

Reintroducing the wolf to Scotland



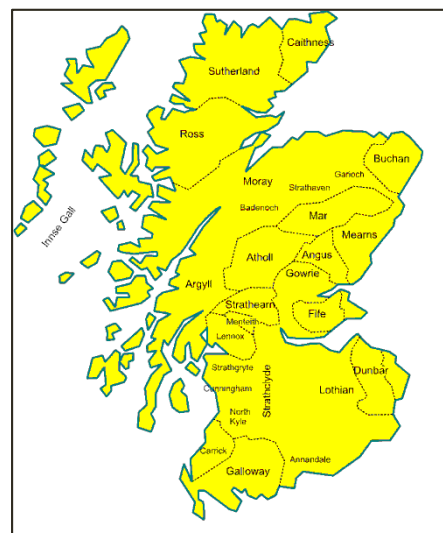
As a UK based wolf organisation we receive numerous enquiries about reintroduction of wolves to Scotland. We believe in order for any reintroduction of the wolf to Scotland to be successful, it is first necessary to secure a safe and viable future for wolves in areas of Europe where they have managed to survive human persecution, and in areas where they have returned, aided by legal protection and European Community policies and conventions encouraging conservation of native habitats, flora and fauna. The lessons to be learnt from this can then be applied to the challenge of co-existence with large carnivores in the Scottish Highlands.

Reintroducing the wolf to the Scottish Highlands was first proposed in the late 1960s, but the idea only started to gain wider publicity and support following the reintroductions of the red wolf to the south-eastern United States in 1989, and the grey wolf to Yellowstone National Park in 1995. The media are always happy to report a story about reintroduction, keeping the topic constantly in the public forum; most proposals reported are unfounded, and lacking in scientific credibility.

Although the British government is required to consider the reintroduction of native species under article 22 of the EU Habitats and Species Directive of 1992, any proposal for reintroduction to Scotland would have to be approved by Scottish Natural Heritage, the government organisation responsible for wildlife and habitats in Scotland, and their position remains that they have no plans to consider reintroduction of wolves.

This is not going to change until something persuades them that reintroduction would not be a controversial issue and would be widely welcomed by the whole spectrum of land users and interests in Scotland. There are however pointers for the future; agriculture in Scotland, particularly sheep farming, which has always been one of the major stumbling blocks for returning large carnivores, is changing. From

January 2005 subsidies based on production, where farmers and crofters receive payment per head



of sheep or cattle, were replaced by Single Farm Payments. This means that farms and crofts receive a subsidy regardless of whether livestock are grazed, or crops grown. The subsidy also requires recipients to meet new rules for Good Agricultural or Environmental Condition. This change, coupled with a Scottish Executive ruling doubling the amount of land eligible for the Farm Woodland Premium Scheme, which provides grants for regeneration of native woodland and forestry, could see sheep being replaced by woodland restoration in the future, thus increasing suitable habitat for both predators and their prey.

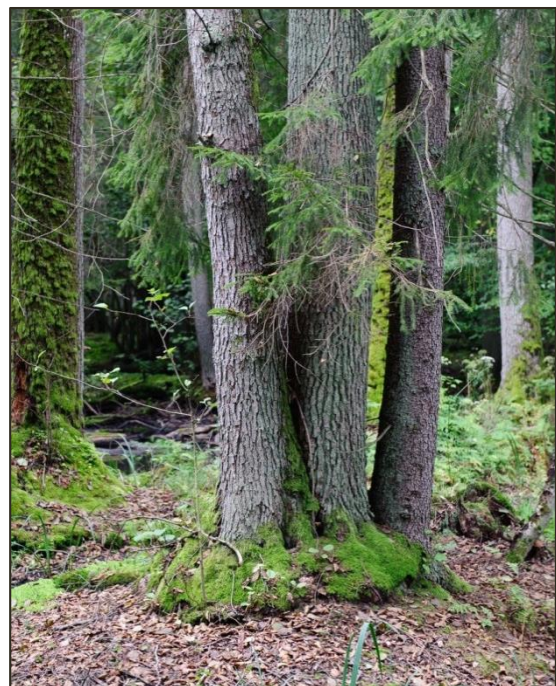
In the meantime, there is much valuable work being carried out by British conservation groups such as *Trees for Life* to restore habitat, particularly the Caledonian forest. There is currently a trial reintroduction of the beaver in Knapdale in Scotland; if this is successful, and is followed by other reintroductions - possibly wild boar, which are already present in many counties as farm escapees, and lynx - and then the ecosystem in Scotland will in future years be a much healthier place to welcome back the apex predator: the wolf.

Why reintroduce wolves?

A report published in 2007 in the Proceedings of The Royal Society, entitled *Wolf reintroduction to Scotland: public attitudes and consequences for red deer management*, concludes that reintroduction of wolves to the Scottish Highlands would have significant ecological benefit by limiting numbers of red deer, reducing the need for costly deer culls and allowing natural regeneration of the Caledonian pine forest.

Researchers from the University of Oslo, Hedmark University College and Imperial College London, used sophisticated population modelling software to predict the effect of reintroducing three wolf packs, consisting of a breeding pair and two subordinates, into the Highlands. The data were then used to forecast the economic consequences for deer management, assuming deer estates are currently following recommendations from the Deer Commission for Scotland to reduce red deer density to a target of six per square kilometre. A survey of rural and urban attitudes to wolf reintroduction was also carried out, questioning both individuals and organisations representing various interests in Scotland.

In the simulation, after initial expansion, wolf numbers stabilised at 25 wolves per 1,000 square kilometres, a density comparable to unmanaged populations in *Bialowieza Forest in Poland*, and after 60 years, deer numbers reached seven per square kilometre, drastically reducing the need for culling of hinds. Using estimates of an average profit of £200 for a stag from trophy hunting, and a loss of £50 for culling a hind, the researchers calculated that a deer estate could make £800 a year from deer stalking in each 10 square kilometres if wolves were present in the Highlands and hinds did not need to be culled, as opposed to just £550 per year without wolves.



The study concluded that wolves could have a greater influence on deer numbers - reducing them by as much as 50% - than has been observed in other countries. One of the reasons suggested for this is the low rate of reproduction of Scottish red deer, which tend to produce a single calf every two years. It is suggested that reduced deer numbers may allow greater natural regeneration of trees, currently suppressed by grazing, and also reduce the incidence of Lyme disease, which is carried by deer ticks. There may also be benefits for grouse moors as wolves have been shown to reduce numbers of foxes and other smaller predators.

The model does not account for the presence of free-ranging sheep over large areas of the Highlands. The authors acknowledge that there will be conflict, but also point out that Highland sheep farming is not profitable, and following changes to agricultural subsidies it is likely that sheep grazing in the Highlands will decline. The report addresses fear of wolf attacks on people, and acknowledges that although there are very few records of healthy wolves attacking people, the perception that they might is an issue that must be resolved before reintroduction. Also addressed is the possibility of wolves killing domestic dogs, and the authors suggest this can be partly resolved by education of dog owners.

The public attitudes survey, as expected, shows a more positive response to wolf reintroduction from urban dwellers than rural dwellers, although not by a large margin. The responses to a questionnaire were scored on a scale of -18 to +18, with the urban sample scoring an average of +6, and the rural sample +2. A sample of farmers' responses were more negative, and scored -4, but interestingly, the National Farmers Union for Scotland, which represent farmers' interests, scored -16.

Importantly, the report concludes that any reintroduction would need to be well planned, or positive attitudes may quickly turn negative.

One aspect the report does not consider is the economic cost of wolf reintroduction to the taxpayer. Whilst the model assumes red deer and wolf population dynamics would be similar across the entire 25,000 square kilometres, this is unlikely to be the case. In the Yellowstone wolf reintroduction, wolves did not always behave as expected or stay in the release areas, often dispersing out of the designated recovery area. Packs were monitored through radio-collared individuals and captured and translocated when they strayed too far. Removal of problem individuals and packs that killed livestock has also been necessary. Given the smaller size of the Highlands and the propensity of wolves to travel large distances in search of territory and a mate, it is likely that a high level of



population management would be required. The requirement for management is likely to be long-term; the population model predicts an initial growth in wolf numbers before equilibrium is reached, and that it would take around 60 years for deer numbers to reduce to an acceptable density. Any reintroduction would need to be clear as to the likely cost of this management, and who would pay for it.

Whilst it is generally considered that sheep farming in the Highlands is not profitable and is likely to decline with the change in subsidies, free ranging sheep grazing is

currently widely practiced across the Highlands. Levels of losses to wolves are likely to be far higher than those experienced in the USA and Europe, where sheep are generally grazed in flocks on pasture, attended by shepherds. Large losses may not be economically significant to heavily subsidised Scottish sheep farming, but as the report points out, the emotional response to wolf predation cannot be underestimated; for example in Slovakia between 2001 and 2003 wolves were responsible for killing less than 1% of sheep per year, yet predation is often cited in the media as evidence that wolves are over-populated and is used as justification for continued control of predators. Payment of compensation for livestock killed is likely to be another cost to the general public of wolf reintroduction, although a private compensation fund, similar to that set up by Defenders of Wildlife when wolves were released in Yellowstone would help to resolve this issue and improve public relations between wolf advocates and farmers. As a UK based charity, the Wolves and Humans Foundation is ideally placed to administer such a fund.

Another aspect of reintroduction not discussed in the report is tourism. Tourism in the Highlands supports 24,000 jobs and generates 8% of Scotland's Gross Domestic Product. It has been estimated that reintroduction of wolves has benefited the Greater Yellowstone Ecosystem by some \$35 million in tourist revenue, and whilst no formal study has been carried out on the potential impact of wolf tourism in the Scottish Highlands, wildlife tourism and ecotourism is a growth industry internationally, so it is not unreasonable to assume there would be a positive effect. Further analysis of case studies from Europe and North America should help determine the likely economic impact and how existing tourist businesses in Scotland can adapt to benefit from the presence of wolves. Concerns have been raised that walkers may be put off by the presence of a large predator, and these would need to be addressed by provision of accurate information about wolf behaviour through tourist information centres, visitor centres and publications.

The Alladale estate, north of Inverness, where owner Paul Lister proposes to bring back extinct native animals such as wolves, elk, wild boar and brown bears in a large fenced reserve, similar to game reserves in South Africa, will be a useful indicator as to the scale of demand for wolf tourism in the Highlands, although it is currently aimed at the luxury end of the market. If it proves successful, other landowners and businesses in Scotland would be more likely to support a reintroduction.

The new report discusses in detail one advantage of reintroducing wolves to the Highlands – control of deer numbers, and touches on many other issues. Reintroduction of wolves is a controversial subject, and would need to be carefully planned and managed, and at the present time further detailed studies are needed on aspects such as the cost of reintroduction, the impact on tourism, conflict with sheep farming and other land use interests, and improving knowledge about wolves to reduce apprehension about wolf attacks.

Sources: *Wolves and Human Foundation, Wolf reintroduction to Scotland: public attitudes and consequences for red deer management. Erlend B Nilsen, E J Milner –Gulland, Lee Schofield, Atle Mysterud, Nils Chr. Stenseth, Tim Coulson. Proceedings of the Royal Society B, 2007*

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