GLOBAL FOREST RESOURCES ASSESSMENT 2015

COUNTRY REPORT

# United Kingdom of Great Britain and Northern Ireland

Rome, 2014

FAO, at the request of its member countries, regularly monitors the world´s forests and their management and uses through the Global Forest Resources Assessment (FRA). This country report is prepared as a contribution to the FAO publication, the Global Forest Resources Assessment 2015 (FRA 2015).

The content and the structure are in accordance with the recommendations and guidelines given by FAO in the document Guide for country reporting for FRA 2015 (http://www.fao.org/3/a-au190e.pdf). These reports were submitted to FAO as official government documents.

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# TABLE OF CONTENTS

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Introductory Text

Place an introductory text on the content of this report

The UK data for this Forest Resources Assessment has, to a great extent, been revised substantially from previous FRA submissions by the UK. The main reason for change is the switch to using interim results from the current National Forest Inventory for forest areas and growing stock in Great Britain, in place of results from earlier inventories.

The National Forest Inventory field survey programme started in 2009 and is being conducted on a continuous 5 year cycle. Full results from the first full cycle will not be available until 2015. Changes in methodologies and improvements in technology between this and previous inventories have resulted in inconsistencies between the results derived from the National Forest Inventory and those from previous inventories. As a result, figures for earlier years have been revised to produce time series that are consistent with the latest results from the National Forest Inventory.

As the results that are currently available are based on data for selected variables from partial fieldwork, the estimates used here are expected to be revised once full survey results are produced. Data for a wider range of variables will also be available after fieldwork for the first cycle has concluded. In addition, improved estimates of change will be produced once sufficient results are available from the second cycle, for which the fieldwork is due to be conducted between 2015 and 2020, when direct comparisons between cycles can be made.

Further details on the National Forest Inventory and previous inventories are available at http://www.forestry.gov.uk/inventory

Desk Study?

| Check "yes" if this survey is a Desk Study, "no" otherwise | |
|---|---|
| Desk Study? | no |

# 1. What is the area of forest and other wooded land and how has it changed over time?

Documents for this question:

- Guide for country reporting FRA 2015
- FRA 2015 Terms and Definitions

## 1.1 Categories and definitions

| Category | Definition |
|---|---|
| Forest | Land spanning more than 0.5 hectares with trees higher than 5 meters and a canopy cover of more than 10 percent or trees able to reach these thresholds in situ. It does not include land that is predominantly under agricultural or urban land use. |
| Other wooded land | Land not classified as "Forest" spanning more than 0.5 hectares with trees higher than 5 meters and a canopy cover of 5-10 percent or trees able to reach these thresholds ; or with a combined cover of shrubs bushes and trees above 10 percent. It does not include land that is predominantly under agricultural or urban land use. |
| Other land | All land that is not classified as "Forest" or "Other wooded land". |
| ...of which with tree cover *(sub-category)* | Land considered as "Other land", that is predominantly agricultural or urban lands use and has patches of tree cover that span more than 0.5 hectares with a canopy cover of more than 10 percent of trees able to reach a height of 5 meters at maturity. It includes bothe forest and non-forest tree species. |
| Inland water bodies | Inland water bodies generally include major rivers, lakes and water reservoirs. |
| Forest expansion | Expansion of forest on land that, until then, was not defined as forest. |
| ...of which afforestation *(sub-category)* | Establishment of forest through planting and/or deliberate seeding on land that, until then, was not defined as forest. |
| ...of which natural expansion of forest *(sub-category)* | Expansion of forests through natural succession on land that, until then, was under another land use (e.g. forest succession on land previously used for agriculture). |
| Deforestation | The conversion of forest to other land use or the longterm reduction of the tree canopy cover below the minimum 10 percent threshold. |
| ...of which human induced *(sub-category)* | Human induced conversion of forest to other land use or the permanent reduction of the tree canopy cover below the minimum 10 percent threshold. |
| Reforestation | Natural regeneration or re-establishment of forest through planting and/or deliberate seeding on land already in forest land use. |
| ...of which artificial reforestation *(sub-category)* | Re-establishment of forest through planting and/or deliberate seeding on land already in forest land use. |

## 1.2 National data

### 1.2.1 Data sources

| References to sources of information | Variables | Years | Additional comments |
|---|---|---|---|

| 1 | Forestry Commission, 2013. Forestry Statistics 2013 (and supporting data). UK. | Forest, Forest expansion, Reforestation | 2000 - 2013 | Woodland area based on National Forest Inventory (GB) and Forest Service estimates (NI). New planting and restocking from supporting time series data. |
|---|---|---|---|---|
| 2 | TBFRA 2000 and FRA 2010 | Other wooded land | 1990 - 2010 | Estimate unchanged from TBFRA 2000 |
| 3 | Defra, 2013. Agriculture in the UK 2012. UK. | Other land with tree cover | 1990 - 2010 | Area of orchards from agricultural censuses |
| 4 | FRA 2015 Working Paper - Guide for country reporting | Total, Inland water | 2009 | N/A |
| 5 | Forestry Commission, 2011. National Forest Inventory Woodland Area Statistics: Great Britain. GB. | Deforestation | 1995/ 1997/ 1998 to 2010 | Estimate of permanent observable woodland loss since previous inventory. Excludes areas not immediately identifiable as permanent woodland loss (e.g. restoration of open habitats). |

## 1.2.2 Classification and definitions

| National class | Definition |
|---|---|
| Woodland | As "forest" in FRA, but with 20% canopy cover threshold (rather than 10%). |
| Orchard | Area of fruit trees (from agricultural censuses). |
| New planting | New woodland creation (including estimates of natural colonisation). Data for years ending 31 March. |
| Restocking | Replanting of existing woodland (including estimates of natural regeneration). Data for years ending 31 March. |
| Woodland loss | Observable permanent woodland loss. |

## 1.2.3 Original data

Estimates of UK woodland area (from supporting data for Forestry Statistics 2013 (ref 1)):

Thousand hectares

| Year | 2000 | 2005 | 2010 | 2013 |
|---|---|---|---|---|
| UK woodland area | 2,954 | 3,021 | 3,059 | 3,127 |

Areas of orchards from UK agricultural censuses (ref 2) are:

Thousand hectares

| Year | 1990 | 2000 | 2005 | 2010 | 2012 |
|---|---|---|---|---|---|
| UK area of orchard fruit | 34 | 28 | 23 | 24 | 24 |

From FRA 2010 (ref 3), the area of other wooded land is assumed to be a constant estimate over all time periods, of 20 thousand hectares.

Official FAOSTAT estimate (ref 4) of total UK area is 24,361 thousand hectares in 2009. The same source gives estimate of 168 thousand hectares for inland water.

Annual estimates of new planting and restocking (from Forestry Statistics 2013 & supporting data (ref 1)), combined to produce 5 year averages:

Thousand hectares

| | 1988-89 to 1992-93 | 1998-99 to 2002-03 | 2003-04 to 2007-08 | 2008-09 to 2012-13 |
|---|---|---|---|---|
| New planting | | | | |
| Conifer | 15 | 5 | 2 | 2 |
| Broadleaf | 6 | 11 | 8 | 7 |
| Total | 22 | 16 | 10 | 9 |
| Restocking | | | | |
| Conifer | 11 | 12 | 14 | 10 |
| Broadleaf | 5 | 3 | 3 | 4 |
| Total | 16 | 15 | 17 | 14 |

Changes to grant scheme rules can affect the level of grant aided planting (and therefore the total estimated planting levels). This is a particular issue for Sitka spruce restocking in Scotland, where rule changes have resulted in a reduction to the figures from 2010.

Reliable data on the breakdown of new planting and restocking data into planted and natural colonisation/regeneration are not available.

National Forest Inventory (ref 5) reported a total of 0.5 thousand hectares of permanent observable woodland loss in Great Britain over a 10 to 15 year period, based on a comparison of differences in woodland maps produced from the National Forest Inventory and the previous inventory. No comparable figures are available for Northern Ireland.

## 1.3 Analysis and processing of national data

## 1.3.1 Adjustment

No adjustment required.

## 1.3.2 Estimation and forecasting

Average annual new planting data for latest period from Table 1b, for 2 years, is added to latest (2013) estimate of UK woodland area to provide an estimate for woodland area in 2015.

2015 forecast = 2013 estimate + 2 * average annual planting in 2008-09 to 2012-13

= 3,144 thousand hectares.

National Forest Inventory-based woodland area estimates were also rolled back, using new planting and deforestation estimates, to produce a revised estimate for woodland area in 1990 that is consistent with the figures shown for subsequent years.  This gives an estimate of 2,778 thousand hectares for 1990.

Other land with tree cover - 2015 estimate assumes no change from 2012 (latest data available).

Total land area and inland water - 2009 estimates have been used as constant estimates for entire reporting period.

Other wooded land - Estimates for 1990 to 2010 (from TBFRA 2000 and FRA 2010 (ref 2)) are constant. This value is continued for 2015, to give constant estimates over the entire time period.

Other land is calculated as a residual for all years, i.e. total less forest, other wooded land and inland water bodies.

Annual estimates of woodland loss (deforestation) have been derived by assuming that the level of woodland loss in Great Britain has been constant over time and that the level of woodland loss in Northern Ireland is negligible. This has been projected forward to 2015 and projected back beyond previous inventory (to 1990).

Information is not available for new planting and restocking of native v introduced species.  As most conifer species are introduced and most broadleaf species are native, it is assumed that the areas of native conifer expansion/ reforestation will be similar to the areas of introduced broadleaf expansion/ reforestation.

## 1.3.3 Reclassification

No reclassification is required.

## 1.4 Data
Table 1a

| Categories | Area (000 hectares) |
|---|---|

| | | 1990 | 2000 | 2005 | 2010 | 2015 |
|---|---|---|---|---|---|---|
| CFRQ | Forest | 2778 | 2954 | 3021 | 3059 | 3144 |
| CFRQ | Other wooded land | 20 | 20 | 20 | 20 | 20 |
| CFRQ | Other land | 21395 | 21219 | 21152 | 21114 | 21029 |
| CFRQ | ... of which with tree cover | 34 | 28 | 23 | 24 | 24 |
| CFRQ | Inland water bodies | 168 | 168 | 168 | 168 | 168 |
| | TOTAL | 24361.00 | 24361.00 | 24361.00 | 24361.00 | 24361.00 |

Table 1b

| | Categories | Annual forest establishment / loss (000 hectares per year) | | | | ...of which of introduced species (000 hectares per year) | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 1990 | 2000 | 2005 | 2010 | 1990 | 2000 | 2005 | 2010 |
| CFRQ | Forest expansion | 22 | 16 | 10 | 9 | 15 | 5 | 2 | 2 |
| CFRQ | ... of which afforestation | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| CFRQ | ... of which natural expansion of forest | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| CFRQ | Deforestation | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| CFRQ | ... of which human induced | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| CFRQ | Reforestation | 16 | 15 | 17 | 14 | 11 | 12 | 14 | 10 |
| CFRQ | ... of which artificial | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |

Tiers

| Category | Tier for status | Tier for reported trend |
|---|---|---|
| Forest | Tier 3 | Tier 2 |
| Other wooded land | Tier 1 | Tier 1 |
| Forest expansion | Tier 1 | Tier 1 |
| Deforestation | Tier 3 | Tier 1 |
| Reforestation | Tier 1 | Tier 1 |

Tier criteria

| Category | Tier for status | Tier for reported trend |
|---|---|---|

| • Forest | **Tier 3** : Data sources: Either recent (less than 10 years ago) National Forest Inventory or remote sensing, with ground truthing, or programme for repeated compatible NFIs **Tier 2** : Data sources: Full cover mapping / remote sensing or old NFI (more than 10 years ago) **Tier 1** : Other | **Tier 3** : Estimate based on repeated compatible tiers 3 (tier for status) **Tier 2** : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) **Tier 1** : Other |
| --- | --- | --- |
| • Other wooded land | | |
| • Afforestation | | |
| • Reforestation | | |
| • Natural expansion of forest | | |
| • Deforestation | | |

## 1.5 Comments

| Category | Comments related to data definitions etc | Comments on the reported trends |
| --- | --- | --- |
| Forest | UK definition of woodland area requires 20% canopy cover. There are no new estimates of the area with 10-20% canopy cover, but this is believed to be relatively small (FRA 2010 included an estimate of less than 50 thousand hectares). Estimates include forests in urban areas. | Figures for all years are estimated on a consistent basis with the current National Forest Inventory, so estimates for earlier years have been revised from previous FRA submissions (that were based on earlier inventories). This has resulted in a higher estimate of forest areas in the UK than previously. |
| Other wooded land | Estimate based on estimate for wood pastures provided for TBFRA 2000. No further data available. | Single point estimate used for all years; assumed to be little change over time. |
| Other land | Estimate calculated as a residual. | Trend reflects the change in estimated forest area, as total land area has been held constant over the entire reporting period. |
| Other land with tree cover | Agricultural censuses do not distinguish size of orchards. Estimate excludes other land with trees (e.g. urban trees). | 2015 estimate = repeat of 2012 figure (latest estimate available). |
| Inland water bodies | N/A | Single point estimate used for all years; assumed to be little change over time. |
| Forest expansion | Data obtained from administrative records of Forestry Commission (in Great Britain) and Forest Service (in Northern Ireland) planting and grant aided planting. Some estimation of planting without grant aid has been made, where possible, to earlier data, but this is likely to be under-counted. | N/A |
| Deforestation | Estimate based on work to compare woodland maps from the National Forest Inventory and previous National Inventory of Woodland and Trees. Covers permanent observable woodland loss only. Further woodland loss may have occurred over the period (e.g. conversion to open habitats), but the permanence of this loss cannot yet be determined. | Single estimate used and assumed to be constant for all years. |
| Reforestation | Data obtained from administrative records of Forestry Commission (in Great Britain) and Forest Service (in Northern Ireland) planting and grant aided planting. Some estimation of planting without grant aid has been made, where possible, to earlier data, but this is likely to be under-counted. | Changes to grant scheme rules can affect the level of grant aided planting (and therefore the total estimated planting levels). This is a particular issue for Sitka spruce restocking in Scotland, where rule changes have resulted in a reduction to the estimate for 2010. |

| Other general comments to the table |
|---|
| N/A |

## 2. What is the area of natural and planted forest and how has it changed over time?

Documents for this question:

- Guide for country reporting FRA 2015
- FRA 2015 Terms and Definitions

### 2.1 Categories and definitions

| Term | Definition |
|---|---|
| Naturally regenerated forest | Forest predominantly composed of trees established through natural regeneration. |
| Naturalized introduced species | Other naturally regenerated forest where the tree species are predominantly non-native and do not need human help to reproduce/maintain populations over time. |
| Introduced species | A species, subspecies or lower taxon occurring <u>outside</u> its natural range (past or present) and dispersal potential (i.e. outside the range it occupies naturally or could occupy without direct or indirect introduction or care by humans). |
| **Category** | **Definition** |
| Primary forest | Naturally regenerated forest of native species where there are no clearly visible indications of human activities and the ecological processes are not significantly disturbed. |
| Other naturally regenerated forest | Naturally regenerated forest where there are clearly visible indications of human activities. |
| ...of which of introduced species *(sub-category)* | Other naturally regenerated forest where the trees are predominantly of introduced species. |
| ...of which naturalized *(sub-sub category)* | Other naturally regenerated forest where the trees are predominantly of naturalized introduced species. |
| Planted forest | Forest predominantly composed of trees established through planting and/or deliberate seeding. |
| ...of which of introduced species *(sub-category)* | Planted forest where the planted/seeded trees are predominantly of introduced species. |
| Mangroves | Area of forest and other wooded land with mangrove vegetation. |
| ...of which planted *(sub-category)* | Mangroves predominantly composed of trees established through planting. |

### 2.2 National data

2.2.1 Data sources

| | References to sources of information | Variables | Years | Additional comments |
|---|---|---|---|---|
| 1 | Natural England, 2013. English Ancient Woodland map. UK. | Other naturally regenerated | 2013 | Excluding Plantations on Ancient Woodland Sites (PAWS). |
| 2 | Forestry Commission Wales, 2011. Welsh Ancient Woodland map. UK. | Other naturally regenerated | 2011 | N/A |

| 3 | Forestry Commission Scotland, 2014. Native Woodland Survey of Scotland. UK. | Other naturally regenerated | 1999 | From Scottish Ancient Woodland map, produced by Scottish Natural Heritage, 1999. |
|---|---|---|---|---|
| 4 | Forestry Commission, 2013. National Forest Inventory map 2012. UK. | Forest | 2012 | Great Britain |

## 2.2.2 Classification and definitions

| National class | Definition |
|---|---|
| Ancient woodland | Woodland that has been in continuous existence since 1600 (1750 in Scotland). |
| Semi-natural woodland | Woodland with natural characteristics (predominantly native species of trees, ground plants and animals) where wood production is not a primary objective; this term is used rather than natural because the woodland may have originally been planted or have been managed for wood production in the past. |
| Ancient semi-natural woodland (ASNW) | Woodland that is both ancient and semi-natural. |
| N/A | N/A |

## 2.2.3 Original data

GIS analysis of National Forest Inventory map (ref 4) and map of Ancient Semi-Natural Woodlands (refs 1 and 2) gives the following estimates of Ancient Semi-Natural Woodland area that is consistent with NFI definition of woodland:

England = 213 thousand hectares; and

Wales = 42 thousand hectares.

Native Woodland Survey of Scotland report (ref 3) reports area of Ancient Semi-Natural Woodlands from Scottish Ancient Woodland Inventory (1999) of 89 thousand hectares.

There is assumed to be no Ancient Semi-Natural Woodlands in Northern Ireland, so UK estimate is 344 thousand hectares.

## 2.3 Analysis and processing of national data

### 2.3.1 Adjustment

No adjustment required.

## 2.3.2 Estimation and forecasting

There is assumed to be no primary forest in the UK.

The area of Ancient Semi-Natural Woodland has been used as a proxy measure for the area of other naturally regenerated forest.

The area of planted forest is calculated as a residual (total forest from table 1a less estimated other naturally regenerated forest).

Data on introduced species with forest types are not currently available.

There are no mangroves in the UK.

## 2.3.3 Reclassification

No further reclassification required.

## 2.4 Data
Table 2a

| Categories | | Forest area (000 hectares) | | | | |
|---|---|---|---|---|---|---|
| | | **1990** | **2000** | **2005** | **2010** | **2015** |
| CFRQ | Primary forest | 0 | 0 | 0 | 0 | 0 |
| CFRQ | Other naturally regenerated forest | N/A | N/A | N/A | 344 | N/A |
| CFRQ | ... of which of introduced species | N/A | N/A | N/A | N/A | N/A |
| CFRQ | ... of which naturalized | N/A | N/A | N/A | N/A | N/A |
| CFRQ | Planted forest | N/A | N/A | N/A | 2716 | N/A |
| CFRQ | ... of which of introduced species | N/A | N/A | N/A | N/A | N/A |
| TOTAL | | .00 | .00 | .00 | 3060.00 | .00 |

Table 2b

| Primary forest converted to (000 ha) | | |
|---|---|---|
| **1990-2000** | **2000-2010** | **2010-2015** |

| Other natural regeneration | Planted | Other land | Other natural regeneration | Planted | Other land | Other natural regeneration | Planted | Other land |
|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Table 2c

| Categories | Area (000 hectares) | | | | |
|---|---|---|---|---|---|
| | 1990 | 2000 | 2005 | 2010 | 2015 |
| Mangroves (forest and OWL) | 0 | 0 | 0 | 0 | 0 |
| ... of which planted | 0 | 0 | 0 | 0 | 0 |

Tiers

| Category | Tier for status | Tier for reported trend |
|---|---|---|
| Primary forest | Tier 1 | Tier 1 |
| Other naturally regenerated forest | Tier 2 | Tier 1 |
| Planted forest | Tier 2 | Tier 1 |
| Mangroves | Tier 1 | Tier 1 |

Tier Criteria

| Category | Tier for status | Tier for reported trend |
|---|---|---|
| Primary forest/Other naturally regenerated forest/Planted forest | **Tier 3** : Data sources: Recent (less than 10 years) National Forest Inventory or remote sensing with ground truthing or data provided by official agencies or programme for repeated compatible NFIs **Tier 2** : Data sources: Full cover mapping/ remote sensing or old NFI (more than 10 years) **Tier 1** : Other | **Tier 3** : Estimate based on repeated compatible tiers 3 (tier for status) **Tier 2** : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) **Tier 1** : Other |

## 2.5 Comments

| Category | Comments related to data definitions etc | Comments on reported trend |
|---|---|---|
| Primary forest | There is assumed to be no primary forest in the UK. | N/A |
| Other naturally regenerating forest | Estimate is based on the area of ancient semi-natural woodland (ASNW). This is likely to under-estimate the area of other naturally regenerated forest, as some other woodlands may also be naturally regenerated. This differs from the approach used for FRA 2010, where 23% of the total UK woodland area was assumed to be naturally regenerated. | Time series estimates not currently available. |

| Planted forest | Estimate calculated as a residual. | Time series estimates not currently available. |
| Mangroves | There are no mangroves in the UK. | N/A |

| **Other general comments to the table** |
| It is difficult to provide an objective measure of the naturally regenerated v planted areas, particularly given that most UK woodlands are of plantation origin. An alternative approach might be to use the area of broadleaved woodland as a proxy for the area of naturally regenerated forest, but this is likely to be an over-estimate. |

# 3. What are the stocks and growth rates of the forests and how have they changed?

Documents for this question:

- Guide for country reporting FRA 2015
- FRA 2015 Terms and Definitions

## 3.1 Categories and definitions

| Category | Definition |
|---|---|
| Growing stock | Volume over bark of all living trees with a minimum diameter of 10 cm at breast height (or above buttress if these are higher). Includes the stem from ground level up to a top diameter of 0 cm, excluding branches. |
| Net Annual Increment (NAI) | Average annual volume of gross increment over the given reference period less that of natural losses on all trees, measured to minimum diameters as defined for "Growing stock". |
| Above-ground biomass | All living biomass above the soil including stem stump branches bark seeds and foliage. |
| Below-ground biomass | All biomass of live roots. Fine roots of less than 2 mm diameter are excluded because these often cannot be distinguished empirically from soil organic matter or litter. |
| Dead wood | All non-living woody biomass not contained in the litter either standing lying on the ground or in the soil. Dead wood includes wood lying on the surface dead roots and stumps larger than or equal to 10 cm in diameter or any other diameter used by the country. |
| Carbon in above-ground biomass | Carbon in all living biomass above the soil including stem stump branches bark seeds and foliage. |
| Carbon in below-ground biomass | Carbon in all biomass of live roots. Fine roots of less than 2 mm diameter are excluded because these often cannot be distinguished empirically from soil organic matter or litter. |
| Carbon in dead wood | Carbon in all non-living woody biomass not contained in the litter, either standing, lying on the ground, or in the soil. Dead wood includes wood lying on the surface, dead roots and stumps larger than or equal to 10 cm in diameter or any other diameter used by the country. |
| Carbon in litter | Carbon in all non-living biomass with a diameter less than the minimum diameter for dead wood (e.g. 10 cm ) lying dead in various states of decomposition above the mineral or organic soil. |
| Soil carbon | Organic carbon in mineral and organic soils (including peat) to a soil depth of 30 cm. |

## 3.2 National data

### 3.2.1 Data sources

| | References to sources of information | Variables | Years | Additional comments |
|---|---|---|---|---|
| 1 | Forestry Commission. National Forest Inventory: analysis of species and age calss, December 2012. | Coniferous growing stock | 2011 | Estimate for forest only. |
| 2 | Forestry Commission, 2012. NFI preliminary estimates of quantities of broadleaved species in British woodlands, with special focus on Ash. UK. | Broadleaved growing stock | 2011 | Estimate for forest only |

| 3 | Forestry Commission, 1987. Census of Woodlands & Trees 1979-82 (FC Bulletin 63 by GML Locke). UK. | Growing stock, area | 1980 | Data for 1980, to estimate 1990 by interpolation. |
|---|---|---|---|---|
| 4 | UK data for Forest Resources Assessment 2010 | Growing stock | 1990-2010 | Estimates for Northern Ireland. |
| 5 | Forestry Commission, 2013. Joint Forest Sector Questionnaire returns to international organisations. UK. | Total roundwood production | 1990-2012 | Based on final submission (September 2013), with revisions to earlier years for consistent time series. |
| 6 | Forestry Commission, 2013. Forestry Statistics 2013 (and supporting data). UK. | Various | All | Woodland area (as for table 1) and breakdowns by conifers/ broadleaves and by country within the UK. |
| 7 | Forestry Commission, 2014. NFI report: Biomass in live woodland trees in Britain. UK. | Above ground, below ground biomass | 2011 | Estimates for Great Britain. |
| 8 | Levy, PE, Hale, SE, Nicoll, BS, 2004. Biomass expansion factors and root: shoot ratios for coniferous tree species in Great Britain. UK. | Above-ground, below-ground | N/A | N/A |
| 9 | Gilbert, J, 2007. National Inventory of Woodland and Trees 1995-1999: Analysis of Management and Biodiversity Data. UK. | Deadwood | N/A | N/A |
| 10 | Forestry Commission, 2014. NFI report: Carbon in live woodland trees in Britain. UK. | Above-ground, below-ground carbon | 2011 | Estimates for Great Britain. |
| 11 | Morison, J et al, 2012. Understanding the Carbon and GHG balance of UK Forests. UK. | Soil carbon | N/A | N/A |
| 12 | Bradley, RI, Milne, R, Bell, J, Lilly, A, Jordan, C, Higgins, A, 2005. A soil carbon and landuse database for the UK. UK. | Soil carbon | N/A | N/A |

## 3.2.2 Classification and definitions

| National class | Definition |
|---|---|
| Standing volume | Live stemwood and useable branchwood (to 7cm top diameter and at least 3m in length). |
| Great Britain | England, Wales and Scotland. Excludes Northern Ireland. |

| Country | Constituent nations within the UK: England, Wales, Scotland and Northern Ireland. |
|---|---|
| Woodland area | As forest in FRA, but with 20% canopy cover threshold, rather than 10%. |

## 3.2.3 Original data

**Growing stock:**

Forest inventory reports (refs 1, 2 and 3) provide standing volume estimates for 1980 and for 2011:

| Category | Volume (million m3 ob) | Volume (million m3 ob) |
|---|---|---|
| | 1980 | 2011 |
| Coniferous standing volume in GB | 106 | 345 |
| Broadleaved standing volume in GB | 91 | 240 |

The same sources also provide the following species breakdowns:

1980 census (ref 3):

million m3 overbark standing

| Species | | Total |
|---|---|---|
| Conifers | | |
| | Scots pine | 28 |
| | Corsican pine | 6 |
| | Lodgepole pine | 3 |
| | Sitka spruce | 28 |
| | Norway spruce | 13 |
| | European larch | 6 |
| | Jap./Hybrid larch | 12 |
| | Douglas fir | 6 |
| | Other conifers | 2 |

| | | |
|---|---|---|
| | Mixed conifers | 3 |
| | Total conifers | 106 |
| Broadleaves | | |
| | Oak | 33 |
| | Beech | 15 |
| | Sycamore | 8 |
| | Ash | 10 |
| | Birch | 6 |
| | Poplar | 1 |
| | Sweet chestnut | 2 |
| | Elm | 2 |
| | Other broadleaves | 4 |
| | Mixed broadleaves | 9 |
| | Total broadleaves | 91 |
| Total | | 197 |

National Forest Inventory (refs 1 & 2):

million m3 overbark standing

| Species | | Total |
|---|---|---|
| Conifers | | |
| | Sitka spruce | 175 |
| | Scots pine | 51 |
| | Corsican pine | 12 |
| | Norway spruce | 20 |
| | Larches | 37 |
| | Douglas fir | 16 |

| | | | |
|---|---|---|---|
| | Lodgepole pine | | 18 |
| | Other conifers | | 15 |
| | Total conifers | | 345 |
| Broadleaves | | | |
| | Oak | | 73 |
| | Beech | | 34 |
| | Sycamore | | 26 |
| | Ash | | 34 |
| | Birch | | 21 |
| | Sweet chestnut | | 8 |
| | Hazel | | 6 |
| | Hawthorn | | 3 |
| | Alder | | 10 |
| | Willow | | 4 |
| | Other broadleaves | | 21 |
| | Total broadleaves | | 240 |

Estimates for Northern Ireland, as used in FRA 2010 (ref 4) are:

million m3 overbark standing

| Common Name | 1990 | 2000 | 2005 | 2010 |
|---|---|---|---|---|
| Sitka Spruce | 3.0 | 5.0 | 5.7 | 6.5 |
| Scots Pine | 0.9 | 0.6 | 0.7 | 0.7 |
| Larch | 0.4 | 0.3 | 0.3 | 0.3 |
| Lodgepole Pine | 0.1 | 0.2 | 0.3 | 0.3 |
| Norway Spruce | 0.6 | 0.6 | 0.6 | 0.5 |
| Douglas Fir | 0.2 | 0.1 | 0.1 | 0.2 |

| | | | | |
|---|---|---|---|---|
| Corsican Pine | 0.0 | 0.0 | 0.0 | 0.0 |
| Other conifers | 0.2 | 0.2 | 0.2 | 0.2 |
| Total conifers | 5.5 | 7.2 | 7.9 | 8.7 |
| Oak | 0.4 | 0.3 | 0.3 | 0.4 |
| Beech | 0.1 | 0.1 | 0.1 | 0.1 |
| Birch | 0.2 | 0.1 | 0.2 | 0.2 |
| Ash | 0.1 | 0.1 | 0.1 | 0.1 |
| Sycamore | 0.1 | 0.1 | 0.1 | 0.1 |
| Other broadleaves | 0.3 | 0.2 | 0.2 | 0.2 |
| Total broadleaves | 1.2 | 1.0 | 1.0 | 1.1 |
| TOTAL by species | 6.7 | 8.1 | 8.9 | 9.8 |

**Increment:**

5 year averages from Joint Forest Sector Questionnaire (ref 5):

thousand m3 underbark

| | 1988 to 1992 | 1998 to 2002 | 2003 to 2007 | 2008 to 2012 |
|---|---|---|---|---|
| Coniferous roundwood | 5296 | 7189 | 8025 | 8929 |
| Non-coniferous roundwood | 1023 | 577 | 446 | 451 |
| Total roundwood | 6320 | 7766 | 8471 | 9380 |

UK woodland areas (from Table 1 and ref 6), with conifer/ broadleaf breakdown:

thousand hectares

| | 1990 | 2000 | 2005 | 2010 | 2015 |
|---|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| Conifers | 1539 | 1624 | 1642 | 1648 | 1668 |
| Broadleaves | 1240 | 1330 | 1379 | 1412 | 1477 |
| Total | 2778 | 2954 | 3021 | 3059 | 3144 |

**Biomass:**

NFI biomass report (ref 7) gives:

- Conifers = 218.331 million oven-dry tonnes
- Broadleaves = 207.915 million oven-dry tonnes

for above- and below-ground biomass in Great Britain in 2011.

Levy et al (2004) (ref 8) gives:

- a root to shoot ratio of below ground biomass = 0.36 * above ground biomass.

Gilbert (2007) (ref 9) provides estimates of deadwood volumes per hectare:

- England = 4.0 m3 per hectare;
- Wales = 1.0 m3 per hectare;
- Scotland = 4.4 m3 per hectare and
- Total (Great Britain) = 3.9 m3 per hectare.

**Carbon:**

NFI carbon report (ref 10) gives:

- Conifers = 109.165 million tonnes of carbon
- Broadleaves = 103.957 million tonnes of carbon

in above- and below-ground biomass in Great Britain in 2011.

Morison et al (2012) (ref 11) provides estimates of the average carbon content in litter and fermentation from biosoil plots of:

- 56.3 tonnes $CO_2$ per hectare for conifers and
- 63.1 tonnes $CO_2$ per hectare for broadleaves.

This source also provides estimates of the carbon content of soil 0-100cm of:

- England = 659 tonnes CO2 per hectare;
- Wales = 704 tonnes CO2 per hectare and
- Scotland = 1,060 tonnes CO2 per hectare.

Earlier estimates, provided in Bradley et al (2005) (ref 12) were:

- England = 623 tonnes CO2 per hectare;
- Wales = 733 tonnes CO2 per hectare;
- Scotland = 1,210 tonnes CO2 per hectare and
- Northern Ireland = 1,357 CO2 per hectare.

UK woodland areas (from Table 1 and ref 6), with country breakdown:

thousand hectares

|  | 1990 | 2000 | 2005 | 2010 | 2015 |
|---|---|---|---|---|---|
| England | 1205 | 1252 | 1277 | 1290 | 1305 |
| Wales | 295 | 300 | 302 | 303 | 306 |
| Scotland | 1204 | 1320 | 1358 | 1378 | 1421 |
| Northern Ireland | 74 | 83 | 85 | 88 | 112 |
| Total | 2778 | 2954 | 3021 | 3059 | 3144 |

## 3.3 Analysis and processing of national data

3.3.1 Adjustment

**Growing stock:**

Great Britain standing volumes from 1980 census are adjusted to National Forest Inventory (NFI) basis, using scaling factor for woodland areas (obtained from comparison between 1980 areas from census and estimated 1980 areas from rolling back NFI area estimates.

Comparison of 1980 woodland areas: 1980 census v NFI-based estimates

|  | Original (1980 census) | Revised (NFI based) | Scaling factor (Revised / Original) |
|---|---|---|---|
| GB woodland area (thousand ha) | 2,108 | 2,472 | 1.17 |

| | | | |
|---|---|---|---|
| Mainly coniferous | 1,357 | 1,223 | 0.90 |
| Mainly broadleaved | 752 | 1,249 | 1.66 |
| GB standing volumes (million m3 obs) | | | |
| Coniferous | 106 | 96 | |
| Broadleaved | 91 | 151 | |

## 3.3.2 Estimation and forecasting

**Growing stock:**

1980 species breakdown combined as necessary for 2011 species breakdown, and adjusted for change in area between 1980 census and NFI-based estimated area in 1980.

NFI estimates for 2011 used as 2010 estimates, and average annual change between 1980 and 2010 calculated.

million m3 overbark standing

| Species | | 1980 revised | 2011 | Average annual change |
|---|---|---|---|---|
| GB Conifers | | | | |
| | Sitka spruce | 25 | 175 | 5.0 |
| | Scots pine | 25 | 51 | 0.9 |
| | Corsican pine | 5 | 12 | 0.2 |
| | Norway spruce | 12 | 20 | 0.3 |
| | Larches | 16 | 37 | 0.7 |
| | Douglas fir | 5 | 16 | 0.3 |
| | Lodgepole pine | 2 | 18 | 0.5 |
| | Other conifers | 5 | 15 | 0.3 |
| | Total conifers | 96 | 345 | 8.3 |
| GB Broadleaves | | | | |
| | Oak | 55 | 73 | 0.6 |

| | | | | |
|---|---|---|---|---|
| | Beech | 25 | 34 | 0.3 |
| | Sycamore | 13 | 26 | 0.4 |
| | Ash | 17 | 34 | 0.6 |
| | Birch | 10 | 21 | 0.4 |
| | Sweet chestnut | 4 | 8 | 0.1 |
| | Other broadleaves | 27 | 44 | 0.6 |
| | Total broadleaves | 151 | 240 | 2.9 |

Average annual change applied to 1980 and 2010 estimates to interpolate for other years:

million m3 overbark standing

| Species | 1980 | 1990 | 2000 | 2005 | 2010 | 2015 |
|---|---|---|---|---|---|---|
| GB Conifers | | | | | | |
| Sitka spruce | 25 | 75 | 125 | 150 | 175 | |
| Scots pine | 25 | 34 | 42 | 47 | 51 | |
| Corsican pine | 5 | 8 | 10 | 11 | 12 | |
| Norway spruce | 12 | 15 | 17 | 19 | 20 | |
| Larches | 16 | 23 | 30 | 33 | 37 | |
| Douglas fir | 5 | 9 | 12 | 14 | 16 | |
| Lodgepole pine | 2 | 8 | 13 | 16 | 18 | |
| Other conifers | 5 | 8 | 12 | 13 | 15 | |
| Total conifers | 96 | 179 | 262 | 303 | 345 | 386 |
| GB Broadleaves | | | | | | |
| Oak | 55 | 61 | 67 | 70 | 73 | |
| Beech | 25 | 28 | 31 | 32 | 34 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Sycamore | 13 | 18 | 22 | 24 | 26 | |
| | Ash | 17 | 23 | 28 | 31 | 34 | |
| | Birch | 10 | 14 | 18 | 20 | 21 | |
| | Sweet chestnut | 4 | 5 | 6 | 7 | 8 | |
| | Other broadleaves | 27 | 33 | 39 | 41 | 44 | |
| | Total broadleaves | 151 | 181 | 210 | 225 | 240 | 254 |

2015 estimates for total conifers and total broadleaves in Northern Ireland produced by assuming change in growing stock from 2010 to 2015 is the same as 2005 to 2010:

million m3 overbark standing

| NI volumes | 1980 | 1990 | 2000 | 2005 | 2010 | 2015 |
|---|---|---|---|---|---|---|
| Total conifers | 3.8 | 5.5 | 7.2 | 7.9 | 8.7 | 9.6 |
| Total broadleaves | 1.5 | 1.2 | 1.0 | 1.0 | 1.1 | 1.1 |
| Total | 5.3 | 6.7 | 8.1 | 8.9 | 9.8 | 10.7 |

Add Great Britain and Northern Ireland growing stock estimates to get UK figures.

**Increment:**

Use growing stock volumes to estimate average annual changes:

million m3 overbark standing per year

| | 1980 to 1990 | 1990 to 2000 | 2000 to 2005 | 2005 to 2010 | 2010 to 2015 |
|---|---|---|---|---|---|
| Conifers | 8.5 | 8.5 | 8.5 | 8.5 | 8.5 |
| Broadleaves | 2.9 | 2.9 | 3.0 | 3.0 | 3.0 |
| Total | 11.4 | 11.4 | 11.4 | 11.4 | 11.4 |

Use conversion factors of 1.244 (softwood) and 1.270 (hardwood) to convert removals data from underbark to standing volumes to get estimate of loss in growing stock resulting from removals, and assume 2015 removals is at similar level to 2010:

million m3 overbark standing per year

|  | 1990 | 2000 | 2005 | 2010 | 2015 |
|---|---|---|---|---|---|
| Conifers | 6.6 | 8.9 | 10.0 | 11.1 | 11.1 |
| Broadleaves | 1.3 | 0.7 | 0.6 | 0.6 | 0.6 |
| Total | 7.9 | 9.7 | 10.5 | 11.7 | 11.7 |

Add removals data to average annual changes in growing stock volumes to get estimates of total average annual growth:

million m3 overbark standing per year

|  | 1990 | 2000 | 2005 | 2010 | 2015 |
|---|---|---|---|---|---|
| Conifers | 15.1 | 17.4 | 18.4 | 19.6 | 19.6 |
| Broadleaves | 4.2 | 3.7 | 3.5 | 3.5 | 3.5 |
| Total | 19.3 | 21.1 | 22.0 | 23.1 | 23.1 |

Divide by area to get estimated net increment per hectare.

**Biomass:**

Uprate Great Britain living biomass estimates to UK data using GB:UK ratio for volumes in 2010.

|  | Uprating factor | UK total biomass (million odt) |
|---|---|---|
| Conifers | 1.025 | 224 |
| Broadleaves | 1.004 | 209 |
| Total |  | 433 |

Use Levy et al (ref 8) to allocate UK 2010 biomass estimates to above- and below-ground:

Above-ground biomass = total (above- and below-ground) / 1.36

|  | Million odt |
|---|---|
| Above-ground | 318 |
| Below-ground | 115 |
| Total living biomass | 433 |

Use ratio of biomass to volume to estimate time series.

Assume Northern Ireland deadwood levels are as Great Britain estimates, to give UK estimate of 3.9 m3 per hectare.

Convert deadwood estimates from m3 per hectare to tonnes per hectare using a factor of 0.45 tonnes per m3.

UK deadwood = 1.755 tonnes per hectare.

In the absence of any other data, assume deadwood levels are constant over time and apply woodland areas (from Table 1) to deadwood rate to give time series estimates of total deadwood.

**Carbon:**

Uprate Great Britain carbon in living biomass estimates to UK data using GB:UK ratio for volumes in 2010.

|  | Uprating factor | UK total carbon in living biomass (million tC) |
|---|---|---|
| Conifers | 1.025 | 111.934 |
| Broadleaves | 1.004 | 104.422 |
| Total |  | 216.356 |

Use Levy et al (ref 8) to allocate UK 2010 carbon in living biomass estimates to above- and below-ground:

Above-ground carbon = total (above- and below-ground) / 1.36

| | million tonnes C |
|---|---:|
| Above-ground | 159 |
| Below-ground | 57 |
| Total living biomass | 216 |

Use ratio of carbon in living biomass to volume to estimate time series.

Estimate carbon in deadwood using factor of 0.5.

Average $CO_2$ contents for litter are converted to average carbon content using a factor of 12/44 to give estimates of total carbon content in litter:

| | tC/ha |
|---|---:|
| Conifers | 15.4 |
| Broadleaves | 17.2 |

These averages are then applied to areas of UK forest (from Table 1) to give estimates of total carbon content in litter:

million tonnes Carbon

| | 1990 | 2000 | 2005 | 2010 | 2015 |
|---|---:|---:|---:|---:|---:|
| Conifers | 23.6 | 24.9 | 25.2 | 25.3 | 25.6 |
| Broadleaves | 21.3 | 22.9 | 23.7 | 24.3 | 25.4 |
| Total | 45.0 | 47.8 | 48.9 | 49.6 | 51.0 |

Northern Ireland soil carbon estimates from Bradley et al (2005) (ref 12) are updated using ratio of change for Scotland between previous (ref 12) and latest (ref 11) data sources:

• Revised Northern Ireland estimate = Previous Northern Ireland estimate * Revised Scotland estimate / Previous Scotland estimate
• = 1357 * 1060 / 1210 = 1189 tonnes $CO_2$ per hectare.

Average $CO_2$ contents for soil are converted to average carbon content using a factor of 12/44.

| | tC/ha |
|---|---|

| | |
|---|---|
| England | 179.7 |
| Wales | 192.0 |
| Scotland | 289.1 |
| Northern Ireland | 324.2 |

Average soil carbon content figures are applied to woodland area figures for England, Wales, Scotland and Northern Ireland to give estimates of soil carbon in UK forests that is consistent with forest area estimates reported in Table 1.

million tonnes Carbon

| | 1990 | 2000 | 2005 | 2010 | 2015 |
|---|---|---|---|---|---|
| England | 216.5 | 224.9 | 229.5 | 231.8 | 234.6 |
| Wales | 56.7 | 57.6 | 57.9 | 58.2 | 58.8 |
| Scotland | 348.2 | 381.5 | 392.5 | 398.5 | 410.8 |
| Northern Ireland | 24.0 | 26.9 | 27.6 | 28.5 | 36.2 |
| Total | 645.4 | 690.9 | 707.5 | 717.0 | 740.4 |

## 3.3.3 Reclassification

No reclassification required.

## 3.4 Data
Table 3a

| Category | | Growing stock volume (million m$^3$ over bark) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Forest | | | | | Other wooded land | | | | |
| | | 1990 | 2000 | 2005 | 2010 | 2015 | 1990 | 2000 | 2005 | 2010 | 2015 |
| CFRQ | Total growing stock | 366 | 480 | 537 | 595 | 652 | N/A | N/A | N/A | N/A | N/A |
| CFRQ | ... of which coniferous | 184 | 269 | 311 | 354 | 396 | N/A | N/A | N/A | N/A | N/A |

| | | 182 | 211 | 226 | 241 | 256 | N/A | N/A | N/A | N/A | N/A |
|---|---|---|---|---|---|---|---|---|---|---|---|
| (CFRQ) | ... of which broadleaved | 182 | 211 | 226 | 241 | 256 | N/A | N/A | N/A | N/A | N/A |

Table 3b

| Category/Species name | | | Growing stock in forest (million cubic meters) | | | |
|---|---|---|---|---|---|---|
| Rank | Scientific name | Common name | 1990 | 2000 | 2005 | 2010 |
| 1 st | Picea sitchensis | Sitka spruce | 78 | 130 | 156 | 182 |
| 2 nd | Quercus robur/ Q petraea | Oak | 61 | 67 | 70 | 73 |
| 3 rd | Pinus sylvestris | Scots pine | 35 | 43 | 47 | 52 |
| 4 th | Larix spp | Larches | 23 | 30 | 34 | 37 |
| 5 th | Fraxinus excelsior | Ash | 23 | 28 | 31 | 34 |
| 6 th | Fagus sylvatica | Beech | 28 | 31 | 32 | 34 |
| 7 th | Acer pseudoplatanus | Sycamore | 18 | 22 | 24 | 26 |
| 8 th | Betula pubescens/ B pendula | Birch | 14 | 18 | 20 | 22 |
| 9 th | Picea abies | Norway spruce | 15 | 18 | 19 | 21 |
| 10 th | Pinus contorta | Lodgepole pine | 8 | 13 | 16 | 19 |
| Remaining | | | 64 | 79 | 87 | 96 |
| TOTAL | | | 367.00 | 479.00 | 536.00 | 596.00 |

## THE PRE-FILLED VALUES FOR GROWING STOCK REFER TO THE FOLLOWING THRESHOLD VALUES (SEE TABLE BELOW)

| Item | Value | Complementary information |
|---|---|---|
| Minimum diameter (cm) at breast height of trees included in growing stock (X) | 7 | N/A |
| Minimum diameter (cm) at the top end of stem for calculation of growing stock (Y) | 7 | N/A |
| Minimum diameter (cm) of branches included in growing stock (W) | 7 | Minimum 3m length |
| Volume refers to above ground (AG) or above stump (AS) | AG | N/A |

**PLEASE NOTE THAT THE DEFINITION OF GROWING STOCK HAS CHANGED AND SHOULD BE REPORTED AS GROWING STOCK DBH 10 CM INCLUDING THE STEM FROM GROUND LEVEL UP TO A DIAMETER OF 0 CM, EXCLUDING BRANCHES.**

Table 3c

| Category | | Net annual increment (m³ per hectare and year) | | | | |
|---|---|---|---|---|---|---|
| | | Forest | | | | |
| | | 1990 | 2000 | 2005 | 2010 | 2015 |
| CFRQ | Net annual increment | 6.9 | 7.1 | 7.3 | 7.6 | 7.4 |
| CFRQ | ... of which coniferous | 9.8 | 10.7 | 11.2 | 11.9 | 11.7 |
| CFRQ | ... of which broadleaved | 3.4 | 2.7 | 2.6 | 2.5 | 2.4 |

Table 3d

| Category | | Biomass (million metric tonnes oven-dry weight) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Forest | | | | | Other wooded land | | | | |
| | | 1990 | 2000 | 2005 | 2010 | 2015 | 1990 | 2000 | 2005 | 2010 | 2015 |
| CFRQ | Above ground biomass | 196 | 257 | 288 | 318 | 349 | N/A | N/A | N/A | N/A | N/A |
| CFRQ | Below ground biomass | 71 | 93 | 104 | 115 | 126 | N/A | N/A | N/A | N/A | N/A |
| CFRQ | Dead wood | 5 | 5 | 5 | 5 | 6 | N/A | N/A | N/A | N/A | N/A |
| TOTAL | | 272.00 | 355.00 | 397.00 | 438.00 | 481.00 | .00 | .00 | .00 | .00 | .00 |

Table 3e

| Category | | Carbon (Million metric tonnes) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Forest | | | | | Other wooded land | | | | |
| | | 1990 | 2000 | 2005 | 2010 | 2015 | 1990 | 2000 | 2005 | 2010 | 2015 |
| CFRQ | Carbon in above ground biomass | 98 | 129 | 144 | 159 | 174 | N/A | N/A | N/A | N/A | N/A |
| CFRQ | Carbon in below ground biomass | 35 | 46 | 52 | 57 | 63 | N/A | N/A | N/A | N/A | N/A |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| CFRQ | *Subtotal Living biomass* | 133 | 175 | 196 | 216 | 237 | N/A | N/A | N/A | N/A | N/A |
| CFRQ | Carbon in dead wood | 2 | 3 | 3 | 3 | 3 | N/A | N/A | N/A | N/A | N/A |
| CFRQ | Carbon in litter | 45 | 48 | 49 | 50 | 51 | N/A | N/A | N/A | N/A | N/A |
| CFRQ | *Subtotal Dead wood and litter* | 47 | 50 | 52 | 52 | 54 | N/A | N/A | N/A | N/A | N/A |
| CFRQ | Soil carbon | 645 | 691 | 708 | 717 | 740 | N/A | N/A | N/A | N/A | N/A |
| TOTAL | | 825.00 | 917.00 | 956.00 | 986.00 | 1031.00 | .00 | .00 | .00 | .00 | .00 |

## Tiers

| Variable/category | Tier for status | Tier for trend |
|---|---|---|
| Total growing stock | Tier 3 | Tier 2 |
| Net annual increment | Tier 1 | Tier 1 |
| Above ground biomass | Tier 3 | Tier 2 |
| Below ground biomass | Tier 3 | Tier 2 |
| Dead wood | Tier 1 | Tier 1 |
| Carbon in above-ground biomass | Tier 3 | Tier 2 |
| Carbon in below ground biomass | Tier 3 | Tier 2 |
| Carbon in dead wood and litter | Tier 3 | Tier 2 |
| Soil carbon | Tier 3 | Tier 2 |

## Tier criteria

| Category | Tier for status | Tier for reported trend |
|---|---|---|
| Total growing stock | Tier 3: Data sources Recent 10 years National Forest Inventory or remote sensing with ground truthing or programme for repeated compatible NFI 10 years Domestic volume functions Tier 2: Data sources/registers and statistics modelling or old NFI 10 years or partial field inventory Tier 1: Other data sources | Tier 3: Estimate based on repeated compatible tiers 3 (tier for status) Domestic growth functions Tier 2: Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 tier for status Tier 1: Other |

| | | |
|---|---|---|
| Net annual increment | Tier 3: Scientifically tested national volume and growth functions Tier 2: Selection of volume and growth functions as relevant as possible Tier 1: Other | Tier 3: Confirmation/adjustment of functions used through scientific work Tier 2: Review work done to seek alternative functions Tier: 1 Other |
| Biomass | Tier 3: Country-specific national or sub-national biomass conversion expansion factors applied or other domestic or otherwise nationally relevant biomass studies Tier 2: Application of country specific national or sub-national biomass conversion factors from other country with similar climatic conditions and forest types Tier 1: International/regional default biomass expansion factors applied | **Tier 3** : Estimate based on repeated compatible tiers 3 (tier for status) **Tier 2** : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) **Tier 1** : Other |
| • Carbon in above ground biomass <br> • Carbon in below ground biomass <br> • Carbon in dead wood and litter <br> • Soil carbon | Tier 3: Country-specific national or sub-national biomass conversion expansion factors applied Tier 2: Application of country specific national or sub-national biomass conversion factors form from other country with similar climatic conditions and forest types Tier 1: International/regional default biomass expansion factors applied | **Tier 3** : Estimate based on repeated compatible tiers 3 (tier for status) **Tier 2** : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) **Tier 1** : Other |

## 3.5 Comments on growing stock biomass and carbon

| Category | Comments related to data definitions etc | Comments on the reported trend |
|---|---|---|
| Total growing stock | 2010 data for Great Britain are 2011 estimates based on the current National Forest Inventory. | Time series assumes constant growth. Estimates for earlier years have been revised from previous FRA submissions to produce a consistent time series. |
| Growing stock of broadleaved coniferous | 2010 data for Great Britain are 2011 estimates based on the current National Forest Inventory. | Time series assumes constant growth. Estimates for earlier years have been revised from previous FRA submissions to produce a consistent time series. |
| Growing stock composition | Species shown are main species from current National Forest Inventory. | Time series assumes constant growth. Estimates for earlier years have been revised from previous FRA submissions to produce a consistent time series. |
| Net annual increment | Derived from changes in growing stock estimates and removals. | Time series based on trends in growing stock and roundwood production. |
| Above-ground biomass | 2010 data for Great Britain are 2011 estimates based on the current National Forest Inventory. | Time series based on growing stock trend. |
| Below-ground biomass | 2010 data for Great Britain are 2011 estimates based on the current National Forest Inventory. | Time series based on growing stock trend. |
| Dead wood | No new estimates of average deadwood per hectare are available at present. | N/A |
| Carbon in above-ground biomass | 2010 data for Great Britain are 2011 estimates based on the current National Forest Inventory. | Time series based on growing stock trend. |

| | | |
|---|---|---|
| Carbon in below-ground biomass | 2010 data for Great Britain are 2011 estimates based on the current National Forest Inventory. | Time series based on growing stock trend. |
| Carbon in dead wood | N/A | N/A |
| Carbon in litter | N/A | N/A |
| Soil carbon | N/A | N/A |

| **Other general comments to the table** |
|---|
| Figures are not available for other wooded land. Estimates for previous years have been revised from those submitted in FRA 2010 to reflect new data sources and revisions to produce consistent time series. Shrubs/ bushes within the forest have been excluded, as there are currently no reliable estimates available. |

# 4. What is the status of forest production and how has it changed over time?

Documents for this question:

- Guide for country reporting FRA 2015
- FRA 2015 Terms and Definitions

## 4.1 Categories and definitions

| Term | Definition |
|---|---|
| Primary designated function | The primary function or management objective assigned to a management unit either by legal prescription documented decision of the landowner/manager or evidence provided by documented studies of forest management practices and customary use. |
| Non wood forest product (NWFP) | Goods derived from forests that are tangible and physical objects of biological origin other than wood. |
| Commercial value of NWFP | For the purpose of this table, value is defined as the commercial market value at the forest gate. |
| **Category** | **Definition** |
| Production forest | Forest area designated primarily for production of wood, fibre, bio-energy and/or non-wood forest products. |
| Multiple use forest | Forest area designated for more than one purpose and where none of these alone is considered as the predominant designated function. |
| Total wood removals | The total of industrial round wood removals and woodfuel removals. |
| ...of which woodfuel | The wood removed for energy production purposes, regardless whether for industrial, commercial or domestic use. |

## 4.2 National data

4.2.1 Data sources

| | References to sources of information | Variables | Years | Additional comments |
|---|---|---|---|---|
| 1 | UK data for FRA 2010 | Christmas Trees | Various | Sales of Christmas Trees |
| 2 | British Christmas Tree Growers Association (personal communication, 2014) | Christmas Trees | Various | N/A |
| 3 | Forestry Commission, 2013. Joint Forest Sector Questionnaire returns to international organisations (and supporting data). UK. | Total wood removals, woodfuel | 1990-2012 | Based on September 2013 submission, with revisions to earlier years for consistent time series |
| 4 | N/A | N/A | N/A | N/A |

4.2.2 Classification and definitions

| National class | Definition |
|---|---|
| | |

| | |
|---|---|
| Christmas trees | All conifers sold as Christmas trees. |
| Deliveries | The quantity of UK-grown roundwood that is delivered to processors (mills) and other uses (such as woodfuel and exports). |
| N/A | N/A |
| N/A | N/A |

## 4.2.3 Original data

UK data for FRA 2010 (ref 1) reported the estimated value of Christmas Tree sales to be £52 million. Correspondence with the British Christmas Tree Growers Association in 2014 (ref 2) suggests little change in sales.

UK data for Joint Forest Sector Questionnaire (ref 3):

thousand m3 underbark

| Year | Roundwood | Of which, woodfuel |
|---|---|---|
| | | |
| 1994 | 7921 | 229 |
| 1995 | 8147 | 229 |
| 1996 | 7495 | 229 |
| 1997 | 7836 | 229 |
| 1998 | 7595 | 229 |
| 1999 | 7775 | 229 |
| 2000 | 7791 | 229 |
| 2001 | 7881 | 229 |
| 2002 | 7789 | 229 |
| 2003 | 8071 | 229 |
| 2004 | 8326 | 229 |
| 2005 | 8516 | 317 |
| 2006 | 8423 | 317 |

| 2007 | 9017 | 459 |
| --- | --- | --- |
| 2008 | 8416 | 557 |
| 2009 | 8624 | 988 |
| 2010 | 9718 | 1381 |
| 2011 | 10020 | 1234 |
| 2012 | 10120 | 1332 |

## 4.3 Analysis and processing of national data

4.3.1 Adjustment

No adjustment required.

4.3.2 Estimation and forecasting

No estimation and forecasting required.

4.3.3 Reclassification

No reclassification required.

## 4.4 Data

Table 4a

| Categories | | Forest area (000 hectares) | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| | | **1990** | **2000** | **2005** | **2010** | **2015** |
| CFRQ | Production forest | N/A | N/A | N/A | N/A | N/A |
| CFRQ | Multiple use forest | N/A | N/A | N/A | N/A | N/A |

Table 4b

| Rank | Name of product | Key species | Commercial value of NWFP removals 2010 (value 1000 local currency) | NWFP category |
| --- | --- | --- | --- | --- |

| | | | | |
|---|---|---|---|---|
| 1 st | Christmas trees | Picea, Abies pinus | 52000 | 6 |
| 2 nd | n.a. | n.a. | N/A | N/A |
| 3 rd | n.a. | n.a. | N/A | N/A |
| 4 th | n.a. | n.a. | N/A | N/A |
| 5 th | n.a. | n.a. | N/A | N/A |
| 6 th | n.a. | n.a. | N/A | N/A |
| 7 th | n.a. | n.a. | N/A | N/A |
| 8 th | n.a. | n.a. | N/A | N/A |
| 9 th | n.a. | n.a. | N/A | N/A |
| 10 th | n.a. | n.a. | N/A | N/A |
| TOTAL | | | 52000.00 | |

| 2010 | |
|---|---|
| Name of local currency | GBP |

| **Category** |
|---|
| **Plant products / raw material** |
| 1 Food |
| 2 Fodder |
| 3 Raw material for medicine and aromatic products |
| 4 Raw material for colorants and dyes |
| 5 Raw material for utensils handicrafts construction |
| 6 Ornamental plants |
| 7 Exudates |
| 8 Other plant products |
| **Animal products / raw material** |
| 9 Living animals |
| 10 Hides skins and trophies |

| 11 Wild honey and beewax |
| :--- |
| 12 Wild meat |
| 13 Raw material for medicine |
| 14 Raw material for colorants |
| 15 Other edible animal products |
| 16 Other non-edible animal products |

## Table 4c Pre-filled data from FAOSTAT

| Year | FRA 2015 category (1000 m$^3$ u.b.) | |
| :--- | :--- | :--- |
| | Total wood removals | ...of which woodfuel |
| 1990 | 6350 | 225 |
| 1991 | 6372 | 250 |
| 1992 | 6408 | 225 |
| 1993 | 6711 | 230 |
| 1994 | 7921 | 229 |
| 1995 | 8147 | 229 |
| 1996 | 7495 | 229 |
| 1997 | 7836 | 229 |
| 1998 | 7595 | 229 |
| 1999 | 7775 | 229 |
| 2000 | 7791 | 229 |
| 2001 | 7881 | 229 |
| 2002 | 7789 | 229 |
| 2003 | 8071 | 229 |
| 2004 | 8326 | 229 |
| 2005 | 8516 | 317 |
| 2006 | 8423 | 317 |
| 2007 | 9017 | 459 |

| | | |
|---|---|---|
| 2008 | 8416 | 557 |
| 2009 | 8624 | 988 |
| 2010 | 9718 | 1381 |
| 2011 | 10020 | 1234 |

## Tiers

| Category | Tier for status | Tier for reported trend |
|---|---|---|
| Production forest | N/A | N/A |
| Multiple use forest | N/A | N/A |

## Tier Criteria

| Category | Tier for status | Tier for reported trend |
|---|---|---|
| Production forest Multiple use forest | Tier 3: Updated including field verifications national forest maps including functions Tier 2: Forest maps older than 6 years including forest functions Tier 1: Other | **Tier 3** : Estimate based on repeated compatible tiers 3 (tier for status) **Tier 2** : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) **Tier 1** : Other |

## 4.5 Comments

| Category | Comments related to data definitions etc | Comments on the reported trend |
|---|---|---|
| Production forest | N/A | N/A |
| Multiple use forest | N/A | N/A |
| Total wood removals | N/A | Data for earlier years have been revised to provide a consistent time series. |
| Commercial value of NWFP | N/A | N/A |

| Other general comments to the table |
|---|
| No reliable data available for Table 4a. No comprehensive data currently available on non-wood forest products. |

# 5. How much forest area is managed for protection of soil and water and ecosystem services?

Documents for this question:

- Guide for country reporting FRA 2015
- FRA 2015 Terms and Definitions

## 5.1 Categories and definitions

| Category | Definition |
|---|---|
| Protection of soil and water | Forest area designated or managed for protection of soil and water |
| ...of which production of clean water (sub-category) | Forest area primarily designated or managed for water production, where most human uses are excluded or heavily modified to protect water quality. |
| ...of which coastal stabilization (sub-category) | Forest area primarily designated or managed for coastal stabilization. |
| ...of which desertification control (sub-category) | Forest area primarily designated or managed for desertification control. |
| ...of which avalanche control (sub-category) | Forest area primarily designated or managed to prevent the development or impact of avalanches on human life assets or infrastructure. |
| ...of which erosion, flood protection or reducing flood risk (sub-category) | Forest area primarily designated or managed for protecting communities or assets from the impacts of erosion riparian floods and landslides or for providing flood plain services. |
| ...of which other (sub-category) | Forest area primarily designated or managed for other protective functions. |
| Ecosystem services, cultural or spiritual values | Forest area primarily designated or managed for selected ecosystem services or cultural or spiritual values. |
| ...of which public recreation (sub-category) | Forest area designated or managed for public recreation. |
| ...of which carbon storage or sequestration (sub-category) | Forest area designated or managed for carbon storage or sequestration. |
| ...of which spiritual or cultural services (sub-category) | Forest area designated or managed for spiritual or cultural services. |
| ...of which other (sub-category) | Forest area designated or managed for other ecosystem services. |

## 5.2 National data

### 5.2.1 Data sources

| | References to sources of information | Variables | Years | Additional comments |
|---|---|---|---|---|
| 1 | Forestry Commission, 2013. Forestry Statistics 2013. UK. | Certified woodland area | 2001-2013 | From supporting time series data (figure 1.2) |

| 2 | N/A | N/A | N/A | N/A |
|---|-----|-----|-----|-----|
| 3 | N/A | N/A | N/A | N/A |
| 4 | N/A | N/A | N/A | N/A |

## 5.2.2 Classification and definitions

| National class | Definition |
|----------------|------------|
| Certified woodland area | Woodland area certified as sustainably managed. |
| N/A | N/A |
| N/A | N/A |
| N/A | N/A |

## 5.2.3 Original data

Estimates of UK certified woodland area (from supporting data to Forestry Statistics 2013 (ref 1)):

thousand hectares

| | Dec 2001 | Mar 2005 | Mar 2010 | Mar 2013 |
|---|----------|----------|----------|----------|
| UK certified woodland area | 1061 | 1257 | 1347 | 1362 |

## 5.3 Analysis and processing of national data

### 5.3.1 Adjustment

No adjustment required.

### 5.3.2 Estimation and forecasting

The area of woodland certified as complying with the UK Forestry Standard is used as a proxy estimate for the area designated for protection of soil and water.

Certified woodland area data were first collected in December 2001, so this figure is used as an estimate for 2000 and the figure for 1990 is marked as not available.

The latest certified area (for 2013) is used as an estimate for 2015.

## 5.3.3 Reclassification

No reclassification required.

## 5.4 Data

Table 5a

| Categories | | Forest area (1000 hectares) | | | | |
|---|---|---|---|---|---|---|
| | | **1990** | **2000** | **2005** | **2010** | **2015** |
| CFRQ | Protection of soil and water | N/A | 1061 | 1257 | 1347 | 1362 |
| CFRQ | ... of which production of clean water | N/A | N/A | N/A | N/A | N/A |
| CFRQ | ... of which coastal stabilization | N/A | N/A | N/A | N/A | N/A |
| CFRQ | ... of which desertification control | N/A | N/A | N/A | N/A | N/A |
| CFRQ | ... of which avalanche control | N/A | N/A | N/A | N/A | N/A |
| CFRQ | ... of which erosion, flood protection or reducing flood risk | N/A | N/A | N/A | N/A | N/A |
| CFRQ | ... of which other (please specify in comments below the table) | N/A | N/A | N/A | N/A | N/A |

| Other |
|---|
| N/A |

Table 5b

| Categories | Forest area (1000 hectares) | | | | |
|---|---|---|---|---|---|
| | **1990** | **2000** | **2005** | **2010** | **2015** |
| Ecosystem services, cultural or spiritual values | N/A | N/A | N/A | N/A | N/A |

| | | | | | |
|---|---|---|---|---|---|
| ...of which public recreation | N/A | N/A | N/A | N/A | N/A |
| ...of which carbon storage or sequestration | N/A | N/A | N/A | N/A | N/A |
| ...of which spiritual or cultural services | N/A | N/A | N/A | N/A | N/A |
| ...of which other (please specify in comments below the table) | N/A | N/A | N/A | N/A | N/A |

## Tiers

| Category | Tier for reported trend | Tier for status |
|---|---|---|
| Protection of soil and water | Tier 1 | Tier 1 |
| Ecosystem services, cultural or spiritual values | N/A | N/A |

## Tier criteria

| Category | Tier for status | Tier for reported trend |
|---|---|---|
| Protection of soil and water | Tier 3: High reliability data derived either from high intensity sample survey or data obtained from national or state agencies responsible for regulations or legislation relating to soil and water protection. Tier 2: Approaches based on low intensity or incomplete sample-based surveys or studies that provide data for specific areas that is extrapolated through statistical analysis to national level estimates. Tier 1: Other | **Tier 3** : Estimate based on repeated compatible tiers 3 (tier for status) **Tier 2** : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) **Tier 1** : Other |
| • Cultural or spiritual values<br>• Public recreation<br>• Spiritual or cultural services<br>• Other | Tier 3: High reliability data derived either from high intensity sample survey or data obtained from national or state agencies responsible for regulations. Tier 2: Approaches based on low intensity or incomplete sample-based surveys or studies that provide data for specific areas that is extrapolated through statistical analysis to national level estimates. Tier 1: Other | **Tier 3** : Estimate based on repeated compatible tiers 3 (tier for status) **Tier 2** : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) **Tier 1** : Other |

## 5.5 Comments

| Category | Comments related to data definitions etc | Comments on the reported trend |
|---|---|---|

| Protection of soil and water | As the UK Forestry Standard requires all woodland to be managed for the protection of soil and water, the area of woodland that is certified is used as a proxy measure. This estimate will include woodland where the protection of soil and water is not an issue, but will exclude other areas managed for the protection of soil and water that are not certified. | The trend reflects the trend in certified woodland area. |
|---|---|---|
| Production of clean water | N/A | N/A |
| Coastal stabilization | N/A | N/A |
| Desertification control | N/A | N/A |
| Avalanche control | N/A | N/A |
| Erosion, flood protection or reducing flood risk | N/A | N/A |
| Other protective functions | N/A | N/A |
| Ecosystem services, cultural or spiritual values | N/A | N/A |
| Public recreation | N/A | N/A |
| Carbon storage or sequestration | N/A | N/A |
| Spiritual or cultural services | N/A | N/A |
| Other ecosystem services | N/A | N/A |

| **Other general comments to the table** |
|---|
| Data on protective functions and ecosystem services is generally unavailable at present. |

# 6. How much forest area is protected and designated for the conservation of biodiversity and how has it changed over time?

Documents for this question:

- Guide for country reporting FRA 2015
- FRA 2015 Terms and Definitions

## 6.1 Categories and definitions

| Category | Definition |
|---|---|
| Conservation of biodiversity | Forest area designated primarily for conservation of biological diversity. Includes but is not limited to areas designated for biodiversity conservation within the protected areas. |
| Forest area within protected areas | Forest area within formally established protected areas independently of the purpose for which the protected areas were established. |

## 6.2 National data

### 6.2.1 Data sources

| | References to sources of information | Variables | Years | Additional comments |
|---|---|---|---|---|
| 1 | Forestry Commission, 2013. National Forest Inventory map 2012. UK. | Forest | 2012 | Great Britain |
| 2 | Maps of designated areas | All | various | Sites of Special Scientific Interest, National Nature Reserves, Local Nature Reserves, Special Protection Areas and Special Areas of Conservation in Great Britain, produced by Natural England, Scottish Natural Heritage and Countryside Commission for Wales (now Natural Resources Wales) |
| 3 | Forest Service (personal communication, 2014) | All | 2013 | Northern Ireland. Data from the NI Woodland Register and Basemap 2013: http://www.dardni.gov.uk/index/forestry/the-forest-industry/woodland-register.htm |
| 4 | N/A | N/A | N/A | N/A |

### 6.2.2 Classification and definitions

| National class | Definition |
|---|---|
| Woodland | As forest in FRA, but with canopy cover threshold of 20% (rather than 10%). |
| N/A | N/A |

| N/A | N/A |
|-----|-----|
| N/A | N/A |

## 6.2.3 Original data

GIS analysis of National Forest Inventory map (ref 1) and maps of protected areas (ref 2) gives the following estimates of protected areas in Great Britain in areas that are defined as woodland (or forest):

- Sites of Special Scientific Interest (SSSI), excluding geological SSSIs = 245 thousand hectares
- Including National Nature Reserves (NNRs) gives an additional 13 thousand hectares
- Including Local Nature Reserves (LNRs) gives an additional 14 thousand hectares
- Including Special Protection Areas (SPAs) gives an additional 10 thousand hectares
- Including Special Areas of Conservation (SACs) gives an additional 4 thousand hectares

This gives a total protected area in Great Britain of 287 thousand hectares.

This estimate excludes SPAs in conifer woodlands in Scotland, where the designation is likely to be unrelated to the woodland.

A similar GIS analysis by Forest Service gives an estimate of 3.5 thousand hectares of woodland (or forest) in MCPFE Class 1 in Northern Ireland.

## 6.3 Analysis and processing of national data

### 6.3.1 Adjustment

No adjustment required.

### 6.3.2 Estimation and forecasting

Estimates for Great Britain and for Northern Ireland are added to provide UK estimate.

### 6.3.3 Reclassification

No further reclassification required.

## 6.4 Data
Table 6

| Categories | Forest area (000 hectares) | | | | |
|------------|------|------|------|------|------|
|            | 1990 | 2000 | 2005 | 2010 | 2015 |

| | | | | | | |
|---|---|---|---|---|---|---|
| CFRQ | Conservation of biodiversity | N/A | N/A | N/A | 290 | N/A |
| CFRQ | Forest area within protected areas | N/A | N/A | N/A | 290 | N/A |

Tiers

| Category | Tier for status | Tier for reported trend |
|---|---|---|
| Conservation of biodiversity | Tier 3 | Tier 1 |
| Forest area within protected areas | Tier 3 | Tier 1 |

Tier criteria

| Category | Tier for status | Tier for reported trend |
|---|---|---|
| • Conservation of biodiversity<br>• Forests within protected areas | Tier 3: Data obtained from national or state agencies responsible for conservation and protected area or legislation relating to area protection. Tier 2: Studies that provide data for specific areas that is extrapolated through statistical analysis to national level estimates Tier 1 Other | **Tier 3** : Estimate based on repeated compatible tiers 3 (tier for status) **Tier 2** : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) **Tier 1** : Other |

## 6.5 Comments

| Category | Comments related to data definitions etc | Comments on the reported trend |
|---|---|---|
| Conservation of biodiversity | Estimated as forest area within protected areas. | Time series estimates not currently available. |
| Forest area within protected areas | Estimate is based on GIS analysis of National Forest Inventory map (for GB) and NI Woodland Register (for NI) with maps of designated areas. This differs from the approach used in FRA 2010, where estimates were based on different data sources and a different interpretation of areas to include. | Time series estimates not currently available. |

| Other general comments to the table |
|---|
| The estimates reported here exclude woodland areas in SSSI's designated for geology (where the presence of woodland is not relevant to the designation). Special Protection Areas designated for species that are not dependent on woodland should also be excluded; this is mainly believed to be an issue for golden eagles in Scotland. SPAs in conifer woodland in Scotland have been excluded from the figures reported, to give a better estimate of woodland designated areas. |

# 7. What is the area of forest affected by woody invasive species?

Documents for this question:

- Guide for country reporting FRA 2015
- FRA 2015 Terms and Definitions

## 7.1 Categories and definitions

| Category | Definition |
|---|---|
| Invasive species | Species that are non-native to a particular ecosystem and whose introduction and spread cause, or are likely to cause, socio-cultural, economic or environmental harm or harm to human health. |

## 7.2 National data

7.2.1 Data sources

| | References to sources of information | Variables | Years | Additional comments |
|---|---|---|---|---|
| 1 | N/A | N/A | N/A | N/A |
| 2 | N/A | N/A | N/A | N/A |
| 3 | N/A | N/A | N/A | N/A |
| 4 | N/A | N/A | N/A | N/A |

7.2.2 Classification and definitions

| National class | Definition |
|---|---|
| N/A | N/A |
| N/A | N/A |
| N/A | N/A |
| N/A | N/A |

7.2.3 Original data

## 7.3 Analysis and processing of national data

7.3.1 Adjustment

## 7.3.2 Estimation and forecasting

## 7.3.3 Reclassification

## 7.4 Data
Table 7

| Scientific name of woody invasive species | Forest area affected (000 ha) | |
|---|---|---|
| | 2005 | 2010 |
| N/A | N/A | N/A |
| N/A | N/A | N/A |
| N/A | N/A | N/A |
| N/A | N/A | N/A |
| N/A | N/A | N/A |
| N/A | N/A | N/A |
| N/A | N/A | N/A |
| N/A | N/A | N/A |
| N/A | N/A | N/A |
| N/A | N/A | N/A |
| Total | N/A | N/A |

Tiers

| Category | Tier for status | Tier for reported trend |
|---|---|---|
| Invasive species | N/A | N/A |

Tier Criteria

| Category | Tier for status | Tier for reported trend |
|---|---|---|

| Invasive species | Tier 3: Systematic assessment in forest inventory or other survey (e.g. by conservation department) within the last 5 years) Tier 2: Systematic assessment in forest inventory or other survey (e.g. by conservation department conducted more than 5 years ago) Tier 1: Other | **Tier 3** : Estimate based on repeated compatible tiers 3 (tier for status) **Tier 2** : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) **Tier 1** : Other |

## 7.5 Comments

| Category | Comments related to data definitions etc | Comments on the reported trend |
|---|---|---|
| Invasive species | N/A | N/A |

| Other general comments to the table |
|---|
| Data not expected to be available until later in 2014. |

# 8. How much forest area is damaged each year?

Documents for this question:

- Guide for country reporting FRA 2015
- FRA 2015 Terms and Definitions

## 8.1 Categories and definitions

| Category | Definition |
|---|---|
| Number of fires | Number of fires per year |
| Burned area | Area burned per year |
| Outbreaks of insects | A detectable reduction in forest health caused by a sudden increase in numbers of harmful insects. |
| Outbreaks of diseases | A detectable reduction in forest health caused by a sudden increase in numbers of harmful pathogens, such as bacteria, fungi, phytoplasma or virus. |
| Severe weather events | Damage caused severe weather events, such as snow, storm, drought, etc. |

## 8.2 National data

### 8.2.1 Data sources

| | References to sources of information | Variables | Years | Additional comments |
|---|---|---|---|---|
| 1 | FAO (MODIS) | Total land area burned, forest area burned | 2003 - 2012 | N/A |
| 2 | Forestry Commission/ Forest Research research and expert knowledge on pests and diseases | Outbreaks | All | Information is available on the Forestry Commission and Forest Research websites in various Information Notes, etc |
| 3 | N/A | N/A | N/A | N/A |
| 4 | N/A | N/A | N/A | N/A |

### 8.2.2 Classification and definitions

| National class | Definition |
|---|---|
| N/A | N/A |
| N/A | N/A |
| N/A | N/A |
| N/A | N/A |

## 8.2.3 Original data

| |
|---|

## 8.3 Analysis and processing of national data

### 8.3.1 Adjustment

| |
|---|

### 8.3.2 Estimation and forecasting

| |
|---|

### 8.3.3 Reclassification

| |
|---|

## 8.4 Data
Table 8a

| Category | | 000 ha, number of fires | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2003 | | 2004 | | 2005 | | 2006 | | 2007 | |
| | | 000 ha | # | 000 ha | # | 000 ha | # | 000 ha | # | 000 ha | # |
| CFRQ | Total land area burned | 11.6 | N/A | 0.3 | N/A | 1.5 | N/A | 0.8 | N/A | 8.7 | N/A |
| CFRQ | ... of which forest area burned | 2 | N/A | 0 | N/A | 0.2 | N/A | 0.3 | N/A | 1.2 | N/A |
| Category | | 2008 | | 2009 | | 2010 | | 2011 | | 2012 | |
| | | 000 ha | # | 000 ha | # | 000 ha | # | 000 ha | # | 000 ha | # |
| CFRQ | Total land area burned | 0.6 | N/A | 1 | N/A | 0.9 | N/A | 5.9 | N/A | 0.7 | N/A |
| CFRQ | ... of which forest area burned | 0.1 | N/A | 0.4 | N/A | 0.4 | N/A | 3 | N/A | 0.3 | N/A |

Table 8b

| Outbreak category | Description/name | Year(s) of latest outbreak | Area damaged (000 hectares) |
|---|---|---|---|

| 2 | Phytophthora ramorum | 2009 | N/A |
|---|---|---|---|
| 2 | Chalara fraxinea (ash dieback) | 2012 | N/A |
| 2 | Phytophthora kernoviae | 2004 | N/A |
| 2 | Phytophthora lateralis | 2010 | N/A |
| 2 | Phytopthora disease of alder | 1993 | N/A |
| 1 | Anoplophora glabripennis (Asian long horn beetle) | 2012 | N/A |
| 1 | Oak processionary moth (Cameraria ohridella) | 2006 | N/A |
| 2 | Dothistroma needle blight (Dothistroma septosporum) | 2007 | N/A |
| 1 | Dutch elm disease (Ophiostoma ulmi) | 1960s | N/A |
| 1 & 2 | Acute oak decline (AOD) | 1980s | N/A |

| Outbreak category |
|---|
| 1 Insects |
| 2 Diseases |
| 3 Severe weather events |

Tiers

| Category | Tier for status | Tier for trend |
|---|---|---|
| Area affected by fire | Tier 2 | Tier 2 |
| • Insects<br>• Diseases<br>• Severe weather events | Tier 1 | Tier 1 |

Tier criteria

| Category | Tier for status | Tier for reported trend |
|---|---|---|
| Burned area | **Tier 3** : National fire monitoring routines **Tier 2** : Remote sensing surveys **Tier 1** : Other | **Tier 3** : Estimate based on repeated compatible tiers 3 (tier for status) **Tier 2** : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) **Tier 1** : Other |
| • Insects<br>• Diseases<br>• Severe weather events | **Tier 3** : Systematic survey (e.g. via inventory or aerial damage assessment) **Tier 2** : Management records **Tier 1** : Other | **Tier 3** : Estimate based on repeated compatible tiers 3 (tier for status) **Tier 2** : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) **Tier 1** : Other |

## 8.5 Comments

| Category | Comments related to data definitions etc | Comments on the reported trend |
|---|---|---|
| Burned area | N/A | N/A |
| Insects | Estimates of areas affected are not directly available. | N/A |
| Diseases | Estimates of areas affected are not directly available. | N/A |
| Severe weather events | N/A | N/A |

| Other general comments to the table |
|---|
| Other insects/ diseases affecting UK trees are phytophthora austricedrae, horse chestnut leaf miner (cameraria ohridella), horse chestnut bleeding canker (pseudomonas syringae pathovar aesculi), great spruce bark beetle (dendoctronus micans), green spruce aphid (elatobium abietinum) and pine tree lappet moth (dendrolimus pini). |

# 9. What is the forest area with reduced canopy cover?

Documents for this question:

- Guide for country reporting FRA 2015
- FRA 2015 Terms and Definitions

| Category | Definition |
|---|---|
| Reduction in canopy cover | Forest that has undergone a reduction of canopy cover of more than 20% between the years 2000 and 2010 within the forest canopy cover range of 30-80% as detected by the MODIS VCF sensor. |

Table 9

| Category | Area of forest with reduced canopy cover (000 ha) |
|---|---|
| Reduction in canopy cover | N/A |

Tiers

| Category | Tier for reported trend |
|---|---|
| Reduction in canopy cover | N/A |

Tier criteria

| Category | Tier for reported trend |
|---|---|
| Reduction in canopy cover | **Tier 3** : Remote sensing with ground truthing and/or Landsat imagery **Tier 2** : Remote sensing using Modis (using pre-filled data provided by FAO) **Tier 1** : Expert opinion |

Comments

| Category | Comments related to data definitions etc |
|---|---|
| Reduction in canopy cover | N/A |

Other general comments

| |
|---|
| No reliable estimates are currently available. |

# 10. What forest policy and regulatory framework exists to support implementation of sustainable forest management SFM?

Documents for this question:

- Guide for country reporting FRA 2015
- FRA 2015 Terms and Definitions

## 10.1 Categories and definitions

| Category | Definition |
|---|---|
| Policies supporting sustainable forest management | Policies or strategies that explicitly encourage sustainable forest management. |
| Legislation and regulations supporting sustainable forest management | Legislation and regulations that govern and guide sustainable forest management, operations and use. |

## 10.2 National data

### 10.2.1 Data sources

| | References to sources of information | Variables | Years | Additional comments |
|---|---|---|---|---|
| 1 | Forestry Commission, 2011. UK Forestry Standard (rev 2011). UK. | Policies supporting sustainable forest management | N/A | N/A |
| 2 | Defra, 2013. Government Forestry and Woodlands Policy Statement (January 2013). UK. | Policies supporting sustainable forest management | N/A | Relates to England only. |
| 3 | Forestry Commission Scotland, 2006. Scottish Forestry Strategy. UK. | Policies supporting sustainable forest management | N/A | Relates to Scotland only. |
| 4 | Welsh Assembly Government, 2009. Woodlands for Wales: the Welsh Assembly Government's strategy for woodlands and trees. UK. | Policies supporting sustainable forest management | N/A | Relates to Wales only. |
| 5 | Forest Service, 2006. Northern Ireland forestry. A strategy for sustainability and growth. UK. | Policies supporting sustainable forest management | N/A | Relates to Northern Ireland only. |
| 6 | Forestry Act 1967 | Legislation and regulations supporting sustainable forest management | N/A | UK legislation |
| 7 | Plant Health Act 1967 | Legislation and regulations supporting sustainable forest management | N/A | UK legislation |

| 8 | Grant scheme regulations in England, Scotland, Wales & Northern Ireland. | Legislation and regulations supporting sustainable forest management | N/A | Sub-UK regulations |

## 10.2.2 Classification and definitions

| National class | Definition |
|---|---|
| N/A | N/A |
| N/A | N/A |
| N/A | N/A |
| N/A | N/A |

## 10.2.3 Original data

| |
|---|
| |

## 10.3 Data

Table 10

| Category | National | Sub-national | | |
|---|---|---|---|---|
| | | Regional | Provincial/State | Local |
| Policies supporting sustainable forest management | yes | yes | no | yes |
| ... of which, in publicly owned forests | yes | yes | no | yes |
| ... of which, in privately owned forests | yes | yes | no | yes |
| Legislation and regulations supporting sustainable forest management | yes | yes | no | no |
| ... of which, in publicly owned forests | yes | yes | no | no |
| ... of which, in privately owned forests | yes | yes | no | no |

## 10.4 Comments

| Variable / category | Comments related to data definitions etc |
|---|---|

| Policies supporting sustainable forest management | Forestry in UK is devolved, so most policies are at regional (England/ Wales/ Scotland/ Northern Ireland) level, underpinned by UK Forestry Standard and legislation/ regulations. Some policies also produced at a more local level, where appropriate. |
|---|---|
| Legislation and regulations supporting sustainable forest management | Legislation is at UK level, but this is generally implemented at regional (England/ Wales/ Scotland/ Northern Ireland) level. |

## Other general comments

National level here has been interpreted to mean UK level, regional level here relates to country (i.e. England, Wales, Scotland, Northern Ireland) level.  There is no equivalent provincial/ state level.

# 11. Is there a national platform that promotes stakeholder participation in forest policy development?

Documents for this question:

- Guide for country reporting FRA 2015
- FRA 2015 Terms and Definitions

## 11.1 Categories and definitions

| Category | Definition |
|---|---|
| National stakeholder platform | A recognized procedure that a broad range of stakeholders can use to provide opinions, suggestions, analysis, recommendations and other input into the development of national forest policy. |

## 11.2 National data

11.2.1 Data sources

| | References to sources of information | Years | Additional comments |
|---|---|---|---|
| 1 | N/A | N/A | N/A |
| 2 | N/A | N/A | N/A |
| 3 | N/A | N/A | N/A |
| 4 | N/A | N/A | N/A |

Table 11

| Is there a national platform that promotes or allows for stakeholder participation in forest policy development? | no |
|---|---|

## 11.3 Comments

| Category | Comments related to data definitions etc |
|---|---|
| National stakeholder platform | Most stakeholder participation is at regional (England/ Wales/ Scotland/ Northern Ireland) or local level. There are some examples of National Forestry Policy initiatives (e.g. Woodland Carbon Code, review of plant health, etc), but there is no overarching standing national platform. Stakeholder participation at UK level for input to UK Forest Standard (UKFS), but policy set by countries. UKFS sets approach of UK Government & sets standards; it is periodically reviewed. |

Other general comments

# 12. What is the forest area intended to be in permanent forest land use and how has it changed over time?

Documents for this question:

- Guide for country reporting FRA 2015
- FRA 2015 Terms and Definitions

## 12.1 Categories and definitions

| Category | Definition |
|---|---|
| Forest area intended to be in permanent forest land use | Forest area that is designated or expected to be retained as forest and is highly unlikely to be converted to other land use. |
| ...of which permanent forest estate *(sub-category)* | Forest area that is designated by law or regulation to be retained as forest and may not be converted to other land use. |

## 12.2 National data

### 12.2.1 Data sources

| | References to sources of information | Variables | Years | Additional comments |
|---|---|---|---|---|
| 1 | N/A | N/A | N/A | N/A |
| 2 | N/A | N/A | N/A | N/A |
| 3 | N/A | N/A | N/A | N/A |
| 4 | N/A | N/A | N/A | N/A |

### 12.2.2 Classification and definitions

| National class | Definition |
|---|---|
| Woodland | As "forest" in FRA but with 20% canopy cover threshold (rather than 10%). |
| N/A | N/A |
| N/A | N/A |
| N/A | N/A |

### 12.2.3 Original data

| |
|---|
| |

## 12.3 Analysis and processing of national data

## 12.3.1 Adjustment

No adjustment required.

## 12.3.2 Estimation and forecasting

## 12.3.3 Reclassification

## 12.4 Data

Table 12

| Categories | | Forest area 2010 (000 ha) |
|---|---|---|
| CFRQ | Forest area intended to be in permanent forest land use | 3059 |
| CFRQ | ... of which permanent forest estate | 3059 |

Tiers

| Category | Tier for status |
|---|---|
| Forest area intended to be in permanent forest land use | Tier 1 |
| Permanent forest estate | Tier 1 |

Tier Criteria

| Category | Tier for status |
|---|---|
| Forest area intended to be in permanent forest land use | **Tier 3** : National or sub-national land use plans strategy documents or other reports within the past 10 years **Tier 2** : National or sub-national land use plans strategy documents or other reports within the past 20 years **Tier 1** : Other |
| Permanent forest estate | **Tier 3** : National or sub-national land use plans strategy documents or other reports within the past 10 years **Tier 2** : National or sub-national land use plans strategy documents or other reports within the past 20 years **Tier 1** : Other |

## 12.5 Comments

| Category | Comments related to data definitions etc |
|---|---|

| | |
|---|---|
| Forest area intended to be in permanent forest land use | All woodland areas in the UK have a considerable degree of protection under the law, and in general the granting of a felling licence is conditional on restocking. Conversion of woodland to another land use requires approval under appropriate procedures (e.g. planning, restoration of open habitats, etc). It is therefore assumed that all woodland in the UK is in permanent forest land use. |
| Permanent forest estate | As above, all woodland in the UK can also be considered to be permanent forest estate. |

## Other general comments

| |
|---|
| |

# 13. How does your country measure and report progress towards SFM at the national level?

Documents for this question:

- Guide for country reporting FRA 2015
- FRA 2015 Terms and Definitions

## 13.1 Categories and definitions

| Category | Definition |
|---|---|
| Forest area monitored under a national forest monitoring framework | Forest area monitored by a national monitoring framework or systems that provide measurement based periodic monitoring of forest extent and quality. |
| Forest reporting at national scale | National reporting of forest extent and characteristics that includes some measure of progress toward sustainable forest management. |

## 13.2 National data

13.2.1 Data sources

| | References to sources of information | Variables | Years | Additional comments |
|---|---|---|---|---|
| 1 | Forestry Commission, 2013. National Forest Inventory. UK. | Forest inventory | 2010 on | N/A |
| 2 | Forestry Commission, 2013. Forestry Statistics 2013. UK. | Updates to other sources, other forest reporting | 2013 & previous years | Annual data on a range of topics, including certification and planting. |
| 3 | Forestry Commission, 2010. Sustainable Forest Management Indicators 2010. UK. | Criteria and indicators reporting | N/A | Based on UK submission for 2011 pan-European Indicators of Sustainable Forest Management. |
| 4 | N/A | N/A | N/A | N/A |

13.2.2 Classification and definitions

| National class | Definition |
|---|---|
| N/A | N/A |
| N/A | N/A |
| N/A | N/A |
| N/A | N/A |

## 13.3 Data

Table 13a

| Category | % of total forest area | Most recent year | Check all boxes that apply | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Continuous | Periodic | Permanent ground plots | Temporary ground plots | Aerial/ remote sensing sample based | Aerial/ remote sensing full coverage |
| Forest inventory | 100 | 2012 | yes | no | yes | yes | no | yes |
| Other field assessments | N/A | n.a. | no | no | no | no | no | no |
| Updates to other sources | 100 | 2013 | no | yes | no | no | no | no |
| Expert estimate | N/A | n.a. | | | | | | |

Table 13b

| Type of forest reporting used at national scale | Check boxes that apply |
|---|---|
| 1 Criteria and Indicators reporting | yes |
| 2 Periodic national state of the forest report | no |
| 3 Other (please document) | yes |
| 4 None | no |

| Other type of forest reporting |
|---|
| Annual statistics releases cover aspects of sustainable forest management (e.g. certification, new planting and restocking). |

## 13.4 Comments

| Category | Comments |
|---|---|
| Forest inventory | Full report of National Forest Inventory results, based on full data from 1st cycle, is due in 2015. |
| N/A | N/A |
| N/A | N/A |

Other general comments

| |
|---|
| The Forestry Commission are proposing to bring results from multiple sources together to inform monitoring of sustainable forest management, but this is not currently done at a UK level. |

Annual reporting on indicators is produced at a sub-UK level (England/ Scotland/ Wales/ Northern Ireland).

# 14. What is the area of forest under a forest management plan and how is this monitored?

Documents for this question:

- Guide for country reporting FRA 2015
- FRA 2015 Terms and Definitions

## 14.1 Categories and definitions

| Category | Definition |
|---|---|
| Forest area with management plan | Forest area that has a long-term documented management plan, aiming at defined management goals which is periodically revised |
| ...of which for production *(sub-category)* | Forest management plan mainly focused on production |
| ...of which for conservation *(sub-category)* | Forest management plan mainly focused on conservation |
| Monitoring of forest management plans | Government monitoring of forest management plan implementation conducted through field visits or audits of forest management plan performance |

## 14.2 National data

### 14.2.1 Data sources

| | References to sources of information | Variables | Years | Additional comments |
|---|---|---|---|---|
| 1 | Forestry Commission, 2013. Forestry Statistics 2013 (and supporting data). UK. | All | 2010 | Area owned/ managed by Forestry Commission/ Forest Service, certified woodland areas. |
| 2 | N/A | N/A | N/A | N/A |
| 3 | N/A | N/A | N/A | N/A |
| 4 | N/A | N/A | N/A | N/A |

## 14.3 Data

Table 14a

| Forest plan type | Forest area 2010 (000 ha) |
|---|---|
| Forest area with management plan | 1521 |
| ... of which for production | N/A |
| ... of which for conservation | N/A |

Table 14b

| Indicate which (if any) of the following are required in forest management plans in your country |
|---|

| | |
|---|---|
| 1 Soil and water management | yes |
| 2 High conservation value forest delineation | yes |
| 3 Social considerations community involvement | yes |

Table 14c

| Percent of area under forest management plan that is monitored annually | 89 |
|---|---|

Tiers

| Category | Tier for status |
|---|---|
| Forest area with management plan | Tier 1 |
| Percent of area under forest management plan that is monitored annually | Tier 1 |

Tier criteria

| Category | Tier for status |
|---|---|
| Forest area with management plan | **Tier 3** : Reports that describe national records 5 years old or less that contain long-term forest monitoring plans **Tier 2** : Industry or other records indicating the presence of a long-term forest management plan **Tier 1** : Other |
| Percent of area under forest management plan that is monitored annually | **Tier 3** : Government documentation of monitoring extent **Tier 2** : Reports from forest managers or other documental sources **Tier 1** : Other |

## 14.4 Comments

| Category | Comments |
|---|---|
| Forest area with management plan | Information on main purpose is not available. |
| Monitoring of forest management plans | All of the areas listed in Table 14b are required to be included in management plans, where relevant. |
| Percent of area under forest management plan that is monitored annually | Management plans produced through certification process are monitored annually. Those not subject to certification are monitored by the Forestry Commission/ Forest Service on a less frequent basis. |

Other general comments

| |
|---|
| Estimate of area with management plan based on all FC/ FS woodland (which is all certified), all non-FC/ FS certified woodland and an estimate for other woodland that may also have a management plan or equivalent. |

# 15. How are stakeholders involved in the management decision making for publicly owned forests?

Documents for this question:

- Guide for country reporting FRA 2015
- FRA 2015 Terms and Definitions

## 15.1 Categories and definitions

| Category | Definition |
|---|---|
| Stakeholder involvement | Stakeholder involvement is defined as significant inputs into at least one aspect of forest management at the operational scale |

Table 15

| Please indicate the type of stakeholder involvement in forest management decision making required in your country | |
|---|---|
| 1. Planning phase | yes |
| 2. Operations phase | yes |
| 3. Review of operations | yes |

Tiers

| Category | Tier for status |
|---|---|
| Type of stakeholder inputs | Tier 3 |

Tier criteria

| Category | Tier for status |
|---|---|
| Type of stakeholder inputs | **Tier 3** : Government (national or sub-national) documentation of stakeholder inputs **Tier 2** : Government (national or subnational) requirement but stakeholder inputs not documented **Tier 1** : Other |

## 15.2 Comments

| Category | Comments |
|---|---|
| Planning phase | Includes public meetings and formal consultations. |
| Operations phase | Consultation with key stakeholders. |
| Review of operations | Various mechanisms exist for operational reviews. |

Other general comments

# 16. What is the area of forest under an independently verified forest certification scheme?

Documents for this question:

- Guide for country reporting FRA 2015
- FRA 2015 Terms and Definitions

## 16.1 Categories and definitions

| Category | Definition |
|---|---|
| FSC certification | Forest area certified under the Forest Stewardship Council certification scheme |
| PEFC certification | Forest area certified under the Programme for the Endorsement of Forest Certification scheme |
| Other international forest management certification | Forest area certified under an international forest management certification scheme with published standards and is independently verified by a third-party, excluding FSC and PEFC certification. |
| Certified forest area using a domestic forest management certification scheme | Area certified under a forest management certification scheme with published standards that are nationally recognized and independently verified by a thirdparty |

## 16.2 Data

Table 16a

| International forest management certification | | Forest area (000 ha) | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | **2000** | **2001** | **2002** | **2003** | **2004** | **2005** | **2006** |
| CFRQ | FSC | 0 | 1061.1 | 1075.4 | 0 | 1159.9 | 1257.1 | 1272.5 |
| CFRQ | PEFC | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| CFRQ | Other | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | **2007** | **2008** | **2009** | **2010** | **2011** | **2012** | |
| CFRQ | FSC | 1324.9 | 1309.7 | 1332 | 1347.3 | 1325.1 | 1365 | |
| CFRQ | PEFC | 0 | 0 | 0 | 0 | 0 | 1092.2 | |
| CFRQ | Other | 0 | 0 | 0 | 0 | 0 | 0 | |

Table 16b

| Domestic forest management certification | | Forest area (000 ha) | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | **2000** | **2001** | **2002** | **2003** | **2004** | **2005** | **2006** |
| CFRQ | N/A | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| CFRQ | N/A | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| CFRQ | N/A | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | |
|---|---|---|---|---|---|---|---|---|
| CFRQ | | 0 | 0 | 0 | 0 | 0 | 0 | |
| CFRQ | | 0 | 0 | 0 | 0 | 0 | 0 | |
| CFRQ | | 0 | 0 | 0 | 0 | 0 | 0 | |

## Tier criteria

| Category | Tier for status |
|---|---|
| **International** forest management certification | Tier 3: International forest management scheme records maintained by the certifying organization for the reporting year Tier 2: International forest management scheme records reported by the certifying organization for a period 2 years prior to the reporting year Tier: 1 Other |
| **Domestic** forest management certification | Tier 3: National registry reports for domestic forest management certification maintained by the certifying organization for the reporting year Tier 2: Domestic forest management scheme records reported by the certifying organization for a period 2 years prior to the reporting year Tier: 1 Other |

## Tiers

| Category | Tier for status |
|---|---|
| **International** forest management certification | Tier 3 |
| **Domestic** forest management certification | N/A |

## 16.3 Comments

| Category | Comments related to data definitions etc |
|---|---|
| Certified forest area using an international forest management certification scheme | Data has been amended, where possible, to revise certified woodland areas in light of National Forest Inventory estimates for Forestry Commission woodland area and follow-up enquiries with certificate holders. All PEFC woodland is also certified under FSC. |
| Domestic forest management certification | There are no domestic forest management certification schemes in the UK. |

## Other general comments

| |
|---|
| |

# 17. How much money do governments collect from and spend on forests?

Documents for this question:

- Guide for country reporting FRA 2015
- FRA 2015 Terms and Definitions

## 17.1 Categories and definitions

| Category | Definition |
|---|---|
| Forest revenue | All government revenue collected from the domestic production and trade of forest products and services. For this purpose revenue include:<br>• Goods : roundwood; sawnwood; biomass; woodbased panels; pulp and paper and non-wood forest products.<br>• Services : including concession fees and royalties, stumpage payments, public timber sales revenue taxes and charges based on forest area or yield, taxes on domestic trade and export of forest products, special levies on forestry activities and payments into forest related funds, other miscellaneous inspection, licence and administrative fees levied by forest administrations, permit and licence fees for recreation and other forest related activities. |
| Public expenditure on forestry | All government expenditure on forest related activities. |

## 17.2 National data

17.2.1 Data sources

| | References to sources of information | Variables | Years | Additional comments |
|---|---|---|---|---|
| 1 | Forestry Commission Annual Reports & Accounts | All | All | Great Britain (England, Wales and Scotland) only |
| 2 | Forest Service Annual Report & Accounts | All | All | Northern Ireland |
| 3 | N/A | N/A | N/A | N/A |
| 4 | N/A | N/A | N/A | N/A |

## 17.3 Data
Table 17

| Category | Revenues / expenditures (000 local currency) | | |
|---|---|---|---|
| | 2000 | 2005 | 2010 |
| Forest revenue | 124 | 129 | 170 |
| Public expenditure on forestry | 247 | 273 | 328 |

| | 2000 | 2005 | 2010 |
|---|---|---|---|
| Name of Local Currency | GBP | GBP | GBP |

## 17.4 Comments

| Category | Comments related to data definitions etc |
|---|---|
| Forest revenue | Covers income to the Forestry Commission (in Great Britain) and the Forest Service (in Northern Ireland) in financial years 2000-01, 2005-06 and 2010-11. The majority of revenue comes from public forests (timber sales, recreation, etc). |
| Public expenditure on forestry | Covers expenditure by the Forestry Commission (in Great Britain) and the Forest Service (in Northern Ireland) in financial years 2000-01, 2005-06 and 2010-11. |
| Other general comments | Figures are rounded to nearest £10,000. Estimates have been revised from figures submitted in previous FRA submissions. The Forestry Commission's responsibilities in Wales transferred to a new organisation, Natural Resources Wales, on 1 April 2013. |

Other general comments

# 18. Who owns and manages the forests and how has this changed?

Documents for this question:

- Guide for country reporting FRA 2015
- FRA 2015 Terms and Definitions

## 18.1 Categories and definitions

| Category | Definition |
|---|---|
| Public ownership | Forest owned by the State or administrative units of the public administration or by institutions or corporations owned by the public administration. |
| ...of which owned by the state at national scale *(sub-category)* | Forest owned by the State at the national scale or administrative units of the public administration or by institutions or corporations owned by the public administration. |
| ...of which owned by the state at the sub-national government scale *(sub-category)* | Forest owned by the State at the sub-national government scale or administrative units of the public administration or by institutions or corporations owned by the public administration. |
| Private ownership | Forest owned by individuals, families, communities, private cooperatives corporations and other business entities, private, religious and educational institutions, pension or investment funds, NGOs, nature conservation associations and other private institutions. |
| ...of which individuals *(sub-category)* | Forest owned by individuals and families. |
| ...of which private business entities and institutions *(sub-category)* | Forest owned by private corporations cooperatives companies and other business entities as well as private nonprofit organizations such as NGOs nature conservation associations, and private religious and educational institutions etc. |
| ...of which local tribal and indigenous communities *(sub-category)* | Forest owned by a group of individuals belonging to the same community residing within or in the vicinity of a forest area or forest owned by communities of indigenous or tribal people The community members are coowners that share exclusive rights and duties and benefits contribute to the community development. |
| Unknown ownership | Forest area where ownership is unknown includes areas where ownership is unclear or disputed. |
| **Categories related to management rights of public forests** | **Definition** |
| Public Administration | The Public Administration (or institutions or corporations owned by the Public Administration) retains management rights and responsibilities within the limits specified by the legislation. |
| Individuals households | Forest management rights and responsibilities are transferred from the Public Administration to individuals or households through long-term leases or management agreements. |
| Private companies | Forest management rights and responsibilities are transferred from the Public Administration to corporations, other business entities private cooperatives, private nonprofit institutions and associations, etc., through long-term leases or management agreements. |
| Communities | Forest management rights and responsibilities are transferred from the Public Administration to local communities (including indigenous and tribal communities) through long-term leases or management agreements. |
| Other form of management rights | Forests for which the transfer of management rights does not belong to any of the categories mentioned above. |

## 18.2 National data

## 18.2.1 Data sources

| | References to sources of information | Variables | Years | Additional comments |
|---|---|---|---|---|
| 1 | Forestry Commission, 2013. Forestry Statistics 2013 (and supporting data). UK | Ownership type | 2000-2010 | N/A |
| 2 | N/A | N/A | N/A | N/A |
| 3 | N/A | N/A | N/A | N/A |
| 4 | N/A | N/A | N/A | N/A |

## 18.2.2 Classification and definitions

| National class | Definition |
|---|---|
| Forestry Commission / Forest Service | Woodland owned/ managed by the Forestry Commission (in Great Britain) or Forest Service (in Northern Ireland) |
| Non-FC/ FS | Woodland that is not owned/ managed by the Forestry Commission or Forest Service. It includes some woodland owned by other public bodies (e.g. local authorities, Ministry of Defence, etc). |
| N/A | N/A |
| N/A | N/A |

## 18.2.3 Original data

Estimates of UK woodland area by ownership, from Forestry Statistics 2013 and supporting data (ref 1):

thousand hectares

| | 2000 | 2005 | 2010 |
|---|---|---|---|
| UK woodland area | 2,954 | 3,021 | 3,059 |
| FC/ FS | 889 | 879 | 868 |
| Non-FC/ FS | 2,065 | 2,143 | 2,191 |

## 18.3 Analysis and processing of national data

## 18.3.1 Adjustment

No adjustment required.

## 18.3.2 Estimation and forecasting

To estimate data for 1990:

Total ownership = forest area from Table 1a.

The methodology used to roll back National Forest Inventory-based estimates of woodland area for Table 1a were also used to roll back the breakdown of this area by ownership, to ensure a consistent approach. Woodland ownership changes over time were taken into account, as well as new planting and deforestation estimates.

## 18.3.3 Reclassification

"Public ownership" is assumed to cover all woodland owned/ managed by the Forestry Commission or Forest Service.

"Private ownership" is assumed to cover all other woodland.

## 18.4 Data
Table 18a

| Categories | | Forest area (1000 hectares) | | | |
|---|---|---|---|---|---|
| | | **1990** | **2000** | **2005** | **2010** |
| CFRQ | Public ownership | 903 | 889 | 879 | 868 |
| CFRQ | ... of which owned by the state at national scale | 0 | 0 | 0 | 0 |
| CFRQ | ... of which owned by the state at the sub-national government scale | 903 | 889 | 879 | 868 |
| CFRQ | Private ownership | 1876 | 2065 | 2143 | 2191 |
| CFRQ | ... of which owned by individuals | N/A | N/A | N/A | N/A |
| CFRQ | ... of which owned by private business entities and institutions | N/A | N/A | N/A | N/A |

| | | | | | |
|---|---|---|---|---|---|
|  | ... of which owned by local, tribal and indigenous communities | N/A | N/A | N/A | N/A |
|  | Unknown ownership | 0 | 0 | 0 | 0 |
| TOTAL | | 2779.00 | 2954.00 | 3022.00 | 3059.00 |

Tiers

| Category | Tier for status | Tier for reported trend |
|---|---|---|
| Public ownership | Tier 3 | Tier 2 |
| Private ownership | Tier 1 | Tier 1 |
| Unknown ownership | Tier 1 | Tier 1 |

Tier criteria

| Category | Tier for status | Tier for reported trend |
|---|---|---|
| Ownership | Tier 3: National forestry statistics registers of land titles or maps on land ownership or all forest area under one ownership category that is five years old or less. Tier 2:National forestry statistics registers of land titles or maps on land ownership or questionnaires that are more than five years old. Tier 1: Other | **Tier 3** : Estimate based on repeated compatible tiers 3 (tier for status) **Tier 2** : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) **Tier 1** : Other |

Table 18b - Holder of management rights of public forests

| Categories | Forest area (000 hectares) | | | |
|---|---|---|---|---|
| | 1990 | 2000 | 2005 | 2010 |
| Public Administration | 903 | 889 | 879 | 868 |
| Individuals | 0 | 0 | 0 | 0 |
| Private companies | 0 | 0 | 0 | 0 |
| Communities | 0 | 0 | 0 | 0 |
| Other | 0 | 0 | 0 | 0 |
| TOTAL | 903.00 | 889.00 | 879.00 | 868.00 |

| Category | Tier for reported trend | Tier for status |
|---|---|---|
| Public Administration | Tier 2 | Tier 3 |

| | | |
|---|---|---|
| Individuals | Tier 1 | Tier 1 |
| Private companies | Tier 1 | Tier 1 |
| Communities | Tier 1 | Tier 1 |
| Other | Tier 1 | Tier 1 |

## 18.5 Comments

| Category | Comments related to data definitions etc | Comments on the reported trend |
|---|---|---|
| Public ownership | Data shown relates to woodland owned/ managed by the Forestry Commission in Great Britain or Forest Service in Northern Ireland. It excludes other publicly owned land (e.g. by local authorities, Ministry of Defence, etc). All Forestry Commission/ Forest Service land is managed at sub-UK level. | Data have been adjusted to produce a consistent time series. As a result, estimates for earlier years differ from figures previously reported. |
| Private ownership | All non-FC/ FS woodland is assumed to be in private ownership. | N/A |
| Unknown ownership | There is assumed to be no woodland in unknown ownership | N/A |
| Management rights | Since 2010 Scottish Ministers have had the power to lease land managed by Forestry Commission Scotland to local communities for forestry purposes (e.g. transfer the management and timber rights). These long term leases (minimum of 25 years) are available to eligible communities via the National Forest Land Scheme and aim to transfer the majority of rights associated with forest management and timber marketing and harvesting. A number of communities are currently looking into the option of leasing Forestry Commission Scotland managed land for forestry purposes but none have been concluded to date. | N/A |

| Other general comments to the table |
|---|
| Further information on ownership of woodland will be available from future analysis of National Forest Inventory data (possibly in 2015). |

# 19. How many people are directly employed in forestry?

Documents for this question:

- Guide for country reporting FRA 2015
- FRA 2015 Terms and Definitions

## 19.1 Categories and definitions

| Category | Definition |
|---|---|
| Full-time equivalents (FTE) | A measurement equal to one person working full-time during a specified reference period. |
| Employment in forestry | Employment in activities related to production of goods derived from forests. This category corresponds to the ISIC/NACE Rev. 4 activity A02 (Forestry and logging). |

## 19.2 National data

### 19.2.1 Data sources

| | References to sources of information | Variables | Years | Additional comments |
|---|---|---|---|---|
| 1 | Eurostat. Labour Force Survey. | All | All | Extract from data provided by Eurostat for 2015 pan-European Indicators of Sustainable Forest Management. |
| 2 | N/A | N/A | N/A | N/A |
| 3 | N/A | N/A | N/A | N/A |
| 4 | N/A | N/A | N/A | N/A |

### 19.2.2 Classification and definitions

| National class | Definition |
|---|---|
| N/A | N/A |
| N/A | N/A |
| N/A | N/A |
| N/A | N/A |

### 19.2.3 Original data

Pre-filled data provided by Eurostat for 2015 pan-European Indicators of Sustainable Forest Management (ref 1):

Table 6.5a: Employment (thousand persons) by gender and age

| Category | Year | Total | Gender | |
|---|---|---|---|---|
| | | | Male | Female |
| Forestry (ISIC/NACE 02) | 2010 | 19.76 | 17.93 | 1.83 |
| | 2005 | 13.65 | 12.34 | |
| | 2000 | 15.76 | 14.52 | |
| | 1990 | 17.44 | 15.53 | |

## 19.3 Data

Table 19

| Category | | Employment (000 years FTE) | | | |
|---|---|---|---|---|---|
| | | **1990** | **2000** | **2005** | **2010** |
| CFRQ | Employment in forestry | 17.4 | 15.8 | 13.7 | 19.8 |
| CFRQ | ... of which female | 1.9 | 1.2 | 1.3 | 1.8 |

## 19.4 Comments

| Category | Comments related to data definitions etc | Comments on the reported trend |
|---|---|---|
| Employment in forestry | Figures relate to headcounts rather than fte. The data comprise 3 year averages for 1992-1994 (for 1990 estimate), 1999-2001 (2000), 2004-2006 (2005) and 2009-2011 (2010). | N/A |

| Other general comments to the table |
|---|
| Data are based on estimates from the Labour Force Survey and are as provided by Eurostat for 2015 pan-European Indicators of Sustainable Forest Management. |

# 20. What is the contribution of forestry to Gross Domestic Product (GDP)?

Documents for this question:

- Guide for country reporting FRA 2015
- FRA 2015 Terms and Definitions

## 20.1 Categories and definitions

| Category | Definition |
|---|---|
| Gross value added from forestry (at basic prices) | This category corresponds to the ISIC/NACE Rev. 4 activity A02 (Forestry and logging). |

## 20.2 Data

Table 20 (Pre-filled data from UNdata/EUROSTAT)

| Category | Million | Currency | Year for latest available information |
|---|---|---|---|
| Gross value added from forestry (at basic prices) | 404 | GBP | 2011 |

## 20.3 Comments

| Category | Comments |
|---|---|
| N/A | N/A |

Other general comments

| |
|---|
| Estimate from Office for National Statistics, 2013. Annual Business Survey - 2011 Revised Results. |

# 21. What is forest area likely to be in the future

Documents for this question:

- Guide for country reporting FRA 2015
- FRA 2015 Terms and Definitions

## 21.1 Categories and definitions

| Category | Definition |
|---|---|
| Government target/ aspiration for forest area | Government target/aspiration for forest area for a specific year. |
| Forests earmarked for conversion | Forest area that is allocated/classified or scheduled to be converted into non-forest uses. |

## 21.2 National data

### 21.2.1 Data sources

| | References to sources of information | Variables | Years | Additional comments |
|---|---|---|---|---|
| 1 | Forestry Commission, 2011. UK Forestry Standard (Rev 2011). UK. | Government target/ aspiration for forest area | All | Guidelines on Forests & Climate Change - table 4.1 gives aspirations of 100 thousand hectares of new woodland (or 5 thousand hectares per year) in Wales between 2010 and 2030, and to double the area of forest from 6% to 12% in Northern Ireland from 2006 to 2056 (approx 1700 hectares per year). |
| 2 | Defra, 2013. Government Forestry and Woodlands Policy Statement. UK. | Government target/ aspiration for forest area | All | Target of 12% woodland cover in England by 2060, an average planting rate of 5 thousand hectares per year. |
| 3 | Scottish Government, 2014. Low Carbon Scotland: Meeting Our Emissions Reduction Targets 2013-2027 | Government target/ aspiration for forest area | All | Target of 10 thousand hectares per year woodland creation in Scotland. |
| 4 | N/A | N/A | N/A | N/A |

## 21.3 Data
Table 21a

| Category | Forest area (000 ha) | |
|---|---|---|
| | 2020 | 2030 |
| Government target/aspiration for forest area | 3300 | 3500 |

Table 21b

| Category | Forest area (000 ha) |
|---|---|
| | **2013** |
| Forests earmarked for conversion | 0 |

## 21.4 Comments

| Category | Comments |
|---|---|
| Government target/aspiration for forest area | Annual woodland creation rates from Government targets/ aspirations have been applied to woodland areas at time that target was set, to estimate Government target/ aspiration for forest area in 2020 and in 2030. |
| Forests earmarked for conversion | A net increase in UK forest area is expected. |

## Other general comments

| |
|---|
| |