

^ zı zřS3 ¥14ç ¥IV; ' zřç; ~ 3; i \$L

^ zıyr3 }cřff3 }}ı^ da1

1

1

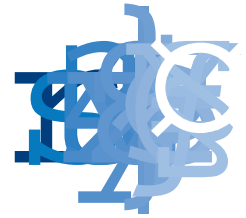
eKAI EF HHE BHEB1

VKıftç SŞzfy? zı zřS3 ¥fQ ftç S}r; u zıfzçç ' p | 1

1

1

Frank McAveety MSP  
Convenor  
Public Petitions Committee  
Scottish Parliament



November2008

**PE1124: SNARING**

I am writing in response to the letter to Scottish Government officials from the Clerk to the Public Petitions Committee of 10 September 2008 seeking further information in response to points considered by the Committee and the detailed submission from the petitioners dated August 2008.

Before I turn to the specific points that have been raised, I think it might be helpful if I very briefly outline the reasons that lie behind the policy position I have adopted. I am not an enthusiast for snaring. I have reluctantly come to the conclusion that snaring is a necessary tool for countryside management after carefully considering the weight of evidence on both sides of the argument for banning snaring. I have been persuaded by the economic case: that snaring is necessary for farmers and game managers to protect livestock, crops and wild game. Upland farming and shooting businesses are vital to sustainable rural communities and to the maintenance of the classic Scottish heather-clad upland landscape with a rich diversity of species. I have taken account of the practicality arguments: that snaring is sometimes the least bad option for carrying out the pest and predator control that is a necessary part of countryside life. There are sometimes other options, shooting being the most widely used. However there are circumstances where shooting is not practicable safe or humane. Most of the other options are either ineffective, not legal, or dangerous to the operator or other wildlife. Finally and most importantly I have been persuaded that by making animal welfare a central concern in how snaring is regulated and carried out we can bring about major improvements in the technique as a humane and efficient management tool.

1

g zı Sç ¥zr1b řr< =ıVuzı sç ¥xyııVY GıGbb1

" " " řtç S}r; u zıçç ' p | 1

ı \$U 78 rsu31rst1 :

I turn now to the specific points mentioned in Mr Cochrane's letter. I intend that the detail of the measures that I outlined in my statement in February will be considered by the Legislation Sub-group of the Partnership for Action against Wildlife Crime in Scotland. This sub-group has very recently been established to examine issues relating to the law and countryside management. It is chaired by Sheriff Kevin Drummond and contains a range of expertise including law enforcement, land managers, conservationists and animal welfare representatives. I have stressed that I consider the work on snaring to be a priority and I look forward to the group producing recommendations for new Regulations within the next few months. We will then put the Regulations to Parliament for consideration. We have not specified any formal review period. I would expect that the PAWS Legislation sub-group will as a matter of course keep the operation of the new snaring regulations under review and to make recommendations for their improvement as necessary.

The new Regulations, when passed, will have the force of law. They will be enforced by the police in the same way that other laws relating to wildlife and animal welfare are policed. I should say here that I would expect to see a high degree of compliance, particularly from professional gamekeepers and land managers. I am aware that the Committee has heard evidence of failure to comply with legal requirements in snaring. I share the abhorrence at some of the incidents that have been described. However I would point out that the cases which come to the attention of those such as the SSPCA are inevitably those where there has been a problem and often involve operators with no training, qualifications or management oversight. The vast majority of snaring is undertaken by professional and responsible gamekeepers and land managers and rarely comes to the public's attention. I am determined to improve training and to set benchmarks for competence with the aim of driving out from the industry bad practice and unskilled and slipshod operators.

Mr Cochrane's letter asks about the number of wildlife crime officers. It is of course primarily a matter for Chief Constables to decide how best to deploy their resources. There are approximately 80 other police officers who deal with wildlife crime as part of their duties. This position is evolving as Chief Constables take note of the recommendations in the HMIC report into the prevention, detection and prosecution of wildlife crime "Natural Justice". This report is a major milestone in the issue of wildlife crime in Scotland and I expect to see further improvements in dealing with this issue as the changes recommended by the Report take effect.

I am enclosing two papers produced by the Wildlife Management service at the Scottish Agricultural Science Agency (SASA). The first of these examines critically the claims made by the petitioners in their submission dated August 2008. The second paper sets out data on how and why snaring is used in Scotland. I apologise that overall this represents a lengthy contribution. However I believe these are important papers and will add greatly to the debate on this subject. I hope the Committee finds them useful.



**MICHAEL RUSSELL MSP  
MINISTER FOR ENVIRONMENT**

## PETITIONS COMMITTEE

### SNARING

#### COMMENTS ON RESPONSE OF PETITIONERS: PE1124

Comments below have been made systematically on the response by Petitioner's (PE1124 K) to Written Submissions where surveys or other comments that can be compared to scientific observations have been made.

<http://www.scottish.parliament.uk/s3/committees/petitions/petitionsubmissions/sub-08/08-subIndexForPE1124.htm>). The use of subheading follows that used in the response by Petitioner's.

#### CONSERVATION & BIODIVERSITY

In this section, reference is made to 'Snaring in Scotland: A Scottish SPCA Survey of Suffering' ([www.scottishspca.org/assets/0000/2593/Snaring\\_in\\_Scotland.pdf](http://www.scottishspca.org/assets/0000/2593/Snaring_in_Scotland.pdf)), in which questionnaires were sent to vets, SSPCA Inspectors, Wildlife Crime Co-ordinators and wildlife rescue and protection agencies regarding snaring incidents. Inevitably, this cross-section of people will come into contact with snares on a professional basis only when problems arise with them. Although these figures will provide a minimum estimate of the total numbers (not percentage) of by-catch under the current system during the survey period, it is important to recognise that this is not a survey of by-catch undertaken in the field. Thus, the 77% of animals caught in snares, reported as non-target species, is not likely to be indicative of the actual percentage of non-target by-catch. Please see 'Animal Welfare' section below and 'Use of snares to control foxes and rabbits-10-08' document for further information. The survey, and Petitioner's response, also states that 12% of 269 animals snared were European Protected Species. In fact, of the species listed, only the otter is a European Protected Species (<http://www.snh.org.uk/about/directives/ab-dir08.asp>), and since only one otter was recorded, this amounts to 0.4% of all animals caught, and 0.5% of all non-target animals caught.

#### ECONOMIC ARGUMENTS

The Petitioner's response questions the validity of a survey undertaken on behalf of the shooting industry by the Public and Corporate Economic Consultants (PACEC) ([www.basc.org.uk/media/pacec\\_glossy11.pdf](http://www.basc.org.uk/media/pacec_glossy11.pdf)), a specialist economic consultancy with an extensive list of former clients (<http://www.pacec.co.uk/clients.php>). The survey estimated the economic and environmental impact of shooting in the UK. In order to obtain accurate information on this subject, it is almost certainly necessary to consult the shooting industry, and the impartiality and accuracy of the data would almost certainly depend upon the way in which the survey was conducted and cross-referenced. Unfortunately, it has not been possible to obtain information with regard to this, although PACEC, given their experience in other public sector projects, would be expected to undertake a properly constructed survey.

The Petitioner's response then relates income from shooting to the number of *providers* of sport shooting stating that the two largest sectors (avian and mammalian pest control), with deer stalking as another significant provider, would be unaffected by a ban on snaring. While the number of *providers per se*, is not an ideal sample by which to relate income, a similar picture is obtained using number of shooting days. The total number of gun days, however, provides a better indicator of income, although these data have been amalgamated for avian and mammalian pest control. The PACEC survey provides the following information in different tables:-

	No. providers (thousands)	Shooting days (thousands)	Gun days (millions)
Lowland game (driven)	26	150	1.5
Lowland game (walked up)	25	110	1.8
Grouse (driven & walked up)	2	6	0.6
Deer stalking	17	150	0.7
Wildfowling (coastal & inland)	20	58	0.8
Avian pest control	48	340	5.4
Mammalian pest control	39	150	

In terms of 'gun days', lowland game shooting is by far the largest sector, after pest control. Given that lowland game shooting is dominated by the rearing and release of large numbers of pheasant and partridge, this sector is one which is likely to be affected by the loss of fox snaring.

One simplistic method of calculating income from shooting would be to multiply the number of 'gun days' by the income from a day of shooting. On this basis, the cost of a day shooting lowland game or grouse far exceeds the cost of a day shooting a pest species. The following figures are taken from <http://www.angliasporting.co.uk/>

A single, shot partridge may cost in excess of £18 - £25;  
A pheasant is likely to cost anywhere between £20 - £35;  
Wild Geese or Duck about £15 - £25 per bird;  
Woodcock around £40 - £50 per bird;  
Pigeon around £7 per bird.

In 2006, the average market value of grouse shooting was £130-150 per brace (two birds) for driven birds and £70-80 per brace for walked-up birds. Combining these values with average bags means that a typical day's driven shooting would be worth £9,030 whereas a day's walked-up grouse comes out at £562 [www.the-environment-council.org.uk/index.php?option=com\\_docman&task=doc\\_download&gid=105&Itemid=64](http://www.the-environment-council.org.uk/index.php?option=com_docman&task=doc_download&gid=105&Itemid=64). Therefore while loss of snaring may not impact on the majority of shooting activities, it may well impact on those of the greatest economic value.

It is also important to note that avian pest control is dominated by pigeon shooting, which is used to help prevent damage to crops, and relative to England, Scotland has comparatively little arable land. Thus, it is likely that the majority of income derived from avian pest control will be spent in England.

<http://www.defra.gov.uk/environment/statistics/land/download/xls/ldtb01.xls>

#### Area of land in crop / bare fallow (hectares x 1000)

England	3915
Wales	66
Northern Ireland	51
Scotland	551

Unfortunately, it is difficult to segregate sport shooting activities from that associated with fox or rabbit control, where snaring may be used. Many gamekeepers are seasonally deployed in a variety of activities, e.g. deer stalking as well as grouse management, all of which could be described as countryside management.

The Petitioner's response suggests that people may choose not to visit Scotland because of shooting activities, although no direct evidence is provided to support this comment. Further that "large parts of the countryside are effectively closed off to the public when shoots are taking place". The Land Reform (Scotland) Act 2003 establishes statutory rights of access to land and inland water for outdoor recreation, and guidance regarding shooting activities is to redirect the public around the sensitive area, rather than to prevent access (see <http://www.outdooraccess-scotland.com/default.asp?nPageID=364&nSubContentID=0>). Furthermore, in Scotland it is customary not to shoot on Sundays. Importantly, these statements refer to shooting rather than snaring, and any ban on snaring is unlikely to make any significant impact on public access to the countryside.

The Petitioner's response also quotes a survey undertaken by CommunicateResearch ([http://www.communicateresearch.co.uk/pd\\_other.aspx](http://www.communicateresearch.co.uk/pd_other.aspx)) on behalf of LACS in 2005, in which people were asked if the shooting of wild birds or mammals for sport was acceptable or unacceptable - 71% thought it was unacceptable; 85% thought it was unacceptable to make money from the killing of wild birds or mammals for sport, and 80% thought the rearing of pheasants in intensive conditions to supply shooting estates was unacceptable. Again, these questions appear to relate to the activity of shooting rather than that of snaring, and are arguably irrelevant in this context. Nonetheless, this further illustrates the fact that the shooting industry is difficult to segregate from some of the arguments surrounding the use of snares.

Visit Scotland's 2006 figure of £210 million, as the value to the Scottish economy from wildlife tourism ([http://www.visitscotland.org/news\\_item.htm?newsID=44549](http://www.visitscotland.org/news_item.htm?newsID=44549)) includes "those who have visited a wildlife attraction (or taken part in wildlife activities such as bird/nature watching) as part of a wider visit to Scotland, and as such should be used with caution" (Elaine Dunlop, Visit Scotland, *pers. comm.*). 'Wildlife attractions' includes all visits to paid attractions, such as zoos/wildlife collections and farm parks. These categories are not affected by land management activities, and can be considered irrelevant in the context of this document.

In terms of the economic benefits to Scotland, those aspects of wildlife tourism that include watching animals in the wild, are not necessarily mutually exclusive to sport shooting activities, and many people may visit Scotland to participate in both.

## **ANIMAL WELFARE**

In the SNH commissioned report (No. 278) <http://www.snh.gov.uk/pubs/results.asp?Q=mountain+hare&rpp=10>, on the distribution of mountain hare in Scotland, a wide variety of landowners and managers of private estates, including gamekeepers, were asked about the distribution and control of mountain hares. The report states that 5,078 mountain hares were snared during the period March 2006 and October 2007, and consultation with the two main licensing authorities (SNH and Rural Directorate of the Scottish Government) has confirmed that over the same period, licences were issued to snare no more than 190 mountain hares. However, the Game and Wildlife Conservation Trust (formerly the Game Conservancy Trust or GCT) questions the requirement of a licence to snare mountain hares (A. Smith, *pers. comm.*), and it is likely that many of the snares set are done so under this assumption. It appears that this issue remains unresolved, and may only be resolved in a court of law.

The Petitioner's response states that with regard to the snaring of mountain hare, "this widespread snaring was illegal and thus, we submit, entirely unprofessional." However, if

most landowners/gamekeepers are of the opinion (based on the statement from the GWCT) that a licence is not a requirement to snare mountain hares, then this Petitioner's response statement is not supported.

The Petitioner's response also states "the continued reporting of accidental non-target captures undermines claims that these are avoided by best practice or professional expertise". However, without detailed knowledge of the individual setting the snare each time a non-target animal is caught, i.e. whether or not 'best practice' is being applied, this statement can be neither proven nor disproven.

Further, Macdonald and co-workers (2000), in their research report to the Committee of Inquiry into Hunting with Dogs in England and Wales, states "One would expect snares to be investigated by RSPCA inspectors when captured animals are reported by members of the public, and thus expect these data to reflect a bias towards town/village fringes, domestic animals and larger wildlife species, and towards snares that have been misused or neglected. Comparison between studies of the proportion of non-targets amongst captures suggests that this is indeed the case" with "the combined GC/BASC gamekeeper snaring data have a significantly different species composition to the RSPCA figures" (see table below). They also state "it is clear that snares placed to catch foxes are genuinely selective for foxes: of the chief non-target species, badgers are nationally about as common as foxes, roe deer about twice as common, while hares are about 3½ times as common." "This selectivity towards foxes is achieved not by the design of the snare, which is capable of catching all the species listed, but by the field-craft involved in its placement." In other words, given that other species are as abundant or more abundant than foxes, the relative proportion of captures is biased towards capturing foxes.

Macdonald *et al* (2000) also state "Most of the non-target animals were alive and uninjured when the snare was inspected and would probably not have suffered lasting ill-effect after release. This is known for badgers because early biological studies employed snares to catch badgers for radio-tagging. Behaviour after release was not abnormal. In the joint BASC/GCT trial, non-target captures and deaths were highly variable between individual operators, and may be largely avoidable through appropriate training."

<http://www.huntinginquiry.gov.uk/mainsections/research/macdonald/macdonaldfinal.htm#sec3.2>

	Professional gamekeepers:		MAFF studies:		RSPCA inspectors:
	GCT 1992-3	BASC/GCT 1994-5.	Lloyd 1980	MAFF 1968	RSPCA 2000
% Of captures:					
Foxes	43	55	79	54	31
Cats	2	1	0	0	42
Dogs	1	3	1	0	8
Badgers	5	6	21	0	14
Deer (roe/muntjac)	6	9	0	0	0

1

Rabbit	9	5	0	0	0
Hare (brown/mountain)	29	16	0	0	0
Unclassified/other	5	6	0	46	5
Sample size (n captures)	739	516	136	287	360
Sample size (n operators)	61	64	unknown	unknown	unknown

## AGRICULTURE

The Petitioner's response quotes the NFUS as having "no robust data on the extent of snaring in the agricultural sector". SASA has relatively robust data on methods of fox and rabbit control (including snares) by farmers in specific agricultural sectors (see attached paper, Use of Snares to Control Foxes and Rabbits).

The executive summary of the Defra commissioned Report of the Independent Working Group on Snares (Kirkwood *et al.*, 2005) states the following "It is believed that, if they (snares) are used carefully, their adverse welfare consequences can be relatively minor." The report summary also states "It would appear that all methods (of fox control) can have welfare drawbacks in practice." These statements are not "directly at odds" (as quoted in the Petitioner's response) with the statement by NFUS, which states "snaring, when carried out properly, is the most humane way of dealing with foxes." However, it is important to put these statements by the Independent Working Group on Snares into context. The group also states "On the other hand, at the other end of the spectrum, there is no doubt that if used carelessly or irresponsibly (and especially if not inspected, or if an animal escapes whilst still entangle by the snare) they can cause extremely severe welfare problems."

The study quoted in the Petitioner's response (Hewson, 1984; not Hewson and Leitch, 1984), actually found that the average percentage lamb crop *predated* was between 1.1 and 3.5% (range = 0.6 to 5.2%). A similar study (cited in White *et al.*, 2000) examined lamb carcasses from sites in Crianlarich and Midlothian. Fox predation was found to be responsible for losses of between 0.2% and 7.1%, and between 0.6% and 6.3% of the lamb crop respectively. However, these losses are recorded against a backdrop of targeted fox control undertaken by farmers, gamekeepers or other operatives working on behalf of the farmer in preparation for the lambing season, e.g. Fox Clubs. Without this fox control, the figures for lamb predation may be significantly higher. The Petitioner's response also quotes the study at Eriboll, where no fox control took place, and which found only 4 predated lamb carcasses over 4 lambing seasons (1987-1990), which was <1% of the lamb crop. However, lambing was exclusively in-bye, possibly with the "presence of shepherds and their dogs active through the night" (Hewson, 1990). This is unlikely to be representative of the majority of lambing in the West and North of Scotland. Macdonald and co-workers (2000) stated that this work is "scientifically weak", and should probably be treated with some caution.

The Petitioner's response states "fox population responds rapidly to local reduction in numbers/increase in territories, with an increase in birth rate." This paper cited has been taken out of context. In fact, foxes typically live in social groups, where only the dominant female breeds successfully. If the dominant vixen is killed, it is likely that the subordinate



female will then breed successfully, depending upon the timing of the death of the dominant. Foxes are seasonal breeders, and have only one opportunity to breed each year, so it is impossible for the potential rate of reproduction of a single animal to change over time (Hartley *et al.*, 1994; Abbott, 1988). Similarly, the following paper quoted (Baker and Harris, 2006) also needs further explanation regarding fox behaviour and ecology. Foxes killed during the fox dispersal season (autumn, winter) will inevitably be replaced by other, dispersing foxes. Therefore in winter, killing foxes only increases the rate of fox dispersal into the area, and over the course of the winter, would increase the apparent overall number of foxes found there. However, fox density is determined by the quality of the habitat, such that areas with abundant food resources will support more foxes, and fox density in the spring (once the dispersal period has ended) will remain the same for a given area (assuming no change in habitat characteristics). Fox destruction will not affect the spring fox density unless between 60 and 80% of all foxes are removed every year, in which case fox density will decrease.

The Petitioner's response states "we have never heard of predation on piglets as a significant burden" and that "most pigs in Scotland are reared indoors". In the UK, it has been estimated that 40% of sows are managed in outdoor systems ([www.fawc.org.uk/pdf/letter070708.pdf](http://www.fawc.org.uk/pdf/letter070708.pdf)), although this may be less in Scotland due to the colder climate. The direct cost to UK agriculture from fox predation has been estimated at £12 million (£9.4 M to the sheep sector; £0.7M egg producers; £0.2M and £0.4m to turkey and goose producers respectively; and £1M to pig producers) (Harris and Yalden, 2008), which gives an indication of the 'burden on farmers' of foxes.

The Report of the Independent Working Group on Snares states "We have found almost no information about the welfare impacts, or rates of non-target capture, associated with the setting of snares to catch rabbits. It seems to be commonly believed that snares often kill rabbits rapidly by breaking their necks. However, we have found no data with which to confirm or refute this and are unaware of any data on the clinical or pathological effects of snares on rabbits or on causes of death." SASA has data on rabbit snaring and can confirm that rabbit snares are not set to kill, rather than to restrain, although snare mortalities can occasionally occur (see Use of snares to control foxes and rabbits-10-08.doc).

## STATEMENT FROM THE MINISTER FOR ENVIRONMENT

### Necessity of predator control and snaring as an option

Snares are typically deployed in a variety of habitats where the ground cover is tall enough to obscure the fox to ensure an accurate, lethal and safe shot (see petition responses by the Scottish Estates Business Group and the Scottish Countryside Alliance; PE1124/B and /F). Foxes stand approximately 35-45 cm in height (<http://www.bbc.co.uk/nature/wildfacts/factfiles/137.shtml>) and many plant-cover species, such as grass, heather, ferns, bracken and scrub need only be a proportion of this height before they are capable of obscuring a fox sufficiently to prevent a safe, reliable shot. Shooting is also not possible in poor weather when visibility is impaired. In both these circumstances, snaring is the only viable option for controlling foxes in rural areas.

Snares are also many times more efficient than shooting in terms of man hours. Given the size of a fox territory (270 ha in mixed lowland rural habitats, up to 4000 ha in Scottish hill country; Harris and Yalden, 2008), it may not be possible to encounter and safely shoot a fox, even during multiple shooting trips, and land managers may resort to snaring as an alternative method of fox control. The Game Conservancy estimate the average time taken to shoot one fox is over ten hours

1



(<http://www.defra.gov.uk/rural/hunting/inquiry/evidence/countrysideallianceshooting.htm>), although this time may well be longer in large parts of rural Scotland, where fox territories are larger than in many areas of rural England. It follows that if snaring is more efficient a method of control than shooting in certain habitats and circumstances, much more time would need to be spent trying to shoot a fox, were snaring to be banned. There may be a number of consequences associated with this, including diverting time which would otherwise be spent undertaking other land management activities; this could have both conservation and economic implications.

### **Fox predation**

The Petitioner's response quotes "A long term study of grouse moors in Scotland, published in 2000, found that predation on grouse by foxes and raptors only became really significant if the grouse population was already in decline", referencing the Report of the UK Raptor Working Group (2000) pages 39-41 ([www.jncc.gov.uk/pdf/raptors.pdf](http://www.jncc.gov.uk/pdf/raptors.pdf)). These pages of the report do not appear to contain such a statement, although it is implied by some of the studies that are quoted in it. However, the principal recent study (Langholm Joint Raptor Study) was conducted on moors where fox and other legal predator control was being exercised, and focused on the effect of raptors, not 'foxes and raptors' which means that its findings are not directly relevant to fox predation. In addition, the report makes it clear that predator removal experiments have shown increased breeding densities/success for black grouse, capercaillie and grey partridge. It also states that it is particularly important to understand that predation can have an effect on the harvestable surplus of birds (which it is the game managers task to maximise) without necessarily impacting on breeding densities or success.

The Report states the following about fox control: "Because of experimental work on other gamebirds, the benefit to moor owners of legally controlling foxes and crows, in particular is generally accepted, although is yet to be quantified precisely through experiment on red grouse populations." The Report also explains how a certain level of predation may have a different effect depending on the population level of the prey. "If post breeding numbers were high relative to carrying capacity, predation might merely remove part of the surplus without reducing breeding density. If post-breeding numbers were low, the same level of predation might cut into breeding stock." Potentially both of these circumstances are bad for a moor manager, the latter clearly because declining breeding stock may mean fewer birds produced (for shooting), but also the former because surplus birds are those that are available for shooting, and if significant numbers are taken by predators, then there are fewer to shoot and hence there may be a financial loss to the moor (see 'Economic Arguments' section above). Therefore predator control may be necessary in both cases. It is certainly true that there are many non-predator causes of falling grouse numbers and in many instances predators may compound these effects. Predator control alone may not be the answer, but it may well be part of the solution along with other management strategies.

Reference number 35 (Baker, Harris and Webbon, 2002) does not at any point, refer to predation by foxes of lambs and other livestock. This paper, entitled 'Effect of British hunting ban on fox numbers', discusses the change (or lack of) in the number of fox scats found over 160 one kilometre squares before and after the 2001 foot and mouth outbreak, during which fox hunting with hounds, was banned. The first two authors however, contributed to the Burns' Committee of inquiry into hunting with dogs (<http://www.huntinginquiry.gov.uk/mainsections/huntingframe.htm>). Their paper (White *et al.*, 2000) quote fox predation rates on lambs in Scotland as ranging from 0.2 to 7.1 % of the lamb crop. In these cases, this predation rate almost certainly took place while fox control was being exercised. They state "losses of lambs to foxes in upland areas total on average, less than 3% of lambs born." "However, in certain circumstances, losses to foxes can be

severe.” “Lambs are most at risk when less than 5 days old, but implementing husbandry changes to remedy these losses may not be practical or economically viable in some of those regions where losses are currently high.” In Scotland, most lambs are born outdoors. A proportion may be born on in-by land, where they can be more closely shepherded, but this by no means eliminates fox predation, and fencing to exclude foxes can often be impractical (SASA, unpublished information).

While the Petitioner’s response quote of the Burns Report is accurate (<http://www.huntinginquiry.gov.uk/mainsections/huntingframe.htm>), the previous paragraph of the Burns Report (section 5.14) states “the best estimate seems to be that a low percentage (less than 2%) of otherwise viable lambs are killed by foxes in England and Wales. However, levels of predation (or perceived predation) can be highly variable between farms and between different areas.” Sheep production in England is far more intensive, on average, than sheep production in Scotland, although there may be closer comparisons between Wales and Scotland.

**Non-target captures**

Please see ‘Animal Welfare’ section above and ‘Use of Snares to Control Foxes and Rabbits’ paper for further information on by-catch figures.

In summary, there are several scientific studies and other reports quoted in this Petitioners’ response. However, many are taken out of context or are selectively quoted, and in these cases, an attempt has been made to balance the discussion in favour of the wider context.

Wildlife Management  
SASA

13 October 2008

**References**

Abbott, D.H. 1988. Natural suppression of fertility. *Symposium of the Zoological Society, London*, **60**: 7-28.

Baker, P.J. and Harris, S. 2006. Does culling reduce fox (*Vulpes vulpes*) density in commercial forests in Wales, UK? *European Journal of Wildlife Research*, **52**: 99-108.

Baker, P.J., Harris, S. and Webbon, C.C., 2002. Effect of British hunting ban on fox numbers. *Nature*, **419**, 5<sup>th</sup> September, page 34.

Lord Burns, V. Edwards, J. Marsh, Lord Soulsby, 2000. The Final Report of the Committee of Inquiry into Hunting with Dogs in England and Wales. The Stationary Office, London.

Hartley, F.G., B.K. Follett, S. Harris, D. Hirst and A.S. McNeilly, 1994. The endocrinology of gestation failure in foxes. *Journal of Reproduction and Fertility*, **100**: 341-346.

Harris, S. and Yalden, D.W., 2008. Mammals of the British Isles: Handbook, 4<sup>th</sup> edition. The Mammal Society.

Hewson, R., 1984. Scavenging and predation upon sheep and lambs in West Scotland. *Journal of Applied Ecology*, **21**: 843-868.

Hewson, R., 1990. Victim of Myth - Predation upon lambs by foxes in the absence of control. A report to the League Against Cruel Sports.

Kinrade, V., J. Ewald, A. Smith, S. Newey, G. Iason, S. Thirgood and R. Raynor. 2008. *The distribution of Mountain Hare (Lepus timidus) in Scotland (2006/07)*. SNH Commissioned Report No. 278.

Kirkwood, J., D. Best, N. Gregory, D. Macdonald, T. Mitchell-Jones, C. Nodder, J. Reynolds, S. Scull, H. Thomas, M. Waters, J. Cormack, I. Inglis, and D. Owen. 2005. *Report of the Independent Working Group on Snares*. Defra.

Macdonald, D.W., Tattersall, F.H., Johnson, P.J., Carbone, C., Reynolds, J. C., Langbein, J., Rushton, S.P. and Shirley, M.D.F., 2000. *Final Report (Contracts 5 & 6) to the Committee of Inquiry into hunting with dogs in England and Wales*. The Stationary Office, London.

Report of the UK Raptor Working Group (2000). JNCC.

White, P., Baker, P., Newton-Cross, G., Smart, J., Moberly, R., McLaren, G., Ansell, R. and Harris, S., 2000. *Final Report (Reports on Contracts 5 & 6) to the Committee of Inquiry into hunting with dogs in England and Wales*. The Stationary Office, London.

# PETITIONS COMMITTEE

## SNARING

PE1124

### USE OF SNARES TO CONTROL FOXES AND RABBITS

The following attempts to set out why snaring is often the preferred option for pest control and to quantify the extent to which snares are used by different groups of people, to control foxes and rabbits. It also includes information on the non-target by-catch of snares. Data is taken from peer-reviewed scientific journals, published and unpublished reports and papers, including data collected by SASA Pesticide Usage & Wildlife Management Section.

#### Advantages of snaring over shooting

There is a wealth of evidence to suggest that gamekeepers consider snares to be a valuable tool for the control of foxes. On average, approximately 80% of gamekeepers use snaring, and approximately 25% of foxes they kill are taken using snares. Snares are also commonly used by field biologists, and almost certainly by Fox Clubs, and small numbers of individuals undertaking pest control, although there is a paucity of information on this latter group.

In rural areas, fox control is restricted to shooting (by a variety of methods) or snaring. Most shot foxes are taken using one of the following techniques.

- Using a shotgun at close quarters. This does not require as much accuracy as using a rifle, but research by BASC shows that the use of a 12 bore shotgun with No 1 (3.6mm) or No 3 (3.3mm) shot at ranges of up to 30 metres results in more than 90% instant kills or humanely despatched animals. This range would be reduced if shooting through soft vegetation, and will most likely increase the level of injury rather than kill. A shotgun is used mainly in daylight when foxes are flushed from cover. The size of a fox territory (270 ha in mixed lowland rural habitats, up to 4000 ha in Scottish hill country; Harris and Yalden, 2008), means that it can be difficult to encounter a fox, even if using walked-up shooting and dogs. Foxes aware of approaching people and dogs are likely to flee before an encounter takes place. Flushing foxes from large areas of cover (e.g. forestry) to a line of waiting guns requires several people (usually with guns) and/or dogs, and a level of formal organisation, but is more successful than a person operating alone. Foxes may also be shot when flushed from below ground using dogs, but this requires detailed knowledge of all active denning sites, and foxes frequently lie up above ground in dense cover.
- Lamping at night, using a rifle (or shotgun at close quarters). Typically a vehicle is used to cover large areas of land in a single night, which significantly increases the likelihood of encountering a fox at random. Furthermore, the vehicle provides power and portability for the lamp, which is normally too bulky for the marksman to handle whilst taking aim, although scope-mounted lights are available. This is the probably the most popular form of fox shooting because it is an efficient way of locating a fox. Furthermore, the equipment used means it's possible to shoot a fox at considerably further distances than a shotgun, which means it's not necessary to get close to the fox. Like many animals, foxes are less disturbed by the noise of a vehicle, which masks the smell and noise of a person. Once located, the vehicle is usually stopped and the fox 'called in' using a whistle designed to sound like an injured/distressed rabbit. Unfortunately, this technique

is limited by vehicle access, and requires two to three people to operate effectively (driver and/or lamper, as well as the marksman).

- Lie in wait for the fox and shoot at relatively close quarters, e.g. at a denning site, midden or regular problem location. This technique requires skill, patience, and intimate knowledge of the fox's behaviour. It is often difficult to predict the movements of the fox. Foxes have multiple denning sites within their territories (cubs are regularly moved between several dens as an anti-predator strategy), and may not use a den at all, but lie up in dense scrub. Thus, it's unlikely that a gamekeeper can predict where to go to encounter a fox. Also, it can be difficult to predict when or if a fox will visit a midden to feed. More importantly, foxes have very acute senses of smell and hearing, and good eyesight, and to get close enough to shoot accurately can be extremely difficult, requiring understanding of not just wind speed and direction, but effects of turbulence, and knowledge of the direction from which a fox will approach. High seats, that are normally associated with deer shooting, can be used to reduce the scent of man at ground level.

The advantages of snaring over these methods include:-

- It requires only one person to set, check and uplift snares. Shooting by 1. or 2. above requires a minimum of two people, and often more.
- Snaring takes place during normal daylight hours. Shooting by 2. or 3. above takes place at night when the fox is more active.
- Snaring can take place in poor visibility conditions, such as rain or fog. The only weather that theoretically limits snaring is when it is so poor, it would not be possible to visit the snares within 24 hours after setting them. Shooting under conditions of poor visibility is dangerous.
- Unlike 3. above, snaring requires less detailed knowledge of fox behaviour, since snares are set on 'runs' or paths used by the fox as it travels around its territory, and these are comparatively easy to identify.
- Snaring is not restricted by the height of the vegetation, unlike shooting.
- Snaring equipment is light weight and can be carried on foot. It does not suffer the same physical restrictions as lamping (2.) above, and can be used in areas where vehicles can't access.
- In terms of man hours, snaring by a competent individual is more efficient than shooting.

For all of the reasons outlined above, snaring may be the only viable option for controlling foxes in certain circumstances in rural areas. Unlike urban foxes, that are very familiar with encountering man-made objects, rural foxes are highly suspicious of cage traps, and will rarely enter them.

Unlike foxes, there are a wide variety of methods commonly used or available for the control of rabbits. These include:

- Shooting with shotguns, rifles and air rifles.
- Live trapping using box (drop) traps or cage traps.

- Lethal trapping using spring traps set in the burrow or in an artificial burrow/tunnel.
- Gassing with lethal gasses that overcome the rabbit at the burrow entrance.
- Ferreting (over guns or using purse nets set over burrow entrances).
- Long-netting using nets set between harbourage and feeding areas into which rabbits are driven.
- In addition, rabbit proof fencing (electric or wire mesh) is commonly used to exclude rabbits from valuable crops, and tree guards are now standard on most saplings.

## FOX SNARING

### Percentage of foxes killed in snares

Hewson & Kolb (1974), analysed the number of foxes killed by various methods. Data were from a Scottish Government (formerly DAFS) survey conducted in 1971-72, where 93 Forestry Commission Rangers completed monthly returns of how they killed foxes, and six DAFS field officers selected gamekeepers from whom they obtained similar information.

Summary of the data. Highlighted methods are effectively illegal.

CONTROL METHOD	LEGALITY TODAY	MEAN % ADULTS KILLED FOR 6 REGIONS	MEAN % CUBS KILLED FOR 6 REGIONS
Island traps	No	14	0
Gin & other traps	No	5	16
Gassing	No	6	40
Snaring	Yes	57	8
Shooting	Yes	17	11
Terriers	Yes	1	25

Of all methods used (currently legal or illegal), snaring was the most commonly employed with 57% of adult foxes taken by this means. It is important to note that the Forestry Commission, who contributed to the data above, no longer has a policy of controlling foxes using "snaring or trapping" on its land

(<http://www.forestry.gov.uk/website/searchall.nsf/SearchTemplate?OpenForm&Country=gb;Areas=General%20Information:Recreation%20and%20Wild%20Woods:News%20Releases:Publications:public%20register%20of%20planting%20and%20felling%20applications:Public%20Register%20of%20planting%20and%20felling%20applications:Learning:Forest%20Research;query=%22snaring%22>; please see Forest Enterprise Scotland Management Board Minutes 12 March 2008).

More recently, a survey by the Scottish Gamekeepers Association (SGA) of its members, found that 29% of foxes were taken using snares (Macaulay Land Use Research Institute, 2000). The Game and Wildlife Conservation Trust (Reynolds, 2000) states that approximately 25% of foxes caught by professional gamekeepers in the UK were taken in snares, although this proportion varies with regional circumstances. In a fox control monitoring scheme of gamekeepers, run by the GWCT, 21% of foxes were killed on average by taking in snares (Kirkwood, 2005).



In comparison with data obtained some 40 years ago, the percentage of foxes controlled using snaring has in fact declined. Even when other methods, such as gassing were available, 57% of adult foxes, on average, were snared. Data from Scotland, and pooled data for the UK, suggests that currently, around 25% of all foxes controlled are taken using snares.

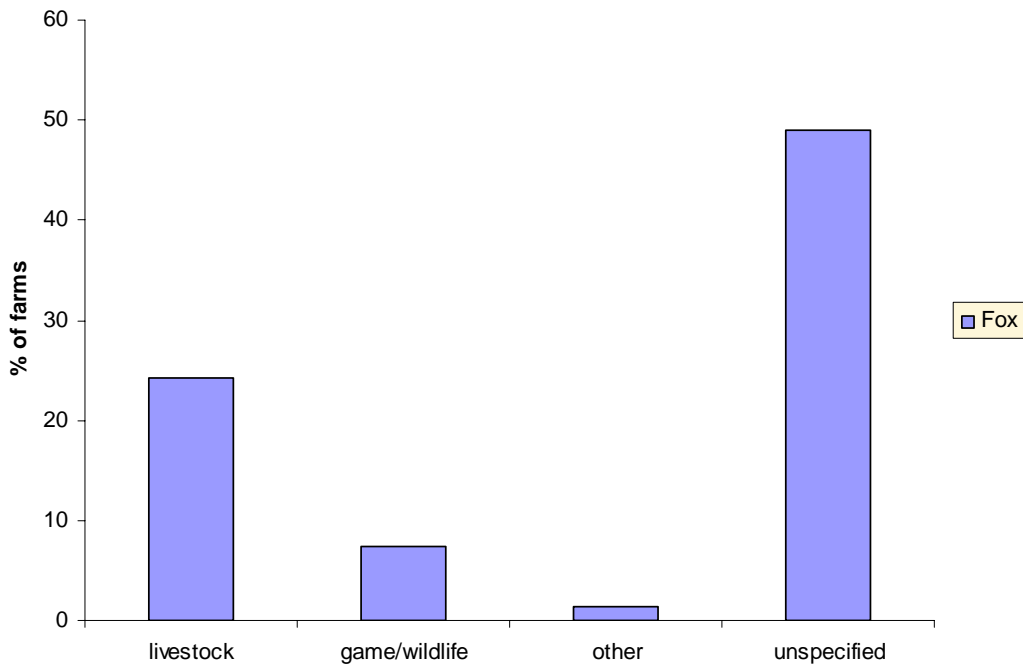
### **Users of snares and prevalence of use**

The majority (81-86%) of professional and part-time gamekeepers use snares, and even 70% gamekeepers who specialised in lamping foxes (a form of shooting at night), also used snares (Kirkwood, 2005). Evidence that gamekeepers are the main users of fox snares is also supported by a regional questionnaire survey of farmers and landowners in England and Wales (Heydon and Reynolds, 2000). They found that on farms less than 200 ha, the prevalence of snare use varied from 7% in mid-Wales, to 10% in the east Midlands and 20% in East Anglia. On farms greater than 200ha, this prevalence of use changed from 3% in mid-Wales, 22% in the east Midlands and 41% in East Anglia. Larger farms were associated with game rearing activities and the presence of a gamekeeper. In addition, game rearing interests and the presence of a gamekeeper also increases west to east across Britain. In mid-Wales, sheep farming predominates, and snares were not commonly used because of concerns about lambs becoming entangled in them. Control using dogs (foot and mounted packs), digging earths and shooting were more commonly used instead (Heydon and Reynolds, 2000; Reynolds, 2000). Given changes in legislation in England and Wales on using dogs, snaring may now be more popular, although evidence from Scottish studies (see above) would not suggest this is the case. A survey of a sample of members from the Scottish Landowners Federation, found that of all fox control activities, snaring was used approximately 18% of the time (Macaulay Land Use Research Institute, 2000).

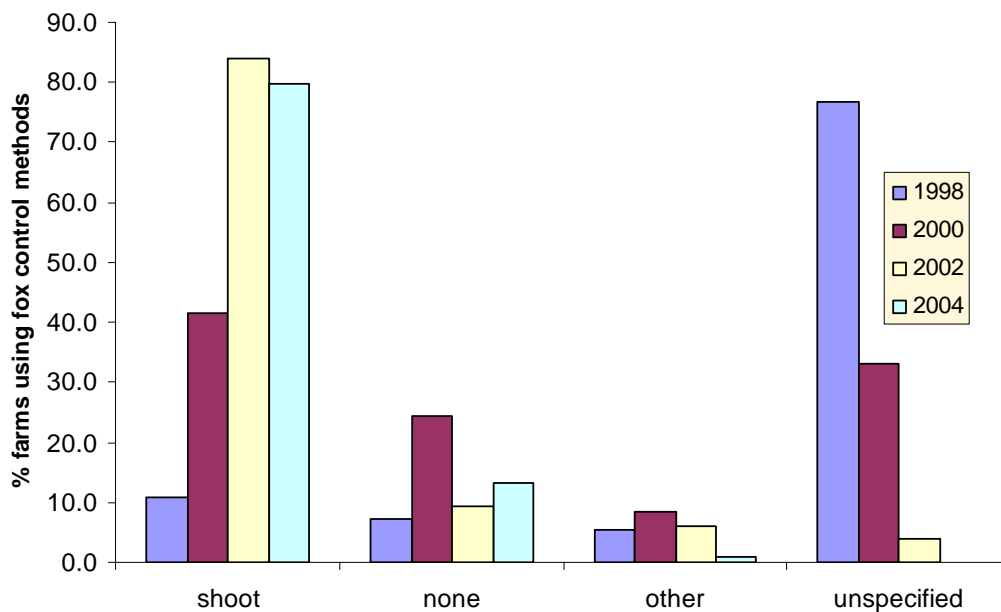
At SASA, pest surveys are conducted annually as an adjunct to surveys conducted by the Pesticide Surveyors. In these surveys, farmers are questioned on which animals they considered pests, which they considered the most serious (top three ranked), the types of problem that the animals caused, and what control methods were used against them. Wildlife Management Section compiled data collected in 1998, 2000, 2002 and 2004 from farms categorised under the Agricultural Census as being 'arable' because the majority of the holding is used for the growing of arable crops. Farms categorised as 'fodder crop' farms, where the majority of the holding is used for growing fodder crops, were also surveyed and data analysed for the years 2002 and 2005. Although these data are taken from surveys of 'arable' or 'fodder crop' farms, where crop production is the key element of the holding, it is evident that a proportion of the farmers keep livestock, and may even have a game enterprise. Unfortunately, farmers were not specifically asked about game interests on the farm, or if a gamekeeper operated on their land (Campbell and Hartley, 2007).

**Arable holdings:** Foxes were considered pests on approximately 16%, 27%, 30% and 40% of farms from the 1998, 2000, 2002 and 2004 surveys respectively, indicating a growing fox problem over time. From the four surveys, foxes were considered one of the top three pests on an average of 22% of farms that reported them as pests.

Of farms where foxes were considered pests there were two main problems associated with them. On average, approximately 25% of farms report that foxes are a problem to livestock, less than 10% consider the fox a problem to either game (usually pheasants) or to wildlife. Around 50% of farms did not specify the nature of the fox problem. The figure below shows the average percentage of farms reporting different types of fox problem.



Details were also collected on the forms of controls used against foxes in each survey year (only partial information available for 1998). The percentage of farms employing different methods in each survey are shown below. Shooting was the only major form of control, and was used on around 80% of farms.

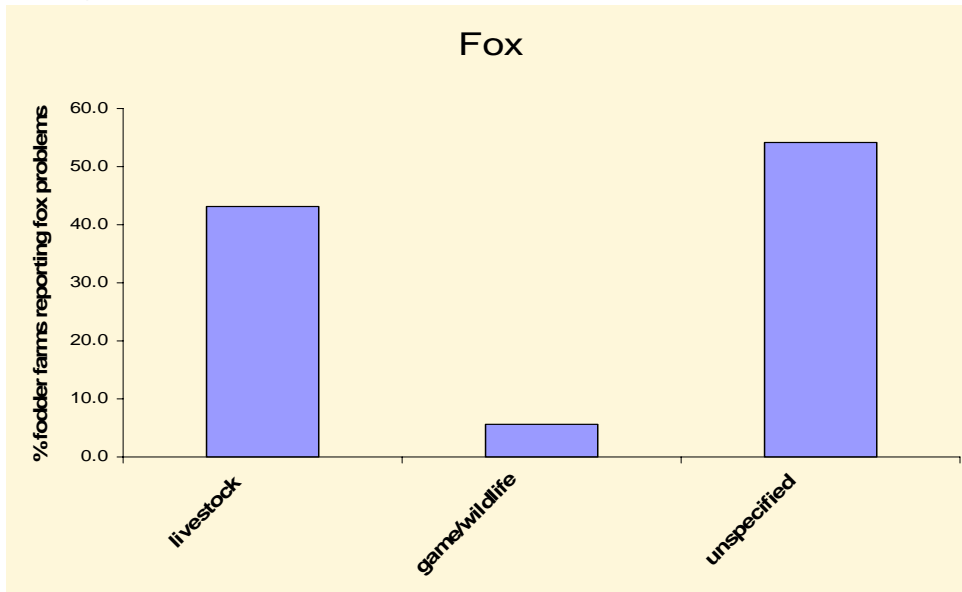


These data suggest that snaring is not an important method of fox control used by arable farmers. However, these data do not exclude the possibility that the farmer may let some of his land to a game enterprise, and any associated gamekeeper may use snares.

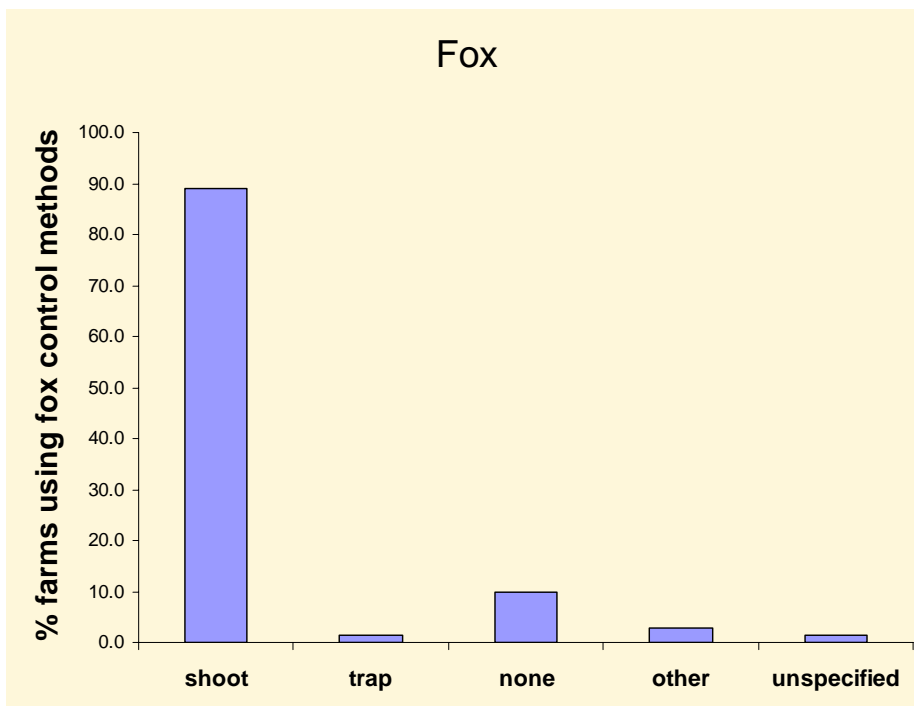
**Fodder crop holdings:** As with the arable farms, many of these farms are diversified and may keep livestock, as well as grow crops for human consumption.

1  
 g z s c y r t b o r < = v u z i s o x y 1 v y G I G b b 1  
 " " " f t c s j r i u x c ' p | 1

In 2005, 38% of farmers with fodder crop holdings considered the fox to be a pest species, while 15% of farmers ranked the fox in their top 3 most serious pests. The figure below indicates that the major concern of foxes on farms categorised as 'fodder crop' farms, is the damage to livestock.



Similarly on fodder crop farms, the percentage of farmers employing 'other' methods such as snaring, as a method of control, is relatively few, although the same prerequisites regarding game rearing and the presence of a gamekeeper may also exist for fodder crop enterprises.



These data suggest that foxes can be an important pest species on even 'arable' or 'fodder crop' farms. However, farmers themselves, rarely use snares to control them. Unfortunately SASA does not have data from farmers whose main enterprise is the rearing of sheep, pigs or poultry outdoors, as these are the agricultural areas which are likely to be most affected by foxes.

**Welfare and non-target captures in snares**

1  
 g z \$ % r 1 b r < = V u z i s 0 x y 1 V Y G I G b b 1  
 " " " f t c \$ j r i u x c ' p | 1

Macdonald and co-workers (2000) argue that taking into account the relative abundance of many species accidentally caught in snares, and given that these species are as common, or more common than foxes, snares are relatively species specific. They also state that “this selectivity towards foxes is achieved not by the design of the snare, which is capable of catching all the species listed, but by the field-craft involved in its placement. However, despite this selectivity, and even accepting GWCT and BASC/GWCT figures as more illustrative of the general use of snares by gamekeepers, there clearly is a non-target involvement.”

While there have been no controlled scientific trials designed to specifically assess the welfare implications of snaring, several trials have shown that many target and non-target captures are usually released unharmed. In a joint BASC/GWCT trial (conducted in 1994-95), data from gamekeepers in the course of their normal snaring work, compared the effectiveness of two types of snare. In terms of capture (target and non-target) the two snare types were not significantly different. It was found that 73% of the 284 foxes caught were found alive and without obvious external injury. Twenty seven percent of the foxes caught were dead. In the same trial, 32 badgers were caught, of which 75% were alive and uninjured, 3% were alive and injured and 22% were dead. Seventy-six brown hares were caught, of which 46% were alive and uninjured, 5% were alive and injured, and 49% were dead (Kirkwood, 2005). As Kirkwood points out, recommended guidelines for snaring have changed considerably since this trial, and imply that current practice is much improved. For instance, at the time, unstopped snares were typically used, and some operators would deliberately use “kill sticks” which were set to bring about strangulation if a struggling animal became entangled in it. Current guidelines recommend the use of stops to prevent closure of the snare beyond a certain point, and to set snares in areas without obstacles that might cause entanglement. In addition, changes to the wire cable and stop positioning has prevented many of the problems of entanglement and associated mortality encountered with brown hares (Kirkwood, 2005).

Despite the above, the Independent Working Group on Snares (Kirkwood, 2005) clearly state “it may be difficult, when using snares to catch foxes in some environments, to reduce the overall proportion of non-target animals caught to below about 40%.” Also, “the best practice aim in the use of snares is for all non-target animals to be released unharmed.” Assuming users of snares comply with current ‘best practice’ then almost certainly, the level of injury and mortality described above would be significantly reduced. However, there are no current data on the working practices of gamekeepers/snare users, and this is one of the areas of research currently commissioned by Defra (D. Cowan, CSL, *pers. comm.*).

It is also worth noting that the Independent Working Group on Snares (Kirkwood, 2005) conclude that even taking into account levels of mortality and injury to badgers in the mid-1990s, and the rate of snare use, there are no ecological consequences of snaring to the UK badger population. For example, in the year of the trial, based on the number of full-time gamekeepers and their estimates of fox capture, they estimate that 575 badgers were killed in snares. Compared to the estimated 50,000 badgers killed annually on roads in the UK, and that each year, 172,000 badger cubs are born, these figures are relatively small.

### Scientific use

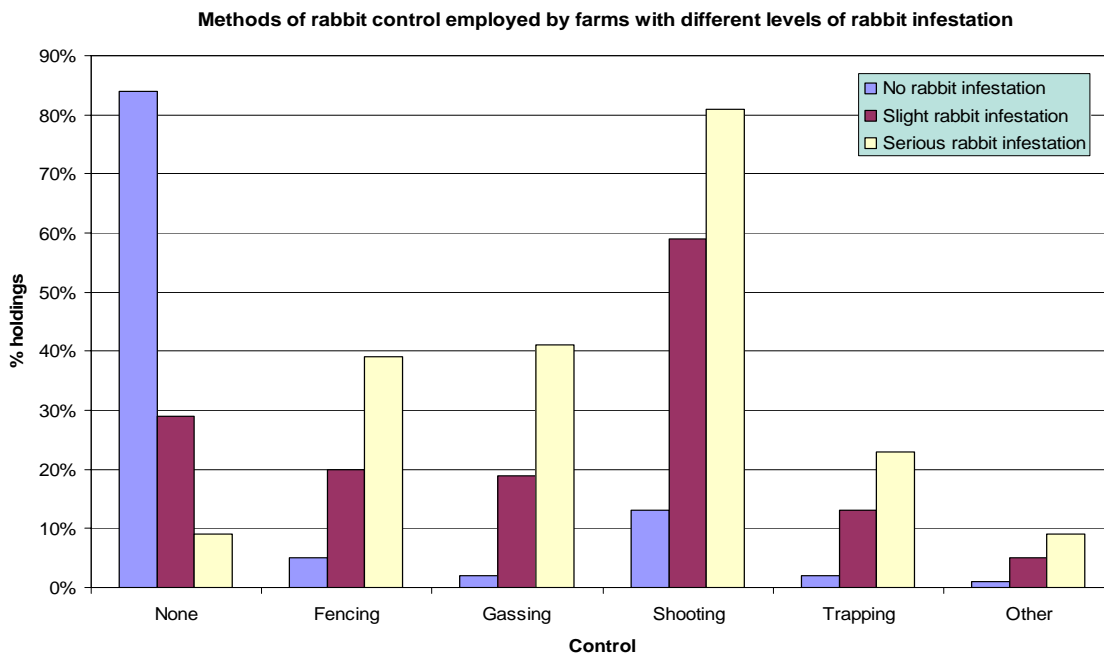
Due to the lack of alternative live capture methods for rural foxes, snares have been the preferred method used by wildlife biologists to capture foxes for radio-tagging in every UK study in a rural area (Lloyd, 1980; Macdonald, 1987; Hewson, 1990; Reynolds & Tapper, 1995). While few data have been published on trapping statistics, anecdotal study of the behaviour of radio-tagged animals before and after capture has led to the consensus that any impact of capture is short-lived (Macdonald *et al.*, 2000).

Others have argued that methods of fox snaring for scientific purposes involves far higher levels of monitoring than for commercial reasons, and for this reason, snaring should be banned other than under licence for scientific purposes (Swann, 2008).

### RABBIT SNARING

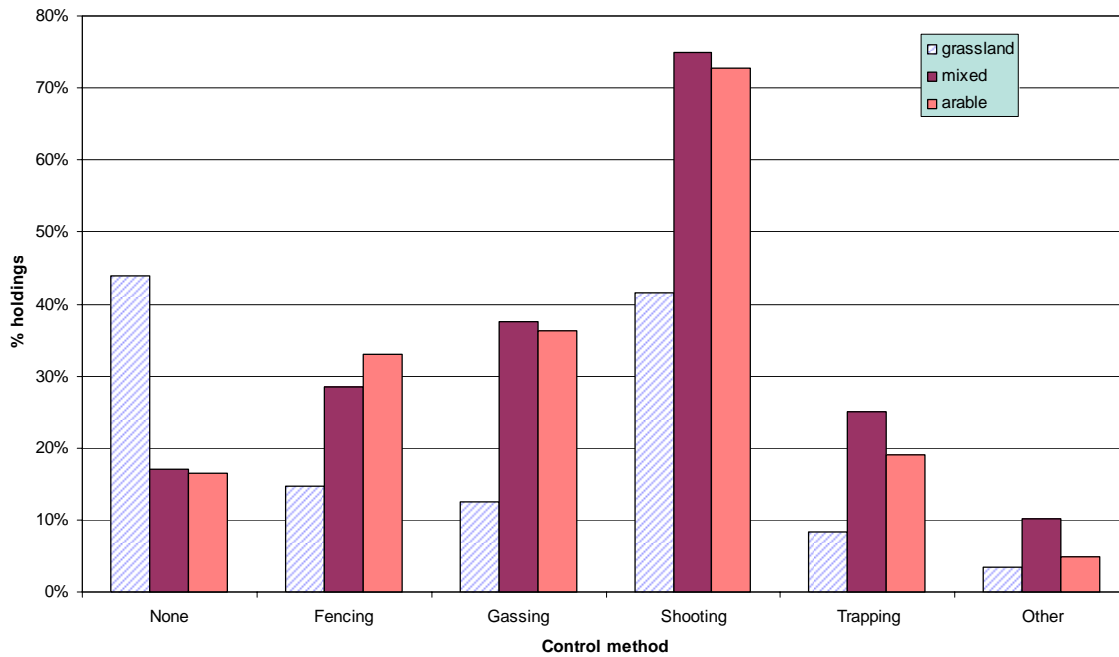
In 2000, SASA undertook a national rabbit survey, whereby a questionnaire was sent to a random sample of 1500 agricultural holdings in Scotland (Campbell and Hartley, 2000). It excluded holdings consisting entirely of rough grazing and/or hill ground, where rabbits in comparison with other farming types, cause the least economic damage. The return rate averaged 84%, and the data were considered to be relatively indicative of the situation at the time.

Analysis of the methods of control used by farmers, places snaring in the 'Other' method of the control column, along with other skilled, but less frequently used control methods, such as long-netting and ferreting. The data suggest that snaring is relatively unimportant, even when severe rabbit infestations exist.



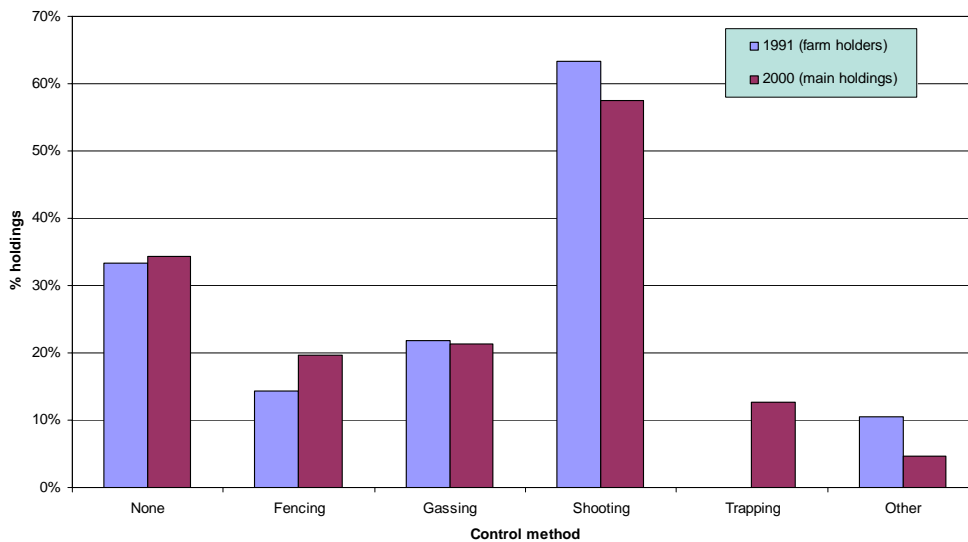
Similarly, the type of agricultural unit does not significantly affect the likelihood that snaring increases in importance as a method of controlling rabbits (see figure below).

Methods of rabbit control employed by different farm types



Also, that these alternatively methods of control, such as snaring, long-netting and ferreting, are decreasing in overall use over time (see below).

Methods of rabbit control reported in the 1991 & 2000 surveys

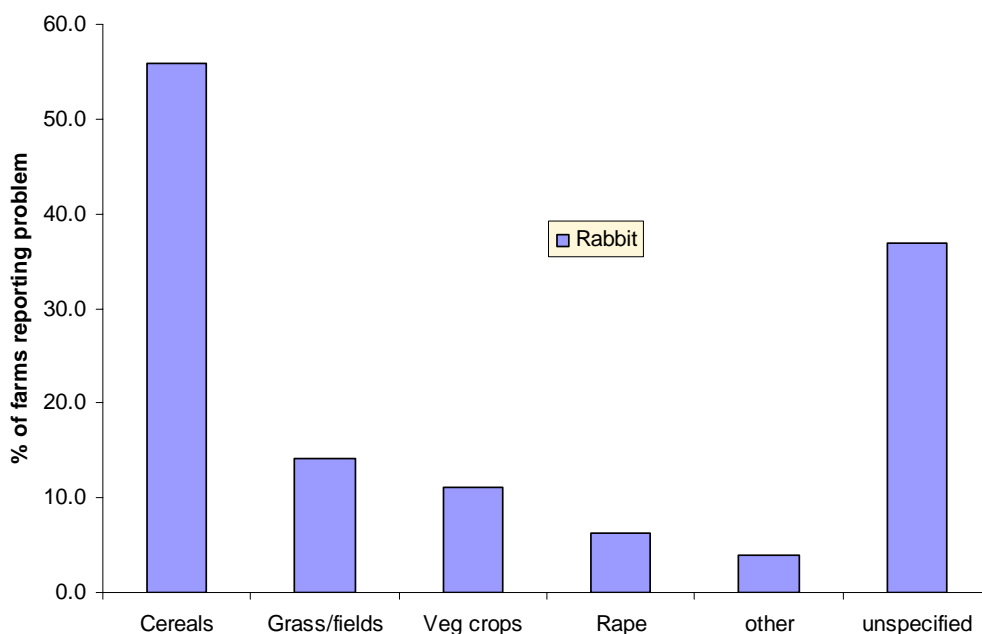


These data are confirmed by a more recent report from the SASA, Wildlife Management Unit of all agricultural pests (Campbell and Hartley, 2007), in which farmers from arable (1998, 2000, 2002 and 2004) and fodder (2002 and 2005) dominated farms were questioned on which animals they considered pests, which they considered most serious, the types of problem that the animals caused, and what control methods were used against them.

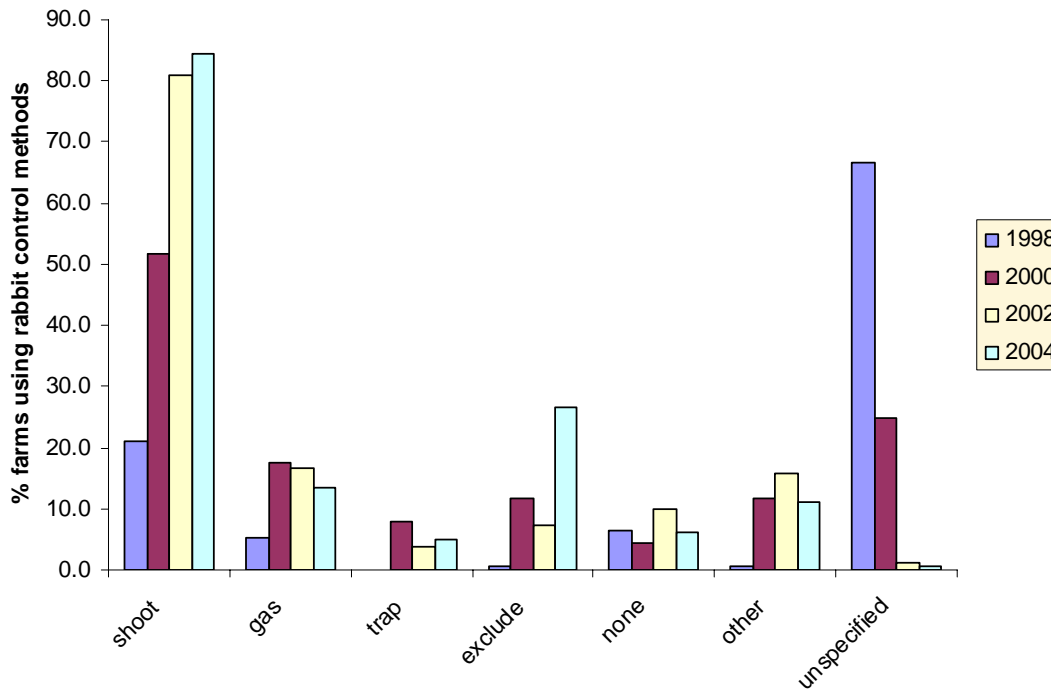


Rabbits were considered a 'major' pest, i.e. reported by more than 10% of farmers (regardless of farm size or region) over the four survey years. The table below shows the percentage of Scottish farms growing arable crops in Scotland reporting any particular species to be a pest. Rabbits are clearly a significant pest of arable farms, and the figure below, shows the types of problems caused by rabbit grazing.

	1998	2000	2002	2004
<b>Rabbits</b>	57.7	43.1	47.2	70.5
<b>Rats</b>	72.1	61.3	45.3	84.6
<b>Mice</b>	25.7	38.7	44.1	50.2
<b>Pigeons</b>	37.1	52.7	41.2	57.1
<b>Corvids</b>	49.5	46.5	50.6	67.9
<b>Geese</b>	21.4	33.0	22.6	36.1
<b>Moles</b>	22.4	29.8	37.0	48.1
<b>Fox</b>	15.5	27.1	29.9	39.7
<b>Deer</b>	10.5	15.1	22.8	45.3



When asked about the control measures they used against rabbits, it is clear that shooting is by far the most common form of rabbit control. 'Other' methods include snaring, long-netting and ferreting.

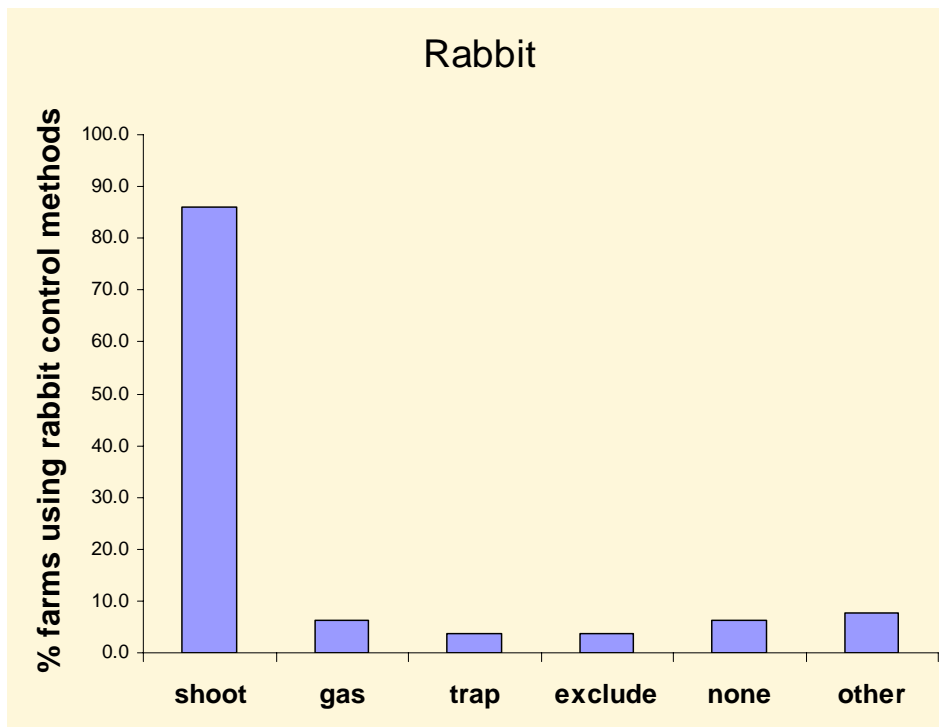


The following data relates to a survey of fodder farms, i.e. farms that produce crops as food for livestock as recorded in the Agricultural Census. As with the arable farms, many of these farms are diversified and may keep livestock, as well as grow crops for human consumption. The sample size from the 2002 survey was small (87 farms), so these data were not extrapolated for all fodder farms in Scotland.

The percentage of Scottish fodder farms that reported a problem with a vertebrate pest species from the 2005 survey is given below.

Estimated % of Scottish fodder farms with pests 2005	
Pest	Estimated %
Rabbit	74.2
Moles	66.6
Rats	83.7
Mice	37.6
Deer	27.0
Fox	37.9
Geese	45.0
Pigeon	65.8
Crows	81.3

The figure below indicates the methods of control used by farmers on fodder crop farms, and again, snaring (categorised under 'Other' along with various other methods of control) is used relatively infrequently compared with shooting.



This suggests that arable and fodder crop farmers, who consider rabbits to be one of their most serious pests, rarely use snaring to control them. While the survey did not enquire as to whether or not a gamekeeper operated on their land, rabbits are not considered to be a major pest of game rearing interests.

### Scientific use

The following data were obtained by SASA Wildlife Management staff, while operating on two hill farm study sites, over the course of two years, in Southern Scotland. The objective of the trial was to capture every rabbit on site to allow autopsy. Unlike studies for radio-telemetry purposes, it was not necessary to capture the rabbits alive. A variety of different live capture and lethal methods (snaring, cage trapping, shooting 'over' ferrets, lamping and box trapping) were used, at decreasing efficiencies over time.

A highly experienced pest controller was used to set the rabbit snares (Alan Stewart of Tayside Police). Thus, the basic principles of use were identical to that used by professional or experienced pest controllers, the only difference being that for commercial reasons, a pest controller would have abandoned the site earlier.

Unstopped rabbit snares were set in batches of 10 or 25, at short distances, along rabbit runs, usually within 20 metres of a rabbit warren. The warrens were located on a sunny slope, close to an area of level pasture, normally used for livestock grazing. Livestock were excluded from the pasture during the entire experimental trial, and not just for the period of rabbit 'trapping'. The actual positioning of the snare was in front of the marks made by the rabbits fore feet as they move along the run. Due to the nature of the runs, some were set on runs that traversed the slope, some on runs that descended/ascended the slope.

Over the course of 10 nights of snaring, 167 rabbits were caught. 86% of rabbits snared the following day were alive. 8% of those found dead had most likely been killed by a predator (in all cases, a fox). In most cases, the fox appeared to have moved along the snare line, killing rabbits systematically, usually by removal of the head. In nearly all cases, most of the rabbit carcass remained, and was usually scent marked by the fox. Very occasionally, the predator would take the entire rabbit, leaving traces of blood and other viscera. Again, these

areas would typically smell of fox. No other species was caught in the snares, although foxes, badgers, pheasants, stoats and roe deer were all commonly seen on the site.

Six percent of those found dead had been killed by cervical dislocation (neck broken), and evidence suggests that these rabbits had entered the snare whilst running at speed down the slope, resulting in instantaneous death. The evidence included a lack of flattened grass adjacent to the rabbit, suggesting that the rabbit had not spent any time in the snare either lying still or trying to struggle free from it, and the full-length position of the body.

In addition, 2% of snares broke, and 1% of snares captured the rabbit around the abdomen, rather than the neck. Both rabbits caught around the abdomen were alive at capture, although one had suffered internal bruising.

Although not quantified in these trials, the most important welfare issue was related to the use of unstopped snares. Rabbits that struggled violently, simultaneously straining against and bending the snare wire, caused the snare to become self-locking. It is estimated that less than 5% of rabbits struggled in this way. The tight neck noose then restricted venous return of blood from the head and caused swelling to the face of the rabbit, which undoubtedly caused pain. The majority of snares which had captured rabbits remained 'free-running', and these animals showed no external signs of physical trauma.

Wildlife Management  
SASA  
7 November 2008

## REFERENCES

Campbell, S. and Hartley, G. 2000. Rabbit survey of Scotland, 2000. Report to the Scottish Executive Environment and Rural Affairs Department.

Campbell, S. and Hartley, G. 2007. Summary of vertebrate pest surveys 1998/99-2005/06. Report to the Scottish Executive Environment and Rural Affairs Department.

Hewson, R. 1990. *Victim of Myth - Predation by Foxes upon Lambs in the Absence of Control*. Report for League Against Cruel Sports, London.

Hewson, R. and Kolb, H.H. 1974. The control of foxes in Scottish Forests. *Scottish Forestry*, **28**: 272-282.

Heydon, M.J. and Reynolds, J.C. 2000. Fox (*Vulpes vulpes*) management in three contrasting regions of Britain, in relation to agricultural and sporting interests. *J. Zool., Lond.* **251**: 237-252.

Kirkwood, J. 2005. Report of the Independent Working Group on Snares. Report to Defra.

Lloyd, H.G. (1980). *The Red Fox*. Batsford, London.

Macaulay Land Use Research Institute, 2000. *Economic Impacts of a Ban on Hunting with Dogs in Scotland*. A report for the Scottish Executive Rural Affairs Department.

Macdonald, D. W. (1987). *Running With the Fox*. Unwin Hyman, London.

1

g z s c y z r t b o r < = V u z i s o x y I V Y G I G b b 1  
" " " f t c s j r i u x c ' p | 1

15148 sub 1 st 1

Macdonald, D.W., Tattersall, F.H., Johnson, P.J., Carbone, C., Reynolds, J. C., Langbein, J., Rushton, S. P. and Shirley, M.D.F., 2000. *Management and Control of Populations of Foxes, Deer, Hares, and Mink in England and Wales, and the Impact of Hunting with Dogs*. Research Report to the Burns' Committee of inquiry into hunting with dogs.

Reynolds, J.C. & Tapper, S.C. 1995. The ecology of the red fox (*Vulpes vulpes*) in relation to small game in rural southern England. *Wildlife Biology*, **1**: 105-119.

Reynolds, J.C. 2000. *Fox Control in the Countryside*. The Game and Wildlife Conservancy Trust, Fordingbridge, Hants., UK.

Swann, W.J. 2008. Shooting and fox control in Scotland. Report for League Against Cruel Sports, London.