



Llywodraeth Cynulliad Cymru
Welsh Assembly Government

Wild deer management in Wales

**An issues paper to inform the
preparation of a management
strategy and action plan for wild
deer in Wales**



Contents

Introduction and explanatory note	3
1. Background: wild deer in Wales	5
2. Current deer management in Wales	8
3. Key issues currently influencing deer and deer management in Wales	11
4. Government policy and deer management in Wales.....	19
5. Conclusions	20
Key areas for action	21
References and selected reading	23
Annex 1: Summary analysis of wild deer management issues in Wales .	25
Annex 2:	30
Annex 2	31
Annex 3:	32
Annex 4: form for stakeholder feedback	33



Introduction and explanatory note

Although public awareness of wild deer in Wales is still fairly low, the last few decades have seen an increase in deer numbers and in distribution, as in other parts of the UK. Impacts on agriculture, forestry and vulnerable habitats are becoming more obvious, as are the risks of collisions with deer on the roads, and the potential role for deer in the epidemiology of certain diseases. At sustainable population levels there are also positive benefits including the production of venison, revenue from stalking and potentially, wildlife tourism. Not least, the native deer species (red and roe) are a key part of our natural heritage.

Compared to the rest of the UK, overall deer impacts appear to be relatively low in Wales at present. However, as wild deer populations increase and their distributions expand, issues that have been affecting other parts of the UK are likely to become more prevalent in Wales. In the near future the challenges of ensuring sustainable and healthy populations of wild deer in Wales will mount. Taking preventative action in Wales now should help avoid the development of the serious problems experienced in parts of England.

Policies in Wales which would affect or are affected by deer management (for example agriculture, forestry, biodiversity) so far have very limited reference to deer management. (The Woodlands for Wales Strategy identifies the need for a strategic approach to deer and the Better Woodlands for Wales Grant scheme offers an example of how deer management can be integrated). Awareness-raising events have also indicated that knowledge and awareness of deer appears to be quite limited among land management professionals (although it is increasing).

For positive and negative impacts alike, it has become clear that a strategic and sustainable approach is needed to manage wild deer in Wales. In February 2008, private and public sector stakeholders met in Rossett¹ to review the present situation, potential future goals and actions, and the role of the Deer Initiative in Wales. One conclusion was that a strategy and action plan for wild deer in Wales was needed to raise awareness, set out the issues and identify solutions and specific actions.

¹ Hosted by the British Association for Shooting and Conservation at their headquarters in Marford Mill, Rossett, Wrexham.



Llywodraeth Cynulliad Cymru
Welsh Assembly Government

In 2009 the Welsh Assembly Government agreed that Forestry Commission Wales and partners would commission a Wales Deer Strategy and Action Plan to develop the necessary co-ordination required to deliver the vision that Wales benefits from its wild deer population. The partnership led by Forestry Commission (Wales), includes Countryside Council for Wales, Deer Initiative Wales and the Welsh Assembly Government.

The first step is to produce this “issues paper”, with key stakeholders, to summarise current knowledge about wild deer in Wales and the key issues for their management, including benefits as well as negative impacts. This paper is based on the conclusions of the Rossett meeting and we are inviting interested parties to consider whether it accurately describes the current situation and takes into consideration all issues relating to wild deer in Wales.

Please send your responses to the questions in this paper, and any other comments on the paper by 15th May 2010 to Jane Holloway, by email to: jane.holloway@forestry.gsi.gov.uk or by post to:

Jane Holloway
Policy and Programme Development,
Forestry Commission Wales,
Welsh Assembly Government,
Rhodfa Padarn,
Llanbadarn Fawr,
Aberystwyth,
Ceredigion SY23 3UR.

Please feel free to use the response form at Annex 4.

Once we have considered feedback from stakeholders, and finalised the issues paper, we will liaise with stakeholders on a draft *Deer management strategy and action plan for Wales*, expected in July 2010.

Please note: responses to this paper may be put into the public domain unless you indicate that you do not wish them to be available to the public.



1. Background: wild deer in Wales

Wild deer are still considered a rarity by most in Wales and there often appears to be very little awareness or knowledge of their existence. This is even evident in areas where deer are present in quite significant numbers. In areas where fallow deer are present there is a greater awareness probably because they are more visible and they are involved in more deer-vehicle collisions (DVCs) and near-misses. In areas where roe, muntjac or red are present there is little or no awareness even among landowners and land managers on whose land the deer are present, unless the deer cause local negative impact.

Despite this lack of awareness, deer are now more common and widespread in Wales than they have been for hundreds of years. The rest of this section outlines what we know about the development of the current distribution of wild deer in Wales.

The recent history and current distribution of deer populations in Wales

From the late middle ages, through a combination of overhunting and habitat change, the native roe and red deer seem to have become extinct in Wales by the 1800s, and possibly earlier (see for example Yalden 1998 a, b, and Ward 2005). Later on from the late 19th Century, fallow and some red deer in parks throughout Wales were either released or escaped, and many of these have survived and developed into wild population clusters.

The maps in Annex 2 show the distribution of the 6 species of deer living in the wild in Britain, using data derived from surveys by the British Deer Society. Including information available to the Deer Initiative (DI) from deer managers and others, the distribution of wild deer species in Wales can be summarised as follows:

Red deer

It is believed that the population of red deer now living wild in the Brecon Beacons originated from a deer farm in the 1980s. There are some escapees in the Margam forest area as well as sightings in the Lley Peninsula and Welshpool area.

Roe deer

It is believed that roe deer in Wales have migrated across Wales since the early 1970s from the border with Herefordshire. Releases are also believed to have taken place during the latter part of the 20th century, in Powys and other areas of north and south Wales.



Fallow

The fallow populations that have established in Wales are deer that were introduced in deer parks as early as the 1500s. Large fallow populations can be found in the areas near Abergele, Dolgellau, Welshpool, Llandeilo, Neath Port Talbot, Chepstow and the Wye Valley.

Sika

There is a small population of red/sika hybrids that live in Cardigan that originate from a deer park but now live wild, and anecdotal reports of individual sika in the Wye Valley and Powys.

Muntjac

Sightings of muntjac have been recorded across Wales although it is difficult to determine if these are of established populations or recent releases. Sightings appear to occur frequently along the English-Welsh border in the Wye Valley and north into Powys. There are also occasional reported sightings along the M4 and A55 road corridors in north and south Wales that are believed to be local illegal releases.

Chinese water deer

None are known to exist in Wales although there were unsuccessful attempts to introduce them to North Wales in the 1950s (Slater 1988). It is thought that the introduction failed due to the climate being unsuitable.

Numbers of wild deer in Wales

"How many deer are there?" is a question often asked but very difficult to answer. It is nearly impossible to get absolute figures, as this would require sampling the entire population in an area, and in practice all surveys use techniques that sample a proportion of the population; whether by dung counts or visual transects, infra-red camera, or helicopter. It is important to bear in mind that absolute figures are far less relevant to management than deer behaviour, population densities and population trends.

It is sometimes possible to arrive at very rough figures for the size of deer populations using a combination of sources such as evidence of increase or decrease (e.g. by measuring impacts) and evidence of the number of deer culled every year. As yet there is very little data of this kind for Wales, but stakeholders meeting in February 2008 were invited to discuss their views on the likely current and future levels of deer populations in Wales. These stakeholder views are summarised below:



Species	Stakeholder estimates in 2008	
	Pop. in 2008	Pop. expected in 2015
red	200	250-300
roe	5,000	10,000-20,000
fallow	10,000	12,000-15,000
muntjac	5,000	10,000-20,000

The views of stakeholders at the February 2008 meeting varied, and a wide range of potential factors underlying the expected trends were discussed – ranging from human intervention and landuse change, to habitat and climate change. With the benefit of more recent experience, the figure for muntjac for 2008 would appear to be unrealistic. No member of Forestry Commission Wales (FCW) staff has had a confirmed sighting of muntjac on the entire Welsh Assembly Government estate, where many have seen fallow and roe, and there are very few even anecdotal sightings of muntjac from across Wales in the past ten years. It could be that numbers in 2008 were more like 500-1000.

Q1. Do you agree with this summary of the distribution of wild deer in Wales?

Q2. If not, please state why.



2. Current deer management in Wales

Wild deer are not owned by, or the responsibility of, anyone. A wild deer becomes the property of the landowner when "reduced into possession" i.e. killed or captured, thus a culled deer is the property of the owner of the land on which it dies, a deer killed in a road accident is the property of the owner of the highway, verge or land on which it falls. The status of enclosed deer such as park deer is not so clear, they are generally regarded as "wild" with respect to shooting seasons but in some cases may be regarded as property. There is no clear definition of farmed deer but deer which carry tags which include the agricultural holding number or which are listed as part of a farm enterprise are regarded as domestic livestock and therefore as property.

Key legislation

The Deer Act 1991 (as amended by the Regulatory Reform Deer (England and Wales) Order 2007) sets out the law relating to the killing or taking of deer, including close seasons and the prohibition of certain weapons. Other relevant legislation includes the Wildlife and Countryside Act (1981, as amended), and the Animal Welfare Act (2006). Powers relating to these three pieces of legislation are devolved to the Welsh Ministers.

As the Deer Act is devolved to Welsh Ministers, the Welsh Assembly Government is also responsible for licensing any deer culling in the close season or at night. In practice these measures would only be justified by failure of other means and such licenses are unlikely to be granted (see box below).

Shooting deer in the close season. Section 3 of the Deer Act 1991 provides a so-called "farmers defence" whereby authorised persons may, in the following circumstances shoot deer if they are causing damage in the close season: Has reasonable grounds for believing that deer of the same species were causing, or had caused, damage to crops, vegetables, fruit, growing timber or any other form of property on the land; it was likely that further damage would be so caused and any such damage was likely to be serious; and his action was necessary for the purpose of preventing any such damage. The Regulatory Reform (Deer) (England and Wales) Order 2007 amends the Deer Act to allow individuals to apply for licences for shooting deer during the close season to prevent the deterioration of natural heritage or to preserve public health and safety.

Shooting deer at night – Under Section 3 of the Deer Act 1991 it is an offence to kill or take deer at night. The Regulatory Reform (Deer) (England and Wales) Order 2007 amends the Deer Act to allow individuals to apply for licences for shooting deer at night where it is not possible to effectively control deer by other means.

(Please refer to the Deer Initiative Best Practice Guides for more information.)



Deer management activity

In 1999 A Deer Management Programme, later to become Deer Initiative Wales, was established through a partnership of FCW, the Countryside Council for Wales (CCW), the National Farmers Union (NFU), the Farmers Union of Wales and the Timber Growers Association (now ConFor) with the aim of establishing advice, research and support to landowners in Wales to manage wild deer effectively. In parallel, in England the Deer Initiative (a wider partnership of private and public sector organisations) was being established and in 2003 in order to increase the scope of cross-border and strategic activities, the two initiatives combined into the Deer Initiative (England and Wales) that is active today. Currently a project officer (0.5 Full-Time Equivalent) is supported by funding from FCW, CCW and the Welsh Assembly Government to provide information, advice and support to landowners and managers in Wales regarding deer issues. The Welsh Assembly Government focus is on deer and disease.

Wild deer regularly cross site boundaries, and so co-operation in their management is crucial. They can only be managed successfully through co-operation and collaboration between a wide range of interests, public and private, statutory and voluntary. In particular it is vital to ensure the collaboration of local landowners and managers who can operate at the landscape scale, which matches the scale of the deer populations themselves. This is key to the approach of the Deer Initiative and a collaborative approach is fostered in Wales, including through Deer Management Groups where appropriate.

Organisations currently involved in deer management (including monitoring, fencing and culling on their land across Wales include:

- Forestry Commission Wales
- National Trust Wales
- Woodland Trust
- Ministry of Defence
- Wildlife Trusts Wales
- Private landowners and estates

Private deer stalkers shoot deer in all areas where they are present in Wales. The level and impact of that culling is unknown, however anecdotal evidence suggests that most levels of recreational stalking productivity are low and this is supported by evidence obtained through the completion of Better Woodlands for Wales Deer Management Plans There is little commercial



guided deer stalking in Wales and of around 15,000 deer stalkers UK-wide (i.e. those stalkers who are members of the British Association for Shooting and Conservation) there are only in the region of 300 deer stalkers registered as living in Wales (Marshall and McCormick, 2006).

Currently, deer management objectives and activities of landowners and managers in Wales are focused on:

- Protection of new tree planting and restock (particularly broadleaf) where objectives range from timber production to protection of woodland habitat for conservation and amenity value.
- Impact monitoring to ensure that appropriate deer management is introduced effectively and efficiently as required.
- Protection of the public through reduction of DVCs.
- Protection of health and welfare of deer in high deer density areas.
- Recreational stalking (including as a generator of revenue and employment).
- Venison as a sustainable by-product of deer management (also generating revenue and employment).

Research

Sustainable deer management relies on sound scientific evidence, and research is therefore a key part of the equation. FCW and CCW are members of the Deer Research Working Group, which is facilitated by the Deer Initiative and chaired by DEFRA. This brings together a range of stakeholders with different perspectives on deer research to agree future research requirements. Among the priorities identified by the group so far, research into predicting future changes is of particular importance in Wales, in order to investigate likely responses of deer populations to the increased woodland cover and connectivity promoted in the Woodlands for Wales Strategy. Other relevant priorities include monitoring and population estimates, wild deer and disease transmission, deer-vehicle collisions awareness and mitigation, and the link between deer and woodland biodiversity.

In the UK, there is a national budget dedicated to research which is managed centrally by DEFRA on behalf of the Welsh Assembly Government. CCW has limited research budgets, while FCW research is largely delivered through the GB Forest Research agency.

Q3. Does this give an accurate picture of deer management in Wales today?

Q4. Are there aspects we have missed?



3. Key issues currently influencing deer and deer management in Wales

Trends in deer populations and distribution

Milder winters, changes in land use, agriculture and habitat have all contributed to an increase in deer abundance (Ward 2005). There is no evidence that recent increases in population number and range will not continue. As well as increases for species already well-established in Wales (red, roe, fallow), it is likely that other species (in particular muntjac and sika) will also be reported in the future. Information from work carried out by the DI (particularly research into impacts) indicates that while problems with fallow on forestry are being addressed across Wales, recent reports of roe impacts in mid Wales suggest this region is where there is likely to be increasing deer impacts that will need to be addressed. Whilst the distribution of wild deer in Wales is relatively clear, information regarding deer numbers and density is scarce and is generally limited to fallow.

Introduction of non-native species

Of the four non-native species living wild in Britain (fallow, sika, muntjac and Chinese water deer), fallow, muntjac and sika are present in Wales. Fallow are considered naturalised, but under schedule 9 of the Wildlife and Countryside Act (1981, as amended) it is illegal to release or allow sika or any sika hybrid or muntjac deer to escape into the wild anywhere in the UK. This will also apply to Chinese water deer from April 2010. Although release of these species is prohibited, in certain circumstances a licence under section 16(4) of the Act may be issued (by the Welsh Assembly Government) to allow limited releases, for example, of animals that have become entrapped or have been rehabilitated. Restrictions are likely to be placed on the conditions under which, and the locations in which, such releases may take place.

It is believed that both native and non-native deer are being introduced (in the case of non-natives illegally) for shooting purposes throughout Wales, although probably not in great numbers. Other introductions are possibly from animal rescue centres releasing treated deer.



Trends in land ownership and management

Current trends including urbanisation, changes in livestock levels, and the move towards biomass, horticultural and other alternative crops can alter or increase habitat and food availability for deer and as well as supporting the expansion of wild deer populations, deer impacts may become more noticeable in these new sectors. The issue of urban deer in particular is a developing issue, currently at an early stage in Wales.

Trends in public awareness

In terms of deer management the rural nature of much of Wales and the strong historic and cultural links to rural life which still exist even in many urban areas of North and South Wales mean that there is often less opposition to culling wild animals than in England. Media stories on deer culling and wildlife management in general have not received the level of condemnation that they often do in other parts of the UK. Deer management activities including the need for culling and development of legislation has also been supported by governmental organisation in a proactive way using lessons learnt from England and Scotland.

Impacts on biodiversity

Wild deer can play an important role in woodland ecology in particular, but have impacts on a wide variety of natural and semi-natural habitats. In contrast to woodland, maintenance of open habitats may actually require some grazing/browsing (to prevent encroachment of scrub and succession of woodland) and so be much more tolerant of grazing impacts.

Deer can cause significant damage to sites by simplifying woodland structure to the extent where other species start to decline as a result of habitat loss i.e. dormice, woodland birds, some invertebrates (lepidoptera). For example, grazing by muntjac has been associated with ground flora impacts and negative impacts on butterflies and bumble bees, whilst in other contexts grazing can have positive effects by maintaining open areas for basking butterflies and ground flora suitable for larvae. An apparent decline in abundance and breeding success in some (particularly shrub-breeding and insectivorous) woodland bird species has been found in areas under sustained high deer impacts (Watson et al. 2009).



In Wales, while some areas may be able to support an increase in deer numbers (which may improve grazing on some sites for conservation), monitoring of deer impacts will be essential to allow early intervention. In November 2008, data from CCW showed negative deer impacts in 9 SSSIs and 2 Special Areas of Conservation, namely the Wye, Elan and Elwy valleys (see the map at Annex 3).

Impacts on forestry

Different crop types and habitats have different carrying capacities for wild herbivores such as deer. Within the framework of landscape-scale management we should therefore manage wildlife according to these varying tolerance levels (rather than seeking to control overall population numbers). It will be important that the effects and impacts of mammal damage are mitigated at the planning stage by good woodland design and forest planning and support for deer management at the landscape level.

In commercial forestry, deer damage appears to be related to deer density, but the relationship is likely to be non-linear: damage levels tend to remain low, up to certain thresholds above which impacts can become significant. Four deer per 100ha has been suggested as a tolerable density, but this is largely untested. Even at a given density, damage levels show substantial variation depending on a number of environmental and silvicultural factors (Watson et al 2009).

Natural regeneration in unfenced native woodlands seems to be suppressed at deer densities above 4-5 per 100ha for the larger deer species; while one study suggests roe densities of 25 per 100ha may be tolerable. For coppice damage, there is little evidence of a clear relationship with deer density or site usage (Watson et al 2009).

Increases in the percentage of broadleaves planted as part of the Woodlands for Wales Strategy have increased the vulnerability of restocks to mammal browsing. The increase in the range, distribution and density of both roe and fallow deer has led to increased site vulnerability in areas where deer browsing was not previously considered an issue.

In Wales, landowner surveys carried out in 2000 and 2005 (Symmons 2009) covered around 24,000 ha and 12,000 ha of private forestry respectively. In private forestry reported observations of deer impacts have increased eight fold over the 5 year period. The number of respondents to the 2005 survey was significantly lower than in 2000 and results suggest that deer damage and private sector expenditure on deer management has decreased, but this is likely to be as a result of a drop in timber prices and the reduction in significance of relative deer damage. Whilst the number of sites with deer management increased we saw a move from short term expensive deer management activities such as fencing with occasional culls towards more regular deer culls and minimal use of fences.



Woodland management practices have certain vulnerabilities to deer impacts:

- Where traditional thinning results in more light reaching the forest floor and more ground flora, this and the anticipated biodiversity benefits would be vulnerable to deer.
- For transformation thinning towards continuous cover management, regeneration of tree seedlings is an important component, but these are vulnerable to browsing and there is a risk that succeeding generations of trees are lost and the woodland progressively declines. Effective deer management is a pre-requisite of management by Continuous Cover Forestry.
- Coppicing will not survive continued browsing, with the risk of no regrowth and no subsequent crop to harvest.
- For clearfelling, new trees will not survive if deer pressure is too high.
- As well as undermining site specific goals, deer impacts could influence forest ability to actively sequester carbon and new aspirations to increase forest cover.

In Wales, types of silvicultural system now being adopted on the Assembly Government woodland estate and promoted by the Better Woodlands for Wales (BWW) scheme include “Low Impact Silvicultural Systems” (LISS) and “Alternatives to Clearfell” (ATC). This will improve habitat quality for deer but also potentially reduce opportunities for management purposes. Ultimately these systems may enhance carrying capacity for deer, but in the short term the natural regeneration is likely to be very vulnerable to deer browsing.

As more woodland comes into productive management, such issues will increase in importance wherever there are wild deer. However, as woodlands start to increase in value to the owners (e.g. for woodfuel) they may become more deer aware, less tolerant of excessively high numbers of deer and more prepared to manage their deer sustainably.

The map at Annex 3 includes shows woodlands under the Better Woodlands for Wales scheme where deer have been identified as an issue.

Impacts on agriculture

Damage to agriculture from deer appears to be related to deer sightings, but no significant correlation of damage with indices of population density has been established. There is no data to suggest what minimum threshold densities might be (Watson et al 2009).

In Wales, landowner surveys were carried out in 2000 and 2005 (Symmons 2009) covering around 84,000 and 81,000ha of farmland respectively. In agriculture damage levels have increased but are not yet significant and landowner expenditure on deer management is minimal. Average deer observations on agricultural farmland have increased from less than 1 deer/100ha in 2000 to 4 deer/100ha in 2005. Little deer



management occurs on farmland, suggesting farmers are currently tolerant of deer damage to agriculture except in isolated incidents.

Deer-vehicle collisions (DVCs)

Across the UK there are up to 74,000 deer involved in collisions every year. The costs in terms of human injury, animal welfare and material damage are significant. There is very little data available on deer-vehicle collisions in Wales, which has less than 1% of UK DVC records. Based on a conservative estimate extrapolated from RSPCA data, the total number of deer involved in collisions with vehicles in Wales is likely to be in the region of 100-250 a year. The remoteness of deer inhabited areas combined with low traffic densities and lack of long stretches of fast road are probably contributory factors to the low numbers of DVCs recorded. However, collisions with deer do occur, and as deer populations increase, the rate of DVCs is likely to go up, and driver awareness as well as deer management efforts will be crucial

The map at Annex 3 includes 116 DVC reports from 2000 to 2009 with sufficient location detail to enable mapping. As with other parts of the UK, a high level of under-reporting and lack of data is a serious obstacle, but what the map does indicate is where the highest incidences of DVCs are occurring: in North East Wales, Carmarthenshire, the Wye Valley and Neath Port Talbot.

Climate change

Future changes in overall conditions as well as in patterns or regularity of precipitation, temperature etc are uncertain, but are likely to affect deer in terms of fecundity, survival, disease, natural habitats and land use. Some land use and conservation activities for climate change mitigation (such as ensuring habitat diversity and connectivity) are likely to provide wild deer populations with opportunities to expand and increase and, there are some suggestions that the herding species may also increase in range and migratory patterns (Irvine et al 2007).

Habitat connectivity

Sufficient habitat connectivity exists for deer to colonise all of Wales, and current land management practices are generally aiding that process. Strategies such as continuous cover forestry and habitat networks increase habitat connectivity for deer and more specifically increase the need for landscape level management of wild deer.

As deer populations expand and a greater number of human/deer interactions occur (DVCs, garden damage etc) there will be greater awareness, changes in public attitude (e.g. towards lethal control, concern for animal welfare, understanding and acceptance of deer and deer management, and releases of non-natives...) and a greater demand for action, as well as for information/education.



Disease

Deer are either susceptible to or have the potential to act as hosts for a number of diseases, including bovine tuberculosis (bovine TB), bluetongue, foot and mouth disease and Lyme disease (the latter of which affects humans).

Research by the Food and Environment Research Agency (FERA), formerly Central Science Laboratory (CSL), undertaken in 2005-06 to assess the role of deer alongside badgers with regard to exposure of cattle to *M. bovis* concluded that deer are likely to pose a lower TB risk to cattle than badgers throughout most of South West England and Wales (Ward et al. 2007). In 2007 the Deer Initiative (DI), with support from Forestry Commission Wales, was appointed by the Welsh Assembly Government to carry out research and training with respect to bovine TB in wild deer on public estates in Wales in over the period of Oct 2007 – March 2008. The project was extended in 2009 to include private estates in Wales.

The aim of the work was to increase the quality of data available to support the FERA model and increase awareness of the risks associated with bovine TB in wild deer in Wales. The level of *M. bovis* in the samples analysed is considered low and supports the conclusions made by Ward et al. (2007) which assessed the overall risk of deer with bovine TB to cattle to be less than the risk posed by badgers. The research indicated the presence of *M. bovis* within the fallow population in Wales, particularly in areas of relatively high density and confirms the need for continued monitoring and sampling in bovine TB hotspot areas.

The DI is also helping to co-ordinate a blood sampling programme with Liverpool University Veterinary Faculty, The University of London Royal Veterinary College, and The Institute for Animal Health at Pirbright. Liverpool University are investigating tick borne diseases in UK deer, notably Borreliosis (Lyme disease), *Anaplasma phagocytophilum* (the causal agent of pasture fever and facilitating pathogen in tick borne fever of sheep), *Babesia divergens*, the agent of redwater fever in cattle and Louping ill virus. London University are investigating the seroprevalence of Borrelia in wild deer, while the Institute for Animal Health at Pirbright is investigating Bluetongue.

Although evidence so far is that the risk presented by wild deer to livestock and humans is low, it is important to maintain surveillance and continue research and capacity building efforts so that control measures can be quickly and effectively put in place as needed. All research carried out relating to wild deer and disease in Wales has stressed the need for further monitoring of the increasing deer populations, and increased awareness of deer related disease issues.

Venison

Wild venison is a natural product of sustainable deer management. Stalking and venison production can also provide important sources of employment, and the revenue



generated can offset the costs of deer management, and of the impacts (e.g. on agriculture and habitats) of the deer themselves. Local production, processing and consumption of venison can help to integrate deer management, supporting local markets and reducing “food miles” as part of a sustainable, low-impact, food economy.

Both wild and farmed venison have enjoyed a surge in popularity in recent years in the UK, thanks to a number of factors, including the growing interest in healthy food combined with efforts to develop standards and marketing.

Stalkers, processors and other practitioners need to adhere to high standards in health, safety and hygiene, including compliance with EU and domestic legislation. The Deer Initiative has produced **Best Practice Guides** for England and Wales, to complement those produced for Scotland by the Deer Commission for Scotland. They include guides on carcass handling, storage and preparation, and will be updated regularly to reflect any changes in legislation and best practice.

Key principles underlying EU legislation are traceability and hygienic practices underpinned by training. Given the fragmented and often small-scale nature of the game meat industry, legal requirements for training, registration, inspection etc can be complex and difficult to follow.

Individuals are recommended to research the requirements in order to determine what they need to do in their case. The Deer Initiative has helped the FSA produce a guidance note, which is available on their website:

<http://www.food.gov.uk/foodindustry/meat/wildgameguidance>

It is believed that in the region of 1000 to 1500 carcasses are sourced and sold locally in Wales with approximately 700 originating from the public estate.

Poaching

Poaching is occurring in most areas of Wales where deer are present. The DI partnership supports a Poaching Priority Officer for England and Wales. FCW, CCW and the Environment Agency Wales all have designated Wildlife Crime Police Officers whose work is regularly supported by the DI in Wales, particularly in hotspots in the Wye Valley, Neath Port Talbot, Ceredigion and north Wales area. Deer poaching appears to not only be for profit (i.e. selling venison) but also for “sport”, including illegal night shooting or using dogs to “course” or run deer down, often whilst betting on the prowess of the dogs. There are serious deer welfare issues in these poaching hotspot areas. There are often significant links between poaching incidents and other rural crime.



There is good anecdotal evidence to suggest that there is a significant level of night shooting of deer in Wales, many of these deer are shot by persons legally holding firearms, with permission to shoot on that land, however many of these persons are using "non deer legal firearms (sub .240 cal) and shooting during the night with the aid of a lamp while legally pursuing foxes.

Q5. Are the issues here described accurately?

Q6. Do you know of any additional evidence?

Q7. Have we missed any key issues?



4. Government policy and deer management in Wales

Deer and deer management have impacts on certain existing Government policies, in particular Welsh Assembly Government policies under the headings of:

- Environment and countryside (in particular - climate change, energy and fuel, environment conservation and management, farming and countryside, animal health and welfare, food and fisheries, and woodlands), and;
- Business and economy (economic, regional and local development).

Not only does deer management need to be sensitive to these related policies, but these other policies themselves should be “deer-proofed” where the opportunity arises. The impacts of deer are highlighted in the recent Woodlands for Wales strategy, and the following policy areas need to have reference to deer management (in alphabetical order):

Agriculture and related grant schemes
Animal health and Welfare
Biodiversity conservation
Biomass and biofuels
Climate change and land use
Food Standards
Non-native species
Policing and public safety
Recreation and Access
Rural and countryside based learning and training
Transport and highways
Wildlife management
Woodlands and forests

Q8. Are there other policy areas that should consider deer management?



5. Conclusions

In the forthcoming draft *Deer management strategy and action plan for Wales*, the Welsh Assembly Government and its partners will outline the vision and strategic objectives for the management of wild deer. This will involve consideration, with stakeholders, of the relative importance of various issues and related activities. To aid this process, the table in Annex 1 summarises an analysis of the deer management issues, based on the opportunities and threats posed by the various issues, and the strengths and weaknesses of the existing approach.

Following work done so far, including discussions at the February 2008 stakeholder meeting in Rossett, it is clear that there is a need for a more structured deer management strategy and co-ordinated effort to address the key issues.

A vision for wild deer management in Wales

To support the strategy and action plan, a shared vision for wild deer management in Wales will need to be developed. Reflecting the views of participants at the Rossett meeting and Ministerial direction, the following sets out a vision for wild deer management in Wales:

“Wales benefits from a wild deer population in balance with the natural, social and economic environment”

Q9. Does this vision reflect your views/the views of your organisation?



Key areas for action

Building on the stakeholder review meeting in February 2008, the evidence presented here highlights the need for action in a number of areas, in particular:

A. Policy

- A Deer management strategy and action plan for Wales should be developed which raises awareness and sets out the issues along with identifying/suggesting solutions. This would be the equivalent of the DEFRA Action Plan and should include species specific actions.
- Other policies and strategies developed in Wales need to be 'deer proofed'

B. Research & monitoring

Although this could be difficult and expensive to achieve, there is a need for:

- impact monitoring
- map & gap exercise on current evidence base
- agreement on methodologies
- better sharing of information
- ongoing density & distribution surveys (including Thermal Imaging work)
- disease, deer health and welfare monitoring to be maintained and improved
- modelling of populations and habitats and deer reaction to changes

C. Education & awareness raising

- need to alter current perceptions ('no deer' or 'not a problem') and demonstrate that action is needed now
- use smart mechanisms to disseminate information – e.g. existing routes and organisations
- increase awareness among agents and landowners beyond the current BWW route, e.g. through agri-environment schemes, land agents etc
- a communication strategy is needed that identifies key messages, audience segments, materials and dissemination routes
- greater awareness and information on the social and economic value of deer (including benefits of venison) as well as their negative impacts is needed
- dissemination of best practice

D. Management

- ensure best practice in all aspects of deer management
- combine incentives with enforcement to achieve appropriate management
- adopt an impact assessment based approach
- consider deer more widely in forest design so that their impacts and management can be factored in to planning and design at an early stage



- more discussion is needed on protection/ remedies for SSSI's
- widen management knowledge and contact base beyond current BWW planners
- include venison supply chain and links to agriculture and food
- management to maintain public safety – eg DVC work

Q10. Do you agree with this list of key areas for action?

Q11. Should any be removed or added?

Q12. Please list three issues that you feel are of particularly high priority.

Q13. In the table at Annex 1, please feel free to annotate the "remarks" column, and include with your response to the paper.

Q14. Do you have any other comments?



References and selected reading

- Deer Initiative (2009) Deer and Bovine Tuberculosis in Wales. Welsh Assembly Government contract reference: A/ABA/06/31/205. Report produced by Jackie Symmons on behalf of The Deer Initiative.
- Fuller, R.J. (2001) Responses of woodland birds to increasing numbers of deer: a review of evidence and mechanisms. *Forestry* **74** (3), 289-298.
- Fuller, R.J. and Gill, R.M.A (2001) Ecological impacts of increasing numbers of deer in British Woodlands. *Forestry* **74** (3), 193-200.
- Gill, R.M.A (1992a) A Review of Damage by Mammals in North Temperate Forests: 1. Deer. *Forestry* **65** (2), 145-169.
- Gill, R.M.A. (1992b) A Review of Damage by Mammals in North Temperate Forests: 3. Impact on Trees and Forests. *Forestry* **65** (4), 363-388.
- Irvine, R.J. Broadmeadow, M., Gill, R.M.A and Albon, S.D. (2007) Deer and Global Warming. How will climate change influence deer populations? *Deer* **14** (5), 34-39.
- Kirby, K. J. (2001) The impact of deer on the ground flora of British broadleaved woodland. *Forestry* **74** (3), 219-229
- Mitchell, F.J.G and Kirby, K.J. (1990) The Impact of Large Herbivores on the Conservation of Semi-natural Woods in the British Uplands. *Forestry* **63** (4), 333-353.
- Marshall, P. and McCormick, A. (2006) The BASC Deer Stalking Survey, 2006. British Association for Shooting and Conservation, 2006.
- Mayle, B.A. and Fletcher, J. (1998) Management of deer in Wales: 1996 Survey. Construction of a spatially related database and examination of the relationships between deer species and ground cover. Report prepared for Forestry Authority Wales 1998 by the Woodland Ecology Branch, Forest Research, Alice Holt, Farnham, Surrey, UK.
- Mayle, B.A., Peace, A.J. and Gill, R.M.A (1999) How Many Deer? A Field Guide to Estimating Deer Population Size. Field Book 18. Forestry Commission Publication, Forestry Commission Edinburgh, UK.
- Putman, R.J. (1986) Foraging by roe deer in agricultural areas and impact on arable crops. *Journal of Applied Ecology* **23**, 91-99.
- Putman, R.J and Moore N.P. (1998) Impact of deer in lowland Britain on agriculture, forestry and conservation habitats. *Mammal Review* **28** (4), 141-164.
- Slater, F. (1988) Nature of Central Wales. Barracuda Books Ltd Buckingham YK.
- Smart, J.C.R., Ward, A.I., White, P.C. (2004) Monitoring woodland deer populations in the UK: an imprecise science. *Mammal Review* **34** (1), 99-114.
- Stewart, A.J.A. (2001) The impact of deer on lowland woodland invertebrates: a review of the evidence and priorities for future research. *Forestry* **74** (3), 259-270.
- Ward, A.I. (2005) Expanding ranges of wild and feral deer in Great Britain. *Mammal Review* **35** (2) 165-173.
- Ward, A.I, Etherington, T.R. and Smith, G.C (2007) A quantitative risk assessment of the role of wild deer in the perpetuation of TB in cattle in Wales. Central Science Laboratory for the Welsh Assembly Government.
- Ward, A., Etherington, T. and Ewald, J. (2008) Five years of change. *Deer* **14**(8): pp17-20.
- Watson, P., Putman, R., Langbein, J. and Green, P. (2009) A Review of the threshold densities for wild deer in England, above which negative impacts may occur. Deer Initiative research report to Defra, June 2009.
- Welsh Assembly Government (2007b) 'One Wales': A progressive agenda for the government of Wales. An agreement between the Labour and Plaid Cymru Groups in the National Assembly 27th June 2007.
- Welsh Assembly Government (2008) Rural Development Plan (RDP) for Wales 2007-2013.



Llywodraeth Cynulliad Cymru
Welsh Assembly Government

White, P.C.L., Smart, J.C.R., Bohm, M. Langbein, J. and Ward, A.I. (2004) Economic Impacts of Wild Deer in the East of England. The Deer Initiative, PO Box 2196, Wrexham LL14 6YH.

Wilson, C.J. (2003) A Preliminary Estimate of the Cost of Damage caused by Deer to Agriculture in England. Report published by DEFRA December 2003.

Yalden, D.W. (1998a) A History of British Mammals. Poyser, London.

Yalden D.W. (1998b) The Past, Present and Future of Deer in Britain. Population Ecology, Management and Welfare of Deer. Proceedings of Manchester University Symposium 1998.



Annex 1: Summary analysis of wild deer management issues in Wales

Issue	Opportunities	Threats	Current approach	Strength of current approach	Weakness of current approach	(Stakeholder remarks)
<i>Trends in deer populations and distribution</i>	Social benefits (see other issues below) become more widespread; (questionable ecological benefits).	Negative impacts become more widespread. Insufficient capacity to address issues. Health and welfare of deer are affected with high deer densities.	DI Partners are monitoring the situation and making recommendations and introducing deer management as required.	Low resource demand.	Need for more strategic approach. Management issues are likely to exceed current capacity.	
<i>Introduction of non-native species</i>	Richer fauna, potential for wider social benefits. Contribution to global conservation of vulnerable species (e.g. CWD).	NNSs add to negative impacts, and have potential for widespread colonisation and negative impacts (invasiveness). Hybridisation.	At a low level, DI Partners are monitoring the situation. Fallow already 'naturalised' and sika and muntjac already well-established in the British Isles.	Low resource demand.	Existing surveillance and response may not address new releases adequately, and also not address spread of these species.	
<i>Trends in land ownership and management</i>	Changes in land use to more environmentally friendly approaches will identify the threats and opportunities for wild deer across a wide spectrum of land uses at a landscape level.	Small landowner objectives and management practices may conflict with the strategic landscape level approach to deer management.	At a low level the DI and its partners are raising awareness of deer related issues across landowners in Wales.	Focus on limited number of key sites to prioritise resources.	Need for more strategic approach. Management issues are likely to exceed current capacity.	



Issue	Opportunities	Threats	Current approach	Strength of current approach	Weakness of current approach	(Stakeholder remarks)
<i>Trends in public awareness</i>	Deer are charismatic species and can act as a focal point for public opinion on a range of issues such as biodiversity, animal welfare, forest management etc. Increased public awareness of and support for wild deer management would help ensure the development of sustainable and humane deer management, has the potential to reduce DVCs and could give the public more access to venison as well as to tourism and educational benefits. Land management practices connected with deer management, including hunting, are part of our cultural heritage (as well as an important part of the rural skill sector).	As in many other parts of the developed world, an increasingly urbanised public can mean less access to nature and less understanding of sustainable natural resource management. There is also likely to be less support for culling. Lack of public understanding of and support for deer management would undermine ability to deliver it by reducing political support and influencing the activities of landowners and deer managers. This influence could extend to other land management issues beyond deer. It would also undermine venison markets.	Factors determining public opinion are complex and numerous – limited resources are likely to have more effect if targeted on those who are directly concerned in deer management, as is the current situation. For the priority issue of DVCs, a public awareness campaign to influence drivers has already been launched. Venison has been increasing in popularity over the last decade or so, and is being promoted by industry-led campaigns such as “Game to Eat” and “Game’s on”.	Current approach focuses on what we know works. Trying to tackle public opinion more widely is a difficult challenge that would need more information and a strategic approach.	DI Partners are signed up to the principles of sustainable wild deer management, but there is still a need to influence more landowners, deer managers, public and private sector organisations and NGOs. This would mean more chance to influence individuals and the general public.	
<i>Impacts on biodiversity</i>	Positive impacts of low deer densities Native species.	High densities threaten specific flora and fauna especially in woodland habitat. Effect on species and structural diversity.	DI Partners are monitoring impacts on habitat and taking management action as a priority issue.	Focus on limited number of key sites to prioritise resources.	Need for monitoring and remedial action are likely to exceed current capacity.	



Llywodraeth Cynlliad Cymru
Welsh Assembly Government

Issue	Opportunities	Threats	Current approach	Strength of current approach	Weakness of current approach	(Stakeholder remarks)
Impacts on forestry	<p>Value of woodlands for people in terms of aesthetic, recreational and wildlife value.</p> <p>Venison as forest product from sustainable population.</p> <p>Stalking and venison revenue.</p>	<p>Deer not always considered in forest planning and mgt. Economic damage to trees.</p> <p>Sustainability of the forest when regeneration cannot occur.</p> <p>Cost of deer management.</p> <p>Lack of access to or capacity for deer mgt.</p> <p>Culling conflicts with other public uses.</p>	<p>Deer management, impacts and infrastructure now an integrated part of woodland planning processes in both the public and private sector.</p>	<p>Current low-level approach may cover current impacts?</p>	<p>Issues increasing and likely to become much more widespread in near future – need for more strategic approach in the sector.</p>	
Impacts on agriculture	<p>Stalking and venison revenue.</p>	<p>Damage to crops.</p> <p>Cost of deer management.</p> <p>Lack of access to or capacity for deer mgt.</p>	<p>Currently not really on the radar of agricultural sector in Wales other than in a few isolated cases.</p>	<p>Current low-level approach may cover current impacts?</p>	<p>Issues increasing and likely to become much more widespread in near future – increased demand for deer management.</p>	
Deer-vehicle collisions	<p>Wider public awareness of deer and the need for deer management.</p>	<p>Human injury, fatalities; animal welfare; material damage.</p> <p>Cost of mitigation.</p> <p>Lack of access to and capacity for mitigation.</p> <p>Lack of data.</p>	<p>DI Partners are working on this as a priority issue, but low level of activity on Wales reflects low level of reporting of DVCs.</p>	<p>Low resource demand.</p>	<p>DVCs likely to increase, as will need for data and development of mitigation.</p> <p>DVC Project has very limited activity in Wales, compared to England and Scotland.</p> <p>Difficult to measure effects of DVC awareness campaigns.</p>	
Climate change	<p>Increase in deer habitat supporting more deer allowing populations to expand.</p>	<p>Increase in negative impacts associated with higher deer numbers)</p> <p>Other climatic effects may negatively impact on deer.</p>	<p>Not currently being addressed.</p>	<p>N/A</p>	<p>Future woodland and habitat management strategies to complement climate change are not being deer proofed.</p>	



Issue	Opportunities	Threats	Current approach	Strength of current approach	Weakness of current approach	(Stakeholder remarks)
Habitat connectivity	Increase in deer habitat supporting more deer allowing populations to expand.	Increase in negative impacts associated with higher deer numbers.	At a low level DI and partners are carrying out landscape level deer assessments and providing support to collaborative deer management.	Focus on limited number of key sites to prioritise resources.	Need for more strategic approach. Management issues are likely to exceed current capacity.	
Disease	Wild deer can act as a host for some notifiable diseases and zoonoses.	Potential for wild deer to act as reservoirs of diseases affecting livestock, humans and other mammals. Threat to health of wild deer populations, cattle and other wildlife.	DI Partners already involved in disease surveillance as a priority issue.	Limited take-up in private sector.	There is a need to further develop capacity for monitoring and responding to outbreaks.	
Venison	Healthy source of meat. Economic benefit in terms of employment, and revenue which can offset costs of management. Contribution to a sustainable food economy (esp. local production and consumption). Increased public awareness of deer and the benefits of deer management. Checks contribute to disease surveillance.	Public opposition to culling (see below). Culling may conflict with other public uses of the land. Potential lack of capacity in terms of skills, infrastructure, and market supply and demand. Need to ensure high standards of meat hygiene. Issue of lead ammunition as for other game meat.	DI Partners already aim to support the development of venison markets, especially on a local basis.	Existing input is low-level, low-cost and low-risk.	Research in other parts of the UK has identified various weaknesses in the sector and underlines the need for strategic support to ensure the development of venison markets. Little information on venison markets in Wales.	



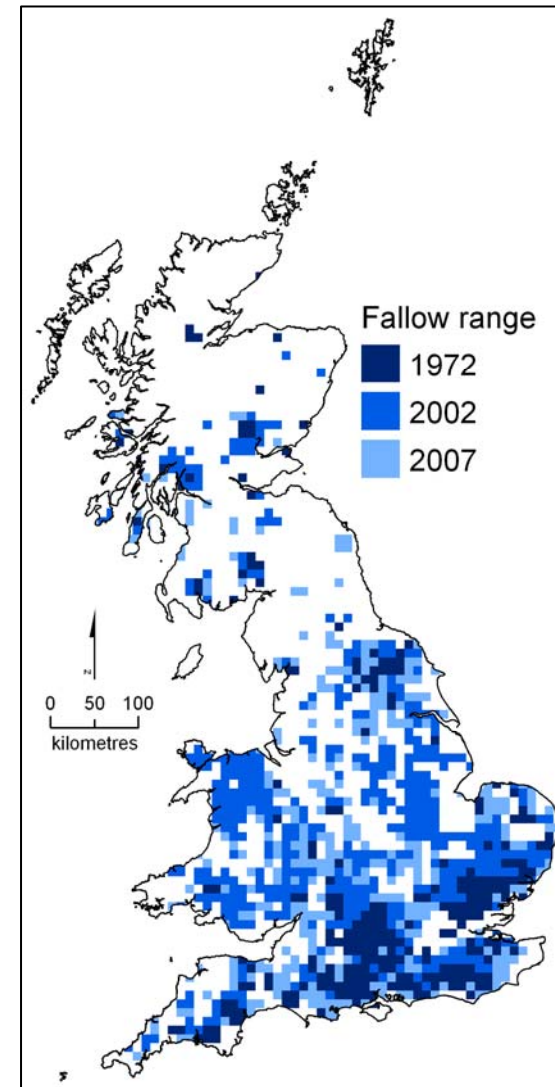
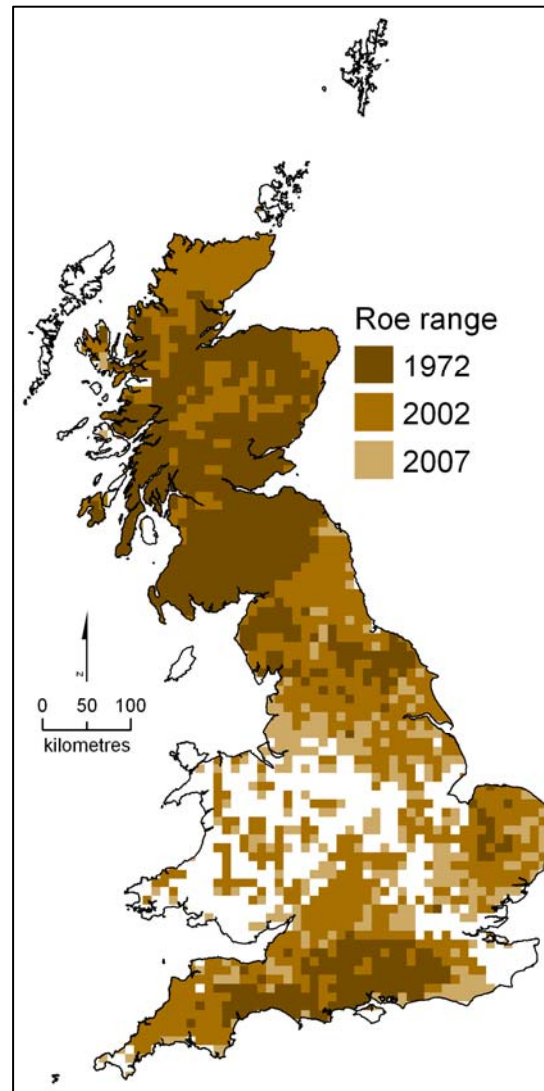
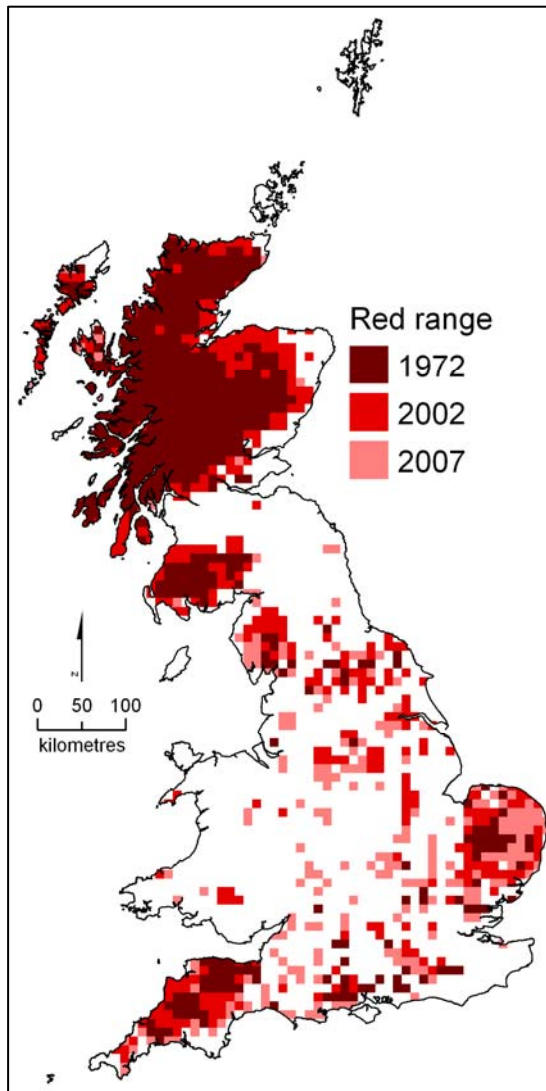
Llywodraeth Cynulliad Cymru
Welsh Assembly Government

Issue	Opportunities	Threats	Current approach	Strength of current approach	Weakness of current approach	(Stakeholder remarks)
Poaching	Opportunity to tackle other elements of rural crime alongside poaching, as well as compliance in the game meat sector with hygiene and traceability. More public concern for and exercise of choice in provenance of game meat. Anti-poaching activities can also raise general public awareness of and support for deer management issues.	Public reputation and acceptability of venison and game meat could become tarnished and threaten support for the game meat sector and deer management. Illegal firearm use. Illegal meat. Danger to the public. Animal welfare. Link to other rural and environmental crimes	DI Partners are already involved in developing and supporting anti-poaching operations, including in Wales.	Current focus is on particular hotspots that do not address wider issues including prevention in other areas	Many anti-poaching activities are still in their infancy, and will require sustained support and development.	



Llywodraeth Cynulliad Cymru
Welsh Assembly Government

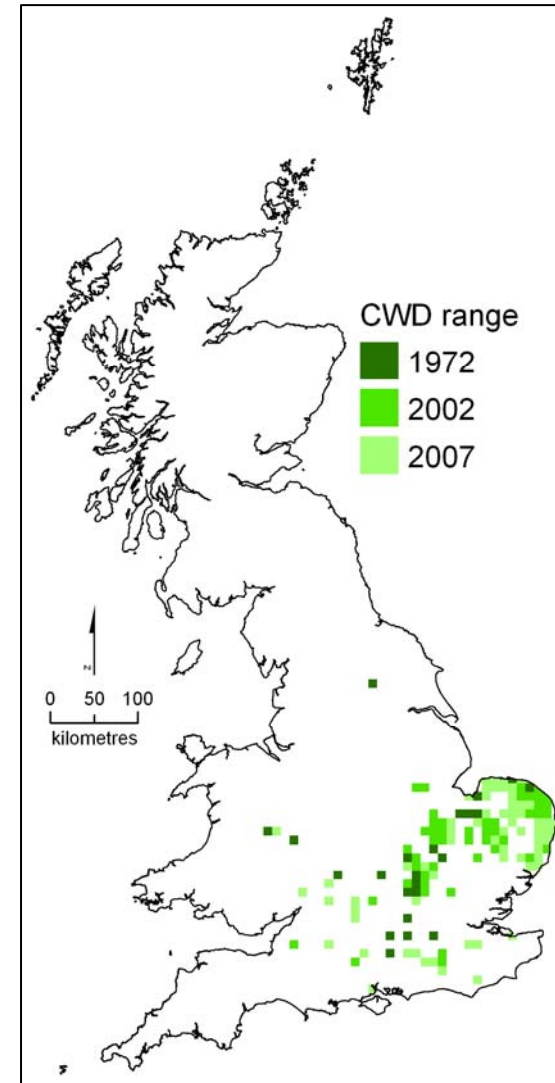
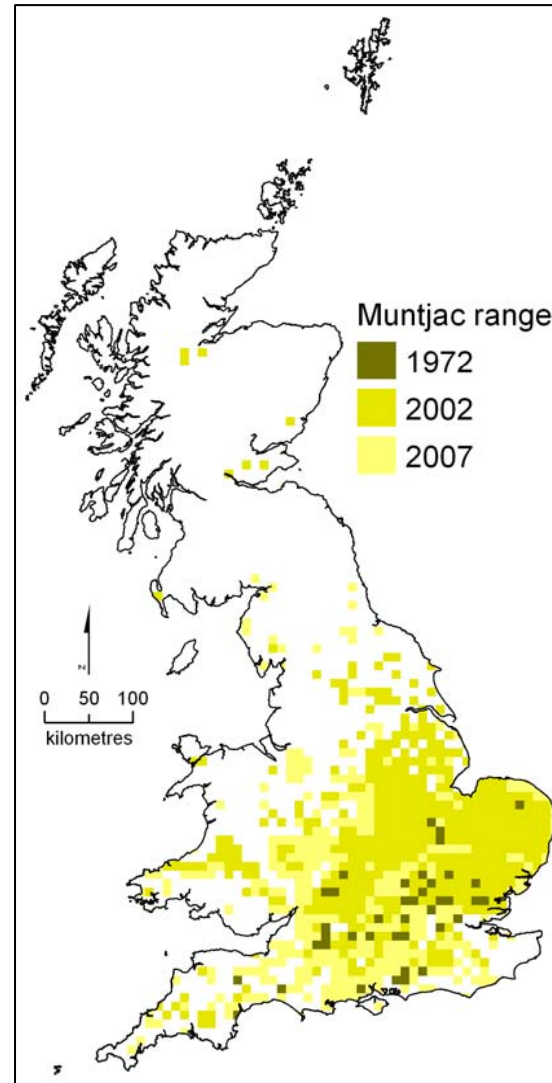
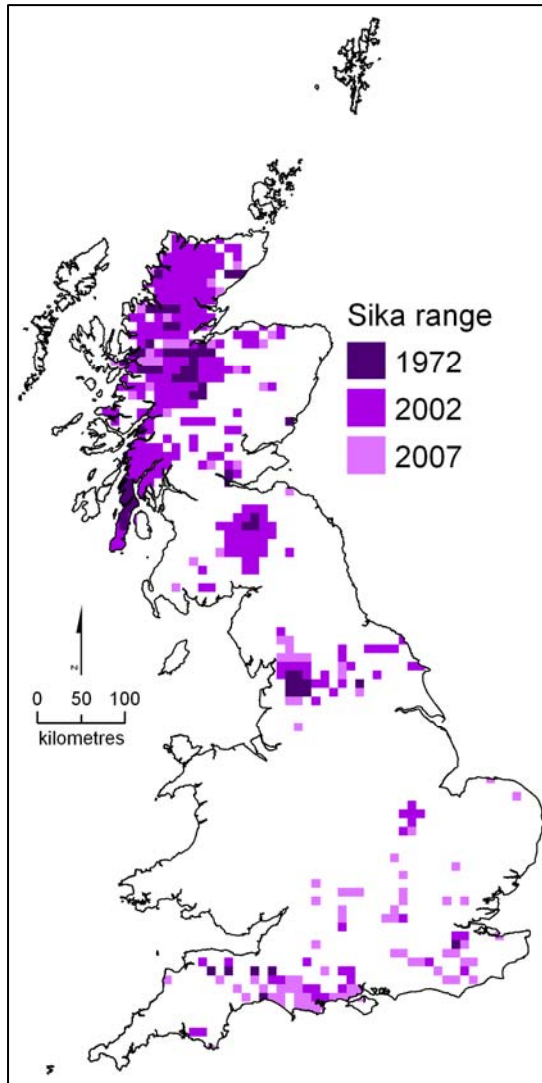
Annex 2: Distribution of wild deer in Great Britain: red, roe and fallow deer. (after Ward *et al* 2008, data from British Deer Society surveys.)



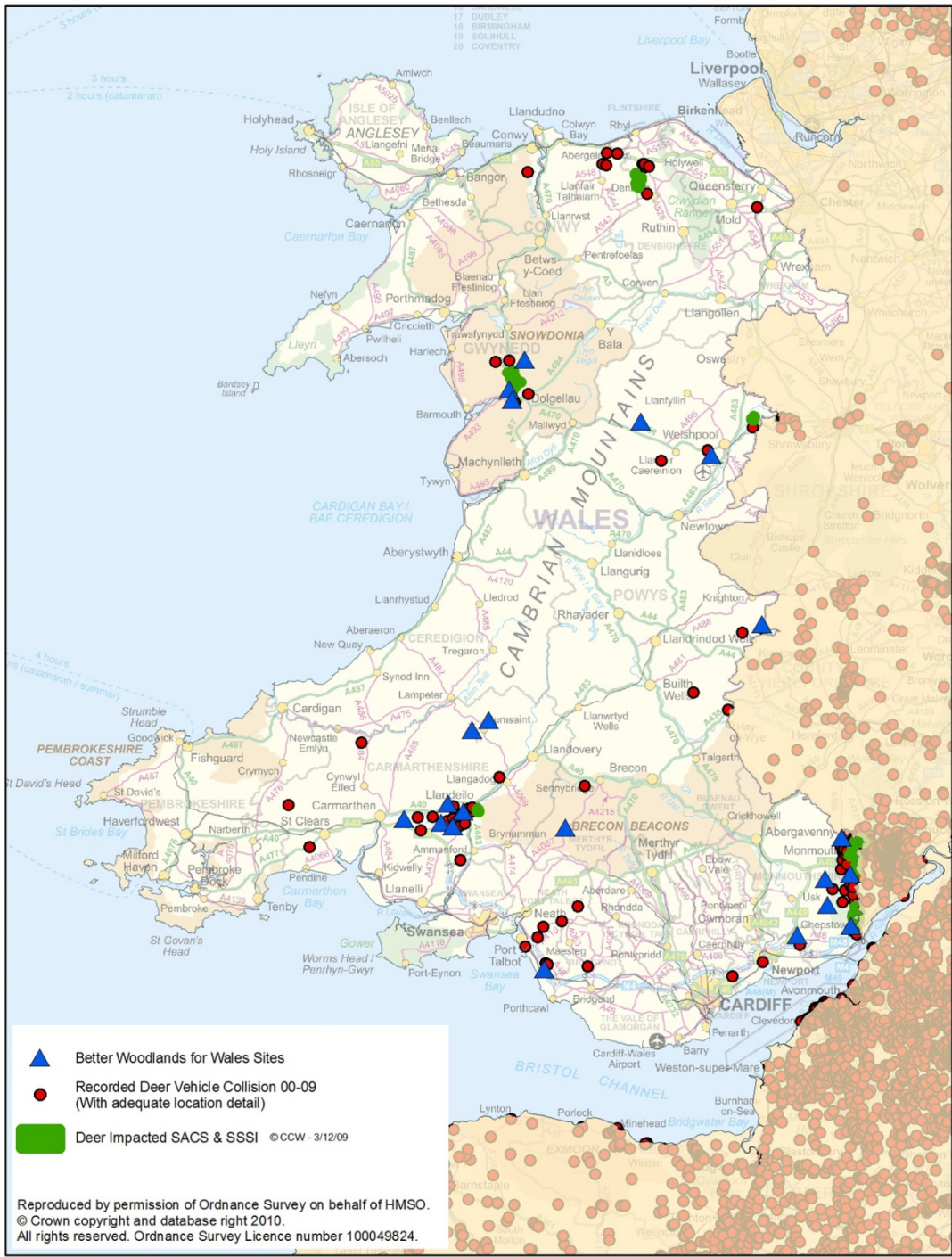


Llywodraeth Cynulliad Cymru
Welsh Assembly Government

Annex 2 (continued): Distribution of wild deer in Great Britain: sika, muntjac and Chinese water deer.



Annex 3: Deer impacts recorded in Wales: i) Better Woodlands for Wales sites identified (between July 2006 and February 2010) as having a potential need for deer management; ii) 116 reports of deer-vehicle collisions recorded between 2000 and 2009 with sufficient detail to enable mapping; and iii) SSSI and SAC sites recorded (up to December 2009) as having deer impacts. This gives an indication of distribution only: due to under-reporting, true impacts are likely to be greater.



Annex 4: form for stakeholder feedback

Deer management in Wales

An issues paper to inform the preparation of a deer management strategy and action plan for Wales

1. Background: deer in Wales

Q1. Do you agree with this summary of the distribution of wild deer in Wales?

Q2. If not, please state why.

2. Current deer management in Wales

Q3. Does this give an accurate picture of deer management in Wales today?

Q4. Are there aspects we have missed?

3. Key issues currently influencing deer and deer management in Wales

Q5. Are the issues here described accurately?

Q6. Do you know of any additional evidence?

Q7. Have we missed any key issues?

4. Government policy and deer management in Wales

Q8. Are there other policy areas that should consider deer management?

5. Conclusions

Q9. Does this vision reflect your views/the views of your organisation?

Q10. Do you agree with this list of key areas for action?

Q11. Should any be removed or added?

Q12. Please list three issues that you feel are of particularly high priority.

Q13. In the table at Annex 1, please feel free to annotate the “remarks” column, and include with your response to the paper.

Q14. Do you have any other comments?