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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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Editorial

In preparation for the UKWCT Autumn seminar one of our regular contributors, Kirsty Peake, has written about her trip to the Yellowstone National Park in February this year. Her article gives us a good introduction to George Bumann, one of the speakers at the seminar, who was with Kirsty's party during the trip. Keeping with the Yellowstone theme, wolf biologist Doug Smith's book, Decade of the Wolf, was published in April and covers the last ten years in Yellowstone. To order your copy see the back inside cover of this issue. Copies will also be available at the seminar.

I am delighted to announce the start of a new syndicated column, **Ethos**, by Senior Ethics Advisor Bill Lynn on ethics and wildlife. This will be a regular feature, and is designed to make us stop and think about our attitudes and actions towards others, and especially towards a species that provokes strong emotions. We invite you to reflect on the more philosophical, but nevertheless fundamental, aspects of wolf conservation, and to let us have your comments and views.

Paul Paquet is one of the longest serving wolf biologists in the world, and has given us permission to reprint an article that was recently published on the Raincoast Wolves in British Columbia, Canada. Paul has written extensively on wolf biology and conservation and has appeared in numerous wildlife documentaries on wolves.

Closer to home, Kieran Hickey, from the National University of Ireland, has researched the history of wolves in Ireland and gives us a fascinating insight into what life was like when wolves roamed our landscape. This ties in very nicely with the Lost Beasts of Britain seminar which is being developed by colleagues at the UKWCT and which will have its debut at the **Inspired by Nature Festival** at Arley Hall in Cheshire on 8th and 9th October. The wolves (of course) will be at the festival and there will be an opportunity to take part in the creation of a lifescale European bison willow sculpture. If you are interested in attending this fun event which celebrates nature through the arts, then check the website at www.education4conservation.org for further details and booking information.

A CALL FOR HELP

Education is the foundation of all our work at the UK Wolf Conservation Trust. We are now trying to raise sponsorship and funding to develop our Education Programme on a more formal basis. We would like to develop a range of education and teaching materials, and reach out to community and other groups throughout the UK and Europe. If you can help with fundraising or you know of any businesses in your area who you think might sponsor this project, then please contact us.

AUTUMN SEMINAR

Sunday 23rd October 2005

Speakers include George Bumann from the Yellowstone Association Institute and Andy Fisher, Head of the Wildlife Crime Unit at the Metropolitan Police Service. **Book now to avoid disappointment.** Website: www.ukwolf.org, email: ukwolf@ukwolf.org or telephone 0118 917 3330.

D Taylor

FRONT COVER PICTURE CREDIT: UKWCT

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Inside this issue...

Wolves of the World . . .

EUROPE

France

France's Bardot demands EU action on wolf cull

BRUSSELS, June 21 (Reuters) - French actress turned animal rights activist Brigitte Bardot has urged the European Union to take legal action against France for authorising the killing of six wolves.

Bardot, a star of the cinema in the 1950s and 1960s, wrote to EU Environment Commissioner Stavros Dimas on Monday, saying France had broken EU conservation rules.

"It's totally unacceptable that France puts in danger a protected species," she wrote.

The wolf population was nearly wiped out in France and only started to reappear in 1992. The authorities estimate there are 55 wolves in France compared to 2,000 in Spain and 700 in Italy.

Bardot also wrote to French Ecology Minister Nelly Olin to urge her to reverse the decision.

French farmers say wolves killed 2,808 sheep in 2002 compared to 192 sheep in 1994. Bardot said farmers could use guard dogs to protect their flocks.

Source:
Reuters
http://www.alertnet.org/thenews/newsdesk/L21492349.htm

Eagles, other animals being poisoned in French Alps

PARIS (AFP) - Three golden eagles and various other animals in the French Alps have been killed by poison recently, apparently victims of an illegal culling campaign by farmers against wolves, four environmental organisations said in a joint statement.

"Several clues suggest that it is the wolf that is actually targeted by these irresponsible acts," France Nature Environment, the Alpine Research Centre on Vertebrates, the Bird Protection League and the Departmental Life and Nature Union said on Friday.

Four wolves have been found poisoned over the past few years, they noted.

The remains of the eagles, predators that feed off small mammals and snakes, were discovered in different parts of the Alps in February, April and June.

Poisons are not limited to the species they are laid out for, but instead contaminate different parts of the food chain, the environmentalists said, adding that it appeared the toxins used were strychnine and cyanide.

Anybody found guilty of poisoning wildlife risked six months in prison and fines of up to 9,000 euros, the associations said, calling for "rigorous investigations" to find those responsible.

Source:
http://news.yahoo.com/news?tmpl=story&u=/afp/20050805/sc_afp/franceenvironment_050805141224

Portugal

Raging fire puts Iberian wolves at risk

Lisbon - More than 300 firefighters recently battled a large wildfire in central Portugal which forced the closure of a highway and threatened a refuge which is home to 17 endangered wolves, emergency services workers said.

The director of the refuge near Mafra, 40km north-west of Lisbon, said efforts were being made to evacuate the Iberian wolves, a species facing extinction in Portugal, to a zoo in the Portuguese capital.

"We were alarmed because the wind changed direction and the fire, which seemed contained, went out of control," Francisco Petruki said.

Once found across the country, environmentalists estimate there are now only 300 Iberian wolves in the wild in Portugal, mostly in the north.

The wolf refuge provides 17 hectares of secluded woodland for the Iberian wolf and was set up in 1989, one year after the government passed legislation to protect the animal.

Firefighters were aided by four water-dropping aircraft and 70 vehicles in their battle against the heat-fueled blaze.

The blaze had already destroyed dozens of acres of brush and eucalyptus forest in a region that was badly affected by a wave of wildfires which swept Portugal in 2003, killing 20 people and burning a record amount of land.

Civil protection officials said most of mainland Portugal, which is facing its worst drought in decades, suffered from a high risk of wildfires on Monday because of soaring temperatures and low air humidity levels. - Sapa-AFP

Source:
http://www.iol.co.za/index.php?set_id=14&click_id=143&art_id=qw112053708658B216

Ukraine

Rabies fear after wolf pack attacks

A pack of wolves attacked more than a dozen people in eastern Ukraine, and one of the animals was found to have rabies, authorities said.

The attacks on 14 people took place from Thursday through to Saturday in villages in the Zaporizhia region, a statement from the Emergency Situations Ministry said.

A car struck and killed one of the wolves, and authorities who examined the animal determined it had rabies, the ministry said.

Source:
http://news.scotsman.com/latest.cfm?id=1742012005

NORTH AMERICA

United States

Shepherd finds wolf remedy in European guard dogs

RUDYARD - At least one local shepherd found his answer to heavy wolf losses in a big, white and friendly dog breed that likes sheep and people but not the gray wolf.

Following up on a suggestion from a Central Michigan University biologist, shepherd Eric Wallis says his lamb losses plummeted since he started using Pyrenees guard dogs with his three flocks. A European breed specially developed for its adaptability with livestock and intolerance of other canines, Wallis' Pyrenees have done what nothing else could in protecting his 700 animals.

Now in his fifth year of what started as an experiment, Wallis swears by the big white dogs as guards for his three flocks. "I'm sold on them," he said simply.

Prior to his first attempt to introduce the dogs, Wallis said he lost about 100 lambs in two years to a small group of wolves whose territory includes his M-48 farm.

With five Pyrenees now living full-time with his flocks, Wallis reported no wolf losses in the past two years. He is certain the difference is the dogs.

Wallis said wolves typically go after young lambs a month or so old.

So crafty are the predators, he said, that several attempts to discover their entry point in his four-foot electrified fencing came to nothing.

During his years of heavy losses, he said lambs just disappeared from his flocks. He found no remains in the 450 acres of fields where his flocks spend much of the year.

"I keep good records," he said, "... No 35-pound coyote is going to carry off a 30-pound lamb over a four-foot fence," he said.

At 150 pounds or so, wolves are big enough to make off with lambs, though he is not all that sure how they make it back over or through his charged fences. The Pyrenees' effectiveness at warding off wolf attacks gives him all the evidence he needs. The breed was especially developed in Europe to protect sheep from wolf attacks.

"Electric fences don't keep them out," he said with some finality.

About five years ago, Wallis said he did find some dead and dying lambs in his field and traced the source to the single male Pyrenees that started his experiment with the dogs. That first young male taught a valuable lesson in numbers, he said.

With only one Pyrenees in his fields, he said the male eventually took after the lambs himself when he reached adolescence. He said he concluded that the adolescent male had no other dogs to play with and chose lambs instead, eventually mauling the young animals.

He ended up getting rid of that one male, theorizing that once the dog learned a taste for lamb, he would not return to guard-dog status in later years.

Undeterred by the experience, he concluded that the only way to use the European breed effectively is in pairs, kept with each flock.

The two Pyrenees he showed with one of his flocks last week seemed to be right at home in their full-time jobs. Resting in the small hut he provides for shelter from a hot July sun, the two dogs immediately approached Wallis' four-wheeler like any friendly dogs.

After a time for making a re-acquaintance, the dogs settled in with the curious sheep, moving easily among them as the somewhat skittish flock shifted here and there in the fenced field. Experts say the Pyrenees develops a near-unique affinity for a flock, in essence becoming part of the flock, except when a wolf is prowling nearby.

Wallis said his five dogs, each 100 pounds or more, are not inexpensive to maintain. He estimates his dogs cost about $1,000 per year to feed but that cost must be weighed against the cost of wolf losses.

The economics are easy, he said. "Five dogs cost $1,000 to feed. Fifty lambs are worth about $5,000."

The dogs are watered from the same troughs used by the sheep. Each pair of guard dogs is fed from a self feeder set up in each of his fields.

In winter, the dogs stay around his barn with the sheep or out in the nearby "barn lot," where sheep spend some of their time in the cold months.

A man who depends on his working dogs for more than one chore, Wallis also depends on his three-year-old Australian shepherd Jake to help round up the flocks. He said he has found that the Pyrenees do not mix well with Jake, so he keeps the two types of dogs apart.

Wallis flocks number about 700 sheep at any given time, divided into three groups, each guarded by a pair of Pyrenees. In his five years with the huge white Pyrenees, he said his wife has sold a few puppies here and there, none for guard dogs, however. "They've all been as pets," he said.

He said the five guard dogs he keeps in the field may be "a touch" more than he needs but he isn't about to argue with success.

As for the wolves, he said he still sees a few around the farm every year and does not mind them being in the neighborhood. He does mind the special endangered status of the gray wolf, not necessarily because wolves do not belong here.

Blaming federal rules primarily, he noted that the endangered status of the gray wolf does not allow farmers to shoot animals pursuing their livestock. A recent ruling allows Department of Natural Resources officers to shoot 20 problem wolves a year, but Wallis does not feel that dispensation will be effective at discouraging livestock losses.

The losses, he said, temper his view of the return of the gray wolf to their traditional Eastern

Upper Peninsula territory. Unlike many farmers and some sportsmen, Wallis said he does not favor a return to an extermination policy.

"I don't mind wolves so long as they don't cut into my livelihood," he said. But with the wolf's continued protection, he said, "... It's like someone slipped his hand in my back pocket and took out one-tenth of my income."

For now, Wallis has found his remedy in his treasured gang of Pyrenees guard dogs for a reason as straightforeward as the Rudyard shepherd's talk: they work.

Source:
By JACK STOREY/The Evening News
http://www.sooeveningnews.com/articles/2005/07/25/news/news291.txt

Wolves teach experts about global warming

Gray wolves could emerge as a "canary in the coal mine" of global warming by suggesting how climate change will affect species around the world, researchers say.

Scientists see gray wolves as indicators for effects of climate change. AFP

"We're not so much looking at wolves as a predator but as an indicator," says environmental scientist Christopher Wilmers of the University of California-Berkeley.

In the past century, average temperatures have climbed about a degree worldwide, and further increases of 2 to 10 degrees are expected by 2100, the United Nations Intergovernmental Panel on Climate Change says. More extreme weather could result, and winter is expected to shorten in some regions. That would affect animals and the entire environment. (Related opinion: Water flow holds clues as well)

At Yellowstone National Park, for example, winters have grown more than a week shorter since 1948, Wilmers and Wayne Getz of South Africa's University of Pretoria report in a study in April's PloS Biology journal.

But wolf packs appear to ease the effects of shorter winters on the food chain, Wilmers says. Before federal biologists reintroduced wolves to the park in 1995, heavy snowfall was the main cause of elk deaths in winter, providing a diet of carrion for scavengers such as ravens, eagles and bears.

Shorter winters without wolves mean about 66% fewer elk deaths every April, which threatens starvation for scavengers. With wolves preying on elk, however, the drop in carrion is only about 11%, a much less dire situation.

Elsewhere, however, extreme weather changes have led to more snowfall in wet regions, which affects wolf and moose populations.

On Lake Superior's Isle Royale, gray wolves now hunt in larger packs. As a result, they kill more moose, which was first shown in a 1999 study in Nature.

Above the Arctic Circle, L. David Mech of the U.S. Geological Survey suggests that climate change may hurt wolves. Last year in the journal Climatic Change, he examined wolf populations on Canada's Ellesmere Island, the most northern place in North America. From

1986 to 1997, wolves there preyed on musk oxen and snowshoe hares.

In 1998, however, the island experienced more extreme weather than any observed since records started in 1947. Snowfall during cold snaps in August covered ground vegetation from the hares and oxen, which reduced their numbers. With little prey, gray wolves have left the region, Mech reports.

"Because gray wolves are so intensively studied, they may give us very good data on the effects of climate change," says ecologist Mike Phillips, executive director of the Turner Endangered Species Fund in Bozeman, Mont. More specialized species, such as snowshoe hares, could show such effects even sooner, he says, but they receive less study.

"It's troubling we can see any effects in wolves, because they are actually very good survivors."

Source:
By Dan Vergano, USA TODAY
http://www.usatoday.com/tech/science/2005-05-30-wolves-warming_x.htm

REST OF THE WORLD

China

Is it time to start culling big bad wolf?

BEIJING, July 28 -- To lose their livelihoods or to break the law? That is the question facing herdsmen in China's wild wild west.

The current situation on the grasslands of western China offers farmers a real dilemma - wolves are taking their livestock, but under China's environmental laws they are a protected species and must not be killed.

But recent reports of "big bad carnivores" devouring livestock have meant the wolves' days as untouchables may be coming to an end.

Last April, a pack of wolves attacked a pasture close to Urumqi in the Xinjiang Uygur Autonomous Region, killing 10 sheep belonging to herdsman Bieke.

On a wintry January night in Inner Mongolia, 180 sheep fell victim to wild wolves.

Since January, more than 1,000 domesticated animals are believed to have been killed by the voracious predators in Xinjiang and Inner Mongolia.

One shocking incident happened on December 21, 2004, when a lone wolf chased a teenager down the street in a county town in Baicheng, Jilin Province in Northeast China. Police came to the rescue and, with approval from their boss, shot it down.

A local official in charge of wild animal protection explained that, under normal circumstances, one should not harm a wolf, but self-defence is justified.

People in the 1950s-1960s might have laughed at the notion. Back in those days, Chinese were expected to exterminate all wolves almost as a matter of duty, and the public did not need much encouragement as the wolf had always been a symbol of vicious aggression.

The wolf-busting programme was so successful that, by the 1980s, there were hardly any wild wolves left. Then, environmental awareness emerged in China and laws and regulations were phased in to protect the animals from random hunting.

"The wolf is high up in the food chain," said Teng Enjiang, an expert with China National Environmental Monitoring Centre. "We need them to keep the balance of things."

Wolves are necessary in the Darwinian animal world, contended Pan Zhaodong, a researcher at Inner Mongolia Academy of Social Sciences, because they prey on the weak and sick, ensuring survival of the fittest.

However, now it seems the protection measures have been too successful, wolves are once again coming into conflict with people, and herdsmen are calling for hunting to be reintroduced.

According to Yuan Guoying, chairman of the Xinjiang Ecology Institute, wolves usually do not invade human territory. But the thriving livestock industry has taken away much of the room for wild wolves, resulting in "an overlapping of these animals' living spaces".

Teng told China Daily that there should be studies to determine the number of wolves appropriate for an area of a certain size. "If there are too many, there should be a controlled cull of the wolf population. Before a cohesive policy is adopted, the herdsmen who lost animals should be compensated by the government."

Some local governments are heeding these suggestions. Damao Banner in Inner Mongolia has introduced three measures. First, herdsmen must take all reasonable measures to protect their animals. Second, a fund will be set up to pay damages to those who have suffered big losses. And third, a patrol team will cruise the prairie to keep wolves at bay.

It may not be ideal to have wolves and sheep on the same grassland, but, with proper management, you don't have to kill one in order for the other to survive.

Source:
www.chinaview.cn
http://news.xinhuanet.com/english/2005-07/28/content_3276885.htm

Thank you to everyone who has contributed news and updates for Wolves of the World. Our special thanks to Pat Morris (Wolfseeker) for the regular supply of wolf news from around the world, and to Andrew Matthews for his sub-editing work. Articles that are reprinted in full are appropriately credited with the author's name and details of where the article was first published.

Last of the best

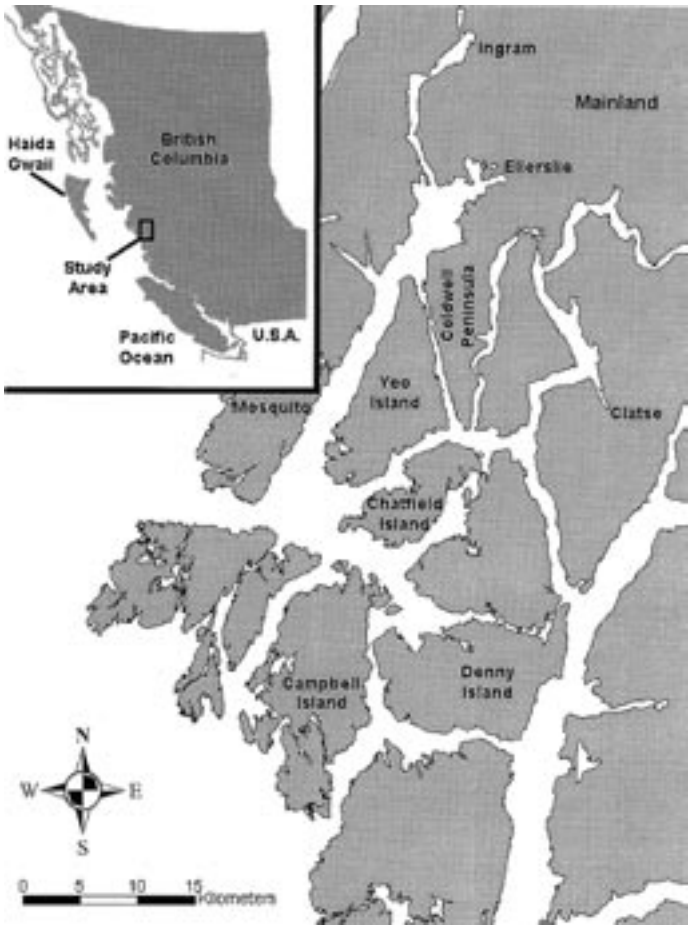
by Paul Paquet, Chris Darimont, Chris Genovali Faisal Moola

Where the land meets the sea on British Columbia's wild Central Coast lies an unparalleled opportunity for saving what is known as the Great Bear Rainforest. The Pacific Ocean overwhelmingly defines and influences this environment, which is rich in human culture and natural history. The landscape is naturally fragmented by a network of waterways and mountains. If we hope to preserve the area effectively, we are compelled to understand how this marine-dominated landscape influences connectivity. Therefore, we must consider connectivity in research and protection efforts before resource extraction, mostly logging, starts to modify and further fragment these precious forests. A sense of urgency prevails. Our work has barely begun but we already know the task is more complex than anticipated.

Encompassing the mainland and adjacent archipelago, the Great Bear Rainforest spans from the northern tip of Vancouver Island to the Alaskan Panhandle. The region is approximately 60,000 km2, of which 19,300 km2 is land (Figure 1). This nearly roadless and mostly unsettled region is bounded by the Coast Mountains to the east and Pacific Ocean to the west, creating a unique ecological and evolutionary environment largely free from industrial development. The few human settlements consist primarily of First Nation's communities. Climate is temperate and wet with most areas receiving more than 350 cm of annual precipitation, primarily as rain. The wet, remote, and biologically productive mountainous mainland, topographically complex inner islands, and flatter outer islands are separated by equally productive open ocean and waterways. Island sizes range from 5.0 km_ (Moore) to 2,295 km_ (Princess Royal), and inter-landmass distances 250 m to 7.25 km.

Coastal temperate rainforest dominates the mainland and islands. This type of rainforest is extremely rare globally, covering only a fraction of a percent of the earth's surface on the coasts of Chile, Norway, Scotland, Tasmania, New Zealand, and the U.S. Pacific Northwest, Alaska, and British Columbia. The temperate rainforest of the Pacific coast once stretched from northern California to Alaska. Today, only Alaska and British Columbia still contain large undisturbed tracts. The Great Bear comprises the largest remaining expanse of temperate rainforest in the world (Schoonmaker et al. 1997).

The Central Coast shows great variation and distinctiveness at the genetic, species, community, and ecosystem levels. Genetic analyses have identified distinct coastal and continental black bear lineages, which may have been isolated from each other for 360,000 years (Byun *et al.* 1997). Together with southeastern Alaska, the region supports the highest endemic species concentration for the temperate rainforest region of Pacific North America (Cook and MacDonald 2001). Mammalian distribution on nearby Alexander



Map: Paul Paquet, et al

Archipelago of Southeast Alaska has been well described (MacDonald and Cook 1996) and notable patterns of biogeography (Conroy et al 1999) and endemism (Cook and MacDonald 2001; Fleming and Cook 2002; Small et al. 2003) have emerged.

The entire Central Coast is important to wide-ranging species such as grizzly bears, gray wolves, killer whales, humpback whales, salmon, and migratory birds, many of which are now exterminated from much of their former ranges. All these species depend on terrestrial and marine corridors for dispersal, reproduction, transport and distribution of food and nutrients, and communication among subpopulations. Our research efforts have focused on wolves. Among regions of North America where wolves still roam, the Central Coast of British Columbia and the associated archipelago of offshore islands are ecologically unique. Ostensibly, this remote ocean archipelago comprises North America's most pristine wolf population (Darimont and Paquet 2002).

The complex physiography of the Central Coast mediates the interaction of marine and terrestrial systems by creating many different kinds of habitats in close proximity. Landmasses that limit movements of fish and marine mammals provide habitat and connectivity for populations of terrestrial mammals. Likewise, the waterways and open ocean that provide habitat and travel corridors for aquatic species often inhibit travel of mammals and birds. For many species, however, land and water combine to provide travel linkages between islands. Small islands or non-productive islands act as ocean bound stepping-stones, providing pathways that connect the larger landmasses. Some stepping-stones may be used as brief rest stops, whereas others that provide good foraging may be occupied for several days. Collectively, these linked islands can support the lifetime requisites of land-hopping wildlife. Changes in sea level on long timescales and tides and currents on short timescales conspire to produce tenuous and often ephemeral linkages. Many ecologists believe that oceanic archipelagos harbor species that are highly vulnerable to disturbance and prone to extinction because landscape connections are chaotic.

CONNECTIVITY, THEORY, AND ARCHIPELAGOS

A long list of ecological studies addressing birds, small mammals, and insects has contributed to the development of contemporary conservation theory. Central to these studies, and the subject of intense debate over the past two decades, has been the role of connectivity in determining animal distribution, abundance, and persistence (Connor and McCoy 1979; Gilpin and Hanski 1991). This discussion has been fueled by the global impoverishment of natural systems through human induced fragmentation and isolation of habitat. Accordingly, the equilibrium theory of island biogeography (MacArthur and Wilson 1967) and metapopulation theory (Gilpin and Hanski 1991, Hanski and Simberloff 1996) have postulated mechanisms explaining animal distribution and persistence of populations in patchy landscapes. These ideas provide much of the theoretical foundation for conservation biology. Although the original concept of a metapopulation as "a population of populations" has expanded to include other spatial population structures, including mainland-island (Hanski and Gilpin 1991) and source-sink metapopulations (Pulliam 1998), the focus remains on connectivity.

According to these theories, fragmentation decreases accessibility, availability, and productivity of secluded habitats; the remnants of which are often arranged across the landscape as island-like patches. Although island attributes such as size, distance from mainland, and accessibility to colonizing organisms clearly influence species composition, community structure, and community processes, the consequences of these for ecosystem functioning are little understood. If, however, we are to establish biological priorities for conservation, we need a firm understanding of how geography interacts with species to shape the evolution of species, ecological relationships, and landscape processes.

Very few studies have evaluated the response of large terrestrial predators to naturally discontinuous landscapes. In part, this is due to a lack of pristine sites to carry out such research. Nevertheless, clarifying the relationship between the geographic structure of true island systems, connectivity, and distribution of large mammals is a needed link between theory and application (Burkey 1995; Alcover 1998). In that regard, the Central Coast provides a valuable opportunity for scientists to study evolutionary and landscape processes in a true island environment under natural conditions. Documenting the responses to a naturally fragmented island environment provides a reference for comparison with similar studies conducted on land.

COASTAL WOLVES AND CONNECTIVITY

Our ongoing studies of the behavior and ecology of coastal gray wolves are helping conservation biologists evaluate and refine prevailing theories about connectivity. The wolf is the most vagile of all large terrestrial predators. On land, they are capable of traveling distances of 50 kilometers in a single day. Dispersal distances of several hundred kilometers are common and movements more than 1,000 km have been documented (Fritts 1983; Boyd et al. 1995, Mech et al. 1995, Paquet and Carbyn 2003). Wolves use different habitats within their territories at different times of the year (Paquet and Carbyn 2003). Depending upon the availability of prey they may move long distances, through corridors with few resources, to seasonal use areas. In the spring they will move to a den site. Activities and movements will center on the den until the pups can travel with the pack.

Well adapted to the marine environment, many coastal wolves are island dwellers whose territories can include groups of islands. Consequently, movement within territories requires traveling on land and between landmasses, which can mean swimming in open ocean between islands as distant as 13 kilometers (Darimont and Paquet 2002). Dispersing and traveling animals may need to cross expanses of inhospitable terrestrial and aquatic habitat. Island topography, island-to-island distance, island size, island productivity, wind, water temperature, and water currents likely combine to affect the frequency and success of these movements. Many of the prey upon which wolves depend for their survival, as well as other carnivores (e.g., black bears, grizzly bears) with which they compete, should be similarly influenced. We are currently testing these hypotheses using genetic samples collected from wolves living on multiple islands. The information derived from the samples can tell us which islands are being used by which wolves, how frequently dispersers reproduce successfully, which island populations are related, and which are isolated. In other words, we can begin to evaluate the effectiveness of landscape linkages in maintaining connectivity among different populations of wolves.

For large carnivores such as wolves the energetic needs are substantial, particularly while raising young. Thus, demands for food could influence island hopping behavior as much as the physical landscape. These movements might be regular and predictable depending upon the species and the season, or random; depending upon varying climatic conditions and availability of food or other resources. We believe the relationship between use of food resources and connectivity is an important but poorly understood consideration. On isolated islands, our wolf foraging data suggest that predator-prey dynamics are inherently unstable and can result in declines in prey populations (Darimont et al in press). Sitka black-tailed deer, the main prey of coastal wolves, cannot immigrate fast enough to remote islands to replace individuals killed by wolves. Reduced numbers of prey invariably lead to fewer predators. Because connectivity is restricted, these islands become temporary mortality sinks, resulting in ephemeral populations of deer and wolves. Without wolves, deer slowly recolonize isolated islands and the cycle of depletion repeats when wolves return. Consequently, and contrary to predictions based on abiotic factors only, we suspect that wolves are compelled to move more frequently among isolated landmasses just to survive.

Although water barriers may constrain dispersal of predator and prey, our work also suggests that the ocean augments the food available on land (Darimont and Reimchen 2002; Darimont et al 2003; Darimont et al in press). Coastal wolves feed on deer, moose, goat, salmon, clams, crabs, and marine carrion such as beached seals and whales. In this respect, many of BC's islands are not impoverished fragments, as other oceanic

islands have been described (Brotons et al., 2003; see also Dunning et al., 1992; Fahrig, 1997). In the fall spawning salmon, having traveled thousands of kilometers in ocean corridors return to rivers and creeks of the Great Bear Rainforest, and constitute a considerable part of the diet of coastal wolves. Notably, these are the same rivers and creeks used by wolves, bears, and other terrestrial species to travel among estuaries and access inland forests. Like bears, wolves act as vectors by transporting marine nutrients from waterways along networks of intersecting trails into the regions' ancient forests. Abandoned salmon carcasses and wolf feces and urine feed a diversity of users and become important fertilizers in nutrient-limited coastal ecosystems.

For all coastal mammals that travel through water corridors, human disturbances such as boat traffic can disrupt or impede movements in much the same way that cars and trains do on land. Waves from large boats can overturn swimming animals and humans harass and kill wildlife as the animals travel between islands. Whereas killer whales, which have been documented preying on moose and deer swimming between islands, can also pose a lethal threat, we believe that geography that includes islands as useful habitat predisposes wildlife to overexploitation by humans. Guide outfitters in the Great Bear Rainforest commonly use jet boats for river access to otherwise remote and secure wildlife habitat (Paquet and Darimont pers. obs.). In essence, coastlines and river systems are analogous to roads, providing humans access to remote areas and opportunities for disrupting connectivity via disturbance. In southeastern Alaska, for example, humans who gained access by boat to areas otherwise secure were responsible for more than 50% of all wolves killed by hunters and trappers (Person 2000). In this respect, long, narrow islands pose greater risk for wildlife than round islands of equal size. The latter provide more security because the interior of the island is more difficult to reach and the exposed coastline is proportionately less than narrow islands.

Because of its remoteness, unique landscape, and pristine condition, the Great Bear Rainforest is a valuable place for the pursuit of conservation research and protection. Insights gained here about the role of connectivity in sustaining the natural environment, and about those species whose survival depends on the intactness of that environment, can contribute to the designs of conservation reserves worldwide. In the face of the ongoing or impending threats of industrial logging, oil and gas extraction, aquaculture, recreational activities, and marine traffic, we hope that caution prevails until knowledge is sufficient to make informed decisions about the destiny of the Great Bear Rainforest. Full protection should be among the preferred options. Our hope is that this, the Last of the Best, can remain "naturally" fragmented.

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Photo: UKWCT

The History of Wolves in Ireland

by Kieran Hickey

Wolves have been present in Ireland from at least 20,000 years ago right up to 1786 and possibly even as late as 1810. The earliest data comes from bone caves in a number of locations throughout Ireland where wolf bones have been recovered and dated. The last authenticated date for the killing of a wolf in Ireland is 1786. This occurred on Mt. Leinster, Co. Carlow after a farmer had a number of sheep killed by a lone wolf which was subsequently hunted down and killed by the wolf-hounds of John Watson of Ballydarton in Co. Carlow . However, there are a number of claims for later dates for wolves being killed right up to 1810 in Co. Kerry but these have yet to be fully authenticated (Figure 1). This is considerably later than England, Wales and Scotland.

As a result of the long history of wolves in Ireland there is an enormous wealth of evidence of their existence, much of which has been overlooked in the past. This includes evidence from a wide variety of sources including archaeological, folklore, place names, monastic annals and a huge variety of other later historical documentary data. Of course the existence of the Irish wolf dog or hound is evidence alone of a significant wolf population stretching back thousands of years.

Folklore

Wolves play a very important part in Irish folklore in a large number of ways. These include their association with many of the great Irish myths and legends, secondly in the form of common stories about encounters with wolves and thirdly the use of pieces of wolves as medicine and charms against evil and ill health. For example the wearing of a band of wolf skin like a girdle was considered a preventative for the falling sickness. One of the most surprising folklore aspects was the belief that one man and woman from the barony of Ossory predominantly in Co. Kilkenny had to

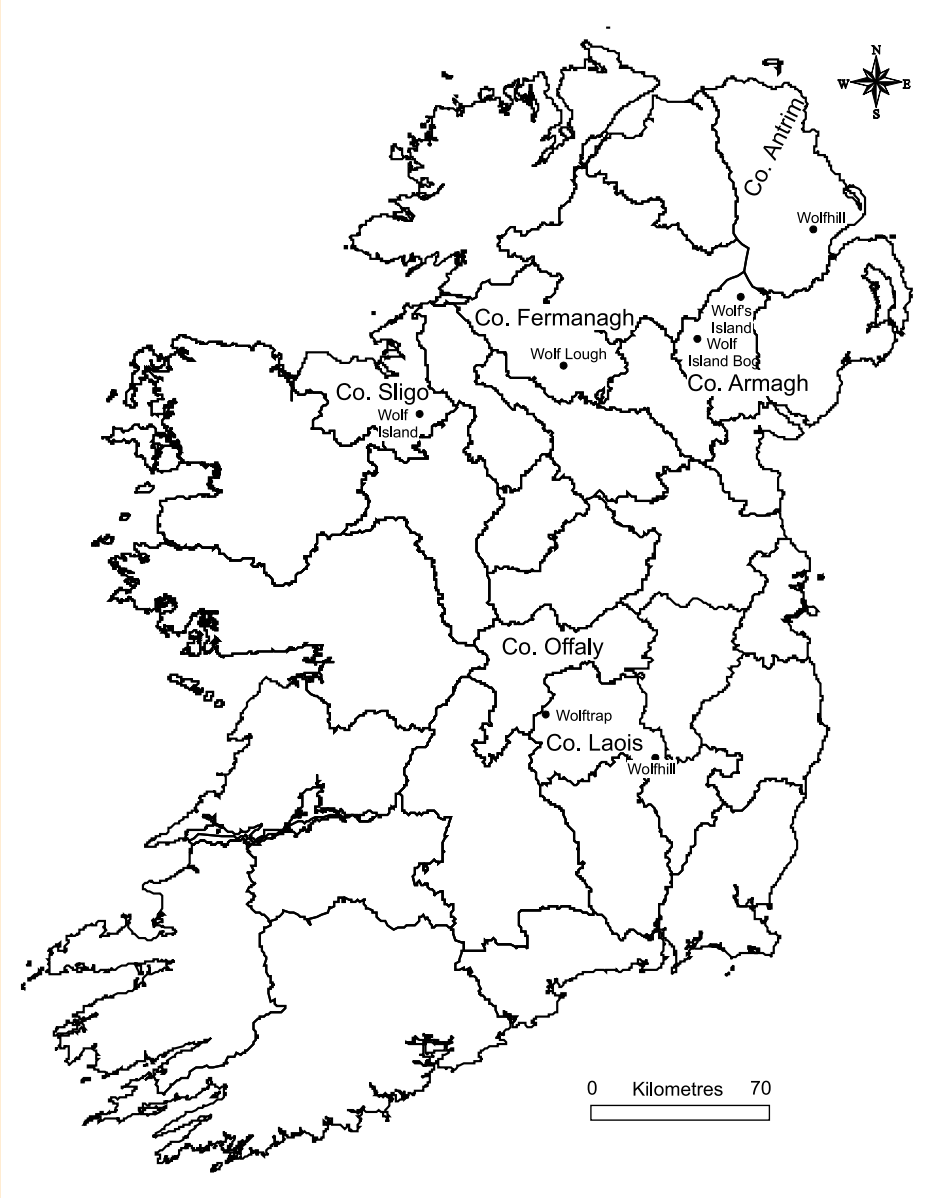

Figure 1. Locations mentioned in text.

become wolves for a period of 7 years, this helps to explain beliefs in such creatures as werewolves.

Even today some customs survive relating to wolves. There is a custom at funerals at the Gate Cemetery, Ogonnelloe, Co. Clare. The cemetery is medieval in date and walled and located in the centre of a field. The mourners carry the coffin around the cemetery and place it on the ground outside the walls of the cemetery, so that the wolves would not know where the corpse was buried. This rather gruesomely suggests that there was a fear that wolves might disturb new graves in their search for food.

Place names

There is a considerable number of place names in Ireland associated with wolves, a few of these are in English e.g. Wolf Island in Lough Gill in Co. Sligo (Figure 2). However the vast majority of them are hidden in place names in Irish. This is because there are a number of Irish words for wolves including Mac-tire (translates as son of the country) e.g. the townland of Isknamacteera in Co. Kerry, faolchu (translates as evil hound) e.g. Feltrim Hill, Co. Dublin and numerous placenames with breagh (translates as wolf) and many variations on this e.g. Breagh (wolf plain/field) in Drumcree, Co. Armagh and Breaghva (wolf plain/field) in Kilrush, Co. Clare. In all over 20 of the 32 counties of Ireland have placenames linked to wolves.

Historical

There is a vast array of historical documentary information on wolves in Ireland from the ogam stones (inscription stones using a simple alphabet dating from the 4th to the 7th centuries) and overlap with the start of the monastic annals in the 6th and 7th centuries right up to the end of the 18th century. These include lists of animals found in Ireland in the monastic annals, brehon laws (ancient Gaelic legal system), legislation and bounties, early natural histories and descriptions of the country, descriptions of wolf encounters, the hunting of wolves, wolf attacks on farm animals and very rarely humans and in letters and diaries. This historical evidence suggests that wolves occurred throughout the island of Ireland and none of the 32 counties is without some reference to them. Below are a small number of the several hundred historical references to wolves in Ireland.

In the eighth century the monk Nennius describing the wonders of Ireland that with the exception of the mouse, the wolf and the fox, that Ireland does not currently or previously have any other noxious animals.

The wolf was considered the principal predator of livestock, particularly lambs and calves. As a result wolf-hunting was considered a public duty and according to a 9th century Behon law-text a client must hunt wolves once a week.

The Annals of Connacht for 1420 state that many persons were killed by wolves in that year (Kelly, 1997).

In a written description of Ireland compiled for Sir John Perotte, the Lord Deputy of Ireland in January 1584 it was suggested that leases for tenants should include provision for the trapping and killing of what were described as ravening and devouring wolves and this was to be done with traps, snares or other devices.

Lord William Russell, Lord-Deputy of Ireland records in his diary that on 26th May 1596 he and Lady Russell went wolf hunting at Kilmainham, which at that time was quite close to Dublin city and now would be considered part of the central city area.

A letter for 1611 notes that Roger Braben in Kinalmeaky, Co. Cork is mainly concerned with the growth of his stud of horses but also states that a colt had been killed by a wolf.

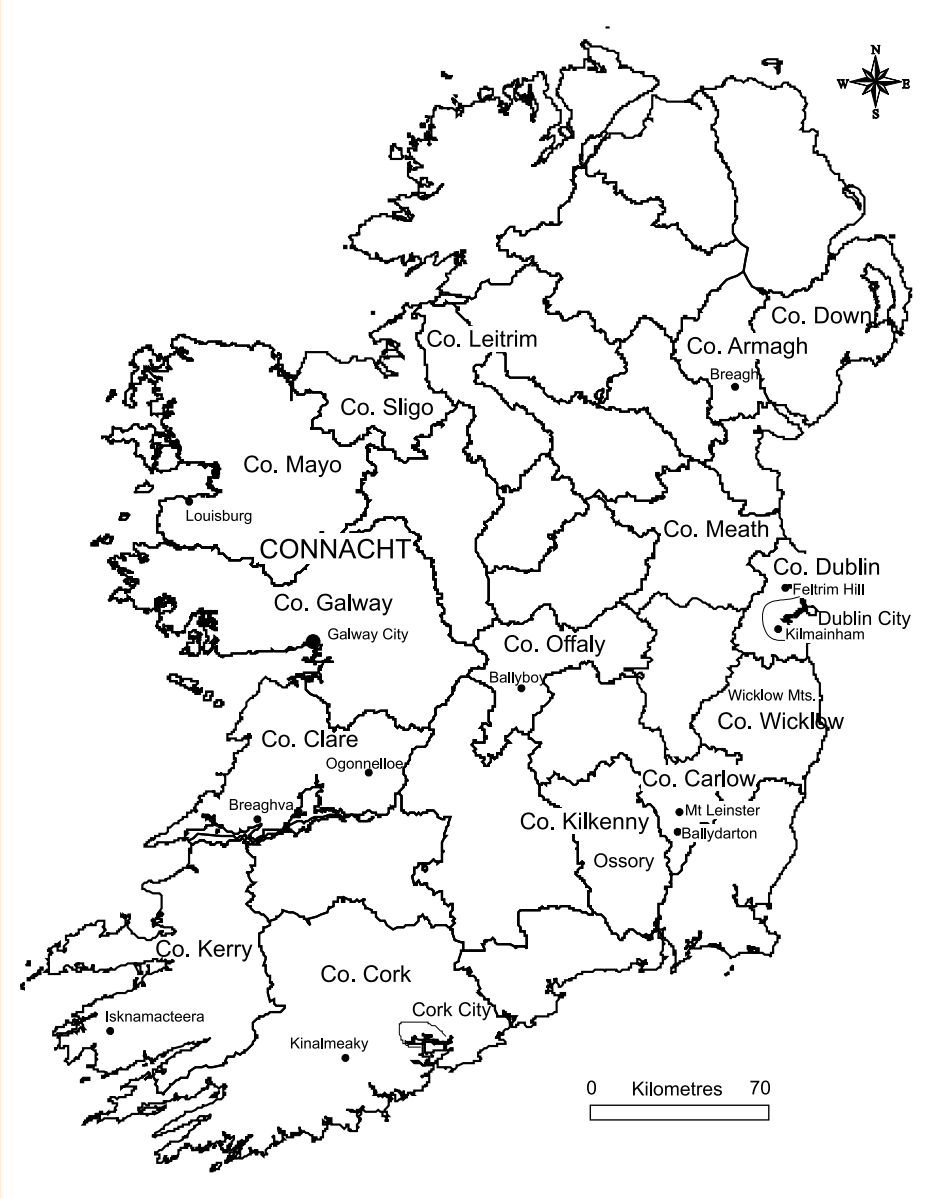

Figure 2. Location of English language wolf place names in Ireland.


Photo: UKWCT

It is stated in the description attached to the Down Survey Map of Ballybay, Co. Offaly (1655-1656) that few sheep were kept in that barony on account of the prevalence of wolves.

An observer writing about Co. Leitrim in 1683 was able to say that the wolves which were previously very numerous were now very scarce.

In 1698 in the stock book of William Conyngham in Co. Down the loss of a two-year-old from his herd of black cattle is noted as killed by a wolf without any indication that the incident was particularly remarkable.

In 1710 or 1714 (depending upon author) a last presentment was made by Brian Townsend to the Grand Jury in Co. Cork for killing wolves i.e. to claim the bounty.

One of the last wolves in Ireland was killed near Louisburg, Co. Mayo in 1745.

It is asserted by many persons of weight and veracity that a wolf was killed in the Wicklow Mts. as recently as 1770.

How did wolves survive in Ireland in the historical period.

Wolves survived in Ireland up until the end of the 18th century due to a number of factors. The first of these was the extensive wilderness areas that existed around the island of Ireland at least up until 1700. These included extensive mountain ranges and large forests with few human inhabitants. Ireland's population in the 1600's was probably around 1.5 million. So there were extensive areas for them to hunt and breed, unaffected or lightly affected by human activities.

The evidence for Ireland suggests that pack sizes were small, probably consisting of no more than the dominant breeding pair and one of two other adult wolves, juveniles and that year's cubs. This small pack size was a reflection of the relative scarcity of large mammals such as deer and the absence of farm animals in many of the forest and mountain areas. Interestingly like urban foxes today there is evidence which shows that wolves were skulking around the outskirts of Dublin city and Cork city scavenging for food e.g. Howel an Alderman of Cork city, wrote in a letter dated 1698 of having both wolves and foxes in the district.

Population estimates

Based on the evidence available it is possible to start to crudely estimate wolf population numbers in Ireland for a number of time periods. The first approach is to look at the records of trade and export of wolf skins from Ireland. The murage charter of 1361 for Galway city lists the taxable commodities in full and included in the list are wolf-skins. This indicates that wolf-skins were seen as a common enough commodity worthy of listing in a tax charter. The evidence of the export trade comes primarily from the port books of key Irish trading ports like Bristol. The Bristol accounts alone show an average of between 100 and 300 wolf skins exported from Ireland throughout the 1500's. Most astonishingly in the tax year 1558-1559 a high figure of 961 wolf skins were exported

from Ireland into the port of Bristol alone. This indicates a very substantial wolf population in Ireland throughout the 1500's.

The second approach was simply a habitat availability assessment in 1600 based on the landscape and population assessment of Ireland and the requirements of a wolf pack in terms of territory. At this time there were still large tracts of wilderness areas including forest, and mountain ideally suited for wolves. It is estimated based on an average pack size of between 5 and 10 individuals that these areas could have supported a wolf population of between 400 and 800 individual wolves.

The third approach was to look at the figures paid out for bounties. In 1653 the Cromwellian Government set bounties of £6 for a female, £5 for a male, £3 for a hunting juvenile and 10s for a cub. These were very substantial amounts of money at the time. Only two payments of bounties have survived and these are in 1655 or 1665 (date not legible) a payment of £243 5s 4d for wolves killed in just Cos. Galway, Mayo, Sligo and parts of Co. Leitrim. Unfortunately no breakdown of the figure is given, but it can be assumed that the figure represents a mixture of females, males, juveniles and cubs as it is likely that wolves would have been hunted pack by pack. This figure can be taken to represent a wolf kill in this area of between 75 and 150 wolves and indicates a significant wolf population in this part of the country, baring in mind this area is less than 25% of the size of the island of Ireland as a whole.

The second bounty figure of £3,847 5s is given for bounties for all of Ireland paid out between July 1649 and November 1656, a period of seven and a half years. This represents an average pay out of £513 per annum and indicates a wolf kill of between 200 and 400 individuals. Clearly, to sustain this loss the actual population of wolves would have been considerably larger than this, possibly between 600 and 800 or more individuals.

Putting all these figure together it is clear that Ireland had a very significant wolf population certainly in the 1500's and the early 1600's probably in excess of a thousand individuals, probably lower than a thousand individuals in the mid 1600's and a rapid decline throughout the late 1600's and 1700's until the last one was gone in 1786 or possibly later.

Causes of extermination

The extermination of the wolf from the Irish landscape resulted from a number of factors. These include significant landscape change, in particular the loss of most of the remaining tracts of native oak forest, a growing population and as a result a pushing of farming into areas not previously involved in agriculture during the late 1600s and 1700s. These two factors would have significantly reduced the areas in which wolves could breed undisturbed and intensified the pressure on the existing wolf population.

The next factors are legislation and bounties in particular that of the Cromwellian Government in Ireland in the 1650s. The new settlers from England and Scotland were horrified to discover that there was significant wolf population in the country and a serious threat to themselves and their livestock. In some of the literature at this time Ireland is even referred to as 'wolf-land'. Very substantial bounties were introduced for wolf kills and this led to the systematic hunting of wolves and their clearance from areas around the country eventually leading to large areas being devoid of wolves throughout the latter half of the 1600s. This even led to the arrival of a number of professional wolf hunters into Ireland to help carry out the extermination. In 1653 Captain Edward Piers was granted land in Co. Meath on condition that he destroys 14 wolves over 5 years or forfeit £100 annually - a very considerable sum.

By the early 1700s the wolf population in Ireland was in serious decline and probably only confined to a few small areas where they remained well away from humans. The definite last kill of a wolf in Ireland occurred in 1786, there are a few references to wolves stretching up to 1810, but these are not yet fully authenticated.

This brief article is only a small flavour of what has been accumulated on wolves in Ireland and is part of ongoing research into the natural and cultural history of wolves in Ireland and will be published in book format in 2006.

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Acknowledgements

My thanks to Dr. Siúbhan Comer for drawing the two maps.

Ethos

Welcome to our new syndicated column on ethics by Bill Lynn, Founder and Senior Ethics Advisor of Practical Ethics (www.practicalethics.net).

Ethics is more than just a philosophy, it informs every aspect of what we do, how we live and how we treat others. By others, we mean this in the plural sense: other races, other creeds, other species. Bill is someone who thinks and cares deeply about our attitudes towards others, and especially towards species that are perceived in a negative way, such as the wolf.

We invite you to critically analyse and reflect on what is presented and to join in the debates that arise from this.

Wolves Are Indicators of Moral Health

by Bill Lynn

Photo: Grupo Lobo

The best columns are a kind of conversation, between author and readers and responders, and most importantly, between the ideas that sprout up in a dialogue. So I paused a good long time before starting this essay, asking myself how to best start a conversation about ethics, and how it informs our outlook on people, animals and nature.

'Ethics you say! Heaven help us'. Oh, it's not so bad. Ethics is not about rigid rules or finger-wagging diatribes. It is really about the moral values that inform (or should inform) 'how we ought to live'. So allow me to start with a subject that is surprisingly concrete -- the ethics of wolf recovery.

Wolves speak to me like few other species. Wolves are indispensable 'top carnivores' that promote the health of ecosystems, as well as a 'flagship species' whose cache helps protect or restore other animals and plants that are not so charismatic. These are the usual reasons we hear for wolf recovery from advocates, educators and scientists. I don't disagree, but taken alone these reasons seem rather bloodless. Wolves are more than a resource to nature and society. Rather, they are part of a rich tapestry of natural life and human culture, one we are only beginning to understand and value.

I seek a richer appreciation of wolves in part because of my life's experience. I have keen childhood memories of wolves passing by our cabin in northern Ontario. They were welcomed visitors, who shared the landscape with us. My sister and I were taught to respect their beauty, their role in nature and their wild ferocity. So as a young man, I was astonished by the willful ignorance, vehement hatred and casual brutality towards wolves in Europe and North America. Wolves preyed on my intellectual curiosity as well, and in graduate school I became fascinated with their links to culture, science and policy. Over the years, I've come to believe that learning to live with wolves is a precondition (and

example) for healing our troubled relationship with the planet.

Wolf recovery -- their conservation, protection and restoration -- is a controversial subject. To date, the controversy has been addressed through a policy process that sees wolves as a 'natural resource' available for 'sustained harvest' and requiring 'rational' wildlife management as driven by 'science'. This is coded language. It implies that wolves are no different than any other agricultural commodity, or that they are simply functional units of ecosystems. To think otherwise is to be muddled, emotional and irrational. This set of coded ideas is nonsense. I'm all for clear-headed management and planning, but at root, our troubled relationship with wolves is not and never has been about science. No, the trouble with wolves is a moral conflict over whose well-being 'counts' in our personal and political deliberations, and to resolve this trouble, we need ethics.

Human beings have always existed in a mixed community of people and animals, both wild and domestic. Because our actions have consequences for the well-being of others, we have responsibilities to those in our care or affected by us. This is the essence of what it means to consider the ethical issue of 'how we ought to live'. These responsibilities apply to both people and other animals. Moreover, wolves are not biological machines to do with as we will. They are feeling, thinking and social creatures, having an intrinsic moral value of their own. We use the same reasoning to recognize the moral value of people, and there is every ethological and ethical reason to do so for wolves. The notion that wolves are morally excluded from this consideration simply because they are not people is a prejudice aptly termed speciesism.

Because wolves are part of a more-than-human moral community, I support their recovery across the landscape. They should not be isolated in a gulag of isolated habitats, surround by exclusion and free-fire zones, and subject to routine and invasive management. They should be free to make their way and their living where appropriate. Obviously wolves don't belong in downtown London or your chicken coop, but we know that wolves don't require wilderness, and there are plenty of other spaces where they can survive apart from or along-side human settlements.

Still, the full recovery of wolves will entail adaptations in our way of life. For instance, wolves are attracted to easy meals, and this can lead to conflicts with domestic animals. Learning to live with wolves can be as simple as securing our garbage, not leaving food on the deck, bringing companion animals indoors at night, and using guard dogs to protect sheep and cattle in fenced or open fields. These are best practices we should employ anyway, and the effort involved is minor.

Wolves are not the only way to explore questions about humanity's relationship to animals and nature. They have, nonetheless, a special resonance in many human cultures -- as beasts of waste and desolation, as vital ecological agents, as creatures exemplifying the best of humanity, as wild beings we can respect in all their familiarity and strangeness. Wolves move people, pro and con, and this opens up possibilities for dialogue about human-animal relations. Wolves keep our feet on the ground, helping us to remember that the point of ethical dialogue is the well-being of people, animals and nature.

Finally, wolves are a cogent indicator of our own moral health. If we can learn to live with wolves, we will per force have taken significant steps towards living sustainably and healing our relationship with nature. This is a moral task worth embracing! If however we cannot learn to live with wolves, we will have failed to address one of the most pressing moral issues of our time. The choice, as with every ethical issue, is ours to make, individually and collectively. Let us hope we make the right one.


Photo: Grupo Lobo

Cheers, Bill

If you would like to join in the debate on Ethics, please write to us:
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UK Wolf Conservation Trust, Butlers Farm,
Beenham, Reading RG7 5NT or
email: denise.taylor@btinternet.com

Bill Lynn

Bill Lynn is the founder and Senior Ethics Advisor of Practical Ethics, an independent consultancy committed to the well-being of people, animals and nature. Practical Ethics helps individuals and groups explore their values, then develop the personal and organizational capacity to put these values to work in the real world.

Bill received his Ph.D. in Geography from the University of Minnesota (2000), where he studied ethics, environmental studies, political geography, interpretive social science, and qualitative methods. A founding editor of the journal Ethics, Place and Environment, he is a member of the Ethics Specialist Group of the IUCN (World Conservation Union), and Assistant Professor in the Center for Animals and Public Policy at Tufts University.

Working in the broad arenas of animal ethics and global ethics, he writes and speaks on animal welfare, wildlife conservation, environmental sustainability and global security. In addition, he advises organizations on values messaging and leadership ethics. At present, he is finishing a book, Practical Ethics: Moral Understanding in a More Than Human World.

New Kids on the Block

by Kirsty Peake

"Four inches!" came the cry from snow covered ground. "Six and half inches!" came another. George Bumann was busy writing down the figures as they were shouted out by the group of people working in pairs. We were digging in the snow frantically and then measuring the length of the willow that we found. This was our first day on the February 2005 Winter Wolf Discovery expedition and George had us helping with research. Why were we measuring willow? Well, we asked George the same question to which he replied that 'all would be revealed' and 'that we would have to measure some more before the end of our visit.' Later on when we measured willow in a different area we were calling out sixteen to twenty inches. What was the difference? In the first area there were no wolves and the elk were static and eating all the willow down and in the second area there were wolves and the elk were being pushed around and thus giving the willow a chance to grow. Ecology in action.

Moving on from willow measuring we found that things had changed with the wolves, particularly since the demise of the Druid Pack alpha pair. The Leopolds are now the biggest pack in the Northern Range by seven wolves. It is the first naturally formed pack originating from two lone wolves from different pen releases. At Hellroaring Overlook we paused occasionally to look for the Geod Pack. This was the site of the last den when wolves were exterminated in Yellowstone.

One of our regular stops was at Slough Creek. Here the Slough Creek Pack is now well established numbering 15, of which 8 are pups. There is also an unknown black male trying to attach himself to the pack. The alpha and beta males are both collared and both black in colour. The Alpha Male is 490. The Alpha Female is black with a grey face. We climbed up onto 'Dave's Hill', a good vantage point to try and see wolves in the Slough Creek area. The pack gave us a clue as to their position by giving a short howl. We soon had them in the spotting scopes and spent an enjoyable time watching them. One of the juveniles was playing with a bone. We were soon quietly laughing at the antics of this young wolf and its toy. It was two bones attached by a joint. The wolf had hold of one end of this and the other end was swinging around. You could almost see it about to happen – the loose end of the bone eventually swung enough to hit the wolf on the head. It immediately dropped the bone and swung round to see what had hit it! We were then sidetracked by the sight of a golden eagle sitting on top of a dead tree. He was holding his wings out in the early sun. George quickly produced his notebook and drew the tree top and eagle. I gave up on my attempt and George took pity on me and sketched it in my notebook. We ended up with some spotting scopes fixed on the eagle and others on the wolves. Unknown to us later in our stay we were to find ourselves really close to a golden eagle.

George Bumann discusses the ecology of Yellowstone. Photo: Kirsty Peake

We stopped off at the Buffalo Ranch for lunch and a warm up. We then set off from there to walk/snowshoe up to the Rose Creek Den. Back in 1995 there were three pens; Rose Creek, Crystal and Soda Butte. For the 1996 introduction the Crystal Creek and Soda Butte pens were moved and then dismantled. Of the three pens only the Rose Creek pen remains and probably will remain as it has historical value. Once we arrived there we had a good exploration of the site. There is definitely an atmosphere about it. We were also very fortunate to be allowed to snowshoe out to the abandoned Rose Creek pack den. One of us even climbed in for a closer look. Two chambers all dug out by the Alpha female. You can see the marks of her claws on the roof.

George Bumann with wolf enthusiasts. Photo: Kirsty Peake

Eagle and magpie on elk carcass. Photo: Kirsty Peake

We had a lot of wolf sightings. We saw the female wolf referred to as UBlack in a group of four: a grey male, a pup, a black wolf and UBlack herself. They are known as the Specimen Ridge group. They don't become a pack until they start breeding and the pups are alive at the end of the year in which they are born. The group was bedded down at the start of the Lamar Valley, between the Druid and Slough packs. We watched four or five coyote on the group's kill. They are worth watching as well. There was a lot of interpretive body language from the big male coyote.

The Druid pack now numbers only seven. The new alpha male is listed as number 480 and the alpha female as 286. They were difficult to find and stayed down the far end of the Lamar Valley towards Soda Butte. Life could become difficult for the Druids with the Slough Creeks flexing their muscles and moving into Lamar Valley.

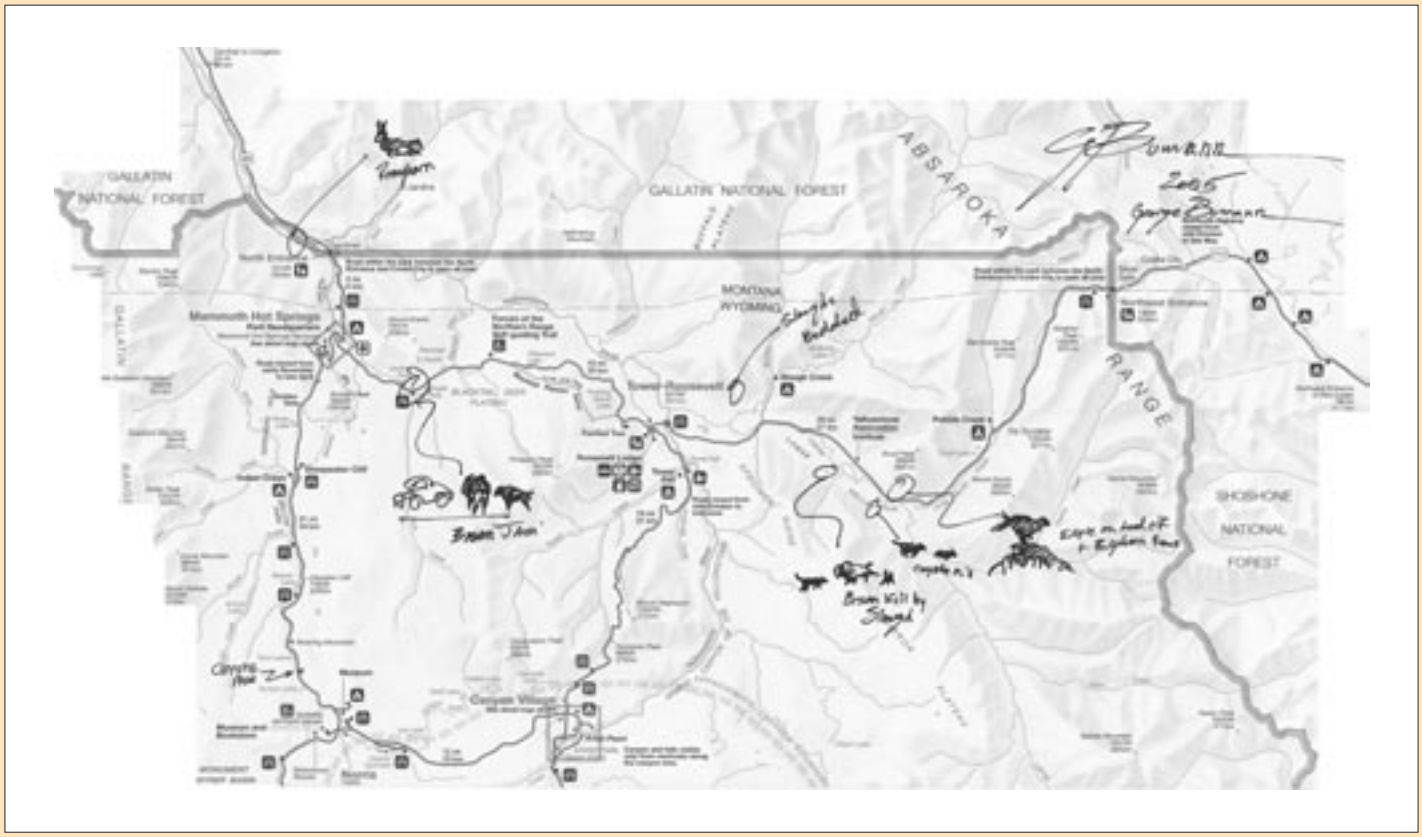
We never saw the Druids this time but saw the Sloughs many times. On another occasion we watched them playing and one of the wolves was jumping up at a tree to chase the ravens off: one grey and one black rolling over together. The grey was on its back, feet in the air and the black one joined in and we watched two wolves 'mucking about' with their feet waving about in the air!

Driving through the Lamar Valley we suddenly spotted a group of wolves at the Druid's Rendezvous site. Was this the Druids at last? No, this was the Slough Creek pack right in the middle of Druid country. They moved on to a kill, obviously theirs, and then moved off again in a very relaxed manner. We watched them until they went out of sight. We climbed pack in the bus and driving along saw a few other vehicles parked with cameras out.

We stopped and very quietly climbed out. We saw the Big Horn Sheep but felt there had to be something else to generate the level of interest. We were not disappointed. We were pointed to a particular point and stood amazed at what we were seeing. A bull elk had fallen down the steep screed slope and died. He had landed upside down with his antlers stuck into the ground. On top of him was the most beautiful golden eagle. We stayed and watched him for a long time. Many photographs were taken, especially when the magpies were beside the eagle for the size comparison. He spread out his wings on several occasions and was in the American parlance 'awesome'.

On our last morning we returned to Lamar Valley and the Slough Creek kill. We noticed that there was a coyote on it but no sign of the wolves. We moved up the valley a bit as we had been told that the Druids were bedded down near Soda Butte. On the

Stand Off. Photo: Kirsty Peake



Yellowstone map annotated by George Bumann.

way we spotted some wolves moving back down the valley towards the kill. We stopped and soon established that these were once again the Slough Creek pack in Druid territory. The coyote was not aware of their approach but suddenly realised that danger was close and turned and ran. One of the juveniles went from the wolf lope straight into overdrive. We stood, stunned, as we watched the distance between the two disappear. All the other wolves had joined in. The coyote had left it too late and was soon caught, overwhelmed and killed. We were all quiet as we stood and watched the wolves lay down and then they had a short howl.

We got back into the bus and drove down to the Buffalo Ranch. Everyone there was out with spotting scopes and watching. We quickly set up scopes and with Norman Bishop and his group on one side of the drive and George with us on the other we watched unfold before us the most amazing scene. The Sloughs had continued down the valley. Two wolves harassed a bison and were kick so badly that they were lifted in the air and then lay motionless in the snow. We thought they had been killed but no, very groggily after a few minutes they got up and followed the rest of the pack. The pack then separated a small group of six bison from the rest and drove them up hill. As they were going up hill the wolves then cut out the last bison, a female. They then turned her down hill constantly attacking her hindquarters. She spun on her front legs, kicked with her back legs, charged with her head all to no avail, she was greatly outnumbered. You have to remember that a wolf has a bite pressure of 1500lbs. The whole event lasted 50 minutes – quick compared with the normal 9 – 12 hours. It was one of those events that one wanted to watch but also didn't want to watch.

Right from the start of the chase the ravens appeared. At the end I counted over 40 at the kill. A most remarkable partnership between wolf and raven exists in the park.

The Slough Creek wolves are definitely the 'new kids on the block'

Each year wolves kill two coyotes in view. Three out of every 100 kills are bison. It was an unforgettable last morning in Yellowstone. It was a difficult morning for some of the group and one person said 'I'll never be able to tell anyone about what I have just witnessed'. George tried to put into perspective: 'each wolf will need 20lbs of meat, bears, when they are about, need 16lbs each; coyotes 12lbs each; eagles 3lbs each; ravens 2lbs each plus their 'stash'. So there are 15 + 1 wolves in the Slough Creek Pack. I counted at least 40 ravens and as we left the eagles arrived. Once the wolves had had their fill the coyotes would move in. We had seen five members of Lamar pack of coyotes. No bears in February! Don't forget all the little animals that live under the snow and will also feed. The bison was a female and would weigh approximately 1300lbs. And finally there are currently too many bison in the park – 4,200 from just 23. I shall leave the maths to you to work out how long the carcass would last before they would have to hunt again.

I have mentioned George Bumann throughout this article and I am sure you are saying who is George Bumann? George is a naturalist in the classical tradition and an educator for Yellowstone Association Institute. He holds a Masters in Wildlife Science and a BSc in Forest Biology. He has conducted field research in predator and scavenger ecology. He has taught various audiences spanning youth groups and university classes. He spends more than 1500 hours per year in Yellowstone National Park teaching, guiding (primarily focused on wolf and bear ecology) and making detailed studies for his artwork. He also teams up with Kirsty and Alan Peake on their Winter Wolf Discovery trips each February and leads the group.

You can have the opportunity of listening, meeting and talking with George at the UKWCT October Seminar. The UKWCT together with Kirsty and Alan Peake have invited George to come and give a presentation. His topic will be Ecology in Action: The Yellowstone Wolf Experience. Don't hesitate book your place with the UKWCT.

For more details of the February 2006 Winter Wolf expedition contact Kirsty and Alan Peake on 01364 621287 or email wwd@kajpeake.ndo.co.uk or visit the website www.peakeservices.co.uk

Book Review

Decade of the Wolf: Returning the Wild to Yellowstone

The image of wolves running free through Yellowstone National Park has become the ultimate symbol of the American wilderness. The release of thirty-one Canadian gray wolves in 1995 and 1996 began what is arguably the most successful, and at the same time controversial feat of conservation in our nation's history.

Spring 2005 marked the 10th anniversary of the wolves' release, and Ferguson and Smith offer the inside scoop on this historic preservation effort, and its incredible effect on the Yellowstone ecosystem, as well as what the future may hold for other threatened species protected under the Endangered Species Act. The book includes stunning, never-before-seen images, and amazing stories about the wolves' interactions with elk, bison, grizzly bears, and each other.

Ferguson, a gifted writer and speaker, is the award-winning author of 15 books on nature and science, and has written for publications including Outside, Vanity Fair, Men's Journal, and the Los Angeles Times. He is a regular contributor to NPR and other public radio stations across the country, and has been featured on E-Town and NPR's Living on Earth.

Wolf Project leader and biologist Dr. Douglas Smith has extensively studied wolves for 24 years, and has worked on the reintroduction since the program's inception. Doug has been interviewed by the Tom Brokaw, the New York Times, the Los Angeles Times, the Boston Globe, the Chicago Tribune, and National Geographic. He has been a consultant and featured personality for two National Geographic films on wolves, and is currently technical editor for an ongoing wolf documentary by the BBC.

Decade of the Wolf: Returning the Wild to Yellowstone
by Gary Ferguson and Douglas Smith, Ph.D.
The Lyons Press
32 page full-color insert / 240 pages / Nature
April 2005
ISBN: 1-59228-700-X

Attendees at our twice-yearly seminars have already heard from biologists and conservationists involved with the project such as Ed Bangs and Carter Neimeyer. This autumn we welcome George Bumann as a guest speaker, and to coincide with this, Kirsty Peake a regular contributor to Wolf Print, has written an article that gives fascinating insights into interactions within the Park (see Page 16).

Copies of **Decade of the Wolf** can be ordered from the UK Wolf Conservation Trust, and will also be available at the Autumn seminar.

II Congresso Luso-Espanhol sobre o Lobo Ibérico

Grupo Lobo are pleased to announce the

II Congress on the Iberian Wolf
to be held November 10-13, 2005,
at the School of Agrarian Sciences of Castelo Branco
(http://www.esa.ipcb.pt/).

This meeting intends to give continuity to the first Iberian Congress, organized by Grupo Lobo – SECEM (Spain) in collaboration with Grupo Lobo (Portugal) that took place November 12-15, 1997 in Soria, Spain.

Grupo Lobo has been working for wolf conservation and its habitat in Portugal since 1985. During the past two decades Grupo Lobo has been developing research projects focused on wolf ecology, behaviour, parasitology, genetics, human-wolf relationships, namely anthropology and ethnology, public attitudes, as well as putting in practice wolf conservation measures such as the use of livestock guarding dogs. Simultaneously, Grupo Lobo has been promoting environmental awareness activities targeted to different publics: giving talks on schools, editing information material, presenting an exhibition across the country, and organising visits to the Iberian Wolf Recovery Centre, which receives thousands of visitors every year.

The Congress is being organized by Grupo Lobo in collaboration with the School of Agrarian Sciences of Castelo Branco, A.RE.NA - Asesores en Recursos Naturales (Spain), SECEM - Sociedad Española para la Conservación y Estudio de los Mamíferos (Spain) and ASCEL - Asociación para la Conservación y Estudio del Lobo Ibérico (Spain).

The main topic areas to be addressed are: Biology, Ecology, Genetics, Behaviour, Conservation and Management, Human Dimensions, Livestock Protection Methods, and Cultural and Anthropological Issues regarding the Iberian wolf.

Deadline for registration and submission of presentation proposals is September 30th, 2005.

For further information please contact us by e-mail (loboiberico@fc.ul.pt).

Look forward to see you in Portugal!