

The magazine of The UK Wolf Conservation Trust, published quarterly

# WolfPrint

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# WolfPrint

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## Aims of The UK Wolf Conservation Trust

- To enhance the conservation, scientific knowledge and public awareness of the environment.
- To stimulate greater interest in Wolves, their food, their habitat and their behaviour.
- To provide opportunities for both ethological research and for people to interact with Wolves.
- To improve the chances of survival of European Wolves in the wild.
- To set up an education programme for schools, conservationists and dog trainers.

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# E ditorial



As I write this, it is the breeding season for our wolves at the UK Wolf Conservation Trust and we have had some very interesting developments this year with our European wolves. Lunca has been deposed as alpha female, and her sibling Latea has taken her place. All this goes to show that life as a wolf within the pack is tenuous, let alone outside it where wolves have to face many external pressures on their way of life.

The Mexican Wolf Recovery Programme has on the whole enjoyed success, but there have also been many setbacks with illegal, legal and accidental killings of wolves. But wolves are adaptable creatures, being the opportunists that they are, the numbers of Mexican wolves in the wild are now steadily rising. Lise Donnez and Pierre Zuppiroli have recently spent time with the Mexican Wolf Recovery Team and have written an update on the current situation. (See page 16).

Unfortunately, the same cannot be said of wolves in Norway, where yet another cull was sanctioned by the Norwegian government in January 2005. Licences were granted to kill five wolves. When you consider that there are approximately 20 wolves in Norway, the implications of the cull are enormous, and not least because Norway was the country to initiate the Bern Convention, and international treaty set up to protect endangered flora and fauna. (See Wolves of the World for the latest report on the cull).

Livestock depredation will continue to be one of the hot topics of wolf conservation. Farming methods and practices have evolved over the centuries, and in many countries we have lived without the threat of large predators. In Europe, wolves are crossing political boundaries and are once more creating a niche for themselves in countries where they have been absent. With a slow, but positive shift in general attitudes towards nature and wildlife, it is no longer a case of eliminating the threats to livestock, instead we have to look at methods of protecting livestock. Livestock guarding dogs are one method that has been around for centuries, and which is now making a comeback. Christoph Angst and Jean-Marc Landry report on the current situation in Switzerland, and the positive effect these guarding dogs are having. (See page 11). This is a topic we will return to on a regular basis.

### Don't miss our Spring Seminar

This is your last chance to book for the UKWCT Spring Seminar. The speakers are respected biologists Elena Tsingarska from Bulgaria and Zanete Andersone-Lilley from Latvia. The seminar is on Sunday 10 April 2005. The talks are followed by a delicious lunch and then a walk with the wolves at the Trust Centre. Contact the Admin Office for further details or to reserve your place: 0118 971 3330. Or visit our website at [www.ukwolf.org](http://www.ukwolf.org).

#### PICTURE CREDITS

Cover and of wolves on pages 8 : Dominic Earl



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## Inside this issue...



Wolves of the World



Company of wolves: Back to nature



Livestock guarding dogs: recent experience for Switzerland



The Mexican Wolf



## EUROPE AND SCANDINAVIA

### Bulgaria

PETRICH, Bulgaria (AFP) - Thousands of Bulgarian hunters embarked on a nation-wide out-of-season campaign to cull ever-increasing numbers of wolves, foxes and golden jackals driven by cold weather to prey on farm livestock.

"The permission to hunt, even if only for a day, was rather necessary in our region," said Dimitar Kitanov, local hunt master in this southwestern district:

"Believe me, people around here are not simply crying wolf. Last week a wolf went into the village of Churichene and ate up a 200-kilogram (440 pound) pig.

"In the last week alone, five wolves were killed around here by appointed hunters granted individual out-of-season hunting certificates to appease villagers whose domestic animals have been menaced by predators," Kitanov said.

"Heavy snowfall drove over 20 hungry wolves down from the mountains around Petrich in search of prey. But we'll be lucky if we corner a wolf or two."

Kitanov recalled that night patrols in the border area with neighbouring Greece had repeatedly complained of packs of 10 to 15 wolves roaming the area. "People are afraid they might be attacked while at work," he said.

Over 2,230 wolves were counted in the latest game tally in Bulgaria, an 11 percent increase since 2003. The fox population has reached 36,500 and golden jackals number more than 27,000, according to the forestry and agriculture ministry.

"In recent years there has been a tendency for predator populations around the country to increase, posing a serious threat to other game as well as to domestic animals," hunting experts commented in a statement announcing Saturday's nationwide hunting spree.

During the official hunting season ending January 31, 13 wolves were killed in the region of Petrich and 15 more further north in Blagoevgrad, local hunting parties told AFP.

Hungry or not, wolves are deemed some of the most cunning animals. They have a very highly developed self-preservation instinct and the stamina to run for 50 to 60 kilometres (30-35 miles) a day to escape pursuers, hunting experts said.

A couple of wolves were later reported shot in the region of Kurdzhali and Kroumovgrad. But it will be some days before full reports are collected from around the country.

Source:

[http://news.yahoo.com/news?tmpl=story&u=/afp/20050219/sc\\_afp/afplifestyleanimals\\_050219211015](http://news.yahoo.com/news?tmpl=story&u=/afp/20050219/sc_afp/afplifestyleanimals_050219211015)

### Finland

#### Wolves in for a Shock

HELSINKI (Reuters) - Finnish wolves with a taste for domestic dogs could soon be in for a shock as an electrified dog-coat could soon be on sale in Helsinki shops.

The dog-coat sends 1,000 volts of electricity through a predatory wolf when it bites into the outer layer, but is designed to ensure the pampered pet feels no pain from the jolt.

Inventor Jussi Aro has already applied for a patent for the battery-powered device. He hopes it will be available in shops by autumn for dog lovers in Finland, where 20 to 30 dogs are killed each year by wolves.

Source:

[http://story.news.yahoo.com/news?tmpl=story&cid=583&e=2&u=/nm/20050303/od\\_nm/odd\\_finl\\_and\\_wolves\\_dc](http://story.news.yahoo.com/news?tmpl=story&cid=583&e=2&u=/nm/20050303/od_nm/odd_finl_and_wolves_dc)

### Italy

#### Wolves back at Rome's door

Mon Jan 17, 3:05 PM ET  
Science - AFP

Ecologists are excited by the discovery of the young wolf's carcass along a roadside, seeing it as the fruit of a 30-year protection programme after Italy's lupine population flirted with extinction in the 1970s.

Up to now, Italy's few dozen packs have been largely confined to isolated areas of the Appenine mountains, and wolves haven't been spotted in the environs of Rome for 70 years.

However, farmers in the Castelli Romani national park, where the wolf was found, have been complaining for weeks of damage to their livestock attributed to a wild animal, local newspapers reported.

"It's wonderful for our protection campaign that such a specimen has been found in our region," Italian newspapers quoted biologist Daniele Badaloni as saying Monday.

"But it's essential that this presence not be seen as a threat by local farmers," he warned.

"I understand that farmers and people with livestock might be alarmed, but people have to bear in mind that wolves cause less damage than dogs," said Badaloni.





Aged around seven months and weighing 22 kilos (48 pounds), the wolf found in the national park January 12 had been hit by a car. A veterinary examination showed that it had not eaten for the previous three days.

Centuries of trapping wiped out the animal across much of western Europe, and by the mid-1970s only about 100 wolves survived in isolated areas of the Appenine mountains.

But the dog-like animal has made a comeback since it became a protected species in Italy in 1976, and numerous packs have since been documented.

Park biologists say they are trying to reassure farmers that the wolf poses no particular threat, even less so to humans.

"For a wolf to attack a human being is extremely rare," said Duccio Centili, of the Italian branch of the World Wildlife Fund.

Legend has it that twins Romulus and Remus, who founded Rome in 753, were discovered and raised by a she-wolf after being abandoned by their natural mother.

A statue of the wolf suckling the twins stands outside Rome's city hall and is the official symbol of the city.

Source:  
[http://news.yahoo.com/news?tmpl=story&u=/afp/20050117/sc\\_afp/italyenvironmentwolves\\_050117200541](http://news.yahoo.com/news?tmpl=story&u=/afp/20050117/sc_afp/italyenvironmentwolves_050117200541)

### Norway

#### Five wolves killed

Hunters were granted a licence to kill five wolves in the eastern valley known as Østerdalen between mid-January and mid-February. Three were to be shot in the Stor-Elvdal and Rendalen areas, while two others were to be shot further south, near Elverum.

The first wolf shot was among those that earlier had been marked with a radio transmitter, prompting protests from researchers and conservationists who have been tracking the wolf population's recovery after near-extinction.

"By shooting this transmitter-marked female, chances are high that the rest of the animals in the Koppang pack will spread out," fumed Rasmus Hansson, secretary general of conservation organization WWF in Norway.

"That means (the hunters) have destroyed the core pack in the Norwegian wolf population," Hansson continued.

He claimed that in turn will make it much more difficult to track the wolves' development, with more animals running loose and independently, "and thereby causing more damage for the ranchers.

"They've been among the most vocal critics of Norway's fledgling wolf population, because the wolves can attack their free-range sheep. Wildlife authorities therefore granted permission for this winter's wolf hunt, which runs until mid-February.

#### Little public support for wolf hunt

Norway's controversial wolf hunt, now officially over, has no strong base of support within the general population. A clear majority in five key counties oppose it, while 54 percent are against the hunt on a national basis.

In largely rural Buskerud County, 67 percent of those questioned said they opposed the wolf hunt, while 60 percent were opposed in Oppland County, another mountainous area where some wolves have been shot.





Even in Hedmark County, where much of the hunt has taken place, 47 percent responded that they did not support the wolf hunt. The poll was conducted by research firm Visendi AS, for the conservation group WWF Norge.

WWF officials were elated by the results, which indicates that the wolf hunt that left five wolves dead this winter is as controversial within Norway as it is internationally. Norway has been the target of international protests since the wolf hunt got underway in mid-January.

Those supporting the hunt, many of them ranchers who fear for the safety of their free-range herds, claim the survey results show that city folks simply don't understand the problem.

### Norway's wolf hunt decried globally

"Norway will have problems justifying shooting five of a total of 20 animals as good management," a spokeswoman for the European Union environmental commission said.

Sweden's Minister of the Environment, Lena Sommerstad, said no EU country would accept Norway's policy and accused Norway of putting all responsibility for wolf preservation on Sweden.

"The Norwegian wolf population hasn't increased for the past four years because of illegal hunts," said Rasmus Hansson, secretary general of the WWF. He wants the wolf put on endangered species lists in both Norway and Sweden.

Proponents of the hunt say it's necessary to protect livestock and reindeer from the wolves. More than 100 hunters applied for licenses to take part in it.

It is a disgrace that Norway is incapable of protecting its wolf population. On the contrary - no efforts are spared to squeeze the tiny population through limiting measures such as culling. Still, the government insists that the wolf is not a hunted species!

This is not a flattering picture of a nation which actually initiated the Bern Convention - the international agreement on wildlife and habitat conservation. The agreement was specifically intended to commit each signing parties to keep the populations of naturally occurring species out of danger. The same agreement is largely pulverized as a conservation tool due to relentless and successful

Norwegian efforts to break the principle of national responsibility and so free itself from the burden of a viable population of wolves. The credibility in environmental matters has reached a depressing level.

In fact, the whole Scandinavian wolf population, numbering approx. 100, is highly inbred due to the constant shooting of new wolves arriving from Finland and Russia. Thus, the population is now extremely vulnerable.

Added regular poaching to the legal pressure and reduced genetic diversity and you have the bleak prospects of the Scandinavian wolf population. It is quite extraordinary that this miniscule population has managed to survive to this day despite the ever-mounting threats to their lives.

The losses of livestock that triggered this event are negligible (47 sheep in southern hunting area, less in the northern, and the total confirmed national loss due to wolf in 2004 was 544 sheep) as is the potential damage. The really major losses are caused by the practising of sheep farming. Two million sheep are left to fend for themselves in the wilderness for several months each year, resulting in losses of 100,000 sheep caused by everything else other than predators, i.e. 1,100 sheep each day during grazing season. In short, a gigantic animal cruelty problem officially considered by the authorities as acceptable. As opposed to the unacceptable loss of 544 sheep - or even 47.

The wolf population goal in Norway was decided by the Parliament in summer 2004: <http://www.fvr.no/informasjon/carngoal.html>. It is an astoundingly low goal of 3 annual breedings inside a tiny area close to the Swedish border: <http://www.fvr.no/informasjon/2004forlik.html>. For all practical purposes it is a goal of extermination. Over the years the politically based management area has steadily been reduced: [http://www.fvr.no/informasjon/ulv/esone2004lg\\_usemap.html](http://www.fvr.no/informasjon/ulv/esone2004lg_usemap.html). It has been nothing else than a long term stepwise effort to rid the country of wolves altogether. It is the result of poor and primitive attitudes towards our natural environment. And what is more - the population goal inside the management area has not even been reached yet!

The decision to hunt down one fourth of the wolf population in Norway is truly yet another shock to the international environmental community.

We should be able to bring updates on our homepage: <http://www.fvr.no>. And there is always a chance that this paper brings news in English on the matter: <http://www.aftenposten.no/english>.

Should you wish to make further enquiries to the decision makers, this is the email address of the Minister of the Environment Mr. Knut Arild Hareide: [odin.dep.no/md/engelsk/dep/statsraad\\_a/](mailto:odin.dep.no/md/engelsk/dep/statsraad_a/)

## MIDDLE EAST

### Afghanistan

#### Cold, hungry wolves devour four people:

[World News]: Kabul, Feb 18 : Hungry wolves, driven by the freezing cold in the mountains, are invading Afghanistan's villages and have devoured four people in the last two weeks, the official Bakhter News Agency (BNA) reported.

Due to heavy snowfall, wild animals from the mountains are heading towards villages and there have been several reports of hungry wolves attacking people, raising fears of rabies.

"So far, four people have been killed and eaten by wolves and 22 people bitten" in Paktia province bordering Pakistan, where heavy cold and snow have also claimed 80 lives, BNA said.

The deaths of men, women and children were reported from Janikhail, Shahikot, Samkhanai, Arma, Sayed Karam, Ahmad Khail, Zormat, Zadran and Aryub areas.

Over 460 head of cattle also perished in the freezing cold and for want of fodder.

Source:

--Indo-Asian News Service

<http://www.newkerala.com/news-daily/news/features.php?action=fullnews&id=74035>

## NORTH AMERICA

### Literature livens up the wolf debate

HAILEY - Beware of the Big Bad Wolf.

Children's literature and folktales are full of frightening images and cautionary stories of the creature, painting the wolf

sometimes as demonic and often as being worthy of fear.

Fear drove early settlers in the West to hunt the wolf to near extinction. In the early 1900s, Congress set aside funds for eliminating wolves and other animals that might pose a danger to agriculture and livestock production near Yellowstone National Park. By 1925, viable wolf populations in the region no longer existed.

However, across Wyoming, Montana and Idaho, lone wolf sightings persisted through the years as did the hope by some individuals that one day wolves would be accepted, allowed to roam once again through the lands they once called home.

Westerners today inherited these conflicting views of wolves. And, to a certain extent, these images permeate rational thinking and influence the opinions people hold today about the species. Literature and lore have played an important role in wolf recovery in central Idaho.

For example, one wolf advocate, Jon Marvel of Western Watersheds, claims that wolf opponents portray the animal in a similar light as can be found in a popular children's tale.

"It's just like Little Red Riding Hood," he said.

The groups, Marvel said, want the public to think of the species as the Big Bad Wolf - insatiable killers, fangs dripping with blood off to prey on schoolchildren as they walk toward grandmother's house.

Advocates like Marvel have looked to other forms of literature and folklore to effect changes in public sentiment.

In his 1949 essay, "Thinking Like a Mountain," nature writer Aldo Leopold recalled his own experiences with wolves growing up in the Midwest. Leopold's description of killing his last wolf captured many a wolf activist's heart:

"We approached the wolf in time to watch a fierce green fire dying in her eyes. I realized then and have known ever since, that there was something new to me in those eyes -- something known only to her and to the mountain."

The conclusion that Leopold reaches in his essay, however, resembles a concept hailed by environmentalists today. The notion Leopold captured continues to gain greater acceptance and support among





conservationists, scientists and activists; it is a notion that all beings are connected, that each species plays a role in the environment:

"I now suspect that just as a deer herd lives in mortal fear of its wolves, so does a mountain live in mortal fear of its deer. And perhaps for better cause, for a buck pulled down by wolves can be replaced in two or three years, a range pulled down by too many deer may fail of replacement in as many decades."

By 1973, Congress gave a level of credence to Leopold's essay when it passed the Endangered Species Act to protect endangered and threatened species throughout the country. The Rocky Mountain gray wolf was listed as endangered that same year.

In anticipation of the 10-year anniversary of Yellowstone wolf reintroduction, Levi Holt of the Nez Perce Tribe described his culture's view of the species and wolf recovery. Holt's words reverberate those of Leopold, striving to dispel the image of Little Red Riding Hood's foe while resurrecting the wolf as the great harmonizer of nature.

"The reintroduction of the Gray Wolf to my peoples historic homelands is, in a way, a return of a long lost family member who had been driven away, exiled or killed out of fear, hatred or misunderstanding," Holt wrote. "A portion of our world has been out of balance since their departure, a portion of our world has been

Source:

Originally published Sunday, December 26, 2004

By Michelle Dunlop, Times-News writer

<http://www.magicvalley.com/news/localstate/index.asp?StoryID=13438>

### 'Old Lefty' is a thing of the past

Wolves populated most of North America at one time.

Although sometimes confused with coyotes, wolves are three to four times heavier, with males weighing an average 90 pounds. Here, as in Europe, wolves were seen as agents of darkness. To this day, "wolf" implies a greedy or cruel person, or a sexually aggressive or predatory man.

Wolves disappeared from the West for two major reasons.

First, the animals they ate disappeared. The bison herds wolf packs trailed were the first to go, and elk and deer then nearly disappeared.

Then, even as deer and elk populations rebounded, the U.S. government set out to kill the lingering wolves. In 1915, the U.S. Biological Survey was created with responsibility to eliminate large predators from the public lands of the West.

Using an arsenal of steel traps and lethal poisons, government agents stalked coyotes, mountain lions, and bears in addition to wolves.

Source:

By Allen Best

January 8, 2005

### Burns Hole casualty

One of the casualties of this campaign to eradicate wolves was an alpha male in the Burns Hole area given the name "Lefty." As explained in a book called "The Last Stand of the Pack," by Arthur Carhart and Stanley P. Young, Lefty had been given that name because, while escaping a leg-hold trap, he lost his right paw.

Still, unable to catch Lefty, the cattlemen of the Castle Peak ranges enlisted the U.S. Biological Survey.

The agency dispatched a hunter named Bert Hegeva. Working from a cabin in Bull Gulch, located northeast of Dotsero, Hegeva methodically set about killing the wolf during the winter of 1921.

A letter of thanks from the stockmen that March sounds like it might have been written by the government agency itself.

"It is a big relief to us to know that 'Old Lefty' is a thing of the past - for his track on the range meant he was back and on the job of cattle killing once again," wrote the stockmen. "We breathe a sigh of keen satisfaction, and fully realize the capture of 'Old Lefty' was truly a job for our Government men who study out these things and apply methods no ordinary amateur can touch.

"You are doing a great work for us stockmen - let us know when we can be of any assistance in furthering your operations on predatory animal control."

### Legends linger

The threat of wolf predation to the livestock herds was

real enough. Wolves will eat everything from mice to moose.

Absent deer and elk, of course, wolves would have attacked sheep and cattle. Yet newspapers of the time contained few stories of wolves eating Herefords and Merinos.

An educated guess is wolves in early Colorado snacked on beef and lamb, but the threat was inflated. That's also the argument found in a new book, "Wolves: Behavior, Ecology, and Conservation," edited by L. David Mech and Luigi Boiani.

"During 1890-1930, the perception of the wolf by the U.S. public and Congress was strongly influenced by accounts of outlaw wolves that allegedly killed stock in large numbers," say the authors, Steven H. Fitts, et al. "Many of these accounts were embellished and were developed, at least in part, by members of the U.S. Biological Survey to generate and maintain funding for their programs."

Seen in this way, even names such as "Lefty" and "Old Three Toes" were part of the public-relations spin. Would Lefty have seemed half as cunning had he instead been Alpha 3218? With a personalized enemy, the agency had both greater power and prestige.

### The campaign also played off human fears

In Russia, Sweden and other countries, a similar story was told of newlyweds and companions traveling in a sleigh when attacked by a pack of wolves. The sleigh's occupants fight the wolves, but several are lost until finally, only the young couple remain, at which time the young man contemplates making a run for help ...

How different is the story from that of the urban "hookman" legend? If a baby boomer, surely you were told the story when growing up of a young couple parked on a dark night on a lonely lane, when of a sudden there's a scrape, scrape, scrape.

At length, the guy gets out to investigate, and ...

### 1,128 wolves

Few wolves remained in the continental United States by the mid-20th century, mostly in a corner of Minnesota. However, some people even then were calling for restoration of wolves in Yellowstone National Park.

As well, wildlife biologists had

begun studying wolves in Alaska, trying to de-mythologize the species. But the most crucial change was the Endangered Species Act of 1973.

That law charted new attitudes toward species protection, but not overnight. In 1983, the Colorado Wildlife Commission opposed reintroduction of both wolves and grizzly bears.

Just the same, the U.S. Fish and Wildlife Service in 1994 completed a study that found habitat suitable for 1,128 wolves in Colorado, with the best habitat being in the San Juans, the West Elks and the Flat Tops, the last of which spread into Eagle County.

Moreover, two public opinion surveys revealed strong support across Colorado for restoration, with support somewhat stronger in cities, and slightly less on the Western Slope.

Source:

<http://www.vaildaily.com/article/20050108/NEWS/101080017>

### Wolf Critics Don't Get It Once viewed as an ecological nuisance, wolves are successfully blending into the West

Time flies when the sky is falling. At least, we were told to expect the sky to fall in 1995. That's when federal biologists snatched a bunch of Canadian wolves, hustled them south of the border and cut them loose in central Idaho and Yellowstone.

Ten years sped by in a flash. But when I look up, I see a pale blue winter sky, right where it's supposed to be. It puzzles me how people both demonize and idolize wolves. I have concluded it has less to do with data or reason and more with emotion, ideology and culture.

Ten years ago, cattle and sheep interests likened wolves to terrorists, sure to rip the guts out of their industry. One senator warned that wolves would snatch kids off bus stops. No doubt, some wolves can be hard on livestock. When a rancher has a troublesome pack in his neighborhood, it's a very real and expensive problem. But it's one of many challenges ranchers face, and for most it has proven to be manageable.

In Montana in 2003, more sheep died from "turtlings" than were killed by wolves. Turtling - a wonderfully descriptive word - is when domestic sheep fall on their





backs and can't right themselves. What killed the most sheep that same year was poisonous plants.

Looking at the new pickup trucks in Montana cowtowns, it's clear ranchers lately have been enjoying the fruits of their hard work. Beef prices went up due to "low-carb" fad diets and a scare over chronic wasting disease that capped the flow of cheap beef from Canada. Though the beef exports are back and the low-carb craze is waning, you can't blame wolves for that.

Meanwhile, the U.S. Fish and Wildlife Service just gave more leeway to ranchers in Montana and Idaho to defend their herds. To me, this makes sense, as wolf populations grow. It makes little difference to a wolf if it's killed by a federal agent or a local rancher, and wolves have proven themselves prolific enough to withstand this kind of pressure. It's also an example of the flexibility inherent in the Endangered Species Act.

But besides some ranchers, the special interest group complaining most bitterly about wolves is big game hunters, charging too much competition from wolf packs

for elk and deer. Even though I am an avid member of this special interest group, their lamentations leave me less than sympathetic.

In Montana, for example, state wildlife managers for the first time this year allowed hunters to kill two elk per season in some areas. They also stretched the elk season from five weeks to seven in several places, because hunters weren't killing enough elk. The columnist for my local newspaper's outdoor page for years had a NO WOLVES bumper sticker on his pickup truck, but he recently wrote, "This year, there were more opportunities for hunting elk than anytime during the last 50 years. The good old days of elk hunting are right now."

The mountain where I hunt elk and deer is in the heart of a wolf pack's territory. I step over fresh wolf scat on many of my hunts. Yet for the past 10 years, I've put meat in the freezer every fall and hung antlers on the wall that would be the pride of any hunter. This year, I passed up legal, safe shots at five deer before shooting the big buck I wanted.

If I were to join the chorus about wolves eating "my" deer or elk, I would just feel greedy. But I will tell you what really did devastate game numbers in my area -- the Big Snow of 1995-96. Even so, the game recovered, despite the wolves.

If I wanted to be rational, I could point to all the balance-of-nature benefits wolves bring to the natural landscape. In Yellowstone, aspen and willow are already recovering after elk overgrazed hillsides and riverbanks. The ripple effects, biologists believe, will be more songbirds, more beaver, even more and bigger trout in the streams.

But that is beside the point. The West without wolves, cougars and bears would be as bland as Africa without lions, leopards and cheetahs.

One September evening a few years ago, my wife and I spied a pair of pointed ears in the long grass of a mountain meadow. Binoculars revealed a wolf pack, staring back. We watched them lope into the timber and then shivered as one of them howled.

For kicks, I threw my head back and howled in return. All around us, the pack broke into full throat. By my watch, we howled back and forth for five minutes. Maybe some folks can have an experience like that and not be moved. I'm just glad I am not one of them.

Ben Long is a contributor to Writers on the Range, a service of High Country News ([hcn.org](http://hcn.org)). He lives and writes in Kalispell, Montana.

Source:

By BEN LONG | posted 01.18.05  
[http://www.tidepool.org/original\\_content.cfm?articleid=143567](http://www.tidepool.org/original_content.cfm?articleid=143567)

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# Company of wolves: Back to nature

by Vivky Allan

FROM the small splashes of blood we know they have been here. Yellow and red flecks spot the snow. At first we think maybe this is a single wolf moving, dripping fresh kill, but then Sabina Nowak points to a brief divergence of tracks. This is not one, but two wolves running together, taking a path up between the spruce pine, feet digging in deep to the wet snow. The blood, she says, is too little to suggest a fresh prey. Perhaps the female is on heat. We move slowly on snow shoes. Like wolves we conserve energy, following in the tread of another's footprint so that it is only the leader who is forced to do the hard work of crushing the heavy wet snow. Working out what happened here is a matter of reconstruction, like putting together elements from the scene of a crime, a forensic art. We study the clues. The steady drip, drip and the rhythmic plunges of their paws lead us deeper into the forest, up a steep hill, across a stream, under branches dripping with melted snow, to a patch where they stopped: devastation. It's like stumbling upon a murder scene. The snow is crushed and pink with blood, spattered with red blots. There are spindles of cracked twigs in the ripped surface. The once powdery top-layer is compacted from pressure. It's not difficult for Polish wolf expert Nowak to decipher. This is a ruffled bed. A fresh, new lust. Here they mated.

I had hoped to see wolves. That is the reason I came wolf-tracking in the Beskid Mountains of southern Poland, to see what wolves were like in the wild, witness their impact, get a measure of the creature we would be inviting into our woodlands if, as has often been mooted by some rich landowners and conservationists, we reintroduced the wolf to Scotland.

But, in a week, I do not see one wolf. I see instead the tracks, scats, urine, scraps of kill, the fleeting traces of their presence. And this, in a way, is only right. This is how it might be. The European wolf is a reclusive animal, wary of humans. The Polish woman who runs my guesthouse has lived in the territory of a wolf pack all her life has seen a wolf only once. Robert Myslajek who works with wolves on Nowak's project has seen them only ten times. As Christoph Promberger the eminent wolf scientist who ran the now-concluded Carpathian Large Carnivore Project in Romania, the country which houses 35 per cent of the European wolf population, tells me, "I have lived in the village of Brasov for ten years. If I were not working with wolves I would not have seen even one."

"There is no place in Europe," says Sabina Nowak, "where you could be guaranteed to see a wolf in the wild." Instead, what there

are, are places where you can be guaranteed to see their tracks. There are conservation groups which bring visitors into the world of the wolf, take them to listen to their eerie howlings, study their behaviour, show them the signs of a lupine existence. There is a growing field of eco-tourism around the wolf and its fellow large predators.

"For some reason," says Promberger, "people like to be in a place where they know there are wolves."

There are no fresh wolf tracks in Scotland - save those fenced in at the Highland Wildlife Park, Kincaig. There have been none since they were purged in the 18th Century. Legend has it that the last wolf was shot at Tomatin in the Findhorn Valley, after allegedly devouring two children - a story which has been disputed since it was written 80 years after the fact.

Instead the wolf has left its tracks through our culture, in our fairytales and nursery rhymes, in folk tales like Robert Henryson's *The Fox and the Wolf*, in names like *The Wolf of Badenoch*, in games like, 'What's the time Mr Wolf?' The wolf is the granny gobbler of *Little Red Riding Hood*, the persecutor of little pigs, the shepherd's nemesis. Its faint footprints are there in the historic documents that demand its eradication, in the 15th Century laws passed ordering all Scottish men to hunt wolves three times a year. James II's declaration of 1457 said: "If anyone slays a wolf at any time, every householder in that parish shall pay him a penny. If it is ever known that a wolf has been spotted in an area, every local householder should be ready to hunt it under the pain of the wedder fine as above. If anyone slays a wolf, he must bring the head to the sheriff, baillie or baron and the sheriff, baillie or baron will be debtor to the wolf slayer for the sum aforesaid."

From all these traces we can reconstruct its presence in our history, but the real knowledge of what it is like to live with wolves is lost to us. We do not know what it is to literally have the wolf at our door, nor do our grandparents. So, when landowners like Paul van Vlissingen, the Dutch businessman who owns the 80,000 acre Letterewe estate in Ross-shire, or Paul Lister, son of the MFI co-founder who owns the 23,000-acre Alladale estate in Sutherland, propose bringing the wolf back to Scotland, it is perhaps only natural that we see blood. We see hillsides littered with mauled lambs, farmers' livelihoods savaged, huge compensation packages, innocent ramblers maimed.

For van Vlissingen and Lister, however the return of the wolf is a different prospect, one plump with tourist potential, one that would

solve deer over-population issues, and one that would allow Scotland to be perceived as a country at the forefront of biodiversity issues. While Scottish Natural Heritage firmly and repeatedly declares (in answer to a question they are often asked) that they have no plan for wolf reintroduction, these two men with their money and personal vision, insist it could happen.

For Paul Lister, the project, due to be revealed this spring, is not full reintroduction, but the housing of wolves within a vast enclosure. He hopes to convert his Alladale estate into a reserve in which the "big five", lynx, wild boar, wolves, bear and European bison would roam, a pilgrimage site for eco-tourists. Van Vlissingen, on the other hand, dreams of reintroduction on a Yellowstone Park scale. No fences. A true return of the wolf.

Paul van Vlissingen's home on the Letterewe estate is reached by boat across Loch Maree. By arrangement beforehand, a man is waiting there to take me across the water. It is a damp December afternoon and twilight clings to the lodge, casting limp shadows on its winsome carvings. The tall 64-year-old millionaire Dutchman, head of family business SHV, greets me at the water's edge, a gathering of dogs at his heels. "Let us assume," he begins as we sit down to soup, "that you had come over today to talk to me because the last two packs of wild wolves were in Letterewe. Now, would your piece be about killing them or would it be about protecting them?"

Van Vlissingen has been making his case for the reintroduction of wolves for many years now. He is not alone. There is a European Directive supporting him. Among conservationists in Scotland opinion is divided. While some believe that restoring the world might send a fragile ecosystem whirling into imbalance, others, like Roy Dennis, think the result will be nothing compared with the already hefty impact of human intervention and change.

"People are terrified something might go wrong," says Dennis. "Better to do something and have it go wrong than to do nothing. There are so many things against nature."

There is also plenty of evidence to support van Vlissingen's theory of the wolf as a possible trophy for Scotland's tourist industry. Yet, on the whole, his statements have been greeted with little enthusiasm.

"I have received a number of letters from politicians that say they are flat against reintroduction of wolves because they would kill people. Now there are no known cases of people being killed by wolves - maybe one or

two somewhere in the world - but it is not frequent. More horses kill people in Scotland than wolves would ever kill - simply by lashing out and biting and kicking. A horse is a far more dangerous animal."

In fact, between 1950 and 2000 four people were killed by wolves around the world. Hardly a significant number, and certainly less than those killed by dogs. As environmentalist George Monbiot recently pointed out, "the risk of being attacked by one of these beasts is tiny by comparison with almost any of the other hazards that we confront". The real threat from wolves is not to us, but to our livestock. What we have always feared from them is not their direct aggression, but their competition.

According to Sabina Nowak, the wolves in her area live on 95 per cent wild ungulates (mainly red and roe deer) and three per cent livestock. Part of her project has been to work on ways of resolving "wolf-livestock conflict" in the mountains, where farmers regularly lose animals to wolves. To do this, she used two main methods: the use of Tatra Mountain dogs, which are trained to protect flocks of sheep; and fladry, a form of protective fencing in which strips of red fabric are attached to a wire. Fladry is a curiosity. Originally devised by hunters who used to trap wolves, it is difficult to see why it works, but for some reason, the wolves, who are colour blind, do not want to go through this wall of fluttering red. The sheep when enclosed are protected.

Of course, shepherding methods in Poland are different to those here and it's difficult to see how fladry might work in a culture where sheep are left to roam freely. In any scheme farmers would clearly have to be compensated for loss of sheep, a factor which van Vlissingen is keen to emphasise in his vision.

"But," he adds, "you know sheep-farming is already subsidised anyway. It would probably cost the public no more."

While van Vlissingen's plan still seems like a pipe dream, Paul Lister looks close to bringing the wolf back to Scotland. His is not a plan of full-scale reintroduction, but rather one of fences, wild boar, bison, bear and wolves, one he thinks he can execute in the near future and which will result in his estate becoming "the number one wildlife attraction in Scotland". Last Monday he began his serious lobbying of political groups and by mid-spring he hopes to have on paper a well-thought out plan.

The first glimmerings of Lister's idea began to form long before he bought Alladale in 2003, when, in his mid 20s (he is 45), he was deer-stalking in the hills of Scotland. "I began to question," he says, "what we were all doing out there shooting deer. Particularly given they're wild deer, and what are we doing shooting so many of them? And why are there so many of them? Why is there nothing growing up here? Why's everything been chewed away?" He was noticing what many conservationists had already seen, that something was missing in the system: a top predator, one that would kill and eat weak and diseased individuals. He began to nurture a plan that might satisfy two aims: the restoration of biodiversity in the Highlands and the creation of a viable tourist initiative in the area.

Sabina Nowak has little time for "wolf-huggers". She flicks photographs of wolf-kill across a slide-screen. Scenes of destruction: a roe deer torn into pieces, its leftover parts scattered across a ten metre square area, an eye in the snow, surrounded by its own small cushion of blood. "They don't like salad," she jokes. "They are not vegetarian." This is the reality of the wolf. We in Britain can be prone towards sentimentalism, but in taking on the wolf we have to acknowledge them for what they are. 'Wolf-huggers' are old ladies who like to walk wolves, people who think of these carnivores as soft and cuddly. "This is not the truth about wolves," she says.

Looking at a picture of a wolf-kill it is not difficult to see why it has been persecuted. To find some of your flock mauled and savaged in this way, must be traumatic. Perhaps because of this, it seems we are incapable of looking at the wolf for what it is, another animal like us. Five years ago I interviewed the author Nicholas Evans around the publication of *The Loop*, a love story revolving around the tensions between ranchers and wolf conservationists in America. He blamed Christianity for the wolf's persecution.

"You only have to go back to the Romans to know what they thought of the wolf. It was revered. But then man started to see himself, with the encouragement of the church, as something superior and other than the animal world. Animals were not deemed to have souls according to Christian dogma, but there were good animals and bad animals and the good animals were the ones that safely grazed in the green pastures around the village. The animals beyond the fences, in the wild, in the dark forests, became demonised, and the wolf was the most visible, because occasionally he popped over the fence and took a lamb."

Why focus so much on wolf reintroduction above all other animals? The wolf, these days, is an animal that provokes extreme emotions: love and hate in almost equal measure. There are wolf-huggers, wolf-hunters, wolf-haters, wolf-experts. This makes it a good icon, a galvanising poster boy for the whole process of conservation and reintroduction of threatened animals. It is, after all, a potent reminder of our place in the world, what we have destroyed and displaced. "Ninety-five per cent of radio and television time," says van Vlissingen, "it's nearly always human problems, about humans against humans. But the question, can we live without other living species around us? I think the answer is no, we cannot."

Nowak projects a map on the wall. These are the known migratory corridors of wolves through Poland, the secret highways of the wild. They lead from the Ukraine, through Poland, blocked occasionally by planned motorway routes, and down into East Germany where the wolf is coming back - there are now two packs where there were none. After years of persecution, they are on the return and have started to recover in Italy, France and Spain, to migrate further and resettle areas they have lost. But Britain is an island. The wolves can never come back here of their own accord, by their own paths, their own corridors.

As conservationist Roy Dennis says, without reintroduction, we will have to wait for the next Ice Age for that.

For more information about wolf tracking and ecotourism, see Sabina Nowak's wolf project at [www.wolf.most.org.pl](http://www.wolf.most.org.pl); see [www.clcp.ro](http://www.clcp.ro) for Christoph Promberger's Romanian tours; For retreats at The Highland Lodge at Alladale estate, log on to [www.alladale.com](http://www.alladale.com)

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Photo: UKWCT





# Livestock guarding dogs: recent experience for Switzerland

by Jean-Marc Landry,  
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Damiano Torriani and  
Christof Angst

## Introduction

Wolves *Canis lupus* were eradicated from Switzerland about 150 years ago. However, since 1995, dispersing wolves from Italy and France have regularly attacked livestock. Swiss sheep farming is no longer adapted to large carnivores because sheep are free-grazed unguarded on alpine pastures. Losses to wolves can potentially be high: surplus killing is common and sheep panicking often fall over cliffs in mountainous regions. Moreover the wolf in Switzerland is fully protected, implying that solutions must be found through changes to sheep husbandry rather than through wolf control. To try to deal with this situation, the Swiss Agency for the Environment, Forest and Landscape (SAEFL) instigated the Swiss Wolf Project (SWP) in 1999. The prime goal was to set up mitigation measures, to monitor wolves, and to spread information about wolves and mitigation measures. For financial and political reasons, the project ended in December 2003. In 2004 a new project was initiated involving more agriculture interests, and dealing only with mitigation measures. This paper discusses the implementation of livestock guarding dogs (LGDs) during the SWP (1999–2003). A separate article in CDPNews No 9 will present briefly the concept of the new project led by the Service Romand de Vulgarisation Agricole (SRVA, information center for agriculture).

## Sheep farming in Switzerland

Since the Uruguay round of world trade negotiations in the early 1990s, Switzerland was forced to adapt its highly conservative agricultural sector to the world trade rules. Trying to reduce the number of farms that were closing, the government defined a new multifunctional role for the agricultural sector (e.g. to preserve natural resources, to keep livestock in an environmentally responsible way, etc). These new responsibilities are considered as public services and are not influenced by the market prices since farmers are subsidised by direct governmental compensations (FOAG<sup>1</sup> 2000). However, the farmers' wages are slowly decreasing forcing them to look for another job to complement their incomes (SFU<sup>2</sup> 2002). Since 1992, the price of the lamb meat declined by 20%. Small farms (<49.4 acres or 20 ha) are disappearing while big farms are slowly expanding (FOAG 2002). The agricultural context makes the future of many sheep farmers uncertain, even if for many of them, keeping sheep is only a supplementary job or hobby. Prices and markets will no longer be guaranteed (e.g. as of 2007, lamb meat is expected to lose 30–50% of its actual value) and financial support will be reduced. The wolf could not choose a more turbulent period to return to Switzerland.

Since the Second World War, shepherding was abandoned to decrease the costs. Sheep are currently free ranging on alpine pastures and checked once a week. Today the average

size of a flock of sheep does not exceed 300 animals in 99.6% of the farms in Switzerland and in 77% of the alpine pastures. Only a few big flocks are still guarded by shepherds. Alpine pastures can be located at more than 2,500 m a.s.l. and can be very steep (Figure 1). Unguarded sheep are allowed to roam over large areas of up to several km<sup>2</sup>, generally delimited by natural borders like ridges, rock faces or forests. However, the flocks are well manageable even if they scatter in small groups because pastures are often at a mountain side of a valley. To make them stay on the pasture and to return to the same night time places they are fed regularly with salt at the same places. As the sheep of a flock normally belongs to one breeder they know each other and stay more or less in a flock. Some flocks are fenced at the beginning of the summer season until mid-august and then are allowed to roam free. If a shepherd is present, daily or weekly sectors are delimited to graze the flock. In spring and fall, flocks are usually kept in the bottom of valleys in small wire netting or electrified enclosures. Most of these pastures are located near forests or are overgrown with bushes and small trees. Since the winter is severe, the sheep are kept in barns from December to late March/mid April. The lambing season runs from January to March and the lambs are sold in autumn for the meat. If LGDs are present, they are always living with the flock, even if it is unguarded or in winter time in the barn.

<sup>1</sup> Swiss Federal Office for Agriculture

<sup>2</sup> Swiss Farmers' Union



Photo: Jean-Marc Landry

Figure 1. Alpine pasture where sheep are grazed during the 100–140 day summer season.

### Consequences of the return of the wolf to Switzerland

Until now, the wolf has reappeared only in the south of Switzerland (cantons of Valais, Tessin and Grisons), which represents 36.7% of the Swiss territory (15,142 km<sup>2</sup>). This is where nearly half (44%) of the alpine pastures are located and in which nearly 2/3 (59%) of the sheep graze during the 100–140 day summer season (147,000 heads or nearly 10 sheep/km<sup>2</sup>). Lots of cattle (119,000 heads or nearly 8 cows/km<sup>2</sup>) are also grazing in this area, on pastures situated at lower altitudes. Besides these livestock, some 94,000 wild ungulates (chamois *Rupicapra rupicapra*, red deer *Cervus elaphus* and roe deer *Capreolus capreolus*) share this area.

From 1998 to 2003, 456 sheep and goats have been compensated as wolf kills. The carcasses are checked by a local gamekeeper. In 1999, 128 sheep, which “disappeared” after wolf attacks, were also compensated. In 2000, 105 sheep killed by an unknown canid (probably a wolf) were compensated as well (damage statistic for wolf see: [www.kora.unibe.ch](http://www.kora.unibe.ch)). The amount of the compensation paid from 1999 to 2002 for 387 sheep/goats killed in 123 attacks reached 161,000 (a mean of 416 per animal). It is generally admitted that 1–4% losses during summer grazing is normal (without predation). There is no official data on dog attacks on livestock, but interviews with sheep owners seems to show that it is not negligible.

### Predators and management plans

Officially, there are about 3 to 6 wolves in the southern part of Switzerland (2004). All wolves that have been reported in Switzerland since 1995 originate from the Italian population (Valiere et al. 2003). There are regular wolf observations elsewhere in Switzerland, but they have never been confirmed scientifically (genetic analysis, good pictures, dead animals). The lynx *Lynx lynx* was reintroduced in Switzerland in the early

seventies. Presently, there are about 100 adults; about 20 in the Jura Mountains, 70 in the Alps and a small population of 8 recently translocated lynx in the eastern part of the country. These lynx kill about 50–100 sheep / goats per year on average. A wolf and a lynx management plan allows the culling of predators under certain conditions (see [www.kora.unibe.ch](http://www.kora.unibe.ch) for more details).

### The Swiss Wolf Project

The initiative to introduce livestock guarding dogs (LGDs) came from two sheep owners who faced the first wolf attacks in 1995. They bought two *Great Pyrenees* (Figure 2) pups in the Alps Maritime (Mercantour, South of France) in 1996. Unfortunately, they were already strongly bonded to people and not trustworthy with the sheep. J.M. Landry had the opportunity to follow them to try to find solutions to correct them with advice from Ray and Lorna Coppinger and the rich information gathered in the DogLog Newsletter (Lorna Coppinger editor), from Joël Pitt, who introduced the first LGDs in France and from Günther Bloch (German Wolf Society) who shared his experience and his literature on LGDs. This first experience has influenced our further mode of working with LGDs. We have developed a strong bond from the dog to the sheep to the detriment of the relationship with the owner. Today, some sheep owners can still not catch their



Photo: Jean-Marc Landry

Figure 2. Great Pyrenees on alpine pasture.

dogs (e.g. to give vaccinations or worm treatments, etc.) or to move the LGD without the sheep / goats (e.g. vet control), which complicates the management of the LGD. In 1998, we introduced the first pup (*Great Pyrenees* female) in the flock of one of the two already “experienced” sheep owners. She is still working today. After a series of wolf attacks at the end of 1998, the SAEFL was initiating the SWP led by KORA (Coordinated research projects for the conservation and management of carnivores in Switzerland).

Our main objective was to examine the feasibility to protect a flock of sheep and goats in the Swiss Alps against wolves and to determine the advantages and the limits of the methods. Livestock guarding dogs were one of the main subjects. Besides, we have also tested the implementation of fences (Angst et al. 2002), fladry, the use of donkeys (Landry 2001), flashlights, protection collars like those used to protect the neck of the sheep against lynx attacks (Angst et al. 2002) and sheep herding. We tested techniques to correct problem dogs as well. We have also tried the option to leave a dog alone with the flock on an alpine pasture during the entire summer and have taken the opportunity to test and improve automatic dog feeders. In addition, we have experimented with the possibility to introduce an adult LGD in a flock recently attacked by a wolf. Finally, our role was to communicate our data through publications and talks and to share our knowledge with sheep owners, from whom we have learned a lot. As KORA was in charge of both the Swiss Wolf and Lynx Project, we rapidly applied LGDs to protect some flocks against lynx attacks. The results obtained by the SWP have been compiled in a final report (Burri et al. 2004).

### LGDs in the projects

We have placed pups in flocks according to the methods of Lorenz (1985), Lorenz & Coppinger (1986), Coppinger (1992) and Coppinger et al. 1983. As the use of the LGDs was unknown by the sheep breeders – and by ourselves as well – we first wrote a short synthesis on the use of this kind of dogs (Landry 1999). From 1998 to 2003, 64 LGDs were introduced in flocks in Switzerland. 3 other LGDs were bought by sheep owners but followed by our project. We acquired 20 *Great Pyrenees* directly from France (10 females and 10 males, from three distinct regions) and four *Maremmano-Abruzzese* (Figure 3) from Italy (Abruzzo province). Every LGD was bred from working parents. We also bought 3 *St-Bernard* (Figure 4) pups at the St-Bernard Hospice. We have received two *Spanish mastiffs* (Figure 5) and one *Mioritic* from a Romanian worker from Brasov as well. 42 pups were directly born in our project from 9 litters and 36 (19 females and 17 males) were introduced in flocks, the others in families. In several cases, we have introduced adults already socialised with sheep. Besides, we had to move 4 adult LGDs to new flocks: one sheep owner had to leave Switzerland and the three other LGDs were not trustworthy with the flock. The problems





Photo: Damiano Torriani

Figure 3. Maremmano-Abruzzese becoming accustomed to the sheep on the first day after their arrival at their new farm.



Photo: Jean-Marc Landry

Figure 4. St-Bernard dog in the sheep pen.



Photo: Jean-Marc Landry

Figure 5. Spanish mastiff with sheep on alpine pasture.

disappeared after they have been introduced into their new flock.

At the end of the project, 41 LGDs (64%) were still working, while 36% (23) of them died (12 = 19%) or were removed (11 = 17%). Six were euthanised, three for skeletal problems (2 hip-joint dislocation and 1 knee lateral dislocation) and three for behavioural disturbances<sup>3</sup>. Two had a stomach torsion, one was killed by another LGD in a barn (food domination) and three died for unknown reasons. Of the eleven LGDs placed in families, 8 were too friendly with humans and were not attentive to sheep, two were removed following mistreatment and one was chasing wildlife. Generally, the socialisation process with the sheep was not adequate and was outside of our control<sup>4</sup>. We are convinced that the possibility to choose the pups and a ensure a good follow-up can reduce the number of problems with LGDs.

#### Academic research on LGDs

Since LGDs are working in tourist areas with up to 25,000 hikers crossing some alpine pastures in one season, we have also observed the LGDs behaviours towards hikers (Landry 2004). This work led to recommendations for the government, the sheep owners, shepherds and hikers to deal

with potential conflicts with tourism and local people. If any dog had bitten someone, a lot of people would be afraid of LGDs. Tourists generally do not know how to interpret and behave when they face a LGD.

#### LGDs and hikers

We observed the interactions<sup>5</sup> of 14 LGDs (13 *Great Pyrenees* and a *Spanish mastiff*) towards hikers and their dogs during three years (2000–2002), mainly on alpine pastures (Landry 2004). We took into account 1,221 encounters from 2,071 persons. In 57% of the encounters the LGDs didn't react (barking or approaching). When approaching hikers, LGDs generally kept a distance of at least 10 m (75%). In the vicinity of the hikers, LGDs showed neutral behaviour (e.g. walked aside, Figure 6) or presented friendly behaviours (e.g. greetings). One LGD occasionally frightened hikers by barking close to them. It was then temporally removed. Nevertheless, the probability of approaches increases considerably when a companion dog accompanies the hikers ( $P < 0.00001$ <sup>6</sup>). In general, there have been no problems with tourists, but one LGD especially bit hikers' dogs, two of them were even on a lead and not in the vicinity of the flock.

To minimize the risks, recommendations were addressed to the new LGDs commission in 2004, which was mandated by SAEFL to make proposals regarding the management of the LGDs in Switzerland. Two of them are:

1. To monitor the LGD breedings to obtain LGDs that are both tolerant to people and effective against predators;
2. To join the national ongoing programme PAM (Prevention des Accidents par Morsures<sup>7</sup>) dedicated to children (especially) and adults. This program was initiated by the Swiss Federal Veterinary Office to teach the right behaviours to adopt when encountering a dog (known or unknown) to reduce the number of accidents.

In the future we may have problems with LGDs attacking other dogs. In our country with many tourists, it is difficult to teach a LGD to defend the flock from predators and stray dogs, but to respect dogs on a lead, even if it is only passing the flock. We think that LGDs interact with other dogs not only to defend territory limits or to safeguard the flock. These interactions may have other explanations. The role of the pheromones and the phenotype of the dog may have an influence, which is not yet known.

Some municipalities have attempted to ban LGDs on their alpine pastures. Since 2004, the canton of Valais has elicited a list of "dangerous" breed, comprising the *Spanish mastiff*. These breeds must be constantly muzzled and be kept on a lead! The canton of Valais can at any time modify the list. Therefore, the next step of this study is to measure the tolerance of LGDs towards hikers related to their capacity to protect efficiently a flock of sheep against a mock predator. This work might help us to select LGDs, which fit the best in our "political" tourist context.

<sup>3</sup> One was untrustworthy with the sheep and was shot by the owner, one was no longer attentive and was euthanised by the owner. The last one was not socialised with humans at all and developed fear-aggression behaviours.

<sup>4</sup> Three LGDs were given to us, the three St-Bernard were not early socialised with sheep and therefore were already strongly bonded to people.

<sup>5</sup> Their behaviours towards hikers when they approach and bark at them and when they are in their vicinity.

<sup>6</sup> We have used the logistic regression through the GLM procedure after normalizing the data. We have taken into account the number of reactions ( $N = 696$ ). We have tested the influences of four variables (number of persons, presence or absence of a companion dog, distance of detection and distance of reaction) to predict the probability of the variable "approach". The variable "presence or absence of a companion dog" is very significant ( $P = 7.97e-011$ )  $T = 6.60$  (this value follows a distribution of Student and allows to calculate the p-value.  $T\text{-value} = \text{value of the logistic regression divided by the standard error}$ ). Degree of freedom ( $df$ ) = 691.

<sup>7</sup> Prevention of the accidents from dog bites.



Photo: Jean-Marc Landry

Figure 6. LGD following a group of tourists along the electrified fence.

### Cost of a livestock guarding dog

The yearly average cost of a LGD is 712 (\$ 937 US), including the food, the vet, dispersing the cost of the dog over 8 years and the trip to get the dog. The price of the food and the travelling expenses vary a lot. In our case, we had a special agreement with a dog food manufacturer (60% reduction). In a rich country like Switzerland, the acquisition and the support of a LGD seems not to be a problem. However, in our sheep-farming context, the average annual cost for three LGDs, the minimum theoretical number to protect a flock against a pack of wolves, can reach a monthly salary. The project has financed the dogs, the food, the vaccinations and the vermifuges during the whole project. A contract described the obligations of the sheep owner and the responsibilities of the project.

### Problems with livestock guarding dogs and techniques to improve them

Apart from the “normal” problem encountered with young dogs – chasing, grab-biting, wool-pulling, tail-biting, and ear-biting – our two main problems were to deal with the oestrus period of the bitches and to prevent certain LGDs from escaping from an enclosure to roam around. Unfortunately, sheep owners often do not watch the heat of their females. Consequently, we had several crossbreeds between herding dog males and LGD females. The pups were all euthanised, except one litter. These pups were placed in families. In one case, the father bred with his daughter on the alpine pasture. These were dogs of two owners regrouping their flocks during summer time. These pups were also euthanised. To help to control the heats, we have recommended that dogs’ owners give injections or permanently sterilize the bitch. The first method requires that injection dates are carefully followed while still allowing occasional heats to prevent uterus infection. Generally, the dogs’ owners do not want to sterilize their bitch, because they hope to have pups one day to sell them. In one case we have obliged the sheep owner to operate his female, because she had successively four litters.

When a dog escaped from the enclosure to defecate, to get water from the stream instead of water from the bucket, to mark or to roam, we – and the sheep owner – often received complaints from local people, and the local gamekeeper has threatened to shoot the dogs on several occasions. Consequently, we have implemented techniques to try to correct the LGDs behaviour. Initially, we have used the electric shock collar. This system is very time consuming if you are not able to provoke the dog to leave the enclosure to correct him at this precise moment. Moreover, the dog often knows that you are in the vicinity and stays quiet in the middle of the sheep. Therefore, we have improved the invisible fence so it does not require our presence. The pasture is surrounded by an electric lead connected to a box which gives electric impulsions. The dog wears a light electric collar giving at first an acoustic signal

and then a smooth electric shock when the dog approaches the fence. We were able to cover even one kilometre fences in very difficult terrains. The two systems described above work quiet well, but the results are never definitive! That means that the experience must be regularly repeated. (e.g. in springtime when the sheep and the LGDs join the spring pastures or in autumn when the flock descends from the alpine pastures to be kept in fences).

### Effectiveness

Because wolves are quite rare in Switzerland, it is impossible to estimate the effectiveness of our LGDs. However, sheep owners recognized that their dogs are very effective against fox *Vulpes vulpes* and raven *Corvus corax* predation on lambs and against stray dogs. We have observed and even filmed LGDs encounters with other dogs and found dead foxes and badgers *Meles meles* near flocks. The presence of one or several LGDs seems to calm the herd, which may panic less when predators approach.

In contrast, we have good evidences that LGDs are effective against lynx predation (Burri et al. 2004). In flocks with repeated lynx kills, the damages ceased after the introduction of two or three LGDs. Since forest or bushes often surround the pastures on lynx territories, one dog is not always enough. Nevertheless, we should be careful before drawing any conclusion, because lynx predation depends as well on other factors like lynx and prey density, presence of lynx that specialised on livestock etc. (Angst et al. 2002). Moreover, the number of protected flocks involved (N = 8) still remains small.

### Importance of the shepherd on the effectiveness of the LGD

Sheep herding is a lost tradition in Switzerland and usually alpine pastures have no infrastructure for shepherds. As most sheep are free grazing and shepherds are very rare in Switzerland, we tested the possibility to leave LGDs alone accompanying the sheep during 100 days. We experimented with three flocks: one herd with a lone LGD, one herd with two LGDs and one herd containing the sheep of two owners with one LGD each. Several automatic dog feeders (Figure 7) were placed where the sheep used to bed. The sheep owners controlled the flock every 7–10 days. The dogs followed the sheep wherever they went for grazing during the day and returned with them to the night places where the sheep owners placed salt for the sheep and the automatic dog feeders. These experiments have shown that it is possible to leave LGDs alone with a flock of sheep during at least 100 days, with a weekly control. The dogs stayed with the flock during the whole trial. However, the majority of LGDs are under supervision of shepherds.

However, the sheep used to scatter in small groups which makes efficient protection difficult. Moreover, one flock was attacked several times by an unknown predator, which killed preferentially an isolated ewe whereas its lamb was saved. A shepherd and two LGDs

from the project stayed during one week with the flock. He penned the sheep with the LGD around every night and no further losses were recorded. Unfortunately, there was no cabin and due to bad weather, he had to leave the area. The predation restarted immediately. The next year, we hired a shepherd. The first day when he arrived with the herd, sheep were attacked during the night. The herder then always penned the sheep with the two LGDs at night. The predation ceased for the whole season. This is however the way shepherds are working with LGDs on alpine pastures in Switzerland.

These experiences demonstrate that the presence of a shepherd is important to increase the effectiveness of the LGDs. His work is to look after the flock, to manage the grass and to group the sheep – preferentially in an electrified enclosure – to assist the work of the LGDs. Nevertheless, the shepherd also needs a cabin where he can warm himself, dry his clothes and cook his food. That requires investment in infrastructure. On the other hand, sheep owners should provide LGDs that work properly, because shepherds typically don’t have time to spend time to correct problematic LGDs.

### Problems dealing with the project

LGDs like wolves quickly became a political object! As a result, the KORA team was often held responsible for the political decisions – e.g. the strict wolf protection – and often accused of having reintroduced the wolves. In general, sheep breeders were not in favour of getting a LGD. For them, accepting a LGD and mitigation measures means accepting the wolf. As a majority of the sheep breeders are not able to finance the mitigation measures (LGDs, salary of the shepherd, etc.), they also wanted to be reassured that the SAEFL will support the mitigation measures for a long time. We tried to find solutions to help sheep owners to manage their dogs’ problems, to encourage them in their work and to improve our communication. We organised annual meetings to talk about the results of the previous year and to listen to their wishes, which were directly transmitted to the SAEFL. During the last year of the SWP



Photo: Alberto Stern

Figure 7. LGD feeding on an automatic dog feeder on an alpine pasture.



(2003), we organised a new sheep association (SSALGD<sup>®</sup>). The prime goal of this association is to be the main interlocutor about LGDs in Switzerland and to collaborate with the new project at the SRVA, which was mandated by the SAEFL as interlocutor for damage prevention in Switzerland.

#### **Cost for optimal prevention measures on alpine terrain**

The prevention measures (3 LGDs, a shepherd, costs of a caravan, helicopter flights, etc) to protect an alpine pasture during 120 days (which was the average number of grazing days in the SWP) cost 14,000 (\$ 18,425 US). Summer grazing of sheep on alpine pastures is subsidised by the state. To be able to afford this amount only due to the subsidies dedicated to summer grazing sheep, the sheep owners need to collect a minimum of 800 animals on the alpine pasture. Presently, this size flock represents only 5–8% of the sheep grazed pastures in Switzerland. Even if flocks are gathered, the majority of the alpine pastures remains too small to reach the limit of 800 animals. Therefore, subsidies for summering sheep, already at the level of those for cows, should be augmented for flocks of sheep below 800 to allow protection. However, the FOAG will not subsidize sheep more than cows for political reasons: the sheep industry only corresponds to 0.8% of the national agricultural incomes, unlike the cow industry, which reaches 48%. Due to the government's restricted budget policy planned for the next years, the actual ability of the SAFEL to finance the mitigation measures is compromised. Due to the new agrarian policy, more and more farmers are working two jobs and therefore have less time to implement mitigation measures and have less personal funds to finance them.

#### **Recommendations**

Our experiences with LGDs and sheep owners during the five years of the SWP allow us to make recommendations especially to the Swiss government, to politicians, and to the new LGDs commission.

- It is essential to involve the sheep owners directly in the project through an existing – or to be created – sheep association, like the SSALGD. We think it is important that sheep owners pay for their own LGD, which might make them more responsible. The government should help to finance the rest of the mitigation measures. It is fundamental to select the sheep owners who really want to protect their flocks.
- It is vital to follow the genealogy of the dogs and to note down their behaviours and temperaments to be able to select the dogs which fit best in the project. In tourist areas, each dog that shows aggression towards people should be taken off the breeding program. We are convinced that

the genetics of the dogs can facilitate the attachment to the sheep and decrease the common problems. We should bear in mind that several “breeds” have been selected more for a phenotype than for a behaviour.

- It is very important to take into account the psychology of the sheep owner and the behaviour of his flock before choosing, which dog to introduce. A LGD, which does not work in one herd, can be successful in another one. Not every LGD works in a team with other dogs. Taking into account the temperament of the dog helps to compose the best pack or to resolve problems by removing a dog.
- Implementation of infrastructure on alpine pastures to welcome shepherds should be facilitated by constructing cabins and provide them with fresh water.

#### **Conclusion**

We need to learn more from our LGDs to facilitate their integration in flocks. This will improve the acceptance of dogs by sheep farmers, who have often less and less time to spend time correcting the dogs. LGDs on alpine pastures, which do not react to hikers, may also help to smooth the acceptance of LGDs. A professional survey of our LGDs and a genetic selection for further breeding will be the next step.

The natural return of the wolf questions the way we deal with sheep husbandry in the Alps. There are methods that further the coexistence between predators and livestock, but they are costly. Politicians do not see the need to invest in funds to help to restore an old tradition. The problem is easily resolved through minimal prevention measures accompanied by a wolf management, which could allow the selective culling of wolves when necessary. Yet, we should see the prevention measure in a broader view in terms of the possibility to manage and conserve alpine pastures in the long term, to control the sanitary state of the livestock daily, to protect the flocks against “normal” predation like stray dogs, foxes, ravens or theft. However, the conservation of large carnivores (especially the wolf) and the implementation of mitigation measures depend on political decisions. Without public money, there will be no mitigation measures and no possible coexistence with large predators.

#### **Acknowledgements**

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# THE MEXICAN WOLF

by Pierre Zuppiroli and Lise Donnez

**The France-based duo Pierre Zuppiroli and Lise Donnez take an outsiders' view of the reintroduction programme of Mexican wolves to the states of Arizona and New Mexico in the South-West region of the United States.**

## INTRODUCTION

The Mexican wolf was probably the most seriously affected by the extermination programme that saw the species targeted all over the USA. Wolf eradication was virtually a crusade for cattle ranchers who enjoyed the full backing of politicians in power in their unbridled drive to exploit the resources of the land. The mere presence of humans endangered the local fauna, with systematic programmes deployed by the government to eliminate the Mexican wolf from the South-West in a matter of mere decades. It was a programme that had few audible critics up until the late 1970s.

As early as 1930 their population had been reduced to a few scattered individuals, and the last cadaver in New Mexico was found in 1970. In neighbouring Texas the last two were accounted for in December of that year, one shot, one caught in a trap.

But through the '70s thinking in the region began to shift toward a more favourable view of the wolf. In 1973 Congress signed into law The Endangered Species Act under which the Mexican wolf was designated a sub-species

under threat. By 1976 the U.S. Fish & Wildlife Services (USFWS) established *canis lupus baileyi* as an endangered species, even though, as we have seen, it was already extinct on US territory. The next step, in 1979, with the co-operation of the Mexican government, was for USFWS to go ahead with the capture of four wolves from a population south of the border where they were also in danger of extinction.

## PRINCIPAL PLAYERS IN THE REINTRODUCTION PROGRAMME

Within the USA the reintroduction programme was made possible by the combined efforts of three agencies: USFWS was given a federal mandate to form and lead a working party known as The Mexican Wolf Recovery Team (MWRT) that also drew on the resources of the Arizona Game and Fish Department (AGFD) and another federal body, the US Forest Service (USFS). These last two helped with the capture of wolves and particularly with selection of sites for reintroduction.

But beyond the official participation of federal and state agencies the role of independent associations and militant organisations favouring the plan proved vital in the lobbying process between institutional bodies and local populations likely to be affected.

Just months before retirement the legendary Bobbie Holaday launched Preserve Arizona's Wolves (P.A.W.S.) in 1988. It was designed as a support group for official initiatives – the restoration and preservation of the Mexican wolf to its original habitat. The group – the first in Arizona dedicated to wolf conservation – gathered 150 members within a month of its launch. USFWS publicly supported and encouraged PAWS, which in turn created the Mexican Wolf Trust Fund, a foundation managed by AGFD designed to raise funds and donations to back up the reintroduction programme.

An equally important contribution was made by Defenders of Wildlife. Drawing on its vast experience in reintroduction



Pierre Zuppiroli of FERUS and Laura Kelly of the U.S. Fish & Wildlife Services (USFWS) call to wolves near Alpine, Arizona. Photo : Lise Donnez.

programmes, its generous reimbursement funds and access the corridors of power in Washington this group had an incalculable impact on the programme's execution.

The Arizona Cattle Growers Association (ACGA) was involved in the debate on the programme from the outset, providing a forum for its doubts and concerns. While relations between the two sides were not always cordial the arrangement meant a compromise could be hammered out enabling the reintroduction to go ahead. It was a case of the myth of the 'Wild West' and its idea that since the beginning of the century the land was the private property of the cattle barons and the legal reality that it fell within the remit of USFS. It was not an easy pill for the cattle community to swallow.

A number of Native American reservations fell within the broad area designated for reintroduction and initially leaders of the communities concerned declined to participate. But in 1988 an agreement was signed with the Council for the White







Mountain Apache Tribe allowing for the monitoring and management of the wolf population within the area of the reserves. An official permit is still required for non-residents to gain access to these reservations.

### SELECTION OF THE SITES

Four years after the signing by the US and Mexican federal governments of the MWRP in 1982, an investigation was launched into the suitability of sites seen as historic habitats for the Mexican wolf in the states of Arizona, New Mexico and Texas to determine which were adequate. But Texas, for political reasons, swiftly moved to prohibit any move toward reintroduction. Thought had been given to the US Army's White Sands Missile Range in New Mexico, but as this site would at best sustain some 20 wolves, and anyway the military was dragging its feet on all initiatives, it too was abandoned.

This meant attention was now focused on the Blue Mountain Range of Arizona and New Mexico and an area of some 18,000km<sup>2</sup>, sitting at 1,500m to 2,500m altitude made up of prairie and forests bearing Ponderosa pine (*Pinus ponderosa*), Blue fir (*Picea pungens*), White fir (*Abies concolor*), Poplars (*Populus tremuloides*) and Douglas firs (*Pseudotsuga menziesii*).

A variety of prey roam these broad acres: elk (*cervus elaphus*), white-tailed deer (*odocoileus virginianus*), mule deer (*odocoileus hemionus*), pronghorn (*antilocapra americana*) and collared peccary (*pecari tajacu*).



A mule deer - one of the prey species of the Mexican Wolf. Photo: Lise Donnez and Pierre Zuppiroli.

### WOLVES – LOS LOBOS

By 1987 there were 24 Mexican wolves in captivity on the US side of the border and six – lobos in the language of Mexico and of course Spain – south of it. From these candidates for release into the wild had to be chosen, based on criteria drawn up by the Mexican Wolf Captive Breeding Committee, established to supervise the captive reproduction programme.

Through this programme three lineages of Mexican wolf were identified and it is solely due to these specimens that the species has been restored to its natural habitat in the wild.

There are about 300 of them now in some 60 captive facilities all recognised as partners in the reintroduction programme: zoos, centres for educational visits, private ventures and others.



A coyote (above) and wolf (below) - tell the difference. Photo: Lise Donnez and Pierre Zuppiroli

Selection of animal for return to the wild depends on factors set out by the Breeding Committee, as mentioned above. These are principally genetic lineage, behaviour, with fear of humankind of paramount importance, ability to run down and kill wild prey, its general fitness and, of course, age. Through this rigorous selection process many wolves are deemed unsuitable for the wild and others are totally dropped from the programme.

Those selected are released in pairs, male and female, but as they are previously unacquainted they are first placed together in an isolated den for an acclimatisation period. Over a period they are fed (but no human contact), establish social bonds and generally get accustomed to their new environment. When biologists consider them to be ready for the next phase they are transported – sometimes in crates on the backs of donkeys – to the second and final acclimatisation den on the reintroduction site. Should their behaviour in any of the acclimatisation pens fail to satisfy the team of biologists they are returned to their original sites in captivity.

It was nearly 20 years from the time of the first capture by USFWS that three wolves were released into the wilds of Alpine in Arizona on 26th January, 1998. Each wolf is given a number – these were 174, 511 and 166 – and the moment was watched by representatives of all groups involved in the programme, various branches of the media and Bruce Babbitt, Secretary General of the US Ministry of the Interior who eloquently stated that the Mexican wolf was now there to stay!

Today, seven years on, there are some 50 individual wolves at large in the Blue Mountain Range, halfway toward the objective of a stable population of some 100, maintained at least over three consecutive years.

Though this progress represents a certain degree of success, there have been problems and disappointments along the way. There is constant pressure from livestock raisers and hunters so a constant human surveillance is maintained. Biologists need to recapture wolves or otherwise intervene if they encroach too closely on human habitation, attack cattle – a rare occurrence – or dogs. In conclusion all the packs – in some way or other – have suffered transfers and human interactions and replacements have been provided due to losses through poaching, road accidents, natural deaths and dispersals. Of 11 specimens reintroduced in that first year, 1998, only three survived in the wild for a full year, with five killed and three recaptured. Despite this, researchers were confident of eventual success given the data yielded by the Yellowstone programme and the Red wolf (*Canis rufus*) reintroduction where 76 individuals were lost before a number of packs took hold in their habitat. David Mech one of the best known scientific advisors on the Mexican wolf project explained that its objectives had plainly been achieved: the returnees had shown the ability to adapt to the territory, hunt down and kill their prey and reproduce there. Mexican wolf packs tend to range from three to seven in number.

Recent studies conducted by the University of Mexico indicate that the Mexican wolf is extinct in Mexico in the wild as it was north of the border before the reintroduction programme. But to conduct a similar operation, only one of three criteria is met: the ecosystem, an area of 15,892km<sup>2</sup> across the states of Chihuahua, Coahuila and Sonora is suitable. Unfortunately the Mexican Government is at this stage in no position to provide the requisite funding and crucially, no consultation of local populations has been conducted yet.





## MEXICAN WOLF

From any point of entry into the Wolf Recovery Area notices draw attention to the fact that the Mexican wolf is a strictly protected species, with penalties for violation by Federal Directive of a six month prison term and a \$100,000 fine! The first case was 21-year-old James Michael Rogers, who went on trial for the killing of a Mexican wolf on 17th May, 2000. Convicted, he was handed a four-month prison sentence, six months house arrest and 50 hours of community service. There have been others.

USFWS and AGFD also have a poster campaign offering rewards of \$10,000 for information on illegal action against the Mexican wolf. This campaign is financed by associations and private funding.

Jim Ashburner, an attorney for USFWS, spends the majority of his time on site keeping hunters and ranchers informed of the legal situation involving hunting and cattle raising in forest and pasture lands belonging to the state. There have been claims that wolves shot were mistaken for the coyotes that often live side-by-side with wolves. Consequently to avoid any "mistakes" all the radio-collars for the Mexican wolves are now delivered in bright orange only!

## CONCLUSION

It is evident that this Blue Mountain Range programme has drawn considerable encouragement from the successful returns to habitat of wolves in Yellowstone and North Carolina. Already the cost of the Mexican wolves initiative has reached \$10M. A considerable sum. In effect, installations and equipment deployed in Alpine overshadows

the village itself: transmitter collars, the fleet of pick-up trucks, observation caravans, helicopters, snow-scooters and a round-the-clock staff presence. A complete "wolf-sitting" service, there on demand!

Though progress has been encouraging all has not been plain sailing. The undertaking was to introduce a species to an area where none of their kind existed that was not really, in essence, their natural habitat. Let us not lose sight of the fact that the Mexican wolf is also known as the desert wolf. There is little resemblance between the chosen areas of the Blue Mountain Range and the arid regions of Chihuahua and Sonora across the border Furthermore the selection process is

extremely rigorous and only a small percentage of those wolves in captivity will have the chance to roam in the wild. Regretfully of some 300 Mexican wolves in the world only 50 are out there enjoying freedom!

There is, surprisingly in the eyes of some, no pro-active sign at the moment of eco-tourism. The only municipal organisation in Alpine concerns the seasons for bear and elk hunting, while the local costume is battle dress and hunter's cap. Apart from that there is a gas (petrol) pump and you can sign up for the annual "worm race" if you ask at the local bar! Nor is there any arrangement for excursions, or even a slide show for the

## The remarkable Bobbie Holaday

It is widely recognised in scientific and organisational communities across the world that without the remarkable contribution of the determined and passionate Bobbie Holaday the Mexican wolf would have remained a zoo-confined species. Through the foundation of P.A.W.S. in 1988 she established herself as a lead citizen at the forefront of the vital process of public awareness and education to improve the acceptance of the reintroduction programme.

She conducted her campaigns with a sensitivity and intelligence starting from the premise that the public needed thorough and precise information about the wolf and its ways before it could make intelligent decisions about its future. She became the prime mediator between the various positions and entrenched camps in the debate. She was convinced that no positive advance could be made without consensus: "I have come to understand in my 11 years as an activist for the protection of the Mexican wolf that polarising a problem never resolved a conflict".

Bobbie has been awarded numerous accolades for her extraordinary efforts, early among them the in 1988 the Conservation Award of Excellence from the Defenders of Wildlife. P.A.W.S. was dissolved in 1998 by common consent of its members on the grounds that the objective had been achieved. Its funds were transferred to Defenders of Wildlife and the AGFD.

We had the pleasure and good fortune to meet Bobbie, still driven by her enthusiasm at the age of 82. From her home in Phoenix, Arizona she takes a keen interest in the evolution of wolf conservation in Europe as well as in North America. She is a model for us all, and one who commands immense respect, admiration and affection.



The legendary Bobbie Holaday with Lise Donnez. Photo : Pierre Zuppiroli.





Pierre Zuppiroli and Laura Kelly radio-tracking near Alpine, Arizona. Photo : Lise Donnez.

traveller who, as in our case, had made the six-hour drive from Albuquerque. A cordial enough welcome at the tiny US Forest Service office, but little of practical encouragement. It seems that for all the investment in re-introduction and education programmes in the general area Alpine, the hub of the entire programme, has been left out! But, not to forget there is though a very thorough monthly paper published by USFWS and AGFD that is available at the local office. And most importantly, Mexican wolves at liberty in the mountain fastness beyond – just imagine.....

### THE IMPORTANCE OF RADIO TRACKING

Radio tracking is a method to identify the source of a signal transmitted by a wolf's radio collar. Its location is established by a triangulation process: you need three different fixed positions to determine the wolf's location. But this does obviously not work if the wolf is on the move. The state-of-the-art technological answer is the GPS (Global Positioning System) collar which continuously beams a signal directly to the research centres. No need to drive around in a 4-wheel drive to pick up the signals!

Of the 50 wolves in the wild, 23 wear collars, two of them GPS. USFWS and AGFD divide monitoring of the 11 packs between themselves. The Alpha female of any pack is the priority choice for a collar while younger wolves often have them too. The collars are designed to detach automatically so as not to impede the youngster's growth – or strangle it!

We had the pleasure of working alongside Laura Kelly of USFWS monitoring the 'beeps' that advertised the presence of packs under her vigilant responsibility. In one day there were signals from two of the three packs – Hawks Nest and Hannegan Meadow – one of them no more than 100 metres away.

Wolf howling is also used to establish the location of packs. But care is needed here: wolf cubs of seven to eight months have exactly the same howl as the coyotes they

co-exist with. Similarly, if there are several simultaneous howls, it is extremely hard to separate the two species.

Radio tracking is an important weapon in the battle against poaching: a 'beep' means the wolf is still alive – a great start to the day!

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*Wolves & Large Carnivores in Bulgaria*  
 Elena has been undertaking research as a wolf biologist for a number of years but also realised the importance of education. She has been responsible for developing & providing an education programme for children in Bulgaria. Members will also be familiar with Elena's work with the purchase & training of wolves for conservation.

**Zaneta Anderson-Lilley**  
 Project Manager for Latvian State Forestry Research Institute  
*Wolves & Lynx in Latvia: Their Status & Co-existence with Humans*  
 Zaneta studied at the University of Latvia, gaining her masters in wolf ecology & went on to do her doctorate on the wolf in Latvia. Since April 2003 she has been Latvian Manager for the international project 'Large Carnivores in Northern Landscapes'. Zaneta currently lives in Hampshire & is a Proactive member of EAC.

The day will include an auction & walk with our ambassador wolves  
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