

# Quality Report: Woodland Area, Planting and Publicly Funded Restocking

## Introduction

Statistics on woodland area, planting and publicly funded restocking in the UK are compiled by the Forestry Commission from a number of sources:

- Estimates of GB woodland area from national forest inventories,
- Forest Service administrative records of FS woodland areas,
- Forest Service estimates of non-FS woodland area in Northern Ireland,
- Forestry Commission, Natural Resources Wales and Forest Service administrative records of new planting and restocking – FC/NRW/FS woodlands and grant schemes and
- Forest Stewardship Council ([www.fsc-uk.org](http://www.fsc-uk.org)) and follow-up enquiries with certificate holders for data on certified woodland areas.

## Relevance

The main uses of statistics on woodland area, planting and publicly funded restocking include:

- Statistics on woodland area, planting and restocking are used to inform government policy and resource allocation;
- Statistics on woodland area, often in the form of percentage land cover, are frequently used to provide context to UK forestry and land management issues;
- National indicators – woodland area and planting statistics are published in the Forestry Commission England Corporate Plan Performance Indicators, the Scottish Forestry Strategy Indicators (Forestry Commission Scotland) and the Woodland for Wales Indicators (Welsh Government);
- UK Government Departments and devolved administrations – statistics on woodland area, often combined with other figures on land use, are used in a number of statistical publications produced by others, including the Office for National Statistics (UK Environmental Accounts, Sustainable Development Indicators) and the Scottish Government (Key Scottish Environment Statistics);

- International reporting – Figures for woodland area in the UK are provided to international organisations; the Food and Agriculture Organisation of the United Nations (FAO) for the 5-yearly *Global Forest Resources Assessment* ([www.fao.org/forestry/fra/en](http://www.fao.org/forestry/fra/en)), and Forest Europe for the 4-yearly *State of Europe's Forests* ([www.foresteurope.org/reporting\\_SFM](http://www.foresteurope.org/reporting_SFM)). Data on planting and restocking also contribute to these reports;
- Figures for woodland area and new planting are used to compile the UK's Greenhouse Gas Inventory for the Land Use, Land Use Change and Forestry (LULUCF) sector, submitted to the United Nations Framework Convention on Climate Change (UNFCCC, [http://unfccc.int/national\\_reports/annex\\_i\\_ghg\\_inventories/national\\_inventories\\_submissions/items/8108.php](http://unfccc.int/national_reports/annex_i_ghg_inventories/national_inventories_submissions/items/8108.php)). Statistics on UK greenhouse gas emissions are published by the Department of Business, Energy and Industrial Strategy (BEIS) at [www.gov.uk/government/collections/uk-greenhouse-gas-emissions-statistics](http://www.gov.uk/government/collections/uk-greenhouse-gas-emissions-statistics).

Those responsible for the international and national reporting are consulted regularly to ensure that the statistics remain relevant to users.

### Accuracy

A number of checks are performed on the data to ensure accuracy, including checks against data for previous years.

Sampling standard errors are produced for the field survey of the National Forest Inventory. Estimates produced to date are available in the NFI reports at [www.forestry.gov.uk/inventory](http://www.forestry.gov.uk/inventory).

Figures are rarely revised between the provisional figures (released in June) and the final figures (released in September).

### Timeliness and punctuality

Provisional results are published in *Woodland Area, Planting and Restocking* in mid June, around 2.5 months after the end of the reference period (year to March).

Final results are published in *Forestry Statistics* at end September, 6 months after the end of the reference period (year to March).

## Accessibility and clarity

The annual *Forestry Statistics* publication, available on the Forestry Commission website at [www.forestry.gov.uk/statistics](http://www.forestry.gov.uk/statistics), provides the most comprehensive results, including background information on the sources, data collected, methodology, revisions and reporting. Excel versions of all tables are also available to download from *Forestry Statistics*. *Forestry Statistics* is published in line with the Forestry Commission's website accessibility statement.

Longer time series data, for new planting and restocking and for certified area, are published in accompanying tables to *Woodland Area, Planting and Restocking*. These tables are available to download from the Forestry Commission website in Excel and PDF formats.

Summary results are also published in *Forestry Facts & Figures*, available on the Forestry Commission website at [www.forestry.gov.uk/statistics](http://www.forestry.gov.uk/statistics).

## Comparability

Statistics on woodland area, planting and restocking have been produced for some time, with limited data available back to 1919. Woodland inventories have been run in Great Britain every 15 years or so, with slight differences in definitions of woodland between inventories. Certified woodland data have been collected since 2001 and annually since 2004. Complete new planting and restocking data for the UK are available since 1976.

The UK definition of woodland is land under stands of trees with a minimum size of 0.5 hectares and a canopy cover of at least 20% (25% in Northern Ireland), or having the potential to achieve this, including integral open space, and including felled areas that are awaiting restocking. For the National Forest Inventory (NFI), a minimum width of 20 metres is also applied. More details can be found on the NFI pages at [www.forestry.gov.uk/inventory](http://www.forestry.gov.uk/inventory). The UK definition differs slightly from the international definition which has a 10% minimum canopy cover (or the potential to achieve it) threshold.

The Forestry Commission's functions in Wales transferred to Natural Resources Wales on 1 April 2013. The figures shown for Natural Resources Wales in *Woodland Area, New Planting and Restocking*, in *Forestry Facts and Figures* and in *Forestry Statistics* only relate to woodland that was previously owned/managed by Forestry Commission Wales, and do not include estimates for other Natural Resources Wales woodland (previously owned/managed by the Countryside Council for Wales or the Environment Agency in Wales).

## Coherence

Statistics on woodland area are also available from the Countryside Survey ([www.countrysidesurvey.org.uk](http://www.countrysidesurvey.org.uk)). This sample survey is run at intervals of 8-9 years, most recently in 2007, 1998 and 1990. It reports approximately the same total woodland area, but very different figures for gains and losses. Unlike in forestry statistics, harvested areas and newly planted areas are assigned to other broad habitats until 25% canopy cover is achieved. The Countryside Survey estimate is therefore of actual woodland cover rather than woodland area.

Statistics on woodland cover are also available from the Land Cover Map (LCM) linked to each Countryside Survey; a more recent Land Cover Map 2015 is also available. The LCM is based on satellite imagery.

Statistics on land cover and land use are produced by Eurostat, from the Land Use/Cover Area frame Survey (LUCAS). Further details are available at <http://eusoils.jrc.ec.europa.eu/projects/Lucas/>.

## Revisions

The Forestry Commission's revisions policy sets out how revisions and errors to FC statistics are dealt with, and can be found at: [www.forestry.gov.uk/pdf/FCrevisions.pdf/\\$FILE/FCrevisions.pdf](http://www.forestry.gov.uk/pdf/FCrevisions.pdf/$FILE/FCrevisions.pdf).

Statistics on woodland area in Great Britain are potentially subject to major revision when results become available from new national forest inventories. Other statistics on woodland area and planting are not normally revised.

Information on significant revisions made to published statistics is available in the Annex.

## Other issues related to quality

The methodology and outputs relevant to UK woodland area, planting and restocking were reviewed in 2014. The review report is available at [www.forestry.gov.uk/pdf/mrwapr.pdf/\\$FILE/mrwapr.pdf](http://www.forestry.gov.uk/pdf/mrwapr.pdf/$FILE/mrwapr.pdf).

For statistics published annually to 2010, non-FC woodland area figures for Great Britain were extrapolated forward from 1995-99, taking account of new planting and sales of FC woodland, but making no adjustment for woodland converted to another land use. Statistics for FC woodland areas published annually to 2010 were obtained from FC administrative systems.

Data from the new National Forest Inventory have been used for estimates of both FC/NRW and non-FC/NRW woodland area since the 2011 edition of *Woodland Area, Planting and Restocking* (see Annex). Revised estimates for woodland areas in Great Britain, based on the National Forest Inventory, have been produced for 1998 to 2009, to give a consistent time series (enabling comparisons over time).

New planting estimates for England also include areas supported by the Woodland Trust and (until 2014-15) areas funded under Natural England's Higher Level Stewardship Scheme. Areas of land acquired by the National Forest Company for new planting have been included from *Woodland Area, Planting and Restocking: 2017 Edition* for 2015-16 and 2016-17.

Local estimates for private sector areas of planting and restocking which are not grant-aided were included for England, Wales and Scotland up to 2009-10, where possible. Estimates of non-grant-aided planting and restocking were relatively small (less than one thousand hectares annually), and it has been assumed that all of this area is broadleaves. A small estimate for broadleaved new planting without grant aid in Scotland in 2016-17 has also been included. No estimates have been included for restocking of Sitka spruce in Scotland, or for restocking in England, that are no longer supported by grants. It is assumed that there is no non-FS non-grant aided new planting and restocking in Northern Ireland.

The use of natural regeneration in non-clearfell systems may be increasing - particularly for broadleaves in England. These systems are not satisfactorily represented by measuring restocking area within any given year, and so broadleaf regeneration may be under-reported in this release and other statistics.

Sheila Ward/ Penelope Donohue  
IFOS-Statistics, Forest Research  
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## Annex: Significant revisions to published statistics

### Revisions arising from the National Forest Inventory

#### 2011 edition

Initial results from the new National Forest Inventory (NFI), providing revised estimates of woodland area at March 2010, were released in Spring 2011. The 2011 edition of *Woodland Area, Planting and Restocking* used these initial NFI results, resulting in an upward revision to the total woodland area in 2011 by 227 thousand hectares. This revision was largely a result of the new inventory identifying small areas of woodland not reported in the previous inventory (the 1995-99 National Inventory of Woodland and Trees) and methodology adjustments.

The rebasing of woodland area estimates to use the same definition of woodland as the National Forest Inventory also resulted in an upward revision by 72 thousand hectares to the estimated Forestry Commission woodland area. This change has also resulted in a revision to the certified woodland area estimates.

#### 2012 edition

The methodology used to estimate woodland area was further refined in the 2012 edition of *Woodland Area, Planting and Restocking*, to take into account additional and updated data from the NFI. Details of the changes and their potential impact on the figures were pre-announced in the *Methodology Note: Annual Woodland Area Estimates*, available at: [www.forestry.gov.uk/pdf/mnwoodarea.pdf/\\$FILE/mnwoodarea.pdf](http://www.forestry.gov.uk/pdf/mnwoodarea.pdf/$FILE/mnwoodarea.pdf)

These further refinements resulted in the following changes:

- very small (less than 0.5%) downwards revisions to the overall woodland area estimates in each country for 2010 and 2011 from those provided in *Forestry Statistics 2011* and *Forestry Facts & Figures 2011*;
- decreases in the conifer woodland area for 2010 and 2011 of 7% for GB (19% in England, 10% in Wales and 2% in Scotland); and
- increases in the broadleaf woodland area for 2010 and 2011 of 8% for GB (8% in England, 12% in Wales and 6% in Scotland).

In addition, revisions to earlier estimates of woodland areas (to produce a consistent time series, enabling comparisons over time) resulted in increases in overall woodland areas for 2009 and earlier years of up to 8% for GB (14% in England, 6% in Wales and 3% in Scotland).

As the Forestry Commission (and Forest Service) woodland area estimates are also used as the certified woodland areas for the Forestry Commission (and Forest Service), the revisions described above have also led to changes to the estimates for certified woodland area. This has resulted in a 1% increase to the Forestry Commission certified woodland area in Wales in 2011 and small changes (less than 0.5%) to the Forestry Commission certified woodland areas in England and in Scotland. Revisions to certified woodland areas for 2009 and earlier years, to produce a consistent time series, has resulted in increases to the Forestry Commission certified woodland area of up to 7% for England, 9% for Wales and 8% for Scotland.

### 2013 edition

Woodland area figures for 2012 were revised in June 2013 to take account of further checks on the NFI woodland area map.

The revisions to the woodland area map have resulted in very small (less than 0.3%) revisions upwards to the overall woodland area estimates in England and Wales for 2012 from those provided in *Forestry Statistics 2012*. For Scotland the revision was larger (0.8% upwards).

### 2014 edition

Woodland area figures for 2010 to 2013 were revised in June 2014 from those provided in *Forestry Statistics 2013* as a result of:

- The correction of an error (see [www.forestry.gov.uk/forestry/INFD-9FYF5R](http://www.forestry.gov.uk/forestry/INFD-9FYF5R)) in the estimate of non-FC broadleaved stocked areas in 2011, used in estimating conifer/broadleaf breakdowns of woodland area in Great Britain in 2010 and 2011;
- The use of estimated stocked areas at 2012 (first released in the National Forest Inventory reports *50 year forecast of softwood availability*, [www.forestry.gov.uk/forestry/infd-9jmelg](http://www.forestry.gov.uk/forestry/infd-9jmelg), and *50 year forecast of hardwood availability*, [www.forestry.gov.uk/forestry/infd-9jmemc](http://www.forestry.gov.uk/forestry/infd-9jmemc), on 30 April 2014) to estimate conifer/ broadleaf breakdowns of woodland area in Great Britain in 2012 and 2013;
- The revision of the 2013 woodland area to take account of further checks on the National Forest Inventory woodland area map.

Overall, these revisions have resulted in a very minor downwards revision of 2 thousand hectares (less than 0.1%) to the 2013 estimate of UK woodland area from the figure published in *Forestry Statistics 2013*. This comprised an increase of 12 thousand hectares (+1%) in the UK broadleaf area and a decrease of 14 thousand hectares (-1%) in the UK conifer area.

At a country level, the revisions to 2013 estimates for broadleaf and for conifer areas resulted in changes of -2% to +5%.

The woodland area figures for 2010 to 2012 that were published in Forestry Statistics 2013 (by country and by ownership) are unchanged as a result of these revisions.

As a result of the revisions above, the 2013 UK certified area was revised upwards by less than 0.1%.

For further details on the NFI, please refer to [www.forestry.gov.uk/inventory](http://www.forestry.gov.uk/inventory).

### 2015 edition

Woodland area figures at March 2014 have been revised from those provided in Forestry Statistics 2014 to take account of further checks on the NFI woodland area map. This resulted in very small revisions to the overall woodland area estimates in Wales (-0.2%), Scotland (+0.4%) and the UK (+0.2%).

### 2016 edition

Woodland area figures at March 2015 have been revised from those provided in Forestry Statistics 2015 to take account of updates to the NFI woodland area map. This resulted in very small revisions to the overall woodland area estimates in England (+0.1%).

### 2017 edition

Woodland area figures at March 2016 have been revised from those provided in Forestry Statistics 2016 to take account of updates to the NFI woodland area map. This resulted in very small revisions to the woodland area estimates in England, Wales and Scotland (<0.3%).



## Other revisions

Revisions to new planting and restocking data for 2015-16 and earlier years has resulted in:

- An increase of 0.1 thousand hectares in the new planting area for England, following inclusion of areas of land acquired for planting by the National Forest Company; and
- Increases of 0.2 thousand hectares in 2014-15 and 0.1 thousand hectares in 2015-16 in the restocking areas in Northern Ireland, following revisions to historic data by the NI Forest Service.

The estimate for the area of private sector new planting in England for 2011-12 was revised upwards by 2.4% in June 2015, with the availability of improved data.

Estimates for “other” woodland new planting were revised in June 2014 for 2010-11 to 2012-13 with the availability of improved data. The estimate for 2010-11 was revised upwards by 12%, while revisions for 2011-12 and 2012-13 were each smaller than 0.1%.

For Northern Ireland, FS restocking figures were revised upwards in June 2017 by 0.2 thousand hectares in 2014-15 and 0.1 thousand hectares in 2015-16. FS restocking figures for conifers in Northern Ireland for 2011-12 were revised upwards in June 2013 by 0.4 thousand hectares from those provided in *Forestry Statistics 2012* as a result of changes to the administrative systems.

The introduction of the Northern Ireland Woodland Register has resulted in an upward revision of 17 thousand hectares (19%) in the Northern Ireland woodland area at March 2012 presented in *Forestry Statistics 2012* and *Forestry Facts & Figures 2012* from the figures in *Woodland Area, Planting and Restocking: 2012 Edition*.

Revisions to the 2011-12 new planting and restocking figures have been made to take account of revised planting data for the Forest Service. This has resulted in a decrease of around 0.5 thousand hectares (48%) in the level of restocking in Northern Ireland presented in *Forestry Statistics 2012* and *Forestry Facts & Figures 2012* from the figure previously released.

The figures for non-Forestry Commission new planting in Wales in 2000-01 to 2009-10 were revised upwards between *Forestry Statistics 2010* (table 1.12) and the 2011 edition of *Woodland Area, Planting and Restocking* (and accompanying time series data), by up to 0.1 thousand hectares per year. This amendment was made to include grant aided planting under the Tir Gofal agri-environment scheme, administered by the Welsh Assembly Government. A further revision was made for *Forestry Statistics 2011* (and accompanying time series data), to improve the estimates of new planting in Wales from the Woodland Grant Scheme. This has resulted in changes of between -0.1 and +0.1 thousand hectares per year for non-Forestry Commission new planting in Wales between 2001-02 and 2008-09.

The figures for new planting and restocking by the Forestry Commission in England in 2004-05 were revised upwards in 2006 publications, from 0.0 and 1.6 thousand hectares to 0.1 and 1.8 thousand hectares respectively. Figures for 2004-05 had been reported and published as net area, but were revised to include a standard estimate for integral open space, for consistency with other years and other planting data.

The figures for new planting by the Forestry Commission in England in 2001-02 and 2002-03 were revised upwards between *Forestry Facts & Figures 2003* (table 4) and *Forestry Statistics 2003* (table 1.11), from 0.1 and 0.0 thousand hectares to 0.6 and 0.7 thousand hectares respectively. This amendment was made to correct the figures extracted from administrative systems, which had incorrectly excluded new planting by the Forestry Commission in community forests, which had been recorded separately.

When results from the 1995-99 National Inventory of Woodland and Trees were incorporated in 1999 and 2000, the total woodland area was revised up by 238 thousand hectares, largely as a result of the new inventory identifying areas of broadleaves not reported in previous censuses.