

Provisional Woodland Statistics

2019 Edition

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National Statistics status

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

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

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

- Adding charts, to illustrate how the statistics have changed over time.
- Expanding the release to include Woodland Carbon Code Statistics and renaming the release to better reflect its content.
- Expanding the Annex to provide more detailed information on the data used in the release.



Introduction

This release contains provisional statistics for the year to March 2019 on:

- UK woodland area;
- certified woodland area;
- areas of new planting and publicly funded restocking; and
- projects registered under the Woodland Carbon Code¹.

These statistics were previously released in 2 separate releases:

- Woodland Area, Planting and Publicly Funded Restocking; and
- Woodland Carbon Code Statistics (previously released on a quarterly basis).

These provisional statistics will be superseded on 26 September 2019 with the publication of final and more detailed results in *Forestry Statistics 2019*.

Estimates for England, Wales, Scotland and Northern Ireland are included in addition to UK totals. Figures at March 2019 and for the period 2018-19 are published for the first time in this release. Some figures for earlier years have been revised from those previously released. For further details, see the Revisions section of the Annex.

Please refer to the Annex for a glossary of terms used in this release.

In Scotland, forestry was fully devolved to Scottish Ministers on 1 April 2019. Two new agencies of the Scottish Government were created: Scottish Forestry to support the delivery of the Scottish Government's priorities for Scotland's forests through guidance, advice, incentives and regulations, and by advising ministers on forest policy; and Forestry and Land Scotland to manage national forests and land on behalf of Scottish Ministers.

¹ The Woodland Carbon Code is a voluntary standard, initiated in July 2011, for woodland creation projects that make claims about the carbon they sequester (take out of the atmosphere).

Key findings

- The area of woodland in the UK at 31 March 2019 is estimated to be 3.19 million hectares. This represents 13% of the total land area in the UK, 10% in England, 15% in Wales, 19% in Scotland and 8% in Northern Ireland.
- Of the total UK woodland area, 0.86 million hectares is owned or managed by the Forestry Commission² (in England), Forestry and Land Scotland, Natural Resources Wales or the Forest Service (in Northern Ireland).
- The total certified woodland area in the UK at 31 March 2019 is 1.40 million hectares, including all Forestry Commission/Forestry and Land Scotland/Natural Resources Wales/Forest Service woodland. Overall, 44% of the UK woodland area is certified.
- Thirteen thousand hectares of newly created woodland were reported in the UK in 2018-19.
- Fifteen thousand hectares of publicly-funded woodland restocking were reported in the UK in 2018-19.
- Woodland Carbon Code projects in the UK that were validated (including those that were also verified) were predicted to sequester a total of 3.4 million tonnes of carbon dioxide over their lifetime of up to 100 years³. This represents 2.5 million tonnes in Scotland, 838 thousand tonnes in England, 118 thousand tonnes in Wales and 11 thousand tonnes in Northern Ireland

² From 1 April 2019, the Forestry Commission's responsibilities for management of forests transferred to Forestry England and to Forestry and Land Scotland.

³ Figures for carbon sequestration indicate the total projected sequestration of the projects over their lifetime of up to 100 years and include the amount claimable by a project plus the amount allocated to a shared "buffer" in case of unanticipated losses.

Area of woodland

Woodland is defined in UK forestry statistics as land under stands of trees with a minimum area of 0.5 hectares and a canopy cover of at least 20% (25% in Northern Ireland), or having the potential to achieve this. The definition relates to land use, rather than land cover, so integral open space and felled areas that are awaiting restocking are included as woodland. Further information, including how this UK definition compares with the international definition of woodland, is provided in the Annex.

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

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

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

Most public sector woodland is owned and managed by the Forestry Commission⁴ (FC) in England, Forestry and Land Scotland, Natural Resources Wales (NRW) in Wales and the Forest Service (FS) in Northern Ireland. Other public sector woodland (e.g. owned by local authorities) is included with privately owned woodland as “private sector” in this release.

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

⁴ From 1 April 2019, the Forestry Commission’s responsibilities for management of forests transferred to Forestry England and to Forestry and Land Scotland.

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The area of woodland in the UK at 31 March 2019 is estimated to be 3.19 million hectares (Table 1). This represents 13% of the total land area in the UK, 10% in England, 15% in Wales, 19% in Scotland and 8% in Northern Ireland.

0.86 million hectares of woodland in the UK (27%) is owned or managed by the Forestry Commission (in England), Forestry and Land Scotland, Natural Resources Wales or the Forest Service (in Northern Ireland).

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

Table 1: Area of woodland, 2019

	thousands of hectares				
	England	Wales	Scotland	Northern Ireland	UK
FC/FLS/NRW/FS¹					
Conifers	151	98	428	56	732
Broadleaves	64	19	41	7	131
Total	215	117	469	62	863
Private sector²					
Conifers	189	54	645	11	899
Broadleaves	904	138	343	40	1,426
Total	1,093	192	988	51	2,325
Total Woodland					
Conifers	340	152	1,072	67	1,631
Broadleaves	968	158	385	46	1,557
Total	1,308	309	1,457	113	3,187

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

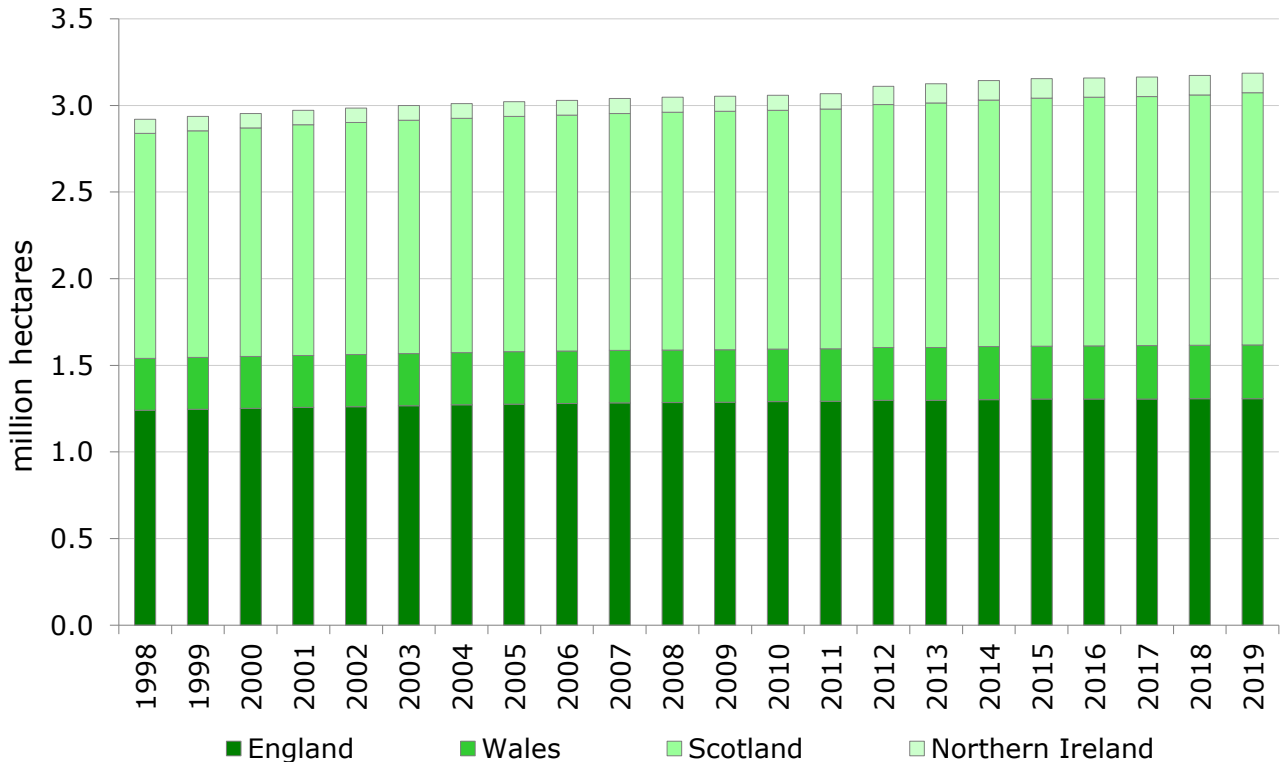
Note:

1. FC: Forestry Commission (England), FLS (Forestry and Land Scotland), NRW: Natural Resources Wales, FS: Forest Service (Northern Ireland). NRW estimates only relate to woodland formerly owned/managed by FC Wales.
2. Private sector: all other woodland. Includes woodland previously owned/managed by the Countryside Council for Wales and the Environment Agency in Wales, other publicly owned woodland (e.g. owned by local authorities) and privately-owned woodland.
3. Areas as at 31 March 2019. Figures are provisional.
4. Figures for England, Wales and Scotland are based on data obtained from the National Forest Inventory and adjusted for new planting, but at present no adjustment is made for woodland recently converted to another land use. Further information on how the figures have been estimated is available in the Annex.
5. Figures for Northern Ireland are obtained from the Northern Ireland Woodland Register.
6. Broadleaves include coppice and coppice with standards.

Provisional Woodland Statistics

Figure 1 shows woodland area by country since 1998. Woodland area has risen by around 270 thousand hectares since 1998, an increase of 9% over the period.

Figure 1: Area of woodland, 1998 to 2019



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

Note:

1. Woodland areas for England, Wales and Scotland shown in this figure are based on data from the National Forest Inventory. The trends shown take account of areas of new planting and identifiable permanent woodland loss. Areas of woodland loss that are not yet identifiable (e.g. conversion of woodland for the restoration of open habitats) are not accounted for. Further information on the National Forest Inventory is available at www.forestryresearch.gov.uk/tools-and-resources/national-forest-inventory/.

Area of certified woodland

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

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

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

Table 2 shows the area of certified woodland. The total area of certified woodland in the UK at 31 March 2019 is 1.40 million hectares. This represents 44% of the total UK woodland area, 25% of the woodland area in England, 47% in Wales, 59% in Scotland and 58% in Northern Ireland.

Table 2: Area of certified woodland, 2019

	thousands of hectares				
	England	Wales	Scotland	Northern Ireland	UK
FC/FLS/NRW/FS ¹	215	117	469	62	863
Private sector ²	110	29	395	3	538
Total	325	146	864	66	1,400
% of woodland area	25%	47%	59%	58%	44%

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

Note:

1. FC: Forestry Commission (England), FLS (Forestry and Land Scotland), NRW: Natural Resources Wales, FS: Forest Service (Northern Ireland). NRW estimates only relate to woodland formerly owned/managed by FC Wales.
2. Private sector: all other woodland. Includes woodland previously owned/managed by the Countryside Council for Wales and the Environment Agency in Wales, other publicly owned woodland (e.g. owned by local authorities) and privately owned woodland.
3. Areas as at 31 March 2019.
4. All certified woodland in 2019 is certified under the Forest Stewardship Council (FSC) scheme. Some of these woodlands are also certified under the Programme for the Endorsement of Forest Certification (PEFC) scheme.
5. 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.
6. All Forestry Commission/Forestry and Land Scotland/Natural Resources Wales (formerly owned/managed by FC Wales)/Forest Service woodland is certified. The Forestry Commission/Forestry and Land Scotland/Natural Resources Wales/Forest Service areas are the latest areas, as shown in Table 1, rather than the areas shown on certificates.

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Figure 2 presents certified woodland area by country since December 2001, with figures for earlier years revised for consistency with results from the National Forest Inventory. This shows an increase in certified woodland area of around 340 thousand hectares (32%) since December 2001.

The 1.40 million hectares of certified woodland at March 2019 represents a 2% increase on the previous year. Most of this increase occurred in Scotland.

Figure 2: Area of certified woodland, 2001 to 2019



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

Note:

1. All certified woodland is certified under the Forest Stewardship Council (FSC) scheme. Some of these woodlands are also certified under the Programme for the Endorsement of Forest Certification (PEFC) scheme.
2. The estimates are based on UK data published by FSC, supplemented by data from individual certificates and other sources. Where possible, figures are for the woodland area certified, rather than the land area certified.

New Planting

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

Table 3 shows the area of new woodland that was created in the year to 31 March 2019. The total area of new planting in the UK in 2018-19 was 13.4 thousand hectares. Conifers accounted for 60% of the total area of new planting. Most new planting (92%) took place on private sector land. 84% of the total new planting area took place in Scotland, 11% in England, 4% in Wales and the remaining 2% in Northern Ireland.

Table 3: Area of new planting, 2018-19

	thousands of hectares				
	England	Wales	Scotland	Northern Ireland	UK
New planting by forest type					
Conifers	0.42	0.25	7.27	0.10	8.05
Broadleaves	1.00	0.27	3.94	0.14	5.35
All new planting	1.42	0.52	11.21	0.24	13.40
New planting by ownership					
FC/FLS/NRW/FS ¹	0.03	0.00	1.03	0.00	1.06
Private sector ²	1.39	0.52	10.19	0.24	12.34
All new planting	1.42	0.52	11.21	0.24	13.40

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

Note:

1. FC: Forestry Commission (England), FLS: Forestry and Land Scotland, NRW: Natural Resources Wales, FS: Forest Service (Northern Ireland).
2. Private sector: all other woodland. Includes other publicly owned woodland (e.g. owned by local authorities) and privately owned woodland.
3. Figures for grant-aided planting relate to areas for which grants were paid during the year.
4. Estimates for areas planted without grant aid are believed to be under-reported and, as a result, the reported figures are likely to under-estimate the true level of planting activity. For England, woodland planting funded by sources other than the Countryside Stewardship Woodland Creation Grant include planting supported by the Woodland Trust, by the Environment Agency, by Natural England and land acquired by the National Forest Company. For Scotland, a small amount of new planting without grant aid was included.
5. The planting season lies both sides of 31 March, and the weather can cause planting to be advanced or delayed.
6. Includes woodland formed by natural colonisation (where known).
7. Figures are provisional.

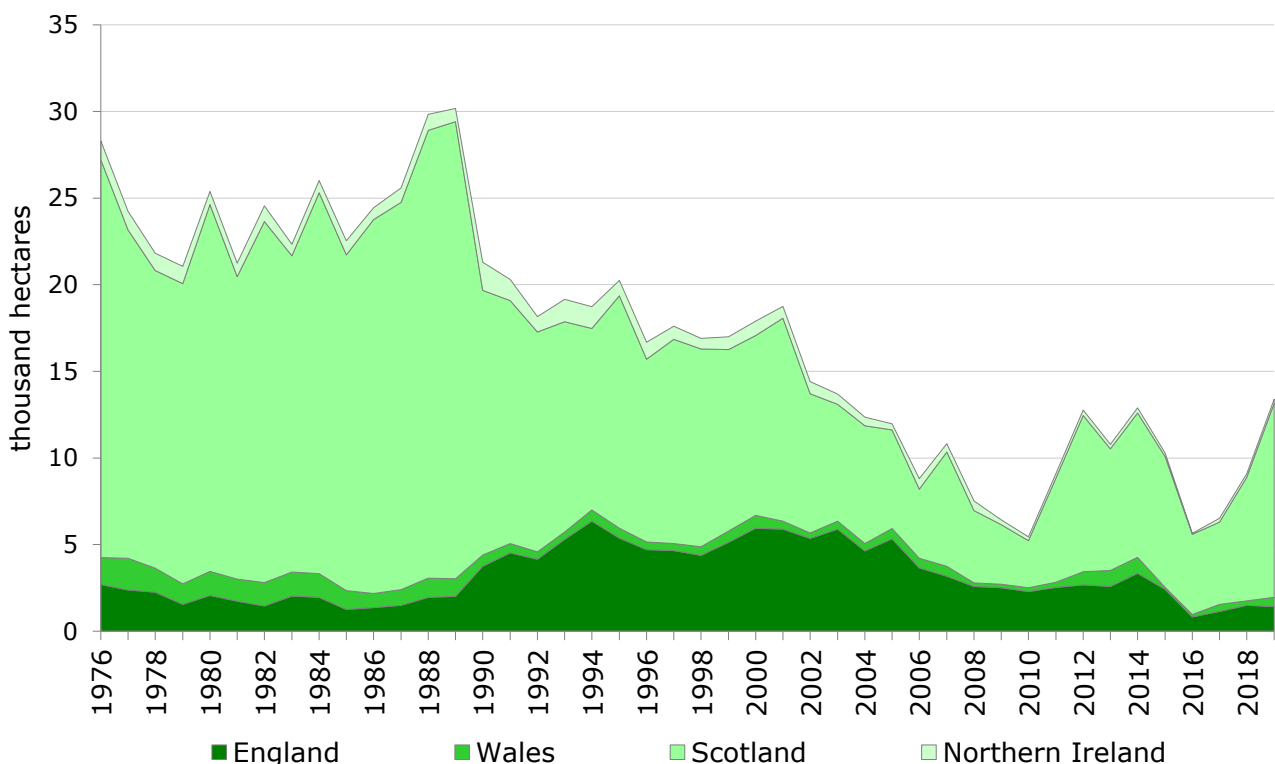
Figure 3 shows areas of new planting by country since the year ending March 1976. Trends in new planting rates have been influenced by changes to the incentives available to land owners (in the form of grants and regulations).

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

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

Figure 3: Area of new planting, 1976 to 2019



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

Note:

1. Private sector figures are based on grant-supported new planting and (where possible) with estimates for areas planted without grant aid.
2. Figures for grant-aided planting relate to areas for which grants were paid during the year.
3. Estimates for areas planted without grant aid are believed to be under-reported and, as a result, the reported figures are likely to under-estimate the true level of planting activity. For England, woodland planting funded by sources other than the Countryside Stewardship Woodland Creation Grant include planting supported by the Woodland Trust, by the Environment Agency, by Natural England and land acquired by the National Forest Company. For Scotland, a small amount of new planting without grant aid was included for 2016-17 and 2018-19.
4. The planting season lies both sides of 31 March, and the weather can cause planting to be advanced or delayed.
5. Includes woodland formed by natural colonisation (where known).
6. Figures are provisional.

Publicly funded restocking

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

As restocking takes place on woodland that has been previously harvested and it is a condition of most felling licences that the area is restocked, restocking rates are mainly driven by harvesting levels (with a time lag, often of around 2 years, between harvesting and restocking).

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

This release only covers publicly funded restocking, that is:

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

Grant support for restocking in Scotland has been limited since 2008. The Forestry Grant Scheme was launched in Scotland in March 2015 and does include support for restocking in most but not all circumstances. As a result, granted aided restocking does not represent all private sector restocking in Scotland. It is therefore likely that conifer restocking in Scotland in recent years is under-reported in this release and other statistics.

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

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Table 4 shows the reported area of publicly funded restocking that took place in the year to 31 March 2019. As private sector figures are based on areas receiving grants for restocking, and restocking is not supported (or only supported in limited circumstances) by some grant schemes, these figures under-estimate the true level of restocking in the UK.

In 2018-19, a total 15.1 thousand hectares of restocking was publicly funded. Conifers accounted for around four fifths (79%) of the total area of restocking. Most reported restocking (71%) took place on FC/NRW/FS land.

Around three quarters of all publicly funded restocking (74%) took place in Scotland, 11% in England, 10% in Wales and the remaining 5% in Northern Ireland.

Table 4: Area of publicly funded restocking, 2018-19

	thousands of hectares				
	England	Wales	Scotland	Northern Ireland	UK
Restocking by forest type					
Conifers	1.26	0.90	9.12	0.72	12.00
Broadleaves	0.39	0.54	2.07	0.11	3.11
All restocking	1.65	1.44	11.19	0.83	15.12
Restocking by ownership					
FC/FLS/NRW/FS ¹	1.57	1.22	7.15	0.79	10.72
Private sector ²	0.08	0.23	4.05	0.04	4.40
All restocking	1.65	1.44	11.19	0.83	15.12

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

Note:

1. FC: Forestry Commission (England), FLS: Forestry and Land Scotland, NRW: Natural Resources Wales, FS: Forest Service (Northern Ireland).
2. Private sector: all other woodland. Includes other publicly owned woodland (e.g. owned by local authorities) and privately-owned woodland.
3. Private sector figures are based on areas for which grants were paid during the year. No estimate of areas planted without grant aid was included.
4. The planting season lies both sides of 31 March, and the weather can cause planting to be advanced or delayed.
5. Includes woodland restocked by natural regeneration.
6. Restocking by natural regeneration in non-clearfell areas may be under-represented in the above table.
7. Figures are provisional.

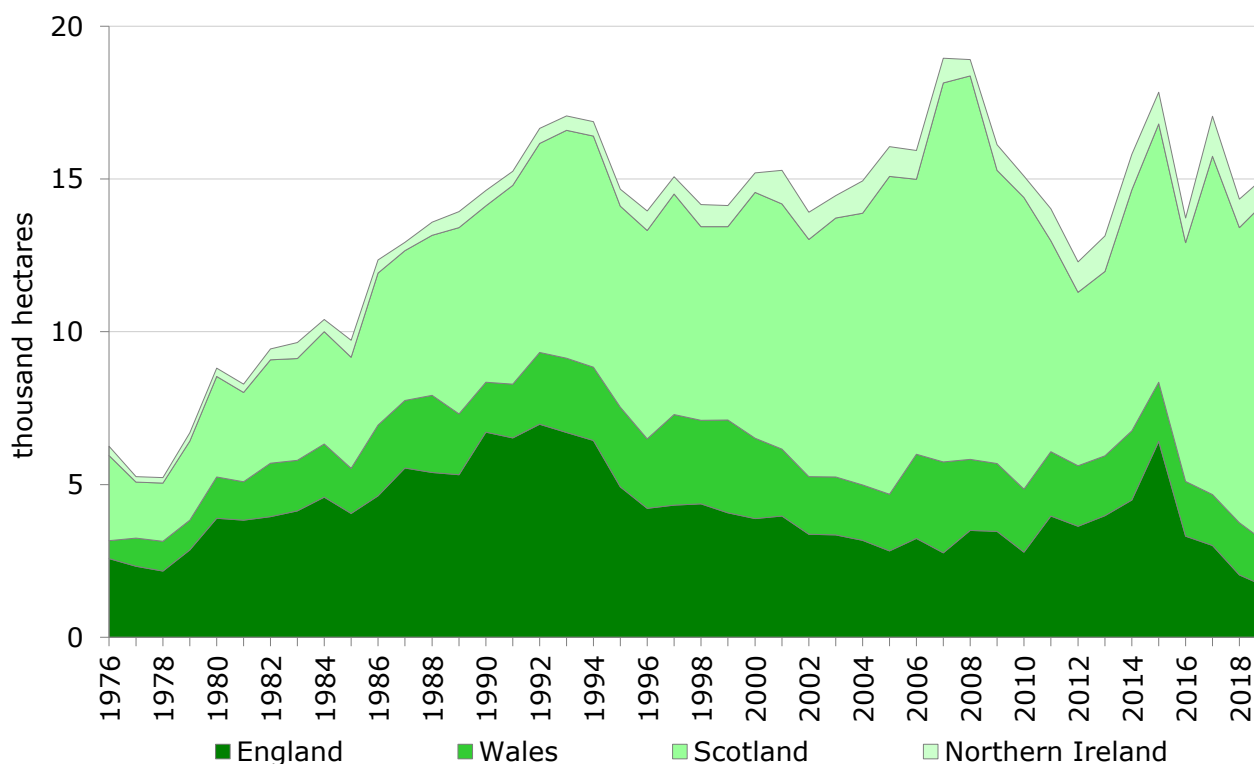
Figure 4 shows reported areas of restocking by country since the year ending March 1976. It indicates an overall increase in restocking rates during the period. Over the same period, there has been a general increase in UK wood production (see www.forestresearch.gov.uk/tools-and-resources/statistics/statistics-by-topic/timber-statistics/uk-wood-production-and-trade-provisional-figures/).

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

The chart shows a dip in the area of restocking in 2015-16, following changes to grant schemes across the UK. Reported restocking has continued to fall in England, where grant aid is now only available in very limited circumstances. The reported area of publicly funded restocking in the UK in 2018-19 represents a 5% increase from the previous year, but remains below the level reported for 2016-17. For further information, see the Data Sources and Methodology section of the Annex.

Figure 4: Area of restocking, 1976 to 2019



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

Note:

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

Woodland Carbon Code

A total of 187 projects across the UK were validated at 31 March 2019 and are projected to sequester 3.4 million tonnes of carbon dioxide over their lifetime of up to 100 years (Table 5). This represents 2.5 million tonnes of carbon dioxide in Scotland, 838 thousand tonnes of carbon dioxide in England, 118 thousand tonnes in Wales and 11 thousand tonnes in Northern Ireland.

A total of 266 projects were registered under the Woodland Carbon Code by the end of March 2019, covering around 17,400 hectares of woodland and projected to sequester 6.2 million tonnes of carbon dioxide over their lifetime.

Table 5: Woodland Carbon Code projects in the UK at 31 March 2019

	England	Wales	Scotland	Northern Ireland	UK
Number of projects¹					
Awaiting validation	18	33	28	0	79
Validated only	51	9	55	2	117
Verified	27	3	40	0	70
Total validated	78	12	95	2	187
All projects	96	45	123	2	266
Area of woodland (hectares)					
Awaiting validation	313	300	8,520	0	9,134
Validated only	1,207	128	4,498	22	5,856
Verified	286	52	2,066	0	2,404
Total validated	1,494	180	6,564	22	8,261
All projects	1,807	480	15,085	22	17,394
Projected carbon sequestration² (thousand tonnes of carbon dioxide equivalent)					
Awaiting validation	153	106	2,501	0	2,760
Validated only	672	85	1,563	11	2,331
Verified	165	33	895	0	1,093
Total validated	838	118	2,458	11	3,424
All projects	991	224	4,959	11	6,184

Source: Forestry Commission.

Note:

1. Projects can be validated/verified individually or as part of a group. The statistics presented here show the number of projects validated or verified whether they were administered individually or as part of a group.
2. Figures for carbon sequestration indicate the total projected sequestration of the projects over their lifetime of up to 100 years and include the amount claimable by a project plus the amount allocated to a shared "buffer" in case of unanticipated losses.
3. **Awaiting validation:** is when a project or group is undergoing assessment by a certification body.
4. **Validated:** is the initial evaluation of a project or group against the requirements of the Woodland Carbon Code. Upon completion a project/group will receive a 'Validation Opinion Statement'. The project/group will then be certified for a period of up to 5 years.
5. **Verified:** Verification is the evaluation of a project as it progresses to confirm the amount of CO₂ sequestered to date as well as that it continues to meet the requirements of the Code.

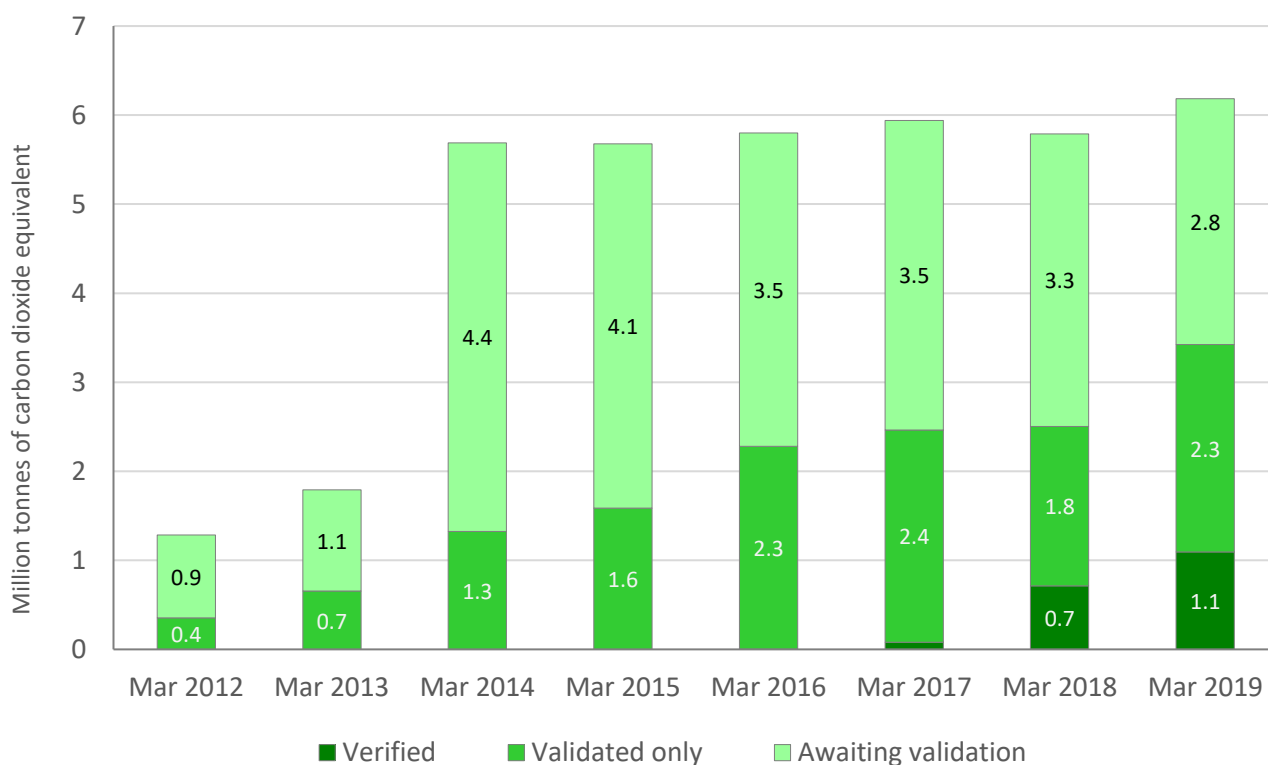
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Figure 5 shows projected carbon sequestration for all projects in the UK since March 2012. The data presented here represent net changes in projects (i.e. additions less deletions). Projects can be removed from the register if they do not meet the Code's standards, planned woodland creation projects do not go ahead, or the landowner no longer wishes to claim the carbon benefit of the project.

There has been a 37% increase in projected carbon sequestration for validated projects (including those verified) in the latest year, from March 2018 to March 2019.

Total projected carbon sequestration for all projects registered (including those awaiting validation) also increased by 7% in the year to March 2019 following a 3% decrease recorded between March 2017 and March 2018.

Figure 5: Projected carbon sequestration by Woodland Carbon Code projects in the UK¹



Source: Forestry Commission.

Note:

1. Figures for carbon sequestration indicate the total projected sequestration of the projects over their lifetime of up to 100 years and include the amount claimable by a project plus the amount allocated to a shared "buffer" in case of unanticipated losses.
2. **Awaiting validation:** is when a project or group is undergoing assessment by a certification body.
3. **Validated:** is the initial evaluation of a project or group against the requirements of the Woodland Carbon Code. Upon completion a project/group will receive a 'Validation Opinion Statement'. The project/group will then be certified for a period of up to 5 years.
4. **Verified:** Verification is the evaluation of a project as it progresses to confirm the amount of CO₂ sequestered to date as well as that it continues to meet the requirements of the Code.
5. Additional data, including quarterly estimates to March 2018, are available in the accompanying data tables.

Annex

Introduction

This annex provides background information on the woodland area, planting, publicly funded restocking and woodland carbon code statistics presented in this release. It covers the data sources and methodology used to produce the statistics, information on quality measures and on any revisions to historic data and links to further information.

Glossary

Awaiting validation When a Woodland Carbon Code project or group is undergoing assessment by a certification body.

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

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

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

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

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.

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

Forest Service (FS) The agency of the Northern Ireland Department of Agriculture, Environment and Rural Affairs responsible for forestry matters in Northern Ireland.

Forestry and Land Scotland (FLS) The Scottish Government agency responsible for managing the national forests and lands in Scotland. Prior to April 2019 it was managed by the Forestry Commission.

Forestry Commission (FC) The government department responsible for forestry matters in England, Scotland (until March 2019) and Wales (until March 2013). The

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Forestry Commission's functions in Wales transferred to the Welsh Government and to Natural Resources Wales on 1 April 2013. The Forestry Commission's functions in Scotland transferred to Scottish Forestry and to Forestry and Land Scotland on 1 April 2019.

FSC Forest Stewardship Council.

Great Britain (GB) England, Wales and Scotland.

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

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

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

Natural Resources Wales (NRW) The organisation responsible for advising the Welsh Government on the environment, created on 1 April 2013.

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

NFI National Forest Inventory.

NIWT 1995-99 National Inventory of Woodland and Trees.

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

Scottish Forestry The Scottish Government agency responsible for forestry policy, support and regulations, created on 1 April 2019. Scottish Forestry also has responsibility for managing the UK Woodland Carbon Code on behalf of the Forestry Commission in England, the Welsh Government and the Northern Ireland Forest Service. Prior to April 2019 it was managed by the Forestry Commission.

Tonne of carbon dioxide equivalent (tCO₂e) Emissions and sequestration can be presented as tonnes carbon or tonnes carbon dioxide (CO₂) equivalent. To convert from tonnes CO₂ to tonnes carbon multiply by 12/44.

United Kingdom (UK) Great Britain and Northern Ireland.

Validated The initial evaluation of a Woodland Carbon Code project or group against the requirements of the Woodland Carbon Code. Upon completion a project/group will receive a 'Validation Opinion Statement'. The project/group will then be certified for a period of up to 5 years.

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

Woodland Land under stands of trees with a minimum size of 0.5 hectares and 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.

Data sources and methodology

Area of woodland

The woodland areas in Great Britain at March 2018 provided in this release (see Figure 1) are based on the *NFI provisional woodland area map of Great Britain at March 2018*. The map is overlaid with a map of Forestry Commission land (including land formerly owned/managed by Forestry Commission Wales), to enable a breakdown by ownership type to be estimated, and the figures derived from these maps are then updated to March 2019 by adding areas of new planting in 2018-19. Initial estimates of conifer stocked area and broadleaved stocked area at March 2012, derived from NFI interim field survey results, were used to estimate the breakdown by type of woodland. More information can be found on the Methodology and Outputs web page at www.forestresearch.gov.uk/tools-and-resources/statistics/about-our-statistics/methodology-and-outputs/.

The provisional 2018 woodland map differs by around 14 thousand hectares (<1%) from the figures for woodland area provided in the NFI report on *Tree cover outside woodland in Great Britain*, that were based on the NFI 2013 map and the National Tree Map™ (NTM™), the latter in combination with samples of visual aerial photograph interpretation and field sampling outside of areas on the NFI map. The estimates in the tree cover report are higher because they include estimates of woodland area outside the NFI map derived from the other sources. It is intended to publish revised woodland area estimates that will bring these two figures into line by reporting an updated, calibrated NFI woodland area that incorporates these additional areas and uses analysis of the main NFI fieldwork survey to exclude currently mapped areas that are not woodland. Further information on the methodology used by the National Forest Inventory and comparisons of results from the NFI and previous woodland area estimates is available at www.forestresearch.gov.uk/tools-and-resources/national-forest-inventory/.

In the time series presented in Figure 1, woodland area estimates for years before 2011 have been revised for consistency with results from the National Forest Inventory, to enable comparisons over time.

The figures shown for Natural Resources Wales in this release only relate to woodland that was previously owned/managed by Forestry Commission Wales, and do not currently include estimates for other Natural Resources Wales woodland (previously

owned/managed by the Countryside Council for Wales or the Environment Agency in Wales).

Figures for Northern Ireland (Forest Service and non-Forest Service woodland) are provided by the Northern Ireland Forest Service. County breakdowns are available from the Forest Service Woodland Register at www.daera-ni.gov.uk/articles/forest-service-woodland-register.

Certified area

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

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

As all Forestry Commission/Forestry and Land Scotland/Natural Resources Wales (formerly owned/managed by FC Wales)/Forest Service woodland is certified, the areas used are those provided in Table 1, rather than the areas shown on the certificates.

New planting and restocking

New planting is the creation of new areas of woodland. Restocking is the replanting of existing 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, Forestry and Land Scotland, Natural Resources Wales and Forest Service new planting and restocking comes from administrative systems. For new planting and restocking by Forestry and Land Scotland (previously Forest Enterprise Scotland) and by Natural Resources Wales, the figures obtained relate to net areas (i.e. excluding integral open space). These are converted to estimates of gross areas (i.e. including integral open space) for consistency with other planting and woodland area data, by using an assumption of 15% open space.

Information about other woodland has come principally from grant schemes, including Countryside Stewardship in England, the English Woodland Grant Scheme (EWGS), Glastir in Wales, Better Woodlands for Wales (BWW), Forestry Grant Scheme in Scotland, Rural Development Contracts in Scotland, Scottish Forestry Grant Scheme (SFGS) and Woodland Grant Scheme (WGS).

Areas receiving grant are allocated to years by date of payment. For natural colonisation and regeneration, the areas are generally those for which the second instalment of grant has been paid during the year. The second instalment is approved when woodland

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reaches a certain stage and density of growth, so this information corresponds approximately to the amount of new and restocked woodland created.

The coverage and level of grant support differ across schemes, so that figures on grant-aided planting are not directly comparable between countries or over time. Grant support for restocking of conifers changed with the introduction of Rural Development Contracts in Scotland in 2008 and again with the introduction of the Forestry Grant Scheme in 2015. This will have led to a reduction in the proportion of private sector restocking that is grant aided and therefore reported for Scotland.

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

Areas of land acquired by the National Forest Company for new planting have been included from 2015-16. To avoid potential double counting, areas of new planting by the National Forest Company that are believed to be supported by grant aid or by the Woodland Trust (and have therefore already been included in the figures reported for these other sources) have been excluded.

Local estimates for private sector areas of planting and restocking which are not grant-aided were included for England, Wales and Scotland up to 2009-10, where possible. Estimates of non-grant-aided planting and restocking were relatively small (less than one thousand hectares annually), and it has been assumed that all of this area is broadleaves. A small estimate for broadleaved new planting without grant aid in Scotland in 2016-17 and in 2018-19 was also included. No estimates have been included for restocking with Sitka spruce in Scotland, or for restocking in England, that are no longer supported by grants. It is assumed that there is no non-FS non-grant aided new planting and restocking in Northern Ireland.

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

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

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

The methodology and outputs relevant to UK woodland area, planting and restocking were reviewed in 2014. The review report is available at www.forestresearch.gov.uk/documents/4425/mrwapr.pdf.

Woodland Carbon Code data

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

Further information on administrative sources can be found at:

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

Quality

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

Detailed information on the quality of the statistics presented in this publication is available in the *Quality Report: Woodland Area, Planting and Restocking* at: www.forestresearch.gov.uk/documents/3182/qrwapr.pdf

Further quality information on FC Official Statistics is available at:

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

Revisions

Figures at March 2019 and for 2018-19 are provisional and published for the first time in this release.

Woodland area figures at March 2017 and at March 2018 have been revised from those provided in Forestry Statistics 2018 to take account of updates to the NFI woodland area map. This resulted in very small revisions to the woodland area estimates in England, Wales and Scotland (<0.3%) for each of these years. Revised woodland areas at March 2017 (obtained from the NFI final revised woodland area map of Great Britain at March 2017) and at March 2018 (obtained from the NFI provisional woodland area map of Great Britain at March 2018), are provided in the Excel tables accompanying this release.

Other figures have not been revised from those previously published in Forestry Statistics 2018 and in Woodland Carbon Code Statistics: data to March 2018.

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

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

Further information

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

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

Additional woodland area statistics are available in *Forestry Statistics 2018* (published September 2018) and *Forestry Facts & Figures 2018* (published September 2018), and can be found at www.forestresearch.gov.uk/tools-and-resources/statistics/forestry-statistics/.

Figures in tables have been independently rounded, so may not add to the totals shown.

Figures for woodland area in the UK are provided to international organisations; the Food and Agriculture Organisation of the United Nations (FAO) for the 5-yearly *Global Forest Resources Assessment* (www.fao.org/forestry/fra/en), and Forest Europe for the 4-yearly *State of Europe's Forests* (www.foresteuropa.org/reporting_SFM). The *Global Forest Resources Assessment 2015* was released in September 2015 and *State of Europe's Forests 2015* was released in October 2015. Both publications used UK data submitted in 2014.

Figures for woodland area and new planting are also used to compile the UK's Greenhouse Gas Inventory for the Land Use, Land Use Change and Forestry (LULUCF) sector, submitted to the United Nations Framework Convention on Climate Change (UNFCCC, unfccc.int/national_reports/annex_i_ghg_inventories/national_inventories_submissions/it_ems/8108.php). Statistics on UK greenhouse gas emissions are published by the Department of Business, Energy and Industrial Strategy (BEIS) at www.gov.uk/government/collections/uk-greenhouse-gas-emissions-statistics.

The international definition of forests differs slightly from the UK definition of woodland in terms of the minimum canopy cover threshold. For the UK, there is a requirement for canopy cover of at least 20%, whilst the international definition specifies a minimum of 10% canopy cover.

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Supplementary data are available in the accompanying spreadsheet at:

www.forestresearch.gov.uk/tools-and-resources/statistics/statistics-by-topic/woodland-statistics/.

Further information on the Woodland Carbon Code is available at:

www.woodlandcarboncode.org.uk/.

More statistics on UK forests and climate change can be found in *Forestry Statistics*

2018: www.forestresearch.gov.uk/tools-and-resources/statistics/forestry-statistics/.

Release schedule

Final results for (the year to) March 2019 will be published on 26 September 2019 in *Forestry Statistics 2019* and *Forestry Facts & Figures 2019*.

Provisional figures for (the year to) March 2020 will be published on 11 June 2020 in the 2020 Edition of this release.