

Forestry Statistics 2018

Introduction, Glossary, Sources

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Introduction

Forestry Statistics is a compilation of statistics on woodland, forestry and primary wood processing in the UK.

Where possible, statistical information in this publication covers the whole of the United Kingdom, and is broken down to give figures for England, Wales, Scotland and Northern Ireland. We would like to acknowledge the contribution of the Welsh Government, Natural Resources Wales and Northern Ireland's Forest Service in providing a wide range of statistics for this publication, which has made it possible to have more comprehensive coverage of the UK. However, there are some topics for which data are currently only available for some parts of the UK, and these tables are labelled accordingly.

The tables within each chapter (including data for charts), along with longer time series (in Excel and PDF formats), are available to download from the Statistics Data Downloads page at <https://www.forestresearch.gov.uk/tools-and-resources/statistics/data-downloads/>. Further information on data sources and methodology are provided in the Sources chapter.

Selected statistics from this publication are provided in "Forestry Facts and Figures 2018", available at <https://www.forestresearch.gov.uk/tools-and-resources/statistics/forestry-statistics/>.

The Forestry Commission also publishes a range of other Official Statistics, available at www.forestresearch.gov.uk/statistics/.

A National Statistics publication

The United Kingdom Statistics Authority has designated these statistics as National Statistics, in accordance with the Statistics and Registration Service Act 2007 and signifying compliance with the Code of Practice for Official Statistics.

Designation can be broadly interpreted to mean that the statistics:

- meet identified user needs;
- are well explained and readily accessible;
- are produced according to sound methods, and
- are managed impartially and objectively in the public interest.

Once statistics have been designated as National Statistics it is a statutory requirement that the Code of Practice shall continue to be observed.

For more information about National Statistics and the UK Statistics Authority visit: www.statisticsauthority.gov.uk.

Forestry Commission's statistical release practices

The Forestry Commission aims to release statistics as soon as they are available. All of our National Statistics and other Official Statistics publications are available on our website www.forestresearch.gov.uk/statistics/. Release dates are published on our website for the year ahead. Publications are made available at 9.30 am on the day of release.

Forestry Commission's statistical revisions policy

Revisions to statistics can occur when further data become available or errors are corrected. The Forestry Commission will normally revise statistics when the figures next appear in any publication. However, if the revision is significant (i.e. resulting in a major change to the published figures), a note showing the revisions will be published as soon as possible on the Forestry Commission website and distributed to all known recipients. In addition, the web versions of any current publications affected will be revised. See our full revisions policy at www.forestryresearch.gov.uk/documents/4355/FCrevisions.pdf for further information.

Quality

Summary information on quality is available in the Sources chapter of this publication. More details are provided in quality reports for individual topics, available at www.forestryresearch.gov.uk/tools-and-resources/statistics/about-our-statistics/code-of-practice/quality-of-official-statistics/.

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Glossary

Ancient woodland

Woodland which has been in continuous existence since 1600 (1750 in Scotland).

Awaiting validation

Status for a Woodland Carbon Code project or group that is undergoing assessment by a certification body.

Bioenergy

Energy from any fuel that is derived from biomass.

Biomass

Material that is derived from living, or recently living, biological organisms.

Biosecurity

A set of precautions that aim to prevent the introduction and spread of harmful organisms. These may be pests, pathogens or invasive species.

Brash

Branch wood and leaf material that is generally too small in diameter to be considered part of the timber product from a harvesting site.

Briquettes

Similar to wood pellets (see below) but larger, briquettes are made from compressed wood fibres and used for heating.

Broadleaves

Trees that do not have needles or cones, such as oak, birch and beech. A few, such as alder, have cone-like structures for their seeds which are not true cones.

Cement bonded particleboard

Sheet material manufactured under pressure, based on wood and other vegetable particles bound with hydraulic cement and possibly containing additives.

Chipboard

(see Particleboard).

Clearfell areas

Sites where all trees have been felled at once. In non-clearfell areas, only some trees are felled at any one time.

Clustering

A sampling technique where the entire population is divided into groups, or clusters, and a random sample of these clusters is selected. All (or a selection of) observations in the selected clusters are included in the sample. Cluster sampling is often used when a random sample would produce a list of subjects so widely scattered that surveying them would prove to be far too expensive.

Confidence interval

An estimated range of values that is likely to include an unknown population parameter (i.e. a fixed value for the population as a whole). The confidence interval around an estimate is derived from the sample data, and is used to indicate the reliability of the estimate.

Confor

Confederation of Forest Industries.

Conifers

Trees with needles and cones, such as spruce, pine and larch.

Conversion factor

Numerical factor by which a quantity that is expressed in one set of units must be multiplied in order to convert it into another set of units.

Coppice

Trees that are cut near ground level (or sometimes higher, in which case they are called pollards), causing them to produce many small shoots. These shoots are harvested every few years at a relatively early age for products such as staves, fencing, fuel and charcoal. "Coppice with standards" includes scattered trees that are left to grow as normal ("standards").

Dead wood

Non-living woody biomass not contained in the litter, either standing or lying on the ground. For wood carbon reporting, the minimum was 15 cm diameter for standing and lying deadwood, and 7 cm dbh (diameter at breast height) for fallen trees.

Defra

Department for Environment, Food and Rural Affairs.

Deliveries

The quantities of UK-grown roundwood that are delivered to processors (mills) or for other uses (such as woodfuel and exports). Note that for sawmills and round fencing mills, the deliveries figure reported is actually the quantity of roundwood consumed by the mill, which may differ from the true deliveries figure if the levels of input stocks vary.

Direct production

Timber that is sold after the trees have been felled by the woodland owner or their contractors.

Establishment

The first five to ten years or formative period that ends once young trees are of sufficient size that, given adequate protection, they are likely to survive at the required stocking.

EU

European Union. It currently comprises 28 member states: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the UK.

Eurostat

The statistical office of the European Union, situated in Luxembourg. Its task is to provide the European Union with statistics at European level that enable comparisons between countries and regions.

FAO

United Nations Food and Agriculture Organisation, responsible for the Forest Resources Assessment and for compiling international statistics on production and trade of wood products.

Fibreboard

Panel material with thickness equal to or greater than 1.5mm, manufactured from lignocellulosic fibres with application of heat and/or pressure. The bond is derived either from the felting of the fibres and their inherent adhesive properties or from a synthetic binder added to the fibres.

Forest

In the United Kingdom, there is no formal definition of "forest"; the term is often used for large woodland areas (especially conifers) or for old Royal hunting preserves such as the New Forest or the Forest of Dean.

Forest Service (FS)

The agency of the Northern Ireland Department of Agriculture, Environment and Rural Affairs responsible for forestry matters in Northern Ireland.

Forestry Commission (FC)

The government department responsible for forestry matters in England, Scotland and (until March 2013) Wales. The Forestry Commission's functions in Wales transferred to a new organisation, Natural Resources Wales, on 1 April 2013. The responsibility for forestry is devolved.

FSC

Forest Stewardship Council.

GDP deflator

Gross Domestic Product at market prices deflator. Gross Domestic Product (GDP) is a measure of the total economic activity. Growth in GDP reflects both growth in the economy and price change (inflation). Applying a GDP deflator to time series of prices or price indices removes the effects of inflation to enable a comparison of changes in price that are not caused by inflation.

Great Britain (GB)

England, Wales and Scotland.

Green tonne

The weight measurement of timber freshly felled before any natural or artificial drying has occurred.

Gross Value Added (GVA)

A measure of the contribution to the economy of each individual producer, industry or sector in the United Kingdom.

Growing stock

The volume of timber in living trees. It is also often referred to as the standing volume.

Hardwood

The wood of broadleaved trees, such as oak, birch and beech; a term sometimes used for the broadleaved trees themselves.

HM Revenue & Customs (HMRC)

The United Kingdom's tax authority.

Hectare (ha)

Unit of area defined as 10,000 square metres (100 m by 100 m), approximately equivalent to 2.47 acres.

High forest

Trees capable of growing to be suitable for timber production (compare with coppice).

Increment

The growth rate of standing trees.

Kyoto Protocol

A protocol to the United Nations Framework Convention on Climate Change (UNFCCC) that set binding obligations on the industrialised countries to reduce their emissions of greenhouse gases.

Litter

Non-living biomass with a diameter less than the minimum for dead wood, lying dead in various states of decomposition above the soil.

Long term contracts (LTC)

Sales of roundwood, felled or standing, to customers over a period of more than one year. The second and subsequent years of a long term contract are negotiated after the sale of the first year's volume.

Medium-density fibreboard (MDF)

Wood fibreboard made by a dry process in which the primary bond is derived from a bonding agent, and having a density usually exceeding 600 kg per cubic metre.

Movement Licence

Any movement of Phytophthora-affected wood from a forest site (or subsequent move of affected material from a mill or processing site) requires a Movement Licence to be issued by the Forestry Commission.

Native species

Species that have arrived and inhabited an area naturally, without deliberate assistance by man. For trees and shrubs in the United Kingdom usually taken to mean those present after post-glacial recolonisation and before historic times. Some species are only native in particular regions - hence locally native.

Natural colonisation

The creation of new woodland by natural means, i.e. without sowing or planting.

Natural regeneration

The regeneration of existing woodland by natural means, i.e. without sowing or planting.

Natural Resources Wales (NRW)

The organisation responsible for advising the Welsh Government on the environment, created on 1 April 2013. NRW is responsible for the functions previously carried out by the Environment Agency in Wales, the Countryside Council for Wales and Forestry Commission Wales.

New planting

Establishing woodland on ground that was not woodland in the recent past.

NFI

National Forest Inventory.

NI

Northern Ireland.

NIWT

1995-99 National Inventory of Woodland and Trees.

Nominal terms

Refers to prices at the time of sale. See also "real terms".

ONS

Office for National Statistics.

Oriented strand board (OSB)

Multi-layered board made from strands of wood of a predetermined shape and thickness together with a binder. The strands in the external layers are aligned and parallel to the board length or width.

Oven dry tonnes (ODT)

Measurement of quantity without moisture (i.e. 0% moisture content).

Overbark

The volume of wood including the bark. Can be either standing volume or felled volume.

Particleboard

Panel material manufactured under pressure and heat from particles of wood (wood and chipboard flakes, chips, shavings, sawdust), with the addition of an adhesive.

PAYE

Pay-as-you-earn tax.

Photosynthesis

Chemical process carried out by green plants in the presence of light, which combines carbon dioxide from the atmosphere with hydrogen from water in the soil to form sugars as food for the growing plant. Oxygen is a by-product of the reaction.

Phytophthora ramorum

Fungus-like pathogen of plants that causes extensive damage and mortality to trees (including Japanese larch) and other plants.

Plywood

Wood-based panel consisting of an assembly of layers bonded together with the direction of the grain in adjacent layers, usually at right angles (not currently made in the UK).

Price index

A measure of the proportionate, or percentage, changes in a set of prices over time. Commonly used indices include the Laspeyres index, Paasche index and Fisher index.

Pulp

A fibrous material produced by mechanically or chemically reducing wood into their component parts from which pulp, paper and paperboard sheets are formed after proper slushing and treatment or used for dissolving purposes (dissolving pulp or chemical cellulose) to make rayon, plastics, and other synthetic products. Sometimes called wood pulp.

Quota sampling

A method of sampling where interviewers are each given a fixed number of subjects of specified type to interview.

Real terms

Refers to prices at a common date. Prices in real terms are derived by applying a deflator to remove the effects of general inflation to enable a comparison of changes over time that have not resulted from inflation. See also "nominal terms".

Recovered wood

Either industrial process by-products (e.g. offcuts or fines from a board manufacturing mill, furniture factory, joinery or construction) or from post-consumer waste wood (e.g. pallets, construction waste) after the stage of recovery or reclamation for purposes of recycling.

Restocking

The replacement of trees on areas of woodland that have been felled; this can be done either through replanting or natural regeneration.

Roadside sales

Sales of timber after harvesting. The owner is responsible for getting the trees felled and extracting them to the side of the road, ready to take away.

Roundwood

Trunk or branch wood, generally with a top diameter of 7 cm or more. Can be in the form of logs (14 cm top diameter or more) or small roundwood (7 to 14 cm).

Sawlogs

Material of at least 14 cm top diameter that is destined to be sawn into planks or boards.

Sawmill products

Materials including wood chips, sawdust and bark which arise during the conversion of logs to sawn timber. Most are used as inputs to other wood processing industries, sold for bioenergy or sold for other uses. Formerly called sawmill residues or co-products.

Sawnwood

Sawn timber - timber that has been cut into planks or boards from logs.

Scottish Government (SG)

The executive branch of the devolved government of Scotland.

Scrub

Area of poorly formed trees or bushes unsuitable for conversion to timber.

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.

Short rotation coppice (SRC)

An energy crop, usually consisting of densely planted, high yielding varieties of willow or poplar.

Silviculture

The care and cultivation of forest trees.

Softwood

The wood of coniferous trees, such as spruce, pine and larch; a term sometimes used for the coniferous trees themselves.

Stand

A relatively uniform collection of trees (from either planting or natural regeneration) composed, for example, of a single species or a single age class.

Standing sales

Sales of timber while the trees are still standing. The buyer is responsible for getting the trees felled and removed from the site.

Standing volume

Measurement of quantity before trees are felled. Usually expressed as cubic metres overbark standing.

Statistical significance

A statistical assessment of whether observations reflect an actual pattern rather than just chance.

Statutory Plant Health Notice (SPHN)

Statutory Plant Health Notices, requiring the felling of infected trees, are issued by the Forestry Commission/ Natural Resources Wales/ Forest Service to prevent the spread of pests and diseases. They are currently being issued to control the movement of material infected with *Phytophthora ramorum*.

Stemwood

Wood from the stem and main branches of a tree, excluding the stump and small branches.

Stocked area

Area stocked with living trees. This differs from the woodland area (see below) in that felled areas awaiting restocking and areas of integral open space are generally excluded from the stocked area.

Stratification

A sampling technique where the entire population is divided into groups, or strata, and a random sample is selected within each group. Stratified sampling is often used to ensure that sufficient numbers from each group are included in the overall sample, particularly where results are required for each group.

Stump

The above-ground base part of a tree that would usually remain after felling.

Thinning

A proportion of stems removed in order to give the best stems space and light to grow into a more valuable crop. This is usually carried out some time after canopy closure and may be repeated at intervals. A temporary reduction in standing volume will result.

UKFPA

United Kingdom Forest Products Association.

UN ECE

United Nations Economic Commission for Europe, responsible for compiling international statistics on production and trade of wood products for Europe, the Russian Federation and North America.

Underbark

The volume of wood excluding the bark.

United Kingdom (UK)

Great Britain and Northern Ireland.

Validated

The initial evaluation of a project or group against the requirements of the Woodland Carbon Code. Upon completion a project/ group will receive a 'Validation Opinion Statement'. The project/ group will then be certified for a period of up to five years.

VAT

Value Added Tax.

Veneer

A thin layer of wood, produced by peeling or slicing, used for decorative purposes. Veneers are usually applied to less expensive or less attractive substitutes including solid timber, wood-based sheet materials, etc.

Verified

Verification is the evaluation of a Woodland Carbon Code project as it progresses to confirm the amount of CO₂ sequestered to date as well as that it continues to meet the requirements of the Code.

Weighting

A set of factors assigned to survey responses to ensure that the resulting weighted results are representative of the population as a whole.

Welsh Government

The executive branch of the devolved government of Wales.

Wood pellets

Sawdust or wood shavings compressed into uniform diameter pellets. They are often burned for heat or energy, but may also be used for other purposes (such as horse bedding or cat litter).

Woodland

Land under stands of trees with 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 due to be restocked. Generally (including the UK) woodland is defined as having a minimum area of 0.5 ha.

Wood Raw Material Equivalent (WRME)

The volume of trees required to produce a wood product. Can be measured underbark or overbark.

11 Sources

This chapter provides background information on the statistics presented in this release. It covers the data sources and methodology used to produce the statistics, information on quality measures and on any revisions to historic data and links to further information.

Further details on quality are provided in quality reports for selected topics and for individual surveys, available from our Quality web page at

www.forestresearch.gov.uk/tools-and-resources/statistics/about-our-statistics/code-of-practice/quality-of-official-statistics/

As a National Statistics output, this publication concentrates on topics for which the data meet National Statistics quality standards. However some topics outside the scope of National Statistics are included, to give a more rounded picture; any such tables are footnoted as "outside the scope of National Statistics". This means that they have not been subject to National Statistics quality assurance procedures, but does not necessarily imply that they are of poorer quality. This edition of Forestry Statistics includes the following tables and charts that are outside the scope of National Statistics:

- Table 1.2: Woodland area in the UK (time series);
- Tables 1.6 to 1.11, figures 1.3 to 1.4b: National Forest Inventory;
- Table 1.15: Felling licences;
- Tables 1.16a and 1.16b: Statutory Plant Health Notices;
- Table 2.4a: Softwood availability forecasts;
- Table 2.4b: Hardwood availability forecasts;
- Table 2.30: Recycled wood used for woodfuel;
- Tables 4.1 to 4.4, Figures 4.2 to 4.3: UK forests and climate change;
- Figure 5.2: Tree health;
- Tables 5.2a and 5.2b: Woodland fires;
- Tables 6.1 to 6.10, Figure 6.1: Recreation;
- Table 8.2, figure 8.2: IPD UK Forestry Index;
- Tables 9.1 to 9.6, Figures 9.1 to 9.7: International forestry.

11.1 Sources: Woodland area and planting

Introduction

The definition of woodland in United Kingdom forestry statistics is land under stands of trees with a canopy cover of at least 20% (or having the potential to achieve this), including integral open space, and including felled areas that are awaiting restocking. There is no minimum height for trees to form a woodland at maturity, so the definition includes woodland scrub but not areas with only shrub species such as gorse or Rhododendron.

In this report, statistics based on the National Forest Inventory (NFI), refer to woods and forests of at least 0.5 hectares, as mapped through the NFI. Previously, figures based on the 1995-99 National Inventory of Woodland and Trees included sample-based estimates for woods and forests between 0.1 hectares and 2.0 hectares in addition to mapped areas of 2.0 hectares or over. Both definitions are slightly different than those used internationally which are based on 10% canopy cover, a minimum height at maturity of 5m and minimum area of 0.5 hectares.

Integral open space is included in woodland area figures derived from the National Forest Inventory if the areas of open space are less than 0.5 hectares; larger areas are mapped out and excluded from the woodland area figures. This differs slightly from the approach used for the National Inventory of Woodland and Trees, where areas of open space of up to 1.0 hectare were included as woodland.

Woodland includes native and non-native trees; semi-natural and plantation areas. Woodland habitat types are not currently differentiated in these statistics.

Most public sector woodland is owned by or managed by the Forestry Commission (FC) in England and Scotland, Natural Resources Wales (NRW) in Wales, or the Forest Service (FS) in Northern Ireland. Woodland owned by local authorities, the Ministry of Defence, non-government organisations including the Woodland Trust and other public sector bodies are included in "private sector woodland".

The Natural Resources Wales woodland areas and land areas shown in this release relate to areas previously owned or managed by Forestry Commission Wales. They exclude any areas previously owned or managed by other parts of Natural Resources Wales, such as the former Environment Agency in Wales and the former Countryside Council for Wales.

The following pages provide more detail on the data sources and methodology used to produce statistics on woodland area and planting. A quality report on Woodland Area, Planting and Restocking is available from our website at www.forestresearch.gov.uk/tools-and-resources/statistics/about-our-statistics/code-of-practice/quality-of-official-statistics/.

11.1.1 Sources: Woodland area

Data Sources and Methodology

Woodland Area

Data on woodland area in the UK presented in this release are derived from the following sources:

- Forestry Commission and Natural Resources Wales administrative records of FC/NRW land areas;
- National Forest Inventory (NFI) woodland map (GB);
- Statistics on new planting in Great Britain;
- Northern Ireland Woodland Register;
- Forest Service administrative records of FS woodland areas and
- Forest Service estimates of non-FS woodland area in Northern Ireland.

Estimates of woodland area in Great Britain are based on figures produced from forest inventories. Until recently, forest inventories in Great Britain were undertaken every 15 years or so. The current National Forest Inventory (NFI), unlike previous inventories, is planned to run on a continuous 5-year cycle.

As forest inventories are generally not designed to produce annual figures, a process is required for updating the results on an annual basis to take account of changes in woodland area. The methodology currently used to calculate annual woodland area estimates is described below.

The data processing takes place in Excel. The main outputs are aggregates from the source data, or breakdowns expressed as percentages, and do not require complex data analysis techniques.

- 1.** For Great Britain, woodland area estimates are based on the latest NFI woodland area map of Great Britain available. In this release, woodland area estimates at March 2017 and at March 2018 are both based on the provisional NFI woodland area map at March 2017.
- 2.** The map is overlaid with a map of Forestry Commission and Natural Resources Wales (ex Forestry Commission Wales only) land, to enable a breakdown by ownership to be estimated. This also enables FC/NRW "other land" areas to be derived (Table 1.5). For woodland area estimates at March 2017, FC/NRW legal boundaries at March 2017 are used, and for estimates at March 2018, FC/NRW legal boundaries at March 2018 are used.
- 3.** The woodland area breakdown by type of woodland (conifer or broadleaf) is estimated from the conifer/broadleaf breakdown of **stocked** woodland area, with areas of felled and open space allocated to conifer or broadleaf pro-rata. Estimates for stocked areas at March 2012 derived from NFI interim field survey results are updated to take into account new planting since that date, for which the conifer/broadleaf breakdown is also known. As the area of new planting is much smaller than total woodland area, the effect of this update on the overall conifer/broadleaf breakdown is very small.

The steps above are sufficient to determine woodland area estimates at March 2017, broken down by ownership and conifer/broadleaf.

To obtain estimates at March 2018, two more steps need to be performed, which are described below.

4. Net ownership transfers of woodland between private sector and FC/NRW from March 2017 to March 2018, as inferred by the differences in FC/NRW legal boundaries between those two dates, are broken down by conifer/broadleaf. The breakdown is based on NFI Interpreted Forest Type (IFT) at those dates, derived from photographic interpretation of the NFI woodland map. The "Conifer" and "Mixed mainly conifer" (>80% conifer) IFT categories are assigned to conifers, and the "Broadleaves" and "Mixed mainly broadleaved" (>80% broadleaved) categories are assigned to broadleaves. For the other IFT categories, the conifer/broadleaf breakdown is allocated pro-rata based on the conifer/broadleaf breakdown of woodland area by ownership (private sector or FC/NRW) before transfer.

5. The woodland area figures are then updated to March 2018 by adding areas of new planting in 2017-18, broken down by ownership and type.

Information on previous methodologies can be found in the Methodology Note: Annual Woodland Estimates produced in May 2012, on the Methodology and Outputs web page at www.forestresearch.gov.uk/tools-and-resources/statistics/about-our-statistics/methodology-and-outputs/.

The methodology and outputs relevant to UK woodland area, planting and restocking were reviewed in 2014. The review report is available at www.forestresearch.gov.uk/tools-and-resources/statistics/about-our-statistics/methodology-and-outputs/.

The provisional 2017 woodland map differs by around 23 thousand hectares (<1%) from the figures for woodland area provided in the NFI report "Tree cover outside woodland in Great Britain", that were based on the NFI 2013 map and the National Tree Map™ (NTM™), the latter in combination with samples of visual aerial photograph interpretation and field sampling outside of areas on the NFI map. The estimates in the tree cover report are higher because they include estimates of woodland area outside the NFI map derived from the other sources. It is intended to publish revised woodland area estimates that will bring these two figures into line by reporting an updated, calibrated NFI woodland area that incorporates these additional areas and uses analysis of the main NFI fieldwork survey to exclude currently mapped areas that are not woodland. Further information on the methodology used by the National Forest Inventory and comparisons of results from the NFI and previous woodland area estimates is available at www.forestresearch.gov.uk/tools-and-resources/national-forest-inventory/.

Figures for Northern Ireland (Forest Service and non-Forest Service woodland) are provided by the Forest Service (<http://www.daera-ni.gov.uk/topics/forestry>). Woodland areas from 2012 provided in this release have been obtained from the NI woodland register.

The NI woodland register is based on a combined dataset derived from fourteen individual datasets from statutory bodies including Forest Service, Land and Property Services, and the Northern Ireland Environment Agency, and non statutory bodies which include

Woodland Trust and National Trust. The minimum area of woodland that has been included in the register is 0.1 hectares.

The use of the NI woodland register has resulted in a step change in the non-Forest Service woodland areas reported for Northern Ireland. This should be interpreted as an improvement in the data reported, rather than an actual increase in woodland area.

Further information on administrative sources can be found at:

www.forestresearch.gov.uk/tools-and-resources/statistics/about-our-statistics/code-of-practice/administrative-sources/.

Certified woodland area

Data on certified woodland areas are obtained from the Forest Stewardship Council (FSC), and contact with individual land owners and managers. Some of the certified woodland has dual certification, i.e. it is certified under both the FSC scheme and the Programme for the Endorsement of Forest Certification (PEFC) scheme.

The data collected from FSC are the areas that are certified for each certificate holder. Follow-up enquiries are then made with larger certificate holders to check the certified areas and to provide a country breakdown.

As all FC/NRW/FS woodlands are certified, the total woodland area (as derived above, from the NFI map and FC boundaries and from Forest Service administrative records) is used, rather than the area provided on the certificates.

Quality

The statistics on woodland area presented here refer to woodland as a land use rather than as a land cover, so felled areas and small areas (less than 0.5 ha) of open space are included within the definition of woodland. Some statistics on woodland area as a land cover are available from other sources (e.g. Countryside Survey 2007, www.countryside.gov.uk, and associated Land Cover Map; a more recent Land Cover Map 2015 is also available).

Detailed information on the quality of the woodland area statistics presented in this publication is available in the "Quality Report: Woodland Area, Planting and Restocking" at www.forestresearch.gov.uk/tools-and-resources/statistics/about-our-statistics/code-of-practice/quality-of-official-statistics/. Further quality information on FC Official Statistics is also available from this location.

Revisions

Figures at March 2018 have not been revised since their previous release in "Woodland Area, Planting and Publicly Funded Restocking: 2018 Edition".

Information on revisions made since "Forestry Statistics 2017" are provided in "Woodland Area, Planting and Publicly Funded Restocking: 2018 Edition".

Information on significant revisions to published statistics is provided in the quality report on Woodland Area, Planting and Restocking, available from our Quality web page at

www.forestryresearch.gov.uk/tools-and-resources/statistics/about-our-statistics/code-of-practice/quality-of-official-statistics/.

The Forestry Commission's revisions policy sets out how revisions and errors are dealt with and can be found at www.forestryresearch.gov.uk/documents/4355/FCrevisions.pdf.

Further information

Accompanying tables to this release, available at www.forestryresearch.gov.uk/tools-and-resources/statistics/statistics-by-topic/woodland-statistics/, provide longer time series data by country for certified woodland.

Figures for woodland area in the UK are provided to international organisations every 4-5 years; to the Food and Agriculture Organisation of the United Nations (FAO) for the "Global Forest Resources Assessment" (www.fao.org/forest-resources-assessment/en/), and to Forest Europe for the "State of Europe's Forests" (<https://foresteurope.org/>).

Figures for woodland area are also 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, <https://unfccc.int/process-and-meetings/transparency-and-reporting/reporting-and-review-under-the-convention/greenhouse-gas-inventories-annex-i-parties/national-inventory-submissions-2018>). Summary factsheets produced by the Department for Business, Energy and Industrial Strategy (previously the Department of Energy and Climate Change), are available at www.gov.uk/government/publications/uk-greenhouse-gas-inventory-summary-factsheets.

Release schedule

Woodland area and certified woodland area data are released twice a year. Provisional figures are published in Woodland Area, Planting and Publicly Funded Restocking (to be renamed Provisional Woodland Statistics from 2019) in early June. Final figures are released in Forestry Statistics at the end of September.

Provisional figures for woodland area and certified woodland area at March 2019 will be published on 13 June 2019 in "Provisional Woodland Statistics: 2019 Edition".

Final results for woodland area and certified woodland area at March 2019 will be published on 26 September 2019 in "Forestry Statistics 2019" and "Forestry Facts & Figures 2019".

11.1.2 Sources: Woodland Inventories

Woodland Inventories

The current National Forest Inventory is the first continuous inventory of British woodlands and is being conducted on a five year cycle. Prior to the National Forest Inventory, a series of one-off woodland inventories took place in Great Britain every 15 years or so.

Most inventories used slightly different definitions of woodland, so some apparent changes in area over time are due to changing definitions. The principal differences for inventories since 1905 are:

- **1905** Felled areas and scrub were not included.
- **1924** Undertaken by questionnaire; woods smaller than 2 acres (0.8 hectares) were not included.
- **1947** Woodlands with an area of less than 5 acres (2 hectares) were not included.
- **1965** Woodlands with an area of less than 1 acre (0.4 hectares) were not included.
- **1980** Woodlands with an area of less than 0.25 hectares were not included.
- **1995-99** Woodlands with an area of 0.1-2 hectares were included on a sample basis; some woodland missing from earlier surveys was included.
- **2010 on** All woodlands with an area of 0.5 hectares or more have been included; all woodlands below 0.5 hectares have been excluded.

Estimates of woodland area prior to 1905 have been obtained from a variety of sources, including:

- Domesday Survey of England - for information in 1086;
- Scottish Woodland History (TC Smout ed, 1997) - for estimate for end Middle Ages in Scotland;
- Roy maps c1750 - for Scotland 17th Century estimate.

National Forest Inventory

In the latest inventory, a digital map based on aerial photography, satellite imagery and other data sources has been produced, from which estimates of total woodland areas have been derived. Data are currently being collected for one hectare sample squares, covering a wide variety of topics, including ownership type, species and age.

Initial results for 2010 were published for countries (Great Britain, England, Wales, Scotland) in Spring 2011. Interim results, based on field survey data combined with information from the NFI map, have since been published on the National Forest Inventory web pages at www.forestresearch.gov.uk/tools-and-resources/national-forest-inventory/.

Further information on administrative sources can be found at: www.forestresearch.gov.uk/tools-and-resources/statistics/about-our-statistics/code-of-practice/administrative-sources/

11.1.3 Sources: New planting & restocking

New planting & restocking

Introduction

New planting is the creation of new areas of woodland. Restocking is the replanting of areas of woodland that have been felled. New planting can use planting/seeding or natural colonisation. Restocking can also use planting/seeding or natural regeneration.

Data sources and methodology

Information about Forestry Commission, Natural Resources Wales and Forest Service new planting and restocking comes from administrative systems. Information about other woodland has come principally from grant schemes, including the Countryside Stewardship in England, English Woodland Grant Scheme (EWGS), Glastir in Wales, Better Woodlands for Wales (BWW), Forestry Grant Scheme in Scotland, Rural Development Contracts in Scotland, Scottish Forestry Grant Scheme (SFGS) and Woodland Grant Scheme (WGS).

Areas receiving grant are allocated to years by date of payment. For natural colonisation and regeneration, the areas are generally those for which the second instalment of grant has been paid during the year. The second instalment is approved when woodland reaches a certain stage and density of growth, so this information corresponds approximately to the amount of new and restocked woodland created.

The coverage and level of grant support differ across schemes, so that figures on grant-aided planting are not directly comparable between countries or over time. Grant support for restocking of conifers changed with the introduction of Rural Development Contracts in Scotland in 2008. As a result, grant aid is no longer available for restocking with Sitka spruce in many cases. This will have led to a reduction in areas of private sector restocking that is grant-aided and therefore reported for Scotland.

New planting estimates for England also include areas supported by the Woodland Trust and areas funded by Natural England (High Level Stewardship Scheme/ Countryside Stewardship). From 2016-17, the estimated area of new planting includes new woodland creation supported by the Woodland Trust under the MOREwoods and Partnerships England projects. From 2017-18, the estimated area of new planting also includes new woodland creation supported by the Environment Agency.

Areas of land acquired by the National Forest Company for new planting have been included from 2015-16. To avoid potential double counting, areas of new planting believed to be supported by grant aid or by Woodland Trust have been excluded.

Local estimates for private sector areas of planting and restocking that 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. 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 private sector non-grant aided new planting and restocking in Northern Ireland.

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

Figures for Northern Ireland (Forest Service and private sector woodland) are provided by the Forest Service (www.daera-ni.gov.uk/topics/forestry).

Further information on administrative sources can be found at:

www.forestresearch.gov.uk/tools-and-resources/statistics/about-our-statistics/code-of-practice/administrative-sources/.

The methodology and outputs relevant to UK woodland area, planting and restocking were reviewed in 2014. The review report is available at www.forestresearch.gov.uk/tools-and-resources/statistics/about-our-statistics/methodology-and-outputs/.

Revisions

Figures for 2017-18 are final; provisional figures were previously released in "Woodland Area, Planting and Publicly Funded Restocking: 2018 Edition".

Figures have not been revised from those provided in "Woodland Area, Planting and Publicly Funded Restocking: 2018 Edition", although a revision has been made to the supporting data, to correct an error in the calculation of total broadleaved new planting + restocking in the longer time series data for England. Information on revisions made since "Forestry Statistics 2017" are provided in "Woodland Area, Planting and Publicly Funded Restocking: 2018 Edition".

Information on significant revisions to published statistics is provided in the quality report on Woodland Area, Planting and Restocking, available from our Quality web page at www.forestresearch.gov.uk/tools-and-resources/statistics/about-our-statistics/code-of-practice/quality-of-official-statistics/.

The Forestry Commission's revisions policy sets out how revisions and errors are dealt with and can be found at www.forestresearch.gov.uk/documents/4355/FCrevisions.pdf.

Further information

Accompanying tables to this release, available at www.forestresearch.gov.uk/tools-and-resources/statistics/statistics-by-topic/woodland-statistics/, provide longer time series data by country for new planting and restocking.

Figures for new planting are also 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, <https://unfccc.int/process-and-meetings/transparency-and-reporting/reporting-and-review-under-the-convention/greenhouse-gas-inventories-annex-i-parties/national-inventory-submissions-2018>). Summary factsheets produced by the Department for Business, Energy and

Industrial Strategy, BEIS (previously the Department of Energy and Climate Change, DECC), are available at www.gov.uk/government/publications/uk-greenhouse-gas-inventory-summary-factsheets.

Release schedule

New planting and restocking data are released twice a year. Provisional figures are published in Woodland Area, Planting and Publicly Funded Restocking (to be renamed Provisional Woodland Statistics from 2019) in early June. Final figures are released in Forestry Statistics at the end of September.

Provisional figures for new planting and restocking in 2018-19 will be published on 13 June 2019 in "Provisional Woodland Statistics: 2019 Edition".

Final results for new planting and restocking in 2018-19 will be published on 26 September 2019 in "Forestry Statistics 2019" and "Forestry Facts & Figures 2019".

11.1.4 Sources: Felling

Felling

Introduction

Under the Forestry Act 1967, it is illegal to fell trees in Great Britain without prior approval, although there are a few exceptions (for trees below a specified size, dangerous trees, and very small scale felling operations). There is a presumption against removal of woodland and loss of forest cover in the UK, so felling licences issued under the Forestry Act will normally be conditional (where felling approval is granted subject to restocking). However, the permanent removal of trees may be granted (through an unconditional felling licence) for thinning woodland (a standard woodland management practice) or if there are overriding environmental considerations, for example to enable the restoration of important habitats (and consent may be required under the relevant Environmental Impact Assessment Regulations).

The removal of trees may also be authorised under planning regulations, to enable development (including for windfarms). In this case, a felling licence is not required.

The Forestry Commission, Natural Resources Wales and the Forest Service may also require trees to be felled to prevent the spread of pests and diseases, by serving a Statutory Plant Health Notice (SPHN) on the affected site.

Data sources and methodology

Information about felling licences and Statutory Plant Health Notices comes from Forestry Commission, Natural Resources Wales and Forest Service administrative systems.

Data on felling licences relates to felling licences that have been issued. It does not indicate whether the felling has taken place (and if so, when).

Further information on administrative sources can be found at:

www.forestresearch.gov.uk/tools-and-resources/statistics/about-our-statistics/code-of-practice/administrative-sources/.

Quality

All of the statistics on felling in this chapter are outside the scope of National Statistics.

Revisions

Figures on felling licences and Statutory Plant Health Notices for 2017-18 are released for this first time in this publication.

Figures on Statutory Plant Health Notices in 2012-13 to 2015-16 in England and in Scotland in 2016-17 have been revised from those released in Forestry Statistics 2017. This has resulted in revisions of between -3 and +2 in the number of sites where a Statutory Plant Health Notice has been served.

The Forestry Commission's revisions policy sets out how revisions and errors are dealt with and can be found at www.forestresearch.gov.uk/documents/4355/FCrevisions.pdf.

Further information

Some related figures for England on felling licences have been released. Data on the total area covered by felling licences (conditional and unconditional) were released on 14 June 2018 in "Forestry Commission England Corporate Plan Performance Indicators 2018".

Further information on felling licences (including details of exemptions) is available at:

- England - <https://www.gov.uk/guidance/tree-felling-licence-when-you-need-to-apply>;
- Wales - <http://naturalresources.wales/forestry/tree-felling-and-other-regulations/?lang=en>;
- Scotland - <http://scotland.forestry.gov.uk/supporting/grants-and-regulations/felling-licences>.

A new Case Management System was introduced in Scotland in January 2012. This centralises the data collected on felling licences and provides more information about restocking proposals (including cases where the applicant has agreed to plant an alternative area, does not intend to restock or where open ground is being created) than has previously been gathered.

Further information on tree pests and diseases is available at www.forestry.gov.uk/pestsanddiseases.

Release schedule

Figures on felling licences and Statutory Plant Health Notices in 2018-19 will be published on 26 September 2019 in "Forestry Statistics 2019".

11.2 Sources: Timber

Introduction

This page provides an overview of the sources for the timber statistics presented in Chapter 2; more detailed information is provided on the following pages.

The chapter covers wood production (removals) from UK woodland, and consumption and production by primary wood processors in the UK. The timber statistics presented cover both softwood (wood from coniferous trees such as spruce, pine and larch) and hardwood (wood from non-coniferous trees such as oak, birch and beech). Please refer to the Glossary for an explanation of the terms used.

Quantities of wood can be expressed in different units. Conversion factors can be used to convert between units.

Data sources and methodology

Statistics on timber are obtained from a number of sources. For wood production (removals), data are compiled from:

- Forestry Commission (FC), Natural Resources Wales (NRW) and Forest Service (FS) administrative records of removals from FC/NRW/FS woodlands;
- the Private Sector Softwood Removals Survey for softwood removals from private sector woodlands and
- deliveries of hardwood to wood processing industries (see below) for total hardwood removals.

There is no source of data for hardwood removals from private sector woodlands, so these are estimated to be:

- deliveries of hardwood to wood processing industries (see below) less
- hardwood removals from FC/NRW/FS woodlands.

Timber availability forecasts are obtained from the "50 year forecast of softwood availability" and the "50 year forecast of hardwood availability", released in April 2014 and available at www.forestresearch.gov.uk/tools-and-resources/national-forest-inventory/.

Deliveries are estimated from the following sources:

- the Sawmill Survey;
- the Wood Panel Industries Federation (for wood-based panels);
- the UK Forest Products Association (for integrated pulp and paper mills);
- the Confederation of Paper Industries (for paper production);
- the Survey of Round Fencing Manufacturers;
- the Private Sector Softwood Removals Survey (for softwood deliveries to woodfuel);
- shavings manufacturers;
- companies believed to export roundwood and/or chips.

Estimates are also provided by the Expert Group on Timber and Trade Statistics:

www.forestresearch.gov.uk/tools-and-resources/statistics/about-our-statistics/expert-group-on-timber-and-trade-statistics/.

The Methodology note: UK wood production, available at www.forestresearch.gov.uk/tools-and-resources/statistics/about-our-statistics/methodology-and-outputs/ sets out the data analysis methods used to produce annual estimates of UK wood production.

Quality

Detailed information on the quality of the statistics presented in this publication is available in the "Quality Report: UK Wood Production and Trade" at

www.forestresearch.gov.uk/tools-and-resources/statistics/about-our-statistics/code-of-practice/quality-of-official-statistics/.

Further quality information on FC Official Statistics, including separate reports for each of the industry surveys used in this release, is available at:

www.forestresearch.gov.uk/tools-and-resources/statistics/about-our-statistics/code-of-practice/quality-of-official-statistics/.

Revisions

Figures for 2017 and earlier years have been previously published. They are however subject to revisions from those published in "UK Wood Production and Trade: 2017 provisional figures" and previous publications, to reflect late updates to administrative or survey data. Further details on any revisions made are provided in the following pages.

Information on significant revisions to published statistics is provided in the quality report on UK Wood Production and Trade, available from our Quality web page at

www.forestresearch.gov.uk/tools-and-resources/statistics/about-our-statistics/code-of-practice/quality-of-official-statistics/.

The Forestry Commission's revisions policy sets out how revisions and errors to these statistics are dealt with, and can be found at:

www.forestresearch.gov.uk/documents/4355/FCrevisions.pdf.

Further information

Most of these statistics are used to compile data that are sent to international organisations in the Joint Forest Sector Questionnaires, in some cases giving more detail than in this release. These returns are published as Official Statistics on the FC website; provisional figures in May and final figures in September/ October. The statistics are used by Eurostat Forestry Statistics, UNECE Timber Bulletins, and UN/FAO Forest Product Statistics and are published on the FAOSTAT database (<http://faostat3.fao.org>). Summary results from the FAOSTAT database are provided in the International Forestry chapter.

The definitions used in this publication are consistent with the international definitions, as given in the Joint Forest Sector Questionnaire definitions, available at

www.fao.org/forestry/statistics/80572/en/.

The United Nations Economic Commission for Europe (UNECE) Committee on Forests and the Forest Industry (previously the UNECE Timber Committee) also collects, on an annual basis, estimates for the current year and projections for the following year of wood production, imports and exports. Results are available on the UNECE website (www.unece.org/forests/fpm/timbercommittee.html). Copies of UK returns for the UNECE Timber Forecast Questionnaire are available at www.forestresearch.gov.uk/tools-and-resources/statistics/statistics-by-topic/international-returns/unece-timber-forecast-questionnaire/.

The Department for Business, Energy and Industrial Strategy publishes an annual Digest of UK Energy Statistics (www.gov.uk/government/collections/digest-of-uk-energy-statistics-dukes). Chapter 7 of this digest covers renewable sources of energy including wood. Figures for wood use in renewable energy statistics take into account wood from all sources (including processed wood, recycled wood and imports), not just UK-grown roundwood.

Experimental Statistics

Included in the accompanying spreadsheets for this release of Forestry Statistics are experimental statistics for the destination of UK softwood removals by country in 2017.

For details on the sources and methodology, please refer to Experimental Statistics: UK Softwood Removals and Delivery by Country, 2015-2016, available at www.forestresearch.gov.uk/tools-and-resources/statistics/forestry-statistics/. Since the publication of these experimental statistics, additional questions, within the industry surveys (a source of data for these statistics), were expanded to ask for country breakdowns of specific data, namely, the volume of softwood roundwood sold for bioenergy and roundwood consumed for shavings.

These estimates are under development and continue to be labelled as “experimental statistics”.

Release schedule

Provisional figures for 2018 will be released on 16 May 2019 in "UK Wood Production and Trade: 2018 provisional figures".

Final figures for 2018 will be released on 26 September 2019 in "Forestry Statistics 2019" and "Forestry Facts & Figures 2019".

11.2.1 Sources: Wood production

Sources

Figures on UK wood production (or removals) are compiled from a variety of sources:

- Forestry Commission (FC), Natural Resources Wales (NRW) and Forest Service (FS) administrative records - for all removals from FC/NRW/FS woodlands;
- the Private Sector Softwood Removals Survey - for softwood removals from private sector woodlands and
- statistics on deliveries - for total hardwood removals.

The compilation of data on wood production was extended in 2004 to include Northern Ireland.

These sources cover removals of roundwood (trunk and branch wood) only. A survey was introduced in 2009 to collect data on removals of brash (branch wood and leaf material) and stumps (above-ground base part of trees). The collection of stump removals was discontinued in 2012.

The software used to record Forestry Commission sales has included some sales of mixed softwood and hardwood as softwood in previous years.

Further information on administrative sources can be found at:

www.forestresearch.gov.uk/tools-and-resources/statistics/about-our-statistics/code-of-practice/administrative-sources/.

Methodology

Figures for removals from FC/NRW/FS woodlands are converted from cubic metres (m³) to green tonnes using standard conversion factors. For total softwood figures, the results from the Private Sector Softwood Removals Survey are combined with the data for FC/NRW/FS woodlands to produce total softwood removals.

For hardwood figures, the total hardwood removals are assumed to equal the total hardwood deliveries (obtained from industry surveys and industry associations; see subsequent pages for further information on these sources). Hardwood removals from FC/NRW/FS woodlands are then subtracted to give an estimate of the amount of hardwood removed from private sector woodlands.

Softwood removals methodology change

The methodology used to estimate the quantity of UK softwood removals from private sector woodland was revised for the release of provisional 2011 estimates in "UK Wood Production and Trade: 2011 provisional figures". Details of the change in methodology and its impact on the figures are available in the "Methodology Review of Softwood Removals from Non-FC/FS Woodland" paper, available at www.forestresearch.gov.uk/tools-and-resources/statistics/about-our-statistics/methodology-and-outputs/.

Revisions

Private sector softwood removals are subject to revision annually (see following page, on the Private Sector Softwood Removals Survey). Removals from FC/NRW/FS woodlands are not normally revised. Total hardwood removals (and consequently hardwood removals from private sector woodlands) are subject to annual revisions (see notes on deliveries for further information).

Figures for 2017 are final; provisional figures were previously released in "UK Wood Production and Trade: 2017 provisional figures". Figures for 2013 to 2017 have been revised from those provided in "UK Wood Production and Trade: 2017 provisional figures" to take account of additional returns and quality assurance checks. This has resulted in changes of:

- Wood production (hardwood) – 'Private Sector Woodland' up 31% and 'Total Hardwood' up 27% in 2017. This increase is due to a new estimate for deliveries of UK grown hardwood used for woodfuel and should not be interpreted as an increase in a single year.

Information on revisions made since "Forestry Statistics 2017" are provided in "UK Wood Production and Trade: 2017 provisional figures".

Further information

Figures are published as UK totals. Country breakdowns (England, Wales, Scotland, Northern Ireland) are also published for softwood in table 2.2 for private sector removals and table 2.3 for FC/NRW/FS removals. Approximate country breakdowns are also estimated for hardwood removals.

Longer time series, presenting estimates of FC/NRW/FS and private sector removals by country and by softwood/hardwood are available from the www.forestresearch.gov.uk/tools-and-resources/statistics/data-downloads/ web page.

Release schedule

Provisional figures for 2018 will be released on 16 May 2019 in "UK Wood Production and Trade: 2018 provisional figures".

Final figures for 2018 will be released on 26 September 2019 in "Forestry Statistics 2019" and "Forestry Facts & Figures 2019".

11.2.2 Sources: Private Sector Softwood Removals Survey

Introduction

The Private Sector Softwood Removals Survey is an annual survey conducted by the Forestry Commission (in association with the Forest Service) of a sample of harvesting companies in the UK.

The survey, which previously covered harvesting companies in Great Britain only, was extended in 2004 to include harvesting companies in Northern Ireland. Figures for Northern Ireland in earlier years have therefore been estimated, based on responses to the 2004 survey.

Figures are published as UK totals and by country (England, Wales, Scotland, Northern Ireland).

Data collected

The questionnaire used for the Private Sector Softwood Removals Survey (available at www.forestresearch.gov.uk/tools-and-resources/statistics/about-our-statistics/surveys/private-sector-softwood-removals-survey/) is issued annually to around 40 harvesting companies, to collect information on:

- the quantity of softwood roundwood harvested from private sector woodlands in the UK in the current (latest) year and in the previous year;
- the quantity of softwood roundwood harvested from certified private sector woodlands and
- (from the 2008 survey) the quantity sold to bioenergy (including wood pellet manufacture).
- (from the 2013 survey) the quantity of softwood roundwood harvested as required by plant health legislation.

Response rates

The questionnaire was issued to 40 harvesting companies for the collection of 2017 data, of which 31 responded, giving a response rate of 78%. These respondents are estimated to account for around 95% of all the softwood harvested by companies covered by the survey.

Private Sector Softwood Removals Survey Response Rates, 2008-2017

Year	Forms issued	Responses received	Response rate ¹	Weighted response rate ²
2008	41	35	85%	100%
2009	40	30	75%	92%
2010	40	30	75%	97%
2011	37	26	70%	96%
2012	37	27	73%	95%
2013	40	28	70%	96%
2014	39	30	77%	97%
2015	40	27	68%	94%
2016	40	26	65%	94%
2017	40	31	78%	95%

Notes:

1. Response rates are calculated as the number of responses received divided by the number of forms issued.
2. Weighted response rates have been calculated from the 2008 survey onwards. They are an estimate of the proportion of the softwood harvested by companies covered by the survey that is accounted for by respondents.

Methodology

A review of the methodology used to estimate total private sector softwood removals (including businesses not covered by the survey) was undertaken in 2011-2012.

The "Methodology Review of Softwood Removals from Non-FC/FS Woodland" paper presents the results from this review and the implications of the change in methodology. The paper is available at www.forestresearch.gov.uk/tools-and-resources/statistics/about-our-statistics/methodology-and-outputs/.

In the current methodology, businesses not covered by the survey are assumed to represent 15% of the total softwood removals from private sector woodland. This fixed percentage is applied from 2006 onwards. This figure is currently under review.

Quality

Detailed information on the survey quality is available in the "Quality Report: Private Sector Softwood Removals Survey" at www.forestresearch.gov.uk/tools-and-resources/statistics/about-our-statistics/code-of-practice/quality-of-official-statistics/.

Further quality information on FC Official Statistics is available at: www.forestresearch.gov.uk/tools-and-resources/statistics/about-our-statistics/code-of-practice/quality-of-official-statistics/.

Revisions

Results from the Private Sector Softwood Removals Survey may be revised between the provisional figures published in the First Release "UK Wood Production and Trade: provisional figures" and the final data published in "Forestry Facts & Figures" and "Forestry Statistics", to take account of late returns and the results of additional data quality checking procedures.

In order to use the most accurate information possible in estimating total private sector softwood removals, figures for non respondents in earlier years are estimated wherever possible, using their responses in previous and in subsequent years. This may cause the estimates for all previous years to be revised when new data are received from a former non-respondent. This process reduces the potential over-inflation of estimated removals which can be caused by harvesting companies tending to respond when removals have increased but being less likely to do so when their removals have reduced.

Figures for 2017 are final; provisional figures were previously released in "UK Wood Production and Trade: 2017 provisional figures". Figures for 2017 and earlier years have not been revised from those in "UK Wood Production and Trade: 2017 provisional figures". Information on revisions made since "Forestry Statistics 2017" are provided in "UK Wood Production and Trade: 2017 provisional figures".

Release schedule

Provisional figures for 2018 will be released on 16 May 2019 in "UK Wood Production and Trade: 2018 provisional figures".

Final figures for 2018 will be released on 26 September 2019 in "Forestry Statistics 2019" and "Forestry Facts & Figures 2019".

11.2.3 Sources: Sawmill Survey

Introduction

The Sawmill Survey is an annual survey conducted by the Forestry Commission (in association with the Forest Service) of sawmills in the UK that are believed to use UK-grown logs. The survey comprises a short questionnaire (for smaller mills) and a detailed questionnaire (for larger mills).

The survey, which previously covered sawmills in Great Britain only, was extended in 2004 to include sawmills in Northern Ireland. Figures for Northern Ireland in earlier years have therefore been estimated, based on responses to the 2004 survey.

The detailed survey has changed over the years, both in terms of coverage and periodicity. For 1996 and earlier, detailed questionnaires were issued triennially to mills producing at least 1,000 m³ of sawnwood. From 1998 to 2004, the questionnaires were issued every two years to mills producing at least 5,000 m³ of sawnwood. From 2005, the detailed questionnaires have been issued annually, to mills producing at least 10,000 m³ of sawnwood. From 2016, the threshold for inclusion in the detailed sawmill survey has been raised to annual production of at least 25,000 m³ sawnwood.

Statistics reported for each year are limited to mills that are known to use UK roundwood, but also include any imported logs used by these mills.

Tables for softwood are broken down by country (England, Wales, Scotland, Northern Ireland) and by size of mill. Given the low number of sawmills using UK hardwood, tables for hardwood are presented at a total UK level only.

The number of active mills (those that produced sawnwood in the reporting year) is presented in tables 2.8 to 2.10.

Longer time series, providing data on numbers of mills and on softwood consumption and production are available at www.forestresearch.gov.uk/tools-and-resources/statistics/data-downloads/. The time series data feature breakdowns by size of mill, by country and by region (in England).

Data collected

Two questionnaires are used for the Sawmill Survey:

- a detailed questionnaire goes to around 30 mills that have annual production of at least 25,000 m³ of sawnwood, and
- a short questionnaire is sent to all other mills that are believed to use UK sawlogs (around 140 mills in 2017).

As the threshold for inclusion in the detailed survey was changed for the collection of data since 2016, the results presented here for earlier years have been adjusted to this new threshold to provide a consistent time series.

Both the detailed and the short questionnaires collect information on:

- the consumption of UK and imported logs,
- the production of sawnwood,
- chain of custody certificates and certified timber,
- (from the 2006 survey) sales to bioenergy,
- (from the 2008 survey) sales as firewood and internal use for heat/energy,
- (from the 2010 survey) other products and
- (from the 2008 survey) total employment.

In addition, the detailed questionnaire also collects information on:

- the source of UK logs (England, Wales, Scotland or Northern Ireland),
- sawnwood product markets,
- other products by type and destination and
- sawmill employment by type.

More information on the Sawmill Survey, including copies of the questionnaires sent to businesses in recent years, can be found at www.forestresearch.gov.uk/tools-and-resources/statistics/about-our-statistics/surveys/sawmill-survey/.

Response rates

Detailed questionnaires were issued to 30 mills for the collection of 2017 data, of which 27 responded, giving a response rate of 90%. For the short questionnaire, 46 responses were received from the 140 forms issued, corresponding to a 33% response rate. This gives an overall response rate of 43%.

Overall, the 73 sawmills responding to the sawmill survey in 2016 are estimated to account for around 86% of total UK sawnwood production.

Sawmill Survey Response Rates (all questionnaires), 2008-2017

Year	Forms issued	Responses received	Response rate ¹	Weighted response rate ²
2008	227	133	59%	90%
2009	219	122	56%	87%
2010	211	93	44%	85%
2011	200	84	42%	82%
2012	196	86	44%	84%
2013	191	83	43%	80%
2014	178	82	46%	84%
2015	179	84	47%	79%
2016	173	74	43%	83%
2017	170	73	43%	86%

Notes:

1. Response rates are calculated as the number of responses received divided by the number of forms issued.
2. Weighted response rates have been calculated from the 2008 survey onwards. They are an estimate of the proportion of total UK sawnwood production that is accounted for by respondents.

Methodology

Each year, figures for non respondents are estimated by rolling forward data from previous years for these mills. For larger mills, these estimates may be modified to take account of advice from the Expert Group on Timber & Trade Statistics.

Time series data for the detailed sawmill survey

From one year to another, some mills may have moved above or below the threshold for inclusion in the detailed sawmill survey. This may affect the trends over time in tables 2.16a to 2.19a.

The total volume of roundwood consumed and sawnwood and other products produced by sawmills covered by the detailed sawmill survey varies over time, so a change in the percentages shown in tables 2.16a to 2.18a does not necessarily reflect a change in volumes.

As a result of the change to the threshold for inclusion in the detailed survey since 2016, results for 2013 to 2015 presented in tables 2.16a to 2.18a have been revised to cover only those mills producing at least 25 thousand m³ sawnwood, for consistency with the data from 2016.

Quality

Detailed information on the survey quality is available in the "Quality Report: Sawmill Survey", available at www.forestresearch.gov.uk/tools-and-resources/statistics/about-our-statistics/code-of-practice/quality-of-official-statistics/.

Further quality information on FC Official Statistics is available at:

www.forestresearch.gov.uk/tools-and-resources/statistics/about-our-statistics/code-of-practice/quality-of-official-statistics/.

Revisions

Results from the Sawmill Survey may be revised between the provisional figures published in the First Release "UK Wood Production and Trade: provisional figures" and the final data published in "Forestry Facts & Figures" and "Forestry Statistics" to take account of late returns and the results of additional data quality checking procedures.

All the main results (number of mills, consumption, production) are subject to revision annually, as information becomes available about mills opening or closing, or new information becomes available for previous non-respondents. The most common revisions are relatively small downward changes, but this can vary from year to year as special exercises are run to validate the survey population. Information about new mills opening can on occasion cause much larger upward revisions to softwood volumes. Results from the survey of larger mills, which provides more detailed information, may be revised to take account of new information for previous non-respondents.

Figures for 2017 are final; provisional figures were previously released in "UK Wood Production and Trade: 2017 provisional figures". Figures for 2017 and earlier years have not been revised from those in "UK Wood Production and Trade: 2017 provisional figures". Information on revisions made since "Forestry Statistics 2017" are provided in "UK Wood Production and Trade: 2017 provisional figures".

Further information

Figures for UK production of sawn softwood have previously been used alongside data from other sources to assess consumption of sawn softwood in the main end-user markets in the UK. Reports are available at www.forestresearch.gov.uk/tools-and-resources/statistics/statistics-by-topic/timber-statistics/timber-utilisation-statistics/.

Release schedule

Provisional figures for 2018 will be released on 16 May 2019 in "UK Wood Production and Trade: 2018 provisional figures".

Final figures for 2018 will be released on 26 September 2019 in "Forestry Statistics 2019" and "Forestry Facts & Figures 2019".

11.2.4 Sources: Pulp & paper

Introduction

Data on the pulp and paper sector are obtained from two sources:

- The UK Forest Products Association (UKFPA, www.ukfpa.co.uk) provides figures on inputs to the integrated pulp and paper mills and
- the Confederation of Paper Industries (CPI, www.paper.org.uk) provides figures on total UK pulp and paper production.

Integrated pulp and paper mills are paper mills that use UK roundwood to produce pulp (an intermediate product in the production of paper). Inputs for other paper mills are not covered in the input statistics reported. The figures for production cover all UK paper mills.

Figures are available at a total UK level only.

Data collected

The data collected on inputs cover the type of input (roundwood, sawmill products) and the type of wood (softwood, hardwood).

Production data covers wood pulp (mechanical or semi-chemical), recovered fibre pulp and paper & paperboard. Paper & paperboard production are available for the following categories: graphic papers, sanitary & household papers, packaging materials and other paper & paperboard. Data are also collected on UK "production" of waste paper, which is the amount recovered from the UK for re-use in the UK or for export.

From 2008, total employment at integrated pulp and paper mills is also requested, to complement the data collected on this topic from other primary wood processors.

Methodology

The data on inputs to integrated pulp and paper mills are collected by the UKFPA from all such mills in the UK. The number of integrated pulp and paper mills has fallen over recent years and currently stands at 2.

The CPI collects production and raw material data from members and non-members, which accounts for the majority of UK production. The remainder is estimated by CPI using a variety of sources.

Revisions

The statistics on pulp and paper are not normally revised after publication. On occasion, a provisional figure or estimate may be published, and replaced by the actual figure in a subsequent publication.

Figures for 2017 are final; provisional figures were previously released in "UK Wood Production and Trade: 2017 provisional figures".

Figures for 2017 and earlier years have not been revised from those in "UK Wood Production and Trade: 2017 provisional figures". Information on revisions made since "Forestry Statistics 2017" are provided in "UK Wood Production and Trade: 2017 provisional figures".

Release schedule

Provisional figures for 2018 will be released on 16 May 2019 in "UK Wood Production and Trade: 2018 provisional figures".

Final figures for 2018 will be released on 26 September 2019 in "Forestry Statistics 2019" and "Forestry Facts & Figures 2019".

11.2.5 Sources: Wood-based panels

Introduction

Data on the wood-based panel sector are obtained from the Wood Panel Industries Federation (WPIF, www.wpif.org.uk) and cover all wood-based panel mills in the UK.

Statistics reported for each year are available at a UK level only.

Data collected

Data are collected on inputs and on production.

The data collected on inputs covers the type of input (roundwood, sawmill products, imports, recycled wood fibre) and the type of wood (softwood, hardwood).

Production data covers all types of wood-based panels made in the UK, which currently comprises particleboard (including oriented strand board) and fibreboard (medium density fibreboard). UK production of hardboard (another type of fibreboard) ended in the UK in 1999 and production of plywood ended in 2000.

From 2008, total employment is also requested, to complement the data being collected on this topic from other primary wood processors.

Methodology

The data on wood-based panels are collected by the WPIF, which represents all UK wood panel manufacturers. Figures on wood consumption are collected annually. Production data (excluding waste and rejects) are derived from quarterly returns. Response rates in recent years have been 100%.

Revisions

The statistics on wood-based panels are not normally revised after publication. On occasion, a provisional figure or estimate may be published, and replaced by the actual figure in a subsequent publication.

Figures for 2017 are final; provisional figures were previously released in "UK Wood Production and Trade: 2017 provisional figures". Figures for 2017 and earlier years have not been revised from those in "UK Wood Production and Trade: 2017 provisional figures".

Release schedule

Provisional figures for 2018 will be released on 16 May 2019 in "UK Wood Production and Trade: 2018 provisional figures".

Final figures for 2018 will be released on 26 September 2019 in "Forestry Statistics 2019" and "Forestry Facts & Figures 2019".

11.2.6 Sources: Survey of Round Fencing Manufacturers

Introduction

The Survey of Round Fencing Manufacturers is an annual survey conducted by the Forestry Commission (in association with the Forest Service) of round fencing manufacturers (or mills) in the UK that are believed to consume UK-grown roundwood.

The survey, which previously covered mills in Great Britain only, was extended in 2004 to include those in Northern Ireland. Figures for Northern Ireland in earlier years have therefore been estimated, based on responses to the 2004 survey.

Figures are published as UK totals and by size of mill.

Longer time series, providing data on numbers of mills and on softwood consumption are available at www.forestresearch.gov.uk/tools-and-resources/statistics/data-downloads/.

The time series data feature breakdowns by size of mill and by country.

Data collected

The questionnaire used for the Survey of Round Fencing Manufacturers is issued to around 60 mills, to collect information on the consumption of UK-grown and (from 2006) imported roundwood. In 2008, the survey was extended to cover woodfuel quantities (sales to bioenergy, sales as firewood and internal use for heat/ energy) and total employment. In 2010, the survey was further extended to request data on production of round fencing and other products. A breakdown of the country of origin (England, Wales, Scotland, Northern Ireland) for UK-grown roundwood is also requested.

More information on the Survey of Round Fencing Manufacturers, including copies of the questionnaires sent to businesses in recent years, can be found at www.forestresearch.gov.uk/tools-and-resources/statistics/about-our-statistics/surveys/survey-of-round-fencing-manufacturers/.

Response rates

The questionnaire was issued to 53 mills for the collection of 2017 data, of which 21 responded, giving a response rate of 40%. These respondents accounted for an estimated 36% of roundwood purchased by softwood round fencing manufacturers.

Survey of Round Fencing Manufacturers Response Rates, 2008-2017

Year	Forms issued	Responses received	Response rate ¹	Weighed response rate ²
2008	87	55	63%	88%
2009	82	42	51%	56%
2010	79	34	43%	46%
2011	72	26	36%	58%
2012	68	26	38%	53%
2013	67	27	40%	51%
2014	62	26	42%	42%
2015	60	29	48%	54%
2016	55	23	42%	49%
2017	53	21	40%	36%

Notes:

1. Response rates are calculated as the number of responses received divided by the number of forms issued.
2. Weighted response rates have been calculated from the 2008 survey onwards. They are an estimate of the proportion of total roundwood purchased by softwood round fencing manufacturers that is accounted for by respondents.

Methodology

Each year, figures for non respondents are estimated by rolling forward data from previous years for these mills.

Quality

Detailed information on the survey quality is provided in the "Quality Report: Survey of Round Fencing Manufacturers", available at www.forestresearch.gov.uk/tools-and-resources/statistics/about-our-statistics/code-of-practice/quality-of-official-statistics/.

Further quality information on FC Official Statistics is available at:

www.forestresearch.gov.uk/tools-and-resources/statistics/about-our-statistics/code-of-practice/quality-of-official-statistics/.

Revisions

Results from the Survey of Round Fencing Manufacturers may be revised between the provisional figures published in the First Release "UK Wood Production and Trade: provisional figures" and the final data published in "Forestry Facts & Figures" and "Forestry Statistics" to take account of late returns and the results of additional data quality checking procedures.

All figures are subject to revision annually, as information becomes available about mills opening or closing, or new information becomes available for previous non-respondents. Such revisions are generally quite small.

Figures for 2017 are final; provisional figures were previously released in "UK Wood Production and Trade: 2017 provisional figures". Figures for 2017 and earlier years have not been revised from those in "UK Wood Production and Trade: 2017 provisional figures". Information on revisions made since "Forestry Statistics 2017" are provided in "UK Wood Production and Trade: 2017 provisional figures".

Release schedule

Provisional figures for 2018 will be released on 16 May 2019 in "UK Wood Production and Trade: 2018 provisional figures".

Final figures for 2018 will be released on 26 September 2019 in "Forestry Statistics 2019" and "Forestry Facts & Figures 2019".

11.2.7 Sources: Other deliveries

Introduction

Data on other deliveries comprise the following:

- shavings - mainly obtained from shavings manufacturers;
- woodfuel - private sector softwood removals survey, woodfuel suppliers and Expert Group on Timber & Trade Statistics estimates;
- hardwood round fencing - Expert Group on Timber & Trade Statistics estimates;
- other miscellaneous products - Expert Group on Timber & Trade Statistics estimates and
- exports of roundwood and chips - companies believed to export roundwood and/or chips, Forest Service (for exports from Northern Ireland) and HM Revenue and Customs.

The figures, which previously covered Great Britain only, were extended in 2004 to include Northern Ireland. Figures for exports prior to 2004 relate to Great Britain only.

Statistics reported for each year are available at a UK level only.

Data collected

The data collected on shavings, woodfuel and other miscellaneous products cover the quantity of roundwood only.

Data collected on exports includes the following categories; industrial roundwood (excluding sawlogs), sawlogs and chips. For 2004 and earlier years, these figures were provided by the UK Forest Products Association (UKFPA, www.ukfpa.co.uk).

Methodology

For shavings, data are collected from the main companies known to produce shavings. In addition, a small estimate is made to cover other shavings manufacturers.

There are currently no reliable sources for data on hardwood round fencing and other miscellaneous products. As a result, estimates (that are rarely changed) are made by the Expert Group on Timber & Trade Statistics to attempt to take account of these other uses of UK roundwood.

The estimate for hardwood used for woodfuel was revised in 2005 to reflect a perceived increase in woodfuel, but this should not be interpreted as an increase in a single year. From 2007, an estimate of roundwood use for biomass energy was included in the woodfuel figures, based on data reported by suppliers and Expert Group on Timber & Trade Statistics estimates. In 2008, the private sector softwood removals survey was extended to ask how much of the removals reported were believed to be for woodfuel use. Estimates of softwood used for woodfuel for recent years are therefore considered to be more reliable than those for earlier years.

For exports, data are requested from companies believed to have exported roundwood or chips in the last year. Forest Service provides data on behalf of companies exporting from Northern Ireland. If required, a small estimate is made for any non respondents or to cover other companies that may have exported roundwood during the year. Exports of hardwood roundwood are estimated from the overseas trade statistics produced by HM Revenue and Customs.

Revisions

Figures for deliveries of softwood for woodfuel may be revised whenever revisions are made to the Private Sector Softwood Removals Survey.

The statistics on other deliveries are not normally revised after publication. On occasion, an estimate may be revised in a subsequent publication, to take account of expert advice on perceived changes in the market for roundwood.

The quality report on UK Wood Production and Trade provides further information, including details of significant revisions to published statistics and is available at www.forestresearch.gov.uk/tools-and-resources/statistics/about-our-statistics/code-of-practice/quality-of-official-statistics/.

Figures for 2017 are final; provisional figures were previously released in "UK Wood Production and Trade: 2017 provisional figures". Since the publication of provisional figures for 2017, the estimate of UK hardwood deliveries used for 'Woodfuel' has been changed from 400 to 600 (up 50%). This increase reflects a new estimate of the level of hardwood deliveries for woodfuel in 2017 and should not be interpreted as an increase in a single year. This figure is currently under review.

Information on revisions made since "Forestry Statistics 2017" are provided in "UK Wood Production and Trade: 2017 provisional figures".

Release schedule

Provisional figures for 2018 will be released on 16 May 2019 in "UK Wood Production and Trade: 2018 provisional figures".

Final figures for 2018 will be released on 26 September 2019 in "Forestry Statistics 2019" and "Forestry Facts & Figures 2019".

11.2.8 Sources: Comparison of removals and deliveries of UK softwood roundwood

The table below provides a comparison between the figures for removals (obtained from Forestry Commission, Natural Resources Wales, Forest Service and Private Sector Removals Survey) and deliveries (obtained from industry surveys and trade associations) of UK softwood roundwood.

The estimated total for softwood removals in the UK in recent years has been at least 0.3 million green tonnes higher than the estimate for total UK softwood deliveries. At least some of this difference may indicate a possible undercounting of deliveries, particularly for roundwood that is used directly for woodfuel.

Comparison of removals and deliveries of UK softwood roundwood, 2008-2017

Year	FC/NRW/FS removals	Private sector removals	Total removals	Deliveries	Balance ¹
thousand green tonnes					
2008	4 415	3 823	8 238	8 187	51
2009	5 126	3 266	8 392	8 304	88
2010	4 625	4 633	9 258	9 269	-11
2011	4 870	5 186	10 056	9 722	334
2012	4 836	5 259	10 095	9 831	265
2013	5 084	5 852	10 936	10 547	388
2014	4 900	6 627	11 527	10 903	624
2015	4 691	5 968	10 659	10 265	393
2016	5 011	5 734	10 745	10 419	327
2017	4 862	6 053	10 915	10 478	437

Source: Forestry Commission, Natural Resources Wales, Forest Service, industry surveys, industry associations

Notes:

1. The difference between reported removals and deliveries can be caused by variations in the level of stocks between harvesting and delivery to the wood processor, and/or by the differences in data sources and methodologies used to compile removals and deliveries statistics.

The methodology used to estimate the quantity of UK softwood removals from private woodland was revised for the release of provisional 2011 estimates in "UK Wood Production and Trade: 2011 provisional figures". Details of the change in methodology and its impact on the figures are available in the "Methodology Review of Softwood Removals from Non-FC/FS Woodland" paper, available at www.forestresearch.gov.uk/tools-and-resources/statistics/about-our-statistics/methodology-and-outputs/.

11.2.9 Sources: Estimation of hardwood removals from private sector woodlands

Figures for hardwood removals from private sector woodlands are derived from total hardwood deliveries (obtained from industry surveys and trade associations) less hardwood removals from FC/NRW/FS woodlands. The table below provides figures for the last 10 years.

Estimation of hardwood removals from private sector woodlands, 2008-2017

Year	Deliveries	FC/NRW/FS removals	Private sector removals
			thousand green tonnes
2008	431	43	388
2009	536	87	449
2010	535	70	465
2011	541	75	465
2012	534	55	479
2013	532	78	454
2014	537	71	466
2015	564	73	490
2016	597	68	529
2017	738	83	655

Source: Forestry Commission, Natural Resources Wales, Forest Service, industry surveys, industry associations

11.2.10 Sources: Woodfuel and pellets

Introduction

Data on woodfuel have been obtained from the following sources:

- Sawmill survey and survey of round fencing manufacturers;
- Private sector softwood removals survey and woodfuel suppliers;
- Expert Group on Timber & Trade Statistics estimates.

Estimates of the quantity of recycled wood used for woodfuel are produced by the Wood Recyclers' Association (www.woodrecyclers.org).

Data on UK pellet production and feedstock are obtained from the survey of UK pellet and briquette production.

For details on roundwood deliveries for woodfuel, see the Sources: other deliveries page.

Figures are published as UK totals.

Data collected

The sawmill survey and survey of round fencing manufacturers included questions asking for the quantity of woodfuel:

- sold to bioenergy,
- sold as firewood and
- used internally for heat/energy.

All 3 questions have been included in the detailed sawmill survey (sent to larger sawmills annually) for some time. The sawmill survey (for smaller mills) was extended in the 2006 survey to cover quantities sold to bioenergy and again in the 2008 survey to cover firewood sales and use for heat/energy. All three questions were included in the round fencing survey for the first time in 2008.

The survey of UK pellet and briquette production was run for the first time for the collection of 2009 data. The questionnaire asks for data on the total quantity of pellets and briquettes produced, the source of fibres used, the origin of wood used and product markets.

More information on the survey of UK pellet and briquette production, including copies of the questionnaires sent to businesses in recent years, can be found at www.forestresearch.gov.uk/tools-and-resources/statistics/about-our-statistics/surveys/survey-of-uk-pellet-amp-briquette-production/.

Response rates

Response rates for the sawmill survey and survey of round fencing manufacturers are available on the relevant sources pages.

The 2017 survey of UK pellet and briquette production was sent to a total of 17 companies that were believed to manufacture pellets or briquettes. A total of 4 responded, giving a response rate of 24%. The respondents to the survey are estimated to account for around 56% of the total production of pellets and briquettes in the UK in 2017.

Whilst the low response rates to this survey are of some concern, it is believed that many of the non-respondents are not (currently) producing pellets or briquettes. This is reflected in the much higher weighted response rates and the figures produced are believed to give a reasonable estimate of the true level of UK pellet production.

Survey of UK Pellet & Briquette Production Response Rates, 2010-2017

Year	Forms issued	Response received	Response rate ¹	Weighted Response rate ²
2010	27	12	44%	95%
2011	22	10	45%	92%
2012	21	5	24%	75%
2013	18	8	44%	91%
2014	18	6	33%	91%
2015	18	5	28%	82%
2016	18	5	28%	68%
2017	17	4	24%	56%

Notes:

1. Response rates are calculated as the number of responses received divided by the number of forms issued.
2. Weighted response rates are an estimate of the proportion of total UK pellet and briquette production that is accounted for by respondents.

Methodology

Details of the methodology used for the sawmill survey and survey of round fencing manufacturers are available on the relevant sources pages.

For the survey of UK pellet and briquette production, estimates were made for non-respondents using results from previous surveys (including the 2008 woodfuel suppliers survey) and expert advice.

Quality

Detailed information on the pellet survey quality is available in the "Quality Report: Survey of UK Pellet & Briquette Production", available at www.forestresearch.gov.uk/tools-and-resources/statistics/about-our-statistics/code-of-practice/quality-of-official-statistics/.

Further quality information on FC Official Statistics is available at: www.forestresearch.gov.uk/tools-and-resources/statistics/about-our-statistics/code-of-practice/quality-of-official-statistics/.

Revisions

All figures are subject to revision annually, as new information becomes available.

Figures for 2017 are final; provisional figures were previously released in "UK Wood Production and Trade: 2017 provisional figures". Figures for 2017 have been revised from those provided in "UK Wood Production and Trade: 2017 provisional figures" to take account of additional returns and quality assurance checks. This has resulted in an upward revision of 2% to total wood pellet production in 2017.

Further information

Figures for Woodfuel Demand and Usage in Scotland, covering actual and potential use of woodfuel in the commercial, industrial and electrical energy sectors, are produced annually by Forestry Commission Scotland and available at

<https://scotland.forestry.gov.uk/supporting/strategy-policy-guidance/climate-change/woodfuel-and-bio-energy>.

The Department for Business, Energy and Industrial Strategy (previously the Department of Energy and Climate Change) publishes an annual Digest of UK Energy Statistics (www.gov.uk/government/collections/digest-of-uk-energy-statistics-dukes). Chapter 7 of this digest covers renewable sources of energy including wood. Figures for wood use in renewable energy statistics take into account wood from all sources (including processed wood, recycled wood and imports), not just UK-grown roundwood.

Release schedule

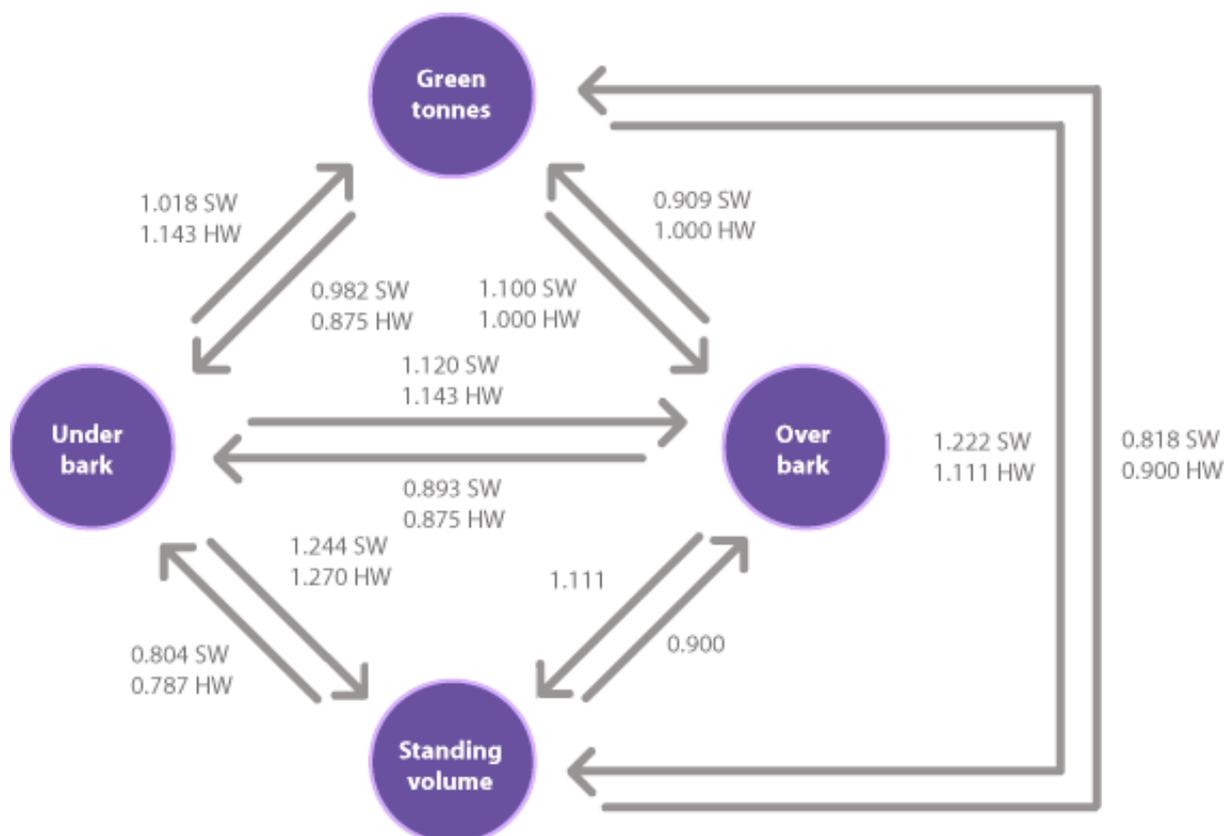
Provisional figures for 2018 will be released on 16 May 2019 in "UK Wood Production and Trade: 2018 provisional figures".

Final figures for 2018 will be released on 26 September 2019 in "Forestry Statistics 2019" and "Forestry Facts & Figures 2019".

11.2.11 Sources: Conversion factors

Conversion factors between cubic metres and green tonnes

The following factors have been used in Chapter 2 (Timber) to convert between cubic metres (m³) and green tonnes:



The diagram shows separate conversion factors to use when converting softwood (SW) and hardwood (HW) with arrows to indicate the direction of conversion. For example, to convert 1,000 green tonnes of SW into an under bark volume, the 1,000 green tonnes should be multiplied by the conversion factor of 0.982 to give 982m³ underbark. There is no difference between the softwood and hardwood conversion factors for converting between standing volume and overbark volumes.

The following factors have been used in Chapter 3 (Trade) to convert between cubic metres (m³) and metric tonnes:

In this case, all the factors are expressed as volumes (in m³) per weight (in tonnes). Therefore, to convert 1,000 tonnes of sawn softwood into a volume, the 1,000 tonnes should be multiplied by 1.82 to give 1,820 m³.

Conversion factors between cubic metres and metric tonnes

Product	m ³ / tonne
Fuelwood, including wood for charcoal	1.38
Wood chips, sawdust, etc	1.48
Industrial roundwood (wood in the rough) - softwood	1.43
Industrial roundwood (wood in the rough) - hardwood	1.25
Sawnwood - softwood	1.82
Sawnwood - hardwood	1.43
Veneer sheets	1.33
Plywood, particleboard	1.54
Hardboard	1.053
MDF (medium density fibreboard)	1.667
Insulating board - density 0.35-0.5 g/cm ³	1.667
Insulating board - other	4.00

The following factors have been used in Chapter 3 (Trade) where required to convert to wood raw material equivalent, which indicates the volume of wood (in m³ underbark) needed to produce one unit of a final product:

Conversion factors to Wood Raw Material Equivalent (wrme) underbark

Product	Measurement unit	Factor to wrme underbark
Fuelwood	tonnes	1.20
Wood charcoal	tonnes	6.00
Chips, sawdust, etc	tonnes	1.20
Industrial roundwood (rough, treated)	m ³	1.10
Industrial roundwood (in the rough)	m ³	1.00
Sleepers	m ³	1.58
Softwood sawnwood	m ³	2.00
Hardwood sawnwood	m ³	2.50
Wastepaper	tonnes	2.80
Mechanical pulp	tonnes	2.50
Chemical dissolving pulp	tonnes	2.50
Sulphate pulp, unbleached	tonnes	6.00
Sulphate pulp, bleached	tonnes	4.50
Sulphite pulp	tonnes	5.00
Semi-chemical woodpulp	tonnes	2.75
Veneer (< 6mm)	tonnes	3.45
Other wood-based panels	tonnes	2.50
Woodwool, woodflour	tonnes	1.70
Packing cases, pallets	tonnes	2.00
Other manufactured wood	tonnes	2.50
Newsprint	tonnes	2.80
Writing & printing paper, uncoated	tonnes	3.50
Other paper & paperboard	tonnes	2.50

Notes:

1. A revised set of figures was produced in FC Technical Paper 19, "Revised Forecasts of the Supply and Demand for Wood in the UK" (Forestry Commission, 1996), but these have not been used in this publication.

11.3 Sources: Trade

Introduction

Statistics on imports and exports are based on the published overseas trade statistics for intra-EU trade and extra-EU trade produced by HM Revenue & Customs (HMRC) and available at www.uktradeinfo.com.

Data on apparent consumption is derived as UK production plus imports less exports.

Data Sources and Methodology

The data obtained from HMRC cover quantities (weights and volumes) and values of wood and wood products imported to and exported from the UK. Data are compiled for the following products:

- roundwood - woodfuel, industrial roundwood;
- wood charcoal;
- wood pellets;
- wood chips, particles and residues;
- sawnwood;
- wood-based panels - veneer sheets, plywood, particleboard, fibreboard;
- pulp - wood pulp, other pulp;
- recovered paper;
- recovered wood;
- paper & paperboard - graphic papers (including newsprint), sanitary & household papers, packaging materials, other paper & paperboard.

For roundwood, sawnwood and wood-based panels, a softwood/hardwood breakdown is available.

The HMRC data are also available by country of origin (for imports) and destination country (for exports).

For consistency with timber deliveries data, roundwood and wood chip exports figures are replaced by those compiled from companies believed to export roundwood and/or chips. For Northern Ireland, figures are provided by the Forest Service. A change in methodology was introduced for this publication, to use HMRC data for hardwood roundwood exports from 2012.

Where the HMRC reporting units for quantity differ from those shown in this publication, figures are adjusted using standard FAO/ECE conversion factors, which are listed in the Timber section of the Sources chapter.

The figures may also be adjusted where an apparent inconsistency in the UK trade figures cannot be resolved before the international return is required.

Historically, HMRC wood trade figures have often necessitated adjustments, following liaison with practitioners in the trade (including the Expert Group on Timber and Trade

Statistics, Wood Panel Industries Federation (www.wpif.org.uk) and Confederation of Paper Industries (www.paper.org.uk). This is partly because detailed intra-EU wood trade data is obtained through a survey of businesses that trade above a particular value threshold. Businesses that trade below this threshold are only required to report the total value of their imports and exports. Therefore the trade data reported in this publication for individual products is based on a potentially biased survey. More information on HMRC statistics can be found at www.uktradeinfo.com/Statistics/Pages/Statistics.aspx.

The "Methodology note: UK wood imports and exports" sets out the data analysis methods used to produce annual estimates of UK wood imports and exports and is available at www.forestresearch.gov.uk/tools-and-resources/statistics/about-our-statistics/methodology-and-outputs/.

Quality

Detailed information on the quality of the trade statistics presented in this publication is provided in the "Quality Report: UK Wood Production and Trade", available at www.forestresearch.gov.uk/tools-and-resources/statistics/about-our-statistics/code-of-practice/quality-of-official-statistics/.

Further quality information on FC Official Statistics is available at: www.forestresearch.gov.uk/tools-and-resources/statistics/about-our-statistics/code-of-practice/quality-of-official-statistics/.

Revisions

Statistics on imports and exports are subject to revision after publication if revisions are made to the overseas trade statistics produced by HMRC. Figures may also be refined to take account of expert advice from the Expert Group on Timber & Trade Statistics and trade associations on the trade in specific products.

Figures for 2017 are final; provisional figures were previously released in "UK Wood Production and Trade: 2017 provisional figures". Since the release of 2017 provisional figures, the following revisions have been made:

- Import quantities – sawnwood up 2% in 2016 and 4% in 2017, woodbased panels down 10% in 2017, "other wood" down 7% in 2016 and 32% in 2017;
- Export quantities – sawnwood up 1% in 2016, woodbased panels up 1% in 2017, "other wood" down 1% in 2016 and down 5% in 2017, wood pellets down 2% in 2016, pulp up 3% in 2016 and down 1 % in 2017;
- Import values – sawnwood up 1% in 2016 and in 2017, wood-based panels down 6% in 2017, "other wood" up 7% in 2016 and down 14% in 2017;
- Export values – woodbased panels down 1% in 2017 and "other wood" down 17% in 2016 and down 15% in 2017.

Other revisions to 2016 and 2017 data resulted in changes of no more than 1% magnitude.

Information on revisions made since "Forestry Statistics 2017" are provided in "UK Wood Production and Trade: 2017 provisional figures".

Information on significant revisions to published statistics is provided in the "Quality Report: UK Wood Production and Trade" at www.forestresearch.gov.uk/tools-and-resources/statistics/about-our-statistics/code-of-practice/quality-of-official-statistics/.

The Forestry Commission's revisions policy sets out how revisions and errors to these statistics are dealt with, and can be found at: www.forestresearch.gov.uk/documents/4355/FCrevisions.pdf.

Further information

Most of these statistics are used to compile data that are sent to international organisations in the Joint Forest Sector Questionnaires, in some cases giving more detail than in this release. These returns are published as Official Statistics on the FC website; provisional figures in May and final figures in September/ October. The statistics are used by Eurostat Forestry Statistics, UNECE Timber Bulletins, and UN/FAO Forest Product Statistics and are published on the FAOSTAT database (<http://faostat3.fao.org>).

A summary of the international statistics available from the FAOSTAT website are presented in the chapter on International Forestry. For more information, please refer to the International Forestry section of the Sources chapter.

The definitions used in this publication are consistent with the international definitions, as given in the Joint Forest Sector Questionnaire definitions, available at www.fao.org/forestry/statistics/80572/en/.

The United Nations Economic Commission for Europe (UNECE) Committee on Forests and the Forest Industry (previously the UNECE Timber Committee) also collects, on an annual basis, estimates for the current year and projections for the following year of wood production, imports and exports. Results are available on the UNECE website (www.unece.org/forests/fpm/timbercommittee.html). Copies of UK returns for the UNECE Timber Forecast Questionnaire are available at www.forestresearch.gov.uk/tools-and-resources/statistics/statistics-by-topic/international-returns/unece-timber-forecast-questionnaire/.

Figures for UK imports and exports of sawn softwood have previously been used alongside data from other sources to assess consumption of sawn softwood in the main end-user markets in the UK. Reports are available at www.forestresearch.gov.uk/tools-and-resources/statistics/statistics-by-topic/timber-statistics/timber-utilisation-statistics/.

Release schedule

Provisional trade figures for 2018 will be released on 16 May 2019 in "UK Wood Production and Trade: 2018 provisional figures".

Final trade figures for 2018 will be released on 26 September 2019 in "Forestry Statistics 2019" and "Forestry Facts & Figures 2019".

11.4 Sources: UK Forests and Climate Change

Introduction

Forests can help mitigate climate change by reducing the amount of greenhouse gases in the atmosphere. They do this by absorbing carbon dioxide, using the carbon to produce sugars for tree growth and releasing the oxygen back into the air. As trees grow, they store carbon in their leaves, twigs and trunk, and in the soil around them.

Globally, deforestation caused by the unsustainable harvesting of timber and the conversion of forests to other land uses accounts for almost 20 per cent of global carbon dioxide emissions. The amount of carbon stored can be increased by actions to reduce the amount of deforestation and to convert non-forested areas to forest. Forests can be managed as a sustainable source of wood – an alternative energy source to fossil fuels, and a low-energy construction material.

Woodlands can also help society adapt to a changing climate, by reducing the risk of flooding, providing shade for wildlife, reducing soil erosion and helping to cool down towns and cities.

Data sources and methodology

Carbon cycle

The diagram showing the carbon cycle is adapted from Figure 3 of Broadmeadow and Matthews (2003).

Forest carbon stock

Table 4.1 is adapted from Table 3e in the final UK report submitted in August 2014 to FAO for the Global Forest Resources Assessment (FRA) 2015 (www.fao.org/forest-resources-assessment/en/).

Units: This table is shown in million tonnes carbon dioxide equivalent (MtCO₂e) rather than million tonnes carbon (MtC). To convert from CO₂e to C multiply by 12/44.

Timescales: Carbon stock is estimated for 1990, 2000, 2005, 2010 and 2015.

Living biomass: Carbon in living biomass is based on data from "NFI report: Carbon in live woodland trees in Britain" (Forestry Commission, May 2014), updated from GB to UK estimates based on estimated volumes of growing stock. A "root to shoot ratio" (below ground biomass = 0.36 x above ground biomass) is used to estimate the breakdown between above- and below- ground biomass (Levy et al, 2004).

Deadwood: Consistent with Morison et al (2012), estimates of deadwood volume per hectare are taken from Gilbert (2007). These are rated up by woodland area estimates for FRA 2015, assuming a density of 0.45 ODT/m³, and an average carbon content of 50% is applied.

Litter: Estimates of the carbon content of the litter layer are available from Morison et al (2012). These are rated up by woodland area estimates for FRA 2015 to provide a consistent time series.

Soil carbon: Estimates of the carbon content of soil 0-100 cm for England, Wales and Scotland are available from Morison et al (2012). An estimate of the carbon content of soil for Northern Ireland is taken from Bradley et al (2005) and rated downward to reflect the generally lower carbon content found in Morison et al (2012). The soil carbon estimates are then rated up by woodland area estimates for FRA 2015 to provide a consistent time series. This soil estimate does not take account of soil carbon accumulation. This was previously included from estimates made by the Centre for Ecology and Hydrology in "Land Use, Land Use Change and Forestry" (LULUCF) modelling. It also assumes that the soil carbon content of afforested (and previously unwooded) land has the same soil carbon content as woodland soils, whereas in practice this may vary.

Comparison with other data sources: Figures in this updated table are broadly similar to the estimates made in Morison et al (2012).

Future updates: This table will be updated once further information is available from the National Forest Inventory.

Carbon sequestration

The information in Table 4.2 is taken from inventory and projections of UK emissions by sources and removal by sinks due to land use, land use change and forestry, produced by CEH for the National Atmospheric Emissions Inventory (NAEI, <http://naei.beis.gov.uk/>) which incorporates all air pollutants including greenhouse gases.

Figure 4.2 shows annual estimates of carbon accumulation by country, taken from the same source but shows carbon in living forest biomass only; it excludes carbon in litter, soils and forest products. Future predictions of carbon uptake assume that commercial conifer plantations will be replanted when felled, and that planting of new woodland will follow a central projection whereby planting up to 2020 is determined by the available grant for woodland creation (i.e. policy and funding in place), and after that planting rates drop to 10% of the baseline projection, reflecting the lack of funding beyond the current Rural Development Plan.

For more information, please refer to the CEH "Greenhouse Gas Inventories for England, Scotland, Wales and Northern Ireland: 1990 to 2016" (http://naei.beis.gov.uk/reports/reports?report_id=958) and "Projections to 2050 of emissions and removals from the LULUCF sector in Scotland, England, Wales and Northern Ireland" (http://naei.beis.gov.uk/reports/reports?report_id=927). Information on the uncertainty around estimates of greenhouse gas emissions is available in the report "Quantifying Greenhouse Gas Emissions" (Committee on Climate Change, 2017 at <https://www.theccc.org.uk/publication/quantifying-greenhouse-gas-emissions/>).

Emissions and sequestration can be presented as tonnes carbon or tonnes carbon dioxide (CO₂). To convert from tonnes CO₂ to tonnes carbon multiply by 12/44.

Woodland Carbon Code

The Woodland Carbon Code is a voluntary standard, initiated in July 2011, for woodland creation projects that make claims about the carbon they sequester (take out of the atmosphere). All projects must be placed on the UK Woodland Carbon Registry. Their claims about potential carbon sequestration are validated by an independent certification body. Validated projects are then verified on a regular basis to confirm the progress of carbon sequestration.

Information about Woodland Carbon Code projects comes from the UK Woodland Carbon Registry, housed on the Markit Environmental Registry (www.markit.com/product/registry). The register is a live database and summary data are extracted on a quarterly basis.

Further information on the Woodland Carbon Code is available at:
www.forestry.gov.uk/carboncode.

Further information on administrative sources can be found at:
www.forestresearch.gov.uk/tools-and-resources/statistics/about-our-statistics/code-of-practice/administrative-sources/.

Public opinion on climate change

Public Opinion of Forestry Surveys have been run every 2 years by the Forestry Commission. The surveys cover public attitudes to forestry and forestry-related issues. The surveys included up to 2 questions on climate change: one asking about ways in which forests and woodlands can impact on climate change and one asking about how UK forests should be managed in response to the threat of climate change (Table 4.4). Further information on the surveys is available in the Sources: Public Opinion of Forestry page.

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Quality

All of the statistics in this chapter are outside the scope of National Statistics, but are included here to give a broad indication of the role of UK forests in climate change.

Revisions

Statistics on UK forests and climate change obtained from others are subject to revision whenever the source data are revised.

The Forestry Commission's revisions policy sets out how revisions and errors to these statistics are dealt with, and can be found at:

www.forestresearch.gov.uk/documents/4355/FCrevisions.pdf.

Release schedule

For information on the release schedules of statistics produced by others, see relevant websites (above).

Woodland Carbon Code Statistics have now moved from a quarterly to an annual release. Data for the year ending March 2018 will be released in "Provisional Woodland Statistics: 2019 Edition" on 13 June 2019.

"Forestry Statistics 2019" and "Forestry Facts & Figures 2019" will be released on 26 September 2019.

The next Public Opinion of Forestry Survey is expected to run in early 2019, with results available in summer 2019.

11.5 Sources: Environment

Introduction

The statistics presented in the Environment chapter of this release cover:

- populations of wild birds;
- public opinion on tree health; and
- woodland fires.

Woodland fires

Wildfires, including woodland fires, are uncontrolled vegetation fires. Although they can start naturally, the majority are caused by people, either accidentally or deliberately.

Wildfires can impact on transport network and power lines; damage property and businesses; affect tourism and recreation; and threaten people's lives. They also damage the natural and historic environment and release carbon dioxide stored in vegetation and soils which contributes to climate change.

Despite woodland wildfires making up a relatively small proportion of all wildfire incidents in the UK, their impacts can be disproportionately large and costly to society. Destructive wildfire events are predicted to increase in frequency in the UK due to increased land-use pressure and climate change.

Data sources and methodology

Populations of wild birds

Population indices for wild birds are a framework indicator for sustainable development. The data published here are based on those published in the Wild bird populations in the UK, 1970-2016 statistical release (Defra, November 2017), rescaled here to give year 2000 = 100 instead of year 1970 = 100.

The index for woodland specialists was recalculated in 2007 to include 4 additional species; this affected the indices for total woodland birds and (to a lesser extent) all birds. A further change in 2015 resulted in the removal of one woodland specialist species from the index. A seabird index was excluded in 2017.

Public opinion on tree health

Public Opinion of Forestry Surveys have been run every 2 years by the Forestry Commission. The surveys cover public attitudes to forestry and forestry-related issues. A question asking about tree health was included for the first time in the 2013 surveys (Figure 5.2). Further information on the surveys is available in the Sources: Public Opinion of Forestry page.

Woodland fires

Information about wildfires comes from the Incident Recording System (IRS), reported by Fire and Rescue Services and submitted to the Home Office (previously to the Department for Communities and Local Government), Scottish Government and Welsh Government.

Information on woodland areas has been obtained from the National Forest Inventory woodland map. Further details on the definition of woodland and the coverage of the National Forest Inventory are provided in the Woodland Area and Planting section of the Sources chapter.

A spatial (GIS) analysis has been undertaken to identify fires that occurred in woodlands, as defined by the National Forest Inventory.

References

Department for Environment, Food and Rural Affairs (2017) "Wild bird populations in the UK, 1970-2016", National Statistics Release (www.gov.uk/government/publications/wild-bird-populations-in-the-uk).

Home Office "Fire Statistics data tables" (www.gov.uk/government/collections/fire-statistics).

Quality

Limited data are currently available on the environmental aspects of woodlands. Other than Wild Bird Populations, all of the statistics in this chapter are outside the scope of National Statistics, but are included here to give a broad indication of the woodland environment.

Revisions

Statistics on the environment obtained from others are subject to revision whenever the source data are revised.

The data on woodland fires in 2015-16 and 2016-17 are released for the first time in this publication. Figures for earlier years have been revised from previous editions of Forestry Statistics to:

- exclude "loose refuse" fires, resulting in a reduction of 2,122 woodland fires in England in 2011-12, 129 fires in Wales in 2013-14 and 122 fires in Wales in 2014-15; and
- include an area of 200 hectares burnt in Wales in 2011-12 that had previously been incorrectly excluded.

The Forestry Commission's revisions policy sets out how revisions and errors to these statistics are dealt with, and can be found at:

www.forestryresearch.gov.uk/documents/4355/FCrevisions.pdf.

Release schedule

For information on the release schedules of statistics produced by others, see relevant websites (above).

The next Public Opinion of Forestry survey is expected to run in early 2019, with results available in summer 2019.

"Forestry Statistics 2019" and "Forestry Facts & Figures 2019" will be released on 26 September 2019.

11.6 Sources: Public Opinion of Forestry

Introduction

The Forestry Commission has conducted similar surveys of public attitudes to forestry and forestry-related issues every two years since 1995. Three separate surveys were undertaken in 2017; in Scotland, Wales and across the UK as a whole. A survey for Northern Ireland was most recently carried out in 2014.

Some questions were asked in all of the surveys conducted in 2014/2017 and in the surveys undertaken in earlier years, but an increasing number are survey specific. Questions are asked on a variety of topics including, public awareness of forestry, woodland-based recreation and community involvement, woodfuel and the relationship between forestry and climate change. Tree health was introduced in the 2013/2014 surveys and continued in more recent surveys. Questions on urban trees were introduced in 2017 surveys.

Data Sources and Methodology

The survey results were obtained by placing questions in omnibus surveys run by private market research companies. The four surveys undertaken in 2014/2017 achieved representative samples of:

- 2,113 adults across the UK;
- 1,013 adults across Scotland;
- 1,035 adults across Wales;
- 994 adults across Northern Ireland.

All of the surveys use quota sampling to ensure that the sample selected is representative of the population, and results are weighted to produce estimates for the population as a whole.

Further information on the methodologies used for each survey are provided in the individual survey reports, available at www.forestresearch.gov.uk/tools-and-resources/statistics/statistics-by-topic/public-opinion-of-forestry/.

Quality

All results are subject to the effects of chance in sampling, so a range of uncertainty (confidence interval) is associated with results from the surveys. The confidence intervals take into account the effect of clustering, weighting and stratification in the survey designs. For questions asked to the whole UK sample in 2017 of around 2,100, the range of uncertainty around any result should be no more than $\pm 3.2\%$, while for questions asked to around 1,000 respondents, the corresponding range of uncertainty should be no more than $\pm 4.6\%$.

Revisions

Results from the Public Opinion of Forestry (POF) Surveys were previously released in the separate POF reports for each country. The statistics are not normally revised.

The Forestry Commission's revisions policy sets out how revisions and errors are dealt with and can be found at www.forestresearch.gov.uk/documents/4355/FCrevisions.pdf.

Further information

Reports for UK and England (using a subset of the UK data set), for Scotland and for Wales were published on 13 July 2017, along with the full sets of data tables.

A report for Northern Ireland was published on 28 August 2014, along with the full set of data tables.

Reports and data tables (including results for previous surveys) are available at www.forestresearch.gov.uk/tools-and-resources/statistics/statistics-by-topic/public-opinion-of-forestry/.

Release schedule

The next Public Opinion of Forestry surveys are expected to run in early 2019, with results available in summer 2019.

11.7 Sources: Recreation

Introduction

There are two main approaches to visitor monitoring:

- General population surveys of individuals at their home. This approach is employed for Scotland's People and Nature Survey, the Welsh Outdoor Recreation Survey, the Monitor of Engagement with the Natural Environment (England) and the Public Opinion of Forestry surveys. (Tables 6.1 to 6.6).
- Surveying and counting of visitors to a specific area or woodland. On-site surveying has been employed for the All Forests surveys. In addition, the Northern Ireland Forest Service keep records of visitors who pay an admission charge to their sites. (Tables 6.7 to 6.8).

There are advantages and disadvantages to each approach, related to factors such as representativeness, feasibility and cost; each approach provides different types of information.

In general, on-site studies provide information on visitor interaction with local or specific woodland areas and include all categories of visitors to a site, regardless of their country of residence and interests.

In contrast, general population studies are limited to residents of a certain country or area, are often carried out by market research companies at a national level, and include people who do not visit woodlands.

Data Sources and Methodology

Household surveys

The information shown in Table 6.1 has been obtained from the following general population household surveys.

- UK Day Visits Surveys (1994, 1996, 1998)
- GB Day Visits Survey (2002/3)
- Scottish Recreation Survey (2004 to 2012)
- England Leisure Visits Survey (2005)
- Welsh Outdoor Recreation Survey (2008, 2011, 2014)
- Monitor of Engagement with the Natural Environment (England 2009/10 onwards)
- Scotland's People and Nature Survey (2013)

The Monitor of Engagement with the Natural Environment has also been used to provide information on visitor characteristics in table 6.2. For further information on this survey, see www.gov.uk/government/collections/monitor-of-engagement-with-the-natural-environment-survey-purpose-and-results.

Estimates of frequency of visits to woodlands in Scotland (Table 6.3) has been produced from Scotland's People and Nature Survey, that ran from March 2013 to February

2014. Scotland's People and Nature Survey replaces the Scottish Recreation Survey. Further information on both surveys are available at www.snh.gov.uk/land-and-sea/managing-recreation-and-access/increasing-participation/measuring-participation/.

The Welsh Outdoor Recreation Survey also provides statistics on visitor characteristics (Table 6.4). More recently, outdoor recreation has been covered by the National Survey in Wales. Further information on the National Survey, and access to earlier results from the Welsh Outdoor Recreation Survey, are available at: <https://naturalresources.wales/evidence-and-data/research-and-reports/national-survey-for-wales/?lang=en>.

Public Opinion of Forestry Surveys have been run every 2 years by the Forestry Commission. The surveys cover public attitudes to forestry and forestry-related issues, including visits to woodland (Tables 6.5 to 6.6 and Figure 6.1). Further information is available on the previous page.

On-site surveys

All Forests Surveys were run at a sample of Forestry Commission sites in Scotland from 2004 to 2007 and in 2012-13 (Table 6.7), to provide estimates of the numbers of visits to the National Forest Estate in Scotland. An All Forests Survey was also run in Wales in 2004, but is no longer included in Forestry Statistics. Further information is available at www.forestresearch.gov.uk/tools-and-resources/statistics/statistics-by-topic/recreation-statistics/all-forests-monitoring/. More recent estimates of the number of visitors to the National Forest Estate in Scotland has been produced by Forestry Commission Scotland, updating the All Forests Survey estimates using automatic counters and, for sites without counters, using the results from the 2012-13 All Forests Survey and advice from local managers.

Estimates for numbers of visits to the Public Forest Estate in England are provided in the Forest Enterprise England Natural Capital Accounts, available at <https://www.forestry.gov.uk/forestry/BEEH-APTCAS>.

Statistics on the day visitors to Forest Service sites in Northern Ireland where an admission charge is made is provided by the Forest Service. Further information on the Forest Service is available at <https://www.daera-ni.gov.uk/topics/forestry>.

Public Access to Woodland

Data on public access to woodland are derived from sources belonging to the Woodland Trust:

- The Woods for People project created an inventory of accessible woodland in 2004. Annual updates have been undertaken since and the data available to date are included in Table 6.9.
- The Space for People project analyses information from the Woods for People inventory to produce estimates on the proportion of the population who live close to woods. Full reports have been published, giving data for 2004, 2009, 2012 and 2016. Summary results are in Table 6.10.

Further information is available at www.woodlandtrust.org.uk/.

Quality

It is notable from Table 6.1 that different surveys have provided some quite different estimates of the aggregate number of visits to woodlands. It is likely that differences in survey design and methodology have contributed to a considerable proportion of the differences in results between these surveys. As the scope of the surveys has evolved over time, the figures in Table 6.1 should not be interpreted as time trends but instead as separate results from each survey.

For England and GB, the 2002/3 GBDVS showed a lower number of visits to woodlands than previous surveys. For England, ELVS 2005 showed an even lower total. It is likely that the use of different market research companies and varying approaches and practices (in-home or telephone interview, changed questionnaire structure, etc) are responsible for a substantial proportion of the differences identified in the table. The questionnaire wording for MENE, starting in 2009/10, was intended to prompt the reporting of more of the short local trips, and this has resulted in a substantial increase in the total woodland visits reported.

Table 6.1 also highlights large differences between UK/GBDVS and later surveys in the estimates for Scotland and Wales, with results for both countries dramatically higher in recent years (and despite the Welsh figure being limited to trips with woodland as main destination). It is again likely that this variation is primarily connected with the change in survey scope, design and methodology (UK and GB Day Visit Surveys until 2002/3, Scottish Recreation Survey for 2004 to 2012, Welsh Outdoor Recreation Survey 2008, 2011 and 2014).

A further inconsistency may have occurred between the Scottish Recreation Survey and Scotland's People and Nature Survey, resulting in an apparently large increase in the number of woodland visits between 2012 and 2013. The 2013 estimate uses a new population estimate to gross up the survey results to an estimate of the total number of visits by the population as a whole, and this change has contributed to at least some of the apparent increase.

In common with all sample based surveys, the results from each survey are subject to the effects of chance, depending on the particular survey method used and the sample achieved, thus confidence limits apply to all results from these surveys. For example, the range of uncertainty around the estimated 62 million visits to woodland in Scotland (by Scottish residents) in 2008, should be within +/-14%, i.e. the true figure is likely to be between around 55 and 69 million.

In the Scottish Recreation Survey, the reports produced by TNS calculate the total number of visits for each month based on the average number of visits in a 4-week recall period, scaled up to the number of days in the month, applied to the Scottish adult population. These estimates are then allocated to trip locations using a data set of individual visit-weighted data. In reports produced by TNS and earlier editions of Forestry Statistics, this allocation was done for each quarter using rounded percentages. From Forestry

Statistics 2010 the calculation was changed to use annual unrounded weighted data; this should be more accurate and ensures that "main destination" results add across categories.

The Wales 2008 total is not shown explicitly in the initial reports for WORS 2008. It is calculated from the following figures in the tables: 36.028 million visits in 4 weeks x 13 (the number of 4 week periods in a year) x 14% to woodland (where the 14% is derived, unrounded, from 820/6045 in the weighted results).

For England, woodland visits in MENE were identified in the part of the questionnaire that collected details for one visit per respondent. Appropriate visit weights were applied to each record in this data set, and weighted tables were then produced selecting all visits that included woodland.

Technical reports, providing further information on MENE, ScRS and WORS, are available from relevant websites (see above).

Comparison between household and on-site surveys in Scotland

The aggregate visit number estimates for Forestry Commission Scotland woodland obtained from the on-site All Forests Scotland surveys (9.1 million in 2012-13, Table 6.7) is substantially lower than the estimates derived from the Scottish Recreation Survey (around 27 million for 2012, see Forestry Statistics 2013, Table 6.3).

Although it would be unreasonable to expect that two surveys which employ such differing methods would produce consistent estimates, the magnitude of the difference is notable.

The methodology used in the All Forests Surveys is believed to produce a more reliable estimate of the total number of visits annually to Forestry Commission Scotland woodland. It is likely that the estimates derived from the Scottish Recreation Survey may include visits to woodlands owned by others (with respondents reporting "Forestry Commission" as the owner, as this is an organisation that they recognise).

Revisions

Most of the statistics in the Recreation chapter have been previously released in other publications, usually by other organisations. The latest year figures for day visitors to Forest Service sites in Northern Ireland are published for the first time in this release. Figures for earlier years have not been revised from those published in Forestry Statistics 2017.

When originally published by Woodland Trust, Woods for People data for publicly accessible woodland in 2004 included some non-woodland areas. They were revised in 2007, before their first inclusion in Forestry Statistics, to include woodland areas only.

Results for the Scottish Recreation Survey for years up to 2007 (Table 6.1) were amended in 2009 from previously published figures, to incorporate improved weighting procedures.

The Forestry Commission's revisions policy sets out how revisions and errors are dealt with and can be found at www.forestresearch.gov.uk/documents/4355/FCrevisions.pdf.

Further information

Further information on recreation statistics and access to individual survey reports is available from www.forestresearch.gov.uk/tools-and-resources/statistics/statistics-by-topic/recreation-statistics/.

Release schedule

For information on the release schedules of statistics produced by others, see relevant websites (above).

The next Public Opinion of Forestry survey is expected to run in early 2019, with results available in summer 2019.

"Forestry Statistics 2019" and "Forestry Facts & Figures 2019" will be released on 26 September 2019.

11.8 Sources: Employment and businesses

Introduction

Data sources and methodology

Statistics on employment are obtained from:

- the Annual Business Survey (www.ons.gov.uk/ons/rel/abs/annual-business-survey/index.html), formerly the Annual Business Inquiry, (Office for National Statistics (www.ons.gov.uk)), an annual survey of UK businesses, and
- Industry surveys (Sawmill Survey, Survey of Round Fencing Manufacturers) and industry associations (UK Forest Products Association (www.ukfpa.co.uk), Wood Panel Industries Federation (www.wpif.org.uk)) - for employment in primary wood processing.

Statistics for accidents to employees are obtained from Health & Safety Executive statistics for Great Britain, available at www.hse.gov.uk/statistics.

Numbers of businesses are estimated from:

- Industry surveys (Sawmill Survey, Survey of Round Fencing Manufacturers) and industry associations (UK Forest Products Association, Wood Panel Industries Federation) - for businesses believed to be using UK-grown roundwood, and
- UK Business: Activity, Size and Location (Office for National Statistics) - for VAT and/or PAYE registered businesses (www.ons.gov.uk/ons/rel/bus-register/uk-business/index.html).

Standard Industrial Classification (SIC)

The Annual Business Survey (Annual Business Inquiry prior to 2009), statistics on health and safety and statistics on VAT and/or PAYE registrations classify businesses by UK Standard Industrial Classification (SIC) code. Detailed information on the SIC is available at:

<https://www.ons.gov.uk/methodology/classificationsandstandards/ukstandardindustrialclassificationofeconomicactivities/uksic2007>.

Businesses are classified to SIC codes according to their main activity. The SIC codes are revised periodically to take account of changes in the global economy. The following codes from SIC 2003 and SIC 2007 have been used in this edition of Forestry Statistics:

Standard Industrial Classification

Title	SIC 2003	SIC 2007
Forestry	02 (forestry, logging & related services)	02 (forestry and logging)
Wood products	20 (manufacture of wood and wood products)	16 (manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials)
Sawmilling	20.1 (sawmilling and planing of wood, impregnation of wood)	16.1 (sawmilling and planing of wood)
Panels	20.2 (manufacture of veneer sheets, manufacture of plywood, laminboard, particleboard and other panels and boards)	16.21 (manufacture of veneer sheets and wood-based panels);
Secondary products	Other SIC 20 (manufacture of builders' carpentry and joinery, wooden containers, and other products of wood, straw and plaiting materials)	Other SIC 16 (manufacture of assembled parquet floors, other builders' carpentry and joinery, wooden containers, and other products of wood, straw and plaiting materials)
Pulp, paper & paper products	21 (manufacture of pulp, paper and paperboard).	17 (manufacture of paper and paper products)
Pulp & paper	21.1 (manufacture of pulp, paper and paper products)	17.1 (manufacture of pulp, paper and paperboard)
Articles of paper & paperboard	21.2 (manufacture of articles of paper and paperboard)	17.2 (manufacture of articles of paper and paperboard)
Total wood processing	SIC 20 + SIC 21	SIC 16 + SIC 17
Total primary wood processing	SIC 20.1 + SIC 20.2 + SIC 21.1	SIC 16.1 + SIC 16.21 + SIC 17.1

In addition figure 7.1, covering accidents to employees, also uses the following SIC 2003/2007 codes:

- Agriculture etc: 01/01 (agriculture, hunting) + 02/02 (forestry, logging & related services) + 05/03 (fishing, exc sea fishing);
- Manufacturing: 15-37/10-33 (all categories of manufacturing) .

Quality

The forestry and wood processing businesses covered by the Annual Business Survey (Table 7.1), accidents to employees (Table 7.3) and VAT and/or PAYE registered businesses (Table 7.5) differ from those covered by the timber industry surveys and enquiries (Chapter 2, Tables 7.2 and 7.4), as follows:

- Businesses below VAT and PAYE thresholds are excluded from the SIC-based statistics;

- businesses whose main activity is not forestry or wood processing will be allocated to other SIC codes and therefore excluded from the relevant tables on the Annual Business Survey, accidents and VAT and/or PAYE businesses;
- businesses that do not use UK-grown roundwood are excluded from the Forestry Commission's timber industry surveys and enquiries;
- businesses involved in secondary wood processing are excluded from the Forestry Commission's timber industry surveys and enquiries.

Reporting requirements for accidents have changed, with absences of at least 3 days to be reported until March 2012 and absences of at least 7 days to be reported from April 2012. As a result, accident data from 2012-13 are not fully consistent with figures for earlier years.

Revisions

Statistics on employment and businesses obtained from others are subject to revision whenever the source data are revised.

Statistics from timber industry surveys and enquiries are subject to revision whenever the timber statistics are revised (see relevant pages within the Sources chapter for further information on revisions to industry surveys and enquiries). The revisions made to the sawmill survey and the survey of round fencing manufacturers have resulted in:

- Table 7.4: a reduction in the number of sawmills, by 1 from 2010 to 2014 and by 2 in 2016.

The Forestry Commission's revisions policy sets out how revisions and errors to these statistics are dealt with, and can be found at:

www.forestresearch.gov.uk/documents/4355/FCrevisions.pdf.

Further information

For further information, please refer to our Employment statistics page

at www.forestresearch.gov.uk/tools-and-resources/statistics/statistics-by-topic/other-topics/employment-statistics/.

Release schedule

For information on the release schedules of statistics produced by others, see relevant websites (above).

"Forestry Statistics 2019" and "Forestry Facts & Figures 2019" will be released on 26 September 2019.

11.9 Sources: Finance & prices

Introduction

The statistics presented in the Finance and Prices chapter of this release cover:

- timber prices;
- financial returns from forestry investment;
- gross value added (GVA);
- government expenditure on forestry; and
- grant schemes.

Figures on financial returns from forestry are produced by another organisation; they are not designated as National Statistics, but are provided to give additional context.

Data Sources and Methodology

Timber Price Indices: Data sources

The Coniferous Standing Sales Price Index and the Softwood Sawlog Price Index are both based on sales of softwood (conifers) by the Forestry Commission and Natural Resources Wales; they do not include any private sector data. They only cover roundwood from woodland; they do not cover sawmill products or other end products.

The Coniferous Standing Sales Price Index (CSSPI) is based on administrative data for standing sales of conifers (softwood) by the Forestry Commission/ Natural Resources Wales. Around 60% of Forestry Commission/ Natural Resources Wales softwood is sold standing, with the purchaser responsible for harvesting. The standing sales cover a full range of sizes, as they include thinning and removal of trees for environmental reasons, as well as harvesting of mature trees. The data used to compile the index covers volumes sold and values by average tree size.

The Softwood Sawlog Price Index (SSPI) is based on administrative data for sales of softwood sawlogs by the Forestry Commission/ Natural Resources Wales. The data used to compile the index covers volumes and values. Direct production by the Forestry Commission/ Natural Resources Wales (where the softwood is sold after harvesting) also covers a range of sizes, but the price statistics reported are limited to sales of logs (over 14 cm diameter).

Both the Coniferous Standing Sales Price Index and the Softwood Sawlog Price Index include sales by long term contract, where the volume of roundwood covered by the contract is sold over a period of more than one year. To take account of changes in price over the term of the contract, price adjustments are made periodically, as part of the contract. The Coniferous Standing Sales Price Index and Softwood Sawlog Price Index include roundwood sales by long term contract but, at present, price adjustments are not included in the indices.

The data for both the Coniferous Standing Sales Price Index and the Softwood Sawlog Price Index are obtained from:

1. the Forestry Commission's Sales Recording Package (SRP). SRP was also used by Natural Resources Wales until February 2017.
2. the timber sales system used by Natural Resources Wales from April 2017 (there were no sales by NRW in March 2017). Sales of softwood sawlogs from April 2017 to March 2018 have been incorporated into the Softwood Sawlog Price Index. As standing sales by size category are not yet available from this system, no figures for Natural Resources Wales from April 2017 have been included in the Coniferous Standing Sales Price Index.

Further information on the administrative data is provided in the Statement of Administrative Sources on the FC Sales Recording Package, available at www.forestresearch.gov.uk/tools-and-resources/statistics/about-our-statistics/code-of-practice/administrative-sources/.

Methodology for Coniferous Standing Sales Price Index

The Coniferous Standing Sales Price Index (CSSPI) is an index of the average prices per cubic metre overbark standing achieved for standing sales of conifers by the Forestry Commission/ Natural Resources Wales. It covers all conifer standing sales (open market and negotiated) by the Forestry Commission/ Natural Resources Wales over the twelve month period. All thinning and clearfell data is combined within the index. It includes all species, tree sizes, working practices and conditions. It does not include any private sector data.

The Coniferous Standing Sales Price Index (CSSPI) is calculated using a Fisher index with 5-yearly chain linking. By using a Fisher index to produce the index, distortions in the average price caused by variations in the average tree size over time are corrected. Applying chain linking at regular intervals (in this case, every 5 years) ensures that the index remains relevant over time. Other factors that may affect price (e.g. working conditions, timber quality or species) are not taken into account when constructing the index.

The methodology used to calculate the Coniferous Standing Sales Price Index was reviewed in 2008, with the Fisher index with 5-yearly chain linking introduced from the November 2008 publication of "Timber Price Indices". Further information on the methodology used to calculate the Coniferous Standing Sales Price Index is provided in the paper "Methodology for the Coniferous Standing Sales Price Index", available from the Statistical Methodology and Outputs page of the Forestry Commission website at www.forestresearch.gov.uk/tools-and-resources/statistics/about-our-statistics/methodology-and-outputs/.

The average prices and the index are expressed in nominal terms (i.e. the actual prices at the time of sale) and in real terms (i.e. the prices converted to 2016). The GDP (Gross Domestic Product at market prices) deflator, produced by the Office for National Statistics (ONS), is applied to the nominal figures to derive real average prices and the index in real

terms. The GDP deflator data can be downloaded from the ONS Quarterly National Accounts dataset at www.ons.gov.uk/economy/grossdomesticproductgdp/timeseries/ybgb.

Methodology for Softwood Sawlog Price Index

The Softwood Sawlog Price Index is calculated from data covering separate 6-month periods to September and March. This means that the changes reported are not covering the same periods as the Coniferous Standing Sales Price Index.

The index measures the average price per cubic metre overbark of sawlog sales, with no adjustment for any change in size mix, as it covers a more limited range of sizes than the Coniferous Standing Sales Price Index.

The index was revised in May 2017 to correct a number of inconsistencies in the underlying data. This revised index, covering open market sales only and all lengths of log, was then extended in November 2017 to include sales by negotiation.

The index is expressed in nominal terms (i.e. based on the actual prices at the time of sale) and in real terms (i.e. based on the prices converted to 2016 prices, by removing the effects of general inflation). As for the Coniferous Standing Sales Price Index, the GDP (Gross Domestic Product at market prices) deflator is used to convert from nominal to real terms.

For consistency with the Coniferous Standing Sales Price Index, the Softwood Sawlog Price Index is rebased every 5 years; in this release, the period to September 2016 = 100.

Financial returns

Estimates of financial returns from commercial Sitka spruce plantations are compiled and published by Investment Property Databank Limited (IPD), www.msci.com/www/upd-factsheets/ipd-uk-annual-forestry-index/0163322597. The returns include changes in the value of forestry estates, as well as timber price changes.

Gross Value Added

Gross value added (GVA) measures the contribution to the economy of each individual producer, industry or sector in the United Kingdom.

Statistics on gross value added are obtained from the Annual Business Survey, formerly the Annual Business Inquiry, (Office for National Statistics), an annual survey of UK businesses. Further information on the Annual Business Survey is available at www.ons.gov.uk/surveys/informationforbusinesses/businesssurveys/annualbusinesssurvey

The Annual Business Survey uses the UK Standard Industrial Classification (SIC) to classify businesses to industries according to their main activity. Detailed information on the SIC is available at

<https://www.ons.gov.uk/methodology/classificationsandstandards/ukstandardindustrialclassificationofeconomicactivities/uksic2007>. For further information on the SIC codes used in this release, see the previous page (Sources: Employment and businesses).

Government expenditure

Information about government expenditure on forestry is obtained from administrative records held by the Forestry Commission. Expenditure by the Welsh Government, Natural Resources Wales, Defra and other government departments/ Devolved Administrations is currently excluded.

Further information is available in the Statement of Administrative Sources on FC financial accounts, available at www.forestryresearch.gov.uk/tools-and-resources/statistics/about-our-statistics/code-of-practice/administrative-sources/. More detailed financial data for the Forestry Commission are published annually in the Annual Report & Accounts produced by National Offices.

Data on grant expenditure are obtained from administrative records for woodland grant schemes across GB. Further information is available in the Statement of Administrative Sources on FC grant schemes data, available at www.forestryresearch.gov.uk/tools-and-resources/statistics/about-our-statistics/code-of-practice/administrative-sources/.

Quality

The Coniferous Standing Sales Price Index and the Softwood Sawlog Price Index are the only official statistics published for roundwood prices in the UK. So, although they are limited to sales by the Forestry Commission and Natural Resources Wales, they are sometimes used as indicators of price trends for other UK softwood. In recent years, softwood has accounted for more than 90% of all timber harvested in Great Britain, and the Forestry Commission/ Natural Resources Wales has accounted for around 40% to 50% of all softwood sold.

For the Coniferous Standing Sales Price Index, data cover a 12 month period (i.e. data for the year to March and data for the year to September). As these periods overlap, comparisons of values should be made with the same period a year earlier.

Unlike the Coniferous Standing Sales Price Index, the Softwood Sawlog Price Index covers 6 month periods (i.e. data for the period October to March and data for the period April to September), so there is no overlapping.

Detailed information on the quality of the statistics presented in this publication is available in the "Quality Report: Timber Price Indices", available at www.forestryresearch.gov.uk/tools-and-resources/statistics/about-our-statistics/code-of-practice/quality-of-official-statistics/.

Revisions

Most of the statistics presented in the Finance & Prices chapter have been previously released. The latest year figures for Government expenditure on forestry are published in this format for the first time in this release.

Timber price indices are unchanged from the figures provided in "Timber Price Indices: data to March 2018". For details of revisions made since Forestry Statistics 2017 see the First Release, available at www.forestryresearch.gov.uk/tools-and-resources/statistics/statistics-by-topic/timber-statistics/timber-price-indices/.

Data on financial returns from forestry are not normally revised. Figures for earlier years have been revised from the figures included in "Forestry Statistics 2017" to reflect changes to the historic data released by IPD.

Data on Gross Value Added (GVA) are subject to revision whenever Annual Business Survey data are revised by the Office for National Statistics. Figures for 2015 have been revised from those shown in "Forestry Statistics 2017" to reflect revisions made to ABS results by ONS.

Data on Government expenditure are not normally revised, but may be subject to revision if revisions are made to the Forestry Commission's financial accounts. Estimates of expenditure on research in 2013-14 to 2016-17 have been revised to exclude expenditure by Forest Research from external income. In addition, the figure for grant expenditure in England in 2016-17 (Table 8.6 and figure 8.3) has been revised up by £1.3m to include payment made in the following year for work undertaken in 2016-17.

The Forestry Commission's revisions policy sets out how revisions and errors are dealt with and can be found at www.forestresearch.gov.uk/documents/4355/FCrevisions.pdf.

Further information

Tables providing longer time series of the Coniferous Standing Sales Price Index and the Softwood Sawlog Price Index and the underlying data used to produce them, are available at www.forestresearch.gov.uk/tools-and-resources/statistics/statistics-by-topic/timber-statistics/timber-price-indices/.

Release schedule

For information on the release schedules of statistics produced by others, see relevant websites (above).

Timber Price Indices are published every six months, in May for data to end March and in November for data to end September. The next editions will be released on the following dates:

"Timber Price Indices: Data to September 2018" will be released on 15 November 2018;

"Timber Price Indices: Data to March 2019" will be released on 16 May 2019.

"Forestry Statistics 2019" and "Forestry Facts & Figures 2019" will be released on 26 September 2019.

11.10 Sources: International Forestry

Introduction

The statistics presented in the International Forestry chapter of this release cover:

- woodland area;
- carbon stocks;
- wood removals;
- production and apparent consumption of wood products; and
- trade in forest products.

Data sources and methodology

International data on forest area and carbon stocks are obtained from the Global Forest Resources Assessment (FRA) 2015 (www.fao.org/forest-resources-assessment/en/), compiled by the United Nations Food and Agriculture Organisation (FAO). The information in Table 9.1 uses forest area from FRA 2015, excluding "other wooded land"; for the UK, this is very similar to the definition of "woodland" used in other tables.

International data on production, imports and exports are obtained from the FAO. Data are collected via the Joint Forest Sector Questionnaire for FAO and other international organisations and published on the FAOSTAT database (<http://faostat3.fao.org/>). Data on apparent consumption is derived as production plus imports less exports.

Data for the European Union (EU) relate to the countries that were EU members at the start of the latest year for which data are available.

Quality

The UK data on forest area and carbon stocks are as submitted by the Forestry Commission to FAO in Spring 2014. More recent estimates of UK woodland area are provided in the Chapter on Woodland Area and Planting. A copy of the full UK return for the Forest Resources Assessment is available at www.forestresearch.gov.uk/tools-and-resources/statistics/statistics-by-topic/international-returns/forest-resources-assessment/.

The UK data on production, imports and exports are as submitted by the Forestry Commission to Eurostat in September 2016. More recent UK estimates are provided in the Chapters on UK-grown Timber and Trade. Copies of all UK returns for the Joint Forest Sector Questionnaire are available at www.forestresearch.gov.uk/tools-and-resources/statistics/statistics-by-topic/international-returns/joint-forest-sector-questionnaire/.

Revisions

International statistics compiled from FRA are subject to revision every five years, when a new collection is undertaken.

International statistics compiled from FAOSTAT may be subject to revision after publication if revisions are made to the data produced by individual countries.

Revisions to historical data have been made in the FAOSTAT database since the publication of "Forestry Statistics 2017" (Tables 9.4 to 9.6). At a global level, such revisions have been relatively minor (no more than 1% difference). There have been larger revisions for some regions, particularly in the wood production estimates for 2015. These include an upward revision of 6% to the figure for woodfuel production in Europe and a downward revision of 6% to the industrial roundwood production estimate for Asia.

The Forestry Commission's revisions policy sets out how revisions and errors to these statistics are dealt with, and can be found at:

www.forestresearch.gov.uk/documents/4355/FCrevisions.pdf.

Further information

Statistics on international forestry are reported here at a regional level. Further data (including figures for individual countries) are also available from the original sources (see above).

Statistics on forest resources are also collected every 4 years at a European level by Forest Europe. The State of Europe's Forests 2015 was released in October 2015 and is available at www.foresteuropa.org/.

The United Nations Economic Commission for Europe (UNECE) Committee on Forests and the Forest Industry (previously the UNECE Timber Committee) also collects, on an annual basis, estimates for the current year and projections for the following year of wood production, imports and exports. Results are available on the UNECE website (www.unece.org/forests/fpm/timbercommittee.html). Copies of UK returns for the UNECE Timber Forecast Questionnaire are available at www.forestresearch.gov.uk/tools-and-resources/statistics/statistics-by-topic/international-returns/unece-timber-forecast-questionnaire/.

Release schedule

For information on the release schedules of statistics produced by others, see relevant websites (above).

International data on wood production and trade in 2017 will be released on 26 September 2019 in "Forestry Statistics 2019" and "Forestry Facts & Figures 2019".