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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



Wolf recovery and restoration is always a hot topic, and recently in the news, another study was highlighted concerning the ecological implications of reintroducing wolves to Scotland. News headlines surrounding this topic spread as far as Poland, where local reports voiced concern that wolves were going to be translocated from Poland to Scotland. Assistant Editor, Chris Senior, has studied the recent report published by the Royal Society and has highlighted the main issues it raises. This topic is something that we are going to return to in more depth in the autumn issue of Wolf Print (No. 32) with a special feature issue on Wolf Reintroduction, Restoration and Recovery.

Of course, alongside wolf recovery comes the contentious issue of wolf management. Bill Lynn looks at the ethics of wolf management on page 17, highlighting a particular situation in the States where lethal wolf control was badly managed, leading to pups being orphaned and left to die.

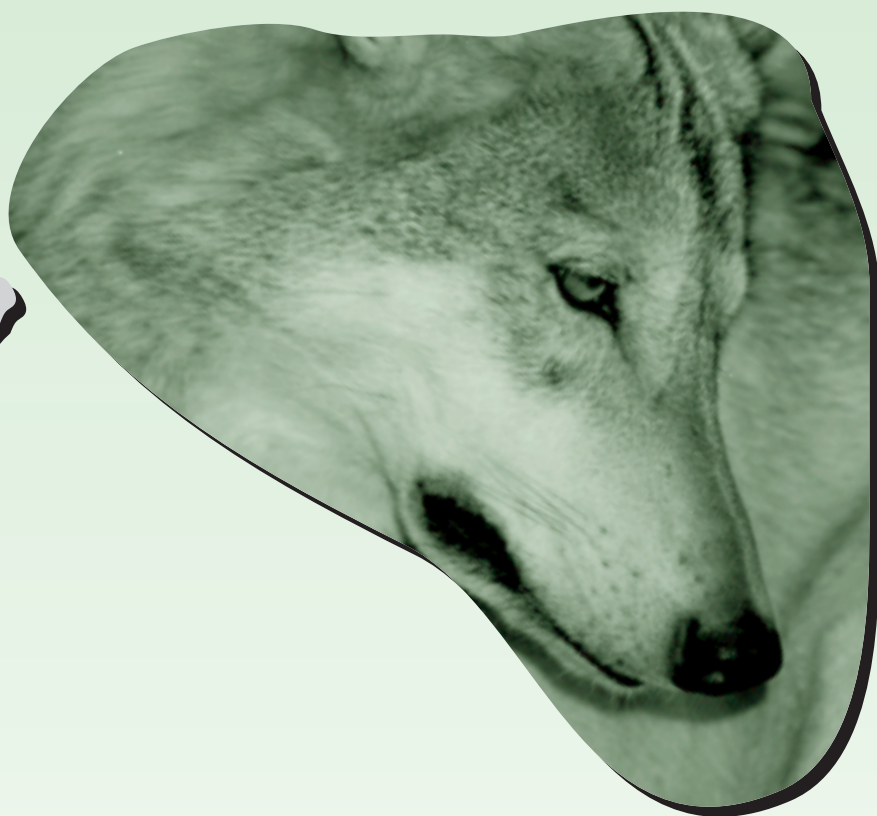
Education is at the heart of all our activities at the UKWCT, even though this isn't always explicitly stated. We were all delighted, therefore, when all our hard work and efforts were realised in March, with the opening of a new education facility at the Trust. Although no longer present in the wild in the UK, wolves still represent nature conservation and wilderness, and as a charismatic species, engage people in wider conservation issues. The new Centre gives us all an added impetus to offer more education activities and programmes. We will continue to bring you updates on our progress.

I would like to welcome another member to the Wolf Print team. Ewa (Eve) Love got involved with Wolf Print following meeting the wolves at a festival late last summer. Since then she has carried out research on wolves in Poland, her home country, and has established links between the Stobnica Wolf Facility near Posnan and the UKWCT. Eve is a tenacious researcher and reporter, and a great addition to the team.

FRONT COVER PICTURE CREDIT: DENISE TAYLOR



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WOLVES of the WORLD ...

MIDDLE EAST

Israel

Israeli soldiers help trap wolf plaguing farmers in Golan Heights.

The soldier's weekly publication "Bamahane" reported that a wolf pack had been preying on cattle and other livestock in the Israeli-controlled territory of the Golan Heights, causing considerable losses to farmers. The Nature Reserves Authority asked the army unit to help capture one of the wolves, which was fitted with a transmitter to allow tracking of the pack, which numbers 13 wolves; this will assist in a decision by the Nature Reserves Authority on whether to cull the pack. Nature Reserves Authority official Yotam Gendler said:

"This will give us a picture of the location of the pack. Without the help of the soldiers and the officer, the operation would have been much more complicated."

An officer in the unit assigned a communications specialist to Gendler to coordinate trapping of the wolf, anesthetizing it and implanting the transmitter. The captured and tagged wolf is a two-year-old male, the report said.

Source:

From The Associated Press of January 15, 2007.

NORTH AMERICA

Canada

Saskatoon

Inquest to be held into the death of Ontario man.

The chief coroner has called for an inquest will be held into the death of Ontario man Kenton Carnegie who was suspected of being attacked by wolves in northern Saskatchewan in November 2005.

Carnegie was working at a remote mining camp near Points North Landing, 700 kilometres

northwest of Saskatoon; he failed to return from a walk; his body was found two hours later, mutilated by wild animals. The bite marks and the numerous tracks surrounding Carnegie's body led investigators to conclude he had been killed by wolves that, for months, had been scavenging at the mining camp's garbage dump. Government officials are awaiting the coroner's report before deciding on action over an unregulated waste dump in the area which locals claim may be attracting wolves.

Yakima Herald online ran a very well-balanced and reasoned article by Scott Sandsberry on the possible background of the alleged attack, particularly the habituation of the wolves; for the full article please see link below.

Source:

From Canadian Press report on January 23, 2007 and Yakima Herald online of 18 Jan 2007. http://nl.newsbank.com/nl-search/we/Archives?p_action=doc&p_docid=116BFFABB7CCF538&p_docnum=6

United States

Spokane (WA)

Experts surmise wolves arrival is only a matter of time

A diverse-interest group in Washington State is being proactive in determining a wolf management strategy; there is no evidence yet of wolves in the state, experts surmise their arrival is only a matter of time. The state has formed a mixed panel consisting of 18 cattle ranchers, a sheep producer, environmentalists (assisted by State fish and wildlife experts acting as technical advisers), to draft a wolf management plan. The group will meet throughout 2007 to agree a strategy on how the state should manage the wolves, which have been absent from Washington State since the 1930s.

Washington's approach is in contrast to neighbouring Idaho, where Gov. C.L. Otter stated that he supports public hunts to kill all but 100 of the estimated 650 grey wolves in Idaho once the federal government removes the predator from Endangered Species Act protections. It is



estimated that 1,200 grey wolves now roam Montana, Idaho and Wyoming and many more live in Canada; some regularly venture into Washington's far north-eastern corner, and there are unconfirmed reports of wolf activity in the south-eastern part of Washington. Madonna Luers, spokeswoman for the Washington Department of Fish and Wildlife said

"They're going to naturally come back. We're not going to bring them in from Canada. What we need to do is get prepared to deal with managing wolves as they recover on their own."

As Washington is not part of a federally designated wolf recovery area, there would be no obligation on the state to ensure the continued existence of the predator once Endangered

Species Act protections are removed; the proposal to take wolves off the endangered species list is expected by the end of the year if not sooner. However, wolves will remain protected under Washington state law assured Luers

"We would not have listed them at the state level as endangered and in need of state protection if we felt otherwise"

Spokane resident Derrick Knowles, who works for Conservation Northwest, said the panel represents a good balance of interests.

"Washington can learn from the controversies and successes of other states", he said, "particularly Idaho, where wolves have been a hot-button issue

since they were reintroduced 12 years ago. We don't have the baggage that Idaho has, the history Idaho has. We're in a better position."

John Blankenship, executive director of Wolf Haven International, stated his goal was to ensure a management plan was fair to both wolves and ranchers.

"I think we can do that," Blankenship said. "I don't think either should have the advantage."

Art Swannack, president of the Washington Sheep Producers, conceded wolves are not good for his business, but believes the planning team's work could help avoid future problems.

"It's going to take a lot of management planning, plain and simple," Swannack said.

Yakima Herald online also carried another good article by Scott Sandsberry on the Washington planning strategy, please see link below.

Source:

From Associated Press report on Jan 13, 2007.

http://nl.newsbank.com/nl-search/we/Archives?p_action=doc&p_docid=116BFFAB2249D8E8&p_docnum=3



EUROPE AND SCANDINAVIA

Finland

Finnish officials have become cautious when approving killing permits.

Following the claim by the Advocate-General in the EC Court at the end of November 2006 that Finland's practice of granting permits to kill wolves outside reindeer husbandry areas violates the EU's Nature Directive, Finnish officials have become cautious when approving such permits.

The Advocate-General put forward a proposal to the Court of Justice of the European Communities calling for a ruling against Finland for the violation, and a decision is due in a few months. Juha Korkeaoja, Finland's Minister of Agriculture and Forestry, has proposed that Finland should apply to the European Union for an alleviation of the directive relating to the conservation of wolves; the current directive forbids the killing of all wolves, with a few specific exceptions.

According to claims by the ministry, the strict conservation of wolves should now be reduced, as the wolf population has increased strongly; also there has been no threat to the population in terms of nature protection during the period of Finland's EU membership.

Riku Lumiaro from the Finnish Association for Nature Conservation would also allow the hunting of individual troublemaker wolves, whose killing is seen as necessary for the prevention of damage; although he stresses that the regulations must be followed. A few such 'troublemaker' wolves have been seen in recent decades; typically, they are young wolves who have strayed from their pack regularly search for food in the same yards.

According to Tapani Veistola from the Association for Nature Conservation, there is no need to change the regulations, as the current directive does already allow for certain exceptions:

"It would be best to leave the wolves alone and let them the hunt elk and deer. Then they would not need to attack dogs" Veistola concluded.

Source:
From Helsingin Sanomat (Finland)
on 23 Jan 2007.

Poland

Face to Face with the wolves of Stobnica – a personal encounter.

by Ewa Love

Photos by Jacek Wieckowski

Nothing compares to the excitement of a person who is going to meet the wolves face to face for the first time.

I was singing along to the radio as my husband drove along the Polish roads on the

early morning of the New Year's Eve. I never sang loudly in the car before, perhaps because I cannot sing but nothing mattered to me that day as my excitement was mounting. This was the day I would remember

for the rest of my life.

The road takes one out of the city of Poznan and through the Wielkopolska countryside with numerous villages scattered along the way. My favourite part of the journey is the final ten



Ewa Love and the alpha male Tobos.



Ewa Love with husband Steve and some of the team from Stobnica.

kilometres before reaching Stobnica itself. Once leaving the last major town on the route, called Oborniki, the road weaves through the fields alongside the Warta River.

This river always played a major part in my life as I grew up in a village situated by its banks. From there I could easily reach Stobnica by boat if I had one.

This time I revisited Stobnica to fulfil the promise of spending some time inside the wolf enclosure with Demos, Tobos, Pati, Luna and Venus.

I was accompanied by my husband Steve, who later became a reason for a female rivalry.

The gates were locked but I knew a little secret of how to enter and it did not involve ringing the bell! It is called knowing where the key is.

Next step was to find Jacek, receive the briefing about entering the wolf enclosure and finally to dip my fingers into the thick, coarse mass of fur of the

wolf's winter coat.

Was I worried about being so close to these potentially dangerous, wild animals? No. Did the thought of any danger cross my mind? Yes, it did, but following the way of optimistic thinking, I was not going to let those thoughts develop.

I was here and I was not going to change my mind. This was the chance of a lifetime. I felt privileged and honoured and placed my trust in the hands of Jacek, who opened the first gate.

As soon as we entered the enclosure we were welcomed by a keen to greet us wolf pack. Up to that moment I thought I was the only one excited about the human-wolf face-to-face encounter. The eager jumping up and licking our faces felt like a tribal ritual and everyone in the pack wanted to get their turn.

First to greet us, was the largest of the pack, Demos. Although significantly large, he is not the alpha male of the

pack. It is not only the size that differentiates him from the others but a grin on his face that looks unmistakably like a smile.

Whilst I sat down on a rock with Demos' head under my arm and his body leaning against my chest in hope of a dose of scratching, the female members of the pack devoted their attention to my husband. Pati, the alpha female, and Luna patiently took their turns by his side until they both got fed up and resolved to a brief fight in which Luna ended up on the floor with Pati pinning her to the ground. At that moment they were approached by Demos, who took the responsibility of telling them off. Perhaps that was not the way one should behave around the visitors.

It soon became apparent to me that every member of the pack had his or her own character. Tobos, the alpha male, was busy eating the remains of the road-kill deer

given to the pack the previous day. However, noticing that the others were getting rather agitated, he came over to greet us and to pose for photographs!

There was something very majestic and peaceful about him and he behaved in a very gentle way towards us.

The respect he had amongst the rest of the pack was eminent when only growls on his behalf made them stop misbehaving.

Venus was tucked away in a neighbouring enclosure. Since the breeding season of three years ago she is at the bottom of the hierarchy of the pack and is often treated like an "underdog" by the others. She can also easily become overexcited and too affectionate with the visitors.

We spent over an hour with the wolf pack and it was a most relaxing and pleasurable time.

I can definitely say that it was one of my most memorable experiences and I felt privileged and humbled to be in the



Steve and Demos.

company of the wolves and to be let into their pack for that wonderful hour of my life.

Some may not appreciate putting wolves on display like that and feel that the wolves place should be in the wild, away from human intervention.

This is obvious to those of us who respect the nature and value the wolves and other endangered species but in order to ever be able to do that we have to first bring the wolves face to face with humans, for there are plenty of us out there that do not share the same feelings for those animals that would make them matter enough in today's world. I believe that only through a strong, profound experience, opinions can be changed.

I truly commend and admire those people who work with wolves and give up their time to protect these wonderful creatures, as the world would be poorer without them.

Before we left the research station we met Jacek's family: his

wife Izabela and two young sons Kacper and Mikolaj. The boys and some of Jacek's friends accompanied us on a walk following the nature trail through the Konczak Valley. On our way we stopped to feed the Tarpan ponies that are bred at the station in order to reintroduce them to the Notecka Virgin Forest. We took a long walk through the very picturesque valley encountering numerous signs of beaver activity, sightings of some tracks left by branches dragged by beavers from the forest into the stream and the typical teeth marks left on the stumps of fallen trees.

It has been a day spent alone with nature without the distractions of the outside world. I realized how little time and interest today's busy individual has to look into nature for inspiration, relaxation and stress-relief.

For me it was almost a spiritual encounter and one that will stay with me forever.



"Ambassadors of the Wild"

The World Premiere - 11th May 2007, 7:30PM

Join Duma and Dakota at the Royal Geographic Society's magnificent headquarters for the launch of our documentary about the work of the Trust and our wolves. The venue overlooks Hyde Park and Kensington Gardens, in the heart of London.

The film includes insights about the life of the wolves at our centre and details regarding the projects we support across Europe, helping to keep wolves in the wild. It's all wrapped up in high production values and the Royal Geographic Society is the perfect location to showcase our work.

Ample parking is available near Hyde Park and there's no congestion charge after 6PM. Or for the full experience, relax on a coach from the Trust at Beenham. A cash bar will be provided at the venue.

Tickets are available at £20 each, with a seat on a coach from Beenham costing £10. To book, phone 0118 971 3330 during office hours, or fill in a form and post it to us. We can accept payment by cheque or credit / debit card.



Pack Size Patterns of the Grey Wolf (*Canis lupus pallipes*) in the Bijar Protected Area, Iran (2004-2005)

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Introduction:

The Bijar Protected Area is situated in Kordestan (Kurdistan) Province near Iran's western borders with Iraq, and is within the northern regions of the Zagros Mountains. Under Iranian Department of the Environment legislation, Protected Area status is below that of Protected Territories and National Parks, but Protected Area status still recognizes the significantly important natural resource, and its influence and impact on fauna and flora in the region.



The Bijar Protected Area is the only environmental reserve inside Kordestan province, with an area of more than 30,000 hectares. The area has been under official conservation since 1973, and is enforced by the Iranian Department of the Environment; it now has two permanent game posts, although with fewer than ten Environmental Guard game wardens.

Methodology:

The Bijar Protected Area has a greater incidence of wolf observation compared to other areas in western part of Iran; this

is thanks to the observational study by the game wardens (who were with the eco-tours run by Araz within the region). It is important to note that observations were always made from a distance; the game wardens made sure they didn't get so close to the wolves that they might have influenced the wolves' natural movements or behaviour in any way.

The observations of the wolves were used to determine a basic pattern of both seasonal and monthly changes in the wolves' pack sizes inside an Iranian reserve; this study was conducted from January to December 2004. The data on wolf observations in Bijar were recorded by the game wardens; the average and total observations in each month were then computed, and results are represented here in graphs for comparison.

Results:

During of the mentioned period, 230 wolves in 80 groups were observed (during daytime observations), and recorded as follows:

Month	Jan	Feb.	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Observation Frequency	4	10	8	9	10	13	3	6	2	7	3	5
Total Number Observed	18	39	36	29	21	33	4	11	4	17	5	13
Pack Size Average	4.5	3.9	4.5	3.2	2.1	2.5	1.3	1.8	2	2.4	1.6	2.6

Table 1: Descriptive data on wolf observation on monthly basis in Bijar Protected Area.

Season	Spring (Apr-Jun)	Summer (Jul-Sep)	Autumn (Oct-Dec)	Winter (Jan-Mar)
Number of observations	32	11	15	32

Table 2: Seasonal wolf frequency in Bijar Protected Area.

Discussion:

In considering the above tables, it seems that the wolves' activity during daylight hours in both winter and spring is higher than other seasons. Due to the harsh conditions and cold in winter, and the associated shortage of food sources, the wolves have to allocate more hours of the day for finding food and other activities; another reason for the increased incidence of wolf observations in winter (in regard to the number of each pack's number which is not more than 12 wolves), is their need to form larger hunting packs when severe conditions and the related deficiency of food resources occur. Furthermore mid-winter is the wolves mating time, leading to more activity and general movement, consequently it makes it possible to observe them more easily.

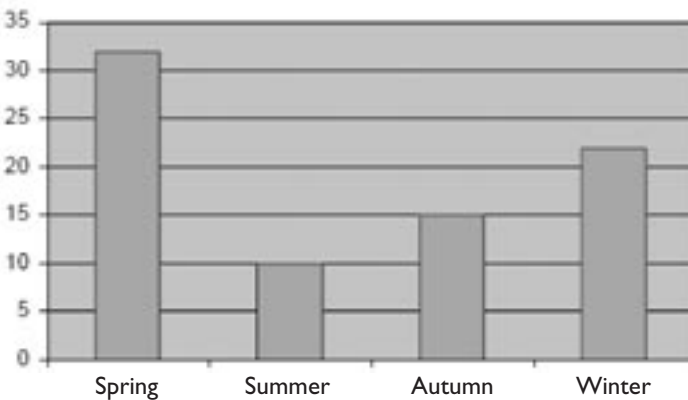


Chart 1: Wolf observation incidences in different seasons.

Mating time amongst the wolves can also vary according to the seasonal conditions in the early part of the year¹. Perhaps this is due to the weather, and particularly temperature; while the weather is cold the mating time may be delayed. Another possible reason for this variation is that the food sources that will be needed to sustain the biological needs of different creatures are more readily available in warmer seasons.

The highest number of wolf observations in Bijar occurs in spring; this totalled 32 instances, or 40% of the total observations in the year of study. In this spring period, the wolves' cubs will be recently born, and the parents and other pack members will be forced to source more food to deal with the cubs' increasing nutritional needs; this is not possible without more activity and movement across the reserve. During the same period, the local shepherds will have moved their livestock up into the grasslands and pastures ready for the summer; the presence of the livestock flocks encourages the increase of the wolves' presence in the region.

As the weather warms and as the summer comes, the wolves are then forced to change their daily activity hours to the evening and through to the early morning; i.e. when the air temperature is lower during the night. The wolf is a creature that cannot easily tolerate the higher temperatures that occur in this region in the summer, and will try to avoid activity both in the hotter parts of the region and during the hotter parts of the day². During these same periods, the highest amount of movement and activity amongst wild goats and sheep occurs in the early and late hours of the day; as these are a major part of wild food resources for wolves in this region, it is during these hours that the wolves have a greater chance to hunt their natural prey.



Canis lupus pallipes.

Pack Size Patterns of the Grey Wolf (*Canis lupus pallipes*) in the Bijar Protected Area, Iran (2004-2005)



The remains of a goat after an attack

Through the duration of the night, the wolves can also attack the livestock herds that are usually out of corrals during summer. The combination of the presence and movement of both wild and domesticated prey means that in comparison to other seasons, the wolves are seldom seen during the daytime during the summer months,

In autumn as the temperature decreases, the wolves again form their packs, and return to their activities and movement in daylight hours. Because of the weather conditions in the area in December, Araz runs less eco-tours than during other months, and this results in decreased chance of encounters with, and observation of, the wolves by the game wardens.

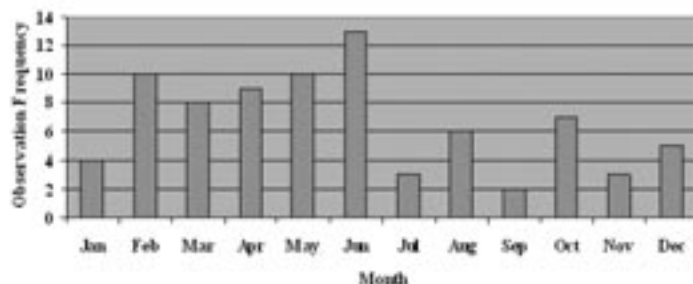


Chart 2: Incidence of wolf observations in different months.

In a more precise consideration of the number of wolf observations in each month, it can be concluded that the rate of observations in the three months of spring is the highest; this is probably due to the needs of female wolves to supply nutrition for recently born cubs, and this demands a wider range of hunting in the region. The wolf observation rate in the summer months is fairly stable, and in the autumn, this rate is also stable, although at a higher level. As the autumn comes to an end and the temperature decreases, the wolf observation rate rises again.

If we examine the chart of times that wolves were observed in the Bijar region, along with average incidence of observed groups in each month, we can conclude that in spring more packs have been observed (32 observation instances of 83 wolves) but the packs are larger in winter (22 observation instances of 93 wolves). When looking at the average number of wolves, we will find that a pack's number is less than 4 wolves in spring, and is between 4 and 5 wolves in the winter.

The reason for the variance of observed group numbers may be that when wolves are faced with harsh conditions in which to find their required food, they form larger groups to increase their chance to locate, and successfully hunt, more or better food resources; therefore, in winter, when finding food is harder, larger groups are formed. However, in spring, we can see that the size of groups decreases in comparison to the winter; larger groups are replaced by smaller and domestic groups, and the pregnant/alpha females will also look for solitude, and safe places for parturition (giving birth).



Chart 3: Average of wolf group size in each month.

The average group size reduces to the minimum value in summer, because at this time, wolves have been spread across the region and have formed smaller groups, and as the chart shows, they can travel and hunt singly or in pairs most of the time. As the autumn comes, the groups become slowly larger and the juveniles now accompany other members of the pack in their activities and hunting.

In December, Araz's eco-tours in the Bijar region decrease due to inclement weather conditions, and the opportunity for wolf observations also decreases; therefore despite the higher numbers observed, these factors prevent the formation of an accurate opinion on the activity and patterns of the wolf groups in this season.

We commented that the intention of the survey was only to observe the wolves and not interfere with the wolves' behaviour. However, an exception was made in the case of an orphaned cub (the fate of the mother is not known); this cub was raised by the local people, and was successfully released back to the wild as an adult.



The wolf cub being raised, prior to release back to the wild

¹ See Mech and Boitani 2003; Packard et al 1985.

² Based on available weather data from Sanandaj, the region had average daytime temperatures in the high 30s C in the summer months of 2004.

Acknowledgments

The authors would like to thank the Environmental Game guard wardens of the Bijar Protected Area for their kind help for this survey. Also, many thanks to Masoud Hosseini for his helpful comments to translate this paper to English; and also to Denise Taylor, Editor of The UKWCT's *Wolf Print Magazine*.

For further information, please check out the following websites:
 Iranian Cheetah Society - www.iraniancheetah.org
 Iranian Department of the Environment - www.irandoe.org/en/index.htm
 Araz Eco Tours - www.araz.org/index.html



Photo: Denise Taylor

Wolves: A Solution to the Red Deer Problem in Scotland?

by Chris Senior

A recent Royal Society study considering the effects of wolf reintroduction to the Scottish Highlands on red deer, and public attitudes to such a reintroduction, has been receiving media coverage lately. The subject of wolves in Scotland, whether in some kind of eco-park, or as an isolated, controlled scientific project, or even running free in the Highlands, seems to crop up every so often. In this article, we will take a look at what this scientifically-written study actually says, and some of the major questions which this gives rise to. Some additional comments in brackets are not made within the study; these have been added by ourselves.

Methods for modelling both populations and finances

The study itself is not advocating wolf reintroduction; merely looking at what effect this would have on a red deer population which is thought to be approaching the capacity of the land to feed it (there are between 250,000 and 400,000 deer in this largely mountainous region): This high density of animals has a knock-on effect for the rest of the ecosystem, preventing natural regeneration of woodland due to overgrazing, lowering numbers of birds, and competing with livestock for grazing. So, the return of the wolf is being considered in terms of the effect it would have on the ecosystem as a whole; not just for the conservation of an individual species (this more wide-ranging view from the scientific community is a welcome break from the reductionist science often seen, which focuses on one small subject area to the exclusion of all others).

Unlike other countries where deer are hunted for food, there is little economic demand in Scotland for hunting, apart from some trophy-hunting of stags, and managers are forced to cull deer to reach the density of six deer per square kilometre, stated by the Deer Commission for Scotland as being a management objective. Overall, this operation barely breaks even from a financial standpoint. The idea of using the grey wolf to manage this problem is, of course, controversial, with strong views on both sides (as seen in other countries and states where wolf reintroduction has been advocated). Alongside a simulation of the effects of such a reintroduction on wolf and deer population levels, the study also surveyed peoples attitudes to wolves, both in the rural Scottish Highlands and urban areas, and also looked at the views expressed by the media and stakeholder groups.

Much is known concerning the red deer population, particularly due to a study from the Isle of Rhum, whilst wolves were modelled using a pack structure with a dominant breeding pair and one or more offspring from one litter each year. A dispersal rate was also included, allowing for the formation of new packs. Availability of deer as a food source, and the preferred prey of juveniles and older females was factored in (the science and mathematics behind population modelling is complex, with numerous factors to consider, based on observations of comparable wild populations. Obviously, not every variable can be accounted for, but the real test is whether the simplified model produces realistic results. In this case, the graph produced for wolf numbers – Figure 1, below – is seen to be mirrored by the Yellowstone wolf population, at least in its early stages).

The model was run over 100 years from wolf reintroduction, having first run for 50 years with no harvesting or predation, to allow the deer population to reach equilibrium. Then, three wolf packs of four members each were released into the model, a 'virtual Highlands' of 2,000 km².

Economically, it was assumed that the recommended six deer per km² were aimed for, with a profit of £200 per stag and a cost (deficit) of £50 per hind. The economics at various rates of harvesting could then be compared before and after wolf reintroduction.

Surveying attitudes to wolf reintroductions

The rural survey was conducted in the Glen Affric area, which borders an area being restored to former Caledonian Forest by the charity Trees for Life, who would like one day to see the area restored in terms of lost species too (but accept that this is a long way from becoming reality, in an interview with the Guardian, January 31 2007). The urban part was carried out in Inverness and Edinburgh. Additionally, an internet search was conducted for UK local and national newspapers on a single day in June 2005, for either 'wolf' or 'wolves' appearing in headlines or lead paragraphs. These were screened and analysed against the same categories for pros and cons of wolf reintroduction as used in the questionnaires. Representatives of stakeholder groups (those with a vested interest) were also surveyed.

Results from the virtual wolves

At the start of the simulation, red deer were at an equilibrium. Then, after the three wolf packs were introduced, there was an initial increase in numbers of both species, as Figure 1 shows. After this, wolves declined to a mean equilibrium value of 25 individuals per 1,000 km², a value similar to unmanaged wolves in Bialowieza Forest, Poland; the deer reached an equilibrium of seven per km² after around 60 years. The time to reach equilibrium is affected by initial deer density and number of wolf packs; this equilibrium density remains unchanged by these, however.

The culling of hinds has a strong influence on equilibrium numbers for deer, and this has a knock-on affect on the wolves. Running the simulation without harvesting caused the wolves to become extinct 19% of the time; increasing hind culls caused this figure to increase dramatically, and the deer population could not cope with more than 4-5% harvest of females as well as a viable wolf population. Prey density is thus a key factor for a viable wolf population. Although some predator-



Photo: Chisty Les Biological Station.

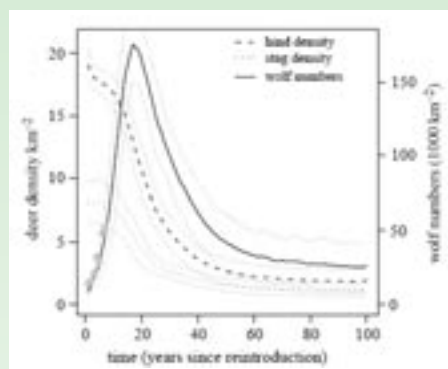


Figure 1: Effects of wolf reintroduction to Scotland on both wolf and deer numbers. The grey points at the start show how wolf densities in Yellowstone National Park, since their reintroduction in 1995, mirror this model.

prey populations fluctuate in a cyclical fashion, this is not thought to be the case here. The major factors in reaching equilibrium numbers of deer are: the rate at which wolves kill deer; adult wolf survival rates; the probability that a dispersing wolf establishes a new territory. Other factors had less effect on reaching a steady population of deer.

So what of the financial implications? Well, reducing deer numbers, and thus removing the need to cull hinds, would save the deer estates money, although reducing the numbers of stags for trophy hunting would lower their income. Still, using the figures of £200 profit from a stag, and £50 loss per hind, to keep to the suggested six deer per km², the difference is that without wolves, the estate would make £550 per year per 10km²; with wolves, the figure increases to £800.

And results from the real people

Attitudes to wolf reintroduction varied between rural and urban samples, as is seen in Figure 2 (something we tend to see in the vast majority of such studies). On a scale of -18 (negative attitude) to +18 (positive attitude), urban people scored +5.3; their rural counterparts came in at +1.9, due to the inclusion of farmers, who scored -4.7 when taken alone. When given set options, 43% of people favoured reintroduction of a variety of species, wolves included, into the wild; 35% into fenced eco-parks; 8% species other than wolves; 14% no reintroductions at all.

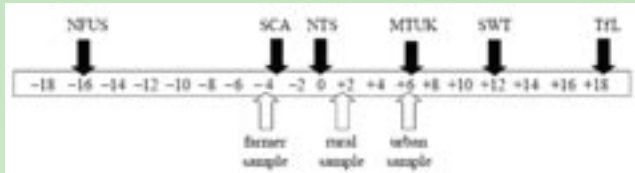


Figure 2: Attitudes of stakeholders to the reintroduction of wolves to the Scottish Highlands. The rural sample includes farmers, the farmer sample is farmers alone and the urban sample contains only urban responses. NFUS, National Farmers Union for Scotland; SCA, Scottish Countryside Alliance; NTS, National Trust for Scotland; MTUK, Mammals Trust UK; SWT, Scottish Wildlife Trust; TFL, Trees for Life.

Major advantages amongst the rural respondents for having wolves were deer control (23%) and tourism (21%). 19% of urban people also cited tourism, and the additional advantages of preserving both Scotland's heritage and the balance of nature. 54% of rural people gave loss of livestock as their major concerns; urban folk were most worried about the possibility of wolf attack (35%).

The search of media coverage gave similar results to those people other than farmers, with 54% of articles mentioning wolves being positive; only 19% were negative. Stakeholder attitudes can be seen in Figure 2 (and are exactly what might be expected, given their respective stances).

Further issues of the study

Unlike most countries with deer, Scotland does not manage deer populations for human consumption, such as meat. This fits well with a model which allows for only a low level of hunting with an unmanaged wolf population present. Wolves would make estates more profitable, removing the need to cull hinds, allowing trophy hunting of stags to generate

income. This could also result in a lack of conflict between hunters and wolves, which is not usually the case elsewhere (although hunters in some other countries still feel that wolves are taking 'their' deer, even when this is shown not to be the case). The study suggests deer density could be reduced by up to 50% by wolves alone, and as red deer can produce only a single calf every other year, this level may actually be achievable in practice.

Knock-on benefits to the ecosystem may include: increased forest regeneration; lower densities of deer ticks to spread Lyme disease; elevated breeding success of some bird species; carrion availability for scavengers; plus, other effects which may not be evident until wolves are a functioning element of the ecosystem, as has been the case in Yellowstone (including regeneration of ground flora in meadows, as they are browsed less heavily by more-wary grazing animals).

Wolf predation on sheep will also be an issue. In the highlands of Spain, sheep roam as freely as in Scotland, and here, wolves are responsible for 80% of natural sheep mortality. However, the economics of sheep farming are changing, and this may be why farmers are not more opposed to wolves. Without subsidies, the average sheep farm would make a loss of £200 per year, but some form of additional compensation for livestock losses would still be required, and there is a chance that attitudes of farmers would change once they experience livestock loss first-hand.

The reintroduction of extirpated species is always a potentially useful conservation tool. However, this will be contentious, costly, and will impact on local communities, who need to support and benefit from reintroductions to reduce the risk of disruption or sabotage. Fear of wolves can be a major concern, as can predation on domestic dogs. This study suggests that reintroducing wolves would solve the problem of deer management, and that the public is quite positive about such a reintroduction.

Some responses to the study

- Alan Watson Featherstone, Trees for Life executive director, approved of the study, but said that the substantial social and economic issues posed by reintroducing the wolf would take at least 20 years to resolve, the wolf having the "worst public image of any large animal on the planet ... People think they're a real threat, but that's just not true".
- Professor Colin Galbraith, director of science at Scottish National Heritage, said the study was a useful contribution to the debate, being "a bit theoretical, but it's quite well done in terms of the science". However, he made the point that globally accepted guidelines on reintroducing

species set out by the World Conservation Union made clear that if an animal was once hunted to extinction by humans, it would be unacceptable to reintroduce that animal where it would again be targeted. Also, he commented that it would be extremely difficult to limit wolves to a particular area, and to ensure that sheep did not become their preferred prey. Thus, SNH has again ruled out wolf reintroduction (and they have the final say in this matter), but will look at reintroducing sea eagles and beavers to Scotland, the latter scheme having been previously rejected by the Scottish Executive.

- Professor John Milne, chairman of the deer commission, claimed that the report's central assumptions were flawed, and that there was no consensus that deer numbers were too high nationally, only causing damage in some environmentally sensitive areas. He also added that trophy hunting added £105 million to the rural economy, whilst providing some 2,500 jobs in areas with few opportunities for employment.
- Anna Davies, spokeswoman for the National Farmers' Union in Scotland, said that the reintroduction of wolves into the wild would "present significant problems in terms of sheep predation, and that is the reason why it is not widely popular among farmers."

Matters arising

The study is an interesting starting point, but, for us, also raises some additional questions, which do not always have any clear-cut answers.

One major point which leaps out of the study is the phrase 'unmanaged wolf population'. It would be great if this was a viable option, but any reintroduction would require human intervention at some point. Individual wolves would try to disperse outside of any designated 'wolf area', looking for space to form a new pack, or an existing pack to join. Some may repeatedly predate cattle, and have to be either removed from the wild or euthanized. There will also come a time – as is currently happening in parts of the USA – where the reintroduced wolves reach a predetermined population level where they are considered to be successfully 'recovered'. At this point, it may be necessary



Photo: Chisty Les Biological Station.



to alter their protection status to allow hunting to control numbers. Would this take the form of further trophy-hunting, or be carried out by government employees? Trophy hunting is possibly more emotive, but either way – from the wolf's perspective – it is dead anyway. So, is the reintroduction of a species worth the sacrifice of individual members of that population? Is it viable to use some form of sterilisation, or would the process of capture, sterilisation and re-release cause undue stress to the wolf?

A point which sometimes comes from those perhaps less informed about the natural world is that it is 'unfair' for the wild deer to be hunted by wolves (see *Issue 28, Ethos: Sad-Goods*), ascribing human values to the actions of wild animals. From this perspective, if deer reach and exceed the capacity of the land to support them, is it 'fair' to allow a long, slow, lingering death through starvation, or would a wolf-limited population be better?

This study, whilst considering any potential reintroduction from a point of view of the entire ecosystem, plus the issues of sheep farming and public perception, still only mentions issues such as ecotourism, compensation for killed livestock and other economic pros and cons in passing. These too are major issues. Although we do not, surely, wish to reintroduce the wolf for the sake of income generation, any economic costs and benefits would need to be considered in more depth.

The guidelines from the World Conservation Union, concerning reintroducing extinct species only if they would not be targeted again, are a flimsy argument for Scottish National Heritage to hide behind. There is an oft-quoted figure of 1769 for the last wolf killed in Scotland, although it is thought that the species was probably effectively extinct a century before this, with only small remnant, isolated populations left. So, is there still the same risk from humans 250 years or more later? Undoubtedly in other countries, where hunting is more widespread, there has been conflict with reintroduced wolf populations, but such hunting is less common in Scotland, and the study has even suggested that the reception of wolves by trophy hunters may be a positive one. Also, attitudes have shifted, particularly since a growth in environmental awareness in the 1970s and the formation of organisations such as the Wolf Specialist Group in 1973. This argument may have more substance in the USA: Denali National Park had a 'predator control program' until 1952, to 'protect' prey species from wolves, but attitudes had changed sufficiently by 1995 to allow wolf reintroduction to Yellowstone, a period of time considerably less than 250 years.

Although the habitat of the Highlands has undergone severe changes since wolves last roamed, including the clearing of further woodland for agriculture; the displacement of up to half a million people during the Highland clearances to make way for sheep farming after the traditional Scottish clans, each with their own shared land, were defeated by the

British at Culloden Moor, in 1746; the formation of sporting estates, which still exist today, once sheep farming became unprofitable; and currently one of the lowest rural population densities outside Scandinavia and Russia. All this has changed the habitat for the worse, ecologically speaking, but not beyond the point for the wolf to find a suitable home, were it to be reintroduced.

So, we are left with many questions, and no easy answers to be found in a lot of cases. If wolves were to be reintroduced to the Scottish Highlands, we would surely wish to put the welfare of these creatures first, but even then, are we talking about

the species as a whole, or the individuals within the population? This study has generated a lot of media interest, and it is good to see some 'hard science' applied to the process, but there is still a lot of work to be done, and many obstacles to be overcome, before the glens echo to the sound of long-forgotten howls.

The full text of the study can be downloaded in pdf format from the Royal Society's website:

<http://www.journals.royalsoc.ac.uk/media/d48072eyvk5xphc4gt7r/contributions/m/6/6/8/m668843344788408.pdf>

Scottish wolf 'reintroduction' makes Polish papers

by Ewa Love based on the articles in Dziennik and Metro

During my recent visit to Poland in February this year, I came across two articles in the Polish papers on the subject of wolf reintroduction to Scotland. Both articles were written on a positive note, stating that the scientists and local farmers see reintroducing wolves to Scotland as very beneficial to the local economy and farming, and that the wolves will "save the Scottish nature". Neither of the two articles explored the possible problems. The authors of both articles named Dr Tim Coulson as both the leader of the project and the group of the scientists from Imperial College, London.

The short article by Malgorzata Minta entitled 'Wolf is not really that bad' appeared in the science part of *Dziennik* (equivalent to *The Times*) on 3rd February 2007. The author of the article writes that British scientists, led by Dr Tim Coulson, have proven that wolves are no longer worthless vermin which kill livestock, but in reality this animal can save Scottish nature. It claims that with the killing of the last wolf in Scotland, the problems of the Scottish sheep farmers began, as the red deer, lacking their natural predator, bred in large quantities and started causing serious damage to the farmland. The author mentions that deer hunting is not as popular in Scotland as it is in the other countries (USA or Scandinavia) and that according to Dr Tim Coulson, the current situation can lead to an ecological disaster: The scientist is quoted to have said that the eco-system is overstretched and that soon there will be no food left for the red deer. It continues that deer cause damage not only to the pastureland, but also to tree-planting schemes, and therefore cause a decline in the variety of the birds in that region. According to this article, the reintroduction of the wolves seems to be a perfect solution to all these problems. It states that the computer simulation techniques showed that the reintroduction of the wolves would return the ecological balance to Scotland's nature. Dr Coulson is said to be weighing the advantages of the reintroduction over any possible future difficulties of the project, and claims that the Scots are also in favour. According to the author of the article, Dr Coulson admits that occasionally wolves may attack the odd sheep, but feels the remainder of the flock will be safe.

The second article appeared in a local paper for the region of West Poland on 16th February 2007, entitled 'Wolves will also emigrate'. This title bears an irony for the increasing amount of Polish people leaving their country in recent years to live and work in Britain. Written for *Metro* by Jacek Rozalski, this piece not only advocates the reintroduction of the wolves to Scotland, but also makes an extreme claim that Dr Tim Coulson is considering 100 wolves for the project, which could come from Poland. Polish ministerial spokesmen Michal Milewski replies that although the Ministry had not yet received a formal request, if asked, it would seriously consider it: The final decision would have to be taken by the Environment Minister, but if approved, it would meet opposition from wolf conservationists in Poland.

In reply, Anna Piekut, of WWF Poland, says that it is not possible that the entire 100 wolves could come from Poland alone. Leopold Bekiel, from Bieszczady National Park, adds that only a few wolves could come from Poland, while Dr Sabina Pieruzek-Nowak, President of the Association of Nature WOLF, opposes the idea, saying that there are parts of West Poland in need of reintroduction of the wolf, therefore sending any of the animals out of the country should not be considered.



Ethos

The Perils of Wolf Management

by Bill Lynn

In early July of 2006, Suzanne Stone and her daughter, Sierra, drove to the Sawtooth National Forest to search for an orphaned group of eight-week-old wolf pups. The Stones drove there after learning that an arm of the US federal government had killed the parents – a male and female from the Big Water Pack in the Soldier Mountains – and left the pups to die from starvation or predation. The agency responsible for this was Wildlife Services, formerly known as Animal Damage Control.

I have known Stone a long time, and she is neither stranger nor opponent of lethal 'wolf control'. As the Northern Rockies representative of the non-profit organization Defenders of Wildlife, she works with citizens, scientists, the livestock industry, and government officials to manage the growing wolf populations of the western US. Part of her work involves

administering two funds, one that compensates ranchers for livestock or working dogs lost to confirmed wolf depredation, and another that subsidises proactive measures to avoid or mitigate conflicts between wolves and people. She is a sympathetic voice for ranchers and rural communities in wolf country, and realises that killing wolves is at times an unfortunate necessity. I should note that I agree with her. And still, she was disturbed enough to search throughout the day and into the night for the pups. Stone never found the pups. Neither did Wildlife Services, which hoping to take the edge off a public relations disaster, also went looking.

An interesting contrast to Stone's actions was the attitude of Steven Nadeau of the Idaho Department of Fish and Game. He authorised the killing of this wolf pack because they were believed to have preyed

on livestock. In comments to National Public Radio he said, 'the regrettable loss of a few pups does not have any real biological impact on the recovery or long-term viability of this population [of wolves]'.

Nadeau is almost certainly right about the biological effect from the loss of these pups. Pups have always been particularly vulnerable to disease and predation, and the reproductive cycle of wolves is adapted to high pup mortality. The loss of a few pups will have little if any impact on the population biology of wolves in Idaho. But I do not think this is why the story made the news. Rather it was the contrast between the admirable care on Stone's part, and the apparent indifference on Nadeau's that captured the attention of the public in the US and Canada.

At its root, wolf management involves questions of how one monitors and intervenes in the lives of wolves, whether



Photo: Alex Hampson

for scientific research or for the administration of wildlife policies. And in the contrast between Stone and Nadeau's approaches, there is much we can learn about the ethics of managing wolves.

Now in any discussion of predator management, you are likely to hear quite a bit about 'sound science'. Sound science is supposed to be the evidentiary, theory-rich baseline for managing wildlife and making public policy. Yet when science is substituted for ethics, our moral compass fails and we are likely to be led astray. Wolf management provides a particularly powerful example of the moral controversies that can arise from a seemingly technical subject.

The techniques used to study and manage wolves are frequently intensive and intrusive. Wolves are radio-collared, monitored, tranquilised, assessed, captured, incarcerated and killed on a regular basis. We still have much to learn about wolves, and there are undoubtedly legitimate scientific reasons to study them using such techniques. Managing wolves in this way may also be required to meet certain goals of wolf recovery. It is, for instance, a necessity in the Red wolf recovery program, where monitoring and managing wolf pairings helps prevent hybridisation with coyotes. Even so, the use of these techniques is not a sustainable model for long-term recovery. They are expensive

propositions in terms of time and labour, and a burden on under-funded and understaffed organisations, as well as an annoyance to individuals and communities. As noted before, with sufficient food and space, wolves will flourish. Over time, they will establish their own population levels and distribution in dynamic relationship to the habitat and other resources they need for survival.

There is another more insidious reason for conducting intensive wolf management, namely to appease vested human interests that oppose our coexistence with wolves. This kind of management is not undertaken for the benefit of science, much less for the well-being of wolves. Although sometimes justified as maintaining the 'social carrying capacity' of wolves, intensive management in this context involves killing or removing wolves with little attention to other proactive measures for mitigating human-wolf conflicts. This approach is also behind the artificially low population goals in some wolf management plans, the designation of certain wolf populations as expendable, and land-use planning that effectively creates wolf-free zones. Wolf recovery and conservation may be the stated goals. The reality of this type of management is quite different; it amounts to an institutionalised system of species cleansing that tries to exclude wolves from the vast majority of the landscape.

Vested interests that distort wolf management are ethically problematic in their own right. Equally disturbing is employing lethal and other blunt-force techniques with little apparent concern for the well-being of individual wolves or their packs. For wolves, the social disruption of intrusive management can be severe. Pups without parents starve or are preyed upon. The loss of adult members that teach younger wolves how to survive in the wild as well as around humans, can lead to heightened mortality and further conflict with people. Wolf packs that are exterminated are replaced by new packs, which may be even less familiar than its predecessor with how to avoid the danger of particular humans on the landscape. What we have here is the makings of a vicious cycle that, from an ethical point of view, we should try to break.

A growing number of voices are objecting to wolves being relegated to a gulag of isolated habitats, surrounded by exclusion and free-fire zones, and subjected to routine and invasive management. From an ethical perspective, managing wolves for the wrong reason and with little concern for their individual well-being is wrong. Those of you who care about the non-human world and raise your voice in defense of animals and the rest of nature are in the right. Keep it up.

Cheers, Bill



Portions of this column are excerpted from my 'Ethics and Wolves' article in Marc Bekoff's forthcoming *Encyclopedia of Human-Animal Relations* (Greenwood Press, 2007). For more information on this groundbreaking work, see my blog, www.practicaethics.net/blog/?p=100.

You can hear Elizabeth Shogren's report, *Orphaned Wolves Lost in Idaho*, on National Public Radio, www.npr.org/templates/story/story.php?storyId=5550973.



Bill Lynn is the founder and Senior Ethics Advisor of Practical Ethics (www.practical-ethics.net), and a professor at the Center for Animals and

Public Policy at Tufts University (www.tufts.edu/vet/cfa). If you have a question you would like to address to Bill, or a comment on *Ethos*, please write him at williamlynn@practicaethics.net.

The UKWCT Opens New Education Centre

Education for and about wolves is one of the key features of any wolf conservation organisation, and the UK Wolf Conservation Trust (UKWCT) is no exception. Dispelling the myths, raising awareness about wolves and their conservation, changing perceptions and attitudes and providing knowledge and education for the scientists and conservationists of tomorrow is all part of the daily work at the Trust.

As many readers of *Wolf Print* will know, the UKWCT has steadily developed as an organisation both in terms of its own infrastructure and in terms of its networks and international reputation. Last year, we employed Education Officer, Toni Shelbourne, on a permanent salaried basis, which in turn has led to a lot more education activity. The natural progression from this was to establish a dedicated Education Centre. After months of hard work having the old Observation Room refurbished, the new Education Centre was duly opened at an official ceremony on Friday 2 March 2007 to much fanfare, and with the heavens shining on us, providing a gloriously sunny, spring day.

Officiating at the ceremony were local Conservative MP, Richard Benyon, and well known children's author, Michelle Paver, who is also a patron of the Trust. Both have had a long association with the UKWCT, and acknowledged their admiration for the work carried out by our dedicated staff and volunteers.

Of course, the wolves were the undisputed stars of the day, and almost behaved impeccably. True to form, the mischievous Dakota, decided to take exception to Richard Benyon. After some warning growls and posturing from Dakota, and her quick removal from the situation, ribald comments from John Denness about Dakota taking her revenge for the Conservatives proposing to bring back fox hunting, lightened the situation.

After the official ceremony, guests and visitors enjoyed a walk around the Centre with juvenile wolves Torak, Mosi and Mai.

The new education facility is a great leap forward for the UKWCT, and formalises much of our approach to education and learning. Toni is now busy putting together various education programmes and activities for both children and adults for the coming year. Keep an eye on the website for up to date information: www.ukwolf.org.



Richard Benyon MP and author Michelle Paver with Duma. Photo: David Southard - Wild Arena.



Michelle Paver and yearling Mosi. Photo: David Southard - Wild Arena.

