Forestry Commission

Forestry Statistics 2019

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 2019", 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/.

Organisational change

From 1 April 2019, the Forestry Commission's functions in Scotland transferred to Scottish Forestry and to Forestry and Land Scotland. At the same time, "Forest Enterprise England" was renamed "Forestry England" and remains an agency of the Forestry Commission.

The Forestry Commission's functions in Wales transferred to the Welsh Government and to Natural Resources Wales on 1 April 2013.

We have used current organisation names throughout this publication, rather than the names of the organisations that existed at the time to which the data refer.

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/.

Review of Forestry Statistics

We are currently reviewing Forestry Statistics, to ensure that it meets the needs of users. Please tell us your views by completing the online survey at www.smartsurvey.co.uk/s/NWXKV/ by 31 December 2019.

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 felling, public opinion on tree health and woodland fires.
- 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.

Chapter 1: Woodland Area and Planting

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 2019 and on new planting and restocking for the period 2018-19 were previously published in "Provisional Woodland Statistics: 2019 edition", released on 13 June 2019, and have not been revised. Some figures for Statutory Plant Health Notices in previous years 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 2019 is estimated to be 3.19 million hectares. This represents 13% of the total land area in the UK, 10% in England, 15% in Wales, 19% in Scotland and 8% 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 2019 is 1.40 million hectares, including all Forestry England/Forestry and Land Scotland[1]/Natural Resources Wales/Forest Service woodland. Overall, 44% of the UK woodland area is certified.
- Thirteen thousand hectares of new woodland were created in the UK in 2018-19, with conifers accounting for 60% of this area.

A total of 842 sites were served with a Statutory Plant Health Notice in 2018-19, requiring a total of 3.8 thousand hectares of woodland to be felled. (This excludes areas felled within the Phytophthora ramorum management zone in south west Scotland, where a Statutory Plant Health Notice is not required).

[1] From 1 April 2019, the Forestry Commission's responsibilities for management of forests transferred to Forestry England and to Forestry and Land Scotland.

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

1.1.1 Area of Woodland: 2019

The area of woodland in the UK at 31 March 2019 is estimated to be 3.19 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 2019

thousand hectares

Forest type and ownership[1,2]	England	Wales	Scotland	NI	UK
Conifers					
FE/FLS/NRW/FS	151	98	428	56	732
Private sector	189	54	645	11	899
Total	**340**	**152**	**1 072**	**67**	**1 631**
Broadleaves					
FE/FLS/NRW/FS	64	19	41	7	131
Private sector	904	138	343	40	1 426
Total	**968**	**158**	**385**	**46**	**1 557**
Total					
FE/FLS/NRW/FS	215	117	469	62	863
Private sector	1 093	192	988	51	2 325
Total	**1 308**	**309**	**1 457**	**113**	**3 187**

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 woodland formerly owned/managed by FC Wales.
2. Private sector: all other woodland. Includes woodland previously owned/managed by the Countryside Council for Wales and the Environment Agency in Wales, 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 3.19 million hectares of woodland in the UK in 2019 represents 13% of the total land area. This comprises 10% in England, 15% in Wales, 19% in Scotland and 8% in Northern Ireland (Table 1.2).

Table 1.2 Woodland area in the United Kingdom

percentage[1]

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
2019[5,6]	10.0	14.9	18.7	8.2	13.1

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

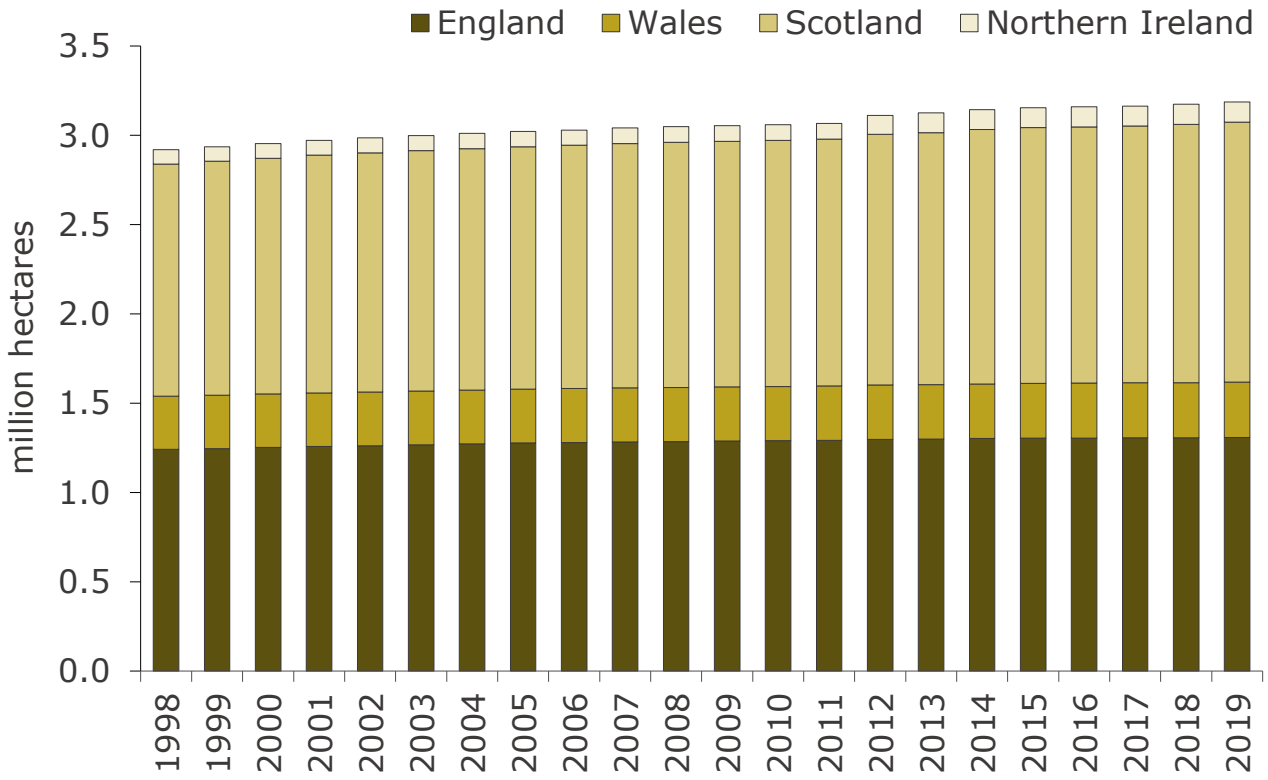
Notes:

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 270 thousand hectares since 1998, an increase of 9% over the period.

Figure 1.1 Area of woodland, 1998-2019



Source: Forestry Commission, Forestry England, Scottish Forestry, Forestry and Land Scotland, 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 2019 (Table 1.3). This proportion ranged from 16% of the woodland area in England to 55% in Northern Ireland.

Table 1.3 Area of woodland in the UK by ownership, 2015-2019

thousand hectares

Ownership	England	Wales	Scotland	NI	UK
FE/FLS/NRW/FS woodland[1]					
2015	215	117	478	62	871
2016	215	117	470	62	864
2017	214	117	469	62	863
2018	215	117	470	62	864
2019	215	117	469	62	863
Private sector woodland[2]					
2015	1 091	189	954	50	2 283
2016	1 091	190	965	50	2 295
2017	1 092	191	968	50	2 301
2018	1 092	192	976	50	2 310
2019	1 093	192	988	51	2 325
Total woodland					
2015	1 305	306	1 432	112	3 155
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	3 174
2019	1 308	309	1 457	113	3 187

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 woodland formerly owned/managed by FC Wales.
2. Private sector: all other woodland. Includes woodland previously owned/managed by the Countryside Council for Wales and the Environment Agency in Wales, 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.

1.40 million hectares of woodland in the UK were certified in March 2019 (Table 1.4). This represented 44% of the total UK woodland area, 25% in England, 47% in Wales, 59% in Scotland and 58% in Northern Ireland.

Table 1.4 Woodland area certified, March 2019

Ownership	England	Wales	Scotland	NI	UK
FE/FLS/NRW/FS woodland[1]	215	117	469	62	863
Private sector woodland[2]	110	29	395	3	538
Total woodland area certified	**325**	**146**	**864**	**66**	**1 400**

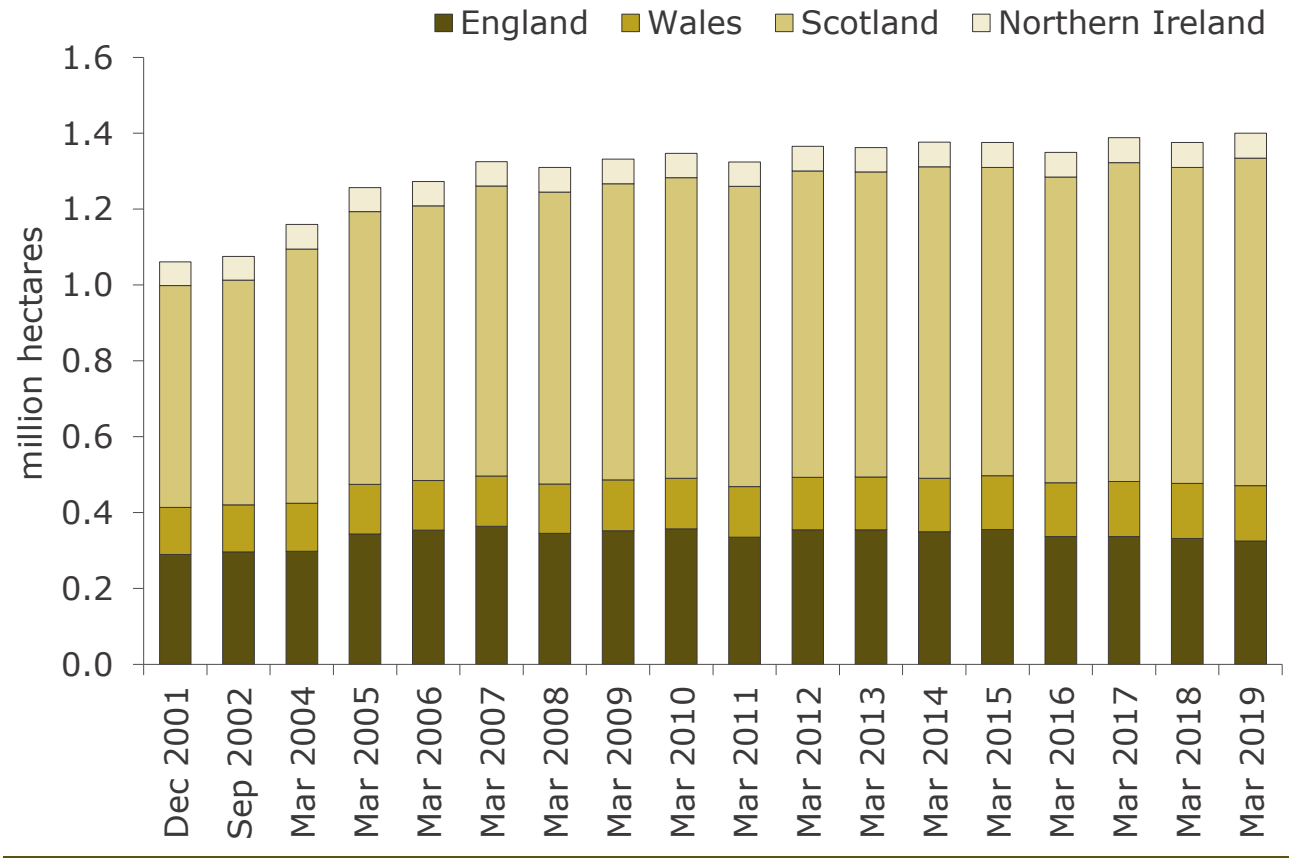
Source: Forest Stewardship Council, Forestry Commission, Forestry England, Scottish Forestry, Forestry and Land Scotland, Natural Resources Wales, Forest Service, National Forest Inventory.
Notes:

1. FE: Forestry England, FLS: Forestry and Land Scotland, NRW: Natural Resources Wales, FS: Forest Service (Northern Ireland). NRW estimates only relate to woodland formerly owned/managed by FC Wales.
2. Private sector: all other woodland. Includes woodland previously owned/managed by the Countryside Council for Wales and the Environment Agency in Wales, other publicly owned woodland (e.g. owned by local authorities) and privately owned woodland.
3. All certified woodland in 2019 is certified under the Forest Stewardship Council (FSC) scheme. Some of these woodlands are also certified under the Programme for the Endorsement of Forest Certification (PEFC) scheme.
4. The estimates are based on UK data published by FSC, 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 FE/FLS/NRW/FS woodland is certified. The FE/FLS/NRW/FS areas are the latest areas, as shown in Table 1.1, rather than the areas shown on the 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. The area of certified woodland has increased by 2% between March 2018 and March 2019 and is 32% higher than at December 2001.

Figure 1.2 Area of certified woodland, 2001-2019



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. Some of these woodlands are also certified under the Programme for the Endorsement of Forest Certification (PEFC) scheme.
2. The estimates are based on UK data published by FSC, 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 areas previously owned or managed by Forestry Commission Wales. They exclude any areas previously owned or managed by other parts of Natural Resources Wales, such as the former Environment Agency Wales and the former Countryside Council for Wales.

Woodland accounted for 79% of all Forestry England/ Forestry and Land Scotland/ Natural Resources Wales/ Forest Service land in the UK at 31 March 2019 (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 FS[1], 2015-2019

thousand hectares

Year	England	Wales	Scotland	Northern Ireland	UK
Woodland					
2015	215	117	478	62	871
2016	215	117	470	62	864
2017	214	117	469	62	863
2018	215	117	470	62	864
2019	215	117	469	62	863
Other land[2]					
2015	38	7	171	13	229
2016	38	7	170	13	228
2017	39	7	169	13	227
2018	39	6	169	13	227
2019	38	6	165	13	223
Total land area					
2015	253	124	649	75	1 100
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

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 woodland formerly owned/managed by FC Wales.
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.

Sixty-one percent 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/NRW[1]				
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 sector[2]				
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 woodland formerly owned/managed by FC Wales.

2. Private sector: all other woodland. Includes woodland previously owned/managed by the Countryside Council for Wales and the Environment Agency in Wales, 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/NRW[1]				
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 sector[2]				
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 woodland formerly owned/managed by FC Wales.

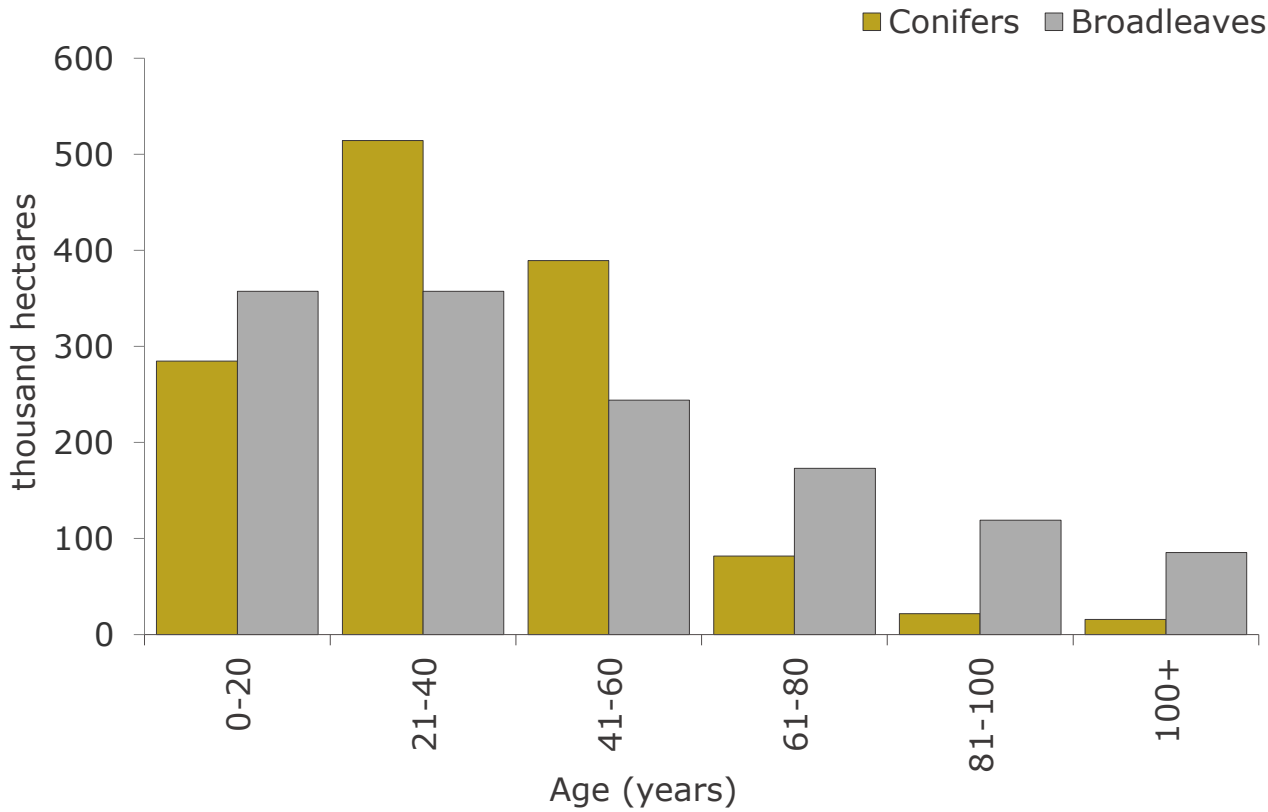
2. Private sector: all other woodland. Includes woodland previously owned/managed by the Countryside Council for Wales and the Environment Agency in Wales, other publicly owned woodland (e.g. owned by local authorities) and privately owned woodland.
3. Stocked area only: excludes felled areas and (for 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/NRW[1]				
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 sector[2]				
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 woodland formerly owned/managed by FC Wales.
2. Private sector: all other woodland. Includes woodland previously owned/managed by the Countryside Council for Wales and the Environment Agency in Wales, 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/NRW[1]				
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 sector[2]				
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
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:

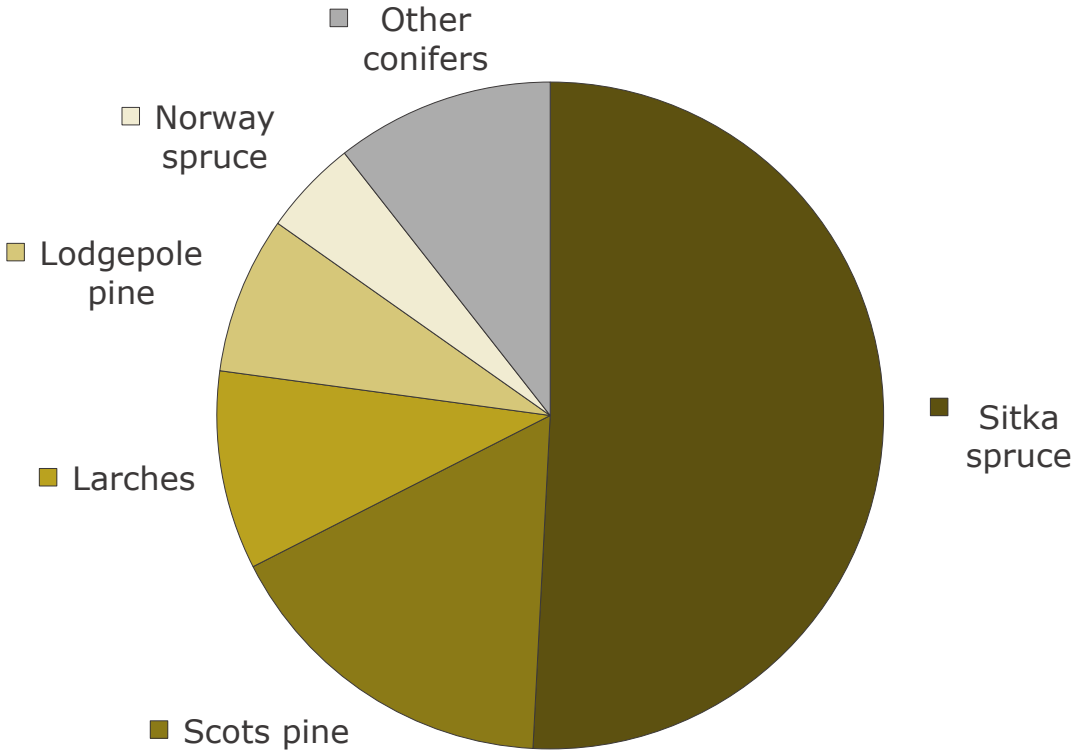
1. FE: Forestry England, FLS: Forestry and Land Scotland, NRW: Natural Resources Wales. NRW estimates only relate to woodland formerly owned/managed by FC Wales.
2. Private sector: all other woodland. Includes woodland previously owned/managed by the Countryside Council for Wales and the Environment Agency in Wales, 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.

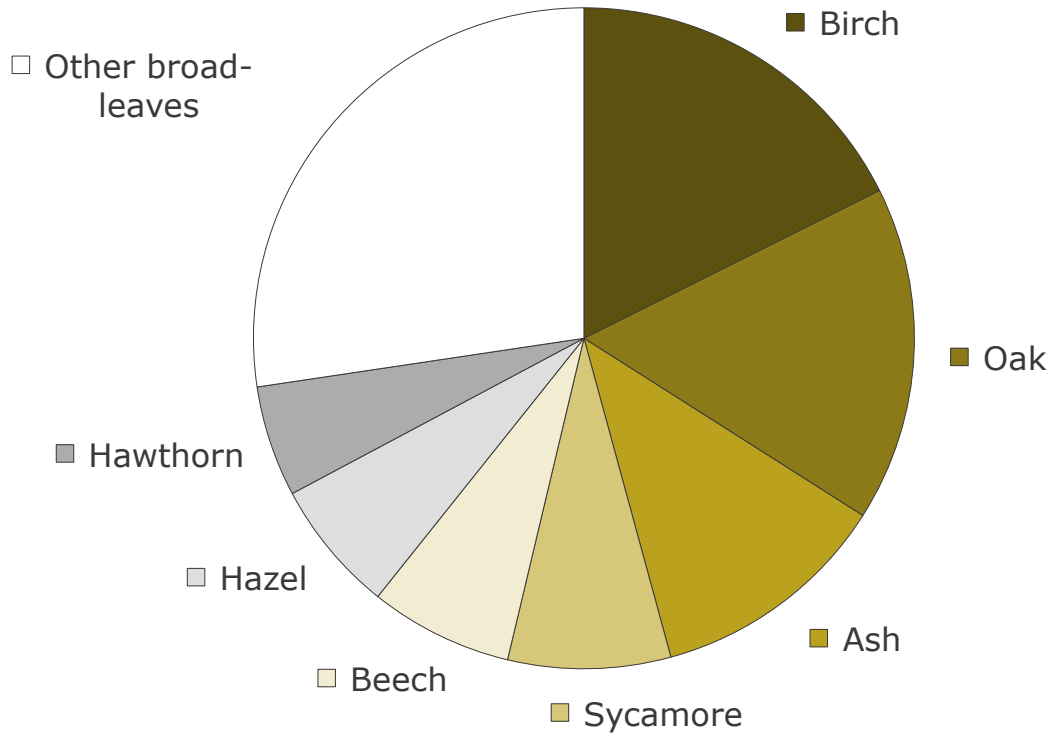
Figure 1.4a Principal tree species in GB by stocked area: Conifers



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 m^3 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 m^3 overbark standing

Principal species	England	Wales	Scotland	GB
FE/FLS/NRW[1]				
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 sector[2]				
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**

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 woodland formerly owned/managed by FC Wales.
2. Private sector: all other woodland. Includes woodland previously owned/managed by the Countryside Council for Wales and the Environment Agency in Wales, 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 m^3 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 m^3 overbark standing

Principal species	England	Wales	Scotland	GB
FE/FLS/NRW[1]				
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 sector[2]				
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

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 woodland formerly owned/managed by FC Wales.
2. Private sector: all other woodland. Includes woodland previously owned/managed by the Countryside Council for Wales and the Environment Agency in Wales, 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 0.7 million hectares in 2009 to 1.0 million hectares in 2018 (Table 1.12). Slightly over one half (52%) of all farm woodland was in Scotland in 2018, with a further 37% in England, 10% in Wales and the remaining 2% in Northern Ireland.

Table 1.12 Area of farm woodland, 2009-2018

thousand hectares

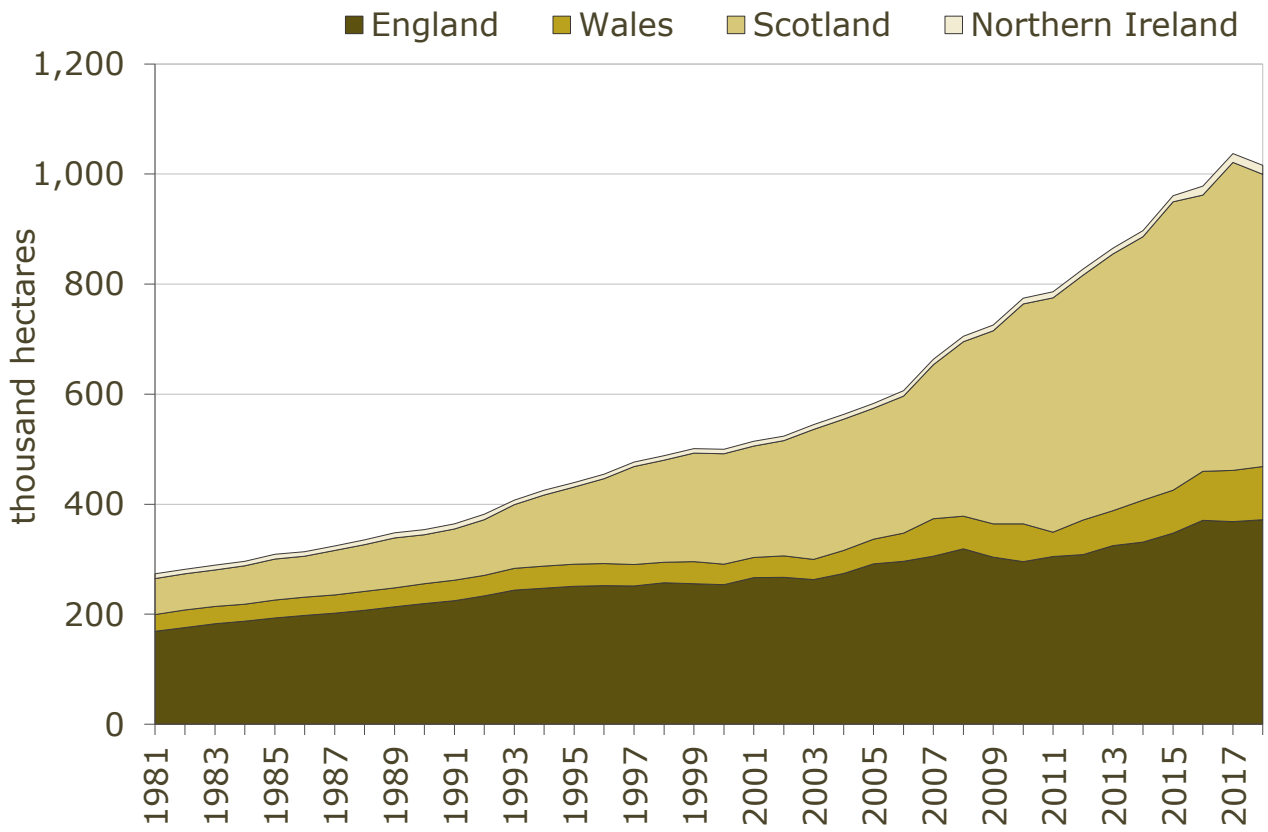
Year	England	Wales	Scotland	Northern Ireland	UK
2009	303.7	60.8	350.8	10.3	725.7
2010	295.3	69.1	399.8	10.2	774.0
2011	304.9	44.2	426.1	10.8	785.9
2012	308.4	62.6	445.4	11.0	827.5
2013	324.9	63.4	466.8	10.3	865.4
2014	331.3	75.7	479.4	11.1	897.5
2015	347.6	78.0	524.0	11.1	960.6
2016	370.5	89.2	502.4	16.1	978.2
2017	368.5	92.8	560.1	15.8	1 037.2
2018	371.7	96.8	531.5	16.3	1 016.3

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.

Figure 1.5 Area of farm woodland, 1981-2018



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.

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 and restocking by forest type

Thirteen thousand hectares of new woodland were created in the UK in 2018-19. In addition, 15 thousand hectares of publicly funded restocking were reported (Table 1.13). Conifers accounted for three fifths (60%) of the new planting area in 2018-19.

Table 1.13a New planting by forest type

thousand hectares

Year (ending 31/3)	Conifer	Broadleaves	Total
England			
2014-15	0.08	2.35	2.43
2015-16	0.00	0.82	0.82
2016-17	0.10	1.05	1.15
2017-18	0.24	1.26	1.50
2018-19	0.42	1.00	1.42
Wales			
2014-15	0.00	0.10	0.10
2015-16	0.04	0.10	0.14
2016-17	0.16	0.23	0.40
2017-18	0.13	0.12	0.24
2018-19	0.25	0.27	0.52
Scotland			
2014-15	2.48	5.08	7.56
2015-16	1.90	2.73	4.63
2016-17	3.22	1.54	4.76
2017-18	4.68	2.46	7.14
2018-19	7.27	3.94	11.21
Northern Ireland			
2014-15	0.02	0.19	0.21
2015-16	0.00	0.05	0.05
2016-17	0.08	0.13	0.21
2017-18	0.11	0.10	0.21
2018-19	0.10	0.14	0.24
UK			
2014-15	2.58	7.72	10.30
2015-16	1.94	3.71	5.65

2016-17	3.56	2.96	6.51
2017-18	5.15	3.94	9.09
2018-19	8.05	5.35	13.40

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 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 and 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.

Table 1.13b Publicly funded restocking by forest type

thousand hectares

Year (ending 31/3)	Conifer	Broadleaves	Total
England			
2014-15	2.01	4.39	6.41
2015-16	2.17	1.14	3.31
2016-17	2.03	0.97	3.00
2017-18	1.58	0.47	2.04
2018-19	1.26	0.39	1.65
Wales			
2014-15	1.30	0.64	1.94
2015-16	1.20	0.58	1.78
2016-17	1.12	0.55	1.67
2017-18	1.00	0.71	1.71
2018-19	0.90	0.54	1.44
Scotland			
2014-15	6.58	1.87	8.45
2015-16	5.99	1.83	7.82
2016-17	9.09	1.99	11.07
2017-18	8.14	1.52	9.66
2018-19	9.12	2.07	11.19
Northern Ireland			
2014-15	0.94	0.10	1.04
2015-16	0.74	0.07	0.81
2016-17	1.15	0.17	1.31
2017-18	0.85	0.08	0.94
2018-19	0.72	0.11	0.83
UK			
2014-15	10.84	7.00	17.84
2015-16	10.10	3.63	13.73

2016-17	13.39	3.67	17.06
2017-18	11.57	2.77	14.34
2018-19	12.00	3.11	15.12

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.

1.6.2 New planting and restocking by ownership

In 2018-19 most new planting (92%) took place on private sector land (Table 1.14).

Table 1.14a New planting by ownership

thousand hectares

Year (ending 31/3)	FE/FLS/ NRW/FS	Private sector	Total
England			
2014-15	0.00	2.43	2.43
2015-16	0.00	0.82	0.82
2016-17	0.02	1.13	1.15
2017-18	0.00	1.50	1.50
2018-19	0.03	1.39	1.42
Wales			
2014-15	0.00	0.10	0.10
2015-16	0.00	0.14	0.14
2016-17	0.00	0.40	0.40
2017-18	0.00	0.24	0.24
2018-19	0.00	0.52	0.52
Scotland			
2014-15	0.40	7.16	7.56
2015-16	0.71	3.93	4.63
2016-17	1.06	3.70	4.76
2017-18	0.87	6.27	7.14
2018-19	1.03	10.19	11.21
Northern Ireland			
2014-15	0.00	0.21	0.21
2015-16	0.00	0.05	0.05
2016-17	0.00	0.21	0.21
2017-18	0.00	0.21	0.21
2018-19	0.00	0.24	0.24
UK			
2014-15	0.40	9.90	10.30
2015-16	0.71	4.94	5.65

2016-17	1.08	5.44	6.51
2017-18	0.87	8.23	9.09
2018-19	1.06	12.34	13.40

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 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 and 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.

Table 1.14b Publicly funded restocking by ownership

thousand hectares

Year (ending 31/3)	FE/FLS/ NRW/FS	Private sector	Total
England			
2014-15	2.25	4.15	6.41
2015-16	2.30	1.02	3.31
2016-17	2.39	0.61	3.00
2017-18	2.04	0.00	2.04
2018-19	1.57	0.08	1.65
Wales			
2014-15	1.56	0.38	1.94
2015-16	1.47	0.32	1.78
2016-17	1.44	0.23	1.67
2017-18	1.55	0.16	1.71
2018-19	1.22	0.23	1.44
Scotland			
2014-15	6.50	1.95	8.45
2015-16	6.55	1.27	7.82
2016-17	6.67	4.41	11.07
2017-18	5.78	3.87	9.66
2018-19	7.15	4.05	11.19
Northern Ireland			
2014-15	0.88	0.16	1.04
2015-16	0.75	0.06	0.81
2016-17	1.25	0.06	1.31
2017-18	0.86	0.08	0.94
2018-19	0.79	0.04	0.83
UK			
2014-15	11.20	6.65	17.84
2015-16	11.06	2.67	13.73

2016-17	11.74	5.31	17.06
2017-18	10.23	4.11	14.34
2018-19	10.72	4.40	15.12

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.

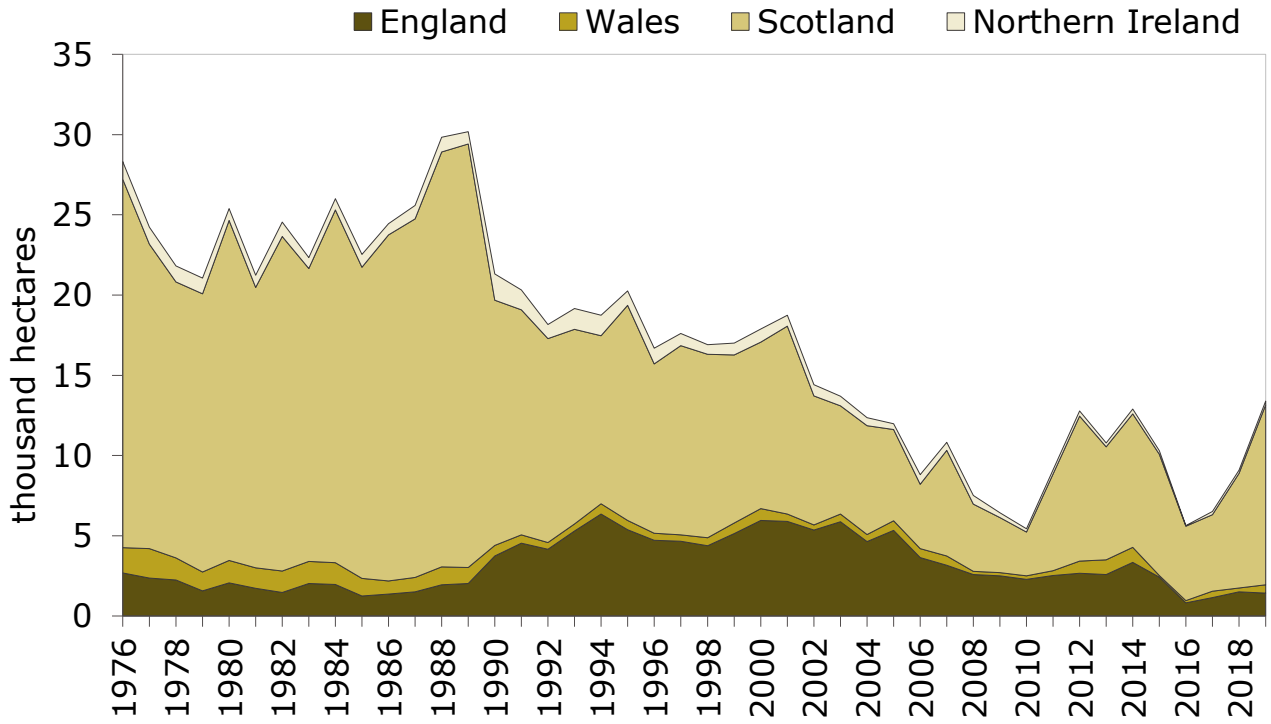
1.6.3 New planting and restocking: time series

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 the incentives available to land owners (in the form of grants and regulations).

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 and 2018-19. These fluctuations are likely to have been influenced by changes in grant schemes across the UK.

At 13.4 thousand hectares in 2018-19, the current level of new planting represents a 47% increase from the 9.1 thousand hectares achieved in the previous year and continues the increase from 2015-16. This increase was largely in Scotland and was likely to have been influenced by the availability of grant funding and increased confidence in forestry arising from strong timber values. For further information, see the New Planting and Restocking section of the Sources chapter.

Figure 1.6 New planting in the UK, 1976-2019



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 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 and 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).

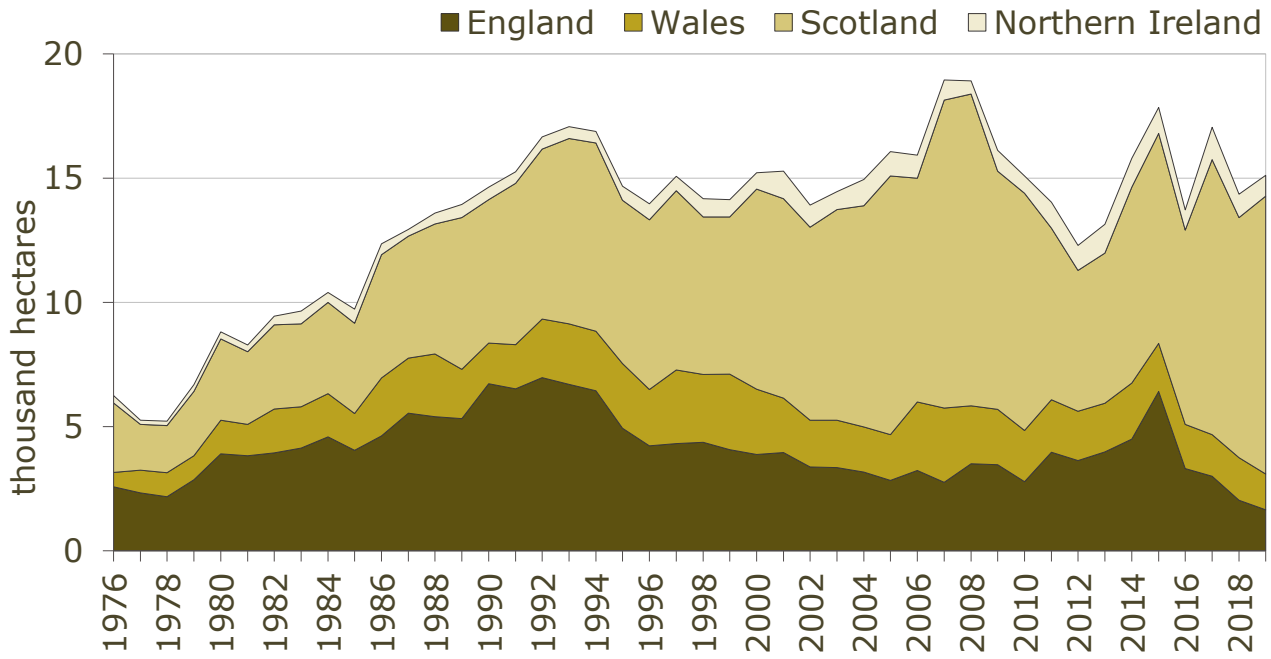
Figure 1.7 shows reported areas of restocking by country since the year ending March 1976. It indicates an increase in restocking rates during the period. Over the same period, there has been a general increase in UK wood production (see UK-Grown Timber chapter).

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 2018-19 represents a 5% increase from the previous year, but 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, 1976-2019



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:

- 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 from NFI second cycle field survey are scheduled to be available by 2020.

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 0.7 thousand hectares of woodland in England and 0.1 thousand hectares in Wales was covered by unconditional felling licences (with no requirement to restock) in the year to March 2019. The level in Scotland was under 50 hectares.

Table 1.15 Area of private sector woodland covered by unconditional felling licences1, 2009-10 to 2018-19

thousand hectares

Year	England	Wales	Scotland	GB
2009-10	0.5	0.0	0.2	0.7
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

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.

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 since 2010-11 and Table 1.16b shows the area required to be felled under these Notices. The tables cover all woodland, including sites owned or managed by Forestry England, Forestry and Land Scotland, Natural Resources Wales or the Forest Service in Northern Ireland. 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 842 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	14	16	251
2012-13	168	89	123	15	395
2013-14	244	272	76	28	620
2014-15	140	71	9	17	237
2015-16	73	57	34	3	167
2016-17	75	53	71	0	199
2017-18	43	153	71	14	281
2018-19	136	215	491	0	842

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.
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 3.8 thousand hectares in 2018-19. 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 Notices[1], 2010-11 to 2018-19

thousand hectares

Year	England	Wales	Scotland	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	0.4	0.2	2.5
2013-14	0.8	4.6	0.3	0.5	6.2
2014-15	0.3	0.4	0.0	0.0	0.7
2015-16	0.1	1.5	0.1	0.0	1.8
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	3.8

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. 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.

Chapter 2: UK-Grown Timber

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 2018 were previously published in "UK Wood Production and Trade: 2018 Provisional Figures", released on 16 May 2019. 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 2018 are (with percentage changes from 2017):

Removals[2] (harvesting) of UK roundwood:

- 11.4 million green tonnes of softwood (+4%);
- 0.8 million green tonnes of hardwood (+13%).

Deliveries[1] of UK roundwood to wood processors and others:

- Total: 11.6 million green tonnes of roundwood (softwood and hardwood) (+3%), of which:
- Sawmills: 6.5 million green tonnes (-2%);
- Wood-based panels: 1.2 million green tonnes (+14%);
- Integrated pulp and paper mills: 0.5 million green tonnes (+10%);
- Woodfuel: 2.6 million green tonnes (+18%);
- Other uses, including round fencing, shavings and exports of roundwood: 0.8 million green tonnes (-10%).

Production of wood products in the UK included:

- 3.7 million cubic metres of sawnwood (-1%);
- 3.1 million cubic metres of wood-based panels (-3%);
- 3.9 million tonnes of paper and paperboard (+1%).

[2] The difference between total removals and deliveries reported here (around 0.6 million green tonnes in 2018) is likely to reflect a number of factors, including 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 12.2 million green tonnes of roundwood was removed from UK woodlands in 2018.

Softwood accounted for most (93%) removals from UK woodland and totalled 11.4 million green tonnes in 2018 (Table 2.1). This represented a 4% increase on the previous year's figure.

Hardwood removals totalled 0.8 million green tonnes in 2018.

Private sector woodlands accounted for 60% of softwood production and 90% of hardwood production in 2018.

Table 2.1a Softwood production, 2009-2018

thousand green tonnes

Year	FE/FLS/ NRW/FS[1] woodland	Private sector[2] woodland	Total softwood
2009	5 126	3 266	8 392
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	4 862	6 075	10 938
2018	4 523	6 827	11 351

Table 2.1b Hardwood production, 2009-2018

thousand green tonnes

Year	FE/FLS/ NRW/FS[1] woodland	Private sector[2] woodland	Total softwood[3,4]
2009	5 126	3 266	8 392
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	4 862	6 075	10 938
2018	4 523	6 827	11 351

Source (table 2.1a & 2.1b): Forestry England, Forestry and Land Scotland, Natural Resources Wales, Forest Service, industry surveys, industry associations.

Notes (table 2.1a & 2.1b):

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 74% of all softwood removals from private sector woodlands were harvested in Scotland, 17% in England, 9% in Wales and the remainder in Northern Ireland in 2018 (Table 2.2).

There has been an overall increase in the level of UK private sector softwood removals in the last decade.

Table 2.2 Private sector softwood removals by country, 2009-2018

thousand green tonnes

Year	England	Wales	Scotland	Northern Ireland	UK
2009	533	321	2 388	24	3 266
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

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 4.5 million green tonnes of softwood was removed from FE/FLS/NRW/FS woodlands in 2018, a 7% decrease from the 2017 figure (Table 2.3). Over one half (54%) of FE/FLS/NRW/FS softwood removals in 2018 occurred in Scotland, 23% in England, 15% in Wales and 7% in Northern Ireland.

In comparison to private sector softwood removals (see Table 2.2), FE/FLS/NRW/FS softwood removals have been relatively stable over the last decade.

Table 2.3 FE/FLS/NRW/FS softwood removals by country, 2009-2018

thousand green tonnes

Year	England	Wales	Scotland	Northern Ireland	UK
2009	1 213	717	2 773	423	5 126
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	758	2 668	349	4 862
2018	1 048	696	2 440	339	4 523

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 m^3 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.forestresearch.gov.uk/tools-and-resources/national-forest-inventory/.
4. An update to these figures is due to be published in 2020.
5. 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 m^3 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.forestresearch.gov.uk/tools-and-resources/national-forest-inventory/.

Table 2.4b Hardwood availability forecasts

thousand m^3 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
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. An update to these figures is due to be published in 2020.
4. 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 2018, deliveries of UK roundwood (softwood and hardwood) totalled 11.6 million green tonnes, a 3% increase from the previous year (Tables 2.5 and 2.6).

Most UK roundwood deliveries (93%) were softwood and totalled 10.7 million green tonnes in 2018 (Table 2.5). 6.4 million green tonnes (60% of UK softwood deliveries) were used by sawmills, a 2% decrease from the previous year. A further 1.9 million green tonnes were used for wood fuel (a 19% increase), 1.2 million green tonnes were used to produce wood-based panels (a 14% increase), 0.5 million green tonnes by integrated pulp and paper mills (a 10% increase), and 0.7 million green tonnes for other uses, including round fencing, shavings and exports of roundwood (an 11% 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, 2009-2018

thousand green tonnes

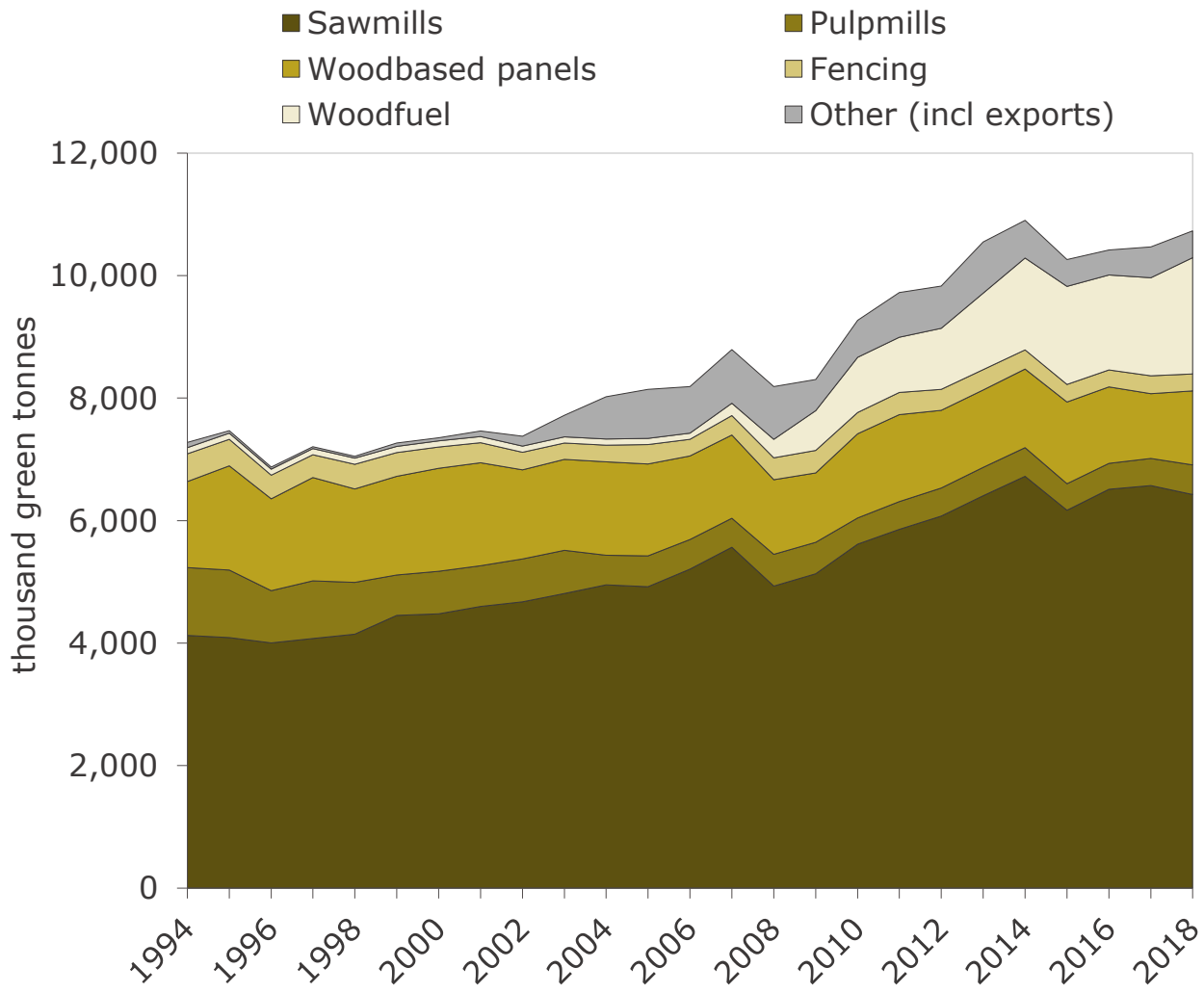
Year	Sawmills	Pulp mills	Wood-based panels	Fencing	Wood fuel[1]	Other[2]	Exports	Total
2009	5 133	511	1 135	367	650	160	347	8 304
2010	5 616	428	1 375	349	900	135	467	9 269
2011	5 859	453	1 417	363	900	145	585	9 722
2012	6 073	461	1 269	338	1 000	154	535	9 831
2013	6 407	465	1 263	332	1 250	191	640	10 547
2014	6 725	465	1 283	317	1 500	176	437	10 903
2015	6 168	435	1 334	288	1 600	164	276	10 265
2016	6 511	423	1 248	277	1 550	178	231	10 419
2017	6 572	442	1 059	295	1 600	170	331	10 468
2018	6 424	486	1 210	273	1 900	174	264	10 731

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, 1994-2018



Source: industry surveys, industry associations.

2.2.2 Hardwood deliveries

There was a total of 0.8 million green tonnes of UK hardwood deliveries in 2018 (Table 2.6). The majority of UK hardwood deliveries (84% in 2018) were used for woodfuel.

Table 2.6 Deliveries of UK-grown hardwood, 2009-2018

thousand green tonnes

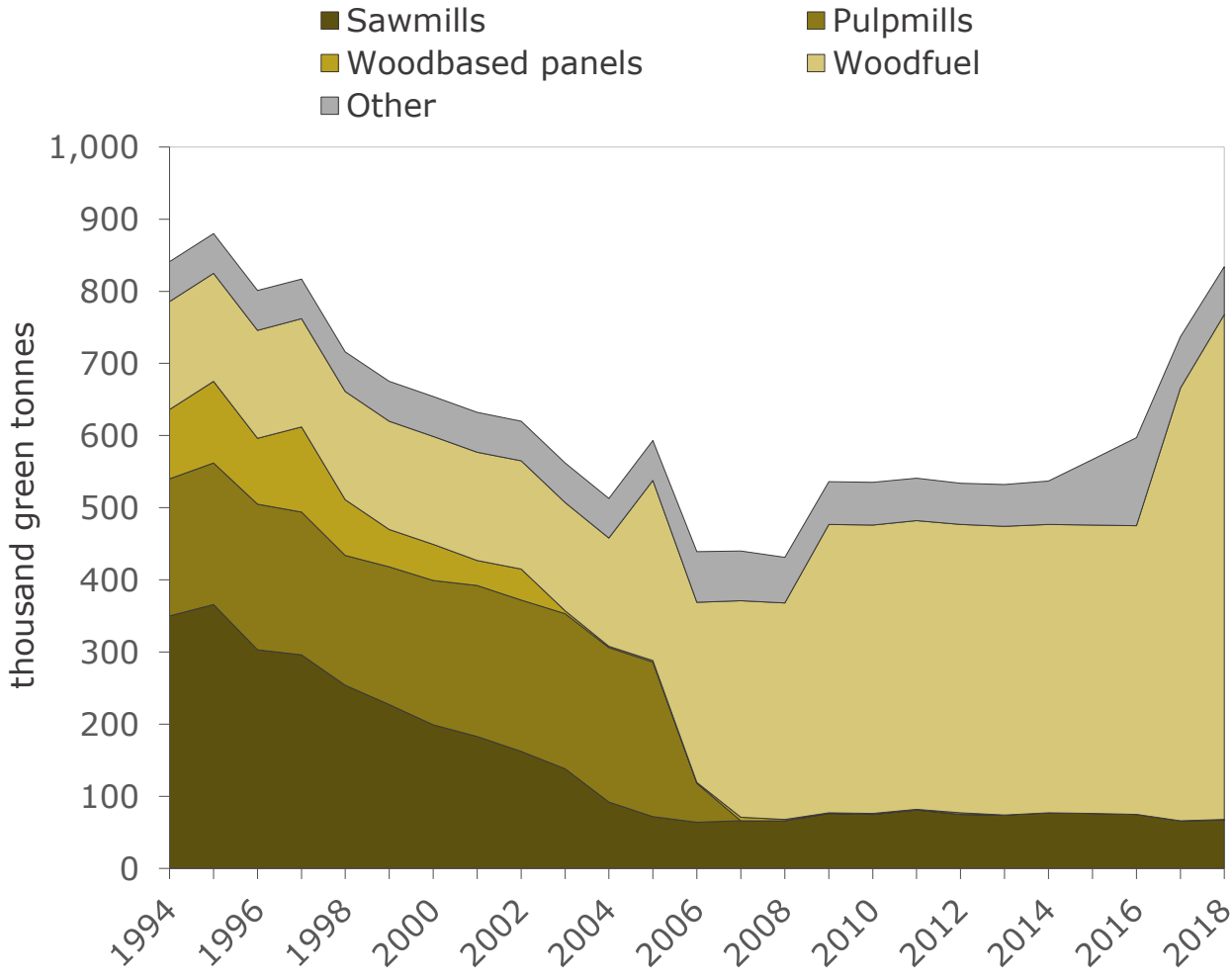
Year	Sawmills	Pulp mills	Wood-based panels	Woodfuel	Other	Total
2009	76	0	1	400	59	536
2010	75	0	1	400	59	535
2011	81	0	1	400	59	541
2012	75	0	2	400	57	534
2013	74	0	0	400	58	532
2014	77	0	0	400	60	537
2015	76	0	0	400	91	566
2016	75	0	0	400	122	597
2017	66	0	0	600	71	738
2018	67	0	1	700	66	834

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, 1994-2018



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 m^3 to annual sawnwood production of 25 thousand m^3. 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 m^3 sawnwood. For conversion factors between different units, see the Timber section of the Sources chapter.

2.3.1 Summary: consumption & production

In 2018, sawmills in the UK consumed a total of 6.7 million green tonnes of softwood, a 1% decrease from 2017 (Table 2.7). A further 0.1 million green tonnes of hardwood were consumed by UK sawmills in 2018. Most of the logs, 6.4 million green tonnes softwood and 0.1 million green tonnes hardwood, were grown in the UK.

A total of 3.7 million m^3 of sawnwood was produced in the UK in 2018, a 1% decrease from 2017.

There has been an overall increase in the levels of softwood consumption and sawn softwood production in the UK between 2009 and 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 2.7a Consumption by UK sawmills, 2009-2018

thousand green tonnes

Year	UK grown soft wood	Imported soft wood	Total soft wood	UK grown hard wood	Imported hard wood	Total hard wood
2009	5 133	158	5 291	76	19	95
2010	5 616	103	5 719	75	19	94
2011	5 859	125	5 984	81	20	100
2012	6 073	124	6 198	75	17	93
2013	6 407	126	6 532	74	13	88
2014	6 725	159	6 884	77	14	91
2015	6 168	182	6 350	76	14	89
2016	6 511	209	6 720	75	17	92
2017	6 572	267	6 838	66	13	80
2018	6 424	325	6 749	67	13	80

Source: Sawmill Survey

Table 2.7b Production by UK sawmills, 2009-2018

thousand m^3 sawnwood

Year	Softwood production	Hardwood production
2009	2 809	48
2010	3 053	48
2011	3 227	52
2012	3 361	48
2013	3 536	46
2014	3 716	47
2015	3 451	46
2016	3 624	47
2017	3 721	42
2018	3 674	41

Source: Sawmill Survey

2.3.2 Number of sawmills by size

A total of 157 sawmills processed UK roundwood in 2018 (Table 2.8). Most mills (82%) produced less than 25 thousand m^3 sawnwood (softwood and hardwood) during the year.

Over the past ten years, the number of active sawmills has reduced by 19%. Most of this decrease has occurred in the smallest size categories.

Table 2.8 Number of sawmills by size category of mill, 2009-2018

Year	< 1	1 - <5	5 - <10	10 - <25	25 - <50	50 - <100	100+	Total
2009	79	52	12	23	11	10	8	195
2010	75	50	12	24	8	10	9	188
2011	70	51	12	23	9	7	12	184
2012	69	49	13	19	11	8	11	180
2013	67	46	13	19	11	6	13	175
2014	69	42	12	19	11	8	12	173
2015	66	43	15	17	12	6	12	171
2016	61	42	15	20	6	10	13	167
2017	61	43	12	21	5	10	12	164
2018	60	38	10	21	8	8	12	157

Source: Sawmill Survey
Notes:
1. Categories are based on total sawnwood production (softwood and hardwood), in thousand m^3.

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 (53%) of the 157 active sawmills in 2018 were in England, around one third (33%) were in Scotland, 8% in Wales and 6% in Northern Ireland (Table 2.9).

Table 2.9 Number of sawmills by country, 2009-2018

Year	England	Wales	Scotland	Northern Ireland	UK
2009	101	17	68	9	195
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	15	54	9	167
2017	88	14	53	9	164
2018	83	13	52	9	157

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 (66%) of the 157 active sawmills in 2018 processed softwood only (Table 2.10). A further 28% processed both softwood and hardwood, and the remaining 6% processed only hardwood.

Table 2.10 Number of sawmills by type of wood sawn, 2009-2018

Year	Softwood only	Hardwood only	Both	Total
2009	130	10	55	195
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	110	9	48	167
2017	110	10	44	164
2018	104	9	44	157

Source: Sawmill Survey

2.3.5 Consumption of softwood by size of mill

Despite accounting for only 18% of all sawmills (see Table 2.8), those with total annual sawnwood production of 25 thousand m^3 or more accounted for 86% of the total softwood consumed by sawmills in 2018 (Table 2.11).

Table 2.11 Consumption of softwood by size category of mill, 2009-2018

thousand green tonnes

Year	< 1	1 - <5	5 - <10	10 - <25	25 - <50	50 - <100	100+	Total
2009	35	201	145	664	670	1 323	2 253	5 291
2010	35	194	147	744	537	1 373	2 689	5 719
2011	32	188	148	685	615	830	3 486	5 984
2012	33	185	175	539	738	1 133	3 395	6 198
2013	36	185	169	578	702	777	4 085	6 532
2014	36	167	156	588	731	1 090	4 117	6 884
2015	31	168	196	553	795	801	3 805	6 350
2016	29	155	191	588	372	1 117	4 270	6 720
2017	29	173	152	671	339	1 352	4 122	6 838
2018	32	152	117	626	585	1 102	4 134	6 749

Source: Sawmill Survey
Notes:
1. Categories are based on total sawnwood production (softwood and hardwood), in thousand m^3.

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 (51%) of the 6.7 million green tonnes of softwood delivered to UK sawmills in 2018 (Table 2.12). A further 30% was consumed by mills in England, 10% in Wales and 9% in Northern Ireland.

Table 2.12 Consumption of softwood by country, 2009-2018

thousand green tonnes

Year	England	Wales	Scotland	Northern Ireland	UK
2009	1 548	538	2 672	532	5 291
2010	1 694	583	2 913	528	5 719
2011	1 726	634	3 082	543	5 984
2012	1 821	654	3 195	528	6 198
2013	1 879	702	3 420	532	6 532
2014	1 982	711	3 661	530	6 884
2015	1 917	655	3 247	531	6 350
2016	1 984	737	3 441	558	6 720
2017	2 086	691	3 479	583	6 838
2018	2 030	656	3 423	640	6 749

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 3.7 million m^3 of sawn softwood in 2018, a 1% decrease from the 2017 figure (Table 2.13).

Sawmills with total annual sawnwood production of 25 thousand m^3 or more accounted for 86% of the total sawn softwood produced by sawmills in 2018.

Table 2.13 Production of sawn softwood by size of mill, 2009-2018

thousand m^3

Year	< 1	1 - <5	5 - <10	10 - <25	25 - <50	50 - <100	100+	Total
2009	20	118	79	352	376	677	1 187	2 809
2010	20	113	79	395	304	693	1 450	3 053
2011	18	110	81	374	335	443	1 867	3 227
2012	18	108	90	314	393	564	1 874	3 361
2013	20	108	88	337	379	404	2 200	3 536
2014	20	98	81	332	398	563	2 224	3 716
2015	18	98	106	296	466	422	2 045	3 451
2016	17	90	101	338	186	597	2 296	3 624
2017	17	99	77	374	178	647	2 328	3 721
2018	19	88	55	355	311	519	2 327	3 674

Source: Sawmill Survey

Notes:

1. Categories are based on total sawnwood production (softwood and hardwood), in thousand m^3.

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

1.9 million m^3 (51%) of sawn softwood was produced by sawmills in Scotland in 2018 (Table 2.14). A further 31% was produced by mills in England, 9% in Wales and the remaining 10% in Northern Ireland.

Over the last 10 years production of sawn softwood in the UK has increased by 31%. For mills in England, Wales and Scotland, most of this increase has occurred in the earlier part of this period, whilst there has been a more recent increase in Northern Ireland.

Table 2.14 Production of sawn softwood by country, 2009-2018

thousand m^3

Year	England	Wales	Scotland	Northern Ireland	UK
2009	860	267	1 413	268	2 809
2010	927	291	1 560	275	3 053
2011	954	316	1 666	291	3 227
2012	1 001	326	1 747	288	3 361
2013	1 026	349	1 873	289	3 536
2014	1 091	354	1 985	286	3 716
2015	1 056	324	1 787	284	3 451
2016	1 093	366	1 871	294	3 624
2017	1 156	319	1 920	326	3 721
2018	1 122	313	1 888	351	3 674

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 m^3 sawnwood annually) only.

These larger mills are estimated to account for 86% of all sawn softwood produced in 2018 (see Table 2.13). In order to provide consistent time series, data presented in this section for 2014 and 2015 is also restricted to sawmills that produced at least 25 thousand m^3 sawnwood in the relevant year.

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 28 sawmills covered by the detailed sawmill survey in 2018 was 5.8 million green tonnes (Table 2.15). Sawn softwood production by these mills was 3.2 million m^3 and other softwood products (chips, bark, sawdust, etc) amounted to 2.8 million tonnes.

Sawmills in Scotland accounted for over one half (52%) of all softwood consumption by larger mills. A further 29% was consumed by mills in England, 9% in Wales and the remaining 10% in Northern Ireland.

Table 2.15 Larger mills1, 2018: softwood consumption and production

	England	Wales	Scotland	Northern Ireland	UK
Number of mills	10	2	14	2	28
Consumption (thousand green tonnes)	1 682	520	3 024	596	5 821
Sawnwood production (thousand m^3)	934	239	1 656	328	3 157
Other products (thousand tonnes)	621	275	1 672	255	2 823

Source: Sawmill Survey (detailed)
Notes:
1. Sawmills producing at least 25 thousand m^3 sawnwood (softwood and hardwood).

2.4.2 Source of softwood logs

Of all softwood sawlogs consumed by larger sawmills in 2018, 58% came from Scotland, 19% from England, 12% from Wales and 4% from Northern Ireland (Tables 2.16 and 2.16a). The remaining 6% were imported from other countries. This was similar to the breakdown by source in previous years.

97% of softwood sawlogs used by Scottish mills in 2018 came from Scotland. The corresponding proportions of mills' log use coming from within the same country were 58% for England, 76% for Wales and 44% for Northern Ireland.

Table 2.16 Larger mills[1], 2018: source of softwood logs

thousand green tonnes

Source	England	Wales	Scotland	Northern Ireland	UK
England	981	44	99	0	1 124
Wales	333	393	0	0	726
Scotland	368	83	2 925	11	3 386
Northern Ireland	0	0	0	260	260
Total UK logs	**1 682**	**520**	**3 024**	**271**	**5 496**
Other countries	0	0	0	325	325
Total log consumption	**1 682**	**520**	**3 024**	**596**	**5 821**

Source: Sawmill Survey (detailed)

Notes:

1. Sawmills producing at least 25 thousand m^3 sawnwood (softwood and hardwood).

Table 2.16a Larger mills[1], 2014-2018: source of softwood logs

per cent of total softwood consumption

Year	England	Wales	Scotland	Northern Ireland	Other countries	Total
2014	20	13	60	4	3	100
2015	19	13	60	4	3	100
2016	20	14	59	5	4	100
2017	20	14	57	4	5	100
2018	19	12	58	4	6	100

Source: Sawmill Survey (detailed)

Notes:

1. Sawmills producing at least 25 thousand m^3 sawnwood (softwood and hardwood).

2.4.3 Sawn softwood product markets

In 2018, 36% of sawn softwood produced by larger sawmills was used for fencing, 33% for construction, 24% for packaging and pallets, and the remaining 7% went to all other markets (Tables 2.17 and 2.17a).

Table 2.17 Larger mills[1], 2018 sawn softwood product markets

per cent of total softwood product markets

Product market	England	Wales	Scotland	Northern Ireland	UK
Construction	18	20	42	43	33
Fencing	54	27	28	33	36
Packaging/ pallets	24	41	22	18	24
Other	4	12	9	6	7
Total	100	100	100	100	100

Table 2.17a Larger mills[1], 2014-2018: sawn softwood product markets

per cent of total softwood product markets

Year	Construction	Fencing	Packaging/ pallets	Other	Total
2014	28	35	31	6	100
2015	27	36	30	6	100
2016	28	35	30	7	100
2017	32	36	24	8	100
2018	33	36	24	7	100

Source: Sawmill Survey (detailed)
Notes:
1. Sawmills producing at least 25 thousand m^3 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 2.8 million tonnes in 2018 (Table 2.15). Around one third (34%) of other softwood products were sold to wood processing industries in the form of chips and 12% were sold to these industries in sawdust and other formats (Table 2.18). A further 24% of other products were sold to bio-energy (including pellet manufacturers), 25% were sold to others and 5% were used internally for heat or energy.

Table 2.18 Larger mills[1], 2018: other softwood products

per cent of total other softwood products

Destination and type of product[2]	England	Wales	Scotland	NI	UK
Sold to wood processing industries					
Wood chips	32	56	36	0	34
Bark	0	0	0	0	0
Sawdust & other	14	22	12	0	12
Total	**46**	**78**	**48**	**0**	**46**
Sold to bio-energy (incl pellet manufacturers)					
Wood chips	9	6	13	64	16
Bark	0	0	0	10	1
Sawdust & other	0	0	8	21	7
Total	**10**	**6**	**20**	**95**	**24**
Other sales					
Wood chips	20	0	10	1	10
Bark	7	11	7	1	7
Sawdust & other	11	4	9	2	8
Total	**37**	**15**	**25**	**5**	**25**
Internal use for heat/energy					
Wood chips	6	0	4	0	4
Bark	0	1	2	0	1
Sawdust & other	0	1	0	0	0
Total	**7**	**2**	**6**	**0**	**5**

Source: Sawmill Survey (detailed)

Notes:

1. Sawmills producing at least 25 thousand m^3 sawnwood (softwood and hardwood).
2. The table does not show sales of firewood and other products disposed of as waste, which together accounted for less than 0.5% of other softwood products.

The proportions of other products that were reported as sold to wood processing industries has reduced over the last five years, whilst other sales have increased (Table 2.18a).

Table 2.18a Larger mills[1], 2014-2018: 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]
2014	59	22	17	3	100
2015	60	21	17	2	100
2016	58	21	19	2	100
2017	56	22	19	3	100
2018	46	24	25	5	100

Source: Sawmill Survey (detailed)
Notes:
1. Sawmills producing at least 25 thousand m^3 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 2.9 thousand full-time equivalent staff employed directly by sawmills producing at least 25 thousand m^3 of sawnwood in 2018 (Tables 2.19 and 2.19a).

Table 2.19 Larger mills[1], 2018: sawmill employment

full-time equivalents

Employment type	England	Wales	Scotland	Northern Ireland	UK
Direct					
Line & production workers	810	165	1 151	313	2 439
Managerial & administrative staff	165	28	124	112	429
Haulage of logs to the mill	58	0	16	2	76
Total direct employment	**1 033**	**193**	**1 291**	**427**	**2 944**
Others[2]					
Line & production workers	12	0	64	0	76
Managerial & administrative staff	0	0	3	0	3
Total contract employment	**12**	**0**	**67**	**0**	**79**

Source: Sawmill Survey (detailed)

Notes:

1. Sawmills producing at least 25 thousand m^3 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 mills[1], 2014-2018: sawmill employment

full-time equivalents

Employment	Line & production workers	Managerial & administrative staff	Haulage of logs to the mill	Total employment
Direct				
2014	2 422	385	43	2 850
2015	2 341	394	44	2 779
2016	2 456	384	45	2 885
2017	2 369	428	79	2 875
2018	2 439	429	76	2 944
Others[2]				
2014	124	1	..	125
2015	58	0	..	58
2016	50	2	..	52
2017	76	3	..	79
2018	55	2	..	57

Source: Sawmill Survey (detailed)

Notes:

1. Sawmills producing at least 25 thousand m^3 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 2018, an 8% increase from the 2017 total (Table 2.20).

UK roundwood represented 90% of the inputs for the integrated pulp & paper mills in 2018, with the remaining 10% coming from sawmill products.

Table 2.20 Inputs for the integrated pulp & paper mills1, 2009-2018

thousand green tonnes

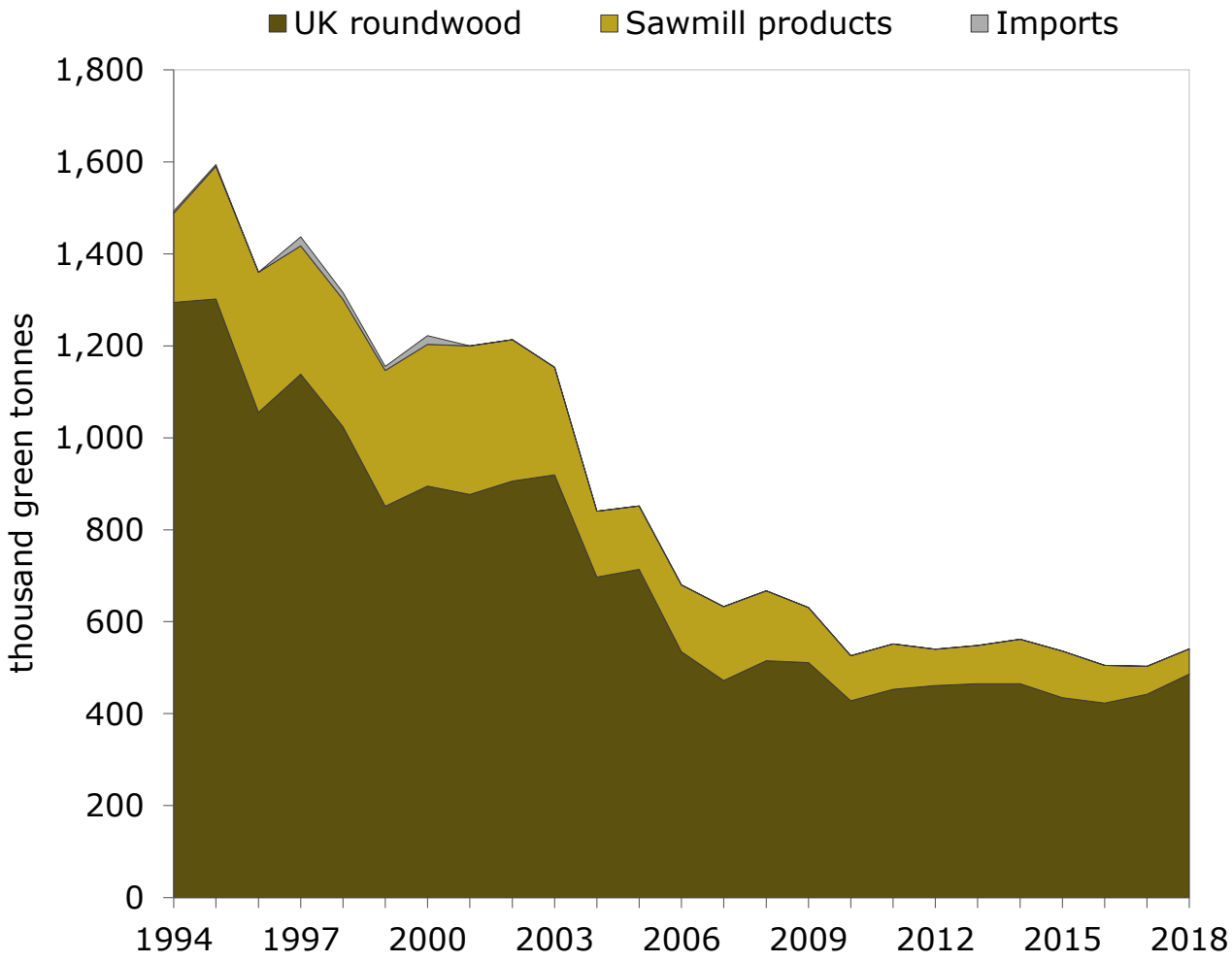
Year	UK roundwood[2]	Sawmill products	Total
2009	511	120	631
2010	428	98	526
2011	453	99	552
2012	461	79	540
2013	465	83	548
2014	465	97	562
2015	435	101	536
2016	423	82	505
2017	442	61	503
2018	486	55	541

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 2018, an increase of 1% from the previous year. Packaging materials accounted for 49% of the total UK paper production in 2018, graphic papers (including newsprint) for 25%, and sanitary and household papers for 19%.

Table 2.21 Production of paper and paperboard, 2009-2018

thousand tonnes

Year	Graphic papers (incl newsprint)	Sanitary & household papers	Packaging materials	Other	Total paper & paperboard
2009	1 609	736	1 702	246	4 293
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

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 show the inputs to mills that produce wood-based panels in the UK. The mills used a total of 3.8 million tonnes of material in 2018, representing a 1% increase from 2017. The inputs in 2018 comprised 1.2 million green tonnes of roundwood (32%), 1.6 million green tonnes of sawmill products (42%), 0.9 million tonnes of recycled wood fibre (23%) and 0.1 million tonnes (3%) of imports.

Table 2.22a Softwood inputs to wood-based panel mills, 2009-2018

thousand green tonnes

Year	UK roundwood[1]	Sawmill products	Imports[2]
2009	1 135	1 435	0
2010	1 375	1 631	7
2011	1 417	1 779	0
2012	1 269	1 851	0
2013	1 263	1 709	0
2014	1 283	1 809	0
2015	1 334	1 687	12
2016	1 248	1 749	10
2017	1 059	1 726	0
2018	1 210	1 566	30

Source: Wood Panel Industries Federation

Notes:

1. UK roundwood derived from stemwood.
2. Imports include roundwood, wood products and products from imported wood.

Table 2.22b Hardwood inputs to wood-based panel mills, 2009-2018

thousand green tonnes

Year	UK roundwood[1]	Sawmill products	Imports[2]
2009	1	0	0
2010	1	0	1
2011	1	0	0
2012	2	0	0
2013	0	0	0
2014	0	0	0
2015	0	0	5
2016	0	0	29
2017	0	0	22
2018	1	0	74

Source: Wood Panel Industries Federation

Notes:

1. UK roundwood derived from stemwood.
2. Imports include roundwood, wood products and products from imported wood.

Table 2.22c Total inputs to wood-based panel mills, 2009-2018

thousand green tonnes

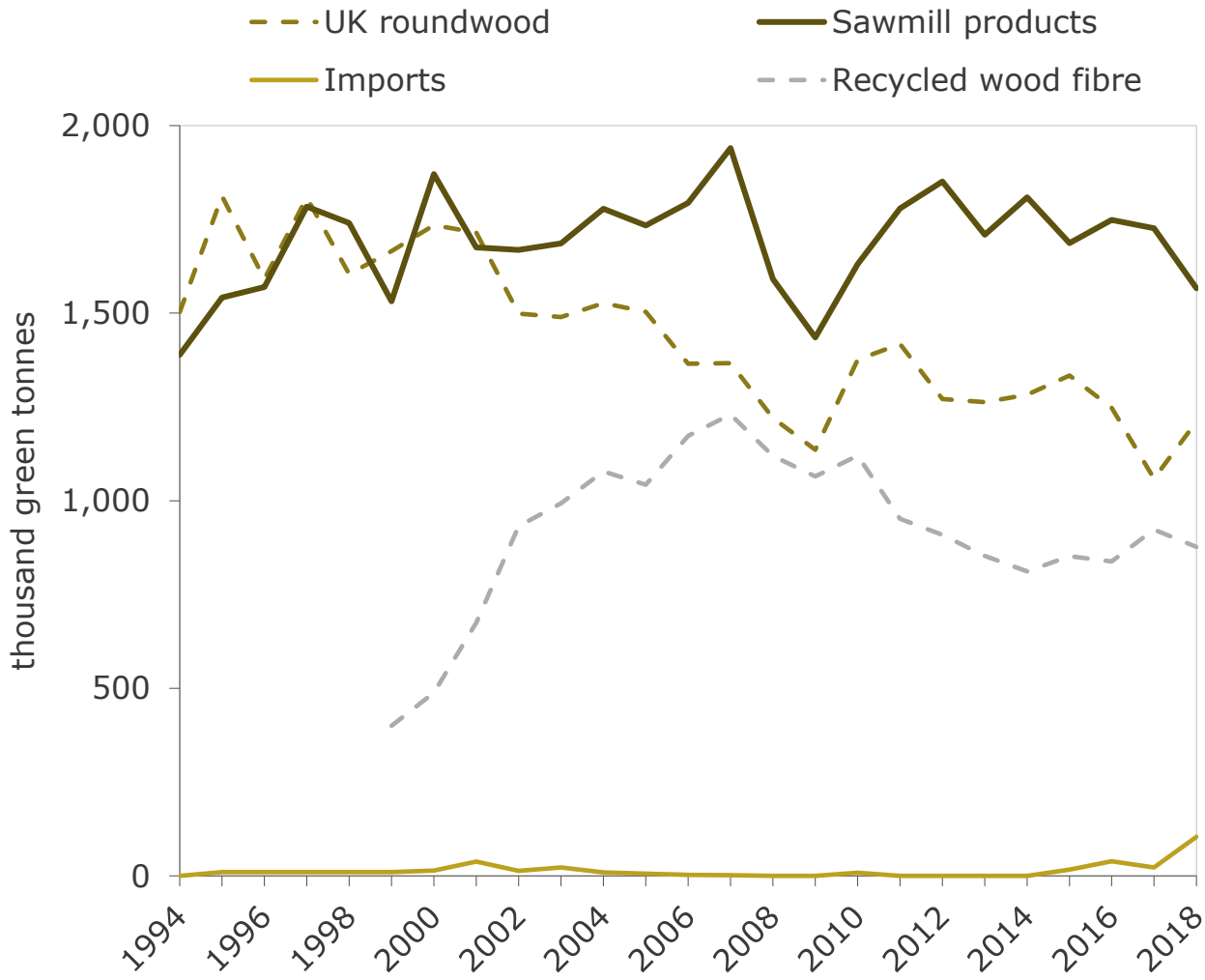
Year	Softwood	Hardwood	Recycled wood fibre[1,2]
2009	2 570	1	1 065
2010	3 013	2	1 120
2011	3 196	1	952
2012	3 120	2	909
2013	2 972	0	853
2014	3 092	0	812
2015	3 033	5	852
2016	3 007	29	838
2017	2 785	22	923
2018	2 806	75	877

Source: Wood Panel Industries Federation

Notes:

1. 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.
2. 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 2018 was 3.1 million m^3, a 3% decrease from 2017 (Table 2.23). Over three quarters (76%) of wood-based panel products produced in the UK in 2018 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, 2009-2018

thousand m^3

Year	Particleboard[1]	Fibreboard[2]	Total
2009	2 370	660	3 030
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

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 2018, an increase of 19% from the previous year (Table 2.24). A further 273 thousand green tonnes of UK softwood were consumed by round fencing manufacturers and 174 thousand green tonnes for other uses in 2018.

Table 2.24 Miscellaneous uses of UK softwood roundwood, 2009-2018

thousand green tonnes

Year	Fencing	Woodfuel[1]	Other[2]	Total
2009	367	650	160	1 178
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	295	1 600	170	2 064
2018	273	1 900	174	2 347

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 2018. A further 30 thousand green tonnes were estimated to have been consumed by round fencing manufacturers and 36 thousand green tonnes for other uses, including exports.

2.7.1 Softwood round fencing manufacturers

There were 48 active round fencing manufacturers in 2018 (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 category, 2009-2018

Year	< 1	1 - < 5	5 - < 10	10 +	Total
2009	22	26	13	7	68
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	8	50
2018	15	16	9	8	48

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 294 thousand green tonnes of softwood (UK grown and imported) was purchased by softwood fencing manufacturers in 2018 (Table 2.26). This represents a decrease of 8% from the 2017 total of 319 thousand green tonnes.

Table 2.26 Total roundwood purchased2 by size category[1] of softwood round fencing manufacturers, 2009-2018

thousand green tonnes

Year	< 1	1 - < 5	5 - < 10	10 +	Total
2009	7	66	82	239	394
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	197	319
2018	6	39	60	188	294

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 2018 consisted of 67 thousand green tonnes of industrial roundwood (excluding sawlogs) and 197 thousand green tonnes of sawlogs, giving a total of 264 thousand green tonnes of roundwood (Table 2.27). The quantity of softwood roundwood exports decreased by 20% between 2017 and 2018.

The UK also exported 112 thousand tonnes of softwood chips in 2018, a 22% increase from the previous year.

Table 2.27 Summary of softwood exports, 2009-2018

thousand green tonnes

Year	Industrial roundwood[1]	Roundwood sawlogs	Total roundwood	Chips
2009	244	104	347	125
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

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

2.9.1 Volume certified

Respondents to the industry surveys run by Forest Research were asked to report on volumes of wood that is certified. 71% of private sector softwood removals in 2018 were from certified sources (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 2018 from certified sources.

64% of sawmills' roundwood consumption in 2018 was certified. For round fencing manufacturers, 54% of total softwood consumption was certified.

Table 2.28 Per cent of volume certified, 2009-2018

per cent certified volume

Year	Softwood removals from Private sector woodland	Total softwood removals (including all removals from FE/FLS/NRW/FS[2] woodland)	Consumption (softwood and hardwood) by sawmills	Consumption (softwood) by round fencing manufacturers
2009	68	87	74	50
2010	73	87	74	62
2011	72	85	68	61
2012	70	84	71	60
2013	76	87	69	55
2014	72	84	70	69
2015	69	83	66	71
2016	66	82	69	70
2017	75	86	70	64
2018	71	82	64	54

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

Notes:

1. The accompanying data tables include a country breakdown of certified softwood removals for 2018. These are currently Experimental statistics.

2.9.2 Chain of custody certificates

Sawmills and round fencing manufacturers were also asked whether they held a Chain of Custody certificate. 72% of sawmills for which the certification status was known held a Chain of Custody certificate in 2018 (Table 2.29). This proportion varied with size of mill, from 39% for mills producing less than 5 thousand m^3 sawnwood to 100% for those producing 25 thousand m^3 sawnwood or more. One half (50%) of round fencing manufacturers for which the certification status was known held a Chain of Custody certificate.

Table 2.29 Chain of custody certificates, 2018

	Mills holding certificate	Mills without certificate	Certification status not known	Total[1]
Sawmills[2] (size of mill[3])				
< 5	7	11	80	98
5 - < 25	9	5	17	31
25 +	26	0	2	28
All sawmills	**42**	**16**	**99**	**157**
Round fencing manufacturers	**8**	**8**	**32**	**48**

Source: industry surveys

Notes:

1. Includes non-respondents to survey in current year.
2. For large sawmills (those producing at least 25 thousand m^3) that did not report whether or not they held a certificate or did not respond to the 2018 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 m^3.

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.

Recycled wood used for woodfuel

Estimates of recycled wood used for woodfuel have been obtained from the Wood Recyclers' Association. In 2018, it is estimated that around 2.1 million tonnes of recycled wood were used for woodfuel, an increase of 24% from the 2017 estimate of around 1.7 million tonnes.

Table 2.30 Recycled wood used for woodfuel[1], 2011-2018

million tonnes

Year[2]	Total[3]
2011	0.59
2012	0.76
2013	0.83
2014	1.34
2015	1.45
2016	1.55
2017	1.66
2018	2.10

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 for 2014 to 2018 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.

2.10.1 Woodfuel supply by sawmills and round fencing manufacturers

An estimated 797 thousand green tonnes (mainly softwood) of woodfuel were supplied by sawmills in 2018 and a further 72 thousand green tonnes were supplied by round fencing manufacturers (Table 2.31). 80% of the total woodfuel supplied was sold to bioenergy.

Table 2.31 Woodfuel supply1 by sawmills and round fencing manufacturers, 2014-2018

thousand green tonnes

	Sales to bioenergy	Sales as firewood	Used internally for heat/energy	Total
Sawmills				
2014	676	27	72	775
2015	614	12	45	671
2016	583	14	65	661
2017	623	15	96	734
2018	638	7	152	797
Round fencing manufacturers				
2014	55	5	1	61
2015	51	7	2	60
2016	57	7	1	65
2017	55	7	3	66
2018	58	9	5	72

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.

2.10.2 Wood pellet production

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 279 thousand tonnes of wood pellets and briquettes are estimated to have been produced in the UK in 2018. This represents a 3% decrease from the 2017 estimate of 287 thousand tonnes.

Table 2.32 Wood pellet production, 2009-2018

thousand tonnes

Year[2]	Total[3]
2009	118
2010	197
2011	244
2012	278
2013	301
2014	354
2015	343
2016	329
2017	287
2018	279

Source: Survey of UK Pellet and Briquette Production

2.10.3 Wood pellet feedstock

A total of 679 thousand tonnes of feedstock was used to produce wood pellets in the UK in 2018 (Table 2.33).

Roundwood accounted for around two thirds (67%) of the feedstock.

Table 2.33 Wood pellet feedstock, 2014-2018

thousand tonnes[2]

Year	Roundwood	Sawmill products[1]	Total
2014	393	306	699
2015	332	290	621
2016	377	320	697
2017	354	295	648
2018	453	226	679

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.

Chapter 3: Trade

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 2018 were previously published in "UK Wood Production and Trade: 2018 Provisional Figures", released on 16 May 2019. Some figures for 2018 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:

- 7.2 million cubic metres of sawnwood in 2018, a 6% decrease from the 2017 figure;
- 3.9 million cubic metres of wood-based panels in 2018, a 2% increase from 2017;
- 8.0 million tonnes of wood pellets in 2018, a 16% increase from 2017;
- 5.5 million tonnes of paper in 2018, a 2% decrease from 2017.
- The total value of wood product imports in 2018 was £8.3 billion, representing a 5% increase from 2017; of which £4.1 billion was pulp and paper.
- Sawn softwood, particleboard, fibreboard, and paper and paperboard were overwhelmingly imported from EU countries in 2018.
- Sawn hardwood and wood pulp imports originated from a range of both EU and non-EU countries in 2018.
- The vast majority of UK imports of plywood and wood pellets in 2018 came from countries outwith the EU.
- Apparent consumption of wood in the UK was 56.4 million m^3 WRME underbark in 2018, representing a 1% decrease from the previous year.

UK exports:

- The total value of wood product exports in 2018 was £1.8 billion, a 3% decrease from 2017; of which £1.6 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 11.3 million m^3 WRME underbark in 2018 (Table 3.1). A further 49.0 million m^3 WRME underbark of wood and wood products were imported to the UK and 3.9 million m^3 WRME underbark were exported, giving apparent consumption of 56.4 million m^3 WRME underbark. This represented a 1% decrease 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 2018.

Table 3.1 Apparent consumption of wood1 in the UK, 2009-2018

million m^3 WRME underbark

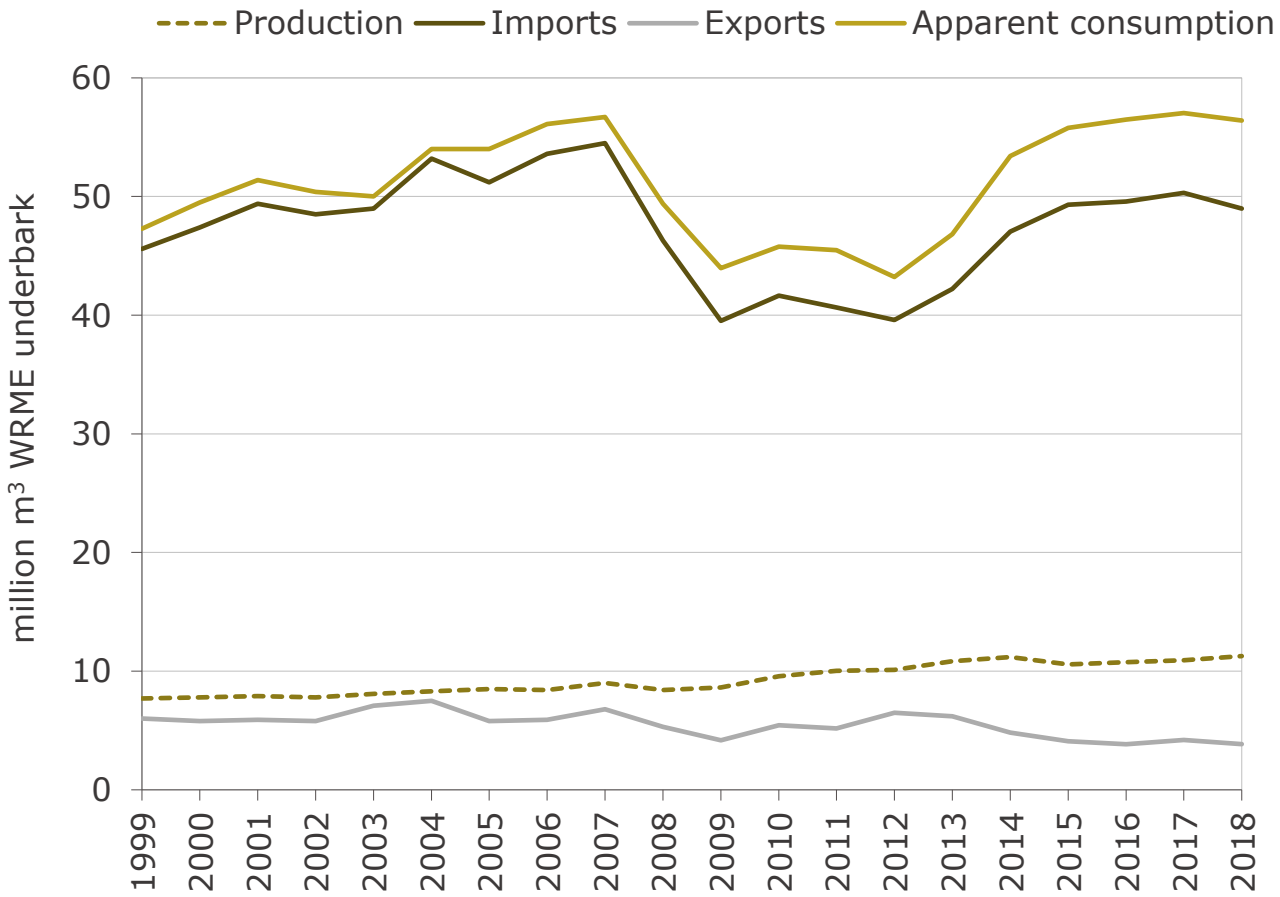
Year	UK production[2]	Imports	Exports	Apparent Consumption
2009	8.6	39.5	4.2	44.0
2010	9.6	41.6	5.5	45.8
2011	10.0	40.6	5.2	45.5
2012	10.1	39.6	6.5	43.2
2013	10.8	42.2	6.2	46.8
2014	11.2	47.0	4.8	53.4
2015	10.6	49.3	4.1	55.8
2016	10.8	49.6	3.8	56.5
2017	10.9	50.3	4.2	57.0
2018	11.3	49.0	3.9	56.4

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, 1999-2018



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. 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 35% of the UK sawnwood market, 46% of the UK wood-based panel market and 45% of the UK paper market in 2018 (Table 3.2).

Table 3.2 Apparent consumption of wood products[1,2] in the UK, 2018

Product	UK production	Imports	Exports	Apparent consumption
Sawnwood[3] (thousand m³)				
Coniferous	3 674	6 626	218	10 082
Non-coniferous	41	587	20	608
Total	**3 715**	**7 213**	**238**	**10 690**
Wood-based panels (thousand m³)				
Veneer sheets	0	30	2	28
Plywood	0	1 598	79	1 519
Particleboard	2 355	1 328	159	3 524
Fibreboard	724	922	55	1 591
Total	**3 079**	**3 878**	**295**	**6 662**
Paper & paperboard (thousand tonnes)				
Graphic papers	962	2 887	367	3 482
Sanitary & household papers	738	391	33	1 096
Packaging materials	1 904	2 212	355	3 760
Other paper & paperboard	291	36	16	311
Total	**3 894**	**5 525**	**771**	**8 648**

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 7.5 million tonnes in 2018 (Table 3.3) a decrease of 3% from 2017. Imports increased by 12% and exports decreased by 4% between 2017 and 2018, resulting in a 1% fall in apparent consumption over this period (Table 3.3).

Table 3.3 Flow of recovered paper, 2009-2018

thousand tonnes

Year	UK production	Imports	Exports	Apparent consumption[1]
2009	8 155	94	4 444	3 805
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	7 547	120	4 540	3 127

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 2018 included 7.2 million cubic metres of sawnwood (a 6% decrease from the previous year), 3.9 million cubic metres of wood-based panels (2% increase) and 8.0 million tonnes of wood pellets (16% increase) (Table 3.4a & Table 3.4b). A total of 5.5 million tonnes of paper was imported into the UK in 2018, a decrease of 2% from 2017.

Table 3.4a UK import quantities, 2009-2018[1]

thousand m^3

Year	Sawn wood[4]	Wood-based panels[3]	Other wood[2]
2009	5 240	2 500	821
2010	5 699	2 701	1 071
2011	4 936	2 827	985
2012	5 179	2 650	965
2013	5 488	2 964	1 267
2014	6 425	3 260	1 329
2015	6 323	3 215	1 378
2016	6 794	3 410	1 121
2017	7 663	3 800	1 379
2018	7 213	3 878	1 766

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. Sawnwood includes sleepers from 2017.

Table 3.4b UK import quantities, 2009-2018[1]

thousand tonnes

Year	Wood pellets	Paper	Pulp	Recovered paper	Total pulp & paper
2009	45	7 018	940	94	8 052
2010	551	7 254	1 094	115	8 462
2011	1 015	6 887	1 009	177	8 073
2012	1 487	6 631	1 021	160	7 812
2013	3 432	5 929	1 100	184	7 213
2014	4 773	5 949	1 234	136	7 319
2015	6 573	6 032	1 223	305	7 560
2016	6 782	5 876	1 092	125	7 092
2017	6 885	5 610	1 081	107	6 798
2018	7 992	5 525	1 066	120	6 711

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 5.3 million tonnes of pulp and paper (including recovered paper) was exported from the UK in 2018 (Table 3.5a & Table 3.5b), representing a 4% decrease from 2017.

Table 3.5a UK export quantities, 2009-2018[1]

thousand m^3

Year	Sawn wood[4]	Wood-based panels[3]	Other wood[2]
2009	203	451	657
2010	195	509	1 029
2011	162	546	1 430
2012	141	597	1 779
2013	167	432	1 267
2014	175	404	1 083
2015	187	286	1 018
2016	193	314	810
2017	218	374	638
2018	238	295	595

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. Sawnwood includes sleepers from 2017.

Table 3.5b UK export quantities, 2009-2018[1]

thousand tonnes

Year	Wood pellets	Paper	Pulp	Recovered paper	Total pulp & paper
2009	12	896	22	4 444	5 361
2010	60	926	35	4 388	5 349
2011	38	974	32	4 479	5 485
2012	54	1 102	36	4 447	5 585
2013	106	1 119	23	4 248	5 390
2014	98	1 010	21	4 436	5 467
2015	88	807	24	4 881	5 712
2016	21	760	7	4 932	5 700
2017	126	788	7	4 733	5 528
2018	63	771	15	4 540	5 326

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 2018 were valued at a total of £8.3 billion, a 5% increase from 2017 (Table 3.6a & Table 3.6b).

Pulp and paper (including recovered paper) imports were valued at £4.1 billion in 2018 (almost half of the total value of wood product imports). Sawnwood imports were valued at £1.7 billion in 2018, wood-based panels at £1.2 billion and wood pellets at £1.1 billion.

Table 3.6a UK import values, 2009-2018[1]

£ million

Year	Sawn wood[4]	Wood-based panels[3]	Other wood[2]
2009	953	677	104
2010	1 199	781	110
2011	1 080	838	79
2012	1 084	791	75
2013	1 180	882	88
2014	1 420	936	80
2015	1 311	957	88
2016	1 423	1 010	85
2017	1 636	1 155	90
2018	1 743	1 201	122

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. Sawnwood includes sleepers from 2017.

Table 3.6b UK import values, 2009-2018[1]

£ million

Year	Wood pellets	Paper	Pulp	Recovered paper	Total pulp & paper
2009	7	3 635	425	11	4 071
2010	69	3 997	593	17	4 607
2011	129	4 049	613	34	4 696
2012	185	3 727	519	21	4 266
2013	412	3 644	500	21	4 165
2014	547	3 667	509	19	4 196
2015	780	3 711	642	23	4 375
2016	915	3 434	557	13	4 003
2017	961	3 418	572	14	4 004
2018	1 117	3 415	639	21	4 075

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 £1.8 billion in 2018, a 3% decrease from the 2017 total (Table 3.7a & Table 3.7b). Total exports of wood products in 2018 comprised 88% pulp and paper (mainly paper), 6% wood-based panels, 4% sawnwood and 2% other wood.

Table 3.7a UK export values, 2009-2018[1]

£ million

Year	Sawn wood[4]	Wood-based panels[3]	Other wood[2]
2009	41	104	20
2010	47	113	35
2011	41	128	50
2012	34	130	51
2013	37	109	47
2014	43	107	39
2015	44	75	35
2016	50	91	26
2017	55	109	41
2018	64	103	41

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. Sawnwood includes sleepers from 2017.

Table 3.7b UK export values, 2009-2018[1]

£ million

Year	Wood pellets	Paper	Pulp	Recovered paper	Total pulp & paper
2009	2	1 010	10	342	1 362
2010	7	1 068	18	524	1 610
2011	3	1 044	11	595	1 650
2012	4	1 048	10	531	1 589
2013	5	1 017	8	494	1 519
2014	2	997	7	476	1 480
2015	1	901	7	534	1 441
2016	0	838	4	465	1 307
2017	6	997	5	649	1 651
2018	5	1 022	5	570	1 597

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 2018.

Sawn softwood, particleboard, fibreboard, and paper and paperboard were overwhelmingly imported from EU countries in 2018 (Table 3.8):

- Sweden (41%), Latvia (17%) and Finland (14%) provided the majority of imports of sawn softwood to the UK.
- Most particleboard imports to the UK came from Germany (20%), France (17%), Ireland and Belgium (both 14%).
- Ireland (31%), Germany (18%) Spain (11%) and Belgium (10%) were the principal sources of fibreboard imports.
- Most paper and paperboard imports came from Germany (18%), Finland and Sweden (both 17%).

Sawn hardwood and wood pulp imports originated from a range of both EU and non-EU countries in 2018:

- The USA (16%), Estonia (14%) and France (10%) provided around two fifths of sawn hardwood imports to the UK.
- Sweden (29%) and Brazil (18%) provided almost 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 (39%) and Brazil (16%) were the principal sources of plywood imports to the UK.
- The USA (61%) and Canada (19%) provided the majority of wood pellet imports to the UK.

Table 3.8 Country of origin of wood imports to the UK, 2018

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	Pellet	Wood pulp	Paper & paper board
Sweden	41	1	1	0	1	0	29	17
Germany	7	4	1	20	18	0	4	18
Finland	14	1	8	0	1	0	7	17
Latvia	17	8	2	12	8	11	0	0
France	0	10	1	17	1	0	0	8
Netherlands	0	3	0	0	0	0	13	4
Ireland	6	3	0	14	31	0	0	1
Italy	0	8	1	3	0	0	0	4
Austria	0	1	2	1	0	0	12	3
Belgium	1	1	1	14	10	0	0	3
Portugal	0	0	0	8	1	3	1	2
Spain	0	0	1	5	11	0	3	1
Estonia	2	14	0	0	0	3	0	0
Other EU-28	4	7	1	5	6	0	0	3
Total EU-28	**94**	**61**	**19**	**99**	**90**	**18**	**70**	**81**
USA	0	16	0	0	0	61	4	4
Canada	1	3	1	0	0	19	0	2
China	0	0	39	0	2	0	0	1
Brazil	0	1	16	0	3	0	18	1
Russia	5	1	8	1	3	2	0	1
Norway	0	6	0	0	0	0	0	4
Malaysia	0	3	5	0	0	0	0	0
Cameroon	0	5	0	0	0	0	0	0
Other non-EU	0	5	12	0	2	0	6	6
Total non-EU	**6**	**39**	**81**	**1**	**10**	**82**	**30**	**19**

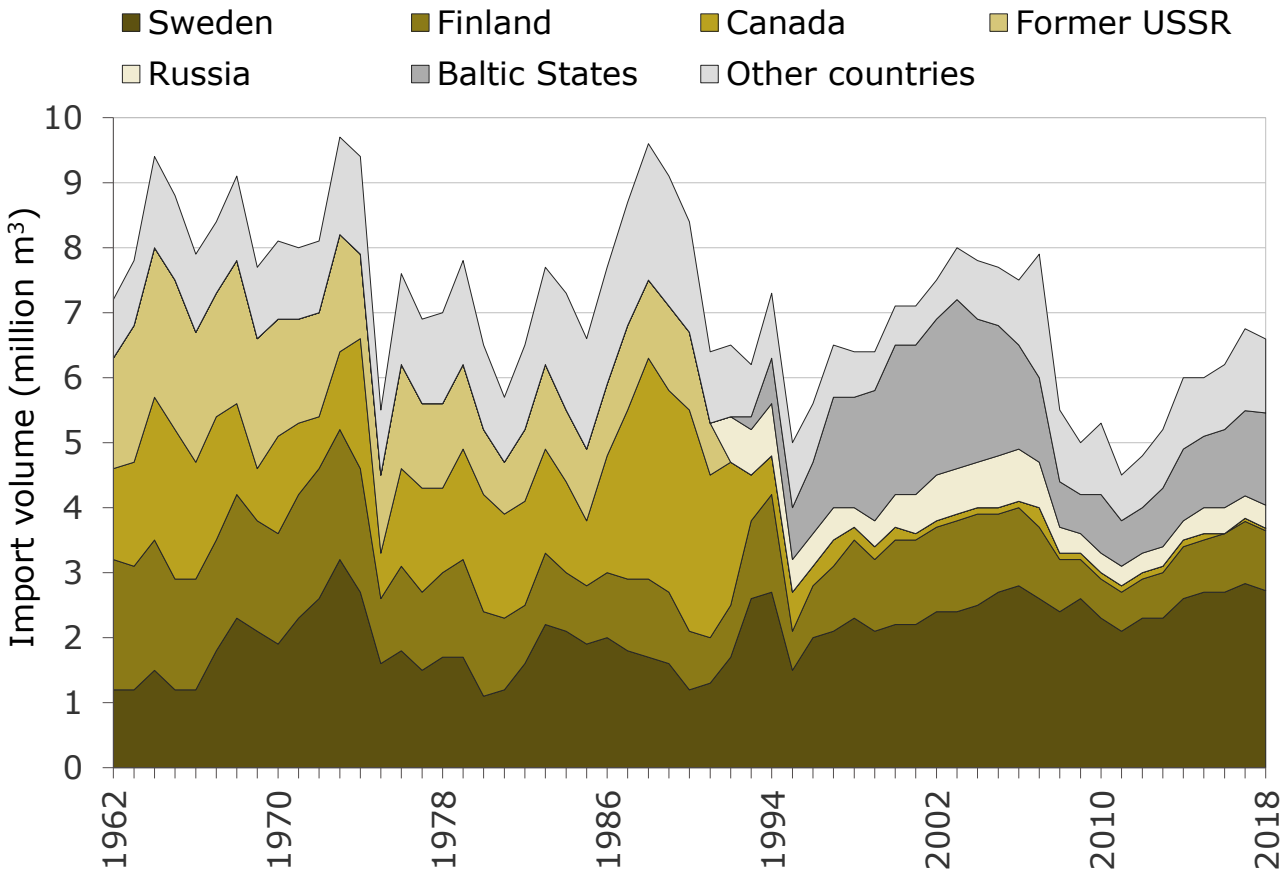
Source: UK overseas trade statistics (HM Revenue & Customs), industry associations.

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 m^3 and 10 million m^3 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, 1962-2018



Source: FAO, UK overseas trade statistics (HM Revenue & Customs), industry associations.
Notes:
1. Sawn softwood imports in this chart exclude sleepers.

Chapter 4: Carbon

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 previously included statistics on net annual changes in carbon in UK woodlands. No update is currently available, and this data will be updated in Forestry Statistics 2020. Previous results can be accessed from Forestry Statistics 2018 at https://www.forestresearch.gov.uk/tools-and-resources/statistics/forestry-statistics/forestry-statistics-2018/uk-forests-and-climate-change/carbon-sequestration/.

Key findings

The main findings are:

- The total carbon stock in UK forests is estimated to have increased between 1990 and 2015, and to continue increasing to 2020.
- A total of 187 projects had been validated to the Woodland Carbon Code at 31 March 2019, covering almost 8,300 hectares and projected to sequester 3.4 million tonnes of carbon dioxide over their lifetime.
- In 2019, 88% of the UK public agreed with the statement "a lot more trees should be planted" in response to the threat from climate change.

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 4.1 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 between 1990 and 2015, and to continue increasing to 2020 (Table 4.1). The carbon stored in forest soils accounts for around 70% of total forest carbon stock.

Table 4.1 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.

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 187 projects had been validated (including those that had also been verified) to the Woodland Carbon Code at 31 March 2019, covering almost 8,300 hectares and projected to sequester 3.4 million tonnes of carbon dioxide over their lifetime.

Of the validated projects, 70 were also verified by the end of March 2019. These projects cover around 2,400 hectares and are projected to sequester 1.1 million tonnes of carbon dioxide over their lifetime.

A total of 266 projects were registered under the Woodland Carbon Code at 31 March 2019, covering around 17,400 hectares of woodland and projected to sequester 6.2 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
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
Projected carbon sequestration[2] (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

Source: Provisional Woodland Statistics: 2019 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 2,458 thousand tonnes of carbon dioxide in Scotland, 838 thousand tonnes in England, 118 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 2019

	England	Wales	Scotland	NI	UK
Number of projects					
Awaiting validation	18	33	28	0	79
Validated only	51	9	55	2	117
Verified	27	3	40	0	70
Total validated	78	12	95	2	187
Total	**96**	**45**	**123**	**2**	**266**
Area of woodland (hectares)					
Awaiting validation	313	300	8 520	0	9 134
Validated only	1 207	128	4 498	22	5 856
Verified	286	52	2 066	0	2 404
Total validated	1 494	180	6 564	22	8 261
Total	**1 807**	**480**	**15 085**	**22**	**17 394**

Projected carbon sequestration[2] (thousand tonnes of carbon dioxide equivalent)					
Awaiting validation	153	106	2 501	0	2 760
Validated only	672	85	1 563	11	2 331
Verified	165	33	895	0	1 093
Total validated	838	118	2 458	11	3 424
Total	**991**	**224**	**4 959**	**11**	**6 184**

Source: Provisional Woodland Statistics: 2019 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.forestresearch.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 ±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.

Chapter 5: Environment

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 2018". 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. Most of this decline has occurred in woodland specialist species.
- In 2019, 85% of the UK public agreed with the statement "action should be taken by authorities and woodland managers to protect trees from damaging pests and diseases".

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 2018 and includes data to 2017.

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.

Table 5.1 UK populations of wild birds

index (year 2000 = 100)

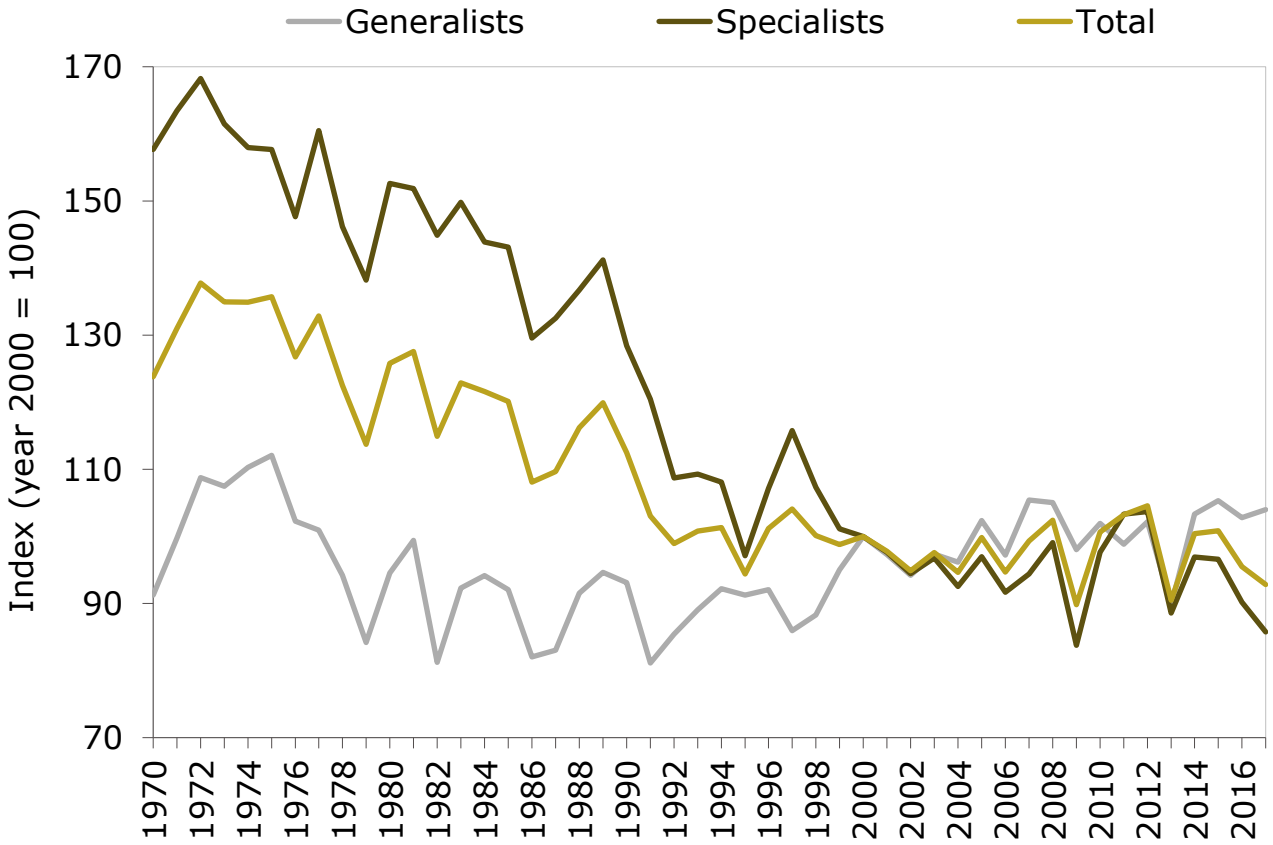
Year	Total breeding birds	Farmland birds	Seabirds	Woodland birds	Woodland generalists	Woodland specialists
2008	100.4	92.2	83.5	102.4	105.0	99.1
2009	95.9	89.5	89.4	89.8	98.0	83.8
2010	97.4	86.9	86.5	100.6	101.9	97.6
2011	95.8	86.5	80.8	103.2	98.8	103.3
2012	96.9	87.3	78.0	104.6	102.2	103.7
2013	89.6	79.1	76.9	90.5	89.7	88.6
2014	96.4	80.4	84.3	100.4	103.3	96.9
2015	99.5	85.2	81.6	100.9	105.3	96.6
2016	96.3	77.6	..	95.5	102.8	90.2
2017	97.5	80.6	..	92.8	104.0	85.7

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, 1970-2017 statistical release (Defra, November 2018).
2. .. Denotes data not available.

Figure 5.1 UK populations of woodland birds



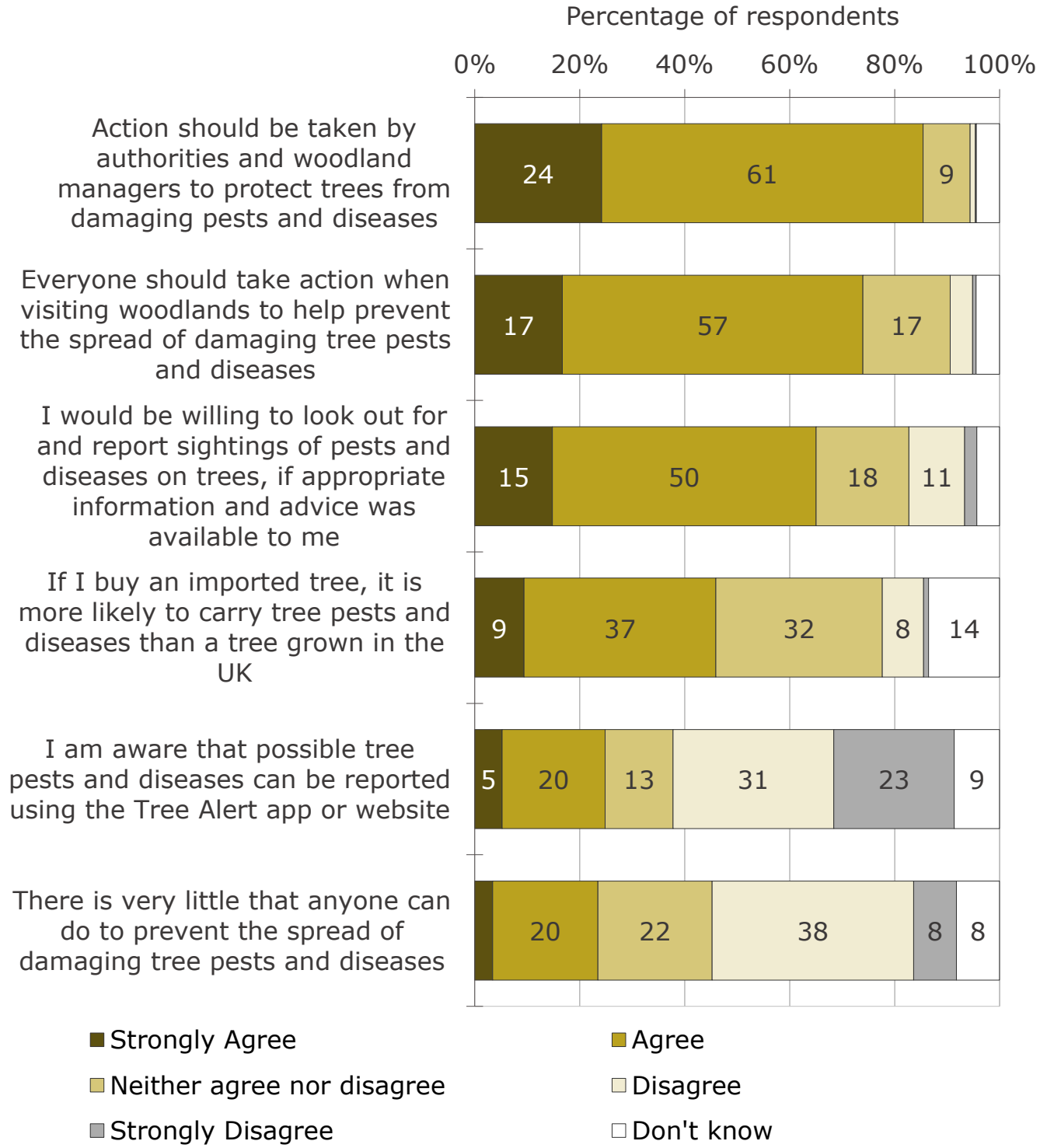
Source: British Trust for Ornithology (BTO), Department for Environment, Food and Rural Affairs (Defra), Joint Nature Conservation Committee (JNCC), Royal Society for the Protection of Birds (RSPB).
Notes:
1. Based on data in Wild Bird Populations in the UK, 1970-2017 statistical release (Defra, November 2018).

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.forestresearch.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 ±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 ±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.

5.3 Woodland Fires

The Home Office and Devolved Administrations produce estimates of the number and area of wildfires each year, using data recorded by Fire and Rescue Services using the Incident Reporting System. These figures were previously produced by the Department for Communities and Local Government.

By analysing the wildfire data with the National Forest Inventory woodland map, it has been possible to produce estimates of fires that occur within woodlands in Great Britain.

No update is currently available, so the results shown below are as published in Forestry Statistics 2018.

Table 5.3a shows the number of woodland fires in 2010-11 to 2016-17. There has been some fluctuation in the number of woodland fires in Great Britain over this period, with a high of around 9 thousand fires in 2011-12 and a low of around 2,500 in 2012-13. Most fires occurred in England.

The total number of woodland fires in Great Britain in 2016-17 (around 4,200) represents 4% of the total of around 119,000 outdoor fires in Great Britain in 2016-17 (Home Office, Welsh Government, Scottish Government).

Table 5.3a Number of woodland fires

Financial year	England	Wales	Scotland	GB
2010-11	6 182	618	1 186	7 986
2011-12	7 238	620	1 059	8 917
2012-13	1 794	176	484	2 454
2013-14	3 899	383	776	5 058
2014-15	2 360	288	490	3 138
2015-16	3 333	345	1 389	5 067
2016-17	2 570	193	1 423	4 186

Source: Fire & Rescue Service Incident Recording System, National Forest Inventory.

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

Table 5.3b shows the area covered by woodland fires between 2010-11 and 2016-17. There was a peak of around 8,700 hectares burnt in 2011-12, with the vast majority of this area occurring in Scotland.

Around 800 hectares of woodland in Great Britain were burnt in 2016-17.

Table 5.3b Area of woodland fires

hectares

Financial year	England	Wales	Scotland	GB
2010-11	979	167	129	1 276
2011-12	278	416	7 982	8 675
2012-13	48	107	268	423
2013-14	101	1 089	318	1 508
2014-15	81	38	762	881
2015-16	117	757	536	1 410
2016-17	29	93	682	804

Source: Fire & Rescue Service Incident Recording System, National Forest Inventory.

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

Chapter 6: Social

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.

Geographical coverage for recreation 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 Recreation 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 forest recreation in the UK.

Further information on the advantages and disadvantages of household surveys and of on-site surveys is provided in the Recreation 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/.

Previous editions of Forestry Statistics have also included statistics on public access to woodland in this chapter, using data from the Woodland Trust's Woods for People and Spaces for People projects. As no new data is available, this section has now been excluded; the latest results can be accessed from Forestry Statistics 2018 at www.forestresearch.gov.uk/tools-and-

resources/statistics/forestry-statistics/forestry-statistics-2018/recreation/public-access-to-woodland/.

Key findings

The main findings are:

- There were an estimated 437 million visits to woodland in England in 2017-18. (Monitor of Engagement with the Natural Environment 2017-18).
- There were an estimated 117 million visits to woodland in Scotland in 2017-18. (Scotland's People and Nature Survey 2017/18).
- "Health and exercise" and "fresh air or to enjoy pleasant weather" were important reasons for visits to woodlands in Wales. (National Survey for Wales, 2016-17 and 2017-18).
- Over three fifths (63%) of the UK population have visited woodland in the last few years. (UK Public Opinion of Forestry Survey 2019).
- Around 532 thousand people visited Forest Service sites where a charge is made in Northern Ireland in 2018-19.

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.

- UK Day Visits Surveys (1994, 1996, 1998)
- GB Day Visits Survey (2002/3)
- Scottish Recreation Survey (2004 to 2012)
- England Leisure Visits Survey (2005)
- Welsh Outdoor Recreation Survey (2008, 2011, 2014)
- Monitor of Engagement with the Natural Environment (England, 2009-10 onwards)
- Scotland's People and Nature Survey (2013, 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 2017-18 estimate a total of 437 million visits to woodlands in England (Table 6.1). This is not significantly different from the 2016-17 figure.

The Welsh Outdoor Recreation Survey 2014 estimates 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	GB
1994	273	12	18	303
1996	308	11	26	346
1998	321	11	22	355
2002	222	12	18	252
2004	..	..	70	..
2005	170	..	62	..
2006	..	..	76	..
2007	..	..	72	..
2008	..	64	62	..
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	..

Sources:
1994, 1996, 1998: UK Day Visit Surveys, carried out by National Centre for Social Research (not available online);
2002: GB Day Visits Survey 2002-03, carried out by TNS Travel & Tourism;
England 2005: England Leisure Visits Survey (ELVS), carried out by Research International;
England 2009 on: Monitor of Engagement with the Natural Environment (MENE), carried out by TNS;
Wales 2008, 2011, 2014: Welsh Outdoor Recreation Survey carried out by IPSOS-MORI (2008) and by TNS (2011, 2014);
Scotland 2004 - 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. The UK and GB Day Visits Surveys collected data about day trips from home, for all countries of GB. The 1994, 1996 and 1998 surveys covered calendar years; the 2002-03 survey covered a 12-month period starting in March 2002.
2. ELVS and MENE covered trips taken in England, including those from holiday bases, by respondents living in England. ELVS ran for 12 months from February 2005. MENE results relate to 12 month periods from March to February.

3. The Welsh Outdoor Recreation Survey totals shown are for trips with woodland as the main destination.
4. 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.
5. In each survey, visits to overseas destinations are excluded.
6. .. 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.

Table 6.2 shows the main characteristics of visits to woodlands over the most recent 5 years. In 2017-18, walking was the main mode of transport for around one half (52%) of visits to woodland. Over one half (56%) of visits to woodland were within 2 miles.

Table 6.2 Woodland visit characteristics1 - England 2013-14 to 2017-18

per cent of respondents

	2013-14	2014-15	2015-16	2016-17	2017-18
Main mode of transport					
On foot	62	60	60	54	52
Car/ van	33	36	36	42	44
Bicycle	3	2	2	2	1
Distance travelled (one way)					
Less than 1 mile	36	39	32	28	29
1 to 2 miles	27	25	31	28	27
3 to 5 miles	22	19	20	21	23
6 to 10 miles	7	9	8	11	11
Over 10 miles	8	9	10	12	10

Source: Monitor of Engagement with the Natural Environment (MENE), carried out by TNS, for Natural England and Department for Environment, Food & Rural Affairs (Defra).
Notes:
1. All trips that included a visit to woodland.
2. .. Denotes data not available.

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 visit was woodland.

"Health and exercise" and "fresh air or to enjoy pleasant weather" were important reasons for visits to woodlands in Wales.

Table 6.3 Reasons for visit to woodland or forest – Wales

per cent of respondents

Reasons for visit	2016-17	2017-18
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 2017-18.

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 visitors[1]

per cent of respondents

Year	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

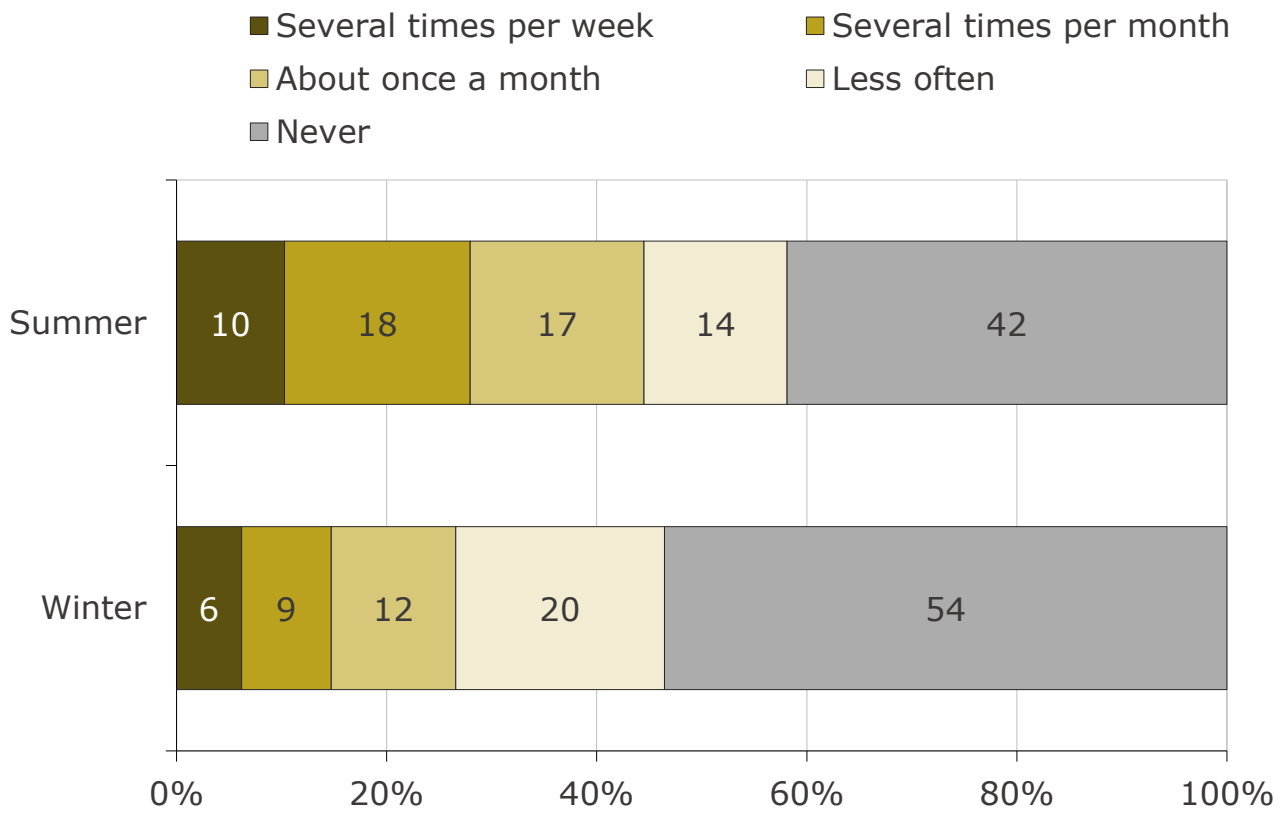
Source: UK/GB, Scotland, Wales and Northern Ireland Public Opinion of Forestry Surveys
Base: UK/GB = 4,000 respondents (2003 to 2007), 2,000 respondents (2009 to 2019);
Scotland and Wales = 1,000 respondents each;
Northern Ireland = 120 respondents (2003), 1,000 respondents (all other years).
Notes:

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 ±3.5% (for surveys with around 2,000 respondents) and ±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 ±3.5% in any individual year and no more than ±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 ±3.5% (for surveys with around 2,000 respondents) and ±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.

Further information on these and other sources of on-site visit data are available from the Sources chapter and from the recreation statistics web pages at www.forestresearch.gov.uk/tools-and-resources/statistics/statistics-by-topic/recreation-statistics/.

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, with over 5,000 hours of fieldwork undertaken over 1,158 days, achieving almost 2,700 face to face interviews. The study 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. The survey made greater use of data from automatic counters, but also achieved over 400 days of fieldwork and 1,970 face-to-face interviews.

The 2012-13 survey 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.

Table 6.6 provides a summary of the key characteristics and results obtained from the Scotland All Forests surveys and appears to show some change in visit characteristics over time, with a general trend towards longer, more distant and less frequent visits. From the 2012-13 survey, around two thirds of visitors to Forestry and Land Scotland woodlands were on a day trip from home. Walking (with or without a dog) was the main activity undertaken by around three quarters of visitors. Over four fifths travelled to the site by car or van and around one third travelled more than 15 miles to get to the site. Around one third of visitors were on short trips, spending one hour or less in the forest. Around one half of respondents visited the site at least monthly.

Table 6.6 Woodland visit characteristics - Scotland All Forests Survey

per cent of respondents

Woodland visit characteristics	2004-2007	2012-13
Type of trip		
Day trip	82	67
Overnight trip	18	33
Main activity during visit		
Dog walking	50	43
Other walking	29	29
Cycling	11	8
Main transport		
Car / van	78	85
Walked	18	11
Cycled	2	2
Distance travelled (one way)		
Less than 6 miles	58	43
6 to 15 miles	19	25

16 to 25 miles	10	12
Over 25 miles	12	20
Duration of visit (time spent in forest)		
Up to 1 hour	59	35
Over 1 hour, up to 2 hours	24	36
Over 2 hours, up to 3 hours	10	16
Over 3 hours	7	13
Frequency of visit to site of interview		
More than once a day	7	3
Once a day	13	9
1 to 3 times per week	25	22
1 to 3 times per month	17	14
1 to 3 times per year	17	18
Less often	5	7
First ever visit	16	27

Source: Scotland All Forests Survey 2004-2007 and All Forests Survey 2, carried out by TNS.

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

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 2018-19, 532 thousand people visited those Forest Service sites where an admission charge was made (Table 6.7). This represented a 5% increase from the previous year, but remained lower than the peak in 2016-17.

Table 6.7 Day visitors to Northern Ireland Forest Service sites[1]

thousands

Year	Visitors to Forest Service sites
2009-10	473
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

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.

Chapter 7: Employment & Businesses

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 2018. 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 reported average employment1 in 2017 of 16 thousand in forestry and 27 thousand in primary wood processing.
- There was estimated to be a total of 7.7 thousand full time equivalent staff employed1 by primary wood processors in the UK in 2018, a 2% decrease from the total for 2017.
- 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 213 establishments in the primary wood processing industries in the UK using UK-grown roundwood in 2018.

Note:

1. 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 7.2), as they include primary processing of imported material and also some secondary processing.

The latest ABS survey was published in May 2019 and includes data to 2017. It recorded average employment in 2017 of 16 thousand in forestry and 27 thousand in primary wood processing (sawmilling, panels and pulp & paper) (Table 7.1).

Table 7.1 Employment in forestry and wood processing[2], 2013-2017

thousands

Standard Industrial Classification (SIC)[1]	2013	2014	2015	2016	2017
Forestry	14	16	17	17	16
Wood products					
Sawmilling	8	9	8	9	9
Panels	5	5	5	5	5
Secondary products	51	65	56	67	60
Total	**64**	**79**	**69**	**81**	**74**
Pulp, paper & paper products					
Pulp & paper[3]	13	13	13	13	13
Articles of paper & paperboard	41	44	43	43	42
Total	**54**	**57**	**56**	**56**	**55**
Total wood processing	**118**	**136**	**125**	**137**	**129**
Total primary wood processing	**26**	**27**	**26**	**27**	**27**

Source: Annual Business Survey - average employment in year (Office for National Statistics, May 2019)
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. Excludes other wood-using industries.
3. Pulp and paper breakdowns for 2013 to 2017 have been suppressed in the figures released by ONS. The figures shown here are estimated from 2008 figures.

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 7.7 thousand full time equivalent staff employed by primary wood processors in the UK in 2018 (Table 7.2), a 2% decrease from the total for 2017.

Over one half (57%) of the total employment in 2018 worked in sawmills and over one quarter (28%) worked in wood-based panel mills.

Table 7.2 Employment in primary wood processing, 2014-2018

Full-time equivalents

Year	Sawmills	Pulp & paper	Wood-based panels	Fencing	Total
2014	4 382	703	2 091	407	**7 583**
2015	4 319	702	2 100	361	**7 483**
2016	4 450	697	2 250	388	**7 785**
2017	4 593	700	2 110	427	**7 830**
2018	4 411	693	2 175	402	**7 681**

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.

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.

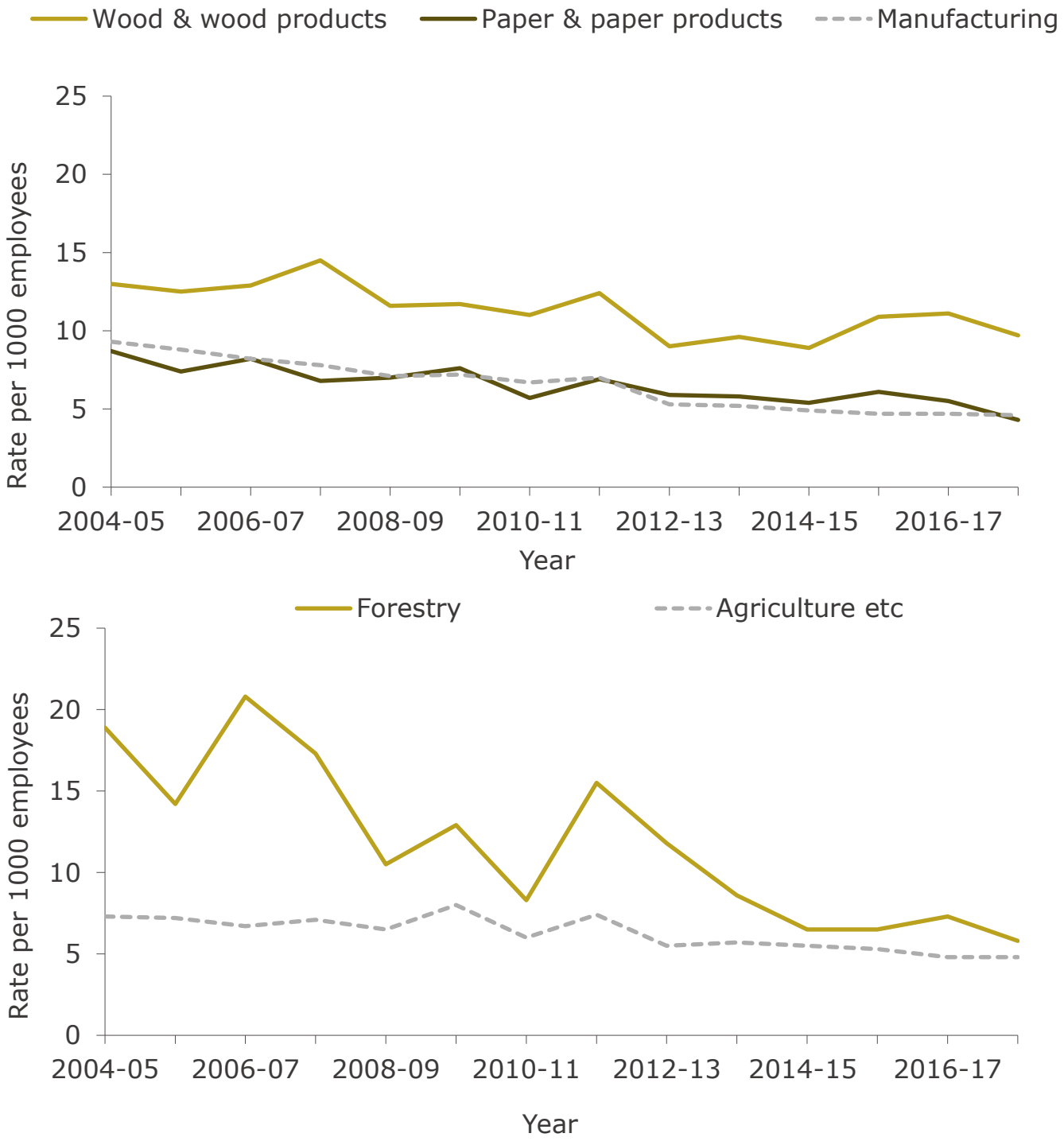
The latest major accident rates for Great Britain, covering 2017-18, show an increase from the previous year for the forestry sector and a decrease for the wood products sector. Over the longer term, the rates for both sectors have generally declined, but they continue to remain higher than the averages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

Table 7.3 Accidents to employees[1] in forestry and wood processing3, 2013-14 - 2017-18

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				
2013-14	51	3.8	116	8.6
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 provisional	38	2.3	95	5.8
Wood products				
2013-14	155	2.9	523	9.6
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 provisional	125	2.4	514	9.7
Pulp, paper & paper products				
2013-14	85	1.5	322	5.8
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 provisional	60	1.1	245	4.3

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 around 1 per year for forestry and 2 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 2017-18



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 273 in 2009 to 213 in 2018, 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]
2009	195	2	8	68	273
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	167	2	6	50	225
2017	164	2	6	50	222
2018	157	2	6	48	213

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 4,150 forestry businesses, 540 sawmilling businesses, 130 wood-based panel businesses and 240 pulp & paper businesses were registered for VAT and/or PAYE purposes in the UK in 2018.

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], 2009-2018

Year	Forestry	Sawmilling	Panels	Pulp & paper
2009	3 100	685	130	270
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

Source: UK Business: Activity, Size and Location: 2018 (Office for National Statistics, October 2018).
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.

Chapter 8: Finance & Prices

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 2018. 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/.

Previous editions of Forestry Statistics have also included statistics on financial returns from forestry investment in this chapter, from the Investment Property Databank (IPD) UK Forestry Index. As no new data is available, this section has now been excluded; the latest results can be accessed from Forestry Statistics 2018 at www.forestresearch.gov.uk/tools-and-resources/statistics/forestry-statistics/forestry-statistics-2018/finance-prices/financial-return-from-forestry-investment/.

Key findings

The main findings are:

- The Coniferous Standing Sales Price Index for Great Britain was 26.8% higher in real terms in the year to March 2019, compared with the previous year.
- The Softwood Sawlog Price Index for Great Britain was 32.5% higher in real terms in the 6 months to March 2019, compared with the corresponding period of the previous year.
- Gross value added (GVA) in primary wood processing (sawmilling, panels and pulp & paper) was £1.48 billion in the UK in 2017. GVA in forestry was £0.70 billion.
- Net expenditure on public forests by Forestry England and by Forestry and Land Scotland totalled £27 million in 2018-19. A further £97 million was spent by the Forestry Commission and Scottish Forestry on other activities.
- A total of £76.6 million was paid in grants by the Forestry Commission, Scottish Forestry and the Welsh Government in 2018-19.

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 2019.

The coniferous standing sales price index for Great Britain was 26.8% higher in real terms in the year to March 2019, compared with the previous year (Table 8.1). The softwood sawlog price index was 32.5% higher in real terms in the 6 months to March 2019, compared with the corresponding period in the previous year.

Table 8.1 Coniferous standing sales and sawlog price indices[1] for Great Britain, 2012-2019

index (period to September 2016 = 100)

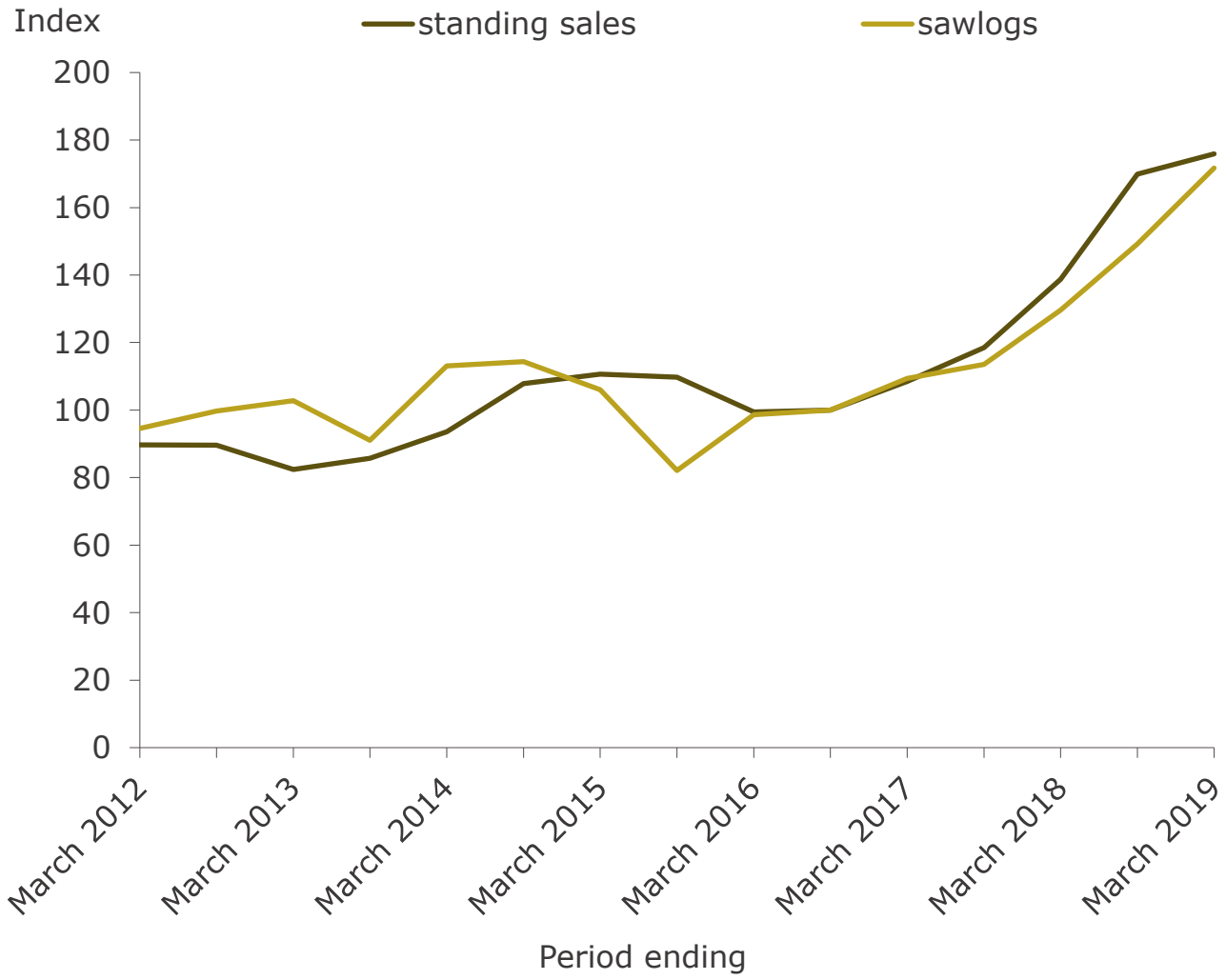
Year	Standing sales[3] in nominal terms[3]	Standing sales[3] index in real terms[4]	Sawlog index in nominal terms[3]	Sawlog index in real terms[4]
2012	83.9	89.7	88.2	94.6
2013	78.6	82.4	97.9	102.8
2014	90.9	93.6	109.5	113.1
2015	108.8	110.6	103.2	106.0
2016	98.5	99.4	97.1	98.6
2017	110.0	108.5	110.8	109.4
2018	143.5	138.7	133.9	129.6
2019	185.5	175.9	180.6	171.7

Source: Timber Price Indices: data to March 2019

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 terms[3] for Great Britain, 2012-2019



Source: Timber Price Indices: data to March 2019

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 2017, GVA in primary wood processing (sawmilling, panels and pulp & paper) was reported to be £1.48 billion and GVA in forestry was £0.70 billion.

Table 8.2 Gross value added in forestry and wood processing[3], 2013-2017

£ million

Standard Industrial Classification (SIC)[1]	2013	2014	2015	2016	2017
Forestry	504	540	658	596	701
Wood products					
Sawmilling	518	356	474	413	437
Panels[2]	267	436	323	316	363
Secondary products	1 797	1 955	2 477	2 850	2 597
Total	2 582	2 747	3 275	3 579	3 397
Pulp, paper & paper products					
Pulp & paper	578	596	738	610	682
Articles of paper & paperboard	3 115	3 197	2 749	2 786	2 554
Total	3 693	3 793	3 487	3 396	3 236
Total wood processing	6 275	6 540	6 762	6 975	6 633
Total primary wood processing	1 363	1 388	1 535	1 339	1 482

Source: Annual Business Survey (Office for National Statistics, May 2019)
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 2013 to 2016 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 2018-19 totalled £27 million. This comprised £15 million in Scotland and £12 million in England.

Recreation, conservation & heritage accounted for £70 million of the total expenditure in 2018-19, harvesting & haulage for £43 million and other expenditure on public forests for £111 million.

Timber sales generated a total income of £131 million in 2018-19. Recreation, conservation & heritage accounted for a further £32 million and other income from public forests for £35 million.

Table 8.3 Funding public forests - net expenditure[1,2,3]

£ million

	2014-15	2015-16	2016-17	2017-18	2018-19
GB					
Harvesting & haulage	36.6	37.9	35.9	36.8	42.6
Recreation, etc[4]	70.2	67.8	70.9	72.8	70.2
Other	81.9	89.2	89.0	96.5	111.3
Timber	-103.1	-99.1	-104.3	-111.3	-131.2
Recreation, etc[4]	-24.3	-24.8	-29.6	-32.1	-31.5
Other	-25.1	-26.8	-27.7	-23.1	-34.7
Net expenditure	**36.2**	**44.2**	**34.2**	**39.6**	**26.7**

England					
Harvesting & haulage	9.8	10.6	10.6	11.3	14.0
Recreation, etc[4]	41.8	45.0	49.7	49.4	49.4
Other	24.5	29.2	31.3	32.9	38.3
Timber	-37.3	-36.7	-38.9	-43.4	-53.2
Recreation, etc[4]	-18.3	-21.1	-26.2	-28.3	-27.8
Other	-11.1	-9.3	-8.6	-5.8	-8.8
Net expenditure	**9.4**	**17.7**	**17.9**	**16.1**	**11.9**
Scotland					
Harvesting & haulage	26.8	27.3	25.3	25.5	28.6
Recreation, etc[4]	28.4	22.8	21.2	23.4	20.8
Other	57.4	60.0	57.7	63.6	73.0
Timber	-65.8	-62.4	-65.4	-67.9	-78.0
Recreation, etc[4]	-6.0	-3.7	-3.4	-3.8	-3.7
Other	-14.0	-17.5	-19.1	-17.3	-25.9
Net expenditure	**26.8**	**26.5**	**16.3**	**23.5**	**14.8**

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 £97 million on other activities in 2018-19 (Table 8.4).

£63 million was used by the national offices in England and Scotland for grants and partnership funding and a further £12 million for policy, regulation & administration in 2018-19. At a GB level, £22 million was used for international & GB support services and £12 million for research.

Table 8.4 Other government expenditure on forestry[1,2]

£ million

	2014-15	2015-16	2016-17	2017-18	2018-19
GB					
Grants and partnership funding[3]	82.0	57.2	61.6	57.6	62.9
Policy, regulation & administration	11.9	13.1	12.2	11.9	12.1
Research - GB funded[4]	8.6	8.4	9.6	10.5	11.8
International & GB support services[4]	32.5	32.1	28.4	25.4	21.6
Less recovery of support service costs from countries	-20.3	-20.7	-16.1	-13.0	-11.3
Total	**114.7**	**90.1**	**95.7**	**92.4**	**97.1**
England					
Grants and partnership funding[3]	37.4	24.8	24.0	13.8	8.3
Policy, regulation & administration[5]	2.0	1.8	2.2	1.9	0.7

Total	**39.4**	**26.6**	**26.2**	**15.7**	**9.0**
Scotland					
Grants and partnership funding[3]	44.6	32.4	37.6	43.8	54.6
Policy, regulation & administration[5]	9.9	11.3	10.0	10.0	11.4
Total	**54.5**	**43.7**	**47.6**	**53.8**	**66.0**

Source: Forestry Commission, Scottish Forestry

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.
4. The estimates for GB funded research exclude work by Forest Research funded by external organisations. 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.

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. 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 1.14 for total areas of new planting and 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 2009-10 to 2018-19. A total of £76.6 million was paid in grants in 2018-19, a 37% increase from the total for the previous year.

At a country level, £50.2 million was paid in grants in Scotland in 2018-19 (an increase of 32% from the previous year), £20.5 million was paid in England (a 52% increase) and £5.9 million in Wales (an increase of 27%).

Table 8.5 Grant money paid, 2009-10 to 2018-19

£ million

	England[1]	Wales[2]	Scotland[3]	GB
2009-10	24.4	2.9	5.7	33.0
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

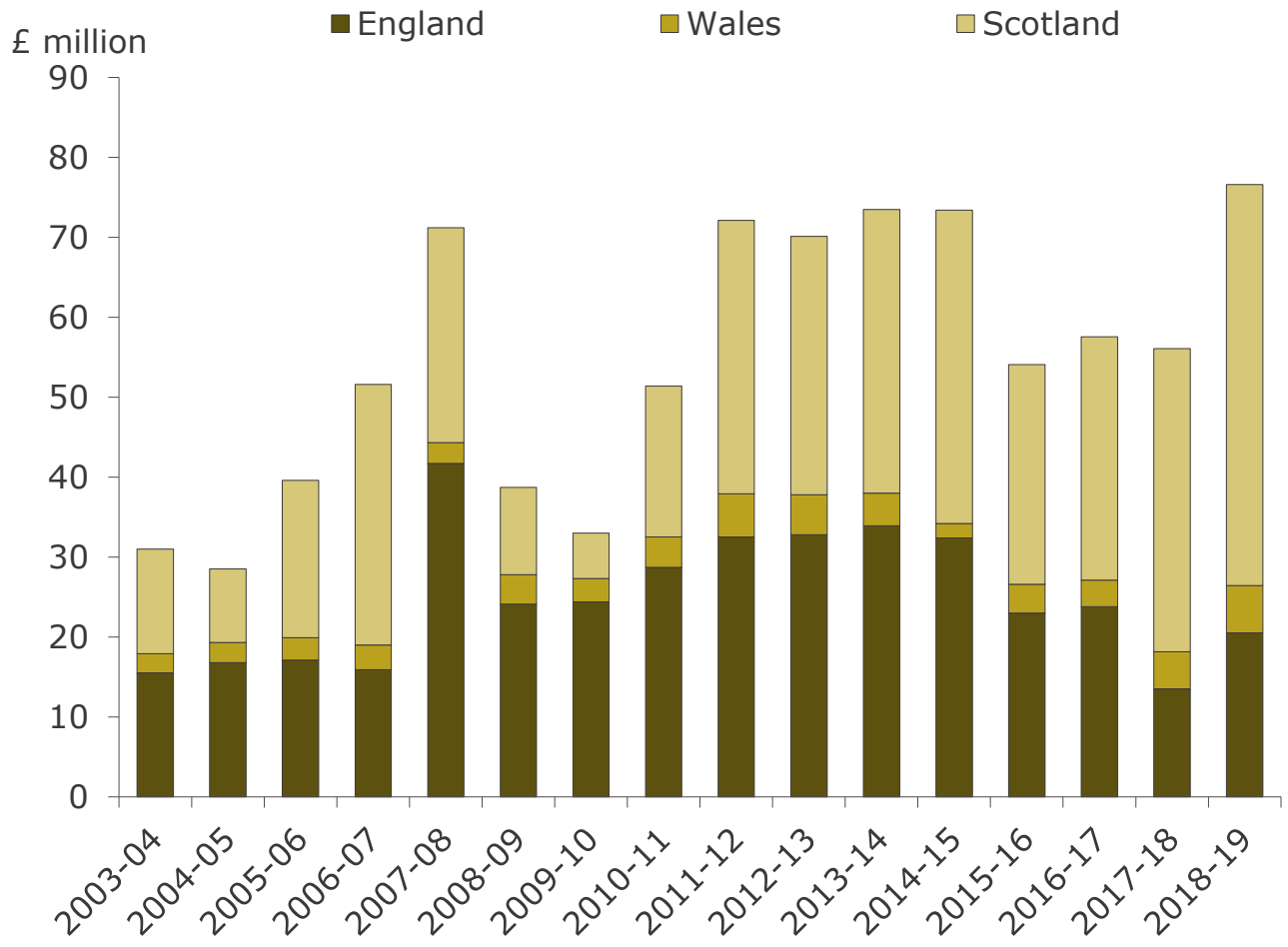
Source: Forestry Commission, Scottish Forestry, Welsh Government

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 2018-19



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).

Chapter 9: International Forestry

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 28 current EU members, including the UK, for all of the years shown. Data for Europe cover 27 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 2015, the UK is one of the least densely forested countries in the European Union. This compares with 38% for the EU as a whole and 31% worldwide.
- The global forest area reduced by around 3.3 million hectares (0.1%) per year between 2010 and 2015.
- Carbon stocks in forest living biomass have increased in both Europe and North & Central America between 2010 and 2015, but have decreased at a global level.
- A total of 3.8 billion m^3 underbark of wood was removed from global forests in 2017, of which around one half (50%) was for use as woodfuel and the remainder was industrial roundwood (for use by wood processors).
- Global production of wood products in 2017 totalled 486 million m^3 of sawnwood, 404 million m^3 of wood-based panels and 414 million tonnes of paper & paperboard.
- Europe consumed around one quarter (24%) of all sawnwood, around one fifth (20%) of the world's wood-based panels and around one fifth (22%) of all paper and paperboard in 2017.
- The UK was the second largest net importer (imports less exports) of forest products in 2017, with net imports of US $7.6 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 the European Union with around 13% of its total land area covered in forest in 2015 (Table 9.1, Figure 9.1). This compares with 38% for the EU as a whole and 31% worldwide.

Table 9.1 Forest cover as a percentage of total land area: international comparisons, 2015

Country	Forest area (million ha)	Total land area (million ha)	Forest as % of land area
Europe			
United Kingdom	3	24	13
Denmark	1	4	14
Finland	22	30	73
France	17	55	31
Germany	11	35	33
Ireland	1	7	11
Italy	9	29	32
Spain	18	50	37
Sweden	28	41	68
Other EU	50	148	34
Total EU-28[1]	**161**	**424**	**38**
Russian Federation	815	1 638	50
Total Europe[2]	**1 015**	**2 214**	**46**
Africa	624	2 987	21
Asia	593	3 118	19
North & Central America	751	2 134	35
Oceania	174	850	20
South America	842	1 747	48
World	**3 999**	**13 049**	**31**

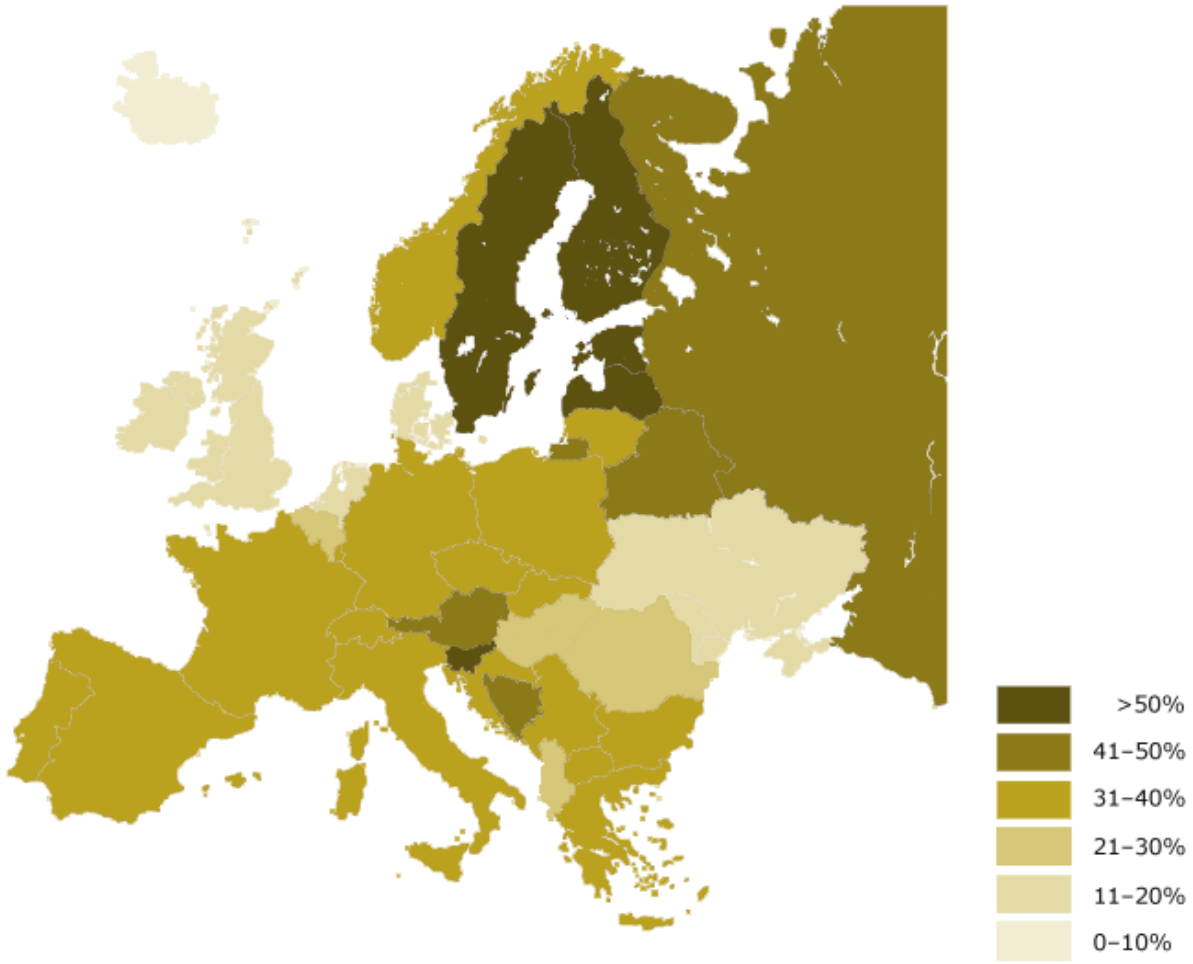
Source: FAO Global Forest Resources Assessment 2015.

Notes:

1. Cyprus is included in EU-28 total but is part of FAO's Asia region.
2. The Europe region covers 27 EU countries (excluding Cyprus), 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.

Figure 9.1 Forest cover as a percentage of total land area: Europe, 2015



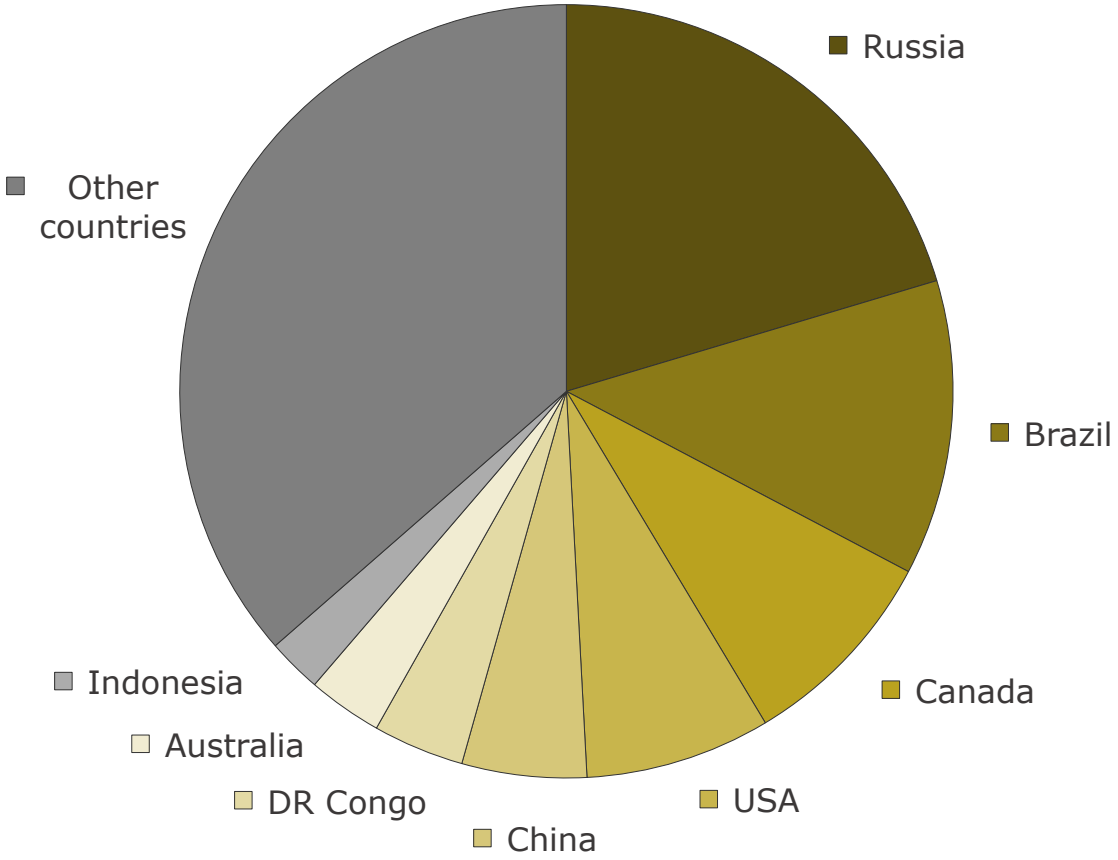
Source: FAO.

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 3,999 million hectares in 2015 is located in four countries (the Russian Federation, Brazil, Canada and the USA).

Figure 9.2 Forest area by country, 2015



Source: FAO Global Forest Resources Assessment 2015.

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 3,999 million hectares in 2015. This represents a decrease of around 7.3 million hectares (0.2%) per year between 1990 and 2000, of around 4.0 million hectares (0.1%) per year between 2000 and 2010 and of around 3.3 million hectares (0.1%) per year between 2010 and 2015 (Table 9.2).

The forest area has reduced in most regions since 1990, except for Europe (where the area increased in each time period) and Asia (where the area reduced between 1990 and 2000 but has increased by more between 2000 and 2015).

Table 9.2 Annual changes in forest area by region, 1990-2015

percentage change in forest area

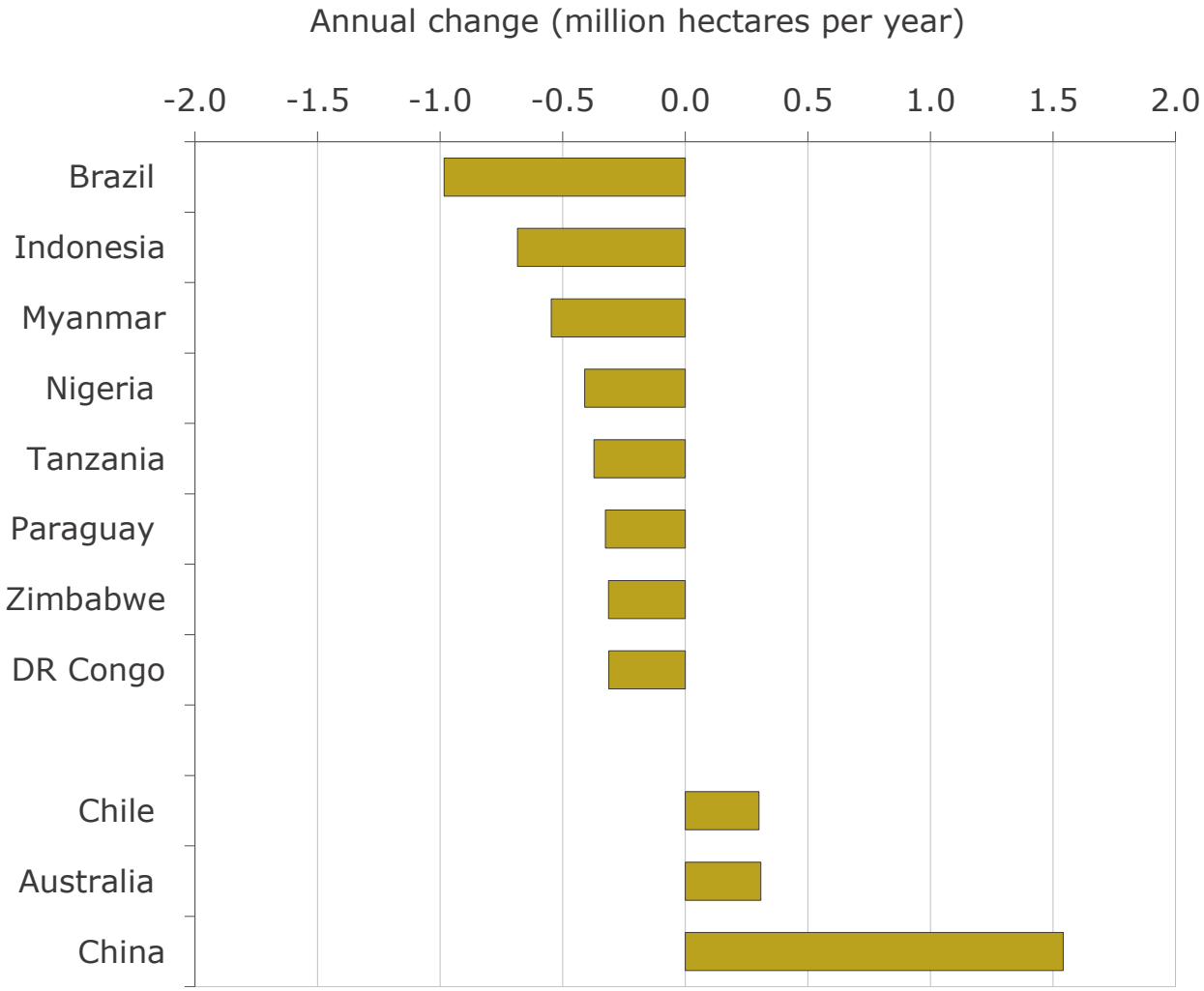
Region	1990-2000	2000-2010	2010-2015
Europe			
UK	0.6	0.3	0.5
EU-281	0.5	0.3	0.2
Total Europe	**0.1**	**0.1**	**0.0**
Africa	-0.5	-0.5	-0.4
Asia	0.0	0.4	0.1
North and Central America	-0.1	0.0	0.0
Oceania	0.0	-0.3	0.2
South America	-0.4	-0.4	-0.2
World	**-0.2**	**-0.1**	**-0.1**

Source: FAO Global Forest Resources Assessment 2015.
Notes:
1. Cyprus is included in EU-28 total but is part of FAO's Asia region.
2. UK figures for 2015 are 2013-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 2015, the largest decrease in forest area was in Brazil (1.0 million hectares per year on average) and the largest increase was in China (1.5 million hectares per year on average) (Figure 9.3).

Figure 9.3 Countries with largest changes in forest area, 2010-2015



Source: FAO Global Forest Resources Assessment 2015.
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 2010 and 2015, but have decreased at a global level, reflecting continuing trends since 1990 (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 declined slightly in Asia, where carbon sequestered in new plantations is not yet able to balance out carbon losses from areas of deforestation.

Table 9.3 Carbon stocks in forest living biomass by region, 1990-2015

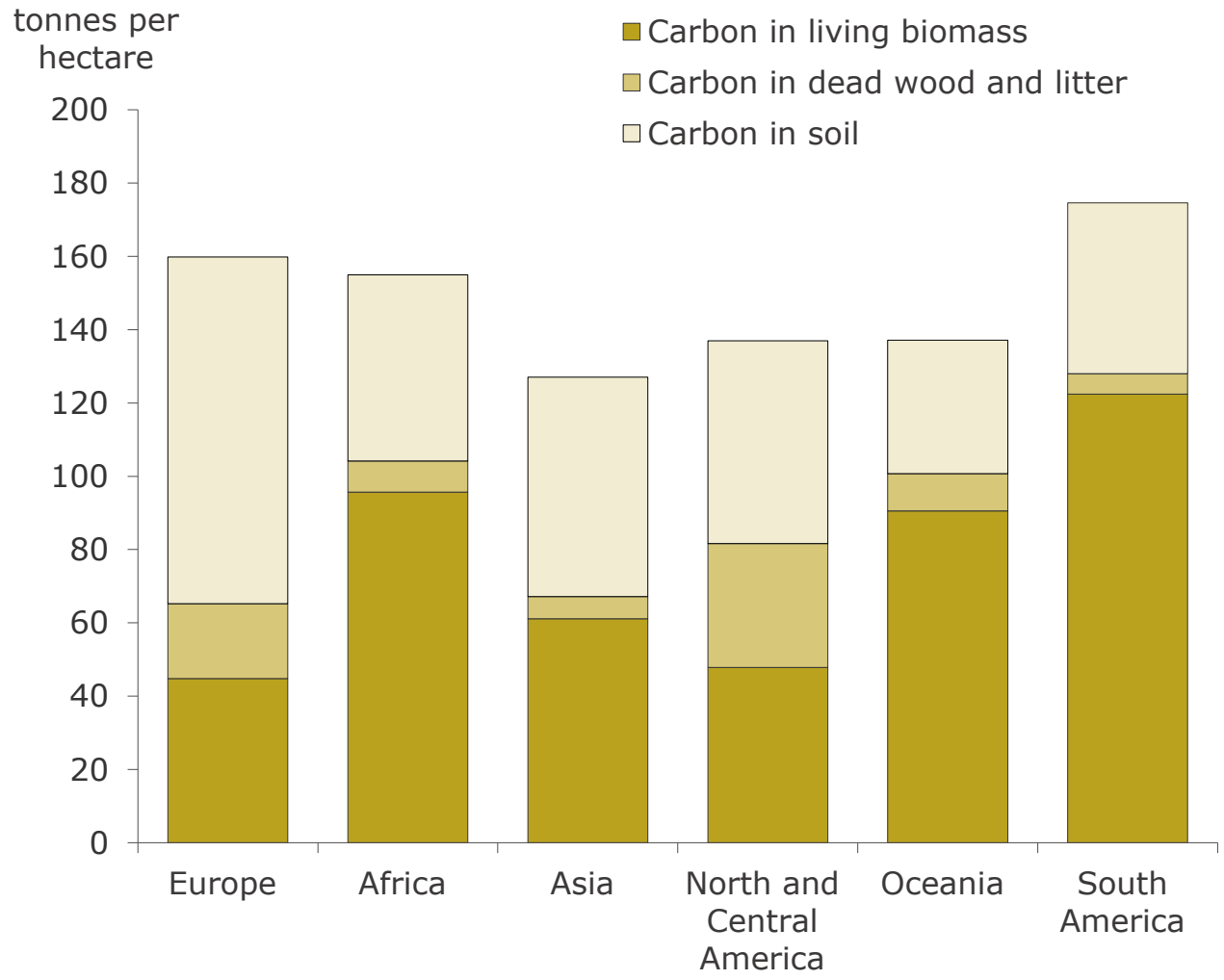
giga tonnes of carbon

Region	1990	2000	2005	2010	2015
Europe	41.4	42.5	43.2	44.4	45.5
Africa	66.5	63.5	62.1	60.8	59.7
Asia	38.1	37.7	37.2	36.8	36.3
North and Central America	33.9	34.9	35.3	35.6	35.9
Oceania	16.1	15.9	15.9	15.9	15.7
South America	111.5	107.8	105.5	104.0	103.1
World	307.6	302.3	299.2	297.6	296.2

Source: FAO Global Forest Resources Assessment 2015.
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, 2015



Source: FAO Global Forest Resources Assessment 2015.

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

9.5 Wood removals

A total of 3.8 billion m^3 underbark of wood was removed from global forests in 2017, of which around one half (50%) 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 2017. Globally, removals of industrial roundwood increased by 3% between 2015 and 2017, resulting from increases in all regions.

Three quarters (74%) of woodfuel removals in 2017 took place in Asia and Africa. Globally, removals of woodfuel increased by 2% between 2015 and 2017.

Table 9.4 Wood removals by region, 1990-2017

million m^3 underbark

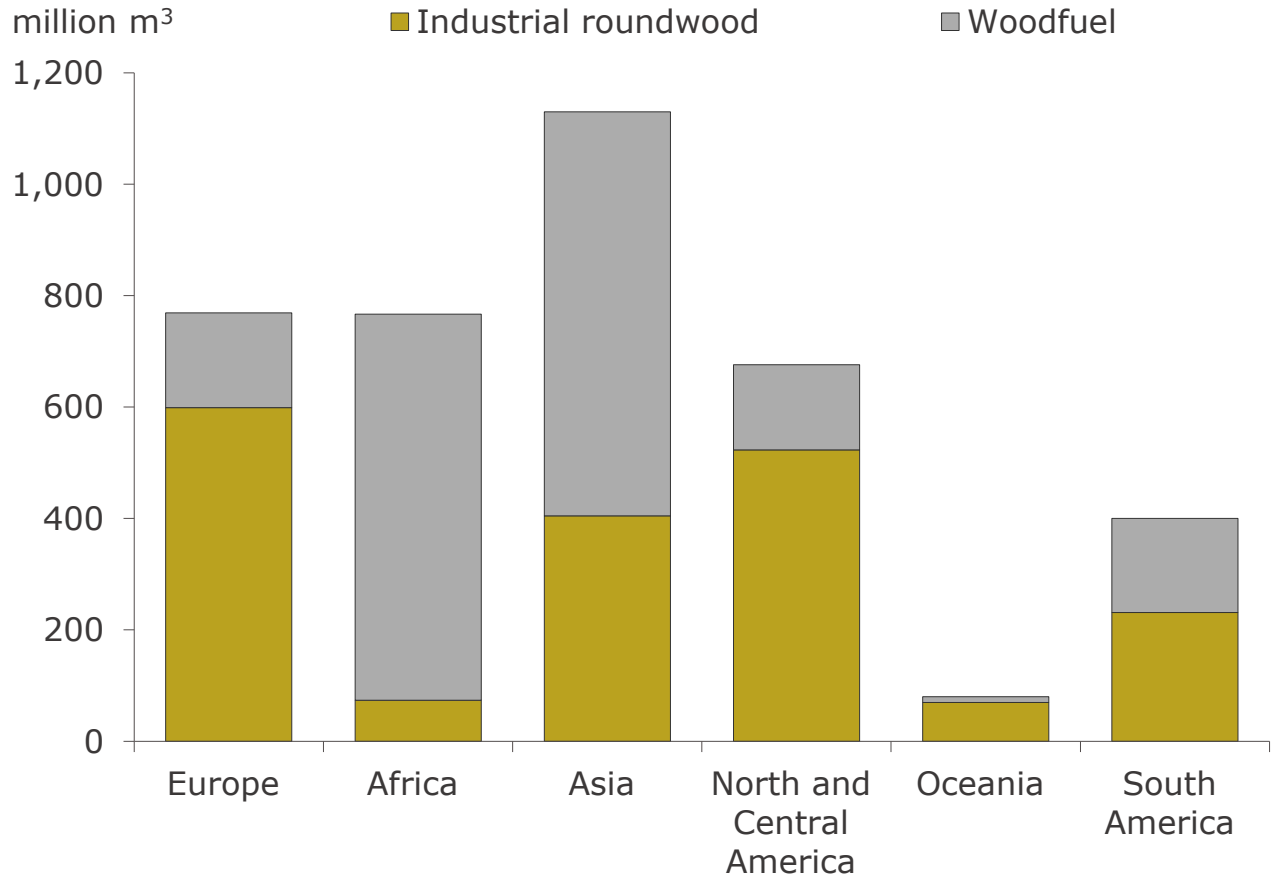
Region	1990	2000	2010	2015	2017
Industrial roundwood					
Europe					
UK	6	8	8	9	9
EU-28[1]	317	344	338	351	362
Total Europe	**517**	**521**	**531**	**579**	**599**
Africa	61	71	72	75	74
Asia	268	269	370	389	405
North & Central America	595	632	485	516	523
Oceania	34	47	58	63	70
South America	110	147	198	217	231
World	**1 585**	**1 688**	**1 713**	**1 840**	**1 903**
Woodfuel					
Europe					
UK	0	0	1	2	2
EU-28[1]	68	79	98	109	119
Total Europe	138	103	136	157	170
Africa	445	551	643	679	693

	Asia	897	808	764	735	725
	North & Central America	162	129	129	136	153
	Oceania	9	13	11	10	10
	South America	162	185	162	171	169
	World	1 814	1 789	1 845	1 889	1 920
Total roundwood						
	Europe					
	UK	6	8	10	11	11
	EU-281	385	423	435	460	481
	Total Europe	655	624	667	736	769
	Africa	506	623	715	754	767
	Asia	1 166	1 077	1 134	1 125	1 130
	North & Central America	757	761	613	652	676
	Oceania	43	60	68	73	80
	South America	272	332	359	388	400
	World	**3 399**	**3 477**	**3 557**	**3 729**	**3 823**

Source: FAO.
Notes:
1. Cyprus is included in EU-28 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, 2017



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 2017 totalled 486 million m^3 of sawnwood, 404 million m^3 of woodbased panels and 414 million tonnes of paper & paperboard (Table 9.5).

Europe produced around one third (34%) of all sawnwood in 2017 (mainly in EU countries), with around one quarter (28%) in Asia and a further quarter (27%) produced in North & Central America. Overall, sawnwood production increased by 7% between 2015 and 2017, 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 2017. Around one fifth (22%) were produced in Europe (mainly EU countries) and 12% in North & Central America. At a global level, wood-based panel production increased by 4% between 2015 and 2017, driven by increases in all regions.

Asia also accounted for almost one half (48%) of paper and paperboard production in 2017, with around one quarter (26%) in Europe and a further 21% in North & Central America. At a global level, paper and paperboard production increased by 2% between 2015 and 2017.

Table 9.5 Production of wood products by region, 1990-2017

Region	1990	2000	2010	2015	2017
Sawnwood (million m³)					
Europe					
UK	2	3	3	3	4
EU-281	82	101	101	105	111
Total Europe	**149**	**130**	**139**	**150**	**165**
Africa	8	8	9	10	10
Asia	105	61	86	124	137
North and Central America	129	146	102	127	133
Oceania	6	8	9	9	10
South America	22	32	30	31	30
World	**419**	**385**	**376**	**452**	**486**
Wood-based panels (million m³)					
Europe					
UK	2	3	3	3	3
EU-281	36	52	57	59	64
Total Europe	**48**	**59**	**71**	**79**	**88**
Africa	2	1	2	2	3
Asia	27	46	143	238	243
North and Central America	44	61	42	48	50
Oceania	2	3	3	3	3
South America	4	8	15	16	17
World	**126**	**178**	**275**	**387**	**404**
Paper & paperboard (million tonnes)					
Europe					
UK	5	7	4	4	4
EU-281	63	90	95	92	93
Total Europe	**74**	**100**	**106**	**104**	**106**

	Africa	3	4	4	4	3
	Asia	57	95	170	191	197
	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**	**406**	**414**

Source: FAO.
Notes:
1. Cyprus is included in EU-28 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 481 million m^3 sawnwood, 398 million m^3 wood-based panels and 413 million tonnes of paper and paperboard in 2017 (Table 9.6).

Two fifths (40%) of all sawnwood in 2017 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 8% overall between 2015 and 2017. 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 2017, around one fifth (20%) was consumed in Europe and 15% in North & Central America. Apparent consumption of wood-based panels worldwide increased by 4% between 2015 and 2017, largely resulting from increased demand in Europe.

One half (50%) of all paper and paperboard in 2017 was consumed in Asia, around one fifth (22%) in Europe and a further one fifth (21%) in North & Central America. At a global level, apparent consumption of paper and paperboard increased by 3% between 2015 and 2017.

Table 9.6 Apparent consumption of wood products by region, 1990-2017

Region	1990	2000	2010	2015	2017
Sawnwood (million m³)					
Europe					
UK	13	10	9	10	11
EU-28[1]	96	100	90	89	95
Total Europe	**158**	**121**	**110**	**107**	**114**
Africa	10	10	17	19	17
Asia	112	78	116	169	192
North and Central America	119	143	95	119	126
Oceania	6	8	8	8	9
South America	20	27	26	25	24
World	**426**	**387**	**372**	**447**	**481**
Wood-based panels (million m³)					
Europe					
UK	5	6	6	6	6
EU-281	40	51	53	56	63
Total Europe	**52**	**57**	**67**	**73**	**81**
Africa	1	2	3	4	5
Asia	25	50	139	233	237
North and Central America	44	64	48	56	60
Oceania	2	2	3	3	3
South America	3	6	12	14	13
World	**127**	**181**	**272**	**382**	**398**
Paper & paperboard (million tonnes)					
Europe					
UK	9	12	11	9	9
EU-281	62	84	85	80	81
Total Europe	**71**	**90**	**95**	**91**	**92**

	Africa	4	5	7	8	8
	Asia	62	103	178	197	206
	North and Central America	88	110	91	86	87
	Oceania	3	5	5	4	4
	South America	8	12	16	16	16
	World	**236**	**325**	**391**	**403**	**413**

Source: FAO.
Notes:
1. Cyprus is included in EU-28 total but is part of FAO's Asia region.

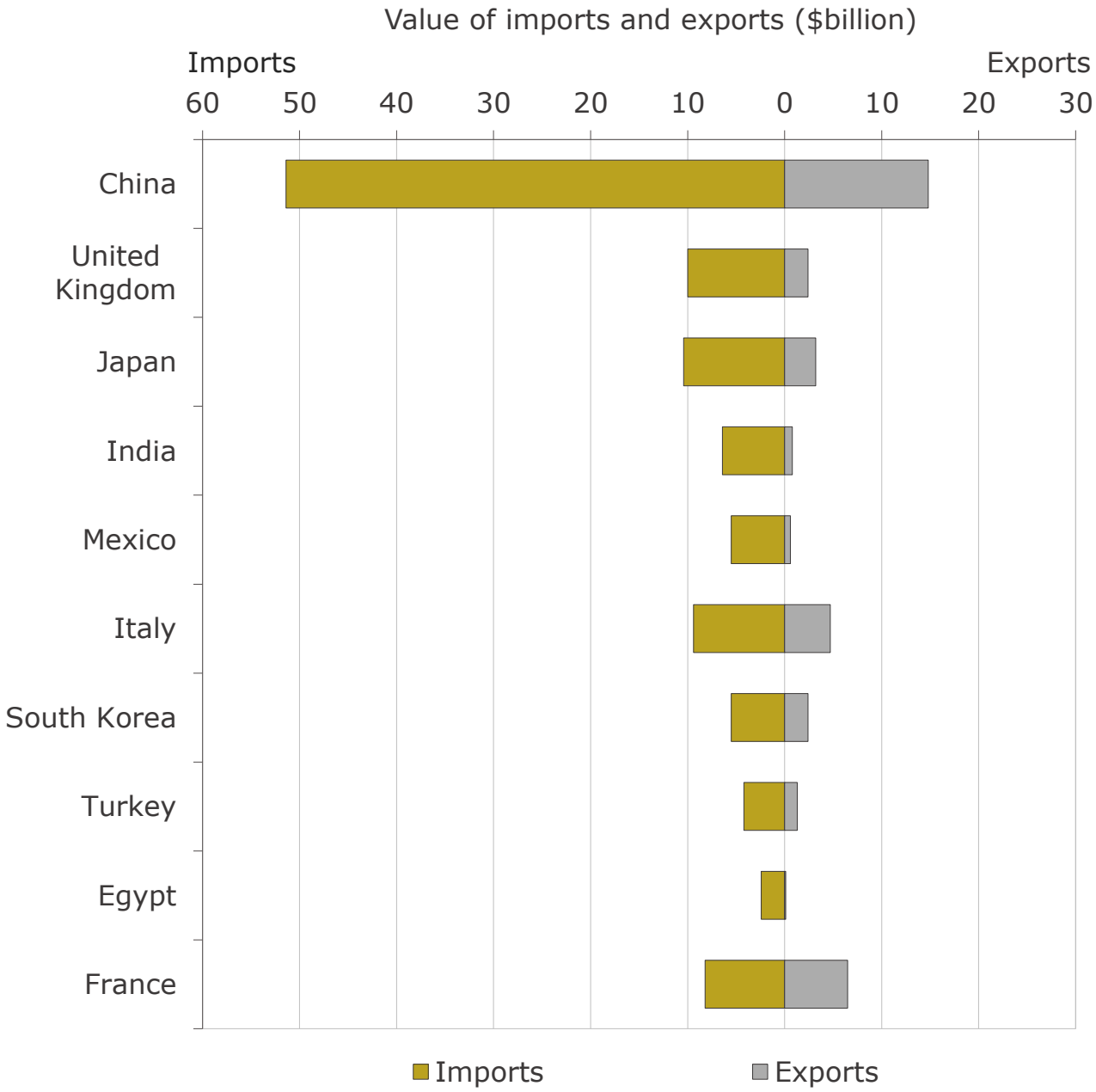
These figures are outside the scope of National Statistics. For further information see the Sources chapter.

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 2017. 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 2017, with net imports of US $7.6 billion (Figure 9.6). The largest net importer in 2017 was China (US $36.6 billion) and Japan was the third largest net importer (US $7.1 billion).

Figure 9.6 Largest net importers of forest products, 2017

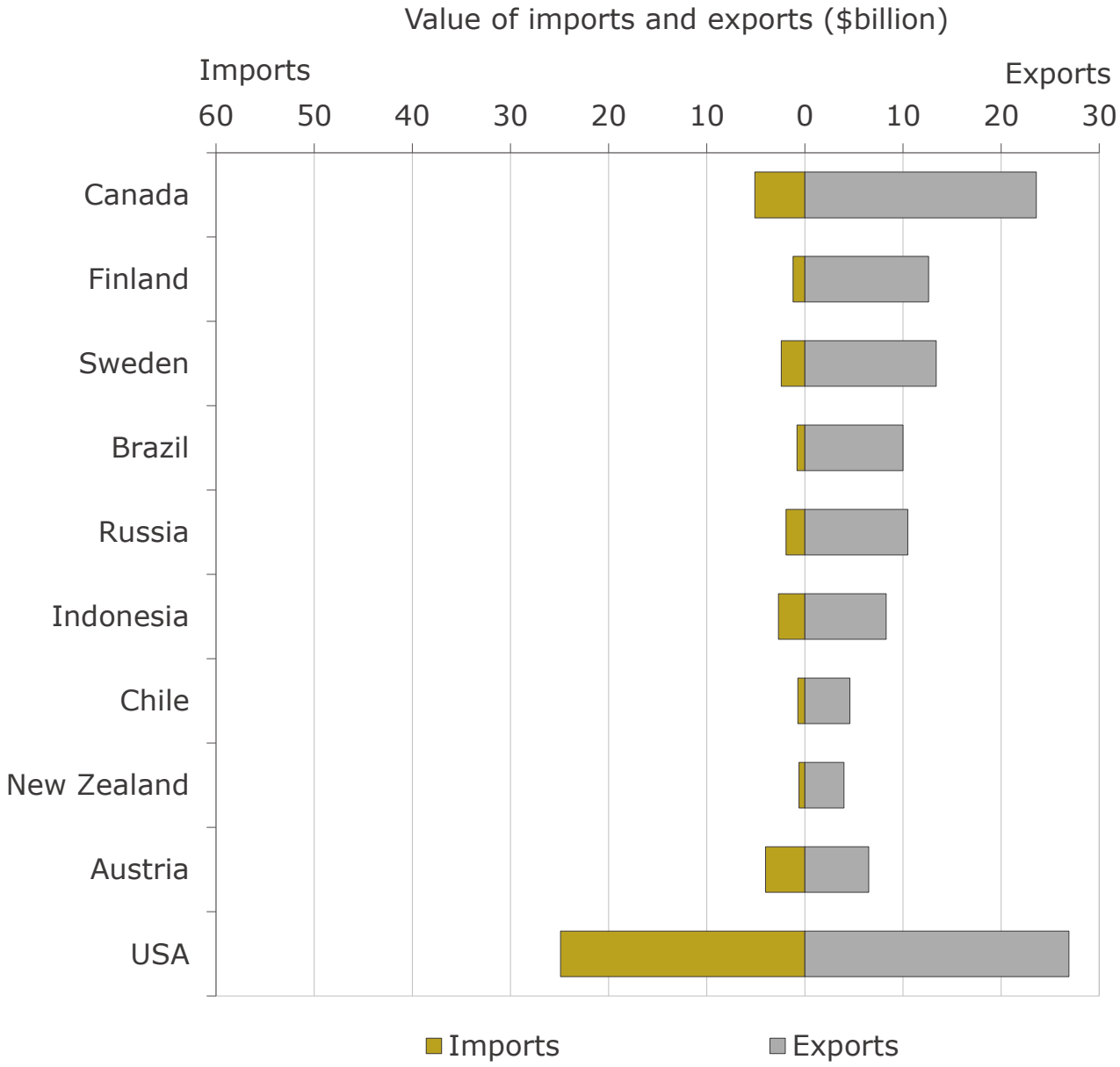


Source: FAO
Notes:
1. Excludes trade in secondary wood products.

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 2017 were Canada (with net exports valued at US $18.5 billion), Finland (US $11.4 billion) and Sweden (US $11.0 billion) (Figure 9.7).

Figure 9.7 Largest net exporters of forest products, 2017



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.