

Deer Management on the National Forest Estate

Current Practice and Future Directions

1 April 2014 to 31 March 2017



Roe buck in an agricultural / woodland environment

Front cover image credit: Kenny Muir - Glen Affric

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AN OVERVIEW

Forestry Commission Scotland (FCS) serves as part of the Scottish Government's Environment and Forestry Directorate and is responsible to Scottish Ministers. Forest Enterprise Scotland (FES) is an agency of FCS charged with managing the National Forest Estate (NFE).

FES manages about 9 per cent of Scotland's land area in line with the Scottish Government's 'Land Use Strategy' to deliver a wide range of public benefits, including those outlined in the Scottish Government's 'Scottish Forestry Strategy'. The 'Role of the National Forest Estate and Strategic Directions' lays out our priorities and approaches around six themes, each of which has a connection with deer management:

Treasured

Deer are part of what our stakeholders treasure about the NFE



Healthy

Managing deer as a keystone species is of fundamental importance to the environmental health of the NFE



Productive

Deer are also an important economic resource in their own right and deer impacts need to be managed to safeguard the productive potential of the NFE



Accessible

We recognise that in increasing the accessibility of the NFE, we must manage the interface between deer and forest users



Cared for

We want to harness the value of deer in ecosystem management and continue to ensure high standards of deer welfare and management



Good value

We aim to manage deer impacts efficiently and effectively and recognise that recreational stalking and venison are important income streams



Management of Scotland's National Forest Estate is independently audited against the UK Woodland Assurance Standard – endorsed by the international Forest Stewardship Council® and the Programme for the Endorsement of Forest Certification.

This publication sets out our approach to wild deer management, outlining the important role wild deer play on the NFE and how we will work with stakeholders to manage deer and their impacts. Management of deer is an underpinning activity essential for the delivery of benefits from the NFE. Our immediate and long term aim is to maintain healthy wild deer populations and manage deer impacts across the NFE consistent with the carrying capacity of the land and the successful delivery of our management objectives.

We aim to play a full part in contributing to and delivering the Scottish Government's 'Scotland's Wild Deer: a National Approach' and the 'Code of Practice on Deer Management'.

DISTRIBUTION OF DEER ON THE NATIONAL FOREST ESTATE

The NFE covers nearly 9 per cent of Scotland's land mass, extending to over 650,000 ha. It comprises forests, woodlands and open ground. Widely distributed around Scotland, the NFE has developed over the last 95 years in response to the forestry objectives of successive governments. Around two-thirds is woodland and one-third is open ground, including agricultural land, mountains, peat bogs, water bodies and coast. These habitats and land uses are a defining feature of Scotland's internationally renowned landscapes.

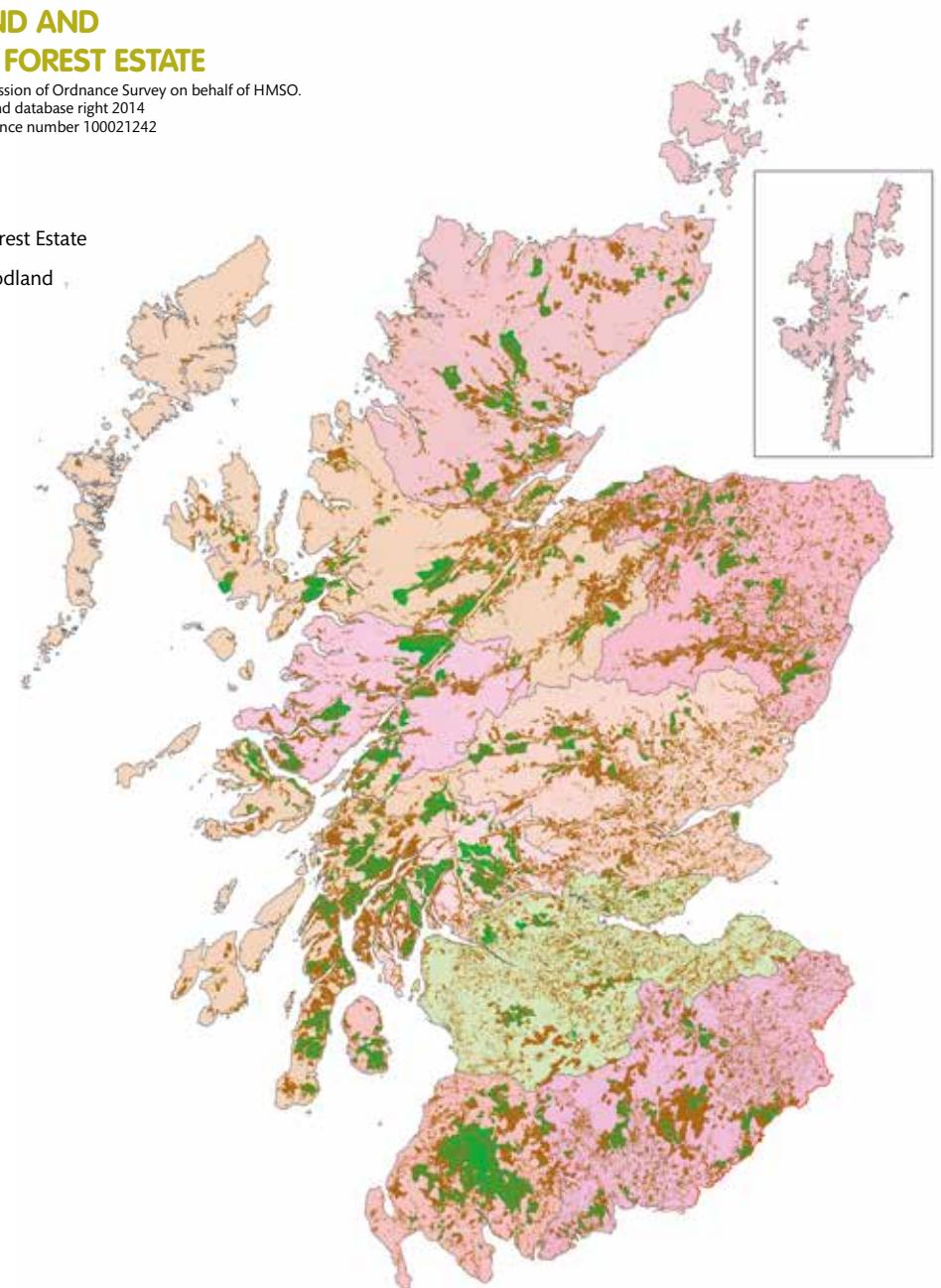


WOODLAND AND NATIONAL FOREST ESTATE

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KEY

- National Forest Estate
- Private Woodland



The Scottish deer population comprises of two native species, **Red and Roe**, and two introduced species, **Sika and Fallow**. Fallow have been part of the Scottish landscape for many centuries and tend to have a low propensity to spread and colonise new areas, and are managed to sustain and contain them within their current range. On the other hand, Sika deer continue to spread rapidly and can hybridise with Red deer. We aim to support Scotland's wild deer strategy by helping to limit the spread and population build up of this species.

In 2005 the Deer Commission for Scotland/Mammal Tracing Partnership estimated the Scottish deer population to be around 667,000 (350,000 Red, 300,000 Roe, 9,000 Sika and 8,000 Fallow).¹

In 2011 Scottish Natural Heritage estimated the Scottish deer population to be around 777,000 (360,000-400,000 Red, 200,000-350,000 Roe, 25,000 Sika, and 2,000 Fallow).²

All of the four main species can be found on land managed by FES:

¹Joint Agency Strategic Environmental Assessment, Draft Strategy for Wild Deer in Scotland, Oct 2007, Appendix 3, Environmental Baseline Information 2.3

²Scottish Parliament, Written Answer, Oct 2013.



Red	Native
Height:	Up to 1.2m at shoulder
Breeding:	One calf each year. Hybridises with sika deer
Located:	Widespread across the Highlands but also found in other upland areas such as the Ochils, Campsie, Dumfries and Galloway. Red deer are found in all 10 Forest Districts



Roe	Native
Height:	Up to 75cm at shoulder
Breeding:	One or two kids each year
Located:	Widespread and found in significant numbers in all 10 Forest Districts, predominantly in the lower-lying areas but increasingly on higher elevation ground



Sika	Introduced
Height:	Up to 85 cm at shoulder
Breeding:	One calf each year. Hybridises with red deer
Located:	Found mostly in the Borders, Fife, Argyll, Ross-shire, Inverness-shire and Sutherland, but are present in all 10 Forest Districts



Fallow	Introduced
Height:	Up to 1m at shoulder
Breeding:	One fawn each year
Located:	Found mostly around Loch Lomond, Dunkeld, Dumfries, Galloway and are present in 6 of the 10 Forest Districts

THE SIGNIFICANCE OF DEER ON THE NATIONAL FOREST ESTATE

This section summarises the value and impact of deer on the NFE and links our deer management effort to the three key objectives in Scotland's Wild Deer: a National Approach. We manage the NFE as a multi-benefit resource to deliver a range of environmental, social and economic benefits in a range of situations.

Where possible we set management strategies at a landscape scale to determine how best to integrate management objectives and maximise benefit delivery. An example of this would be The Great Trossachs Forest where we manage the Loch Katrine and Loch Achray catchments, habitats and associated deer populations in conjunction with the RSPB and Woodland Trust Scotland.

We value and manage deer as an iconic and natural resource which contributes to our biodiversity, climate change, social, cultural and silvicultural objectives. Our deer management objectives and practices will evolve, modify and adapt as necessary to reflect changing circumstances such as a future increase in the range of public benefits delivered on the NFE.



Environmental



Social



Economic

Protecting and enhancing the environment

Native deer are an important component of Scotland's biodiversity - they have a major shaping effect on habitats, and their actions fundamentally determine the suitability of ecosystems for other species.

We are also responsible for some 12,000 historic environment features. The best examples of habitats and ancient monuments are subject to a high level of statutory designations. For example Bessie's Hill is an Iron Age hill fort in Dumfries & Borders Forest District. The fort has pronounced earthwork ditches and ramparts and is covered in rank grass, but with little by way of natural regeneration of trees and scrub and this is due largely to deer having a positive impact through regular browsing of the site. This browsing helps achieve the Monument Management Plan which requires keeping the site free of tree/shrubs growth.

We aspire to increase the environmental value of our planted forests through restructuring and diversification – helping natural processes to turn plantations into fully functioning forests.

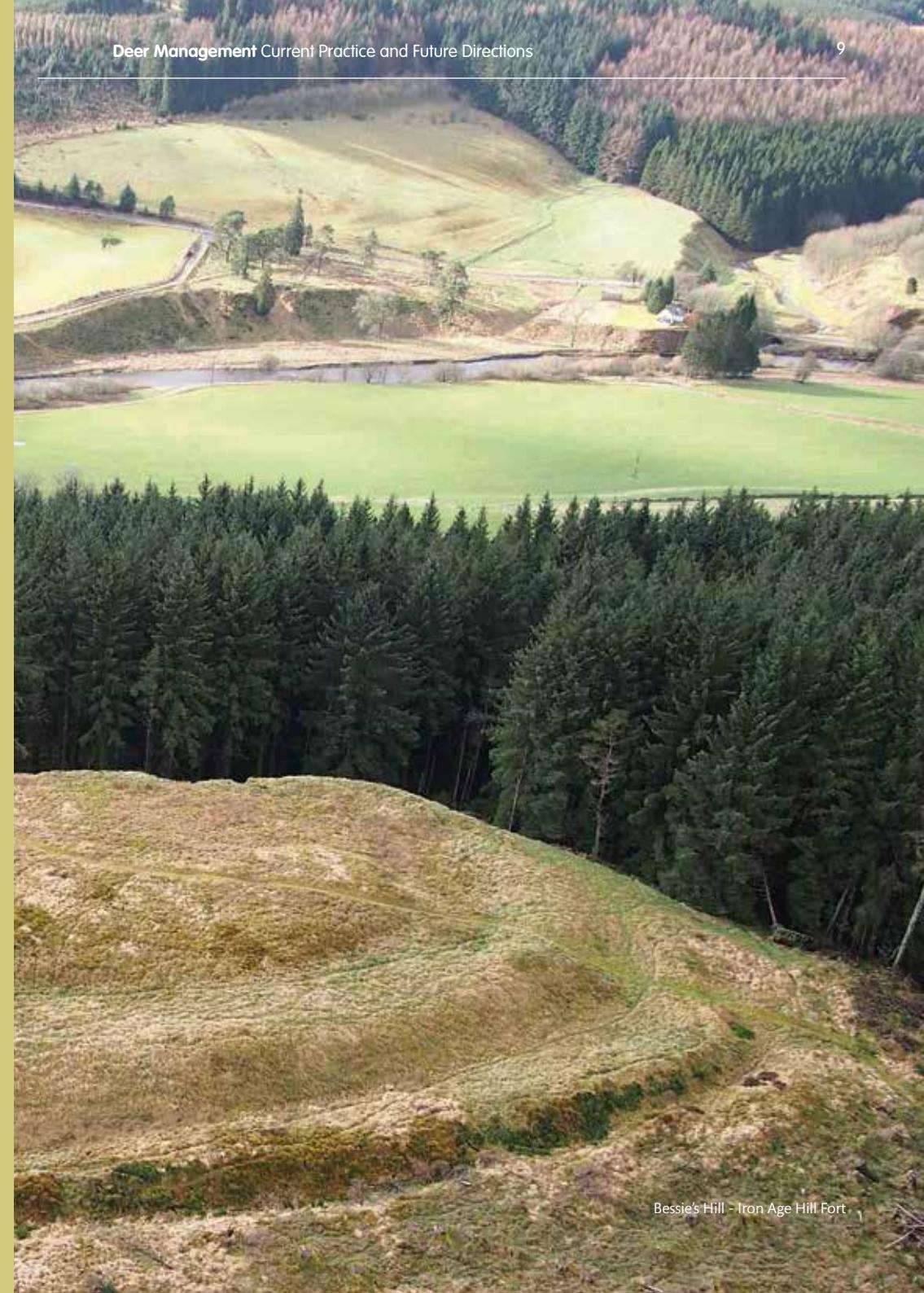
We want to achieve favourable environmental condition across the NFE, most importantly on designated sites but also more widely across non-designated areas as this is consistent with Scottish Ministers' land management objectives as laid out in Scotland's 'Land Use Strategy'. Achieving favourable conditions and ecosystem health helps meet the aims of the 'Scottish Biodiversity Strategy' and 'Scotland's Native Woodlands' and is usually aided by a degree of deer activity which can help maintain vegetation species and structural diversity and influence succession processes. However, high deer impacts can be detrimental, most obviously to woodland

regeneration but also to highly palatable ground layer species; to habitat structural diversity; to dependent insect, bird and animal species; and to fragile ecosystems like peat bogs.

As indicated in the FCS Biodiversity Programme 'Woods for Nature', we will focus our deer management effort to be as effective as possible in reducing negative biodiversity impacts from deer. Our efforts will be directed at protecting designated sites, priority habitats and encouraging overall woodland diversity and broad ecosystem health across the NFE.

Ascertaining the optimum deer impacts to achieve favourable environmental condition, and the appropriate deer densities to support this, is complex and we are still developing our skills in this area. By using a combination of habitat impact surveys, dung counting and population data we aim to establish management strategies appropriate to the unique circumstances of each locality. These strategies also take into account the positive and negative impacts of deer fencing, for example on woodland grouse, vegetation management and recreation access.

The NFE is certified and recognised internationally as sustainably managed through Forestry Stewardship Council certification via the UK Woodland Assurance Scheme (UKWAS). Our approach to deer management is considered as part of this certification process.



Bessie's Hill - Iron Age Hill Fort

BIODIVERSITY AND THE NATURAL HERITAGE

We work to protect, enhance and maintain biodiversity across a wide range of natural and man-made habitats, designated and non-designated, delivering positive outcomes for the wider natural heritage including the NFE's wild deer populations.

By working to maintain healthy deer populations in balance with their local environment and our management objectives, we benefit and support a wide range of bird, mammal, insect and plant species across a variety of ecosystems.



Crossbills



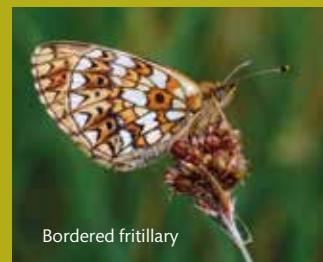
Black grouse



Lichen and mosses



Salmonid



Bordered fritillary



Otter

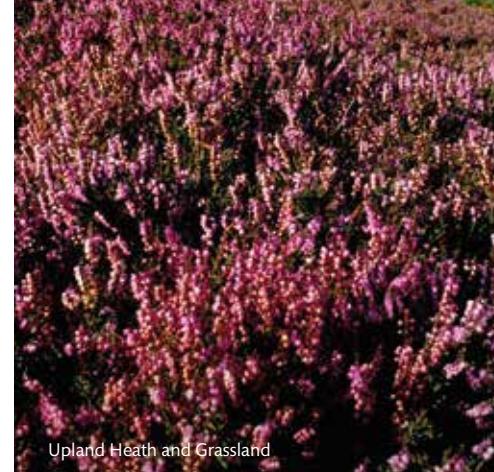


Red squirrel



We seek to achieve and maintain favourable condition across a range of sites including mountains, moorland, peat bogs, wetland, native woodlands, coastal dunes, grasslands and riparian zones.

Where appropriate opportunities arise we will work with neighbours and partners to improve connectivity between habitat networks at both the local and landscape-scale.



Supporting social wellbeing

The NFE is one of Scotland's greatest recreation resources, hosting some nine million visits a year. Catching a glimpse of deer is a highlight of many visits to the NFE.

We aim to manage deer in a way that sustains these wildlife viewing opportunities and accommodates the way people want to access and use the NFE. In Galloway Forest Park our Red Deer Range provides ranger-led guided walks and close encounters with Red deer.

We welcome community involvement in planning and land management on the NFE. Over the last 10 years we have been involved with over 100 community partnerships. Through our land management planning consultation, all local communities have the opportunity to comment on local deer management and other aspects of our land management.

With the expansion of our 'Woods In and Around Towns' (WIAT) programme, we are increasingly managing deer in urban and peri-urban areas in order to facilitate and protect the creation and maintenance of green space and woodland environments.

We have been at the forefront of developing working methods for the management of urban deer, working with local authorities, the police and other urban stakeholders and taking into account safety of the public, welfare of deer and the impact of deer on road safety and residential properties.

Concern has been growing over the impact of deer in road traffic accidents. As we are increasing the presence of the NFE in Scotland's urban area, this is growing as a priority for us. We are proactive in working with partners to find the best strategies to manage this problem.

We are also working with the police Wildlife Liaison Officers and local authorities to reduce anti-social activities against deer.

We recognise that neighbouring landowners and householders may have different views and management objectives in relation to deer. In many areas our neighbours have deer stalking interests, and for some this is an important business activity. Local residents are often keen to see deer, although some have issues about deer impacts in gardens. Where possible, we aim to take account of our neighbours' interests and views in formulating our deer management approach.

The provision of recreational and accompanied stalking on the NFE provides the opportunity for regular and healthy outdoor activity for several hundred participants each year.





Woodlands In and Around Towns -
Cuningar Loop, Glasgow



Deer in the Urban Environment
Image credit: Bertie Gregory 20/20 Vision

Supporting sustainable economic development

We are committed to managing the NFE as a productive resource. The sustainable management of deer can provide economic activity through high quality wild venison, and, where appropriate, stalking opportunities. Our recreational and accompanied stalking operations contribute directly to the Scottish tourist industry through client spend in local catering and accommodation.

Deer contribute to Scotland's wider tourism offering, and are an important component of Scotland's rapidly growing eco-tourism market. We are actively seeking ways to increase the opportunities for the public to enjoy deer at first hand. FES has developed the NFE into a major tourism resource, adding some

£230m¹ (2011/12 prices)

to the Scottish economy each year. Our Community, Recreation and Tourism teams are working with VisitScotland and local partners on how we can further harness the NFE's natural and cultural heritage to boost tourism, including ecotourism. At key locations we will work to provide quality, low key facilities that significantly enhance the visitor experience such as wildlife viewing hides and informative on-site interpretation such as the Galloway Red Deer Range.

We will work to better understand the local socio-economic impacts of deer and deer management activities on the NFE and on neighbouring properties.

An important aspect of productivity on the NFE is the growing and production of timber including biomass and firewood – the NFE currently supplies over three million tonnes of timber annually to Scotland's economically important timber industries, accounting for 40 per cent of all timber produced in Scotland.

Red deer, Sika and Fallow at high densities, can impact on the mature timber resource by bark stripping, which damages trees and allows access for tree diseases.

The most significant impact of deer however is on the establishment of young trees. Some 100 million young trees, representing many millions of pounds worth of investment will be in the vulnerable establishment phase on the NFE at any one time. Our woodland creation programme is at least

500-1,000 ha/annum, and our restocking programme is rising to around 6,000 ha/annum



Tourism



Timber production

with naturally regenerating trees developing within many of our native woodland and continuous cover areas.

As we increase tree planting programmes and seek to diversify the range of timber producing tree species on the NFE, the distribution and number of palatable trees vulnerable to deer impacts will increase. Managing deer impacts is therefore becoming an ever increasing challenge.

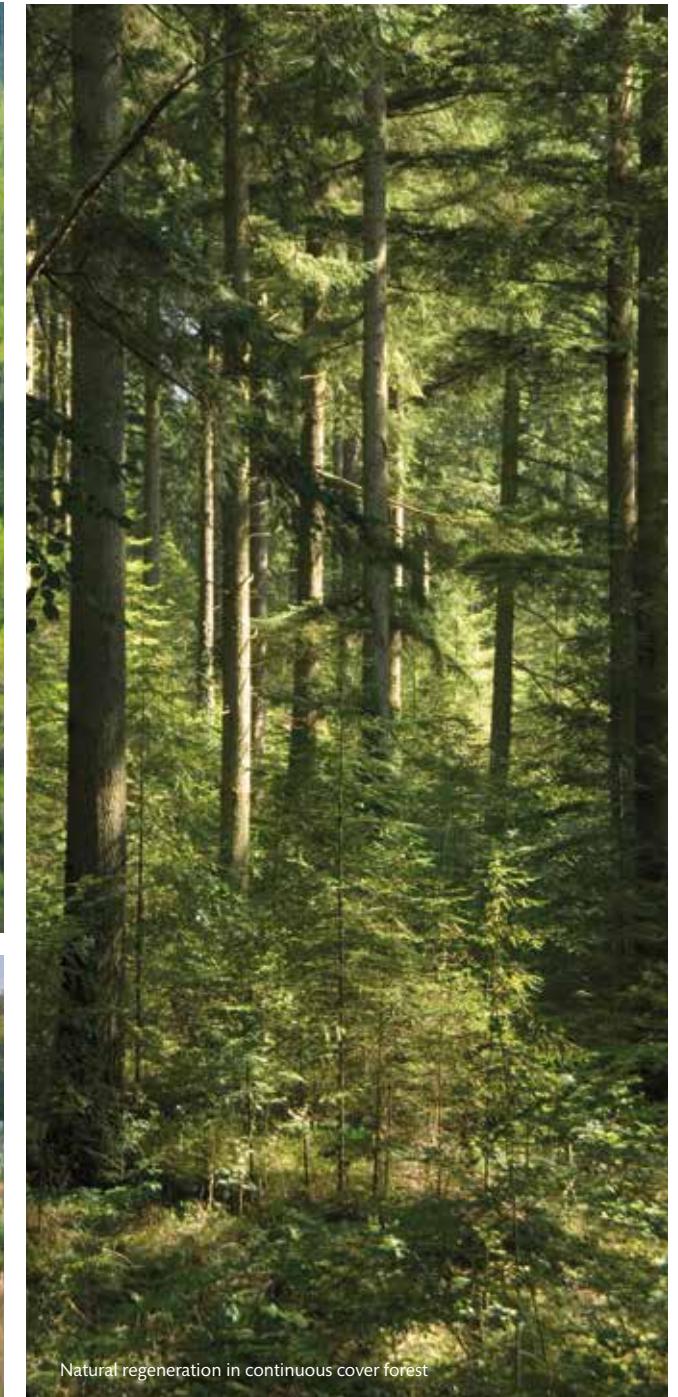
This is further accentuated as we:

- move increasingly to continuous cover forestry systems where appropriate and increased reliance on the natural regeneration of a wider range of tree species.
- adapt silvicultural practice (ie increased clearfell followed by restocking and regeneration), to manage the developing scale and impacts of tree disease, such as Dothistroma and Phytophthora.

Between 2011 and 2013, annually **around 11%-20%** of the leading shoots of young trees suffered damage. We need to reduce this to **below 10%** and maintain the lower level, in order to achieve successful establishment. **We will achieve this protection and manage tree disease impacts by applying a combination of locally focused deer cull and by judicious use of perimeter deer fencing where appropriate and, occasionally, internal deer fencing.**

In 2013 FES directly awarded £36.5million worth of contracts to 1,005 small and medium sized businesses, helping support Scotland's economy and rural communities.

¹ A Valuation of the Economic and Social Contribution of Forestry for People in Scotland. Research Report for Forestry Commission Scotland. Forest Research. Edinburgh. Available at: forestry.gov.uk/fr/forestryforpeople





Integrated Land Management

Our deer management practices and outcomes underpin or are affected by a range of integrated land management activities. From this mix of land use and management regimes we provide a range of ecosystem services which support the basic natural cycles of water, nutrients and life.

Without constant and effective deer management and cohesive land management planning, we would be limited in our ability to deliver some of the above services.





WORKING WITH OTHERS

Deer Management Groups

We support the work of the Association of Deer Management Groups (ADMG) and Lowland Deer Network Scotland (LDNS) in their efforts to represent the full range of interests involved in deer management and their work to encourage and deliver sustainable deer management across Scotland.



FES is represented on the Executive Committee of the ADMG and supports its work to foster good communication, respect, effective collaboration and co-operation between the various parties (public and private), involved in deer management in Scotland. Committee business includes the venison initiatives, deer welfare, conflict resolution, supporting the work of Deer Management Groups, Lowland Deer Network Scotland and feedback to the Scottish Government regarding policies and legislation.

We support the work of local Deer Management Groups (DMGs) in their efforts to foster understanding, constructive and positive discussion, collaboration and co-operation between neighbours and their work to deliver sustainable and effective deer management at local level.



We will work with SNH and ADMG to support the DMG structure and seek to increase its overall effectiveness through participation in the 'Collaborative Deer Management Project 2014' and application of 'The DMG Benchmark'.

Our deer management teams represent FES on over 40 individual DMGs. They attend and participate in meetings to support the work of the groups but also to discuss and share with them our intentions regarding:

- local deer management activities;
- deer management plans;
- proposed cull targets and achievements;
- proposed deer fencing programmes;
- renewable developments;
- results from habitat surveys and assessments;
- tree damage assessments;
- increasing planting programmes and tree species choice resulting from tree disease, particularly where there may be implications for open range deer stocks and where early engagement would be beneficial;
- use of contractors, out of season and night shooting;
- considered response to suggestions by DMGs and communities for appropriate local culling solutions where this is compatible with FES objectives; and
- considered response to taking forward wider public and private objectives where this is compatible with FES objectives.

We also support the groups in:

- local best practice events;
- deer counts (helicopter or ground-based); and
- the funding, compilation and implementation of effective group deer management plans.

We currently contribute over £16,000/annum to the work of ADMG and DMGs through annual subscriptions.

FES is represented on the Lowland Deer Network Scotland Development and Executive Committee where we are sharing our increasing knowledge and experience of managing deer in the lowland setting.

Working with neighbours and stakeholders

We will work with neighbours to try to establish common ground and resolve issues where we have differing objectives. Informed discussion based on the sharing of objective data, evidence and factual information such as deer counts and habitat assessment will form the basis of any solution. If there is evidence that deer are moving out of the NFE onto adjacent agricultural or crofting land, residential properties, green spaces or public roads and causing damage or issues for road safety, FES will exercise its duty of care and work with neighbours to help manage the situation.

We will continue to seek opportunities for co-operation and sharing of resources, where appropriate and practical, to further the aims of sustainable deer management, integrated land management and the safeguarding of Scotland's natural heritage.

We support the Lowland Deer Network Scotland, established in 2011 to represent individuals, public bodies, representative bodies and commercial interests directly involved in the management of deer in the Scottish lowlands. FCS has contributed around £30,000 over three years to support the establishment of the Network.

We are open to supporting the work of other deer initiatives in the development and furtherance of sustainable deer management at national or regional level.

We are represented on and support the work of initiatives such as the Deer Management Round Table, Cairngorms Deer Advisory Group, Wild Deer Best Practice Steering Group and Deer Management Qualification Board.



Leading by example

As part of our ongoing, integrated approach to responsible land management and the development of ecological resilience in response to climate change and other pressures, we aim to be a national exemplar of sustainable deer management. We will explore the potential for working in partnership to demonstrate delivery of: protection of the natural environment; support for sustainable economic development and social well-being; and the safe guarding of wild deer welfare. As part of this we actively support research, development and training.

We aim to deliver high standards of deer management to meet our environmental and quality commitments within the UK Woodland Assurance Scheme (UKWAS), Scottish Quality Wild Venison (SQWV), and the 'Code of Practice on Deer Management'. Our teams apply industry best practice.

Our deer management activities are monitored and reviewed on a regular basis by our Wildlife Ranger Managers and are subject to audit by the FES and FCS Internal Audit teams and externally through our UKWAS accreditation.

FES will discuss with FCS and SNH the potential for comparative performance indicators (such as deer densities and deer damage impacts), to assess the contribution to Scotland's 'Wild Deer a National Approach' (WDNA), and delivery of the 'Code of Practice on Deer Management' for land managers on public and private land. FES will work with SNH to review the WDNA and contribute to the delivery of WDNA objectives and actions.

AN INTEGRATED AND COLLABORATIVE APPROACH TO DELIVERY

A review of deer management by the Scottish Parliament Rural Affairs Climate Change and Environment Committee in early 2014 focused attention on deer management and the need to reduce deer impacts on Scotland's natural heritage, its designated sites and the wider countryside, including its native woodlands.

It also highlighted the need for a supported Deer Management Group structure to build the capacity and effectiveness to deliver the deer Code through collaboration and effective deer management plans.

Through its integrated land management practices and delivery of sustainable deer management, FES helps to deliver the **Scottish Land Use Strategy** and enhance the NFE's resilience to climate change impacts. We manage the NFE as a valued natural resource for the people of Scotland.

We support and collaborate directly with **more than 40 Upland and Lowland Deer Management Groups** and a wide range

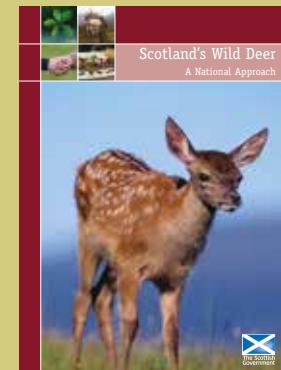
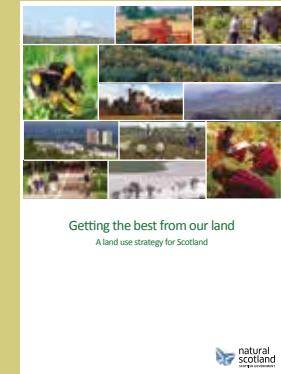
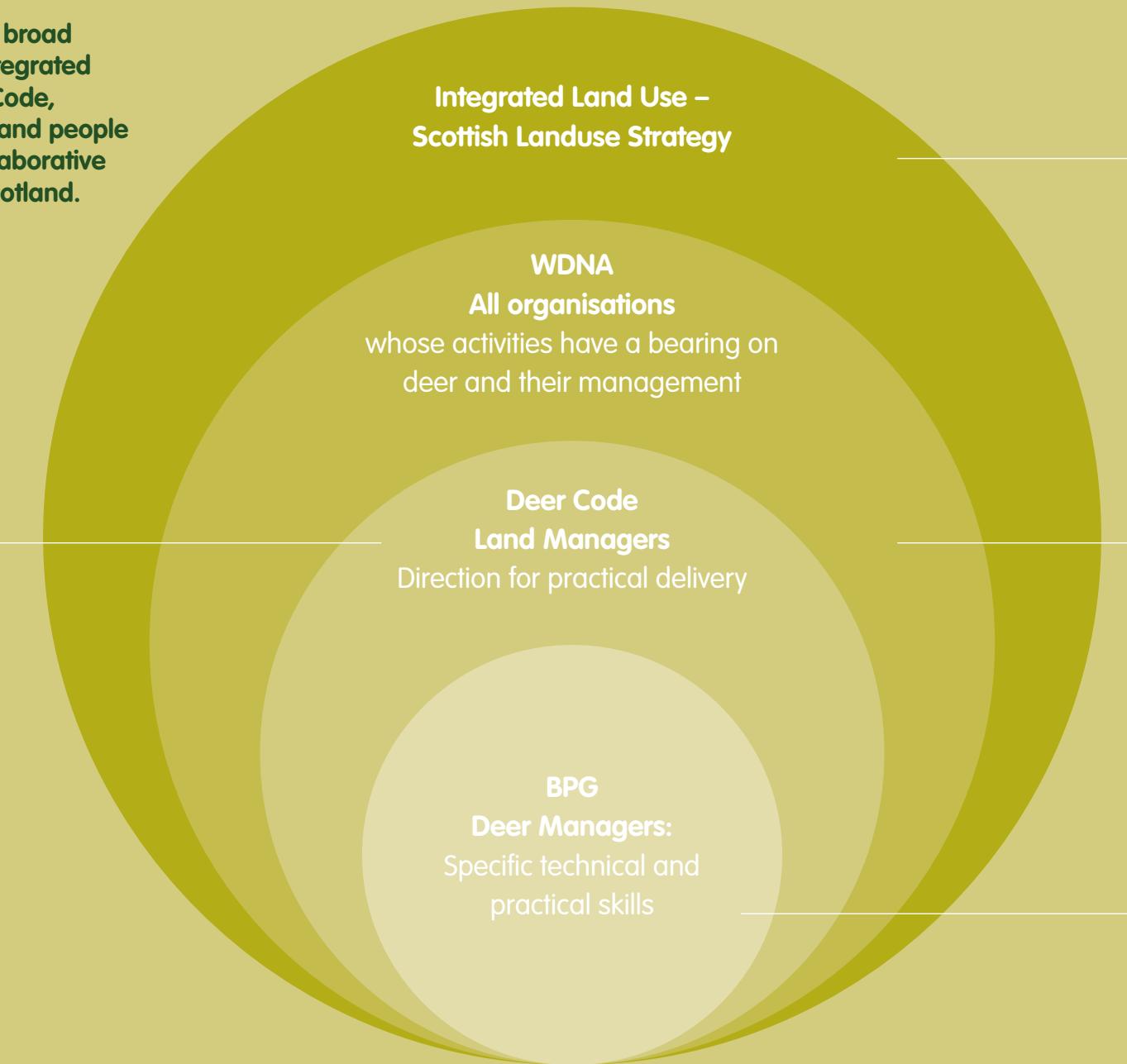
of neighbours, initiatives and partners across Scotland to help deliver the Scottish Government's deer strategy **Scotland's Wild Deer: A National Approach (WDNA)**, always looking ahead to the next set of challenges. We aim to be accountable, inclusive and transparent in the management of the NFE and our deer activities. We will play our part in contributing to the WDNA Action Plan.

Our Wildlife Management teams, contractors and recreational stalkers play an important role in protecting the NFE's biological and cultural assets from damaging deer impacts by applying the principles of the **Code of Practice on Deer Management** and through implementation of FES deer management plans and application of a wide range of practical skills and adherence to the **Wild Deer Best Practice Guides**.

The geographic spread of the NFE and range of our operational work across Scotland means that our staff have a broad and comprehensive understanding of deer management issues and opportunities and how this relates to wider land management. This enhances our ability and capacity to contribute effectively to Deer Management Groups, deer initiatives, policy development, research, the national cull and to share best practice.



This diagram shows the broad relationship between integrated land use, WDNA, Deer Code, Wild Deer Best Practice and people who work to deliver collaborative deer management in Scotland.



Landscape-scale deer management - a partnership approach

The Great Trossachs Forest (TGTF) project is **restoring, protecting and enhancing native habitats. Ecosystems with a high biodiversity value are being created** and the area is becoming a showcase for wildlife, tourism, research and partnership working.

The project area **spans 16,500 hectares (ha), across three ownerships and includes both designated and non-designated land**.

The partner organisations are Forestry Commission Scotland (Loch Katrine 10,610 ha), Woodland Trust Scotland (Glen Finglas 4,870 ha), and Royal Society for the Protection of Birds (Inversnaid Nature Reserve 810 ha).

A key element of project delivery is the sustainable management of deer, applying best practice, at the local and landscape level through implementation of an effective Deer Management Plan (DMP). The Balquhidder Deer Management Group DMP provides the overall direction for the management of wild deer in this part of Scotland. The TGTF DMP sits beneath this and above the three individual partner organisation's DMPs, providing the overarching strategic context. It also facilitates internal and external communication processes.

Deer population numbers were determined by helicopter count across the Balquhidder DMG area plus dung counts at certain locations to establish deer usage and density. Habitat condition assessments review the impact that grazing is having on pre-identified habitats at randomly selected points. A regular cycle of 3 or 5 years allows the partners to assess deer movement, deer densities and impacts on designated sites and other important habitats, which will then inform cull targets.

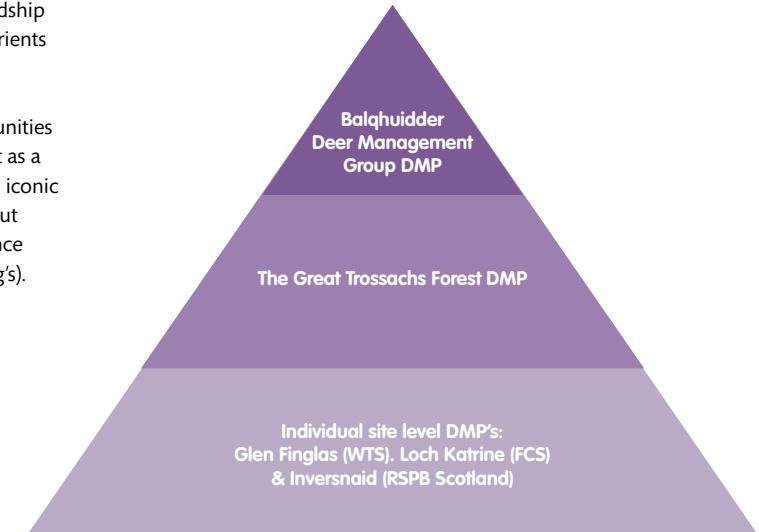
Deer fencing is employed only when every other option has been considered, and management objectives cannot be achieved any other way without impacting on neighbouring objectives. By working together and linking fences, the partners have reduced the total length of deer fence required. Fencing will be removed when the trees are safely established and above browsing height.

Ecosystem Services

Through sustainable and integrated management of the Loch Katrine, Arklet and Glen Finglas water catchments the partnership is proactively managing this **living ecosystem** to help deliver a range of public benefits:

- **provisioning services** such as the supply of clean water to the Glasgow area, farmed food (beef) from the cattle herds, wild food (venison) from the Katrine deer herd, timber production from the existing and developing woodlands, and renewable energy from Scottish Hydro's Glen Finglas Reservoir hydro-scheme;
- **regulating services** such as carbon sequestration through the creation and growth of new native woodlands; flood mitigation through the protection of soils, avoidance of erosion and by the long-term maintenance of woodlands and associated ground vegetation; and through encouraging pollinating insects by developing a diverse ground flora, shrub layer and woodland canopy;

- **supporting services** by careful stewardship of the basic natural cycles of water, nutrients and life; and
- **cultural services** by providing opportunities for people to appreciate the catchment as a place to exercise, learn, relax, enjoy the iconic Katrine landscape and get inspired about nature and history (Glen Finglas was once a royal hunting ground for Scottish king's).





Native woodland expansion in the Loch Katrine catchment

OUR APPROACH TO PROFESSIONAL STANDARDS

The FES deer management team

FES employs 70 deer management staff (64 Full Time Equivalents), and provides direct work for 30-35 deer culling contractors on short to medium term contracts. Their efforts to protect the natural heritage underpins the work of a large number of FES employees and contractors involved in managing the NFE.

This includes a team of around 50 Wildlife Rangers who underpin practical deer management on the NFE. As well as direct deer management, they are closely involved in the forest design planning process and monitor/assist in the management of leases and permissions. Many also make an important contribution to our wider environmental objectives, and are valuable eyes and ears around the Estate.

Some of our Wildlife Rangers enlist the support of an Assistant to help with night shooting operations for instance to provide safety cover and to hold the spot lamp while the Ranger takes the shot.

Our 12 Wildlife Ranger Managers manage FES deer operations at District level, overseeing and supervising the work of Wildlife Rangers and contractors. They also manage the tendering of contracts and permissions and our deer related monitoring activities.

Three Deer Management Officers manage FES deer activities at regional level covering three or four Forest Districts each. They represent FES on regional and national committees and initiatives. They oversee the implementation of deer management policy and practice, and lead on programming and budgeting.

We have a small administrative team based in each of the regional deer hubs (admin centres), in Golspie, Dunkeld and West Calder who provide a professional administrative and customer care service to the deer management team, contractors, lease / permission holders and accompanied stalking clients.

In 2013/14, just over 30,000 deer were culled on the NFE. The Wildlife Rangers culled 14,610 (49 per cent), the contractors 11,960 (40 per cent) and the recreational stalkers 3,540 (11 per cent).



Wildlife Ranger equipment



Administering the deer management activity

Professional standards

All Wildlife Rangers and contractors working on the NFE have Deer Management Qualifications (DMQ), Deer Stalking Certificate 2 (DSC2), are SNH registered as 'Fit and Competent', hold food standards 'Trained Hunter' status, work to Scottish Quality Wild Venison (SQWV), assured standards and industry best practice. Contractors are selected by national competitive tender and must have the appropriate qualifications, firearms licence, equipment and Public Liability Insurance (which covers business use). The tender process is formally audited.

The operational standards of the Wildlife Rangers and contractors are monitored regularly by our Wildlife Ranger Managers and Deer Management Officers. This includes deer welfare, health and safety, shot placement, carcass recovery, presentation and quality. Cull targets for our Wildlife Rangers and contractors are set by the Wildlife Ranger Managers and agreed with the Deer Management Officers.

We are working to develop a programme for apprentices or trainees in wildlife management. We are currently in discussion with Scottish colleges and our Learning and Development colleagues to assess the future potential and possible mechanisms **for Wildlife Ranger trainee development on the NFE**. We hope this will lead to the creation of Wildlife Ranger apprentice or traineeships providing opportunities for new entrants to enter the wildlife management sector.

We promote training and continual professional development for all our deer management staff. The FES Wildlife Ranger team undergoes continual assessment and training in order to maintain a high level of competence. This includes:

- health and safety, risk assessment;
- firearms and firearms handling standard;
- primary production of deer carcasses;
- marksmanship;
- dogs as an aid to deer management;
- manual handling;
- first aid;
- information technology; and
- ATV training

Development includes a visit to the game dealer premises to increase understanding of the venison processing industry, end-products and the need for high standards of food hygiene and quality presentation of deer carcasses. We will incorporate into our training regimes the guidance being developed by the Wild Deer Best Practice Steering Group and SNH to support delivery of the 'Code of Practice on Deer Management'.

Some of our Deer Management staff benefit from the Nature Exchange Programme to participate in fully funded study visits to organisations in other European countries, to exchange best practice and to establish new contacts and partnerships for future cooperation.



Quad bikes allow access to remote sites



Trainee Ranger assessing young conifer for deer damage



Larding using appropriate protective clothing and equipment

Operational guidance

The Commission has produced three internal guides for FES staff to inform and steer our deer management activities:

- OGB 5 Deer Management;
- OGB 5a Wild Venison Standard
- OGB 14 Using Firearms

We will continue to review the guides throughout 2014/15 and take into account recent changes such as the outcomes of the Wildlife and Natural Environment Act (Scotland) 2011. We have also developed some guidance for other stalkers shooting on the NFE such as those involved in Deer Management Permission and Accompanied Stalking.

Forestry Commission Firearms Advisory Group

The Forestry Commission has a Firearms Advisory Group on which there are senior deer management staff plus members of our Health and Safety, and Learning and Development teams. The Group works to address FC-wide firearms and deer management issues including health and safety and the revision of operational guidance.

Industry best practice

We support the deer industry in implementing and developing best practice, standards and assessment of competence.

Managing all four species of deer across Scotland, over many years, across the Highlands, the Lowlands and in the urban environment, we have accumulated a great deal of knowledge and experience which we offer in support of ongoing national developments and initiatives.

Within operational limitations, we offer the use of FES zeroing areas and deer larders to recognised DMQ Assessment Centres for training and assessment purposes in the crofting areas where facilities and opportunities are otherwise limited.

FES actively participates in the Wild Deer Best Practice Steering Group, and currently contributes

£25,000/annum

to support its work. We will continue to help develop, promote and implement guidance from the Group, and FES staff will also support related training or best practice events.

In liaison with industry groups, we have taken a lead role to create resources for professional development such as DVDs on stalking deer in woodlands, humane despatch and urban deer management.

Deer Management Qualifications

FES is a member of DMQ, providing a Representative Director to its Board. We also contribute in the DMQ Quality Assurance Group (QAG) when required. Two of our Deer Management Officers are DMQ Assessors whilst one is also the FES Internal Verifier. FCS heads the FC DMQ Assessment Centre. In addition, around 30 of our Wildlife Ranger Managers and Wildlife Rangers are Approved Witnesses and they can train and witness stalkers performance towards DSC 2 as part of their accompanied stalking work.

Our general requirement of competence is that all personnel shooting unaccompanied on the NFE must have DSC 2. The exceptions to this are:

- recreational stalkers who can have DSC 1 but must attain DSC 2 within the year, until which time they must be accompanied by member of the syndicate who is a DSC 2 holder; and
- accompanied stalking clients (some of whom may have an appropriate European qualification), who are accompanied by a Wildlife Ranger who has DSC 2.





Wildlife Ranger Manager assessing a Ranger's marksmanship and firearm handling



Raising Awareness

As a significant land and deer manager and provider of outdoor recreation, FES has a unique opportunity to raise awareness nationally of the importance of deer in Scotland and on the NFE, and the full range of deer management activities and associated high standards necessary to protect the environment and deer welfare. We will use these opportunities to provide factual information about deer management, why it is important and how it is carried out.

Health and safety

All of our deer management activities are undertaken within a comprehensive health and safety framework. We employ professional health and safety advisors and take a continuous improvement approach to assessment and mitigating risk.

Health and safety considerations are a major factor in defining working methods, Wildlife Ranger training and development programmes, and provision of equipment for deer management.

We operate comprehensive fail-to-safe lone working systems. Our Wildlife Rangers use the Guardian 24 lone working system which requires logging-in and logging-out, before and after deer management activities. We are currently assessing future needs including the use of technology such as personal locator beacons.

We believe that, as outlined in the Scottish Outdoor Access Code, access and safety should work together, therefore in most circumstances we safely carry out deer management activities whilst maintaining open access to the NFE. However, safety will always be the over-riding principle in all our management activities, and we take full account of patterns of woodland use by the public and operational activities when we are determining our deer management plans for an area.

A very important aspect of safety is the stalkers continual observation and risk assessment of the stalking environment and circumstances during the stalk, and the need to be absolutely certain of a safe backdrop before taking the shot.

We have produced a deer management protocol to ensure the safe management and communication of our deer stalking activities in and around developments such as windfarms and hydro schemes.

Prevention of Lyme's disease forms a key part of health and safety management for all operatives working on the NFE. In addition, we provide public information on tick avoidance and what to do if bitten.



Ticks can transmit Lyme's diseases



Logging on to the safety system



Enjoying the forest



Discussing safety aspects of harvesting and deer management

RESOURCES FOR DEER MANAGEMENT

Each year we invest some £6-7million in deer management and deer fencing; a significant input into the rural economy in itself, and equating to just under £7/ha of the NFE. This funds a wide range of activities including:

- contributions to the deer initiatives;
- representation on deer initiatives & working groups;
- damage and impact surveys;
- wildlife Ranger equipment, Protective clothing, dogs etc;
- lone worker safety system;
- planning for deer management;
- ATV track construction and maintenance;
- maintenance of deer glades;
- larder maintenance/equipment & waste disposal;
- deer fencing (construct, inspect, maintain and dismantle);
- managing leases/permissions;
- culling activity; and
- buildings compliance.

FES makes wide use of private resources and expertise in its deer management operations including contract and recreational stalking, surveyors, fence contractors, plant hire, larder construction and maintenance, larder waste disposal, helicopter hire (deer counts), and firearms dealers (inspections and repairs).

Deer Management Indicative Expenditure for 2014/15

£2.4m
Salaries

£0.6m
Vehicles, Machinery & Equipment

£0.7m
Admin

£2.9m
Cash (of which £0.7m is for deer fencing)

£0.1m
Depreciation

£6.7m
Total Expenditure

£1.8m
Deer Management Indicative Income 2014/15

£4.9m
Deer Management Indicative Net Expenditure 2014/15

HOW WE MANAGE DEER

Planning deer management

We are committed to maintaining sustainable, resident deer populations on the land managed by FES, taking into account the welfare of individual deer as well as the wider population. We do not take a single species or single site approach to management of deer but rather an ecosystem approach for delivery of multi-purpose benefits.

Objective setting for deer management is undertaken through our spatial planning process, focused on the forest plan and informed by national and Forest District strategies. For designated sites and priority habitats, deer management objectives are embedded in FDPs, based on surveys and condition monitoring work. Deer management aspects of planning are brought together in local deer management plans, usually in collaboration with other land owners.

We are currently reviewing our land management planning and strategic spatial planning systems to take forward the integrated management of woodland and open space using an ecosystem-based approach. This will achieve more joined-up delivery of a full range of ecosystem services, including deer management aspects, and to better take account of uncertainties and pressures like climate change and invasive exotics.

We recognise that woodland creation and development happens over a long time-scale, and that ongoing and consistent deer management is important to avoid failure due to deer impacts.

We plan and manage land on the NFE taking into account the needs of deer management and deer welfare. Our design plans for woodland establishment across the NFE are developed to include appropriate areas of open ground for landscaping, conservation and amenity purposes but also to facilitate safe and effective deer management. Our deer management teams input to planning at the strategic and local level by providing information on deer species and impacts, ensuring the provision of infrastructure such as deer glades, ATV access tracks and fences where appropriate and commenting on tree species choice.

Evidence-based Management

The provision of objective data and information provides a basis for informed debate and evidence-based decision-making within FES, and for informed discussion with our neighbours and partners.

We use the best available evidence to determine the appropriate deer densities required to meet management objectives, and the cull targets necessary to achieve those densities. This ranges from formal habitat impact assessments, stocking density assessments, tree damage assessments, effective deer utilisation (dung counts), helicopter and ground-based deer counts (including thermal imaging), as well as making the most of what we see on the ground. Assessments can include site condition monitoring such as fixed-point

photography quadrats, collection of information on livestock and deer sightings, and distribution of ground vegetation. We provide training for surveyors to recognise the various forms of damage to trees such as by insects or herbivores.



A deer browsed Rowan

When reviewing damage to ground vegetation, tree growth etc, we take into account local grazing/browsing impacts caused by other herbivores such as sheep, goats, cattle, blue/brown hares and rabbits.

We will continue to collect objective and evidence-based data to guide our deer culling operations. During 2014/15 we will review our monitoring, survey, assessment and decision-making processes with the purpose of rationalising and improving the analysis, consistency and use of existing and new data

with the longer-term aim of:

- predicting likely damage impact levels;
- monitoring immigration to the NFE by deer;
- setting deer culls to prevent or reduce impacts;
- ensuring clarity of objectives and approach in our management of in-forest and open range habitats;
- helping inform our strategic or march deer fencing;
- monitoring deer density and population trends; and
- assessing the potential for developing deer population (deer density), modelling to aid cull planning on the NFE.

The combined use of:

- dung counts/effective deer utilisation;
- damage impacts to trees/shrubs/ground vegetation;
- cull records; and
- habitat impact assessments could potentially be developed to provide an enhanced scientific method of assessing deer populations, deer densities and the necessary cull intensities across the NFE.

The Native Woodland Survey of Scotland (NWSS) provides the first ever overall picture of deer and other herbivore impacts in native woods throughout Scotland alongside detailed information on woodland structure and composition. We will take into account the NWSS information together with our own data systems to help assess priorities for action to protect and conserve native and ancient woods working with neighbouring land managers where possible.

Deciding the management approach

Once deer management objectives have been set in support of our wider delivery intentions for the land area, the main decision on management approach is the balance between culling and fencing. When making that decision we broadly consider the costs and benefits of each, both financial and in relation to wider benefits and potential issues.

The UK Woodland Assurance Scheme requires that "appropriate wildlife management and control shall be used in preference to fencing", and generally, management of deer populations by culling offers the most holistic basis for delivering our range of objectives across the NFE so this will tend to be our favoured approach where it is viable.

Fencing

Fences are an important deer management tool but are rarely the complete or ideal solution. Fencing is costly to plan, erect, inspect, repair and dismantle. Fences have a limited life, and can be difficult to keep deer-proof. They are not effective during periods of deep snow, after storms when windblown trees flatten fences, in areas where vandalism is a problem, or when gates are left open. Furthermore, fences can affect the ranging behaviour of deer, impact on other wildlife like woodland grouse, and can be an impediment to recreation access. They can be visually intrusive, impact on landscapes, and protect only the parts of the forest enclosed leaving the remainder vulnerable to adverse impacts from deer. Fencing within semi-natural woodland to achieve natural regeneration can lead to a dense stand structure that casts heavy shade and threatens rare plants.

In many areas fencing forms a part of our approach to deer management. Where feasible, march fences are an important tool if we have different deer management objectives from our neighbours. We try to minimise the use of internal fences, but these can be essential in localised high risk situations, for example where we are establishing concentrations of particularly palatable tree species or productive broadleaved crops that can only tolerate very low deer numbers and need constant protection. We do make use of electric fencing in some locations but this is limited and can be as simple as a single strand wire positioned parallel to a main deer fence.

The delivery of climate change resilience and managing the scale and impacts of tree disease means that we will be planting an increasingly wide range of palatable broadleaves and alternative conifers, distributed across a wider area of the NFE. In order to reduce browsing

damage to leading shoots, we will rely more on an increased culling effort where necessary, effective perimeter deer fencing (in appropriate locations), and less on internal deer fencing to achieve successful tree establishment.

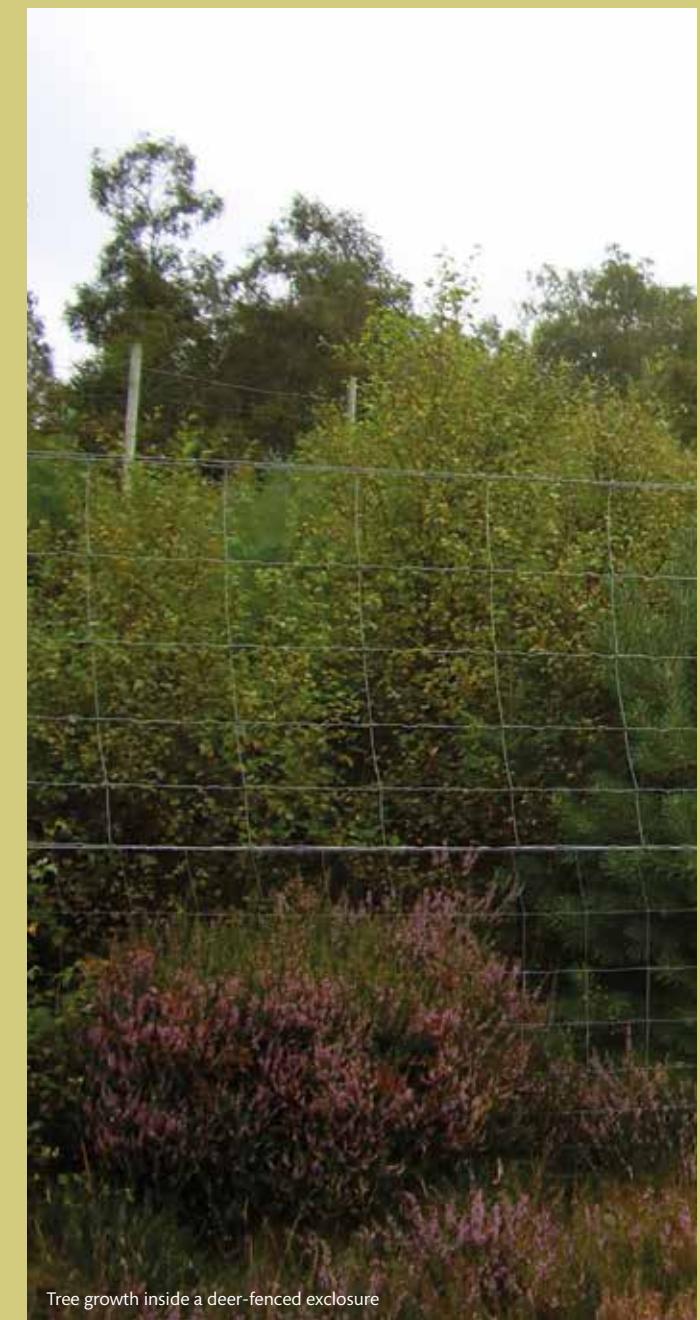
FES sustains major fencing commitments, currently extending to around

2,250 km of deer fences

across the NFE. Each year we spend in the region of **£0.5-£1 million** on deer fencing. Given limited resources, and potential negative impacts, fencing activities have to be carefully targeted for maximum effect. Where we do erect and maintain strategic or boundary fences this will be in agreement with the relevant neighbours, for mutual benefit and with cost sharing in accordance with the relevant legal agreements and titles.

Our fencing is planned and managed in accordance with the principles of the 'Joint Agency Statement on Deer Fencing – June 2004' and using the 'Practical/Technical Guidance for Deer Fencing (May 2012)' to assess impacts and mitigation. We will increasingly plan for fences at the Land Management Plan level.

We will continue to utilise deer fencing as a carefully targeted option for effective deer management taking into account environmental, access, shared-costs, benefits and budgetary constraints. Many of our new woodland creation and productive broadleaved sites will be deer fenced. As fencing is rarely a complete solution, we continue to monitor browsing impacts in fenced areas and undertake supplementary culling as necessary.



Tree growth inside a deer-fenced enclosure

CULLING

Setting Cull Targets

Our Wildlife Management teams work with their Operations and Environment colleagues and survey consultants to agree deer density targets based on the evidence available and our management objectives. Through ongoing consultation, for instance via Deer Management Groups, we also consider the deer management objectives of our neighbours when setting cull targets for the NFE.

Determining appropriate deer populations and hence cull targets is an iterative process. Habitat data, damage impact results and cull returns are monitored and assessed and, if necessary, adjustments made to subsequent cull targets. Where our focus is on woodland development and habitat management recommended deer densities are typically between 2-7 deer/km².



Distribution of the cull

FES cull data is summarised in these tables. The deer cull in 14/15 will increase to an estimated **30,950** as we seek to reduce impacts on the NFE. The precise cull achieved in each year of the forecast will vary according to operational circumstances and decisions based on the results of ongoing deer impact monitoring.

The FES cull represents around **30 per cent** of the Scottish deer cull, and represents an estimated **5 per cent** of the Scottish deer population (for reference the NFE extends to about **9 per cent** of Scotland's land area).

In 2012/13, FES activity represented 54 per cent of Scotland's Sika cull, 43 per cent of the Roe cull, 25 per cent of the Fallow cull and 21 per cent of the Red cull. Overall the FES cull density is 4.5 deer per km² per year across the NFE. Of the 11,965 Red deer culled on the NFE, 5,372 were stags, which includes stags culled outside the traditional Red deer range.

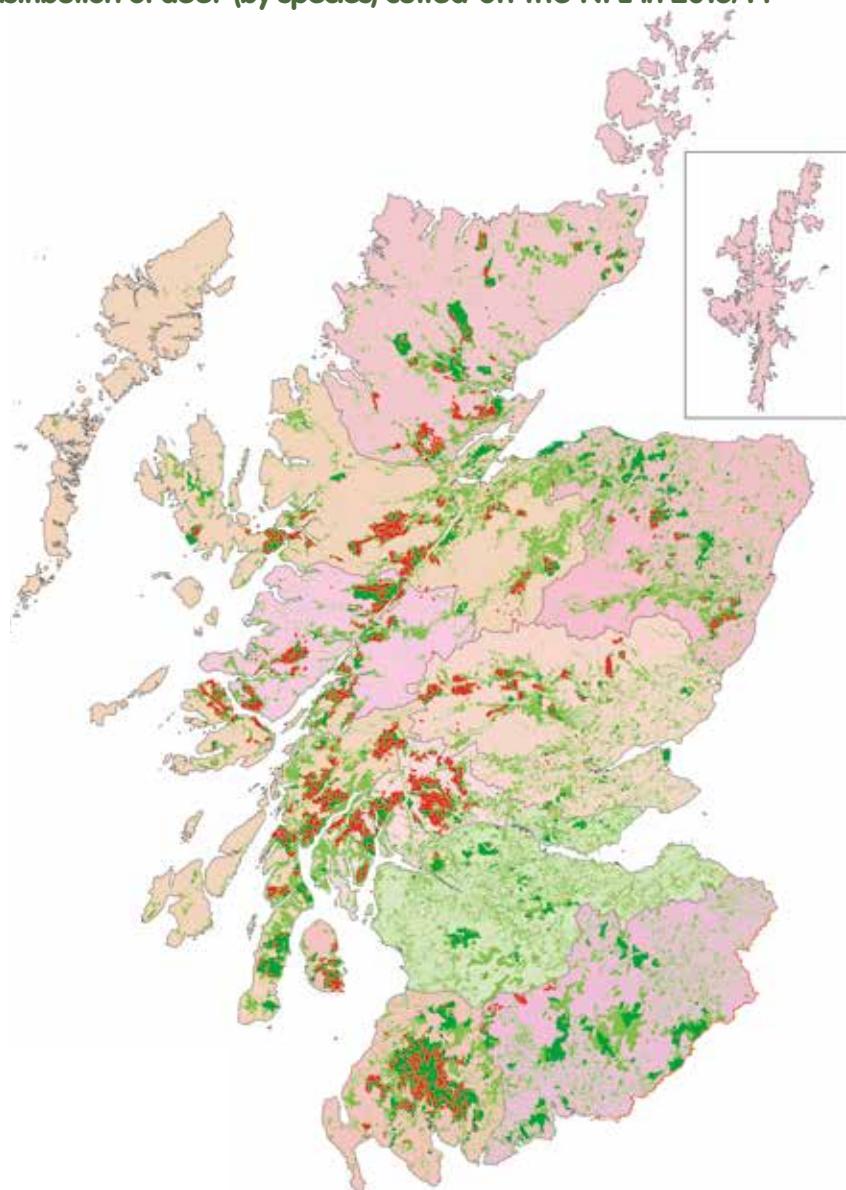
Deer culled on the NFE 2010/11-13/14 and Forecast for 14/15

	Red Deer	Roe Deer	Sika Deer	Fallow Deer	Total
2010/11 Actual	11,157 (41%)	12,255 (45%)	3,196 (12%)	424 (2%)	27,032 (100%)
2011/12 Actual	10,633 (39%)	13,254 (48%)	3,247 (12%)	408 (1%)	27,542 (100%)
2012/13 Actual	11,854 (40%)	14,259 (48%)	3,241 (11%)	432 (1%)	29,786 (100%)
2013/14 Actual	11,695 (39%)	14,705 (49%)	3,183 (11%)	528 (1%)	30,111 (100%)
2014/15 Forecast	-	-	-	-	30,950 (100%)

Deer Culled on the NFE 2010/11-12/13 as a Contribution to the Scottish Cull.

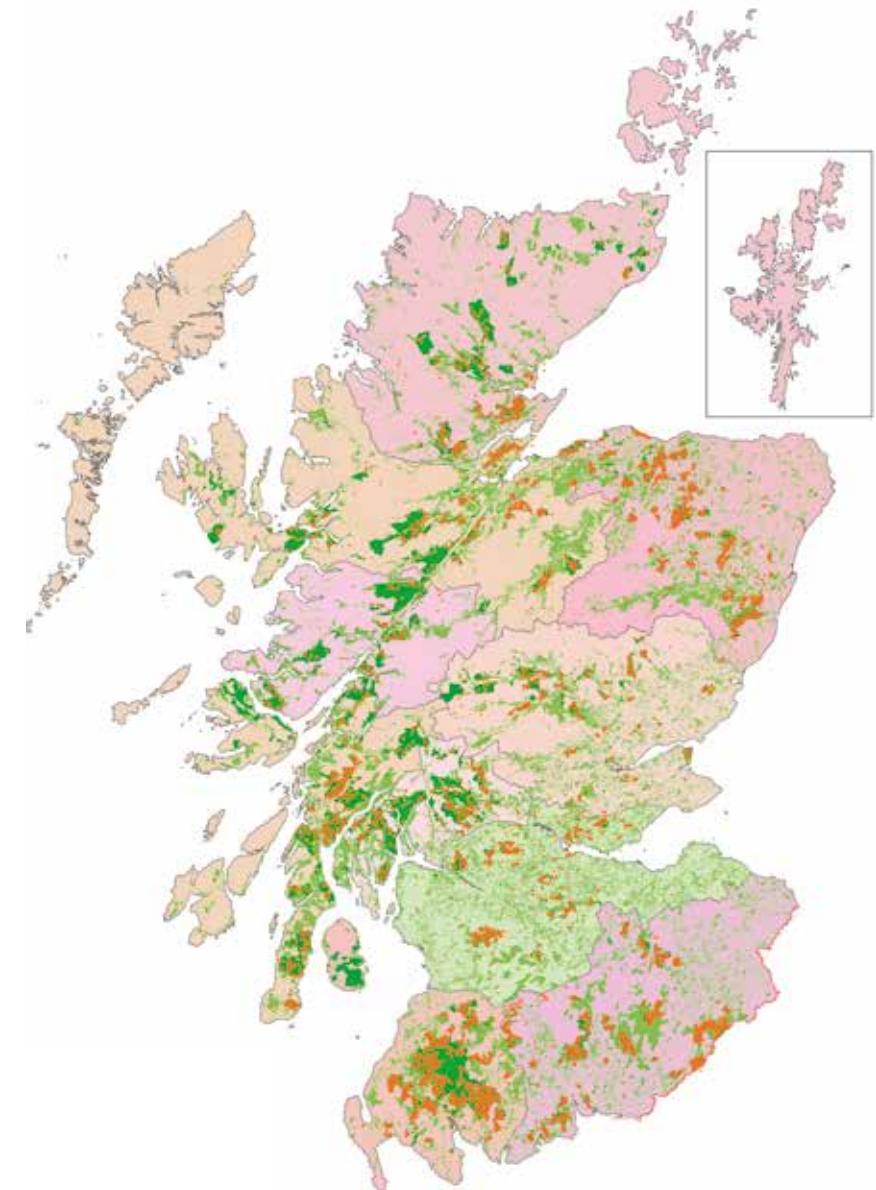
	Red Deer	Roe Deer	Sika Deer	Fallow Deer	Total
2010/11 FES Actual	11,157 (41%)	12,255 (45%)	3,196 (12%)	424 (2%)	27,032 (100%)
2010/11 Scottish Actual	56,275 (59%)	31,291 (32%)	6,528 (7%)	1,923 (2%)	96,017 (100%)
FES Cull as % of Scottish Cull	20% of Red Cull	39% of Roe Cull	49% of Sika Cull	22% of Fallow Cull	28% of Scottish Cull
2011/12 FES Actual	10,633 (39%)	13,254 (48%)	3,247 (12%)	408 (1%)	27,542 (100%)
2011/12 Scottish Actual	52,902 (57%)	32,097 (34%)	6,141 (7%)	1,863 (2%)	93,003 (100%)
FES Cull as % of Scottish Cull	20% of Red Cull	41% of Roe Cull	53% of Sika Cull	22% of Fallow Cull	30% of Scottish Cull
2012/13 FES Actual	11,854 (40%)	14,259 (48%)	3,241 (11%)	432 (1%)	29,786 (100%)
2012/13 Scottish Actual	56,779 (58%)	33,175 (34%)	5,977 (6%)	1,696 (2%)	97,627 (100%)
FES Cull as % of Scottish Cull	21% of Red Cull	43% of Roe Cull	54% of Sika Cull	25% of Fallow Cull	31% of Scottish Cull

Distribution of deer (by species) culled on the NFE in 2013/14



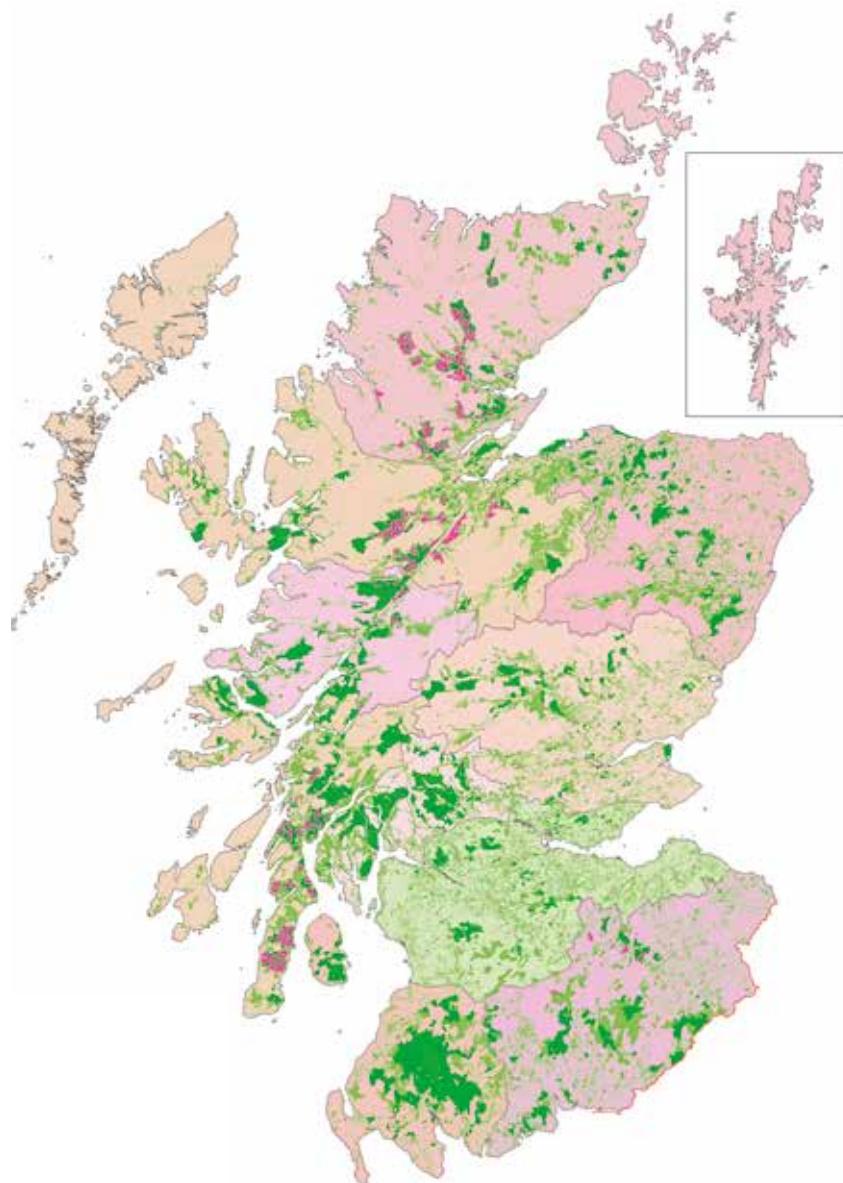
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Red Deer 11,695 culled in 2013/14



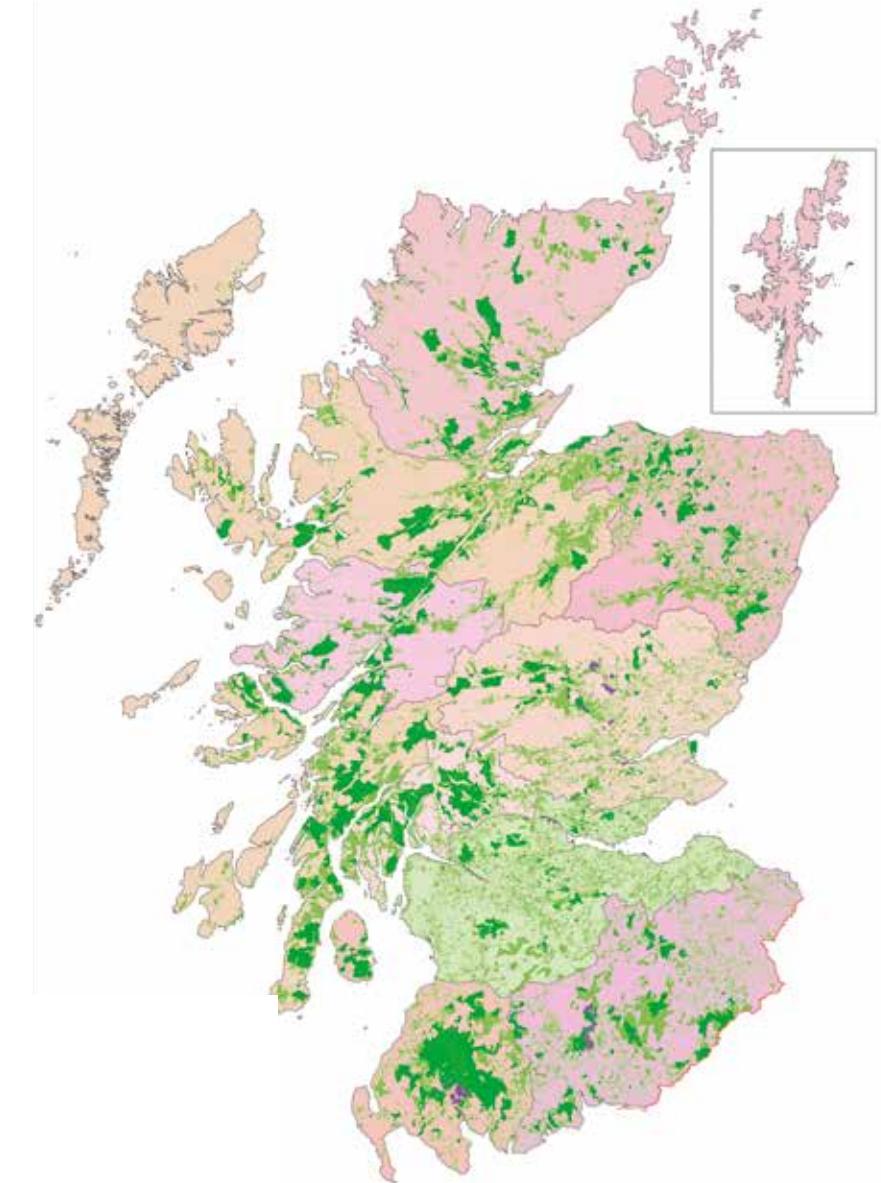
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Roe Deer 14,705 culled in 2013/14



KEY

Sika Deer 3,183 culled in 2013/14



KEY

Fallow Deer 528 culled in 2013/14

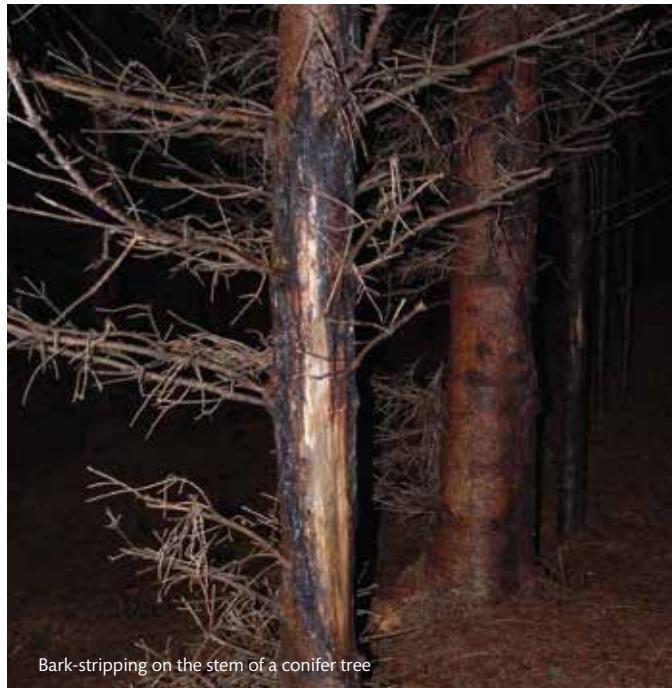


FIREARMS & AMMUNITION

We restrict the type and calibre of firearms used on the NFE to those which are suitable for the safe, legal and effective culling of deer. The permitted categories of firearm for shooting deer on the NFE are centre-fire rifles, and shotguns for roadside Deer Vehicle Collision (DVC), deer casualties.

Due to concerns regarding the potential impacts on wildlife and human health from lead in the environment the use of lead ammunition in the UK is currently being assessed by the DEFRA-led 'Lead Ammunition Group' (LAG).

We are currently using lead and non-lead ammunition on the NFE, consolidating our considerable practical experience of both types. Our experience will be reviewed and briefly summarised, taking into account the overall effectiveness of both lead and non-lead, the evidence and conclusions of the LAG, and any new trials we may conduct. Consideration will then be given to the future use of lead and/or non-lead ammunition on the NFE. Recreational stalkers and other stakeholders will be consulted regarding any proposals by FES as to the future use of non-leaded ammunition for leases and permissions on the NFE.



Out of season and night shooting

Deer can cause damaging impacts to trees and ground flora at any time of year.

We therefore need to monitor this and ensure protection of the NFE's biological resources throughout the year.

Out of season and night shooting are essential in helping us manage damage impacts.

All of our out of season and night shooting activity is discussed with the statutory deer authority, SNH. All applications are based on an objective justification and require authorisation by SNH. We adhere to any conditions set.

The culling of deer outwith their open seasons in enclosed woodland is covered by a 'General Authorisation' under Section 5.6 of the Deer

(Scotland) Scotland 1996. For unenclosed woodland, a specific Section 5.6 authorisation is required from SNH.

Approximately 80 per cent of the total cull on the NFE is achieved between 1 October and 31 March.

We do not cull female deer from 1 April to 30 September,

except for Sika for which we might make applications from 15 September.

Night shooting - using spotlights to illuminate animals - has been used for many years when necessary, for culling deer to reduce damage impacts on the NFE and to undertake deer management in heavily used forests where public safety and operational activity is a major consideration. Local police are informed before we carry out night shooting activities.

Deer Culled on the NFE in 2013/14 by Out of Season and Night Shooting

	Red Deer	Roe Deer	Sika Deer	Fallow Deer	Total
2013/14 Out of Season Actual	4,146 (58%)	2,199 (31%)	709 (10%)	72 (1%)	7,126 (100%)
2013/14 Night Shooting Actual	1,339 (24%)	3,406 (60%)	729 (13%)	191 (3%)	5,665 (100%)
2013/14 Out of Season & Night Shooting Actual	1,618 (31%)	2,321 (45%)	1,201 (23%)	42 (1%)	5,182 (100%)
2013/14 Total	7,103 (39%)	7,926 (44%)	2,639 (15%)	305 (2%)	17,973 (100%)

SAFEGUARDING THE WELFARE OF DEER AND THE WIDER ENVIRONMENT

In carrying out our deer management activities, we recognise that there are people who have concerns about both the culling and scale of culling. We will conduct our deer culling activities taking into account the welfare of the deer on the NFE. We will monitor our activities closely to maintain high standards and to apply industry best practice.

Deer health

Wild deer can potentially host, be affected by, or carry, a range of diseases such as Chronic Wasting Disease, Blue Tongue, Lyme disease, Johnes disease, TB and Foot and Mouth. We will take the potential impacts of deer disease into account in our risk management and contingency planning. **We will work with SNH to manage and minimise the risk of deer disease outbreaks by sharing information and implementing agreed biosecurity measures.**

Where required we will collect samples from deer, such as tissue samples or ticks, to inform research projects relating to diseases affecting deer such as TSE (Transmissible Spongiform Encephalopathies). Given the extent and distribution of the NFE, this offers a significant and ongoing insight into the health of Scotland's deer.

Deer vehicle collisions

Road traffic accidents involving deer can have a tragic human cost, through fatalities and injury. They can also be costly in terms of damage and disruption to traffic flow. Transport Scotland estimates 8,000-10,000 deer-related road accidents in Scotland each year, and these result in a significant number of injuries to people. The economic cost is estimated to be £5 million /annum. Deer vehicle collisions also represent a major deer welfare issue. Vehicle collisions involving deer often increase during April and May as Roe deer territorial behaviour peaks and young deer venture out on their own. Parts of the Highlands experience a peak during the winter months particularly as Red deer come down to lower elevations.

We work proactively to reduce the risk of road traffic accidents involving deer on and adjacent to the NFE. We co-operate with local police, Transport Scotland and local communities where there is a heightened potential for deer from the NFE to cause accidents on adjacent public roads.

We take this into account when formulating deer management plans for the urban and peri-urban parts of the NFE, and indeed wherever there are busy roads nearby.

Despatch of wounded deer

We are committed to the humane despatch of injured or dying deer that may result from deer vehicle collisions or ineffective shot placement. Where appropriate we use trained deer dogs to follow-up wounded deer. From 2013/14 our staff will receive enhanced training in the methods and options for humane despatch using rifle, knife or shotgun.

In tackling an injured deer our priority is to ensure the safety of the operator and the public;

and to minimise the suffering of the injured or dying deer.

Managing significant incursions of deer

During particularly severe winters large numbers of deer may move onto the NFE. This may even happen in fenced areas as snow builds up along the fence-line. The result can be rapid with severe impacts to young trees and important habitats, jeopardising the achievement of objectives, setting management

progress back sometimes many years, and resulting in high remedial costs. It can also impact adversely on resident deer populations given that there is limited food and shelter within any given locality. In these conditions deer may be severely weakened and deer welfare becomes a major consideration.

In consultation with the deer management sector we have developed an agreed protocol for managing emergency situations resulting from major deer incursions. This involves a rapid assessment of the situation and immediate communication with neighbours to discuss each specific incursion, and rapid action to resolve the situation. In some cases moving deer out of vulnerable areas may be possible; in others an emergency cull may be necessary.



Deer Management – Forest Enterprise Scotland Protocol for Managing Emergency Situations on the National Forest Estate.

CONTEXT
In order to encourage and encourage collaborative deer management in Scotland, Forest Enterprise Scotland (FES) has developed a Deer Management Group and neighbour protocol regarding the management of deer on the National Forest Estate. This includes sharing information on proposed culls, out of season and night shooting authorisations and emergency situations.

Recognising however that, from time to time, emergency situations occur FES has agreed with the Executive Committee of the Association of Deer Management Groups that the wider interests of deer management in Scotland would be further strengthened if a formalised protocol for managing deer emergency situations was developed.

In the event, for instance, that a significant deer incursion or significant deer incursion on the NFE, FES staff will implement the following protocol:

Situation Identified
Major deer incursions identified by FES staff, neighbour or other interested party. FES notified and protocol initiated with information to:

- FES would encourage neighbours to share information on developing situations which they are aware of and not known to FES.

FES Actions
FES Wildlife Ranger team carry out a rapid and accurate assessment of the overall situation to:

- Assess the key facts (e.g. deer numbers/species, location, condition of deer, probable source, route into the NFE, likely impact on crops, habitat and wider designated areas, potential impact on public safety).

- Take immediate action from local authority services if animal welfare is thought to be a key or urgent factor.



Sika Deer

Image credit: Colin Varndell



Feral Pig



Grey Squirrel



Muntjac

Sika deer

Sika deer are an introduced species progressively expanding across Scotland. They can interbreed with Red deer and can cause particularly severe damage to trees. We are committed to the effort to reduce the expansion of Sika deer and to help reduce impacts on the genetic integrity of the Scottish Red deer population. Where they are present, Sika deer are a particular focus of our culling effort. During the past 15 years FES has cooperated with Edinburgh University in collecting DNA samples for their Red/Sika hybridisation research project.

In 2012/13 FES activity represented 54 per cent of Scotland's Sika cull.

Feral boar

Feral boar impacts on the NFE tend to be localised with turning over of the soil, turf, ground vegetation, forest roadsides, rides and in-bye land with some limited damage to restock sites or trees for example through damaging or lifting the lower sections of fences thus allowing access by other herbivores.

Sightings of feral boar (including breeding populations), and reports of damage are increasing. FES will manage boar, on the NFE, working with SNH and neighbours to increase our understanding of boar impacts, population dynamics, future management focus and delivery of any Scottish Government policy or guidance on this evolving issue. Our aim will be to reduce potential damage and impacts to forest, environmental, agricultural and social interests.

Grey squirrels

FES Wildlife Management and Environment staff, contractors and partner organisations in south Scotland are involved in a project to contain the spread of Grey squirrel and associated squirrel pox virus to help safeguard Red squirrel in their population strongholds. This is achieved via a combination of survey, monitoring, research and trapping.

Other non-native species

We have a competent and knowledgeable deer management team with considerable experience in wildlife management. We are therefore ideally placed

to support SNH in applying the 'Invasive Non-native Species Code' to prevent establishment or further expansion of non-native species such as Muntjac.

To fulfil our land management responsibilities, we work in conjunction with SNH and other agencies regarding the prevention of the establishment of non-native species on the NFE.

Wildlife crime and disturbance

We will report any suspected incidences of wildlife crime and help contribute to initiatives to tackle wildlife crime. We work in collaboration with the police in reporting and investigating incidences of poaching and other criminal activity on the NFE.

In keeping with the Wildlife and Natural Environment (Scotland) Act 2011 we are committed to managing disturbance to wildlife. We provide guidance to all relevant staff, contractors and recreational stalkers and make it clear that it is an offence to intentionally or recklessly kill or disturb wild birds.



Working with Police Scotland

Foxes

FES will only control foxes to meet conservation interests, research purposes or where deemed appropriate to assist our neighbours in the agricultural and game management sectors.

DEER STALKING ON THE NFE

Recreational stalking

As part of our forest protection activities we provide suitably qualified members of the public with opportunity to participate in stalking on land managed by FES.

In protecting the forest environment from adverse deer impacts we are currently able to provide that opportunity for around 370 recreational stalkers each year on approximately 80,000 hectares (12% of the NFE), representing around 5,550 stalking trips per year.

Stalking on the NFE contributes to the local economy. For example a BASC deer stalking lease on Arran is estimated to directly contribute around £45,000/annum to local businesses. Stalking also generates income for FES, which helps offset our deer management costs.

We continually review the balance between recreational stalking and in-house deer management, seeking to identify additional areas for recreational stalking as and where appropriate. In each case we assess the deer

management priorities, damage impact risks and challenges we face. In high risk situations we are less likely to offer recreational stalking. We also assess the suitability of the area for recreational stalking in terms of both geographical location and local issues like collaboration with neighbours and interaction with other uses of the area, for example the public.

We are currently phasing out deer management leases and introducing deer management permissions, which are a more flexible basis for offering recreational stalking in a fair and open way, and with lower costs of administration. Permissions are offered on a one year plus one year basis up to a maximum of five years. We require recreational stalkers to have DCS 2 (or have DSC 1 and attain DSC 2 within year one). They must hold a valid British firearms certificate, including authorisation to hold or purchase a legal calibre of firearm for shooting deer and must hold sufficient public liability insurance.

Recreational stalkers enter into an agreement with FES to cull an agreed number of deer in order to help manage deer impacts on the NFE. They are required to work to agreed procedures and health and safety management. Deer shot by recreational stalkers are usually retained by the stalker. Where carcasses are to be sold-on, FES will encourage the use of SQWV approved venison dealers. FES retains concurrent

rights to manage the cull where it is falling behind or where deer impacts and deer numbers appear to be rising. This is in order to protect the natural heritage and our wider land management objectives.

In recognition of the benefits of contributing to local economic activity we will, in 2014/15, assess the NFE's potential for stag shooting permissions in the Red deer range.

Accompanied stalking

FES provides members of the public some opportunities to stalk deer, accompanied by an FES Wildlife Ranger. Clients must have a firearms certificate and appropriate insurance.

Our accompanied stalking offer attracts clients from Europe and the UK to shoot deer in-season. In 2013/14 FCS offered 12 stag weeks and 4 Doe/hind weeks. This has spin-off benefits for local businesses such as accommodation and catering.

During 2014/15 we will review accompanied stalking, and look at opportunities to develop the associated wildlife viewing photography and field-craft aspects of the experience. However, availability will always be somewhat limited given our land management and natural heritage protection priorities.



Recreational stalkers enjoying the forest environment



Accompanied stalking on the National Forest Estate

VENISON

Venison Supply

Whilst we do not cull wild deer for the purpose of venison production, we do provide the Scottish venison industry with a regular supply of quality deer carcasses to support the marketing of healthy venison products to the consumer. All carcasses shot by our Wildlife Rangers and contractors on the NFE are supplied under Chain of Custody and are FSC 100 per cent approved. We meet our Chain of Custody responsibilities as part of our UK Woodland Assurance Scheme commitments. By doing so we contribute to the sustainable economic development objectives of 'Scotland's Wild Deer: A National Approach'.

As Scotland's single largest producer of wild venison we supplied, in 2013/14, in the region of **26,000** quality deer carcasses directly to the venison industry. This was mainly via a long-term contract and partnership arrangement with a major game dealer, but also via local sales. We collaborate with the contracted game dealer to promote Scottish wild venison, through branded packaging - around 1.2 million items per year. We will work with the game dealer to promote the direct link between sustainably managed forests, the sustainable culling of deer to protect the forest environment and the supply of quality assured venison to the consumer. We will work with them to promote the marketing of all four species of deer, including Roe which forms 49% of our cull.

Each year we provide several hundred deer carcasses for local sale to individual members of the public, small local businesses and niche markets. FES has the appropriate Venison Dealers Licence granted by Local Authorities.

In recognition of the benefits to the venison supply chain, we will make every effort to cull more stags earlier in the season (July, Aug), within the operational constraints which apply at that time of year.

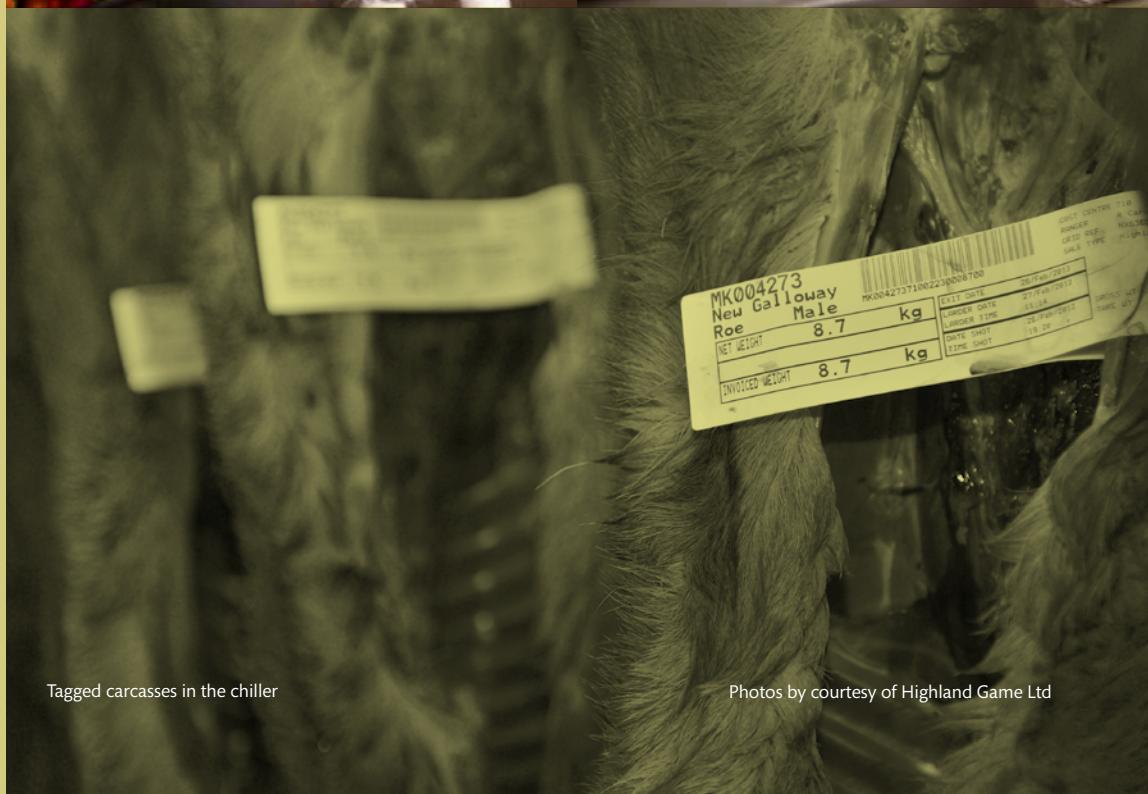
In recognition of the venison industry's need for a supply of venison throughout the year, in 2014-15 we will continue to explore the potential for the development of a deer park on the NFE.



Unloading carcasses at the game dealers



Packaging venison products



Tagged carcasses in the chiller

Photos by courtesy of Highland Game Ltd

Quality Assurance

We support the work of the Scottish venison initiatives and their work to enhance the quality and marketing of wild deer venison as a healthy and sustainable high quality product. FES participates in the Scottish Venison Partnership (SVP), and the Scottish Quality Wild Venison Assurance Scheme (SQWVAS).

We currently contribute £18,000 annually to support the work of the venison initiatives (SVP and SQWV). Where appropriate we will work with SVP and SQWV to promote industry best practice nationally.

We have an ongoing programme of investing in equipment, larders, vehicles, systems, training and development in accordance with the requirements of the SQWV assurance scheme standards, which is endorsed by the Food Standards Agency. This helps ensure that well-presented, quality carcasses are made available to customers at FES deer larders in accordance with food hygiene standards such as the Food Hygiene Regulations 2006.

We will continue to invest appropriately in the best practice and quality assurance aspects of our deer management and venison supply work (eg high standards of culling, gralloching, extraction, larding, presentation and traceability), and we will encourage permission holders to apply SQWV standards and to sell venison to SQWV accredited game dealers. Quality Assurance of the standards and assessment of competence is inherent in the FES support to the DMQ Quality Assurance Group.

Deer Larders

We maintain a modern fit-for-purpose infrastructure of 37 deer larders and associated carcass management systems.

We have installed scanners, chiller alarm units, computer hardware, software and internet connection in all our deer larders in order to facilitate provision of up to date information to our Wildlife Management System and the game dealer. This ensures traceability and informs the game dealer's scheduling of carcass uplift.



Preparing a deer carcass prior to chilling in the deer larder

SUMMARY OF KEY COMMITMENTS

We will manage the NFE as a multi-benefit resource to deliver a range of environmental, social and economic benefits in a diversity of situations.

We will manage deer at densities which will allow the sustainable management of a diverse, productive and resilient NFE which produces quality timber, vibrant ecosystems, attractive landscapes and quality venison.

We will manage deer in a way that contributes to the rural economy as far as this is compatible with our other management principles.

We will value deer as an iconic asset and keystone species.

We will use the NFE as an exemplar of best practice for deer management.

We will place health and safety and deer welfare at the heart of our deer management activities.

We will work closely with neighbours and relevant organisations to promote sustainable deer management through an ongoing process of collaboration seeking to recognise and understand the interests of all parties.

We will support the work of SNH and the deer initiatives. We will use a combination of deer culling and deer fencing to manage deer impacts and densities to acceptable levels.

We will carry out deer culling operations using Wildlife Rangers, Deer Management Contractors,

Leases (being phased out), Permissions and Accompanied Stalking to achieve the best balance of effectiveness and efficiency.

We will apply FC Operational Guidance and industry best practice.

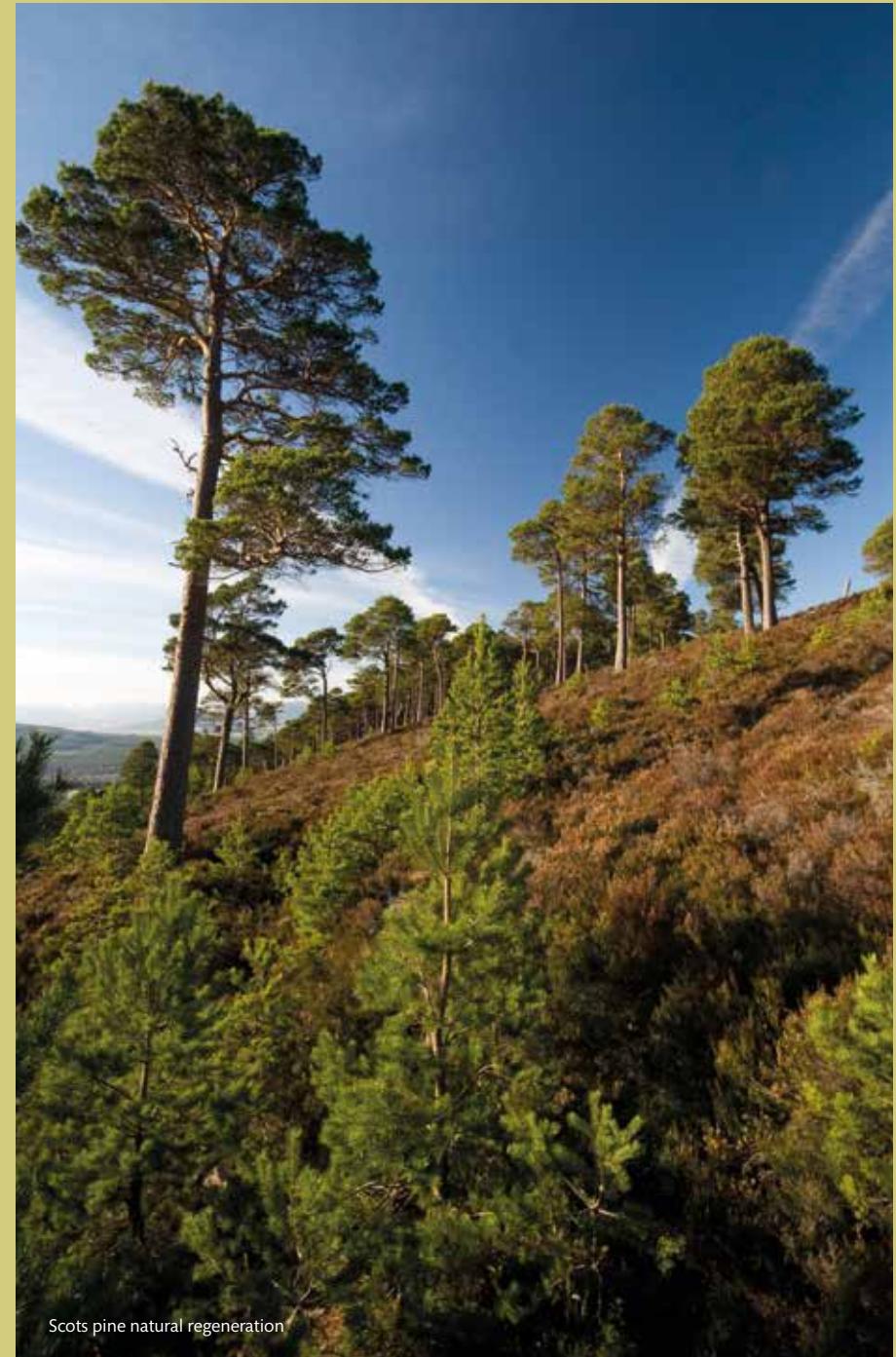
We will use authorised and responsible out of season and night shooting to help manage negative deer impacts given that the NFE is vulnerable to these impacts throughout the year.

We will review our monitoring, survey, assessment and decision-making processes to improve the predictive quality and focus of our deer management activities.

We will align our deer management practices to 'Scotland's Deer a National Approach' and the 'Code of Practice on Deer Management'.

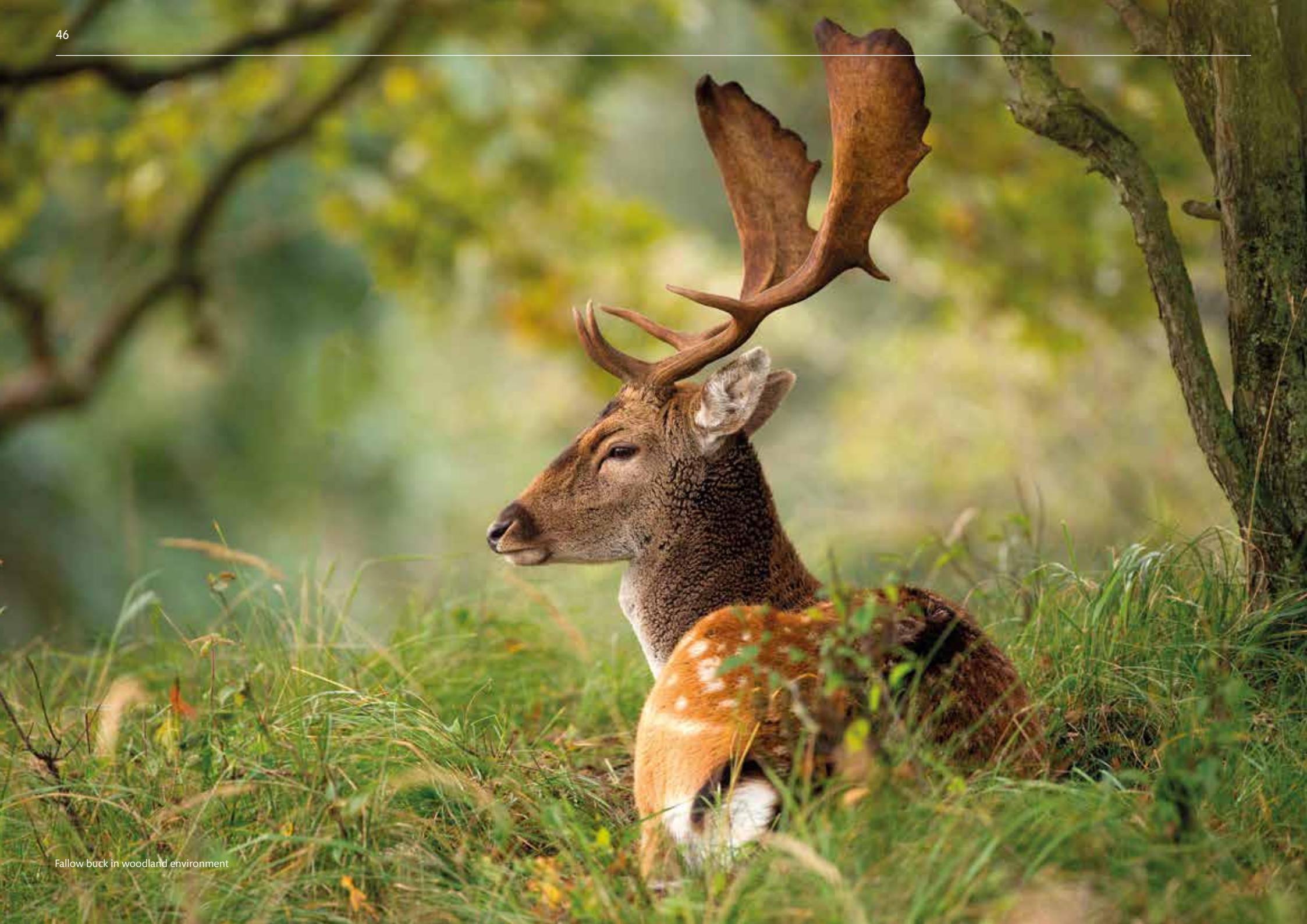
FES Deer Management Strategy 2017-20

Elements of the feedback from the 2013 consultation and ongoing experience will be taken into account in our development of a deer management strategy for the NFE for the period 2017-20. This will include the identification of challenges and management directions, measures and options that FES and its partners might adopt in future in their efforts towards sustainable deer management and responsible land management, including the management of open ground.





Upland oakwood with very limited natural regeneration or ground vegetation



Fallow buck in woodland environment

GLOSSARY

Fully Functioning Forests: woodlands with functioning ecological processes like natural regeneration, deadwood and nutrient cycling and colonisation by woodland species.

Continuous Forest Cover Areas/Systems: are based on a presumption against clear-felling. It favours the use of natural regeneration and the creation of a varied forest structure containing a range of tree species.

Carrying Capacity of the Land: is the ability of the available habitat to sustain a deer population through the natural provision of food and shelter whereby the natural mortality of deer is avoided and the sustainability of the natural heritage and the landowner's management objectives are not compromised. A habitat's carrying capacity is at its lowest during the winter months and this forms the limiting factor for a deer population.

Landscape/Ecosystem Approach: FES manages living ecosystems (ie forests, riparian zones, moorland and bogs), to deliver a range of public benefits. As a result of our sustainable management of wild deer populations we:

- produce quality wild venison (a by-product of the culling operation);
- help in the production of quality timber (by reducing deer damage impacts to growing trees); and
- maintain and support a diverse range of habitats and animals (by reducing browsing pressure on ground vegetation and shrub layers).

An example of this is our partnership with RSPB and Woodland Trust Scotland to manage the Loch Katrine catchment ecosystem and deer populations at a landscape scale.

Ecosystem Services:

there are four categories:

- provisioning services which include the supply of timber, farmed and wild food (like venison), clean water, minerals and renewable energy;
- regulating services which include sequestration of carbon in growing trees, flood mitigation, cleaning city air and encouraging pollinating insects;
- cultural services where people enjoy and appreciate the NFE as a place to exercise, learn, relax and get inspired about nature and history; and
- supporting services which is how the NFE helps the basic natural cycles of water, nutrients and life.

Integrated Land Management: is getting the best mix of sustainable land uses and management regimes, working within natural limits, will help us deliver more from the NFE in the long term.

Forest Enterprise Scotland is an agency of Forestry Commission Scotland charged with managing the National Forest Estate.

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Scots Pine (*Pinus sylvestris*)
Scotland's National Tree

