

## **Fletcher 4 wild deer issues**

### **Wild deer issues in Britain and mainland Europe**

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**Abstract** During the last fifty years wild deer populations have risen at an accelerating rate in much of Europe. This is reflected in an increased range of all species as well as increased population densities despite growing annual kills by a declining number of hunters. An attempt will be made in this paper to quantify these factors and to consider the many issues, frequently of veterinary relevance, that result from increased deer numbers. These include road traffic accidents, the growth in rehabilitation centres, damage to the environment and agriculture, and loss of genetic 'purity' within deer populations. The increased risks of disease resulting from an increased density of deer have been considered in another contribution.

**Introduction.** In order to assess the chief areas of concern relating to wild deer within Europe a number of scientists and others working with deer throughout Europe were consulted and the following paper is an attempt to consolidate these responses. Quantitative data are only available for a few local regions but there was a substantial consensus of concern related to the continuing growth in wild deer populations with a theme of declining numbers of hunters quantified by Chardonnet and others (2002).

Gill, in a thorough survey of the status of deer populations in North America and Europe emphasised the dramatic change from scarcity in the eighteenth and nineteenth centuries to one of growing economic importance, extending ranges and increasing populations in the late twentieth (Gill, 1990). Despite the stated intentions that this substantial review should be regularly updated no comprehensive attempts have yet been made to do so. His report remains an invaluable overview.

Methods of counting wild populations which usually inhabit woodland remain problematic and the subject of continuing research, for example, Buckland et al.,( 2000), but it is clear from published reports as well as anecdotal responses from hunters and biologists that, with few local exceptions, most deer species within Europe are continuing to increase their range and population, often at an accelerating rate. Among the exceptions are reindeer in southern Norway whose population has fallen by 50% over the last thirty years to 30,000 and is still falling; this is attributed to construction work (United Nations 2003) although milder winters may be a factor. Scandinavia is also the one region of Europe where hunting is becoming more popular (Heberlein et al 1998).

In the other species increases in deer numbers predominate probably reflecting the disappearance of many predators, and a declining rural human population or at least less people working on the land who hunt and eat deer regularly. They have largely been replaced by the recreational hunter whose importance is demonstrated by the fact that, for example, in 1985 west German hunters spent 950 million DM to achieve meat valued at only 209 million DM (Gill 1990). As in North America, European deer control is almost wholly dependant on recreational hunters. However with few exceptions the numbers of hunters are falling (Chardonnet 2002). In France the number of hunters has declined by 22.7% over fifteen years and their age has increased to a median of 50 (Landry 2000). Other factors encouraging the growth in deer numbers probably include a succession of mild winters, an increasing frequency of storms creating windthrown trees, less intensive management of woodland with less demand for coppice and firewood, increased planting of 'amenity' woodlands.

**Hunting methods** Deer hunting systems vary greatly within Europe and some, such as the Iberian ‘monteria’, may be becoming more popular. In the treeless regions of the Scottish Highlands red deer are ‘stalked’ by paying guests on private estates accompanied by professional stalkers employed by the landowner. This entails sighting deer through telescopes or binoculars and a stealthy approach upwind to within rifle shot.

Especially in Central Europe, Germany and Austria, but also elsewhere, hunters may sit in elevated hides, ‘high seats’, waiting, usually at dusk, for deer to move out of woodland into clearings or agricultural fields where they may present an opportunity for a shot. In France deer are often shot in enclosures after being flushed by dogs. In Spain and Portugal deer are hunted, as are wild boar, by the ‘monteria’; the rifles are each assigned a post and the quarry are driven towards them by beaters with dogs. The animals are then killed, usually in flight, by rifle.

The principles within each region of Europe by which the size of the cull is calculated and the differing patterns of land ownership and forest management are described by Gill (1990).

In almost all parts of Europe it would appear that insufficient numbers of deer, particularly females, are being killed and populations are growing. As this trend continues the recreational hunter is being increasingly assisted by state employed hunters. This is often controversial as for example in the Scottish Highlands where, in a highly publicised event in January 2004, the Deer Commission for Scotland flew in hunters in their employ to kill red deer on the privately owned estate of Glen Feshie, claiming this was necessary to protect over-grazed ecosystems. Legal action is now threatened by the landowner.

In central Europe following the collapse of the soviet and communist regimes during the late 1980’s and 1990’s many deer populations experienced increased hunting pressure with resulting declines of population as deer were shot indiscriminately for meat. However deer numbers appear to have now stabilised and in many E European countries are apparently beginning to increase; whilst the numbers of hunters is often still growing (Chardonnet 2002) and control over the numbers of deer killed is being more carefully exercised.

**Regional data.** (Hunter statistics from Chardonnet (2002).)

Denmark. Of wild deer, 3,600 red, 3,400 fallow, 400 sika and 109,000 roe were shot in the 2001/2 season. Roe numbers increasing; all others stable (Herlevsen, pers comm). Hunter numbers stable or rising.

Norway. In 1960 only 1500 red deer were culled but in 2002 24,500 (pers comm Solheim) and hunter numbers are stable or rising.

Germany. In the hunting season 2001-2 the German hunting authority issued the following figures:

**Table 1**  
**Comparison of German hunting returns for 2001-2 with the five year average.**

Species	2001-2	Five year average
Red deer	57,593	52,290
Fallow deer	48,951	42,756
Roe deer	1,060,272	1,051,142

(Data from Deutscher Jagdschutz-Verband, Johannes-Henry Strasse 26, 53113 Bonn, Germany)

German hunter numbers are stable or declining.

Britain: The British Department of the Environment has recently published a report as a response to the growing costs of wild deer in England (Wilson,2003). This highlights the apparent growth in deer numbers from estimates in the 1970's to estimates in the 1990's (see table 2).

**Table 2. Estimated growth in British deer populations** (Wilson, 2003)

Species	Estimated populations in 1970's	Estimated population in 1990's
Red deer	190,000	360,000
Roe deer	200,000	500,000
Fallow deer	50,000	100,000
Sika	1,000	11,500
Muntjac	5,000	40,000

Only red and roe deer are native British species, fallow probably being introduced during the 11<sup>th</sup> century and sika and muntjac during the nineteenth and twentieth centuries. The remarkable breeding success of the muntjac (Ward,2003) reflects a succession of mild winters, the ability of the species to colonise suburban habitats and the rapid extension of its range is due to the practice of wildlife rehabilitators transporting rehabilitated road traffic accident victims into new areas (Chapman 2004). There are now between 200 and 300 animal 'hospitals' within Britain specialising in wildlife rehabilitation (pers comm Best).A recent report commissioned by the UK Department of the Environment details the numbers of deer on farms, in parks and in the wild and describes the structure of the deer related industry (Munro 2002).

Netherlands: It is no coincidence that these issues have become polarised on the Oostvaardersplassen which is in the Netherlands within that part of Europe which carries the highest human population densities. This 5000 hectare polder, reclaimed from the sea during the 1960's, was originally destined for industrial use but instead it was decided to create a nature reserve which has now become an internationally important wetland. In order to control the grass and scrub, horses, cattle and, in 1992, 50 red deer were introduced to 2000 hectares. By 2000 there were 600 deer and by the end of 2003 1200. Public opinion is now polarised as to whether these deer should be allowed to starve as was originally envisaged or culled systematically to keep the population healthy. This represents a microcosm of the European deer populations' predicament. Issues raised by neighbouring farmers are interesting: the farmers would be prosecuted for leaving their cattle to die and even for leaving carcasses on the ground while the state employees are doing just this on the other side of the fence (Spek, GJ and van Baarle R pers comm). On another area within the Netherlands, the Veluwe of 60,000 hectares carrying 840 red deer, 30-50 are killed each year in road accidents. The Netherlands has now had its first sightings of muntjac and can expect a population explosion over the next decades.

Dutch roe deer numbers have grown from around 2000 in the 1940's to around 50,000 now (pers comm Spek GJ).

## **The costs of elevated deer populations and the extension of their ranges.**

**Hybridisation.** Since at least Roman times wild animals have been transported so that, for example, the range of European fallow deer has been artificially increased and the genetic variability of this species is very limited in many if not all populations. During the nineteenth and early twentieth century the Sika deer introduced into several parts of Britain and especially Scotland from a variety of sources (Ratcliffe, 1987) are now recognised by an examination of blood proteins to have hybridised with red deer so that no red deer population on the Scottish mainland can now be conclusively considered to be free of the risk of hybridisation. Legislation to create refugia on offshore islands has now been introduced so that some red deer populations should remain unadulterated..

Within Spain, Portugal and France red deer are regularly transported for hunting purposes and importations of *Cervus elaphus hippelaphus* from central Europe and *C.e.scoticus* from Great Britain have been taking place for at least the last twenty or thirty years. The range of red deer has therefore been greatly extended and the indigenous subspecies *C. e. hispanicus* can only be said to be authentic within the Cota Donana national reserve.

**Damage to crops.** Within Britain deer wreak damage in agriculture estimated at around £4 million p.a.(Wilson 2003a), through feeding, lying and flattening, and to the horticultural and forestry industries by browsing, rubbing antlers etc (Moore et al 2000). In France in 2000 compensation to farmers for damaged crops, paid by hunters, reached 20 million euros although much of this was caused by wild boar (Chardonnet,2002).

Chemical repellants are expensive to use requiring frequent applications to be effective. Deer fencing is a realistic alternative but also expensive and increasingly unpopular with environmental agencies who implicate deer fencing in the death of the endangered capercaillie and other birds as well as its general environmental unfriendliness.

**Environmental damage:** Deer, when numerous, prevent the regeneration of trees and change the nature of the ground flora (Cooke et al.1995; Langbein 1997; Rackham 2003). Muntjac in particular have been incriminated in the disappearance of bluebells from some English woodlands, the destruction of oak woodland understorey with the loss of nesting sites for rare birds, and they are thought to be responsible for the destruction of some orchid populations. In addition they damage amenity tree planting and gardens, fences, hedges and even dry stone walls.

**Safety:** Within Britain around 40,000 deer are thought to be killed or injured by vehicles each year at a cost of about £10 million and these accidents are thought to cause an annual average of fourteen to fifteen human fatalities within Britain (Putman, 2003; Wilson,2003b). In France road traffic accidents involving deer and wild boar have increased by over three fold in ten years (Chardonnet, 2002). United Kingdom rehabilitation centres funded by private benefactors employ veterinarians to treat deer injured by vehicles and then release them back 'into the wild' although no studies appear to have been carried out to assess the survival rates of such animals. There are well authenticated accounts of deer being stalked in thick cover only for it to be found when retrieved to have a plaster cast on a leg.

The British Wildlife Rehabilitation Council has conducted a voluntary survey of 30 rehabilitation units representing only about 10% of the UK total. Between 1993 and 1997 these treated 83 roe, 66 muntjac and 57 fallow and released approximately 20% (pers comm R.Best).

In many large areas of Europe deer fencing the motorways is considered essential especially if erected in conjunction with under passes but even so the incidence of deer/vehicle collisions is thought to be increasing (Groot Bruinderink et al.1996). The German hunting organisation estimates deer killed on the roads during the hunting season 2001-2 as: red deer 1,930; fallow deer 2,900; roe deer 150,500.

Deer have also been deemed a safety concern on airfields and car race tracks.

### **The benefits of wild deer.**

The values of wild deer should not be overlooked. Hunting provided, within the smaller Europe before 1995, a significant economic spin-off put at ten billion euros and 100,000 jobs (Pinet 1995) and in France alone in 1992 1.95 billion euros and 23,000 jobs (Chardonnet 2002). There is also the indefinable therapeutic value to the hunters and a comparable pleasure to those who simply watch wildlife. They also provide meat of a health status far greater than that of conventional domestic animals (Fletcher, 1998; Chardonnet, 2002). France and Germany consume around 0.5 kg/person/year although this includes wild boar. Valuable data on consumption patterns are cited by Chardonnet (2002).

### **Discussion.**

As Europeans become more urbanised and lose their connexion with rural sources of income, new concerns surface. Britain which industrialised first and which has a highly urbanised population is among the first to experience these issues. Thus the English National Trust was prompted by its very large and predominantly urban membership to ban the hunting of deer with dogs on its property, a decision followed by the Forestry Commission. This precipitated a public debate which seems likely to lead to the banning of the hunting of deer and foxes with dogs. From a listed 120 deer hunts working in the 18<sup>th</sup> – 20<sup>th</sup> centuries only three packs of hounds still continue to hunt deer and between them only kill around 200 deer per annum (Wilson,2004).

Public concerns are ambivalent as to the ethics of killing deer to control numbers but would no doubt be unhappy with a large die-off precipitated by a hard winter and ensuing shortage of feed. Some have suggested that this conundrum could best be answered by the re-introduction of predators, probably wolves, at least to the Scottish Highlands. This would be expensive: compensation paid to European farmers for sheep and cattle eaten by wolves works out at between about 1000 and 3000 euros per wolf per annum(Chardonnet 2002). The use of contraceptives is often proposed as a means of limiting deer numbers but with no realistic appreciation of the obvious difficulties associated with such 'technical fixes'.

It is quite clear that the only feasible solution to reducing the costs of increasing deer numbers is the limitation of the numbers of deer and in growing areas of Europe the sole alternative is the use of the rifle. As the only realistic way to do this is through the use of recreational hunters it may become necessary to actually encourage hunting by rifle. This will require a substantial change in attitudes. Research to establish the accuracy and welfare implications of stalking Scottish red deer by rifle and the proportion of deer requiring a second shot by analysis of permanent wound tracts has gone some way to providing a scientific basis for assessing the humanitarian basis for rifle culling (Urquhart, 2003). Nevertheless the promoting of hunting is itself not likely to be easy. However if the value of the venison and in particular its social value in increasing lean meat consumption is acknowledged then it may be possible to increase the annual deer cull without offering bounties or employing state hunters. The encouragement of hunting still seems controversial but the logic behind such a policy is becoming increasingly clear and was actually voiced to journalists by a UK environment Minister, Ben Bradshaw, in January 2004: *'venison is a low fat meat that is full of protein. I eat a lot of game and I love venison.'*

Any publicity given by governments to the healthy attributes of venison could have valuable implications for the farmed venison industry. Procurement of wild venison is expensive, wasteful, seasonally concentrated and the product is inconsistent with regard to age and the length of time between shooting and refrigeration; crucially it is almost impossible to achieve a hygienic carcass. Surprisingly within Britain there is no requirement for veterinary controls of wild venison unless it is to be exported. For those reasons game dealers who handle the wild venison crop cannot easily gain access to the supermarkets who handle over 80% of British meat retail sales and a growing proportion throughout Europe. Similarly restaurants, unless in the traditional German speaking parts of Europe or within central Europe, where traditional cooking methods have been developed to hide the flavour of 'high' meat, much prefer the consistent quality of venison from farms.

Changes in legislation are now being proposed in Britain to extend the hunting seasons and to make shooting deer by night more readily available. Britain is also now likely to introduce veterinary controls for venison destined for domestic consumption which will add substantially to the costs of game dealing. There are no figures for UK venison consumption but of the 3500 tonnes produced annually the proportion being exported is thought to have declined from 80% to 20% within five years (pers comm L Barclay) reflecting a growing British taste for venison.

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### **References.**

- Chardonnet Ph, des Clers B, Fischer J, Gerhold R, Jori F, Lamarque F. The value of wildlife *Rev.sci.tech.Off.int.Epiz.*, **21** (1), 15-51. 2002
- Cooke A Muntjac damage in woodland. *Enact* **3** (3), 12 – 14. 1995
- Cooke AS and Farrell L. Establishment and impact of muntjac on two National Nature Reserves. Muntjac Deer; their Biology, Impact and Management in Britain. Proceedings of a conference at New Hall, Cambridge. October 1993.
- Buckland ST, Goudie IBJ, and Borchers DL. Wildlife population assessment: past developments and future directions. *Biometrics* **56**, 1-12. 2000
- Gill R. Monitoring the status of European and North American cervids. Global Environment Monitoring System Information Series No.8 United Nations Environment Programme Nairobi September 1990
- Groot Bruinderink GWTA and Hazebroek E. Ungulate traffic collisions in Europe. *Conservation Biology* **10**, 1059-1067. 1996
- Heberlein TA and Willebrand T. Attitudes towards hunting across time and continents: the United States and Sweden. *Game Wildl. Sci.*, **15**, 1071-1080. 1998
- Langbein J. The ranging behaviour, habitat use and impact of deer in oak woods and heather moors of Exmoor and the Quantock hills. British Deer Society, Fordingbridge 1997
- Landry P Enquete nationale sur les tableaux de chasse a tir. Saison 1998-9. Resultats nationaux et donnees sociologiques *Faune Sauvage* **251**, 8-17. 2000.
- Macdonald D, Tattersall F, Johnston P, Carbone C, Reynolds J, Langbein J, Rushton S, and Shirley M. Managing British Mammals: Case Studies from the Hunting Debate. Wildlife Conservation Research Unit, University of Oxford, 2000
- Moore NP, Hart JD Kelly PF and Langton SD. Browsing by fallow deer in young broadleaved plantations: seasonality, and the effects of previous browsing and bud eruption *Forestry* **73**, 437-445. 2000

- Munro R Report on the deer industry in Great Britain. Report to DEFRA and the Food Standards Agency. 2002
- Putman, RJ. The Deer Manager's Companion. Swan Hill, Shrewsbury, England. 2003
- Pinet JM Quel chasseur en Europe? In Manuel de la chasse en Europe, Vol VIII L'importance socioeconomique de la chasse *FACE* 1-14 .1995
- Rackham O. *Ancient Woodland*. Castlepoint Press, Dumfries 2003
- Ratcliffe PR Distribution and current status of sika deer in Great Britain *Mammal Review* **17** (1) 39 -58. 1987
- United Nations Environment Programme cited in British Deer Society electronic bulletin 10. 23<sup>rd</sup> December 2003
- Urquhart KA, and McKendrick IJ. Survey of permanent wound tracts in the carcasses of culled wild red deer in Scotland. *Veterinary Record* **152**, 497-501 2003
- Wilson CJ. Current and future deer management options: a report on behalf of Defra European wildlife division. Department of the Environment, Food and Rural Affairs, London. December 2003a
- Wilson CJ. A preliminary estimate of the cost of damage caused by deer to agriculture in England. Unpublished DEFRA National Wildlife Management Team report to European Wildlife Division 2003 b
- Wilson CJ. Estimating the cost of road traffic accidents caused by deer in England. Unpublished DEFRA National Wildlife Management Team report to European Wildlife Division 2003 c