

The Scottish Forestry Strategy

Description of indicators

The Scottish Forestry Strategy Indicators

Introduction

This document provides background details to the indicators contained in the Scottish Forestry Strategy and reported through an annual implementation/reporting process. This can be accessed at <http://www.forestry.gov.uk/forestry/inf-d-6aggzw>.

Climate Change

- Area of new planting
- Annual net carbon sequestration by new woodlands
- Installed capacity of wood energy plant (in megawatt thermal and electrical)
- Number of non-domestic, wood fuelled energy systems installed
- Area of short rotation coppice (SRC) grant aided
- Index of roundwood road miles

Timber

- Actual Wood Production
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- Forecast wood availability from the national forest estate
- Timber's contribution to Scottish Value Added
- Sawmill log consumption
- Sawmill sawnwood output
- Scottish wood's value share of the UK market
- Timber use in construction relative to other materials
- Area of new coniferous woodland
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- Sales of improved nursery stock
- Volume of certified timber from Scottish forests

Business development

- Forestry's contribution to Scottish gross value-added
- Employment supported by the forestry related sector
- Uptake of Rural Development Contracts
- Proportion of statutory development plans recognising woodland benefits
- Numbers of people enrolling or registering for forestry related short courses, qualifications and Modern Apprenticeship programmes

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Numbers of people completing forestry related short courses, qualifications and Modern Apprenticeship programmes

Forestry's contribution to Scottish tourism gross value added

Community development

Number of schools involved in woodland based learning activities

Number of community groups involved in owning or managing woodland

Number of schools providing vocational courses that include forestry related skills

Proportion of adults and/or family members who attended an organised learning activity or event linked with Scottish woodlands in the previous 12 months

Number of land parcels sold or leased under the National Forest Land Scheme

Area of land parcels sold or leased under the National Forest Land Scheme

Independent satisfaction rating of community partnerships on the national forest estate

Access and health

Proportion of the population with accessible woodland greater than 2 ha within 500m of their home

Proportion of the population with accessible woodland greater than 20ha within 4 km of their home

Proportion of adults (16+ years) who visited woodland in previous 12 months

Number of visits to national forests

Number and length of Core Paths in woodlands

Proportion of visitors satisfied with woodland recreation provision

Proportion of people who used woodland, forest or tree covered park for exercise at least twice per week in the last four weeks

Number of volunteer days associated with woodland

Environment quality

Length/area of baseline rivers/lochs in forested catchments where ecological quality is of good or high status

Length/area of baseline rivers/lochs affected by acidification where forestry is a significant exacerbating factor

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Number of forestry operations or activities leading to direct pollution of water environment

Proportion of woodlands covered by approved forest plans in areas designated for their landscapes

Proportion of woodland area managed under low impact silvicultural systems

Number of monuments in forests protected under a current forest management plan or agreement

Biodiversity

Area of Native Woodland

Percentage of designated woodland sites in favourable or unfavourable recovering condition

Progress against Habitat Action Plan targets for improving native woodland condition

Progress against Habitat Action Plan targets for native woodland restoration

Progress against Habitat Action Plan targets for native woodland expansion

Proportion of woodland related UKBAP priority species and habitats identified as increasing or stable in Scotland

Area of PAWS with a commitment to restoration under long-term plans

Area of woodland with active, approved deer management plans

Loss of ancient semi-natural woodland to development

Woodland Birds Index

Woodland Structure and Composition: shrub layer cover

Woodland Structure and Composition: number of tree/shrub species

Woodland Structure and Composition: deadwood

Woodland Structure and Composition: old growth

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Climate Change

Area of new planting	
Trend indications	Additional approved new planting to the UK Forestry Standard will bring additional environmental, economic and social benefits.
Definitions	New planting is defined as establishing new woodland on ground that was not woodland in the recent past. It includes direct planting, natural regeneration and direct seeding.
Data	<p>New planting figures for the National Forest Estate are obtained from records held by Forestry Enterprise Scotland. Figures for new planting other than on the National Forest Estate are obtained from Forestry Commission Scotland administrative records for Woodland Grant Schemes, the Scottish Forestry Grants Scheme and woodlands established through Rural Development Contracts. These figures include areas of natural colonisation and natural regeneration (for which the second instalment of grant has been paid).</p> <p>Natural colonisation is the creation of new woodland by natural means, ie without sowing or planting.</p> <p>Natural regeneration is the regeneration of existing woodland by natural means, ie without sowing or planting.</p>
Source	Data is collated by the Forestry Commission's Economics and Statistics Unit.
Frequency	Annually
Quality control	The Forestry Commission has arrangements in place to implement the National Statistics Code of Practice.
Other information	Further information on forestry statistics can be found at http://www.forestry.gov.uk/forestry/AHEN-5gcfv8
Contact	hugh.clayden@forestry.gsi.gov.uk

Annual net carbon sequestration by new woodlands	
Trend indications	Increasing carbon sequestration by woodlands supports Scotland's climate change programme.
Definitions	Annual net C removals by land converted to woodland in Scotland since 1990.
Data	The data is generated with reference to the LULUCF models used for Kyoto reporting.
Source	FCS
Frequency	Annually

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Quality control	DEFRA Climate, Energy, Science and Analysis Division
Other information	The indicator values are summary outputs from the Centre for Ecology and Hydrology afforestation carbon calculator.
Contact	chris.nixon@forestry.gsi.gov.uk

Installed capacity of wood energy plant (in megawatt thermal and electrical)	
Trend indications	An increasing figure is a positive trend. Thermal (heat) production offers the greatest conversion efficiency and hence carbon savings.
Definitions	This is the total rated thermal and electrical capacity installed in wood energy plants in Scotland, using home-grown virgin wood fibre, in megawatts.
Data	<p>Electrical capacity is based on rated output of individual systems, as published by the owner, manager or installer of the system. Electricity generated by co-firing of biomass is not included in these figures.</p> <p>Thermal capacity is based on the rated output of individual systems, where available, as provided by the owner, manager or installer of the system. An approximate thermal capacity for large-scale industrial biomass heat plants is included, based on woodfuel usage figures provided. The figure does not include heat energy generated from recycled wood fibre.</p>
Source	Hudson Consulting
Frequency	Annually
Quality control	Reviewed by FCS
Other information	Estimates for thermal capacity were recalculated in 2008 to more accurately reflect existing capacity in large-scale industrial users.
Contact	rebecca.carr@forestry.gsi.gov.uk

Number of non-domestic, wood fuelled energy systems installed	
Trend indications	More wood-fuelled energy systems increase the substitution of fossil fuels for wood fuel. Most of these systems are for heat generation, which provides the greatest carbon savings.
Definitions	This is the number of installed dedicated wood fuelled energy systems in commercial, industrial and community premises. It excludes individual private domestic installations, although it does include district-heating schemes.
Data	The data is based on information provided by installers, FCS Woodfuel Officers and information published on grant awards for renewable energy systems.

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Source	Hudson Consulting
Frequency	Annually
Quality control	Commissioned and reviewed by FCS
Other information	
Contact	rebecca.carr@forestry.gsi.gov.uk

Area of short rotation coppice (SRC) grant aided	
Trend indications	Increasing SRC area provides a greater raw material resource for biomass energy generation. This is one of a number of sources, along with wood fuel from forests and landscaping, and from recycled and waste sources.
Definitions	This indicator relates to grant aid which is offered for SRC on private land through the Scottish Forestry Grant Scheme and Rural Development Contracts. SRC is an energy crop that usually consists of densely planted, high yielding varieties of poplar or willow. Stems are usually harvested every 3 to 5 years and the coppice stools (stumps) remain productive for up to 30 years.
Data	Annual figures for SRC on private land are obtained from Forestry Commission's administrative records for the Scottish Forestry Grant Scheme and Rural Development Contracts.
Source	Grants and Licences
Frequency	Annually
Quality control	Data managed as part of the SRDP management process.
Other information	This indicator will be reviewed in 2009-10 to consider the addition of short rotation forestry (SRF).
Contact	hugh.clayden@forestry.gsi.gov.uk

Index of roundwood road miles	
Trend indications	Indicator affected by location of forests and destination. Trends will be accompanied by an explanatory commentary to determine positive or negative nature of change.
Definitions	Roundwood road miles are defined as the mileage of road haulage of roundwood (ie unprocessed timber) from forest to wood processor, expressed as an index against annual timber production.
Data	Under review in 2009/10
Source	Under review in 2009/10

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Frequency	Under review in 2009/10
Quality control	Survey overseen by Forest Research statisticians.
Other information	Further information on the survey can be obtained from Forestry Commission Scotland Policy Group.
Contact	andy.leitch@forestry.gsi.gov.uk

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Timber

Actual Wood Production	
Trend indications	An increase in wood production generally indicates an increase in demand in wood products from Scottish forests.
Definitions	Actual wood production is the estimated tonnage of timber (softwood and hardwood) produced through harvesting operations on the national forest estate and private sector woodlands.
Data	Calendar year data (in green tonnes) published in Forestry Statistics 2008 at UK level; full estimates for Scotland not published.
Source	FC data obtained from sales reporting. Non-FC softwood estimated from Private Sector Softwood Removals Survey. Non-FC hardwood estimated from UK hardwood deliveries.
Frequency	Annual. Last updated in 2008 (for data covering calendar year 2007).
Quality control	Produced by Forestry Commission Economics and Statistics, working to National Statistics standards and in consultation with the Expert Group on Timber and Trade Statistics.
Other information	Non-FC data are subject to revision annually, as information becomes available about closures, or new information becomes available for previous non-respondents.
Contact	andy.leitch@forestry.gsi.gov.uk

Forecast wood availability in the private sector	
Trend indications	An increase in forecast wood availability indicates potential increased production available to the market, but not necessarily quality.
Definitions	This equates to softwood forecasts, from clearfell and thinning, derived from existing inventory data from the GB Private Sector forecast.
Data	Unit measured in cubic metres over bark standing.
Source	2005 UK forecast for Softwood, broken down by country. There is currently no hardwood forecast.
Frequency	Five- yearly. Next due in 2011.
Quality control	It is recognised that the data for a section of the private sector woodlands has wide confidence limits. This is one of the key areas that we hope to address and improve led by an Industry working group.
Other information	
Contact	andy.leitch@forestry.gsi.gov.uk

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Forecast wood availability from the national forest estate	
Trend indications	An increase in forecast wood availability indicates increased potential production, but not necessarily quality.
Definitions	This equates only to softwood forecasts from existing inventory data from the National Forest Estate. This volume represents the average annual volume sustainable harvest from the current growing stock on the NFE.
Data	Units measured in cubic metres over bark standing.
Source	2005 UK forecast for softwood.
Frequency	Full forecast on a 5-yearly basis. Next due in 2011.
Quality control	Data collected by FE using best practice survey techniques. Forecast scrutinised and published by Inventory and Forecast Unit.
Other information	
Contact	andy.leitch@forestry.gsi.gov.uk

Timber's contribution to Scottish Value Added	
Trend indications	Higher GVA is positive.
Definitions	Gross Value Added (GVA) is a measure of the value added to materials and other inputs in the production of goods and services by resident organisations; before allowing for depreciation or capital consumption. Net receipts from interest, profits and dividends abroad are excluded.
Data	Input/output tables provide a complete picture of the flows of products and services in the economy for a given year, illustrating the relationship between producers and consumers and the interdependencies of industries.
Source	Scottish input/output tables includes forestry planting, harvesting, wood and wood products, pulp, paper and paperboard. Scottish grown timber only; excludes articles of paper and paperboard. See http://www.scotland.gov.uk/Topics/Statistics/Browse/Economy/Input-Output .
Frequency	Assessments are made on a 4-yearly basis, commencing in 2006.
Quality control	Scrutinised and published through Scottish Government statisticians.
Other information	The data is available at the Scotland level only. Estimate does not include GVA generated using Scottish timber elsewhere in the UK.
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Sawmill log consumption	
Trend indications	An increase in sawmill log consumption indicates increased demand.
Definitions	Measured in cubic metres under bark. This is the consumption by Scottish sawmills of softwood and hardwood sawlogs.
Data	Calendar year data (consumption in green tonnes) published in Forestry Statistics 2008 at UK level; full estimates for Scotland not currently published, but available from supporting tables.
Source	Sawmill survey
Frequency	Annual. Last updated in 2008 (for data covering calendar year 2007).
Quality control	Produced by Forestry Commission Economics and Statistics, working to National Statistics standards and in consultation with the Expert Group on Timber and Trade Statistics.
Other information	Actual hardwood figures may be higher as published figures do not include mobile mills. Data is subject to revision annually, as information becomes available about mills opening or closing, or new information becomes available for previous non-respondents.
Contact	andy.leitch@forestry.gsi.gov.uk

Sawmill sawnwood output	
Trend indications	The long-term trend of an increase in sawmill sawnwood output indicates overall increase in sawmill products.
Definitions	Measured in cubic metres sawnwood. This figure represents the output of softwood and hardwood sawmills for Scotland.
Data	Calendar year data published in Forestry Statistics 2008 at UK level; full estimates for Scotland not currently published, but available from supporting tables.
Source	Sawmill survey
Frequency	Annual. Last updated in 2008 (for data covering calendar year 2007).
Quality control	Produced by Forestry Commission Economics and Statistics, working to National Statistics standards and in consultation with the Expert Group on Timber and Trade Statistics.
Other information	Actual hardwood figures may be higher as published figures do not include mobile mills. Data is subject to revision annually, as information becomes available about mills opening or closing, or new information

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	becomes available for previous non-respondents.
Contact	andy.leitch@forestry.gsi.gov.uk

Scottish wood's value share of the UK market	
Trend indications	An increase in Scottish wood's value share of the UK market is a positive trend.
Definitions	This equates to the percentage of the value of wood and wood products consumed within the UK which are produced in Scotland.
Data	Calendar year figures are derived from data on UK production, imports and exports, and estimates of Scottish production.
Source	FC Economics and Statistics
Frequency	Annual. Last updated in 2008 (for data covering calendar year 2007).
Quality control	Figures collated, scrutinised and published by FC Economics and Statistics.
Other information	
Contact	andy.leitch@forestry.gsi.gov.uk

Timber use in construction relative to other materials	
Trend indications	<u>In development</u> . Initial scoping paper illustrates that it would be extremely difficult to capture the appropriate data for this indicator. Further investigation in 2008 identified that significant expenditure would be required to source and interrogate sufficient data to provide a useful indicator of "timber use in construction of new builds against other materials". The findings of this report are currently under consideration.
Definitions	
Data	
Source	
Frequency	
Quality control	
Other information	
Contact	andy.leitch@forestry.gsi.gov.uk

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Area of new coniferous woodland	
Trend indications	An increase in the area of new coniferous woodland indicates increased potential production for future timber supplies.
Definitions	This area (hectares) represents the total new coniferous woodland planted in Scotland both on the National Forest Estate and by private growers.
Data	Derived from business monitoring from FC Scotland, represents area planted by FES and grant aid.
Source	FC Scotland Annual Review 2007-08.
Frequency	Annual records
Quality control	Figures scrutinised through business reporting and end of year reporting. Outputs often influenced by status of current grant scheme.
Other information	
Contact	andy.leitch@forestry.gsi.gov.uk

Area of broadleaved woodland where timber production is a significant management objective	
Trend indications	An increase in the area of broadleaved woodland where timber production is a significant management objective is a positive trend as it will support development on the Scottish hardwood market.
Definitions	This area (hectares) represents the total new broadleaved woodland planted in Scotland both on the National Forest Estate and by private growers. For private growers, only grant aided new planting where timber production is a significant management.
Data	Represents area (hectares) planted by FES and grant-aid in 2007-08.
Source	FC Business monitoring and FC Scotland Annual Review 2007-08.
Frequency	Annual
Quality control	Figures scrutinised through business reporting and end of year reporting. Outputs often influenced by status of current grant scheme.
Other information	
Contact	andy.leitch@forestry.gsi.gov.uk

Sales of improved nursery stock	
Trend indications	An increase in the numbers of improved nursery stock sold to Scotland may indicate an increase in the potential production or it

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	may mean heavy losses in previous planting year.
Definitions	<p>This indicator provides the total sales of "improved" Sitka Spruce and Scots pine as well as total sales of these species, accounting for 95% of sales in Great Britain.</p> <p>"Improved" covers :</p> <ul style="list-style-type: none"> • Seed orchard material that falls in the tested category under the UK Forest Reproductive Material Regulations (Sitka spruce and Scots pine) and • Vegetatively propagated tested 'family mixture' material (either half or full sib families) (Sitka spruce).
Data	Figures for planting year (October to September) estimated from survey of nurseries in Great Britain.
Source	Nursery Survey 2008
Frequency	Annual basis commenced October 2008 (for planting year October 2006 to September 2007).
Quality control	Figures collated, scrutinised and published by FC Economics and Statistics.
Other information	
Contact	andy.leitch@forestry.gsi.gov.uk

Volume of certified timber from Scottish forests	
Trend indications	An increase in the volume of certified timber may represent increased production from certified forests.
Definitions	Volume of timber measured in cubic metres over bark standing
Data	Calendar year data published in Forestry Statistics 2008 at UK level; estimates for Scotland not published.
Source	FC data obtained from sales reporting. Non-FC softwood estimated from Private Sector Softwood Removals Survey. Non-FC hardwood estimated from UK hardwood deliveries.
Frequency	Annual. Last updated in 2008 (for data covering calendar year 2007).
Quality control	Produced by Forestry Commission Economics and Statistics, working to National Statistics standards and in consultation with the Expert Group on Timber and Trade Statistics.
Other information	All FC woodland is certified.
Contact	andy.leitch@forestry.gsi.gov.uk

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Business development

Forestry's contribution to Scottish gross value-added	
Trend indications	Higher GVA is positive.
Definitions	This is a measure of the contribution to the economy of each individual producer, industry or sector in the United Kingdom (Office of National Statistics – Annual Business Inquiry definition). Gross Value Added (GVA) equals total turnover less total purchases of goods, materials and services (see http://www.statistics.gov.uk/abi/variable_info.asp). Figures include contribution of Scottish grown timber production and processing and recreation and tourism visits to Scottish woodland.
Data	The GVA data was compiled through the commissioned report from Forest Research – “A Valuation of the Economic and Social Contribution of Forestry for People in Scotland.”
Source	FC Scotland
Frequency	Assessments are made on a 4-yearly basis, commencing in 2008.
Quality control	The data for the indicator is derived from Office of National Statistics – Annual Business Inquiry definition, to take account of the number of jobs generated by Scottish grown timber only. Tourism data was derived from an Omnibus Survey in 2006.
Other information	The data is available at the Scotland level only. Growing the economy is the Scottish Government's top priority although no specific targets have been set for GVA growth.
Contact	cameron.maxwell@forestry.gsi.gov.uk

Employment supported by the forestry related sector	
Trend indications	Trend needs to be compared with GVA increase. If employment trend is higher with no corresponding GVA increase, then this would be a negative overall productivity trend.
Definitions	This is a measure of the number of jobs, both direct, indirect and induced, which the Scottish forestry sector supports. Figures include contribution of Scottish grown timber production and processing and recreation and tourism visits to Scottish woodland. The figures do not include data for the industry supported by imported wood and timber products.
Data	The 2008 employment data was compiled through the commissioned report from Forest Research – “A Valuation of the Economic and Social Contribution of Forestry for People in Scotland.”

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Source	FC Scotland
Frequency	Assessments are made on a 4 yearly basis, commencing in 2006.
Quality control	The data for the indicator is derived from Office of National Statistics – Annual Business Inquiry definition, to take account of the number of jobs generated by Scottish grown timber only. Tourism data was derived from an omnibus survey in 2006.
Other information	The data is available at the Scotland level only.
Contact	cameron.maxwell@forestry.gsi.gov.uk

Uptake of Rural Development Contracts	
Trend indications	An increase would indicate a positive response to delivery mechanisms.
Definitions	This is a measure of the number of land management contracts under the Scottish Rural Development Programme, which are agreed with the forestry sector in Scotland.
Data	Data indicates the number of applications approved during the year. In time, more detailed data on application types will be available.
Source	FCS
Frequency	Assessments are made on an annual basis, commencing in 2008.
Quality control	The data for the indicator will be derived from FCS and Scottish Government sources.
Other information	The data is available at the Scotland level only.
Contact	cameron.maxwell@forestry.gsi.gov.uk

Proportion of statutory development plans recognising woodland benefits	
Trend indications	An increase in the proportion of plans that recognise benefits indicates progress.
Definitions	Baseline: proportion of current published structure plans and indicative forestry strategies. Future measurements: proportion of Development Plans.
Data	Woodland benefits that we expect to be recognised in a statutory development plan or in a sub-national forestry strategy clearly referenced within the plan: General (eg: reference to regional forestry strategy); rural development (eg: quality local jobs); economy of the region (eg: timber processing capacity); biodiversity conservation; soil

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	<p>conservation; water management; landscape; informal local recreation; economic regeneration of urban areas; tourism; green networks in settlements (eg: linking town and country); habitat networks; climate change; biomass for energy and community involvement (eg: local community groups).</p> <p>References to these aspects are checked off during a reading of the document. If a majority of the list is referenced then the plan is defined as recognising woodland benefits.</p>
Source	FC Scotland
Frequency	Assessments are made on a 5-yearly basis, commencing in 2008.
Quality control	Managed by Land Use Planning Development Manager.
Other information	<p>The data is available at the Scotland level only. Baseline assessment undertaken in March 2008. Baseline assessment did not include the two National Parks because neither had a structure plan.</p> <p>Assessment undertaken on:</p> <ul style="list-style-type: none"> - the version of the Development Plan that has been adopted by the Planning Authority at the time of the assessment (i.e. which has undergone full public consultation and approval by the Planning Authority, but which may not yet have been approved (with amendments) by Scottish Ministers); and - the version of the Indicative Forestry Strategy that has been approved by the Planning Authority at the time of the assessment and which, either: <ul style="list-style-type: none"> - has been formally incorporated into the Development Plan as supplementary guidance; or - has been approved by the Planning Authority following full consultation, is being used by the authority to inform decisions, and where an intention to update the IFS is clearly expressed in the existing Development Plan.
Contact	neil.langhorn@forestry.gsi.gov.uk

Numbers of people enrolling or registering for forestry related short courses, qualifications and Modern Apprenticeship programmes	
Trend indications	An increase in the numbers represents progress.
Definitions	<p>The qualification elements that will be analysed are:</p> <ol style="list-style-type: none"> 1. Accredited and non-accredited further education qualifications/courses data that take place within colleges and private training providers. 2. Accredited and non-accredited work-based learning qualifications/courses data that take place within colleges and private training providers. 3. Higher education qualifications/courses data that take place within higher education institutions.

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	<p>4. Scottish Modern Apprenticeship programmes data.</p> <p>The definition of enrolling or registering is an individual who has enrolled on a course with the intention of starting the programme of study (as defined by the specific requirements of the course)</p>
Data	<p>The data analysed is held at: Lantra Internal Apprenticeship Database Scottish Funding Council Lantra Sector Qualification Strategy</p> <p>The above figures will be derived by reviewing each of the above sources and extracting the relevant data. It will be presented in a fashion which adheres to the <i>Statement of Methodology</i> compiled by Lantra.</p> <p>Analysis will principally comprise of selection of data followed by extraction and presentation.</p>
Source	Lantra. Contract reference 045-13-07/08
Frequency	Annual
Quality control	Lantra managed research, contract management by Forestry Commission Scotland.
Other information	A detailed analysis of the data will be available on the FCS website in mid 2009.
Contact	james.ogilvie@forestry.gsi.gov.uk

Numbers of people completing forestry related short courses, qualifications and Modern Apprenticeship programmes

Trend indications	<p>An increase in the numbers represents progress.</p> <p>A slower increase in completions than in enrolments/registrations (see above) may indicate problems.</p>
Definitions	<p>The qualification elements that will be analysed are:</p> <ol style="list-style-type: none"> 1. Accredited and non-accredited further education qualifications/courses data that take place within colleges and private training providers. 2. Accredited and non-accredited work-based learning qualifications/courses data that take place within colleges and private training providers. 3. Higher education qualifications/courses data that take place within higher education institutions. 4. Scottish Modern Apprenticeship programmes data. <p>The definition of completed is an individual who has fulfilled the time requirements of the course/programme of study and may or may not have passed.</p>

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Data	<p>The data analysed is sourced from:</p> <ul style="list-style-type: none"> • Lantra Internal Apprenticeship Database • Scottish Funding Council • Lantra Sector Qualification Strategy <p>The above figures will be derived by reviewing each of the above sources and extracting the relevant data. It will be presented in a fashion which adheres to the <i>Statement of Methodology</i> compiled by Lantra.</p> <p>Analysis will principally comprise of selection of data followed by extraction and presentation.</p>
Source	Lantra. Contract reference 045-13-07/08
Frequency	Annual
Quality control	Lantra managed research, contract management by Forestry Commission Scotland.
Other information	A detailed analysis of the data will be available on the FCS website in mid 2009.
Contact	james.ogilvie@forestry.gsi.gov.uk

Forestry's contribution to Scottish tourism gross value added	
Trend indications	An increase would represent progress but any change would need to be set against overall tourism GVA trends.
Definitions	This is a measure of the GVA which the Scottish forestry sector supports through forest related tourist spending. For residents of Scotland, tourist trips are defined as non-regular (less frequent than weekly) trips over 3 hours in duration. All trips by other visitors are also counted as tourism, although of these, only visits by residents of other parts of the UK are covered. Forest-related spending is expenditure directly related to recreation at forest sites, including associated site facilities, such as visitor centres. As a precise breakdown of spending at different sites is not available, only trips where woodland was the main destination are counted as forest-related for residents of Scotland, while for other UK residents, only trips where visiting woodland was the only or 'very important' reason for the trip are counted as forest-related. The estimate assumes that GVA due to spending on woodland trips is an average of 37% of spending.
Data	The number of visits by residents of Scotland is measured via the Scottish Recreation Survey, a survey managed by Scottish Natural Heritage. The number of visits by residents of other parts of the UK is estimated from the Forestry Commission All Forests Survey.
Source	FC Scotland. The most recent estimate for tourism's contribution was compiled through the commissioned report from Forest Research – "A Valuation of the Economic and Social Contribution of Forestry for

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	People in Scotland" at: http://www.forestresearch.gov.uk/forestryforpeople .
Frequency	Assessments are to be made on a four-yearly basis, commencing in 2008.
Quality control	Estimate reviewed by Forestry Commission statisticians.
Other information	This indicator in the SFS is "By 2008 we will develop a cost-effective, measurable indicator that recognises forestry's direct contribution to the tourist sector". "Forestry's contribution to Scottish tourism GVA" is the indicator chosen. The figure is likely to be an underestimate because for Scottish residents it is based only on visits where woodlands were the main destination. GVA due to spending for other woodland trips and due to spending by overseas visitors is not included. The data is available at the Scotland level only.
Contact	cameron.maxwell@forestry.gsi.gov.uk

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Community development

Number of schools involved in woodland based learning activities	
Trend indications	<p>An increase would represent progress.</p> <p>Note that the focus is on building the confidence of teachers to use woodland for learning as a normal part of education. If teachers' confidence increases they may use woodland for learning without seeking FCS' direct support. Therefore, the indicator is an indirect measurement of success. Furthermore, a decrease would merit further investigation to check that such a decrease does not result from teachers using woodland for learning without FCS. There is currently no reasonable way of making a more direct measurement.</p>
Definitions	<p>Schools are state or private nursery, primary or secondary schools. To be involved in a "woodland based learning activity" a school must use in a woodland at some point during the school year as part of their learning programme. The indicator captures only those schools whose woodland based learning is supported directly by FCS.</p>
Data	<p>The data is collected with the annual report to Forestry Commission Scotland (FCS) management board on progress with the education strategy. FCS staff provide returns to an e-mailed request for data.</p>
Source	FCS Education Policy Advisor
Frequency	Annual
Quality control	Report to management board.
Other information	<p>Annual reports are published at http://www.forestry.gov.uk/forestry/infd-6cjdgl.</p> <p>There are 2,769 schools in Scotland.</p>
Contact	sally.york@forestry.gsi.gov.uk

Number of community groups involved in owning or managing woodland	
Trend indications	An increase would represent progress.
Definitions	<p>Definition of a community group</p> <ul style="list-style-type: none"> • Has at least a written constitution, ie: the existence of the group is established beyond the mere existence of a collection of people. • Operates over a geographically defined area. • A significant proportion of the local population is linked to the group eg by membership. • Members of the local community are in the majority on the

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	<p>board or other equivalent governance committee.</p> <p>Definition of “involved in owning or managing woodland” There are four broad mechanisms by which involvement in ownership or management could be achieved:</p> <p>Ownership: This implies that the Community Woodland Group itself (in the case of a Company Limited by Guarantee) or appointed representative (in the case of a Voluntary Association, or unconstituted body) has the legal holding of title to the solum and, typically, the trees growing thereon.</p> <p>Management agreement: A management agreement is a formalised mutual understanding between the Community Woodland Group, the woodland owner or their management agent and possibly any other relevant interested third party. This understanding is usually described in a document, agreed to by all interested parties, which identifies some or all of the management objectives for the woodland, specific requirements deriving there from and possibly prescriptions for relevant activities as well as the body(ies) responsible for carrying out (or ensuring that the activities are performed). The Community Woodland Group may be identified as the lead organisation, or as an active management partner organisation.</p> <p>Lease: This is a legally binding agreement between a community group and the woodland owner (or their managing agent). It stipulates the area of land subject to the agreement, the duration of the agreement, and the rights and restrictions conferred on the community group with regard to the woodland for the duration of the agreement.</p> <p>Informal arrangement: Such an arrangement does not include any of the mechanisms mentioned above for the formalisation of the community group’s involvement with the woodland. By its nature it is (usually) a verbal understanding between the group and the owner or their managing agent. The level of a group’s involvement with the woodland can vary significantly within this framework and can range from direct participation in management planning and management operations to <i>ad hoc</i> access to the woodland. To be involved in managing woodland the community group must have a significant degree of influence over decisions about management of the woodland.</p>
Data	<p>The baseline figure was established by a report <i>Reforesting Scotland (2002) Scottish Forestry Strategy Indicators of Progress for Community Involvement</i>. The second measurement was made by Forest Research’ survey of forestry for people activities, part of the “Valuation of the Socio-economic Benefits of Forestry for People in</p>

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	Scotland" research programme. The two measurements employed the same definitions and basic research methodology: survey of known community woodland groups and other stakeholder organisations. Subsequent measurements are to be made using the same definitions and basic methodology. A detailed description of the methodology is available at http://www.forestresearch.gov.uk/forestryforpeople .
Source	Baseline by Reforesting Scotland. Second measurement by Forest Research. Subsequent measurements by the Community Woodland Association, subject to contract.
Frequency	The baseline was established in 2002 and the second measurement in 2007. Subsequent measurements will be on a 3-yearly interval.
Quality control	Web-published report, contract management.
Other information	
Contact	bob.frost@forestry.gsi.gov.uk

Number of schools providing vocational courses that include forestry related skills	
Trend indications	An increase would represent progress.
Definitions	The schools contributing to the figure are secondary schools providing Skills for Work Rural Skills and the Scottish Progression Award in Rural Skills courses that provide a vocational forestry component in associated educational activities. As established by a survey of schools that are offering these two courses.
Data	The baseline figure was provided by Lantra using then current informal knowledge. The second measurement was made by Lantra under a contract agreement with FCS (Agreement 045-13-07/08, "Measurement of Scottish Forestry Strategy Skills Indicators"). Initial scoping with the Scottish Qualifications Authority identified the schools offering the two relevant courses and a survey of these schools then identified those offering a forestry component. A detailed methodology statement is available in the relevant contract file.
Source	Lantra provided the baseline and second measurements. Subsequent measurements by Lantra are subject to contract and may be carried out direct by FCS.
Frequency	The frequency of measurement depends on the cost but it is likely to be annual.
Quality control	Contract management.
Other information	The baseline figure is probably an underestimate because it was based on then current informal knowledge.

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Contact	james.ogilvie@forestry.gsi.gov.uk
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Proportion of adults and/or family members who attended an organised learning activity or event linked with Scottish woodlands in the previous 12 months	
Trend indications	An increase would represent progress.
Definitions	This is the % of respondents to the Scottish Public Opinion of Forestry Survey that said that they or a member of their family had attended any organised learning activities or events to do with woodlands or forests in the last twelve months.
Data	A question in the Scottish Public Opinion of Forestry Survey. This is a set of questions in an omnibus survey of the Scottish population. A detailed report is available at http://www.forestry.gov.uk/forestry/INFD-5ZYL9W .
Source	Forestry Commission Economics and Statistics Unit
Frequency	Biennial
Quality control	The professional statisticians in the Economics and Statistics Unit ensure adequate quality.
Other information	
Contact	sally.york@forestry.gsi.gov.uk

Proportion of adults who have heard or read about Scottish woodlands in the previous 12 months	
Trend indications	An increase would represent progress.
Definitions	This is the % of respondents to the Scottish Public Opinion of Forestry Survey who selected at least one of a set of topics on Scottish forests, woods or trees that they had heard, seen or read about on the television, radio or in newspapers in the last twelve months.
Data	A question in the Scottish Public Opinion of Forestry Survey. This is a set of questions in an omnibus survey of the Scottish population. A detailed report is available at http://www.forestry.gov.uk/forestry/INFD-5ZYL9W .
Source	Forestry Commission Economics and Statistics Unit
Frequency	Biennial
Quality control	The professional statisticians in the Economics and Statistics Unit ensure adequate quality.
Other information	

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Contact	james.ogilvie@forestry.gsi.gov.uk
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Number of land parcels sold or leased under the National Forest Land Scheme	
Trend indications	<p>An increase would represent progress because it is an indicator of community empowerment.</p> <p>Note, however that the National Forest Land Scheme (NFLS) is a mechanism to facilitate asset based community development rather than a programme with output targets.</p>
Definitions	<p>This is the number of land parcels where sale or lease is completed in the reporting financial year. The NFLS is the mechanism by which FCS facilitates acquisition of National Forest Estate land by community groups, non-governmental organisations or affordable housing bodies. It has four sections, all of which count towards the indicator: community acquisition, affordable housing, woodland crofts and sponsored sale of surplus land.</p>
Data	End of year report to FCS management board.
Source	FCS NFLS Programme Manager. Data collated in the NFLS Management Spreadsheet.
Frequency	Annual
Quality control	Report to management board.
Other information	
Contact	bob.frost@forestry.gsi.gov.uk

Area of land parcels sold or leased under the National Forest Land Scheme	
Trend indications	<p>An increase would represent progress because it is an indicator of community empowerment.</p> <p>Note, however that the NFLS is a mechanism to facilitate asset based community development rather than a programme with output targets.</p>
Definitions	<p>This is the total area of land parcels where sale or lease is completed in the reporting financial year. The NFLS is the mechanism by which FCS facilitates acquisition of national forest estate land by community groups, non-governmental organisations or affordable housing bodies. It has four sections, all of which count towards the indicator: community acquisition, affordable housing, woodland crofts and sponsored sale of surplus land.</p>
Data	End of year report to FCS management board.
Source	NFLS Programme Manager. Data collated in the NFLS Management Spreadsheet.

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Frequency	Annual
Quality control	Report to management board.
Other information	
Contact	bob.frost@forestry.gsi.gov.uk

Independent satisfaction rating of community partnerships on the national forest estate	
Trend indications	An increase would represent progress.
Definitions	The rating is the % surveyed who answered “yes-completely” or “so far but more to do” to the question, “[Do the] activities and achievements of the community-FCS partnership meet your organisation’s expectations of the partnership?”
Data	<p>The baseline figure was established as part of an evaluation of community partnerships on the National Forest Estate conducted by Campbell Consulting and commissioned by FCS, CWA and the Community Land Unit of Highlands and Islands Enterprise in 2006. A detailed report is available at: www.forestry.gov.uk/communitiesscotland</p> <p>The rating was established by surveying community groups involved in partnerships. Groups were identified by FES District staff and surveyed using a written questionnaire. Collection of subsequent data will be led by the CWA (subject to contract).</p>
Source	CWA (subject to contract)
Frequency	Three-yearly
Quality control	Web-published report, contract management.
Other information	
Contact	bob.frost@forestry.gsi.gov.uk

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Access and health

Proportion of the population with accessible woodland greater than 2 ha within 500m of their home	
Trend indications	An increase would represent progress.
Definitions	<p>The indicator uses the Woodland Trust's Space for People Woodland Access Standard.</p> <p>'Woodland' is defined as 'land under stands of trees with, or the potential to achieve, tree crown cover of more than 20 per cent'.</p> <p>Accessible woodland is 'Any [woodland] site that is permissively accessible to the general public for recreational purposes.' It includes sites with unrestricted open access and restricted, but permissive, access (eg fee-payable, fixed hours access).</p> <p>Land reform in Scotland means that there is a right of responsible access to most woodland. Therefore, some physical attributes have been applied to the definition of accessible woodland in Scotland so that only those woodlands where access is actively encouraged count towards the standard. To be accessible, the woodland must have an entrance and a useable path, track or forest road as well as access that is welcoming.</p>
Data	<p>Spatial and physical attribute data is collected via a survey of local authorities and other relevant woodland owners and managers. This is collated into the Woods for People inventory via an on-line recording system. The inventory is then analysed against the accessible woodland standards. Further information and functionality to submit results is available at http://www.woodsforpeople.info.</p>
Source	Woodland Trust
Frequency	Triennial
Quality control	Woodland Trust ground-truthing and scrutiny by a stakeholder group.
Other information	
Contact	kevin.lafferty@forestry.gsi.gov.uk

Proportion of the population with accessible woodland greater than 20ha within 4 km of their home	
Trend indications	An increase would represent progress.
Definitions	<p>The indicator uses the Woodland Trust's Space for People Woodland Access Standard.</p> <p>'Woodland' is defined as 'land under stands of trees with, or the</p>

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	<p>potential to achieve, tree crown cover of more than 20 per cent'.</p> <p>Accessible woodland is 'Any [woodland] site that is permissively accessible to the general public for recreational purposes.' It includes sites with unrestricted open access and restricted, but permissive, access (eg fee-payable, fixed hours access).</p> <p>Land reform in Scotland means that there is a right of responsible access to most woodland. Therefore, some physical attributes have been applied to the definition of accessible woodland in Scotland so that only those woodlands where access is actively encouraged count towards the standard. To be accessible, the woodland must have an entrance and a useable path, track or forest road as well as access that is welcoming.</p>
Data	<p>Spatial and physical attribute data is collected via a survey of local authorities and other relevant woodland owners and managers. This is collated into the Woods for People inventory via an on-line recording system. The inventory is then analysed against the accessible woodland standards. Further information and functionality to submit results is available at http://www.woodsforpeople.info.</p>
Source	Woodland Trust
Frequency	Triennial
Quality control	Woodland Trust ground-truthing and scrutiny by a stakeholder group.
Other information	
Contact	kevin.lafferty@forestry.gsi.gov.uk

Proportion of adults (16+ years) who visited woodland in previous 12 months	
Trend indications	An increase would represent progress but trends need to be analysed against an understanding of the influence of external factors such as the weather.
Definitions	This is calculated by combining the % of respondents to the Scottish Public Opinion of Forestry Survey that said that they had visited a woodland in the last 12 months and information from the Survey on frequency of visits for the last year.
Data	Questions in the Scottish Public Opinion of Forestry Survey. This is a set of questions in an omnibus survey of the Scottish population. A detailed report is available at http://www.forestry.gov.uk/forestry/INFD-5ZYL9W .
Source	Forestry Commission Economics and Statistics Unit.

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Frequency	Biennial
Quality control	The professional statisticians in the Economics and Statistics Unit ensure adequate quality.
Other information	There is some uncertainty about the trend and causal factors. Other similar surveys show significantly different results. Figures may be highly weather or season dependent.
Contact	kevin.lafferty@forestry.gsi.gov.uk

Number of visits to national forests	
Trend indications	An increase would represent progress but analysis needs to be undertaken against a policy background of focussing on access for health or access for local economic development with success measured by more than overall numbers.
Definitions	This is determined through the 'All Forests' methodology. This is a visitor survey which to provide a statistically valid estimate of all visitors who access the national forest estate on foot, cycle or horseback. Sampling has been undertaken in random forest areas at various times with all visitors counted either at promoted access points or along boundaries in more where there is recognised visitor movements.
Data	The sample consists of figures taken from the All Forest Visitor Survey and includes the number of visits made in the evening recorded through the car park counters. Attendance at FES events on the National Forest Estate.
Source	Forest Enterprise Scotland
Frequency	A baseline dataset has been assembled across all of Scotland over a three-year period concluding in FY06/07. A decision on a repeat survey will be taken in due course but this is not anticipated within the next 3-5 years.
Quality control	Contract management based on advice provided by FC statisticians.
Other information	
Contact	kevin.lafferty@forestry.gsi.gov.uk

Number and length of Core Paths in woodlands	
Trend indications	This indicator is more about ensuring that there is a reasonable amount of core path in woodland than in showing progress as such. We would expect the proportion of core paths that are in woodland to be approximately reflective of the proportion of Scotland's land area that is woodland.

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Definitions	<p>Core Paths in woodland in approved Core Paths Plans.</p> <p>The access legislation places a statutory duty on all access authorities to produce a Core Paths Plan for their area. Core Paths will provide a system of paths sufficient for providing reasonable access across the area. In general terms they will be a network of routes around, or between, communities or places of interest and provide links with the wider path network. In the main, core paths are likely to follow established access routes but some new routes may be created. Core Paths will be well publicised and way-marked and will eventually be shown on Ordnance Survey maps.</p>
Data	<p>Core path data is held individually by Local Authorities. A few LAs have completed consultation on their Core Path Plans whilst others are in various stages of formal or pre-formal consultation. During 2009 CGIS will attempt to obtain core path geospatial data from all LAs.</p> <p>This data will be analysed against known distribution of woodland to produce a figure for length of core paths in woodland.</p>
Source	Local Authorities? analysed by FCS Corporate GIS team (CGIS).
Frequency	Base data will be available in 2010. The frequency of updates is not yet known.
Quality control	Minimum standards for Core Path data set down in regulatory framework. Scrutiny by CGIS.
Other information	SNH were given the role of Core Path co-ordinators initially but they passed this responsibility to the 32 Local Authorities. Kevin reports that whilst no formal objections have been received so far, the SG anticipates some objections to be made in the near future. Each LA holds maps in a range of different formats (varying from good to useless). Even FES does not have comprehensive and consistent geospatial path data for the NFE (never mind core path data).
Contact	kevin.lafferty@forestry.gsi.gov.uk/Howard/CGIS

Proportion of visitors satisfied with woodland recreation provision	
Trend indications	An increase would represent progress.
Definitions	Percentage of respondents to the Scottish Public Opinion of Forestry Survey who answered very good or good to a question asking them to rate the provision of woodland recreation opportunities in Scotland.
Data	Questions in the Scottish Public Opinion of Forestry Survey. This is a set of questions in an omnibus survey of the Scottish population. A detailed report is available at

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	http://www.forestry.gov.uk/forestry/INFD-5ZYL9W .
Source	Forestry Commission Economics and Statistics Unit
Frequency	Biennial
Quality control	The professional statisticians in the Economics and Statistics Unit ensure adequate quality.
Other information	
Contact	kevin.lafferty@forestry.gsi.gov.uk

Proportion of people who used woodland, forest or tree covered park for exercise at least twice per week in the last four weeks

Trend indications	An increase would represent progress but any trend would have to be analysed against overall physical activity level trends.
Definitions	<p>Two questions in the Scottish Health Survey are combined to provide this figure:</p> <p>A: In the past four weeks have you made use of any of the places listed for any ... physical activities for example for walking, cycling, or doing any sports?</p> <ol style="list-style-type: none"> 1 A woodland, forest or tree covered park 2 An open space or park 3 Country paths (not on tarmac) 4 A beach/sea shore/loch/river or canal 5 Sports fields or outdoor courts (eg tennis, 5-a-side) 6 A swimming pool 7 A gym or sports centre 8 Pavements or streets in your local area 9 Your home 10 Somewhere else 11 No - not used any of these <p>B. How often in the past 4 weeks have you made use of (name of place) for physical activity?</p> <ol style="list-style-type: none"> 1 Every day 2 4-6 days a week 3 2-3 days a week 4 Once a week 5 2-3 times in the last 4 weeks 6 Once in the last 4 weeks 7 (Varies too much to say)
Data	<p>Through the Scottish Health Survey. This is a national survey run by the Scottish Government providing a detailed picture of the health of the Scottish population in private households. It is designed to make a major contribution to the monitoring of health in Scotland. Further details at http://www.scotland.gov.uk/Topics/Statistics/Browse/Health/scotti</p>

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	sh-health-survey .
Source	Scottish Government produces the base data which is then analysed by the Economics and Statistics Unit of FCS.
Frequency	The first survey containing the relevant questions will be run in 2008, with data available in autumn 2009. It will be annual thereafter.
Quality control	Scottish Government statistics quality control process.
Other information	
Contact	kevin.lafferty@forestry.gsi.gov.uk

Number of volunteer days associated with woodland	
Trend indications	An increase would represent progress but note the policy is to focus on volunteering that delivers social and individual benefits so the type of volunteering is also of interest.
Definitions	<p>Volunteering in this context is “the giving of time and energy in the outdoor woodland environment or on activities directly related to the outdoor woodland environment (eg: building bat boxes, staffing an interpretation facility) through a third party, which can bring measurable benefits to the volunteer, individual beneficiaries, groups and organisations, communities, the environment and society at large. It is a choice undertaken of one's own free will, and is not motivated primarily for financial gain or for a wage or salary”.</p> <p>A formal volunteer day is composed of 6.5 hours of volunteer work as defined above. It must be in an organised activity for a third party such as BTCV, Forestry Commission Scotland, or a local community group.</p> <p>The figure given is the number of formal volunteer days per year.</p>
Data	<p>A rough baseline figure can be derived from data in a Scottish Natural Heritage commissioned review of volunteering in natural heritage by Volunteer Development Scotland in 2006. A survey of 204 natural heritage organisations calculated that there were a total of 23,340 volunteers who collectively volunteered for at least 91,149 hours in an average month. Assuming an 6.5 hours average working day and that the proportion of these volunteers who worked in woodland was 17.2% (the proportion of Scotland that is wooded) produces a figure of approximately 29,000 volunteer days in woodland per year. This methodology is considered too rough to provide a quotable baseline.</p> <p>A more robust baseline figure of 47,444 days was established for 2007 by Forest Research’ survey of forestry for people activities, part of the “Valuation of the Socio-economic Benefits of Forestry for People in Scotland” research programme. A detailed description of the methodology is available at http://www.forestresearch.gov.uk/forestryforpeople. The survey</p>

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	will be repeated at three-yearly intervals.
Source	Forest Research.
Frequency	Triennial.
Quality control	Scrutiny by Economics and Statistics.
Other information	The original indicator was "Number of formal volunteer days associated with woodland". The word "formal" was found to be confusing and has been dropped.
Contact	james.ogilvie@forestry.gsi.gov.uk

Environment quality

Length/area of baseline rivers/lochs in forested catchments where ecological quality is of good or high status	
Trend indications	An increase in the length of rivers or area of lochs for which ecological quality is maintained or enhanced would be a positive trend.
Definitions	<p>Forested catchments refer to those water catchments where forests occupy more than 50% of the land area.</p> <p>Ecological status is an expression of the quality of the structure and functioning of surface water ecosystems as indicated by the condition of a number of quality elements. These are biological quality elements, chemical and physicochemical quality elements and hydromorphological quality elements.</p> <p>There are five classes of ecological status; high, good, moderate, poor, bad. The Water Framework Directive (WFD) states that the overall ecological status of a waterbody is determined by the results for the biological or physicochemical quality elements with the worst class.</p> <p>Heavily modified waterbodies and artificial waterbodies (HMWBs and AWBs) have a separate classification system that takes into account the modified nature of these water bodies. There are five classes of <u>ecological potential</u> for HMWBs and AWBs: maximum, good, moderate, poor and bad.</p>
Data	<p>As part of their duties under the Water Framework Directive, SEPA has developed a new classification scheme based on the quality classes above for the publication of the final River Basin Management Plans in December 2009, supported by the new monitoring network which was implemented in January 2007.</p> <p>This indicator uses classification results from baseline river and fresh water loch water bodies that are maintained at good or high status, or any water bodies that move from less than good status into good or high status. Figures from HMWBs and AWBs of good</p>

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	<p>and maximum ecological potential are also included as are any of those waterbodies moving from moderate, poor or bad into good or maximum ecological potential. These figures are combined to give an annual assessment of water bodies that achieve good or high status.</p> <p>The National Inventory of Woodlands and Trees is combined with the above figures to identify the length/area of waterbodies where ecological status is high or good in catchments where forestry occupies 50% or more of the land area.</p>
Who produces the data	SEPA
Timeliness of the data	Annually.
Quality control	The UK Technical Advisory Group for the WFD is developing environmental quality standards that will be used in the classification schemes.
Other information	For more information on the Water Framework Directive go to http://www.sepa.org.uk/wfd/index.htm
Contact	hugh.clayden@forestry.gsi.gov.uk

Length/area of baseline rivers/lochs affected by acidification where forestry is a significant exacerbating factor

Trend indications	A reduction in the length of baseline rivers and area of lochs affected by acidification where forestry is a significant exacerbating factor would be a positive trend.
Definitions	<p>Acidification is defined as a continuing loss of acid neutralising capacity manifested by increasing hydrogen ion concentrations and/or declining alkalinity.</p> <p>Forestry will be assumed to be a significant exacerbating factor where baseline rivers or freshwater lochs are at less than good status (based on the WFD classification schemes) for pH or Acid Neutralising Capacity (ANC) respectively and where forestry has been agreed to be a source of diffusion pollution.</p>
Data	<p>Diffuse pollution through acidification is identified as a Significant Water Management Issue (SWMI) in both the Scotland and Solway Tweed SWMI reports.</p> <p>As part of their duties under the Water Framework Directive, SEPA are developing a classification scheme with five quality classes (high, good, moderate, poor, and bad). This classification scheme will identify those waterbodies where acidification is resulting in an unfavourable ecological condition and mitigation measures will be agreed between SEPA and Forestry Commission Scotland.</p>

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	The first classification results will be produced mid to late 2008, based on the new monitoring network, which was implemented in January 2007.
Who produces the data	SEPA
Timeliness of the data	Annually.
Quality control	The UK Technical Advisory Group for the WFD is developing environmental quality standards that will be used in the classification schemes.
Other information	For more information on the Water Framework Directive and the SWMI reports go to: http://www.sepa.org.uk/wfd/index.htm
Contact	hugh.clayden@forestry.gsi.gov.uk

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Number of forestry operations or activities leading to direct pollution of water environment	
Trend indications	A reduction in the number of forestry operations or activities leading to direct pollution of the water environment would be a positive trend.
Definitions	<p>This indicator relates to point source pollution incidents from forestry operations and is associated mainly with spillages of fuel/chemicals and specific sedimentation incidents where there is direct discharge into a watercourse or groundwater source. It does not include diffuse pollution from forestry.</p> <p>Relevant incidents will be those where <u>formal</u> action was taken by SEPA (eg prosecution or written warning).</p> <p>Forestry operations or activities include harvesting, road construction, fertilising, planting, drain maintenance, and mounding.</p>
Data	Activities liable to cause pollution of the water environment are authorised under the Water Environment (Controlled Activities) Scotland Regulations 2005. Under this act all pollution incidents must be reported to SEPA.
Who produces the data	SEPA
Timeliness of the data	Yearly
Quality control	SEPA internal procedures
Other information	For more information on the Water Environment (Controlled Activities) Scotland Regulations 2005 see http://www.sepa.org.uk/pdf/wfd/regimes/car_practical_guide.pdf
Contact	hugh.clayden@forestry.gsi.gov.uk

Proportion of woodlands covered by approved forest plans in areas designated for their landscapes	
Trend indications	Increase in proportion of woodlands covered by an approved forest plan is a positive trend.
Definitions	<p>A Forest Plan (FP) is a whole woodland plan that describes the planned felling, restocking and thinning that will be carried out over a 20-year period. For the National Forest Estate managed by FES the term Forest Design Plan (FDP) is used.</p> <p>An approved FP/FDP is one that has met FCS regulatory and best practice requirements.</p>

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	Areas designated for their landscapes are National Scenic Areas (NSAs).
Data	Woodland area covered by an approved FP/FDP within NSAs.
Source	FP/FDP: FCS. NSA areas: SNH.
Frequency	Annually
Quality control	FCS for FP/FDP data. SNH for NSA area data.
Other information	<p>What constitutes a FP/FDP is currently under review as part of the Scottish Rural Development Programme. Guidance on the preparation of such a plan is explained in FC Forestry Practice Guide 'Forest Design Planning – A Guide to Good Practice' see this link:</p> <p>http://www.forestry.gov.uk/pdf/fdp.pdf/\$FILE/fdp.pdf.</p> <p>Information on NSAs is available on the SNH web-site: http://www.snh.org.uk/scripts-snh/ab-pa03.asp</p>
Contact	nicholas.shepherd@forestry.gsi.gov.uk

Proportion of woodland area managed under low impact silvicultural systems (LISS)	
Trend indications	Increase in the proportion of woodland area managed under low impact silvicultural systems is a positive trend.
Definitions	<p>Woodland area are those where FCS grant has been paid for such work to be carried out or, on the National Forest Estate, areas designated as LISS in an approved Forest Design Plan and managed as such.</p> <p>Low impact silvicultural systems are recognised alternatives to clearfelling and are defined in the UK Woodland Assurance Standard.</p>
Data	<p>Woodland area covered by an approved Forest Plan (FP) where such work has been prescribed for a measured area of the woodland.</p> <p>Woodland area covered by Scottish Forestry Grants Scheme (SFGS) (now closed) Stewardship Grant S6: Developing alternative systems to clearfelling.</p> <p>On the National Forest Estate the data will be derived from the GIS 'thinning' and 'future forest structure' layers.</p>
Source	<p>FP and SFGS data: FCS.</p> <p>National forest estate: FES</p>
Frequency	Annually
Quality control	FCS

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Other information	Information on what is required in a Forest Plan is available at: www.forestry.gov.uk/forestry/infd-7egc3u guidance on the preparation of FP is explained in FC Forestry Practice Guide 'Forest Design Planning – A Guide to Good Practice' see this link: www.forestry.gov.uk/pdg/fdp.pdf/\$FILE/fdp.pdf . Information on the (now closed) SFGS Stewardship Grant S6 is available on: www.forestry.gov.uk/pdf/SFGSquickguideFINAL.pdf/\$FILE/SFGSquickguideFINAL.pdf (page 7)
Contact	hugh.clayden@forestry.gsi.gov.uk

Number of current Management Plans for Scheduled Monuments in forests on the National Forest Estate	
Trend indications	Increase in the number of Scheduled Monuments within forests on the National Forest Estate that have a current Monument Management Plan is a positive trend.
Definitions	A Scheduled Monument is an archaeological site or monument of national importance that Scottish Ministers have given legal protection under the Ancient Monuments and Archaeological Areas Act 1979. A Management Plan usually describes what, where, how, by whom and when formally agreed activities are to be carried out to achieve specific management objectives. On the National Forest Estate managed by Forest Enterprise Scotland, (FES) such management plans are called Monument Management Plans (MMPs). FES has a corporate target of achieving an agreed MMPs with Historic Scotland (HS) for all Scheduled Monuments on the National Forest Estate.
Data	Total number of Scheduled Monuments on or that intersects the National Forest Estate that are required in agreement with Historic Scotland to have a current MMP.
Source	Number of Scheduled Monuments on the National Forest Estate with a current MMP: FES
Frequency	Annually
Quality control	FES
Other information	Information on Scheduled Monuments can be obtained from the Historic Scotland web-site at: http://www.historic-scotland.gov.uk/index/ancientmonuments.htm
Contact	matthew.ritchie@forestry.gsi.gov.uk

Number of monuments in forests protected under a current forest management plan or agreement	
Trend indications	Increase in number of monuments within forests that are protected under a current forest management plan or other woodland management agreement is a positive trend.
Definitions	Archaeological monuments and landscapes: Archaeological monuments and landscapes are recorded on the

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	<p>database of the Royal Commission on the Ancient and Historical Monuments of Scotland (RCAHMS) (formerly known as the National Monuments Record of Scotland). This database comprises information on the archaeological and built heritage of Scotland, including its coastal and maritime waters. Many of the sites recorded in the database have statutory protection (listed buildings, scheduled monuments and historic wrecks) or other types of protection (Inventory of Gardens and Designed Landscapes). Some sites are also the subjects of voluntary management agreements.</p> <p>Information held in the RCAHMS database comes from a variety of sources; the accuracy of the grid references reflects this diversity ranging from highly accurate modern survey data to antiquarian references. The location of each record within the database is displayed as a point on the map and does not attempt to define the extent of the described archaeological remains.</p> <p>Current forest management plan or other woodland management agreement include: Forest plans (FP): a whole woodland plan that describes the planned felling, restocking and thinning that will be carried out over a 20-year period. For the National Forest Estate managed by FES the term Forest Design Plan (FDP) is used. Woodland Grant Scheme (WGS) and Scottish Forestry Grant Scheme (SFGS) are whole or part woodland creation and management plans.</p> <p>FPs, WGS and SFGS are all approved on the basis of meeting the standards set out in the UK Forestry Standard and associated FC Guidance.</p>
Data	<p>Total number of monuments (both scheduled and un-scheduled) on or that intersect all woodlands in Scotland (using the National Inventory of Woodlands and Trees (NIWT) dataset) that are also within a current FP, WGS or SFGS.</p> <p>For all monuments the data comprises an extract from the RCAHMS database, filtered to exclude both maritime and 'find spots', and excluding all terrestrial non-forested areas and a copy of the polygon features defining the course of linear records, such as Roman and Military Roads and the Antonine Wall.</p> <p>Data required to run analysis: National Forest Estate legal boundary, all Scottish Forestry Grant Scheme (SFGS) scheme boundaries, all Forest Plan boundaries, all Woodland Grant Scheme boundaries approved since 01/01/98 (launch date of guidelines), RCAHMS point dataset filtered as described above and Military Road and other relevant linear datasets.</p>
Source	<p>National Inventory of Woodlands and Trees (NIWT) dataset: FCS. All FP, WGS and SFGS contracts using the start point of the UK Forestry Standard (UKFS) January 1998: FCS. RCAHMS database: RCAHMS.</p>

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Frequency	Annually
Quality control	RCAHMS for RCAHMS data. FCS for all other data.
Other information	Information on the RCAHMS database is available through the Canmore database on the RCAHMS website at: www.rcahms.gov.uk
Contact	nicholas.shepherd@forestry.gsi.gov.uk

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Biodiversity

Area of Native Woodland	
Trend indications	An overall increase in native woodland area is a positive trend.
Definitions	<p>The indicator estimates changes in total area of native woodland in Scotland, using a baseline value of 392,000ha estimated as at 31 March 2005.</p> <p>Net area change is estimated annually from known gains (assessed in Biodiversity Indicator 5: progress against HAP targets for native woodland expansion), minus identifiable annual losses which may include those from unconditional felling licences, and in future from planning permission approvals, where native woodland areas are identified. This indicator will be a partial estimate as it will exclude most cases of gradual gains or losses eg resulting from changes in grazing pressure, and loss of native woodlands by conversion to other types of woodland or to open ground as part of forest restructuring.</p>
Data	<p><u>Baseline</u></p> <p>The baseline data was compiled as at 31 March 2005 from numerous sources as an estimate for the Native Woodland Partnership for Scotland. The report explaining the method of estimation is on the Forestry Commission website.</p> <p><u>Update data</u></p> <p>Gains: On the national forest estate, annual returns based on local knowledge/data records. For grant schemes, planting and restocking data for native species and native woodlands supported by the Woodland Grant Scheme, the Scottish Forestry Grant Scheme or Rural Development Contracts. Assessments may be needed of the proportion of restocking which replaces non-native species and whether it is an ancient woodland site or not.</p> <p>Losses</p> <ul style="list-style-type: none"> • Loss of ancient semi-natural woodland to development (see Biodiversity Indicator 10; unavailable until 2011). • On the National Forest Estate: annual returns based on local data and knowledge. • From grant schemes: unconditional felling licence approvals. Requires sample assessment of records and deriving nativeness from information supplied on species.
Source	FCS
Frequency	The data will be updated to 31 March 2007 by 31 March 2008 and annually thereafter.

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Quality control	FCS. At this time the data is derived from a combination of local knowledge and existing data sets that do not include all changes to woodland. Consequently the quality is poor.
Other information	Data from rural development contracts (RDCs) will feed into data for Gains of native woodland for updates from 31 March 2009, using areas of native woodland model planting and restructuring where native species replace non-natives (see Biodiversity Indicator 5). On completion of the Native Woodlands Survey of Scotland (NWSS), the area of native woodland in Scotland baseline will be reset.
Contact	derek.nelson@forestry.gsi.gov.uk

Percentage of designated woodland sites in favourable or unfavourable recovering condition	
Trend indications	An increase in percentage in favourable or unfavourable recovering condition is a positive trend.
Definitions	This measure assesses progress towards the Scottish Government's high level target for nature conservation: Bring 95% of the special features of Scotland's nationally important nature sites into favourable condition by 2010. The indicator relates to sites designated as woodland habitat features as Sites of Special Scientific Interest (SSSIs), or Special Areas of Conservation (SACs). The indicator is expressed as the percentage of features in favourable or unfavourable recovering condition, in line with the Government target. A feature which is in 'favourable' condition or 'unfavourable but recovering' counts as meeting the target.
Data	Assessments of condition of all notified features are made by SNH using the Site Condition Monitoring system. Initial assessments between 1999-2005 were analysed and quality assured during 2007.
Source	SNH
Frequency	First quality assured data will be available in 2007/08. Thereafter data updates will be annual, based on rolling update of assessments by SNH.
Quality control	Data is Quality Assured by SNH specialist staff.
Other information	SNH are testing the use of data from Native Woodlands Survey for Scotland for assessing condition of woodland features in the next round of monitoring.
Contact	gordon.patterson@forestry.gsi.gov.uk

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Progress against Habitat Action Plan targets for improving native woodland condition	
Trend indications	An increase in the area of native woodlands in management to improve their condition is a positive trend.
Definitions	The indicator is defined as the cumulative total area since 31 March 2005 of native woodland brought into management with the intention to improve condition. It will provide a cumulative measure of progress against HAP targets for condition for 2005-2015, which total 54,000ha.
Data	<p>There are two sources of data for this indicator: FES and FCS Grants and Licences Information.</p> <p>On private land the data is derived from area paid under SFGS S3 grant for the period from 31 March 2005 to 31 March 2008. After this it will be based on areas entering RDC contracts (see Other Information below).</p> <p>On the National Forest Estate the update is derived from a local knowledge/data returns from FDMs based on their knowledge of areas brought into improvement.</p>
Source	FCS
Frequency	The baseline value will be produced in 2008 for data for the period from 31 March 2005 to 31 March 2007 and will be updated annually thereafter.
Quality control	FCS. The data is derived from a combination of local knowledge and existing data sets that do not include all changes to woodland. Consequently the quality is variable.
Other information	<p>The introduction of Rural Development Contracts (RDCs) in 2008 will mean that forestry grant scheme data collated from 31 March 2009 onwards will be based on the area annually entering approved schemes for Forest Environment Payments (FEP) for native woodland. This should improve data quality.</p> <p>The completion of the Native Woodlands Survey of Scotland (NWSS), (expected in 2013) will allow a firm baseline figure to be set for area in good condition, and the indicator could then be revised to become the cumulative area in favourable condition. More information on NWSS is available from derek.nelson@forestry.gsi.gov.uk. Definition and assessment of condition will need to be developed as part of the NWSS project.</p>
Contact	derek.nelson@forestry.gsi.gov.uk

Progress against Habitat Action Plan targets for native woodland restoration	
Trend indications	An increase in the area of non-native Plantations on Ancient

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	Woodland Sites (PAWS) that are under restoration to native woodlands is a positive trend.
Definitions	<p>The indicator is defined as the cumulative total area, since 31 March 2005, of non-native PAWS brought into management that is intended to restore fully to native woodland of suitable priority woodland type(s). It will provide a measure of success against Scottish HAP restoration targets for 2005-2015, which totals 9000ha entering restoration.</p> <p>PAWS are ancient woods in which former semi-natural tree cover has been replaced by planting, often with non-native trees. Restoration targets apply to PAWS sites where tree canopy cover was dominated by non-native species at the start of the restoration work. Because restoration is often quite a long-term process, areas should be counted when the programme of work starts under a plan where the aim is to restore fully to native woods.</p> <p>PAWS sites are identified from the provisional Scottish Ancient Woodland Inventory dataset. Further guidance on the Inventory can be obtained from Scottish Natural Heritage.</p>
Data	<p>For the National Forest Estate: annual returns based on local knowledge and data.</p> <p>For grant schemes: area of non-native PAWS grant aided by SFGS S3, Native Woodlands. The current species composition and intention to restore may need to be assessed by conservancy staff.</p> <p>See Other Information below regarding additional data under Rural Development Contracts.</p>
Source	FCS
Frequency	The baseline value will be produced in 2008 for data for the period from 31 March 2005 to 31 March 2007 and will be updated annually thereafter.
Quality control	<p>The data is derived from a combination of local knowledge and existing data sets that do not include all changes to woodland. Consequently the quality is variable.</p> <p>The Ancient Woodland Inventory is based on historic records. There are likely to be errors in the used of data derived from this.</p>
Other information	<p>The introduction of rural development contracts (RDCs) in 2008 will require extra data to be used for updates from 31 March 2009 for:</p> <ul style="list-style-type: none"> • replanting with native woodland on PAWS (Restructuring Woodland Improvement Grants) • gradual restoration (FEP areas that are non-native PAWS but planned to be restored to native woods) <p>The completion of the Native Woodlands Survey of Scotland</p>

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	(NWSS), expected in 2013, will allow revised baseline information. More information on NWSS is available from derek.nelson@forestry.gsi.gov.uk
Contact	derek.nelson@forestry.gsi.gov.uk

Progress against Habitat Action Plan targets for native woodland expansion	
Trend indications	An increase in the area of native woodlands created is a positive trend.
Definitions	<p>The indicator is expressed as the cumulative total progress towards Scottish Habitat Action Plan (HAP) expansion targets 2005-2015, totalled for all priority native woodland types. The total target is 40,500ha in this period. It includes new planting and natural regeneration, as well as conversion from non-native woodlands (outwith ancient woodland sites).</p> <p>The targets and descriptions of each of the priority woodland types can be found on the UKBAP website.</p>
Data	<p>On the National Forest Estate, annual returns based on local knowledge/data records.</p> <p>For grant schemes, planting and restocking data for native species and native woodlands for the Woodland Grant Scheme and the Scottish Forestry Grant Scheme. Assessments may be needed of the proportion of restocking which replaces non-native species and whether it is an ancient woodland site or not.</p> <p>See Other Information below regarding additional data under Rural Development Contracts.</p>
Source	FCS
Frequency	The data was updated initially in 2008 from the 31 March 2005 baseline date up to 31 March 2007 data, and the data will be updated annually.
Quality control	FCS. The data is derived from a combination of local knowledge and existing data sets that do not include all changes to woodland. Consequently the quality is variable.
Other information	<p>The introduction of rural development contracts (RDCs) in 2008 will require extra data to be used for updates from 31 March 2009 onwards for:</p> <ul style="list-style-type: none"> restructuring Woodland Improvement Grant (WIG) for Caledonian Scots Pine or native broadleaves (where indicated in the plan that the new planting is replacing non-native species and is not on an ancient woodland site); woodland creation of native/riparian woodland.
Contact	derek.nelson@forestry.gsi.gov.uk

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Proportion of woodland related UKBAP priority species and habitats identified as increasing or stable in Scotland	
Trend indications	An increase in the percentage of priority woodland species and habitats that are increasing or stable is a positive trend.
Definitions	This is a broad measure of success in contributing to biodiversity priority outcomes. Assessments are made by lead partners in reports under the UK Biodiversity Action Plan. Woodland related species and habitats are those which are wholly or partly associated with woodlands. A list of priority woodland habitats and species for Scotland was compiled by FCS for baseline reporting using 2005 reporting data. This list will need to be updated slightly for the 2008 reporting round, to accommodate changes in the UKBAP list of species and habitats which have been reported on. The indicator value will be the percentage of the total number of species and habitats for which a status is reported which are classed as either 'increasing', fluctuating probably increasing' or 'stable'. The remaining categories include 'declining' (three categories) or 'no clear trend'. Species with 'status unknown' are excluded from the indicator calculation.
Data	UKBAP reporting is carried out on a three-year cycle. Lead partners assessment is used to decide if a species or habitat is progressing or not. UKBAP data on the position in Scotland in 2005 was incomplete as some lead partners did not report or there were no distinct Scottish targets. From 2008 onwards the quality should improve.
Source	SNH
Frequency	Three-yearly cycle. As a baseline, SNH have analysed the 2005 reporting data relevant to Scotland and for woodland-related species or habitats. Next reporting date will be 2009 for data as at 31 March 2008.
Quality control	By UK Biodiversity Research and Information Group (BRIG) and the Joint Nature Conservation Committee (JNCC) in vetting lead partner reporting.
Other information	
Contact	gordon.patterson@forestry.gsi.gov.uk

Area of PAWS with a commitment to restoration under long-term plans	
Trend indications	An increase in the area of Plantations on Ancient Woodland Sites (PAWS) that are in assured long-term management is a positive trend.

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Definitions	<p>The indicator measures the area of PAWS under long-term assured management including Forest Plans for private forests and Forest Design Plans for the National Forest Estate. The assumption is that all areas of PAWS under these plans will have suitable management in line with the UK Forestry Standard and/or UKWAS. This indicator includes both non-native PAWS areas being restored completely to native woods (see Biodiversity Indicator 4) and any other PAWS site in other forms of management that should maintain and enhance ancient woodland features such as veteran trees or patches of ground flora. It therefore includes all types of PAWS sites, whatever the current tree species composition.</p> <p>PAWS sites are identified from the provisional Scottish Ancient Woodland Inventory dataset. Further guidance on the Inventory can be obtained from Scottish Natural Heritage.</p>
Data	Spatial datasets for Scottish Ancient Woodland Inventory to be combined with the area of PAWS covered by current approved Forest Design Plans for the national forest estate, or the area of woodland subject to an approved Forest Plan under grant schemes.
Source	FCS
Frequency	The baseline value will be produced in 2008/09 for data as at 31/3/08 and will be updated annually thereafter.
Quality control	FCS, SNH. The Ancient Woodland Inventory is regarded as provisional and was based on historic records and was not digitised to current day standards so there are likely to be errors in the used of data derived from this.
Other information	The completion of the Native Woodlands Survey of Scotland (NWSS), expected in 2013, will allow revised baseline information on the areas and composition of ancient woodlands. More information on NWSS is available from derek.nelson@forestry.gsi.gov.uk
Contact	derek.nelson@forestry.gsi.gov.uk

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Area of woodland with active, approved deer management plans	
Trend indications	An increase in the area of woodland subject to active, approved deer management plans is a positive trend.
Definitions	The indicator 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.
Data	On the National Estate, FES data is derived from areas under Deer Management Plans. For grant schemes, data for the total area approved for SFGS grants for Reducing Deer Numbers (S2). See Other information below for information on additional data required with introduction of Rural Development Contracts in 2008.
Source	FCS
Frequency	The baseline data will be collated in early 2008 for data as at 31 March 2007 and annually thereafter.
Quality control	FCS
Other information	Following the introduction of rural development contracts (RDCs) in 2008, the following additional data will be collated from March 2009. <ul style="list-style-type: none"> • 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 area of woodland receiving a WIG for 'reducing deer impact'.
Contact	hugh.clayden@forestry.gsi.gov.uk

Loss of ancient semi-natural woodland to development	
Trend indications	A declining rate of loss of ASNW to development is a positive trend.
Definitions	Ancient Semi-natural Woodland is the most important category for nature conservation. ASNW is identified on the Scottish Ancient Woodland Inventory prepared by SNH. Ancient woods are those which were present on maps either in 1750 or in 1860, appeared to have semi-natural origin and are believed to have been continuously wooded to the present day. Of these, areas that were assessed as still having semi-natural woodland cover when the Inventory was compiled in the 1980s were classed as <i>Ancient and Semi-natural Woodland. (ASNW)</i> . Losses will be assessed as part of the Native Woodland Survey of

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	Scotland project (NWSS) as areas of 0.5 ha or more which have been converted from ASNW to development in the period between photographs and ground survey. This will be converted to an estimated national annual rate of loss.
Data	The NWSS project 2006-2012, combined with the Ancient Woodlands Inventory (held by SNH) will provide updated information on current areas of ASNW and losses to development.
Source	FCS, SNH
Frequency	Initial baseline estimate in 2011 based on half of NWSS results. Full estimate in 2013. Interval thereafter to be determined.
Quality control	FCS
Other information	The National Forest Inventory project which is currently being developed may allow estimates of loss of ASNW based on sample plots from 2011-12 onwards. We will test how to combine with NWSS data. If spatial monitoring systems are developed for development control by 2013, this would improve information on forms of development impact.
Contact	derek.nelson@forestry.gsi.gov.uk

Woodland Birds Index

Trend indications	An increase in the value of the index is a positive trend showing increased abundance of a suite of woodland bird species in Scotland.
Definitions	The woodland breeding birds index forms a part of a terrestrial breeding birds indicator of trends in abundance (published as a Scottish Biodiversity Strategy indicator http://www.scotland.gov.uk/Topics/Environment/Wildlife-Habitats/16118/Scottishbiodiversityind). It includes separate component indices for woodland, farmland and upland species. Each index is expressed as a percentage of the baseline value in 1994 which is taken as 100.
Data	<p>Data is collected by professional and volunteer surveyors as part of the Breeding Birds Survey organised by British Trust for Ornithology. SNH has contracted BTO to update the terrestrial breeding birds indicator by end December annually, and it will be published by SNH on their website.</p> <p>The woodland component currently includes 17 species but is being enhanced by a three-year project led by FCS to increase sampling intensity and increase species coverage; the increase is likely to be 8-10 species. SNH have contracted BTO to develop the current Terrestrial Breeding Birds Indicator to include the enhanced</p>

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	woodland birds data from this project. The additional species will appear in the indicator once trend data for two seasons is available: expected to be in 2010.
Source	BTO
Frequency	Annual
Quality control	SNH and FCS
Other information	
Contact	gordon.patterson@forestry.gsi.gov.uk

Woodland Structure and Composition: shrub layer cover	
Trend indications	An increase in the mean cover of understory shrub layer vegetation in woodlands is a positive trend.
Definitions	<p>Attributes of woodland structure and composition are known to relate closely to overall species and habitat diversity of woodlands.</p> <p>This indicator measures one of the four key components of structure and composition included in a woodland diversity index that has been developed for the Scottish Biodiversity Strategy indicator set. All are derived from data collected in the National Inventory of Woodlands and Trees (NIWT). Baseline data is reported in 'Scotland's Biodiversity Indicators' published by the Scottish Government at: http://www.scotland.gov.uk/Topics/Environment/Wildlife-Habitats/16118/Scottishbiodiversityind</p> <p>This indicator assesses understory shrub layer cover and is defined as mean cover of vegetation in the shrub layer (2-5 m height) assessed from those plots which have an upper canopy layer (over 15m).</p> <p>The other three structure and composition indicators are mean number of tree/shrub species, mean deadwood volume and percentage of total woodland in old-growth stage.</p>
Data	The NIWT fieldwork between 1995 and 1999 comprised over 14,000 one hectare assessment squares covering 1% of the woodland area in Scotland and including both native and non-native woodlands. Trend data will come from the successor survey the National Forest Inventory.
Source	Forest Research
Frequency	Baseline data was collected as part of the National Inventory of Woodland and Trees (NIWT) between 1995 and 1999, (http://www.forestry.gov.uk/forestry/inventory), and was reported in 2007. Trend data is expected from 2011/2012, based on partial data from the successor survey, the National Forest Inventory.

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Quality control	Forest Research, Forestry Commission Corporate and Forestry Support, and peer review through SBS indicators group.
Other information	
Contact	gordon.patterson@forestry.gsi.gov.uk

Woodland Structure and Composition: number of tree/shrub species	
Trend indications	An increase in the mean number of species of trees and shrubs within stands of trees is a positive trend.
Definitions	<p>The number of tree and shrub species within stands is correlated with species diversity of associated wildlife.</p> <p>This is one of the four key components of structure and composition included in a woodland diversity index that has been developed for the Scottish Biodiversity Strategy indicator set. All are derived from data collected in the National Inventory of Woodlands and Trees (NIWT). Baseline data is reported in 'Scotland's Biodiversity Indicators' published by the Scottish Government at:</p> <p>http://www.scotland.gov.uk/Topics/Environment/Wildlife-Habitats/16118/Scottishbiodiversityind</p> <p>This indicator assesses the mean number of species of trees and shrubs per sample plot (plot size 0.25ha) including both native and non-native species.</p> <p>The other three structure and composition indicators are mean shrub layer cover mean deadwood volume and percentage of total woodland in old-growth stage.</p>
Data	The NIWT fieldwork between 1995 and 1999 comprised over 14,000 one hectare assessment squares covering 1% of the woodland area in Scotland and including both native and non-native woodlands. Trend data will come from the successor survey the National Forest Inventory.
Source	Forest Research
Frequency	Baseline data was collected as part of the first National Inventory of Woodland and Trees (NIWT) between 1995 and 1999, (http://www.forestry.gov.uk/forestry/inventory), and was reported in 2007. Trend data is expected from 2011/2012, based on partial data from the successor survey the National Forest Inventory.
Quality control	Forest Research, Forestry Commission Corporate and Forestry Support, and peer review through SBS indicators group.
Other information	

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Woodland Structure and Composition: deadwood	
Trend indications	An increase in the mean volume of deadwood in woodland stands is a positive trend.
Definitions	<p>The amount of standing and fallen deadwood accumulated within woodlands is correlated with the richness of many species groups including fungi, bryophytes, lichens, many invertebrates and several woodland birds and mammals.</p> <p>This is one of the four key components of structure and composition included in a woodland diversity index that has been developed for the Scottish Biodiversity Strategy indicator set. All are derived from data collected in the National Inventory of Woodlands and Trees (NIWT). Baseline data is reported in 'Scotland's Biodiversity Indicators' published by the Scottish Government at: http://www.scotland.gov.uk/Topics/Environment/Wildlife-Habitats/16118/Scottishbiodiversityind</p> <p>This indicator assesses the mean volume of deadwood per 0.25ha. sample plot, including both standing and fallen deadwood and totalled for all tree species.</p> <p>The other three structure and composition indicators are mean shrub layer cover, mean number of tree/shrub species and percentage of total woodland in old-growth stage.</p>
Data	The NIWT fieldwork between 1995 and 1999 comprised over 14,000 one hectare assessment squares covering 1% of the woodland area in Scotland and including both native and non-native woodlands. Trend data will come from the successor survey the National Forest Inventory.
Source	Forest Research
Frequency	Baseline data were collected as part of the first National Inventory of Woodland and Trees (NIWT) between 1995 and 1999, (http://www.forestry.gov.uk/forestry/inventory), and were reported in 2007. Trend data is expected from 2011/2012, based on partial data from the successor survey the National Forest Inventory.
Quality control	Forest Research, Forestry Commission Corporate and Forestry Support, and peer review through SBS indicators group.
Other information	
Contact	gordon.patterson@forestry.gsi.gov.uk

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Woodland Structure and Composition: old growth	
Trend indications	An increase in the current low percentage of the 'old growth stage' found in Scottish woodlands is a positive trend.
Definitions	<p>The percentage of woodland in the older growth stages is related to overall biodiversity. It diversifies woodland structure and provides a complex set of niches for specialist fauna and flora.</p> <p>This is one of the four key components of structure and composition included in a woodland diversity index that has been developed for the Scottish Biodiversity Strategy indicator set. All are derived from data collected in the National Inventory of Woodlands and Trees (NIWT). Baseline data are reported in 'Scotland's Biodiversity Indicators' published by the Scottish Government at: http://www.scotland.gov.uk/Topics/Environment/Wildlife-Habitats/16118/Scottishbiodiversityind</p> <p>This indicator assesses the percentage area of woodland in the old-growth stage from NIWT plots, averaged across Scotland as a whole. The old growth stage was defined as trees over 85 years for broadleaved trees and over 75 years for conifers.</p> <p>The other three structure and composition indicators are mean shrub layer cove, mean number of tree/shrub species and mean volume of deadwood.</p>
Data	The NIWT fieldwork between 1995 and 1999 comprised over 14,000 one hectare assessment squares covering 1% of the woodland area in Scotland and including both native and non-native woodlands. A successor survey NIWT2 will provide repeat data.
Source	Forest Research
Frequency	Baseline data were collected as part of the first National Inventory of Woodland and Trees (NIWT) between 1995 and 1999, (http://www.forestry.gov.uk/forestry/inventory), and was reported in 2007. Trend data is expected in 2013, based on analysis of part of the next cycle of sampling of NIWT2, which should start in 2009.
Quality control	Forest Research, Forestry Commission Corporate and Forestry Support, and peer review through SBS indicators group.
Other information	
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Forestry Commission Scotland serves as the forestry department of the Scottish Government and is responsible to Scottish Ministers.

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