

Rates assessments raise more questions than answers



Richard Cooke, Chairman
Association of Deer Management Groups

The topic of the day for deer managers and many others is of course sporting rates. Business rates were reintroduced

for sporting rights in the Land Reform (Scotland) Act 2016. ADMG and many others argued at the time that an additional cost against deer management would be counterproductive in terms of Government policy but, as a recommended land reform measure, it was never likely that this would be dropped from the legislation. ADMG did succeed in promoting an amendment [Pt 6.76(2)b] directing Regional Assessors to take account of "such factors relating to deer management as the Assessor considers appropriate." The reasoning here was that membership of a DMG with an SNH approved Deer Management Plan should justify an additional allowance. This however does not appear to have been taken into account in the Assessments received so far but will be relevant at Appeal stage.

Last summer the Assessors circulated questionnaires to gather evidence of current rents for sporting rights and this information was used as a basis for the first phase of some 10,700 valuations issued in October. There are two further phases to come and it is thought that the total number of assessments could exceed 50,000 if all landholdings are included. ADMG does not take issue with the methodology of the valuations which, using the evidence gathered, assesses value on a per hectare basis.

This is as intended by the original 1854 Lands Valuation (Scotland) Act. However, the resultant valuations contain many apparent anomalies, some of which are potentially devastating for those businesses concerned, and the high values attributed to forestry land, much of which is not capable of being used for deer stalking, are a particular issue.

In short, the reintroduction of sporting rates appears to be in serious disarray and a more refined approach which takes account of actual circumstances is clearly required. This could be achieved without further change in the law by increasing the number of value bands and greater allowance for disability factors, such as: remoteness, land quality, available deer population etc.

ADMG along with other organisations, is closely engaged in the ongoing discussions with the Regional Assessors Association in the hope of resolving the current problems. Meanwhile our advice to members must be to appeal within the six-month time limit, i.e. by 31 March 2018, at least until a clearer picture emerges. Payment of current valuations is required by law but can eventually be recovered in whole or in part in the event of a successful appeal.

Turning to the 2019 review of the deer sector, now little more than a year away, ADMG is in close discussion with SNH to ensure that there is clear guidance as to the criteria on which DMGs will be assessed. We hope shortly to agree with SNH a definitive list of measures to be used in the 2019 Assessments. This will be of critical importance to guide all DMGs on their Deer Management Plan priorities for the next 12 months.



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Focus on Inveraray & Tyndrum DMG



Helen MacIntyre
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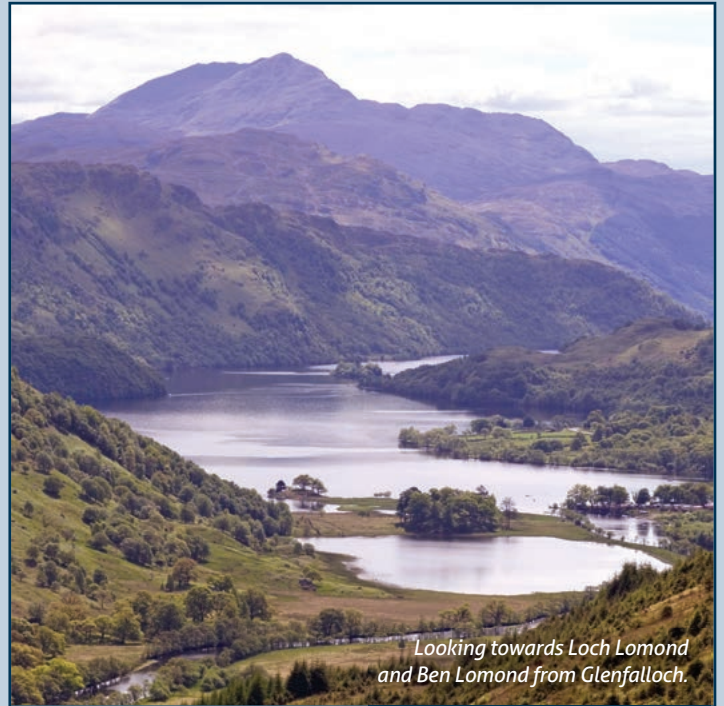
Though one of the smaller deer groups at 59,000ha, we have 23 landholdings with a range of land-use types. With a third of the area forested and the rest mainly managed for livestock and deer, the Group must work together to ensure deer impacts on forestry are kept low and that there is a sustainable population to achieve habitat, sporting and other objectives. In addition, we must also protect our designated sites, including several SSSIs, SACs and a Special Protection Area for golden eagles which covers over a third of the Group area.

The Group meets every six months and, despite the large number of members and varying land use objectives, is fairly harmonious and works together well. We get great support and advice from our SNH local wildlife officer, Jimmy Irvine, and also from the Loch Lomond & Trossachs National Park, which covers part of our Group.

We have just set up a new Executive Committee and sub-groups, one for habitat impact assessment and our Deer Management Plan, and a stalkers group which will include organising counts and cull setting. This should allow quicker progress and help spread the work involved in running the group.

We carry out an annual foot count on the open range areas. The average deer density over the past 15 years is 8.2 deer per 100 hectares. It can be difficult to get an accurate count as the deer move between hill and forest depending on the weather and disturbance by walkers, but we believe the population to be pretty stable. The most recent count, done by SNH by helicopter in February 2017, recorded 3883 deer and covered most of the Group area, giving a density of 7.3 deer per 100 ha. For the last 10 years the annual Group culls have fluctuated around 1200 animals.

Last year we developed a population model with the help of SNH. Due to the difficulty counting deer numbers in woodland, the model applies to the open range population only. Using the Group's sporting requirement for stags, and the estimated mortality and calving rates, we calculate we would need a hind population of around 1400, and need to cull 300 stags and 300 hinds per year on the open range to maintain this.



Looking towards Loch Lomond and Ben Lomond from Glenfalloch.

From the initial SNH benchmark assessment in 2014 to the reassessment in 2016, our Group has made much progress, and now is fully delivering 96 per cent of the objectives on the operation of the Group and 80 per cent of the objectives on public interest.

Habitat impact assessment was the public interest action where we had made the least progress, so it became our main focus this year. A Group-wide monitoring programme was put out to tender and awarded in July. We had excellent uptake within the Group, and now every Group member except one is committed to habitat monitoring, with the forestry members carrying out their own damage assessments.

Our priorities for the future are to investigate opportunities for peatland regeneration within the Group and potential funding for this, to support our members where possible on the issue of sporting rates, to continue to update and address the action points in our deer management plan, to remain informed and involved at a national level, and to work towards our next SNH re-assessment.



I&T DMG Habitat Impact Assessment training day

Peatland restoration - a collaborative approach

Peatland restoration work
underway on Glenmazera



Drew McFarlane-Slack MBE
Chairman, Monadhliath DMG

The Monadhliath DMG (MDMG) is approximately 175,000ha of upland habitat stretching from Spean Bridge in the south

to Inverness in the north. It has 42 active members. In 2014 the group unanimously approved its current 10 year Strategic Deer Management Plan after two years of debate and collaboration.

Our goal is to promote scientific management of the deer herd, in order to deliver a balance between sporting objectives and nature conservation objectives. A core objective is to improve and restore semi-natural habitats. We will achieve this by expanding woodland areas, restoring degraded upland peatland and also heather moorland.

The MDMG area contains around 65,000ha of peatland, the majority of which is in the eastern section. These peatlands include areas in a near natural state with active blanket bog to areas with intensive drainage or extensive surface erosion. In the areas where natural processes and human impact have arisen, intervention is required to help stabilise and reverse damage.

We have designed a landscape-scale restoration project to deal with these problems. The objective is to deliver blanket bog restoration over a three-year period beginning in the winter of 2017. We will initiate recovery of degraded peatland habitat across a minimum of 1500 ha over the three years. Our planned reduction in hind numbers in the Eastern Monadhliath, now almost complete after four years of hard work by members, will help ensure the restored areas experience low grazing impacts in the future. Three main techniques will be employed to achieve the practical peatland restoration outcomes:

- Drain blocking and channel re-profiling
- Gully blocking and re-profiling of micro-eroded hags
- Peat flat re-colonisation

The initial phase of the programme (Year 1) was discussed at length by the MDMG Executive Committee (EC) and included 15 estates keen to carry out feasibility surveys. Because of the scope and size of the programme the EC agreed that our project technical advisers, Strath Caulaidh Ltd (SCL), would also work closely with a sub-set of five estates keen to make an early start to physical restoration work.

The Peatland Action fund is expected to be the main source of finance for the project, but all estates will put in some staff time and some (eg Coignafearn) are funding all the work themselves. However, because it was proposed to use a novel collaborative method for project delivery, we also required a separate corporate bid, via the MDMG itself, to Peatland Action for a facilitation fund. We hope the novel collaborative approach will allow the MDMG, all its participating estates and SNH to deliver the best possible range of public benefit.

The collaborative approach is underpinned by a number of elements delivered by SCL along with member estates. Given the scale of the work a plan was created to ensure proper coordination of all the actions required to manage the work on the ground. Desktop appraisal of the whole area, field surveys, data reporting and work programmes were developed for each estate as required.

Contractors interested in the work were approached to test their interest and capacity, then tender documents were prepared and issued. Four contractors were awarded a place on a three-year framework contract to deliver work on the ground. Access agreements were reached with estates and work has now started. Training and supervision of the work, along with monitoring and reporting back on quality and quantity of work, will also be completed by SCL. Additionally, there will be opportunities to train contractors and estate staff in modern techniques along the way, provide research and monitoring of the sites and promote knowledge transfer to a broader audience.

Our novel approach to a complex and ambitious programme of restoration work will ensure high-level technical support and standardised management supervision is available on site, to provide comfort to Government and participating estates that value for money will be achieved. It will also provide a welcome work stream to local contractors with associated training which, in turn, will ensure that a high-quality workforce is available to deliver similar tasks in future years.

For further information on this approach to collaborative peatland restoration contact:

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Peatland restoration work underway azeran

Stephen Gibbs - An appreciation

**Richard Cooke, Chairman
Association of Deer Management Groups**

Stephen Gibbs, who died last November, was at the forefront of the Scottish deer world, and the Scottish venison industry, for more than 20 years.

After a period in the Kings Royal Rifle Corps and subsequently time with the Territorials, reaching the rank of Major, he pursued a career in public relations, a new profession at that time. He purchased Dougarie on the Isle of Arran in 1972. He managed Dougarie with interest, expertise and affection, and with particular attention to the management of the red deer population and also oversaw the planting and maintenance of extensive new woodlands.

In 1994 he was elected as Chairman of the Association of Deer Management Groups which had been set up two years earlier, succeeding its inaugural Chairman Capt. Alwyn Farquharson of Invercauld. Stephen continued as Chair until 2005 and, during his time in office, the Association contributed to much improved collaboration with a growing number of DMGs and better communication between the private deer sector, the Deer Commission and Scottish, Westminster and European Governments. Before then it had, in Stephen's words, been a case of "every man for himself." He was a champion of the voluntary approach, favouring persuasion over compulsion and valuing a system with sufficient flexibility to reflect a wide range of different circumstances. Stephen also served on the Board of the Deer Commission for Scotland from 1994 to 2000.

I worked alongside Stephen throughout as ADMG Secretary. He was a hands-on Chair, involving himself in every aspect of the work of the Association. He had a light but determined touch and a real gift with people. He was an absolute pleasure to work with and he now sits on my shoulder in carrying on his job.

Of particular importance was the contribution he made to the development of the venison industry to meet mainstream food sector standards. He set up and chaired



Stephen Gibbs with chef Tom Lewis at the first Scottish Venison Day at Blair Castle

the Scottish Venison Partnership, a position in which he continued after standing down from ADMG, finally retiring from that role in 2016. His leadership was instrumental in the development of the venison quality assurance scheme, Scottish Quality Wild Venison, and he can take much credit, not just for the fact that on his watch the price paid to producers for their venison stabilised at a realistic level, but also for the continuing strong growth of the domestic market for what is now perceived as a uniquely healthy and flavoursome Scottish product.

In his words, "the whole Scottish venison sector has made huge leaps forward, virtually from a standing start."

A former recipient of the Balfour Brown Trophy from Forestry Commission Scotland, he was also honoured by the award of an OBE for services to deer management in 2001.

Stephen's contribution to Scotland's deer and venison sectors cannot be underestimated, but he was always quick to give credit to others without whose help, he said, such progress would not have been possible. His personal interest in deer and deer people also gave him a great deal of satisfaction and enjoyment. When interviewed for Scope in 2016 when he stepped back from the front line he said: "Looking back on it all it has been a lot of fun."

Numbers and impact of red deer on open-hill ground in Scotland: an ongoing debate!

Authors:

Steve Albon and Justin Irvine, The James Hutton Institute
Donald Fraser, Scottish Natural Heritage

Deer densities over time and space

A recently published report (Albon et al. 2017), based on the deer count data held by SNH, provides compelling evidence that overall mean densities of red deer on open-hill range in Scotland have been relatively stable since 2000 at around 10 deer/km² (Figure 1). After four decades of steady increase in overall density, the stabilisation since the Millennium has happened despite the fact that there has been a 40% reduction in sheep stocks, which previously would have competed for summer grazing, at a time of more benign winters, earlier springs and warmer summers, which would also be expected to promote continued population growth. A major factor in this pattern is the large increase in culling effort, which is now averaging around 22% of the estimated population compared to 15% in 1961.

Although the average density across the Highlands and Islands has remained unchanged over the last 15 years, changes in density have varied markedly between Deer Management Areas (DMAs) from more than 35% reductions in parts of the Grampian Mountains to increases of more than 30% on some of the islands (see Figure 2, left hand panel). In 2000 the highest densities of red deer were more than 30 deer/km² but by 2016 the highest was estimated at 18 deer/km². Interestingly, those DMAs that increased between 2000 and 2016, some by as much as 30%, were often the lower density populations at the start of the period. DMAs where red deer density increased included East Sutherland and Easter Ross, as well as some of the islands, for example, Mull, South Uist and Harris.

Culling effort

Since the Millennium overall culling levels varied between DMAs from as little as 10% to more than 40% (Figure 2 right hand panel), and proved to be a significant factor explaining the variation in the change in densities across the Highlands & Islands. On average, as the percentage cull rose above 20%, densities tended to decline. However, where the percentage culled in a DMA was less than 20%, the population tended to rise. Given the continued climate warming and possible further reductions in sheep stocks culls of more than 20% are likely to be required to stop red deer populations increasing.

Impacts on the Natural Heritage

While we have widespread information on densities from systematic counts, as well as cull returns, there is far less quantitative data about the impact of red deer on the natural heritage. However, since 1999 Scottish Natural Heritage has been conducting a rolling programme of Site Condition Monitoring across its network of Sites of Special

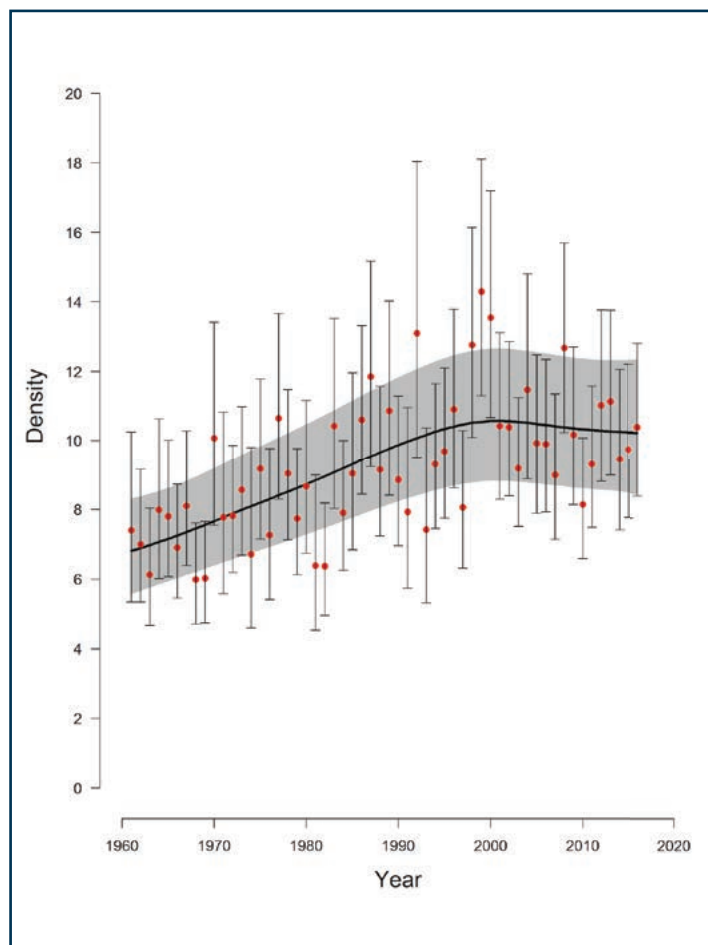


Figure 1: The overall trend (black curve – grey shading shows the 95% confidence intervals) in red deer (stags, hinds, calves) density estimated across the Highlands and Islands, since records began in 1961 until 2016. The red dots show the annual estimates and the thin lines the 95% confidence intervals based on the subset of Deer Management Areas counted in each year.

Scientific Interest (SSSIs) and Natura sites. Unsurprisingly, our analysis showed that the probability of 'favourable' condition was significantly lower where herbivore pressure was identified by the surveyor, than in sites where features were subject to other pressures, or no pressures. However, relating site condition to our independent estimates of deer and sheep densities indicated that increasing densities of both sheep and deer reduced the probability of favourable condition.

The Site Condition Monitoring programme was not designed specifically to look at habitat impact of grazers. Clearly grazing impact is a result of all the herbivores present, and not just deer, thus managers need to consider the appropriate stocking rates of all these species once a grazing impact assessment has been made. However, for this to be effective, a more appropriate and practical set of indicators is needed to enable land managers to assess the impact of grazers on the state of vegetation at the landscape scale.

Although, we are aware of the resource limitations that land managers experience, adopting these methods more widely, as currently being encouraged and facilitated by SNH, might help to focus on appropriate management actions, allowing the sector to demonstrate responsible and transparent stewardship of the land.

Conclusions

There is strong evidence that the overall density of red deer on open-hill ground in the Highlands and Islands of Scotland has been more or less constant since 2000, at around 10 deer/km². However, this average is somewhat misleading since there have been substantial changes in density between Deer Management Areas in different

parts of the region. Differences in culling account for much of the change in local densities, with culls of more than 20% typically driving population density lower. Some historically low density deer populations, with traditionally modest culls, have tended to increase. In these cases the increases may be partly due to improved environmental conditions, including the reduction in sheep, particularly on some of the islands and west coast mainland. Where herbivore densities are high (sheep and/or deer), protected areas are less likely to be in favourable condition, so habitat impact assessment is an important tool providing evidence for planning future herbivore densities which aim to minimise deleterious impacts.

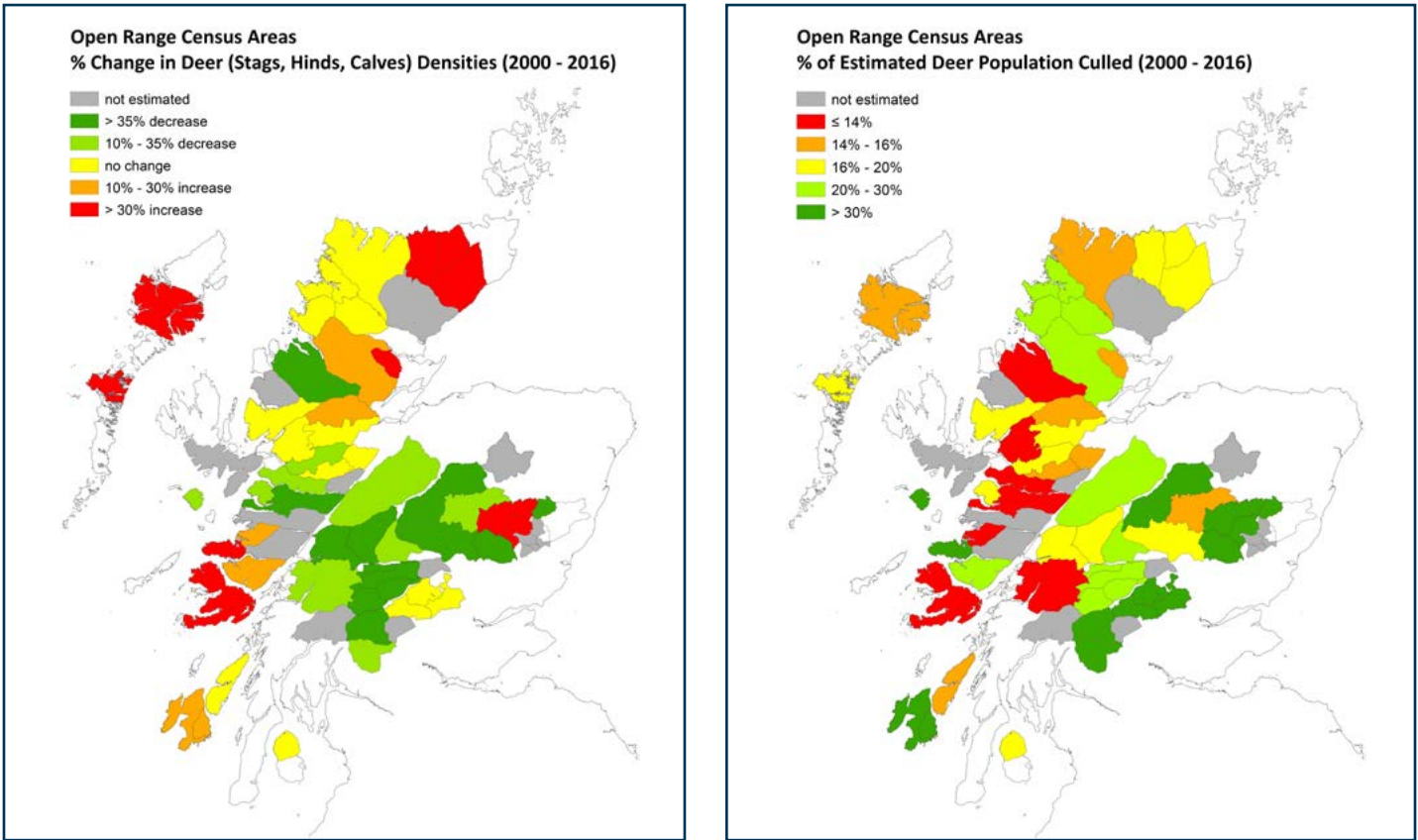


Figure 2. The percentage change in red deer density (stags, hinds, calves) in Deer Management Areas between 2000 and 2016 (left-hand panel) and the variation in the mean percentage of the estimated population culled in Deer Management Areas between 2000 and 2016 (right hand panel). If the DMA had not been counted since 2010 we made no attempt to model the likely density in 2016 (grey shading).

Acknowledgements

We are particularly grateful for the help of key colleagues, in particular, Mark Brewer, David Elston & Jackie Potts (Biomathematics and Statistics Scotland), Jim Mcleod (The James Hutton Institute), Jimmy Irvine and Megan Towers (Scottish Natural Heritage) for major inputs into data collation, analysis and interpretation which led to the report on which this article is based.

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Albon, S. D., McLeod, J., Potts, J., Brewer, M., Irvine, J., Towers, M., Elston, D., Fraser, D. & Irvine, R.J. (2017) Estimating national trends and regional differences in red deer density on open-hill ground in Scotland: identifying the causes of change and consequences for upland habitats. Scottish Natural Heritage Commissioned Report No. 981.

Alternatives to lead and steel

Mark Malins MICFor and Peter Oliver MICFor look at how deer and trees might co-exist more comfortably



*Open space should be proportional to forest size
(Royal Forest of the Ardennes)*

Mark Malins MICFor
and Peter Oliver MICFor

Non-metallic deer management

Protecting trees from deer by fence or gun has become a cultural dimension of modern forestry: central tenets of our policy for mitigating the impact that deer have on our work. While steel and lead are essential allies, there is also a silvicultural dimension to deer management that forest managers could usefully consider. The design and development of woodland structure has a significant influence on deer numbers, and a thoughtful assimilation of such 'non-metallic' variables may generate an environment less demanding in the costly use of fencing and shooting.

The ecology of deer

Our native roe and red deer are 'keystone' species and complimentary niche feeders within native woodlands. Without roe and red deer their respective ecological communities will become ecologically dysfunctional, lacking a controller of otherwise over-dominant woody species and ultimately undermining biodiversity. In turn, a keystone predator is required above the deer in the food chain. It is this lack of predation, rather than deer presence per se, which renders deer a problem to the forester and demands our intervention to manage their numbers. There is a balance in both roe and red populations that is fundamental to the function of our woodland ecosystems. The forester needs to seek this balance, rather than remove native deer altogether. Successful deer management requires an understanding of where this balance lies in a particular woodland and deploying sympathetic metallic and non-metallic strategies to achieve it.

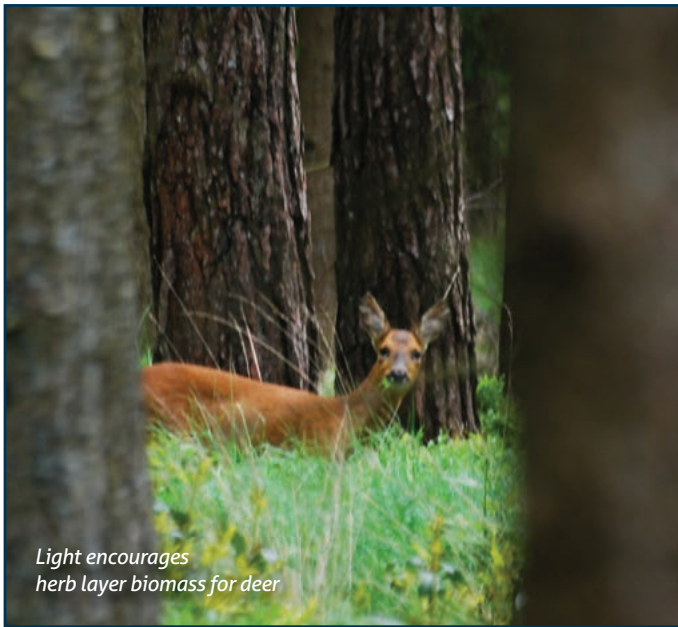
Deer presence or impact?

A key aspect of deer management is the distinction between 'presence' and 'impact'. If we accept that native deer are a keystone of our woodland, there will always be evidence of their presence - even at low densities - as part of the ecological footprint. This 'presence' only becomes 'impact' when the population starts to undermine our core forestry objectives, and this is the threshold which we need to fully understand and influence.

For example, the roe deer is a frequent browser that selectively feeds on a wide range of plants, seeking those with the highest digestibility and associated fermentable energy and nitrogen. Their preferences will be influenced by the dominant plant communities at different times of the year. The balance of population will vary and their impact will be higher or lower according to the local environment and the influence of our management choices.



*Plant biomass - the key to
non-metallic deer management*



*Light encourages
herb layer biomass for deer*

Most obviously, we can reduce deer impacts with larger stand sizes and by planting less palatable tree species. The latter may not be possible where a particularly palatable species, such as western red cedar, is important in our objectives. Vigilant metallic protection may then be necessary but, bearing in mind that deer seek to maximise their nutrition with the least expenditure of energy, we may also be able to deploy a planting strategy that offers deer the opportunity to feed on more palatable associated nurse species and supplementary shrubs. Birch can play an important ecological role in providing inexpensive establishment with high levels of regeneration that can be used to protect future timber trees from deer, particularly (but not exclusively) on acid soils by deflecting deer browse away from target trees. The deer then serve to reduce the regenerating competitiveness of birch against our targets.

The larger deer species are more grazers by nature as their digestive tract forms a proportionally larger element of body mass which can cope with other plant material. These factors mean that combining a well-managed open space with a mix of plants and in proportion to the size of woodland, with varied tree species, can help to draw their feeding behaviour away from crop trees.

Deer also only feed in an environment where they feel safe; in settings that allow them to feed freely while remaining near to vegetative cover to which they can run if threatened. Research suggests that in roe deer this urge is genetic; continuing even where predators have been extinguished and no longer pose a direct threat (as is the case in the UK). Therefore, scale and distribution of protective cover is another factor in the balance between presence and impact of deer which the forester can influence. Design of stand layout (size and shape, the form of rides) and silvicultural systems in particular, including shrubs, are choices that the forester should make with an understanding of their effect on deer and how they will alter the ability of a stalker to manage deer populations directly.

Such choices may be more strongly influenced by other considerations, but certain silvicultural strategies will be more helpful to deer than others in the cover they provide. Where the other considerations are indispensable to achieving forestry objectives, the reliance on and cost of metallic deer management will be greater.

There are other factors that can exacerbate the perceived problems of deer. Failure in natural regeneration, for example, is often blamed on deer but it could be that we haven't created the conditions for successful regeneration: managing light levels and competitive species around our targets. What about excessive browsing by rabbits and hares? Also, we know that deer will browse trees when food is in short supply, but is our forest management providing them with sufficient biomass to reduce the pressure on our target species? This is linked to a site's soil type and National Vegetation Classification which underpin the vegetative biomass and the diversity of plant species across the woodland ecosystem. Such systemic fundamentals are determined by the environment, but the ecological outcome remains under the influence of the forester who manages it.

Summary

Forests and woodlands are diverse in size, nature and form. However, to develop wooded environments where biodiversity gains can be made and where trees can live more comfortably with deer, understanding the relationship between the scale of the forest or woodland and the needs of deer is essential. It does not mean the disbanding of the metallic alliance but, by embracing a form of ecological forest management, we may be able to identify more conciliatory and less costly ways to live with deer.

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Their article results from a training event run by the Regional Group and Forestry Commission England and has been published in Chartered Forester and Deer. It is reproduced by kind permission of the authors.

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*Birch can protect
future timber trees like oak.*

When the winds of change blow, some people build walls... others build windmills

- Chinese proverb



Robbie Rowantree

Whether you are a 'believer' in anthropogenic climate

change, or not, the view of the majority of climate scientists will continue to inform Governments and will shape the continuation of a policy that will be strongly toward producing our energy needs from non-fossil sources.

(See figure 1 to the right)

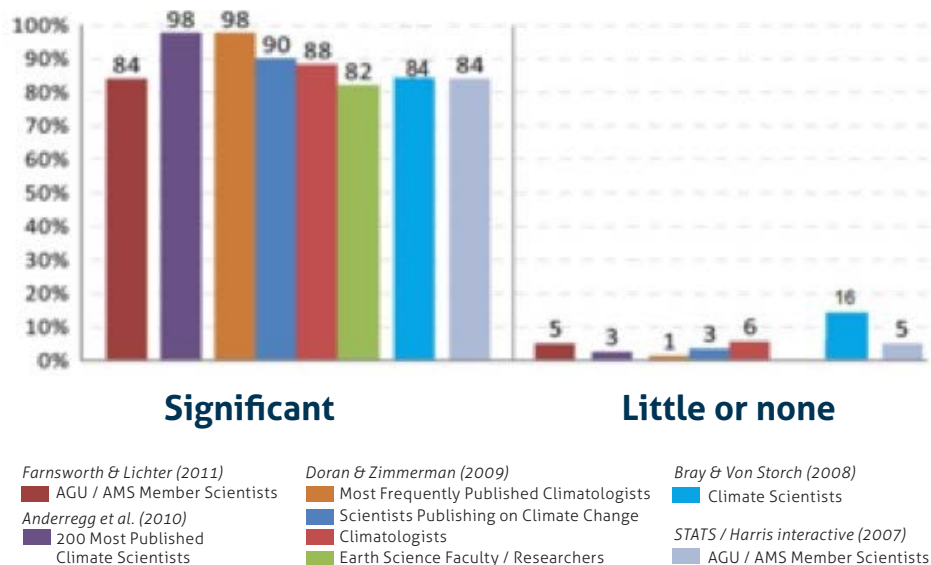
This is a wind of change that will continue to blow through Scotland for the next decade at least.

There is currently about 5400 MW of onshore wind generation operational and as the table over shows, the number of onshore windfarms could nearly treble with 4150 MW under construction or consented and waiting to be built and another 4300 MW in planning.

The majority of these schemes will be built in upland areas as the wind resource is better at higher ground altitudes and the air flow in upland areas is less disrupted. So it is reasonable to assume that there will be impacts on moorland and managers will have to develop tools to understand the impacts that these structures will have, and how to apply sound management and good science to understand and mitigate for these impacts.

A Habitat Management Plan (HMP) is often associated with an application for an onshore wind farm, as part of the mitigation measures or as a condition of planning consent.

Opinions of Climate and Earth Scientists on Human Role in Global Warming



(Figure 1)

The bird interest is well recognized in this process through the Birds Directive (formally known as Council Directive 2009/147/EC on the conservation of wild birds) and there is a reasonable body of scientific knowledge on the impacts that these structures have on the birdlife that utilises moorland, either as seasonal or permanent residents. There is less understanding of the impacts that this type of development has on the terrestrial mammals, domestic and wild, that live in and around these developments, which, although they may have a fairly low level of "ground take" can have a presence over a wide area due to the layout of the turbines.

Pipeline Renewable Projects in Scotland, by Technology and Status, March 2015

Technology	In Planning		Consented - Awaiting Construction		Consented - Awaiting Construction	
	No. of Projects	Capacity (MW)	No. of Projects	Capacity (MW)	No. of Projects	Capacity (MW)
Biomass - Co-firing	0	0	0	0	0	0
Biomass - Dedicated	1	15	10	100	4	14
Geothermal	0	0	0	0	0	0
Hydro	7	18	28	56	7	13
Landfill Gas	0	0	0	0	0	0
Municipal and Industrial Waste	1	12	9	120	1	10
Solar	1	17	10	91	0	0
Sewage Gas	0	0	0	0	0	0
Tidal and Tidal Stream	2	38	3	93	1	6
Wave	0	0	1	50	0	0
Wind Offshore	0	0	9	4,164	0	0
Wind Onshore	126	4,304	114	3,533	20	621
TOTAL	138	4,404	184	8,205	33	663

(Figure 2. Source: DECC, Renewable Energy Planning Database, April 2015) <https://www.gov.uk/government/collections/renewable-energy-planning-data>

In the process of writing this article it became obvious that there were very few research papers that could help inform management (there is probably a need for some research into the impacts at both local and cumulative level, of onshore wind on terrestrial mammals) and plug the gap in this knowledge base.

There was some useful guidance on what to include in the planning process published by SNH in the second issue of its Guidance document, "Planning for development: What to consider and include in deer assessments and management at development sites" but this doesn't have any guidance on how to manage terrestrial mammals in and around windfarms, or the longer term effects.

With only a relatively few studies, [a quick check of the "Tethys" website is useful (<http://bit.ly/2EoscGu>)] the operational manager of terrestrial mammals and their habitats will have to rely on the tried and tested tools of personal observation and experience to inform management decisions, which is why I felt that it was useful to comment on the experience gained on two wind energy projects in Scotland.

They lie on either side of a wide valley, or Strath and utilise the same transmission line, although they are not contiguous being separated by about 6Km. They are very similar in size with an output of around 70MW. One has a mainly south facing aspect while the other is slightly "back-lying". There are a range of smaller terrestrial mammals present in or on the access to both sites, including water vole (*Arvicola terrestris*), hedgehog (*Erinaceus europaeus*), pine marten (*Martes martes*) and otter (*Lutra lutra*), as well as the occasional blue hare (*Lepus timidus*), all Biodiversity Action Plan (BAP) species, as well as badger (*Meles meles*), stoat (*Mustela ermine*), weasel (*Mustela nivalis*) and red fox (*Vulpes vulpes*).

There has been no noticeable impact on the patterns of behaviour of any of these species and in the case of badger, a particularly noticeable increase in habitat utilisation of the periphery of the northern site, the reasons for which are not immediately apparent (observation of nocturnal activity has been carried out using thermal imaging equipment, which has become an invaluable aid to management).

However, it is the large grazing animals that are the habitat engineers and are of most importance to the moorland manager. Combined with prescribed burning and cutting, they produce the varied sward needed in the areas of dry heath, but need to be kept at reasonably low densities to prevent impact on the wet heath and blanket bog areas that are the abundant habitat features of this area.

On the south side of the Strath, the grazing pressure is applied fairly equally by a hefted flock of North Country Cheviots and red deer, while on the north side the grazing is by deer only on the higher ground, while out-wintered cattle share the grazing on the lower acid grassland.

Both windfarms are covered by a planning obligation to implement a Habitat Management Plan, which involves monitoring of the grazing impacts. This in turn informs the Deer Management Plan, which feeds into the wider Deer Management Group plan for the area.

Planning then needs to be delivered as actions and this can be divided into three phases of a wind farm development.

Phase 1 is the pre-development or 'scoping' phase – this is quite an intensive and wide ranging set of actions carried out by a number of specialist consultants and usually involves quite a lot of survey work both on the proposed site and on the surrounding areas. This will produce the Environmental Impact Assessments (EIA) which will be the basis for many of the planning decisions. This invariably leads to far greater usage of the area than would be expected during normal / historic usage. From a shepherding point of view this isn't much of an issue, but can cause some difficulty for the deer manager as the deer can become very flighty if being moved on a daily basis by surveyors. It caused some difficulties in meeting cull targets as the visits varied in length and frequency and did not create the right situations for wild deer to become 'habituated' to the activity. It is very worthwhile for the management team and the developer to develop quick and effective channels of communication with the surveyors from all the disciplines, which can help prevent plans for all parties being disrupted.

Winds of change *continued...*

Phase 2 is the construction phase – while this is locally very intense, it tends not to have as wide an impact on deer management as the surveying work. The deer 'habituated' to the construction phase very quickly and could often be observed lying within 200 - 300 metres of operating construction equipment while chewing the cud, usually the sign of a reasonably contented animal. The sheep too paid little or no attention to the construction effort. This appears to be down to the fact that the activity is regular and predictable and the animals quickly recognise patterns.

Phase 3 is the operating phase – while the other two phases are transient, this phase will be for the operating life of the windfarm, which is normally twenty-five years. This normally involves working closely with the operations team of the windfarm company and again the secret of success is good communication, as plans will almost certainly require to be realigned in light of monitoring or other changes in circumstances. An example from the north side of the Strath illustrates this.

The whole estate is monitored for grazing impacts by 4 of 4 Km annually walked transects where vegetation height and condition is recorded. Looking at transect three (T3), which is the transect where the wind turbines are located, there was a marked increase in impacts in 2015 after steady reductions in the preceding four years. The data revealed a big increase in the amount of heather affected by insect damage. This is captured very clearly in data that classifies grazing pressure on dwarf shrub heath into five classes from high, through moderate, to low.

This increase in pressure requires a management response, which will be to reduce grazing levels. This is not without its complications as the deer resident in and around the transect T3 had come to realise that there was a 'no culling' policy within the turbine area. Rather than the presence of the turbines proving a deterrent, the 'no culling' had habituated the deer to regarding the wind turbine area as a refuge.

Close cooperation with the operator's environmental and site management teams has led to a very cautious but sensible approach to allowing selective culling within the turbine envelope by following rigorous protocols and being restricted to places where backdrop and shelter



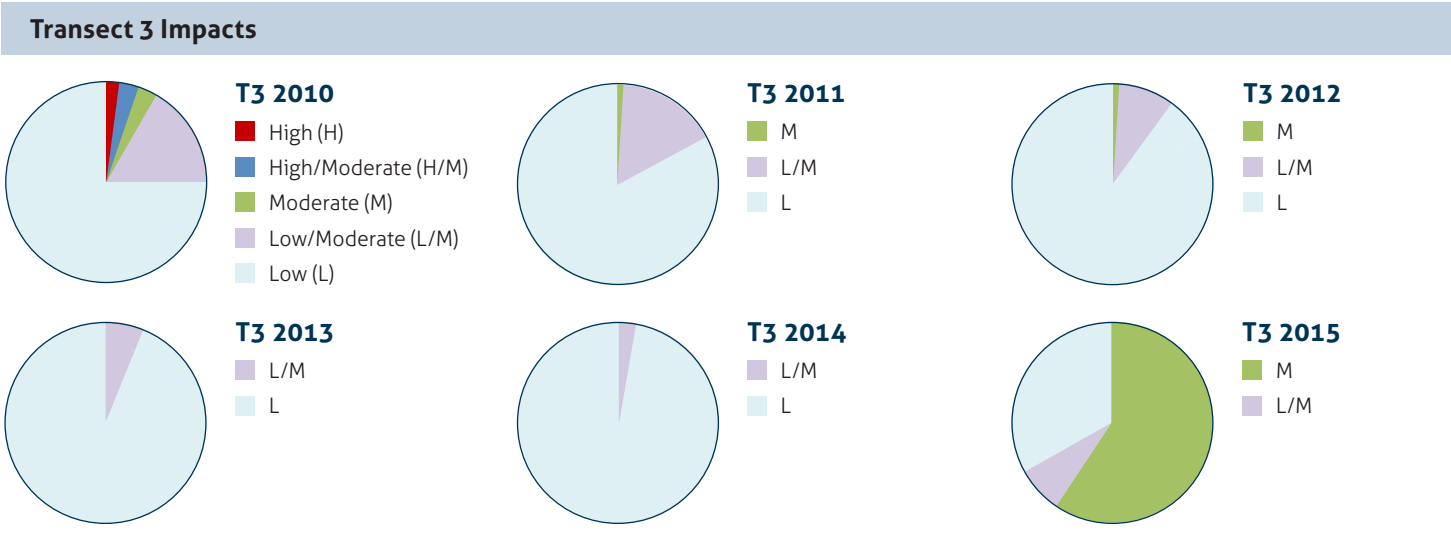
eliminate any possibility of danger to, firstly, people, both site personnel and any potential visitors and secondly, to equipment.

This will allow for the reduction of both hefted and transient deer in the turbine area, in an effort to rebalance the grazing pressure and to meet an HMP ambition to make the turbine site less attractive to birds to prevent possible collision with turbines, while at the same time altering the perception of the deer that this area is a refuge.

This, I hope, illustrates the need for a well-designed deer management plan (DMP) as a critical part of the Habitat Management Plan if deer are present, or become resident in the operating life of the windfarms; and the need for the inclusion of the DMP in the wider Deer Management Group Planning process so as to be compliant with the Code of Conduct on Sustainable Deer Management in acting collaboratively with neighbours.

The importance of good communication at all levels of operation cannot be over- emphasised if the winds of change are to be harvested in a way that is conducive to good integrated management and make a positive contribution to the management of the uplands.

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Focusing in on woodland problems



Even-aged oak on an SAC designated site



Victor Clements

As a native woodland advisor, I have in recent years adopted a very useful philosophy from Albert Einstein, namely that if you spend ninety percent of your time working out what the problem is, you only need ten percent of your time to come up with the solution. It is a good way of thinking, and I commend it to anyone struggling with a problem of any sort.

This short article looks at designated woodland sites in Scotland, seeking to put deer browsing issues in their proper context.

In early 2018, with one deer review process behind us, and another one not far away, it is hugely important to understand the proper context of the issues facing us if we are to be confident and assertive in arguing our case.

Background

It is very easy to imply that many of our most special woodlands are overgrazed, that this is some sort of systematic failure, and that the urgency to do something about it is immediate. Let us crunch the numbers.

There are 426 SSSI designated woodland features in Scotland. Of these, 3 have never been assessed for condition, 234 are in favourable condition, 60 are in unfavourable - recovering condition, leaving 129 in unfavourable condition. Of these the majority (79) lie outwith the various Deer Management Group (DMG) areas, leaving 50 features in unfavourable condition within the DMG areas.

Of these, five are not impacted by grazing at all, and are unfavourable for other reasons. Another 18 have over grazing listed as a problem along with other pressures such as invasive and non-native species, inappropriate agricultural development, water abstraction, burning and

many other issues. In just 27 is grazing the main issue. In total, these 45 features cover 39 sites, five of which overlap with SAC designated problem sites.

There are 88 SAC designated woodland sites, of which 36 are in favourable condition, 10 are listed as unfavourable - recovering, and 41 unfavourable.

Of these 41 features, 29 lie within the DMG areas, and on six of these, grazing is not a problem. Of the remaining 23 features, which cover 17 sites, 15 are impacted by grazing alone, and eight are also impacted by other pressures.



Varied age structure and species composition in the Carie & Cragganester SSSI

Focusing in on woodland problems *continued...*

In total then, between SSSI and SAC designations, we have 51 sites within the DMG areas in Scotland where grazing is an issue, allowing that there is some overlap between features and designations.

Recurring Problems

Within the sites affected by over-grazing, there are a number of recurring issues.

1. On the SAC designated features, nine involve montane willows, which very often comprise only a few individual plants and which cannot sustain any grazing pressure whatsoever. Very often, fencing such sites at high altitude is impractical. We need to focus on such sites and work out what can actually be done about them.
2. Many of the big oak woodland sites cover many properties, sometimes as many as 20 - 30. Very often, work on one property will not change the overall conservation status if a problem exists elsewhere. There is an administrative problem here that needs to be overcome, allowing SNH to make a judgement about the woodland area within a particular ownership. This is especially important as, very often, factors other than grazing can be at play.
3. Oak does not regenerate under its own canopy. Neither does birch or Scots Pine. Together, these woodland types comprise nearly 60% of our native woodlands, but regeneration is restricted because of the existing canopy, and can only be encouraged by coupe felling such woodlands. Very often, this is not appropriate. In designated woodlands, such interventions are almost always discouraged. Woodland regeneration might well be lacking,

and will frequently be noted, but the presence of an existing canopy will be the dominant factor in this and restrict new growth, even if grazing is at appropriate levels. Again, our thinking has to take account of this, and administrative systems have to change.

4. Finally, I personally am aware of 18 designated sites where management plans and/or actions are in place; but this has not yet led through to favourable or, indeed, recovering condition, despite the plans being signed off by SNH in all situations, and public money used to support works. It is very important to keep abreast of what is actually going on, and to keep records updated so that a true picture can be articulated.

My inclination as a woodland advisor is that we are now down to a hard core of difficult sites in Scotland. While grazing pressure is certainly a genuine problem on some, there are administrative issues and some real physical and ecological issues that need to be addressed as well. We would do well to spend time at the outset understanding the exact nature of some of our outstanding problems. If we can do that, then we will either learn to make allowances, or we might even make some progress. What we must not do is continue with a lazy narrative which ignores the complex nature of some of the problem sites we have. We have to move away from that, and if we can do that, then everyone will benefit.

Victor Clements is a woodland advisor working in Highland Perthshire, Secretary of the Breadalbane Deer Management Group and an Executive Committee member of ADMG.



Non-native beech in the Birks of Aberfeldy SSSI

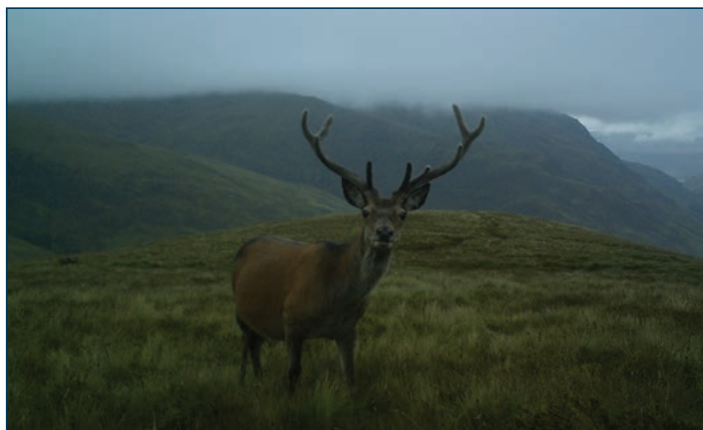
Conflict and Coexistence in the Scottish uplands - an update on this important research project

The Scottish uplands are highly attractive for recreational activities and both deer stalking and hill walking are significant economic activities within rural communities. However, they can potentially be in conflict if hill walkers alter the distribution and behaviour of red deer with consequences for the management of this species. Deer range use is influenced by a range of factors including weather and livestock, as well as human presence. For people, the *Land Reform (Scotland) Act 2003* and the associated Scottish Outdoor Access Code sets out the rights of access on or off paths or tracks. Our research project titled *Conflict and Coexistence* is aimed at studying the level of influence hill walkers exert on red deer behaviour and spatial distribution, whilst taking account of the other environmental factors influencing how deer use their range.

In this context, a multi-year study has been initiated at the North Chesthill Estate in Glen Lyon by a collaborative team of researchers from the James Hutton Institute, Durham University and the University of St Andrews.

This deer stalking estate is also attractive for hill walking with it hosting a popular 11 mile route traversing four Munros: Carn Gorm, Meall Garbh, Carn Maigr, and Creag Mhor. In summer 2017, a master's student from Durham University and an undergraduate student from St Andrews University began piloting a range of techniques aimed at quantifying deer range use including camera traps (see photo), pellet counts and vantage counts.

Also, hill-walkers were approached at the trail head and asked to voluntarily carry a GPS transmitter while walking the hills (see map). The GPS devices record a detailed track of each individual while out on the hills. At the same time, we also asked hill walkers to complete a short wildlife viewing survey allowing us to match the times when hill walkers encountered different wildlife with the GPS tracking data.



We found that hill walkers were happy to engage and participate in the data collection process with more than 90% of those groups approached agreeing to carry the GPS units. Our preliminary look at the data shows that hill walkers predominantly followed the main route of the trail, with less than 10% of the participants going 'off course'. Further research will investigate the geographical distribution and timing of wildlife encounters (from the questionnaire) and explore the relationship between hill walkers, deer and the trail using the camera trap survey. The extent to which the events where people deviate from the trail have an influence on deer movement will be investigated in forthcoming field seasons.

At a broader scale, we hope this study will contribute to our understanding of human-wildlife interactions, and how they shape wildlife behaviour in space and time. A PhD student jointly based out of St Andrews and the James Hutton Institute is advancing the project over the next couple of years. We are currently seeking funding to buy and fit GPS collars to the deer in order to quantify directly any link between deer movement with human activity in order to collect more detailed data on deer behaviour and range use.

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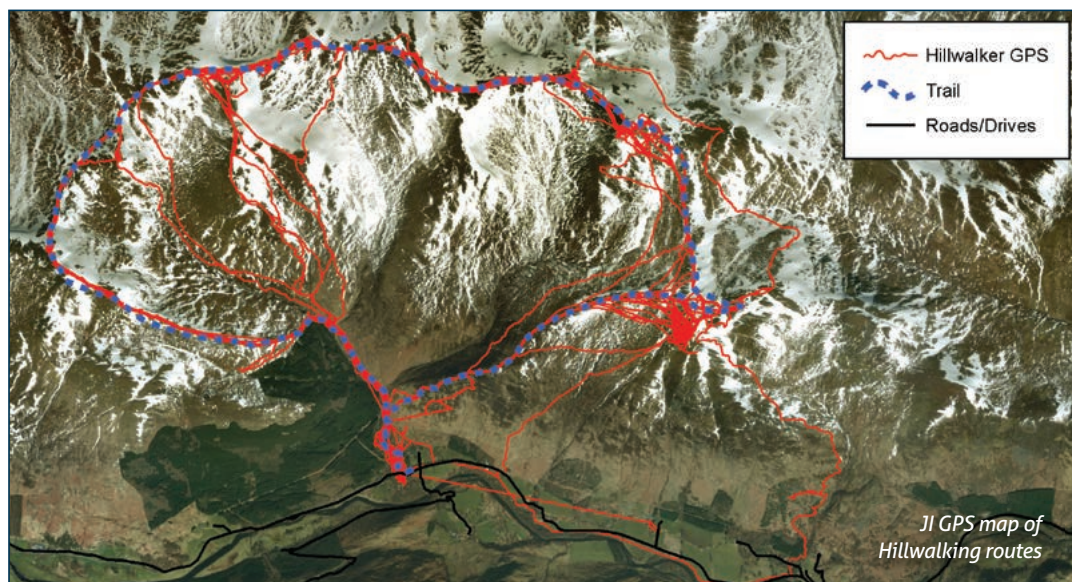
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Map Source: Esri, DigitalGlobe, Geoeye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community.

Scottish Venison Report



Dick Playfair,
Secretary, Scottish Venison Partnership

This is an important year for the production of Scottish venison, and particularly wild venison, for a number of reasons. Current events present both challenges and opportunities and producers and processors will need to step up on a number of fronts if we are to look back in 12 months time on a year of success and progress.

Firstly, New Zealand production is down. The New Zealand news channel *Stuff NZ* reported last December that from well over 1.5 million deer in New Zealand in 2002, last year its deer numbers had decreased to under 1 million. Deer NZ stats show that the UK is now its fifth largest venison export market accounting for 6.4 per cent (<800 tonnes approx) of its total venison exports. This is down by as much as 25 per cent in the last three years although additional quantities of NZ venison will be entering the UK through Benelux. Overall NZ venison exports have weakened with volumes falling from 14,869 tonnes in 2014/2015 to just under 12,000 tonnes in 2016/2017.

However, New Zealand is forecasting a revival in production to meet a maturing year-round global market as early as 2019/20 and a move towards "tender chilled, farm-raised venison" for those markets away from traditional European customers.

The application for PGI (Protected Geographical Indication) status for Scottish Wild Venison will help to support our wild venison production – that is one of its objectives. This application is now moving forward, although extensive public consultation has still to take place both in the UK and Europe and during these stages it could be challenged. But not only does PGI, even with the prospect of Brexit looming, provide valuable underpinning of our wild product, it also provides a number of opportunities to tell the Scottish venison story and, indeed, the PGI process in itself should bring a fillip in interest and sales as it has done with other applications.

On the farmed venison side momentum is also building and the Venison Advisory Service reports an increasing number of conventional, highly professional established beef and sheep enterprises now looking at deer in numbers. One of the factors restricting growth is availability of breeding stock with entrants choosing to retain their hind calves to grow their own herds although more will become available to sustain further expansion and keep prices stable.

The Scottish Government is believed to be taking a long hard look at venison with a view to how it might encourage growth, possibly ease routes to market including into the public sector, and capitalize on the continuing trend of healthy eating.

But there is a flip side. Since the *E Coli* O157 scare in wild venison two years ago, which should have been a warning shot, unregulated and unlicensed product still finds routes to market with poor working practice evident. The threat is very real and another food scare associated with venison would have highly serious consequences. Food Standards Scotland could not have made that point more forcefully than at the ADMG AGM in 2016.

Right now there is an in-depth study taking place to assess the prevalence of *E Coli* O157 in wild deer in Scotland, all species, all regions. That research is being undertaken by the Moredun Research Institute with Edinburgh University and will report in 2019. The wild sector has committed to support that and the response for sampling has been extremely good. We do not yet know what the results may bring.

Coupled with that, the Scottish Venison Partnership with Scottish Quality Wild Venison and Scottish Natural Heritage has produced three short films on YouTube to highlight the main risk areas for contamination in the production process for both roe and red from the hill to larder, and these are absolutely essential viewing for anyone who is putting venison into the food chain for human consumption, however much you may think you know.

Of major concern, however is that Food Standards Scotland has through its inspection programme, including unannounced spot checks on processor premises, established that there is a significant increase in serious non-compliances, and concerns around food safety and traceability systems in the game sector. The message is that parts of the chain have been leading a charmed existence during a regime of relaxed inspection whether from FSS or Local Authorities; that has to change, and quickly. This is no idle threat.

So, whilst on the one hand there is opportunity, there is still an absolutely vital requirement to bring the sector into the 21st century, to have zero tolerance of poor practice, and for everyone who is involved in the chain from hill to plate to have absolute confidence that the venison they have a part in producing is safe to eat.

It is in everyone's interest to ensure that this is the case. To achieve this, changes to regulation may be required and levels of enforcement increased.

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