

Indicator name			Version
NF3 Proportion of total woodland under High Nature Value (HNV) forestry			07/03/16
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	FO5: Loss of native woodland biodiversity	

At a glance

- There is considerable concern over the potential impact of climate change on forest biodiversity
- High Nature Value (HNV) forestry identifies forestry and woodland management systems that support a high level of biodiversity
- This indicator was developed by the Scottish Government and provides an estimate of the percentage of forest and woodland in Scotland that is considered to be of High Nature Value

Latest Figure			Trend
Year	Area (ha)	Proportion of woodland (%)	No significant trend
2013	575, 000	41%	
N.B. Calculations based on total area of woodland of 1,410,000 ha. Source: Scottish Government, 2014			

Why is this indicator important?

“High Nature Value (farming and) forestry” (HNV forestry) refers to (farming and) forestry systems important for the environmental benefits they provide, including support for a range of habitats and species (such as butterflies and birds) considered to be of high nature conservation importance’ (Scottish Government, 2014).

Woodland supports a large number of plant and animal species and is an extremely important habitat for priority species listed in the UK Biodiversity Action Plan (Moffat et al, 2012). There is considerable concern over the potential impact of climate change on forest biodiversity; the Scottish crossbill and

capercaillie are among species likely to be adversely affected (Berry et al, 2011; cited in Moffat et al, 2012).

The HNV forestry indicator (along with that for HNV farming) was developed by the Scottish Government to help in monitoring the Scottish Rural Development Programme (SRDP) and other strategies, e.g. the Land Use Strategy (Scottish Government, 2014). It is anticipated that in future the indicator will be complemented with a further HNV indicator that will show uptake of particular Rural Development Programme measures related to HNV forestry.

This Scottish Government indicator is being utilised here to help understand the risk of a loss of woodland biodiversity due to a changing climate; with the direction and extent of change in HNV Systems enabling understanding of the degree to which land management actions are working to support or reduce the resilience of woodland biodiversity. It is anticipated that an increase in the area of woodland classified as HNV forestry would indicate that land management actions are working to potentially increase the resilience of woodland biodiversity to climate change.

Associated Indicators:

NA9: Proportion of farmland (Utilised Agricultural Area) under High Nature Value (HNV) farming

What is happening now?

Native and ancient woodlands and planted woodlands that have a diverse structure and range of plant species are all defined as HNV forestry systems (Scottish Government, 2014). The definition of HNV forestry derives from European Commission guidance for the Rural Development Programme and includes the following sub-categories:

- HNV Forestry Type A: semi-natural woodland features and low intensity managed woodland.
- HNV Forestry Type B: diversity of features and low intensity managed woodland.

Of the 41% of all woodland that is HNV forestry, the percentages of HNV forestry Type A and Type B are shown below:

	2013
% HNV forestry Type A	52%
% HNV forestry Type B	48%

Calculations are based on the total area of woodland in 2013: 1,410,000 ha.

Source: Scottish Government, 2014

What has happened in the past?

There has been no change in the percentage of all woodland that is HNV from the baseline year, 2010, to the latest survey in 2013. Within that, there is no change in the proportion of Type A and Type B HNV forestry. The total area of woodland has increased from 1,296,000 ha in 2010 to 1,410,000 ha in 2013.

The baseline for this indicator was calculated for 2010:

Year	Area (ha)	Proportion (%)
2010	529,000	41%

Calculations are based on the total area of woodland in 2010: 1,296,000 ha.

Source: Scottish Government, 2011

Of the 41% of woodland that was HNV forestry, the percentages of HNV Forestry Type A and Type B are shown below:

	2010
% HNV forestry Type A	52%
% HNV forestry Type B	48%

Calculations are based on the total area of woodland in 2010: 1,296,000 ha.

Source: Scottish Government, 2011

What is projected to happen in the future?

Patterns of change

The proportion of forestry estimated to be HNV for each SRDP Rural Priorities Regional Proposal Assessment Committee (RPAC) area has been calculated, along with the RPAC contribution to total HNV forestry in Scotland. The following charts are taken from Scottish Government's 2011 report on HNV forestry:

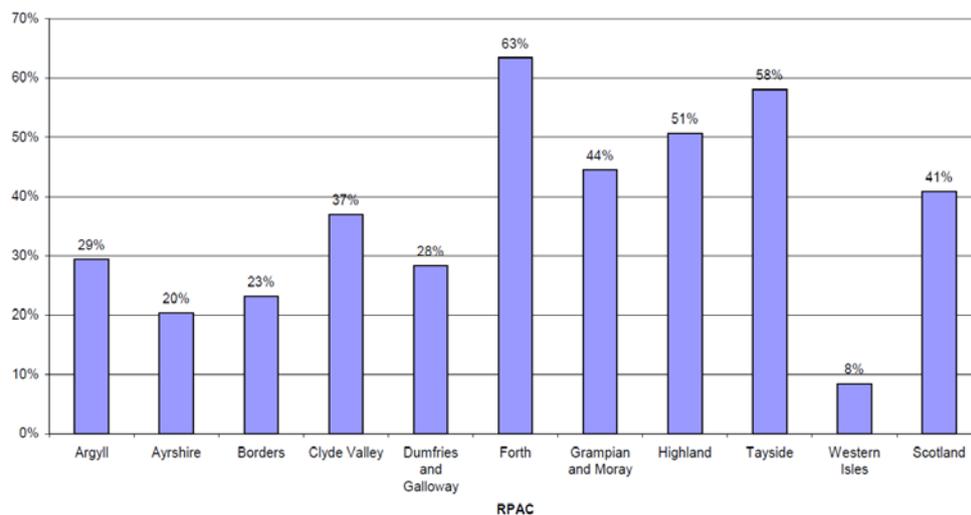


Figure 1: Percentage of forestry estimated to be HNV, by RPAC, 2009 (Source: Scottish Government, 2011)

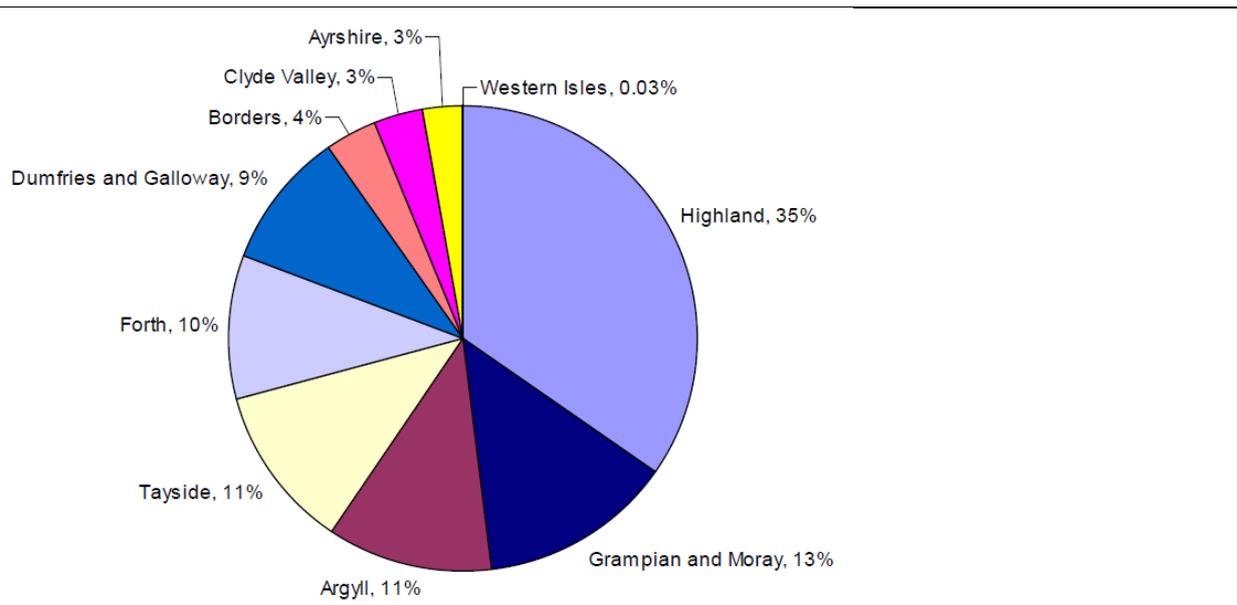


Figure 2: RPAC contribution to total HNV forestry, 2010 (Source: Scottish Government, 2011)

Figure 1 shows that the proportion of woodland classified as HNV varies widely between RPAC regions. Forth has the highest percentage of HNV woodland (63%) and the Western Isles the lowest (8%). Figure 2 shows the contribution of each RPAC region to overall HNV forestry in Scotland. Highland contributes the largest percentage of total HNV forestry area (35%).

Interpretation of indicator trends

There was no significant change in the estimated percentage of forestry that was HNV between 2010 and 2013. The area of HNV forestry increased slightly (from 529,000 ha to 575,000 ha) but the percentage of total woodland area estimated to be HNV forestry has remained the same at 41%.

In the future, the Scottish Government will seek to understand emerging trends in HNV forestry by identifying the influence of key drivers of change such as woodland creation and loss and other land use changes, and changes in woodland design and composition. They will use case studies to illustrate changes in forestry practices that are known to be important in terms of impact on biodiversity and will also cross-check trends in HNV forestry against other critical indicators such as relevant Scottish Biodiversity Strategy indicators (Scottish Government, 2011).

The indicator classifies forestry management systems which are HNV rather than specific sites on the ground that are HNV (Scottish Government, 2011). As such, the indicator is not intended to be used to inform site specific management decisions but rather to monitor how rural development measures are impacting upon the extent of HNV forestry as a whole.

Limitations

The percentage of woodland area which is HNV forestry is likely to be under-estimated as it excludes the Northern Isles and the total area of HNV forestry for Grampian and Moray is thought to be underestimated. The Native Woodland Survey Scotland (Forestry Commission, 2014) also notes that

HNV forestry is likely to contain an underestimate of the amount of native woodland. This would also result in a lower overall percentage of HNV forestry.

Lack of spatial data for HNV forestry is an omission that has limited the level at which HNV Forestry can be calculated and mapped. The Scottish Government has acknowledged that data needs to improve in this respect (Scottish Government, 2011).

The process for identifying HNV forestry lags behind that of HNV farming (Scottish Government, 2011). The HNV forestry indicator developed for Scotland builds on EC guidance to create an indicator which is best suited to Scotland's woodlands by ensuring that semi-natural woodlands and some planted woodlands, as well as young and old woodlands, are included where they are deemed to have a high value for biodiversity (Scottish Government, 2011).

References

Forestry Commission Scotland (2014) *Scotland's Native Woodlands: Results From the Scottish Native Woodland Survey*. <http://scotland.forestry.gov.uk/supporting/strategy-policy-guidance/native-woodland-survey-of-scotland-nwss/national-nwss-report>

Moffat, A.J., Morison, J.I.L., Nicoll, B. & Bain, V. (2012) *Climate Change Risk Assessment for the forestry sector*. Defra. <http://randd.defra.gov.uk/Default.aspx?Module=More&Location=None&ProjectID=15747>

Scottish Government (2014) *High Nature Value Farming and Forestry Indicators 2009 – 2013*, an Official Statistics publication for Scotland, Agriculture Series, 27th March 2014. <http://www.gov.scot/Publications/2014/03/8273>

Scottish Government (2011) *Developing High Nature Value Farming and Forestry Indicators for the Scottish Rural Development Programme – summary report of the Technical Working Group on High Nature Value Farming and Forestry Indicators*. July 2011. Rural and Environment Science and Analytical Service, Scottish Government. <http://www.gov.scot/Publications/2011/08/10135254/0>

Further information

Acknowledgements

The information in this template comes from Scottish Government reports on High Nature Value Farming and Forestry (Scottish Government 2011 and 2014).

Suzanne Martin (RBGE/CXC) contributed as lead author on this indicator.

Gilly Diggins (Scottish Government) provided guidance.

Appendix One: Indicator metadata and methodology

Table 1: Indicator metadata

	Metadata
Title of the indicator	Total area of High Nature Value (HNV) forestry
Indicator contact: Organisation or individual/s responsible for the indicator	Ruth Monfries (Royal Botanic Garden Edinburgh/CXC)
Indicator data source	The Scottish Government
Data link: URL for retrieving the indicator primary indicator data.	http://www.gov.scot/Publications/2014/03/8273

Table 2: Indicator data

	Indicator data
Temporal coverage: Start and end dates, identifying any significant data gaps.	2010 and 2013 (not available for 2011, 2012)
Frequency of updates: Planned or potential updates	Annual (from 2016)
Spatial coverage: Maximum area for which data is available	Scotland
Uncertainties: Uncertainty issues arising from e.g. data collection, aggregation of data, data gaps	Northern Isles excluded. Under-estimate of HNV forestry for Grampian and Moray. Lack of spatial data.
Spatial resolution: Scale/unit for which data is collected	0.25 ha
Categorical resolution: Potential for disaggregation of data into categories	HNV A and HNV B, regions (RPAC areas)
Data accessibility: Restrictions on usage, relevant terms & conditions	Publicly accessible and free.

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.
The Scottish Ancient Woodland Inventory (www.snh.gov.uk/docs/C283974.pdf) and National Inventory of Woodland and Trees (NIWT) (1995-1999) (www.forestry.gov.uk/forestry/hcou-54pg9t) were used to provide information on tree species and woodland habitats which could be defined as HNV. As NIWT's replacement survey, in the future the National Forest Inventory (www.forestry.gov.uk/inventory) will be used in place of NIWT. Forestry Facts and Figures (www.forestry.gov.uk/statistics) was used as a source of figures on total area of woodland in Scotland. Spatial and statistical data is now available (from 2013) for all native woodlands (over 0.5ha) in Scotland from the Native Woodland Survey Scotland (NWSS) (http://scotland.forestry.gov.uk/supporting/strategy-policy-guidance/native-woodland-survey-of-scotland-nwss). This will provide improved information on native woodland extent and condition for the period 2006-2012 and a more accurate inventory and map for Type A HNV forestry.

Table 4 Indicator methodology

Indicator methodology
The methodology used to create the indicator data
<p>The definition of HNV land is based on European Commission guidance for Rural Development Programmes which categorises HNV land as follows:</p> <ul style="list-style-type: none">• Type 1: land with a high proportion of semi- natural vegetation• Type 2: land with a mosaic of low intensity management and natural and structural elements• Type 3: land supporting rare species or a high proportion of European or wold populations. <p>The HNV forestry indicator is based on areas broadly aligned with Types 1 and 2 but these are named Types A and B to distinguish them from the EC categories.</p> <p>The area of HNV forestry is calculated from sample squares used in the National Inventory of Woodland and Trees (NIWT) and assessed both management system and biodiversity data. Areas identified in the survey as being HNV forestry were scaled up to the whole woodland area of Scotland using total woodland area figures in the Forestry Facts and Figures publications of the Forestry Commission. The estimate of total area of HNV forestry was updated annually from 2007-2013 according to annual updated figures of total woodland area. The area of HNV forestry per RPAC area was also calculated.</p> <p>Although the HNV forestry indicators were developed alongside HNV farming indicators, they use a slightly different methodology (e.g. the forestry indicator shows 'actual' HNV whereas the HNV Farming indicator shows estimated HNV). As such they are not summed together and are presented in separate indicator templates.</p> <p>A full explanation of the methodology used to calculate HNV forestry is available at: http://www.gov.scot/Publications/2011/08/10135254/0</p>