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Report

United Kingdom of Great Britain and Northern Ireland

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FAO has been monitoring the world's forests at 5 to 10 year intervals since 1946. The Global Forest Resources Assessments (FRA) are now produced every five years in an attempt to provide a consistent approach to describing the world's forests and how they are changing. The FRA is a country-driven process and the assessments are based on reports prepared by officially nominated National Correspondents. If a report is not available, the FRA Secretariat prepares a desk study using earlier reports, existing information and/or remote sensing based analysis.

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TABLE OF CONTENTS

Introduction

1. Forest extent, characteristics and changes
2. Forest growing stock, biomass and carbon
3. Forest designation and management
4. Forest ownership and management rights
5. Forest disturbances
6. Forest policy and legislation
7. Employment, education and NWFP
8. Sustainable Development Goal 15

Introduction

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Introductory text

Place an introductory text on the content of this report

1 Forest extent, characteristics and changes

1a Extent of forest and other wooded land

National Data

Data sources + type of data source eg NFI, etc

References to sources of information	Variables	Years	Additional comments
Forestry Commission, 2018. Forestry Statistics 2018 (and supporting data). UK.	Forest, forest expansion	1990-2018	Woodland area based on National Forest Inventory (Great Britain) and Forest Service Woodland Register and estimates (Northern Ireland). New planting from administrative systems.
UK submission to FRA 2015.	Other wooded land	1990-2015	Estimate unchanged from previous submissions.
FAOSTAT	Total land area, climactic domain	2015	Entries pre-filled.

National classification and definitions

National class	Definition
Woodland	As "forest" in FRA, but with 20% canopy cover threshold (rather than 10%).
New planting	New woodland creation (including estimates of natural colonisation). Data for years ending 31 March.
Great Britain	England, Wales and Scotland. Excludes Northern Ireland.

Original data

Estimates of UK woodland area, from Forestry Statistics 2018 (and supporting data):

thousand hectares

	1990	2000	2010	2015	2016	2017	2018
UK	2,778	2,954	3,059	3,155	3,159	3,164	3,173

Annual estimates of UK new planting (from Forestry Statistics 208) give a 5 year average for 2013-14 to 2017-18 of 8.9 thousand hectares.

From UK submission to FRA 2015, the area of other wooded land is assumed to be a constant estimate over all time periods of 20 thousand hectares.

Analysis and processing of national data

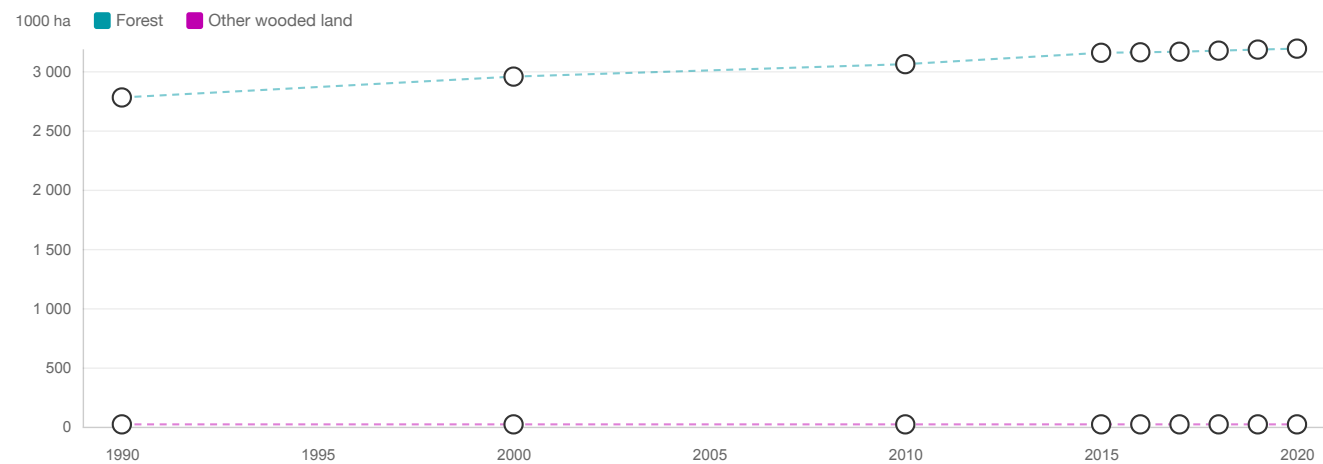
Estimation and forecasting

UK woodland areas for 2019 and 2020 estimated as UK woodland area for previous year + average annual new planting area in 2013-14 to 2017-18.

For other wooded land, the constant estimate of 20 thousand hectares from FRA 2015 for 1990 - 2015 is extended to 2020.

Reclassification into FRA 2020 categories

None.



FRA categories	Area (1000 ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Forest (a)	2 778.00	2 954.00	3 059.00	3 155.00	3 159.00	3 164.00	3 173.00	3 182.00	3 190.00
Other wooded land (a)	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00
Other land (c-a-b)	21 395.00	21 219.00	21 114.00	21 018.00	21 014.00	21 009.00	21 000.00	20 991.00	20 983.00
Total land area (c)	24 193.00	24 193.00	24 193.00	24 193.00	24 193.00	24 193.00	24 193.00	24 193.00	24 193.00

The FAOSTAT land area figure for the year 2015 is used for all reference years

Climatic domain	% of forest area 2015	Override value
Boreal	14.00	
Temperate	86.00	
Sub-tropical	0.00	
Tropical	0.00	

Comments

Forest area in 2015 revised from FRA 2015 to replace projection with estimate.

Forest areas for Great Britain from 2010 are obtained from annual National Forest Inventory woodland maps. Changes in the annual maps include corrections to previous maps, as well as genuine changes in forest areas. For Northern Ireland, the Northern Ireland Woodland Register has been used to produce woodland estimates from 2012. This has resulted in a step change in the estimated forest areas from 2010 to 2015.

1b Forest characteristics

National Data

Data sources + type of data source eg NFI, etc

References to sources of information	Variables	Years	Additional comments
Table 1a	Total forest area	All	
UK input to FRA 2015	Naturally regenerating forest	2010	Estimate of ancient semi-natural woodland, based on ancient woodland maps for England, Wales and Scotland, and National Forest Inventory map of woodland in Great Britain.

National classification and definitions

National class	Definition
Woodland	As "forest" in FRA, but with 20% canopy cover threshold (rather than 10%)
Ancient woodland	Woodland that has been in continuous existence since 1600 (1750 in Scotland)
Semi-natural woodland	Woodland with natural characteristics (predominantly native species of trees, ground plants and animals) where wood production is not a primary objective; this term is used rather than natural because the woodland may have originally been planted or have been managed for timber production in the past.
Ancient semi-natural woodland	Woodland that is both ancient and semi-natural

Original data

The UK's submission for Forest Resources Assessment 2015 included an estimate of 344 thousand hectares of ancient semi-natural woodlands.

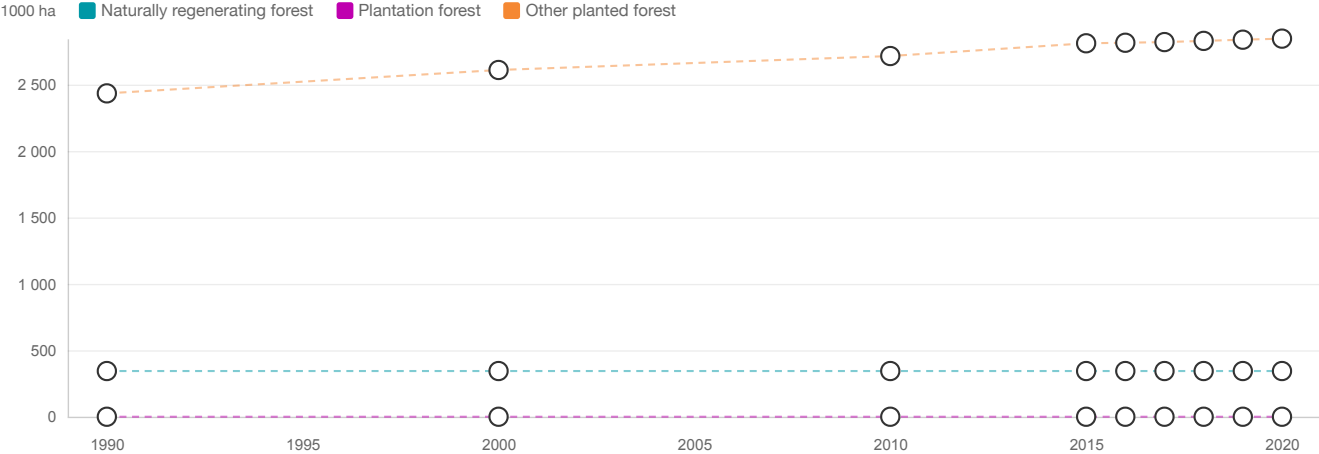
Analysis and processing of national data

Estimation and forecasting

The area of ancient semi-natural woodland has been used as a proxy measure for the area of other naturally regenerated forest in 2010.

Reclassification into FRA 2020 categories

None.



FRA categories	Forest area (1000 ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Naturally regenerating forest (a)	344.00	344.00	344.00	344.00	344.00	344.00	344.00	344.00	344.00
Planted forest (b)	2 434.00	2 610.00	2 715.00	2 811.00	2 815.00	2 820.00	2 829.00	2 838.00	2 846.00
Plantation forest	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
...of which introduced species	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other planted forest	2 434.00	2 610.00	2 715.00	2 811.00	2 815.00	2 820.00	2 829.00	2 838.00	2 846.00
Total (a+b)	2 778.00	2 954.00	3 059.00	3 155.00	3 159.00	3 164.00	3 173.00	3 182.00	3 190.00
Total forest area	2 778.00	2 954.00	3 059.00	3 155.00	3 159.00	3 164.00	3 173.00	3 182.00	3 190.00

Comments

There is assumed to be little change over time in the area of naturally regenerating forest. Planted forest has been derived as total forest area (from table 1a) less the estimate for naturally regenerating forest. The estimate for other planted forest includes plantations.

1c Primary forest and special forest categories

National Data

Data sources + type of data source eg NFI, etc

None.

National classification and definitions

None.

Original data

Areas of bamboos, mangroves, primary forest and rubber wood are assumed to be nil or negligible in the UK.

Analysis and processing of national data

Estimation and forecasting

None.

Reclassification into FRA 2020 categories

None.

FRA categories	Area (1000 ha)				
	1990	2000	2010	2015	2020
Primary forest	0.00	0.00	0.00	0.00	0.00
Temporarily unstocked and/or recently regenerated					
Bamboos	0.00	0.00	0.00	0.00	0.00
Mangroves	0.00	0.00	0.00	0.00	0.00
Rubber wood	0.00	0.00	0.00	0.00	0.00

Comments

Consistent data for areas of temporarily unstocked and/ or recently regenerated forest are not currently available.

1d Annual forest expansion, deforestation and net change

National Data

Data sources + type of data source eg NFI, etc

References to sources of information	Variables	Years	Additional comments
Forestry Commission, 2018. Forestry Statistics 2018 (and supporting data). UK.	Forest expansion	1990-91 to 2017-18	New planting from administrative systems
Forestry Commission, 2016. National Forest Inventory report: Preliminary estimates of the changes in canopy cover in British woodland between 2006 and 2015. UK.	Deforestation	2006-07 to 2014-15	

National classification and definitions

National class	Definition
New planting	New woodland creation (including estimates of natural colonisation). Data for years ending 31 March.
Woodland loss	Area previously accounted under forestry land use that has been converted to another land use. Such conversion can be caused and maintained by either a continued human-induced or natural perturbation action.

Original data

Annual average new planting in the UK:

thousand hectares per year

Years	Average annual new planting area
1990-91 to 1999-00	18.3
2000-01 to 2009-10	11.0
2010-11 to 2014-15	11.2
2015-16 to 2017-18	7.1

Area of woodland loss in Great Britain:

hectares

Years	Area of woodland loss
2006/07 to 2008/09	481
2009/10 to 2011/12	1,643
2012/13 to 2013/14	707
2014/15	448
Total	3,279

Analysis and processing of national data

Estimation and forecasting

Assume woodland loss in Northern Ireland is negligible, so UK figures are as GB. Calculate average annual deforestation in 2000-2010 and 2010-2015, as follows:

Average annual deforestation in 2000-2010 = average annual woodland loss in 2006/07 - 2008/09 = 481/3 = 160 hectares;

Average annual deforestation in 2010-2015 = average annual woodland loss in 2009/10 - 2014/15 = (1643+707+448)/6 = 466 hectares.

Reclassification into FRA 2020 categories

None.

FRA categories	Area (1000 ha/year)			
	1990-2000	2000-2010	2010-2015	2015-2020
Forest expansion (a)		10.70	19.70	
...of which afforestation				
...of which natural expansion				
Deforestation (b)		0.20	0.50	
Forest area net change (a-b)	17.60	10.50	19.20	7.00

Comments

Deforestation figures here relate to areas where definitive evidence for the permanent removal of woodland cover has been established.

Expansion and deforestation figures are not consistent with the forest area net change figures derived from table 1, as new estimates of forest areas can also include corrections to previous estimates.

1e Annual reforestation

National Data

Data sources + type of data source eg NFI, etc

References to sources of information	Variables	Years	Additional comments
Forestry Commission, 2018. Forestry Statistics 2018. UK.	Restocking	1990-91-2017-18	Data for years ending 31 March

National classification and definitions

National class	Definition
Restocking	Replanting of existing woodland.

Original data

As table 1d

Analysis and processing of national data

Estimation and forecasting

None.

Reclassification into FRA 2020 categories

None.

FRA categories	Area (1000 ha/year)			
	1990-2000	2000-2010	2010-2015	2015-2020
Reforestation	15.30	16.00	14.60	15.00

Comments

Figures from 2010 only cover publicly finded restocking and under-estimate the true level of palnting activity.

1f Other land with tree cover

National Data

Data sources + type of data source eg NFI, etc

References to sources of information	Variables	Years	Additional comments
Defra, 2018. UK land areas, livestock numbers and agricultural workforce on agricultural holdings on 1 June. UK.	Orchards	1990-2018	

National classification and definitions

National class	Definition
Orchard	Area of fruit trees (from agricultural censuses)

Original data

Area of orchards, from agricultural censuses, are:

thousands of hectares

Categories	1990	2000	2010	2015	2018
orchard	34	28	24	26	24

The area of palms is assumed to be nil or negligible in the UK.

Analysis and processing of national data

Estimation and forecasting

Figure for 2018 used as estimate for 2020.

Reclassification into FRA 2020 categories

None.

FRA categories	Area (1000 ha)				
	1990	2000	2010	2015	2020
Palms (a)	0.00	0.00	0.00	0.00	0.00
Tree orchards (b)	34.00	28.00	24.00	26.00	24.00
Agroforestry (c)					
Trees in urban settings (d)					
Other (specify in comments) (e)					
Total (a+b+c+d+e)	34.00	28.00	24.00	26.00	24.00
Other land area	21 395.00	21 219.00	21 114.00	21 018.00	20 983.00

Comments

Woodlands in urban areas and other areas are already covered within the forest areas reported in table 1a.

2 Forest growing stock, biomass and carbon

2a Growing stock

National Data

Data sources + type of data source eg NFI, etc

References to sources of information	Variables	Years	Additional comments
National Forest Inventory	Forest growing stock	2012	Analysis from full 1st cycle results, providing data on growing stock and increment by species over time, for input to DIABOLO. Covers Great Britain only.
UK submission to FRA 2015	Forest growing stock	1990-2000/2010	Estimates for earlier years were (for Great Britain) based on interim results from the National Forest Inventory and earlier data.
Northern Ireland Forest Service	Forest growing stock	2016	Revised growing stock and increment estimates for Northern Ireland
Forestry Commission, 2018. Joint Forest Sector Questionnaire returns to international organisations. UK (October 2018)	Fellings	2013-2017	UK roundwood production, based on deliveries to wood processors and others. Figures have been used with increment estimates to produce time series for growing stock.
Table 1a	Forest area	All	UK forest area estimates for use in calculating growing stock volumes per hectare.

National classification and definitions

National class	Definition
Standing volume	Live stemwood and usable branchwood (to 7cm top diameter and at least 3m in length).
Great Britain	England, Wales and Scotland. Excludes Northern Ireland.

Original data

UK data, as reported in FRA 2015:

Million m³ overbark standing

	1990	2000	2005	2010
Total	366	480	537	595

National Forest Inventory analysis for DIABOLO gives estimates for Great Britain of:

- standing volumes in 2012 = 601 million m³ overbark standing;
- increment (excluding fellings) of around 21.3 million m³ overbark standing.

Revised Northern Ireland estimates for conifer growing stock give a total of 13.5 million m³ overbark standing in 2016 and increment of 0.23 million m³ overbark standing.

Fellings (converted from roundwood removals reported to international organisations) give average production of 13.5 million m³ overbark standing in 2013-2017.

Analysis and processing of national data

Estimation and forecasting

Estimates for Great Britain in 2010 and in 2015-2020 have been produced by applying increment and fellings data to the 2012 growing stock estimates from the National Forest Inventory.

For Northern Ireland, the time series for conifers has been derived using the revised increment figure provided by Forest Service.

Reclassification into FRA 2020 categories

None.

FRA categories	Growing stock m³/ha (over bark)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Naturally regenerating forest									
Planted forest									
...of which plantation forest									
...of which other planted forest									
Forest	133.19	163.85	195.16	201.90	204.18	206.38	208.32	210.25	212.23
Other wooded land									

FRA categories	Total growing stock (million m³ over bark)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Naturally regenerating forest									
Planted forest									
...of which plantation forest									
...of which other planted forest									
Forest	370.00	484.00	597.00	637.00	645.00	653.00	661.00	669.00	677.00
Other wooded land									

Comments

Estimates by category are not currently available.

2b Growing stock composition

National Data

Data sources + type of data source eg NFI, etc

References to sources of information	Years	Additional comments
National Forest Inventory	2012	Analysis from full 1st cycle results, providing data on growing stock and increment by species over time, for input to DIABOLO. Covers Great Britain only.
UK submission to FRA 2015	1990-2000/ 2010	Estimates for earlier years were (for Great Britain) based on interim results from the National Forest Inventory and earlier data.
Northern Ireland Forest Service	2016	Revised growing stock and increment estimates for Northern Ireland.
Forestry Commission, 2018. Joint Forest Sector Questionnaire returns to international organisations. UK (October 2018).	2013-2017	UK roundwood production, based on deliveries to wood processors & others. Figures have been used with increment estimates to produce time series for growing stock.
Table 1a	All	UK forest area estimates for use in calculating growing stock volumes per hectare.

National classification and definitions

National class	Definition
Standing volume	Live stemwood and useable branchwood (to 7cm top diameter and at least 3m in length).
Native species	Scots pine, Oak, Beech, Ash, Birches, Hazel Hawthorn, Alder and Willow. All other species are assumed to be introduced.
Great Britain	England, Wales and Scotland. Excludes Northern Ireland.

Original data

UK data, as reported in FRA 2015 (million m³ overbark standing):

		1990	2000	2005	2010
Conifers	Sitka spruce	78	130	156	182
	Scots pine	35	43	47	52
	Corsican pine	8	10	11	12
	Norway spruce	15	18	19	21
	Larches	23	30	34	37
	Douglas Fir	9	12	14	16
	Lodgepole pine	8	13	16	19
	Other conifers	8	12	14	15
	Total conifers	184	269	311	354
Broadleaves	Oak	61	67	70	73
	Beech	28	31	32	34
	Sycamore	18	22	24	26

		1990	2000	2005	2010
	Ash	23	28	31	34
	Birch	14	18	20	22
	Sweet chestnut	5	6	7	8
	Other broadleaves	33	39	42	44
	Total broadleaves	182	211	226	241
Total (conifers + broadleaves)		366	480	537	595

National Forest Inventory analysis for DIABOLO gives estimates of standing volumes in 2012 for Great Britain, as follows (million m³ overbark standing):

		2012
Native	Oak	69
	Scots pine	52
	Ash	40
	Beech	30
	Birches	23
	Alder	11
	Hazel	7
	Willow	7
	Hawthorn	3
Introduced	Sitka spruce	183
	Larches	36
	Sycamore	24
	Norway spruce	21
	Lodgepole pine	18
	Douglas fir	17
	Corsican pine	12
	Sweet chestnut	8
	Other broadleaves	23
	Other conifers	15

Northern Ireland revised estimates give total conifers as table 2a and Sitka spruce estimate of 9.5 million m³ overbark standing in 2016.

Analysis and processing of national data

Estimation and forecasting

Estimates for Great Britain in 2010 and in 2015-2020 have been produced by applying increment and fellings data to the 2012 grwoing stock estimates from the National Forest Inventory.

For Northern Ireland, the time series for conifers has been derived using the revised increment figure provided by Forest Service.

Reclassification into FRA 2020 categories

Data for some species are not available for 1990 and 2000. The "other conifers" and "other broadleaves" for these years have been assigned to native/ introduced as follows:

- All "other conifers" are assumed to be introduced.
- Using the more detailed species breakdowns for later years, it is assumed that around "50%" of "other broadleaves" are native species and 50% introduced.

FRA categories	Scientific name	Common name	Growing stock in forest (million m³ over bark)				
			1990	2000	2010	2015	2020
Native tree species							
#1 Ranked in terms of volume	Quercus spp.	Oak	61.00	67.00	67.00	72.00	77.00
#2 Ranked in terms of volume	Pinus sylvestris	Scots pine	36.00	44.00	53.00	55.00	59.00
#3 Ranked in terms of volume	Fraxinus spp.	Ash	23.00	28.00	39.00	42.00	45.00
#4 Ranked in terms of volume	Fagus spp.	Beech	28.00	31.00	29.00	31.00	34.00
#5 Ranked in terms of volume	Betula spp.	Birches	14.00	18.00	22.00	27.00	32.00
#6 Ranked in terms of volume	Alnus spp.	Alder			10.00	12.00	13.00
#7 Ranked in terms of volume	Corylus avellana	Hazel			7.00	8.00	10.00
#8 Ranked in terms of volume	Salix spp.	Willow			6.00	8.00	9.00
#9 Ranked in terms of volume							
#10 Ranked in terms of volume							
Remaining native tree species			16.00	19.00	3.00	4.00	5.00
Total volume of native tree species			178.00	207.00	236.00	259.00	284.00
Introduced tree species							
#1 Ranked in terms of volume	Picea sitchensis	Sitka spruce	78.00	130.00	185.00	200.00	212.00
#2 Ranked in terms of volume	Larix spp.	Larches	24.00	31.00	38.00	34.00	31.00
#3 Ranked in terms of volume	Acer pseudoplatanus	Sycamore	18.00	22.00	23.00	25.00	27.00
#4 Ranked in terms of volume	Picea abies	Norway spruce	16.00	19.00	22.00	22.00	23.00
#5 Ranked in terms of volume	Pinus contorta	Lodgepole pine	8.00	14.00	19.00	18.00	18.00

FRA categories	Scientific name	Common name	Growing stock in forest (million m³ over bark)				
			1990	2000	2010	2015	2020
Native tree species							
Remaining introduced tree species			48.00	61.00	74.00	78.00	82.00
Total volume of introduced tree species			192.00	277.00	361.00	377.00	393.00
Total growing stock			370.00	484.00	597.00	636.00	677.00

Comments

None.

2c Biomass stock

National Data

Data sources + type of data source eg NFI, etc

References to sources of information	Variables	Years	Additional comments
National Forest Inventory, including NFI report: Biomass in live woodland trees in Britain (2014).	All	All	All estimates relate to Great Britain. Deadwood estimate only available for single year.
Table 2a	Growing stock	All	

National classification and definitions

National class	Definition
Great Britain	England, Wales and Scotland. Excludes Northern Ireland.

Original data

The NFI report: Biomass in live woodland trees in Britain gives estimates of 218 thousand oven dry tonnes for conifers and 208 thousand oven dry tonnes for broadleaves in Great Britain.

Analysis and processing of national data

Estimation and forecasting

It is assumed that the volume of deadwood per hectare is unchanges over time, and that all estimates per hectare for the UK are similar to Great Britain levels.

For the above-ground and below-ground biomass, growing stock estimates are used to uprate GB biomass figures from the NFI report to UK figures and to derive a time series.

Reclassification into FRA 2020 categories

None,

FRA categories	Forest biomass (tonnes/ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Above-ground biomass	74.00	89.00	104.00	109.00	110.00	112.00	113.00	114.00	115.00
Below-ground biomass	27.00	32.00	38.00	39.00	40.00	40.00	41.00	41.00	41.00
Dead wood	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00

Comments

None.

2d Carbon stock

National Data

Data sources + type of data source eg NFI, etc

References to sources of information	Variables	Years	Additional comments
Table 2c	Above-ground, Below-ground, dead wood	All	
Morison, J et al, 2012. Understanding the Carbon and GHG balance of UK forests. UK.	Litter, soil	All	As used in UK submission to FRA 2015.
Bradley, RI, Milne, R, Bell, J, Lilly, A, Jordan, C, Higgins, A, 2005. A soil carbon and landuse database for the UK. UK.	Soil	All	As used in UK submission to FRA 2015.
Forestry Commission, 2018. Forestry Statistics 2018 (and supporting data). UK.	Forest area	All	As used in table 1a.

National classification and definitions

National class	Definition
Woodland	As "forest" in FRA, but with 20% canopy cover threshold (rather than 10%).
Great Britain	England, Wales and Scotland. Excludes Northern Ireland.

Original data

Morison et al (2012) gives:

- estimates for average carbon content in litter and fermentation from biosoil plots of 15.4 tonnes per hectare for conifers and 17.2 tonnes per hectare for broadleaves; and
- estimates of the carbon content of soil 0-100cm of 659 tonnes CO₂ per hectare in England, 704 tonnes CO₂ per hectare in Wales and 1,060 tonnes CO₂ per hectare in Scotland.

Earlier estimates, provided in Bradley et al (2005) give estimates of the carbon content of soil 0-100cm of 623 tonnes CO₂ per hectare in England, 733 tonnes CO₂ per hectare in Wales, 1,210 tonnes CO₂ per hectare in Scotland and 1,357 tonnes CO₂ per hectare in Northern Ireland.

Forestry Statistics 2018 (and supprting data) and estimation for table 1a gives:

a. UK woodland areas for conifers and broadleaves (thousand hectares):

	1990	2000	2010	2015	2016	2017	2018	2019	2020
Total	2,778	2,954	3,059	3,155	3,159	3,164	3,173	3,182	3,190
Coniferous	1,539	1,624	1,648	1,614	1,615	1,617	1,622	1,625	1,628
Broadleaved	1,240	1,330	1,412	1,541	1,544	1,547	1,551	1,557	1,563

b. total woodland areas by country (thousand hectares):

	1990	2000	2010	2015	2016	2017	2018	2019	2020
UK	2,778	2,954	3,059	3,155	3,159	3,164	3,173	3,182	3,190
England	1,205	1,252	1,290	1,305	1,305	1,306	1,307	1,309	1,311
Wales	295	300	303	306	307	308	308	308	309
Scotland	1,204	1,320	1,378	1,432	1,435	1,438	1,445	1,451	1,458
Northern Ireland	74	83	88	112	112	112	113	113	113

Analysis and processing of national data

Estimation and forecasting

A factor of 0.5 is applied to convert biomass estimates from table 2c into carbon estimates.

Average soil carbon for Northern Ireland from 2005 source is updated using Scotland estimates from 2005 and 2012, giving revised estimate for Northern Ireland of 1,189 tonnes CO₂ per hectare.

Average CO₂ estimates are converted to estimates of average carbon content using a factor of 12/44.

Average carbon in litter figures are applied to coniferous and broadleaved woodland areas to produce estimates of total carbon content. Average soil carbon figures are applied to woodland areas for England, Waes, Scotland and Northern Ireland to produce estimates of total soil carbon content.

Reclassification into FRA 2020 categories

None.

FRA categories	Forest carbon (tonnes/ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Carbon in above-ground biomass	37.00	45.00	52.00	54.00	55.00	56.00	56.00	57.00	58.00
Carbon in below-ground biomass	13.00	16.00	19.00	20.00	20.00	20.00	20.00	21.00	21.00
Carbon in dead wood	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
Carbon in litter	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
Soil carbon	232.00	234.00	234.00	236.00	236.00	236.00	236.00	236.00	236.00

Soil depth (cm) used for soil carbon estimates	100.00
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Comments

None.

3 Forest designation and management

3a Designated management objective

National Data

Data sources + type of data source eg NFI, etc

None.

National classification and definitions

National class	Definition
Woodland	As "forest" in FRA, but with 20% canopy cover threshold (rather than 10%).

Original data

As table 1a.

Analysis and processing of national data

Estimation and forecasting

None.

Reclassification into FRA 2020 categories

None.

Primary designated management objective

FRA 2020 categories	Forest area (1000 ha)				
	1990	2000	2010	2015	2020
Production (a)					
Protection of soil and water (b)					
Conservation of biodiversity (c)					
Social Services (d)					
Multiple use (e)					
Other (specify in comments) (f)					
None/unknown (g)	2 778.00	2 954.00	3 059.00	3 155.00	3 190.00
Total forest area	2 778.00	2 954.00	3 059.00	3 155.00	3 190.00

Total area with designated management objective

FRA 2020 categories	Forest area (1000 ha)				
	1990	2000	2010	2015	2020
Production					
Protection of soil and water					
Conservation of biodiversity					
Social Services					
Other (specify in comments)					

Comments

Data on management objectives for specific areas are not currently collated. However national policies, e.g. UK ForestryStandard, require consideration and appropriate implementation of multiple objectives and in practice most forests are managed for multiple objectives.

3b Forest area within protected areas and forest area with long-term management plans

National Data

Data sources + type of data source eg NFI, etc

References to sources of information	Variables	Years	Additional comments
Forestry Commission, 2016. National Forest Inventory map 2015. UK.	Forest area	2015	
Maps of designated areas (SSSI, NNR, LNR, SPA, SAC)	Protected areas	Various	Maps produced by Natural England, Scottish Natural Heritage and Natural Resources Wales.
Northern Ireland Forest Service	Forest areas, protected areas	2013	Data from the NI Woodland Register and Basemap 2013: https://www.daera-ni.gov.uk/articles/forest-service-woodland-register
Forestry Commission, 2018. Forestry Statistics 2018 (and supporting data). UK.	Forest areas, certified areas	All	Woodland areas owned/ managed by the Forestry Commission/ Natural Resources Wales/ Northern Ireland Forest Service, and certified woodland areas.
Forestry Commission, 2018. Forestry Commission England Corporate Plan Performance Indicators 2018 (and supporting data). UK.	Forest areas with management plan	2010-2018	
Forestry Commission	Forest areas with management plan	2010-2020	Data from grants and regulation systems.

National classification and definitions

National class	Definition
Designated areas	Areas in the UK with some level of protection. This includes: <ul style="list-style-type: none">Sites of Special Scientific Interest (SSSI);National Nature Reserves (NNR);Local Nature Reserves (LNR);Special Protected Areas (SPA);Special Areas of Conservation (SAC).
Woodland	As "forest" in FRA, but with a 20% canopy cover threshold (rather than 10%).
Private sector woodland	All woodland that is not owned or managed by the Forestry Commission, Natural Resources Wales or Northern Ireland Forest Service. This will include some other public sector woodland (e.g. owned by local authorities).

Original data

For Great Britain, the forest area within legally protected areas has been estimated by overlaying the National Forest Inventory woodland map with maps of designated areas. Geological Sites of Special Scientific Interest have been excluded from this analysis, as the designation in these cases is unlikely to be related to the presence of woodland. A similar analysis was undertaken by the Northern Ireland Forest Service for the Forest Resources Assessment 2015. Together, these produced an estimated 290 thousand hectares of woodland in designated areas.

All Forestry Commission/ Natural Resources Wales, Forest Service (FC/NRW/FS) woodland from 2000 is assumed to have a long term management plan. For private sector woodland, the area of woodland with a long term management plan has been estimated from data held in administrative systems for Grants & Regulations, or for areas of certified woodland (if this is larger). This is likely to undercount the true level of woodland with a long term management plan.

thousand hectares

	2000	2010	2015	2016	2017	2018
FC/NRW/FS	889	868	871	864	863	864
Private sector	176	800	938	943	1,008	1,028

Given the differences in the nature of management plans before 2000, it is not possible to produce reliable, comparable estimates for 1990.

It is not currently possible to estimate the area of woodland with a long term management plan that is within a designated area.

Analysis and processing of national data

Estimation and forecasting

Given that the underlying maps used in the analysis have differing base dates, and that the National Forest Inventory map updates comprise both genuine change and corrections to earlier maps, it is not possible to produce accurate estimates for different time periods. Instead, it is assumed that there is little change in forest areas in legally protected areas over time, and a constant estimate has been used.

For forest areas with a long term management plan in 2019 and 2020, it is assumed that all new woodland will have a long term management plan.

Reclassification into FRA 2020 categories

None.

FRA categories	Area (1000 ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Forest area within protected areas	290.00	290.00	290.00	290.00	290.00	290.00	290.00	290.00	290.00
Forest area with long-term forest management plan		1 065.00	1 668.00	1 809.00	1 807.00	1 871.00	1 891.00	1 909.00	1 926.00
...of which in protected areas									

Comments

None.

4 Forest ownership and management rights

4a Forest ownership

National Data

Data sources + type of data source eg NFI, etc

References to sources of information	Variables	Additional comments
National Forest Inventory ownership report (in draft)	Ownership types	Great Britain only.
Table 1a	Total forest area	
Forestry Commission, 2018. Forestry Statistics 2018 (and supporting data). UK.	Forest area	Area of state forests

National classification and definitions

National class	Definition
Great Britain	England, Wales and Scotland. Excludes Northern Ireland.
Woodland	As "forest" in FRA, but with 20% canopy cover threshold rather than 10%.

Original data

As table 4a.

Analysis and processing of national data

Estimation and forecasting

Area of state forests (Forestry Commission/ Natural Resources Wales/ Northern Ireland Forest Service) is used as "public forests".

Percentage breakdowns of GB woodland area by ownership are applied to remaining UK forest areas to provide UK estimates. In the absence of full ownership data for other years, the same percentage breakdown has been applied for all years.

Reclassification into FRA 2020 categories

Data have been assigned to FRA 2020 categories as follows:

FRA category	NFI ownership category
individuals	private personal.
private business entities and institutions	private forestry or timber business, private business - companies/ partnerships/ syndicates, crown, church & education institution, charity funded by voluntary subscription, private community.
other/ unknown	mixed, other and no data.

Ownership by local, tribal and indigenous communities is assumed to be negligible.

FRA categories	Forest area (1000 ha)			
	1990	2000	2010	2015
Private ownership (a)	361.00	410.00	435.00	454.00
...of which owned by individuals	237.00	269.00	286.00	298.00
...of which owned by private business entities and institutions	124.00	141.00	149.00	156.00
...of which owned by local, tribal and indigenous communities	0.00	0.00	0.00	0.00
Public ownership (b)	963.00	889.00	868.00	871.00
Unknown/other (specify in comments) (c)	1 454.00	1 655.00	1 756.00	1 830.00
Total forest area	2 778.00	2 954.00	3 059.00	3 155.00

Comments

Public ownership in table 4a only covers Forestry Commission/ Natural Resources Wales/ Forest Service woodland. Other forms of public ownership (e.g. local authorities) are currently included with private and other ownerships.

Information for all other categories has been derived from an ownership survey that was run as part of the National Forest Inventory. Non-respondents (and respondents who did not provide information for this question) have been allocated to the unknown/ other category. This category is likely to mainly include private businesses, but could also cover local authorities and charitable organisations.

As the results from the ownership survey were not available for the 2015 submission, all non-State forests were previously allocated to private ownership.

4b Holder of management rights of public forests

National Data

Data sources + type of data source eg NFI, etc

References to sources of information	Variables	Years	Additional comments
Table 4a	Public ownership	All	

National classification and definitions

None.

Original data

As table 4a.

Analysis and processing of national data

Estimation and forecasting

It is assumed that management rights for all forests in public ownership are held by public administration.

Reclassification into FRA 2020 categories

None.

FRA categories	Forest area (1000 ha)			
	1990	2000	2010	2015
Public Administration (a)	963.00	889.00	868.00	871.00
Individuals (b)	0.00	0.00	0.00	0.00
Private business entities and institutions (c)	0.00	0.00	0.00	0.00
Local, tribal and indigenous communities (d)	0.00	0.00	0.00	0.00
Unknown/other (specify in comments) (e)	0.00	0.00	0.00	0.00
Total public ownership	963.00	889.00	868.00	871.00

Comments

None.

5 Forest disturbances

5a Disturbances

National Data

Data sources + type of data source eg NFI, etc

References to sources of information	Variables	Years	Additional comments
Forestry Commission. Administrative data on Statutory Plant Health Notices.	Diseases	2010-2017	Excludes areas of disease where a Statutory Plant Health Notice was not served, including within the Phytophthora ramorum management zone in south west Scotland, where Statutory Plant Health Notices are not issued.

National classification and definitions

National class	Definition
Diseases	Areas to be felled under Statutory Plant Health Notices

Original data

As shown in table 5a.

Analysis and processing of national data

Estimation and forecasting

None.

Reclassification into FRA 2020 categories

None.

FRA categories	Area (1000 ha)																	
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Insects (a)																		
Diseases (b)											2.00	1.00	3.00	6.00	1.00	2.00	1.00	2.00
Severe weather events (c)																		
Other (specify in comments) (d)																		
Total (a+b+c+d)	–	–	–	–	–	–	–	–	–	–	2.00	1.00	3.00	6.00	1.00	2.00	1.00	2.00
Total forest area	2 954.00	–	–	–	–	–	–	–	–	–	3 059.00	–	–	–	–	3 155.00	3 159.00	3 164.00

Comments

Since 2010/2011, Statutory Plant Health Notices have mainly been issued to attempt to slow down the spread of Phytophthora ramorum.

There are currently no annual estimates for areas affected by severe weather events. The National Forest Inventory report "Survey of the impact of the 2013 St Jude's day storm on woodland in Southern England" estimated a total of 31 thousand hectares of forest affected by the storm.

5b Area affected by fire

National Data

Data sources + type of data source eg NFI, etc

References to sources of information	Variables	Years	Additional comments
Forestry Commission. National Forest Inventory woodland map.	Area and location of woodland	2010-2016	
Home Office, Welsh Government, Scottish Government. Fire & Rescue Service Incident Recording System.	Area and locatiion of wildfires	2010-2016	

National classification and definitions

National class	Definition
Woodland	As "forest" in FRA, but with 20% canopy cover threshold (rather than 10%).

Original data

As shown in table 5b.

Analysis and processing of national data

Estimation and forecasting

None.

Reclassification into FRA 2020 categories

None.

FRA categories	Area (1000 ha)																	
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Total land area affected by fire											18.00	37.00	3.00	10.00	4.00	11.00	6.00	
...of which on forest											1.00	9.00	0.00	2.00	1.00	1.00	1.00	

Comments

Figures reported are estimated area of wildfires in Great Britain (England, Wales and Scotland) located in woodland. Figures for Northern Ireland are currently unavailable.

5c Degraded forest

Does your country monitor area of degraded forest		No
If "yes"	What is the national definition of "Degraded forest"?	
	Describe the monitoring process and results	

Comments

The term "degraded forest" is not currently defined or used within the UK.

6 Forest policy and legislation

6a Policies, Legislation and national platform for stakeholder participation in forest policy

National Data

Data sources + type of data source eg NFI, etc

References to sources of information	Variables	Additional comments
Department for Environment, Food and Rural Affairs (Defra), 2018. A Green Future: Our 25 Year Plan to Improve the Environment. UK.	Policies supporting SFM	
Department for Business, Energy and Industrial Strategy (BEIS), 2017. The Clean Growth Strategy: leading the way to a low carbon future. UK.	Policies supporting SFM	
Forestry Commission, 2006. Scottish Forestry Strategy. UK.	Policies supporting SFM	
Welsh Government, 2018. Woodlands for Wales: The Welsh Government's Strategy for Woodlands and Trees. UK.	Policies supporting SFM	
Forest Service, 2006. Northern Ireland Forestry: A strategy for sustainability and growth. UK.	Policies supporting SFM	
Forestry Commission, 2017. UK Forestry Standard (4th edition). UK.	Policies supporting SFM	
Forestry Act 1967; Forestry Act (Northern Ireland) 2010	Legislation supporting SFM	
Plant Health Act 1967	Legislation supporting SFM	
Grant scheme regulations in England, Wales, Scotland and Northern Ireland.	Regulations supporting SFM	
Timber and Trade Products (Placing on the Market) Regulations 2013; Forest Law Enforcement, Governance and Trade Regulations 2012	Traceability system for wood products	
UK Woodland Assurance Standard (UKWAS) and certification schemes	Traceability system for wood products	

National classification and definitions

"National" in this return has been assumed to refer to UK level; "sub-national" has been used to refer to policies, legislation, etc at country level within the UK (i.e. England, Wales, Scotland and Northern Ireland).

Original data

None.

Indicate the existence of	Boolean (Yes/No)	
	National	Sub-national
Policies supporting SFM	Yes	Yes
Legislations and regulations supporting SFM	Yes	Yes
Platform that promotes or allows for stakeholder participation in forest policy development	No	Yes
Traceability system(s) for wood products	Yes	No

Comments

Forestry in the UK is devolved, so most policies are at a country level within the UK (i.e. England, Wales, Scotland and Northern Ireland), underpinned by the UK Forestry Standard and legislation/ regulations. Legislation/ regulations tend to be at UK level, but are usually implemented at a country level within the UK; stakeholder participation also tends to take place at country or more local levels.

6b Area of permanent forest estate

National Data

Data sources + type of data source eg NFI, etc

References to sources of information	Variables	Years	Additional comments
Table 1a	Forest area	All	

National classification and definitions

National class	Definition
Woodland	As "forest" in FRA, but with 20% canopy cover threshold (instead of 10%).

Original data

As table 6b.

FRA 2020 categories	Forest area (1000 ha)					
	Applicable?	1990	2000	2010	2015	2020
Area of permanent forest estate	Yes	2 778.00	2 954.00	3 059.00	3 155.00	3 190.00

Comments

All woodland areas in the UK have a considerable degree of protection under the law, and in general the granting of a felling licence is conditional on restocking. Conversion of woodland to another land use requires approval under appropriate procedures (e.g. planning, restoration of open habitats, etc). It is therefore assumed that all woodland in the UK can be considered as permanent forest estate.

7 Employment, education and NWFP

7a Employment in forestry and logging

National Data

Data sources + type of data source eg NFI, etc

References to sources of information	Years	Additional comments
Eurostat. Labour Force Survey.	1992-2016	Pre-filled data provided by Eurostat for 2020 pan-European indicators of sustainable forest management.

National classification and definitions

Figures relate to headcounts, not full-time equivalents.

3 year averages are:

- 1992-1994 for 1990 estimate;
- 1999-2001 for 2000 estimate;
- 2004-2006 for 2005 estimate;
- 2009-2011 for 2010 estimate; and
- 2014-2016 for 2015 estimate.

Original data

Category	Year	Total	Male	Female
Forestry (ISIC/NACE 02)	2015	22.90	17.50	5.43
	2010	19.60	17.83	n/a
	2005	13.50	12.17	n/a
	2000	15.63	14.40	n/a
	1990	17.30	15.43	n/a

FRA 2020 categories	Full-time equivalents (1000 FTE)											
	1990			2000			2010			2015		
	Total	Female	Male	Total	Female	Male	Total	Female	Male	Total	Female	Male
Employment in forestry and logging	17.30	1.87	15.43	15.63	1.23	14.40	19.60	1.77	17.83	22.90	5.43	17.50
...of which silviculture and other forestry activities												
...of which logging												
...of which gathering of non wood forest products												
...of which support services to forestry												

Comments

Data for females have been estimated as total less males. Given the relatively low numbers involved, it is not possible to provide more detailed breakdowns.

7b Graduation of students in forest-related education

National Data

Data sources + type of data source eg NFI, etc

Data from UK Higher Education Statistics Agency student records for forestry graduates.

References to sources of information	Years	Additional comments
Higher Education Statistics Agency	2008/09 - 2015/16	Bespoke analysis of forestry graduates. Years relate to academic years.

National classification and definitions

National class	Definition
Doctorate	assumed equivalent to doctoral degree.
Masters + other postgraduate	assumed equivalent to masters degree
First degree + undergraduate degree	assumed equivalent to bachelors degree

Original data

Year	Doctorate	Masters	Other postgraduate	First Degree	Undergraduate	Total
2013/14 - 2015/16 annual average	5	49	11	75	67	207
2008/09 - 2010/11 annual average	10	55	5	69	135	274

FRA 2020 categories	Number of graduated students											
	1990			2000			2010			2015		
	Total	Female	Male	Total	Female	Male	Total	Female	Male	Total	Female	Male
Doctoral degree							10.00			5.00		
Master's degree							61.00			61.00		
Bachelor's degree							203.00			141.00		
Technician certificate / diploma												
Total												

Comments

Further breakdowns of degree data are not available.

Information on technician certificates/ diplomas is not collated centrally.

7c Non wood forest products removals and value 2015

National Data

Data sources + type of data source eg NFI, etc

References to sources of information	Variables	Additional comments
British Christmas Tree Growers Association, News release, 2017	Christmas trees	
Forestry Commission. UK data for UNECE/FAO Game Meat Survey	Venison	
UK input to FRA 2010	All other products	

National classification and definitions

None.

Original data

As table 7c.

	Name of NWFP product	Key species	Quantity	Unit	Value (1000 local currency)	NWFP category
#1	Christmas trees	Picea, Abies pinus	7	millions	280 000	6 Ornamental plants
#2	Venison	Cervus elaphus	3 588	tonnes	7 524	12 Wild meat
#3	Other game	Phasininae spp, etc				1 Food
#4	Tree seed					8 Other plant products
#5	Mushrooms	Boletus, Cantharellus, etc				1 Food
#6	Honey	Bombus spp				11 Wild honey and bee wax
#7						
#8						
#9						
#10						
All other plant products						
All other animal products						
Total					287 524	

Name of currency	GBP
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Comments

No comprehensive data available for non-wood products.

8 Sustainable Development Goal 15

8a Sustainable Development Goal 15

SDG Indicator 15.1.1 Forest area as proportion of total land area 2015

Indicator	Percent							
	2000	2010	2015	2016	2017	2018	2019	2020
Forest area as proportion of total land area 2015	12.21	12.64	13.04	13.06	13.08	13.12	13.15	13.19

Name of agency responsible	Forestry Commission
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SDG Indicator 15.2.1 Progress towards sustainable forest management

Sub-Indicator 1	Percent						
	2000-2010	2010-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
Forest area annual net change rate	0.35	0.62	0.13	0.16	0.28	0.28	0.25

Name of agency responsible	Forestry Commission
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Sub-Indicator 2	Forest biomass (tonnes/ha)							
	2000	2010	2015	2016	2017	2018	2019	2020
Above-ground biomass stock in forest	89.00	104.00	109.00	110.00	112.00	113.00	114.00	115.00

Name of agency responsible	Forestry Commission
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Sub-Indicator 3	Percent (2015 forest area baseline)							
	2000	2010	2015	2016	2017	2018	2019	2020
Proportion of forest area located within legally established protected areas	9.19	9.19	9.19	9.19	9.19	9.19	9.19	9.19

Name of agency responsible	Forestry Commission
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Sub-Indicator 4	Percent (2015 forest area baseline)							
	2000	2010	2015	2016	2017	2018	2019	2020
Proportion of forest area under long-term forest management plan	33.76	52.87	57.34	57.27	59.30	59.94	60.51	61.05

Name of agency responsible	Forestry Commission
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Sub-Indicator 5	Forest area (1000 ha)							
	2000	2010	2015	2016	2017	2018	2019	2020
Forest area under independently verified forest management certification schemes	2 760.64	1 587.48	1 609.41	1 599.81	1 610.43	1 603.88	–	–