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Deer Vehicle Collisions in Britain - A Nationwide Issue

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Introduction

Collisions of vehicles with wild deer are a long-standing problem in Britain, known to cause around 300 human personal injury accidents and some human fatalities every year. The annual toll of deer killed or injured in such accidents was already estimated to have exceeded 30,000 by the mid-1990s (SGS, 1997), but ever rising volumes in road traffic combined with increased numbers and spread of several of our resident deer species make further escalation of this problem almost inevitable.

The Result of a DVC

The scale of even the above estimates may come as a surprise to some readers, but a similar picture emerges from national statistics for Deer-Vehicle-Collision (DVC) in other countries across Europe and North America. One of the earliest detailed studies of deer casualties in Germany during the 1960's suggested that even then 40,000 deer were killed there annually by road traffic (Ueckermann, 1964). That figure had risen to 120,000 by 1996, while more recent estimates suggest 140,000 DVCs on German roads each year (DJV, 2003). Switzerland, one of the few countries where all accidental mortality of game animals has been systematically collated for many decades, shows deer accidents there too have more than doubled from around 5000 in the 1970s to over 10,000 by the end of the century (annual game statistics - Bundesamt fuer Forstwesen). Wider review of available figures across other European countries shows >55,000 DVCs in Sweden, 35,000 in Austria, 10,000 in Denmark, 3500 in Norway, and led Groot-Bruinderink & Hazebroek (1996) to estimate that close to half a million deer are hit by vehicles in Western Europe every year, leading to over 300 human fatalities and 30,000 human injuries and with damage to property estimated in excess of £1 bn. In the United States the figures are equally horrific, with estimates ranging upward of 500,000 to 726,000 deer crashes annually (Romin and Bissonette, 1996; Conover *et al.* 1995), leading to over 220 human fatalities annually; and in some of the worst affected States - such as Michigan and Wisconsin where 65,000 and 22,000 DVCs are reported annually - these make up over 15% of all vehicle accidents (www.deercrash.com).

Cause for concern

Until recently accurate information on the extent and distribution of the problem in Britain has been lacking; already what is clear is that deer related accidents do present a major cause for concern both in terms of road safety and animal welfare.

From a road safety point of view, hitting a deer may be expected to pose a heightened risk compared to collisions with other animals such as badgers, foxes or rabbits which are also commonly encountered on roads in this country. Further accidents occur through increased tendency of drivers to swerve to try and avoid hitting an animal depending on its size. This remains true not only in relation to live animals darting across the road, but also where animal carcasses remain on the carriageway having been hit by earlier traffic.

DVC and Vehicle Damage

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Editorial

Challenges in Prospect

The much publicised document, **Securing the Future – the UK's shared framework for sustainable development**, was launched in London on Monday, 7th March. Heading the Defra contingent were Margaret Becket and Elliot Morley. It is also a joint document with the Scottish Executive, the Welsh Assembly and the Northern Ireland Office which gives it quite some clout.

The publication is timely because one of the hurdles which aspirant Chartered Environmentalists have to cross is to explain what they understand by sustainability. Easy you may say and that's what ecologists do all the time. Being close to the subject it is easy to forget that the concept is also about engaging with society, social justice and economic equity so there is a real challenge for ecologists to look over the parapet and engage with the wider world. I ought to say at this point that in reviewing a number of SocEnv applications, there is something of a tendency by IEEM members not to recognise the breadth of this concept.

Securing the future does indeed embrace the broad concept of sustainable development with the environmental, social and economic aspects clearly laid out. There is much in this which IEEM members would welcome. One of the guiding principles is using Science responsibly – ensuring policy is developed and implemented on the basis of strong scientific evidence, whilst taking into account scientific uncertainly (through the precautionary principle) as well as public attitudes and values.

There is a series of no less than 68 UK Government Strategy indicators some of which require measures to be developed, the main ecological ones being – greenhouse gas emissions, bird populations, biodiversity conservation, farming and environmental stewardship, land use, fish stocks, ecological impacts of air pollution, river quality and finally environmental equality.

Also significant is a series of issues for the UK government to develop in an international context. These include the commitment to halt biodiversity loss by 2010, a network of marine protected areas by 2012 and restoration of depleted fish stocks by 2015.

Another interesting development on the horizon and due for adoption by the British Government and other EU Member States in 2007 is the Environmental Liability Directive. This will require all those causing damage -defined as anything that has a significant adverse effect upon reaching or maintaining favourable conservation status for species and natural habitat types protected under EU legislation – to return the environment as a whole to baseline condition. Well, what may you ask is favourable condition? How is the damage assessed and how is a return to baseline condition going to be achieved? Somehow I sense even more employment prospects for ecologists.

Jim Thompson

The Institute is immensely grateful to those organisations listed below who have made financial contributions or provided substantial 'help in kind' to support its activities during 2004/2005

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This was indeed confirmed recently through an analysis of road accidents involving any animals (excluding dogs) across a sample of 14 English counties (Langbein, 2003), where among a sample of 1450 Personal injury accident records noting animals as a 'carriageway hazard', 603 were found to be due to wild mammals (mainly deer, fox, badger, and lagomorphs), 558 due to domesticated animals and birds (cows, sheep, ponies, and incl. pheasants), while 290 were noted merely as an 'animal' on the road. For those with 'wild' mammals, close to 50% concerned deer, with rather fewer associated with rabbits and hares (21%), foxes (20%) and badgers (9%). Human injury accidents are however, merely the (mostly costly) tip of the ice-berg, with most vehicles involved in accidents with deer suffering some damage ranging from minor dents to total write-offs; extrapolation of insurance claims data provided by Fortis-Group (holding approximately 4 - 5% of the private vehicle motor insurance market), suggests that annual car repair costs in the UK resulting from DVCs alone exceed £11M. (Langbein, 2003).

From the deer welfare point of view, numerous deer hit by vehicles are not killed outright, but may suffer for prolonged periods until suitably qualified persons can be called to attend. The RSPCA alone is called to assist with over 1500 live deer road casualties in England, and thousands of others are dealt with by individual deer stalkers, vets, wildlife rescue organizations or other competent people police are able to call on when faced with such accidents. In the vast majority of cases the severity of injuries suffered by the deer make dispatch at the roadside – most commonly with a firearm or via lethal injection - the only humane option after a traffic accident, though each raises still further issues of public safety and environmentally safe disposal of carcasses, not to mention the distraught drivers and passengers unfortunate enough to have hit the deer who, feeling responsible, may not wish the animal to be destroyed. Besides this 'individual' welfare aspect, data from Continental Europe suggest that road traffic accidents may result in the death of up to 10% of the estimated spring population of some species each year; such 'cull' by motor vehicle is not only inhumane but of course completely unselective.

National Deer Collisions Database Project

In the UK, as in many other countries, there is at present no legal requirement to report collisions with non-domestic animals to any authority, nor indeed for police to maintain detailed records of such collisions even when they are reported, except in cases of accidents leading also to human injury. Other potential data sources for nationwide assessment of the true scale of the problem, such as major motor insurance companies have also (with one or two notable exceptions) tended not to log 'animal related' collisions in ways enabling separate retrieval of information on numbers of claims relating to deer or other types of animals. This lack of accurate records for DVCs clearly poses a major handicap to development of effective management and was highlighted in an initial nationwide assessment undertaken for the Highways Agency in 1997 (ed. Smith & Langbein, SGS Environment, 1998) as well as in a subsequent independent survey commissioned by the Deer Commission for Scotland in 2000 (Staines, Langbein, and Putman, 2001), As a consequence, the National Deer Collisions Project was launched in January 2003 to collate information on as high a proportion as possible of DVCs occurring throughout England, Wales and Scotland for two to three years, and initiate research into the effectiveness of various, different preventative measures at the roadside.

The key objectives of the project are:

- To assess the true scale and geographical distribution of the problem within mainland UK;
- To identify local deer accident black spots where future mitigation efforts should be targeted;
- To investigate key risk factors in order to help predict future problem areas, and identify road design and road management practices which tend to contribute to increased accident risk;
- To assess the effectiveness of different measures employed to reduce animal road kills;
- To increase public awareness of deer-related traffic collisions and how to avoid them.

The project is administered via The Deer Initiative (a broad partnership of statutory, voluntary and private organisations committed to delivery of a sustainable deer population in England and Wales) on behalf of the Highways Agency and Scottish Executive. They have provided lead funding for the project, together with also the National Forest Company, Woodland Trust, and The Deer Study & Resource Centre.

Information on deer related accidents and/or simply dates and locations of any dead deer seen at the roadside is being gathered from a wide range of sources, including Trunk road and local authority roads cleansing departments, police, county road safety teams, deer managers, RSPCA/ SSPCA, Forestry Commission rangers, vets, other wildlife rescue organisations, insurance companies, scientists naturalists and many others – and including hopefully, increasing numbers of Ecological Consultants or other members of IEEM. Records can also be submitted by anyone direct to the project via a dedicated form on the project web-site www.deercollisions.co.uk.

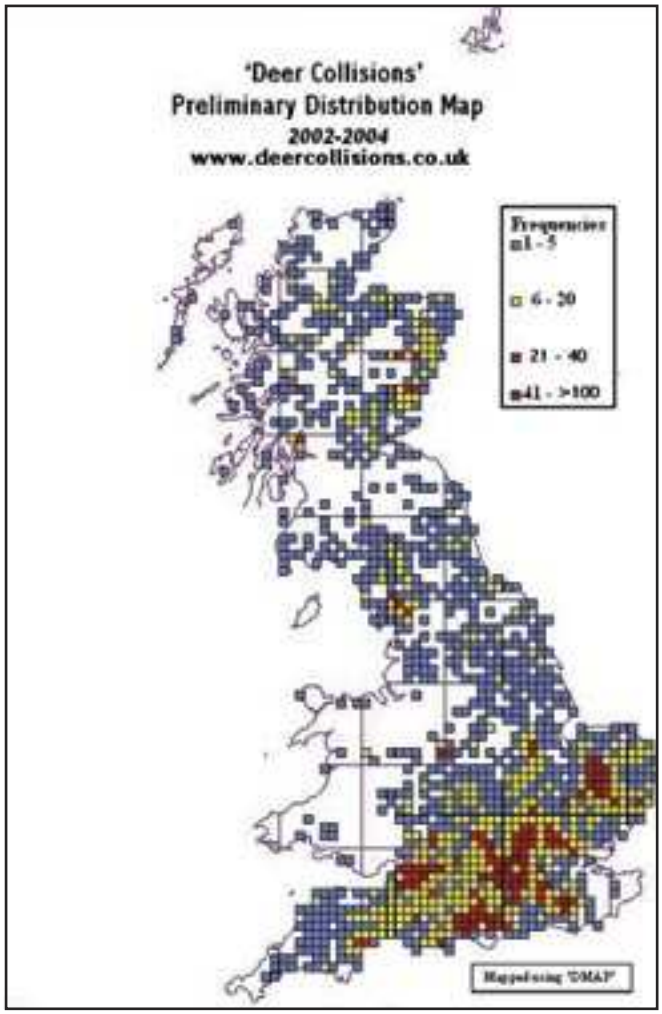

Figure 1. The distribution of reported DVCs in with in Britain.

Not only a rural issue

During the first 18 months of the project, records on over 18,000 different deer-vehicle collisions or deer found dead at roadsides since January 2000 have already been submitted to the study, with well over half of these relating to incidents occurring during 2003 & 2004.
This does not represent an increase in accident rate of that period – merely an increasing capture rate of accident records by our database, as we recruit increasing numbers of information sources. Data for 2000-2002 represent past data we have also been able to obtain from some sources, rather than the more stratified data collection attempted from the commencement of the Deer Collisions Project itself.

Even the initial year of the current project had always been planned as a period over which to raise awareness about the project and establish the necessary data-collection networks and thus was not expected to return comprehensive data and figures available still represent a low percentage of the full likely toll of casualties.

Although data-collection will remain on-going (at the very least to the end of 2005), initial results already show the emergence of regional patterns. Preliminary mapping of some 15,400 records received to date with sufficient location details (Figure 1) demonstrates how very widespread DVCs are throughout most parts of mainland Britain. The filled squares on the map show all those 10km Ordnance Survey grid squares for which at least some post-2000 incidents have been submitted. The greatest concentration of records in Scotland comes from the northeast and the Highlands. However, while over half of all deer in Britain occur within Scotland, the highest concentrations of DVCs in fact occur in southern England, where vastly higher volumes of traffic coincide with high levels of deer density and especially so within the well-wooded commuter-belt areas around Greater London, the Home Counties and Hampshire. Relatively high DVC numbers have also been reported so far from East Anglia and Cumbria.

To put these numbers into a more local perspective, it is worth noting that more than 250 deer carcasses are uplifted annually by council road cleansing teams alone in individual counties such as Aberdeenshire and Hampshire (during 2003); while many others are dealt with by RSPCA/SSPCA, individual stalkers, vets and others. And even then, figures available at best relate only to those incidents where requests were made to attend to remove a carcass or assist with injured deer.

Deer species and other factors

While the species of deer involved is only known in a proportion of all records submitted (depending on source type), preliminary inspection of the data suggests that in England roe, muntjac and fallow each contribute some 30% of all incidents; though in Scotland roe make up closer to two-thirds of all deer hit, with most of the remainder relating to red deer. Although some accidents occur throughout the year, a pronounced late-autumn peak is apparent in numbers of fallow, red, sika, and to a lesser extent of muntjac, hit by vehicles during October and November. This is likely to relate in part to autumn rutting activity of the three larger species, and in part as at this time peak daily traffic flows co-incident with peak times of deer movements around dawn and dusk. By contrast, only accidents with roe deer show a very distinct peak during April and May, possibly related to dispersal movements of sub-adult roe and does around calving time. Such patterns suggest that there could be some benefit in seasonal enhancement of warning signage or other preventative measures. However, aside from such ecological relationships, of greater interest may be what features of road-type, road design, roadside habitat and other factors – which might be more susceptible to management - are associated with increased accident risk. Once well-stratified data are available and fully verified for a number of years, it will be possible to interrogate the database in greater detail to explore factors associated with heightened risk of DVCs and implications for management and mitigation design. It is hoped to use the information to build up a geographical information system (GIS) showing areas with high risk of DVCs and others of relatively lower risk, to aid decision-making by trunk road engineers and local authority road departments regarding the need for and targeting of preventative measures.

What can be done to reduce Deer Vehicle Collisons?

Although the main objective of the current project is to develop a well stratified, nation-wide system for collection of standardised information on deer related RTAs throughout mainland UK, we do not merely seek to get a handle on the actual number of incidents occurring or assess the distribution and true scale of the problem. As well as attempting to understand the factors influencing accident risk, a further objective is to explore the effectiveness of different measures which may be employed to reduce accident risk.

So far some small trials have been initiated, including one with Suffolk County Council to investigate the potential for using rumble strips and improved signage to reduce DVCs in known black-spots (Wilson & Langbein, 2004). Other parallel work is underway to monitor the effectiveness of recently installed deer fencing and use by deer of underpasses and bridges across the new A120 in Essex. It is hoped that it will be possible to mount other trials in the near future with interactive, driver and/or animal-activated road signage to increase awareness of risk of DVCs in known black-spots. While that remains for the future, for now we offer below a broader review of the wide range of options which may be available to help reduce DVCs – even though in many cases, evidence of the actual effectiveness of the differing methods remains rather sparse or inconclusive.

From the outset, we must stress that there is no universal solution to the problem, but that different measures are more or less suited to different circumstances, and any mitigation programme must be tailored to the precise local situation. In the present article we can clearly offer only the briefest of introductions, based on a more detailed review undertaken for the Deer Commission for Scotland in 2004 (Putman, Langbein and Staines, 2004; and available on-line at www.deercollisions.co.uk).

Attempts at reducing the frequency or severity of deer-vehicle collisions may broadly be considered under a number of different headings:

i) Preventing, or controlling crossing, by the use of highway fencing, roadside wildlife warning reflectors, reductions in local deer population density, and less conventional methods such as chemical fences or the fitting of warning whistles to vehicles.
ii) Increasing driver awareness, through the use of various driver warning systems – whether through the use of fixed signage, or signage responsive to driver speed, or the actual presence of deer on the roadside.
iii) Provision of safer crossing places for deer by the installation of dedicated overpasses or underpasses, by modification of existing structures for joint use, or by the creation of designated 'cross-walks' across the carriageway itself.

The need for Preventative measures

Preventing or 'Controlling' crossing

High tensile roadside fencing is, and is likely to remain the primary method used to try and reduce road-crossings and resultant accidents at identified sites of high risk. However such fencing must be of adequate specification (height/mesh size) for the deer species present and be designed not with the expectation, or aim, of attempting to prevent road-crossings altogether, but rather to channel animals to cross elsewhere. Long lengths of complete barrier fencing to prevent all road-crossings are rarely justifiable, both because of high cost of installation and long-term maintenance, and the likelihood that they will prove ineffective due to some animals eventually forcing the fence to cross roadways (with the added risk that they may then become trapped within the carriageway, unable to escape). At the very least, where effective as a total barrier to movement such fencing causes fragmentation and isolation of previously continuous populations of deer and other larger wildlife.

Roadside wildlife-warning reflectors are also designed not to stop animal movements across roads, but to delay these to times when there is no traffic on the carriageway. Working on the principle that light from approaching headlights is reflected onto the verge to provide a flash warning, or continuous visual barrier (depending on reflector type and deployment) they are designed to alert deer to oncoming traffic at night. In practice, since they rely on reflected light from approaching headlights, they can only be effective when lights are in use. Since in addition, they are designed not to prevent crossing, but delay it until the road is clear, they can also only hope to be effective on roads of low traffic volume, where there are adequate gaps in the traffic to allow animals to cross, and lesser likelihood of habituation by deer to the light barrier created. Despite these obvious constraints, these reflectors are amongst the most common form of mitigation deployed in the UK - and often in the most inappropriate situations – because they are of comparatively low cost, and because their installation satisfies the need to be seen to be doing something (however ineffective!). In fact, there remains considerable uncertainty about the effectiveness of such reflectors. Early results from a recent trial in Germany of a newly developed type of reflectors incorporating an auditory deterrent as well, suggest significant reductions in DVCs have been achieved (German Ministry of Industry and Transport web-site, 2005). However, the majority of published scientific research in both Europe and North America indicate no or only short-term reductions in accident rates (for review see Putman *et al*. 2004).

'Chemical fences' (repellent chemicals encapsulated in slow release organic foam and applied to roadside posts or trees) have also been trialled in Germany, with claims by the manufacturers of some efficacy in reducing the frequency of deer-vehicle collisions. (Kerzel and Kirchberger, 1993). More detailed assessment showed that although roadkills were reduced by 30-80 % within the test sections, accidents outside the trial areas actually rose – suggesting that the fences merely displaced crossings to other, equally unsuitable locations (Lebersorger,1993). Further new similar olfactory products are being marketed by various companies, though much more information is needed to assess true effectiveness as well as maintenance requirements and costs.

Roadside Warning Reflectors

Car-mounted warning whistles. Several commercial companies are offering a device for attachment directly to the front of a motor vehicle which emits a high frequency whistle claimed to be a deterrent to deer or other roadside wildlife. In the only formal study undertaken of the response of deer to such air-activated whistles, deer showed no behavioural response to suggest acknowledgement or avoidance of vehicles equipped with such devices (Romin and Dalton, 1992), nor could any reduction in the number of deer-vehicle collisions be demonstrated. Indeed a separate study of many of the products which are available commercially, established that the sound emitted was at the limits or outside the auditory range for deer, and/or inaudible over the general traffic noise such as tyres on tarmac (Scheifele *et al*.,1998). In any event, such devices are likely to lead to a reduction in accident frequencies only if fitted to the vast majority of vehicles using the road network.

Reductions of deer density.

Some published studies have now been able to demonstrate a relationship between the frequency of deer-vehicle collisions and local deer densities, which does suggests that a general reduction of deer density, in association with other mitigation techniques, may help to reduce accident frequencies (e.g. Schwabe *et al*. 2002, Rondeau & Conrad, 2003). It is patently clear that there must exist some relationship between deer numbers and accident frequency. Despite this, formal studies of the effectiveness of a local reduction in deer numbers are few and contradictory. While Jenks *et al.*, (1993) Danielson and Hubbard (1998), Jones *et al.*, (2002) reported that a decrease in deer numbers in their study areas resulted in a corresponding reduction in the number of deer-vehicle collisions, Waring *et al*., (1991), Doerr *et al*., (2001) found that deer-vehicle collisions did not decline even after significant decreases in local deer population density (for refs. see Putman *et al.,* 2004). Any such relationship is probably not linear, and so many other factors may be important in determining the actual level of accident risk. Manipulation of deer numbers may not in practice achieve much of a response; not least as any localised reductions in densities may rapidly be replaced by immigration of animals from the wider surrounding area. Recent assessment of influence of habitat fragmentation on animal road-kills in Sweden (Seiler, 2004) also concludes that while quite clearly at a regional basis a large scale reduction in deer density is bound to reduce overall numbers of DVCs, at a more local scale at which culls would generally occur, several other factors become increasingly (more) important than density, including habitat connectivity, safe crossing areas and traffic flow.

Vegetation Management

Vegetation Management – another, perhaps obvious, conclusion from our own analyses and various other authors, is that risk of accidents is greatly increased where dense vegetation comes right down to the roadway. Deer, especially the smaller species such as roe and muntjac, favour scrubby areas for the food and shelter that they offer and so are inclined to come closer to the roadway. At the same time, the 'advance warning' that drivers may get of deer near the road is reduced by screening vegetation, whilst the visibility to the deer themselves of approaching traffic is also reduced.

Removal of scrub and woodland from a margin at the road edge may have benefits in increasing driver awareness of deer and vice versa (e.g Waring *et al*., 1991). However, major clearance of woodland from large stretches of road verge would be detrimental to other environmental interests and is likely only to be justifiable in particular black-spots. The method and timing of removal of roadside vegetation may also be critical, as the subsequent re-growth of young shoots within cut-over areas may become attractive for foraging deer at certain times of the year (Rea, 2003).

Increasing driver awareness

Deer warning road signs are the most frequently used measure to reduce deer-vehicle accidents. No evidence exists that these standard highway signs actually help at all in reducing DVCs. It is likely that they will be of benefit only if erected solely on approaches to known regular crossing points, where the message will be reinforced by a high proportion of drivers having actual experience of seeing deer cross near that point. In practice, warning signs are relatively rarely so precisely targeted and usually, more generally alert drivers to increased probability of deer on the road ahead over a stretch of several miles.

Dynamic signage.

Various suggestions have been made to increase the effectiveness of such signs. Driver habituation might be reduced where signs are only exposed at particular times or seasons where accidents are known to be more frequent. Alternatively, lighted signs might be illuminated only if vehicle speeds in known problem areas exceed some (advertised) threshold level, or specifically when large animals approach the roadway. Such 'dynamic electronic signage' systems have now been tested in several areas in the US and in Europe and do appear to have good potential (e.g. Huijser and McGowen, 2003). Costs of animal-activated systems, which are mostly based on either radar or heat-sensing infra-red detection of animals near the carriageway to trigger illumination of a digital road signs, tend to be relatively high (£ 50 to 75 K). Cost/benefit studies are much needed to look into the relative effectiveness of such animal-activated signs, compared to cheaper vehicle activated signage. The latter type of electronic signs are designed and already in widespread use as traffic calming in urban and rural accident black-spots, through displaying real-time speed of on-coming vehicles to alert drivers to their speed and encourage safer driving. Their installation in areas of high deer collision risk would seem well worth trialling.

Safer crossing points

As noted above, highway deer fencing is at its most effective if it seeks not to prevent all animals crossing the road, but to direct them to safer crossing points.

On roads carrying high volumes of traffic, such crossings may include purpose built wildlife underpasses or 'green' bridges, as are now increasingly installed in new-built roads in continental Europe to preserve or increase connectivity of wildlife habitats fragmented by roads (see COST, 341). The ideal dimensions and high associated costs of such structures if designed to maximise usage by animals including the larger deer species (from 15 to over 40m wide) will only rarely be possible to justify through predictable savings to the economy via enhanced road safety and reduced animal collisions alone; and these may generally thus only be a viable option where other multiple environmental and conservation benefits will arise.

Safe Crossing Point in Use.

However, in cases where the primary concern is road safety, ratherthan enabling free interchange of deer from populations resident to either side of the road, then adaptation of other structures such as farm accommodation bridges, viaducts, or cattle-creeps may help to provide a 'bolt-hole' for those deer determined to cross and alleviate pressure from fences. The most likely types of structures to be used by deer will be bridges or underpasses already close to some concealing cover, and/or this may be further enhanced through planting and by provision of deer-fencing to funnel animal movements towards the passage. A good example how even large wild deer may become accustomed to using such structures is shown in the photograph above taken from recent video footage filmed by us on a narrow (4m) bridge over the six-lane wide M25 London orbital road. Deer use this bridge and a number of other structures not only at night but sometimes even during full-daylight and peak traffic flowing beneath.

Finally, on non-trunk roads of relatively low traffic volume/speed, consideration may given to use fencing to deter deer from crossing in areas of poorest visibility (such as at corners or blind summits), but guiding them to areas where it is safer to cross the carriageway or even guiding them to specially-constructed 'cross-walks' i.e. locations where animals may actually cross on the carriageway surface, but in well-delimited and well-signposted locations, thus limiting crossing to just a few defined areas of good visibility and where proper warning can be given(e.g. Lehnert and Bissonette, 1997).

In offering the above review and general recommendations of what may be the most effective measures, we would emphasise that this represents merely our best current advice. Due to a degree of context-related variability in the effectiveness and cost-effectiveness of various measures, actual mitigation will be dependent on local conditions. It is clearly crucial that each mitigation scheme should be based on good quality survey information, and tailored to the particular local situation and identified deer movement patterns.

Conclusion

Concern in preventing collisions between road traffic and deer (or other wildlife) has in the past often tended to be treated foremostly as an animal welfare issue and funding allocations to address this

have tended to be minimal. It is becoming increasingly clear however, that in addition to the animal welfare implications and the effects of roadkill on population size of a number of species, there are also very real major costs to the economy. Human injury RTAs alone, involving deer, are estimated to incur over £40m to the UK economy annually, with damage to vehicles conservatively put a further £11m. Greater consideration and expenditure on measures to reduce deer and other animal road casualties therefore seems well justified not merely for ecological reasons, but also based on substantial potential savings and benefits through enhanced road safety.

The National Deer Collisions Project remains very much 'work-in-progress' and further submissions of records from anyone with information on deer road kills or related accidents are still required throughout 2005/6. A date for incidents is usually essential to identify potential duplication, together with an OS grid reference (remembering to give the Easting before Northing to avoid too many deer collisions being logged in the sea!) Alternatively, a simple description of the location, such as two miles west of [place] on the [road/number] can be used with the date. The more information provided the better – such as the species of deer, roadside habitat, time of day, mitigation measures present and so on. Records can be submitted online via the project website and may include any incidents, even of just deer carcasses seen by the roadside. There are procedures in place to identify possible duplicate records, and it is important not to assume that someone else will already have reported it. For contact details and further information see the project web-site www.deercollisions.co.uk or mail us at info@deercollisions.co.uk .

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Jochen Langbein and Rory Putman are both independent wildlife research and deer management consultants, and together oversee the National Deer Collisions project on behalf of The Deer Initiative.

New Articles Needed

Articles for *In Practice* are always needed.

Each page takes about 1,200 words and papers are welcome up to 4 pages, preferable in 1-page units.

It helps to have articles with good quality illustrations, photos or slides.

We reserve the right to edit or not to publish but most IEEM members who have submitted articles to date have had them published.