

Indicator name			Version
NF14: Area of woodland with active, approved deer management plans			25/03/16
Indicator type:	Risk/opportunity	Impact	Action
			X
SCCAP Theme	SCCAP Objective	CCRA risk/opportunity	
Natural Environment	N3: Sustain and enhance the benefits, goods and services that the natural environment provides	Cross-cutting	

At a glance
<ul style="list-style-type: none"> Excessive deer browsing is a key pressure impacting woodlands, that needs to be managed to achieve resilient, climate ready woodland This indicator measures the area of woodland in Scotland specifically managed to reduce deer impacts This indicator is also used in the Scottish Forestry Strategy

Latest Figure			Trend
Year	Area of woodland with active approved deer management plans	Percent of total woodland area with approved deer management plans	There has been an overall increase in the area of woodland under active deer management from 50% in 2007 to 55% in 2013, although values decreased in 2010 through 2012.
2013	779,000 ha	55%	

Why is this indicator important?
<p>Deer management is vital for effective woodland management and to secure biodiversity objectives (Forestry Commission Scotland, 2006). Deer are valued by stakeholders and the general public and provide economic benefit through stalking, wider tourism and provision of venison, however deer grazing is one of the key pressures affecting natural regeneration and establishment of woodlands, both native and non-native (Forestry Commission Scotland, 2014a).</p> <p>A certain amount of grazing and browsing by herbivores such as deer is important in sustainably managing woodland and maintaining biodiversity. However, when deer numbers are too high, as is currently the case in parts of Scotland, woodland is damaged by heavy browsing, bark stripping and</p>

trampling/poaching (Forestry Commission Scotland, 2014a). Excessive browsing prevents woodland regeneration by damage to vulnerable young trees. This is described as ‘currently the most widespread threat to the condition of designated woodland features’ (Scottish Natural Heritage, 2010, cited in Forestry Commission Scotland, 2014a).

If woodlands are to be resilient to climate change there is a need to reduce other pressures that have a negative impact. It is therefore important to reduce the stress induced by deer grazing in woodlands.

This indicator is used in the Scottish Forestry Strategy (SFS) and ‘measures areas of woodland, including any associated open areas, where specific deer management plans are in place. These plans require a strong focus on achieving reductions in deer impacts on biodiversity and tree growth’ (Forestry Commission Scotland, 2011).

What is happening now?

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What has happened in the past?

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What is projected to happen in the future?

It is thought that, due to the extended growing season, climate change may increase the reproductive capacity of deer leading to increased browsing damage. It might also enable Fallow and Sika deer to expand their range and Muntjac deer, currently present in England, to move into Scotland (Scottish Government, 2011a and 2011b).

The SFS Implementation Plan 2014-17 identifies the need for its partners (FCS, SNH, Wild Deer National Approach steering group, Lowland Deer Network Scotland) to ‘promote a landscape-scale approach to deer management, and identify strategic priorities to reduce impacts on woodland’ (FCS, 2014b, p.39)

Deer management will continue to be part of integrated ecosystem-based land management activity aimed at sustaining and enhancing ecosystem services. This covers both woodland and open ground and enables accounting for pressures such as climate change on delivery of ecosystem services. FCS commit to manage deer ‘at densities which will allow the sustainable management of a diverse, productive and resilient National Forest Estate which produces quality timber, vibrant ecosystems, attractive landscapes and quality venison’ (FCS, 2014c, p. 44). The Forest Enterprise Scotland (FES) Deer Management Strategy 2017-20 is under development, informed by experience to date and feedback from a consultation held in 2013. The strategy will identify management options and measures for sustainable deer management, using a combination of deer culling and deer fencing (FCS, 2014c).

Patterns of change

Scotland’s deer population is made up of two native species, Red and Roe, and two introduced species, Sika and Fallow. Fallow deer have long been part of Scotland’s landscape. They do not colonise new areas rapidly and are therefore being managed to contain existing populations. However, Sika deer have spread rapidly to colonise new areas and they also hybridise with Red deer. Management is focussed on limiting both population increase and range spread of the Sika, and maintaining the genetic integrity of the native Red deer (Forestry Commission Scotland, 2014c).

Interpretation of indicator trends

Although there was an increase in the area of woodland (and percentage of total woodland) with active, approved deer management plans between 2007 and 2013, this varied throughout the period, with a decrease from 2010 through to 2012, so the underlying trend is not clear.

Limitations

References

Forestry Commission (2015) *Forestry Statistics*. Available at:

<http://www.forestry.gov.uk/forestry/infd-7aqdgc> (Accessed February 2015)

Forestry Commission Scotland (2006) *The Scottish Forestry Strategy*.

<http://scotland.forestry.gov.uk/supporting/strategy-policy-guidance/forestry-strategy> (Accessed January 2015)

Forestry Commission Scotland (2011) *The Scottish Forestry Strategy: Description of Indicators*.

<http://scotland.forestry.gov.uk/images/corporate/pdf/sfsindicators.pdf> (Accessed January 2015)

Forestry Commission Scotland (2014a) *Scotland's Native Woodlands: Results From the Native Woodland Survey of Scotland*.

<http://scotland.forestry.gov.uk/supporting/strategy-policy-guidance/native-woodland-survey-of-scotland-nwss/national-nwss-report> (Accessed January 2015)

Forestry Commission Scotland (2014b) *The Scottish Forestry Strategy: Implementation Plan (2014-17) and Progress Report (2013-14)*.

<http://scotland.forestry.gov.uk/supporting/strategy-policy-guidance/forestry-strategy> (Accessed January 2015)

Forestry Commission Scotland (2014c) *Deer management on the National Forest Estate: Current Practice and Future Directions 1 April 2014 to 31 March 2017*.

<http://scotland.forestry.gov.uk/images/corporate/pdf/deer-management-on-scotlands-national-forest-estate.pdf> (Accessed January 2015)

Scottish Government (2011a) *Scotland's Climate Change Adaptation Framework: Agriculture Sector Action Plan* <http://www.scotland.gov.uk/Topics/Environment/climatechange/scotlands-action/adaptation/AdaptationFramework/SAP/Agriculture/Impacts> (Accessed January 2015)

Scottish Government (2011b) *Scotland's Climate Change Adaptation Framework: Forests and Forestry Sector Action Plan* <http://www.scotland.gov.uk/Topics/Environment/climatechange/scotlands-action/adaptation/AdaptationFramework/SAP/Forests> (Accessed January 2015)

Further information

Scottish Government (2008) *Scotland's Wild Deer: a national approach*. Scottish Government, Edinburgh. <http://www.snh.gov.uk/docs/C249895.pdf>

Scottish Natural Heritage (2011) *Code of Practice on Deer Management*. SNH, Inverness.

<http://www.snh.gov.uk/land-and-sea/managing-wildlife/managing-deer/code-of-deer-management/>

Acknowledgements

Forestry Commission Scotland

Suzanne Martin (RBGE) contributed to this indicator.

Appendix One: Indicator metadata and methodology

Table 1: Indicator metadata

	Metadata
Title of the indicator	Area of woodland with active, approved deer management plans
Indicator contact: Organisation or individual/s responsible for the indicator	Ruth Monfries (Royal Botanic Garden Edinburgh/CXC)
Indicator data source	Scottish Forestry Strategy, Forestry Commission Scotland
Data link: URL for retrieving the indicator primary indicator data.	www.forestry.gov.uk/sfs

Table 2: Indicator data

	Indicator data
Temporal coverage: Start and end dates, identifying any significant data gaps.	2007 - 2013
Frequency of updates: Planned or potential updates	Annual
Spatial coverage: Maximum area for which data is available	Scotland
Uncertainties: Uncertainty issues arising from e.g. data collection, aggregation of data, data gaps	
Spatial resolution: Scale/unit for which data is collected	Hectare
Categorical resolution: Potential for disaggregation of data into categories	In theory, available by type of woodland e.g. National Forest Estate, private woodlands and by type of grant scheme.
Data accessibility: Restrictions on usage, relevant terms & conditions	Publically available. Unlicensed and free of charge.

Table 3 Contributing data sources

Contributing data sources
Data sets used to create the indicator data, the organisation responsible for them and any URLs which provide access to the data.

On the National Estate, FES data is derived from areas under Deer Management Plans. Forestry Commission Scotland.

For grant schemes, data is obtained from Scottish Forestry Grant Scheme (SFGS) data and shows the total area approved for SFGS assistance for Reducing Deer Numbers (S2). Forestry Commission Scotland.

Following the introduction of rural development contracts (RDCs) in 2008, additional data has been collated from March 2009. Data is for the area of woodland receiving Plan Preparation Grant i.e. WIG for long-term forest planning (it is compulsory to have a Deer Management Plan as part of this). Where there is no Forest Plan, the data represents the area of woodland receiving a WIG for 'reducing deer impact'. Forestry Commission Scotland.

Table 4 Indicator methodology

Indicator methodology

The methodology used to create the indicator data

Further information about Scottish Forestry Strategy indicators and methodology can be found on the Scottish Forestry Commission website www.forestry.gov.uk/sfs