunits, biologists extrapolate the number of pack wolves. To count dispersers, they rely on study-area ratios of pack wolves to loners and add those data to arrive at their range-wide estimate.

Michigan

Lone wolves were detected in Michigan’s Upper Peninsula (UP) in the late 1980s, and the first pack was discovered there in 1989. Due to the ruggedness of terrain and rapid expansion in wolf numbers, Michigan DNR recently modified its count technique. Wolf habitat is now segregated within the UP into high- and low-density units, totaling 21 units in all. Each year, half of the units (12 to 13 units representing 50 percent of the UP land mass of 26,700 square miles) are randomly



Maps show the differences between survey blocks in Michigan and Wisconsin as just an example of how states approach estimating wolf numbers. In Michigan the units are divided geographically (east and west), and by low and high densities. In Wisconsin the survey blocks are smaller (than in the Upper Peninsula) and are merely blocked up in sizes manageable for surveyors to do in one-day intervals.

selected, and field workers systematically count wolves using snow tracking and telemetry data. The design ensures that every unit is surveyed at least one time out of every three surveys, according to Michigan DNR wildlife biologist Dean Beyer. Field data is applied to the entire UP using a “stratified random sample” technique with radio-collared wolf packs supplying territory size and boundary data.

Isle Royale National Park in Lake Superior

The earliest and longest-lived census of wolves within the continental U.S. has been conducted annually on Isle Royale, Michigan, since 1959. It relies on aerial surveillance of wolf packs and a total count of individuals living on this remote island within Lake Superior.

Wisconsin

Packs returned to this state in the late 1970s, and state officials have plotted the number of breeding packs annually. Snow-track surveys are conducted by a suite of biologists from county, state, federal and tribal agencies, and trained citizen volunteers each December through March (with 17,759 miles driven in winter 2015-16) and augmented by long-term, radio-collared, wolf-pack-boundary data in an annual census that calculates the minimum number of wolves present.

Pacific Coastal States (Washington, Oregon, California)

Breeding packs of wolves very recently recolonized the area. State, federal and tribal agencies are developing tools to monitor wolves as they recolonize this region.

Washington

The first breeding pack in Washington was noted in 2008, likely composed of dispersers coming out of British Columbia, Canada; Montana or Idaho. The Washington Department of Fish and Wildlife monitors its wolves using telemetry of radio-collared wolf packs, aerial and ground-track surveys, remote cameras and winter snow-track surveys. Washington state estimates are based on winter wolf numbers. They include a minimum number of wolves along with the number of packs and breeding packs (packs with pups) present on December 31 each year.

Oregon

In Oregon, where winter censuses are conducted annually, the first breeding pack was discovered in 2009. The Oregon Department of Fish and Wildlife uses a combination of telemetry data from radio-collared packs, as well as trail cameras, snow-track surveys and

ground searches to census wolves in areas where none are presently collared. Banking on continued wolf expansion, biologist Russ Morgan of the Oregon Department of Fish and Wildlife says, "...With an increasing and expanding population we anticipate using a combination of direct counts and systematic sampling methods in the future."

California

California is just beginning to experience natural wolf recovery. In 2011 the now-famous wolf OR7 dispersed

from northeastern Oregon into northern California, briefly residing there before returning to Oregon. In 2015, a camera trap picked up images of two adults and five pups in Siskiyou County, California. According to the California Department of Fish and Wildlife's Draft Wolf Management Plan (May 2016), the state agency plans to use a variety of methods including radioed wolf packs, scat/hair surveys, track surveys and howl surveys to keep tabs on wolves as they begin to repopulate California. ■

Coming up — the Southwest and the Northern Rockies

Clearly wolves are rebounding in the Upper Great Lakes and Pacific Coastal regions. Populations in each of these states are either stable or increasing (Table 2). In the next issue of *International Wolf* we will explore the methods of estimating wolf populations in the Southwest and Northern Rockies regions.

Richard P. Thiel retired in 2011 as coordinator of the Wisconsin DNR Sandhill Outdoor Skills Center. He was team chair of Wisconsin's wolf recovery project in the 1980s, and continued serving as a wolf population monitor until he retired. He authored The Timber Wolf in Wisconsin: the Death and Life of a Majestic Predator (1993), and Keepers of the Wolves (2001), and is co-editor of the International Wolf Center book, Wild Wolves We Have Known: Stories of Wolf Biologists' Favorite Wolves (2013). He also serves on the Center's wolf education committee.

Diane Boyd began her wolf-studies career in 1977, working with Dave Mech in Minnesota. She moved to Montana in 1979 to study wolf recovery in the Rocky Mountains, following the population growth from one wolf to the present 1,700 wolves. Diane has collaborated on wolf research in five states, three Canadian Provinces, and in Italy and Romania. She currently works for Montana Fish, Wildlife and Parks in Kalispell, Montana, as the Wolf/Carnivore Specialist.

TABLE 2. Recent estimates in Great Lakes and Coastal Pacific States.

State	Federal Minimum		Current Estimate			
	Recovery Goal	Year Met	Year Made	Number	Breeding Pairs	Packs
MN	stability	1994	2015-2016	2,278		439 ²
MI	100		2015-16	618 +- 50		
WI			2015-16	866-897		
IR			2015-16	2	1 ¹	
WA	N/A		2015	90	8	18
OR	N/A		2015	110	11	12
CA	N/A		2015	7	?	?

¹ May not be breeding. ² Includes breeding pairs



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Steve Hillbrand, National Park Service

Wildlands

By FITZ FITZGERALD

Natural habitat means wildlands—not necessarily wilderness habitat, entirely uncultivated and uninhabited—but rather the combination of federal, state and private lands that represent quality environmental conditions as they would exist naturally in a specific geographical area.

The howl of the wolf has always been associated with wilderness. But what is wilderness?

According to *Webster's New World College Dictionary*, it is land that is "uncultivated or uninhabited." In the U.S., the designation also has a "protected" element. The Wilderness Society reports there are more than 618 million acres of federal wildlands in the United States, 110 million of which are designated protected wilderness and granted by Congress the highest level of protection.

We cannot talk about the survival of any wild species, especially the wolf, without considering habitat, and to me, natural habitat means wildlands. This doesn't necessarily mean wilderness habitat—entirely uncultivated and uninhabited—but rather the combination of federal, state and private lands that represent quality environmental conditions as they would exist naturally in a specific geographical area.

When you include private land in a habitat equation, things can get complicated. But it must be included because most large species cannot survive and expand on the remnants of government-owned lands that dot this country. Predators require a combination of habitat that supports prey species like

whitetail deer and moose—species that create good hunting for apex predators such as wolves. Private property forms the land-links that connect our protected wild areas.

It makes sense, then, when discussing large carnivores, to look at the larger, "landscape sized" picture, including the compatible areas of habitat that lie adjacent to or nearby the protected areas.

Here in the Great Lakes area, a typical range for a wolf pack can cover anywhere from 25 to 100 square miles. (The latest survey results in Minnesota estimate an average range of 62 square miles.) In areas of lower habitat quality and lower prey density, the range can be many times that, as animals need to go further afield in search of food. Large areas are also required to maintain genetic diversity, as young wolves disperse from packs to colonize new territories. All of this needs to take place in a high-quality habitat for the prey species that meet basic food requirements of wolves—and maintains the delicate balance between numbers of prey species and numbers of predators. Too many or too few of either type of animal can lead to ecological collapse.

Maintaining large areas of high-quality habitat and keeping it compatible with human land use in the same area

and the Wolf



Emmanuel Keller

is not simple. But it's necessary to look at the big picture—and those broad landscapes—to assure the survival of animals like the wolf.

The wolf is an adaptable species. It can, in some instances, adapt to land development and environmental changes quite easily. But adaptation to those changes often brings wolves' needs into conflict with human lifestyles. Problems inevitably arise, especially in the presence of readily available prey species—namely livestock and pets. So for humans, it becomes an issue of preserving relatively natural areas of significant size to support diverse, naturally occurring species, some of which the wolf is dependent upon to survive. This means we need large areas of undisturbed forest, wetlands, cedar and tamarack swamps, open meadows and clean waters, many of which will be on private land.

This discussion ultimately leads to the topic of development by humans. Can we preserve enough quality habitat outside of protected areas to meet the needs of a wide-ranging animal like the wolf without increasing wolf-human conflicts?

Roads and highways that come with land development disrupt remaining wildlands; some studies have revealed

road-density thresholds that affect wolf-pack dynamics. Hence, the process of aligning development with the need for natural habitat requires serious discussion on which areas should be left undisturbed. In some cases, conservation easements may be the answer. A conservation easement is a legal, binding agreement between a landowner and a qualified entity (in most cases a land trust or agency) that places restrictions on future development. Restrictions apply to all future owners, ensuring the property will be protected and remain potential “wildland” as we have described it here.

In a positive trend, there are areas in the western U.S. where wildlife population dynamics and habitat requirements are an integral part of local land-use planning. Wildlands are recognized as a vital part of the social and economic desirability of a given area. Long-range ecological health requires planning to sustain water quality, air quality, healthy forests and a diverse, natural mix of species representative of the area.

Wildlands and their preservation are not of concern only to biologists or wolf enthusiasts. Wildlands bolster the primitive human spirit, clear the mind and strengthen the soul. Minnesota author Sigurd Olson said, “Joys come from

simple and natural things: mists over meadows, sunlight on leaves, the path of the moon over waters.”

And, I would add, the howl of the wild wolf. ■

Francis “Fitz” Fitzgerald recently retired from the Minnesota Land Trust as Director of Conservation, Northern Region. He was formerly a program director and project manager for the Colorado Chapter of the Nature Conservancy. A U.S. Marine Corps veteran, he has held a real estate broker's license, was a partner in various Rochester, Minn. contracting firms, and owned and operated Northernair Lodge near Ely, Minn. during the 1990's. Fitzgerald holds a Bachelor of Science degree in Natural Resource Management and Wildlife Management from the University of Wisconsin, Stevens Point. He and his wife Heather have lived on Mitchell Lake near Ely since 1991.

Tracking the Pack

For New Pups, Adjustment Takes Time

by Lori Schmidt

The summer of 2016 brought a flurry of activity to the new Wolf Care Center. Pup-care team members worked around the clock to establish bonds with Axel and Grayson that would last a lifetime, successfully socializing the pups to accept the human wolf-care team as safe members of their world. But the pups also needed to meet the Exhibit Pack during their socialization window—a period in their maturation process estimated to extend from 3 to 12 weeks of age. On August 7, Axel

and Grayson were introduced to their pack mates.

“Introduction day” culminates an effort to form a cohesive pack that starts with interpreting each wolf’s behavior. In this case, two personalities warranted concern. The first was our dominant female, Luna, who had been displaying intense focus and guarding behavior since Axel and Grayson’s arrival on May 25. The other personality that warranted analysis was Grayson, who had a tendency to exhibit avoidance behavior,

acting fearful when he was the focus of attention from adult pack members.

Wolf-care staff began introduction day at 6:45 a.m., placing Aidan and Luna near the protective barrier that separated the pups from the Exhibit Pack. Aidan was whining and willing to greet, while Luna continued to display heightened focus, with ears pricked forward and an intense stare. After an hour of trying to calm Luna, wolf-care staff decided this introduction would continue without her. She was moved into the Wolf Care Center with a plan to assess her physical condition and behavior. The introduction proceeded with the males in rank order—dominant pack leader Aidan, second-in-rank Denali and Boltz, the omega male.

A pup introduction is not a one-day event. The wolf behavioral team spent 24 hours a day observing the pack during week one of the introduction. For



Grayson and Aidan



Grayson and Axel

Member Profile

months afterward, staff and volunteers observed, fed, distracted and, when necessary, intervened with overactive adults on behalf of the pups.

The pups interact differently with each wolf as they adapt to pack life. Axel is often in the mix, fearlessly taking food from adults, pulling tails and exploring his surroundings. Grayson has been cautious, tending to avoid intense pack rallies, and seems to gain confidence daily, relying on comfort from Axel. Aidan has been a calming influence, quick to intervene if pack tension arises. Boltz has transitioned from a shy, lower-ranking adult to a protector of the pups, while Denali has regressed to a 148-pound behavioral juvenile.

The dynamics of this social group will include many teachable moments. Join us for the monthly webinars, wolf logs and Youtube videos to follow each wolf's progress! ■



Photo courtesy of Gary Deutsch

Honk if You Like Wolves!

By David Kline

And boy, does Gary Deutsch give a “big-rig hello” every time he rumbles by the International Wolf Center’s administrative and outreach office in Minneapolis. It happens at least once a month; the office staff hears that honk and always knows it’s Gary!

Since being introduced to the work of the International Wolf Center by their son Dan more than 12 years ago, Gary and Doreen Deutsch have not been shy about their support of the Center’s wolf education work. Doreen said, “I really love helping others change their minds about wolves—especially the old European folklore myths.”

Fun trips to the interpretive center in Ely, Minnesota, with their two grandchildren have become regular vacation highlights for these outdoor enthusiasts. Aside from their favorite program, “What’s for Dinner,” Gary said, “We love hearing about wolves from (Wolf Curator) Lori Schmidt and the other

educators because we learn something new every time.”

When they’re not in Ely, they enjoy watching the streaming wolf cams on wolf.org, the Center’s Facebook page posts and YouTube channel videos, and reading articles in the *International Wolf* magazine.

The Deutsches are native Minnesotans who met through a co-worker at a gas station where Gary worked as a young adult. Doreen has flourished working for the U.S. Forest Service and Gary is a truck driver for Tax Air Freight. Both are approaching retirement, but these long-time International Wolf Center members aren’t shopping for rocking chairs quite yet! They plan on visiting more national parks in their retirement years, both with and without the grandkids.

When asked about why they like to help wolves and other animal causes, Doreen and Gary explained that they feel a strong sense of responsibility to be supportive because animals and nature don’t have a voice. But between Doreen working in forestry and Gary’s horn-honking enthusiasm, the wolves and wildlands have a loud and effective voice in these two Center members! ■



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Pictured, left to right, are Aidan, Grayson and Axel

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Thank You!

Wolves of the World

News from Three Continents: Secretive, Bold and Singing

By Tracy O'Connell



NEPAL

A call to protect the unique Himalayan wolf

Ancient and rare, the Himalayan wolf (*Canis lupus chanco*) subspecies has been a topic of study lately as scientists seek to determine more about its genotype and the cause of decline in its numbers. Scientists have long believed

the animal to be related to the Tibetan wolf—another gray wolf subspecies—but new findings may tell a different story.

The animal was believed to exist for a long time in Nepal, as well as neighboring areas of the Himalayas and Tibet, according to Madhu Chetri, graduate student at Hedmark University College in Norway and lead investigator in recently completed studies, but infor-

mation about it was not available due to lack of research.

Chetri first observed the animal, popularly called the “wooly wolf,” in 2004; based on its appearance, he believed it was a unique species. He was first taken by its curious gaze while doing conservation work in Nepal and began to study it then but had to wait more than a decade for funding to return and complete his research.

The Himalayan wolf is described as having stubby legs, a longer muzzle and smaller build than the gray wolf, and a wooly coat—hence the nickname—that is white on the throat, chest, inner legs and belly. With a team of scientists, Chetri returned to Nepal's Annapurna Conservation Area to study the snow leopard, and while there he analyzed wolf droppings for mitochondrial DNA (a non-coding type of DNA inherited only from females). As a result, he suggested in a paper published last April that this animal split more than 800,000 years ago from the wolf-dog group from which today's dogs and wolves descended.

Others have not been quick to agree, saying it takes much more than a study of mitochondrial DNA—such as extensive nuclear DNA—to make this determination.

Either way, Chetri and others are calling for protection of this rare canid of which only 350 were believed to exist in 1995—a number that may have dwindled to 50 or fewer today. Ranging across remote parts



Himalayan wolf

S Shankar

of India, Nepal and Tibet, Himalayan wolves are considered valuable because their isolation has largely kept them from interbreeding with other wolf subspecies or with dogs. The International Union for Conservation of Nature has classified the wolves as “critically endangered,” and they are on the Nepal “red list” of animals threatened by habitat loss or human conflict.

Publishing in the journal *ZooKeys*, Chetri and his team cite the attitudes of local communities as a reason to protect the wolf. In interviews and surveys with more than 400 nomads, villagers, herders and others living in the range of the Himalayan wolf, the team discovered these canids are heavily persecuted due to livestock kills when they travel outside the protected Annapurna Conservation Area. Chetni adds that all is not bleak, as wolf populations are currently expanding due to a dwindling nomadic culture in the region and the long-term impact of community conservation work in place for more than two decades.

As an example, since 1992 the National Trust for Nature Conservation has implemented measures that Chetri says helped raise conservation awareness significantly in local communities. Chetri suggests additional efforts—specifically, depredation insurance and a study to find grazing areas where wolves are not present—as part of an action plan to help prevent further decline in numbers.



Photos: Andrew Hempstead



CANADA

Warnings in British Columbia follow spate of habituated-wolf issues

Two wolves were euthanized last summer after their behavior posed threats to campers in Banff National Park in Alberta. One was a breeding female and the other a collared female yearling. Each had made numerous visits to the park’s Bow Valley campground, stealing food and refusing to be driven away. Declaring the wolves food-habituated, Parks Canada personnel chose lethal means of control after consulting with wildlife management experts, reviewing scientific literature and considering other options, Parks staff said.

Critics, however, are blaming the wolves’ plight on park management’s focus on development, calling the valley

a “ghetto” without natural food options for the animals. Paul Paquet, an adjunct professor at the University of Calgary and carnivore specialist with the Raincoast Conservation Foundation, pointed out that the valley’s towns, highways, power lines, ski hills, dams and reservoirs create an unnatural environment for the animals.

In 2015, the park hosted a record 3.8 million visitors. Admission will be free in 2017 to celebrate Canada’s 150th anniversary of confederation—a measure expected to bring larger numbers still. In another possible result of development and human incursion into wild areas, four pups were killed this year by trains.

Banff park personnel discount the claims that development adversely affects wildlife and that visitor numbers play a negative role. Instead, they point to the behaviors of individual campers

that result in food habituation, and to two other packs in the Banff area that are not suffering from lack of hunting options. Park management has ticketed campers who leave open food containers and garbage, and enacted efforts to drive the wolves from the campground.

Meanwhile, on the west coast of Vancouver Island, a wolf warning was issued in early June for the Pacific Rim National Park Reserve near Tofino, British Columbia after two wolf encounters took place in campgrounds. Todd Windle, a human-wildlife conflict specialist with Parks Canada, told CBC News that in one instance a woman found a wolf standing just yards away, watching her tent. The second incident involved a wolf coming within five yards of a group picnicking.

There are believed to be two packs in that area—one with three members and one with five. From mid-May through early June, 14 wolf sightings were reported; Windle believes many more went unreported. Wolves in at least one pack were considered fearless, showing up so frequently since November that park visitors would stop to watch them from the highway.

“They’re basically lying in the open, which is somewhat unnatural behavior,” Windle told reporters of the wolf presence, adding that the animals would be expected to be more secretive. He believes campground sightings involve yearlings from one or both of the packs. He notes that with 800,000 visitors in Pacific Rim Park every year, there are bound to be sightings, but adds that wolf habituation to humans can be dangerous.

This situation prompted a new, educational tracking program that wildlife specialists hope will reduce contact between animals and people. It began as a pilot a year ago and teaches people to recognize animal tracks while discouraging them from seeking out wildlife. Windle summarized the program topics, noting that participants can follow tracks and gain insight into what the wolves were doing, how many there were, where they were going and what were they looking at. “That was really successful and we’re hoping to have something like that again this year to help protect



International Wolf Center

the park’s wildlife,” he noted, adding, “Let’s use this opportunity to make sure we keep them wild.”

A third instance reported in the media was of a Banff motorcyclist who encountered a wolf on a June ride along British Columbia’s Highway 93, on a stretch located in Kootenay National Park. Seeing a blur of grey and thinking it was a coyote, the rider stopped after nearly colliding with the animal, according to a story in *The Missoulian*, a Montana newspaper that (along with other media) reported on the event. Trying to take a photo, the rider found himself pursued by the animal. As he rode away, he shot photos over his shoulder until traffic made that effort unsafe.

Parks Canada personnel who viewed the photos suspect it was a human-habituated wolf that associated the motorcycle with food. Others who saw the photos online suggested it was a wolf-dog hybrid—or a hoax.



SPAIN

Higher-pitched pack chorus indicates presence of pups

The Fall 2016 issue of *International Wolf* carried a story about research on howling, and how studying canid howls can lead to knowledge of their subspecies and geographic range, and may potentially be used to help reduce depredation and interbreeding. Other research published this year in the online journal *PLOS ONE* is showing ways to enhance the reliability of using chorus howls—sounds made when a pack howls together—to determine the presence of pups.

Analyzing howls has long been used as a way to track the presence of pups in the rendezvous sites where they spend part of their youth. However, the complexity of the sounds makes it difficult even for experienced listeners to determine when pups are present.



Book Review

Wolf Land: A Trapper's Tale

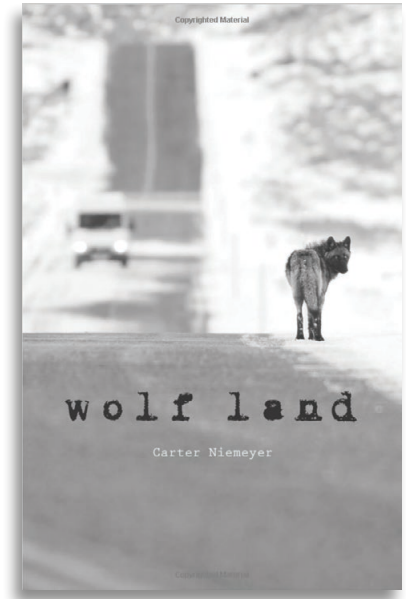
Book Review by Nancy jo Tubbs

He graduated from Iowa State University in 1973 and took a job trapping rabid skunks “because it sounded exotic.” Later, because he loved trapping, his passion carried Carter Niemeyer from work “bad for the soul” as a federal trapper hired to kill wolves that bedeviled ranchers, to work as a wildlife manager trapping wolves in order to save them.

In his 2016 memoir, “*Wolf Land*,” Niemeyer chronicled, with bracing candor and humor, his long, intimate relationship with wild wolves.

“Nobody much wanted to go deal with the rural folks who experienced wolves up close, but I discovered I was good at it,” he wrote about the days following wolf reintroduction in the American West. “I did what I could to get people to tolerate this new varmint on the landscape. It’s just a wolf. The world is not ending. At first I was thrilled to get to handle a wolf, and was honored to have them in my care. Later I just thought, you poor bastard. You’re going to end up dead.”

He fell into the job of helping to gather live-trapped or darted wolves that would be flown in from Alberta, Canada for the Northern Rockies wolf reintroduction—a job that required wrangling backwoods trappers, driving narrow, snow-packed roads in the dark and working day and night with teams of vets, pilots, biologists and volunteers. In 1995, a wolf he transported by truck to Hinton, Alberta with its head resting on his leg in the front seat, turned out to be Wolf 9, which he later ran into at a critical time. Nine was notoriously left with a litter of pups after her mate was



illegally shot near Yellowstone outside Red Lodge, Montana (See Summer 2006 *International Wolf*). It became Niemeyer’s job to set a trap to catch her.

“We found her footprints,” he wrote, “so I set five traps, or ‘sets’ over a distance of 100 yards. On each trap I tied thin parachute cord that attached to a magnet on a radio collar, which I hung high in a nearby tree, secured with duct tape. When the trap snapped, the cord would pull the magnet off the radio collar, causing it to emit a signal. I baited each set with some stink I brewed up myself. I called it Carter’s Kitty Kandy, the main ingredient of which was ground-up bobcat. I also carefully placed a few turds from the Rose Creek Pen. If I was Number 9, I’d find this irresistible.”

As complicated as the contraption was, as enticing as Carter’s Kitty Kandy was, and as irresistible as the trap was, Niemeyer’s memoir is a must-read for anyone fascinated by the nitty-gritty of field work with wolves. The author delivers a book full of powerful stories that’s not just “exotic”—it’s also good for the soul. ■

By analyzing recorded chorus howls of 110 Iberian wolves in a total of 20 packs and developing mathematical models based on their acoustic structure, a group of researchers found that acoustic energy is concentrated at higher frequencies when pups participate in the howling. Using the predictive models they developed, the research group from biology and mathematics departments at two Spanish universities and a technology company, ARENA SL, was able to determine with 94 percent accuracy which packs had pups.

The study used both wild and captive wolves, and both spontaneous howls and those made in response to a human initiator. The sounds were studied across 13 acoustic variables. The accuracy of the results, investigators suggest, should override concerns about the small investment in recording equipment that is required to use these predictive models in the established field technique of analyzing chorus howls. ■

Tracy O’Connell is professor emeritus at the University of Wisconsin-River Falls in marketing communications, and serves on the Center’s magazine and communications committees.

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

Personal Encounter

Best Job Ever! *Notes from the Pup Care Staff*

As pups are raised to join the Center's Exhibit Pack, a crucial socialization process helps them adjust to the human presence in a captive environment. The International Wolf Center Pup Care Program began in 2000 when Shadow and Malik arrived; the Center selected 20 individuals to train and volunteer over a six-week period that year. This year, 85 pup care participants from 15 states and Canada volunteered over 10 weeks.

Increasing numbers of volunteers have allowed the Center to expand programming, and pups now participate in 280 indoor, public programs before they join the adults in the main enclosure. Those educational efforts, along with round-the-clock pup care, add up to 1,176 hours of care and attention.

Here, three of the 2016 volunteers reveal some of the challenges and rewards of helping Grayson and Axel make a successful transition to life in the Exhibit Pack.

Third Time's a Charm

By Kim Goodbrandson

Having been a pup nanny on two other occasions—in 2012 for Luna and Boltz and in 2008 for Aidan and Denali—"third time's a charm" is how I describe my experience of being a pup-care nanny this year for Grayson and Axel.

I fondly recall the first time I found the International

Wolf Center online during a blizzard in December 2007, when my young son Riley and I were playing around on the internet. We were just "topic hopping" and having fun because we sure couldn't go outside that night. He and I took turns blurting out a topic to look up online. When it was my turn, I said, "wolf!"

From there, we discovered the International Wolf Center. We were amazed. We were smitten! We had to get there, so we decided that night to make a trip to Ely, Minnesota, the following summer for our family's camping vacation with my husband

Dean and daughter Annika. And we did—just as we have every year since.

We consider Ely our second home, and the Center is our favorite place to visit and volunteer.

I have volunteered there not only for pup care, but with other tasks such mail delivery, fence painting and helping build Grizzer's retirement den.

As I cared for Grayson and Axel this year, I came to appreciate how young and fragile the pups were. As in past years, I cared for the pups at several weeks of age. It's an important role I felt privileged to take on, and I was humbled by the experience.

What I learned in each year of doing pup care is how important it can be to monitor and record each one of the pups' behaviors. Some of my favorite memories of this year's pup-care adventure include hand-feeding Axel and Grayson, watching them climb a hay bale for the first time and hearing their very first howls. It was especially fun to discover that they have puppy breath!

When my family and friends ask me about volunteering at the Center, I have to answer with this: When you love being a part of the bigger picture—something really important—you need to involve yourself. Being connected to the International Wolf Center fulfills that need for me.

Ask me, will I do this again? Yes, indeed—see you again in 2020!

Kim Goodbrandson is a nurse who lives in Selkirk, Manitoba, Canada. She has been a member of the International Wolf Center since 2008. Kim is married and has two children. With their family dog Oscar, the Goodbrandson family enjoys camping, hiking, fishing and being outdoors at every opportunity.



Kim Goodbrandson



Rob Schultz

A Gift From The Storm

by Alexis Sharp

On July 20, northern Minnesota weathered a significant storm. Frightening and destructive straight-line winds of 50 to 60 mph tore through Ely and the surrounding area. My pup-care teammate (and husband) Kerry and I were off-shift, hunkered down in our cabin as our power went out and we listened to the wind howl. When morning came, we arrived at the Center to start our 8 a.m. shift and were relieved to find minimal evidence of the storm. The overnight team had brought the pups inside before the winds hit, and Axel and



Alexis and Kerry Sharp

Grayson safely spent the night in the newly renovated wolf lab with the staff. The power was out, but humans and wolves were all safe—a testament to the skill and camaraderie of the International Wolf Center staff who were determined to ensure that daily wolf-care activities were uninterrupted.

Axel and Grayson didn't care that the power was out, and it didn't matter to us, either—we had volunteered to be with the pups, and we experienced the joy of interacting with them the entire day. Out in the pup

enclosure, greeted by wagging tails, we missed the electricity only when we longed to step into an air conditioned room for a moment. The pups seemed to relax as they realized that their regular routine of starring in daily pup programs for Center visitors had been canceled and replaced with a day of napping in the woods. I happily sat in the dirt next to the sleeping pups, gently handling their ears and paws on occasion. They would wake for a playful chase, a bite to eat or a brief encounter with the Exhibit Pack along their fence line before going back to their naps.

We heard sirens throughout the day as emergency vehicles passed by on the main road, a persistent reminder of the damage the storm had caused. However, the wolves found a way to overlay our concern and uncertainty with a sense of peace. Grizzer, in the retirement enclosure, started to howl in response to the sirens. Eventually, Axel, Grayson and the entire Exhibit Pack joined in a beautiful chorus. It was the first time that week we had heard the pups howl. As their voices grew quiet, Grizzer continued his haunting song for a moment longer. Being there with the pups, in the middle of this beautiful music, was a moment I will never forget. The storm had given me a gift—my favorite shift of pup care in 2016.

Alexis Sharp first visited the International Wolf Center in 2006, when Kerry surprised her with a weekend adventure trip. The connection was immediate, and they have been part of every pup-care team since 2008.

New Pups, New Knowledge and Old Friends

by Kate Kierski

The summer of 2016 was a memorable and influential one for me. I was a member of the International Wolf Center pup-care staff for Axel and Grayson when they were seven weeks old, and a member of the wolf observation team during their introduction week. I have participated in pup care for each litter since 2008, and each experience has been unique, as every litter poses different challenges.

I have practically grown up doing pup care, and each year I feel like I have more and more knowledge to bring to the task—but one of the things I understand better each time I work with wolf pups is how they are different from dogs. One example is that despite how “socialized” they become, wolves are still wary of new people—especially the large crowds they are exposed to in the pup programs.

A wonderful part of being a volunteer during “pup summers” is spending time with other volunteers and the Center staff. They're amazing people with diverse backgrounds and experiences that resulted in their work with wolves. I made many new friends and reconnected with people I hadn't seen for years.



Kate Kierski

The best experience of the summer was watching Axel and Grayson integrate with the adult members of the exhibit pack. The success of that integration is a direct result of hard work by wolf-care staff and pup-care volunteers over the years. The whole introduction week that I spent watch-

ing and studying wolf behavior was great training for working with dogs. I noticed a lot of subtle body and ear postures that help me understand my own dog and all the canine patients I will be seeing as a veterinarian.

These experiences have inspired me to want to work with captive wildlife or rehabilitated wildlife in my future career as a veterinarian. ■

Kate Kierski is a third-year veterinary student at the University of Wisconsin-Madison.

Wild Kids



Notes from the Field

As nights start getting crisper and aspen trees turn gold,

beavers begin preparing to live all winter beneath the ice. This means venturing onto land more often to cut trees and store the branches in an underwater food pile—and that makes them more vulnerable to wolves that lie in wait for the large rodents or patrol the shorelines in order to catch them on land. An adult beaver will provide enough wolf food for several days.



Play!



Which wolf gets dinner?

Can you guess which wolf finds the prey?
Follow the lines to see if you're right!



Meet the Pack



Adult wolves Aidan, Denali and Boltz have adopted the arctic wolf pups, Axel and Grayson. The pups have bonded with the adult wolves and consider them pack mates, seeking basic comforts like food and security from the adults. As they grow, they are gaining confidence, exploring their environment and testing the adult wolves to see if they can move up in the rank order. ■



Anung May

Vocabulary

Food begging: Pups and young wolves will lick, nibble, pull or paw at an older or more dominant wolf's muzzle when food begging. Often, a food-begging pup displays other submissive postures like rolling over, tail wagging or flattening its ears against the side of its head.

Active Submission: In active submission, a lower-ranking wolf crouches, whines, paws and licks at the muzzle of a dominant wolf, wagging its tail weakly.



Axel is food begging from Aidan.

During the introduction period, Axel quickly learned that if he submits, the adult wolf loses interest, and he's no longer the focus of a wolf three times his size.



Awen Briem

A Look Beyond

Nowhere to Run

By Cornelia Hutt and Kim Wheeler

I am hopeful that future scientists and citizens will see fit to conserve what we have left of Canis rufus as a living reminder of both what was and what still can be.

— T. DeLene Beeland,
The Secret World of Red Wolves

On September 12, 2016, just two days before the anniversary of the red wolf's historic return to the wild in 1987, the U. S. Fish and Wildlife Service (USFWS) announced a long-awaited proposal regarding the future of one of the world's rarest mammals.

After completing a review of its Red Wolf Recovery Program, the USFWS recommended restricting the only wild population of red wolves (presently

an estimated 45 known animals) to federal lands on the eastern side of North Carolina's Albemarle Peninsula. This would mean shrinking the red wolf's home to approximately 198,000 acres of habitat on the Alligator River National Wildlife Refuge (ARNWR) and the adjacent Dare County Bombing Range. Wolves straying or dispersing onto private lands would be removed at the landowner's request and relocated onto public land or placed in captivity. Additionally, the USFWS proposed doubling the current Red Wolf Species Survival Captive Breeding Program population of approximately 200 wolves. The agency also stated it would determine where potential new reintroduction sites exist, a task many think should have been undertaken long ago, particularly since sea-level rise is a major, long-term threat to North Carolina's coastal lowlands.

Once a major predator in the Southeast, the red wolf was driven to functional extinction by habitat loss and government-sponsored extermination programs. Saved by a pioneer captive breeding program and nurtured by people with knowledge and sound management tools, red wolf numbers gradually increased to approximately 100-135 wild individuals in 2006. But a sharp mortality uptick in 2011-12 caused the population to plummet.

In June 2015, the USFWS responded to the unfolding crisis by undertaking a review of the Red Wolf Recovery Program. Concurrently, the agency suspended all field-management strategies, a decision that conservationists consider an abdication of legal responsibility under the Endangered Species Act (ESA). Moreover, the USFWS twice granted lethal "take authorizations" to landowners opposed to red wolves. After a female breeder was shot in 2015 by a landowner with a USFWS-issued lethal control permit, the Southern Environmental Law Center (SELC) filed suit in federal



Valerie Abbott



Museum of Life & Science, Durham NC



Valerie Abbott

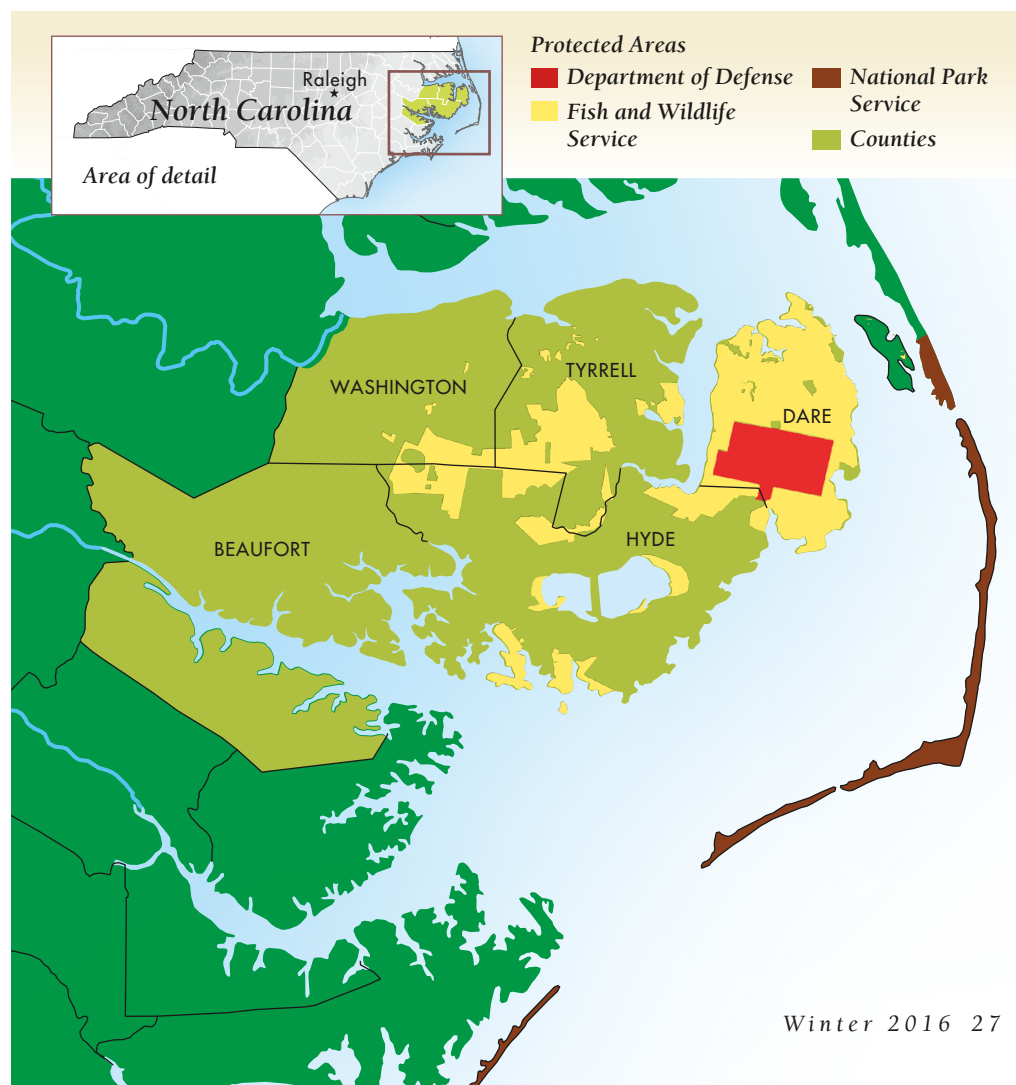
court on behalf of the Red Wolf Coalition and two other plaintiffs. In addition to petitioning for emergency intervention, SELC brought to the court's attention the fact that the USFWS had halted critical adaptive management strategies including releases of captive-born, adult red wolves, fostering of captive-born pups into wild dens, and sterilization of coyotes to mitigate hybridization with resident coyotes in the recovery region. The lawsuit is not yet resolved.

Despite challenges and setbacks, the hard-won successes of the Red Wolf Recovery Program in northeastern North Carolina are due mostly to skillful, on-the-ground work by dedicated field biologists. Many conservationists and scientists regard the red wolf's story as the most remarkable achievement in American endangered species conservation—the first restoration of a successfully-reproducing large carnivore that had vanished from its historical range. But the work is not finished.

If the red wolf is to survive as a representation of our continent's original ecology, a concerted conservation effort must continue. If, however, the USFWS restricts red wolves to the ARNWR and the adjacent military installation, these far-ranging wild predators could once again fade into extinction. One only needs to examine the map to understand why. Under the USFWS plan, dispersing red wolves would have nowhere to go to find mates and establish new territories. Wolves attempting to occupy areas to the west of Dare County, NC

would likely be captured and placed in captivity.

If the past 39 years provide a window to the red wolf's future, we can predict that the road ahead will not be easy. The state of North Carolina has historically been hostile to red wolf recovery. Along with a few highly vocal landowners, the North Carolina Wildlife Resources





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EDITOR'S NOTE On September 29, 2016, the U.S. District Court for the Eastern District of North Carolina issued a preliminary injunction ordering the U.S. Fish and Wildlife Service (USFWS) to stop capturing—and authorizing private landowners to capture and kill—red wolves in the world's only wild population. On behalf of the Red Wolf Coalition, Defenders of Wildlife, and the Animal Welfare Institute, the Southern Environmental Law Center has brought the USFWS to court for abandoning its responsibility to protect and restore the red wolf, a species listed under the Endangered Species Act.

Commission continues to exert relentless pressure on the USFWS to terminate the Red Wolf Recovery Program. The current lack of political will to conserve red wolves must be replaced with focus on several key fronts. State and federal agencies must work with conservation organizations, scientists and private citizens to promote canid studies and partner in red wolf education and outreach.

The ongoing debate among taxonomists and geneticists over the red wolf's evolutionary origins has led some people to conclude that the red wolf we have today is not a "legitimate" species—and some say it never was. These controversies will continue, but perhaps they obscure the real point. The red wolf of the present is a living link to the little-understood story of canid evolution in North America. Moreover, the red wolf's recent history illustrates what happens when an animal is allowed to drift to the brink of extinction. The struggle to reverse the damage seems unending and perhaps unwinnable.

The ESA recovery mandate is clear. In the view of the Red Wolf Coalition and its allies, the USFWS proposed plan for the red wolf's future could precipitate the final demise of a species native to this continent. Making genetic preser-

vation in a captive population the key objective of red wolf recovery ignores the primary responsibility of the USFWS, which is the building of a free-ranging wild population. Curtis Carley, a pioneer of red wolf recovery, said, "In working with endangered species, I cannot overstate the importance of not being afraid to try."

If there is to be a "beyond" for the red wolf, we have to keep trying. ■








Cornelia Hutt is chair of the Red Wolf Coalition Board of Directors.

Kim Wheeler is executive director of the Red Wolf Coalition.



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Resources and Suggested Reading

-  Red Wolf Coalition website – www.redwolves.com
-  Red Wolf Coalition Facebook – <https://www.facebook.com/redwolfcoalition>
-  *The Secret World of Red Wolves* – T. Delene Beeland
-  *Meant to Be Wild* – Jan DeBlieu
-  *International Wolf* magazine red wolf issue – <http://wolf.org/wp-content/uploads/2013/12/winter2007.pdf>
-  Red Wolf Revival – Documentary Film – <http://www.redwolfrevival.org/film/>
-  "Frequently Asked Questions: Red Wolf Recovery Program Review" (USFWS) – <https://www.fws.gov/redwolf/docs/red-wolf-announcement-faq-september-2016.pdf>

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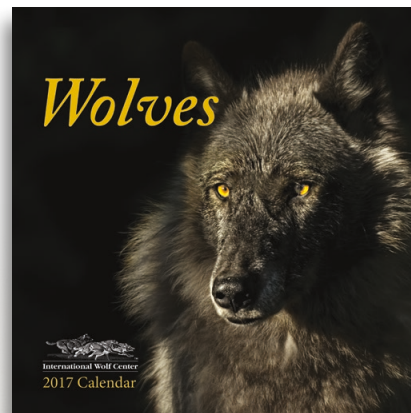
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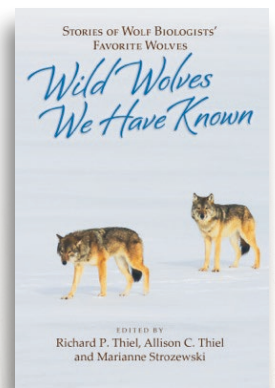
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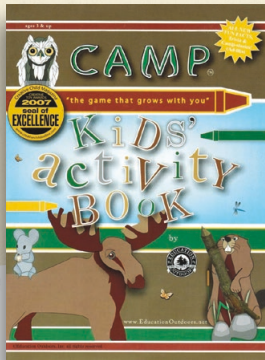
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