

Forestry Statistics 2020

A compendium of statistics about woodland, forestry and primary wood processing in the United Kingdom

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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. 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 (for some topics) are available to download in spreadsheet format from the Statistics Data Downloads page at 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 2020", available at www.forestresearch.gov.uk/tools-and-resources/statistics/forestry-statistics/.

We also publish a range of other Official Statistics, available at www.forestresearch.gov.uk/statistics/.

Statistical release practices

We aim 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.

Statistical revisions policy

Revisions to statistics can occur when further data become available or errors are corrected. We 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 Forest Research 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.forestresearch.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.forestresearch.gov.uk/tools-and-resources/statistics/about-our-statistics/code-of-practice/quality-of-official-statistics/.

National Statistics Status

National Statistics status means that our statistics meet the highest standards of trustworthiness, quality and public value, and it is our responsibility to maintain compliance with these standards.

The continued designation of these statistics (Forestry Statistics and Forestry Facts & Figures) as National Statistics was confirmed in March 2012 following an assessment by the UK Statistics Authority (now the Office for Statistics Regulation) against the Code of Practice for Statistics.

Since the latest assessment of these statistics in 2012, we have made improvements including:

- Expansion of content to cover data on additional topics, including woodland types and habitats, felling and public opinion on tree health.
- The addition of key findings at the start of each chapter, to provide users with a brief overview of the statistics.
- Provision of more detailed information on the methodology used, particularly in relation to the estimation of woodland area.

Sources

Background information on the statistics presented in this release are available in the Sources chapter. This 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 4.3b, Figure 4.1: Carbon;
- Table 5.2 and Figure 5.2: Tree health;
- Tables 5.3a and 5.3b: Woodland types and habitats;
- Tables 6.1 to 6.6, Figure 6.1: Social;
- Tables 9.1 to 9.6, Figures 9.1 to 9.7: International forestry.

Forestry Statistics 2020

Chapter 1: Woodland Area and Planting

Release date:

24 September 2020

Coverage:

United Kingdom

Geographical breakdown:

Country

Introduction

This chapter contains statistics on:

- UK woodland area;
- certified woodland area;
- areas of new planting and restocking; and
- felling.

Estimates for England, Wales, Scotland and Northern Ireland are included in addition to UK totals. International comparisons are provided in the International Forestry chapter. Further information on the data sources and methodology used to compile the figures is provided in the Sources chapter.

Figures on woodland area and certified woodland area at March 2020 and on new planting and restocking for the period 2019-20 were previously published in "Provisional Woodland Statistics: 2020 edition", released on 14 June 2020. Some figures for new planting in 2019-20 and for Statutory Plant Health Notices in Scotland have been revised from those previously published. For further details on revisions, see the Woodland Areas and Planting: Felling section of the Sources chapter.

A copy of all woodland area and planting tables, along with longer time series (where available) can be accessed in spreadsheet format from the Data Downloads web page at <https://www.forestresearch.gov.uk/tools-and-resources/statistics/data-downloads/>.

Key findings

The main findings are:

- The area of woodland in the UK at 31 March 2020 is estimated to be 3.2 million hectares. This represents 13% of the total land area in the UK, 10% in England, 15% in Wales, 19% in Scotland and 9% in Northern Ireland.
- Of the total UK woodland area, 0.86 million hectares (27%) is owned or managed by Forestry England, Forestry and Land Scotland, Natural Resources Wales or the Forest Service (in Northern Ireland).
- The total certified woodland area in the UK at 31 March 2020 is 1.39 million hectares, including all Forestry England/Forestry and Land Scotland/Natural Resources Wales/Forest Service woodland. Overall, 43% of the UK woodland area is certified.
- 13.7 thousand hectares of new woodland were created in the UK in 2019-20, with conifers accounting for 57% of this area.

1.1 Woodland Area

Woodland is defined in UK forestry statistics as land under stands of trees with a canopy cover of at least 20% (25% in Northern Ireland), or having the potential to achieve this. The definition relates to land use, rather than land cover, so integral open space and felled areas that are awaiting restocking are included as woodland. Further information, including how this UK definition compares with the international definition of woodland, is provided in the Sources chapter.

Statistics on woodland area are used to inform government policy and resource allocation, to provide context to UK forestry and land management issues and are reported to international organisations. They are also used in the compilation of natural capital accounts.

Increases in woodland area result from the creation of new woodland. This can be achieved through new planting or by natural colonisation of trees on land near existing woodland. Further information is available in the section on New Planting.

Decreases in woodland area result from the conversion of woodland to other land uses. Regulatory approval is usually required before trees can be felled. Felling approval will normally require the area to be restocked, but there are some cases in which trees may be permanently removed, generally for environmental reasons. The permanent removal of trees may also be authorised under planning regulations, to enable development.

Most public sector woodland is managed by Forestry England (FE), Forestry and Land Scotland (FLS), Natural Resources Wales (NRW) and the Forest Service (FS) in Northern Ireland. Other public sector woodland (e.g. owned by local authorities) is included with privately owned woodland as “private sector” in this release.

The Natural Resources Wales woodland areas relate to the Welsh Government Woodland Estate. There is approximately 900 hectares of woodland on National Nature Reserves and other land managed by Natural Resources Wales that is not included in the Natural Resources Wales figures.

1.1.1 Area of Woodland: 2020

The area of woodland in the UK at 31 March 2020 is estimated to be 3.2 million hectares (Table 1.1). Of this total, 1.5 million hectares (46%) is in Scotland, 1.3 million hectares (41%) is in England, 0.3 million hectares (10%) is in Wales and 0.1 million hectares (4%) is in Northern Ireland.

Conifers account for around one half (51%) of the UK woodland area, although this proportion varies from around one quarter (26%) in England to around three quarters (74%) in Scotland.

Table 1.1 Area of woodland by ownership & forest type at 31 March 2020

thousand hectares

Forest type and ownership ^{1,2}	England	Wales	Scotland	Northern Ireland	UK
Conifers					
FE/FLS/NRW/FS	151	98	426	55	730
Private sector	190	54	653	8	905
Total	340	152	1,079	64	1,635
Broadleaves					
FE/FLS/NRW/FS	64	19	41	7	131
Private sector	907	138	347	48	1,440
Total	971	158	388	55	1,571
Total					
FE/FLS/NRW/FS	215	117	467	62	861
Private sector	1,097	192	1,000	56	2,345
Total	1,311	309	1,467	118	3,206

Source: Forestry Commission, Forestry England, Scottish Forestry, Forestry and Land Scotland, Natural Resources Wales, Forest Service, National Forest Inventory.

Notes:

1. FE: Forestry England, FLS: Forestry and Land Scotland, NRW: Natural Resources Wales, FS: Forest Service (Northern Ireland). NRW estimates only relate to the Welsh Government Woodland Estate (WGWE).
2. Private sector: all other woodland. Includes woodland managed by NRW outside the WGWE, other publicly owned woodland (e.g. owned by local authorities) and privately-owned woodland.
3. Figures for England, Wales and Scotland are based on data obtained from the National Forest Inventory (NFI) and adjusted for new planting, but at present no adjustment is made for woodland recently converted to another land use. Further information on how the figures have been estimated is available in the Sources chapter.
4. Figures for Northern Ireland are obtained from the Northern Ireland Draft Woodland Register.
5. Broadleaves include coppice and coppice with standards.

1.1.2 Area of woodland: changes over time

The 3.2 million hectares of woodland in the UK in 2020 (Table 1.1) represents 13% of the total land area. This comprises 10% in England, 15% in Wales, 19% in Scotland and 9% in Northern Ireland (Table 1.2).

Table 1.2 Woodland area in the United Kingdom

per cent of land area¹

Year	England	Wales	Scotland	Northern Ireland	UK
1086 ²	~15	..	..	..	..
c1350 ²	~10	..	~4	..	..
17thC ^{2,3}	~8	..	~4	~1.5	..
1905 ³	5.2	4.2	4.5	1.1	4.7
1924	5.1	5.0	5.6	1.0	5.0
1947 ³	5.8	6.2	6.6	1.7	5.9
1965	6.8	9.7	8.4	3.1	7.4
1980	7.3	11.6	11.8	4.9	9.0
1995-99	8.4	13.8	16.4	6.0	11.3
1998 ⁴	9.5	14.4	16.7	6.0	12.0
2020 ^{5,6}	10.1	14.9	18.8	8.6	13.2

Source: Forestry Commission, Forestry England, Scottish Forestry, Forestry and Land Scotland, Welsh Government, Natural Resources Wales, Forest Service, National Forest Inventory.

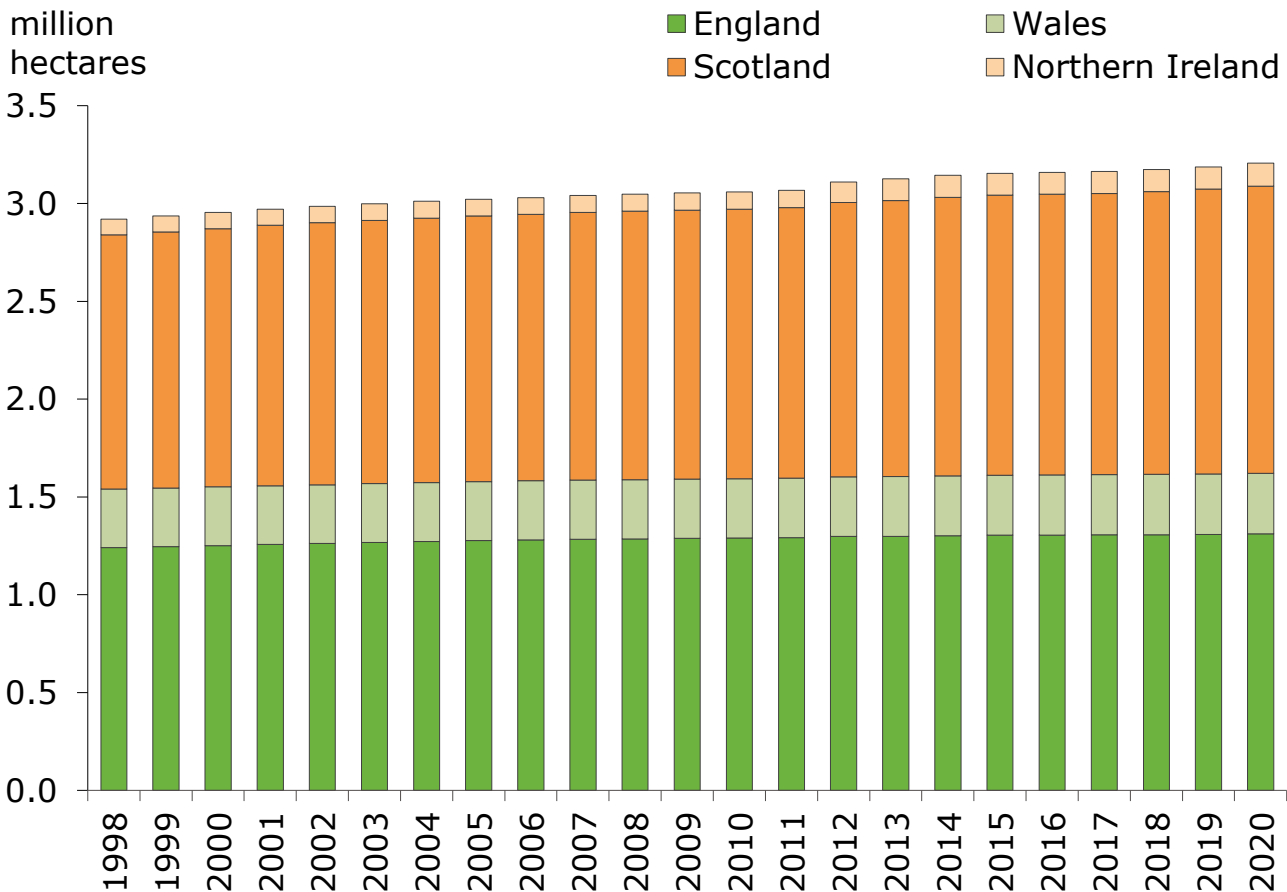
Notes:

1. Percentage of the total surface area excluding inland water. The total surface areas, excluding inland water, are taken from the UK Standard Area Measurements (published by the Office for National Statistics).
2. Estimates for England and Scotland before 1905 come from a variety of sources, including the Domesday Survey of England, Scottish Woodland History (TC Smout ed, 1997) and Roy maps c1750.
3. For Northern Ireland, 17th century figure is estimate for all Ireland, 1905 figure is estimate for Province of Ulster 1908, 1947 figure assumes no change from 1939-40 Census.
4. 1998 figures shown for England, Wales and Scotland have been revised from those originally published to produce estimates that are consistent with subsequent data from the National Forest Inventory.
5. Figures for England, Wales and Scotland are based on data obtained from the National Forest Inventory (NFI) and adjusted for new planting, but at present no adjustment is made for woodland recently converted to another land use. Further information on how the figures have been estimated is available in the Sources chapter.
6. Figures for Northern Ireland are obtained from the Northern Ireland Draft Woodland Register.
7. .. Denotes data not available.

These figures are outside the scope of National Statistics. For further information see the Sources chapter.

Figure 1.1 shows woodland area by country since 1998. Woodland area in the UK has risen by around 290 thousand hectares since 1998, an increase of 10% over the period.

Figure 1.1 Area of woodland, 1998-2020



Source: Forestry Commission, Forestry England, Scottish Forestry, Forestry and Land Scotland, Welsh Government, Natural Resources Wales, Forest Service, National Forest Inventory.

Notes:

1. Woodland areas for England, Wales and Scotland shown in this figure are based on data from the National Forest Inventory. The trends shown take account of areas of new planting and identifiable permanent woodland loss. Areas of woodland loss that are not yet identifiable (e.g. conversion of woodland for the restoration of open habitats) are not accounted for. Further information on the National Forest Inventory is available at <https://www.forestresearch.gov.uk/tools-and-resources/national-forest-inventory/>.
2. Figures for 1998 to 2009 for England, Wales and Scotland were revised from those initially published, to produce results that are consistent with the National Forest Inventory and enable comparisons over time.

1.1.3 Woodland area by ownership

Forestry England, Forestry and Land Scotland, Natural Resources Wales and the Forest Service in Northern Ireland owned or managed 27% of the total woodland area in the UK in 2020 (Table 1.3). This proportion ranged from 16% of the woodland area in England to 53% in Northern Ireland.

Table 1.3 Area of woodland in the UK by ownership, 2016-2020

thousand hectares

Ownership	England	Wales	Scotland	Northern Ireland	UK
FE/FLS/NRW/FS woodland¹					
2016	215	117	470	62	864
2017	214	117	469	62	863
2018	214	117	470	62	863
2019	215	117	468	62	862
2020	215	117	467	62	861
Private sector woodland²					
2016	1,091	190	965	50	2,295
2017	1,092	191	968	50	2,301
2018	1,093	192	976	50	2,311
2019	1,094	192	988	51	2,326
2020	1,097	192	1,000	56	2,345
Total woodland					
2016	1,305	307	1,435	112	3,159
2017	1,306	308	1,438	112	3,164
2018	1,307	309	1,446	113	3,175
2019	1,309	309	1,456	113	3,187
2020	1,311	309	1,467	118	3,206

Source: Forestry Commission, Forestry England, Scottish Forestry, Forestry and Land Scotland, Welsh Government, Natural Resources Wales, Forest Service, National Forest Inventory.

Notes:

1. FE: Forestry England, FLS: Forestry and Land Scotland, NRW: Natural Resources Wales, FS: Forest Service (Northern Ireland). NRW estimates only relate to woodland formerly owned/managed by FC Wales.
2. Private sector: all other woodland. Includes woodland managed by NRW outside the WGWE, other publicly owned woodland (e.g. owned by local authorities) and privately owned woodland.
3. Figures for England, Wales and Scotland are based on data obtained from the National Forest Inventory (NFI) and adjusted for new planting, but at present no adjustment is made for woodland recently converted to another land use. Further information on how the figures have been estimated is available in the Sources chapter.
4. Northern Ireland figures are obtained from the Northern Ireland Draft Woodland Register.
5. Areas as at 31 March.

1.2 Certified woodland area

Certified woodland in the UK has been independently audited against the UK Woodland Assurance Standard. Forestry certification schemes are owned by international non-governmental organisations and exist to promote good forest practice. They offer product labels to demonstrate that wood or wood products come from well-managed forests.

Figures for certified woodland areas are often used as an indicator of sustainable forest management. However, it should be noted that woodland that is not certified may also be managed sustainably.

Most changes to the certified woodland area figures over time are a result of new areas being certified or certificates not being renewed upon expiry. Temporary changes can also occur if there is a time lag between expiry and renewal.

Statistics on certified timber are provided in Chapter 2.

1.39 million hectares of woodland in the UK were certified in March 2020 (Table 1.4). This represented 43% of the total UK woodland area, 25% in England, 47% in Wales, 59% in Scotland and 55% in Northern Ireland.

Table 1.4 Woodland area certified, March 2020

thousand hectares

Ownership	England	Wales	Scotland	Northern Ireland	UK
FE/FLS/NRW/FS woodland ¹	215	117	467	62	861
Private sector woodland ²	109	29	392	3	533
Total woodland area certified	323	146	859	66	1,394

Source: Forest Stewardship Council, Programme for the Endorsement of Forest Certification, Forestry England, Forestry and Land Scotland, Natural Resources Wales, Forest Service.

Notes:

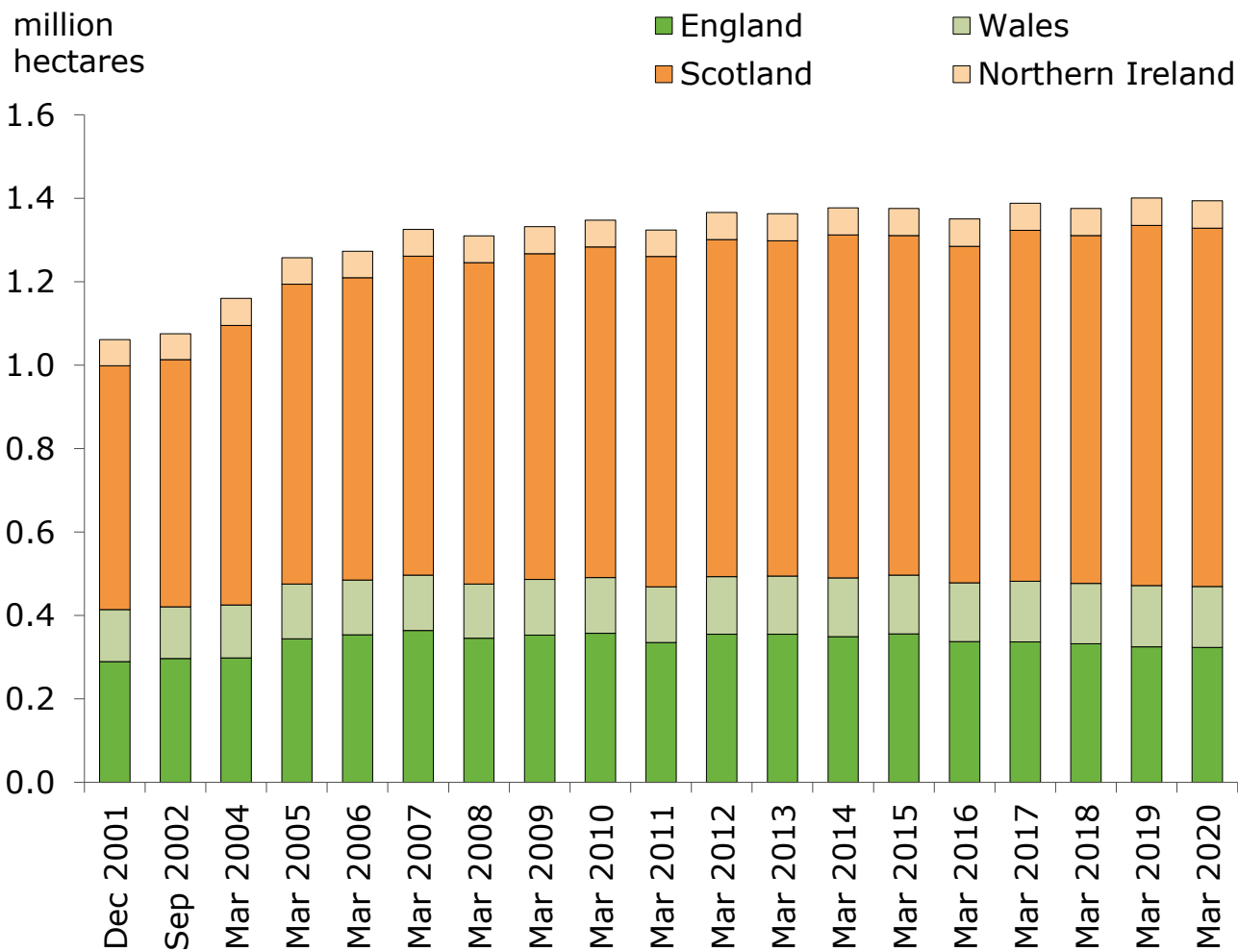
1. FE: Forestry England, FLS: Forestry and Land Scotland, NRW: Natural Resources Wales, FS: Forest Service (Northern Ireland). NRW estimates only relate to the Welsh Government Woodland Estate (WGWE).
2. Private sector: all other woodland. Includes woodland managed by NRW outside the WGWE, other publicly owned woodland (e.g. owned by local authorities) and privately owned woodland.
3. All certified woodland in 2020 is certified under the Forest Stewardship Council (FSC) scheme or the Programme for the Endorsement of Forest Certification (PEFC) scheme, with many woodlands certified under both schemes.
4. The estimates are based on UK data published by FSC and PEFC, supplemented by data from individual certificates and other sources. Where possible, figures are for the woodland area certified, rather than the land area certified.
5. All Forestry England/Forestry and Land Scotland/ Natural Resources Wales WGWE/Forest Service woodland is certified. The Forestry England/Forestry and Land Scotland/ Welsh Government Woodland Estate /Forest Service areas are the latest areas, as shown in Table 1, rather than the areas shown on certificates.

Data: Longer time series of the above table are available from the Data Downloads webpage.

Figure 1.2 presents certified woodland area by country since December 2001, with figures for earlier years revised for consistency with results from the National Forest Inventory. This shows an increase in certified woodland area of around 330 thousand hectares (31%) since December 2001, with most of this increasing occurring in the early 2000s.

The 1.39 million hectares of certified woodland in the UK at March 2020 represents a 0.4% decrease on the previous year.

Figure 1.2 Area of certified woodland, 2001-2020



Source: Forest Stewardship Council, Forestry Commission, Forestry England, Scottish Forestry, Forestry and Land Scotland, Natural Resources Wales, Forest Service.

Notes:

1. All certified woodland is certified under the Forest Stewardship Council (FSC) scheme or the Programme for the Endorsement of Forest Certification (PEFC) scheme, with many woodlands certified under both schemes.
2. The estimates are based on UK data published by FSC and PEFC, supplemented by data from individual certificates and other sources. Where possible, figures are for the woodland area certified, rather than the land area certified.
3. Figures for earlier years were revised for consistency with results from the National Forest Inventory.

1.3 Land use

Not all land that is owned or managed by Forestry England, Forestry and Land Scotland, Natural Resources Wales and the Forest Service in Northern Ireland is woodland; other land uses include agricultural land, mountain areas and moorland.

The woodland areas and land areas shown for Natural Resources Wales relate to the Welsh Government Woodland Estate. There is approximately 900 hectares of woodland on National Nature Reserves and other land managed by Natural Resources Wales that is not included in the Natural Resources Wales figures.

Woodland accounted for 79% of all Forestry England/ Forestry and Land Scotland/ Natural Resources Wales/ Forest Service land in the UK at 31 March 2020 (Table 1.5). This proportion was highest in Wales (95%) and lowest in Scotland (74%).

Table 1.5 Land use of FE, FLS, NRW and FS¹, 2016-2020

thousand hectares

Year	England	Wales	Scotland	Northern Ireland	UK
Woodland					
2016	215	117	470	62	864
2017	214	117	469	62	863
2018	214	117	470	62	863
2019	215	117	468	62	862
2020	215	117	467	62	861
Other land²					
2016	38	7	170	13	228
2017	39	7	169	13	227
2018	39	6	169	13	227
2019	39	6	166	13	224
2020	39	6	166	13	224
Total land area					
2016	253	124	640	75	1,092
2017	253	124	638	75	1,090
2018	253	123	639	75	1,090
2019	253	123	634	75	1,085
2020	253	123	634	75	1,085

Source: Forestry England, Forestry and Land Scotland, Natural Resources Wales, Forest Service.

Notes:

1. FE: Forestry England, FLS: Forestry and Land Scotland, NRW: Natural Resources Wales, FS: Forest Service (Northern Ireland). NRW estimates only relate to the Welsh Government Woodland Estate (WGWE).
2. "Other land" includes agricultural land and areas of moorland and mountain.
3. Areas as at 31 March.

1.4 National Forest Inventory

This section contains interim results from the National Forest Inventory (NFI). The statistics are based on field survey data combined with information from the NFI woodland map, which is a spatial representation of woodland areas in Great Britain.

Figures presented in this chapter are interim estimates at 31 March 2012, published in the NFI "50-year forecast of softwood timber availability" and "50-year forecast of hardwood timber availability" reports, released in April 2014. Both reports are available at www.forestresearch.gov.uk/tools-and-resources/national-forest-inventory/.

The figures presented in Tables 1.6 to 1.9 (and Figures 1.3, 1.4a and 1.4b) relate to stocked areas. These differ from the woodland areas presented in earlier tables, as stocked areas exclude felled areas and (for private sector land) areas of integral open space.

The figures on growing stock presented in Tables 1.10 and 1.11 form the basis for the softwood and hardwood availability forecasts (see Tables 2.4a and 2.4b).

Further information on the National Forest Inventory is available at www.forestresearch.gov.uk/tools-and-resources/national-forest-inventory/.

1.4.1 Woodland area by age: conifers

Table 1.6 presents the area of conifers, broken down by age class, ownership and country.

61% of the coniferous woodland area in Great Britain was occupied by stands of 40 years old or younger (Table 1.6). A further 9% of stands were aged over 60 years.

Table 1.6 Stocked woodland area in GB by ownership and age class: Conifers

thousand hectares

Age class (years)	England	Wales	Scotland	GB
FE/FLS/NRW¹				
0-20	33	24	76	134
21-40	38	25	145	208
41-60	39	25	111	176
61-80	12	7	25	44
81-100	4	1	6	11
100+	1	0	3	4
All age classes	128	82	367	576
Private sector²				
0-20	17	8	126	151
21-40	54	22	231	306
41-60	83	15	116	214
61-80	19	1	18	38
81-100	3	2	6	11
100+	3	1	9	12
All age classes	179	47	505	732
Total				
0-20	51	32	202	285
21-40	92	46	376	514
41-60	123	39	227	389
61-80	31	8	43	82
81-100	7	2	12	22
100+	3	1	12	16
All age classes	307	129	872	1,308

Source: National Forest Inventory: 50-year forecast of softwood availability (Forestry Commission, April 2014), (supporting data).

Notes:

1. FE: Forestry England, FLS: Forestry and Land Scotland, NRW: Natural Resources Wales. NRW estimates only relate to the Welsh Government Woodland Estate (WGWE).

2. Private sector: all other woodland. Includes woodland managed by NRW outside the WGWE, other publicly owned woodland (e.g. owned by local authorities) and privately-owned woodland.
3. Stocked area only: excludes felled areas and (for private sector land) open space.
4. Areas at 31 March 2012.

These figures are outside the scope of National Statistics. For further information see the Sources chapter.

1.4.2 Woodland area by age: broadleaves

Table 1.7 presents the area of broadleaves, broken down by age class, ownership and country.

Around one half (53%) of the broadleaved area was occupied by stands of 40 years old or younger (Table 1.7). More than one quarter (28%) of stands were aged over 60 years.

Table 1.7 Stocked woodland area in GB by ownership and age class: Broadleaves

thousand hectares

Age class (years)	England	Wales	Scotland	GB
FE/FLS/NRW¹				
0-20	8	7	11	25
21-40	6	2	5	13
41-60	13	2	4	19
61-80	13	2	4	19
81-100	4	1	2	7
100+	10	3	5	18
All age classes	54	16	32	102
Private sector²				
0-20	217	30	84	332
21-40	227	33	84	344
41-60	145	22	58	225
61-80	117	15	22	154
81-100	92	11	9	112
100+	51	10	7	67
All age classes	849	121	265	1,235
Total				
0-20	225	37	95	357
21-40	232	36	90	357
41-60	157	24	63	244
61-80	130	17	26	173
81-100	97	12	11	119
100+	61	12	12	85
All age classes	902	137	297	1,337

Source: National Forest Inventory: 50-year forecast of hardwood availability (Forestry Commission, April 2014), (supporting data).

Notes:

1. FE: Forestry England, FLS: Forestry and Land Scotland, NRW: Natural Resources Wales. NRW estimates only relate to the Welsh Government Woodland Estate (WGWE).

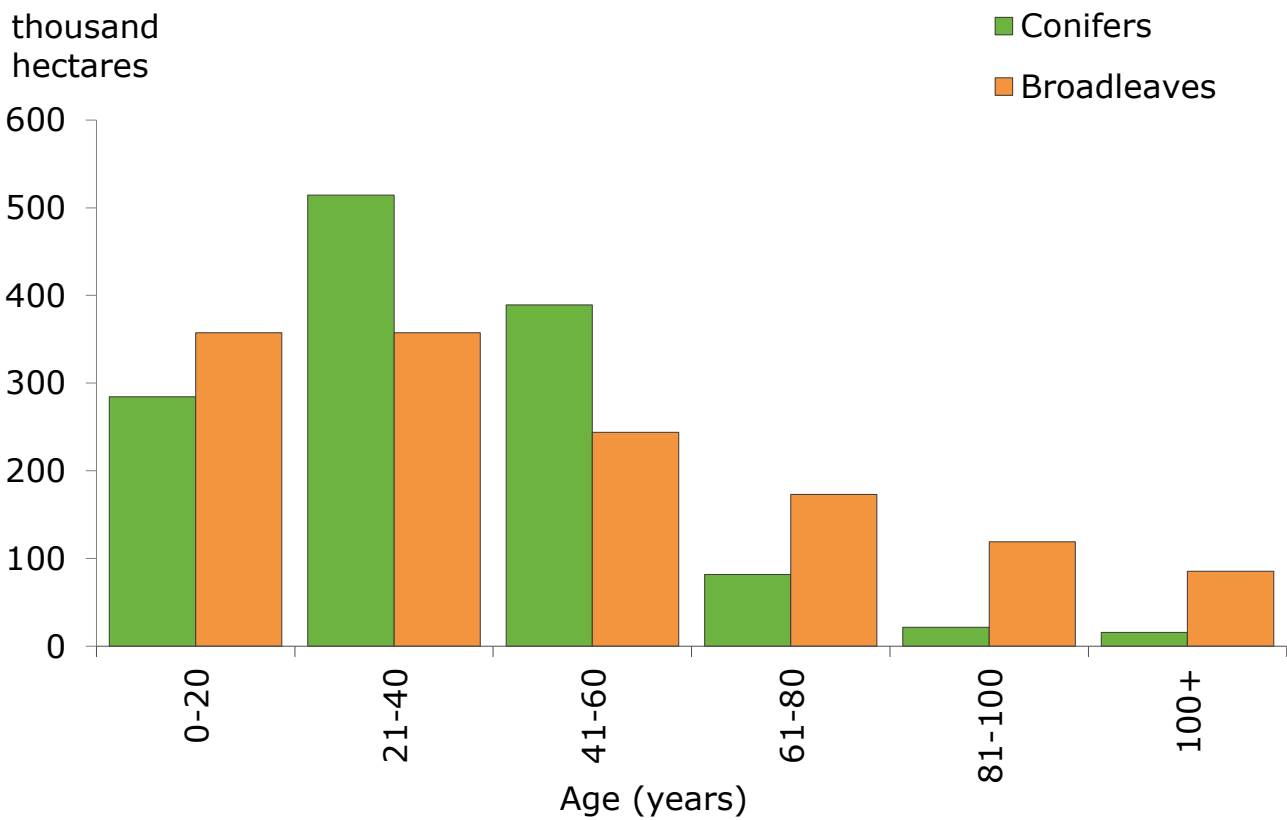
- 2. Private sector: all other woodland. Includes woodland managed by NRW outside the WGWE, other publicly owned woodland (e.g. owned by local authorities) and privately-owned woodland.
- 3. Stocked area only: excludes felled areas and (for private sector land) open space.
- 4. Areas at 31 March 2012.

These figures are outside the scope of National Statistics. For further information see the Sources chapter.

1.4.3 Woodland area by age: Summary

Figure 1.3 presents the age profile of woodland in Great Britain for conifers and for broadleaves. It shows that broadleaves are more evenly distributed across the age classes than conifers.

Figure 1.3 Age profile of woodland in GB



Source: National Forest Inventory: 50-year forecast of softwood availability (Forestry Commission, April 2014), National Forest Inventory: 50-year forecast of hardwood availability (Forestry Commission, April 2014), (supporting data).

Notes:

- 1. Stocked area only: excludes felled areas and (for private sector land) open space.
- 2. Areas at 31 March 2012.

These figures are outside the scope of National Statistics. For further information see the Sources chapter.

1.4.4 Woodland area by species: conifers

Table 1.8 presents the area of conifers, broken down by principal species, ownership and country.

Sitka spruce accounts for around one half (51%) of the conifer area in Great Britain (Table 1.8), followed by Scots pine (17%) and larches (10%). Sitka spruce is less dominant in England, accounting for just one quarter (26%) of the conifer area there.

Table 1.8 Stocked woodland area in GB by ownership and principal species: Conifers

thousand hectares

Principal species	England	Wales	Scotland	GB
FE/FLS/NRW¹				
Sitka spruce	49	50	225	323
Scots pine	17	2	45	64
Corsican pine	27	2	2	30
Norway spruce	7	5	11	23
Larches	10	12	26	48
Douglas fir	10	5	5	20
Lodgepole pine	4	3	49	56
Other conifers	5	3	3	11
All conifers	128	82	367	576
Private sector²				
Sitka spruce	32	27	282	341
Scots pine	45	1	109	154
Corsican pine	14	0	1	15
Norway spruce	21	3	15	38
Larches	30	8	39	78
Douglas fir	15	3	7	25
Lodgepole pine	3	1	39	44
Other conifers	19	2	8	29
All conifers	179	47	505	732
Total				
Sitka spruce	80	77	507	665
Scots pine	61	3	154	218
Corsican pine	40	2	3	46
Norway spruce	27	8	25	61
Larches	40	20	66	126
Douglas fir	25	9	12	46
Lodgepole pine	8	4	88	100

Other conifers	24	5	11	40
All conifers	307	129	872	1,308

Source: National Forest Inventory: 50-year forecast of softwood availability (Forestry Commission, April 2014).

Notes:

1. FE: Forestry England, FLS: Forestry and Land Scotland, NRW: Natural Resources Wales. NRW estimates only relate to the Welsh Government Woodland Estate (WGWE).
2. Private sector: all other woodland. Includes woodland managed by NRW outside the WGWE, other publicly owned woodland (e.g. owned by local authorities) and privately-owned woodland.
3. Stocked area only: excludes felled areas and (for private sector land) open space.
4. Areas at 31 March 2012.

These figures are outside the scope of National Statistics. For further information see the Sources chapter.

1.4.5 Woodland area by species: broadleaves

Table 1.9 presents the area of broadleaves, broken down by principal species, ownership and country.

The most commonly occurring broadleaved species in Great Britain are birch (accounting for 18% of broadleaf woodland), oak (16%) and ash (12%) (Table 1.9). Birch is more dominant in Scotland, accounting for 43% of the broadleaf area there.

Table 1.9 Stocked woodland area in GB by ownership and principal species: Broadleaves

thousand hectares

Principal species	England	Wales	Scotland	GB
FE/FLS/NRW¹				
Oak	16	3	3	21
Beech	13	2	1	15
Sycamore	1	0	0	2
Ash	3	1	0	4
Birch	6	2	11	19
Sweet chestnut	1	0	0	1
Hazel	0	0	0	1
Hawthorn	0	0	0	0
Alder	1	0	1	1
Willow	0	0	0	0
Other broadleaves	14	9	15	38
All broadleaves	54	16	32	102
Private sector²				
Oak	151	23	23	198
Beech	59	5	15	78
Sycamore	74	9	21	105
Ash	120	18	15	153
Birch	90	11	116	217
Sweet chestnut	28	0	0	28
Hazel	64	14	8	86
Hawthorn	57	8	8	73
Alder	30	10	16	56
Willow	41	11	13	65
Other broadleaves	133	12	29	174
All broadleaves	849	121	265	1,235
Total				
Oak	167	26	26	219

Forest Research: Statistics

Beech	72	6	15	94
Sycamore	75	9	22	106
Ash	123	19	16	157
Birch	96	12	128	236
Sweet chestnut	28	0	0	29
Hazel	65	14	8	87
Hawthorn	57	8	8	73
Alder	31	10	17	58
Willow	41	11	13	65
Other broadleaves	146	21	44	212
All broadleaves	902	137	297	1,337

Source: National Forest Inventory: 50-year forecast of hardwood availability (Forestry Commission, April 2014).

Notes:

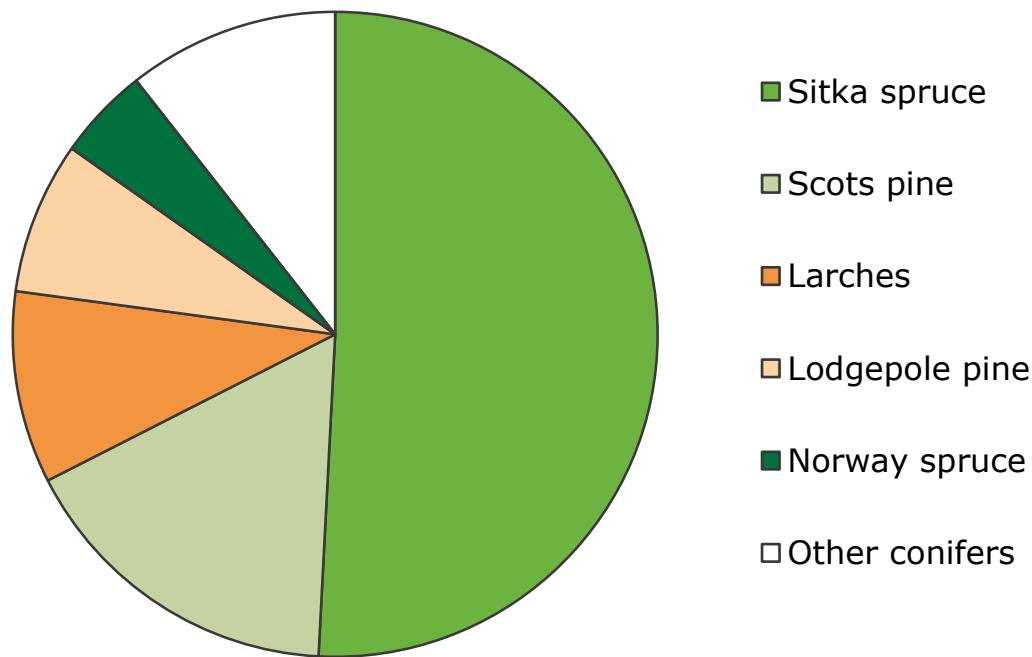
1. FE: Forestry England, FLS: Forestry and Land Scotland, NRW: Natural Resources Wales. NRW estimates only relate to the Welsh Government Woodland Estate (WGWE).
2. Private sector: all other woodland. Includes woodland managed by NRW outside the WGWE, other publicly owned woodland (e.g. owned by local authorities) and privately-owned woodland.
3. Stocked area only: excludes felled areas and (for private sector land) open space.
4. Areas at 31 March 2012.

These figures are outside the scope of National Statistics. For further information see the Sources chapter.

1.4.6 Woodland area by species: summary

Figures 1.4a and 1.4b show that, whilst the conifer area is dominated by a small number of species (Sitka spruce and Scots pine together account for around two thirds of the conifer area), broadleaves are more varied.

Figure 1.4a Principal tree species in GB by stocked area: Conifers



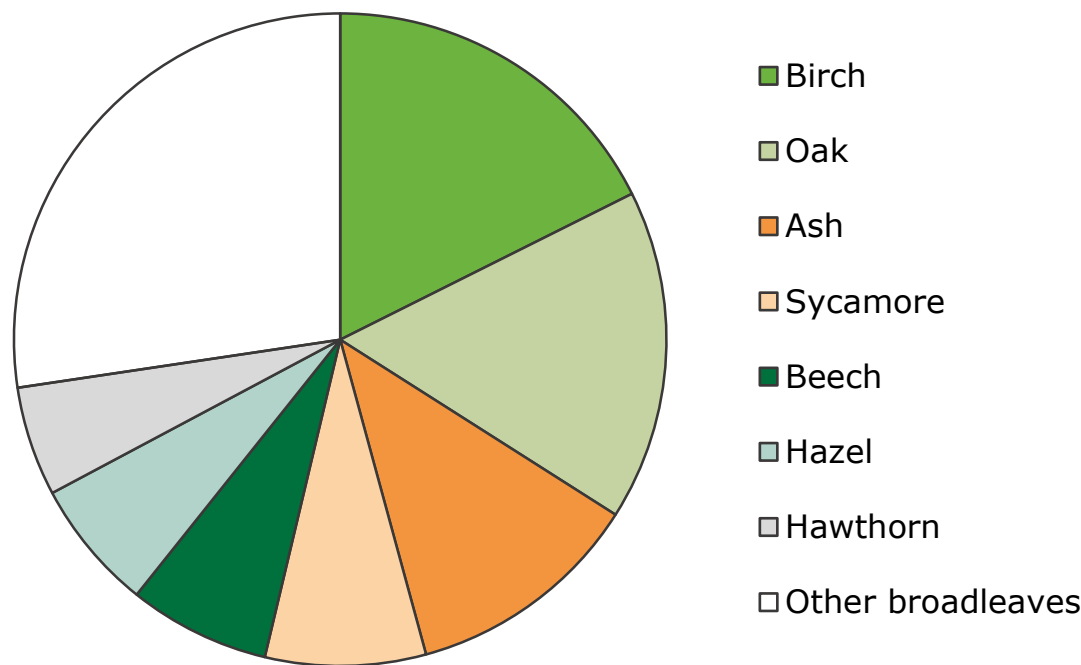
Source: National Forest Inventory: 50-year forecast of softwood availability (Forestry Commission, April 2014).

Notes:

- 1. Stocked area only: excludes felled areas and (for private sector land) open space.
- 2. Areas at 31 March 2012.

These figures are outside the scope of National Statistics. For further information see the Sources chapter.

Figure 1.4b Principal tree species in GB by stocked area:
Broadleaves



Source: National Forest Inventory: 50-year forecast of hardwood availability (Forestry Commission, April 2014).

Notes:

- 1. Stocked area only: excludes felled areas and (for private sector land) open space.
- 2. Areas at 31 March 2012.

These figures are outside the scope of National Statistics. For further information see the Sources chapter.

1.4.7 Growing stock by species: conifers

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

Table 1.10 presents the volume of coniferous growing stock, broken down by principal species, ownership and country.

The total volume of coniferous growing stock in Great Britain in 2012 was 355 million m³ overbark standing (Table 1.10).

Sitka spruce accounted for around one half (51%) of the conifer growing stock, followed by Scots pine (15%) and larches (10%). This largely reflects the distribution of species by area (see Table 1.8).

Table 1.10 Growing stock in GB by ownership and principal species:
Conifers

million m³ overbark standing

Principal species	England	Wales	Scotland	GB
FE/FLS/NRW¹				
Sitka spruce	8.9	11.1	52.1	72.0
Scots pine	4.0	0.5	8.8	13.3
Corsican pine	5.5	0.6	0.4	6.4
Norway spruce	1.7	1.5	3.5	6.7
Larches	1.7	2.7	4.8	9.2
Douglas fir	2.7	1.3	1.4	5.4
Lodgepole pine	0.8	0.6	8.2	9.6
Other conifers	1.5	1.1	1.0	3.6
All conifers	26.8	19.4	80.2	126.4
Private sector²				
Sitka spruce	11.4	9.5	88.0	108.9
Scots pine	14.7	0.3	24.5	39.4
Corsican pine	4.7	0.2	0.3	5.3
Norway spruce	7.1	1.3	5.9	14.4
Larches	10.7	3.3	12.3	26.3
Douglas fir	6.4	1.6	3.5	11.5
Lodgepole pine	1.0	0.3	7.4	8.7
Other conifers	7.6	1.1	3.0	11.7
All conifers	63.7	17.9	146.7	228.4
Total				
Sitka spruce	20.3	20.6	140.0	180.9
Scots pine	18.6	0.8	33.3	52.7
Corsican pine	10.2	0.8	0.7	11.7
Norway spruce	8.8	2.8	9.4	21.1
Larches	12.4	6.0	17.1	35.6
Douglas fir	9.1	2.9	4.9	16.9
Lodgepole pine	1.8	0.9	15.5	18.3
Other conifers	9.1	2.2	4.1	15.4

All conifers	90.5	37.4	226.9	354.7
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Source: National Forest Inventory: 50-year forecast of softwood availability (Forestry Commission, April 2014).

Notes:

- 1. FE: Forestry England, FLS: Forestry and Land Scotland, NRW: Natural Resources Wales. NRW estimates only relate to the Welsh Government Woodland Estate (WGWE).
- 2. Private sector: all other woodland. Includes woodland managed by NRW outside the WGWE, other publicly owned woodland (e.g. owned by local authorities) and privately-owned woodland.
- 3. Areas at 31 March 2012.

These figures are outside the scope of National Statistics. For further information see the Sources chapter.

1.4.8 Growing stock by species: broadleaves

Table 1.11 presents the volume of broadleaved growing stock, broken down by principal species, ownership and country.

The total volume of broadleaved growing stock in Great Britain in 2012 was 245 million m³ overbark standing (Table 1.11).

Oak (28%), ash (16%) and beech (12%) accounted for the majority of the broadleaved volume. To some extent, this reflects the distribution of species by area (see Table 1.9).

Table 1.11 Growing stock in GB by ownership and principal species: Broadleaves

million m³ overbark standing

Principal species	England	Wales	Scotland	GB
FE/FLS/NRW¹				
Oak	3.3	0.5	0.6	4.4
Beech	2.8	0.4	0.1	3.4
Sycamore	0.1	0.0	0.0	0.2
Ash	0.4	0.1	0.0	0.5
Birch	0.5	0.1	1.7	2.3
Sweet chestnut	0.1	0.0	0.0	0.1
Hazel	0.0	0.0	0.0	0.1
Hawthorn	0.0	0.0	0.0	0.0
Alder	0.1	0.0	0.1	0.2
Willow	0.0	0.0	0.0	0.0
Other broadleaves	1.3	0.8	1.2	3.3
All broadleaves	8.7	1.9	3.9	14.5
Private sector²				
Oak	51.7	7.7	5.6	65.0
Beech	19.8	1.6	5.2	26.6
Sycamore	16.2	2.4	4.8	23.4
Ash	30.1	6.9	2.8	39.8
Birch	11.3	1.2	8.5	20.9
Sweet chestnut	7.7	0.2	0.0	7.9
Hazel	5.0	0.9	0.4	6.4
Hawthorn	2.8	0.4	0.3	3.4
Alder	6.8	2.1	1.9	10.8
Willow	4.9	0.8	0.9	6.5
Other broadleaves	16.0	1.1	2.6	19.6
All broadleaves	172.3	25.4	32.9	230.6
Total				
Oak	55.0	8.1	6.3	69.4
Beech	22.6	2.0	5.3	29.9

Forest Research: Statistics

Sycamore	16.4	2.4	4.9	23.6
Ash	30.5	7.0	2.8	40.3
Birch	11.8	1.3	10.1	23.2
Sweet chestnut	7.8	0.2	0.0	8.0
Hazel	5.1	0.9	0.5	6.5
Hawthorn	2.8	0.4	0.3	3.4
Alder	6.9	2.2	1.9	11.0
Willow	4.9	0.8	0.9	6.5
Other broadleaves	17.2	1.8	3.8	22.9
All broadleaves	181.0	27.3	36.8	245.1

Source: National Forest Inventory: 50-year forecast of hardwood availability (Forestry Commission, April 2014).

Notes:

1. FE: Forestry England, FLS: Forestry and Land Scotland, NRW: Natural Resources Wales. NRW estimates only relate to the Welsh Government Woodland Estate (WGWE).
2. Private sector: all other woodland. Includes woodland managed by NRW outside the WGWE, other publicly owned woodland (e.g. owned by local authorities) and privately-owned woodland.
3. Areas at 31 March 2012.

These figures are outside the scope of National Statistics. For further information see the Sources chapter.

1.5 Area of Farm Woodland

Agricultural Censuses run by Defra (Department for Environment, Food and Rural Affairs) and the devolved administrations collect annual information on the land-use of farms. Table 1.12 below shows the area of woodland on farms.

The area of farm woodland in the UK has increased from 0.8 million hectares in 2010 to 1.0 million hectares in 2019 (Table 1.12). Slightly over one half (51%) of all farm woodland was in Scotland in 2019, with a further 37% in England, 11% in Wales and the remaining 2% in Northern Ireland.

Table 1.12 Area of farm woodland, 2010-2019

thousand hectares

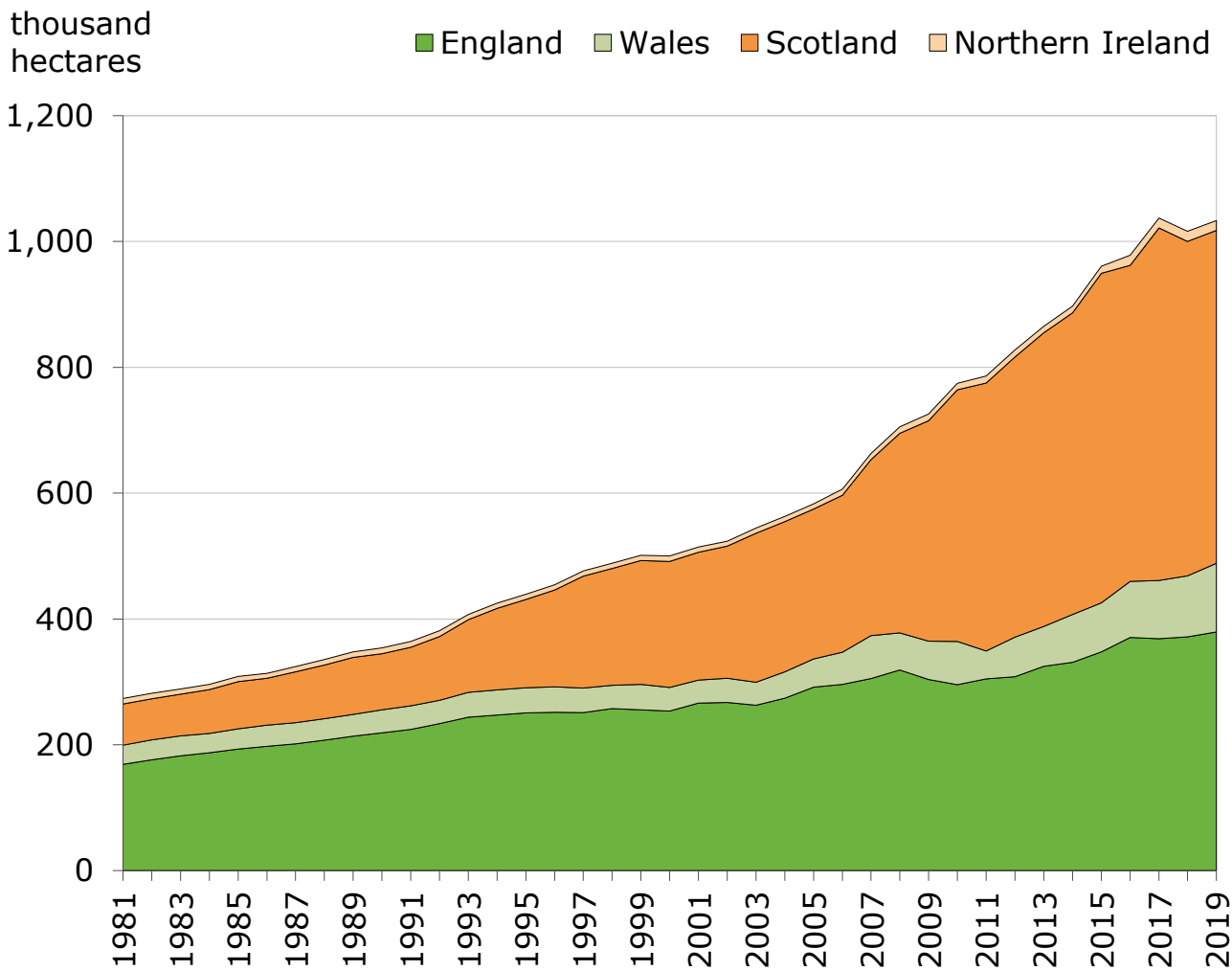
Year	England	Wales	Scotland	Northern Ireland	UK
2010	295	69	400	10	774
2011	305	44	426	11	786
2012	308	63	445	11	827
2013	325	63	467	10	865
2014	331	76	479	11	897
2015	348	78	524	11	961
2016	370	89	502	16	978
2017	369	93	560	16	1,037
2018	372	97	532	16	1,016
2019	379	109	529	16	1,033

Source: June Agricultural Census - Defra, The Scottish Government, Welsh Government, Northern Ireland Executive.

Notes:

- 1. Changes in the area of farm woodland over time indicate a change in the area of farm land that is reported as woodland and do not necessarily indicate a change in woodland area.
- 2. Figures include estimates for farm woodland that is not in receipt of grant aid.

Figure 1.5 Area of farm woodland, 1981-2019



Source: June Agricultural Census - Defra, The Scottish Government, Welsh Government, Northern Ireland Executive.

Notes:

1. Changes in the area of farm woodland over time indicate a change in the area of farm land that is reported as woodland and do not necessarily indicate a change in woodland area.
2. Figures include estimates for farm woodland that is not in receipt of grant aid.

1.6 New planting and publicly funded restocking

New planting

New planting is the creation of new areas of woodland by planting trees on land that was not previously woodland. The statistics presented here also include new woodland that is created by natural colonisation of trees on land near existing woodland. Statistics on new planting are used to inform government policy and resource allocation and are used in producing annual estimates of woodland area.

There are a number of factors that can affect the level of new planting in the UK. These include:

- choices by landowners reflecting their own motivation and needs;
- the costs and availability of land for conversion to woodland;
- the availability of grants for new planting, the level of grant payments available and the awareness of grants among potential recipients;
- the tax benefits available from owning woodland;
- expected future markets for wood products such as timber and woodfuel;
- income from payments for ecosystem services, particularly carbon storage;
- national and local initiatives, for example on biodiversity, green infrastructure and water management.

Restocking

Restocking is the replacement of trees on areas of woodland that have been felled; this can be done either through replanting or natural regeneration. The statistics presented here include felled areas that have been restocked by both natural regeneration and replanting.

As restocking takes place on woodland that has been previously harvested and it is a condition of most felling licences that the area is restocked, restocking rates are mainly driven by harvesting levels (with a time lag, usually of around 2 years, between harvesting and restocking). Figures for timber harvesting (wood production) are available in the UK-Grown Timber chapter.

Economic factors, including grant rates, may have some effect on the species choice at restocking. In addition, the precise timing of restocking may be affected by weather conditions.

This release only covers publicly funded restocking, that is:

- restocking of Forestry England/ Forestry and Land Scotland/ Natural Resources Wales/ Forest Service Woodland and
- grant aided restocking of private sector woodland.

Grant support for restocking of conifers changed with the introduction of Rural Development Contracts in Scotland in 2008 and again with the introduction of the Forestry Grant Scheme in 2015. This will have led to a reduction in the proportion of private sector restocking that is grant aided and therefore reported for Scotland.

Grant support in England is now provided by the Countryside Stewardship scheme, which opened for applications in early 2016. Funding for restocking under Countryside Stewardship is only available under limited circumstances (through the tree health grant). The restoration (and restocking with native species) of PAWS (plantations on ancient woodland sites) is also supported by the HS2 Woodland Fund. No estimate has been made for restocking in England that is no longer supported by grants and therefore restocking in England in recent years is under-reported in this release and other statistics.

1.6.1 New planting

13.7 thousand hectares of new woodland were created in the UK in 2019-20 (Table 1.13a). Conifers accounted for 57% of the new planting area in 2019-20.

Table 1.13a New planting by forest type

thousand hectares

Year (ending 31/3)	England	Wales	Scotland	Northern Ireland	UK
Conifers					
2015-16	0.00	0.03	1.90	0.00	1.93
2016-17	0.10	0.17	3.22	0.08	3.56
2017-18	0.24	0.10	4.68	0.11	5.13
2018-19	0.42	0.32	7.27	0.10	8.12
2019-20	0.24	0.04	7.43	0.06	7.77
Broadleaves					
2015-16	0.82	0.08	2.73	0.05	3.68
2016-17	1.05	0.24	1.54	0.13	2.96
2017-18	1.26	0.10	2.46	0.10	3.92
2018-19	1.00	0.35	3.94	0.14	5.42
2019-20	2.10	0.04	3.61	0.14	5.90
Total					
2015-16	0.82	0.11	4.63	0.05	5.61
2016-17	1.15	0.41	4.76	0.21	6.52
2017-18	1.50	0.20	7.14	0.21	9.05
2018-19	1.42	0.67	11.21	0.24	13.54
2019-20	2.34	0.08	11.05	0.20	13.66

Source: Forestry Commission, Forestry England, Scottish Forestry, Forestry and Land Scotland, Natural Resources Wales, Forest Service, grant schemes.

Notes:

1. Private sector new planting figures are based on grant-supported new planting and (where possible) with estimates for areas planted without grant aid.
2. Figures for grant-aided planting relate to areas for which grants were paid during the year.

3. Estimates for areas planted without grant aid are believed to be under-reported and, as a result, the reported figures are likely to under-estimate the true level of planting activity. For England, woodland planting funded by sources other than the Countryside Stewardship Woodland Creation Grant, the Woodland Carbon Fund and the HS2 Woodland Fund include planting supported by the Woodland Trust, by the Environment Agency, by Natural England and land acquired by the National Forest Company. For Scotland, a small amount of new planting without grant aid was included for 2016-17 to 2019-20.
4. The planting season lies both sides of 31 March, and the weather can cause planting to be advanced or delayed.
5. Includes woodland formed by natural colonisation (where known).

Data: Longer time series of the above table are available from the Data Downloads web page.

In 2019-20 most new planting (97%) took place on private sector land (Table 1.13b).

Table 1.13b New planting by ownership

thousand hectares

Year (ending 31/3)	England	Wales	Scotland	Northern Ireland	UK
FC/FLS/NRW/FS					
2015-16	0.00	0.00	0.71	0.00	0.71
2016-17	0.02	0.00	1.06	0.00	1.08
2017-18	0.00	0.00	0.87	0.00	0.87
2018-19	0.03	0.00	1.03	0.00	1.06
2019-20	0.10	0.00	0.27	0.05	0.42
Private sector					
2015-16	0.82	0.10	3.93	0.05	4.90
2016-17	1.13	0.41	3.70	0.21	5.45
2017-18	1.50	0.20	6.27	0.21	8.18
2018-19	1.39	0.67	10.19	0.24	12.48
2019-20	2.24	0.08	10.78	0.15	13.24
Total					
2015-16	0.82	0.11	4.63	0.05	5.61
2016-17	1.15	0.41	4.76	0.21	6.52
2017-18	1.50	0.20	7.14	0.21	9.05
2018-19	1.42	0.67	11.21	0.24	13.54
2019-20	2.34	0.08	11.05	0.20	13.66

Source: Forestry Commission, Forestry England, Scottish Forestry, Forestry and Land Scotland, Natural Resources Wales, Forest Service, grant schemes.

Notes:

1. Private sector new planting figures are based on grant-supported new planting and (where possible) with estimates for areas planted without grant aid.
2. Figures for grant-aided planting relate to areas for which grants were paid during the year.
3. Estimates for areas planted without grant aid are believed to be under-reported and, as a result, the reported figures are likely to under-estimate the true level of planting activity. For England, woodland planting funded by sources other than the Countryside Stewardship Woodland Creation Grant, the Woodland Carbon Fund and the HS2 Woodland Fund include planting supported by the Woodland Trust, by the Environment Agency, by Natural England

and land acquired by the National Forest Company. For Scotland, a small amount of new planting without grant aid was included for 2016-17 to 2018-19.

4. The planting season lies both sides of 31 March, and the weather can cause planting to be advanced or delayed.
5. Includes woodland formed by natural colonisation (where known).

Data: Longer time series of the above table are available from the Data Downloads web page.

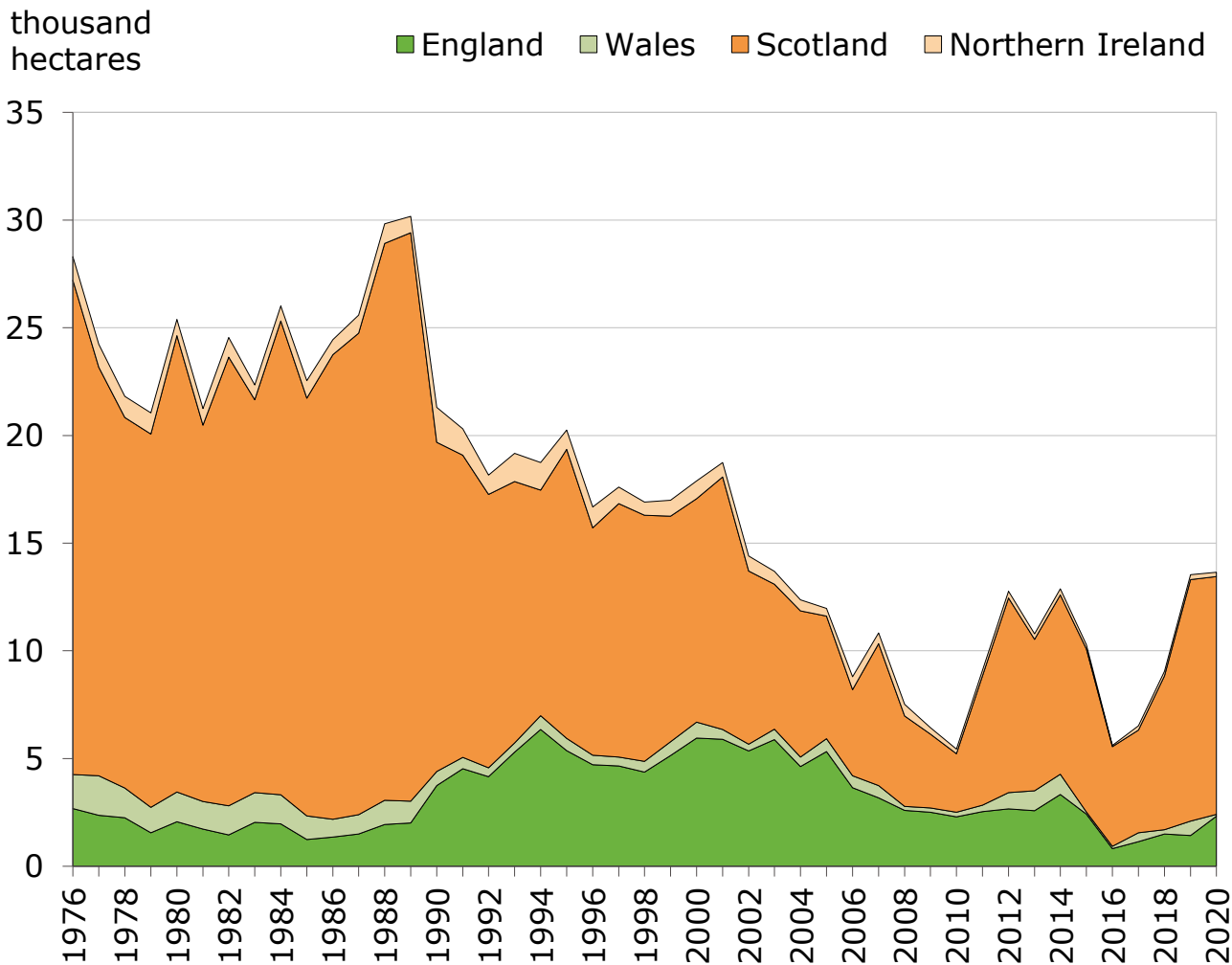
Figure 1.6 shows areas of new planting by country since the year ending March 1976. Trends in new planting rates have been influenced by changes to regulations and the incentives available to land owners.

In recent years, areas of new planting in the UK have dropped to lows of under 6 thousand hectares in 2009-10 and in 2015-16 and have risen to highs of around 13 thousand hectares in 2011-12, 2013-14, 2018-19 and 2019-20. These fluctuations are likely to have been influenced by changes in grant schemes across the UK.

At 13.7 thousand hectares in 2019-20, the current level of new planting is similar to the level reported in 2018-19. This current level does represent an increase of 0.8% from the previous year. This is the smallest increase recorded since levels rose sharply after the 2015-16 planting season.

For further information, see the New Planting and Restocking section of the Sources chapter.

Figure 1.6 New planting in the UK, 1976-2020



Source: Forestry Commission, Forestry England, Scottish Forestry, Forestry and Land Scotland, Natural Resources Wales, Forest Service, grant schemes.

Notes:

1. Private sector figures are based on grant-supported new planting and (where possible) with estimates for areas planted without grant aid.
2. Figures for grant-aided planting relate to areas for which grants were paid during the year.
3. Estimates for areas planted without grant aid are believed to be under-reported and, as a result, the reported figures are likely to under-estimate the true level of planting activity. For England, woodland planting funded by sources other than the Countryside Stewardship Woodland Creation Grant, the Woodland Carbon Fund and the HS2 Woodland Fund include planting supported by the Woodland Trust, by the Environment Agency, by Natural England and land acquired by the National Forest Company. For Scotland, a small amount of new planting without grant aid was included for 2016-17 to 2019-20.
4. The planting season lies both sides of 31 March, and the weather can cause planting to be advanced or delayed.
5. Includes woodland formed by natural colonisation (where known).

1.6.2 Restocking

A total of 14.8 thousand hectares of publicly funded restocking were reported in the UK in 2019-20 (Table 1.14a).

Table 1.14a Publicly funded restocking by forest type

thousand hectares

Year (ending 31/3)	England	Wales	Scotland	Northern Ireland	UK
Conifers					
2015-16	2.17	1.19	5.99	0.74	10.09
2016-17	2.03	1.16	9.09	1.15	13.42
2017-18	1.58	0.97	8.14	0.85	11.53
2018-19	1.26	1.04	9.12	0.72	12.14
2019-20	2.11	0.92	8.19	0.69	11.91
Broadleaves					
2015-16	1.14	0.58	1.83	0.07	3.62
2016-17	0.97	0.54	1.99	0.17	3.66
2017-18	0.47	0.70	1.52	0.08	2.77
2018-19	0.39	0.66	2.07	0.11	3.23
2019-20	0.63	0.58	1.69	0.03	2.92
Total					
2015-16	3.31	1.76	7.82	0.81	13.71
2016-17	3.00	1.70	11.07	1.31	17.09
2017-18	2.04	1.67	9.66	0.94	14.30
2018-19	1.65	1.70	11.19	0.83	15.37
2019-20	2.74	1.50	9.88	0.71	14.83

Source: Forestry Commission, Forestry England, Scottish Forestry, Forestry and Land Scotland, Natural Resources Wales, Forest Service, grant schemes.

Notes:

1. No estimates are available for restocking without grant aid.
2. The planting season lies both sides of 31 March, and the weather can cause planting to be advanced or delayed.
3. Includes woodland restocked by natural regeneration (where known).

Data: Longer time series of the above table are available from the Data Downloads web page.

Table 1.14b Publicly funded restocking by ownership

thousand hectares

Year (ending 31/3)	England	Wales	Scotland	Northern Ireland	UK
FC/FLS/NRW/FS					
2015-16	2.30	1.47	6.55	0.75	11.06
2016-17	2.39	1.44	6.67	1.25	11.74
2017-18	2.04	1.55	5.78	0.86	10.23
2018-19	1.57	1.22	7.15	0.79	10.72
2019-20	2.48	1.48	5.35	0.62	9.93
Private sector					
2015-16	1.02	0.30	1.27	0.06	2.65
2016-17	0.61	0.26	4.41	0.06	5.34
2017-18	0.00	0.12	3.87	0.08	4.07
2018-19	0.08	0.48	4.05	0.04	4.65
2019-20	0.26	0.02	4.52	0.09	4.89
Total					
2015-16	3.31	1.76	7.82	0.81	13.71
2016-17	3.00	1.70	11.07	1.31	17.09
2017-18	2.04	1.67	9.66	0.94	14.30
2018-19	1.65	1.70	11.19	0.83	15.37
2019-20	2.74	1.50	9.88	0.71	14.83

Source: Forestry Commission, Forestry England, Scottish Forestry, Forestry and Land Scotland, Natural Resources Wales, Forest Service, grant schemes.

Notes:

1. No estimates are available for restocking without grant aid.
2. The planting season lies both sides of 31 March, and the weather can cause planting to be advanced or delayed.
3. Includes woodland restocked by natural regeneration (where known).

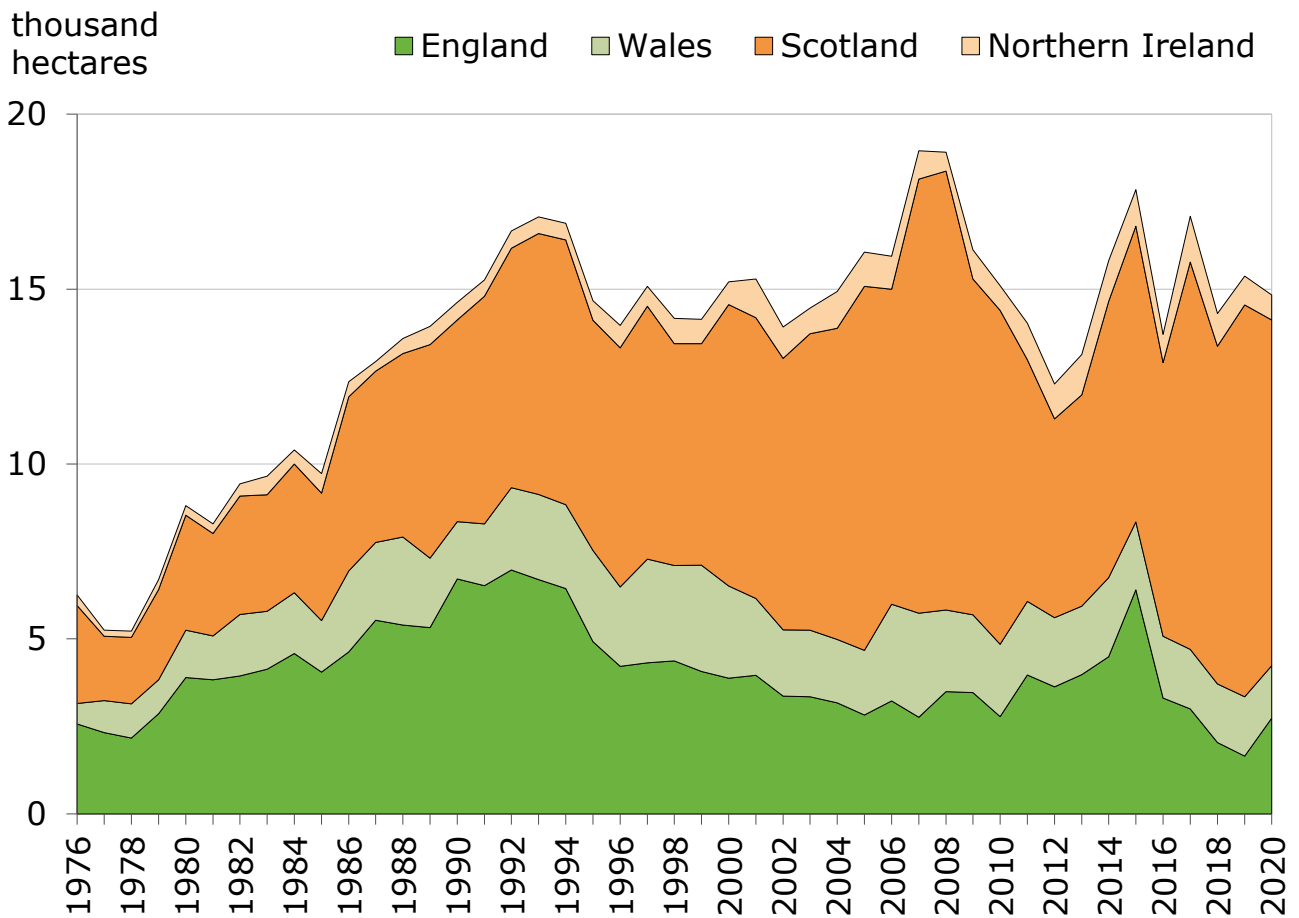
Data: Longer time series of the above table are available from the Data Downloads web page.

Figure 1.7 shows reported areas of restocking by country since the year ending March 1976. It indicates an increase in restocking rates during the period. Over the same period, there has been a general increase in UK wood production (see UK-Grown Timber chapter).

The reported area of restocking fell significantly after a peak of 19 thousand hectares in 2006-07. This followed changes to grant support for restocking in Scotland, that resulted in some non-grant aided Sitka spruce restocking being excluded from the estimates. Results from the Forestry Commission's Nursery Survey (an annual survey of forest nurseries in Great Britain) indicate that, following a dip in the 2009/10 planting year, sales of Sitka spruce plants to Scotland have been relatively stable in recent years.

The chart shows a dip in the area of restocking in 2015-16, following changes to grant schemes across the UK. Reported restocking has continued to fall in England, where grant aid is now only available in very limited circumstances. The reported area of publicly funded restocking in the UK in 2019-20 represents a 4% decrease from the previous year and remains below the level reported for 2016-17. For further information, see the New Planting and Restocking section of the Sources chapter.

Figure 1.7 Restocking in the UK, 1976-2020



Source: Forestry Commission, Forestry England, Scottish Forestry, Forestry and Land Scotland, Natural Resources Wales, Forest Service, grant schemes.

Notes:

1. Private sector figures are based on areas for which grants were paid during the year.
2. Estimates of areas planted without grant aid are also included (where possible) up to 2009-10, but no estimates are available since then. As a result, the reported figures are likely to under-estimate the true level of planting activity.
3. The planting season lies both sides of 31 March and the weather can cause planting to be advanced or delayed.
4. Includes woodland restocked by natural regeneration.
5. Restocking by natural regeneration in non-clearfell areas may be under-represented.

1.7 Felling

Felling

Approval for the felling (cutting down) of trees in the UK is granted through felling licences issued by the Forestry Commission, Scottish Forestry, Natural Resources Wales or the Forest Service in Northern Ireland.

Felling licences may be conditional (where felling approval is granted subject to replanting) or unconditional (where tree felling is approved without the requirement to replant). Unconditional licences are routinely issued for silvicultural thinning operations and in these cases no woodland loss takes place. However, an unconditional felling licence without the requirement to replant may be issued if there are overriding environmental considerations, for example to enable the restoration of important habitats.

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 removal of trees might also be required through a Statutory Plant Health Notice (SPHN). A SPHN may require the felling and destruction of infected trees or containment of infested material on site, and is issued by the Forestry Commission, Scottish Forestry, Natural Resources Wales or the Forest Service to prevent the spread of pests and diseases. Similar actions are also required within the public woodland estate managed by these organisations. There is no legal requirement for woodland to be restocked after felling under a SPHN.

Since 2010/2011, SPHNs have mainly been issued to attempt to slow down the spread of *Phytophthora ramorum*, first found in the UK in 2002 on viburnum, and in 2009 on Japanese larch, a significant sporulating host resulting in a dramatic upsurge in the disease.

Statutory felling of infected *P. ramorum* infected larch does not apply within the designated *P. ramorum* management zone in south west Scotland where the high levels of infection and proportion of larch in the area make this unfeasible. However, felling licences are still required, and movement licences are required to stop spread out of this area. In Wales' *P. ramorum* Core Disease Zone SPHNs are still served to contain material on site, but felling still requires a felling licence.

Further information on felling and Statutory Plant Health Notices is provided in the Sources chapter.

Woodland loss

Information on unconditional felling licences that do not relate to thinning may be seen as an indication of the level of woodland loss on land that is not owned or managed by Forestry England, Forestry and Land Scotland, Natural Resources Wales or the Forest Service. However, the data relates only to felling licences issued, so does not provide information on whether the felling actually took place (or the timing of the felling). In addition, felling licences do not cover woodland loss that is authorised under planning regulations.

The National Forest Inventory report "Preliminary estimates of the changes in canopy cover in British woodlands between 2006 and 2015" (August 2016) has reported:

- 3.3 thousand hectares of observed permanent woodland loss between 2006 and 2015;
- a further 0.7 thousand hectares of ground under development and 0.2 thousand hectares of newly established habitats;
- 69% of the clearfelled area observed in 2006 had been restocked by 2012, leaving around 33.9 thousand hectares of woodlands in transition and open areas;
- 63% of the area observed as clearfelled between 2006 and 2009 had been restocked by 2012, leaving around 28.6 thousand hectares of woodlands in transition and open areas.

These are interim estimates that are likely to underestimate the final position; updated estimates will be available when results from the NFI second cycle field survey are released.

Further information is available in the report at www.forestresearch.gov.uk/tools-and-resources/national-forest-inventory/.

1.7.1 Felling licences

Table 1.15 shows the area covered by unconditional felling licences issued by the Forestry Commission, Scottish Forestry and Natural Resources Wales in the last 10 years. The figures do not include unconditional felling licences issued to permit thinning of woodlands. The table covers woodland in England, Scotland and Wales that is not owned or managed by Forestry England, Forestry and Land Scotland or Natural Resources Wales only; it does not cover felling that is exempt from felling licence approval (such as authorisations for felling under planning regulations, felling required under a Statutory Plant Health Notice or felling that is approved on condition that the area is restocked).

A total of 0.3 thousand hectares of woodland in England, 0.3 thousand hectares of woodland in Scotland and 0.1 thousand hectares in Wales was covered by unconditional felling licences (with no requirement to restock) in the year to March 2020.

Table 1.15 Area of private sector woodland covered by unconditional felling licences^{1,2}, 2010-11 to 2019-20

thousand hectares

Year	England	Wales	Scotland	GB
2010-11	0.5	0.0	0.1	0.6
2011-12	0.6	0.0	0.1	0.7
2012-13	0.3	0.3	0.2	0.9
2013-14	0.4	0.1	0.1	0.6
2014-15	0.2	0.0	0.1	0.3
2015-16	0.2	0.1	0.2	0.5
2016-17	0.2	0.0	0.0	0.2
2017-18	0.2	0.0	0.0	0.2
2018-19	0.7	0.1	0.0	0.8
2019-20	0.3	0.1	0.3	0.6

Source: Forestry Commission, Scottish Forestry, Natural Resources Wales

Notes:

1. Felling licences issued in the period. Excludes areas exempt from felling licence approval and licences issued for thinning.
2. From April 2019 Felling Permissions, issued under the Forestry and Land Management Act (Scotland) 2018, have replaced Felling Licences in Scotland

These figures are outside the scope of National Statistics. For further information see the Sources chapter.

1.7.2 Statutory Plant Health Notices

Table 1.16a shows the number of sites where a Statutory Plant Health Notice has been served in the UK between 2010-11 and 2018-19. For Scotland, the figures now show the number of Statutory Plant Health Notices issued, rather than number of sites.

All woodland, including sites owned or managed by Forestry England, Forestry and Land Scotland, Natural Resources Wales or the Forest Service in Northern Ireland are covered. As Statutory Plant Health Notices are not issued in the *Phytophthora ramorum* management zone in south west Scotland, the figures presented here do not cover all felling of infected larch.

A total of 635 sites were served with Statutory Plant Health Notices between April 2018 and March 2019.

Table 1.16a Number of sites where a Statutory Plant Health Notice has been served¹, 2010-11 to 2018-19

Year	England	Wales	Scotland	Northern Ireland	UK
2010-11	114	46	1	10	171
2011-12	131	90	15	16	252
2012-13	168	89	44	15	316
2013-14	244	272	55	28	599
2014-15	140	71	17	17	245
2015-16	73	57	32	3	165
2016-17	75	53	65	0	193
2017-18	43	153	70	14	280
2018-19	136	215	284	0	635

Source: Forestry Commission, Scottish Forestry, Natural Resources Wales, Forest Service.
Note:

1. The number of sites where infection of larch by *Phytophthora ramorum* has been confirmed, or where there is sufficient suspicion of infection and a Statutory Plant Health Notice has been served on the landowner. For Scotland, figures relate to the number of Statutory Plant Health Notices issued.
2. Excludes felling within the *Phytophthora ramorum* management zone in south west Scotland, where Statutory Plant Health Notices are not issued.

These figures are outside the scope of National Statistics. For further information see the Sources chapter.

Areas requiring felling under Statutory Plant Health Notices totalled 3.9 thousand hectares in 2018-19 (Table 1.16b). Around one half (49%) of the area to be felled in 2018-19 was in Wales, 36% was in Scotland and 15% in England.

Table 1.16b Felling areas under Statutory Plant Health Notices¹, 2010-11 to 2018-19

thousand hectares

Year	England	Wales	Scotland ²	Northern Ireland	UK
2010-11	1.2	0.8	0.0	0.3	2.3
2011-12	0.5	0.5	0.1	0.1	1.1
2012-13	0.5	1.5	0.3	0.2	2.5
2013-14	0.8	4.6	0.3	0.5	6.1
2014-15	0.3	0.4	0.1	0.0	0.8
2015-16	0.1	1.5	0.9	0.0	2.6
2016-17	0.3	0.2	0.2	0.0	0.7
2017-18	0.1	1.3	0.3	0.1	1.7
2018-19	0.6	1.9	1.4	0.0	3.9

Source: Forestry Commission, Scottish Forestry, Natural Resources Wales, Forest Service.

Note:

1. The area that is required to be felled within the Statutory Plant Health Notice.
2. Felling areas in Scotland relate to larch only.
3. Excludes felling within the Phytophthora ramorum management zone in south west Scotland, where Statutory Plant Health Notices are not issued.

These figures are outside the scope of National Statistics. For further information see the Sources chapter.

Forestry Statistics 2020

Chapter 2: UK-Grown Timber

Release date:

24 September 2020

Coverage:

United Kingdom

Geographical breakdown:

Country

Introduction

This chapter covers the production of timber from woodland and the primary processing of harvested wood to give basic wood products.

Estimates for England, Wales, Scotland and Northern Ireland are included, in addition to UK totals, where possible.

International comparisons of timber production are available in the International Forestry chapter. Further information on the data sources and methodology used to compile the figures is provided in the Sources chapter.

Timber originating from conifers is known as softwood and that from broadleaves is known as hardwood. Please refer to the Glossary for a definition of other terms used in this chapter.

Figures for 2019 were previously published in "UK Wood Production and Trade: 2019 Provisional Figures", released on 14 May 2020. Some figures have been revised from those previously published. For further details on revisions, see the Timber section of the Sources chapter.

A copy of all UK-grown timber tables can be accessed in spreadsheet format from the Data Downloads web page at www.forestresearch.gov.uk/tools-and-resources/statistics/data-downloads/.

Key findings

The main findings for 2019 are (with percentage changes from 2018):

Removals¹ (harvesting) of UK roundwood:

- 9.8 million green tonnes of softwood (-14%);
- 0.9 million green tonnes of hardwood (+4%).

Deliveries¹ of UK roundwood to wood processors and others:

- Total: 11.1 million green tonnes of roundwood (softwood and hardwood) (-3%), of which:
- Sawmills: 6.0 million green tonnes (-7%);
- Wood-based panels: 1.3 million green tonnes (+9%);
- Integrated pulp and paper mills: 0.5 million green tonnes (-5%);
- Woodfuel: 2.6 million green tonnes (unchanged);
- Other uses, including round fencing, shavings and exports of roundwood: 0.7 million green tonnes (-3%).

Production of wood products in the UK included:

- 3.5 million cubic metres of sawnwood (-6%);
- 3.2 million cubic metres of wood-based panels (+5%);
- 3.9 million tonnes of paper and paperboard (-1%).

¹ The difference between total removals and deliveries reported here (around 0.4 million green tonnes in 2019) is likely to reflect a number of factors, including changes in stock levels and the different data sources and methodologies used.

2.1 Wood production

Wood production (also referred to as removals) refers to the harvesting of roundwood (trunk and branch wood) from coniferous (softwood) and non-coniferous (hardwood) trees. Figures are generally expressed here in green tonnes (weight when freshly felled).

Removals should not be confused with deliveries, which are the quantities of UK-grown roundwood that is delivered to processors (mills) or for other uses (such as woodfuel and exports). Deliveries statistics are presented in Tables 2.5 and 2.6. A comparison of removals and deliveries of UK softwood roundwood is provided in the Sources chapter.

The figures on removals of UK roundwood are used to monitor trends in the UK forest sector. The data is also used alongside figures for standing volume (the volume of standing trees) and increment (the growth rate of standing trees) to compile natural capital accounts for inclusion in the UK Environmental Accounts released by the Office for National Statistics.

The data are derived from a number of sources:

- FE/FLS/NRW/FS figures are obtained from Forestry England, Forestry and Land Scotland, Natural Resources Wales and Forest Service administrative systems;
- Private sector softwood figures are obtained from the Private Sector Softwood Removals Survey;
- Total hardwood figures are estimated from hardwood deliveries figures, which are compiled from surveys of the UK-grown timber industry, trade associations and expert estimates.

2.1.1 Summary: wood production

It is estimated that a total of 10.7 million green tonnes of roundwood was removed from UK woodlands in 2019.

Softwood accounted for most (92%) removals from UK woodland and totalled 9.8 million green tonnes in 2019 (Table 2.1a). This represented a 14% decrease on the previous year's figure.

Hardwood removals totalled 0.9 million green tonnes in 2019 (Table 2.1b).

Private sector woodlands accounted for 60% of softwood production and 92% of hardwood production in 2019.

Table 2.1a Softwood production, 2010-2019

thousand green tonnes

Year	FE/ FLS/ NRW/ FS ¹ woodland	Private sector ² woodland	Total softwood
2010	4,625	4,633	9,258
2011	4,870	5,186	10,056
2012	4,836	5,259	10,095
2013	5,084	5,852	10,936
2014	4,900	6,627	11,527
2015	4,691	5,968	10,659
2016	5,011	5,734	10,745
2017	4,761	6,075	10,836
2018	4,522	6,827	11,349
2019	3,937	5,864	9,801

Source: Forestry England, Forestry and Land Scotland, Natural Resources Wales, Forest Service, industry surveys, industry associations.

Notes:

1. FE: Forestry England, FLS: Forestry and Land Scotland, NRW: Natural Resources Wales, FS: Forest Service (Northern Ireland).
2. Private sector: removals from all other woodland (including some publicly owned woodland).

Table 2.1b Hardwood production, 2010-2019

thousand green tonnes

Year	FE/ FLS/ NRW/ FS ¹ woodland	Private sector ² woodland	Total hardwood ^{3,4}
2010	70	464	534
2011	75	465	540
2012	55	478	533
2013	78	453	531
2014	71	465	536
2015	73	492	565
2016	68	528	596
2017	85	652	737
2018	88	746	835
2019	68	801	869

Source: Forestry England, Forestry and Land Scotland, Natural Resources Wales, Forest Service, industry surveys, industry associations.

Notes:

1. FE: Forestry England, FLS: Forestry and Land Scotland, NRW: Natural Resources Wales, FS: Forest Service (Northern Ireland).
2. Private sector: removals from all other woodland (including some publicly owned woodland).
3. Most hardwood production in the UK comes from private sector woodland; the figures are estimates based on reported deliveries to wood processing industries and others.
4. The increase in hardwood removals between 2016 and 2017 is largely attributed to a revised estimate for deliveries of UK grown hardwood used for woodfuel (see Table 2.6). This new estimate should not be interpreted as an increase in a single year.

Data: Longer time series of the above table, including estimates by country (England/ Wales/ Scotland/ Northern Ireland) are available from the Data downloads web page at: <https://www.forestresearch.gov.uk/tools-and-resources/statistics/data-downloads/>.

2.1.2 Origin of private sector softwood removals

It is estimated that 70% of all softwood removals from private sector woodlands were harvested in Scotland, 21% in England, 8% in Wales and the remainder in Northern Ireland in 2019 (Table 2.2).

Despite a 14% decrease in private sector softwood removals in the UK in the latest year, the total for 2019 remains higher than the level at the beginning of the decade.

Table 2.2 Private sector softwood removals by country, 2010-2019
thousand green tonnes

Year	England	Wales	Scotland	Northern Ireland	UK
2010	678	427	3,471	57	4,633
2011	738	501	3,894	53	5,186
2012	847	611	3,761	40	5,259
2013	929	695	4,205	23	5,852
2014	1,165	739	4,691	33	6,627
2015	1,052	686	4,203	28	5,968
2016	1,013	643	4,043	34	5,734
2017	961	783	4,295	36	6,075
2018	1,130	628	5,022	47	6,827
2019	1,221	486	4,112	44	5,864

Source: Private Sector Softwood Removals Survey

Data: Longer time series of the above table, including estimates for hardwood removals and for removals from FE/FLS/NRW/FS woodlands are available from the Data Downloads web page at: <https://www.forestresearch.gov.uk/tools-and-resources/statistics/data-downloads/>.

2.1.3 Origin of FE/FLS/NRW/FS removals

Information on removals from Forestry England (FE), Forestry and Land Scotland (FLS), Natural Resources Wales (NRW) and Forest Service (FS) woodlands is obtained from administrative systems.

A total of 3.9 million green tonnes of softwood was removed from FE/FLS/NRW/FS woodlands in 2019, a 13% decrease from the 2018 figure (Table 2.3). This represents the lowest level in the last decade.

Over one half (54%) of FE/FLS/NRW/FS softwood removals in 2019 occurred in Scotland, 23% in England, 13% in Wales and 9% in Northern Ireland.

Table 2.3 FE/FLS/NRW/FS softwood removals by country, 2010-2019

thousand green tonnes

Year	England	Wales	Scotland	Northern Ireland	UK
2010	1,142	644	2,434	405	4,625
2011	1,185	689	2,566	430	4,870
2012	1,154	663	2,627	392	4,836
2013	1,188	693	2,819	384	5,084
2014	1,064	722	2,749	365	4,900
2015	1,023	692	2,644	333	4,691
2016	1,146	778	2,745	343	5,011
2017	1,087	660	2,666	349	4,761
2018	1,048	696	2,438	339	4,522
2019	905	525	2,143	364	3,937

Source: Forestry England (FE), Forestry and Land Scotland (FLS), Natural Resources Wales (NRW), Forest Service (FS).

Data: Longer time series of the above table, including estimates for hardwood removals and for removals from private sector woodlands are available from the Data Downloads web page at: <https://www.forestresearch.gov.uk/tools-and-resources/statistics/data-downloads/>.

2.1.4 Softwood availability forecast

The National Forest Inventory "50-year forecast of softwood availability" and "50-year forecast of hardwood availability" were published in April 2014. They are forecasts of potential availability rather than production, as they do not take account of management objectives, financial factors or the state of markets, all of which will affect the level of and timing of harvesting.

More information on the forecasts and detailed breakdowns are available on the National Forest Inventory web pages at www.forestresearch.gov.uk/tools-and-resources/national-forest-inventory/.

The forecasts are outside the scope of National Statistics, but are provided here to give more context to the data on wood production.

As these forecasts were produced in 2014, they do not take into account any of the findings from the '[preliminary estimates of the changes in canopy cover in British woodlands between 2006 and 2015](#)', released in August 2016.

The key assumptions underpinning the headline softwood forecast scenario include:

- Private woodland is managed in a way that maximises total production.
- The estate of Forestry England, Forestry and Land Scotland and Natural Resources Wales is managed according to current management plans; note that Forestry England, Forestry and Land Scotland, and Natural Resources Wales intend to cap production below the level set out in Table 2.4a.

Under the above scenario, softwood availability for Great Britain averages 15.2 million cubic metres a year over the 50-year period 2013 to 2061 (Table 2.4a). The majority (66%) of this softwood is projected to come from private sector woodland.

Table 2.4a Softwood availability forecasts

thousand m³ overbark standing

Annual average in the period	England	Wales	Scotland	GB
FE/FLS/NRW ¹				
2013 - 2016	1,632	1,082	4 220	6,933
2017 - 2021	1,330	991	3,658	5,980
2022 - 2026	1,211	895	3,516	5,622
2027 - 2031	1,159	778	3,789	5,726
2032 - 2036	1,066	934	3,215	5,216
2037 - 2041	1,013	794	2,936	4,744
2042 - 2046	1,055	531	2,730	4,316
2047 - 2051	1,014	585	3,280	4,879
2052 - 2056	828	495	2,886	4,209
2057 - 2061	1,250	679	2,339	4,269
Private sector ²				
2013 - 2016	2,945	901	5,708	9,554
2017 - 2021	3,225	949	6,997	11,171
2022 - 2026	2,903	1,087	7,830	11,820
2027 - 2031	2,986	775	8,910	12,671
2032 - 2036	2,850	736	8,847	12,433
2037 - 2041	2,224	679	8,133	11,035
2042 - 2046	1,848	490	6,527	8,865
2047 - 2051	1,523	521	4,986	7,030
2052 - 2056	1,431	734	5,679	7,845
2057 - 2061	1,603	694	5,627	7,924
Total softwood				
2013 - 2016	4,577	1,983	9,928	16,487
2017 - 2021	4,555	1,940	10,656	17,151
2022 - 2026	4,113	1,982	11,346	17,442
2027 - 2031	4,145	1,553	12,700	18,398

2032 - 2036	3,916	1,670	12,062	17,649
2037 - 2041	3,237	1,473	11,069	15,779
2042 - 2046	2,903	1,021	9,257	13,181
2047 - 2051	2,537	1,106	8,266	11,909
2052 - 2056	2,259	1,229	8,566	12,054
2057 - 2061	2,853	1,373	7,966	12,193

Source: National Forest Inventory: 50-year forecast of softwood availability (Forestry Commission, April 2014)³

Notes:

1. The estate of Forestry England (FE), Forestry and Land Scotland (FLS) and Natural Resources Wales (NRW) is assumed to be managed according to current management plans; note that Forestry England, Forestry and Land Scotland and Natural Resources Wales intend to cap production below the level set out in Table 2.4a.
2. Private woodland is assumed to be managed in a way that maximises total production.
3. More recent softwood availability forecasts, covering a 25 year period only, are available from the NFI web pages at: www.forestryresearch.gov.uk/tools-and-resources/national-forest-inventory/.
4. To convert softwood 'overbark standing' into green tonnes multiply by 0.818. See the Sources chapter for more details on conversion factors.

These figures are outside the scope of National Statistics. For further information see the Sources chapter.

2.1.5 Hardwood availability forecast

The key assumptions underpinning the headline hardwood forecast scenario include:

- In private woodland, harvesting is limited to areas with evidence of recent thinning activity.
- The estate of Forestry England, Forestry and Land Scotland and Natural Resources Wales is managed according to current management plans.

Under the above scenario, hardwood availability for Great Britain averages 1.6 million m³ a year over the 50-year period (Table 2.4b). The majority (89%) of this hardwood is projected to come from private sector woodland. If these woodlands were managed to maximise total production, the forecast would be much higher, as illustrated in the full National Forest Inventory report available at www.forestryresearch.gov.uk/tools-and-resources/national-forest-inventory/.

Table 2.4b Hardwood availability forecasts

thousand m³ overbark standing

Annual average in the period	England	Wales	Scotland	GB
FE/FLS/NRW ¹				
2013 - 2016	126	12	9	147
2017 - 2021	92	11	9	111
2022 - 2026	110	17	10	137
2027 - 2031	86	12	10	108
2032 - 2036	99	14	15	128
2037 - 2041	129	19	24	172
2042 - 2046	189	56	31	276
2047 - 2051	116	19	40	175
2052 - 2056	134	28	45	208
2057 - 2061	146	28	64	237
Private sector ²				
2013 - 2016	122	20	83	225
2017 - 2021	333	46	139	519
2022 - 2026	538	77	193	808
2027 - 2031	720	100	233	1,054

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2032 - 2036	825	115	262	1,202
2037 - 2041	1,047	153	367	1,567
2042 - 2046	1,915	243	586	2,743
2047 - 2051	1,678	227	675	2,580
2052 - 2056	1,254	198	554	2,006
2057 - 2061	645	139	343	1,127
Total hardwood				
2013 - 2016	249	32	92	373
2017 - 2021	425	58	148	631
2022 - 2026	648	94	203	945
2027 - 2031	806	112	244	1,162
2032 - 2036	923	130	277	1,330
2037 - 2041	1,176	171	391	1,738
2042 - 2046	2,104	299	616	3,019
2047 - 2051	1,795	246	715	2,755
2052 - 2056	1,388	227	599	2,214
2057 - 2061	791	167	406	1,364

Source: National Forest Inventory: 50-year forecast of hardwood availability (Forestry Commission, April 2014)

Notes:

1. The estate of Forestry England (FE), Forestry and Land Scotland (FLS) and Natural Resources Wales (NRW) is assumed to be managed according to current management plans.
2. In private woodland, harvesting is assumed to be limited to areas with evidence of recent thinning activity. If these woodlands were managed to maximise total production, the forecast would be much higher, as illustrated in the full National Forest Inventory report available at www.forestresearch.gov.uk/tools-and-resources/national-forest-inventory/.
3. To convert hardwood 'overbark standing' into green tonnes multiply by 0.900. See the Sources chapter for more details on conversion factors.

These figures are outside the scope of National Statistics. For further information see the Sources chapter.

2.2 Deliveries of UK-grown roundwood

Figures for deliveries relate to the quantity of UK-grown roundwood that is delivered to processors (mills) or for other uses (such as woodfuel and exports). They are expressed in green tonnes (weight when freshly felled). Statistics on roundwood deliveries are used to monitor trends in the supply of, and demand for, UK-grown wood.

Deliveries should not be confused with removals, which are the quantities of roundwood that is harvested from UK woodland. Removals statistics are presented in Tables 2.1 to 2.3. A comparison of removals and deliveries of UK softwood roundwood is provided in the Sources chapter.

The data are derived from a number of sources, including surveys of the UK-grown timber industry, trade associations and expert estimates.

2.2.1 Softwood deliveries

In 2019, deliveries of UK roundwood (softwood and hardwood) totalled 11.1 million green tonnes, a 3% decrease from the previous year (Tables 2.5 and 2.6).

Most UK roundwood deliveries (92%) were softwood and totalled 10.2 million green tonnes in 2019 (Table 2.5). 5.9 million green tonnes (58% of UK softwood deliveries) were used by sawmills, a 7% decrease from the previous year. A further 1.9 million green tonnes were used for wood fuel (unchanged from 2018), 1.3 million green tonnes were used to produce wood-based panels (a 13% increase), 0.5 million green tonnes by integrated pulp and paper mills (a 5% decrease), and 0.6 million green tonnes for other uses, including round fencing, shavings and exports of roundwood (a 7% decrease).

The increase in softwood deliveries for woodfuel in recent years reflects an increase in wood use for heating and energy production in the UK (see the Sources chapter for further information).

Table 2.5 Deliveries of UK-grown softwood, 2010-2019

thousand green tonnes

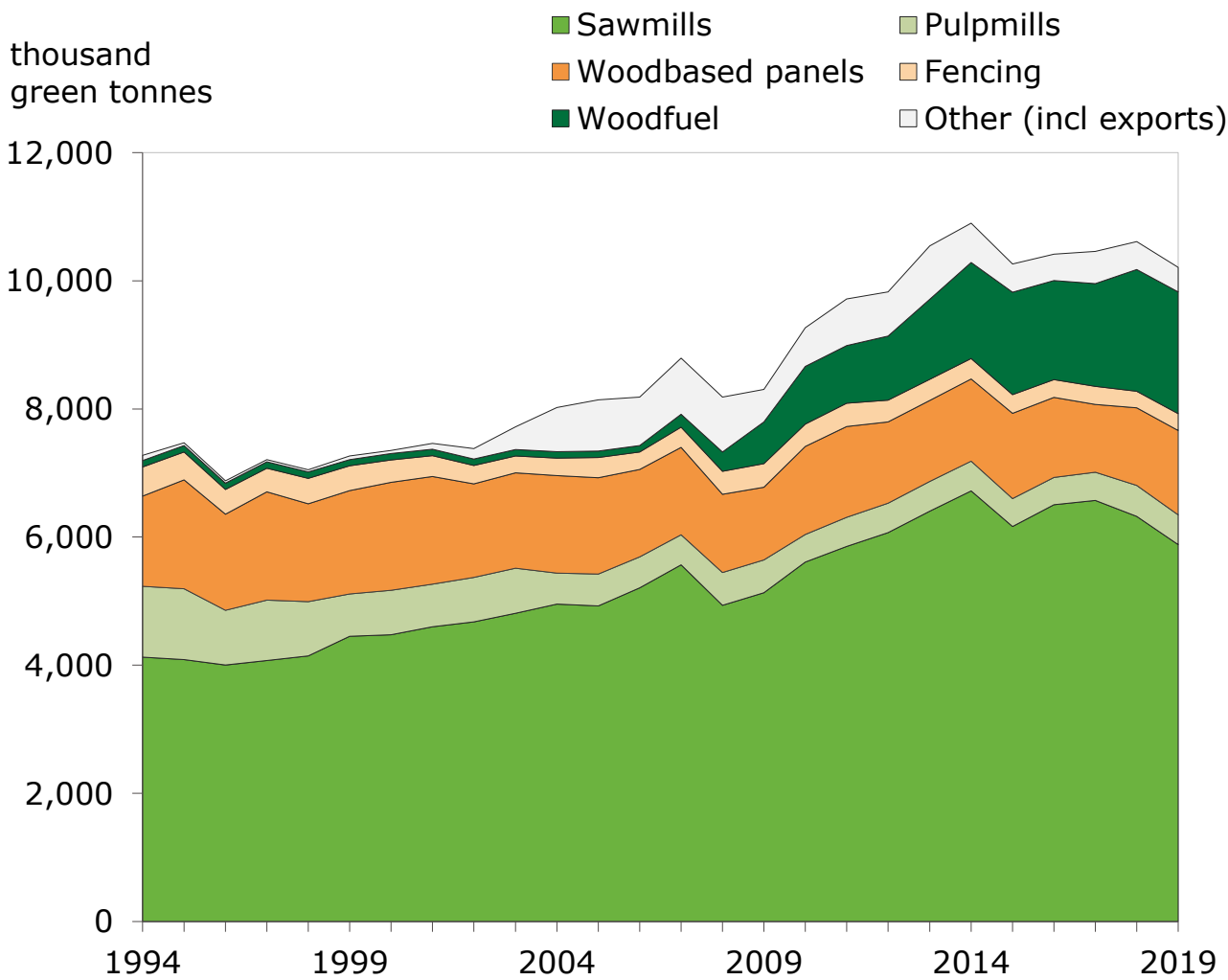
Year	Saw-mills	Pulp mills	Wood-based panels	Fencing	Wood fuel ¹	Other ²	Exports	Total
2010	5,611	428	1,375	349	900	135	467	9,265
2011	5,855	453	1,417	363	900	145	585	9,718
2012	6,069	461	1,269	338	1,000	154	535	9,826
2013	6,403	465	1,263	332	1,250	191	640	10,543
2014	6,721	465	1,283	317	1,500	176	437	10,899
2015	6,164	435	1,334	288	1,600	164	276	10,261
2016	6,507	423	1,248	277	1,550	178	231	10,415
2017	6,571	442	1,059	283	1,600	170	331	10,456
2018	6,322	486	1,210	255	1,900	174	264	10,611
2019	5,883	464	1,316	262	1,900	183	201	10,210

Source: industry surveys, industry associations.

Notes:

- 1. Woodfuel derived from stemwood, includes estimates of roundwood use for biomass energy. The figures are estimated by the Expert Group on Timber and Trade Statistics and make use of woodfuel data reported in the Private Sector Softwood Removals Survey.
- 2. Includes shavings and poles. Quantities for some uses are estimates by the Expert Group on Timber and Trade Statistics.

Figure 2.1 Deliveries of UK-grown softwood, 1994-2019



Source: industry surveys, industry associations.

2.2.2 Hardwood deliveries

There was a total of 0.9 million green tonnes of UK hardwood deliveries in 2019 (Table 2.6). The majority of UK hardwood deliveries (81% in 2019) were used for woodfuel.

Table 2.6 Deliveries of UK-grown hardwood, 2010-2019

thousand green tonnes

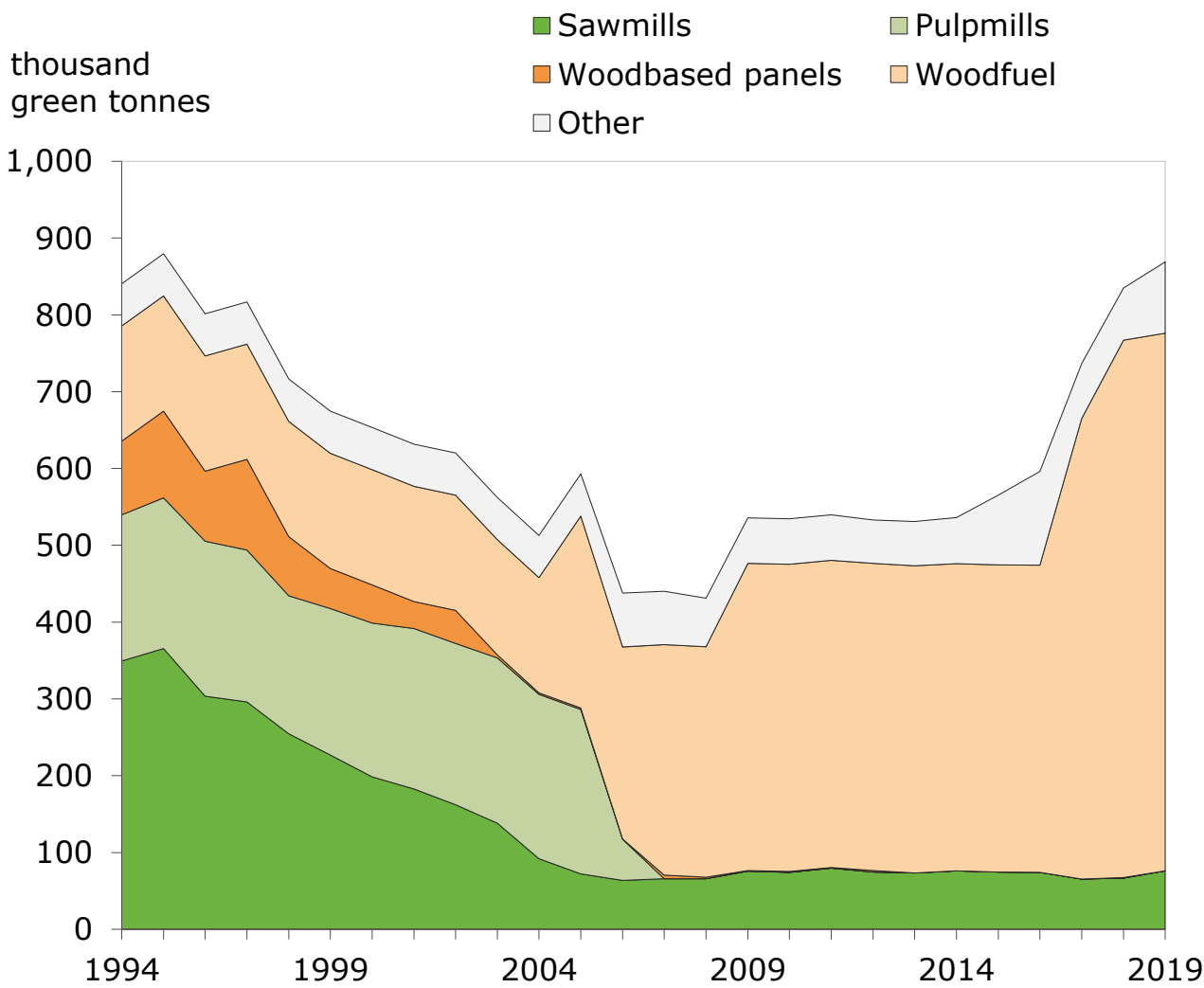
Year	Sawmills	Pulp mills	Wood-based panels	Woodfuel	Other	Total
2010	74	0	1	400	59	534
2011	80	0	1	400	59	540
2012	74	0	2	400	57	533
2013	73	0	0	400	58	531
2014	76	0	0	400	60	536
2015	75	0	0	400	91	565
2016	74	0	0	400	122	596
2017	65	0	0	600	71	737
2018	67	0	1	700	68	835
2019	76	0	0	700	93	869

Source: industry surveys, industry associations.

Notes:

1. Figures are based on processing industries' purchases of hardwood grown in the UK and estimates for woodfuel and other uses.
2. Woodfuel reported here is derived from stemwood and includes estimated roundwood use for biomass energy.
3. The apparent increase in woodfuel from 2016 to 2017 reflects a new estimate of the level of hardwood deliveries for woodfuel and should not be interpreted as an increase in a single year.
4. Other includes round fencing and roundwood exports.

Figure 2.2 Deliveries of UK-grown hardwood, 1994-2019



Source: industry surveys, industry associations.

Notes:

1. Other includes round fencing and roundwood exports.
2. The apparent increase in woodfuel from 2016 to 2017 reflects a new estimate of the level of hardwood deliveries for woodfuel and should not be interpreted as an increase in a single year.

2.3 Sawmills - All Mills

Data are collected by Forest Research in an annual Sawmill Survey. The following section includes summary results, covering number of mills, consumption and production are available for all mills.

In addition, there are also more detailed figures for larger mills only. The threshold defining larger mills was changed for the collection of 2016 data, from annual sawnwood production of 10 thousand m³ to annual sawnwood production of 25 thousand m³. Further information on this change is provided in the section on Larger Mills within this chapter and in the Sawmill Survey section of the Sources chapter.

Consumption units are given in green tonnes. For production, the units used are m³ sawnwood. For conversion factors between different units, see the Timber section of the Sources chapter.

2.3.1 Summary: consumption & production

In 2019, sawmills in the UK consumed a total of 6.2 million green tonnes of softwood, a 6% decrease from 2018 (Table 2.7a). A further 0.1 million green tonnes of hardwood were consumed by UK sawmills in 2019. Most of the logs, 5.9 million green tonnes softwood and 0.1 million green tonnes hardwood, were grown in the UK.

Despite a drop in the levels of softwood consumption in the UK in the last 2 years, the 2019 figure remains above the level earlier in the decade.

Table 2.7a Consumption by UK sawmills, 2010-2019

thousand green tonnes

Year	UK grown soft wood	Imported soft wood	Total soft wood	UK grown hard wood	Imported hard wood	Total hard wood
2010	5,611	103	5,715	74	19	93
2011	5,855	125	5,980	80	20	100
2012	6,069	124	6,194	74	17	92
2013	6,403	126	6,528	73	13	87
2014	6,721	159	6,880	76	14	90
2015	6,164	182	6,345	75	14	89
2016	6,507	209	6,716	74	17	91
2017	6,571	267	6,837	65	13	79
2018	6,322	325	6,647	67	13	80
2019	5,883	343	6,227	76	13	89

Source: Sawmill Survey

A total of 3.5 million m³ of sawnwood was produced in the UK in 2019, a 6% decrease from 2018.

In addition to producing sawnwood, sawmills also generate other products. Further information on other products produced by larger mills are provided in Tables 2.18 and 2.18a.

Table 2.7b Sawnwood production by UK sawmills, 2010-2019
thousand m³ sawnwood

Year	Softwood production	Hardwood production
2010	3,050	47
2011	3,223	51
2012	3,358	48
2013	3,532	45
2014	3,713	47
2015	3,447	46
2016	3,621	47
2017	3,720	41
2018	3,618	41
2019	3,410	47

Source: Sawmill Survey

2.3.2 Number of sawmills by size

A total of 150 sawmills processed UK roundwood in 2019 (Table 2.8). Most mills (83%) produced less than 25 thousand m³ sawnwood (softwood and hardwood) during the year.

Over the past ten years, the number of active sawmills has reduced by 20%. Most of this decrease has occurred in the smallest size categories.

Table 2.8 Number of sawmills by size category of mill, 2010-2019

Year	< 1	1 - <5	5 - <10	10 - <25	25 - <50	50 - <100	100+	Total
2010	73	51	13	24	8	10	9	188
2011	70	50	13	23	9	7	12	184
2012	69	48	14	19	11	8	11	180
2013	67	45	14	17	13	6	13	175
2014	69	40	14	17	13	8	12	173
2015	66	42	16	17	12	6	12	171
2016	60	41	16	20	6	10	13	166
2017	60	41	13	22	5	10	12	163
2018	60	35	12	21	8	7	12	155
2019	56	35	13	20	8	6	12	150

Source: Sawmill Survey

Notes:

- Categories are based on total sawnwood production (softwood and hardwood), in thousand m³.

Data: Longer time series of the above table are available from the Data Downloads web page at: <https://www.forestresearch.gov.uk/tools-and-resources/statistics/data-downloads/>

2.3.3 Number of sawmills by country

Around one half (54%) of the 150 active sawmills in 2019 were in England, around one third (32%) were in Scotland, 8% in Wales and 6% in Northern Ireland (Table 2.9).

Table 2.9 Number of sawmills by country, 2010-2019

Year	England	Wales	Scotland	Northern Ireland	UK
2010	98	17	64	9	188
2011	96	16	63	9	184
2012	95	15	61	9	180
2013	92	15	59	9	175
2014	92	15	57	9	173
2015	92	15	55	9	171
2016	89	14	54	9	166
2017	88	13	53	9	163
2018	83	12	51	9	155
2019	81	12	48	9	150

Source: Sawmill Survey

Data: Longer time series of the above table, and for mills in England by region, are available from the Data downloads web page at www.forestresearch.gov.uk/tools-and-resources/statistics/data-downloads/.

2.3.4 Number of sawmills by type of wood sawn

Around two thirds (67%) of the 150 active sawmills in 2019 processed softwood only (Table 2.10). A further 27% processed both softwood and hardwood, and the remainder processed only hardwood.

Table 2.10 Number of sawmills by type of wood sawn, 2010-2019

Year	Softwood only	Hardwood only	Both	Total
2010	122	10	56	188
2011	120	10	54	184
2012	118	11	51	180
2013	118	11	46	175
2014	115	9	49	173
2015	112	9	50	171
2016	109	9	48	166
2017	109	10	44	163
2018	102	9	44	155
2019	101	8	41	150

Source: Sawmill Survey

2.3.5 Consumption of softwood by size of mill

Despite accounting for only 17% of all sawmills (see Table 2.8), those with total annual sawnwood production of 25 thousand m³ or more accounted for 85% of the total softwood consumed by sawmills in 2019 (Table 2.11).

Table 2.11 Consumption of softwood by size category of mill, 2010-2019

thousand green tonnes

Year	< 1	1 - <5	5 - <10	10 - <25	25 - <50	50 - <100	100 +	Total
2010	33	184	155	744	537	1,373	2,689	5,715
2011	32	176	156	685	615	830	3,486	5,980
2012	33	172	184	539	738	1,133	3,395	6,194
2013	36	173	177	476	804	777	4,085	6,528
2014	36	146	173	486	833	1,090	4,117	6,880
2015	31	156	204	553	795	801	3,805	6,345
2016	28	142	199	588	372	1,117	4,270	6,716
2017	29	152	152	692	339	1,352	4,122	6,837
2018	32	127	134	626	585	1,009	4,134	6,647
2019	30	127	169	639	550	831	3,881	6,227

Source: Sawmill Survey

Notes:

1. Categories are based on total sawnwood production (softwood and hardwood), in thousand m³.

Data: Longer time series of the above table are available from the Data downloads web page at: <https://www.forestresearch.gov.uk/tools-and-resources/statistics/data-downloads/>

2.3.6 Consumption of softwood by mills in each country

Mills in Scotland consumed around one half (48%) of the 6.2 million green tonnes of softwood delivered to UK sawmills in 2019 (Table 2.12). A further 32% was consumed by mills in England, 11% in Northern Ireland and 9% in Wales.

Table 2.12 Consumption of softwood by country, 2010-2019

thousand green tonnes

Year	England	Wales	Scotland	Northern Ireland	UK
2010	1,694	583	2,909	528	5,715
2011	1,726	634	3,078	543	5,980
2012	1,821	654	3,191	528	6,194
2013	1,879	702	3,416	532	6,528
2014	1,982	711	3,657	530	6,880
2015	1,917	655	3,243	531	6,345
2016	1,984	737	3,437	558	6,716
2017	2,089	691	3,475	583	6,837
2018	2,030	648	3,329	640	6,647
2019	1,993	561	2,994	678	6,227

Source: Sawmill Survey

Data: Longer time series of the above table, and for mills in England by region, are available from the Data downloads web page at: <https://www.forestresearch.gov.uk/tools-and-resources/statistics/data-downloads/>

2.3.7 Production of sawn softwood by size of mill

UK sawmills produced a total of 3.4 million m³ of sawn softwood in 2019, a 6% decrease from the 2018 figure (Table 2.13).

Sawmills with total annual sawnwood production of 25 thousand m³ or more accounted for 85% of the total sawn softwood produced by sawmills in 2019.

Table 2.13 Production of sawn softwood by size of mill, 2010-2019
thousand m³

Year	< 1	1 - <5	5 - <10	10 - <25	25 - <50	50 - <100	100 +	Total
2010	19	105	84	395	304	693	1,450	3,050
2011	18	101	86	374	335	443	1,867	3,223
2012	18	100	95	314	393	564	1,874	3,358
2013	20	100	93	287	429	404	2,200	3,532
2014	20	84	91	282	448	563	2,224	3,713
2015	18	90	111	296	466	422	2,045	3,447
2016	17	82	106	338	186	597	2,296	3,621
2017	17	88	77	384	178	647	2,328	3,720
2018	19	73	65	355	311	468	2,327	3,618
2019	18	72	80	349	306	382	2,203	3,410

Source: Sawmill Survey

Notes:

1. Categories are based on total sawnwood production (softwood and hardwood), in thousand m³.

Data: Longer time series of the above table, are available from the Data downloads web page at: <https://www.forestresearch.gov.uk/tools-and-resources/statistics/data-downloads/>

2.3.8 Production of sawn softwood by mills in each country

1.7 million m³ (49%) of sawn softwood was produced by sawmills in Scotland in 2019 (Table 2.14). A further 33% was produced by mills in England, 10% in Northern Ireland and the remaining 8% in Wales.

Table 2.14 Production of sawn softwood by country, 2010-2019

thousand m ³					
Year	England	Wales	Scotland	Northern Ireland	UK
2010	927	291	1,556	275	3,050
2011	954	316	1,663	291	3,223
2012	1,001	326	1,743	288	3,358
2013	1,026	349	1,869	289	3,532
2014	1,091	354	1,981	286	3,713
2015	1,056	324	1,783	284	3,447
2016	1,093	366	1,867	294	3,621
2017	1,159	319	1,917	326	3,720
2018	1,122	308	1,837	351	3,618
2019	1,108	266	1,684	351	3,410

Source: Sawmill Survey

Data: Longer time series of the above table, and for mills in England by region, are available from the Data downloads web page at: <https://www.forestresearch.gov.uk/tools-and-resources/statistics/data-downloads/>

2.4 Sawmills - Larger Mills

The following, more detailed, tables are available for larger mills (those producing at least 25 thousand m³ sawnwood annually) only.

These larger mills are estimated to account for 85% of all sawn softwood produced in 2019 (see Table 2.13).

The threshold for inclusion in the more detailed survey of larger sawmills was raised from 10 thousand m³ sawnwood production to 25 thousand m³ sawnwood production in 2016. In order to provide consistent time series, data presented in this section for 2015 is also restricted to sawmills that produced at least 25 thousand m³ sawnwood.

The tables cover the following topics:

- Source of softwood logs;
- Sawn softwood product markets;
- Other softwood products; and
- Sawmill employment.

2.4.1 Softwood consumption and production

Total softwood consumption by the 26 sawmills covered by the detailed sawmill survey in 2019 was 5.3 million green tonnes (Table 2.15). Sawn softwood production by these mills was 2.9 million m³ and other softwood products (chips, bark, sawdust, etc) amounted to 2.5 million tonnes.

Sawmills in Scotland accounted for around one half (48%) of all softwood consumption by larger mills. A further 31% was consumed by mills in England, 12% in Northern Ireland and the remaining 8% in Wales.

Table 2.15 Larger mills¹, 2019: softwood consumption and production

Large mills	England	Wales	Scotland	Northern Ireland	UK
Number of mills	10	2	12	2	26
Consumption (thousand green tonnes)	1,652	434	2,538	638	5,262
Sawnwood production (thousand m ³)	928	198	1,435	329	2,891
Other products (thousand tonnes)	573	239	1,331	332	2,476

Source: Sawmill Survey (detailed)

Notes:

1. Sawmills producing at least 25 thousand m³ sawnwood (softwood and hardwood).

2.4.2 Source of softwood logs

Of all softwood sawlogs consumed by larger sawmills in 2019, 54% came from Scotland, 21% from England, 13% from Wales and 6% from Northern Ireland (Tables 2.16 and 2.16a). The remaining 7% were imported from other countries. The proportion of softwood sawlogs from Scotland has declined over the last 5 years, whilst the proportion of imported logs has increased.

96% of softwood sawlogs used by Scottish mills in 2019 came from Scotland. The corresponding proportions of mills' log use coming from within the same country were 60% for England, 72% for Wales and 46% for Northern Ireland.

Table 2.16 Larger mills¹, 2019: source of softwood logs

thousand green tonnes

Source	England	Wales	Scotland	Northern Ireland	UK
England	989	30	94	0	1,113
Wales	358	315	0	0	673
Scotland	305	78	2,444	12	2,839
Northern Ireland	0	0	0	294	294
Total UK logs	1,652	423	2,538	306	4,919
Other countries	0	12	0	332	343
Total log consumption	1,652	434	2,538	638	5,262

Source: Sawmill Survey (detailed)

Notes:

1. Sawmills producing at least 25 thousand m³ sawnwood (softwood and hardwood).

Table 2.16a Larger mills¹, 2015-2019: source of softwood logs
per cent of total softwood consumption

Year	England	Wales	Scotland	Northern Ireland	Other countries	Total
2015	19	13	60	4	3	100
2016	20	14	59	5	4	100
2017	20	14	57	4	5	100
2018	20	13	57	5	6	100
2019	21	13	54	6	7	100

Source: Sawmill Survey (detailed)

Notes:

1. Sawmills producing at least 25 thousand m³ sawnwood (softwood and hardwood).

2.4.3 Sawn softwood product markets

In 2019, 37% of sawn softwood produced by larger sawmills was used for fencing, 30% for construction, 26% for packaging and pallets, and the remaining 7% went to all other markets (Tables 2.17 and 2.17a).

Table 2.17 Larger mills¹, 2019 sawn softwood product markets
per cent of total softwood product markets

Product market	England	Wales	Scotland	Northern Ireland	UK
Construction	19	16	40	29	30
Fencing	53	30	27	36	37
Packaging/ pallets	24	45	24	26	26
Other	4	10	9	8	7
Total	100	100	100	100	100

Source: Sawmill Survey (detailed)

Notes:

1. Sawmills producing at least 25 thousand m³ sawnwood (softwood and hardwood).

Table 2.17a Larger mills¹, 2015-2019: sawn softwood product markets
per cent of total softwood product markets

Year	Construction	Fencing	Packaging/ pallets	Other	Total
2015	27	36	30	6	100
2016	28	35	30	7	100
2017	32	36	24	8	100
2018	33	36	24	7	100
2019	30	37	26	7	100

Source: Sawmill Survey (detailed)

Notes:

1. Sawmills producing at least 25 thousand m³ sawnwood (softwood and hardwood).

2.4.4 Other softwood products

Sawmills were asked to estimate the quantity of other products (excluding sawnwood) that they generated from softwood and sold to different industries. The figures presented below are based on these estimates.

Other softwood products amounted to 2.5 million tonnes in 2019 (Table 2.15). Around one third (36%) of other softwood products were sold to wood processing industries in the form of chips and 17% were sold to these industries in sawdust and other formats (Table 2.18). A further 20% of other products were sold to bio-energy (including pellet manufacturers), 19% were sold to others and 8% were used internally for heat or energy.

Table 2.18 Larger mills¹, 2019: other softwood products

per cent of total other softwood products

Destination and type of product ²	England	Wales	Scotland	Northern Ireland	UK
Sold to wood processing industries					
Wood chips	46	60	37	0	36
Bark	0	0	0	0	0
Sawdust & other	21	24	18	0	17
Total	67	84	54	0	53
Sold to bio-energy (incl pellet manufacturers)					
Wood chips	11	4	17	18	15
Bark	1	0	0	0	0
Sawdust & other	0	0	5	18	5
Total	12	4	22	36	20
Other sales					
Wood chips	3	0	6	20	7
Bark	9	11	9	11	9
Sawdust & other	4	0	4	2	3
Total	16	11	19	34	19
Internal use for heat/energy					
Wood chips	4	0	3	30	7
Bark	0	0	1	1	1
Sawdust & other	0	1	1	0	1
Total	5	1	5	31	8

Source: Sawmill Survey (detailed)

Notes:

1. Sawmills producing at least 25 thousand m³ sawnwood (softwood and hardwood).

The proportions of other products that were reported as sold to wood processing industries have shown an overall reduction over the last five years (Table 2.18a).

Table 2.18a Larger mills¹, 2015-2019: other softwood products by destination

per cent of total other softwood products

Year	Sold to wood processing industries	Sold to bio-energy (incl pellet manufacturers)	Other sales	Internal use for heat/energy	Total ²
2015	60	21	17	2	100
2016	58	21	19	2	100
2017	56	22	19	3	100
2018	46	24	25	5	100
2019	53	20	19	8	100

Source: Sawmill Survey (detailed)

Notes:

1. Sawmills producing at least 25 thousand m³ sawnwood (softwood and hardwood).
2. Total includes sales of firewood and other products disposed of as waste.

2.4.5 Sawmill employment

There were estimated to be 2.7 thousand full-time equivalent staff employed directly by sawmills producing at least 25 thousand m³ of sawnwood in 2019 (Tables 2.19 and 2.19a).

Table 2.19 Larger mills¹, 2019: sawmill employment

full-time equivalents

Employment type	England	Wales	Scotland	Northern Ireland	UK
Direct					
Line & production workers	777	152	1,039	252	2,220
Managerial & administrative staff	166	15	113	101	395
Haulage of logs to the mill	58	0	16	2	76
Total direct employment	1,001	167	1,168	355	2,691
Others ²					
Line & production workers	20	0	56	0	76
Managerial & administrative staff	0	0	0	0	0
Total contract employment	20	0	56	0	76

Source: Sawmill Survey (detailed)

Notes:

1. Sawmills producing at least 25 thousand m³ sawnwood (softwood and hardwood).
2. 'Others' refers to others undertaking work for the sawmill, including contractors and their employees.
3. The results exclude any employment on harvesting, and any employment at the site not directly related to the sawmill (e.g. exclude work producing pallets or other wood products from sawn wood).
4. Excludes haulage employment on contract.

Table 2.19a Larger mills¹, 2015-2019: sawmill employment
full-time equivalents

Employment	Line & production workers	Managerial & administrative staff	Haulage of logs to the mill	Total employment
Direct				
2015	2,341	394	44	2,779
2016	2,456	384	45	2,885
2017	2,369	428	79	2,875
2018	2,368	416	75	2,859
2019	2,220	395	76	2,691
Others ²				
2015	58	0	..	58
2016	50	2	..	52
2017	76	3	..	79
2018	50	0	..	50
2019	76	0	..	76

Source: Sawmill Survey (detailed)

Notes:

1. Sawmills producing at least 25 thousand m³ sawnwood (softwood and hardwood).
2. Excludes haulage employment on contract.
3. .. Denotes data not available.

2.5 Pulp & paper

Statistics on inputs to the pulp & paper industry only cover the integrated pulp & paper mills in the UK that use UK roundwood. There were four such mills until 2003, three from 2004 and two from spring 2006. Figures on inputs are provided by the Confederation of Forest Industries (Confor).

Figures on production of pulp and paper are provided by the Confederation of Paper Industries, and cover all paper production in the UK, not just from mills using UK roundwood.

2.5.1 Inputs for the integrated pulp & paper mills

The integrated pulp & paper mills in the UK consumed a total of 0.5 million tonnes of material (all softwood) in 2019, a 3% decrease from the 2018 total (Table 2.20).

UK roundwood represented 88% of the inputs for the integrated pulp & paper mills in 2019, with the remaining 12% coming from sawmill products.

Table 2.20 Inputs for the integrated pulp & paper mills¹, 2010-2019
thousand green tonnes

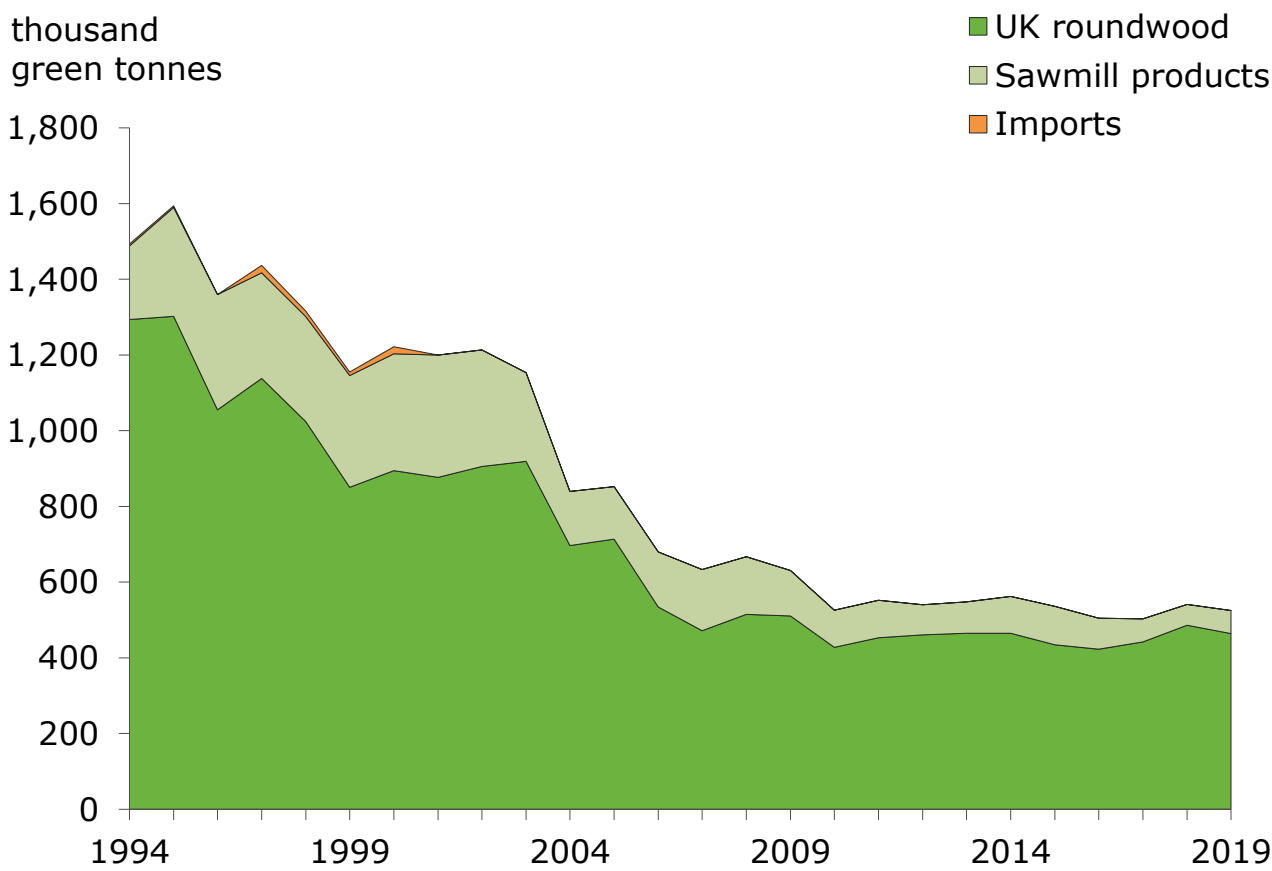
Year	UK roundwood ²	Sawmill products	Total
2010	428	98	526
2011	453	99	552
2012	461	79	540
2013	465	83	548
2014	465	97	562
2015	435	101	536
2016	423	82	505
2017	442	61	503
2018	486	55	541
2019	464	61	525

Source: Confor

Notes:

- 1. Excludes inputs of recycled paper and cardboard. All inputs are softwood.
- 2. UK roundwood derived from stemwood.

Figure 2.3 Inputs to integrated pulp and paper mills



Source: Confor

2.5.2 Production of paper

Figures for the production of paper (Table 2.21) are provided by the Confederation of Paper Industries. They cover all paper production from UK mills, not just those using UK roundwood. Most UK paper production uses recovered waste paper or imported pulp.

A total of 3.9 million tonnes of paper and paperboard was produced in the UK in 2019, a decrease of 1% from the previous year. Packaging materials accounted for 49% of the total UK paper production in 2019, graphic papers (including newsprint) for 24%, and sanitary and household papers for 20%.

Table 2.21 Production of paper and paperboard, 2010-2019
thousand tonnes

Year	Graphic papers (incl newsprint)	Sanitary & household papers	Packaging materials	Other	Total paper & paperboard
2010	1,637	729	1,640	294	4,300
2011	1,669	766	1,600	307	4,342
2012	1,616	795	1,798	271	4,480
2013	1,636	802	1,851	272	4,561
2014	1,544	768	1,801	284	4,397
2015	1,053	772	1,894	251	3,970
2016	897	730	1,800	250	3,677
2017	918	734	1,935	270	3,858
2018	962	738	1,904	291	3,894
2019	918	762	1,884	287	3,851

Source: Confederation of Paper Industries

2.6 Wood-based panels

Wood-based panels include oriented strand board (OSB), wood chipboard and cement bonded particleboard (which are all types of particleboard), and medium density fibreboard (MDF) and other fibreboard (which are both types of fibreboard).

Statistics on wood-based panels are provided by the Wood Panel Industries Federation (WPIF).

2.6.1 Inputs for wood-based panel products

Table 2.22 and Figure 2.4 provide statistics on the inputs to mills that produce wood-based panels in the UK. The mills used a total of 3.9 million tonnes of material in 2019, representing a 3% increase from 2018. The inputs in 2019 comprised 1.3 million green tonnes of roundwood (34%), 1.5 million green tonnes of sawmill products (38%), 1.0 million tonnes of recycled wood fibre (25%) and 0.1 million tonnes of imports (3%).

Table 2.22 Softwood inputs to wood-based panel mills, 2010-2019
thousand green tonnes

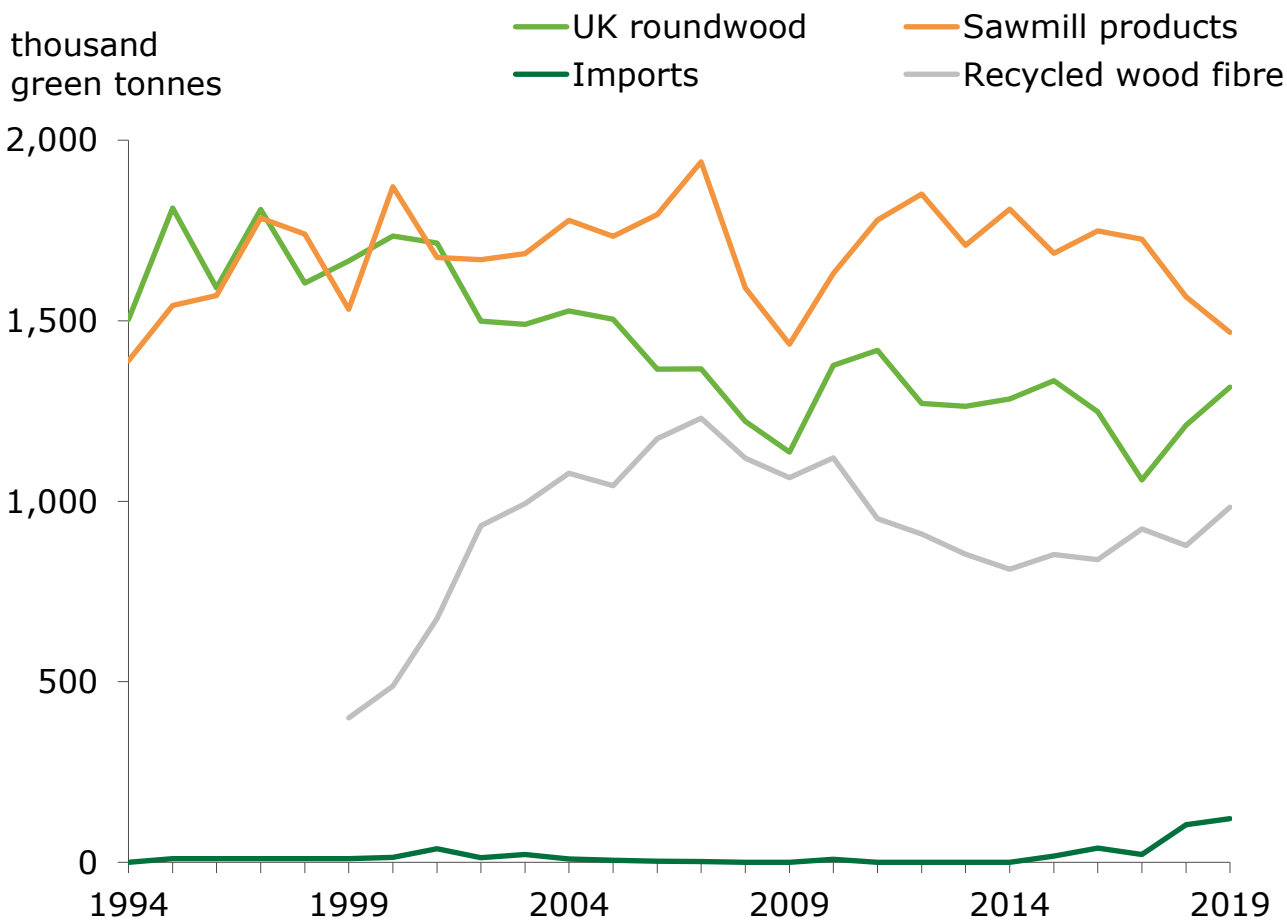
Year	UK round- wood ¹ softwood	UK round- wood ¹ hardwood	Sawmill products	Imports ² softwood	Imports ² hardwood	Recycled wood fibre ^{3,4}
2010	1,375	1	1,631	7	2	1,120
2011	1,417	1	1,779	0	1	952
2012	1,269	2	1,851	0	2	909
2013	1,263	0	1,709	0	0	853
2014	1,283	0	1,809	0	0	812
2015	1,334	0	1,687	12	5	852
2016	1,248	0	1,749	10	29	838
2017	1,059	0	1,726	0	22	923
2018	1,210	1	1,566	30	75	877
2019	1,316	0	1,468	43	78	984

Source: Wood Panel Industries Federation

Notes:

1. UK roundwood derived from stemwood.
2. Imports include roundwood, wood products and products from imported wood.
3. Recycled wood fibre is wood fibre recovered from both pre- and post-consumer wood waste for use in woodbased panel production. It comprises wood originally grown in the UK and wood originally grown in forests outside the UK.
4. Quantities are as delivered, with an assumed average moisture content of 25%. To convert to green tonnes (assuming moisture content of 52%), multiply by 1.56.

Figure 2.4 Inputs to wood-based panel mills



Source: Wood Panel Industries Federation.

Note:

1. Recycled wood fibre data not available before 1999.

2.6.2 Production of wood-based panel products

Total production of wood-based panels in 2019 was 3.2 million m³, a 5% increase from 2018 (Table 2.23). Over three quarters (77%) of wood-based panel products produced in the UK in 2019 were particleboard (including oriented strand board (OSB)).

The marked decrease between 2011 and 2012 largely results from the closure of a panel mill in 2012.

Table 2.23 Wood-based panel production, 2010-2019

thousand m³

Year	Particleboard ¹	Fibreboard ²	Total
2010	2,594	776	3,370
2011	2,625	759	3,384
2012	2,215	788	3,003
2013	2,276	756	3,032
2014	2,319	749	3,068
2015	2,324	756	3,080
2016	2,349	684	3,033
2017	2,501	675	3,176
2018	2,355	724	3,079
2019	2,495	751	3,246

Source: Wood Panel Industries Federation

Notes:

1. Includes Oriented Strand Board (OSB).
2. Includes Medium Density Fibreboard (MDF).
3. Changes in the mix of materials used and type of product produced can result in apparent discrepancies between the trends for inputs (Table 2.22) and production.

2.7 Miscellaneous products

Softwood

Data for softwood fencing are obtained from the Survey of Round Fencing Manufacturers. Figures for other uses are reported by manufacturers or are estimated by representatives of the wood processing industries.

1.9 million green tonnes of UK softwood were estimated to have been used directly for woodfuel (including biomass energy) in 2019, unchanged from the level in the previous year (Table 2.24). A further 262 thousand green tonnes of UK softwood were consumed by round fencing manufacturers and 183 thousand green tonnes for other uses in 2019.

Table 2.24 Miscellaneous uses of UK softwood roundwood, 2010-2019

thousand green tonnes

Year	Fencing	Woodfuel ¹	Other ²	Total
2010	349	900	135	1,384
2011	363	900	145	1,408
2012	338	1,000	154	1,492
2013	332	1,250	191	1,773
2014	317	1,500	176	1,992
2015	288	1,600	164	2,052
2016	277	1,550	178	2,006
2017	283	1,600	170	2,053
2018	255	1,900	174	2,329
2019	262	1,900	183	2,346

Source: Survey of Round Fencing Manufacturers, industry associations.

Notes:

1. Woodfuel derived from stemwood. Includes estimates of roundwood use for biomass energy. The figures are estimated by the Expert Group on Timber and Trade Statistics and make use of woodfuel data reported in the Private Sector Softwood Removals Survey.
2. Includes shavings and poles. Quantities for some uses are estimates by the Expert Group on Timber and Trade Statistics.

Hardwood

An estimated 700 thousand green tonnes of UK hardwood were used for woodfuel (including biomass energy) in 2019. A further 30 thousand green tonnes were estimated to have been consumed by round fencing manufacturers and 63 thousand green tonnes for other uses, including exports.

2.7.1 Softwood round fencing manufacturers

There were 46 active round fencing manufacturers in 2019 (Table 2.25).

Around two thirds of round fencing manufacturers (65%) consumed less than 5 thousand green tonnes of softwood annually.

Table 2.25 Number of softwood round fencing manufacturers by size category¹, 2010-2019

Year	< 1	1 - <5	5 - <10	10 +	Total
2010	21	24	13	6	64
2011	21	24	10	8	63
2012	21	21	11	7	60
2013	20	22	11	7	60
2014	18	21	10	7	56
2015	15	19	10	6	50
2016	17	16	11	6	50
2017	16	17	9	7	49
2018	15	15	10	6	46
2019	14	16	10	6	46

Source: Survey of Round Fencing Manufacturers

Notes:

1. Categories are based on total softwood consumption, in thousand green tonnes.

Data: Longer time series of the number of softwood round fencing manufacturers, by size category and by country (England/ Wales/ Scotland/ Northern Ireland) are available from the Data downloads web page at: <https://www.forestresearch.gov.uk/tools-and-resources/statistics/data-downloads/>.

2.7.2 Roundwood purchased by softwood round fencing manufacturers

A total of 288 thousand green tonnes of softwood (UK grown and imported) was purchased by softwood fencing manufacturers in 2019 (Table 2.26). This represents an increase of 4% from the 2018 total of 276 thousand green tonnes.

Table 2.26 Total roundwood purchased² by size category¹ of softwood round fencing manufacturers, 2010-2019

thousand green tonnes

Year	< 1	1 - <5	5 - <10	10+	Total
2010	7	63	86	213	369
2011	8	65	60	250	383
2012	8	57	69	226	360
2013	7	57	79	204	346
2014	7	54	74	201	335
2015	6	46	79	185	316
2016	7	41	78	177	303
2017	6	45	71	185	307
2018	6	37	71	162	276
2019	6	40	76	166	288

Source: Survey of Round Fencing Manufacturers

Notes:

1. Categories are based on total softwood consumption, in thousand green tonnes.
2. This table includes purchases of both UK grown and imported softwood, whereas table 2.24 relates to UK grown softwood only.

Data: Longer time series of roundwood purchased by round fencing manufacturers, by size category and by country (England/ Wales/ Scotland/ Northern Ireland) are available from the Data downloads web page at: <https://www.forestresearch.gov.uk/tools-and-resources/statistics/data-downloads/>.

2.8 Exports

UK softwood exports in 2019 consisted of 154 thousand green tonnes of sawlogs and 46 thousand green tonnes of industrial roundwood (excluding sawlogs), giving a total of 201 thousand green tonnes of roundwood (Table 2.27). The quantity of softwood roundwood exports decreased by 24% between 2018 and 2019.

The UK also exported 109 thousand tonnes of softwood chips in 2019, a 3% decrease from the previous year.

Table 2.27 Summary of softwood exports, 2010-2019

thousand green tonnes

Year	Industrial roundwood ¹	Sawlogs	Total roundwood	Chips
2010	301	166	467	136
2011	415	171	585	158
2012	405	130	535	142
2013	379	260	640	126
2014	228	209	437	151
2015	75	202	276	86
2016	48	183	231	51
2017	124	207	331	92
2018	67	197	264	112
2019	46	154	201	109

Source: industry associations

Notes:

1. Includes all roundwood other than sawlogs.

2.9 Certification

Forest certification assesses forest management practices against an agreed standard and awards a label to those forest products that meet the standard. In order for products to achieve certification, both [forest management practices and the Chain of Custody](#), which tracks timber from forest to retail outlet, must be assessed.

The following tables provide information on the level of certified wood produced in the UK (Table 2.28) and the number of sawmills and round fencing manufacturers holding Chain of Custody certificates (Table 2.29).

Estimates of the certified softwood removals in the UK by country, are also provided (Table 2.28a). As these figures are relatively new and the quality of data at this level is still improving, these estimates are currently labelled as experimental statistics.

Information on areas of certified woodland is provided in Chapter 1.

2.9.1 Volume certified

70% of private sector softwood removals in 2019 were from certified woodlands (Table 2.28). The percentage of private sector softwood removals that are certified has fluctuated over recent years; industry experts have indicated a general reduction in the level of certification amongst smaller estates and an increase in production from larger estates.

As nearly all removals from Forestry England, Forestry and Land Scotland, Natural Resources Wales and Forest Service woodland are certified, this equates to around 82% of all softwood removals in 2019 from certified sources.

77% of sawmills' roundwood consumption in 2019 was certified. For round fencing manufacturers, 69% of total softwood consumption was certified.

Table 2.28 Per cent of volume certified, 2010-2019

per cent certified volume

Year	Softwood removals from private sector woodland	Total softwood removals¹	Consumption (softwood and hardwood) by sawmills	Consumption (softwood) by round fencing manufacturers
2010	73	87	83	62
2011	72	85	80	61
2012	70	84	81	60
2013	76	87	83	55
2014	72	84	80	69
2015	69	83	80	71
2016	66	82	81	70
2017	75	86	79	71
2018	71	82	78	61
2019	70	82	77	69

Source: Forestry England (FE), Forestry and Land Scotland (FLS), Natural Resources Wales (NRW), Forest Service (FS) and industry surveys

Notes:

1. Includes all removals from FE/FLS/NRW/FS woodland.

Experimental statistics providing a country breakdown of softwood removals from certified woodlands in 2019 indicate that 91% of softwood removals from woodlands in Northern Ireland were certified, 87% from Wales, 86% from Scotland and 70% from England.

Table 2.28a Per cent of volume certified by country¹: softwood removals, 2019

per cent certified volume		
Country	Softwood removals from Private sector woodland	Total softwood removals ²
England	48	70
Wales	73	87
Scotland	78	86
Northern Ireland	17	91
UK	70	82

Source: Forestry England (FE), Forestry and Land Scotland (FLS), Natural Resources Wales (NRW), Forest Service (FS) and industry surveys

Notes:

- 1. These figures are currently experimental statistics.
- 2. Includes all removals from FE/FLS/NRW/FS woodland.

2.9.2 Chain of custody certificates

Sawmills and round fencing manufacturers were also asked whether they held a Chain of Custody certificate. 71% of sawmills for which the certification status was known held a Chain of Custody certificate in 2019 (Table 2.29). This proportion varied with size of mill, from 20% for mills producing less than 5 thousand m³ sawnwood to 100% for those producing 25 thousand m³ sawnwood or more. Around two thirds (69%) of round fencing manufacturers for which the certification status was known held a Chain of Custody certificate.

Table 2.29 Chain of custody certificates, 2019

number of mills				
Mills	Mills holding certificate	Mills without certificate	Certification status not known	Total ¹
Sawmills ² (size of mill ³)				
< 5	4	16	71	91
5 - < 25	20	4	9	33
25 +	26	0	0	26
All sawmills	50	20	80	150
Round fencing manufacturers	11	5	30	46

Source: industry surveys

Notes:

- 1. Includes non-respondents to survey in current year.
- 2. For large sawmills (those producing at least 25 thousand m³) that did not report whether or not they held a certificate or did not respond to the 2019 survey, the certification status was obtained from the FSC database, where possible.
- 3. Categories are based on total sawnwood production (softwood and hardwood), in thousand m³.

2.10 Woodfuel and pellets

Wood from various sources can be used for fuel, including roundwood, chips and sawdust from wood processing, specific products such as pellets and briquettes, and recycled wood.

The following pages provide data on:

- recycled wood used for woodfuel (Table 2.30 below);
- woodfuel supply by sawmills and round fencing manufacturers (Table 2.31); and
- wood pellet production (Table 2.32) and feedstock (Table 2.33).

In addition, estimates of roundwood used directly for woodfuel are provided in tables 2.5 and 2.6.

2.10.1 Recycled wood used for woodfuel

Estimates of recycled wood used for woodfuel have been obtained from the Wood Recyclers' Association. In 2019, it is estimated that around 2.4 million tonnes of recycled wood were used for woodfuel, an increase of 14% from the 2018 estimate of around 2.1 million tonnes.

Table 2.30 Recycled wood used for woodfuel¹, 2010-2019
million tonnes

Year	Total
2010	0.55
2011	0.59
2012	0.76
2013	0.83
2014	1.34
2015	1.45
2016	1.55
2017	1.66
2018	2.10
2019	2.39

Source: Wood Recyclers Association

Notes:

- 1. Post consumer recovered wood, comprising wood originally grown in the UK and wood originally grown in forests outside the UK.
- 2. Figures from 2014 relate to capacity, rather than consumption.
- 3. Quantities are as delivered, with an assumed average moisture content of 25%. To convert to green tonnes (assuming moisture content of 52%), multiply by 1.56.

These figures are outside the scope of National Statistics.

2.10.2 Woodfuel supply by sawmills and round fencing manufacturers

An estimated 752 thousand green tonnes (mainly softwood) of woodfuel were supplied by sawmills in 2019 and a further 77 thousand green tonnes were supplied by round fencing manufacturers (Table 2.31). Around two thirds (69%) of the total woodfuel supplied was sold to bioenergy.

Table 2.31 Woodfuel supply¹ by sawmills and round fencing manufacturers, 2015-2019

thousand green tonnes

	Sales to bioenergy	Sales as firewood	Used internally for heat/ energy	Total
Sawmills				
2015	612	12	45	669
2016	581	14	65	660
2017	620	15	96	731
2018	633	7	152	792
2019	528	17	206	752
Round fencing manufacturers				
2015	51	7	2	60
2016	57	7	1	65
2017	55	7	3	66
2018	52	8	4	65
2019	43	10	25	77

Source: Sawmill Survey, Survey of Round Fencing Manufacturers

Notes:

1. Material reported as sales/use for woodfuel but may have been used for other purposes.

2.10.3 Wood pellets

Wood pellets and briquettes are processed wood products that can be made from roundwood, sawmill products and/or recycled wood. Some of the wood used to make wood pellets and briquettes will be accounted for elsewhere in this release (e.g. in Tables 2.30 and 2.31). Wood pellets and briquettes are often used for woodfuel, but pellets may also be used for other purposes (such as horse bedding or cat litter).

A total of 298 thousand tonnes of wood pellets and briquettes are estimated to have been produced in the UK in 2019. This represents a 7% increase from the 2018 estimate of 279 thousand tonnes.

Table 2.32 Wood pellet production, 2010-2019
thousand tonnes

Year	Total
2010	197
2011	244
2012	278
2013	301
2014	354
2015	343
2016	329
2017	287
2018	279
2019	298

Source: Survey of UK Pellet and Briquette Production

A total of 570 thousand tonnes of feedstock was used to produce wood pellets in the UK in 2019, a 16% decrease from the total for 2018 (Table 2.33).

The overall decrease in feedstock reflects a change in the composition of pellets. Roundwood fell by 32% in the latest year and accounted for over one half (54%) of the feedstock in 2019 (down from 67% in 2018).

Correspondingly, there was a 16% increase in sawmill products and other feedstock.

Table 2.33 Wood pellet feedstock, 2015-2019

thousand tonnes²

Year	Roundwood	Sawmill products ¹	Total
2015	332	290	621
2016	377	320	697
2017	354	295	648
2018	453	226	679
2019	307	263	570

Source: Survey of UK Pellet and Briquette Production

Notes:

- 1. May also include wood from other sources (e.g. energy crops, arboriculture arisings and recycled wood).
- 2. Tonnes as delivered.

Forestry Statistics 2020

Chapter 3: Trade

Release date:

24 September 2020

Coverage:

United Kingdom

Geographical breakdown:

None

Introduction

This chapter contains information about UK imports and exports of wood products, and about the level of apparent consumption estimated from data for UK production, imports and exports.

Information on imports and exports mainly comes from the Overseas Trade Statistics compiled by HM Revenue & Customs. Estimates are provided at a UK level only. International comparisons of apparent consumption are provided in the International Forestry chapter. Further information on the data sources and methodology used to compile the figures is provided in the Sources chapter.

Figures for 2019 were previously published in "UK Wood Production and Trade: 2019 Provisional Figures", released on 14 May 2020. Some figures for 2019 and earlier years have been revised from those previously published. For further details on revisions, see the Trade section of the Sources chapter.

A copy of all trade tables can be accessed in spreadsheet format from the Data Downloads web page at www.forestresearch.gov.uk/tools-and-resources/statistics/data-downloads/.

Key findings

The main findings are:

UK imports:

- 7.0 million cubic metres of sawnwood in 2019, a 2% decrease from the 2018 figure;
- 3.7 million cubic metres of wood-based panels in 2019, a 6% decrease from 2018;
- 8.9 million tonnes of wood pellets in 2019, an increase of 11% from 2018;
- 5.2 million tonnes of paper in 2019, a 5% decrease from 2018.
- The total value of wood product imports in 2019 was £8.3 billion, representing a 1% increase from 2018; of which £4.1 billion was pulp and paper.
- Sawn softwood, particleboard, fibreboard, and paper and paperboard were overwhelmingly imported from EU countries in 2019.
- Sawn hardwood and wood pulp imports originated from a range of both EU and non-EU countries in 2019.
- The vast majority of UK imports of plywood and wood pellets in 2019 came from countries outside the EU.
- Apparent consumption of wood in the UK was 56.7 million m³ WRME underbark in 2019, representing a 1% increase from the previous year.

UK exports:

- The total value of wood product exports in 2019 was £1.7 billion, a 5% decrease from 2018; of which £1.5 billion was pulp and paper.

3.1 Apparent consumption of wood in the UK

Apparent consumption is the amount of timber used as wood and wood products by people and industries in the United Kingdom. It is calculated as total United Kingdom production plus imports, minus exports. Apparent consumption differs from actual consumption by the extent of changes in the level of stocks. It is not practical to collect information on actual consumption.

As table 3.1 covers a broad range of products (including secondary processed wood products), volumes are expressed in wood raw material equivalent (WRME) underbark. WRME volumes represent the amount of wood that would have been required to make the product.

UK production of roundwood totalled 10.8 million m³ WRME underbark in 2019 (Table 3.1). A further 49.9 million m³ WRME underbark of wood and wood products were imported to the UK and 3.9 million m³ WRME underbark were exported, giving apparent consumption of 56.7 million m³ WRME underbark. This represented a 1% increase in apparent consumption from the previous year. These figures exclude recycled wood and recovered paper (see Table 3.3 for statistics on recovered paper).

Imports accounted for 81% of all wood (production + imports) in the UK in 2019.

Table 3.1 Apparent consumption of wood¹ in the UK, 2010-2019

million m³ WRME underbark

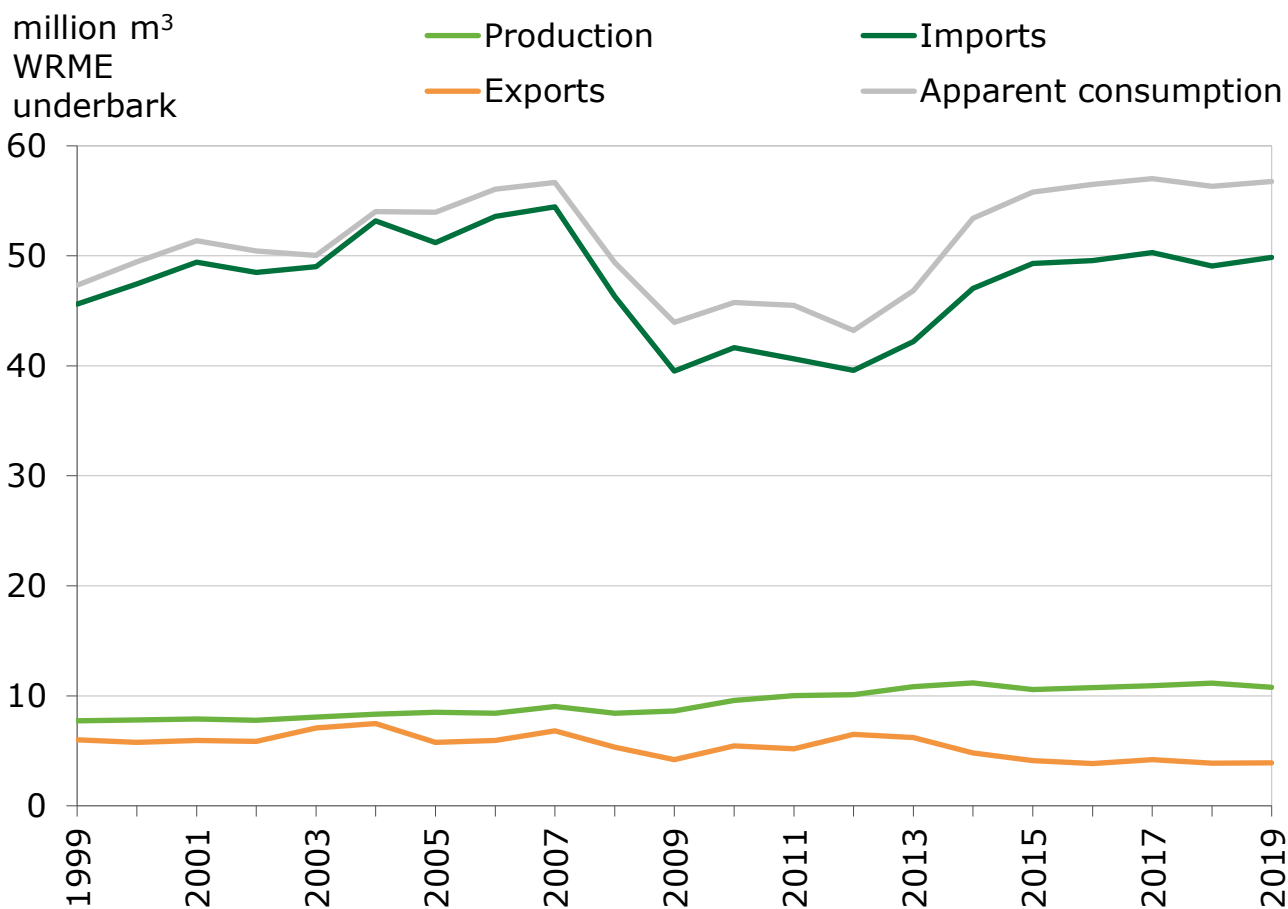
Year	UK production ²	Imports	Exports	Apparent Consumption
2010	9.6	41.6	5.5	45.8
2011	10.0	40.6	5.2	45.5
2012	10.1	39.6	6.5	43.2
2013	10.8	42.2	6.2	46.8
2014	11.2	47.0	4.8	53.4
2015	10.6	49.3	4.1	55.8
2016	10.7	49.6	3.8	56.5
2017	10.9	50.3	4.2	57.0
2018	11.2	49.1	3.9	56.3
2019	10.8	49.9	3.9	56.7

Source: Industry surveys, industry associations, UK overseas trade statistics (HM Revenue & Customs) and conversion factors to Wood Raw Material Equivalent (WRME).

Notes:

1. Excludes recovered paper.
2. UK production of roundwood is estimated from deliveries to wood processing industries and others, as in tables 2.5 and 2.6.

Figure 3.1 Apparent consumption of wood¹ in the UK, 1999-2019



Source: Industry surveys, industry associations, UK overseas trade statistics (HM Revenue & Customs) and conversion factors to Wood Raw Material Equivalent (WRME).

Notes:

1. Excludes recovered paper.
2. UK production of roundwood is estimated from deliveries to wood processing industries and others, as in tables 2.5 and 2.6.

3.2 Apparent consumption of wood products in the UK

Table 3.2 provides volumes of UK production, trade and apparent consumption in selected wood products. It differs from table 3.1 in terms of both coverage (table 3.1 covers a wider range of wood and wood products, including secondary processed products) and in terms of units (wood raw material equivalents in table 3.1, volumes of product in table 3.2).

UK production accounted for 34% of the UK sawnwood market, 50% of the UK wood-based panel market and 47% of the UK paper market in 2019 (Table 3.2).

Table 3.2 Apparent consumption of wood products^{1,2} in the UK, 2019

Product	UK production	Imports	Exports	Apparent consumption
Sawnwood³ (thousand m ³)				
Coniferous	3,410	6,437	193	9,654
Non-Coniferous	47	603	22	627
Total	3,456	7,040	215	10,281
Woodbased panels (thousand m ³)				
Veneer sheets	0	53	2	51
Plywood	0	1,453	86	1,367
Particleboard	2,495	1,247	234	3,508
Fibreboard	751	897	62	1,586
Total	3,246	3,650	384	6,512
Paper & paperboard (thousand tonnes)				
Graphic papers	918	2,509	352	3,075
Sanitary & household papers	762	313	7	1,068
Packaging materials	1,884	2,237	336	3,785
Other paper & paperboard	287	129	129	287
Total	3,851	5,188	824	8,215

Source: Industry surveys, industry associations, UK overseas trade statistics (HM Revenue & Customs).

Notes:

1. Excludes other wood products, e.g. fuelwood and round fencing.

2. Excludes roundwood and intermediate products (e.g. sawmill products, pulp and recovered paper) to avoid double-counting.

3. Includes sleepers.

3.3 Flow of recovered paper

UK production of recovered paper (the amount recovered from businesses and households in the UK) totalled 7.3 million tonnes in 2019 (Table 3.3) a decrease of 3% from 2018. Imports fell by 31% and exports decreased by 4% between 2018 and 2019, resulting in a 1% fall in apparent consumption over this period.

Table 3.3 Flow of recovered paper, 2010-2019

thousand tonnes				
Year	UK production	Imports	Exports	Apparent consumption ¹
2010	8,003	115	4,388	3,730
2011	8,036	177	4,479	3,733
2012	8,099	160	4,447	3,812
2013	7,901	184	4,248	3,837
2014	8,014	136	4,436	3,714
2015	7,912	305	4,881	3,336
2016	7,825	125	4,932	3,018
2017	7,772	107	4,733	3,147
2018	7,539	120	4,530	3,129
2019	7,348	83	4,327	3,104

Source: Confederation of Paper Industries, UK overseas trade statistics (HM Revenue & Customs).

Notes:

1. Apparent consumption of recovered paper refers to use of recycled paper pulp in the UK.

3.4 UK import quantities by product

Wood imports to the UK in 2019 included 7.0 million cubic metres of sawnwood (a 2% decrease from the previous year), 3.7 million cubic metres of wood-based panels (6% decrease), 8.9 million tonnes of wood pellets (11% increase) and 6.2 million tonnes of pulp and paper (7% decrease) (Table 3.4).

Table 3.4 UK import quantities, 2010-2019¹

Year	Sawn wood² (thousand m³)	Wood-based panels³ (thousand m³)	Other wood⁴ (thousand m³)	Wood pellets (thousand tonnes)	Pulp & paper⁵ (thousand tonnes)
2010	5,699	2,701	1,071	551	8,462
2011	4,936	2,827	985	1,015	8,073
2012	5,179	2,650	965	1,487	7,812
2013	5,488	2,964	1,267	3,432	7,213
2014	6,425	3,260	1,329	4,773	7,319
2015	6,323	3,215	1,378	6,573	7,560
2016	6,794	3,410	1,121	6,782	7,092
2017	7,663	3,800	1,379	6,885	6,798
2018	7,213	3,878	1,766	7,992	6,663
2019	7,040	3,650	2,229	8,878	6,168

Source: UK overseas trade statistics (HM Revenue & Customs), industry associations

Notes:

1. There are reliability concerns for some of these figures, particularly for individual products (see Sources chapter).
2. Sawnwood includes sleepers from 2017.
3. Includes veneer sheets.
4. Includes roundwood, wood charcoal, chips, particles, residues and from 2017, includes recovered wood.
5. Further details of pulp and paper import quantities are provided in table 3.4a.

Paper accounted for the majority of pulp and paper imports, with a total of 5.2 million tonnes imported in 2019 (Table 3.4a). This represented a 5% decrease from the previous year.

Table 3.4a UK import quantities, 2010-2019¹: Pulp and paper
thousand tonnes

Year	Paper	Pulp	Recovered paper	Total Pulp & Paper
2010	7,254	1,094	115	8,462
2011	6,887	1,009	177	8,073
2012	6,631	1,021	160	7,812
2013	5,929	1,100	184	7,213
2014	5,949	1,234	136	7,319
2015	6,032	1,223	305	7,560
2016	5,876	1,092	125	7,092
2017	5,610	1,081	107	6,798
2018	5,477	1,066	120	6,663
2019	5,188	897	83	6,168

Source: UK overseas trade statistics (HM Revenue & Customs), industry associations

1. There are reliability concerns for some of these figures, particularly for individual products (see Sources chapter).

3.5 UK export quantities by product

A total of 5.2 million tonnes of pulp and paper (including recovered paper) was exported from the UK in 2019 (Table 3.5), representing a 3% decrease from 2018.

Table 3.5 UK export quantities, 2010-2019¹

Year	Sawn wood ² (thousand m ³)	Wood-based panels ³ (thousand m ³)	Other wood ⁴ (thousand m ³)	Wood pellets (thousand tonnes)	Pulp & paper ⁵ (thousand tonnes)
2010	195	509	1,029	60	5,349
2011	162	546	1,430	38	5,485
2012	141	597	1,779	54	5,585
2013	167	432	1,267	106	5,390
2014	175	404	1,083	98	5,467
2015	187	286	1,018	88	5,712
2016	193	314	810	21	5,700
2017	218	374	638	126	5,528
2018	238	295	595	63	5,317
2019	215	384	604	33	5,160

Source: UK overseas trade statistics (HM Revenue & Customs), industry associations

Notes:

1. There are reliability concerns for some of these figures, particularly for individual products (see Sources chapter).
2. Includes roundwood, wood charcoal, chips, particles, residues and, from 2017, includes recovered wood.
3. Includes veneer sheets.
4. Sawntwood includes sleepers from 2017.
5. Further details of pulp and paper export quantities are provided in table 3.5a.

Recovered paper accounted for the majority of pulp and paper exports, with 4.3 million tonnes exported in 2019 (Table 3.5a).

Table 3.5a UK export quantities, 2010-2019¹: Pulp and paper
thousand tonnes

Year	Paper	Pulp	Recovered paper	Total Pulp & Paper
2010	926	35	4,388	5,349
2011	974	32	4,479	5,485
2012	1,102	36	4,447	5,585
2013	1,119	23	4,248	5,390
2014	1,010	21	4,436	5,467
2015	807	24	4,881	5,712
2016	760	7	4,932	5,700
2017	788	7	4,733	5,528
2018	772	15	4,530	5,317
2019	824	9	4,327	5,160

Source: UK overseas trade statistics (HM Revenue & Customs), industry associations

Notes:

1. There are reliability concerns for some of these figures, particularly for individual products (see Sources chapter).

3.6 UK import values by product

Wood product imports in 2019 were valued at a total of £8.3 billion, a 1% increase from 2018 (Table 3.6).

Pulp and paper (including recovered paper) imports were valued at £4.1 billion in 2019 (almost half of the total value of wood product imports). Sawnwood imports were valued at £1.6 billion in 2019, wood-based panels at £1.1 billion and wood pellets at £1.3 billion.

Table 3.6 UK import values, 2010-2019¹

£ million

Year	Sawn wood ²	Wood-based panels ³	Other wood ⁴	Wood pellets	Pulp & Paper ⁵	Total
2010	1,199	781	110	69	4,607	6,765
2011	1,080	838	79	129	4,696	6,822
2012	1,084	791	75	185	4,266	6,402
2013	1,180	882	88	412	4,165	6,727
2014	1,420	936	80	547	4,196	7,180
2015	1,311	957	88	780	4,375	7,510
2016	1,423	1,010	85	915	4,003	7,436
2017	1,636	1,155	90	961	4,004	7,845
2018	1,743	1,201	122	1,117	4,075	8,257
2019	1,598	1,134	184	1,309	4,076	8,301

Source: UK overseas trade statistics (HM Revenue & Customs), industry associations

Notes:

1. There are reliability concerns for some of these figures, particularly for individual products (see Sources chapter).
2. Sawnwood includes sleepers from 2017.
3. Includes veneer sheets.
4. Includes roundwood, wood charcoal, chips, particles, residues and from 2017, includes recovered wood.
5. Further details of pulp and paper import values are provided in table 3.6a.

Paper imports were valued at £3.5 billion in 2019, a 4% increase from the previous year (Table 3.6a).

Table 3.6a UK import values, 2010-2019¹: Pulp and paper

£ million

Year	Paper	Pulp	Recovered paper	Total Pulp & Paper
2010	3,997	593	17	4,607
2011	4,049	613	34	4,696
2012	3,727	519	21	4,266
2013	3,644	500	21	4,165
2014	3,667	509	19	4,196
2015	3,711	642	23	4,375
2016	3,434	557	13	4,003
2017	3,418	572	14	4,004
2018	3,415	639	21	4,075
2019	3,538	520	17	4,076

Source: UK overseas trade statistics (HM Revenue & Customs), industry associations

Notes:

1. There are reliability concerns for some of these figures, particularly for individual products (see Sources chapter).

3.7 UK export values by product

Wood product exports from the UK were valued at a total of £1.7 billion in 2019, a 5% decrease from the 2018 total (Table 3.7). Total exports of wood products in 2019 comprised 87% pulp and paper, 7% wood-based panels, 3% sawnwood and 2% other wood.

Table 3.7 UK export values, 2010-2019¹

£ million

Year	Sawn wood ²	Wood-based panels ³	Other wood ⁴	Wood pellets	Pulp & Paper ⁵	Total
2010	47	113	35	7	1,610	1,812
2011	41	128	50	3	1,650	1,872
2012	34	130	51	4	1,589	1,807
2013	37	109	47	5	1,519	1,717
2014	43	107	39	2	1,480	1,672
2015	44	75	35	1	1,441	1,597
2016	50	91	26	0	1,307	1,473
2017	55	109	41	6	1,651	1,861
2018	64	103	41	5	1,597	1,810
2019	58	123	41	2	1,491	1,714

Source: UK overseas trade statistics (HM Revenue & Customs), industry associations

Notes:

1. There are reliability concerns for some of these figures, particularly for individual products (see Sources chapter).
2. Sawnwood includes sleepers from 2017.
3. Includes veneer sheets.
4. Includes roundwood, wood charcoal, chips, particles, residues and from 2017, includes recovered wood.
5. Further details of pulp and paper export values are provided in table 3.7a.

Paper exports were valued at £1.0 billion in 2019, accounting for 70% of all pulp and paper exports (Table 3.7a).

Table 3.7a UK export values, 2010-2019¹: Pulp and paper

£ million

Year	Paper	Pulp	Recovered paper	Total Pulp & Paper
2010	1,068	18	524	1,610
2011	1,044	11	595	1,650
2012	1,048	10	531	1,589
2013	1,017	8	494	1,519
2014	997	7	476	1,480
2015	901	7	534	1,441
2016	838	4	465	1,307
2017	997	5	649	1,651
2018	1,022	5	570	1,597
2019	1,049	4	437	1,491

Source: UK overseas trade statistics (HM Revenue & Customs), industry associations

Notes:

1. There are reliability concerns for some of these figures, particularly for individual products (see Sources chapter).

3.8 Origin of wood imports

Table 3.8 presents data on the source of selected wood products that have been imported into the UK in 2019.

Sawn softwood, particleboard, fibreboard, and paper and paperboard were overwhelmingly imported from EU countries in 2019 (Table 3.8):

- Sweden (42%), Latvia (18%) and Finland (14%) provided the majority of imports of sawn softwood to the UK.
- Most particleboard imports to the UK came from Germany (26%), France (19%) and Ireland (14%).
- Ireland (31%), Germany (20%), Belgium and Spain (both 10%) were the principal sources of fibreboard imports.
- Most paper and paperboard imports came from Sweden (18%), Germany (16%) and Finland (15%).

Sawn hardwood and wood pulp imports originated from a range of both EU and non-EU countries in 2019:

- Estonia (14%), the USA (13%), Latvia (11%) and France (10%) provided almost one half of sawn hardwood imports to the UK.
- Sweden (30%) and Brazil (29%) provided over one half of wood pulp imports to the UK.

The vast majority of UK imports of plywood and wood pellets came from countries outside the EU in 2018:

- China (37%) and Brazil (20%) were the principal sources of plywood imports to the UK.
- The USA (62%) and Canada (18%) provided the majority of wood pellet imports to the UK.

Table 3.8 Country of origin of wood imports to the UK, 2019
per cent of total UK imports (volume) in each category

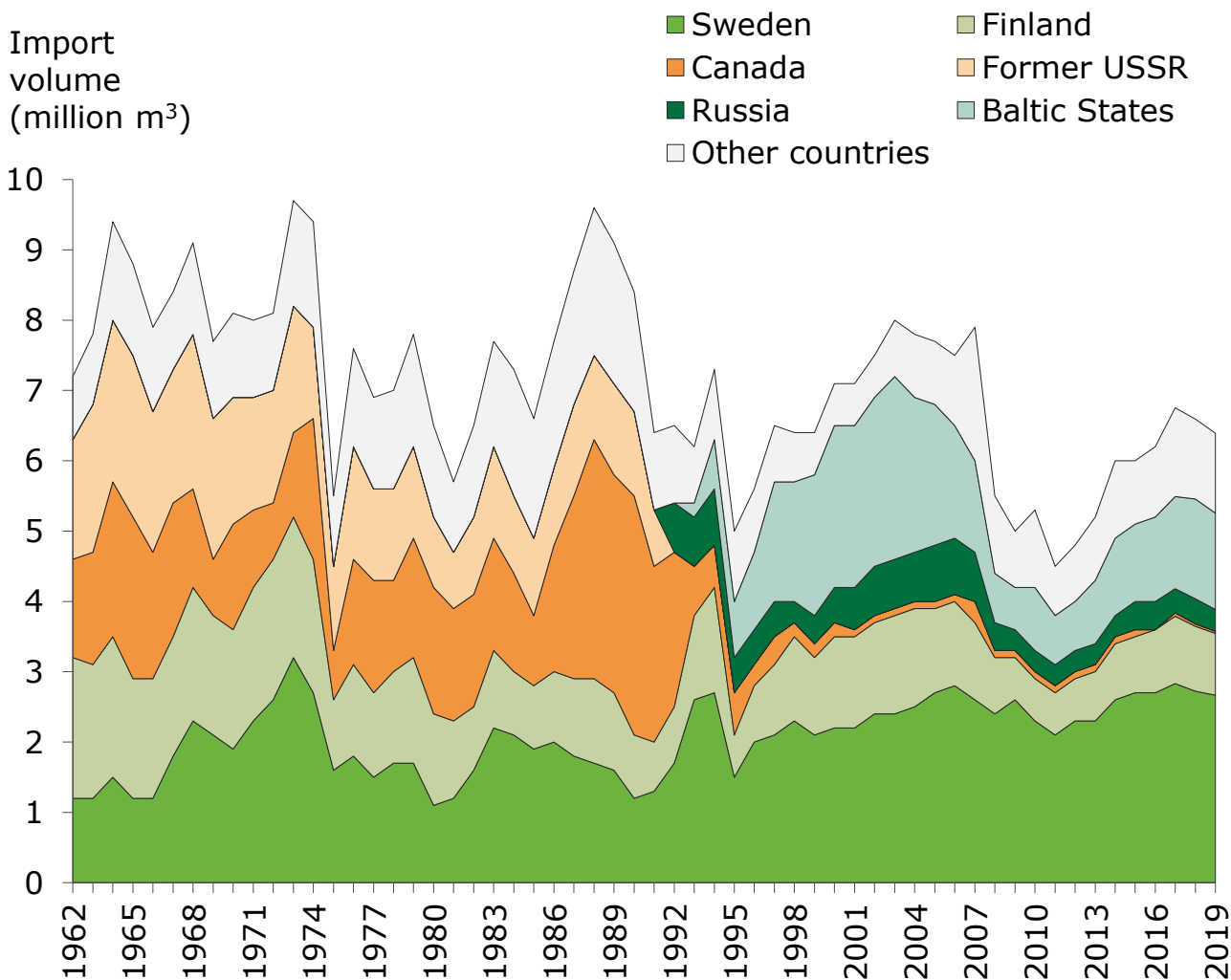
Source	Sawn ¹ soft wood	Sawn ¹ hard wood	Ply- wood	Particle- board	Fibre- board	Pellets	Wood pulp	Paper and paper- board
Sweden	42	1	1	0	0	0	30	18
Germany	7	3	1	26	20	0	3	16
Finland	14	4	6	0	1	0	8	15
Latvia	18	11	1	11	9	10	0	0
France	0	10	8	19	1	0	0	6
Ireland	6	1	0	14	31	0	0	1
Netherlands	1	4	0	0	0	0	8	4
Italy	0	7	0	2	0	0	1	3
Austria	0	1	0	1	1	0	2	4
Belgium	1	1	1	12	10	0	0	2
Portugal	0	0	0	10	2	2	4	3
Spain	0	0	1	2	10	0	3	2
Poland	1	4	1	1	3	0	0	2
Estonia	2	14	0	0	0	4	0	0
Other EU	3	6	0	1	3	1	0	1
Total EU	94	67	20	98	92	17	59	77
USA	0	13	0	0	0	62	1	4
Canada	1	2	1	0	0	18	0	3
Brazil	0	1	20	0	0	0	29	1
China	0	0	37	0	2	0	0	1
Russia	5	1	8	1	2	2	1	1
Norway	0	4	0	0	0	0	0	5
Indonesia	0	0	4	0	0	0	0	1
Chile	0	0	2	0	1	0	4	1
Malaysia	0	2	4	0	0	0	0	1
Cameroon	0	5	0	0	0	0	0	0
Other non-EU	0	4	3	0	1	0	5	5
Total non-EU	6	33	80	2	8	83	41	23

Source: UK overseas trade statistics (HM Revenue & Customs), industry associations.
Notes:

1. Sawnwood imports in this table exclude sleepers.

Figure 3.2 shows the main sources of imports of sawn softwood to the UK since 1962. The total level of sawn softwood imports has fluctuated between around 5 million m³ and 10 million m³ from 1962 to present. Imports to the UK from Canada have reduced substantially since the early 1990s. In contrast imports from the Baltic States increased between 1992 and 2003 and, although there was some decline between 2003 to 2012, imports from the Baltic States to the UK have started to increase again in recent years. Since 1993 Sweden has consistently been the principal country of origin for UK sawn softwood imports.

Figure 3.2 Country of origin of sawn softwood¹ imports to the UK, 1962-2019



Source: FAO, UK overseas trade statistics (HM Revenue & Customs), industry associations.
Notes:

1. Sawn softwood imports in this chart exclude sleepers.

Forestry Statistics 2020

Chapter 4: Carbon

Release date:

24 September 2020

Coverage:

United Kingdom

Geographical breakdown:

Country

Introduction

This chapter contains information on:

- carbon in forests;
- the Woodland Carbon Code; and
- public attitudes to forestry and climate change.

Estimates for England, Wales, Scotland and Northern Ireland are included, where possible, in addition to UK totals. International comparisons of carbon stocks are provided in the International Forestry chapter. Further information on the data sources and methodology used to compile the figures is provided in the Sources chapter.

All of the statistics presented in this chapter have been previously released.

A copy of all carbon tables can be accessed in spreadsheet format from the Data Downloads web page at www.forestresearch.gov.uk/tools-and-resources/statistics/data-downloads/.

In addition to the statistics presented here, information on UK forests and climate change is available from "Combating Climate Change - a role for UK forests" (The Read Report), an independent assessment of the science published in November 2009 and available at www.forestresearch.gov.uk/documents/2062/SynthesisUKAssessmentfinal.pdf.

This chapter had previously included statistics on net annual changes in carbon in UK woodlands. No update is currently available. Historical data have been released by the Department of Business, Energy and Industrial Strategy at <https://www.gov.uk/government/collections/uk-greenhouse-gas-emissions-statistics>.

Key findings

The main findings are:

- The total carbon stock in UK forests is estimated to have increased, from around 3.2 billion tonnes of carbon dioxide equivalent in 1990 to 4.0 billion tonnes of carbon dioxide equivalent in 2020.
- Around one half (51%) of the total UK forest carbon stock in 2020 is in Scotland (2.0 billion tonnes of carbon dioxide equivalent), 36% in England (1.5 billion tonnes), 8% in Wales (0.3 billion tonnes) and 4% in Northern Ireland (0.2 billion tonnes).
- A total of 239 projects had been validated to the Woodland Carbon Code at 31 March 2020, covering over 12,000 hectares and projected to sequester 4.7 million tonnes of carbon dioxide over their lifetime.

4.1 Forest carbon stock

Forest carbon stock is the amount of carbon that has been sequestered from the atmosphere and is now stored within the forest ecosystem, mainly within living biomass and soil, and to a lesser extent also in dead wood and litter.

Table 4.1a presents estimates of UK forest carbon stock that were compiled in 2018 for submission to international organisations. The total carbon stock stored within UK forests is estimated to have increased, around 3.2 billion tonnes of carbon dioxide equivalent in 1990 to 4.0 billion tonnes of carbon dioxide equivalent in 2020 (Table 4.1a). The carbon stored in forest soils accounts for around 70% of total forest carbon stock.

Table 4.1a UK forest carbon stock

million tonnes of carbon dioxide equivalent

	1990	2000	2010	2015	2020
Carbon in above-ground biomass	376	482	586	630	674
Carbon in below-ground biomass	135	174	211	227	242
Carbon in dead wood	130	138	143	147	149
Carbon in litter	165	175	182	188	190
Soil carbon ^{1, 3}	2,366	2,533	2,629	2,726	2,761
Total forest carbon	3,172	3,502	3,750	3,918	4,016

Source: Forest Research

Notes

1. Carbon in soil depth 0 to 100 cm.
2. To convert tonnes carbon dioxide equivalent (CO₂e) to tonnes carbon (C), multiply by 12/44.
3. Changes in soil carbon stocks over the period can be attributed to changes in UK forest area.

These figures are outside the scope of National Statistics. For further information see the Sources chapter.

Around one half (51%) of the estimated total UK forest carbon stock in 2020 is in Scotland (2.0 billion tonnes of carbon dioxide equivalent), 36% in England (1.5 billion tonnes), 8% in Wales (0.3 billion tonnes) and 4% in Northern Ireland (0.2 billion tonnes).

Table 4.1b Forest carbon stock by country, 2020
million tonnes of carbon dioxide equivalent

	England	Wales	Scotland	Northern Ireland	UK
Carbon in above-ground biomass	338	64	259	13	674
Carbon in below-ground biomass	122	23	93	5	242
Carbon in dead wood	61	14	68	5	149
Carbon in litter	80	18	85	7	190
Soil carbon ¹	864	217	1,545	134	2,761
Total forest carbon	1,465	337	2,050	165	4,016

Source: Forest Research

Notes

- 1. Carbon in soil depth 0 to 100 cm.
- 2. To convert tonnes carbon dioxide equivalent (CO₂e) to tonnes carbon (C), multiply by 12/44.

These figures are outside the scope of National Statistics. For further information see the Sources chapter.

4.2 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.

Further information on Woodland Carbon Code projects is provided in the Sources chapter and at www.woodlandcarboncode.org.uk/.

Table 4.2a provides annual data on projects registered under the Woodland Carbon Code. The table provides information on the number of projects, area of woodland covered by the projects and the total projected carbon sequestration over the lifetime (up to 100 years) of the projects.

A total of 239 projects had been validated (including those that had also been verified) to the Woodland Carbon Code at 31 March 2020, covering around 12 thousand hectares and projected to sequester 4.7 million tonnes of carbon dioxide over their lifetime.

Of the validated projects, 88 were also verified by the end of March 2020. These projects cover around 2.6 thousand hectares and are projected to sequester 1.2 million tonnes of carbon dioxide over their lifetime.

A total of 363 projects were registered under the Woodland Carbon Code at 31 March 2020, covering around 15 thousand hectares of woodland and projected to sequester 5.8 million tonnes of carbon dioxide.

Table 4.2a Woodland Carbon Code projects¹ in the UK

	Verified	Validated only	Awaiting validation	Total
Number of projects				
March 2013	0	36	69	105
March 2014	0	67	135	202
March 2015	0	100	99	199
March 2016	1	121	108	230
March 2017	3	140	107	250
March 2018	37	119	83	239
March 2019	70	117	79	266
March 2020	88	151	124	363
Area of woodland (hectares)				
March 2013	0	1,488	2,073	3,561
March 2014	0	2,824	12,576	15,401
March 2015	0	3,322	12,063	15,385
March 2016	5	4,749	11,087	15,841
March 2017	148	4,993	11,028	16,170
March 2018	1,578	3,680	10,868	16,125
March 2019	2,404	5,856	9,134	17,394
March 2020	2,633	9,372	2,962	14,967
Projected carbon sequestration² (thousand tonnes of carbon dioxide equivalent)				
March 2013	0	655	1,137	1,792
March 2014	0	1,323	4,364	5,687
March 2015	0	1,588	4,091	5,679
March 2016	2	2,278	3,519	5,799
March 2017	79	2,385	3,476	5,940
March 2018	713	1,790	3,285	5,788

March 2019	1,093	2,331	2,760	6,184
March 2020	1,207	3,480	1,121	5,809

Source: Provisional Woodland Statistics: 2020 Edition

Notes:

1. Projects can be validated/ verified individually or come together as part of a group. The statistics presented here show the number of projects validated or verified whether they were put through the process individually or as part of a group.
2. Figures for carbon sequestration indicate the total projected sequestration of the projects over their lifetime of up to 100 years, and include the amount claimable by a project plus the amount allocated to a shared "buffer" in case of unanticipated losses.

Awaiting validation: is when a project or group is undergoing assessment by a certification body.

Validated: is 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 5 years.

Verified: Verification is the evaluation of a 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.

These figures are outside the scope of National Statistics. For further information see the Sources chapter.

Together, all validated (including verified) projects were predicted to sequester 3,791 thousand tonnes of carbon dioxide in Scotland, 711 thousand tonnes in England, 175 thousand tonnes in Wales and 11 thousand tonnes in Northern Ireland over their lifetime (Table 4.2b).

Table 4.2b Woodland Carbon Code projects¹ at 31 March 2020

	England	Wales	Scotland	Northern Ireland	UK
Number of projects					
Awaiting validation	47	50	27	0	124
Validated only	51	17	82	1	151
Verified	36	3	48	1	88
Total validated	87	20	130	2	239
Total	134	70	157	2	363
Area of woodland (hectares)					
Awaiting validation	748	464	1,750	0	2,962
Validated only	884	250	8,224	14	9,372
Verified	376	52	2,196	9	2,633
Total validated	1,260	302	10,420	23	12,005
Total	2,008	766	12,170	23	14,967
Projected carbon sequestration² (thousand tonnes of carbon dioxide equivalent)					
Awaiting validation	460	144	517	0	1,121
Validated only	503	143	2,827	8	3,480
Verified	208	33	963	3	1,207
Total validated	711	175	3,791	11	4,687
Total	1,171	319	4,308	11	5,809

Source: Provisional Woodland Statistics: 2020 Edition

Notes:

1. Projects can be validated/ verified individually or come together as part of a group. The statistics presented here show the number of projects validated or verified whether they were put through the process individually or as part of a group.

2. Figures for carbon sequestration indicate the total projected sequestration of the projects over their lifetime of up to 100 years, and include the amount claimable by a project plus the amount allocated to a shared "buffer" in case of unanticipated losses.

Awaiting validation: is when a project or group is undergoing assessment by a certification body.

Validated: is 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 5 years.

Verified: Verification is the evaluation of a 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.

These figures are outside the scope of National Statistics. For further information see the Sources chapter.

4.3 Public Opinion of Forestry - climate change

Forest Research has conducted similar surveys of public attitudes to forestry and forestry-related issues every two years since 1995. The most recent set of separate surveys was conducted in 2019 (in Northern Ireland, Wales, and across the UK as a whole) and 2017 (in Scotland). The full results are available on our website at www.forestryresearch.gov.uk/tools-and-resources/statistics/statistics-by-topic/public-opinion-of-forestry/.

In the UK survey in 2019, questions were asked to gauge the public's agreement on climate change issues, including on the management of UK forests in response to the threat of climate change (Table 4.3). Some of the public views presented below do not reflect expert opinion.

There were high levels of agreement (respondents stating that they agreed or strongly agreed) with the statements:

- "A lot more trees should be planted", supported by 88% of the UK public in 2019; and
- "Different types of trees should be planted that will be more suited to future climates", supported by 78% in 2019.
- Conversely, there were much lower levels of agreement with the statements:
- "No action is needed, let nature take its course", supported by 26% in 2019; and
- "Trees should not be felled under any circumstances, even if they are replaced", supported by 29%.

Table 4.3 Management of UK forests in response to the threat of climate change

percent of respondents who agree or strongly agree

	2011	2013	2015	2017	2019
A lot more trees should be planted	90	86	80	84	88
Different types of trees should be planted that will be more suited to future climates	74	71	67	76	78
Trees should not be felled in any circumstances, even if they are replaced	21	22	25	26	29
No action is needed, let nature take its course	21	18	22	24	26

Source: UK Public Opinion of Forestry Surveys.

Notes:

1. Figures are based on all respondents: weighted totals = 2011 (2,068), 2013 (1,927), 2015 (1,804), 2017 (2,113), 2019 (2,174).
2. The range of uncertainty around any result should be no more than $\pm 3.5\%$ in any of the years shown. To compare results over time, a difference of at least 5 percentage points is required to indicate that there is a significant difference.

These figures are outside the scope of National Statistics. For further information see the Sources chapter.

Forestry Statistics 2020

Chapter 5: Environment

Release date:

24 September 2020

Coverage:

United Kingdom

Geographical breakdown:

Country

Introduction

This chapter presents a range of information about the woodland environment, mostly using sources that are outside the scope of National Statistics. They are included to provide additional context to the topic.

Estimates for England, Wales, Scotland and Northern Ireland are included, where possible, in addition to UK or GB totals. Further information on the data sources and methodology used to compile the figures is provided in the Sources chapter.

All of the statistics presented in this chapter have been previously released.

The statistics on the populations of wild birds (Table 5.1 and Figure 5.1) have been revised since "Forestry Statistics 2019". For further details on revisions, see the Environment section of the Sources chapter.

A copy of all environment tables can be accessed in spreadsheet format from the Data Downloads web page at www.forestresearch.gov.uk/tools-and-resources/statistics/data-downloads/.

Key findings

The main findings are:

- The UK woodland bird index has remained relatively stable since the early 1990s, following a period of long-term decline. In recent years the index has decreased, most of this decline has occurred in woodland specialist species.
- The total area of native woodland in Great Britain is estimated to be around 1.51 million hectares.
- Non-native coniferous woodland is the single largest habitat type in Great Britain, accounting for 1.29 million hectares (42%).

5.1 Populations of wild birds

Bird populations provide a good indication of the broad state of wildlife in the UK. This is because they are a well-studied taxonomic group, enabling a more informed interpretation of observed changes, who occupy a range of habitats while still responding to the same environmental pressures that also operate on other groups of wildlife.

Indices of wild bird populations in the UK are produced annually by the Department for Environment, Food and Rural Affairs (Defra) in conjunction with the Royal Society for the Protection of Birds (RSPB), the British Trust for Ornithology (BTO) and the Joint Nature Conservation Committee (JNCC), and cover a range of species that are native to the UK. This data has been produced since the early 1970s for the majority of habitat groups, meaning there is considerable long-term data available on the changes in bird populations, which aids in the interpretation of more short-term variation. The latest statistical release on Wild Bird Populations was published in November 2019 and includes data to 2018.

The index for woodland birds was expanded in 2007 to cover 38 species. A further change in 2015 resulted in a reduction to 37 species, of which 12 are generalists and 25 are woodland specialists (those that breed or feed mainly or solely in woodland).

Since the early 1990s, when the majority of species group indices stabilised, the UK woodland bird index has generally been about 20 per cent below the level of the early 1970s, with the decline predominantly in woodland specialist species (Figure 5.1).

Causes for the long-term decline in the woodland bird index may include a lack of diversity in habitats and food sources, loss of habitats and food sources through damage caused by increasing deer populations, and a reduction in some migratory species following pressures in other parts of the world.

In recent years, woodland bird indices have largely decreased. Since 2015 woodland specialist species have fallen by 14% and woodland generalist species have fallen by 10%.

Table 5.1 UK populations of wild birds

index (year 2000 = 100)

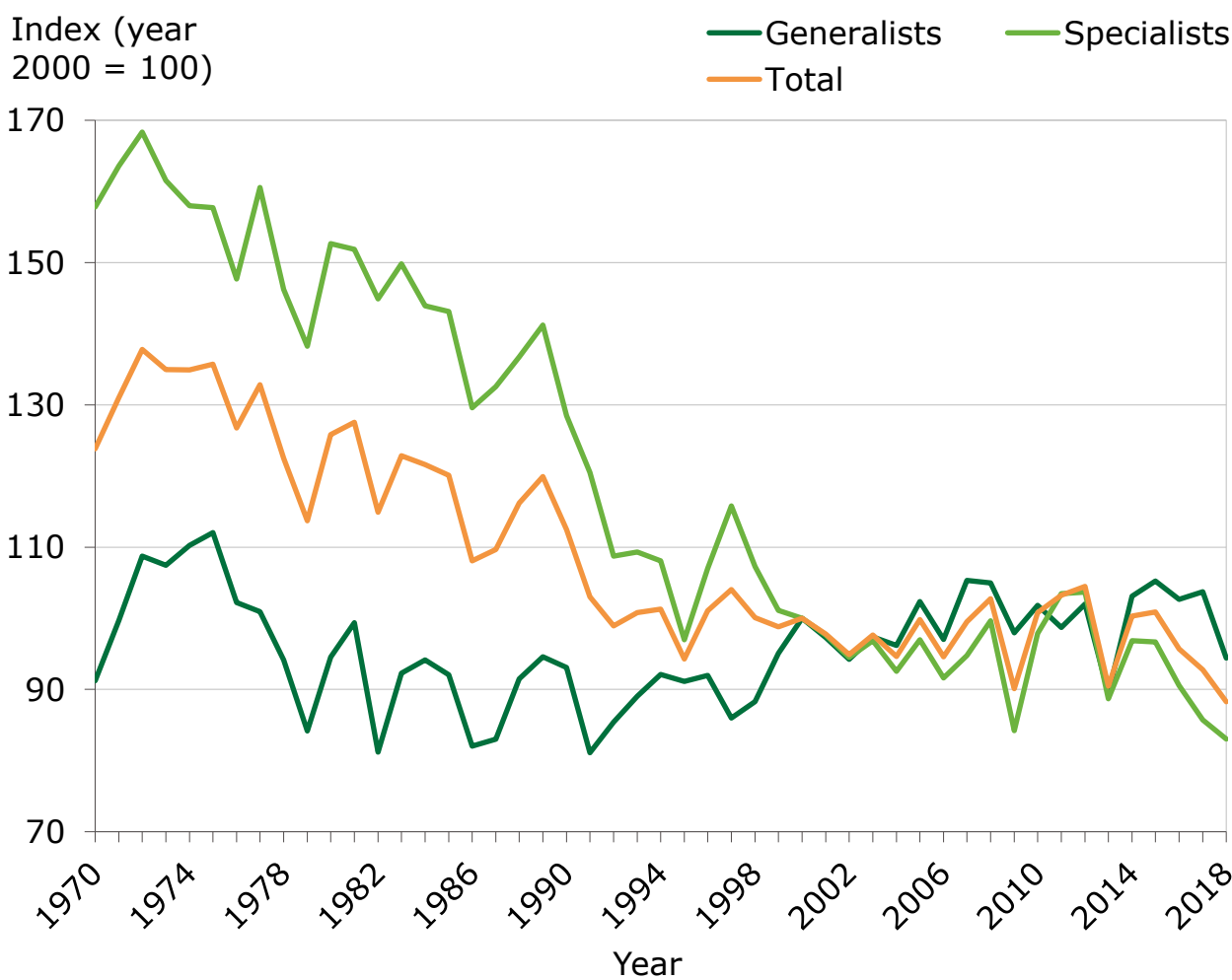
Year	Total breeding birds	Farmland birds	Seabirds	Woodland birds	Woodland generalists	Woodland specialists
2009	95.9	89.4	87.6	90.1	98.0	84.2
2010	97.4	86.9	84.7	100.8	101.8	97.9
2011	96.1	86.4	81.4	103.3	98.7	103.4
2012	96.8	87.1	76.7	104.5	102.0	103.7
2013	89.3	78.9	74.6	90.5	89.5	88.7
2014	96.0	80.2	81.0	100.3	103.1	96.8
2015	99.3	85.1	77.9	100.9	105.2	96.7
2016	96.3	77.6	81.0	95.7	102.7	90.5
2017	97.3	80.8	82.3	92.8	103.7	85.7
2018	92.0	77.6	75.6	88.3	94.4	83.0

Source: British Trust for Ornithology (BTO), Department for Environment, Food and Rural Affairs (Defra), Joint Nature Conservation Committee (JNCC), Royal Society for the Protection of Birds (RSPB).

Notes:

1. Based on data in Wild Bird Populations in the UK, 1970-2018 statistical release (Defra, November 2019).

Figure 5.1 UK populations of woodland birds



Source: British Trust for Ornithology (BTO), Department for Environment, Food and Rural Affairs (Defra), Joint Nature Conservation Committee (JNCC), Royal Society for the Protection of Birds (RSPB).

Notes:

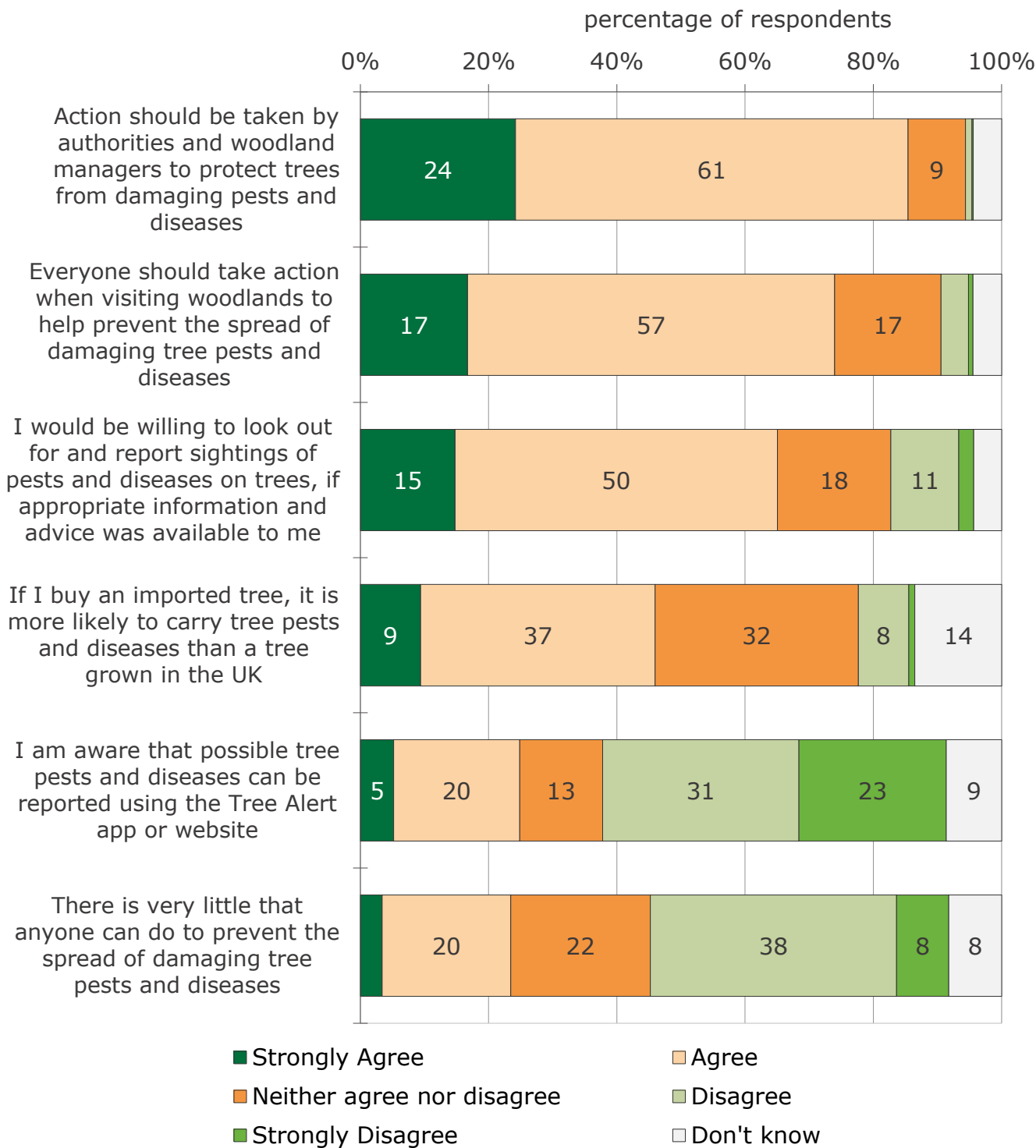
1. Based on data in Wild Bird Populations in the UK, 1970-2018 statistical release (Defra, November 2019).

5.2 Public Opinion of Forestry - tree health

Forest Research has conducted similar surveys of public attitudes to forestry and forestry-related issues every two years since 1995. The most recent surveys were conducted in 2019 (with separate surveys in Wales, Northern Ireland and across the UK as a whole) and in 2017 (in Scotland). Full results are available within the Public Opinion of Forestry reports available on our website at www.forestryresearch.gov.uk/tools-and-resources/statistics/statistics-by-topic/public-opinion-of-forestry/.

Respondents to the UK survey in 2019 were asked their views on a range of statements relating to tree health. The highest level of agreement was seen with the statement "action should be taken by authorities and woodland managers to protect trees from damaging pests and disease", with 85% of UK respondents agreeing (agree or strongly agree) (Figure 5.2 and Table 5.2). This compares with only 23% agreeing with the statements "there is very little that anyone can do to prevent the spread of damaging tree pests and diseases".

Figure 5.2 Public opinion on tree health



Source: UK Public Opinion of Forestry Survey 2019. Base: 2,000 UK respondents.

Notes:

1. The range of uncertainty around any result should be no more than $\pm 3.2\%$.

These figures are outside the scope of National Statistics. For further information see the Sources chapter.

Table 5.2 Public opinion on tree health 2015-2019

percent of respondents who agree or strongly agree

	2015	2017	2019
Action should be taken by authorities and woodland managers to protect trees from damaging pests and diseases	75	85	85
Everyone should take action when visiting woodlands to help prevent the spread of damaging tree pests and diseases	57	74	74
I would be willing to look out for and report sightings of pests and diseases on trees, if appropriate information and advice was available to me	55	65	65
If I buy an imported tree, it is more likely to carry tree pests and diseases than a tree grown in the UK	42	48	46
I am aware that possible tree pests and diseases can be reported using the Tree Alert app or website	22	23	25
There is very little that anyone can do to prevent the spread of damaging tree pests and diseases	21	23	23

Source: UK Public Opinion of Forestry Surveys.

Note:

1. Figures are based on all respondents: weighted totals = 2015 (1,804), 2017 (2,113), 2019 (2,174).
2. The range of uncertainty around any result should be no more than $\pm 3.5\%$ in any of the years shown. To compare results over time, a difference of at least 5 percentage points is required to indicate that there is a significant difference.

These figures are outside the scope of National Statistics. For further information see the Sources chapter.

5.3 Woodland types and habitats

National Forest Inventory (NFI) reports on woodland ecological condition, released in February 2020, provide estimates of the areas of woodland types and of woodland habitats in Great Britain.

Table 5.3a presents estimates of the extent of each type of woodland. The total area of native woodland in Great Britain is estimated to be around 1.51 million hectares. This equates to around one half (49%) of the woodland area in Great Britain. The proportion of native woodland is highest in England (62%), followed by Wales (48%) and Scotland (32%).

Table 5.3a Type of woodland, Great Britain

thousand hectares				
Type of woodland	England	Wales	Scotland	Great Britain
Native	914	150	443	1,507
Near native & fragments	29	7	20	57
Non-native	398	155	908	1,461
Not determinable	2	1	17	20
Total	1,343	313	1,388	3,045

Source: NFI Woodland Ecological Condition Statistics (February 2020)

Notes:

1. The report “NFI Woodland Ecological Condition Scoring Methodology” provides further details on woodland types.
2. Comparisons with woodland area should not be made as woodland area is defined differently to woodland habitat (with woodland area being greater than habitat area due to the treatment of land uses like open space and clear-fell).
3. Clear-fell and transition land are included in the estimates. Woodland type for some clear-fell and transition land cannot be determined and are assigned as not determinable.

These figures are outside the scope of National Statistics. For further information see the Sources chapter.

Non-native coniferous woodland is the single largest habitat type in Great Britain, accounting for 1.29 million hectares (42%). This is the most common habitat type for Scotland (59%) and Wales (46%). For England, lowland mixed deciduous woodland accounts for over one half (56%) of woodlands.

Table 5.3b Woodland habitats, Great Britain

thousand hectares

Habitat type	England	Wales	Scotland	Great Britain
Lowland beech/yew woodland	54	6	1	62
Lowland mixed deciduous woodland	748	79	82	909
Native pine woodlands	0	0	124	124
Non-HAP native pinewood	0	0	38	38
Upland birchwoods (Scotland), birch dominated upland oakwoods (England, Wales)	11	2	120	134
Upland mixed ashwoods	32	7	15	54
Upland oakwoods	44	26	33	103
Wet woodland	78	28	63	169
Wood pasture & parkland	8	0	3	11
Broadleaf habitat NOT classified as priority	19	12	21	53
Non-native coniferous woodland	328	145	819	1,292
Clearfelled and transition	22	6	70	97
Total	1,344	313	1,389	3,045

Source: NFI Woodland Ecological Condition Statistics (February 2020)

Notes:

1. The report "NFI Woodland Ecological Condition Scoring Methodology" provides further details on habitat types.

These figures are outside the scope of National Statistics. For further information see the Sources chapter.

Forestry Statistics 2020

Chapter 6: Social

Release date:

24 September 2020

Coverage:

United Kingdom

Geographical breakdown:

Country

Introduction

This chapter contains statistics on:

- the number and profile of visits to all woodlands from household surveys; and
- the number and profile of visits to Forestry England/ Forestry and Land Scotland/ Natural Resources Wales/ Forest Service woodlands from on-site surveys and administrative sources.

The statistics in this chapter need to be viewed in the context of broader changes in the UK population, with an increasing and ageing population.

More recently, the Covid-19 pandemic has led to an increase in visits to the outdoors. Initial studies are providing some information on these changes, but these have not been incorporated into this release yet. For further information, see:

- <https://www.gov.uk/government/collections/people-and-nature-survey-for-england> (see monthly interim indicators);
- <https://gov.wales/national-survey-wales-monthly-survey-july-2020>
- <https://www.nature.scot/outdoor-visits-and-engagement-nature-during-coronavirus-lockdown> and
- <http://www.outdoorrecreationni.com/news/new-survey-highlights-importance-of-accessing-outdoors-safely-during-covid-19/>.

Geographical coverage for social statistics varies. Estimates are presented at country level and, where possible, UK or GB totals are included. Further information on the data sources and methodology used to compile the figures is provided in the Sources chapter.

Most of the statistics presented in this chapter have been previously released 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 previously published. For further details on revisions, see the Social section of the Sources chapter.

The frequency with which the estimates in this chapter are updated varies depending on the data sources used. Whilst some of the information presented is now several years old, it represents the latest available data and has been included to provide a more rounded picture of the social use of forests in the UK.

Further information on the advantages and disadvantages of household surveys and of on-site surveys is provided in the Social section of the Sources chapter.

A copy of all social tables can be accessed in spreadsheet format from the Data Downloads web page at www.forestresearch.gov.uk/tools-and-resources/statistics/data-downloads/.

Key findings

The main findings are:

- There were an estimated 368 million visits to woodlands in England in 2018-19.
- Around one half (49%) of visits to woodlands in England in 2018-19 were within 2 miles.
- “Health and exercise” and “fresh air or to enjoy pleasant weather” were important reasons for visits to woodlands in England and Wales.
- Walking was the most common activity on visits to woodland in England.
- Around 465 thousand people visited Forest Service sites where a charge is made in Northern Ireland in 2019-20.

6.1 Visits to woodland - household surveys

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

- Scottish Recreation Survey (2009 to 2012)
- Welsh Outdoor Recreation Survey (2011, 2014)
- Monitor of Engagement with the Natural Environment (England, 2009-10 onwards)
- Scotland's People and Nature Survey (2013, 2017/18)

It is likely that differences in survey design and methodology have contributed to a considerable proportion of the differences in results between these surveys. The figures in Table 6.1 should not be interpreted as time trends but instead as separate results from each survey. Further information on the differences between surveys is provided in the Recreation section of the Sources chapter.

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.

Results from the Monitor of Engagement with the Natural Environment 2018-19 estimate a total of 368 million visits to woodlands in England (Table 6.1). This is a statistically significant decrease from the 2017-18 figure of 437 million visits.

The Welsh Outdoor Recreation Survey 2014 estimated a total of 68 million visits to woodlands by Welsh residents. This is a statistically significant decrease from the estimated total of 86 million in 2011, but similar to the 2008 estimate (64 million).

Scotland's People and Nature Survey 2017/18 reports an estimated total of 117 million visits to woodlands in Scotland. This is a statistically significant increase from the 2013 estimate of 90 million visits.

Table 6.1 Number of visits to woodland by journey starting point
million visits

Year	England	Wales	Scotland
2009	317	..	57
2010	326	..	63
2011	358	86	65
2012	357	..	62
2013	378	..	90
2014	417	68	..
2015	446	..	..
2016	439	..	..
2017	437	..	117
2018	368	..	..

Sources:

England 2009 on: Monitor of Engagement with the Natural Environment (MENE), carried out by TNS;

Wales 2011, 2014: Welsh Outdoor Recreation Survey carried out by TNS;

Scotland 2009 - 2012: Scottish Recreation Survey (ScRS), carried out by TNS;

Scotland 2013, 2017: Scotland's People and Nature Survey (SPANs), carried out by TNS.

Notes:

1. MENE covered trips taken in England, including those from holiday bases, by respondents living in England. Results relate to 12 month periods from March to February.
2. The Welsh Outdoor Recreation Survey totals shown are for trips with woodland as the main destination.
3. The Scottish Recreation Survey ran from July 2003 until December 2012. It was replaced by Scotland's People and Nature Survey that ran from March 2013 to February 2014 and from May 2017 to April 2018. Both surveys covered visits to the outdoors for leisure and recreation in Scotland by people living in Scotland. The total shown is for all trips that included a visit to woodland.
4. In each survey, visits to overseas destinations are excluded.
5. .. Denotes data not available.

These figures are outside the scope of National Statistics. For further information see the Sources chapter.

6.1.1 England

Household surveys in England

In March 2009 fieldwork commenced on the Monitor of Engagement with the Natural Environment (MENE) survey, which includes collecting information on visits to the outdoors in England. Further information on the survey, including copies of annual reports and online data viewers to access more detailed results, is available at www.gov.uk/government/collections/monitor-of-engagement-with-the-natural-environment-survey-purpose-and-results.

Tables 6.2a to 6.2e shows the main characteristics of visits to woodlands over the most recent 5 years.

In 2018-19, walking was the main mode of transport for almost one half (47%) of visits to woodland.

Table 6.2a Mode of transport to visit woodlands - England 2014-15 to 2018-19

Main mode of transport	per cent of respondents				
	2014-15	2015-16	2016-17	2017-18	2018-19
On foot	60	60	54	53	47
Car / van	36	36	42	44	45
Bicycle	2	2	2	1	1

Source: Monitor of Engagement with the Natural Environment (MENE), Natural England.

Notes:

- 1. All trips that included a visit to woodland.

These figures are outside the scope of National Statistics. For further information see the Sources chapter.

Around one half (49%) of visits to woodland were within 2 miles.

Table 6.2b Distance travelled to visit woodlands - England 2014-15 to 2018-19

Distance travelled (one way)	per cent of respondents				
	2014-15	2015-16	2016-17	2017-18	2018-19
Less than 1 mile	39	32	28	29	25
1 to 2 miles	25	31	28	27	24
3 to 5 miles	19	20	21	23	26
6 to 10 miles	9	8	11	11	10
Over 10 miles	9	10	12	10	16

Source: Monitor of Engagement with the Natural Environment (MENE), Natural England.

Notes:

- 1. All trips that included a visit to woodland.

These figures are outside the scope of National Statistics. For further information see the Sources chapter.

Health or exercise was the most popular reason for visiting woodlands in England in 2018-19 (70%).

Table 6.2c Motivation for visits to woodlands - England 2014-15 to 2018-19

per cent of respondents

Motivation for visit	2014-15	2015-16	2016-17	2017-18	2018-19
For health or exercise	53	60	55	56	70
To exercise your dog	66	65	60	53	53
For fresh air or to enjoy pleasant weather	39	41	39	41	46
To relax and unwind	35	42	37	37	40
To enjoy scenery	32	38	34	36	34
To be somewhere you like	23	26	25	26	29
For peace and quiet	22	27	33	26	29
To enjoy wildlife	27	30	28	28	28
To spend time with family	17	14	15	16	28

Source: Monitor of Engagement with the Natural Environment (MENE), Natural England.

Notes:

1. All trips that included a visit to woodland.
2. Excludes other reasons for visiting, each reported by fewer than 20% of respondents in 2018-19.
3. Respondents were able to select more than one option, so results do not sum to 100%.

These figures are outside the scope of National Statistics. For further information see the Sources chapter.

Walking (with or without a dog) was the most popular activity on visits to woodland in England in 2018-19.

Table 6.2d Activities on visits to woodlands - England 2014-15 to 2018-19

per cent of respondents

Activities during visit	2014-15	2015-16	2016-17	2017-18	2018-19
Walking without a dog	22	23	31	56	56
Walking with a dog	68	66	59	36	36
Playing with children	6	6	8	10	15
Eating or Drinking Out	5	6	8	10	15
Cycling/ mountain biking	4	3	6	4	6

Source: Monitor of Engagement with the Natural Environment (MENE), Natural England.

Notes:

1. All trips that included a visit to woodland.
2. Excludes other activities, each reported by fewer than 5% of respondents in 2018-19.
3. Respondents were able to select more than one option, so results do not sum to 100%.

These figures are outside the scope of National Statistics. For further information see the Sources chapter.

Most visits to woodlands in England (62%) lasted up to 2 hours in 2018-19.

Table 6.2e Duration of visits to woodlands - England 2014-15 to 2018-19

Duration of visit	per cent of respondents				
	2014-15	2015-16	2016-17	2017-18	2018-19
Up to 1 hour	51	50	43	45	39
1+ to 2 hours	28	29	29	26	23
2+ to 3 hours	8	9	11	12	18
Over 3 hours	5	4	9	7	11

Source: Monitor of Engagement with the Natural Environment (MENE), Natural England.

Notes:

- 1. All trips that included a visit to woodland.

These figures are outside the scope of National Statistics. For further information see the Sources chapter.

6.1.2 Wales

Household surveys in Wales

The National Survey for Wales began in March 2016 and replaced a number of separate surveys of households in Wales, including the Welsh Outdoor Recreation Survey (WORS). The survey is completed by around 12,000 people each year and covers a wide range of topics. Further information on the survey, including copies of reports and data, is available at <https://gov.wales/national-survey-wales>.

Table 6.3 shows the reasons provided for their visit to the outdoors by respondents who stated that the main destination of the visit was woodland. "Health and exercise" and "fresh air or to enjoy pleasant weather" were the most important reasons reported for visits to woodlands in Wales.

Table 6.3 Reasons for visit to woodland or forest – Wales

per cent of respondents

Reason for visit	2016-17	2018-19
For health or exercise	47	55
For fresh air or to enjoy pleasant weather	50	47
For pleasure / enjoyment	42	42
To spend time with family	39	41
To relax and unwind	34	41
To enjoy scenery and wildlife	38	39
To exercise the dog	38	30
For peace and quiet	22	29
To spend time with friends	16	22

Source: National Survey for Wales (Welsh Government).

Notes:

1. Visits where the main destination was woodland.
2. Respondents were able to select more than one option, so results do not sum to 100%.
3. Excludes other reasons for visiting, each reported by fewer than 20% of respondents in 2018-19.

6.1.3 Public Opinion of Forestry Survey - Woodland visitors

The Public Opinion of Forestry Survey is carried out every two years and obtains people's attitudes to forestry and forestry-related issues, including visits to woodland. Copies of reports and detailed data tables are available at www.forestresearch.gov.uk/tools-and-resources/statistics/statistics-by-topic/public-opinion-of-forestry/.

The results shown in Tables 6.4 and 6.5 and Figure 6.1 have been taken from the UK and country reports on the latest surveys in 2019 and from surveys in earlier years. The reports also include other recreation-related results, such as whether the woodlands visited were in towns or the countryside and any reasons given by survey respondents for not visiting woodlands.

In the UK 2019 survey, over three fifths (63%) of respondents said that they had visited woodland in the last few years for walks, picnics or other recreation (Table 6.4).

Table 6.4 Woodland visitors¹

Year	per cent of respondents				
	England	Wales	Scotland	Northern Ireland	UK
2003	66	62	64	77	67
2005	65	69	50	67	65
2007	76	79	75	62	77
2009	77	..	57	..	77
2010	..	..	..	72	..
2011	68	68	75	..	67
2013	65	64	76	..	66
2014	..	..	..	75	..
2015	55	64	78	..	56
2017	62	72	84	..	61
2019	63	77	..	78	63

Source: UK/GB, Scotland, Wales and Northern Ireland Public Opinion of Forestry Surveys

Base: UK/GB = 4,000 respondents (2003 to 2007), 2,000 respondents (2009 to 2019);

Scotland and Wales = 1,000 respondents each;

Northern Ireland = 120 respondents (2003), 1,000 respondents (all other years).

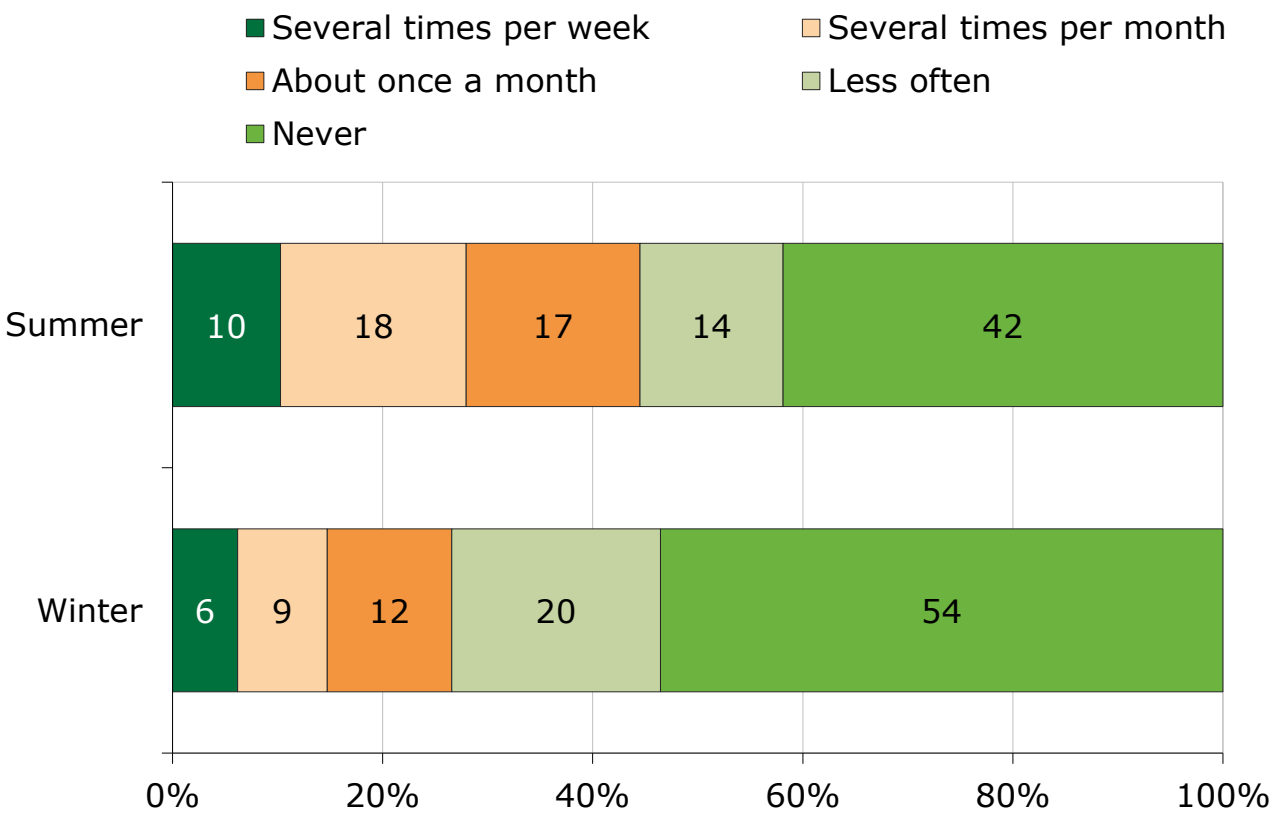
Notes:

1. Those stating that they had visited woodland in the last few years.
2. The range of uncertainty around any result should be no more than $\pm 3.5\%$ (for surveys with around 2,000 respondents) and $\pm 4.7\%$ (for surveys with around 1,000 respondents). To compare results over time, a difference of at least 5 percentage points (for surveys each with around 2,000 respondents) and at least 7 percentage points (for surveys each with around 1,000 respondents) is required to indicate that there is a significant difference.
3. .. Denotes data not available (survey not run that year or question not asked).

These figures are outside the scope of National Statistics. For further information see the Sources chapter.

Survey respondents were asked how frequently they had visited during the previous summer and winter. Figure 6.1, which presents aggregated UK results for the 2015 to 2019 surveys, shows that respondents visited much more often during the summer, with 44% of respondents visiting at least once a month in the summer compared to around one quarter (27%) in the winter.

Figure 6.1 Frequency of visits to woodlands



Source: UK Public Opinion of Forestry Surveys, 2015 to 2019.
Base: Average visit frequencies from last three UK surveys: 2,000 respondents per survey.
Notes:
1. The range of uncertainty around any result should be no more than $\pm 3.5\%$ in any individual year and no more than $\pm 1.1\%$ for the 3 surveys combined.

These figures are outside the scope of National Statistics. For further information see the Sources chapter.

6.1.4 Public Opinion of Forestry Survey - woodland visitors by age group

In the UK 2019 Public Opinion of Forestry survey, 71% of respondents aged 35 to 54 said that they had visited woodland in the last few years for walks, picnics or other recreation (Table 6.5). This compares with around three fifths (61%) of respondents aged 16 to 34 and 56% of those aged 55 or over.

Table 6.5 Woodland visitors¹ by age group

per cent of respondents

Year	Aged 16 to 34	Aged 35 to 54	Aged 55 and over	Total
1999	73	74	55	67
2001	75	77	63	72
2003	71	72	60	67
2005	66	74	56	65
2007	79	82	69	77
2009	78	84	69	77
2011	65	74	63	67
2013	62	75	60	66
2015	54	62	53	56
2017	60	68	55	61
2019	61	71	56	63

Source: UK and GB Public Opinion of Forestry Surveys, 1999 to 2019.

Base: 2,000 respondents (1999, 2001, 2009 to 2019); 4,000 respondents (2003 to 2007).

Notes:

1. Those stating they had visited woodland in the last few years.
2. The range of uncertainty around any result should be no more than $\pm 3.5\%$ (for surveys with around 2,000 respondents) and $\pm 2.3\%$ (for surveys with around 4,000 respondents). To compare results over time, a difference of at least 5 percentage points (for surveys each with around 2,000 respondents) is required to indicate that there is a significant difference.

These figures are outside the scope of National Statistics. For further information see the Sources chapter.

6.2 Visits to woodland - on-site surveys

The previous section provided information on visits to all woodlands (regardless of ownership), based on data from household surveys. This section provides information on visits to Forestry England/ Forestry and Land Scotland/ Natural Resources Wales/ Forest Service woodland only, based on data from on-site surveys and administrative sources.

The information provided in this section covers:

- Visits to the National Forest Estate in Scotland (Forestry and Land Scotland woodlands) from the All Forests Scotland surveys run from 2004 to 2007 and in 2012-13. An updated estimate of total visits in 2016 is also provided.
- Day visitors to Northern Ireland Forest Service sites where an admission charge was made.

6.2.1 Scotland All Forests Survey

All Forests surveying in Scotland has been undertaken on two occasions. The first All Forests Survey in Scotland was carried out across a three-year period from June 2004 to June 2007, and estimated that around 8.2 million visits are made annually to Forestry and Land Scotland woodland. An estimated 150-200 thousand visits to events in forests and around 300 thousand visits during the hours of darkness (when fieldwork was not undertaken) were also made, giving an overall total of around 8.7 million visits per year.

The second All Forests Survey was carried out from November 2012 to October 2013, and estimated an annual total of 9.1 million visits (including visits to events and in the hours of darkness) to Forestry and Land Scotland woodland. This represents a 5% increase on the estimated overall total of 8.7 million visits from the 2004-2007 survey.

The estimated number of visits has been updated using data from 224 automatic counters at 165 sites. For sites without counters, estimates have been produced using the results from the 2012-13 All Forests Survey and advice from local managers. This gives an overall estimate of 10.2 million visits to Forestry and Land Scotland woodland in 2016, a 12% increase from 2012-13.

Further information is available on the Forestry and Land Scotland website at <https://forestryandland.gov.scot/what-we-do/tourism-and-recreation/research-resources-guidance>.

6.2.2 Northern Ireland Forest Service day visitors

Information on visitors to Forest Service sites in Northern Ireland is provided by the Forest Service and relates only to sites where an admission charge is made.

In Northern Ireland in 2019-20, 465 thousand people visited those Forest Service sites where an admission charge was made (Table 6.6). This represented a 13% decrease from the previous year, and is reflective of new partnership agreements with local councils for the management of recreation facilities in Forest Service forests coming into effect.

Table 6.6 Day visitors to Northern Ireland Forest Service sites¹
thousands

Year	Visitors to Forest Service sites
2010-11	468
2011-12	430
2012-13	340
2013-14	364
2014-15	397
2015-16	432
2016-17	584
2017-18	509
2018-19	532
2019-20	465

Source: Forest Service

Notes:

1. Number of people visiting sites where an admission charge was made, excluding campers.

These figures are outside the scope of National Statistics. For further information see the Sources chapter.

Forestry Statistics 2020

Chapter 7: Employment & Businesses

Release date:

24 September 2020

Coverage:

United Kingdom

Geographical breakdown:

None

Introduction

This chapter contains information on:

- employment in forestry and wood processing;
- health & safety; and
- numbers of businesses.

All of the statistics presented in this chapter relate to UK totals. Further information on the data sources and methodology used to compile the figures is provided in the Sources chapter.

Most of the statistics presented in this chapter have been previously released. Some of the figures in this chapter have been revised since Forestry Statistics 2019. For further details on revisions, see the Employment section of the Sources chapter.

A copy of all Employment & Businesses tables can be accessed in spreadsheet format from the Data Downloads web page at

www.forestresearch.gov.uk/tools-and-resources/statistics/data-downloads/.

Key findings

The main findings are:

- The Annual Business Survey (May 2020) reported average employment¹ in 2018 of 16 thousand in forestry, 10 thousand in sawmilling and 6 thousand in panel mills.
- There was estimated to be a total of 7.3 thousand full time equivalent staff employed² by primary wood processors in the UK in 2019, a 4% decrease from the total for 2018.
- Accident rates in forestry and wood products have tended to decline in recent years but are still higher than the averages in agriculture and manufacturing respectively.
- There were 204 establishments in the primary wood processing industries in the UK using UK-grown roundwood in 2019.

² There are a number of differences in the scope of the employment figures reported from the Annual Business Survey (ABS) and the full time equivalent figures obtained from the annual surveys of the UK timber industry run by Forest Research (FR). In particular, the ABS figures cover employment by all businesses in the relevant sectors that pay VAT and/ or PAYE. This will include businesses that do not use UK grown timber. The FR surveys include businesses below the VAT and PAYE thresholds, but exclude businesses that do not use UK grown timber.

7.1 Employment: Annual Business Survey (ABS)

The Annual Business Survey (ABS), carried out by the Office for National Statistics (ONS), includes statistics on employment broken down by Standard Industrial Classification (SIC 2007). In wood processing, SIC 16 (wood products) and SIC 17 (pulp, paper and paper products) have a much wider scope than the data on employment in primary wood processing (Table 7.2a), as they include primary processing of imported material and also some secondary processing.

The latest ABS survey was published in May 2020 and includes data to 2018. It recorded average employment in 2018 of 16 thousand in forestry, 10 thousand in sawmilling and 6 thousand in panel mills (Table 7.1).

Table 7.1 Employment in forestry and wood processing², 2014-2018

	thousands				
Standard Industrial Classification (SIC)¹	2014	2015	2016	2017	2018
Forestry	16	17	17	16	16
Wood products					
Sawmilling	9	8	9	9	10
Panels	5	5	5	5	6
Secondary products	65	56	67	60	73
Total	79	69	81	74	89
Pulp, paper & paper products	57	56	56	55	62

Source: Annual Business Survey - average employment in year (Office for National Statistics, May 2020)

Notes:

- Categories are based on the [UK Standard Industrial Classification \(SIC 2007\)](#) categories. Further details on the SIC codes used are provided in the Sources: Employment and businesses page.
- Excludes other wood-using industries.
- Pulp, paper & paper products breakdowns for all years have been suppressed in the figures released by ONS. Data produced by the Confederation of Paper Industries, presenting estimates on a different basis are provided in table 7.2b.

7.2 Employment in primary wood processing

Information on employment in primary wood processing is obtained annually via the sources used to collect data on UK-grown timber (presented in Chapter 2).

There was estimated to be a total of 7.3 thousand full time equivalent staff employed by primary wood processors in the UK in 2019 (Table 7.2a), a 4% decrease from the total for 2018.

Over one half (57%) of the total employment in 2019 worked in sawmills and over one quarter (29%) worked in wood-based panel mills.

Table 7.2a Employment in primary wood processing, 2015-2019
full-time equivalents

Year	Sawmills	Pulp & paper	Wood-based panels	Fencing	Total
2015	4,310	702	2,100	361	7,474
2016	4,434	697	2,250	388	7,769
2017	4,577	700	2,110	405	7,792
2018	4,310	693	2,175	399	7,577
2019	4,118	663	2,075	397	7,253

Source: industry surveys, industry associations.

Notes:

1. Some businesses operate sawmills and round fencing mills. Employment for such businesses may be recorded under sawmills, round fencing manufacturers or shared between the two categories.

Table 7.2b presents the estimated total number of direct employees at all UK paper and board mills. Direct employment fell by 13% from 2014 to 2015, and has fluctuated between 7.8 thousand and 8.0 thousand since then.

Table 7.2b Direct employment in paper and board mills, 2014-2019
number of employees

	2014	2015	2016	2017	2018	2019
Direct employees	9,170	7,970	7,911	7,849	7,939	7,860

Source: Confederation of Paper Industries.

Notes:

1. Figures exclude contractors, self-employed and employees at ancillary sites.
2. Covers all mills producing paper in the UK. This differs from the employment data in table 7.2a, which is restricted to mills using UK grown roundwood.

7.3 Health & safety

Accidents involving absence from work of at least seven days are required to be reported to the Health & Safety Executive (HSE). Prior to this time, reporting was required for absences of at least three days.

The latest major accident rates for Great Britain, covering 2018-19, show levels similar to 2017-18 rates for both forestry and the wood products sector. Over the longer term, the rates for both sectors have generally declined, but they continue to remain higher than the averages in agriculture and manufacturing respectively (Table 7.3 and Figure 7.1).

Table 7.3 Accidents to employees¹ in forestry and wood processing³, 2014-15 - 2018-19

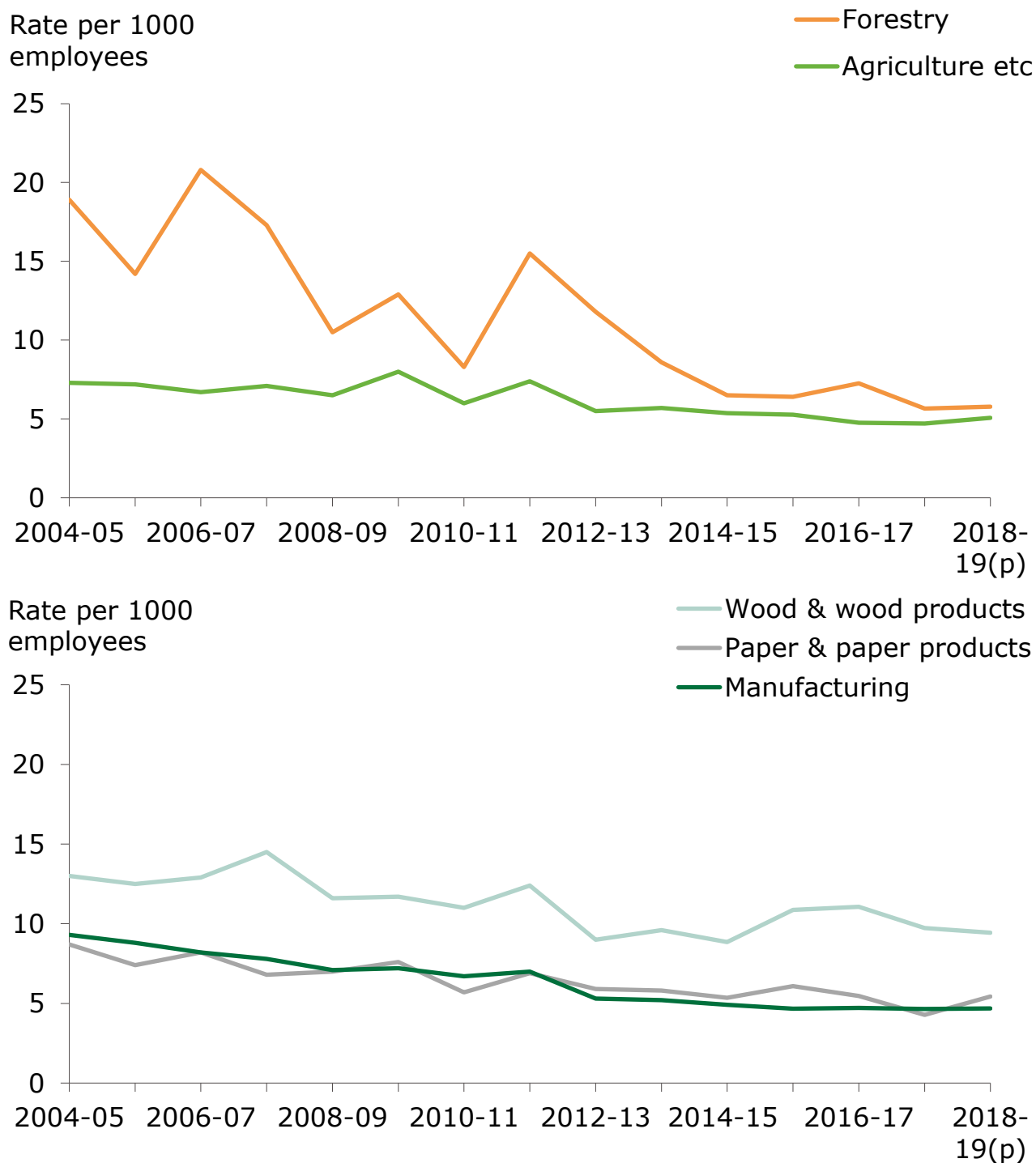
Standard Industrial Classification (SIC) ²	Number of major accidents ⁴	Major accident ⁴ rate rate/ 1000 employees	Total number of reported accidents	Total reported accident rate/ 1000 employees
Forestry				
2014-15	26	1.7	101	6.5
2015-16	34	2.0	111	6.5
2016-17	31	1.9	120	7.3
2017-18	37	2.2	94	5.7
2018-19 provisional	33	2.2	88	5.8
Wood products				
2014-15	136	2.4	510	8.9
2015-16	129	2.5	561	10.9
2016-17	149	3.0	557	11.1
2017-18	124	2.3	515	9.7
2018-19 provisional	135	2.3	560	9.4
Pulp, paper & paper products				
2014-15	75	1.3	303	5.4
2015-16	67	1.4	284	6.1
2016-17	71	1.5	257	5.5
2017-18	60	1.1	245	4.3
2018-19 provisional	72	1.4	275	5.4

Source: Health & Safety Executive.

Notes:

1. Employees only; excludes self-employed.
2. Categories are based on the [UK Standard Industrial Classification \(SIC 2007\)](#) categories. Further details on the SIC codes used are provided in the Sources: Employment and businesses page.
3. Excludes other wood-using industries.
4. Major accidents include fatal accidents, which averaged below 1 per year for forestry and 1 per year for wood processing. There were no fatal accidents in the period shown for pulp, paper and paper products.

Figure 7.1 Accidents to employees: Total reported accidents per 1000 employees, 2004-05 to 2018-19



Source: Health & Safety Executive.

Notes:

1. Employees only; excludes self-employed.
2. Categories are based on the [UK Standard Industrial Classification \(SIC 2007\)](#) categories. Further details on the SIC codes used are provided in the Sources: Employment and businesses page.
3. As a result of a change in reporting requirements, data from 2012-13 is not directly comparable with previous years.

7.4 Establishments in the primary wood processing industries

Table 7.4 shows the number of primary wood processors, according to the sampling frames used for Forest Research surveys of establishments using UK timber.

The figures in Table 7.4 do not correspond with the VAT and PAYE registration information given in Table 7.5. The figures here count establishments (sites) rather than businesses and include those that do not need to register for VAT or PAYE. They also have a different basis for classification, so some businesses that are excluded from Table 7.5 because of their VAT/PAYE classification are included in this table (typically businesses where primary wood processing is a small part of their total activity), and some businesses included in Table 7.5 are excluded here (usually because they do not use UK-grown timber).

The number of establishments in the primary wood processing industries using UK-grown roundwood has reduced from 261 in 2010 to 204 in 2019, a 22% decrease.

Table 7.4 Number of establishments in the primary wood processing industries using UK-grown roundwood

Year	Sawmills	Pulp & paper mills	Wood-based panel mills	Round fencing manufacturers	Total ¹
2010	188	2	7	64	261
2011	184	2	7	63	256
2012	180	2	7	60	249
2013	175	2	6	60	243
2014	173	2	6	56	237
2015	171	2	6	50	229
2016	166	2	6	50	224
2017	163	2	6	49	220
2018	155	2	6	46	209
2019	150	2	6	46	204

Source: industry surveys, industry associations

Notes:

1. A single mill may be recorded twice, as a sawmill and a round fencing manufacturer.

7.5 VAT and/or PAYE registered businesses

Table 7.5 shows the number of VAT and/or PAYE registered businesses classified under forestry and primary wood processing. The headings shown potentially include businesses not traditionally regarded as forestry or primary wood processing, and some businesses traditionally included in forestry and primary wood processing are excluded as they are classified to other headings of the Standard Industrial Classification (SIC).

A total of 4,185 forestry businesses, 530 sawmilling businesses, 125 wood-based panel businesses and 230 pulp & paper businesses were registered for VAT and/or PAYE purposes in the UK in 2019.

There has been an overall increase in forestry businesses over the last ten years, whilst sawmilling and pulp and paper businesses have declined.

Table 7.5 Number¹ of VAT and/or PAYE registered businesses by Standard Industrial Classification (SIC)², 2010-2019

Year	Forestry	Sawmilling	Panels	Pulp & paper
2010	3,095	640	135	255
2011	3,170	605	135	250
2012	3,375	585	135	255
2013	3,505	560	130	240
2014	3,685	555	130	230
2015	3,925	555	125	230
2016	4,050	550	125	225
2017	4,060	540	120	240
2018	4,150	540	130	240
2019	4,185	530	125	230

Source: UK Business: Activity, Size and Location: 2019 (Office for National Statistics, October 2019).

Notes:

1. All figures are rounded by the Office for National Statistics (ONS) to the nearest multiple of 5.
2. Categories are based on the [UK Standard Industrial Classification \(SIC 2007\)](#) categories. Further details on the SIC codes used are provided in the Sources: Employment and businesses page.

Forestry Statistics 2020

Chapter 8: Finance & Prices

Release date:

24 September 2020

Coverage:

United Kingdom

Geographical breakdown:

Country

Introduction

This chapter contains statistics on:

- timber prices;
- gross value added (GVA);
- Government expenditure on forestry; and
- grant schemes.

Estimates for England, Wales, Scotland and Northern Ireland are included, where possible, in addition to UK or GB totals. Further information on the data sources and methodology used to compile the figures is provided in the Sources chapter.

Most of the statistics presented in this chapter have been previously released. Some of the figures for earlier years have been revised since Forestry Statistics 2019. For further details on revisions, see the Finance & Prices section of the Sources chapter.

A copy of all Finance & Prices tables can be accessed in spreadsheet format from the Data Downloads web page at www.forestresearch.gov.uk/tools-and-resources/statistics/data-downloads/.

Key findings

The main findings are:

- The Coniferous Standing Sales Price Index for Great Britain was 14.8% lower in real terms in the year to March 2020, compared with the previous year.
- The Softwood Sawlog Price Index for Great Britain was 18.6% lower in real terms in the 6 months to March 2020, compared with the corresponding period of the previous year.
- Gross value added (GVA) in primary wood processing (sawmilling, panels and pulp & paper) was £1.88 billion in the UK in 2018. GVA in forestry was £0.67 billion.
- Net expenditure on public forests by Forestry England and by Forestry and Land Scotland totalled £26.2 million in 2019-20. A further £89.9 million was spent by the Forestry Commission and Scottish Forestry on other activities.
- A total of £80.6 million was paid in grants by the Forestry Commission, Scottish Forestry and the Welsh Government in 2019-20.

8.1 Timber prices

Timber Price Indices are based on sales of softwood (conifers) by Forestry England, Forestry and Land Scotland and Natural Resources Wales and are released every 6 months.

The Coniferous Standing Sales Price Index monitors changes in the average price received per cubic metre for timber that Forestry England/ Forestry and Land Scotland/ Natural Resources Wales sold standing, where the purchaser is responsible for harvesting.

The Softwood Sawlog Price Index monitors changes in the average price received per cubic metre of sawlogs (roundwood with a top diameter of 14 cm or more, destined to be sawn into planks or boards) sold at roadside by Forestry England/ Forestry and Land Scotland/ Natural Resources Wales.

Standing timber and sawlogs are distinct markets and may show different price movements. The data are averages for historic periods, so may be slow to show any turning points.

These indices are used to monitor trends in timber prices and to provide information on the state of the UK timber industry. They are also used by the UK timber industry, alongside other economic indicators, in contract reviews.

There is little other information currently available on wood prices before primary processing and no price index is available for broadleaves. Prices for outputs of primary wood processing are collected by the Office for National Statistics (ONS) in the Producer Price Indices (PPIs), and these are available in the MM22 dataset which gives detailed PPIs monthly.

Table 8.1 presents the coniferous standing sales and sawlog price indices for Great Britain to March 2020.

The coniferous standing sales price index for Great Britain was 14.8% lower in real terms in the year to March 2020, compared with the previous year (Table 8.1). The softwood sawlog price index was 18.6% lower in real terms in the 6 months to March 2020, compared with the corresponding period in the previous year. These decreases follow a generally increasing trend in both indices in recent years.

Table 8.1 Coniferous standing sales and sawlog price indices¹ for Great Britain, 2012-2020

index (period to September 2016 = 100)

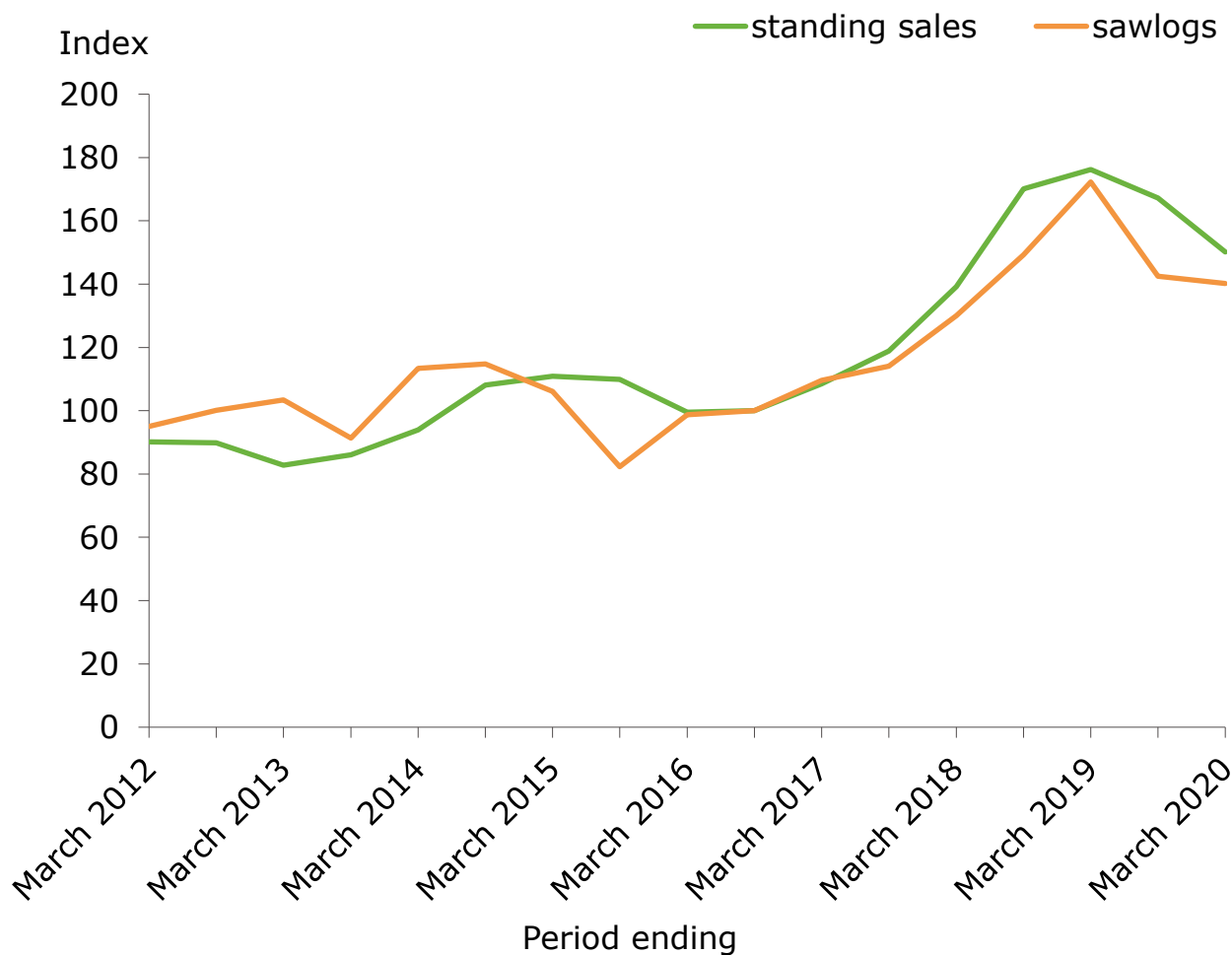
Year	Standing sales ² in nominal terms ³	Standing sales ² index in real terms ⁴	Sawlog index in nominal terms ³	Sawlog index in real terms ⁴
2012	83.9	90.2	88.2	95.0
2013	78.6	82.8	97.9	103.4
2014	90.9	93.9	109.5	113.4
2015	108.8	110.9	103.2	106.1
2016	98.5	99.5	97.1	98.7
2017	110.0	108.5	110.8	109.6
2018	143.5	139.2	133.9	130.1
2019	185.5	176.2	180.6	172.3
2020	161.0	150.1	149.7	140.2

Source: Timber Price Indices: data to March 2020

Notes:

1. The price indices are constructed from information on sales by Forestry England/ Forestry and Land Scotland/ Natural Resources Wales only.
2. The standing sales index uses the Fisher method with 5 year chain linking to take account of changes in the size mix over time.
3. Nominal prices are the actual prices at that point in time.
4. Real terms values are obtained by using the GDP deflator to convert to "constant prices" (in this case prices in 2016). This allows trends in timber prices to be tracked without the influence of inflation.
5. The standing sales index excludes sales by Natural Resources Wales from April 2017.
6. Sawlog prices in Wales in the year to March 2018 include long term contract rates for the clearance of infected larch.

Figure 8.1 Coniferous standing sales and sawlog price indices^{1,2} in real terms³ for Great Britain, 2012-2020



Source: Timber Price Indices: data to March 2020

Notes:

1. The price indices are constructed from information on sales by Forestry England/ Forestry and Land Scotland/ Natural Resources Wales only.
2. The standing sales index uses the Fisher method with 5 year chain linking to take account of changes in the size mix over time.
3. Real terms values are obtained by using the GDP deflator to convert to "constant prices" (in this case prices in 2016). This allows trends in timber prices to be tracked without the influence of inflation.
4. The standing sales index excludes sales by Natural Resources Wales from April 2017.
5. Sawlog prices in Wales in the year to March 2018 include long term contract rates for the clearance of infected larch.

8.2 Gross value added

Gross value added (GVA) measures the contribution to the economy of each individual producer, industry or sector in the United Kingdom. It is the difference between the value of outputs and the value of intermediate consumption, so mainly comprises employment costs and profits.

The Annual Business Survey (ABS) carried out by the Office for National Statistics (ONS) includes statistics on gross value added for different industries, classified using the UK Standard Industrial Classification (SIC 2007). Further information on the ABS is available from the ONS website.

Table 8.2 shows that, in 2018, GVA in primary wood processing (sawmilling, panels and pulp & paper) was reported to be £1.88 billion and GVA in forestry was £0.67 billion.

Table 8.2 Gross value added in forestry and wood processing³, 2014-2018

£ million

Standard Industrial Classification (SIC)¹	2014	2015	2016	2017	2018
Forestry	540	658	596	698	673
Wood products					
Sawmilling	356	474	413	420	579
Panels ²	436	323	316	363	453
Secondary products	1,955	2,478	2,850	2,532	2,666
Total	2,747	3,275	3,579	3,315	3,698
Pulp, paper & paper products					
Pulp & paper	596	738	610	707	845
Articles of paper & paperboard	3,197	2,749	2,786	2,607	2,528
Total	3,793	3,487	3,396	3,314	3,373
Total wood processing	6,540	6,762	6,975	6,629	7,071
Total primary wood processing	1,388	1,535	1,339	1,490	1,877

Source: Annual Business Survey (Office for National Statistics, May 2020)

Notes:

1. Categories are based on the [UK Standard Industrial Classification \(SIC 2007\)](#) categories. Further details on the SIC codes used are provided in the Sources: Employment and businesses page.
2. The 2014 to 2016 and 2018 figures for panels have been suppressed in the figures released by ONS, so the figures here cover both panels and the manufacture of assembled parquet floors (SIC 16.22) for those years. Panels accounted for 99% of the total of SIC codes 16.21 (panels) and 16.22 in 2017.
3. Excludes other wood-using industries.

8.3 Government expenditure on public forests

Table 8.3 provides information on net expenditure on public forests by Forestry England and by Forestry and Land Scotland. This covers expenditure less income for land that is owned or managed by Forestry England/ Forestry and Land Scotland. Other expenditure by the Forestry Commission and Scottish Forestry is covered in Table 8.5.

Figures for Wales on a comparable basis are currently unavailable.

Net expenditure on public forests by Forestry England/ Forestry and Land Scotland in 2019-20 totalled £26.2 million. This comprised £22.4 million in England and £3.8 million in Scotland.

Recreation, conservation & heritage accounted for £78.7 million of the total expenditure in 2019-20, harvesting & haulage for £40.8 million and other expenditure on public forests for £107.0 million.

Timber sales generated a total income of £136.2 million in 2019-20. Recreation, conservation & heritage accounted for a further £32.0 million and other income from public forests for an additional £32.1 million.

Table 8.3 Funding public forests - net expenditure^{1,2,3}

£ million

	2015-16	2016-17	2017-18	2018-19	2019-20
GB					
Harvesting & haulage	37.9	35.9	36.8	36.4	40.8
Recreation, etc. ⁴	67.8	70.9	72.7	70.2	78.7
Other	89.2	89.0	96.4	110.4	107.0
Timber	-99.1	-104.3	-111.3	-131.2	-136.2
Recreation, etc. ⁴	-24.8	-29.6	-31.4	-31.5	-32.0
Other	-26.8	-27.7	-24.8	-27.5	-32.1
Net expenditure	44.2	34.2	38.4	26.8	26.2
England					
Harvesting & haulage	10.6	10.6	11.3	14.0	16.2
Recreation, etc. ⁴	45.0	49.7	49.4	49.4	57.8
Other	29.2	31.3	32.9	38.3	36.6
Timber	-36.7	-38.9	-43.4	-53.2	-50.8
Recreation, etc. ⁴	-21.1	-26.2	-28.3	-27.8	-27.9
Other	-9.3	-8.6	-5.8	-8.8	-9.5
Net expenditure	17.7	17.9	16.1	11.9	22.4
Scotland					
Harvesting & haulage	27.3	25.3	25.5	22.4	24.6
Recreation, etc. ⁴	22.8	21.2	23.3	20.8	20.9
Other	60.0	57.7	63.5	72.1	70.4
Timber	-62.4	-65.4	-67.9	-78.0	-85.4
Recreation, etc. ⁴	-3.7	-3.4	-3.1	-3.7	-4.1
Other	-17.5	-19.1	-19.0	-18.7	-22.6
Net expenditure	26.5	16.3	22.3	14.9	3.8

Source: Forestry England, Forestry and Land Scotland

Notes:

1. Expenditure by Forestry England and by Forestry and Land Scotland only. Excludes expenditure incurred by other departments.
2. Excludes notional cost of capital and any surplus/deficit on sale of properties.

- 3. Excludes gain on revaluation of biological assets and value of timber felled.
- 4. Recreation, etc. includes conservation and heritage.

8.4 Other government expenditure on forestry

Table 8.4 provides information on other expenditure (excluding public forests) by the Forestry Commission and Scottish Forestry. It includes expenditure by National Offices in England and Scotland as well as expenditure on GB level functions. Figures for Wales on a comparable basis are not currently available. Expenditure on land that is owned or managed by Forestry England/ Forestry and Land Scotland is covered in Table 8.3.

In addition to expenditure on public forests, the Forestry Commission/ Scottish Forestry spent a total of £89.8 million on other activities in 2019-20 (Table 8.4).

Together, the Forestry Commission and Scottish Forestry used £65.4 million for grants and partnership funding and £12.8 million for policy, regulation & administration in 2019-20. A further £11.6 million of funding was provided to Forest Research by Defra, the Forestry Commission and the Devolved Administrations.

Table 8.4 Other government expenditure on forestry^{1,2}

£ million

	2015-16	2016-17	2017-18	2018-19	2019-20
GB					
Grants and partnership funding ³	57.2	61.6	57.6	62.9	65.4
Policy, regulation & administration	13.1	12.2	11.9	12.1	12.8
Research - GB funded ⁴	8.4	9.6	10.5	11.8	11.6
International & GB support services ^{4,6}	32.1	28.4	25.4	21.6	0.0
<u>Less</u> recovery of support service costs from countries ⁶	-20.7	-16.1	-13.1	-11.3	0.0
Total	90.1	95.7	92.3	97.1	89.8
England					
Grants and partnership funding ³	24.8	24.0	13.8	8.3	5.8
Policy, regulation & administration ⁵	1.8	2.2	1.9	0.7	0.7
Total	26.6	26.2	15.7	9.0	6.5
Scotland					
Grants and partnership funding ³	32.4	37.6	43.8	54.6	59.6
Policy, regulation & administration ⁵	11.3	10.0	10.0	11.4	12.1
Total	43.7	47.6	53.8	66.0	71.7

Source: Forestry Commission, Scottish Forestry, Forest Research

Notes:

1. Forestry Commission/ Scottish Forestry expenditure only. Excludes expenditure incurred by other departments.
2. Excludes miscellaneous income.
3. EU co-financing not subtracted from grant expenditure. In England authority for the Rural Development Programme for England (RDPE) grant scheme rests with Defra. Grant expenditure funded by Defra that is managed by the Forestry Commission is excluded from this table.
4. The estimates for GB funded research relate to Forest Research income from Defra, the Forestry Commission and Devolved Administrations. The increase in "Research - GB funded" and corresponding decrease in "International & GB support services" from 2015-16

to 2016-17 largely reflect organisational change within the Forestry Commission, with the transfer of some functions into Forest Research in April 2016.

5. Country costs for "policy, regulation & administration" include shares of GB support service costs.
6. Central services were disbanded following reorganisation of the Forestry Commission in April 2019.

8.5 Grant schemes

Private sector woodland in Great Britain is supported by a range of grants for creating new woodland and managing existing woodland. The Woodland Grant Scheme (WGS) was introduced in 1988, at the same time as tax relief was phased out. In Scotland, WGS was replaced by the Scottish Forestry Grant Scheme (SFGS) in 2003, by Rural Development Contracts in 2006 and has now been replaced by the Forestry Grant Scheme. The English Woodland Grant Scheme (EWGS) was launched in July 2005 and has now been replaced by Countryside Stewardship and other grants (e.g. the Woodland Carbon Fund and the HS2 Woodland Fund). Better Woodlands for Wales (BWW) was launched in December 2005 and has now been replaced by Glastir (administered by the Welsh Government).

Because of the differences between these schemes, it is increasingly difficult to provide comparable statistics across the three countries. The following tables provide information relating to planting and grants:

- Table 1.13a and 1.13b for total areas of new planting;
- Table 1.14a and 1.14b for total areas of grant-funded restocking;
- Table 8.4 for expenditure by the Forestry Commission/ Scottish Forestry on grants and partnership funding;
- Table 8.5 (below) for grant expenditure by the Forestry Commission (including grant expenditure managed by the Forestry Commission on behalf of Defra), by Scottish Forestry and by the Welsh Government.

Table 8.5 presents information on grant money paid in 2010-11 to 2019-20. A total of £80.6 million was paid in grants in 2019-20, a 5% increase from the total for the previous year.

At a country level, £52.2 million was paid in grants in Scotland in 2019-20 (an increase of 4% from the previous year), £22.4 million was paid in England (a 9% increase) and £6.0 million in Wales (an increase of 1%).

Table 8.5 Grant money paid, 2010-11 to 2019-20

£ million

	England¹	Wales²	Scotland³	GB
2010-11	28.7	3.8	18.9	51.4
2011-12	32.5	5.4	34.2	72.1
2012-13	32.8	5.0	32.3	70.1
2013-14	33.9	4.1	35.5	73.5
2014-15	32.4	1.8	39.2	73.4
2015-16	23.0	3.6	27.5	54.1
2016-17	23.8	3.3	30.5	57.5
2017-18	13.5	4.7	37.9	56.1
2018-19	20.5	5.9	50.2	76.6
2019-20	22.4	6.0	52.2	80.6

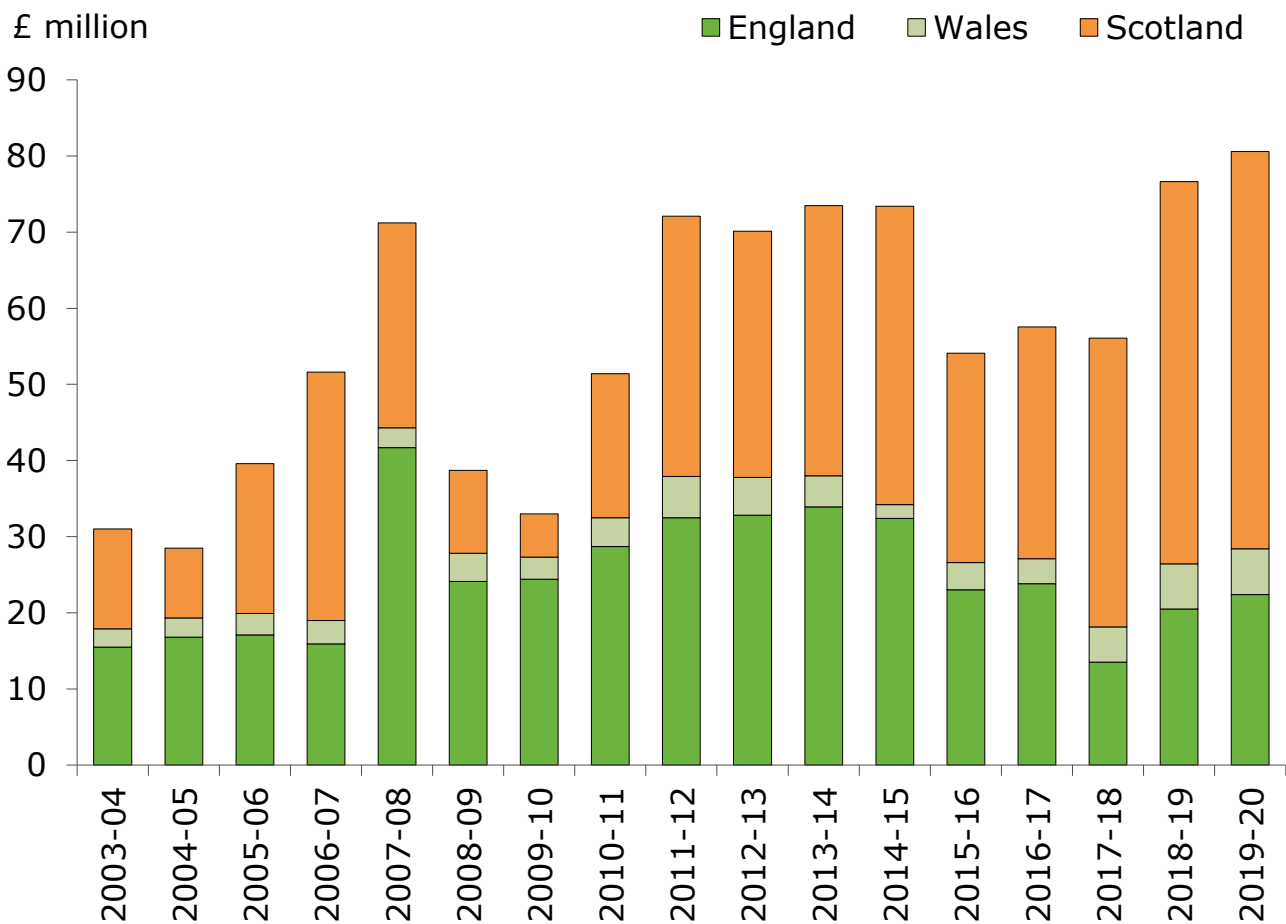
Source: Forestry Commission, Scottish Forestry, Welsh Government

Notes:

1. England includes grant scheme expenditure managed by the Forestry Commission on behalf of Defra.
2. Wales relates to grant paid by the Welsh Government.
3. Scotland includes grants paid under the Forestry Grant Scheme and legacy schemes (including Rural Development Contracts).

The total grant money paid in Great Britain has fluctuated over recent years, with levels often dipping around the times that new grant schemes are introduced, followed by a sharp recovery.

Figure 8.2 Grant money paid in Great Britain, 2003-04 to 2019-20



Source: Forestry Commission, Scottish Forestry, Welsh Government

Notes:

1. England includes grant scheme expenditure managed by the Forestry Commission on behalf of Defra.
2. Wales relates to grant paid by the Welsh Government.
3. Scotland includes grants paid under the Forestry Grant Scheme and legacy schemes (including Rural Development Contracts).

Forestry Statistics 2020

Chapter 9: International Forestry

Release date:

24 September 2020

Coverage:

United Kingdom

Geographical breakdown:

Country

Introduction

This chapter contains information about world forestry, presenting global figures by region alongside data for the UK and the EU. Topics covered include woodland area, carbon stocks, wood removals, production and apparent consumption of wood products and international trade in forest products.

The data are produced by the United Nations Food and Agriculture Organisation (FAO). Further information on the data sources and methodology used to compile the figures is provided in the Sources chapter.

All of the statistics presented in this chapter have been previously released by the FAO. For further details on revisions, see the International Forestry section of the Sources chapter.

Data for the European Union (EU) relate to all 27 current EU members, excluding the UK, for all of the years shown. Data for Europe cover 26 of the EU members (excluding Cyprus), the Russian Federation and a number of other European countries, including Norway, Switzerland, Serbia and Ukraine.

A copy of all International Forestry tables can be accessed in spreadsheet format from the Data Downloads web page at

www.forestresearch.gov.uk/tools-and-resources/statistics/data-downloads/.

Key findings

The main findings are:

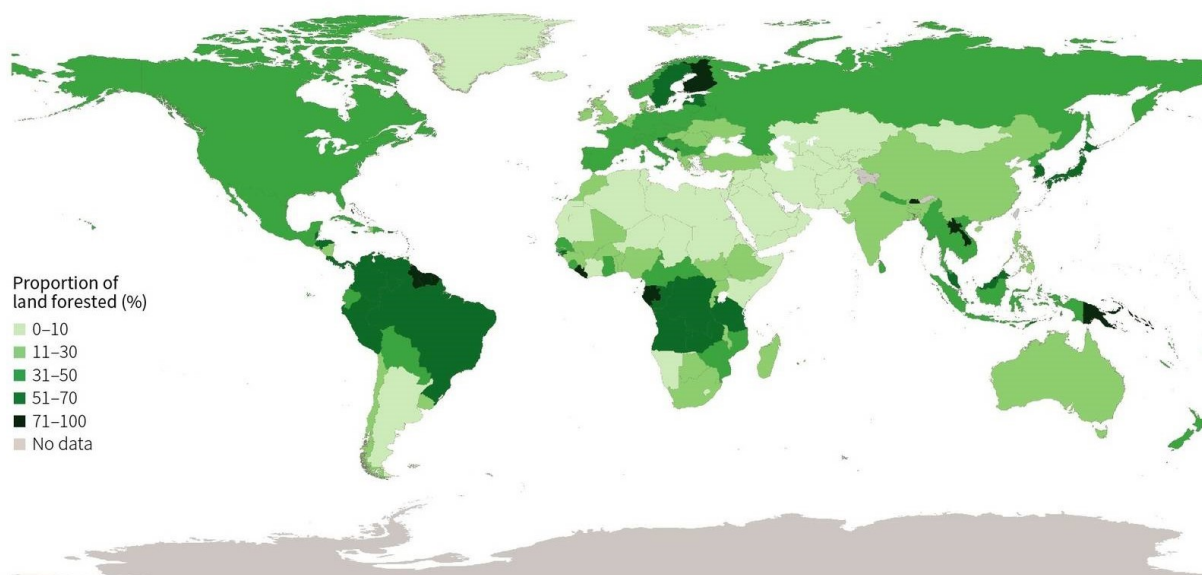
- At around 13% forest cover in 2020, the UK is one of the least densely forested countries in Europe. This compares with 46% for Europe as a whole and 31% worldwide.
- The global forest area reduced by around 4.7 million hectares (0.1%) per year between 2010 and 2020.
- Carbon stocks in forest living biomass have increased in Europe, North & Central America and Asia between 1990 and 2020, but have shown an overall decrease at a global level over this period.
- A total of 4.0 billion m³ underbark of wood was removed from global forests in 2018, of which around one half (49%) was for use as woodfuel and the remainder was industrial roundwood (for use by wood processors).
- Global production of wood products in 2018 totalled 492 million m³ of sawnwood, 404 million m³ of wood-based panels and 408 million tonnes of paper & paperboard.
- Europe consumed around one quarter (24%) of all sawnwood, around one fifth (21%) of the world's wood-based panels and almost one quarter (23%) of all paper and paperboard in 2018.
- The UK was the second largest net importer (imports less exports) of forest products in 2018, with net imports of US \$8.6 billion. The largest net importer was China.

9.1 Forest cover: international comparisons

The FAO Global Forest Resources Assessment (FRA) is a collation of forest data undertaken by the United Nations Food and Agriculture Organisation (FAO) at the global level every five years.

The UK is one of the least densely forested countries in Europe with around 13% of its total land area covered in forest in 2020 (Figure 9.1, Table 9.1). This compares with 46% for Europe as a whole and 31% worldwide.

Figure 9.1 Forest cover as a percentage of total land area: World, 2020



Source: FAO Global Forest Resources Assessment 2020.

These figures are outside the scope of National Statistics. For further information see the Sources chapter.

Table 9.1 Forest cover as a percentage of total land area: international comparisons, 2020

Country	Forest area (million ha)	Total land area (million ha)	Forest as % of land area
Europe			
United Kingdom	3	24	13
Denmark	1	4	15
Finland	22	30	74
France	17	55	32
Germany	11	35	33
Ireland	1	7	11
Italy	10	29	33
Spain	19	50	37
Sweden	28	41	69
Other EU	47	124	38
Total EU¹	159	400	40
Russian Federation	815	1,638	50
Total Europe²	1,017	2,213	46
Africa	637	2,989	21
Asia	623	3,109	20
North & Central America	753	2,133	35
Oceania	185	849	22
South America	844	1,746	48
World	4,059	13,039	31

Source: FAO Global Forest Resources Assessment 2020.

Notes:

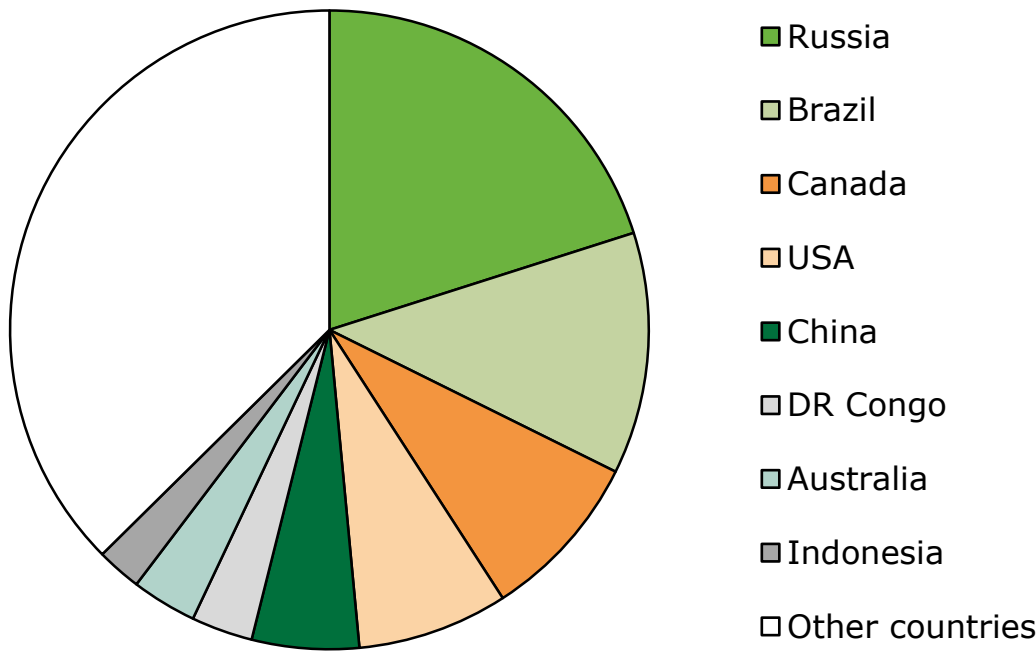
1. The EU covers 27 member states as at September 2020. This excludes the UK. Cyprus is included in EU total but is part of FAO's Asia region.
2. The Europe region covers 26 EU countries (excluding Cyprus), the UK, the Russian Federation and other countries, including Norway, Switzerland, Serbia and Ukraine.

These figures are outside the scope of National Statistics. For further information see the Sources chapter.

9.2 Forest area by country

Figure 9.2 shows the countries with the largest forest areas. Around one half (49%) of the total forest area of 4,059 million hectares in 2020 is located in four countries (the Russian Federation, Brazil, Canada and the USA).

Figure 9.2 Forest area by country, 2020



Source: FAO Global Forest Resources Assessment 2020.

These figures are outside the scope of National Statistics. For further information see the Sources chapter.

9.3 Annual changes in forest area

The global forest area has reduced from around 4,128 million hectares in 1990 to 4,059 million hectares in 2020. This represents a decrease of around 7.8 million hectares (0.2%) per year between 1990 and 2000, of around 5.2 million hectares (0.1%) per year between 2000 and 2010 and of around 4.7 million hectares (0.1%) per year between 2010 and 2020 (Table 9.2).

The forest area has reduced in most regions since 1990, except for Europe and Asia (where areas have increased).

Table 9.2 Annual changes in forest area by region, 1990-2020

percentage change in forest area

Region	1990-2000	2000-2010	2010-2020
Europe			
UK	0.6	0.4	0.4
EU ¹	0.5	0.3	0.2
Total Europe	0.1	0.1	0.0
Africa	-0.4	-0.5	-0.6
Asia	0.0	0.4	0.2
North and Central America	0.0	0.0	0.0
Oceania	-0.1	-0.1	0.2
South America	-0.5	-0.6	-0.3
World	-0.2	-0.1	-0.1

Source: FAO Global Forest Resources Assessment 2020.

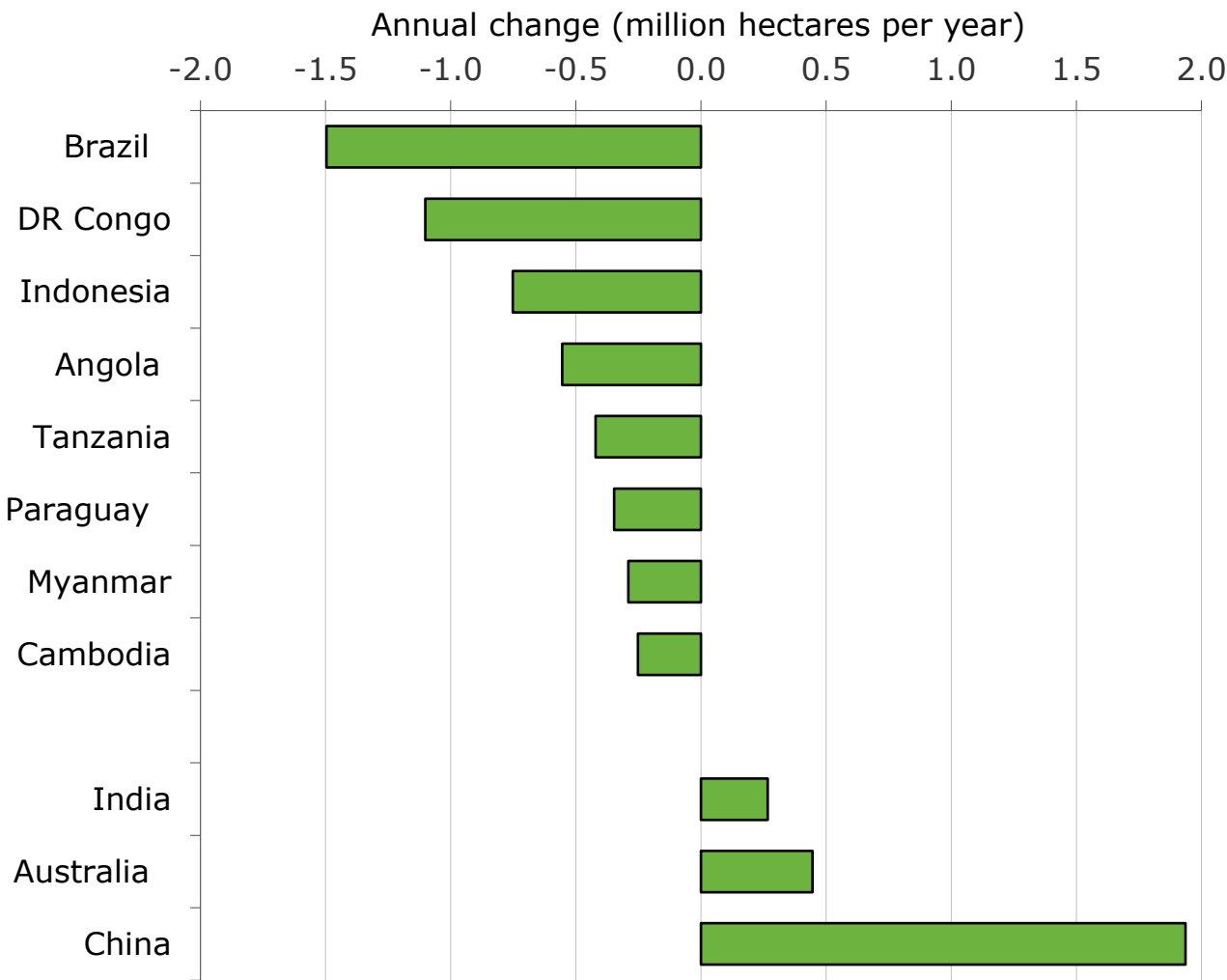
Notes:

1. The EU covers 27 member states as at September 2020. This excludes the UK. Cyprus is included in EU total but is part of FAO's Asia region.
2. UK figures for 2020 are 2018-based estimates. Revised estimates (from Chapter 1) suggest that Table 9.2 slightly under-estimates the change in forest area in the UK in the most recent time period.

These figures are outside the scope of National Statistics. For further information see the Sources chapter.

Between 2010 and 2020, the largest decrease in forest area was in Brazil (1.5 million hectares per year on average) and the largest increase was in China (1.9 million hectares per year on average) (Figure 9.3).

Figure 9.3 Countries with largest changes in forest area, 2010-2020



Source: FAO Global Forest Resources Assessment 2020.

Notes:

1. Countries with changes of at least 0.3 million hectares per year only.

These figures are outside the scope of National Statistics. For further information see the Sources chapter.

9.4 Forest carbon stocks

Carbon stocks in forest living biomass have increased in Europe and North & Central America between 1990 and 2020, but have shown an overall decrease at a global level over this period (Table 9.3).

The overall decrease has mainly been driven by declines in South America and Africa, where forest areas have decreased. Carbon stocks in biomass also increased slightly in Asia, where carbon sequestered in new plantations has balanced out carbon losses from areas of deforestation.

Table 9.3 Carbon stocks in forest living biomass by region, 1990-2020

Region	giga tonnes of carbon				
	1990	2000	2010	2015	2020
Europe	45	48	51	53	55
Africa	59	56	54	52	51
Asia	34	35	36	37	38
North and Central America	39	40	41	41	42
Oceania	14	14	14	14	14
South America	106	102	98	97	96
World	298	296	294	295	295

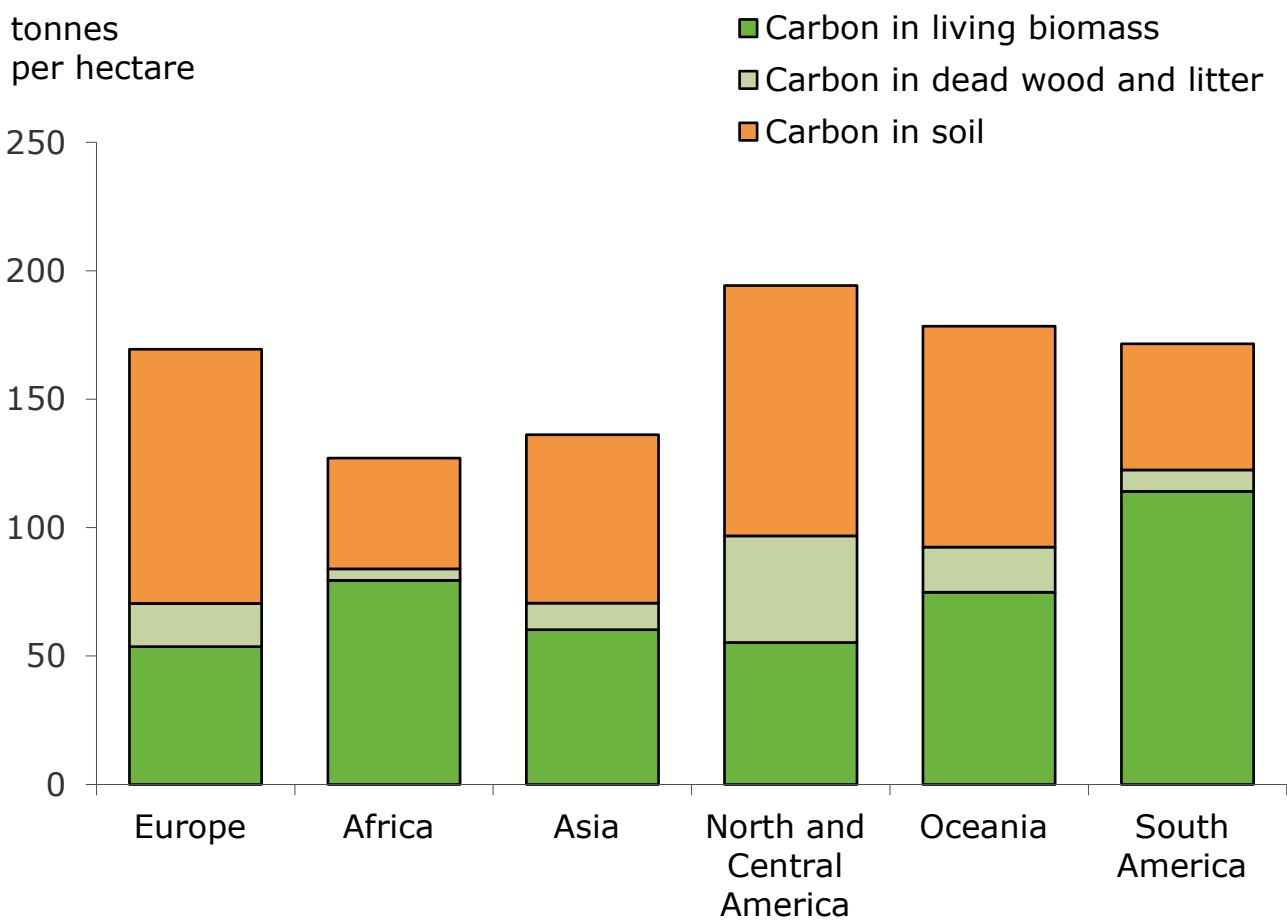
Source: FAO Global Forest Resources Assessment 2020.

Notes:

1. A giga tonne is a thousand million tonnes (10⁹ tonnes).

These figures are outside the scope of National Statistics. For further information see the Sources chapter.

Figure 9.4 Forest carbon stock per hectare by region, 2020



Source: FAO Global Forest Resources Assessment 2020.

These figures are outside the scope of National Statistics. For further information see the Sources chapter.

9.5 Wood removals

A total of 4.0 billion m³ underbark of wood was removed from global forests in 2018, of which around one half (49%) was for use as woodfuel and the remainder was industrial roundwood (for use by wood processors) (Table 9.4).

North & Central America and Europe together accounted for around three fifths (59%) of all industrial roundwood removals in 2018. Globally, removals of industrial roundwood increased by 11% between 2015 and 2018, resulting from increases in all regions.

Nearly three quarters (73%) of woodfuel removals in 2018 took place in Asia and Africa. Globally, removals of woodfuel increased by 2% between 2015 and 2018.

Table 9.4 Wood removals by region, 1990-2018

million m³ underbark

Region	1990	2000	2010	2015	2018
Industrial roundwood					
Europe					
UK	6	8	8	9	9
EU ¹	311	335	331	338	378
Total Europe	517	519	533	574	650
Africa	61	71	72	75	79
Asia	268	273	379	403	442
North & Central America	595	632	485	516	561
Oceania	34	47	57	64	77
South America	110	147	198	217	248
World	1,585	1,690	1,723	1,849	2,057
Woodfuel					
Europe					
UK	0	0	1	2	2
EU ¹	67	85	115	120	122
Total Europe	138	109	154	170	180
Africa	445	551	644	679	700

Forest Research: Statistics

Asia	897	808	764	735	719
North & Central America	162	129	129	136	160
Oceania	9	13	11	10	10
South America	162	185	162	171	180
World	1,814	1,795	1,863	1,902	1,948
Total roundwood					
Europe					
UK	6	8	10	11	11
EU ¹	378	420	446	458	500
Total Europe	655	628	687	744	830
Africa	506	623	715	754	779
Asia	1,166	1,081	1,144	1,138	1,160
North & Central America	757	761	613	652	721
Oceania	43	60	68	74	87
South America	272	332	359	388	428
World	3,399	3,485	3,586	3,751	4,005

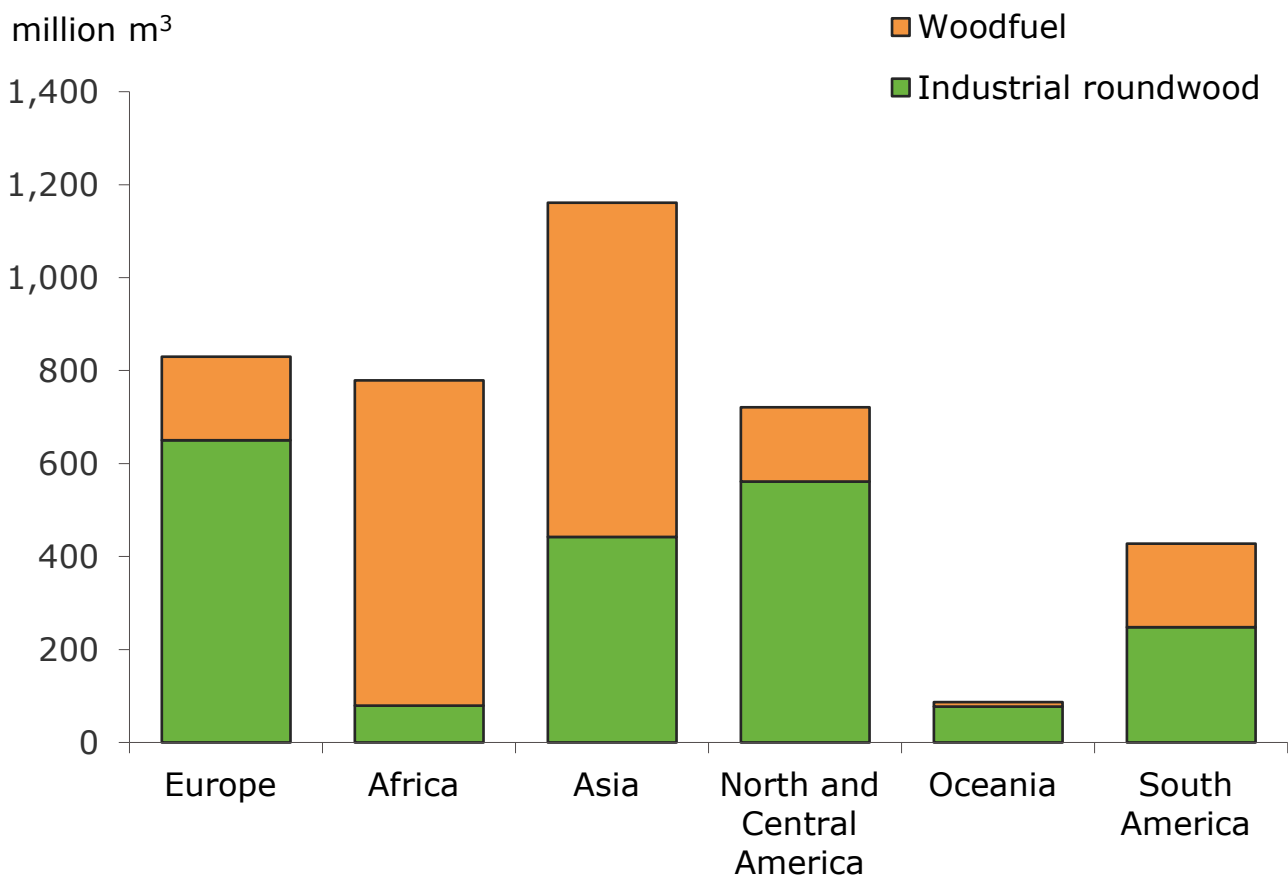
Source: FAO.

Notes:

1. The EU covers 27 member states as at September 2020. This excludes the UK. Cyprus is included in EU total but is part of FAO's Asia region.

These figures are outside the scope of National Statistics. For further information see the Sources chapter.

Figure 9.5 Wood removals by region, 2018



Source: FAO.

These figures are outside the scope of National Statistics. For further information see the Sources chapter.

9.6 Production of wood products

Global production of wood products in 2018 totalled 492 million m³ of sawnwood, 404 million m³ of woodbased panels and 408 million tonnes of paper & paperboard (Table 9.5).

Europe produced around one third (34%) of all sawnwood in 2018 (mainly in EU countries), with over one quarter (29%) in Asia and a further quarter (27%) produced in North & Central America. Overall, sawnwood production increased by 10% between 2015 and 2018, driven by increases in most regions.

Wood-based panels were more commonly produced in Asia, accounting for around three fifths (60%) of global production in 2018. Around one fifth (22%) were produced in Europe (mainly in EU countries) and 12% in North & Central America. At a global level, wood-based panel production increased by 5% between 2015 and 2018, mainly driven by an increase in Europe.

Asia also accounted for almost one half (47%) of paper and paperboard production in 2018, with around one quarter (26%) in Europe and a further 21% in North & Central America. At a global level, paper and paperboard production increased slightly (by 0.4%) between 2015 and 2018.

Table 9.5 Production of wood products by region, 1990-2018

Region	1990	2000	2010	2015	2018
Sawnwood (million m³)					
Europe					
UK	2	3	3	3	4
EU ¹	80	98	98	100	108
Total Europe	149	130	139	149	169
Africa	8	8	9	10	12
Asia	105	61	86	125	141
North and Central America	129	146	102	127	135
Oceania	6	8	9	9	9
South America	22	32	30	26	27
World	419	385	376	447	492
Wood-based panels (million m³)					
Europe					
UK	2	3	3	3	3
EU ¹	34	48	53	56	60
Total Europe	48	59	71	79	90
Africa	2	1	2	2	3
Asia	27	46	143	237	241
North and Central America	44	61	42	48	48
Oceania	2	3	3	3	3
South America	4	8	15	16	18
World	126	178	275	386	404
Paper & paperboard (million tonnes)					
Europe					
UK	5	7	4	4	4
EU ¹	59	83	91	87	89
Total Europe	74	100	106	104	106

Forest Research: Statistics

Africa	3	4	4	4	3
Asia	57	95	170	192	192
North and Central America	92	111	94	89	88
Oceania	3	4	4	4	4
South America	8	11	15	15	16
World	235	325	392	407	408

Source: FAO.

Notes:

1. The EU covers 27 member states as at September 2020. This excludes the UK. Cyprus is included in EU total but is part of FAO's Asia region.

These figures are outside the scope of National Statistics. For further information see the Sources chapter.

9.7 Apparent consumption of wood products

Apparent consumption (defined as production + imports - exports) of wood products around the world totalled 486 million m³ sawnwood, 404 million m³ wood-based panels and 408 million tonnes of paper and paperboard in 2018 (Table 9.6).

Two fifths (41%) of all sawnwood in 2018 was consumed in Asia and around one quarter each in North & Central America (26%) and in Europe (24%). Reflecting the increased production of sawnwood (see Table 9.5), apparent consumption of sawnwood increased by 10% overall between 2015 and 2018. This was driven by increases in apparent consumption in most regions.

Asia consumed around three fifths (59%) of the world's wood-based panels in 2018, around one fifth (21%) was consumed in Europe and 14% in North & Central America. Apparent consumption of wood-based panels worldwide increased by 5% between 2015 and 2018, largely resulting from increased demand in Europe.

Nearly one half (49%) of all paper and paperboard in 2018 was consumed in Asia, around one fifth (23%) in Europe and a further one fifth (21%) in North & Central America. At a global level, apparent consumption of paper and paperboard increased by 1% between 2015 and 2018.

Table 9.6 Apparent consumption of wood products by region, 1990-2018

Region	1990	2000	2010	2015	2018
Sawnwood (million m³)					
Europe					
UK	13	10	9	10	11
EU-28 ¹	83	89	82	78	87
Total Europe	158	121	110	106	115
Africa	10	10	17	19	17
Asia	112	78	116	170	197
North and Central America	119	143	95	119	128
Oceania	6	8	8	8	8
South America	20	27	26	20	19
World	426	387	372	443	486
Wood-based panels (million m³)					
Europe					
UK	5	6	6	6	7
EU-28 ¹	36	45	48	50	58
Total Europe	52	57	67	73	86
Africa	1	2	3	4	5
Asia	25	50	139	233	238
North and Central America	44	64	48	56	58
Oceania	2	2	3	3	3
South America	3	6	12	13	13
World	127	181	272	383	404
Paper & paperboard (million tonnes)					
Europe					
UK	9	12	11	9	9
EU-28 ¹	53	72	74	71	73
Total Europe	71	90	95	91	93

Forest Research: Statistics

Africa	4	5	7	8	8
Asia	62	103	178	198	200
North and Central America	88	110	91	86	87
Oceania	3	5	5	4	4
South America	8	12	16	16	17
World	236	325	391	404	408

Source: FAO.

Notes:

1. The EU covers 27 member states as at September 2020. This excludes the UK. Cyprus is included in EU total but is part of FAO's Asia region.

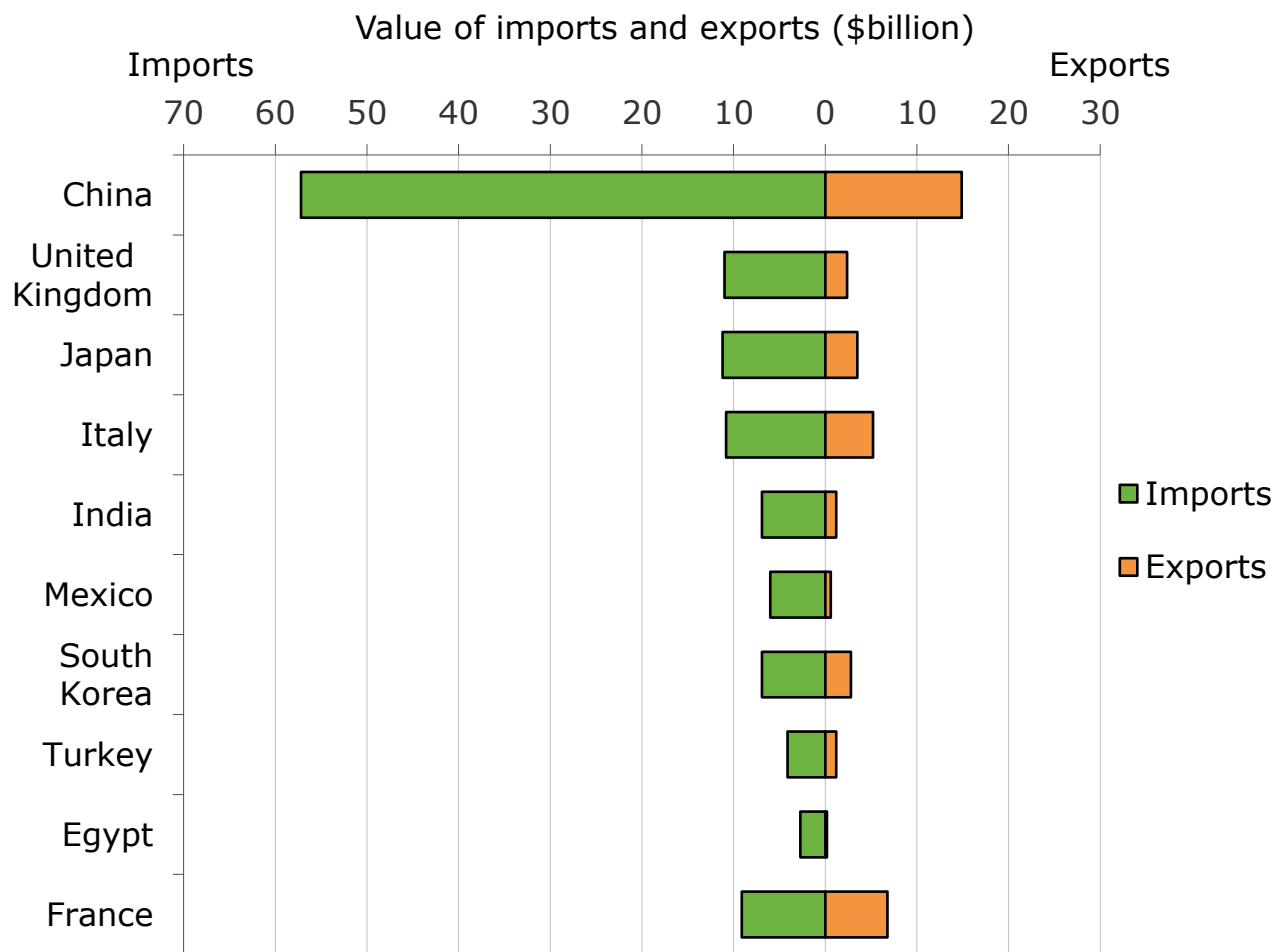
These figures are outside the scope of National Statistics. For further information see the Sources chapter.

9.8 World trade in forest products

Figures 9.6 and 9.7 show the largest net importers and exporters (by value) of forest products in 2018. This covers trade in roundwood, sawnwood, wood-based panels, wood pulp and paper and paperboard, but excludes trade in secondary processed wood (e.g. furniture made from wood). Values are expressed in US dollars (the units reported in the data published by FAO).

The UK was the second largest net importer (imports less exports) of forest products in 2018, with net imports of US \$8.6 billion (Figure 9.6). The largest net importer in 2018 was China (US \$42.3 billion) and Japan was the third largest net importer (US \$7.7 billion).

Figure 9.6 Largest net importers of forest products, 2018



Source: FAO

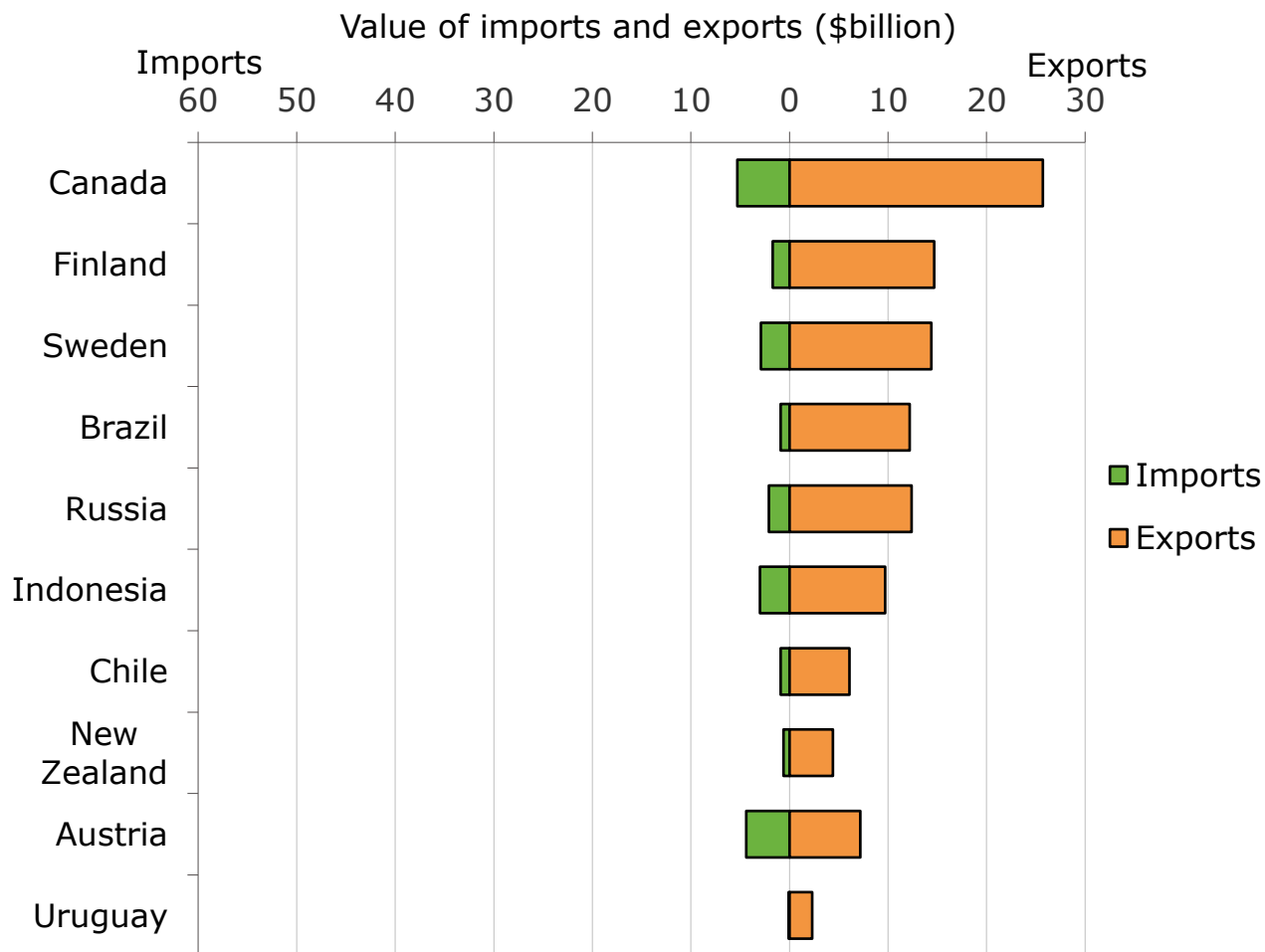
Notes:

1. Excludes trade in secondary wood products.

These figures are outside the scope of National Statistics. For further information see the Sources chapter.

The largest net exporters (exports less imports) of forest products in 2018 were Canada (with net exports valued at US \$20.5 billion), Finland (US \$13.0 billion) and Sweden (US \$11.5 billion) (Figure 9.7).

Figure 9.7 Largest net exporters of forest products, 2018



Source: FAO

Notes:

1. Excludes trade in secondary wood products.

These figures are outside the scope of National Statistics. For further information see the Sources chapter.

10 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").

Deadwood

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 27 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 and Sweden.

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 Research (FR)

The Forestry Commission agency responsible for forestry and tree related research (including statistics).

Forest Service (FS)

An executive agency of the Department of Agriculture, Environment and Rural Affairs (DAERA). Forest Service fulfils DAERA's legal obligations for forestry in Northern Ireland.

Forestry and Land Scotland (FLS)

The Scottish Government agency responsible for managing the national forests and lands in Scotland, created on 1 April 2019.

Forestry Commission (FC)

The government department responsible for forestry matters in England. The Forestry Commission's functions in Wales transferred to the Welsh Government and to Natural Resources Wales on 1 April 2013. The Forestry Commission's functions in Scotland transferred to Scottish Forestry and to Forestry and Land Scotland on 1 April 2019. The Forestry Commission is supported by two agencies; Forestry England and Forest Research.

Forestry England (FE)

The Forestry Commission agency responsible for managing the national forests in England. Prior to April 2019, Forestry England was known as Forest Enterprise England.

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.

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 Forestry (SF)

The Scottish Government agency responsible for forestry policy, support and regulations, created on 1 April 2019. Scottish Forestry also has responsibility for managing the UK Woodland Carbon Code on behalf of the Forestry Commission in England, the Welsh Government and the Northern Ireland Forest Service.

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/ Scottish Forestry/ 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.

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.

11.1 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 managed by Forestry England (FE), Forestry and Land Scotland (FLS), Natural Resources Wales (NRW), 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 relate to the Welsh Government Woodland Estate. There is approximately 900 hectares of woodland on National Nature Reserves and other land managed by Natural Resources Wales that is not included in the Natural Resources Wales figures.

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 Statistics 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 England, Forestry and Land Scotland and Natural Resources Wales administrative records of FE/FLS/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 (Northern Ireland) 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 2019 and at March 2020 are both based on the provisional NFI woodland area map at March 2019.

2. The map is overlaid with a map of Forestry England, Forestry and Land Scotland and Natural Resources Wales (Welsh Government Woodland Estate only) land, to enable a breakdown by ownership to be estimated. This also enables FE/FLS/NRW "other land" areas to be derived (Table 1.5). For woodland area estimates at March 2019, FE/FLS/NRW legal boundaries at March 2019 are used, and for estimates at March 2020, FE/FLS/NRW legal boundaries at March 2020 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 2019, broken down by ownership and conifer/broadleaf.

To obtain estimates at March 2020, two more steps need to be performed, which are described below.

4. Net ownership transfers of woodland between private sector and FE/FLS/NRW from March 2019 to March 2020, as inferred by the differences in FE/FLS/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 FE/FLS/NRW) before transfer.

5. The woodland area figures are then updated to March 2020 by adding areas of new planting in 2019-20, 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 2019 woodland map differs from the figures for woodland area provided in the NFI report on *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 include estimates of woodland area outside the NFI map derived from the other sources. Work is ongoing to calibrate the figures, and the NFI woodland map for 2019 incorporates amendments made to date as a result of the calibration (as well as additional areas of woodland creation since 2013). 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 draft woodland register.

The NI draft 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 draft 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.

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 FE/FLS/NRW/FS woodlands are certified, the total woodland area (as derived above, from the NFI map and FE/FLS/NRW 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.countrysidesurvey.org.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 Statistics" at www.forestryresearch.gov.uk/tools-and-resources/statistics/about-our-statistics/code-of-practice/quality-of-official-statistics/. Further quality information on our Official Statistics is also available from this location.

Revisions

Figures at March 2020 have been revised since their previous release in "Provisional Woodland Statistics: 2019 Edition" to incorporate late revisions to new planting figures for 2019-20. This has resulted in minor changes of up to 1 thousand hectares.

Information on revisions made since "Forestry Statistics 2019" are provided in "Provisional Woodland Statistics: 2020 Edition".

Information on significant revisions to published statistics is provided in the quality report on Woodland Statistics, 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/.

Our 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/data-downloads/, 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). Official statistics on UK greenhouse gas emissions are produced by the Department for Business, Energy and Industrial Strategy and available at www.gov.uk/government/collections/uk-greenhouse-gas-emissions-statistics.

Release schedule

Woodland area and certified woodland area data are released twice a year. Provisional figures are published in Provisional Woodland Statistics (previously Woodland Area, Planting and Publicly Funded Restocking) 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 2021 will be published on 17 June 2021 in "Provisional Woodland Statistics: 2021 Edition".

Final results for woodland area and certified woodland area at March 2021 will be published on 30 September 2021 in "Forestry Statistics 2021" and "Forestry Facts & Figures 2021".

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/.

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 England, Forestry and Land Scotland, Natural Resources Wales and Forest Service new planting and restocking comes from administrative systems. For new planting and restocking by Forestry and Land Scotland and by Natural Resources Wales, the figures obtained relate to net areas (i.e. excluding integral open space). These are converted to estimates of gross areas (i.e. including integral open space) for consistency with other planting and woodland area data, by using an assumption of 15% open space.

Information about other woodland has come principally from grant schemes, including Countryside Stewardship in England, Glastir in Wales, Forestry Grant Scheme in Scotland and legacy grant schemes.

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 and again with the introduction of the Forestry Grant Scheme in 2015. This will have led to a reduction in the proportion 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 (Higher Level Stewardship / 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 by the National Forest Company that are believed to be supported by grant aid or by the Woodland Trust (and have therefore already been included in the figures reported for these other sources) have been excluded.

Local estimates for private sector areas of planting and restocking which are not grant-aided were included for England, Wales and Scotland up to 2009-10, where possible. Estimates of non-grant-aided planting and restocking were relatively small (less than one thousand hectares annually), and it has been assumed that all of this area is broadleaves. A small estimate for broadleaved new planting without grant aid in Scotland in 2016-17 to 2019-20 was also included. No estimates have been included for restocking with 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 may be increasing - particularly for broadleaves in England. These systems are not satisfactorily represented by measuring restocking area within any given year, and so broadleaf regeneration may be under-reported in this release and other statistics.

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

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 2019-20 are final; provisional figures were previously released in "Provisional Woodland Statistics: 2020 Edition".

Figures have been revised from those provided in "Provisional Woodland Statistics: 2020 Edition", resulting in minor changes (of no more than 0.2 thousand hectares) to the estimated new planting in 2019-20. Information on revisions made since "Forestry Statistics 2019" are provided in "Provisional Woodland Statistics: 2020 Edition".

Information on significant revisions to published statistics is provided in the quality report on Woodland Statistics, 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/.

Our 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/data-downloads/, 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). Official statistics on UK greenhouse gas emissions are produced by the Department for Business, Energy and Industrial Strategy and available at www.gov.uk/government/collections/uk-greenhouse-gas-emissions-statistics.

Release schedule

New planting and restocking data are released twice a year. Provisional figures are published in Provisional Woodland Statistics in early June. Final figures are released in Forestry Statistics at the end of September.

Provisional figures for new planting and restocking in 2020-21 will be published on 17 June 2021 in "Provisional Woodland Statistics: 2021 Edition".

Final results for new planting and restocking in 2020-21 will be published on 30 September 2021 in "Forestry Statistics 2021" and "Forestry Facts & Figures 2021".

11.1.4 Sources: Felling

Felling

Introduction

Under the Forestry Act 1967 and the Forestry and Land Management Act (Scotland) 2018, 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 (or felling permissions under the Forestry and Land Management Act in Scotland) 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, Scottish Forestry, Natural Resources Wales and the Northern Ireland 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, Scottish Forestry, 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).

Quality

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

Revisions

Figures on felling licences in 2019-20 are released for the first time in this publication. 2019-20 figures for Statutory Plant Health Notices are not yet available.

Figures on Statutory Plant Health Notices in Scotland have been revised from those released in Forestry Statistics 2019 for all years, to reflect a change from reporting on the number of sites where a Statutory Plant Health Notice was issued to reporting on the number of Statutory Plant Health Notices issued. Most revisions are relatively small, as the number of sites where multiple notices are issued and the number of notices issued that cover multiple sites are often at around the same level. Larger revisions (down by 79 in 2012-13 and down by 207 in 2018-19) reflect a higher level of notices issued to cover multiple sites. The area associated with the revised numbers of Statutory Plant Health Notices in Scotland relates to Larch only and has not altered by more than 0.1 thousand hectares. UK figures have also been revised, to reflect the changes to the Scotland data. Other figures are unchanged.

Our 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

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 11 June 2020 in "Forestry Commission Key Performance Indicators 2020".

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 - <https://naturalresources.wales/permits-and-permissions/tree-felling-and-other-regulations/tree-felling-licences/?lang=en>;
- Scotland - <https://forestry.gov.scot/support-regulations/felling-permissions>.

Further information on tree pests and diseases is available at www.gov.uk/government/collections/tree-pests-and-diseases.

Release schedule

Figures on felling licences and Statutory Plant Health Notices in 2020-21 will be published on 30 September 2021 in "Forestry Statistics 2021".

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:

- Administrative records of removals from Forestry England (FE), Forestry and Land Scotland (FLS), Natural Resources Wales (NRW) and Northern Ireland Forest Service (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 FE/FLS/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 Confederation of Forest Industries, Confor (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 our 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 2019 and earlier years have been previously published. They are however subject to revisions from those published in "UK Wood Production and Trade: 2019 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/.

Our 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 Forest Research 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 (www.fao.org/faostat/en/#home). 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.

Release schedule

Provisional figures for 2020 will be released on 16 May 2021 in "UK Wood Production and Trade: 2020 provisional figures".

Final figures for 2020 will be released on 30 September 2021 in "Forestry Statistics 2021" and "Forestry Facts & Figures 2021".

11.2.1 Sources: Wood production

Sources

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

- Forestry England (FE), Forestry and Land Scotland (FLS), Natural Resources Wales (NRW) and Northern Ireland Forest Service (FS) administrative records - for all removals from FE/FLS/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.

Methodology

Figures for removals from FE/FLS/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 FE/FLS/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 FE/FLS/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 FE/FLS/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 2019 are final; provisional figures were previously released in "UK Wood Production and Trade: 2019 provisional figures". Figures for 2019 and earlier years have not been revised from those provided in "UK Wood Production and Trade: 2019 provisional figures".

Information on revisions made since "Forestry Statistics 2019" are provided in "UK Wood Production and Trade: 2019 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 FE/FLS/NRW/FS removals. Approximate country breakdowns are also estimated for hardwood removals.

Longer time series, presenting estimates of FE/FLS/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 2020 will be released on 16 May 2021 in "UK Wood Production and Trade: 2020 provisional figures".

Final figures for 2020 will be released on 30 September 2021 in "Forestry Statistics 2021" and "Forestry Facts & Figures 2021".

11.2.2 Sources: Private Sector Softwood Removals Survey

Introduction

The Private Sector Softwood Removals Survey is an annual survey conducted by Forest Research (on behalf of the Forestry Commission, Scottish Forestry, Natural Resources Wales and the Northern Ireland Forest Service) of a sample of harvesting companies in the UK.

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;
- (from the 2008 survey) the quantity sold to bioenergy (including wood pellet manufacture);
- (for the 2013 - 2017 surveys) the quantity of softwood roundwood harvested as required by plant health legislation and
- (from the 2018 survey) the quantity of removals by type of product.

Response rates

The questionnaire was issued to 40 harvesting companies for the collection of 2019 data, of which 26 responded, giving a response rate of 65%. These respondents are estimated to account for around 88% of all the softwood harvested by companies covered by the survey.

Private Sector Softwood Removals Survey Response Rates, 2010-2019

Year	Forms issued	Responses received	Response rate ¹	Weighted response rate ²
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%
2018	43	37	86%	90%
2019	40	26	65%	88%

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 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 remains 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 our 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 2019 are final; provisional figures were previously released in "UK Wood Production and Trade: 2019 provisional figures". Figures for 2019 and earlier years have not been revised from those in "UK Wood Production and Trade: 2019 provisional figures". Information on revisions made since "Forestry Statistics 2019" are provided in "UK Wood Production and Trade: 2019 provisional figures".

Release schedule

Provisional figures for 2020 will be released on 16 May 2021 in "UK Wood Production and Trade: 2020 provisional figures".

Final figures for 2020 will be released on 30 September 2021 in "Forestry Statistics 2021" and "Forestry Facts & Figures 2021".

11.2.3 Sources: Sawmill Survey

Introduction

The Sawmill Survey is an annual survey conducted by Forest Research (on behalf of the Forestry Commission, Scottish Forestry, Natural Resources Wales and the Northern Ireland 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 detailed survey has changed over the years, both in terms of coverage and periodicity. From 2016, the threshold for inclusion in the detailed sawmill survey has been raised to annual production of at least 25,000 m³ sawnwood. Information on changes prior to 2009 are available in previous editions of Forestry Statistics.

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 (currently around 125 mills).

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,
- (from the 2008 survey) total employment and
- (for the 2018 survey only) total wood inputs.

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 28 mills for the collection of 2019 data, of which 22 responded, giving a response rate of 79%. For the short questionnaire, 35 responses were received from the 123 forms issued, corresponding to a 28% response rate. This gives an overall response rate of 38%.

Overall, the 57 sawmills responding to the sawmill survey in 2019 are estimated to account for around 75% of total UK sawnwood production.

Sawmill Survey Response Rates (all questionnaires), 2010-2019

Year	Forms issued	Responses received	Response rate ¹	Weighted response rate ²
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%
2018	155	64	41%	79%
2019	151	57	38%	75%

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 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 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 our 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 2019 are final; provisional figures were previously released in "UK Wood Production and Trade: 2019 provisional figures". Figures for 2019 and earlier years have not been revised since "UK Wood Production and Trade: 2019 provisional figures".

Information on revisions made since "Forestry Statistics 2019" are provided in "UK Wood Production and Trade: 2019 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 2020 will be released on 16 May 2021 in "UK Wood Production and Trade: 2020 provisional figures".

Final figures for 2020 will be released on 30 September 2021 in "Forestry Statistics 2021" and "Forestry Facts & Figures 2021".

11.2.4 Sources: Pulp & paper

Introduction

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

- The Confederation of Forest Industries (Confor, www.confor.org.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.

From 2018, data was also requested on wood inputs for energy use.

Methodology

The data on inputs to integrated pulp and paper mills are collected by Confor 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 2019 are final; provisional figures were previously released in "UK Wood Production and Trade: 2019 provisional figures".

Figures for 2019 and earlier years have not been revised from those in "UK Wood Production and Trade: 2019 provisional figures". Information on revisions made since "Forestry Statistics 2019" are provided in "UK Wood Production and Trade: 2019 provisional figures".

Release schedule

Provisional figures for 2020 will be released on 16 May 2021 in "UK Wood Production and Trade: 2020 provisional figures".

Final figures for 2020 will be released on 30 September 2021 in "Forestry Statistics 2021" and "Forestry Facts & Figures 2021".

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.

From 2018, data was also requested on wood inputs for energy use.

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 2019 are final; provisional figures were previously released in "UK Wood Production and Trade: 2019 provisional figures". Figures for 2019 and earlier years have not been revised from those in "UK Wood Production and Trade: 2019 provisional figures".

Release schedule

Provisional figures for 2020 will be released on 16 May 2021 in "UK Wood Production and Trade: 2020 provisional figures".

Final figures for 2020 will be released on 30 September 2021 in "Forestry Statistics 2021" and "Forestry Facts & Figures 2021".

11.2.6 Sources: Survey of Round Fencing Manufacturers

Introduction

The Survey of Round Fencing Manufacturers is an annual survey conducted by Forest Research (on behalf of the Forestry Commission, Scottish Forestry, Natural Resources Wales and the Northern Ireland Forest Service) of round fencing manufacturers (or mills) in the UK that are believed to consume UK-grown roundwood.

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 50 mills, to collect information on the consumption of UK-grown and 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. A question on total wood inputs was added for the 2018 survey but has since been dropped.

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 50 mills for the collection of 2019 data, of which 20 responded, giving a response rate of 40%. These respondents accounted for an estimated 45% of roundwood purchased by softwood round fencing manufacturers.

Survey of Round Fencing Manufacturers Response Rates, 2010-2019

Year	Forms issued	Responses received	Response rate ¹	Weighed response rate ²
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%
2018	53	22	42%	37%
2019	50	20	40%	45%

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 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. In 2019, this approach was modified to include a 3% uplift, to reflect the increasing activity in the sector.

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 our 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 2019 are final; provisional figures were previously released in "UK Wood Production and Trade: 2019 provisional figures". Since the publication of provisional figures for 2019, the estimate for UK softwood consumption by round fencing mills has been revised upwards by 5 thousand green tonnes to reflect an improved estimate for non-respondents. Data for earlier years have not been revised. Information on revisions made since "Forestry Statistics 2019" are provided in "UK Wood Production and Trade: 2019 provisional figures".

Release schedule

Provisional figures for 2020 will be released on 16 May 2021 in "UK Wood Production and Trade: 2020 provisional figures".

Final figures for 2020 will be released on 30 September 2021 in "Forestry Statistics 2021" and "Forestry Facts & Figures 2021".

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.

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.

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 2017 to reflect a perceived increase in woodfuel, but this should not be interpreted as an increase in a single year. A further increase in 2018 reflects a rise that is believed to have occurred during the year.

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 2019 are final; provisional figures were previously released in "UK Wood Production and Trade: 2019 provisional figures". Figures for 2019 and earlier years have not been revised from those in "UK Wood Production and Trade: 2019 provisional figures". Information on revisions made since "Forestry Statistics 2019" are provided in "UK Wood Production and Trade: 2019 provisional figures".

Release schedule

Provisional figures for 2020 will be released on 16 May 2021 in "UK Wood Production and Trade: 2020 provisional figures".

Final figures for 2020 will be released on 30 September 2021 in "Forestry Statistics 2021" and "Forestry Facts & Figures 2021".

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 England, Forestry and Land Scotland, 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 2011 to 2017 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.

More recently, a larger discrepancy of 0.7 million green tonnes in 2018 has been offset by a reversal, with the estimate for softwood deliveries now 0.4 million green tonnes higher than removals in 2019. Taken together, the total discrepancy for 2018 and 2019 equates to total removals around 0.3 million green tonnes higher than deliveries, suggesting that at least some of the recent changes in the difference between removals and deliveries may be related to changes in the level of stocks.

Comparison of removals and deliveries of UK softwood roundwood, 2010-2019

thousand green tonnes

Year	FE/FLS/ NRW/FS removals	Private sector removals	Total removals	Deliveries	Balance ¹
2010	4,625	4,633	9,258	9,265	-7
2011	4,870	5,186	10,056	9,718	338
2012	4,836	5,259	10,095	9,826	269
2013	5,084	5,852	10,936	10,543	392
2014	4,900	6,627	11,527	10,899	628
2015	4,691	5,968	10,659	10,261	397
2016	5,011	5,734	10,745	10,415	331
2017	4,761	6,075	10,938	10,456	381
2018	4,522	6,827	11,349	10,611	738
2019	3,937	5,864	9,801	10,210	-409

Source: Forestry England, Forestry and Land Scotland, 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.

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 FE/FLS/NRW/FS woodlands. The table below provides figures for the last 10 years.

Estimation of hardwood removals from private sector woodlands, 2010-2019

thousand green tonnes

Year	Deliveries	FE/FLS/NRW/FS removals	Private sector removals
2010	534	70	464
2011	540	75	465
2012	533	55	478
2013	531	78	453
2014	536	71	465
2015	565	73	492
2016	596	68	528
2017	737	83	652
2018	835	86	746
2019	869	68	801

Source: Forestry England, Forestry and Land Scotland, 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.

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 2019 survey of UK pellet and briquette production was sent to a total of 14 companies that were believed to manufacture pellets or briquettes. A total of 5 responded, giving a response rate of 36%. The respondents to the survey are

estimated to account for around 89% of the total production of pellets and briquettes in the UK in 2019.

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, 2010-2019

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%	45%
2016	18	5	28%	68%
2017	17	4	24%	56%
2018	14	5	36%	89%
2019	14	5	36%	89%

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 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 our 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 2019 are final; provisional figures were previously released in "UK Wood Production and Trade: 2019 provisional figures". Figures for 2019 and earlier years have not been revised from those provided in "UK Wood Production and Trade: 2019 provisional figures".

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 Scottish Forestry and available at <https://forestry.gov.scot/forests-environment/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

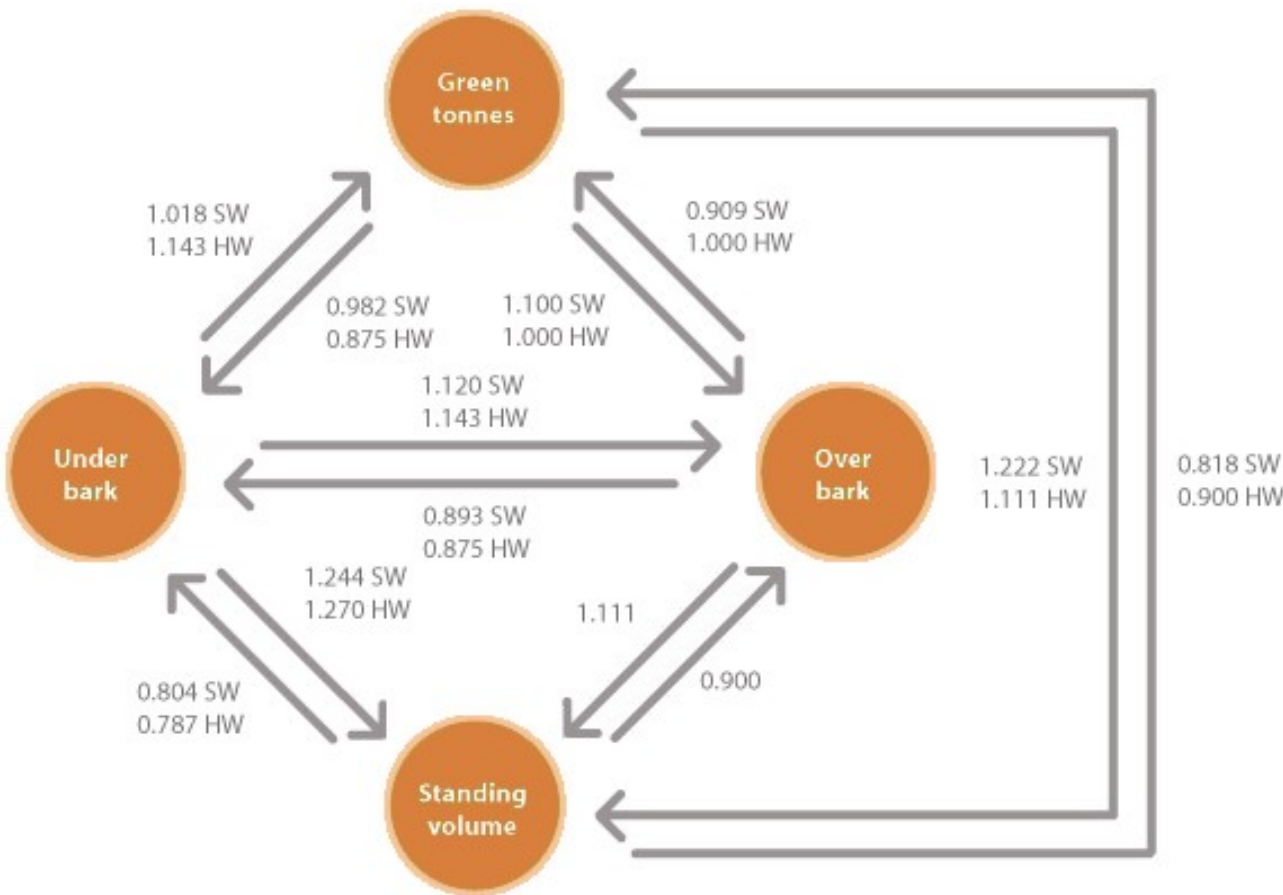
Provisional figures for 2020 will be released on 16 May 2021 in "UK Wood Production and Trade: 2020 provisional figures".

Final figures for 2020 will be released on 30 September 2021 in "Forestry Statistics 2021" and "Forestry Facts & Figures 2021".

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, softwood 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.

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 our 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 2019 are final; provisional figures were previously released in "UK Wood Production and Trade: 2019 provisional figures". Since the release of 2019 provisional figures, the following revisions have been made:

- Import quantities – an upward revision to pulp in 2018 (1%).
- Export quantities – revisions to woodbased panels in 2019 (down 2%) and to pulp in 2018 (down 3%) and 2019 (up 1%).
- Import values – revisions to woodbased panels in 2019 (up 2%) and to sawnwood in 2019 (down less than 0.5%).

- Export values – a downwards revision to sawnwood in 2019 (2%) and an upwards revision to woodbased panels in 2019 (1%).

Other revisions to 2018 and 2019 data resulted in changes of no more than 0.5% magnitude.

Information on revisions made since "Forestry Statistics 2019" are provided in "UK Wood Production and Trade: 2019 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/.

Our 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 Forest Research 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 www.fao.org/faostat/en/#home).

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 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 2020 will be released on 16 May 2021 in "UK Wood Production and Trade: 2020 provisional figures".

Final trade figures for 2020 will be released on 30 September 2021 in "Forestry Statistics 2021" and "Forestry Facts & Figures 2021".

11.4 Sources: Carbon

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

Forest carbon stock

Table 4.1a is adapted from Table 2d in the final UK report submitted in January 2019 to FAO for the Global Forest Resources Assessment (FRA) 2020 (www.fao.org/forest-resources-assessment/en/). Table 4.1b has been compiled using the same approach produce estimates by country within the UK.

Units: These tables are shown in million tonnes carbon dioxide equivalent (MtCO_{2e}) rather than million tonnes carbon (MtC). To convert from CO_{2e} to C multiply by 12/44.

Timescales: Carbon stock is estimated for 1990, 2000, 2010, 2015 and 2020.

Living biomass: Carbon in living biomass is based on data from "NFI report: Carbon in live woodland trees in Britain" (Forestry Commission, May 2014), uprated 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). Updated estimates of growing stock over time (making use of data from the National Forest Inventory) have been used.

Deadwood: Estimates of deadwood volume per hectare are taken from National Forest Inventory estimates. These are rated up by woodland area estimates for FRA 2020, 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 2020 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 2020 to provide a consistent time series. This soil estimate does not take account of soil carbon accumulation. 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.

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 annually.

Further information on the Woodland Carbon Code is available at: www.woodlandcarboncode.org.uk/.

Public opinion on climate change

Public Opinion of Forestry Surveys have been run every 2 years by Forest Research (on behalf of the Forestry Commission, Scottish Forestry, Welsh

Government/ Natural Resources Wales and Northern Ireland Forest Service). 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 4.3). Further information on the surveys is available in the Sources: Public Opinion of Forestry page.

References

Bradley, R.I., Milne, R., Bell, J., Lilly, A., Jordan, C., Higgins, A. (2005) "A soil carbon and landuse database for the UK", *Soil Use and Management* 21 (363-369), DOI: 10.1079/SUM2005351

(<https://onlinelibrary.wiley.com/doi/abs/10.1079/SUM2005351>).

Broadmeadow, M., Matthews, R. (2003) "Forests, Carbon and Climate Change: the UK Contribution", Forestry Commission, Edinburgh

(www.forestresearch.gov.uk/research/archive-forests-carbon-and-climate-change-the-uk-contribution-2/).

Jenkins, T.A.R., Mackie, E.D., Matthews, R.W., Miller, G., Randle, T.J., White, M.E., FC (2011) "Woodland Carbon Code: Carbon Assessment Protocol", Forest Research

(www.woodlandcarboncode.org.uk/images/PDFs/WCC_CarbonAssessmentProtocol_V2.0_March2018.pdf).

Levy, P.E., Hale, S.E., Nicoll, B.C. (2004) "Biomass expansion factors and root: shoot ratios for coniferous tree species in Great Britain", *Forestry*, Vol 77, No 5, DOI: 10.1093/forestry/77.5.421

(<https://academic.oup.com/forestry/article/77/5/421/664592>).

Morison, J. et al (2012) "Understanding the Carbon and GHG balance of UK Forests", Forest Research

(www.forestresearch.gov.uk/research/understanding-the-carbon-and-greenhouse-gas-balance-of-forests-in-britain/).

National Forest Inventory (www.forestresearch.gov.uk/tools-and-resources/national-forest-inventory/)

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

Most of the statistics in this chapter have been previously released. Data have not been revised from previous releases.

Our 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

Data on historical UK greenhouse gas emissions (including carbon sequestration by woodlands) is available in statistics published by the Department for Business, Energy and Industrial Strategy at

<https://www.gov.uk/government/collections/uk-greenhouse-gas-emissions-statistics>.

Release schedule

Woodland Carbon Code Statistics for the year ending March 2021 will be released in "Provisional Woodland Statistics: 2021 Edition" on 17 June 2021.

"Forestry Statistics 2021" and "Forestry Facts & Figures 2021" will be released on 30 September 2021.

The next Public Opinion of Forestry Survey is expected to run in early 2021, with results available in summer 2021.

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;
- woodland types and habitats.

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, 1970-2018 statistical release (Defra, November 2019), 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.

Public opinion on tree health

Public Opinion of Forestry Surveys have been run every 2 years by Forest Research (on behalf of the Forestry Commission, Scottish Forestry, Welsh Government/ Natural Resources Wales and Northern Ireland Forest Service). 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 types and habitats

Data on woodland types and habitats comes from National Forest Inventory (NFI) report on Woodland Ecological Condition Statistics, released in February 2020. The accompanying report on NFI Woodland Ecological Condition Scoring Methodology provides more detailed information on definitions and methodology.

References

Department for Environment, Food and Rural Affairs (2019) "Wild bird populations in the UK, 1970-2018", National Statistics Release (<https://www.gov.uk/government/statistics/wild-bird-populations-in-the-uk>).

NFI woodland ecological condition in Great Britain: Statistics (<https://www.forestresearch.gov.uk/tools-and-resources/national-forest-inventory/what-our-woodlands-and-tree-cover-outside-woodlands-are-like-today-8211-nfi-inventory-reports-and-woodland-map-reports/nfi-woodland-ecological-condition/>)

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.

Our 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).

The next Public Opinion of Forestry survey is expected to run in early 2021, with results available in summer 2021.

"Forestry Statistics 2021" and "Forestry Facts & Figures 2021" will be released on 30 September 2021.

11.6 Sources: Public Opinion of Forestry

Introduction

Forest Research (on behalf of the Forestry Commission, Scottish Forestry, Welsh Government/ Natural Resources Wales and Northern Ireland Forest Service). has conducted similar surveys of public attitudes to forestry and forestry-related issues every two years since 1995. Three separate surveys were undertaken in 2019; in Northern Ireland, in Wales and across the UK as a whole. A survey for Scotland was most recently carried out in 2017.

Some questions were asked in all of the surveys conducted in 2017/2019 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 2019 (and 2017) achieved representative samples of:

- 2,174 adults across the UK;
- 1,013 adults across Scotland (in 2017);
- 1,001 adults across Wales;
- 1,000 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 2019 of 2,174, 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.

Our 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

Latest reports for UK and England (using a subset of the UK data set) and for Wales were published on 27 June 2019, along with the full sets of data tables.

The latest report for Northern Ireland was published on 28 March 2019, along with the full set of data tables.

The latest report for Scotland was published on 13 July 2017, 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 2021, with results available in summer 2021.

11.7 Sources: Social

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 National Survey for Wales, the Monitor of Engagement with the Natural Environment (England) and the Public Opinion of Forestry surveys. (Tables 6.1 to 6.5).
- 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. (Table 6.6).

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.

- Scottish Recreation Survey (to 2012)
- Welsh Outdoor Recreation Survey (2011, 2014)
- Monitor of Engagement with the Natural Environment (England 2009/10 onwards)
- Scotland's People and Nature Survey (2013 and 2017/18)

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.

Scotland's People and Nature Survey has replaced the Scottish Recreation Survey. Further information on both surveys are available at www.nature.scot/.

The National Survey for Wales has replaced the Welsh Outdoor Recreation Survey and provides statistics on visitor characteristics (Table 6.3). Further information on the National Survey is available at: <https://gov.wales/national-survey-wales>.

Public Opinion of Forestry Surveys have been run, usually every 2 years, by Forest Research on behalf of the Forestry Commission, Scottish Forestry, Welsh Government/ Natural Resources Wales and the Northern Ireland Forest Service. The surveys cover public attitudes to forestry and forestry-related issues, including visits to woodland (Tables 6.4 to 6.5 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 and Land Scotland sites in Scotland from 2004 to 2007 and in 2012-13, 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. More recent estimates of the number of visitors to the National Forest Estate in Scotland has been produced by Forestry and Land 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 Forestry England Natural Capital Accounts, available at www.forestryengland.uk/article/natural-capital-accounts.

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>.

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.

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.

Technical reports, providing further information on household surveys run or commissioned by other organisations, are available from relevant websites (see above).

Revisions

Most of the statistics in the Social 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 2019.

Our 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 social 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 2021, with results available in summer 2021.

"Forestry Statistics 2021" and "Forestry Facts & Figures 2021" will be released on 30 September 2021.

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), (Office for National Statistics (www.ons.gov.uk)), an annual survey of UK businesses;
- Industry surveys (Sawmill Survey, Survey of Round Fencing Manufacturers) and industry associations (Confor (www.confor.org.uk/), Wood Panel Industries Federation (www.wpif.org.uk)) - for employment in primary wood processing; and
- Confederation of Paper Industries (<https://www.paper.org.uk/>)

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 (Confor, 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, 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 7.2a, Table 7.2b 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 Forest Research's timber industry surveys and enquiries;
- businesses involved in secondary wood processing are excluded from Forest Research'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 7.2a: reductions to employment in sawmills in 2015 to 2018 by up to 2% and in fencing mills by up to 5%.
- Table 7.4: a reduction in the number of sawmills, by 1 in 2016, 2017 and by 2 in 2018.

Our 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 2021" and "Forestry Facts & Figures 2021" will be released on 30 September 2021.

11.9 Sources: Finance & prices

Introduction

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

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

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 Forestry England, Forestry and Land Scotland, 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 Forestry England/ Forestry and Land Scotland/ Natural Resources Wales. Around 60% of Forestry England/ Forestry and Land Scotland/ 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 Forestry England/ Forestry and Land Scotland/ Natural Resources Wales. The data used to compile the index covers volumes and values. Direct production by Forestry England/ Forestry and Land Scotland/ 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. Forestry England's and Forestry and Land Scotland'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). 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.

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 Forestry England/ Forestry and Land Scotland/ Natural Resources Wales. It covers all conifer standing sales (open market and negotiated) by Forestry England/ Forestry and Land Scotland/ 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 Forest Research 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.

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 section on Employment and businesses within the Sources chapter.

Government expenditure

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

More detailed financial data are published annually in each organisation's Annual Report & Accounts.

Data on grant expenditure are obtained from administrative records for woodland grant schemes across GB.

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 Forestry England, Forestry and Land Scotland, 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 Forestry England/ Forestry and Land Scotland/ 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.forestresearch.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 2020". For details of revisions made since Forestry Statistics 2019 see the First Release, available at

www.forestresearch.gov.uk/tools-and-resources/statistics/statistics-by-topic/timber-statistics/timber-price-indices/.

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 2017 have been revised from those shown in "Forestry Statistics 2019" 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 financial accounts of the Forestry Commission, Forestry England, Scottish Forestry or Forestry and Land Scotland.

Our 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 underlying data used to produce it, 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 2020" will be released on 19 November 2020;

"Timber Price Indices: Data to March 2021" will be released on 16 May 2021.

"Forestry Statistics 2021" and "Forestry Facts & Figures 2021" will be released on 30 September 2021.

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) 2020 (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 2020, 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://www.fao.org/faostat/en/#home>). Data on apparent consumption is derived as production plus imports less exports.

Data for the European Union (EU) presented in this edition of Forestry Statistics relate to the countries that were EU members at September 2020 so, unlike in previous editions, the UK is now excluded from the EU figures for all years.

Quality

The UK data on forest area and carbon stocks are as submitted by the Forestry Commission to FAO in early 2019. 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 2020 Forest Resources Assessment is available at www.fao.org/forest-resources-assessment/en/.

The UK data on production, imports and exports are as submitted by the Forest Research to the UN Economic Commission for Europe in May 2020. 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.forestryresearch.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.

Revisions to historical data have been made following the release of the Global Forest Resources Assessment 2020. This has resulted in:

- Increases in forest area reported for 1990, 2000, 2010 and 2015 of up to 3% globally (mainly in Africa, Asia and South America); and
- Increases in the carbon stock in forests of up to 3% globally (for 1990, 2000 and 2010) and 18% for 2015.

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 2019" (Tables 9.4 to 9.6). At a global level, such revisions have been relatively minor (no more than 1% difference).

Our 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 4-5 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 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 2019 will be released on 30 September 2021 in "Forestry Statistics 2021" and "Forestry Facts & Figures 2021".