Forestry Commission

Forestry Statistics 2009

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

NATIONAL STATISTICS

FOREST SERVICE

0 Introduction

Forestry Statistics is a compendium of statistical information about woodland, forestry and primary wood processing in the UK. Traditionally forestry statistics have focused on forests as a source of timber, and on the use of timber by wood processing industries. However, in recent years, it has been increasingly recognised that a wider range of environmental and social aspects of woodland should be reflected in the statistical information that is collected and published. This publication includes some information about environment and recreation, but it is still weighted towards the traditional topics that have the best quality data.

This 2009 edition of Forestry Statistics has been extended to include 2 new chapters:

- UK Forests and Climate Change and
- International Forestry.

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

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

To navigate this publication, please use the links on the left hand side of the screen to access the contents list, to use the search facility or to select a range of pages to print. The back to Statistics button will access the Forestry Commission's Statistics home page. Individual pages provide further links to relevant tables and sources.

Selected statistics from this publication are available in Forestry Facts and Figures 2009, which is available in hard copy and on our web pages. A Welsh language version of Forestry Facts and Figures is also available.

A National Statistics publication

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

Forestry Commission's statistical release practices

The Forestry Commission aims to release statistics as soon as they are available. All of our National Statistics publications are available on our website www.forestry.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. Further details on Forestry Commission statistical release practices are available in our compliance statement, available on our website.

Forestry Commissions statistical revisions policy

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

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1 Woodland Areas and Planting

This section contains information about the extent of woodland in the United Kingdom. International comparisons are now provided in the International Forestry chapter.

Use the links on the right to access data and sources on UK woodland area and planting.

A copy of all woodland area and planting tables is available to download as an Excel spreadsheet.

1.1 Area of woodland: 2009

The area of woodland in the UK at 31 March 2009 is 2.8 million hectares. Of this total, 1.3 million hectares (47%) is in Scotland, 1.1 million hectares (40%) is in England, 0.3 million hectares (10%) is in Wales and 0.1 million hectares (3%) is in Northern Ireland.

Table 1.1 Area of woodland by ownership and forest type at 31 March 2009

Forest type and ownership	England	Wales	Scotland	Northern Ireland	UK
					thousand hectares
Conifers					
FC/ FS woodland	146	91	418	56	710
Non-FC/ FS woodland[2]	219	65	624	10	918
Total	**365**	**156**	**1 042**	**66**	**1 628**
Broadleaves[1]					
FC/ FS woodland	55	14	29	6	104
Non-FC/ FS woodland[2]	709	114	271	16	1 110
Total	**764**	**128**	**300**	**22**	**1 213**
Total					
FC/ FS woodland	201	105	447	61	814
Non-FC/ FS woodland[2]	928	179	894	26	2 027
Total	**1 128**	**284**	**1 341**	**88**	**2 841**

Source: Forestry Commission, Forest Service, 1995-99 National Inventory of Woodland and Trees.

Notes:

1. Broadleaves include coppice and coppice with standards.

2. Non-FC woodland figures for England, Wales and Scotland are based on the 1995-99 National Inventory of Woodland and Trees (NIWT) and adjusted for new planting and sales of FC woodland, but at present no adjustment is made for woodland converted to another land-use, nor for changes in woodland composition at restocking. They include non-FC publicly owned woodland. The NIWT did not include Northern Ireland.

1.2 Area of woodland: changes over time

The 2.8 million hectares of woodland in the UK represents 11.7% of the total land area; this percentage ranges from 6.5% in Northern Ireland to 17.2% in Scotland.

Table 1.2 Woodland area in the United Kingdom

Year	England		Wales		Scotland		Northern Ireland[2]		UK	
	Area (000 ha)	%[1]	Area (000 ha)	%[1]	Area (000 ha)	%[1]	Area (000 ha)	%[1]	Area (000 ha)	%[1]
1086		~15								
c1350		~10				~4				
17thC		~8				~4		~1.5		
1905	681	5.2	88	4.2	351	4.5	15	1.1	1 140	4.7
1924	660	5.1	103	5.0	435	5.6	13	1.0	1 211	5.0
1947	755	5.8	128	6.2	513	6.6	23	1.7	1 419	5.9
1965	886	6.8	201	9.7	656	8.4	42	3.1	1 784	7.4
1980	948	7.3	241	11.6	920	11.8	67	4.9	2 175	9.0
1995-99	1 097	8.4	287	13.8	1 281	16.4	81	6.0	2 746	11.3
2009[3]	1 128	8.7	284	13.7	1 341	17.2	88	6.5	2 841	11.7

Not National Statistics.

Source: Forestry Commission, Forest Service.

Notes:

1. Percentage of the total surface area including inland water. The total surface areas, including inland water are taken from the Annual Abstract of Statistics 2009 (published by the Office for National Statistics).

2. For Northern Ireland, 17th century figure is estimate for all Ireland, 1905 figure is estimate for Ulster 1908, 1947 figure assumes no change from 1939-40 Census.

3. Non-FC woodland figures for 2009 for England, Wales and Scotland are based on the 1995-99 National Inventory of Woodland and Trees(NIWT) and adjusted for new planting and sales of FC woodland, but at present no adjustment is made for woodland converted to another land-use. The NIWT did not include Northern Ireland.

1.3 Woodland area by ownership

The Forestry Commission/ Forest Service owned or managed 29% of the total woodland area in the UK in 2009. This proportion ranged from 18% of the woodland area in England to 70% in Northern Ireland.

Table 1.3 Area of woodland in the United Kingdom by ownership, 2005-2009

Ownership	England	Wales	Scotland	Northern Ireland	UK
					thousand hectares
Forestry Commission / Forest Service					
2005	205	109	463	61	838
2006	204	108	460	61	832
2007	202	107	457	61	827
2008	202	106	452	61	821
2009	201	105	447	61	814
Non-FC/FS woodland					
2005	914	177	871	25	1 987
2006	918	178	876	25	1 997
2007	922	178	884	26	2 010
2008	925	179	890	26	2 020
2009	928	179	894	26	2 027
Total woodland					
2005	1 119	286	1 334	85	2 825
2006	1 121	285	1 337	86	2 829
2007	1 124	285	1 341	87	2 837
2008	1 127	285	1 342	87	2 841
2009	1 128	284	1 341	88	2 841

Source: Forestry Commission, Forest Service, 1995-99 National Inventory of Woodland and Trees.

1.4 Certified woodland area

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.

1.3 million hectares of woodland in the UK were certified in March 2009, under the Forest Stewardship Council (FSC). This represented 45% of the total UK woodland area, varying from 31% in England to 74% in Northern Ireland. Figures showing volumes of certified timber and Chain of Custody certificates are provided in tables 2.29 and 2.30.

Table 1.4 Area of certified woodland[1,2], March 2009

Ownership	England	Wales	Scotland	Northern Ireland	UK
					thousand hectares
Forestry Commission/ Forest Service[3]	201	105	447	61	814
Non-FC/ FS	146	19	300	4	469
Total woodland area certified	**347**	**124**	**746**	**65**	**1 283**

Source: Forest Stewardship Council, Forestry Commission, Forest Service.

Notes:

1. All certified woodland is under the Forest Stewardship Council (FSC) 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. The Forestry Commission and Forest Service areas are the latest areas, as shown in Table 1.1, rather than the areas shown on the certificates.

1.5 Land use

Woodland accounted for 73% of all Forestry Commission/ Forest Service land in the UK in 2009. This proportion was highest in Wales (85%) and lowest in Scotland (67%).

Table 1.5 Land-use of the Forestry Commission and Forest Service, 2005-2009

Year (ending 31/3)	England	Wales	Scotland	Northern Ireland	UK
					thousand hectares
Woodland[1]					
2005	205	109	463	61	838
2006	204	108	460	61	832
2007	202	107	467	61	827
2008	202	106	452	61	821
2009	201	105	447	61	814
Other land[1,2]					
2005	54	17	205	15	291
2006	55	17	208	15	296
2007	55	18	210	14	297
2008	56	18	215	14	304
2009	57	19	219	14	309
Total FC/ FS land area					
2005	259	126	668	76	1 129
2006	259	125	668	76	1 128
2007	257	124	666	76	1 124
2008	258	124	667	76	1 125
2009	258	124	665	76	1 123

Source: Forestry Commission, Forest Service.

Notes:

1. The definitions used by Forestry Commission and Forest Service have varied over time, so there are some small inconsistencies in the comparisons in Table 1.5.

2. 'Other land' includes agricultural land and areas of moorland and mountain.

1.6 National Inventory of Woodland and Trees

This section contains information extracted from the 1995-99 National Inventory of Woodland and Trees.

1.6.1 Woodland area by ownership type

44% of the GB woodland area in 1995-99 was personally owned. A further 35% was owned or managed by the Forestry Commission.

Table 1.6 Area of woodland[1] in GB by ownership type

Ownership type	England	Wales	Scotland	GB
				thousand hectares
Forestry Commission	223	120	539	882
Other public body (not FC)	27	5	13	45
Local authority	61	8	11	80
Private forestry or timber business	7	6	28	41
Other private business	147	26	101	273
Personal	481	96	533	1 110
Charity	68	8	14	90
Community ownership or common land	4	1	0	5
Unclassified	4	1	13	18
Total	**1 022**	**270**	**1 253**	**2 545**

Not National Statistics.

Source: 1995-99 National Inventory of Woodland and Trees.

Notes:

1. Excludes woods of less than 2 hectares.

1.6.2 Woodland area by main tree species

Over one half (53%) of the total woodland area in Great Britain is made up of conifers although this proportion ranges from 31% in England to 72% in Scotland.

Sitka spruce accounted for almost one half (49%) of the conifer area in Great Britain, followed by Scots pine (16%) and Lodgepole pine (10%). Amongst broadleaf species, Oak covered 23% of the broadleaf area, followed by Birch (16%) and Ash (13%).

Table 1.7 Area of woodland in GB by main tree species

Species	England	Wales	Scotland	GB
				thousand hectares
Conifers				
Scots pine	82	5	140	227
Corsican pine	41	3	2	47
Lodgepole pine	7	6	122	135
Sitka spruce	80	84	528	692
Norway spruce	32	11	35	79
European larch	14	1	9	23
Japanese/hybrid larch	33	22	56	111
Douglas fir	24	11	10	45
Other conifer	19	6	5	30
Mixed conifer	9	0	8	18
Total Conifers	**340**	**149**	**916**	**1 406**
Broadleaves				
Oak	159	43	21	223
Beech	64	9	10	83
Sycamore	49	7	11	67
Ash	105	19	5	129
Birch	70	13	78	160
Poplar	11	1	0	12
Sweet chestnut	12	1	0	12
Elm	4	0	1	5
Other broadleaves	84	18	18	120
Mixed broadleaves	91	8	62	160
Total broadleaves	**648**	**118**	**206**	**971**
Total - all species	**988**	**266**	**1 123**	**2 377**
Felled	15	9	23	47
Coppice[1]	22	0	1	24
Open space[2]	72	11	134	217
Total woodland	**1 097**	**287**	**1 281**	**2 665**

Not National Statistics.

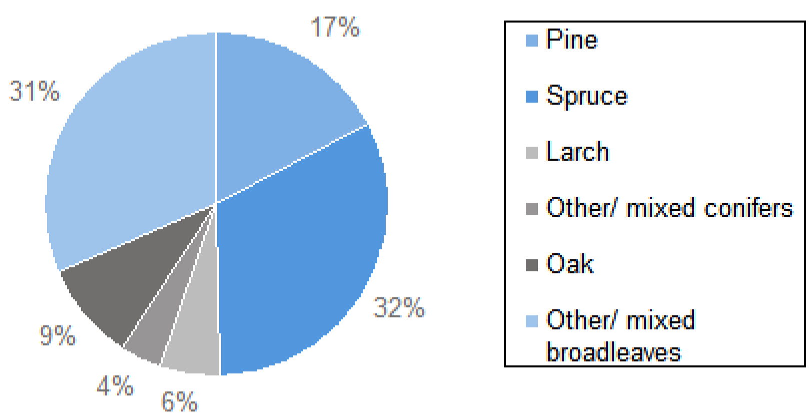
Source: 1995-99 National Inventory of Woodland and Trees.

Notes:

1. Coppice includes coppice with standards.

2. Areas of integral open space, each less than 1 hectare.

Figure 1.1 Main tree species in GB



Not National Statistics.

Source: 1995-99 National Inventory of Woodland and Trees.

1.6.3 Woodland area by age

Two thirds of woodland area in GB consists of trees planted after 1950. Conifers tend to have a shorter rotation with 87% of conifers, but just 39% of broadleaves planted after 1950.

Table 1.8 Area of woodland[1] in GB by planting year classes[2]

Planting year	England	Wales	Scotland	GB
				thousand hectares
Conifers				
pre-1861	2	0	4	6
1861-1900	5	0	9	14
1901-1910	1	0	1	3
1911-1920	6	0	7	13
1921-1930	7	1	13	22
1931-1940	16	4	17	37
1941-1950	36	10	43	89
1951-1960	67	33	129	228
1961-1970	74	38	203	314
1971-1980	59	24	234	317
1981-1990	36	21	215	273
1991-	32	17	41	89
Total conifers	**340**	**149**	**916**	**1 406**
Broadleaves				
pre-1861	34	1	12	46
1861-1900	89	24	31	144
1901-1910	19	4	5	27
1911-1920	55	9	11	75
1921-1930	60	9	16	85
1931-1940	56	20	15	91
1941-1950	85	16	25	126
1951-1960	80	15	27	121
1961-1970	59	8	22	90
1971-1980	42	4	17	63
1981-1990	33	4	15	52
1991-	36	3	11	50
Total broadleaves	**648**	**118**	**206**	**971**
Total				
pre-1861	35	1	16	52
1861-1900	94	24	40	157
1901-1910	21	4	6	30

1911-1920	61	9	18	88
1921-1930	67	10	29	107
1931-1940	72	25	31	128
1941-1950	121	26	69	215
1951-1960	146	47	156	350
1961-1970	133	46	225	404
1971-1980	101	28	251	380
1981-1990	70	26	230	325
1991-	68	20	52	140
Total	**988**	**266**	**1 123**	**2 377**

Not National Statistics.

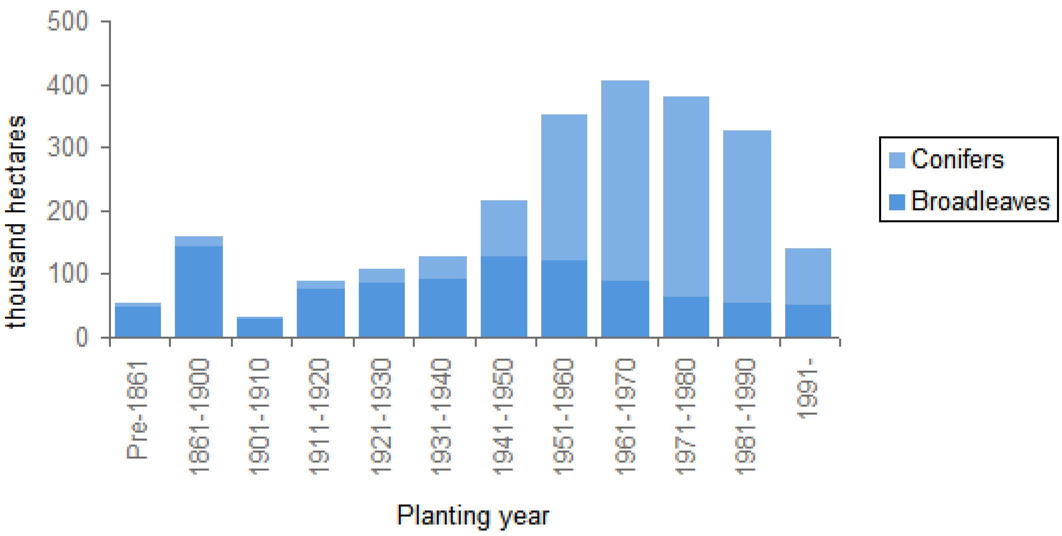
Source: 1995-99 National Inventory of Woodland and Trees.

Notes:

1. Excluding felled, coppice and open space.

2. Age is determined from records where these are available. Where records were not available or were clearly inaccurate, age-class was assigned by reference to similar crops of known age in the locality.

Figure 1.2 Age profile of woodland in GB



Not National Statistics.

Source: 1995-99 National Inventory of Woodland and Trees.

1.6.4 Number of trees

There are estimated to be around 3,814 million trees in Great Britain. The majority of these (56%) are in Scotland, with a further 34% in England and the remainder in Wales.

Table 1.9 Number of trees in GB

	England	Wales	Scotland	GB
				million trees
Conifers (woods over 2 ha)	523	252	1 892	2 667
Broadleaves (woods over 2 ha)	577	92	188	857
Small woods and other	179	38	73	290
All trees	**1 279**	**382**	**2 154**	**3 814**

Not National Statistics.

Source: 1995-99 National Inventory of Woodland and Trees.

1.7 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. The table below shows the area of woodland on farms.

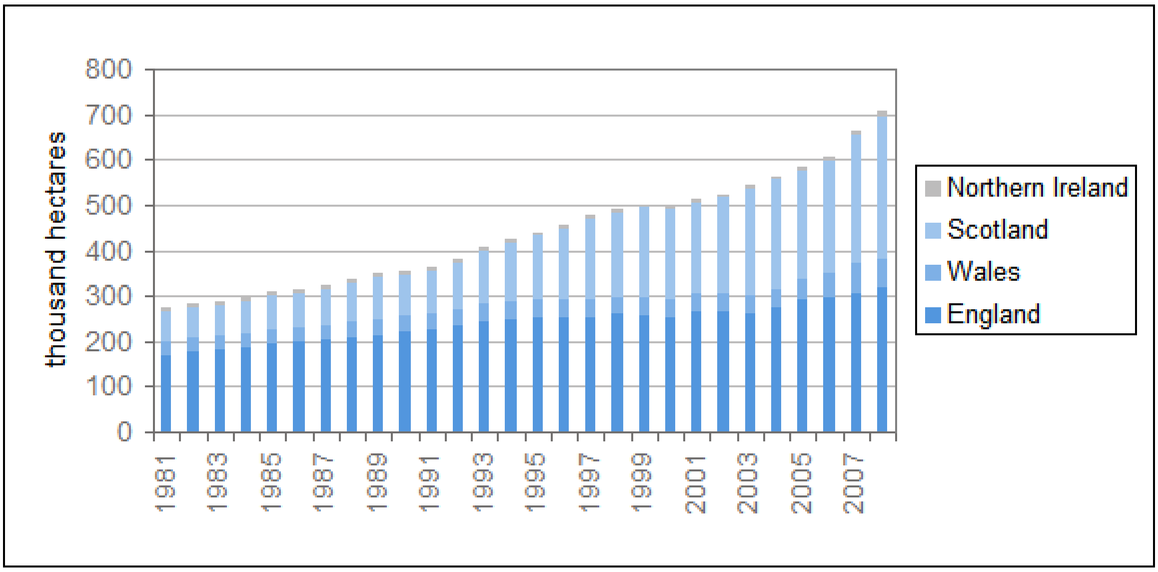
The area of farm woodland in the UK has increased from 501 thousand hectares in 1999 to 705 thousand hectares in 2008. Almost half (45%) of all farm woodland is in England, with a further 45% in Scotland, 8% in Wales and the remainder in Northern Ireland.

Table 1.10 Area of farm woodland, 1999 to 2008

Year	England	Wales	Scotland	Northern Ireland	UK
					thousand hectares
1999	255.4	40.4	197.2	8.2	501.2
2000	253.2	37.1	200.6	8.6	499.5
2001	266.2	36.7	202.9	8.2	513.9
2002	267.0	38.8	209.9	7.9	523.6
2003	262.9	36.5	236.6	8.4	544.4
2004	274.1	41.7	239.0	8.2	563.0
2005	291.7	44.9	238.0	8.6	583.2
2006	296.0	51.3	249.3	9.6	606.2
2007	305.4	67.9	279.9	9.9	663.1
2008	318.8	59.2	317.3	10.0	705.3

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

Figure 1.3 Area of farm woodland, 1981-2008



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

Executive.

1.9 New planting & restocking by forest type

The total area of new planting and restocking in the UK was 21.8 thousand hectares in 2008-09. Restocking accounted for 73% of this total. Broadleaved species accounted for the majority (80%) of new planting but just 24% of the restocking area in 2008-09.

Table 1.11 New planting and restocking by forest type

Year (ending 31/3)	New planting			Restocking			Total		
									thousand hectares
	Conifers	Broadleaves	Total	Conifers	Broadleaves	Total	Conifers	Broadleaves	Total
England									
2004-05	0.2	5.1	5.3	2.0	0.9	2.8	2.1	6.0	8.2
2005-06	0.1	3.6	3.7	2.1	1.1	3.2	2.2	4.7	6.9
2006-07	0.1	3.1	3.2	1.8	0.9	2.8	1.9	4.0	5.9
2007-08	0.1	2.5	2.6	2.0	1.5	3.5	2.1	4.0	6.1
2008-09	0.0	2.1	2.1	1.7	1.5	3.2	1.7	3.6	5.3
Wales									
2004-05	0.0	0.5	0.5	1.3	0.5	1.8	1.4	1.0	2.4
2005-06	0.0	0.5	0.5	1.8	1.0	2.8	1.8	1.5	3.2
2006-07	0.0	0.4	0.4	2.1	0.9	3.0	2.2	1.2	3.4
2007-08	0.0	0.2	0.2	1.5	0.8	2.3	1.5	1.0	2.5
2008-09	0.0	0.1	0.1	1.4	0.8	2.2	1.4	0.9	2.3
Scotland									
2004-05	1.9	3.8	5.7	8.8	1.6	10.4	10.7	5.4	16.1
2005-06	1.0	3.0	4.0	7.8	1.2	9.0	8.8	4.2	13.0
2006-07	2.0	4.6	6.6	10.6	1.8	12.4	12.6	6.4	19.0
2007-08	0.7	3.4	4.2	10.8	1.8	12.6	11.5	5.2	16.7
2008-09	1.2	2.3	3.4	8.2	1.4	9.6	9.3	3.7	13.0
Northern Ireland									
2004-05	0.0	0.3	0.4	0.9	0.1	1.0	0.9	0.4	1.3
2005-06	0.0	0.6	0.6	0.8	0.2	0.9	0.8	0.7	1.5
2006-07	0.0	0.5	0.5	0.7	0.1	0.8	0.8	0.5	1.3
2007-08	0.1	0.5	0.6	0.5	0.0	0.5	0.6	0.5	1.1
2008-09	0.0	0.3	0.3	0.8	0.1	0.8	0.8	0.3	1.1
UK									
2004-05	2.1	9.8	11.9	13.0	3.0	16.1	15.1	12.8	28.0
2005-06	1.1	7.6	8.7	12.5	3.4	15.9	13.7	11.0	24.6
2006-07	2.1	8.5	10.7	15.3	3.6	19.0	17.5	12.2	29.6

2007-08	0.9	6.7	7.5	14.8	4.1	18.9	15.7	10.8	26.4
2008-09	1.2	4.7	5.9	12.1	3.8	15.9	13.3	8.5	21.8

Source: Forestry Commission, Forest Service, grant schemes.

1.10 New planting & restocking by ownership

Most of the new planting (84% in 2008-09) takes place on non-FC/FS land. In contrast, more than half of restocking occurs on FC/FS land (58%).

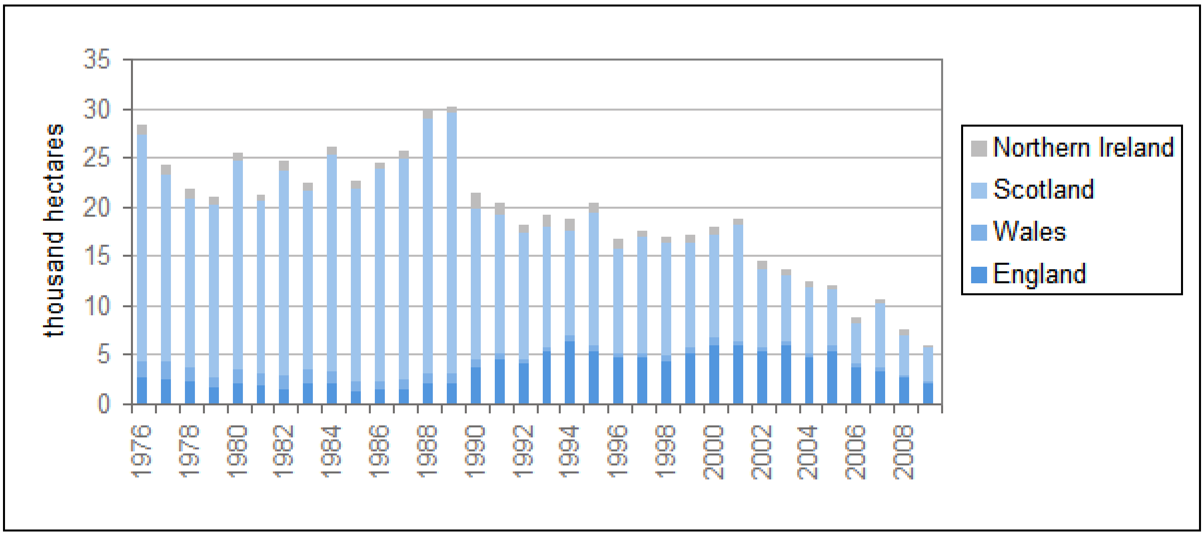
Table 1.12 New planting and restocking by ownership

Year (ending 31/3)	New Planting			Restocking			Total		
									thousand hectares
	FC/FS	Non-FC/FS	Total	FC/FS	Non-FC/FS	Total	FC/FS	Non-FC/FS	Total
England									
2004-05	0.1	5.3	5.3	1.9	0.9	2.8	1.9	6.2	8.2
2005-06	0.2	3.5	3.7	2.5	0.8	3.2	2.6	4.3	6.9
2006-07	0.2	2.9	3.2	1.9	0.9	2.8	2.1	3.9	5.9
2007-08	0.1	2.5	2.6	2.1	1.4	3.5	2.3	3.8	6.1
2008-09	0.0	2.1	2.1	1.8	1.4	3.2	1.9	3.4	5.3
Wales									
2004-05	0.0	0.5	0.5	1.6	0.3	1.8	1.6	0.8	2.4
2005-06	0.0	0.5	0.5	2.0	0.8	2.8	2.0	1.3	3.2
2006-07	0.0	0.4	0.4	2.0	1.0	3.0	2.0	1.4	3.4
2007-08	0.0	0.2	0.2	2.0	0.4	2.3	2.0	0.6	2.5
2008-09	0.0	0.1	0.1	1.6	0.6	2.2	1.6	0.7	2.3
Scotland									
2004-05	0.0	5.6	5.7	6.2	4.2	10.4	6.3	9.8	16.1
2005-06	0.1	3.9	4.0	5.2	3.8	9.0	5.3	7.7	13.0
2006-07	0.0	6.6	6.6	6.4	6.0	12.4	6.4	12.6	19.0
2007-08	0.0	4.2	4.2	5.9	6.7	12.6	5.9	10.8	16.7
2008-09	0.9	2.5	3.4	5.2	4.4	9.6	6.1	7.0	13.0
Northern Ireland									
2004-05	0.0	0.3	0.4	0.9	0.1	1.0	0.9	0.4	1.3
2005-06	0.0	0.6	0.6	0.8	0.1	0.9	0.9	0.7	1.5
2006-07	0.0	0.5	0.5	0.8	0.1	0.8	0.8	0.5	1.3
2007-08	0.0	0.5	0.6	0.5	0.1	0.5	0.5	0.6	1.1
2008-09	0.0	0.3	0.3	0.6	0.3	0.8	0.6	0.6	1.1
UK Total									
2004-05	0.1	11.8	11.9	10.6	5.5	16.1	10.7	17.3	28.0
2005-06	0.3	8.4	8.7	10.4	5.5	15.9	10.7	13.9	24.6
2006-07	0.2	10.4	10.7	11.0	8.0	19.0	11.2	18.4	29.6
2007-08	0.2	7.4	7.5	10.4	8.5	18.9	10.6	15.9	26.4
2008-09	0.9	5.0	5.9	9.2	6.7	15.9	10.1	11.7	21.8

Source: Forestry Commission, Forest Service, grant schemes.

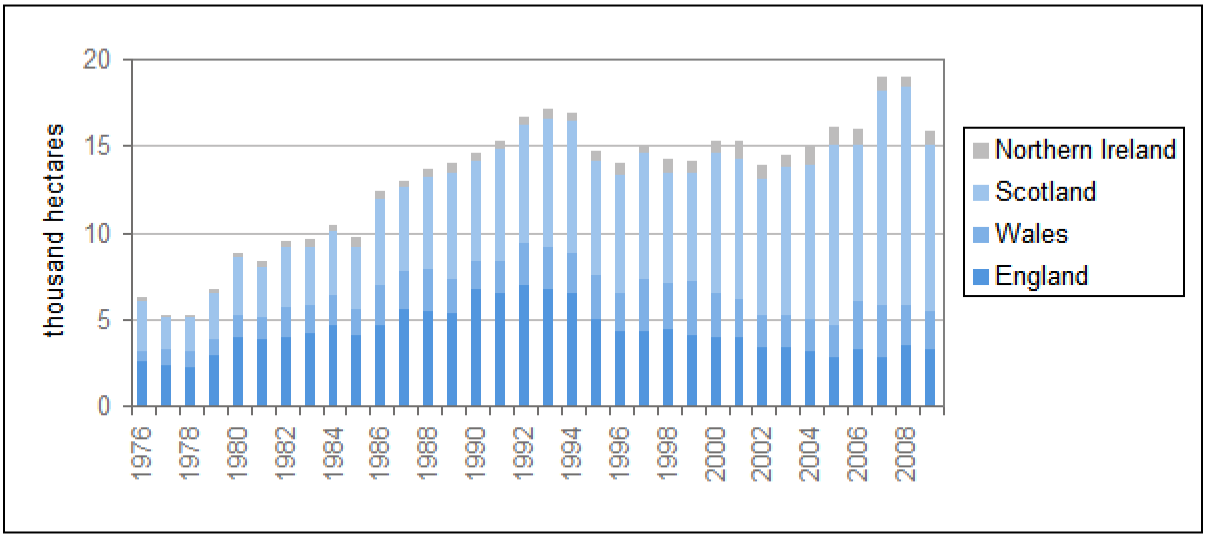
1.11 New planting and restocking: time series

Figure 1.4 New planting in the UK, 1976-2009



Source: Forestry Commission, Forest Service, grant schemes.

Figure 1.5 Restocking in the UK, 1976-2009



Source: Forestry Commission, Forest Service, grant schemes.

2 UK Grown Timber

This section covers the production of timber from woodland, and the primary processing of harvested wood to give basic wood products. International comparisons of timber production are available in the International Forestry chapter.

Timber originating from conifers is known as softwood and that from broadleaves is known as hardwood.

Use the links on the right to access data and sources on timber.

A copy of all timber tables is available to download as an Excel spreadsheet.

2.1 Wood production

Figures for wood production (or removals) are expressed in green tonnes (i.e. weight when freshly felled). The data are derived from a number of sources:

FC/ FS figures are obtained from Forestry Commission and Forest Service administrative systems;

Non-FC/ FS 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.

Use the links on the right to access data and sources on wood production.

2.1.1 Summary: wood production

A total of 8.4 million green tonnes of softwood was produced in the UK in 2008. This was a decrease of 7% from the previous year, but similar to the level in 2006. Over the same period, hardwood production remained almost unchanged, at 0.4 million green tonnes in 2008.

Table 2.1 Wood production, 1999-2008

Year	Softwood			Hardwood[1]		
	FC/ FS woodland	Non-FC/ FS woodland	Total softwood	FC/ FS woodland	Non-FC/ FS woodland	Total hardwood
						thousand green tonnes
1999	4 725	2 555	7 280	128	547	675
2000	4 850	2 580	7 430	130	524	654
2001	4 604	2 900	7 504	145	486	632
2002	4 650	2 982	7 632	118	502	620
2003	4 817	3 502	8 319	117	445	562
2004	4 894	3 629	8 524	113	399	513
2005	4 579	3 906	8 485	101	492	593
2006	4 582	3 929	8 511	45	392	438
2007	4 653	4 363	9 016	40	400	440
2008	4 415	4 005	8 420	43	389	432

Source: Forestry Commission, Forest Service, industry surveys, industry associations.

Notes:

1. Most hardwood production in the UK comes from non-FC/ FS woodland; the figures are estimates based on reported deliveries to wood processing industries and others.

2.1.2 Private sector softwood removals survey

It is estimated that a total of 4.0 million green tonnes of softwood was removed from non-FC/ FS woodlands in 2008. This is an 8% decrease from the previous year, but a 2% increase from the 2006 figure.

Table 2.2 Private sector softwood removals survey[1], 1999-2008

Year	Survey results[2]		% change	Estimated UK total
				thousand green tonnes
	Previous year	Latest year		
1999	1 783	1 727	-3%	2 555
2000	1 631	1 647	1%	2 580
2001	1 634	1 837	12%	2 900
2002	1 839	1 891	3%	2 982
2003	1 891	2 221	17%	3 502
2004	2 293	2 376	4%	3 629
2005	2 595	2 793	8%	3 906
2006	3 081	3 099	1%	3 929
2007	3 105	3 448	11%	4 363
2008	3 523	3 234	-8%	4 005

Source: Private Sector Softwood Removals Survey

Notes:

1. Removals from non-FC/ FS woodlands only.

2. Survey results exclude Northern Ireland before 2004.

2.1.3 Origin of non-FC/ FS removals

It is estimated that 74% of all softwood removals from non-FC/ FS woodlands were harvested in Scotland, 17% in England, 9% in Wales and the remainder in Northern Ireland in 2008.

Table 2.3 Non-FC/ FS softwood removals by country, 1999-2008

Year	England	Wales	Scotland	Northern Ireland	UK
					per cent of UK total
1999	18.7	12.1	68.0	1.2	100.0
2000	19.5	12.5	66.8	1.1	100.0
2001	18.8	13.0	67.2	1.0	100.0
2002	12.9	11.7	74.5	1.0	100.0
2003	14.9	9.2	75.0	0.8	100.0
2004	13.8	8.9	76.5	0.8	100.0
2005	15.3	7.6	76.1	1.0	100.0
2006	16.0	8.9	74.6	0.5	100.0
2007	15.0	9.1	75.3	0.7	100.0
2008	17.0	8.7	73.6	0.6	100.0

Source: Private Sector Softwood Removals Survey

2.1.4 Origin of FC/ FS removals

Information on removals from Forestry Commission (FC) and Forest Service (FS) woodlands is extracted from administrative systems.

A total of 4.4 million green tonnes of softwood was removed from FC/ FS woodlands in 2008, a 5% decrease from the 2007 level. Over on half (53%) of FC/ FS softwood removals in 2008 occurred in Scotland, 25% in England, 13% in Wales and 9% in Northern Ireland.

Table 2.4 FC/ FS softwood removals by country, 1999-2008

Year	England	Wales	Scotland	Northern Ireland	UK
					thousand green tonnes
1999	1 266	836	2 351	273	4 725
2000	1 156	752	2 616	326	4 850
2001	1 075	779	2 354	396	4 604
2002	1 103	894	2 268	385	4 650
2003	1 107	880	2 405	424	4 817
2004	1 204	783	2 527	380	4 894
2005	1 165	673	2 388	353	4 579
2006	1 152	612	2 454	364	4 582
2007	1 211	584	2 496	363	4 653
2008	1 100	556	2 362	398	4 415

Source: Forestry Commission, Forest Service.

2.1.5 Softwood availability forecasts

Softwood availability forecasts are taken from the 2005 forecast, published in September 2006 (not National Statistics). Strictly, they are forecasts of availability rather than production, as they do not take account of financial factors or the state of markets, which may cause production to be delayed or brought forward. More information and detailed breakdowns of GB forecasts are available in UK: new forecast of softwood availability in the November 2006 edition of Forestry & British Timber.

Softwood production in the UK is projected to increase to an annual average of almost 12 million green tonnes over the five year period 2017 to 2021. The majority of this softwood is projected to come from non-FC/ FS woodland.

Table 2.5 Softwood availability forecasts

Annual average in the five years	England	Wales	Scotland	Northern Ireland	UK
					thousand green tonnes
FC/ FS					
2007 - 2011	1 119	645	2 644	370	4 778
2012 - 2016	1 170	721	3 083	474	5 447
2017 - 2021	1 148	649	3 355	468	5 620
2022 - 2026	981	610	3 024	433	5 048
Non-FC/ FS					
2007 - 2011	1 520	547	2 995	16	5 078
2012 - 2016	1 638	610	3 583	16	5 847
2017 - 2021	1 763	622	3 959	16	6 361
2022 - 2026	1 800	610	4 095	16	6 522
Total softwood					
2007 - 2011	2 639	1 193	5 638	386	9 856
2012 - 2016	2 807	1 331	6 666	490	11 294
2017 - 2021	2 910	1 271	7 315	484	11 980
2022 - 2026	2 781	1 220	7 119	449	11 570

Not National Statistics.

Source: 2005 UK Forecast of Softwood Availability (Forestry Commission, 2006)

No forecasts are published for hardwood.

2.2 Deliveries of UK grown roundwood

Figures for deliveries of UK grown roundwood to wood processing industries and others are expressed in green tonnes (i.e. weight when freshly felled). The data are derived from a number of sources, including surveys of the UK-grown timber industry, trade associations and expert estimates. Further details on data sources and methodology are available using the links on the right.

The statistics presented on deliveries cover summary tables for softwood and hardwood, as well as more detailed tables. Use the links on the right to access data and sources on deliveries.

2.2.1 Softwood deliveries

A total of 8.2 million green tonnes of UK grown softwood was delivered to UK wood processing industries and others in 2008. This represented a 7% decrease from the 2007 total, but was similar to the level in 2006.

Sawmills accounted for the majority of softwood deliveries (61%). A further 15% of softwood was delivered to woodbased panel mills and 6% to integrated pulp and paper mills. Roundwood exports in 2008 accounted for 9% of all softwood deliveries.

Table 2.6 Deliveries of UK grown softwood, 1999-2008

Year	Sawmills	Pulpmills	Woodbased panels	Fencing	Woodfuel[1]	Other[2]	Exports[3]	Total
								thousand green tonnes
1999	4 452	660	1 613	385	100	32	24	7 266
2000	4 476	695	1 685	347	100	32	16	7 351
2001	4 598	668	1 680	324	100	31	61	7 463
2002	4 677	696	1 456	289	100	29	133	7 380
2003	4 812	704	1 486	264	100	45	307	7 718
2004	4 953	483	1 525	272	100	79	610	8 022
2005	4 924	500	1 502	320	100	95	705	8 146
2006	5 210	481	1 365	275	100	114	643	8 188
2007	5 591	472	1 362	296	200	113	759	8 793
2008	4 955	515	1 219	341	300	116	733	8 179

Source: industry surveys, industry associations.

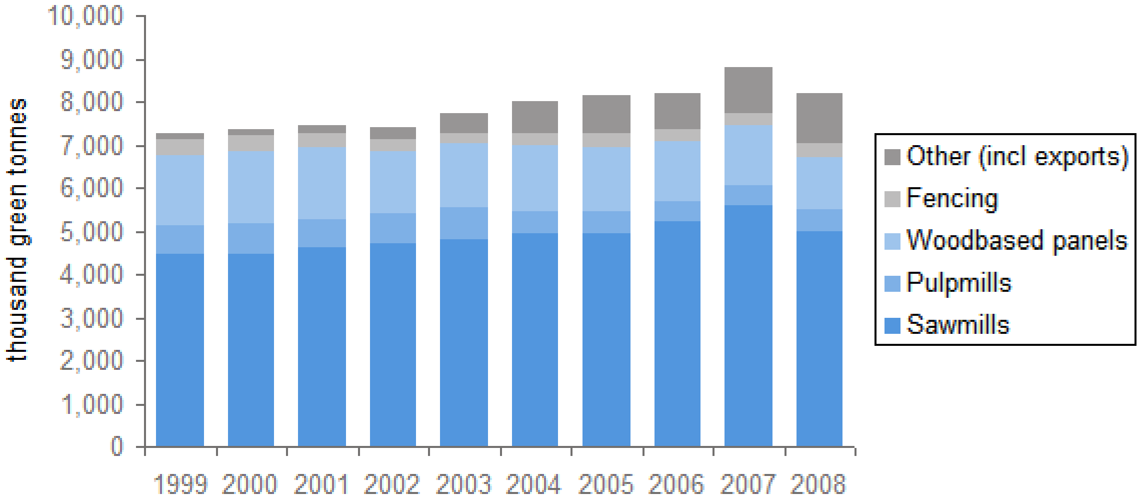
Notes:

1. Woodfuel reported here is derived from stemwood, and from 2007 include estimated roundwood use for biomass energy. The figures are estimated by the Expert Group on Timber and Trade Statistics.

2. Includes shavings and poles. Quantities for some uses are estimates by the Expert Group on Timber and Trade Statistics.

3. Exports exclude Northern Ireland before 2004.

Figure 2.1 Deliveries of UK grown softwood



Source: industry surveys, industry associations.

2.2.2 Hardwood deliveries

A total of 0.4 million green tonnes of UK grown hardwood were delivered to UK wood processing industries and others in 2008.

The majority of UK hardwood deliveries (69%) were used for woodfuel.

Table 2.7 Deliveries of UK grown hardwood, 1999-2008

Year	Sawmills	Pulpmills	Woodbased panels	Woodfuel[1]	Other[2]	Total
						thousand green tonnes
1999	227	191	52	150	55	675
2000	199	200	50	150	55	654
2001	183	209	35	150	55	632
2002	162	210	43	150	55	620
2003	138	215	4	150	55	562
2004	92	214	2	150	55	513
2005	72	214	2	250	55	593
2006	64	54	1	250	70	438
2007	66	0	5	300	69	440
2008	67	0	2	300	63	432

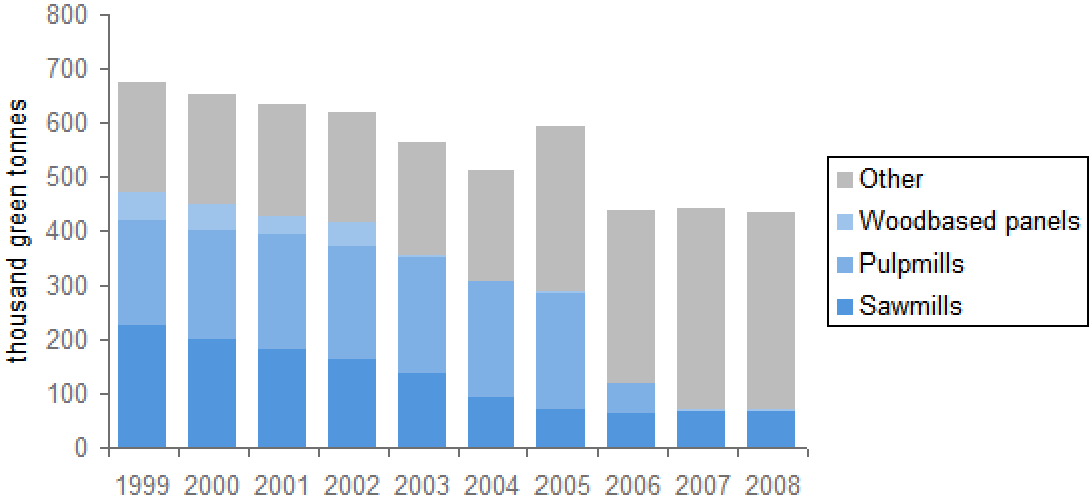
Source: industry surveys, industry associations.

Notes:

1. Woodfuel reported here is derived from stemwood, and from 2007 include estimated roundwood use for biomass energy. The figures are estimated by the Expert Group on Timber and Trade Statistics. The apparent increase in woodfuel from 2004 to 2005 reflects a new estimate of the level of hardwood deliveries for woodfuel and should not be interpreted as an increase in a single year. Woodfuel includes wood for charcoal; charcoal production in the UK is estimated to be about 5 thousand tonnes, with about 7 green tonnes of wood required to make one tonne of charcoal.

2. Includes round fencing and roundwood exports. Quantities for hardwood fencing and some other uses are estimates by the Expert Group on Timber and Trade Statistics.

Figure 2.2 Deliveries of UK grown hardwood



Source: industry surveys, industry associations.

Notes:

1. Other includes woodfuel, round fencing and roundwood exports.

2.3 Sawmills - All Mills

Data are collected by the Forestry Commission in an annual Sawmill Survey. Summary results, covering number of mills, consumption and production are available for all mills. More detailed figures are available for larger mills only (sawmills producing at least 10 thousand m^3 sawnwood).

Consumption units are given in green tonnes. For production, the units used are m^3 sawnwood.

Use the links on the right to access data and sources on sawmills.

2.3.1 Summary: consumption & production

Sawmills consumed a total of 5.1 million green tonnes of softwood in 2008, a decrease of 12% from the 2007 figure but similar to the level in 2005. Hardwood consumption increased by 1% from 2007 to 89 thousand green tonnes in 2008.

Table 2.8 Consumption and production by UK sawmills, 1999-2008

Year	Softwood				Hardwood			
	consumption: thousand green tonnes, **production:** thousand m^3 sawnwood							
	Consumption of			**Production**	**Consumption of**			**Production**
	UK grown	**Imported**	**Total**		**UK grown**	**Imported**	**Total**	
1999	4 452	227	4 679	2 530	227	7	234	120
2000	4 476	234	4 711	2 515	199	11	210	108
2001	4 598	239	4 838	2 583	183	17	200	97
2002	4 677	235	4 912	2 619	162	18	180	91
2003	4 812	225	5 037	2 669	138	18	157	81
2004	4 953	226	5 178	2 722	92	28	120	60
2005	4 924	272	5 196	2 728	72	34	106	53
2006	5 210	266	5 477	2 860	64	22	85	45
2007	5 591	263	5 854	3 100	66	21	87	45
2008	4 955	174	5 129	2 772	67	22	89	46

Source: Sawmill Survey

2.3.2 Number of sawmills by size

A total of 204 sawmills processed UK roundwood in 2008. Around two thirds of sawmills produced less than five thousand m^3 sawnwood (softwood and hardwood).

Table 2.9 Number of sawmills by size of mill, 1999-2008

Year	Size of mill (total production)[1]						Total
	< 1	1 - < 5	5 - < 10	10 - < 25	25 - < 50	50 +	
1999	129	105	36	22	12	15	319
2000	116	102	32	19	14	14	297
2001	101	91	28	24	12	15	271
2002	92	81	26	24	10	16	249
2003	91	76	22	23	12	16	240
2004	87	67	20	23	10	18	225
2005	86	60	20	19	9	20	214
2006	85	59	19	21	10	20	214
2007	85	55	17	21	12	20	210
2008	81	55	17	21	11	19	204

Source: Sawmill Survey

Notes:

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

2.3.3 Number of sawmills by country

The majority of the 204 active sawmills in 2008 (104) were in England, 68 were in Scotland, 19 in Wales and 13 in Northern Ireland.

Table 2.10 Number of sawmills by country, 1999-2008

Year	England	Wales	Scotland	Northern Ireland	UK
1999	188	29	87	15	319
2000	168	27	87	15	297
2001	145	27	84	15	271
2002	131	23	80	15	249
2003	125	22	78	15	240
2004	114	21	75	15	225
2005	109	20	71	14	214
2006	109	21	71	13	214
2007	106	21	70	13	210
2008	104	19	68	13	204

Source: Sawmill Survey

2.3.4 Number of sawmills by type of wood sawn

Around two thirds of the 204 active sawmills in 2008 processed softwood only. A further 25% processed both softwood and hardwood, and the remaining 7% processed only hardwood.

Table 2.11 Number of sawmills by type of wood sawn, 1999-2008

Year	Softwood only	Hardwood only	Both	Total
1999	187	33	99	319
2000	184	28	85	297
2001	174	25	72	271
2002	160	22	67	249
2003	154	20	66	240
2004	144	18	63	225
2005	143	16	55	214
2006	143	19	52	214
2007	138	17	55	210
2008	139	14	51	204

Source: Sawmill Survey

2.3.5 Consumption of softwood by size of mill

Sawmills with total sawnwood production of 10 thousand cubic metres or more accounted for 92% of the total softwood consumed by sawmills in 2008.

Table 2.12 Consumption of softwood by size of mill, 1999-2008

Year	Size of mill (total production)[1]						Total
	< 1	1 - < 5	5 - < 10	10 - < 25	25 - < 50	50 +	
							thousand green tonnes
1999	53	334	374	592	717	2 610	4 679
2000	49	365	309	503	895	2 590	4 711
2001	40	280	295	634	846	2 742	4 838
2002	33	248	279	659	680	3 013	4 912
2003	29	239	227	598	835	3 110	5 037
2004	31	218	216	630	686	3 397	5 178
2005	30	230	232	518	579	3 607	5 196
2006	29	200	243	613	661	3 730	5 477
2007	31	184	203	610	840	3 985	5 854
2008	33	197	190	620	660	3 430	5 129

Source: Sawmill Survey

Notes:

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

2.3.6 Consumption of softwood by country

Mills in Scotland consumed almost one half (47%) of the 5.1 million green tonnes of softwood delivered to UK sawmills in 2008. A further 30% was consumed by mills in England, 12% in Wales and 11% in Northern Ireland.

Table 2.13 Consumption of softwood by country, 1999-2008

Year	England	Wales	Scotland	Northern Ireland	UK
					thousand green tonnes
1999	1 574	711	1 732	662	4 679
2000	1 505	713	1 831	662	4 711
2001	1 436	724	2 015	662	4 838
2002	1 363	720	2 166	662	4 912
2003	1 434	777	2 165	662	5 037
2004	1 394	813	2 310	662	5 178
2005	1 416	746	2 349	685	5 196
2006	1 603	757	2 430	686	5 477
2007	1 674	784	2 683	714	5 854
2008	1 533	619	2 415	562	5 129

Source: Sawmill Survey

2.3.7 Production of sawn softwood by size of mill

Sawmills with total sawnwood production of 10 thousand cubic metres or more accounted for 91% of the total sawn softwood produced by sawmills in 2008.

Table 2.14 Production of sawn softwood by size of mill, 1999-2008

Year	Size of mill (total production)[1]						Total
	< 1	1 - < 5	5 - < 10	10 - < 25	25 - < 50	50 +	
							thousand cubic metres
1999	31	195	208	317	381	1 398	2 530
2000	28	213	168	274	466	1 365	2 515
2001	24	163	167	355	429	1 446	2 583
2002	19	147	159	360	354	1 580	2 619
2003	16	142	130	328	443	1 610	2 669
2004	17	126	119	331	368	1 761	2 722
2005	17	116	121	278	317	1 877	2 728
2006	17	118	128	326	359	1 911	2 860
2007	18	109	111	335	437	2 090	3 100
2008	19	116	104	331	369	1 834	2 772

Source: Sawmill Survey

Notes:

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

2.3.8 Production of sawn softwood by country

1.3 million cubic metres (47%) of sawn softwood was produced by sawmills in Scotland in 2008. A further 31% was produced by mills in England, 12% in Wales and the remainder in Northern Ireland.

Table 2.15 Production of sawn softwood by country, 1999-2008

Year	England	Wales	Scotland	Northern Ireland	UK
					thousand cubic metres
1999	879	370	940	342	2 530
2000	815	369	989	342	2 515
2001	786	381	1 074	342	2 583
2002	751	381	1 146	342	2 619
2003	781	392	1 155	342	2 669
2004	744	408	1 228	342	2 722
2005	746	368	1 247	365	2 728
2006	853	378	1 297	332	2 860
2007	884	405	1 452	360	3 100
2008	847	319	1 313	294	2 772

Source: Sawmill Survey

2.4 Sawmills - Larger Mills

The following, more detailed, tables for 2008 are available for larger mills (those producing at least 10 thousand m^3 sawnwood) only. These mills are estimated to account for around 90% of all sawn softwood produced.

2.4.1 Softwood consumption and production

Additional information was collected for 2008 from mills that, based on their responses to previous surveys, were believed to produce more than 10 thousand m^3 of sawnwood.

Total softwood consumption by all sawmills covered by the detailed sawmill survey was 4.7 million green tonnes. Sawn softwood production was 2.5 million m^3 and other softwood products (chips, bark, sawdust, etc) amounted to 2.5 million tonnes.

Sawmills in Scotland accounted for almost one half (47%) of all softwood consumption by larger mills. A further 28% was consumed by mills in England, 13% in Wales and the remaining 12% in Northern Ireland.

Table 2.16 Larger mills[1], 2008: softwood consumption and production

	England	Wales	Scotland	Northern Ireland	UK
Number of mills	15	8	25	3	51
Consumption (thousand green tonnes)	1 332	594	2 236	548	4 709
Sawnwood production (thousand m^3)	731	305	1 212	287	2 533
Other products (thousand tonnes)	661	334	1 185	291	2 471

Source: Sawmill Survey (detailed)

Notes:

1. Sawmills producing at least 10 thousand m^3 sawnwood (softwood and hardwood).

2.4.2 Source of softwood logs

Of all softwood sawlogs, 54% came from Scotland, 23% from England, 13% from Wales and 5% from Northern Ireland. The remaining 4% was imported from other countries.

94% of softwood sawlogs used by Scottish mills came from Scotland. The corresponding proportions of mills' log use coming from within the same country were 65% for England, 72% for Wales and 47% for Northern Ireland.

Table 2.17 Larger mills[1], 2008: source of softwood logs

Source	England	Wales	Scotland	Northern Ireland	UK
					thousand green tonnes
England	867	85	138	0	1 090
Wales	204	428	0	0	632
Scotland	261	81	2 097	117	2 556
Northern Ireland	0	0	0	258	258
Total UK logs	**1 332**	**594**	**2 236**	**374**	**4 536**
Other countries	0	0	0	173	173
Total log consumption	**1 332**	**594**	**2 236**	**548**	**4 709**

Source: Sawmill Survey (detailed)

Notes:

1. Sawmills producing at least 10 thousand m^3 sawnwood (softwood and hardwood).

2.4.3 Sawn softwood product markets

In 2008, 37% of sawn softwood production was used for fencing, 32% for construction, 28% for packaging and pallets and the remaining 2% went to all other markets.

Table 2.18 Larger mills[1], 2008: sawn softwood product markets

Product market	England	Wales	Scotland	Northern Ireland	UK
					per cent
Construction	25	25	39	31	32
Fencing	51	34	29	44	37
Packaging/ pallets	25	40	28	24	28
Other	0	1	4	2	2
Total	**100**	**100**	**100**	**100**	**100**

Source: Sawmill Survey (detailed)

Notes:

1. Sawmills producing at least 10 thousand m^3 sawnwood (softwood and hardwood).

2.4.4 Other softwood products

Other products (excluding sawnwood) from softwood amounted to 2.5 million tonnes in 2008. Over one half (57%) of these other products were sold to wood processing industries in the form of chips and 19% were sold to these industries as bark or in other formats. A further 12% of other products was sold to bio-energy (including pellet manufacturers) and 11% was sold to others.

Table 2.19 Larger mills[1], 2008: other softwood products

Destination and type of product[2]	England	Wales	Scotland	Northern Ireland	UK
					per cent of total other softwood products
Sold to wood processing industries					
Wood chips	63	66	55	39	57
Bark	5	6	2	0	3
Sawdust & other	20	22	15	0	16
Total	**89**	**94**	**73**	**39**	**76**
Sold to bio-energy (incl pellet manufacturers)					
Wood chips	2	0	10	32	9
Bark	0	0	0	0	0
Sawdust & other	0	0	2	15	3
Total	**2**	**1**	**13**	**47**	**12**
Other sales					
Wood chips	3	0	2	1	2
Bark	4	4	8	10	7
Sawdust & other	3	1	3	3	3
Total	**10**	**5**	**14**	**14**	**11**

Source: Sawmill Survey (detailed)

Notes:

1. Sawmills producing at least 10 thousand m^3 sawnwood (softwood and hardwood).

2. Excludes sales of firewood and other products disposed of as waste, which account for less than 1% of other softwood products.

2.4.5 Sawmill employment

There were estimated to be 2,610 full time equivalent staff employed directly by sawmills producing at least 10 thousand m^3 of sawnwood in 2008.

Table 2.20 Larger mills[1], 2008: sawmill employment

Employment type	England	Wales	Scotland	Northern Ireland	UK
					full time equivalents
Direct					
Line & production workers	684	256	997	220	2 157
Managerial & administrative staff	153	32	150	75	409
Haulage of logs to the mill	19	8	12	5	44
Total direct employment	**856**	**296**	**1 159**	**300**	**2 610**
Others[2]					
Line & production workers	21	13	12	1	47
Managerial & administrative staff	2	0	2	3	7
Total contract employment	**23**	**13**	**14**	**4**	**54**

Source: Sawmill Survey (detailed)

Notes:

1. Sawmills producing at least 10 thousand m^3 sawnwood (softwood and hardwood).

2. Excludes haulage employment on contract.

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 UK Forest Products Association.

Figures on production of pulp and paper are provided by the Confederation of Paper Industries, and cover all paper production in the UK.

2.5.1 Inputs for the integrated pulp & paper mills

The integrated pulp & paper mills in the UK consumed 667 thousand tonnes (all softwood) in 2008, a 5% increase from the previous year.

UK roundwood represented 77% of the inputs for the integrated pulp & paper mills in 2008, with the remaining 23% coming from sawmill products.

Table 2.21 Inputs for the integrated pulp & paper mills[1], 1999-2008

Year	UK roundwood[2]		Sawmill products		Total[3]	
						thousand green tonnes
	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood
1999	660	191	295	0	964	191
2000	695	200	308	0	1 004	218
2001	668	209	323	0	991	209
2002	696	210	307	0	1 003	210
2003	704	215	234	0	938	215
2004	483	214	143	0	626	214
2005	500	214	138	0	638	214
2006	481	54	145	0	626	54
2007	472	0	161	0	633	0
2008	515	0	152	0	667	0

Source: UK Forest Products Association

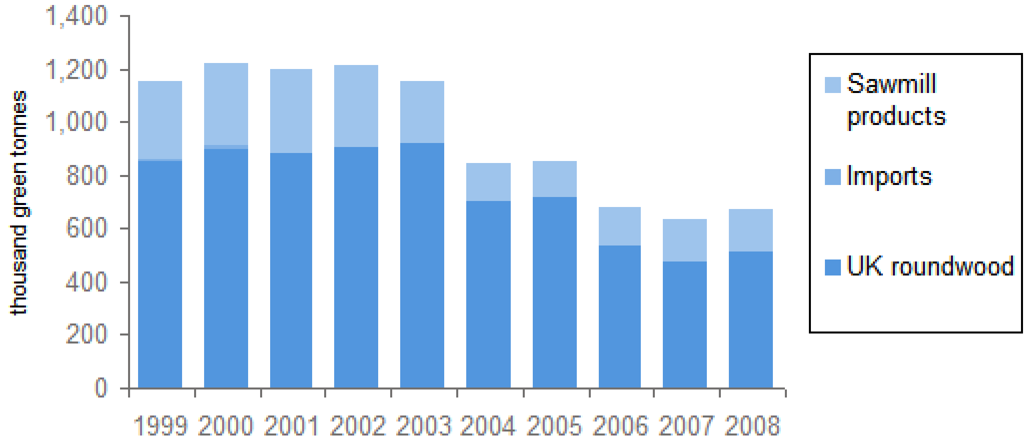
Notes:

1. Excludes inputs of recycled paper and cardboard.

2. UK roundwood derived from stemwood.

3. Includes inputs from imported roundwood and chips.

Figure 2.3 Inputs to integrated pulp and paper mills



Source: UK Forest Products Association

2.5.2 Production of paper

Figures for the production of paper are provided by the Confederation of Paper Industries. They cover all paper production from UK mills, not just those using UK roundwood.

A total of 5.0 million tonnes of paper was produced by UK paper mills in 2008. This represented a 5% decrease from 2007.

Table 2.22 Production of paper and paperboard, 1999-2008

Year	Graphic papers (incl newsprint)	Sanitary & household papers	Packaging materials	Other	Total paper & paperboard
					thousand tonnes
1999	2 816	718	2 527	515	6 576
2000	2 847	724	2 291	743	6 605
2001	2 627	738	2 190	649	6 204
2002	2 526	823	2 207	662	6 218
2003	2 532	808	2 240	646	6 226
2004	2 632	806	2 230	572	6 240
2005	2 654	801	1 989	595	6 039
2006	2 483	805	1 999	301	5 588
2007	2 229	834	1 852	313	5 228
2008	2 063	783	1 838	299	4 983

Source: Confederation of Paper Industries

2.6 Woodbased panels

Woodbased panels are 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 woodbased panels are provided by the Wood Panel Industries Federation (WPIF).

2.6.1 Inputs for woodbased panel products

A total of 1.2 million green tonnes of UK roundwood was consumed by the woodbased panel products sector in 2008. A further 1.6 million green tonnes of sawmill products and 1.1 million green tonnes of recycled wood fibre were also consumed in 2008.

Table 2.23 Inputs to woodbased panel mills, 1999-2008

Year	UK roundwood[1]		Sawmill products		Imports[2]		Total		
	Soft wood	Hard wood	Soft wood	Hard wood	Soft wood	Hard wood	Soft wood	Hard wood	Recycled wood fibre[3]
									thousand green tonnes
1999	1 613	52	1 522	10	10	0	3 145	62	400
2000	1 685	50	1 871	0	14	0	3 570	50	488
2001	1 680	35	1 675	0	13	25	3 368	60	675
2002	1 456	43	1 669	0	13	0	3 138	43	932
2003	1 486	4	1 682	4	22	0	3 190	8	993
2004	1 525	2	1 778	0	9	0	3 312	2	1 078
2005	1 502	2	1 732	2	6	0	3 240	4	1 043
2006	1 365	1	1 794	0	3	0	3 162	1	1 173
2007	1 362	5	1 940	0	2	0	3 304	5	1 230
2008	1 219	2	1 591	0	0	0	2 810	2	1 119

Source: Wood Panel Industries Federation

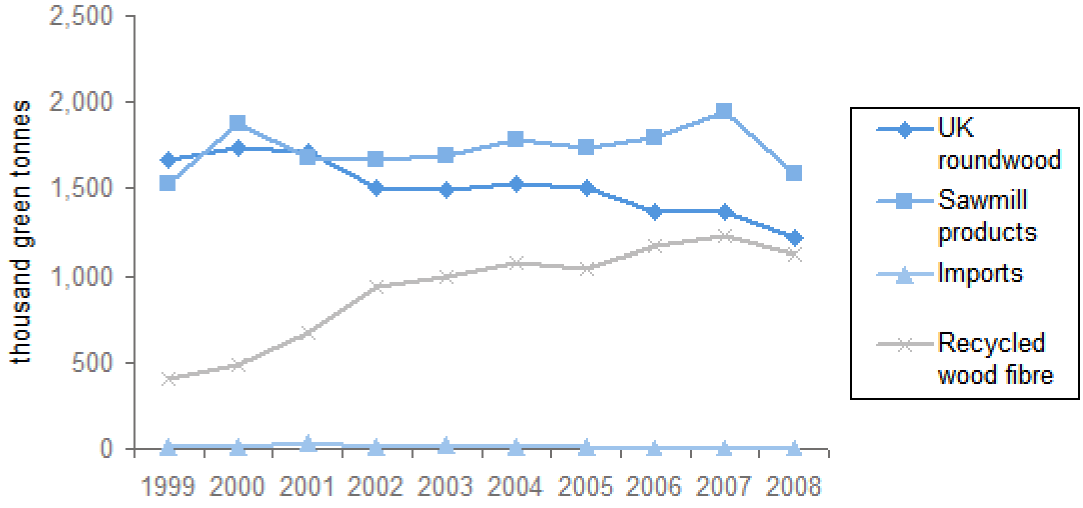
Notes:

1. UK roundwood derived from stemwood.

2. Imports include roundwood, wood products and products from imported wood.

3. Recycled wood fibre is wood fibre recovered from both pre- and post-consumer wood waste for use in woodbased panel production.

Figure 2.4 Inputs to woodbased panel mills



Source: Wood Panel Industries Federation

2.6.2 Production of woodbased panel products

A total of 2.6 million m^3 of woodbased panel products was produced in 2008, a 28% decrease on the 2007 total. Around three quarters of woodbased panel products produced in the UK were particleboard (including oriented strand board (OSB)).

Table 2.24 Woodbased panel production, 1999-2008

Year	Particleboard[1]	Fibreboard[2]	Plywood	Total
				thousand cubic metres
1999	2 442	527	5	2 974
2000	2 570	700	5	3 275
2001	2 498	757	0	3 255
2002	2 446	771	0	3 217
2003	2 526	835	0	3 361
2004	2 653	880	0	3 533
2005	2 557	841	0	3 398
2006	2 626	872	0	3 498
2007	2 684	865	0	3 549
2008	2 015	550	0	2 565

Source: Wood Panel Industries Federation

Notes:

1. Includes Oriented Strand Board (OSB).

2. Includes Medium Density Fibreboard (MDF) and hardboard.

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.

A total of 341 thousand green tonnes of UK softwood were consumed by round fencing manufacturers in 2008. A further 300 thousand tonnes were estimated to have been used for woodfuel (including biomass energy) and 116 thousand green tonnes for other uses.

Table 2.25 Miscellaneous uses of UK softwood roundwood, 1999-2008

Year	Fencing	Woodfuel[1]	Other[2]	Total
				thousand green tonnes
1999	385	100	32	517
2000	347	100	32	479
2001	324	100	31	455
2002	289	100	29	418
2003	264	100	45	409
2004	272	100	79	451
2005	320	100	95	515
2006	275	100	114	489
2007	296	200	113	609
2008	341	300	116	758

Source: Survey of Round Fencing Manufacturers, industry associations.

Notes:

1. Woodfuel reported here is derived from stemwood, and from 2007 include estimated roundwood use for biomass energy. The figures are estimated by the Expert Group on Timber and Trade Statistics.

2. Includes shavings, poles and woodwool.

Hardwood

An estimated 300 thousand green tonnes of UK hardwood were used for woodfuel (including biomass energy) in 2008. A further 30 thousand green tonnes were estimated to have been consumed by round fencing manufacturers and 33 thousand green tonnes for other uses, including exports.

2.7.1 Softwood round fencing manufacturers

There were 68 active round fencing manufacturers in 2008.

Table 2.26 Number of softwood round fencing manufacturers, 1999-2008

Year	Size category (consumption)[1]				Total
	< 1	1 - < 5	5 - < 10	10 +	
1999	37	43	8	9	97
2000	42	36	8	7	93
2001	39	33	8	6	86
2002	32	25	10	7	74
2003	25	28	9	6	68
2004	25	30	8	6	69
2005	26	26	8	8	68
2006	26	31	7	6	70
2007	31	28	10	7	76
2008	25	27	11	5	68

Source: Survey of Round Fencing Manufacturers

Notes:

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

2.7.2 UK roundwood purchased by softwood round fencing manufacturers

A total of 341 thousand green tonnes of UK softwood was purchased by softwood fencing manufacturers in 2008. This represents an increase of 15% from the 2007 total of 296 thousand green tonnes.

Table 2.27 UK roundwood purchased by softwood round fencing manufacturers, 1999-2008

Year	Size category (consumption)[1]				Total
	< 1	1 - < 5	5 - < 10	10 +	
					thousand green tonnes
1999	11	98	56	220	385
2000	14	82	60	190	347
2001	12	74	59	180	324
2002	11	63	68	148	289
2003	9	62	62	132	264
2004	8	69	53	143	272
2005	10	66	50	194	320
2006	10	77	47	140	275
2007	12	63	60	161	296
2008	10	66	64	201	341

Source: Survey of Round Fencing Manufacturers

Notes:

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

2.8 Exports

UK softwood exports in 2008 consisted of 556 thousand green tonnes of pulpwood and 176 thousand green tonnes of logs, giving a total of 733 thousand green tonnes of roundwood. The UK also exported 176 thousand tonnes of chips in 2008.

Table 2.28 Summary of softwood exports[1], 1999-2008

Year	Roundwood			Chips
	Pulpwood	Logs	Total	
				thousand green tonnes
1999	24	..	24	..
2000	16	..	16	..
2001	61	..	61	..
2002	133	..	133	..
2003	217	90	307	..
2004	465	145	610	320
2005	560	145	705	150
2006	505	138	643	214
2007	588	171	759	251
2008	556	176	733	176

Source: industry associations

Notes:

1. Data for exports from Northern Ireland before 2004 are not available.

.. denotes not available.

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.

Use the links on the right to access data and sources on certification (including certified woodland area).

2.9.1 Volume certified

Respondents to Forestry Commission surveys were asked to report on volumes certified. 65% of non-FC/ FS softwood removals in 2008 were from certified sources. 81% of sawmills' roundwood consumption and 75% of sawnwood production by sawmills in 2008 was certified. For round fencing manufacturers, 66% of total softwood consumption was certified.

Table 2.29 Per cent of volume certified, 2002-2008

Year	Removals[1]	Sawmills		Round fencing
	Softwood from non-FC/ FS woodland	Consumption (softwood and hardwood)	Production (softwood and hardwood)	Consumption (softwood)
				per cent certified volume
2002	40	65	62	14
2003	54	67	50	36
2004	74	80	63	58
2005	69	76	71	53
2006	67	81	64	46
2007	74	78	65	54
2008	65	81	75	66

Source: industry surveys

Notes:

1. For all removals from FC/ FS woodland, the source is certified.

2.9.2 Chain of custody certificates

Sawmills and round fencing manufacturers were also asked whether they held a Chain of Custody certificate. 44% of sawmills who provided data in 2008 reported that they held a Chain of Custody certificate. This proportion varied with size of mill, from 14% of mills producing less than 5 thousand m^3 sawnwood to 100% of those producing 25 thousand m^3 sawnwood or more. 27% of round fencing manufacturers reported holding a Chain of Custody certificate.

Table 2.30 Chain of custody certificates[1], 2008

	Mills holding certificate	Mills without certificate	Certification status not reported	Total
Sawmills (size of mill[2])				
< 5	9	51	5	65
5 - < 25	15	8	1	24
25 +	28	0	0	28
All sawmills	**52**	**59**	**6**	**117**
Round fencing manufacturers	15	25	15	55

Source: industry surveys

Notes:

1. Mills responding for 2008. Accounts for around 90% of total production for sawmills and around 90% of total consumption by round fencing manufacturers.

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

2.10 Woodfuel

The sawmill survey and survey of round fencing manufacturers were extended in 2008 to request data on woodfuel sales and use from all sawmills and round fencing manufacturers, with data requested on:

- sales to bioenergy;
- sales as firewood and
- internal use for heat/ energy.

Previously, this information was only asked of larger mills (those producing at least 10 thousand m^3 sawnwood), although sales to bioenergy was introduced onto the questionnaire for smaller mills in 2006.

In addition, a new survey of woodfuel suppliers was run in Spring 2009, requesting data on the use and supply of woodfuel.

Use the links on the right to access data and further information on sources on woodfuel.

2.10.1 Woodfuel supply

An estimated 0.8 million oven dry tonnes of wood chips, 0.1 million oven dry tonnes of logs for stoves and open fires, 0.1 million oven dry tonnes of wood pellets (excluding imported pellets) and 0.1 million oven dry tonnes of woodfuel in other forms was supplied in the UK in 2008.

Table 2.31 UK woodfuel supply, 2008

Form	Quantity[1]
	thousand oven dry tonnes
Logs for stoves and open fires	122
Wood chips[2]	
From recycled wood	278
From other sources	495
Total wood chips	772
Wood pellets[3]	90
Other[4]	78

Source: Woodfuel Suppliers Survey, Wood Recyclers Association, industry surveys.

Notes:

1. Estimated, based on woodfuel suppliers survey 2008 and other sources.

2. Wood fibre from roundwood, forest harvesting residues, arboriculture arisings, sawmill products and other processed residues.

3. UK production only. Excludes imported pellets.

4. Includes other sawmill products (e.g. sawdust, slabwood).

2.10.2 Woodfuel supply by sawmills and round fencing manufacturers

An estimated 359 thousand green tonnes (mainly softwood) of woodfuel were supplied by sawmills in 2008 and a further 63 thousand green tonnes were supplied by round fencing manufacturers. 92% of the total woodfuel supplied was sold to bioenergy.

Table 2.32 Woodfuel supply[1] by sawmills and round fencing manufacturers, 2006-2008

	Sales to bioenergy	Sales as firewood	Used internally for heat/ energy	Total
				thousand green tonnes
Sawmills				
2006	184	3	10	212
2007	204	4	5	213
2008	337	8	14	359
Round fencing manufacturers				
2008	49	13	1	63

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. *Sales as firewood and used internally for heat/ energy relates to larger mills (those producing at least 10 thousand m^3 sawnwood) only in 2006 and 2007.*

3 Trade

This section 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. International comparisons are provided in the International Forestry chapter.

Information on imports and exports comes from the Overseas Trade Statistics compiled by HM Revenue & Customs. The two sources are surveys of European Union (EU) internal trade (Intrastat) and customs data for trade with non-EU countries.

A copy of all trade tables is available to download as an Excel spreadsheet.

3.1 Apparent consumption of wood in the UK

Apparent consumption is the amount of timber, measured as wood raw material equivalent (WRME) underbark, 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 also differs from actual consumption by the extent of changes in the level of stocks. It is not practical to collect information on actual consumption.

UK production of roundwood totalled 8.4 million m^3 WRME underbark in 2008. A further 45.7 million m^3 WRME underbark of wood and wood products were imported to the UK and 5.4 million m^3 WRME underbark were exported, giving apparent consumption of 48.8 million m^3 WRME underbark. These figures exclude recycled wood and recovered paper (see Table 3.3 for statistics on recovered paper).

Table 3.1 Apparent consumption of wood[1] in the UK, 1999-2008

Year	UK production[2]	Imports	Exports	Apparent Consumption
				million m^3 WRME underbark
1999	7.7	45.6	6.0	47.3
2000	7.8	47.4	5.8	49.5
2001	7.9	49.4	5.9	51.4
2002	7.8	48.5	5.8	50.4
2003	8.1	49.0	7.1	50.0
2004	8.3	53.2	7.5	54.0
2005	8.5	51.2	5.8	54.0
2006	8.4	53.6	5.9	56.1
2007	9.0	54.5	6.8	56.7
2008	8.4	45.7	5.4	48.8

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 2.6 and 2.7.

3.2 Apparent consumption of wood products in the UK

UK production accounted for around one third of the UK sawnwood market and around one half of the UK woodbased panel and paper markets.

Table 3.2 Apparent consumption of wood products[1,2] in the UK, 2008

Product	UK production	Imports	Exports	Apparent consumption
Sawnwood (thousand m^3)				
Coniferous	2 772	5 487	205	8 054
Non-coniferous	46	399	17	428
Total	2 818	5 886	222	8 482
Woodbased panels (thousand m^3)				
Veneer sheets	0	30	6	24
Plywood	0	1 490	59	1 431
Particleboard	2 015	994	289	2 720
Fibreboard	550	884	164	1 269
Total	2 565	3 398	519	5 444
Paper & paperboard (thousand tonnes)				
Newsprint	1 073	1 279	211	2 142
Other graphic papers	990	3 877	318	4 548
Sanitary & household papers	783	192	61	913
Packaging materials	1 838	2 010	424	3 424
Other paper & paperboard	299	65	16	347
Total	4 983	7 422	1 030	11 375

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.

3.3 Flow of recovered paper

UK production of recovered paper (the amount recovered from businesses and households in the UK) totalled 8.8 million tonnes in 2008. The amount of recovered paper which is exported has risen from around 0.5 million tonnes in 1999 to 4.9 million tonnes in 2008, accounting for over one half of UK production.

Table 3.3 Flow of recovered paper, 1999-2008

Year	UK production	Imports	Exports	Apparent consumption[1]
				thousand tonnes
1999	5 135	61	452	4 744
2000	5 301	136	590	4 847
2001	5 521	50	694	4 877
2002	5 968	76	1 227	4 817
2003	6 304	100	2 005	4 399
2004	7 126	87	3 127	4 085
2005	7 718	78	3 329	4 467
2006	8 015	140	3 996	4 159
2007	8 617	88	4 749	3 956
2008	8 768	74	4 891	3 951

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 2008 comprised 5.9 million cubic metres of sawnwood, 3.4 million cubic metres of woodbased panels and 1.9 million cubic metres of other wood. This represented a 30% decrease in the level of sawnwood imports and a 12% decrease in woodbased panel imports from 2007.

A total of 7.4 million tonnes of paper was imported into the UK in 2008, representing a 6% decrease from the 2007 figure of 7.9 million tonnes.

Table 3.4 UK import quantities, 1999-2008

Year	Wood (thousand m^3)			Pulp and paper (thousand tonnes)			
	Sawnwood	Other wood[1]	Woodbased panels	Paper	Pulp	Recovered paper	Total pulp & paper
1999	7 014	604	3 031	7 079	1 717	61	8 857
2000	7 852	735	3 307	6 668	1 779	136	8 584
2001	7 801	887	3 598	7 322	1 632	50	9 005
2002	8 432	1 020	3 782	7 072	1 623	76	8 771
2003	8 933	1 045	3 492	7 490	1 522	100	9 112
2004	8 583	1 048	3 813	7 528	1 636	87	9 251
2005	8 341	1 325	3 552	7 663	1 694	78	9 434
2006	7 963	1 133	3 685	7 741	1 452	140	9 332
2007	8 469	1 637	3 847	7 890	1 427	88	9 405
2008	5 886	1 935	3 398	7 422	1 336	74	8 831

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

Notes:

1. Includes roundwood, wood charcoal, chips, particles and residues.

3.5 UK export quantities by product

A total of 5.9 million tonnes of pulp and paper (including recovered paper) was exported from the UK in 2008. This represented a 3% increase from the previous year.

Table 3.5 UK export quantities, 1999-2008

Year	Wood (thousand m^3)			Pulp and paper (thousand tonnes)			
	Sawnwood	Other wood[1]	Woodbased panels	Paper	Pulp	Recovered paper	Total pulp & paper
1999	152	193	383	1 781	37	452	2 269
2000	195	286	345	1 759	22	590	2 371
2001	210	255	362	1 623	14	694	2 332
2002	272	298	424	1 546	21	1 227	2 794
2003	304	840	531	1 697	10	2 005	3 713
2004	312	1 294	519	1 557	29	3 127	4 714
2005	358	1 186	520	1 164	25	3 329	4 518
2006	415	1 214	510	1 002	24	3 996	5 022
2007	346	1 353	599	971	24	4 749	5 743
2008	222	1 289	519	1 030	9	4 891	5 930

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

Notes:

1. Includes roundwood, wood charcoal, chips, particles and residues.

3.6 UK import values by product

Wood product imports in 2008 were valued at a total of £6.3 billion. Pulp and paper (including recovered paper) comprised two thirds of this total, 17% was sawnwood, 13% woodbased panels and 2% other wood.

Table 3.6 UK import values, 1999-2008

Year	Wood			Pulp and paper				Total
	Sawnwood	Other wood[1]	Woodbased panels	Paper	Pulp	Recovered paper	Total pulp & paper	
								£ million
1999	1 001	63	635	3 363	510	6	3 879	5 578
2000	1 105	67	683	3 306	738	19	4 063	5 918
2001	1 057	73	731	3 780	599	12	4 391	6 252
2002	1 107	79	781	3 237	484	9	3 730	5 697
2003	1 225	98	767	3 509	484	10	4 003	6 094
2004	1 190	95	885	3 520	476	7	4 003	6 173
2005	1 120	114	796	3 432	517	5	3 954	5 984
2006	1 144	112	748	3 599	548	9	4 156	6 160
2007	1 516	128	898	3 741	526	7	4 275	6 817
2008	1 085	158	832	3 655	608	10	4 273	6 349

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

Notes:

1. Includes roundwood, wood charcoal, chips, particles and residues.

3.7 UK export values by product

Wood product exports from the UK were valued at a total of £1.8 billion in 2008. This comprised 89% pulp and paper (mainly paper), 6% woodbased panels, 3% sawnwood and 3% other wood.

Table 3.7 UK export values, 1999-2008

Year	Wood			Pulp and paper				Total
	Sawnwood	Other wood[1]	Woodbased panels	Paper	Pulp	Recovered paper	Total pulp & paper	
								£ million
1999	30	14	76	1 167	14	40	1 220	1 341
2000	31	19	77	1 227	8	69	1 303	1 429
2001	31	12	74	1 197	4	75	1 276	1 393
2002	39	13	82	982	9	98	1 088	1 222
2003	47	25	91	1 002	5	173	1 181	1 345
2004	50	34	95	992	7	235	1 234	1 412
2005	52	35	102	1 002	6	278	1 286	1 475
2006	61	37	128	947	8	329	1 284	1 510
2007	70	40	107	1 013	7	407	1 427	1 645
2008	50	48	104	1 114	3	472	1 590	1 792

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

Notes:

1. Includes roundwood, wood charcoal, chips, particles and residues.

3.8 Origin of wood imports

Sweden, Finland and Latvia provided the majority of imports of sawn softwood to the UK in 2008. Sawn hardwood was most commonly imported from the USA and other non-EU countries.

UK imports of plywood commonly came from countries outwith the EU, such as China, Brazil and Malaysia, whilst Finland accounted for the majority of EU trade. Most particleboard imports to the UK in 2008 came from within the EU (mainly Ireland, Germany, France and Belgium). The EU also supplied the majority of fibreboard imports, with Ireland, Spain, Germany and Belgium being the principal sources.

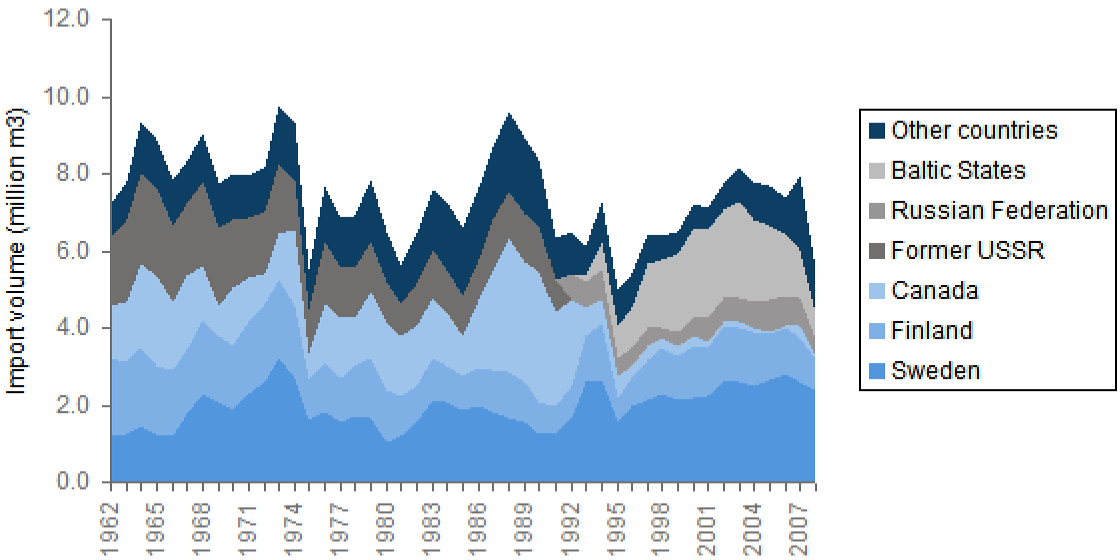
Brazil and the USA were amongst the principal sources of wood pulp to the UK in 2008, whilst most paper imports came from Finland, Sweden and Germany.

Table 3.8 Country of origin of wood imports to the UK, 2008

Source	Sawn softwood	Sawn hardwood	Plywood	Particle-board	Fibre-board	Wood pulp	Paper and paperboard
	per cent of total UK imports (volume) in each category						
Sweden	44	6	0	1	1	8	17
Finland	14	0	12	1	3	4	20
Germany	9	9	1	25	17	0	17
France	0	6	1	16	0	1	9
Belgium	1	1	1	16	14	1	2
Spain	0	0	1	1	18	9	2
Ireland	3	2	0	30	27	0	0
Latvia	10	3	1	0	1	0	0
Other EU-27	7	12	1	10	14	16	13
Total EU-27	**88**	**39**	**19**	**99**	**96**	**39**	**81**
USA	0	25	0	1	0	14	3
Norway	1	0	0	0	0	8	6
Brazil	0	1	23	0	1	22	1
Canada	2	6	1	0	0	6	3
China	0	3	24	0	1	0	1
Russia	7	1	4	0	0	1	1
Malaysia	0	6	20	0	1	0	0
Cameroon	0	7	0	0	0	0	0
Other non-EU	2	12	8	0	2	11	4
Total non-EU	**12**	**61**	**81**	**1**	**4**	**61**	**19**

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

Figure 3.1 Country of origin of sawn softwood imports to the UK, 1962-2008



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

4 UK Forests and Climate Change

This section contains information relating to carbon in forests and public attitudes to forestry and climate change.

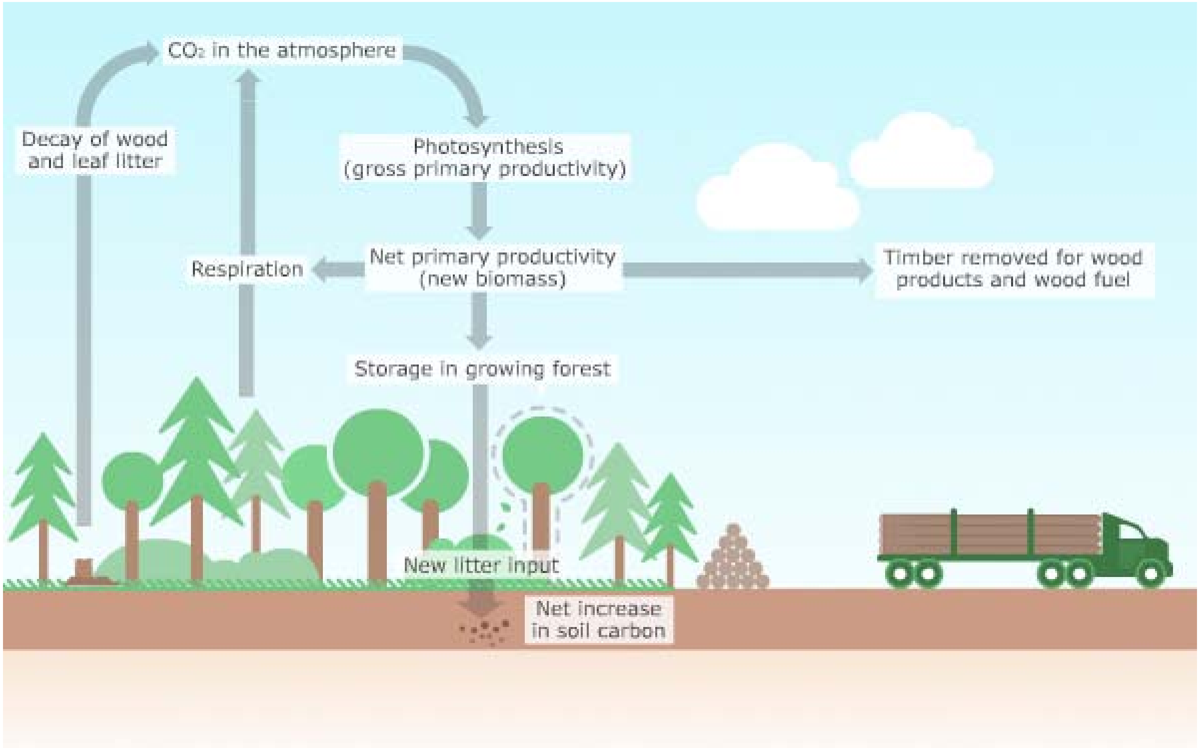
Use the links on the right to access data and sources on forests and climate change.

A copy of all UK forests and climate change tables is available to download as an Excel spreadsheet.

4.1 Carbon cycle

Figure 4.1 shows a forest's contribution to the carbon cycle. Trees absorb carbon dioxide through photosynthesis and release it through respiration; the difference is new biomass. Some of this biomass is dropped to the forest floor as litter (foliage, deadwood, etc), which in due course decays and is either released back to the atmosphere or becomes part of soil carbon. The remainder accumulates as increment in the forest, mostly as stemwood, branches or roots. A proportion of this accumulated biomass is harvested, for wood products or fuelwood; the rest is a net addition to the biomass stored in the forest.

Figure 4.1 Carbon Cycle



4.2 Forest carbon stock

The total carbon in UK forests has increased from 1990 to 2005 and is projected to continue to increase to 2010. The carbon in forest soils accounts for most (around 80%) of total forest carbon.

Table 4.1 Forest carbon stock

	1990	**2000**	**2005**	**2010**
				million tonnes of carbon
Carbon in above-ground biomass	106	104	111	117
Carbon in below-ground biomass	14	15	17	19
Carbon in dead wood	2	2	2	2
Carbon in litter	25	25	25	25
Soil carbon [1]	656	702	718	730
Total forest carbon	**803**	**848**	**873**	**893**

Not National Statistics.

Source: UK report for Global Forest Resources Assessment 2010

Notes

1. Carbon in soil depth 0 to 100 cm. Most of the increase in soil carbon is existing soil carbon in areas afforested between these dates, not additional carbon sequestered.

4.3 Carbon sequestration

In climate change reporting, removals to forestland, also called the forest sink, measures the net annual accumulation of carbon in forests by woody biomass, soils and litter. The annual rate is reported to have peaked in 2004 at 16 million tonnes CO_2 in total, of which 12 million tonnes CO_2 was in living biomass, and is expected to fall steadily to 2020. Under the Kyoto protocol, additional woodland planted since 1990 contributes to the UK's carbon dioxide emissions target; this continues to increase as woodland continues to be planted. Changes in the quantity of forest products from timber grown in the UK may also contribute to the carbon balance, but are not included in these reported figures.

Table 4.2 Net carbon dioxide removals attributed to UK forestry

Year	In living biomass	Total	of which, due to land afforested since 1990
			million tonnes of carbon dioxide per year
1990	9.1	12.2	0.0
1995	10.5	13.7	0.3
2000	9.9	13.8	1.4
2005	12.1	15.7	2.3
2010	5.1	10.6	3.0
2015	2.2	7.6	3.4
2020	-0.5	4.7	4.1

Not National Statistics.

Source: Inventory and projections of UK emissions by sources and removal by sinks due to land use, land use change and forestry (CEH, 2009), contributing to 2007 UK Greenhouse Gas Emissions (Defra, January 2009).

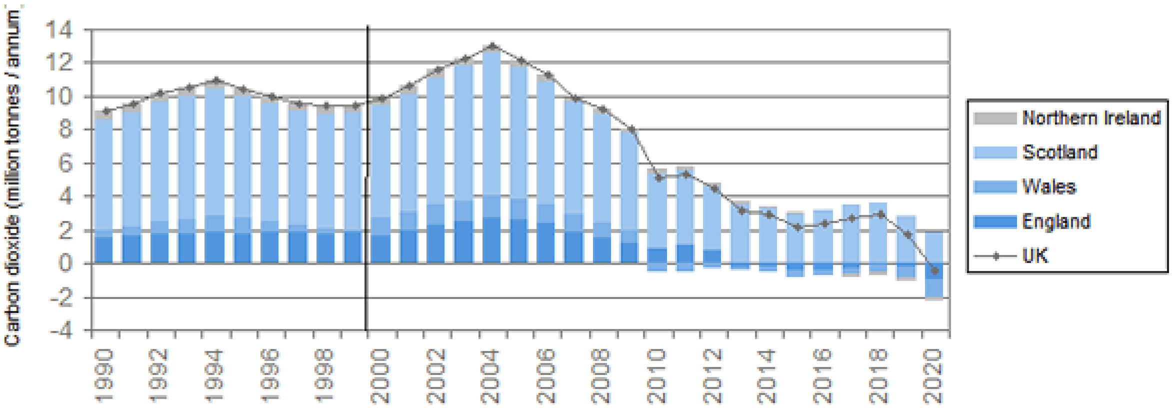
Notes:

1. Net annual accumulation of carbon in forests by woody biomass, soils and litter. Includes losses due to forest wildfires. Excludes changes in UK harvested wood products.

2. Emissions and sequestration can be presented as tonnes carbon or tonnes carbon dioxide (CO_2). To convert from tonnes CO_2 to tonnes carbon multiply by 12/44.

3. Future predictions of carbon uptake assume that commercial conifer plantations will be replanted when felled, and that planting of new woodland will continue at the same rate as in 2007 (mid projection).

Figure 4.2 Net annual change in carbon (CO_2 equivalent) [1] in UK woodlands



Not National Statistics.

Source: Inventory and projections of UK emissions by sources and removal by sinks due to land use, land use change and forestry (CEH, 2009), contributing to 2007 UK Greenhouse Gas Emissions (Defra, January 2009).

1. Net annual accumulation of carbon in living forest biomass only. Includes losses due to forest wildfires. Excludes changes in carbon in litter, soils and UK harvested wood products.

2. Emissions and sequestration can be presented as tonnes carbon or tonnes carbon dioxide (CO_2). To convert from tonnes CO_2 to tonnes carbon multiply by 12/44.

3. Future predictions of carbon uptake assume that commercial conifer plantations will be replanted when felled, and that planting of new woodland will continue at the same rate as in 2007 (mid projection).

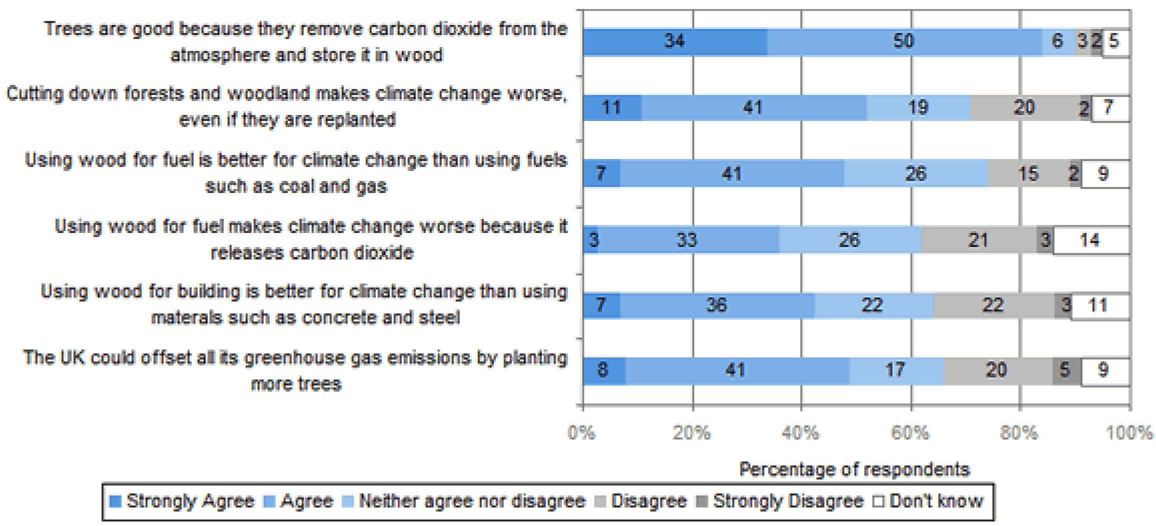
4.4 Public Opinion of Forestry - climate change

The Forestry Commission has conducted similar biennial surveys of public attitudes to forestry and forestry-related issues since 1995. The most recent set of three separate surveys was conducted in 2009; in Scotland, Wales, and across the UK as a whole. The full results are available within the 2009 Public Opinion of Forestry reports available on our website.

Questions were asked to gauge the public's agreement on climate change issues, including on the ways in which forests and woodlands can impact on climate change. Some of the public views presented below do not reflect expert opinion.

The highest level of agreement was seen with the statement "trees are good because they remove carbon dioxide from the atmosphere and store it in wood", with 84% agreeing. This compares with only 36% agreeing with the statement "using wood for fuel makes climate change worse because it releases carbon dioxide".

Figure 4.3 Public opinion on ways in which forests and woodlands can impact on climate change



Not National Statistics.

Source: UK Public Opinion of Forestry Survey 2009.

Base: 2,000 UK respondents.

Questions were also posed on how UK forests should be managed in response to the threat of climate change - see the survey reports for further details.

Public views on forests and climate change were also given by other parts of the 2009 survey:

- when asked about a series of UK forestry topics seen in the media, the most common response, given by 39% of respondents, was ‘Forests and woodlands helping to tackle climate change’ ;

- 68% of respondents said that ‘to help tackle climate change’ is a good reason to support forestry with public money.

5 Environment

This section presents a range of information about the woodland environment, mostly using sources that are not National Statistics. More information on environmental aspects is included in the UK Indicators of Sustainable Forestry, published in October 2002 with web updates.

A copy of all environment tables is available to download as an Excel spreadsheet.

5.1 Ancient and semi-natural woodland

Ancient semi-natural woodland (ASNW) tends to be richer in plants and animals than other woodland areas. The area of ASNW has declined over the centuries and woodlands have become increasingly fragmented. The figures shown in Table 5.1 are mostly based on maps from the 1990s.

Table 5.1 Ancient and semi-natural woodland

Woodland type	England	Wales	Scotland	Northern Ireland	UK
					thousand hectares
ASNW[2]	206	34	89	0	329
PAWS[2]	135	28	59	1	223
OSNW[2]	210	47	44	15	316
Total ancient[1]	**341**	**62**	**148**	**1**	**552**
Total semi-natural[1]	**416**	**81**	**133**	**15**	**645**

Not National Statistics.

Source: Protected Forest Areas in the UK *(S Pryor & G Peterken, 2001), Wales from Woodlands for Wales progress report 2001-05 (2006) and Northern Ireland ancient woodland data from* Back on the Map *(Woodland Trust, 2007)*

Notes:

1. Ancient woodland is woodland that has been in continuous existence since 1600 (1750 in Scotland);
Semi-natural woodland is woodland with natural characteristics (predominantly native species of trees, ground plants and animals).
2. ASNW (ancient semi-natural woodland) is both ancient and semi-natural;
PAWS (plantation on an ancient woodland site) is ancient but not semi-natural;
OSNW (other semi-natural woodland) is semi-natural but not ancient.

5.2 Protected forest areas

Woodland areas can be placed under different types of statutory and non-statutory protection.

Table 5.2 Woodland areas under types of statutory protection

Type of protection[1]	England	Wales	Scotland	Northern Ireland	UK
					thousand hectares
SAC	24	1	22	0	47
SPA	..	1	..	..	..
NNR[2]	9	1	19	0	30
SSSI	80	9	38	2	129

Not National Statistics.

Source: Protected Forest Areas in the UK *(S Pryor & G Peterken, 2001).*

Notes:

1. SAC: Special Area of Conservation;
SPA: Special Protection Area;
NNR: National Nature Reserve;
SSSI: Site of Special Scientific Interest (ASSI in Northern Ireland).

2. For NNR, the Scottish figure is the area of NNR managed under the WGS, and probably under-estimates the total woodland in NNRs in Scotland. This has a knock-on effect on the UK total.

.. Denotes data not available.

Based on combinations of these designations and objectives, it has been estimated that in the pan-European classification of protected forest areas, 10 thousand hectares of woodland in the UK are in the highest categories 'non-intervention nature reserves' and 'wilderness areas in near-natural conditions', 135 thousand hectares have 'conservation through active management' and 646 thousand hectares have 'protection of landscapes and specific natural elements'.

5.3 Populations of wild birds

The index for woodland birds was expanded in 2007 to cover 38 species, of which 12 are generalists and 26 are woodland specialists (those that breed or feed mainly or solely in woodland). Since the early 1990s the UK woodland bird indicator has remained about 20 per cent below the level in the early 1970s. The decline was predominantly in woodland specialist species.

Table 5.3 UK populations of wild birds

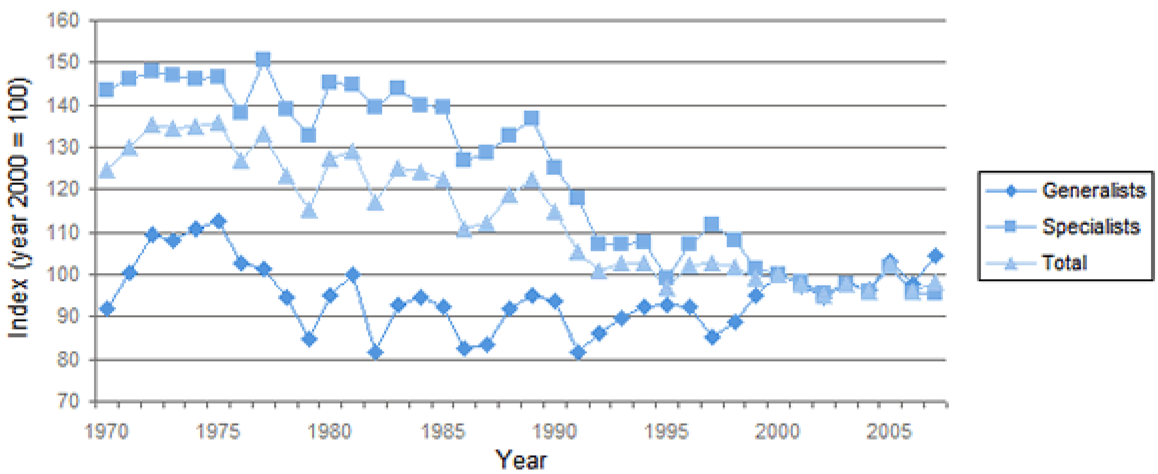
Year	Total breeding birds	Farmland birds	Seabirds	Woodland birds	Woodland generalists	Woodland specialists
						index (year 2000 = 100)
1998	96.9	95.8	97.6	101.6	88.8	108.2
1999	96.6	94.9	101.3	99.2	95.0	101.3
2000	100.0	100.0	100.0	100.0	100.0	100.0
2001	98.9	99.5	101.5	97.6	97.2	98.0
2002	99.0	99.0	101.9	95.1	94.4	95.6
2003	99.5	99.1	98.9	97.9	98.0	97.8
2004	98.3	97.6	91.0	95.9	96.2	95.9
2005	100.7	96.7	94.5	102.2	103.1	101.9
2006	100.1	95.6	98.5	96.1	97.6	95.4
2007	98.8	90.2	95.8	98.4	104.5	95.7

Source: British Trust for Ornithology (BTO), Royal Society for the Protection of Birds (RSPB).

Notes:

1. Based on data in Wild Bird Populations statistics release (Defra, October 2008).

Figure 5.1 UK populations of woodland birds



Source: British Trust for Ornithology (BTO), Royal Society for the Protection of Birds (RSPB).

Notes:

1. Based on data in Wild Bird Populations statistics release (Defra, October 2008).

5.4 Woodland vegetation

The Countryside Survey carried out by the Centre for Ecology and Hydrology, reports for a wide range of habitats, including conifer and broadleaved woodland. Results for 2007 show some declines in species richness. Data for Scotland show significant declines in species richness since 1998, in both broadleaved and conifer woodlands. No other changes in species richness since 1998 are statistically significant, but Wales and GB total show significant declines in species richness for broadleaves over the longer period since 1990.

The Ellenberg N fertility score has declined significantly over the longer period since 1990 for broadleaves in Scotland. There are no other significant changes in Ellenberg fertility and light scores.

Table 5.4 Vegetation richness and condition scores[1]

		England	Wales	Scotland	GB
Species richness					
Broadleaved	1990	20.8	25.8	25.3	22.6
	1998	18.9	22.8	26.9	21.3
	2007	20.1	21.6	22.1	20.9
Conifer	1990	16.0	12.2	14.2	14.5
	1998	14.2	15.7	15.6	15.3
	2007	14.9	13.9	13.7	14.1
Ellenberg light score					
Broadleaved	1990	6.0	6.4	6.3	6.2
	1998	5.9	6.3	6.4	6.1
	2007	5.9	6.3	6.4	6.1
Conifer	1990	5.9	6.1	6.4	6.2
	1998	5.8	6.2	6.4	6.2
	2007	5.8	6.1	6.4	6.2
Ellenberg N fertility score					
Broadleaved	1990	5.5	4.5	4.5	5.1
	1998	5.5	4.6	4.3	5.1
	2007	5.6	4.6	4.2	5.1
Conifer	1990	4.7	3.6	3.4	3.8
	1998	4.7	3.7	3.4	3.9
	2007	4.7	3.8	3.3	3.8

Not National Statistics.

Source: Countryside Survey data (C) NERC - Centre for Ecology & Hydrology.

Notes:

1. Higher scores indicate more species, and higher levels of light and fertility.

6 Recreation

This section contains information on the number and profile of visits to woodlands across the UK, Forestry Commission facilities and activities and public access to woodland.

A copy of all recreation tables is available to download as an Excel spreadsheet.

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 (2003 onwards)
- England Leisure Visits Survey (2005)

It is likely that differences in survey design and methodology have contributed to a considerable proportion of the differences in results between these surveys. As the scope of the surveys has evolved over time, the figures in Table 6.1 should not be interpreted as time trends but instead as separate breakdowns for each survey.

In common with all sample based surveys, the results from each survey are subject to the effects of chance, depending on the particular survey method used and the sample acheived, thus confidence limits apply to all results from these surveys. For example, the range of uncertainty around the estimated 62 million visits to woodland in Scotland (by Scottish residents) in 2008, should be no more than around +/-14%, i.e. the true figure is likely to be between around 55 and 69 million.

Table 6.1 Number of visits to woodland

Year	Journey starting point			
	England	Wales	Scotland	GB
				million visits
1994	273	12	18	303
1996	308	11	26	346
1998	321	11	22	355
2002/3	222	12	18	252
2004	..	..	70	..
2005	170	..	62	..
2006	..	..	76	..
2007	..	..	72	..
2008	..	..	62	..

Not National Statistics.

Source: 1994, 1996, 1998: UK Day Visit Surveys, carried out by National Centre for Social Research (not available online); 2002/3: GB Day Visits Survey, carried out by TNS Travel & Tourism; England 2005: England Leisure Visits Survey (ELVS), carried out by Research International; Scotland from 2004: Scottish Recreation Survey, carried out by TNS Travel & Tourism.

Notes:

1. The UK and GB Day Visits Surveys collected data about day trips from home; the 1994, 1996 and 1998 surveys covered calendar years, while the 2002/3 survey was conducted over a 12-month period starting in March 2002. Despite the name of the early UK surveys, they did not cover visits by people living in Northern Ireland.

2. ELVS included trips taken in England by repondents living in England, from February 2005 to February 2006.

3. The Scottish Recreation Survey, which commenced in July 2003 (and is scheduled to continue until 2013), collects information on visits to the outdoors for leisure and recreation in Scotland by people living in Scotland.

4. In each survey, visits to overseas destinations are excluded.

.. denotes data not available.

6.1.1 England

An England Leisure Visits Survey (ELVS) was carried out during 2005. This survey measured the extent of participation by the English adult population in Leisure Visits, defined as round trips from home for leisure purposes (although the survey also collected information on trips made from a holiday base). Telephone interviews were conducted across all geographic regions in England, with a core sample of 23,500.

In 2005, 5% of all Leisure Visits, an estimated 170 million trips, included a trip to a woodland or forest. Table 6.2 shows the main characteristics of the trips which involved a visit to a wood or forest.

At the beginning of 2009 fieldwork commenced on Natural England's "Monitor of Engagement with the Natural Environment" which will collect information on visits to the outdoors in England. The Forestry Commission is providing support for this survey and results relating to the woodland visits covered by the survey will be published in Forestry Statistics 2010.

Table 6.2 Woodland visit characteristics - England 2005 (ELVS)[1]

Woodland visit characteristics	2005
	per cent
Most recent woodland visit	
Within last month	16
Within last year	40
Season of year	
January-March	29
April-June	27
July-September	22
October-December	23
Day of week	
Weekday	61
Weekend	39
Main activity on trip	
Walking	62
Cycling	9
Eat/drink out	6
Duration of visit (round trip)	
Up to 1 hour	30
Over 1, up to 2 hours	26
Over 2, up to 3 hours	12
Over 3 hours	31
Distance travelled (round trip)	
Up to 2 miles	6

Over 2, up to 5 miles	32
Over 5, up to 20 miles	33
Over 20 miles	29
Main mode of transport	
Car/van	45
On foot	41
Bicycle	8
Group composition	
One adult only	33
With family	47
With friends	18
Organised group	2
Perceived owner or manager	
Local Authority	18
Forestry Commission	8
Voluntary organisation	15
Private owner	24
Other	12
Don't know	25

Not National Statistics.

Source: England Leisure Visits Survey 2005, carried out by Research International.

Notes:

1. Most recent woodland visit figures refer to per cent of respondents, others refer to per cent of trips.

6.1.2 Scotland

The Scottish Recreation Survey (ScRS), which measures and collects details about the Scottish adult population's participation in outdoor recreation in Scotland, began in July 2003 and will run for ten years, with 1,000 adults being interviewed in their home each month.

In 2008 an estimated 62 million recreation visits were made by the Scottish population to woodland in Scotland, either as the main destination of a visit or as one of a few destinations within a single visit to the outdoors (24 million to Forestry Commission woodland, 40 million to other woodland). This represents a 14% decrease from the 72 million recreation visits to woodland estimated for 2007.

Table 6.3 Estimated number of visits taken to woodlands for recreation in Scotland, 2006-2008 [1,2,3]

Year	FC owned Woodland		Other woodland / don't know owner		Total	
	All visits	Of which main destination	All visits	Of which main destination	All visits	Of which main destination
						millions of visits
2006	34.8	27.5	41.0	29.5	75.8	55.6
2007	28.4	22.6	43.8	33.0	72.2	53.9
2008	23.9	19.3	40.3	25.1	62.2	42.3

Not National Statistics.

Source: Scottish Recreation Survey, carried out by TNS.

Notes:

1. The Scottish Recreation Survey results are obtained from the Scottish Omnibus Survey. All results are subject to the effects of chance in sampling, so a range of uncertainty (confidence interval) should be associated with any result from the survey. The confidence intervals take into account the effect of clustering, weighting and stratification in the survey design. For example, the range of uncertainty around the 62 million visits in 2008 result should be no more than around +/-14%, i.e. the true figure is likely to be between around 55 and 69million.

2. Visits are split into those made to FC owned woodland and other woodland/ don't know owner. 'Total' visits cover those visits where one or more of the locations visited in a single visit was a woodland/forest location and not the sum of the two sub- categories shown above.

3. 'All visits' relate to visits where locations other than woodland may have been visited as part of the trip. Woodland may not have been the main destination of the trip in some of these cases. 'Of which main destination' relates to visits where woodland was the main location of the visit.

Table 6.4 shows the main characteristics of recreation visits, where the main destination of visit was woodland, from the first five full calendar years of the Scottish Recreation Survey.

Table 6.4 Woodland visit characteristics - Scotland, 2004-2008 [1]

Woodland visit characteristics	2004	2005	2006	2007	2008
					per cent
Main activity during visit					

Walking	77	79	80	83	83
Family Outing	5	6	6	4	5
Cycling	8	7	6	4	6
Main transport					
On foot	39	43	58	53	53
Car/ van	53	48	37	42	40
Cycling	5	7	3	4	5
Distance travelled					
Up to 2 miles	15	20	35	30	22
Over 2, up to 5 miles	33	33	35	40	41
Over 5, up to 20 miles	28	32	20	20	26
Over 20 miles	24	16	10	10	11
Duration of visit (round trip)					
Up to 1 hour	22	13	17	23	20
1 - less than 2 hours	29	32	46	47	41
2 - less than 3 hours	16	21	18	12	15
3 hours or more	33	30	19	18	24
Frequency of visit to main destination					
At least once a day	21	27	37	42	31
Several times a week	28	11	28	21	35
Once a week	9	9	10	10	11
1-2 times a month	17	19	10	12	11
Less often	20	27	12	9	11
First ever visit	5	6	3	6	1
Accompanied by dog	55	46	62	62	50

Not National Statistics.

Source: Scottish Recreation Survey, carried out by TNS.

Notes:

1. Per cent of visits where the main destination was woodland.

2. Figures for 2004-2007 have been revised since Forestry Statistics 2008.

6.1.3 Wales

Fieldwork for the Wales Outdoor Recreation Survey (WORS) commenced in January 2008 and ran for one year. The survey provides data on Welsh residents' participation in informal outdoor activities and visits to the outdoors, including woodland. Countryside Council for Wales (CCW) and Forestry Commission Wales (FCW) plan to run the survey again in 2011.

Table 6.5 shows the main charateristics of recreation visits where the main destination of visit was woodland from the Welsh Outdoor Recreation Survey.

Figure 6.5: Woodland visit characteristics- Wales, 2008 [1]

Woodland visit characteristics	per cent
Main activity during visit	
Walking	68
Off road cycling, mountain biking	8
Sightseeing or visiting an attraction	4
Main transport	
Car/ Van	47
On foot	43
Bicycle/ mountain bike	7
Distance travelled	
0 distance, up to 1 mile	44
Over 1 mile, up to 5 miles	26
Over 5 miles, up to 20 miles	18
Over 20 miles	12
Duration	
Up to 1 hour	10
Over 1 hour, up to 2 hours	29
Over 2 hours, up to 3 hours	25
3 hours or more	36
Frequency of visit to main destination (in last 4 weeks)	
1-5 visits	28
6-10 visits	18
11-20 visits	16
21-30 visits	24
31+ visits	14
Accompanied by a dog	60

Not National Statistics

Source: Wales Outdoor Recreation Survey, carried out by Ipsos-MORI

Notes:

1. *Per cent of visits where the main destination was woodland.*

6.1.4 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.

The results shown in Tables 6.6 and 6.7 and Figure 6.1 have been taken from the UK and country reports on the surveys in 2009 and 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 2009 survey, 77% of respondents said that they had visited woodland in the last few years for walks, picnics or other recreation.

Table 6.6 Woodland visitors[1]

Year	England	Wales	Scotland	Northern Ireland	UK
					per cent of respondents
2003	66	62	64	77	67
2005	65	69	50	67	65
2007	76	79	75	62	77
2009	77	..	57	..	77

Not National Statistics.

Source: UK and GB Public Opinion of Forestry Surveys, 2003 to 2009

Base: UK/ GB = 4,000 respondents (2003, 2005, 2007), 2,000 respondents (2009); Scotland and Wales = 1,000 respondents each; Northern Ireland = 120 respondents (2003), 1,000 respondents (2005 and 2007)

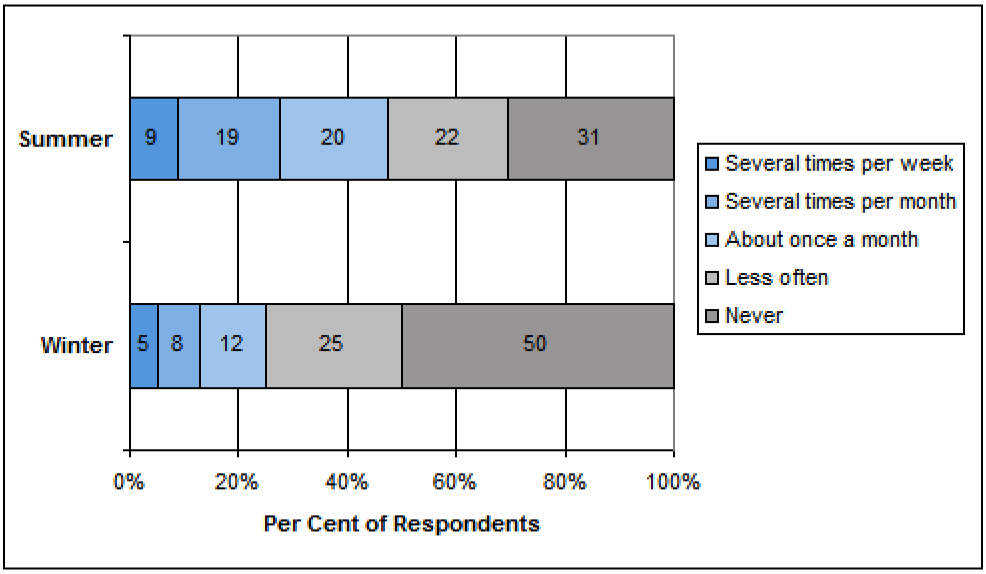
Notes:

1. Those stating they had visited woodland in the last few years.

.. denotes data not available

Survey respondents were asked how frequently they had visited during the previous summer and winter. Figure 6.1, which presents UK results for the 2005 to 2009 surveys, shows that respondents visited much more often during the summer, with 48% visiting at least once a month in the summer compared to 25% in the winter.

Figure 6.1 Frequency of visits to woodlands



Not National Statistics.

Source: UK and GB Public Opinion of Forestry Surveys, 2005 to 2009.

Base: average visit frequencies from last three surveys: 4,000 in 2005; 4,000 in 2007; 2,000 in 2009.

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

In the UK 2009 Public Opinion of Forestry survey, 84% of respondents aged 35 to 54 said that they had visited woodland in the last few years for walks, picnics or other recreation. This compares with 78% of respondents aged 16 to 34 and 69% of respondents aged 55 or over.

Table 6.7 Woodland visitors[1] by age group

Year	Aged 16 to 34	Aged 35 to 54	Aged 55 and over	Total
				per cent of respondents
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

Not National Statistics.

Source: UK and GB Public Opinion of Forestry Surveys, 1999 to 2009.

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

Notes:

1. Those stating they had visited woodland in the last few years.

2. Figures for 2007 have been revised from Forestry Statistics 2008.

6.2 Visits to woodland - on-site surveys

Until 2002, a visitor monitoring programme (not National Statistics) was carried out at selected Forestry Commission woodland sites in England, Scotland and Wales. Year-on-year changes in visitor numbers were estimated by the 'Trends Index' which used data from traffic counters and other counters. Information about visitors and their views on facilities were collected by on-site visitor surveys.

In 2002 and 2003, the Forestry Commission developed new visitor monitoring systems to replace the existing national visitor monitoring programme. The 'All Forests Visitor Monitoring Survey' provides more accurate estimates of the number of visits to a wider range of Forestry Commission woodland, whilst continuing to gather information on the profile of visitors.

In addition, a new on-site survey methodology to measure visitor's 'Quality of Experience' was adopted in England in 2004 and in Wales in 2006, with four or five surveys now being carried out per year at selected sites.

Although neither of these methods have been used in Northern Ireland, the Forest Service do collect information on the total number of paying visitors.

6.2.1 All Forests Survey

The All Forests visitor monitoring survey was undertaken in Wales (over a one-year period) and Scotland (over three years), with surveying starting in 2004.

Surveying took place from January 2004 to January 2005 with over 1,200 hours of fieldwork undertaken during 285 days. During this period, 765 face to face interviews were achieved. By stratifying all Welsh Assembly Government (WAG) woodlands by estimated usage and the size of surrounding population, this study estimated that around 4.3 million visits are made annually to WAG woodland in Wales.

At a combined level, the blocks selected are representative of the range of facilities and activities available in WAG woodland, but this is not always the case at a district level. Approximately a fifth of each district's forests were included in the survey.

Table 6.8 provides a summary of the key results obtained from the Wales All Forests survey.

Table 6.8 Woodland visit characteristics - Wales All Forests Survey

Woodland visit characteristics	2004
	per cent of respondents
Type of trip	
Day trip	81
Overnight trip	19
Main activity during visit	
Dog walking	40
Other walking	32
Cycling	12
Main transport	
Car / van	81
Walked	12
Cycled	3
Distance travelled (one-way)	
Less than 6 miles	46
6 to 15 miles	22
16 to 25 miles	13
Over 25 miles	19
Duration of visit (time spent in forest)	
Up to 1 hour	55
Over 1 hour, up to 2 hours	27
Over 2 hours, up to 3 hours	8
Over 3 hours	10
Frequency of visit to site of interview	

More than once a day	6
Once a day	10
1 to 3 times per week	23
1 to 3 times per month	16
1 to 3 times per year	19
Less often	7
First ever visit	19
Importance of forest and facilities in decision to visit area	
Only reason for coming	26
Very important	39
Quite important	17
Group composition	
Alone	37
Couples / groups of two	42
Groups of three or more	20

Not National Statistics.

Source: Wales All Forests Survey 2004, carried out by TNS.

All Forests surveying was carried out in Scotland across all 15 forest districts[1]. Due to the scale of this exercise, fieldwork was spread 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. By stratifying all Forestry Commission Scotland (FCS) woodlands, independently in each forest district, by estimated usage and the size of surrounding population, this study estimated that around 8.2 million visits are made annually to FCS woodland.

At a combined level, the blocks selected are representative of the range of facilities and activities available in FCS woodland, but this is not always the case at a district level. Approximately a fifth of each district's forests were included in the survey.

Table 6.9 provides a summary of the key characteristics and results obtained from the Scotland All Forests survey.

Table 6.9 Woodland visit characteristics - Scotland All Forests Survey

Woodland visit characteristics	**2004-2007**
	per cent of respondents
Type of trip	
Day trip	82
Overnight trip	18
Main activity during visit	
Dog walking	50

Other walking	29
Cycling	11
Main transport	
Car / van	78
Walked	18
Cycled	2
Distance travelled (one-way)	
Less than 6 miles	58
6 to 15 miles	19
16 to 25 miles	10
Over 25 miles	12
Duration of visit (time spent in forest)	
Up to 1 hour	59
Over 1 hour, up to 2 hours	24
Over 2 hours, up to 3 hours	10
Over 3 hours	7
Frequency of visit to site of interview	
More than once a day	7
Once a day	13
1 to 3 times per week	25
1 to 3 times per month	17
1 to 3 times per year	17
Less often	5
First ever visit	16
Importance of forest and facilities in decision to visit area	
Only reason for coming	23
Very important	40
Quite important	17
Group composition	
Alone	42
Couples / groups of two	37
Groups of three or more	21

Not National Statistics.

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

Notes:

1. A third of FC forest districts were surveyed each year, although by the end of the project, the Kincardine and Buchan forest districts had been combined to form one forest district named Aberdeenshire.

6.2.2 Quality of Experience

A new on-site survey methodology was developed early in 2003 to measure visitors' 'Quality of Experience'. Pilot surveys were conducted in 2003 at Afan Argoed and the New Forest, prior to adoption of the methodology in England in 2003 and in Wales in 2006, with four or five surveys now being carried out per year at selected sites. Reports from these surveys are published on the Forestry Commission website when results become available.

These studies were designed to investigate what constitutes quality of experience for visitors, addressing related concepts such as motivations, expectations and the needs of different groups.

Visitors who used a particular site at least once a month were interviewed and asked to rate both the levels of importance of different aspects of woodland and forest visits and their satisfaction with the same aspects. Visitors who visited less often were interviewed for a shorter period before being given a questionnaire to take away and return regarding their levels of satisfaction.

Table 6.10 Sites of Quality of Experience surveys undertaken in England and Wales

Year	England	Wales
2003	Grizedale, Westonbirt, Whiston	-
2004	Dalby, Thetford	-
2005	Alice Holt, Cannock Chase, Forest of Dean	-
2006	Sherwood Pines, Delamere, Hamsterley	Garwnant, Nant yr Arian
2007	Fineshade, Rosliston, Whinlatter	Coed y Brenin
2008	Bedgebury, Thetford, Wyre	Cwmcarn

Not National Statistics.

Source: Forestry Commission Quality of experience surveys, carried out by TNS.

In addition, surveys have been conducted around community forests in Thames Chase (2004), South Yorkshire (2005), North West England (2006), South Wales (2006), South West England (2007) and North & Mid Wales (2007). These surveys examine the recreation activities undertaken by members of the local community, levels of recreational use, awareness of local open spaces, and the motivations and barriers to using Forestry Commission sites for recreation.

6.2.3 Northern Ireland Forest Service day visitors

In Northern Ireland in 2008-09, 451 thousand people visited those Forest Service sites where an admission charge was made.

Table 6.11 Day visitors to Northern Ireland Forest Service sites [1]

Year	Visitors to Forest Service sites
	thousands
1999-00	403
2000-01	402
2001-02	403
2002-03	460
2003-04	446
2004-05	508
2005-06	433
2006-07	410
2007-08	518
2008-09	451

Not National Statistics

Source: Forest Service

Notes:

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

6.3 Forestry Commission facilities and activities

A breakdown of the recreation facilities and activities that were included on the recreation area of the Forestry Commission website in August 2009 is shown below. A total of 698 sites were featured on the website: 314 (45%) in Scotland, 277 (40%) in England and 107 (15%) in Wales.

Over three quarters of sites had parking facilities; over three quarters of sites offered walking activities and over two fifths cycling routes.

Table 6.12 Number of Forestry Commission recreation facilities and activities[1,2,3], August 2009

Facilities / activities	England	Wales	Scotland	GB
				number of sites
Total sites on FC website	**277**	**107**	**314**	**698**
Facilities				
Parking - Free	199	78	251	**528**
Parking - Paid	45	8	20	**73**
Information	125	20	132	**277**
Easy Access	111	23	49	**183**
Toilets	80	13	67	**160**
Refreshments	63	7	29	**99**
Visitor Centre	35	5	21	**61**
Shop	25	4	13	**42**
Activities				
Walking	188	82	265	**535**
Picnic	121	38	111	**270**
Cycling	118	39	124	**281**
Horse Riding	81	57	80	**218**
Wildlife Activities	81	11	82	**174**
Education	62	14	27	**103**
View Point	39	12	85	**136**
Heritage	30	5	53	**88**
Fishing	30	12	17	**59**
Barbecue	36	12	6	**54**
Play Area	32	6	16	**54**
Orienteering	41	5	12	**58**
Camping	24	3	8	**35**
Arts	20	0	20	**40**
Forest Drive	15	1	5	**21**

Arboretum	8	5	11	**24**
Watersports	4	2	3	**9**
Skiing	0	0	1	**1**

Not National Statistics.

Source: Forestry Commission.

Notes:

1. Number of sites where a given facility or activity is present. These data are not directly comparable with numbers published for years before 2003.

2. Facilities and activity counts are taken from the recreation listings on the Forestry Commission website:
http://www.forestry.gov.uk/website/fchomepages.nsf/hp/GBEEE

3. A small number of facilities or activities are double counted as they appear more than once in the database used for the website.

6.4 Public access to woodland

The Woods for People project (led by the Woodland Trust) has created a UK-wide provisional inventory of accessible woodland.

As a result of the information gathered on accessible woodland, the Woodland Trust has undertaken a major analysis of woodland access provision and deficit across the UK. This project, named Space for People, has used the accessible woodland data from the Woods for People project to develop targets for increasing woodland access.

6.4.1 Woods for People

The Woods for People project has created a UK-wide provisional inventory of accessible woodland.

At present, it does not include woodlands where the only access is on public rights of way. For Scotland, the Land Reform Act gives a right of responsible access to almost all land, but the dataset only includes woods that encourage access. Table 6.13 shows the proportions of woodland with public access (permissive) as identified by the Woods for People database.

The changes between versions of the dataset (2004 to 2008) are the result of several factors, including the development of the database between versions as areas are updated by land owners; one significant change has been a reduction in England and Wales as a result of a fall in the amount of Walkers Welcome data. A list of land owners who have contributed to the project is available on the Woods for People web site.

Table 6.13 Woods for People: Publicly accessible[3] woodland

Year	England	Wales	Scotland	Northern Ireland	UK
					per cent of all woodland area
2004[1]	37	49	57	66	**49**
2006[2]	32	39	58	64	**46**
2007[2]	34	40	58	64	**47**
2008[2]	34	40	58	64	**48**

Not National Statistics.

Source: Woods for People (Woodland Trust)

Notes:

1. The 2004 data are from version 1 of the Woods for People project; the results presented here (after re-analysis in September 2007) count only areas of woodland within areas of land owned. The higher results originally presented in the 2004 Woodland Trust Spaces for People report, were based in part on total land areas, rather than only woodland areas.

2. The 2006, 2007 and 2008 data are from versions 3, 4 and 5 of the Woods for People dataset respectively (which are based on only woodland areas).

3. Accessible woodland is the proportion of the total woodland area defined in 2004 for the Woods for People project; the total woodland area was not updated in 2006, 2007 or 2008.

6.4.2 Space for People

As a result of the information gathered on accessible woodland, the Woodland Trust has undertaken a major analysis of woodland access provision and deficit across the UK. This project, named **Space for People**, has used the accessible woodland data from the Woods for People project to develop targets for increasing woodland access.

The Space for People analysis proposes a Woodland Access Standard for people to have access to a woodland of an adequate size near to where they lived. The report estimates the proportion of the population with access to nearby woods, the extent to which this could be increased by improving access and the amount of new woodland that would have to be created to give the rest of the population this level of access. The initial results of the analysis in 2004 showed the following levels of access:

Table 6.14 Space for People[1]: Publicly accessible woodland, 2004

% of population with access to:	England	Wales	Scotland[2]	Northern Ireland
				per cent
2 ha or more wood within 500m	10	16	15	7
20 ha or more wood within 4km	55	72	54	50

Not National Statistics.

Source: Space for People (Woodland Trust, 2004).

Notes:

1. The Space for People analysis is scheduled to be updated in 2009, five years on from the initial work.

2. An interim update was performed for Scotland in 2006, to provide an update for the Scottish Forestry Strategy. That work indicated that the proportion of the population with access to 2 hectares or more of woodland within 500 metres of their home was 23%, while the proportion with access to 20 hectares or more of woodland within 4 kilometres of their home was 68%. The increase in the proportion of people in Scotland with access to woodland is due to a variety of factors, including the creation of new woodland (or settlements near to existing woodland) and the inclusion of this new woodland (and existing woodland not previously identified) within the 2006 version of the Woods for People dataset.

7 Employment & Businesses

This section contains information on employment in forestry and wood processing, health & safety and the number of businesses.

A copy of all Employment & Businesses tables is available to download as an Excel spreadsheet.

7.1 Employment: Annual Business Inquiry (ABI)

The Annual Business Inquiry (ABI) carried out by the Office for National Statistics (ONS) includes statistics on employment broken down by Standard Industrial Classification (SIC 2003). In wood processing, SIC 20 (wood products) and SIC 21 (pulp and paper) have a much wider scope than the data on employment in primary wood processing (table 7.2) and the Forest Employment Survey (tables 7.3 to 7.5), as they include primary processing of imported material and also some secondary processing. SIC 02 (forestry) has a narrower scope than in the Forest Employment Survey, as it does not include activities like timber haulage and government administration.

The Annual Business Inquiry recorded average employment in 2007 of 13 thousand in forestry and 29 thousand in primary wood processing.

Table 7.1 Employment in forestry and wood processing[2], 2003-2007

Standard Industrial Classification (SIC 2003)[1]	2003	2004	2005	2006	2007
					thousands
SIC 02: Forestry	12	13	12	11	13
SIC 20: Wood products					
20.1 Sawmilling	11	11	10	13	12
20.2 Panels	6	6	6	5	5
Other SIC 20 Secondary products	71	71	69	68	69
Total	**88**	**88**	**85**	**86**	**86**
SIC 21: Pulp & paper					
21.1 Pulp & paper	17	17	14	14	12
21.2 Articles of paper & paperboard	69	66	62	59	54
Total	**86**	**83**	**76**	**74**	**67**
Total wood processing (SIC 20 + 21)	**174**	**171**	**161**	**160**	**153**
Total primary wood processing (SIC 20.1 + 20.2 + 21.1)	**34**	**34**	**30**	**32**	**29**

Source: Annual Business Inquiry - average employment in year (Office for National Statistics, June 2009)

Notes:

1. UK Standard Industrial Classification (SIC 2003) categories are:
02 (forestry, logging & related services);
20.1 (sawmilling and planing of wood, impregnation of wood);
20.2 (manufacture of veneer sheets, manufacture of plywood, laminboard, particleboard and other panels and boards);
Other SIC 20 (manufacture of builders' carpentry and joinery, wooden containers, and other products of wood, straw and plaiting materials);
21.1 (manufacture of pulp, paper and paperboard).
21.2 (manufacture of articles of paper and paperboard).

2. Excludes other wood-using industries.

7.2 Employment in primary wood processing

There was estimated to be a total of 6,968 full time equivalent staff employed by primary wood processors in the UK in 2008. Around one half of this total was employed by sawmills and a further one third by woodbased panel mills.

Table 7.2 Employment in primary wood processing, 2008

Type of processor	2008
	full-time equivalents
Sawmills	
Larger mills	2 896
Small mills	476
Pulp & paper mills	797
Woodbased panel mills	2 440
Round fencing manufacturers	360
Total	**6 968**

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 Forest Employment Survey: employers

Tables 7.3 to 7.5 show estimates obtained from the 1998/9 employment survey (not National Statistics). The report *1998/9 Forest Employment Survey*, together with more detailed regional breakdowns, is available on the Forestry Commission website.

Total employment (including self-employment) in the forestry and primary wood processing industries in Great Britain in 1998-99 was estimated to be around 30 thousand full-time equivalents. Around one half were based in England, 36% in Scotland and 14% in Wales. 36% were employed working for primary wood processing industries, 29% for private woodland owners, 16% for forestry companies and contractors and 13% for the Forestry Commission

Table 7.3 Employment in forestry and primary wood processing industries, 1998/9

Employer[1]	England	Wales	Scotland	GB
				full-time equivalents
Forestry Commission	1 331	567	2 011	3 909
Private woodland owners	4 242	987	3 196	8 425
Forestry companies and contractors	2 077	298	2 223	4 598
Wood processing industries	5 581	2 130	2 917	10 628
Other employers	1 508	117	347	1 972
Total	**14 739**	**4 099**	**10 694**	**29 532**

Not National Statistics.

Source: Forest Employment Survey 1998/9

Notes:

1. Figures include work by contractors and self-employment as well as employees.

7.4 Forest Employment Survey: activity

The 1998/9 Forest Employment Survey reported that around 43% of employment was based in the forest, mainly in harvesting (16% of all employment), maintenance (11%) or establishment (9%). Processing accounted for the majority of non-forest employment (38% of all employment).

Table 7.4 Employment in forestry and primary wood processing by activity, 1998/9

Activity	England	Wales	Scotland	GB
				full-time equivalents
Forest based				
Forest Nurseries	421	2	201	624
Establishment	1 088	252	1 189	2 529
Maintenance	1 680	380	1 304	3 364
Harvesting	2 330	493	1 947	4 770
Road construction	181	47	179	407
Other forest	466	144	372	982
Total forest	**6 166**	**1 318**	**5 192**	**12 676**
Non-forest based				
Haulage	326	142	593	1 061
Processing	5 952	2 192	3 083	11 227
Other non-forest	2 295	447	1 826	4 568
Total non-forest	**8 573**	**2 781**	**5 502**	**16 856**
Total	**14 739**	**4 099**	**10 694**	**29 532**

Not National Statistics.

Source: Forest Employment Survey 1998/9

7.5 Forest Employment Survey: travel to work

Almost all direct workers (96%) travelled less than 20 miles to their place of employment. Contract workers were more likely to travel further, with 45% travelling more than 20 miles.

Table 7.5 Percentage of forestry workers travelling less than 20 miles to their place of employment in GB, 1998/9

Type of employment	England	Wales	Scotland	GB
				per cent of workers
Direct workers	97	80	98	96
Contract workers	56	55	54	55
Total	**72**	**68**	**68**	**71**

Not National Statistics.

Source: Forest Employment Survey 1998/9

7.6 Health & safety

Accidents involving absence from work of at least 3 days are reported to the Health & Safety Executive (HSE). Accident rates in forestry and primary wood processing in 2007-08 varied from 9.8 per thousand employees for woodbased panel manufacture (SIC 20.2) to 17.2 per thousand employees for sawmilling (SIC 20.1).

Table 7.6: Accidents to employees in forestry and primary wood processing[2], 2003-04 - 2007-08

Standard Industrial Classification (SIC)[1]	Major Accidents[3]		Total Reported	
	Number	Rate/ 1000 employees	Number	Rate/ 1000 employees
SIC 02 - Forestry				
2003-04	36	3.8	113	11.8
2004-05	40	4.0	103	10.4
2005-06	31	3.4	85	9.4
2006-07	30	3.3	79	8.7
2007-08	31	2.9	115	10.7
SIC 20.1 - Sawmilling				
2003-04	51	4.9	181	17.2
2004-05	58	5.9	176	18.0
2005-06	48	4.9	180	18.4
2006-07	36	3.8	155	16.1
2007-08	50	4.9	175	17.2
SIC 20.2 - Panels				
2003-04	15	2.5	57	9.7
2004-05	14	2.5	51	8.9
2005-06	8	1.5	34	6.2
2006-07	12	2.4	44	9.0
2007-08	7	1.5	47	9.8
SIC 21.1 - Pulp & Paper				
2003-04	58	3.4	307	17.8
2004-05	48	2.9	239	14.5
2005-06	41	2.8	217	14.9
2006-07	34	2.4	180	12.7
2007-08	42	3.4	194	15.5

Source: Health & Safety Executive (accidents), Office for National Statistics (employment).

Notes:

1. UK Standard Industrial Classification (SIC 2003) categories are:
02 (forestry, logging & related services);
20.1 (sawmilling and planing of wood, impregnation of wood);

20.2 (manufacture of veneer sheets, manufacture of plywood, laminboard, particleboard and other panels and boards); 21.1 (manufacture of pulp, paper and paperboard).

2. Excludes other wood-using industries.

3. Major accidents include fatal accidents, which averaged 1 or less per year in each sector.

7.7 Establishments in the primary wood processing industries

Table 7.7 shows the number of primary wood processors, according to the sampling frames used for Forestry Commission surveys of establishments using UK timber.

The figures in Table 7.7 do not correspond with the VAT registration information given in Table 7.8. The figures here count establishments (sites) rather than businesses and include those that do not need to register for VAT. They also have a different basis for classification, so some businesses that are excluded from Table 7.8 because of their VAT 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 7.8 are excluded here (usually because they do not use UK-grown timber).

Table 7.7 Number of establishments in the primary wood processing industries using UK-grown roundwood

Year	Sawmills	Pulp & paper mills	Woodbased panel mills	Round fencing manufacturers	Total[1]
1999	319	4	10	97	430
2000	297	4	10	93	404
2001	271	4	10	86	371
2002	249	4	10	74	337
2003	240	3	8	68	319
2004	225	3	8	69	305
2005	214	3	8	68	293
2006	214	2	8	70	294
2007	210	2	8	76	296
2008	204	2	8	68	282

Source: industry surveys, industry associations

Notes:

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

7.8 VAT registered businesses

Table 7.8 shows the number of VAT-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 that are traditionally included in forestry and primary wood processing are excluded as they are classified to other headings of the Standard Industrial Classification (SIC 2003).

A total of 3,155 forestry businesses, 760 sawmilling businesses, 140 panels businesses and 370 pulp & paper businesses were registered for VAT purposes in the UK at the start of 2008.

Table 7.8 Number[1] of VAT-registered businesses at start of year by Standard Industrial Classification (SIC)[2], 1999-2008

Year	SIC 02 Forestry	SIC 20.1 Sawmilling	SIC 20.2 Panels	SIC 21.1 Pulp & paper
1999	3 390	1 045	195	540
2000	3 365	985	185	510
2001	3 310	955	180	490
2002	3 265	920	180	465
2003	3 240	885	180	430
2004	3 230	840	170	405
2005	3 200	800	165	390
2006	3 195	785	155	380
2007	3 165	765	145	370
2008	3 155	760	140	370

Source: Business start ups and closures: VAT registrations and deregistrations (Department for Business Enterprise and Regulatory Reform, 2008).

Notes:

1. All figures are rounded by the Department for Business Enterprise and Regulatory Reform (BERR) to the nearest multiple of 5.

2. UK Standard Industrial Classification (SIC 2003) categories are:
02 (forestry, logging & related services);
20.1 (sawmilling and planing of wood, impregnation of wood);
20.2 (manufacture of veneer sheets, manufacture of plywood, laminboard, particleboard and other panels and boards);
21.1 (manufacture of pulp, paper and paperboard).

8 Finance & Prices

This section contains information about timber prices, financial returns from forestry, gross value added (GVA), Government expenditure on forestry and grants.

A copy of all Finance & Prices tables is available to download as an Excel spreadsheet.

8.1 Timber prices

The Forestry Commission has collected information for many years on the prices of conifers sold standing by the FC and publishes a Coniferous Standing Sales Price Index (CSSPI) every 6 months for overlapping 12 month periods. A softwood sawlog price index, providing information for 6-month periods on prices (delivered to roadside), of coniferous sawlogs produced by the Forestry Commission, is also published. Both series are published in Timber Price Indices on the Forestry Commission website. There is little other information 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 Business Monitor which gives detailed PPIs monthly.

The coniferous standing sales price index for Great Britain was 30% lower in real terms in the year to March 2009, compared with the previous year. The softwood sawlog price index was 28% lower in real terms in the 6 months to March 2008, compared with the corresponding period in the previous year.

Table 8.1 Coniferous standing sales and sawlog price indices[1] for Great Britain, 2000-2008

Period ending March	Standing sales[2]		Sawlogs	
	Nominal terms[3]	Real terms[4]	Nominal terms[3]	Real terms[4]
				index (period to September 2006 = 100)
2000	121.6	142.0	118.2	138.6
2001	110.2	126.9	115.0	132.7
2002	105.4	118.8	106.2	119.5
2003	81.3	88.8	102.6	112.0
2004	79.6	84.5	99.0	105.3
2005	86.9	89.8	105.2	108.6
2006	100.0	101.3	100.5	101.8
2007	111.0	109.4	113.6	111.8
2008	173.8	166.5	133.0	127.4
2009	124.2	116.3	98.1	91.8

Source: Timber Price Indices (data to March 2009)

Notes:

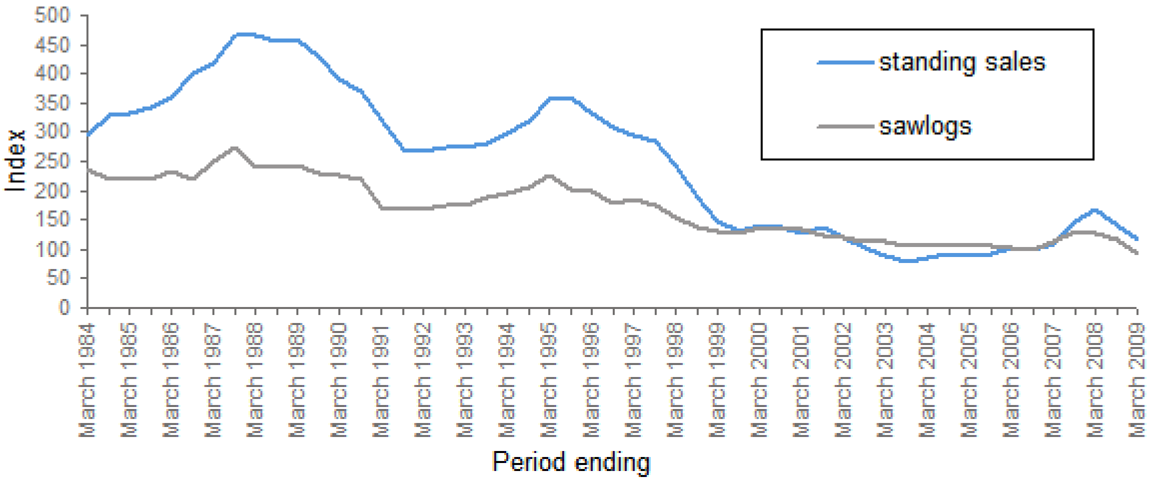
1. The price indices are constructed from information on Forestry Commission sales only.

2. Until November 2008 the Laspeyres method was used to calculate the standing sales index to take account of the size mix. Since then the Fischer method with 5 year chain linking has also been adopted and will eventually supercede the Laspeyres method after a period of transistion.

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 2006). This allows trends in timber prices to be tracked without the influence of inflation.

Figure 8.1 Coniferous standing sales and sawlog price indices[1] in real terms[2], 1984-2009



Source: Timber Price Indices (data to March 2009)

Notes:

1. The price indices are constructed from information on Forestry Commission sales only.

2. Until November 2008 the Laspeyres method was used to calculate the standing sales index to take account of the size mix. Since then the Fischer method with 5 year chain linking has also been adopted and will eventually supercede the Laspeyres method after a period of transistion.

3. Real terms values are obtained by using the GDP deflator to convert to 'constant prices' (in this case prices in 2006). This allows trends in timber prices to be tracked without the influence of inflation.

8.2 Financial return from forestry investment

Returns to investors in forestry are made up of sales of timber (standing or felled), sales of other goods and services, increases in the value of the woodland (from annual increment or market factors), and the net income from subsidies (e.g. planting grants) less taxes. The investors' costs are made up of employment costs and other purchases.

Estimates of the overall return from commercial Sitka spruce plantations are produced annually in the Investment Property Databank (IPD) UK Forestry Index (not National Statistics), which is calculated from a sample of private sector plantations in mainland Britain.

The total return from investments in forestry in the three year period 2006 to 2008 is estimated to have been 19.3% per annum. This continues the recovery from the negative returns of earlier years. The annual return for 2008 is estimated to have been 7.0%.

Table 8.2 Returns from forestry, 1999-2008

Period ending	annual return	3 year return (annual average)
		per cent per annum
1999	-11.1	-3.0
2000	-2.9	-5.2
2001	-1.1	-5.1
2002	-4.7	-2.9
2003	1.3	-1.5
2004	9.2	1.8
2005	14.4	8.2
2006	20.6	14.6
2007	31.6	22.0
2008	7.0	19.3

Not National Statistics

Source: IPD UK Forestry Index

8.3 Gross value added

The Annual Business Inquiry (ABI) carried out by the Office for National Statistics (ONS) includes statistics on gross value added broken down by UK Standard Industrial Classification (SIC 2003). The ABI was extended to include forestry from 2000. Gross Value Added (GVA) is the difference between the value of outputs and the value of intermediate consumption, so mainly comprises employment costs and profits.

From 2003 to 2007, GVA in primary wood processing increased by 13% to £1.67 billion. GVA in forestry has undergone a net increase of 22% over the same period.

Table 8.3 Gross value added in forestry and wood processing[2], 2003-2007

Standard Industrial Classification (SIC)[1]	2003	2004	2005	2006	2007
					£ million
SIC 02: Forestry	316	321	323	286	384
SIC 20: Wood products					
20.1 Sawmilling	354	356	424	441	498
20.2 Panels	245	275	255	298	344
Other SIC 20 Secondary products	2 070	2 327	2 273	1 975	2 382
Total	**2 669**	**2 958**	**2 952**	**2 714**	**3 224**
SIC 21: Pulp & paper					
21.1 Pulp & paper	879	788	762	612	825
21.2 Articles of paper & paperboard	2 594	2 536	2 377	2 074	2 146
Total	**3 472**	**3 325**	**3 139**	**2 686**	**2 971**
Total wood processing (SIC 20 + 21)	**6 141**	**6 283**	**6 091**	**5 397**	**6 195**
Total primary wood processing (SIC 20.1 + 20.2 + 21.1)	**1 478**	**1 419**	**1 441**	**1 351**	**1 667**

Source: Annual Business Inquiry (Office for National Statistics, June 2009)

Notes:

1. UK Standard Industrial Classification (SIC 2003) categories are:
02 (forestry, logging & related services);
20.1 (sawmilling and planing of wood, impregnation of wood);
20.2 (manufacture of veneer sheets, manufacture of plywood, laminboard, particleboard and other panels and boards);
Other SIC 20 (manufacture of builders' carpentry and joinery, wooden containers, and other products of wood, straw and plaiting materials);
21.1 (manufacture of pulp, paper and paperboard).
21.2 (manufacture of articles of paper and paperboard).

2. Excludes other wood-using industries.

8.4 Government expenditure on public forests

Net expenditure on public forests by the Forestry Commission in 2008-09 totalled £59 million. £56 million was used to fund forest management and development, £39 million for recreation, conservation & heritage and £39 million for harvesting & haulage. Timber sales generated a total income of £74 million in 2008-09.

The total net expenditure for 2008-09 of £59 million comprised £28 million in Scotland, £22 million in England and £10 million in Wales.

Table 8.4 Funding public forests - net expenditure[1], 2004-05 - 2008-09

	2004-05	2005-06	2006-07	2007-08	2008-09
					£ million
GB					
Forest management & development[2]	53.4	56.1	55.4	60.3	55.7
Recreation, conservation & heritage	30.6	32.4	35.1	38.3	39.2
Harvesting & haulage	42.4	39.0	39.3	39.5	38.8
Less timber income	-64.3	-61.9	-65.8	-78.6	-74.3
Net expenditure	**62.1**	**65.6**	**64.0**	**59.6**	**59.4**
England					
Forest management & development[2]	16.3	18.4	16.6	19.4	19.4
Recreation, conservation & heritage	11.8	13.8	15.8	15.3	15.3
Harvesting & haulage	10.1	10.8	11.1	11.9	12.0
Less timber income	-17.3	-18.7	-20.3	-26.3	-25.0
Net expenditure	**20.8**	**24.3**	**23.1**	**20.3**	**21.7**
Wales					
Forest management & development[2]	9.1	9.6	10.8	9.0	8.5
Recreation, conservation & heritage	9.7	7.3	5.9	6.3	7.0
Harvesting & haulage	9.9	6.6	6.4	6.3	6.5
Less timber income	-11.5	-8.2	-8.7	-10.2	-12.1
Net expenditure	**17.3**	**15.3**	**14.4**	**11.5**	**10.0**
Scotland					
Forest management & development[2]	28.0	28.0	28.0	31.9	27.8
Recreation, conservation & heritage	9.1	11.3	13.4	16.7	17.0
Harvesting & haulage	22.5	21.6	21.8	21.2	20.2
Less timber income	-35.5	-35.0	-36.7	-42.1	-37.3
Net expenditure	**24.1**	**26.0**	**26.6**	**27.8**	**27.7**

Source: Forestry Commission Annual Reports & Accounts

Notes:

1. Excludes notional cost of capital and any surplus/ deficit on sale of properties.

2. Includes all expenditure on public forests not covered under "recreation, conservation & heritage" or "harvesting & haulage".

8.5 Other government expenditure on forestry

In addition to expenditure on public forests, the Forestry Commission spent a total of £91 million on other activities in 2008-09. £33 million of this total was used by the national offices in each country for grants and partnership funding and a further £33 million for policy, regulation & administration. At a GB level, £31 million was used for international & GB support services and £17 million for research.

Table 8.5 Other government expenditure on forestry[1,2], 2004-05 - 2008-09

	2004-05	2005-06	2006-07	2007-08	2008-09
					£ million
GB					
Grants and partnership funding[3]	44.8	46.0	61.5	71.6	32.9
Policy, regulation & administration	23.6	28.3	29.2	32.9	33.2
Research - GB funded	13.2	14.3	15.1	15.5	16.7
International & GB support services	28.1	27.9	27.0	28.7	30.8
Less recovery of support service costs from countries	-24.2	-23.3	-20.2	-21.2	-22.5
Total	**85.5**	**93.2**	**112.7**	**127.5**	**91.1**
England					
Grants and partnership funding[3]	20.2	18.2	18.3	27.2	8.6
Policy, regulation & administration[4]	12.7	12.9	13.2	14.8	15.3
Total	**32.9**	**31.1**	**31.5**	**42.0**	**23.9**
Wales					
Grants and partnership funding[3]	6.8	8.1	9.2	11.3	5.7
Policy, regulation & administration[4]	0.8	4.6	7.6	8.5	8.2
Total	**7.6**	**12.6**	**16.8**	**19.8**	**13.9**
Scotland					
Grants and partnership funding[3]	17.9	19.7	34.0	33.1	18.6
Policy, regulation & administration[4]	10.1	10.9	8.4	9.7	9.7
Total	**27.9**	**30.6**	**42.4**	**42.8**	**28.3**

Source: Forestry Commission

Notes:

1. Forestry Commission expenditure only. Excludes expenditure incurred by other departments.

2. Excludes miscellaneous income.

3. EU co-financing not subtracted from grant expenditure. In Wales, includes "Objective 1" expenditure, starting in 2003. In addition, from 1 April 2008 the Forestry Commission ceased to hold delegated authority for the Rural Development Programme for England (RDPE) grant scheme. Authority for the RDPE grant scheme now rests with Defra.

4. Country costs for "policy, regulation & administration" include shares of GB support service costs.

5. Figures have been revised from Forestry Statistics 2008 to remove double counting of GB core funding of Forest Research.

8.6 Grant schemes

Non-FC 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 and, more recently, by Rural Development Contracts. The English Woodland Grant Scheme (EWGS) was launched in July 2005 and Better Woodlands for Wales (BWW) in December 2005.

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

- Table 1.12 for total areas of new planting and restocking;
- Table 8.5 for expenditure by the Forestry Commission on grants and partnership funding;
- Table 8.6 for grant expenditure by the Forestry Commission (including grant expenditure managed by the Forestry Commission on behalf of Defra).

Table 8.6 Grant money paid in 2008-09, by type of grant

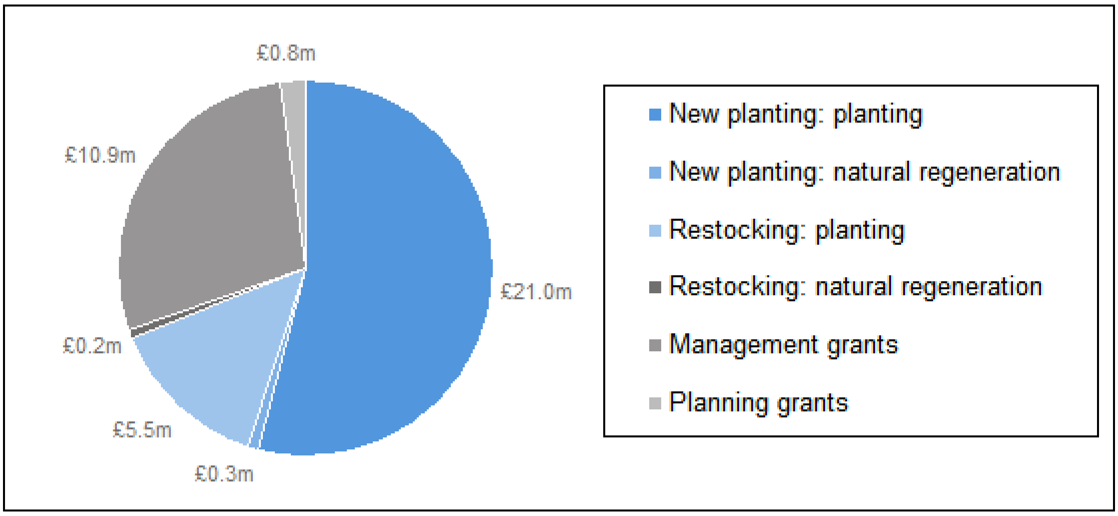
Type of grant	England	Wales	Scotland	GB
				£ million
New planting				
Planting	15.9	0.4	4.7	21.0
Natural regeneration	0.0	0.0	0.3	0.3
Restocking				
Planting	1.2	0.6	3.7	5.5
Natural regeneration	0.0	0.0	0.2	0.2
Management grants	6.8	2.0	2.1	10.9
Planning grants	0.1	0.7	0.0	0.8
Total	**24.1**	**3.7**	**10.9**	**38.7**

Source: Forestry Commission

Notes:

1. Includes grant scheme expenditure managed by the Forestry Commission on behalf of Defra.

Figure 8.2 GB grant money paid in 2008-09 by type of grant



Source: Forestry Commission

9 International Forestry

This section contains international information about 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 world trade in forest products.

A copy of all International Forestry tables is available to download as an Excel spreadsheet.

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.

At around 12% forest cover, the UK is one of the least densely forested countries in Europe. This compares with 37% for the EU as a whole and 30% worldwide.

Table 9.1 Forest cover: international comparisons, 2005

Country	Forest area (million ha)	Total land area (million ha)	Forest as % of land area	Forest area (ha) per 100 population
Europe				
United Kingdom	3	24	12	5
Finland	23	30	74	431
France	16	55	28	26
Germany	11	35	32	13
Italy	10	29	34	17
Spain	18	50	36	43
Sweden	28	41	67	306
Other EU	48	154	31	28
Total EU-27[1]	**156**	**419**	**37**	**32**
Russian Federation	809	1 689	48	566
Total Europe	**1 001**	**2 260**	**44**	**138**
Africa	635	2 968	21	73
Asia	572	3 088	19	15
North & Central America	706	2 144	33	139
Oceania	206	849	24	630
South America	832	1 743	48	228
World	**3 952**	**13 053**	**30**	**62**

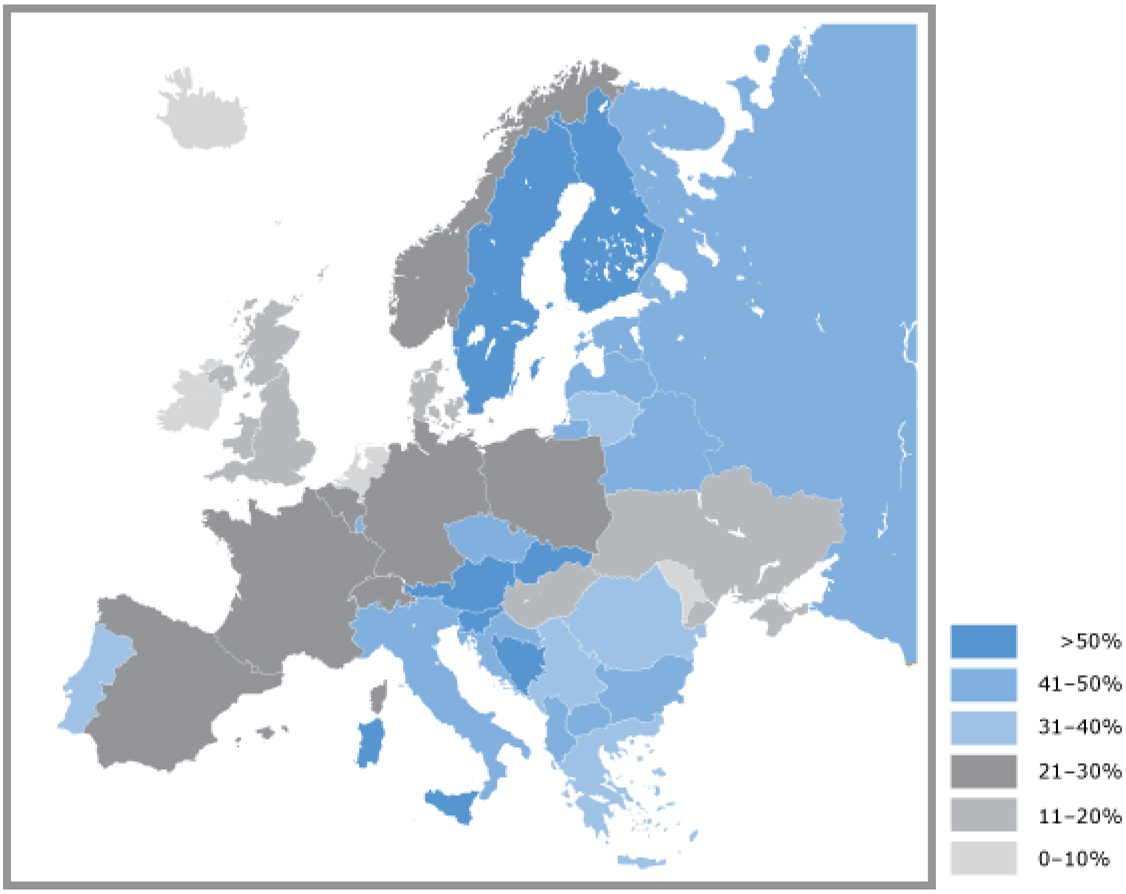
Not National Statistics.

Source: FAO Global Forest Resources Assessment 2005 .

Notes:

1. Cyprus is included in EU-27 total but is part of FAO's Asia region.

Figure 9.1 Forest cover: international comparisons, 2005



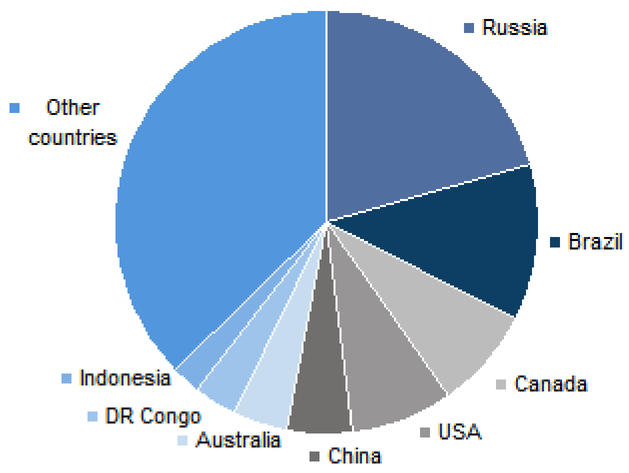
Not National Statistics.

Source: FAO.

9.2 Forest area by country

One fifth of the world's forest area is in the Russian Federation, with a further 12% in Brazil.

Figure 9.2 Forest area by country, 2005



Not National Statistics

Source: FAO Global Forest Resources Assessment 2005.

9.3 Annual changes in forest area

The global forest area reduced by around 8.9 million hectares (0.2%) per year between 1990 and 2000 and by around 7.3 million hectares (0.2%) per year between 2000 and 2005.

The forest area has reduced in most regions since 1990, except for Europe (where the area increased on average) and in Asia (where the area reduced between 1990 and 2000 but has increased between 2000 and 2005).

Table 9.2 Annual changes in forest area by region, 1990-2005

Region	1990-2000		2000-2005	
	(thousand ha)	(%)	(thousand ha)	(%)
Europe				
UK	18	0.70	10	0.40
EU-27[1]	748	0.52	696	0.46
Total Europe	**877**	**0.09**	**661**	**0.07**
Africa	-4 375	-0.64	-4 040	-0.62
Asia	-792	-0.14	1 003	0.18
North and Central America	-328	-0.05	-333	-0.05
Oceania	-448	-0.21	-356	-0.17
South America	-3 802	-0.44	-4 251	-0.50
World	**-8 868**	**-0.22**	**-7 317**	**-0.18**

Not National Statistics.

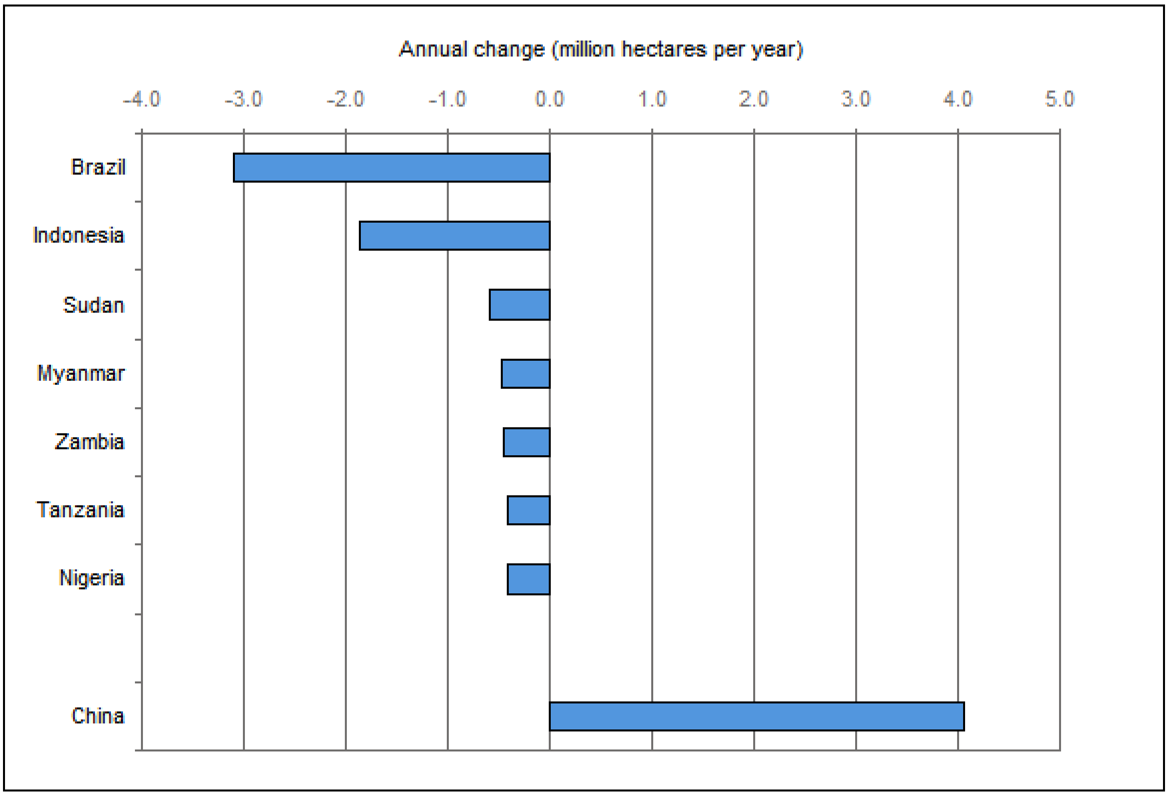
Source: FAO Global Forest Resources Assessment 2005.

Notes:

1. Cyprus is included in EU-27 total but is part of FAO's Asia region.

The largest decreases in forest areas between 2000 and 2005 occurred in Brazil (an average annual reduction of 3.1 million hectares per year) and Indonesia (1.9 million hectare loss per year on average). The largest increase in forest area between 2000 and 2005 occurred in China (an additional 4.1 million hectares per year on average).

Figure 9.3 Countries with largest changes in forest area, 2000-2005



Not National Statistics.

Source: FAO Global Forest Resources Assessment 2005.

Notes:

1. Countries with changes of at least 0.4 million hectares per year only.

9.4 Carbon stocks in forest biomass

From 1990 to 2005, carbon in forest living biomass decreased in Africa, Asia and South America. The trends are mostly driven by changes in forest area, but areas of new plantations are not able to balance out equivalent areas of deforestation.

Table 9.3 Carbon stocks in forest living biomass by region, 1990-2005

Region	1990	2000	2005
			giga tonnes of carbon
Europe			
UK	0.1	0.1	0.1
EU-27[1]	7.6	8.8	9.4
Total Europe	**42.0**	**43.1**	**43.9**
Africa	65.8	62.2	60.8
Asia	41.1	35.6	32.6
North and Central America	41.0	41.9	42.4
Oceania	11.6	11.4	11.4
South America	97.7	94.2	91.5
World	**299.2**	**288.6**	**282.7**

Not National Statistics.

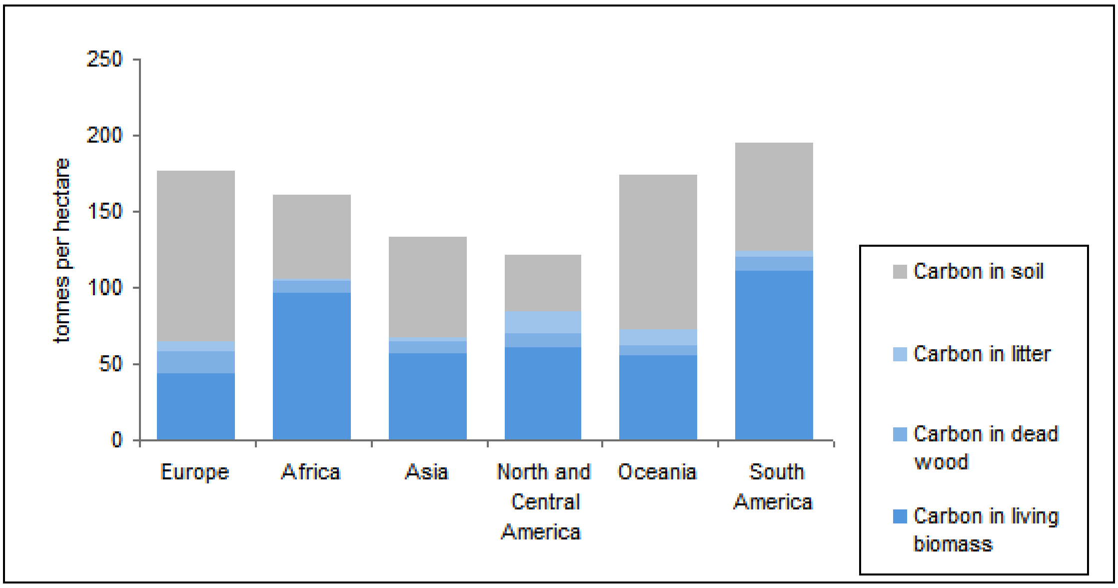
Source: FAO Global Forest Resources Assessment 2005.

Notes:

1. Cyprus is included in EU-27 total but is part of FAO's Asia region.

2. A giga tonne is a thousand million tonnes (10^9 tonnes).

Figure 9.4 Carbon stock per hectare in forest biomass by region, 2005



Not National Statistics.

Source: FAO Global Forest Resources Assessment 2005.

9.5 Wood removals

A total of 3.6 billion m^3 underbark of wood was removed from global forests in 2007, of which around one half was for use as woodfuel and around one half was industrial roundwood (for use by wood processors).

North and Central America and Europe accounted for around two thirds of all industrial roundwood removals in 2007, whilst around three quarters of woodfuel removals took place in Asia and Africa.

Table 9.4 Wood removals by region, 1990-2007

Region	1990	1995	2000	2005	2006	2007
						million m^3 underbark
Industrial roundwood						
Europe						
UK	6	7	8	8	8	9
EU-27[1]	319	296	343	369	337	379
Total Europe	**519**	**408**	**483**	**540**	**516**	**576**
Africa	57	66	69	67	69	69
Asia	258	263	231	235	232	240
North and Central America	595	603	633	635	608	597
Oceania	33	41	47	49	49	51
South America	110	134	145	176	160	172
World	**1 571**	**1 515**	**1 608**	**1 702**	**1 635**	**1 705**
Woodfuel						
Europe						
UK	0	0	0	0	0	0
EU-27[1]	45	45	45	85	89	88
Total Europe	**116**	**86**	**109**	**150**	**154**	**153**
Africa	439	502	526	569	596	603
Asia	784	789	834	796	790	787
North and Central America	163	174	129	130	132	138
Oceania	9	11	13	11	11	11
South America	161	174	186	194	192	194
World	**1 672**	**1 735**	**1 797**	**1 850**	**1 876**	**1 886**
Total roundwood						
Europe						
UK	6	8	8	8	8	9
EU-27[1]	365	341	388	454	426	467
Total Europe	**635**	**494**	**592**	**690**	**670**	**729**
Africa	495	568	595	636	665	672

Asia	1 042	1 052	1 065	1 031	1 023	1 027
North and Central America	758	777	762	765	740	736
Oceania	42	52	60	60	60	62
South America	271	307	331	369	353	366
World	**3 243**	**3 251**	**3 405**	**3 552**	**3 511**	**3 591**

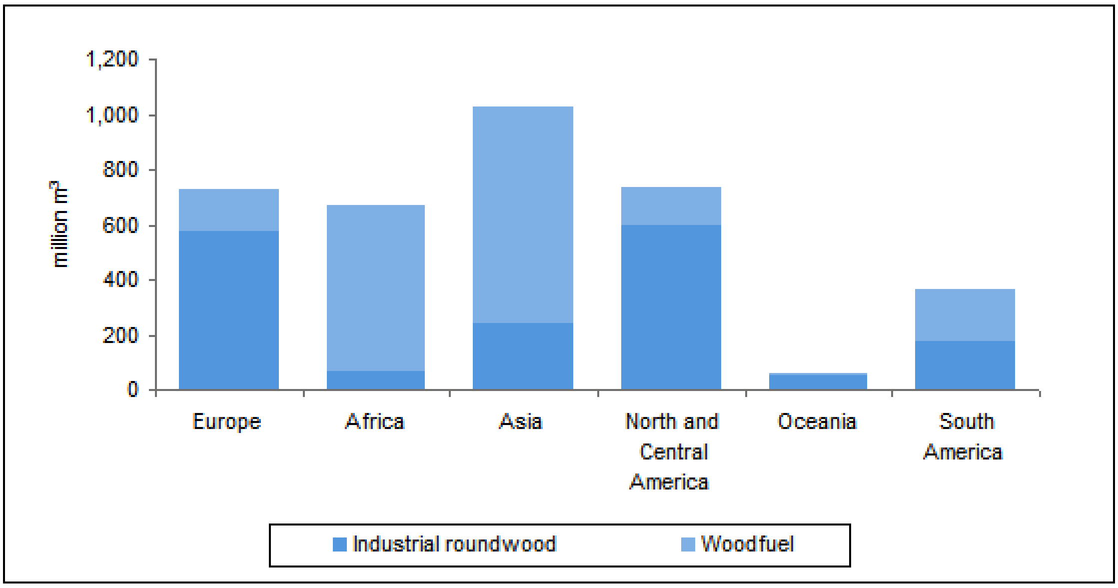
Not National Statistics.

Source: FAO.

Notes:

1. Cyprus is included in EU-27 total but is part of FAO's Asia region.

Figure 9.5 Wood removals by region, 2007



Not National Statistics.

Source: FAO.

9.6 Production of wood products

Global production of wood products in 2007 totalled 431 million m^3 of sawnwood, 266 million m^3 of woodbased panels and 384 million tonnes of paper & paperboard.

Europe produced around one third of all sawnwood in 2007 (mainly in EU countries), with a further one third produced in North and Central America and around one fifth in Asia.

Woodbased panels were more commonly produced in Asia (around 40%), with a further quarter produced in the EU and around one fifth in North and Central America.

Asia also accounted for around 40% of paper and paperboard production, with around one quarter produced in North and Central America and one quarter in the EU.

Table 9.5 Production of wood products by region, 1990-2007

Region	1990	1995	2000	2005	2006	2007
Sawnwood (million m^3)						
Europe						
UK	2	2	3	3	3	3
EU-27[1]	81	82	100	108	112	114
Total Europe	**149**	**118**	**130**	**142**	**146**	**149**
Africa	8	8	8	9	9	9
Asia	105	97	62	73	79	82
North and Central America	129	134	147	162	157	142
Oceania	6	7	8	9	9	10
South America	25	27	31	37	39	40
World	**422**	**391**	**386**	**432**	**440**	**431**
Woodbased panels (million m^3)						
Europe						
UK	2	3	3	3	3	4
EU-27[1]	36	40	53	63	66	69
Total Europe	**48**	**46**	**61**	**75**	**79**	**84**
Africa	2	2	2	2	3	3
Asia	27	44	49	91	99	105
North and Central America	44	47	61	63	63	57
Oceania	2	2	3	4	4	4
South America	4	6	9	13	14	15
World	**126**	**147**	**185**	**249**	**262**	**266**
Paper & paperboard (million tonnes)						
Europe						
UK	5	6	7	6	5	5

EU-27[1]	63	73	90	98	101	102
Total Europe	**73**	**82**	**100**	**111**	**114**	**115**
Africa	3	3	4	5	4	4
Asia	57	77	95	122	134	142
North and Central America	92	108	111	108	108	108
Oceania	3	3	4	4	4	4
South America	8	9	10	14	11	11
World	**235**	**282**	**324**	**364**	**376**	**384**

Not National Statistics.

Source: FAO.

Notes:

1. Cyprus is included in EU-27 total but is part of FAO's Asia region.

9.7 Apparent consumption of wood products

Apparent consumption (defined as production + imports - exports) of wood products in 2007 totalled 424 million m^3 sawnwood, 257 million m^3 woodbased panels and 383 million tonnes of paper and paperboard globally.

Around one third of all sawnwood was consumed in North and Central America and a further one quarter each in the EU and in Asia.

Asia consumed almost two fifths of the world's woodbased panels, around one quarter was consumed in the EU and one quarter in North and Central America.

Around two fifths of all paper and paperboard was consumed in Asia, over one quarter in North and Central America and a further quarter in the EU.

Table 9.6 Apparent consumption of wood products by region, 1990-2007

Region	1990	1995	2000	2005	2006	2007
Sawnwood (million m^3)						
Europe						
UK	13	8	10	11	10	11
EU-27[1]	96	80	99	102	105	110
Total Europe	**157**	**109**	**121**	**119**	**120**	**125**
Africa	10	12	11	13	13	13
Asia	112	112	79	93	100	102
North and Central America	119	126	144	166	160	144
Oceania	6	7	8	8	8	8
South America	24	24	28	30	33	33
World	**429**	**390**	**389**	**429**	**433**	**424**
Woodbased panels (million m^3)						
Europe						
UK	5	5	6	6	7	7
EU-27[1]	40	41	53	59	63	67
Total Europe	**51**	**47**	**59**	**71**	**76**	**81**
Africa	1	2	2	3	3	3
Asia	25	46	53	91	93	95
North and Central America	44	46	64	72	73	64
Oceania	2	2	3	3	3	3
South America	3	4	6	8	9	10
World	**126**	**146**	**188**	**248**	**257**	**257**
Paper & paperboard (million tonnes)						
Europe						

UK	9	11	11	13	12	12
EU-27[1]	62	68	83	87	91	93
Total Europe	**71**	**73**	**90**	**98**	**102**	**105**
Africa	4	4	5	7	6	7
Asia	62	85	103	132	142	148
North and Central America	88	101	110	107	108	106
Oceania	3	4	5	5	5	5
South America	8	10	12	14	11	11
World	**235**	**277**	**325**	**364**	**375**	**383**

Not National Statistics.

Source: FAO.

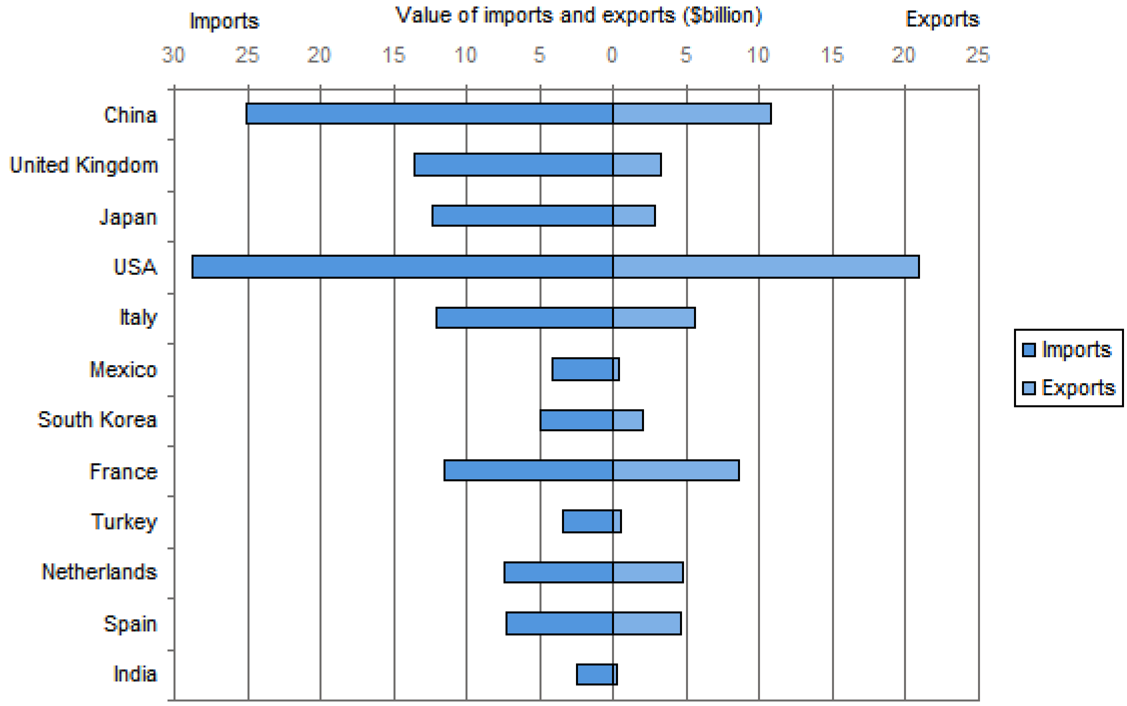
Notes:

1. Cyprus is included in EU-27 total but is part of FAO's Asia region.

9.8 World trade in forest products

The UK was the second largest net importer of forest products in 2007, behind China and followed by Japan and USA.

Figure 9.6 Largest net importers of forest products, 2007



Not National Statistics.

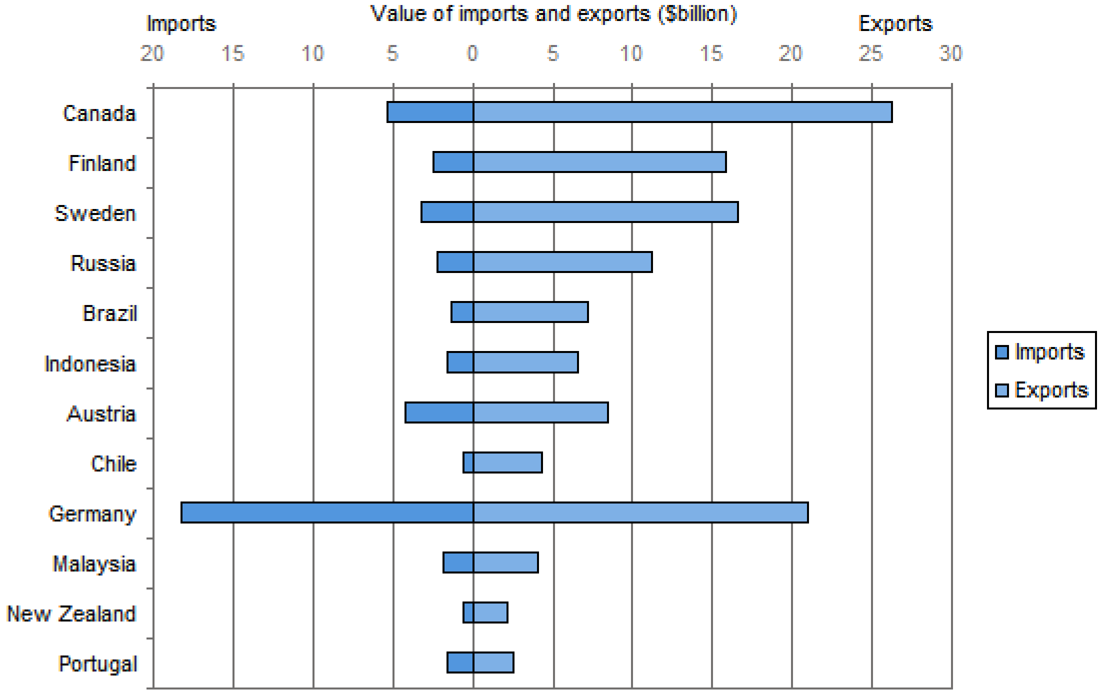
Source: FAO

Notes:

1. Excludes trade in secondary wood products.

The largest net exporters of forest products in 2007 were Canada, Finland and Sweden.

Figure 9.7 Largest net exporters of forest products, 2007



Not National Statistics.

Source: FAO

Notes:

1. Excludes trade in secondary wood products.

10 Glossary

bioenergy
Energy from any fuel that is derived from biomass.

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

broadleaves
Trees that do not have needles or cones (a few, such as alder, have cone-like structures for their seeds which are not true cones).

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

chipboard
(see Particleboard).

conifers
Trees with needles and cones .

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

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

Defra
Department for Environment, Food and Rural Affairs.

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

EU
European Union. There are currently 27 member states: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the UK.

FAO

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

FC

Forestry Commission: the government department responsible for forestry matters in Great Britain. The responsibility for forestry is devolved to ministers in the Scottish Parliament and Welsh Assembly, but the executive functions are exercised throughout Great Britain by the FC.

fibreboard

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

forest

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

FS

Northern Ireland Forest Service (an agency of the Department of Agriculture and Rural Development).

FSC

Forest Stewardship Council.

GB

Great Britain: England, Wales and Scotland.

green tonne

Weight measurement of timber fresh felled before any natural or artificial drying has occurred.

gva

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

ha

hectare (2.471 acres).

hardwood

The wood of broadleaved trees, a term sometimes used for the broadleaved trees themselves.

high forest

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

litter

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

MDF (medium-density fibreboard)

Wood fibreboard made by a dry process in which the primary bond is derived from a bonding agent, and having a density usually exceeding 600 kg m^3.

native species

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

natural colonisation

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

natural regeneration

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

new planting

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

NI

Northern Ireland.

NIWT

National Inventory of Woodland and Trees.

odt

Oven dry tonnes - Measurement of quantity without moisture (i.e. 0% moisture content).

ONS

Office for National Statistics.

OSB (oriented strand board)

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

overbark

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

particleboard

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

plywood

Woodbased panel consisting of an assembly of layers bonded together with the direction of the grain in adjacent layers, usually at right angles. (Not made in the UK).

pulp

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

recovered

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

restocking

The replanting of an area after trees are removed.

roundwood

Logs and small branches (small roundwood).

sawlogs

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

sawmill products

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

sawnwood

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

scrub

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

Scottish Government

Devolved government in Scotland. Previously the Scottish Executive.

semi-natural

Woodland with natural characteristics (predominantly native species of trees, ground plants and animals) where wood production is not a primary objective; this term is used rather than natural because the woodland may have originally been planted or have been managed for wood production in the past.

silviculture

The care and cultivation of forest trees.

softwood

The wood of coniferous trees or conifers themselves.

SRC

Short rotation coppice (either willow or poplar).

standing volume

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

thinning

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

UK

United Kingdom: Great Britain and Northern Ireland.

UKFPA

United Kingdom Forest Products Association.

UN ECE

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

underbark

The volume of wood excluding the bark.

veneer

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

Welsh Assembly Government

Devolved government in Wales.

wood pellets

Sawdust or wood shavings compressed into uniform diameter pellets to be burned for heat/ energy.

woodland

Land under stands of trees with a canopy cover of at least 20% (25% in Northern Ireland), or having the potential to achieve this, including integral open space, and including felled areas that are awaiting restocking.

WRME

Wood Raw Material Equivalent - the volume of trees required to produce a wood product. Can be measured underbark or overbark.

11 Sources

This section provides further information on the data sources used to provide figures for this publication. Where relevant, information is also provided on the data collected from these sources, the methodology used to estimate figures, revisions and the level of detail reported.

11.1 Sources: Woodland area and planting

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

There is no minimum size for a woodland. In this report, 'woodland' (as defined above) refers to woods and forests of all sizes. The 1995-99 National Inventory of Woodland and Trees mapped all areas down to 2.0 hectares, but sample-based information was also collected for smaller woods, small groups of trees and individual trees. The area statistics in Chapter 1 show totals for woods over 0.1 hectares.

This is a different definition from that used internationally which is based on 10% canopy cover, a minimum height at maturity of 5m and minimum area of 0.5 hectares. However, the two definitions are estimated to give similar areas of woodland in the UK, as the UK woodland in areas of 0.1 - 0.5 hectares balances the unrecorded area with 10 - 20% canopy cover.

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

Integral open space is defined differently in the data sources used in this publication for woodland owned or managed by Forestry Commission (FC) and woodland owned by others (Tables 1.1 and 1.3). FC data now come from a GIS where mappable open space is excluded from the total. Non-FC woodland (from the National Inventory of Woodland and Trees, NIWT) includes open areas less than 1 hectare as integral open space.

Most public sector woodland is owned by or managed by the Forestry Commission (FC) or, in Northern Ireland, the Forest Service (FS). Woodland owned by local authorities, the Ministry of Defence, and other public sector bodies is included in 'non-FC/FS woodland'.

11.1.1 Sources: Woodland area

Background

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

- Forestry Commission and Forest Service administrative records of FC/ FS woodland areas;
- National Inventory of Woodland and Trees (GB);
- Statistics on new planting of non-FC woodlands in Great Britain;
- Forestry Commission administrative records of disposals of woodland (GB) and
- Forest Service estimates of non-FS woodland area in Northern Ireland.

Data collected

Data are woodland areas in each country (England, Wales, Scotland, Northern Ireland) by ownership (FC/ FS, non-FC/ FS) and type of woodland (conifer, broadleaf).

Methodology

For FC/ FS woodlands, data are obtained annually from administrative systems. Forest Service also provide estimates of non-FS woodland on an annual basis.

For non-FC woodlands in Great Britain, annual estimates of woodland areas are based on the most recent inventory of woodlands - currently the 1995-99 National Inventory of Woodland and Trees (NIWT). The figures obtained from NIWT are then rolled forward for each country by adding statistics for new planting of non-FC woodland and disposals of FC woodland. No account is taken of woodland converted to another land-use, nor for changes in composition at restocking, as there are no sufficiently reliable data sources for these topics.

Revisions

The statistics on woodland area may be revised between the provisional figures published in the First Release Woodland area, planting and restocking and the final data published in Forestry Facts & Figures and Forestry Statistics, to take account of revisions to administrative data. They are not normally revised after final figures are published except when a new National Inventory of Woodland and Trees is published, previous years may be revised.

Reporting

Statistics reported for each year are published at a country level (England, Wales, Scotland, Northern Ireland).

11.1.2 Sources: Woodland Inventories

Woodland inventories have taken place in Great Britain every 15 years or so. Most inventories, however, used slightly different definitions of woodland, so some apparent changes in area over time are due to changing definitions. The principal differences for inventories since 1905 are:

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

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

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

National Inventory of Woodland and Trees

In the latest 1995-99 inventory, data were collected for one hectare squares, covering a wide variety of topics, include ownership type, species and age. The results were uprated to total woodland areas from a digital map based on aerial photography.

Results are published for countries (Great Britain, England, Wales, Scotland) and for more detailed geographical breakdowns (regions and counties).

Further details on the most recent inventory are available from www.forestry.gov.uk/inventory.

11.1.3 Sources: New planting & restocking

Background

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

Information about Forestry Commission and Forest Service new planting and restocking comes from administrative systems. Information about other woodland has come principally from the Woodland Grant Scheme (WGS) and the successor grant schemes introduced in England, Wales and Scotland. For natural colonisation and regeneration, the areas are those for which the second instalment of grant has been paid. Areas receiving grant are allocated to years by date of payment.

Local estimates for areas of planting and restocking which are not FC and which are not grant-aided are included for England, Wales and Scotland. These estimates are relatively small (less than one thousand hectares annually), and it has been assumed that all of this area is broadleaves. It is assumed that there is no non-FS non-grant aided new planting and restocking in Northern Ireland.

Data collected

Data on planting (new planting, restocking) in each country (England, Wales, Scotland, Northern Ireland) are obtained by ownership (FC/ FS, non-FC/ FS) and type of woodland (conifer, broadleaf).

Revisions

The statistics on new planting and restocking may be revised between the provisional figures published in the First Release 'Woodland Area, Planting and Restocking' and the final data published in Forestry Facts & Figures and Forestry Statistics, to take account of revisions to administrative data. They are not normally revised after final figures are published.

Reporting

Statistics reported for each year are published at a country level (England, Wales, Scotland, Northern Ireland).

11.2 Sources: Timber

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

- Forestry Commission and Forest Service administrative records of removals from FC/ FS woodlands;
- Private Sector Softwood Removals Survey for softwood removals from non-FC/ FS woodlands and
- deliveries of hardwood to wood processing industries (see below) for total hardwood removals.

There is no source of data for hardwood removals from non-FC/ FS woodlands, so these are estimated to be:

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

Deliveries are estimated from the following sources:

- Sawmill Survey;
- UK Forest Products Association;
- Wood Panel Industries Federation;
- Survey of Round Fencing Manufacturers;
- Private Sector Softwood Removals Survey (for softwood deliveries to woodfuel);
- shavings manufacturers;
- harvesting companies (for roundwood and chip exports) and
- estimates provided by the Expert Group on Timber and Trade Statistics.

Provisional results (in summary format) are published in the First Release 'UK Wood Production and Trade', with final figures issued in Forestry Facts and Figures and Forestry Statistics.

Figures are also provided in the Joint Forest Sector Questionnaire submitted to international organisations (provisional data in May and final data in September).

11.2.1 Sources: Wood production

Background

Figures on UK wood production are compiled from a variety of sources:

- Forestry Commission/ Forest Service administrative records - for all removals from FC/ FS woodlands;
- the Private Sector Softwood Removals Survey - for softwood removals from non-FC/ FS woodlands and
- statistics on deliveries - for total hardwood removals.

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

Methodology

Figures for removals from FC/ FS woodlands are converted from cubic metres (m^3) to green tonnes using standard conversion factors. For total softwood figures, the results from the Private Sector Softwood Removals Survey are combined with the data for FC/ FS woodlands to produce total softwood removals.

For hardwood figures, the total hardwood removals are assumed to equal the total hardwood deliveries (obtained from industry surveys and industry associations). Hardwood removals from FC/ FS woodlands are then subtracted to give an estimate of the amount of hardwood removed from non-FC/ FS woodlands.

Revisions

Non-FC/ FS softwood removals are subject to revision annually (see note on the Private Sector Softwood Removals Survey). Removals from FC/ FS woodlands are not normally revised. Total hardwood removals (and consequently hardwood removals from non-FC/ FS woodlands) are subject to annual revisions (see notes on deliveries for further information).

Reporting

Figures are published as UK totals. Country breakdowns (England, Wales, Scotland, Northern Ireland) are also published for softwood in table 2.3 (as percentages) for non-FC/ FS removals and table 2.4 for FC/ FS removals. Approximate country breakdowns are also estimated for hardwood removals.

11.2.2 Sources: Private Sector Softwood Removals Survey

Background

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

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

Data collected

The questionnaire used for the Private Sector Softwood Removals Survey is issued to around 40 harvesting companies, to collect information on:

- the quantity of softwood roundwood harvested from non-FC/ FS woodlands in the UK in the current year and in the previous year;
- the quantity of softwood roundwood harvested from certified non-FC/ FS woodlands and
- (in 2008) the quantity sold to bioenergy (including wood pellet manufacture).

Response rates

In 2008, the questionnaire was issued to 41 harvesting companies, of which 35 responded, giving a response rate of 85%.

Private Sector Softwood Removals Survey Response Rates, 1999-2008

Year	Forms issued	Responses received	Response rate
1999	45	39	87%
2000	43	26	60%
2001	42	30	71%
2002	35	24	69%
2003	33	24	73%
2004	41	33	80%
2005	40	28	70%
2006	43	35	81%
2007	43	34	79%
2008	41	35	85%

Methodology - Estimation of non-FC/ FS softwood removals

The percentage change in non-FC/ FS softwood removals from the previous year to the current year is calculated for all respondents. This percentage change is then applied to the estimated total for the previous year, subject to any revisions (see below), to produce an estimated total for the current year.

Revisions

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

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

Reporting

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

11.2.3 Sources: Sawmill Survey

Background

The Sawmill Survey is an annual survey conducted by the Forestry Commission (in association with the Forest Service) of sawmills in the UK that are believed to use UK logs.

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

The detailed survey has changed over recent years, both in terms of coverage and periodicity. For 1996 and earlier, detailed questionnaires were issued triennially to mills producing at least 1,000 m^3 of sawnwood. From 1998 to 2004, the questionnaires were issued on a biennial basis to mills producing at least 5,000 m^3 of sawnwood. From 2005, the detailed questionnaires have been issued annually, to mills producing at least 10,000 m^3 of sawnwood.

Data collected

2 questionnaires are used for the Sawmill Survey:

- a detailed questionnaire goes to around 50 mills that have annual production of at least 10,000 m^3 of sawnwood, and
- a short questionnaire is sent to all other mills that are believed to take UK sawlogs (around 200 mills).

Both questionnaires collect information on:

- the consumption of UK and imported logs,
- the production of sawnwood,
- (from 2006) sales to bioenergy,
- (from 2008) sales as firewood and internal use for heat/ energy and
- (from 2008) total employment.

In addition, the detailed questionnaire also collects information on:

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

Response rates

In 2008, detailed questionnaires were issued to 53 mills, of which 42 responded, giving a response rate of 79%. For the short questionnaire, 91 responses were received from the 174 forms issued, corresponding to a 52% response rate.

Sawmill Survey Response Rates (all questionnaires), 1999-2008

Year	Forms issued	Responses received	Response rate
1999	406	244	60%
2000	374	193	52%
2001	260	172	66%
2002	288	150	52%
2003	260	143	55%
2004	262	147	56%
2005	257	143	56%
2006	264	164	62%
2007	243	149	61%
2008	227	133	59%

Methodology

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

Revisions

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

All the main results (number of mills, consumption, production) are subject to revision annually, as information becomes available about mills opening or closing, or new information becomes available for previous non-respondents. The most common revisions are relatively small downward changes, but this can vary from year to year as special exercises are run to validate the survey population. Information about new mills opening can on occasion cause much larger upward revisions to softwood volumes, as in British Timber Statistics 2003. Results from the survey of larger mills, which provides more detailed information, are not normally revised.

Reporting

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

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

The number of active mills is presented in tables 2.9 to 2.11.

11.2.4 Sources: Pulp & paper

Background

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

- UK Forest Products Association (UKFPA) provides figures on inputs to the integrated pulp and paper mills and
- Confederation of Paper Industries (CPI) provides figures on total UK pulp and paper production.

Integrated pulp and paper mills are paper mills that use UK roundwood to produce pulp, which is an intermediate product in the production of paper. Inputs for other paper mills are not covered. The figures for production cover all UK paper mills.

Data collected

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

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

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

Methodology

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

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

Revisions

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

Reporting

Statistics reported for each year on inputs are limited to integrated pulp and paper mills. Figures are available at a total UK level only.

11.2.5 Sources: Woodbased panels

Background

Data on the woodbased panel sector are obtained from the Wood Panel Industries Federation (WPIF) and cover all woodbased panel mills in the UK.

Data collected

Data are collected on inputs and on production.

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

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

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

Methodology

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

Revisions

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

Reporting

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

11.2.6 Sources: Survey of Round Fencing Manufacturers

Background

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

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

Data collected

The questionnaire used for the Survey of Round Fencing Manufacturers is issued to around 100 mills, to collect information on the consumption of UK and (from 2006) imported roundwood. In 2008, the survey was extended to cover woodfuel quantities (sales to bioenergy, sales as firewood and internal use for heat/ energy) and total employment. A breakdown of the country of origin (England, Wales, Scotland, Northern Ireland) for UK roundwood is also requested.

Response rates

In 2008, the questionnaire was issued to 87 mills, of which 55 responded, giving a response rate of 63%.

Survey of Round Fencing Manufacturers Response Rates, 1999-2008

Year	Forms issued	Responses received	Response rate
1999	139	91	65%
2000	142	78	55%
2001	127	84	66%
2002	109	68	62%
2003	104	52	50%
2004	107	67	63%
2005	103	60	58%
2006	109	61	56%
2007	103	67	65%
2008	87	55	63%

Methodology

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

Revisions

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

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

Reporting

Figures are published as UK totals and by size of mill. Data for individual countries can be produced, subject to confidentiality constraints.

11.2.7 Sources: Other deliveries

Background

Data on other deliveries comprise the following:

- shavings - mainly obtained from shavings manufacturers;
- woodfuel - private sector softwood removals survey, suppliers and Expert Group on Timber & Trade Statistics estimates;
- hardwood round fencing - Expert Group on Timber & Trade Statistics estimates;
- other miscellaneous products - Expert Group on Timber & Trade Statistics estimates and
- exports of roundwood and chips - harvesting companies and Forest Service.

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

Data collected

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

Data collected on exports covers pulpwood, logs and chips. For 2004 and earlier years, these figures were provided by the UK Forest Products Association (UKFPA).

Methodology

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

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

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

For exports, data are requested from harvesting companies believed to have exported roundwood or chips in the last year. Forest Service provides data on behalf of companies exporting from Northern Ireland. If required, a small estimate is made for any non respondents or to cover other companies which may have exported roundwood during the year.

Revisions

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

Reporting

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

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

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

Comparison of removals and deliveries of UK softwood roundwood, 1999-2008

Year	FC/ FS removals	Non-FC/ FS removals	Total removals	Deliveries	Balance[1]
					thousand green tonnes
1999	4 725	2 555	7 280	7 266	14
2000	4 850	2 580	7 430	7 351	79
2001	4 604	2 900	7 504	7 463	41
2002	4 650	2 982	7 632	7 380	252
2003	4 817	3 502	8 319	7 718	600
2004	4 894	3 629	8 524	8 022	502
2005	4 579	3 906	8 485	8 146	339
2006	4 582	3 929	8 511	8 188	323
2007	4 653	4 363	9 016	8 793	223
2008	4 415	4 005	8 420	8 179	241

Source: Forestry Commission, Forest Service, industry surveys, industry associations

Notes:

1. The difference between reported removals and deliveries. This can be caused by variations in the level of stocks between harvesting and delivery to the wood processor, but a persistent difference indicates that statistics for removals and/ or deliveries may be unreliable.

11.2.9 Sources: Estimation of hardwood removals from non-FC/ FS woodlands

Figures for hardwood removals from non-FC/ FS woodlands are derived from total hardwood deliveries (obtained from industry surveys and trade associations) less hardwood removals from FC/ FS woodlands.

Estimation of hardwood removals from non-FC/ FS woodlands, 1999-2008

Year	Deliveries	FC/ FS removals	Non-FC/ FS removals
			thousand green tonnes
1999	675	128	547
2000	654	130	524
2001	632	145	486
2002	620	118	502
2003	562	117	445
2004	513	113	399
2005	593	101	492
2006	438	45	392
2007	440	40	400
2008	432	43	389

Source: industry surveys, industry associations

11.2.10 Sources: Woodfuel

Background

Data on woodfuel have been obtained from the following sources:

- Woodfuel suppliers survey (run for the first time in 2008);
- Sawmill survey and survey of round fencing manufacturers;
- Wood Recyclers' Association;
- Expert Group on Timber & Trade Statistics estimates.

Data collected

The woodfuel suppliers survey collected data on the quantity of woodfuel used or supplied by form. Further detail was also collected on the origin of wood chips and the source of pellets.

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

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

All 3 questions have been included in the detailed sawmill survey (sent to sawmills believed to produce at least 10 thousand m3 sawnwood annually) for some time. The sawmill survey (for smaller mills) was extended in 2006 to cover quantities sold to bioenergy and again in 2008 to cover firewood sales and use for heat/ energy. All three questions were included for the first time in 2008 in the round fencing survey.

Response rates

The woodfuel suppliers survey was sent to a total of 321 businesses believed to supply and/ or use woodfuel, of which 142 responded, giving a response rate of 44%.

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

Methodology

To avoid unnecessary burden on businesses, the woodfuel suppliers survey was only issued to businesses not covered by existing surveys or data requests. Where possible, data were estimated for non respondents (based on the figures provided by respondents) and for those not covered by the survey. The results were then refined to remove potential double counting. All figures have been converted into a common unit of quantity (oven dry tonnes).

Revisions

Results from the Woodfuel Suppliers Survey were revised between the provisional figures published in the First Release 'UK Woodfuel Statistics' and the final data published in Forestry Statistics to take account of late returns and the results of additional data quality checking procedures.

All figures are subject to revision annually, as information becomes available about currently unknown suppliers, or new information becomes available for previous non-respondents.

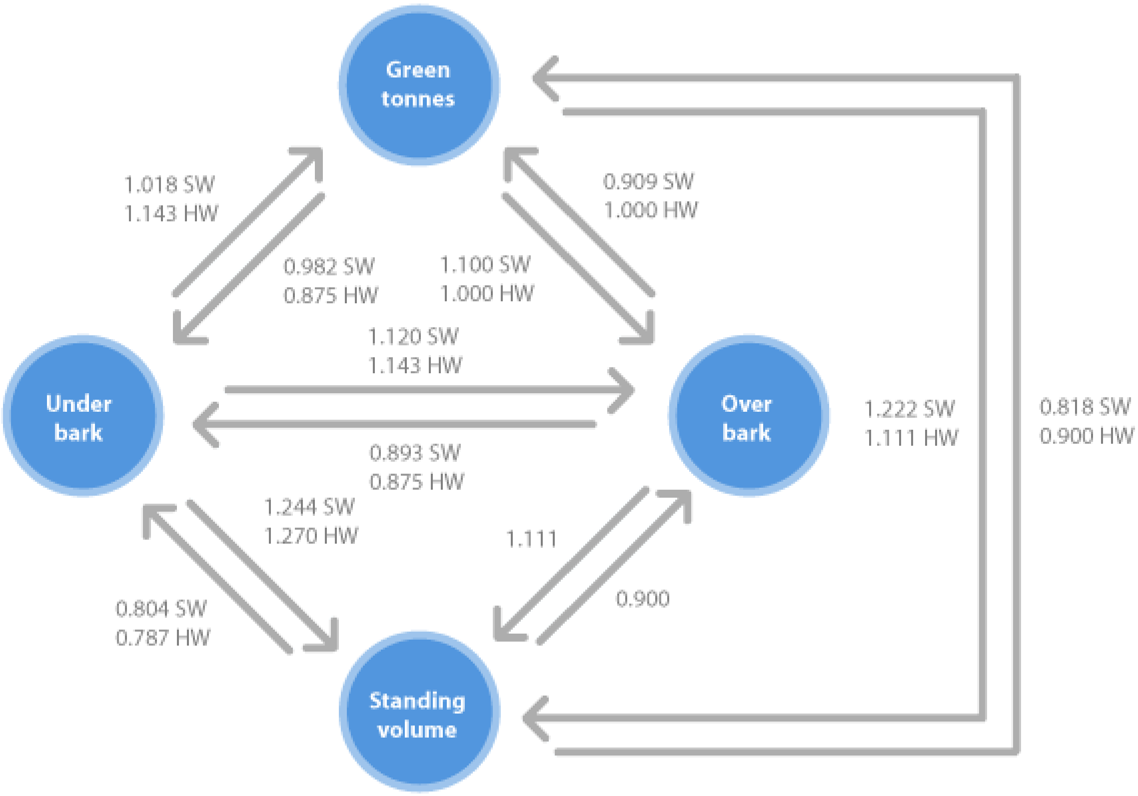
Reporting

Figures are published as UK totals.

11.2.11 Sources: Conversion factors

Conversion factors between cubic metres and green tonnes

The following factors have been used in Chapter 2 (Timber) to convert between cubic metres (m^3) and green tonnes:



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

Conversion factors between cubic metres and metric tonnes

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

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

Conversion factors to Wood Raw Material Equivalent (wrme) underbark

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

Notes:

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

Conversion factors to oven dry tonnes

Woodfuel estimates have been converted to oven dry tonnes (odt) in Chapter 2 (Timber) using the following assumptions about moisture contents (if actual moisture contents were not reported):

- virgin roundwood and chips from whole log = 52%
- virgin sawmill chips and sawdust = 56%

- wood pellets = 10%
- recycled wood = 25%.

11.3 Sources: Trade

Background

Data on imports and exports are based on data obtained from overseas trade statistics on intra-EC trade and extra-EC trade produced by HM Revenue and Customs.

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

Data collected

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

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

For roundwood, sawnwood and woodbased panels, a softwood/ hardwood breakdown is available.

Data are also obtained by country of origin (for imports) and destination country (for exports).

Methodology

The data obtained from HM Revenue & Customs are converted to other units (if required) and checked against other sources and expert advice (including the Expert Group on Timber and Trade Statistics, Wood Panel Industries Federation and Confederation of Paper Industries). For consistency with timber deliveries data, roundwood and wood chip exports figures are replaced by those compiled from harvesting companies and (for Northern Ireland) Forest Service.

Revisions

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

Reporting

Provisional results are published in the First Release 'UK Wood Production and Trade' in May, with final figures issued in Forestry Facts and Figures and Forestry Statistics.

Figures are also provided in the Joint Forest Sector Questionnaire submitted to international organisations (provisional data in May and final data in September).

Statistics reported for each year are available at a UK level. Data are also available for country imported from (or exported to) and for more detailed product types.

11.4 Sources: UK Forests and Climate Change

Background

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

Globally, deforestation caused by the unsustainable harvesting of timber and the conversion of forests to other land uses accounts for almost 20 per cent of global carbon dioxide emissions. The amount of carbon stored can be increased by actions to reduce the amount of deforestation and to convert non-forested areas to forest.

Although they cover a small part of the global area, the forests and woodlands in Britain have a role to play too. They can be managed as a sustainable source of wood – an alternative energy source to fossil fuels, and a low-energy construction material.

Woodlands can also help society adapt to a changing climate. The right trees planted in the right places can reduce the risk of flooding, provide shade for wildlife, reduce soil erosion and help to cool down towns and cities.

Carbon cycle

The diagram showing the carbon cycle is adapted from Figure 3 of the Forestry Commission Information Note on Forests, Carbon and Climate Change: the UK Contribution (M Broadmeadow and R Matthews, 2003).

Forest carbon stock

Table 4.1 is a slightly reduced version of Table T8 in the final draft UK report for Global Forest Resources Assessment 2010. Sources and methodology are described in more detail in that report.

Figures for growing stock were from models based on the 1995-99 National Inventory of Woodland and Trees and data for the FC estate, converted to estimates of above-ground and below-ground biomass using standard factors, then converted to carbon assuming 50% carbon in biomass.

Figures for deadwood were based on the 1995-99 National Inventory of Woodland and Trees. Figures for litter were based on data from the Centre for Ecology & Hydrology (CEH). Figures for soil carbon were based on data from CEH, adjusted to take account of the changing forest area.

Carbon sequestration

The information in Table 4.2 is taken from inventory and projections of UK emissions by sources and removal by sinks due to land use, land use change and forestry (CEH, 2009). They exclude the pool of carbon in timber products.

Figure 4.2 shows annual estimates of carbon sequestration by country, taken from the same source but shows carbon in living forest biomass only; it excludes carbon in litter, soils and forest products. Future predictions of carbon uptake assume that commercial conifer plantations will be replanted when felled, and that planting of new woodland will continue at the same rate as in 2007 (mid projection).

Emissions and sequestration can be presented as tonnes carbon or tonnes carbon dioxide (CO_2). To convert from tonnes CO_2 to tonnes carbon multiply by 12/44.

11.5 Sources: Environment

Ancient and semi-natural woodland and protected areas

The information in Table 5.2 and most of Table 5.1 has been reproduced from Protected Forest Areas in the UK (S Pryor & G Peterken, 2001) (not National Statistics). It had been derived from a variety of sources, and is unlikely to give a wholly accurate inventory of protected areas in the United Kingdom.

The woodland categories used in Table 5.1 are:

- ASNW: (ancient semi-natural woodland) both ancient and semi-natural.
- PAWS: (plantation on an ancient woodland site) ancient in the sense of continuously wooded over a long period but not semi-natural.
- OSNW: (other semi-natural woodland) semi-natural but not ancient.

The types of statutory protection in Table 5.2 are:

- SAC: Special Area of Conservation;
- SPA: Special Protection Area;
- NNR: National Nature Reserve;
- SSSI: Site of Special Scientific Interest (ASSI in Northern Ireland).

Data about the small amount of ancient woodland in Northern Ireland was not available in 2001, but has been added using the report Back on the Map (Woodland Trust, 2007) (not National Statistics).

Revised estimates for Wales were compiled for Woodland for Wales progress report 2001-05 (2006) (not National Statistics). For Forestry Statistics 2009, they have been used for Wales in place of the estimates from Pryor & Peterken (2001), and the UK totals have been revised accordingly.

The UK Indicators of Sustainable Forestry (indicator B1) published in 2002 used results from a different source: Pryor & Smith (2002). This was an updated estimate of ancient woodland area derived by overlaying the 1995-99 National Inventory of Woodland and Trees digital map onto ancient woodland inventories. This gave lower figures than those published in Pryor & Peterken (2001). At the time, Pryor & Smith (2002) was thought to give the best estimates of ancient woodland area. However, further investigation of the discrepancies between the 1995-99 National Inventory of Woodland and Trees and the ancient woodland inventories suggests that some discrepancies are due to differences in spatial registration of woods, and that some areas of ancient woodland are incorrectly omitted from the totals in Pryor & Smith (2002). In consequence, the estimates from Pryor & Peterken (2001) are now recommended for use, until better information becomes available.

The Ancient Woodland Inventory data sets for England and Wales are currently being revised. New estimates for Scotland will become available from the Native Woodland Survey of Scotland.

Populations of wild birds

Population indices for wild birds are a framework indicator for sustainable development. The data published here are based on those published in the Wild Bird Populations statistics release (Defra, October 2008), rescaled here to give year 2000 = 100 instead of year 1970 = 100. Further data and analysis about populations of wild birds are in Defra Wildlife KeyFacts.

The index for woodland specialists was recalculated in 2007 to include 4 additional species; this affected the indices for total woodland birds and (to a lesser extent) all birds.

Woodland vegetation

This indicator, which shows the overall condition and richness of flora in woodland, is derived from data collected by the Countryside Survey in 2007 (not National Statistics) and previous surveys in 1998 and 1990. Results were published in late 2008.

No similar samples were taken in the Northern Ireland Countryside Survey.

11.6 Sources: Public Opinion of Forestry

Background

The Forestry Commission has conducted similar biennial surveys of public attitudes to forestry and forestry-related issues since 1995. Three separate surveys were undertaken in 2009; in Scotland, Wales and across the UK as a whole. In previous years separate surveys for Northern Ireland were also carried out.

Some questions were asked in all three of the surveys conducted in 2009 and in the surveys undertaken in earlier years, but an increasing number are survey specific. Questions are asked on a variety of topics including, public awareness of forestry, woodland-based recreation and community involvement, woodfuel and the relationship between forestry and climate change.

Methodology

The survey results were obtained by placing questions on omnibus surveys run by private market research companies. The four surveys undertaken in 2009 achieved representative samples of around:

- 2,000 adults across the UK
- 1,000 adults across Scotland
- 1,000 adults across Wales

All results are subject to the effects of chance in sampling, so a range of uncertainty (confidence interval) is associated with results from the surveys. The confidence intervals take into account the effect of clustering, weighting and stratification in the survey designs. For questions asked to the whole UK sample of 2,000, the range of uncertainty around any result should be no more than ±3.3%, while for questions asked to 1,000 respondents, the corresponding range of uncertainty should be no more than ± 4.6%.

Reporting

Preliminary reports for England (using a subset of the UK data set), Scotland and Wales were published in June 2009.

Final reports giving more in-depth information on the specific questions asked in each country, including breakdowns by geographic regions, socio-demographic variables (e.g. gender, age, health, social class), deprivation indices and rural urban categorisations will be published in October 2009.

11.7 Sources: Recreation

Visitor Monitoring

There are two main approaches to visitor monitoring:

- General population surveys of individuals at their home. This approach is employed for the Scottish Recreation Survey, the Welsh Outdoor Recreation Survey, the English Day Visits Survey and the Public Opinion of Forestry surveys (Tables 6.2 to 6.7).
- Surveying and counting of visitors to a specific area or woodland. On site surveying has been employed for the All Forest Monitoring and Quality of Experience surveys. In addition, the Northern Ireland Forest Service keep records of visitors who pay an admission charge to their sites.

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

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

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

Differences in results - household surveys

It is notable from table 6.1 that different surveys have provided some quite different estimates of the aggregate number of visits to woodlands; for example, a fall, in recent years, in the estimated number of visits to woodlands in England and GB. It is likely that the use of different market research companies and varying approaches and practices (in-home or telephone interview, changed questionnaire structure etc) are responsible for a substantial proportion of the fall identified in the table.

Table 6.1 also highlights a large difference in the estimates for Scotland, although in contrast to the England and GB results, the Scottish result is dramatically higher in recent years. It is, however, again likely that this variation is primarily connected with the change in survey scope, design and methodology (UK and GB Day Visit Surveys until 2002/3, Scottish Recreation Survey for 2004 onwards).

Differences in results - household survey versus on-site survey

The aggregate visit number estimate for Forestry Commission Scotland woodland obtained from the on site All Forests Scotland survey (8.2 million, table 6.9) is substantially lower than the corresponding estimates derived from the Scottish Recreation Survey (around 30 million, table 6.3). Although it would be unreasonable to expect that two surveys which employ such differing methods would produce consistent estimates, the magnitude of the difference is notable. Considering the methods employed in these surveys, it may be hypothesised that the the Scottish Recreation Survey, which is a household survey, overestimates the number of visits while the All Forests Survey, an onsite survey, provides an underestimate. It may also be hypothesised that the 'true' number of visits to Forestry Commission Scotland woodland lies somewhere between the estimates derived from these surveys.

Revisions

Results for 'total' visits from the Scottish Recreation Survey for 2004-2008 (tables 6.1, 6.3 and 6.4) have been amended from previously published figures.

Public Access to Woodland

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

- The Woods for People project created an inventory of accessible woodland in 2004. Annual updates have been undertaken since and are included in table 6.14.
- The Space for People project analyses information from the Woodlands for People inventory to produce estimates on the proportion of the population who live close to woods.

Facilities and Activities

Information on the numbers of facilities and activities present at Forestry Commission sites are taken from the recreation listings on the Forestry Commission website. A small number of facilities are double counted as they appear more than once on the database used for the website.

11.8 Sources: Employment and businesses

Statistics on employment are obtained from:

- Annual Business Inquiry (Office for National Statistics) - an annual survey of UK businesses,
- Industry surveys (Sawmill Survey, Survey of Round Fencing Manufacturers) and industry associations (UK Forest Products Association, Wood Panel Industries Federation) - for employment in primary wood processing, and
- Forest Employment Survey - a Forestry Commission survey of forestry and primary wood processing businesses in Great Britain, last run in 1998/9.

Numbers of businesses are estimated from:

- Industry surveys (Sawmill Survey, Survey of Round Fencing Manufacturers) and industry associations (UK Forest Products Association, Wood Panel Industries Federation) - for businesses believed to be using UK roundwood, and
- Business Start-ups and closures: VAT registrations and de-registrations (Department for Business Enterprise and Regulatory Reform, now the Department for Business Innovation and Skills) - for VAT-registered businesses.

The Annual Business Inquiry and statistics on VAT registrations classify businesses by UK Standard Industrial Classification (SIC 2003) code. Businesses are classified to SIC codes according to their main activity.

11.9 Sources: Finance & prices

Timber prices

Annual figures for coniferous standing sales from Forestry Commission owned woodland broken down by size category, and for Forestry Commission sales of softwood logs, are obtained from administrative records held by the Forestry Commission. The figures are published twice yearly (in May and November) in the First Release 'Timber Price Indices', covering the year to 31 March and the year to 30 September for standing sales and the six month period to 31 March and to 30 September for logs.

The GDP market prices deflator (published quarterly by the Office for National Statistics) is used to convert the figures to real prices (September 2006 base).

The Softwood Sawlog Price Index measures the average price received per cubic metre of sawlogs from Forestry Commission sales.

The methodology used to calculate the Coniferous Standing Sales Price Index was reviewed in 2008, with a new method introduced from the November 2008 publication. A Fisher index with 5-yearly chain linking was adopted as the preferred method for calculating the index to account for the change in the size mix of standing sales.

For a 5 year transition period, the previous Laspeyres index will be shown alongside the new index in the 'Timber Price Indices' publications. For the purposes of this publication only the Fisher series has been presented. Further details on this change are available in the paper Methodology for the Coniferous Standing Sales Index.

Financial returns

Estimates of financial returns from commercial Sitka spruce plantations are compiled and published by Investment Property Databank Limited (IPD). The returns include changes in the value of forestry estates, as well as timber price changes.

Gross Value Added

Statistics on gross value added (GVA) are obtained from the Annual Business Inquiry (Office for National Statistics), an annual survey of UK businesses. The Annual Business Inquiry uses the UK Standard Industrial Classification (SIC 2003) to classify businesses to industries according to their main activity.

Government expenditure

Information about government expenditure on forestry is obtained from administrative records held by the Forestry Commission. Data are published annually in the Annual Report & Accounts produced by National Offices.

The figures in Table 8.5 (other government expenditure on forestry) have been revised from Forestry Statistics 2008 to remove double counting of annual research programme expenditure, which was previously included in both the "Research - GB funded" and "International & GB support services" categories. This has reduced the total GB expenditure in this table by around £10 million per year.

Data on grant expenditure are obtained from administrative records for woodland grant schemes across GB.

11.10 Sources: International Forestry

Background

International data on forest area and carbon stocks are obtained from the Global Forest Resources Assessment (FRA) 2005, compiled by the United Nations Food and Agriculture Organisation (FAO). The information in Table 9.1 uses forest area from FRA 2005, excluding 'other wooded land'; for the UK, this is very similar to the definition of 'woodland' used in other tables.

International data on production, imports and exports are obtained from the United Nations Food and Agriculture Organisation (FAO). Data are collected via the Joint Forest Sector Questionnaire for FAO and other international organisations and published in the online FAOSTAT database.

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

Revisions

International statistics compiled from FRA are not subject to revision after publication.

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

Reporting

Statistics reported for each year are available at a regional level. Further data (including data for individual countries) are also available from the original sources.