

# 50-year forecast of softwood timber availability (2026)

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## Summary

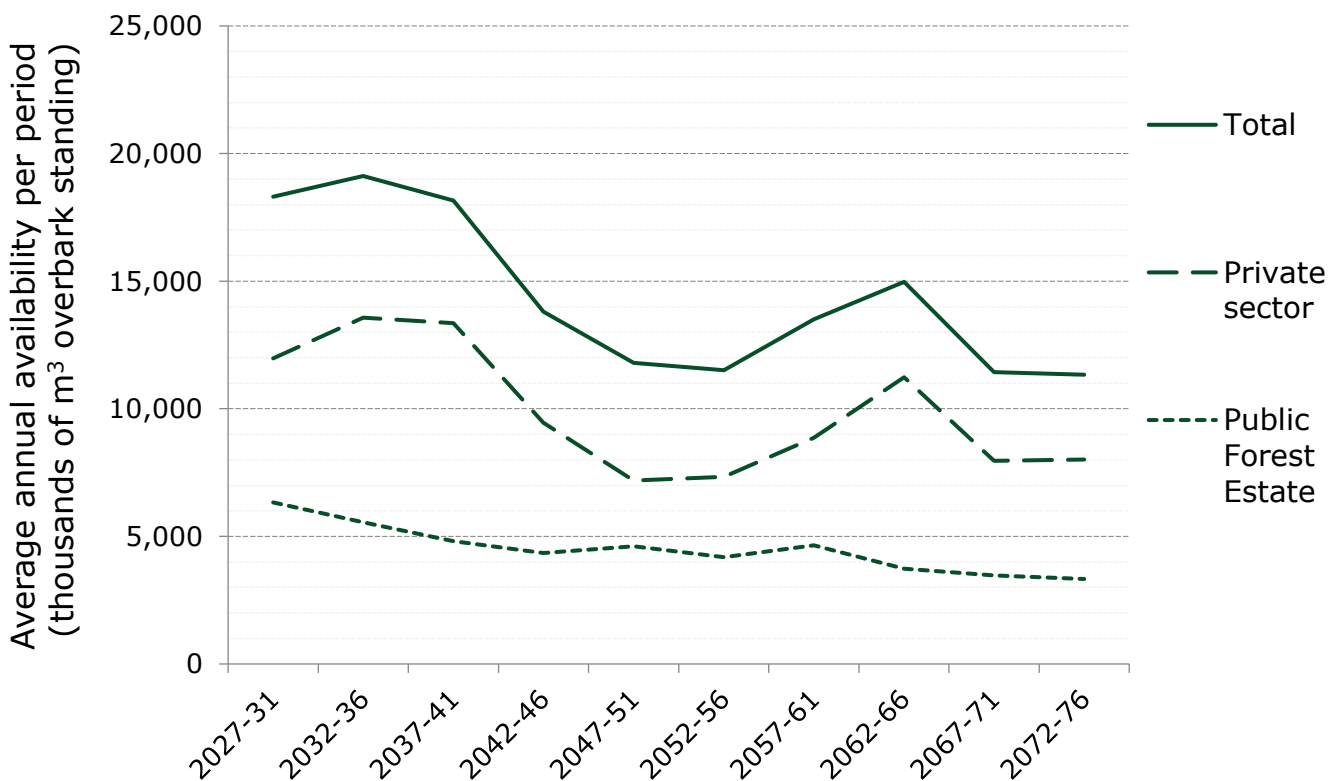
This report provides a 50-year forecast of softwood timber volume that could potentially be produced from conifers growing in forests and woodlands in Great Britain, assuming certain timber harvesting scenarios are followed. It is not an estimate of what will actually come to market.

The report includes estimates for potential timber production on land managed by Forestry England (FE), Forestry and Land Scotland (FLS), and Natural Resources Wales (NRW), and land under private ownership. In this report FE/FLS/NRW is referred to as 'Public Forest Estate' (PFE). The published intention of the three state forestry organisations is to manage production to ensure a long-term sustainable harvest, in balance with long-term increment; this means that the volume of timber offered to market may differ from the forecast. All other woodland is referred to as 'private sector' (PS). The reporting period runs from 2027 to 2076.

The forecast is produced by bringing together data on the current woodland resource, models and assumptions to estimate how conifer forests in Britain will grow and be managed in the future. The forecast makes use of the public sector's own management and restocking plans, and expert advice from both the public and private sector to try to capture current policy, management and harvesting practice in our assumptions. Combining this knowledge with our growth (and yield) models, we provide an estimate of how much softwood timber is theoretically available over the next 50-years under a specific scenario.

This report builds on the previous 25-year forecast of softwood timber availability published in 2022. Some comparison is made between the two reports. Reference is also made to the 50-year forecast of softwood timber availability (2014).

**Figure 1.** Summary of the 50-year forecast of softwood timber availability for the Public Forest Estate and private sector estate in GB



## Key Findings

- The forecast of potential softwood availability for the GB forest estate is an average of 14.4 million m<sup>3</sup> of softwood timber per annum over the 50-year period. The forecast for Scotland is an average of 10.0 million m<sup>3</sup> per annum; for England 3.0 million m<sup>3</sup>; and for Wales 1.4 million m<sup>3</sup>.
- The average GB softwood availability for the next 50 years is 25% higher than the annual softwood production across GB for 2024, reported in [Forestry Statistics 2025](#) as 11.6 million m<sup>3</sup> (9.862 million green tonnes). However,

average availability is lower in the latter 25 years of the forecast than in the opening half of the forecast.

- Softwood availability changes over the period of the forecast; it increases from 18.3 million m<sup>3</sup> per annum in 2027–31 to 19.1 million m<sup>3</sup> per annum in 2032–36 before a steep decline to 11.5 million m<sup>3</sup> per annum by 2052–56. After the trough, availability increases to 15.0 million m<sup>3</sup> by 2062–66, then declines again to a forecast minimum of 11.3 million m<sup>3</sup> in the final period 2072–76.
- The profiles for the Public Forest Estate and private sector are different. Over the forecast period, the Public Forest Estate generally shows a gradual decline throughout the 50-year period. The private sector shows an initial increase before a sharp decline into a trough which runs from 2041 until 2051 before increasing again. There is a second peak from 2062–66, followed by a second decline toward the end of the forecasting period.
- The GB Public Forest Estate is projected to generate an average of 4.5 million m<sup>3</sup> of softwood timber per annum for the next 50 years if existing forest plans are followed. In the first five-year period (2027–31), 6.3 million m<sup>3</sup> per annum would be potentially available, and this will reduce to an average of 3.3 million m<sup>3</sup> per annum in the final five-year period (2072–76). For FLS the average is 2.7 million m<sup>3</sup> per annum; for FE 1.1 million m<sup>3</sup> per annum; and for NRW 0.7 million m<sup>3</sup> per annum.
- Under the target diameter scenario used in this forecast, the potential availability of softwood timber from the private sector estate is forecast to average 9.9 million m<sup>3</sup> per annum for the next 50 years, under a management scenario of maximising timber productivity. For Scotland the average is 7.3 million m<sup>3</sup> per annum; for England 1.9 million m<sup>3</sup> per annum; and for Wales 0.7 million m<sup>3</sup> per annum.

This report focuses on softwood timber availability. The actual levels of timber that will be produced will vary from the results reported here, as production depends on the harvesting choices made by forest and woodland owners.

## Contents

Summary .....	2
Key Findings .....	4
Contents.....	7
Figures.....	9
Tables .....	10
1. Introduction .....	11
2. Methodology used in the derivation of the forecast of softwood availability.....	13
2.1 How forecasts are derived .....	13
2.2 Sub-compartment database.....	14
2.3 National Forest Inventory .....	14
2.4 Estimates for the GB Public Forest Estate .....	16
2.5 Estimates for the private sector estate in Great Britain.....	17
2.6 Assumptions used in the forecast .....	22
2.6.1 Ownership .....	22
2.6.2 Restocking .....	22
2.6.3 Currently clearfelled areas .....	24
2.6.4 Overdue timber .....	24
2.6.5 Pests and diseases.....	26
3. Results .....	27
4 What the results tell us.....	50
4.1 Actual production vs forecasted availability .....	53
4.2 Changes in stocked area and standing volume .....	56
4.3 Changes in relative levels of species and of timber .....	59
4.4 Changes in relative levels of species and of timber .....	59
4.5 Forecast for the Public Forest Estate (FE/FLS/NRW) .....	61
4.5.1 Changes in inventory data and assumptions.....	61
4.5.2 Application of M1v2 growth and yield Models.....	62
4.5.3 Management intentions .....	63
4.6 Forecast for the private sector estate.....	64
4.6.1 Changes in overdue handling .....	64
4.6.2 The prominence of Sitka spruce.....	64

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4.6.3 Age-class structure and DBH-class structure .....	65
4.7 Impact of future events.....	66
5. Conclusions .....	67
6. Future work .....	69
7. Glossary .....	71
8. NFI national reports and papers.....	78
9 Appendices .....	80
Appendix A – Summary of assumptions.....	81
Appendix B Target diameter management assumptions .....	89
Appendix C Restocking assumptions (private sector).....	96
Appendix D Managing the restock .....	103
Appendix E Overdue assumptions .....	104
Appendix F International definitions of gross and net increment .....	107
Appendix H Public Forest Estate yield class mapping – M1 to M1v2 .....	108
Appendix I Thin Reduction Factors .....	110
Appendix J Spruce handling in the <i>Ips typographus</i> demarcated area .....	111
Appendix K Forecasting gap – ‘grow on period’ and overdue reporting.....	113
Appendix L Known data issues and effect on forecast .....	114

## Figures

<b>Figure 1.</b> Summary of the 50-year forecast of softwood timber availability for the Public Forest Estate and private sector estate in GB .....	4
<b>Figure 2.</b> 50-year forecast of softwood timber availability for Public Forest Estate and private sector estates in the UK by country .....	31
<b>Figure 3.</b> Standing coniferous timber volume by sector and stand mean DBH class for GB .....	37
<b>Figure 4.</b> 50-year forecast of average annual coniferous standing volume.....	40
<b>Figure 5.</b> 50-year forecast of average annual coniferous net increment .....	43
<b>Figure 6.</b> 50-year summary of softwood standing volume, increment and availability by country – GB Public Forest Estate .....	45
<b>Figure 7.</b> 50-year summary of softwood standing volume, increment and availability by country – GB private sector .....	47
<b>Figure 8.</b> All conifers – area by age class and ownership for GB.....	49
<b>Figure 9.</b> Comparison of the 50-year forecast of softwood timber availability for the public forest estate and private sector estate in GB (2014 vs 2026).....	50
<b>Figure 10.</b> Actual production vs forecasted available volume (average annual)...	53
<b>Figure 11.</b> Actual softwood production volumes vs historic forecasting (annual) .	55
<b>Figure 12.</b> Changes in conifer stocked area since the last 25-year forecast.....	57
<b>Figure 13.</b> Overview of decision tree for felling and thinning .....	93
<b>Figure 14.</b> Overview of decision tree for felling prescription .....	94
<b>Figure 15.</b> Overview of decision tree for thinning prescription .....	95
<b>Figure 16.</b> Spruce removal prescriptions in the <i>Ips typographus</i> DMA .....	112

## Tables

<b>Table 1.</b> Stocked area of conifers at: 31 March 2025 for public sector; 31 March 2021 for private sector .....	29
<b>Table 2.</b> Standing volume of conifers at: 31 March 2025 for public sector; 31 March 2021 for private sector.....	29
<b>Table 3.</b> 50-year forecast of softwood availability; average annual volumes/period .....	30
<b>Table 4.</b> Breakdown of the softwood forecast volume (000 m3 obs) by country, top diameter class and forecast period (must contain a link to the spreadsheet) .....	33
<b>Table 5.</b> Percentage spruce in the forecast softwood volume by country, sector, top diameter class and forecast period (WILL CONTAIN A LINK TO SPREADSHEET) .....	34
<b>Table 6.</b> Overdue timber Area at 31 March 2025 (public sector); at 31 March 2021 (private sector) .....	35
<b>Table 7.</b> Standing volume by country and stand mean DBH class for GB .....	36
<b>Table 8.</b> Clearfelled area at: 31 March 2025 for public sector; 31 March 2021 for private sector .....	38
<b>Table 9.</b> 50-year forecast of coniferous standing volume; average annual volumes .....	39
<b>Table 10.</b> 50-year forecast of coniferous net increment: average annual volumes .....	42
<b>Table 11.</b> Differences in opening standing volume since 25-year forecast of softwood availability (2022) using M1 and M1v2 growth and yield models.....	58
<b>Table 12.</b> Coniferous mean yield classes for GB.....	59
<b>Table 13.</b> Assumptions used in the 2025 forecast .....	81
<b>Table 14.</b> Comparison of assumptions with those used in PF2020 – Public Forest Estate .....	84
<b>Table 15.</b> Comparison of assumptions with those used in PF2020 – private sector .....	86
<b>Table 16.</b> Restock assumptions for England (including <i>Ips typographus</i> DMA) ....	97
<b>Table 17.</b> Restock assumptions for England (excluding <i>Ips typographus</i> DMA) ...	98
<b>Table 18.</b> Restock assumptions for <i>Ips typographus</i> Demarcated Area .....	99
<b>Table 19.</b> Restock assumptions for Scotland .....	100
<b>Table 20.</b> Restock assumptions for Wales .....	101
<b>Table 21.</b> Overdue assumptions for GB .....	105

# 1. Introduction

National forest inventories are carried out by Forest Research (FR) to provide accurate, up to date information about the size, distribution, composition, and condition of the forests and woodlands in Great Britain (GB). This information is essential for developing and monitoring policies and guidance to support sustainable forest management.

The current National Forest Inventory (NFI), which began in 2010, is a multipurpose operation that has involved the production of a woodland map for Britain and a continuing program of field surveys of the mapped forest and woodland areas. The first cycle of field surveys was completed in late 2015 and the second cycle was completed in late 2020. The third cycle has concluded but the data is undergoing validation and is not ready for use in this report. The fourth cycle is now underway.

Information and data collected by the National Forest Inventory is used for a number of purposes, including estimates and long-term forecasts of forest metrics such as:

- standing volume
- timber availability
- tree growth and increment
- carbon stocks
- biomass

This report presents the results of a 50-year forecast of softwood availability for all forests and woodlands across Great Britain (GB).

For the public sector, this includes:

- Forestry England (FE)
- Forestry and Land Scotland (FLS)
- Natural Resources Wales (NRW)

All other woodland in GB is referred to in this report as 'private sector', although it also includes some public sector woodland (e.g. owned by local authorities).

Timber is defined in this report as the volume in m<sup>3</sup> overbark standing (obs) of stemwood to 7 cm top diameter overbark, including stump (above ground) and usable branchwood (of minimum 3 m in length and 7 cm top diameter) – it does not include brash.

It should be noted that this report assesses the potential amount of timber that could arise from GB forests under the specified scenarios, and any references to volume, production, or availability must be taken in that context.

A forecast of hardwood availability was published in 2014. Further information on this and other NFI outputs is available from the [NFI web pages](#).

## 2. Methodology used in the derivation of the forecast of softwood availability

This report provides the latest overall softwood timber availability forecasts, giving a breakdown of forecast volume by size class and by country (see **Table 3**) and size class (see **Table 4**).

The forecasts of softwood availability for Great Britain are based on the GB Public Forest Estate's sub-compartment database (2025) and on data collected during the second cycle of fieldwork in the National Forest Inventory for woodland in the private sector.

### 2.1 How forecasts are derived

Forecasts of softwood availability are derived from:

- woodland area
- woodland characteristics (e.g. age, species and stocking) within this area
- how quickly the trees are growing (yield class)
- when the trees will be harvested
- how the harvested areas will be restocked.

The forecast of softwood availability for GB is composed of two separate forecasts derived under different methodologies: a forecast for the Public Forest Estate (Forestry England/Forestry and Land Scotland/Natural Resources Wales estates); and a forecast for the private sector estate in Britain. The forecasts are based upon similar principles but use different data sources and apply different assumptions.

For the Public Forest Estate, information on woodland area and woodland characteristics was extracted from the sub-compartment database (SCDB). For the private sector estate, the woodland area and woodland characteristics were

estimated from data collected in the National Forest Inventory field survey, together with the NFI woodland map (see **Appendix A** for a summary of assumptions).

The *National Forest Inventory forecasts methodology overview* (2012) and the technical documentation on *Felling and removals forecasts* (2012) give more information on the approaches used to derive the forecasts (see the [National Forest Inventory webpages](#).)

## 2.2 Sub-compartment database

The sub-compartment database (SCDB) is a record of all land managed by Forestry England, Forestry and Land Scotland, and Natural Resources Wales. Each stand of trees is represented spatially, together with information on individual stand characteristics (e.g. species, planting year, spacing, and yield class) which is periodically updated. As new surveys of stands are conducted (e.g. for operational purposes), survey results are also recorded against the stands. In addition, the database contains details of planned stand management – in particular, the planned frequency and type of thinning, a date for felling, and restocking information as recorded in the forest plans. Forest plans are prepared and maintained by staff throughout Britain. These plans form the basis of the harvesting regimes used to derive the estimates for the forecasts, and the forecast assumption is that these plans reflect agreed longer-term policy and practice and adhere to appropriate forestry standards.

## 2.3 National Forest Inventory

The National Forest Inventory (NFI) is composed of two elements: a digital woodland map and a field survey. The woodland map covers all forests and woodlands of over 0.5 hectares with a minimum width of 20 metres and a minimum of 20% canopy cover (or the potential to achieve it), including transition areas such as new planting, clearfelled sites and restocked sites. Particular attention is paid to identifying areas

of woodland creation and canopy change including permanent woodland loss. It is based on interpretation of 25 cm resolution colour aerial photography for England and Scotland, 40 cm resolution aerial photography for Wales, and Satellite Imagery of 30 cm and 10 cm resolution.

The map was updated using satellite imagery (from the year 2023) which gave an independent crosscheck of woodland area. Satellite imagery was used to identify areas of canopy change. Permanent canopy change is recorded where it can be verified with further evidence (e.g. establishment of windfarms, the restoration of habitats, or impact of pests and diseases); otherwise, canopy change is considered temporary (e.g. felled stands).

To reflect expected reduction in productive conifer area from recent developments such as windfarms, an area of 7.5 thousand hectares was removed from the private sector conifer area of the woodland map in the following NFI regions: East Scotland, North East Scotland, North Scotland, South Scotland, West Scotland, North East England, and North West England. This reflects an estimate (provided by Confor) for the area removed from woodlands in the last 10 years, which, by definition, has not yet been removed from the NFI woodland map (felled woodland area is only removed from the NFI woodland map if it has not been restocked after 10 years). No attempt was made to model the potential impact of further permanent removals taking place throughout the forecast duration.

Field survey work was then used to refine the map-based estimates of woodland and clearfelled areas and to measure detailed aspects of the forest. Field surveys carried out between 2015 and 2020 were used to estimate standing volume and other forest metrics. This involved the ground surveying of 1 hectare sample squares that were partially or entirely covered by forest, including clearfelled areas, according to the woodland map. [Further details on the NFI](#) can be found at our website.

## 2.4 Estimates for the GB Public Forest Estate

Information from the sub-compartment database (SCDB) was used to estimate standing volume and other attributes of stands on a stand-by-stand basis, at the reference date of 31 March 2025 for FE, FLS, and NRW.

Where an operational survey has been carried out on a stand, Forest Research's newest growth and yield models, known as M1v2, were applied directly to the mensuration data to 'grow' the stand from the date of survey up to the reference date, and into the future. M1v2 is an extension of an earlier model: 'M1'. M1v2 was developed to address and remove major inaccuracies identified in M1. Where there had been no operational survey, general yield classes assigned by forest managers were used to estimate the growth of the stands from the reference date onwards; these general yield classes were based on the M1 model – as such, they were mapped to their M1v2 analogs within the Forecast System (see **Appendix H** for more detail).

This data formed the basis of the volume forecasts. Forest Research growth and yield models were then used to 'grow' the stands, based upon inventory data and yield class estimates.

The stands were grown taking account of harvesting events that either thinned or felled a stand over the forecast period, producing the standing volume, increment, and production volumes projected by the forecasts. The timing and scale of thinning and felling events was taken from forest plans, which set prescriptions for harvesting across productive forest area on the estate. This was then aggregated to produce the estimated total production across a defined geographic area for particular types of stand (classified, for example, by species, age, or size class). The stands were then restocked according to stand-level prescriptions designed by forest managers from the SCDB (further details on forecast restocking assumptions

are described in **Appendix C**). The production forecast is an output of this stand modelling process.

As the resulting estimates are based on a full record of data from the SCDB, there is no sampling error involved in the estimation process, therefore no sampling standard error is calculated. However, the nature of the estimation process within each individual stand does introduce estimation error, with variable contributions from stand to stand, due to the type, age, and accuracy of the information held in the sub-compartment database. These estimation errors have not been quantified in this report.

## 2.5 Estimates for the private sector estate in Great Britain

GB Forests on the National Forest Inventory woodland map were separated into Public Forest Estate and private sector estate holdings using spatial records of PFE management boundaries as at 31 March 2025. Estimates of softwood availability on the private sector estate used the woodland area obtained from the map updated to 31 March 2023. This map contained a slightly larger area (2.39 million ha) of private sector woodland than was used in the 2022 forecast (2.30 million ha). A full account of the National Forest Inventory mapping exercise can be found in the National Forest Inventory forecasts methodology overview (2012). The 2023 total woodland map area was 3.28 million ha. For more details, please refer to Table 1 in [Forestry Statistics 2025](#).

During the field survey work, some 9,000 sample squares were surveyed (of which 6,607 were in private sector woodland) and the resulting data has been used to produce the results in this report. These surveyed sample squares are a statistically representative sample covering all woodland in Britain that has been surveyed during the second cycle of the National Forest Inventory field surveys (completed in late 2020).

At each sample square, the area was stratified into forest and non-forest, and the forested area was further stratified into different woodland types or stands, where information on species, age, management, and a range of other parameters was collected. Typically, sample squares covered parts of different forest stands, resulting in some 27 thousand stands being assessed (approximately 20.5 thousand in private sector woodland). Within each stand, field-based computer systems were used to locate two or three randomly located 100 m<sup>2</sup> (0.01 hectare) circular plots, within which all trees of greater than or equal to 7 cm diameter at breast height (DBH) were mapped, species and age identified, stocking assessed, and diameters measured. Approximately 253.5 thousand trees (with a DBH of 7 cm or greater) were measured (approximately 173.4 thousand in private sector woodland).

The resulting data was used to estimate the standing volume of the trees that provided the initial values of timber present in the stand, from which forecasts of future timber availability were projected. All squares were marked on the ground with metal pegs and GPS data of their location was recorded for checking and future measurement. All measurements were subject to office-based checks, and a small percentage were re-measured in the field by an independent quality assurance team to ensure consistency and high standards of data quality.

The inventory data for the private sector estate was then run against the headline management scenario (**Appendix B** has more explanation on the management scenario). Under this scenario, private sector forests are managed under a regime designed to:

- Fell according to a target stand mean diameter. For conifers other than larches, a target diameter of 30 cm is used; for larches, 25 cm is used. In this report a 2 cm buffer was introduced, meaning conifers with DBH 30–31 cm are felled at 31 cm and those with DBH 31–32 cm are felled at 32 cm

(analogous rules apply for larches between 25–27 cm). Beyond 32 cm DBH, overdue management rulesets are applied (see **Appendix E**).

- Take account of thinning and wind constraints, with 80% of stands (by area) thinned where evidence shows that there has been previous thinning or where they are assessed with a DAMS (Detailed Aspect Method of Scoring) score of less than 16.
- Harvest a proportion of overdue stands (i.e., stands that have exceeded the prescribed target stand mean diameter for felling according to the scenario). Overdue handling is described in **Appendix E**.
- Harvest stands which are slow growing and which forest growth and yield models indicate will not reach the target diameter, according to the age of maximum mean annual increment (MAI) or (where wind constraints apply) at a terminal height of 25 m (the modified biological potential assumptions described in **Appendix B**).
- Harvest stands subject to *Ips typographus* management measures in affected regions (described in **Appendix J**).
- Restock stands which are classed as felled at the start of the forecast, and restock stands which are felled within the forecast period, according to the restocking options described in **Appendix C**.

Together, these form a management scenario referred to as the 'target diameter' scenario, which is used as the headline scenario for this forecast for the private sector. This scenario, produced through consultation with private sector woodland owners and timber processors, aims to reflect current management practices for conifer felling. This scenario differs from that used as the headline for the private sector in the 25-year forecast of softwood availability (2022). A summary of the inventory, management and restocking sources, and assumptions can be found in **Appendix A (Table 13)**, alongside a table which compares the assumptions by sector (**Table 14**) and with the assumptions used in the 25-year forecast of

softwood availability (2022) (**Table 15**). Further details of the assumptions made can be found in **Appendix B**.

The forecast results for individual surveyed squares were aggregated and scaled up to the areas identified by the woodland map, using standard statistical survey methodology, to produce the estimates in this report. Along with these estimates, associated sampling standard errors have also been calculated and reported. The sampling standard error accounts for random variation arising from the selection of the sample, and random measurement errors, but not from any systematic biases in the field measurements. However, because of the quality assurance process, it is unlikely that any substantial biases of this nature are present in the survey data.

There are four classes of error or uncertainty that are not accounted for or contained in the quoted sampling standard errors:

- Errors in standing volume estimates arising from random variation about, and systematic bias in, the empirical models used to estimate standing volumes from mensuration data. It is not thought that this will contribute a large source of additional error.
- Random variation about, and biases in, the growth and yield models used to project the future growth of stands. It is known that biases exist in these models, some of which have recently been corrected, and both these biases and annual random variation about the growth model projections contribute errors which will accumulate in the longer-term forecasts, such that errors contributed by these sources will eventually become a larger source of error than sampling error.
- The forecasts are conditional upon future conditions of growth being equal to those experienced in the past. The quoted sampling standard errors do not therefore take account of any major sudden events that significantly impact upon the tree stock, such as meteorological conditions of a type not

experienced in the past, or of more gradual deviation from past conditions, such as the possible accumulating impact of climate change.

- It is important to also note that in the statement above, the forecasts are conditional upon the underlying assumptions; the forecast therefore assumes that on average, stands are managed as have been prescribed. In practice, there will be considerable uncertainty and variation in the future management of forest stands. This uncertainty is another major source of error in longer-term forecasts.

Incorporation of these unaccounted sources of error in future forecasts would require a different forecasting model that is beyond current capacity to implement. The effect would be that the magnitude of standard errors fully accounting for all sources of variation in the forecasts would be close to the sampling standard errors for short-term forecasts; but would then continuously expand for forecasts further into the future. However, the advantage of the semi-deterministic forecasts used in this report (and previous reports) is that the comparative effects of alternative management scenarios on future production and the state of the woodland resource can be easily identified, even if the forecast values themselves are subject to increasing uncertainty the further they project into the future.

## 2.6 Assumptions used in the forecast

### 2.6.1 Ownership

Forests and woodlands are managed differently depending on ownership type (i.e. public vs private). Given that forecasts are largely based on the assumptions made about harvesting prescriptions and restocking options, the rate of change of ownership between public and private sector is important. For simplicity, this current forecast assumes that there will be no future transfer of ownership, in line with the assumptions made in 2022.

### 2.6.2 Restocking

The restocking that is applied in this current forecast is different between the GB Public Forest Estate and private sector woodlands in Britain. The approach for the private sector builds on the approaches used for the 25-year forecast of softwood availability (2022) and the 50-year forecast of softwood timber availability (2014) and represents further progression from earlier scenarios which simply replaced felled stands with exactly the same crop in the subsequent rotation (i.e. as in the 25-year forecast of softwood availability (2022), and previous forecasts). The updated approaches to restocking attempt to better reflect current forestry practices.

For the Public Forest Estate, restocking plans from land management plans were applied directly to inform the restocking of individual felled stands. It is thought that this is the most reliable way of accurately reflecting current and future restocking practice within the Public Forest Estate.

For the private sector, scenarios that were developed in response to the findings of the report *Preliminary estimates of the changes in canopy cover in British woodlands between 2006 and 2015* (2016) have been carried forward and adapted for this new forecast to account for changes to the UK Forestry Standard (UKFS) guidelines on upper limits on the proportion of a single species across forest

management units. Stands planted post-2017 were assumed to have undergone some restructuring in compliance with UKFS guidelines (i.e. an approximate upper limit on single species of 75% is assumed), therefore, these stands were restocked with prescriptions with an upper limit of 87% for any single species – this is to avoid ‘overshooting’ the current guideline for a maximum single-species threshold of 65%. Stands planted prior to the year 2017 are assumed to have undergone no UKFS restructuring, therefore, the upper limit on the proportion of a single species has been capped at 65% for pre-2017 planted stands. For conifer stands, the restocking prescriptions include conifer species diversification and the continuation of the conversion of 10% of area to open space and 10% to broadleaved species. The conifer felled areas are managed according to the target diameter felling assumptions, which are modified in areas considered to be at high risk from wind damage, as determined by a DAMS (Detailed Aspect Method of Scoring) score of 16 or more.

It is important to note that, unlike a 25-year forecast, restocking has a noticeable impact on production volumes, particularly during the latter half of the forecast period, as this is when these stands will produce timber volume from thinning and felling.

Unlike previously published forecasts, a specific restocking prescription has been created to represent the restocking of spruce in South East England and London and East England, which are affected by the current spruce ban due to the outbreak of *Ips typographus*. The assumptions around the *Ips typographus* demarcated area (DMA) are detailed in **Appendix J**.

### 2.6.3 Currently clearfelled areas

To estimate the area of clearfell for the GB Public Forest Estate, records from the sub-compartment database detailing clearfelling activity were used. For the private sector estate, the area of clearfell was initially identified using aerial photography and subsequently updated with satellite imagery. This information was then combined with data from the field survey to estimate the stocked area and the area of clearfell.

In line with the 2022 forecast, the current forecast assumes that all clearfelled areas in the private sector will be restocked (with 10% of felled area converted to open space). Within the PFE, restocking prescriptions from the land management plans are applied. Restocking assumptions applied in this forecast differ from those used in the 2022 forecast and are summarised in **Appendix A**, with more detail on private sector restocking prescriptions in **Appendix C**.

### 2.6.4 Overdue timber

'Overdue timber' refers to timber contained within stands which, at the start of the forecast period, are already beyond the timing prescribed for felling. For the public sector, this refers to any unfelled stand in the database whose fell year is earlier than the forecast start date; in the private sector, it refers to conifer stands with a mean stand diameter >30 cm (25 cm for larches).

In earlier forecasts of softwood timber availability reports, a separate prescription for overdue timber was developed and incorporated into the main scenario. This scenario assumed that a proportion of overdue timber would come to market over the forecast period. This approach has been continued in the current forecast, though the details of the prescriptions have undergone some changes (see **Appendix E**).

Where the target diameter scenario is applied (i.e. in the private sector estate), stands with a mean stand diameter below 30 cm (25 cm for larches) will be felled

once they reach that size, according to growth and yield models. Stands with a mean stand diameter which exceeds the target diameter at the beginning of the forecast are treated separately under the overdue prescriptions – however, a 2 cm ‘buffer’ has been introduced to reflect that, in practice, many stands which are marginally overmature will be felled and brought to market. Stands within this buffer will be treated as ‘standard felling’ when they reach 1 cm or 2 cm above the target diameter for the species, depending on their size at the beginning of the forecast (i.e. stands with mean DBH >30 cm but <31 cm at the start of the forecast are felled at 31 cm; stands with mean DBH >31 cm but <32 cm are felled at 32 cm).

These prescriptions were developed in consultation with the private sector and allocate varying prescriptions to proportions of overdue stands depending on species and centimetres beyond target diameter. The overdue prescriptions consider factors such as tree species, the presence and impact of current diseases, stand mean target diameter, and historical harvesting trends. A full description of the overdue prescription can be found in **Appendix E**.

All areas felled as overdue are restocked according to the restocking scenario, consistent with the treatment of any other stands felled during the forecast period.

Overdue timber represents a significant portion of total standing volume at the start of the forecast (approximately 25%). This suggests that part of the private sector estate is not currently being managed for production and is being left to grow well beyond the typical felling age. Since these stands are already being managed differently than assumed in the forecast, it is inevitable that some proportion will continue to deviate from the assumed target diameter management in the future. Although this forecast assumes they will be managed accordingly, the *Evaluation of alternative harvesting and afforestation scenarios on British softwood timber availability* (2015) report explores the potential impact of a proportion of all stands becoming overdue, regardless of their current age.

Felling ages for the GB public sector forecast are derived from the approved forest plans, which cover the entire public estate. The overdue timber volume reflects coupes scheduled for felling in the first phase of the approved plan. Some of this felling may be partially complete at the start of the forecast period. It may also include volumes from changes in the felling sequence of coupes or substitutions made for operational reasons.

### 2.6.5 Pests and diseases

In response to the *Ips typographus* DMA, where spruce planting is currently banned, revised management and restocking prescriptions were devised for spruce species in these areas. The management scenario was designed in line with consultation with representatives from Defra and reflects their plant health economists' assumptions about spruce removals in the area; the restock prescriptions were designed in consultation with Forestry Commission representatives and representatives from the private sector timber industry. For this forecast, the *Ips typographus* DMA is assumed to cover the entire NFI regions of South East England and London, and East England. More detail is given in **Appendix J**.

### 3. Results

The forecasts are projected from conifer stocked area, standing volume, and currently felled land (summarised in **Table 1**, **Table 2**, and **Table 8** respectively).

**Table 3** gives the 50-year forecast of softwood timber availability for the UK, and each country, broken down by Public Forest Estate and private sector estate.

**Figure 2** illustrates the 50-year forecast broken down by country, ownership, and five-year period. **Table 4** shows the forecast of softwood timber availability broken down by country, ownership, size class, and five-year period. **Table 5** gives a breakdown of the forecast by the percentage of spruce within overall softwood volumes (spruce comprises Sitka spruce and Norway spruce).

The baseline date for the FE/FLS/NRW forecasts is 31 March 2025. For the private sector in Britain, NFI second cycle field data (completed in 2020) has been used in tandem with the 2023 NFI Woodland Map. This approach makes use of the most up to date validated NFI field survey data in combination with the most up to date estimate of GB woodland cover (at time of analysis) to estimate the composition, condition, and extent of private sector woodland. However, due to the gap between the end of the survey cycle and the date of forecasting, the private sector was run from 2021 and harvesting and management scenarios were applied retrospectively, meaning the opening estimates in **Table 1** and **Table 2** are only as accurate as the management assumptions that were applied and how well the scenario applied reflects actual management during that period (see **Appendix K**).

The convention in this report is to define the year 2025 as starting on 1 April 2024 and ending on 31 March 2025. This convention applies to all forecast years or periods quoted. The forecast reports on five-year cycles of production, starting with 2027–2031. In full, 2027–2031 refers to the period 1<sup>st</sup> April 2026 to 31<sup>st</sup> March 2031.

All volumes are given in cubic metres (m<sup>3</sup>) overbark standing (obs) and, as in previous forecasts, all volumes available for harvesting include thinnings and fellings. Volumes are presented as average annual volume for each five-year period. The values in the tables have been independently rounded, so may not add to the totals shown. In some breakdowns of private sector estimates, the estimates in the body of the table may not sum to the quoted total because each individual value, including the total, has been estimated independently. Sampling standard errors (SE) attached to private sector estimates are expressed in relative terms (%) to the right of the relevant estimate.

Due to biological and sampling constraints, for example where there is a very small population of a species within a particular region, the estimates may have a high associated standard error. Since this indicates a high level of uncertainty around those estimates, caution should be used when drawing any conclusions from these values as the estimate may not be representative of the real population. Such estimates have been shown in amber in the tables.

Other than the estimates in **Table 1**, **Table 2**, **Table 6**, **Table 7**, and **Table 8**, the estimates are forecasted values determined by applying growth and yield models to current assessments.

**Table 4** and **Table 5** are summary tables. More detailed tables are available in the supporting spreadsheet. A regional breakdown of average annual volumes for England and Scotland is also available in a supplementary spreadsheet.

In the following tables, areas are expressed in thousands of hectares (000 ha) and volume is given in thousands of cubic metres overbark standing (000 m<sup>3</sup> obs).

**Table 1.** Stocked area of conifers at: 31 March 2025 for public sector; 31 March 2021 for private sector

Country	GB PFE	Private sector		Total
	area (000 ha)	area (000 ha)	SE%	area (000 ha)
England	116.2	153.0	2	<b>269.3</b>
Scotland	293.5	518.1	1	<b>811.6</b>
Wales	75.4	46.9	3	<b>122.2</b>
<b>Great Britain</b>	<b>485.2</b>	<b>718.0</b>	<b>1</b>	<b>1,203.1</b>

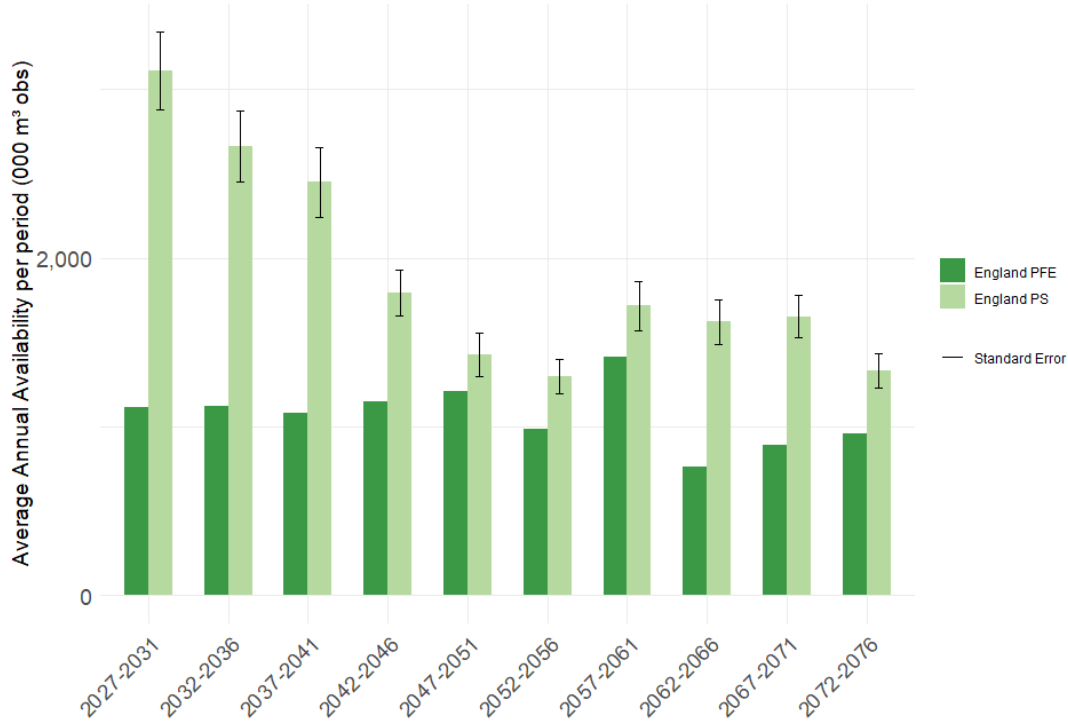
**Table 2.** Standing volume of conifers at: 31 March 2025 for public sector; 31 March 2021 for private sector

Country	GB PFE	Private sector		Total
	volume (000 m <sup>3</sup> obs)	volume (000 m <sup>3</sup> obs)	SE%	volume (000 m <sup>3</sup> obs)
England	29,650	65,328	3	<b>94,978</b>
Scotland	79,713	190,001	2	<b>269,714</b>
Wales	23,625	20,062	5	<b>43,687</b>
<b>Great Britain</b>	<b>132,987</b>	<b>275,392</b>	<b>2</b>	<b>408,378</b>

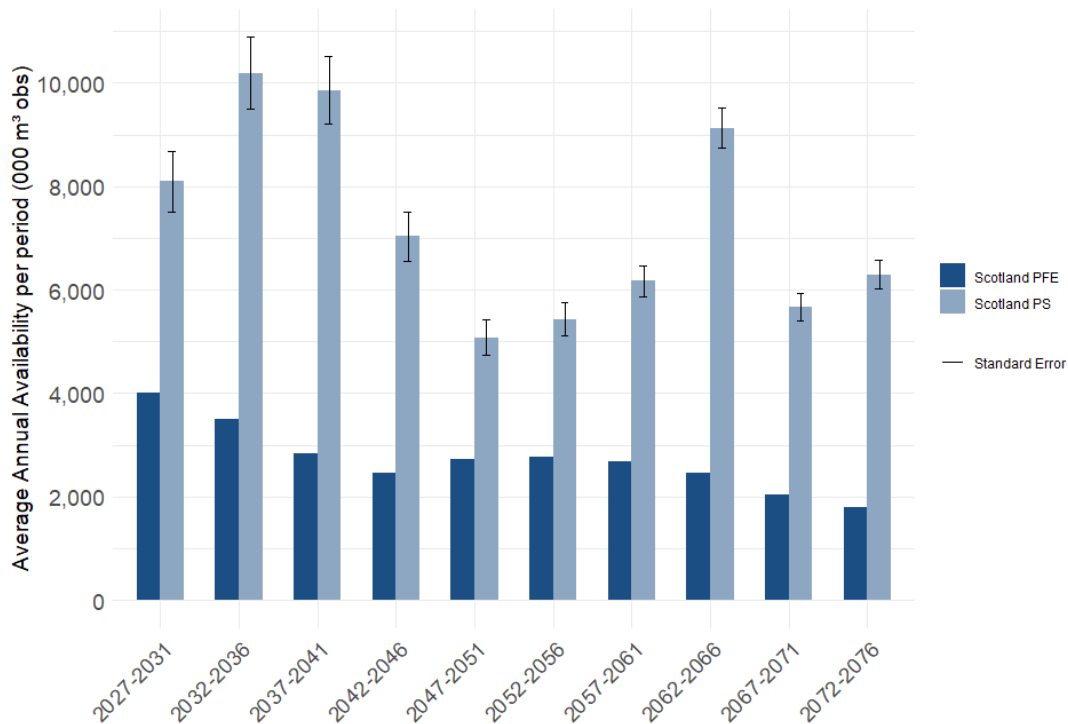
**Table 3.** 50-year forecast of softwood availability; average annual volumes

Forecast period	GB PFE	Private sector		Total
	Volume (000 m <sup>3</sup> obs)	Volume (000 m <sup>3</sup> obs)	SE%	Volume (000 m <sup>3</sup> obs)
<b>England</b>				
2027-31	1,115	3,111	7	<b>4,226</b>
2032-36	1,119	2,666	8	<b>3,785</b>
2037-41	1,080	2,451	9	<b>3,530</b>
2042-46	1,147	1,793	8	<b>2,940</b>
2047-51	1,208	1,425	9	<b>2,632</b>
2052-56	986	1,297	8	<b>2,283</b>
2057-61	1,412	1,717	9	<b>3,129</b>
2062-66	759	1,622	8	<b>2,382</b>
2067-71	891	1,654	8	<b>2,546</b>
2072-76	962	1,331	8	<b>2,292</b>
<b>Scotland</b>				
2027-31	4,008	8,097	7	<b>12,105</b>
2032-36	3,501	10,195	7	<b>13,696</b>
2037-41	2,845	9,862	7	<b>12,707</b>
2042-46	2,458	7,033	7	<b>9,491</b>
2047-51	2,724	5,078	7	<b>7,802</b>
2052-56	2,764	5,436	6	<b>8,199</b>
2057-61	2,687	6,173	5	<b>8,860</b>
2062-66	2,471	9,129	4	<b>11,600</b>
2067-71	2,047	5,674	5	<b>7,721</b>
2072-76	1,799	6,297	4	<b>8,096</b>
<b>Wales</b>				
2027-31	1,206	768	15	<b>1,974</b>
2032-36	931	708	13	<b>1,639</b>
2037-41	890	1,036	14	<b>1,926</b>
2042-46	746	627	16	<b>1,373</b>
2047-51	679	686	15	<b>1,365</b>
2052-56	431	600	13	<b>1,031</b>
2057-61	548	972	9	<b>1,521</b>
2062-66	508	481	11	<b>989</b>
2067-71	534	633	9	<b>1,167</b>
2072-76	568	378	12	<b>947</b>
<b>Great Britain</b>				
2027-31	6,329	11,976	5	<b>18,305</b>
2032-36	5,551	13,569	5	<b>19,120</b>
2037-41	4,815	13,349	5	<b>18,164</b>
2042-46	4,350	9,454	5	<b>13,804</b>
2047-51	4,611	7,188	5	<b>11,799</b>
2052-56	4,181	7,333	5	<b>11,513</b>
2057-61	4,648	8,862	4	<b>13,510</b>
2062-66	3,738	11,233	4	<b>14,971</b>
2067-71	3,472	7,962	4	<b>11,434</b>
2072-76	3,329	8,006	4	<b>11,335</b>

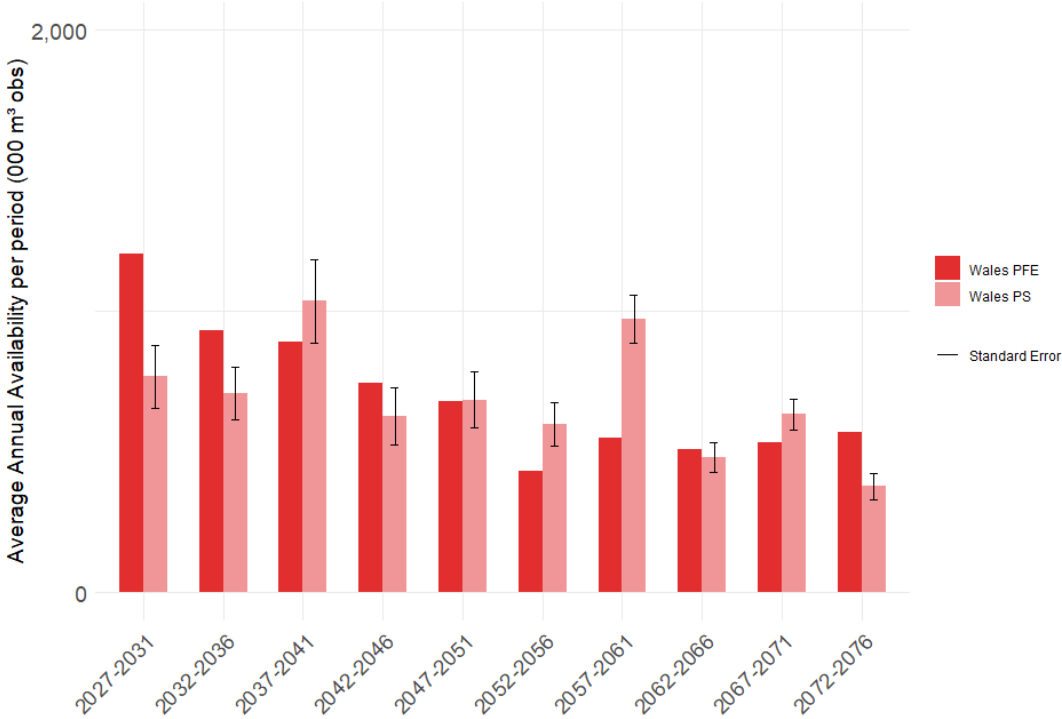
**Figure 2.1** 50-year forecast of softwood timber availability for Public Forest Estate and private sector estates in GB – England



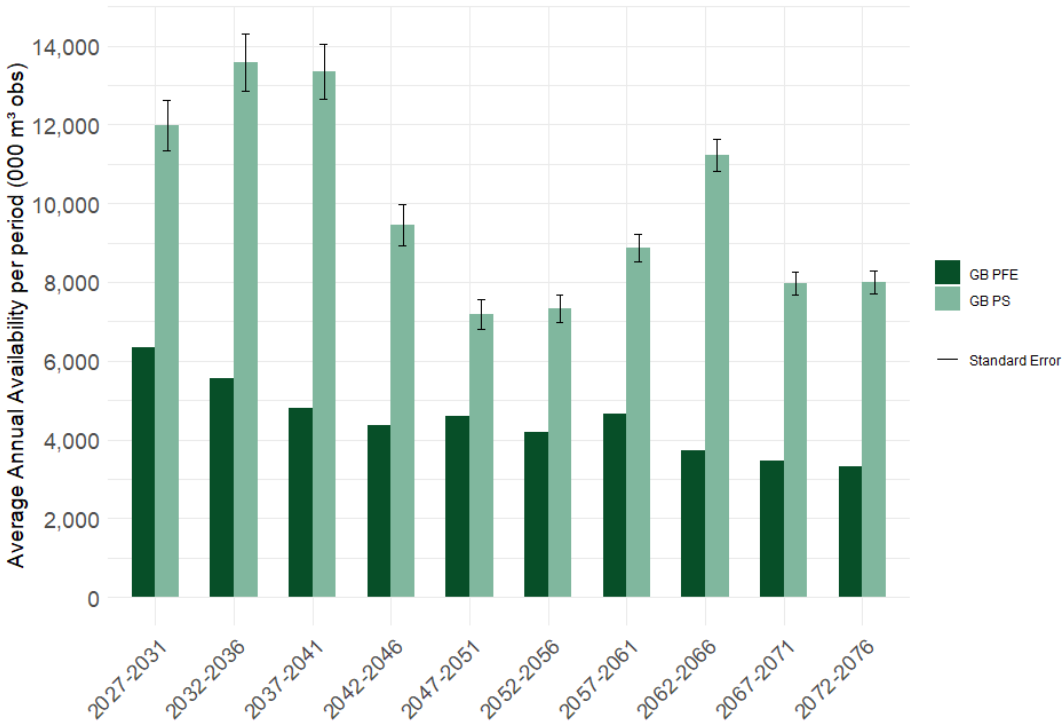
**Figure 2.2** 50-year forecast of softwood timber availability for Public Forest Estate and private sector estates in GB – Scotland



**Figure 2.3** 50-year forecast of softwood timber availability for Public Forest Estate and private sector estates in GB – Wales



**Figure 2.4** 50-year forecast of softwood timber availability for Public Forest Estate and private sector estates in GB – Great Britain



**Table 4.** Breakdown of the softwood forecast volume, top diameter class, and forecast period for Great Britain

Top diameter class (cm)	2027-31		2032-36		2037-41		2042-46		2047-51	
	PFE	PS	PFE	PS	PFE	PS	PFE	PS	PFE	PS
	(000 m <sup>3</sup> )		(000 m <sup>3</sup> )		(000 m <sup>3</sup> )		(000 m <sup>3</sup> )		(000 m <sup>3</sup> )	
7-14	995	699	783	842	641	926	585	749	635	703
14-16	480	417	399	514	330	552	292	426	306	380
16-18	535	581	463	698	393	735	350	538	359	463
18-24	1,699	2,622	1,536	3,055	1,349	3,092	1,238	2,185	1,261	1,765
24-34	1,656	4,041	1,518	4,671	1,338	4,454	1,236	2,966	1,286	2,157
34-44	582	1,876	515	2,128	453	1,992	396	1,350	431	910
44-54	231	872	201	940	178	892	147	625	172	405
54+	152	867	136	723	132	706	107	614	160	406
<b>Total</b>	<b>6,329</b>	<b>11,976</b>	<b>5,551</b>	<b>13,569</b>	<b>4,815</b>	<b>13,349</b>	<b>4,350</b>	<b>9,454</b>	<b>4,611</b>	<b>7,188</b>
	2052-56		2057-61		2062-66		2067-71		2072-76	
7-14	669	716	734	859	685	865	643	675	651	729
14-16	307	397	336	499	297	578	281	429	287	475
16-18	345	489	379	606	324	713	303	533	307	590
18-24	1,142	1,891	1,240	2,358	1,009	3,083	921	2,234	907	2,477
24-34	1,110	2,239	1,236	2,708	919	3,805	823	2,528	766	2,663
34-44	349	884	418	1,029	289	1,408	270	896	234	788
44-54	133	369	161	384	106	433	104	297	87	181
54+	126	347	144	419	109	346	127	368	91	104
<b>Total</b>	<b>4,181</b>	<b>7,333</b>	<b>4,648</b>	<b>8,862</b>	<b>3,738</b>	<b>11,233</b>	<b>3,472</b>	<b>7,962</b>	<b>3,329</b>	<b>8,006</b>

\*Note: a more detailed version of this table, which includes standard errors and a breakdown for each country, is available in the [accompanying spreadsheet](#) on our website.

**Table 5.** Percentage spruce in the forecast softwood volume by country, sector, top diameter class, and forecast period (Great Britain)

Top diameter class (cm)	2027-31		2032-36		2037-41		2042-46		2047-51	
	FC (%)	PS (%)	FC (%)	PS (%)	FC (%)	PS (%)	FC (%)	PS (%)	FC (%)	PS (%)
7-14	74	77	77	76	77	75	77	72	72	71
14-16	76	78	80	78	81	77	81	74	78	71
16-18	77	79	80	78	81	77	82	73	79	68
18-24	76	77	79	76	81	74	82	69	78	63
24-34	75	72	76	72	77	70	78	61	72	52
34-44	73	65	74	69	73	65	72	54	63	43
44-54	72	61	72	65	70	61	68	51	59	40
54+	67	33	65	51	63	46	55	50	48	47
<b>Total</b>	<b>75</b>	<b>69</b>	<b>77</b>	<b>72</b>	<b>77</b>	<b>69</b>	<b>78</b>	<b>63</b>	<b>73</b>	<b>56</b>
	2052-56		2057-61		2062-66		2067-71		2072-76	
7-14	70	68	69	75	64	77	62	62	60	71
14-16	77	67	77	77	71	80	69	64	66	72
16-18	78	65	79	75	73	79	71	64	67	72
18-24	79	61	80	74	74	80	73	66	67	72
24-34	75	53	77	71	70	79	70	67	65	71
34-44	66	47	72	67	62	77	63	67	61	69
44-54	59	44	67	59	55	67	57	61	55	58
54+	50	57	51	58	45	68	46	69	43	50
<b>Total</b>	<b>74</b>	<b>57</b>	<b>75</b>	<b>71</b>	<b>69</b>	<b>78</b>	<b>67</b>	<b>66</b>	<b>64</b>	<b>71</b>

\*Note: a more detailed version of this table, which includes a breakdown for each country is available in the [accompanying spreadsheet](#) on our website.

**Table 6** gives a breakdown of the amount of overdue timber by ownership and country for Britain arising from the headline harvesting scenario. A proportion of this volume was assumed to have been available for harvesting and has been included in the main forecast of timber availability according to the prescriptions for handling overdue timber set out in **Appendix E**.

**Table 7** and **Figure 3** show standing volume broken down into stand mean diameter classes.

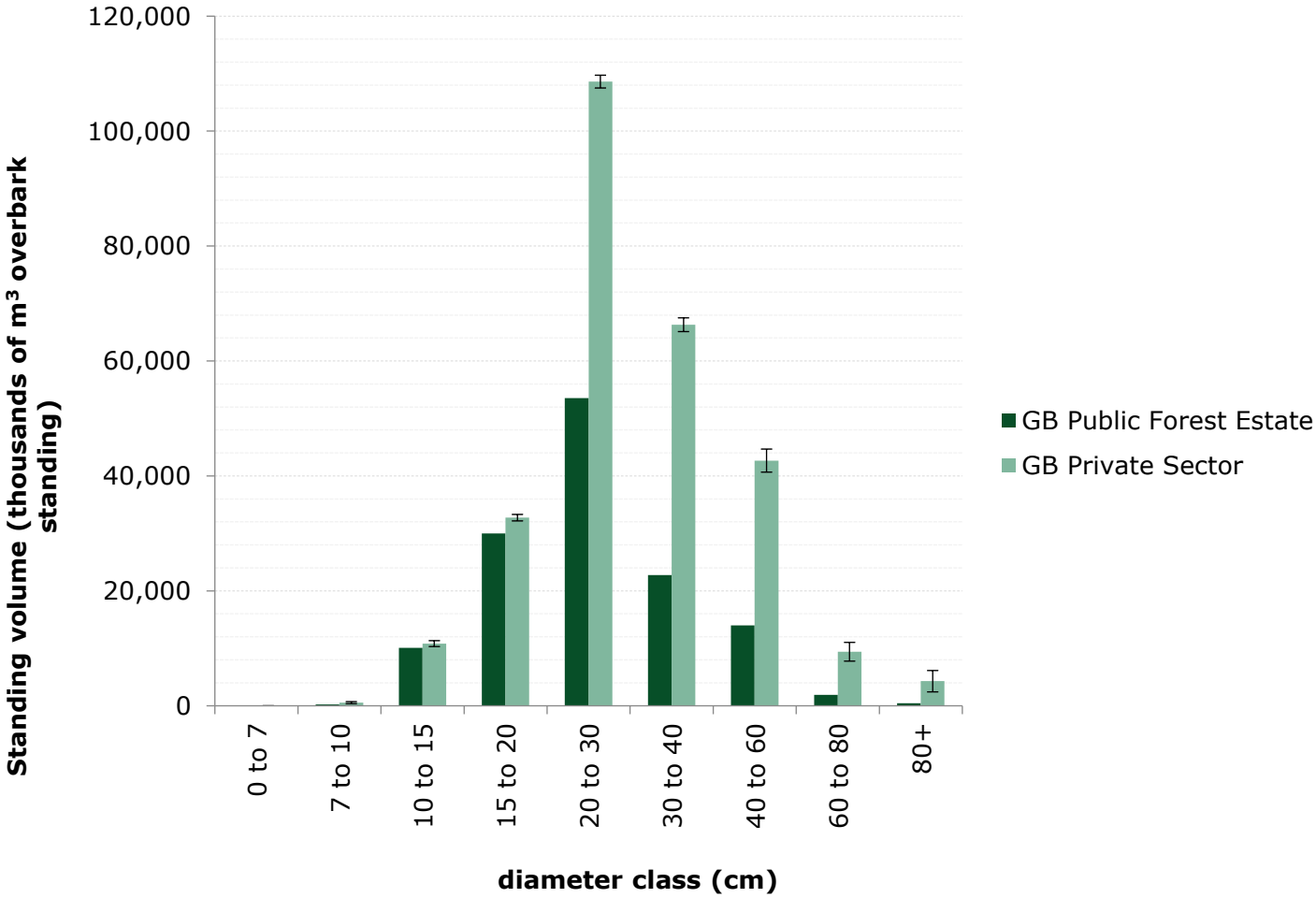
**Table 6.** Overdue timber Area at: 31 March 2025 (public sector); 31 March 2021 (private sector)

All conifers	GB PFE	Private sector		GB PFE	Private sector	
	volume (000 m <sup>3</sup> obs)		SE%	area (000 ha)		SE%
<b>England</b>	<b>2,107</b>	<b>31,916</b>	<b>5</b>	<b>5.9</b>	<b>43.9</b>	<b>5</b>
North West England	527	2,790	22	1.2	3.6	19
North East England	890	3,891	19	2.7	4.8	18
Yorkshire and the Humber	97	2,419	15	0.3	4.2	15
East Midlands	69	1,002	20	0.2	2.2	20
East England	175	2,418	17	0.5	4.5	16
South East England and London	134	6,504	10	0.3	9.3	10
South West England	136	8,211	9	0.4	8.9	9
West Midlands	80	4,681	14	0.3	6.5	13
<b>Scotland</b>	<b>2,179</b>	<b>55,163</b>	<b>6</b>	<b>4.8</b>	<b>70.7</b>	<b>6</b>
North Scotland	97	6,002	18	0.4	8.1	16
North East Scotland	176	13,889	10	0.5	19.7	10
East Scotland	48	8,950	14	0.1	11.9	13
South Scotland	287	15,411	12	0.7	18.7	12
West Scotland	1,571	10,910	15	3.1	12.3	14
<b>Wales</b>	<b>1,273</b>	<b>10,114</b>	<b>10</b>	<b>2.7</b>	<b>11.9</b>	<b>10</b>
<b>Great Britain</b>	<b>5,559</b>	<b>97,193</b>	<b>4</b>	<b>13.4</b>	<b>126.5</b>	<b>4</b>

**Table 7.** Standing volume by country and stand mean diameter class (DBH) for GB at: 31 March 2025 (public sector); 31 March 2021 (private sector)

DBH class (cm)	GB PFE	Private sector		Total
	volume (000 m <sup>3</sup> obs)	volume (000 m <sup>3</sup> obs)	SE%	volume (000 m <sup>3</sup> obs)
<b>England</b>				
0 to 7	0	0	-	<b>0</b>
7 to 10	37	115	33	<b>152</b>
10 to 15	1,966	1,207	5	<b>3,173</b>
15 to 20	6,438	3,406	2	<b>9,843</b>
20 to 30	7,962	15,959	1	<b>23,921</b>
30 to 40	5,520	18,179	2	<b>23,699</b>
40 to 60	6,452	18,993	5	<b>25,444</b>
60 to 80	1,068	4,959	17	<b>6,026</b>
80+	206	2,512	43	<b>2,718</b>
<b>Scotland</b>				
0 to 7	0	0	-	<b>0</b>
7 to 10	157	391	13	<b>548</b>
10 to 15	7,009	8,892	5	<b>15,901</b>
15 to 20	18,496	26,773	6	<b>45,269</b>
20 to 30	36,460	86,911	4	<b>123,371</b>
30 to 40	12,504	42,622	7	<b>55,126</b>
40 to 60	4,503	19,463	9	<b>23,966</b>
60 to 80	465	3,302	16	<b>3,766</b>
80+	119	1,647	35	<b>1,765</b>
<b>Wales</b>				
0 to 7	0	0	-	<b>0</b>
7 to 10	28	42	20	<b>70</b>
10 to 15	1,135	726	17	<b>1,861</b>
15 to 20	5,047	2,553	15	<b>7,600</b>
20 to 30	9,128	5,752	11	<b>14,880</b>
30 to 40	4,732	5,510	13	<b>10,241</b>
40 to 60	3,054	4,215	18	<b>7,269</b>
60 to 80	388	1,143	34	<b>1,531</b>
80+	113	121	58	<b>234</b>
<b>Great Britain</b>				
0 to 7	0	0	-	<b>0</b>
7 to 10	223	548	33	<b>771</b>
10 to 15	10,110	10,825	5	<b>20,935</b>
15 to 20	29,981	32,731	2	<b>62,712</b>
20 to 30	53,551	108,622	1	<b>162,173</b>
30 to 40	22,756	66,310	2	<b>89,067</b>
40 to 60	14,008	42,671	5	<b>56,679</b>
60 to 80	1,920	9,404	17	<b>11,324</b>
80+	438	4,280	43	<b>4,718</b>

**Figure 3.** Standing coniferous timber volume by sector and stand mean diameter class (DBH) for GB at: 31 March 2025 (public sector); 31 March 2021 (private sector)



**Table 8** gives estimates of clearfelled areas. For GB Public Forest Estate, the area of clearfell is taken from the sub-compartment database as at 31 March 2025. For the private sector, clearfelled areas recorded by the NFI are combined with the areas of clearfell identified in the NFI map based on satellite imagery to provide the estimates. Currently clearfelled areas are assumed to be restocked within this forecast (see **Appendix C**) and contribute marginally to future production.

**Table 8.** Clearfelled area at: 31 March 2025 for public sector; 31 March 2021 for private sector

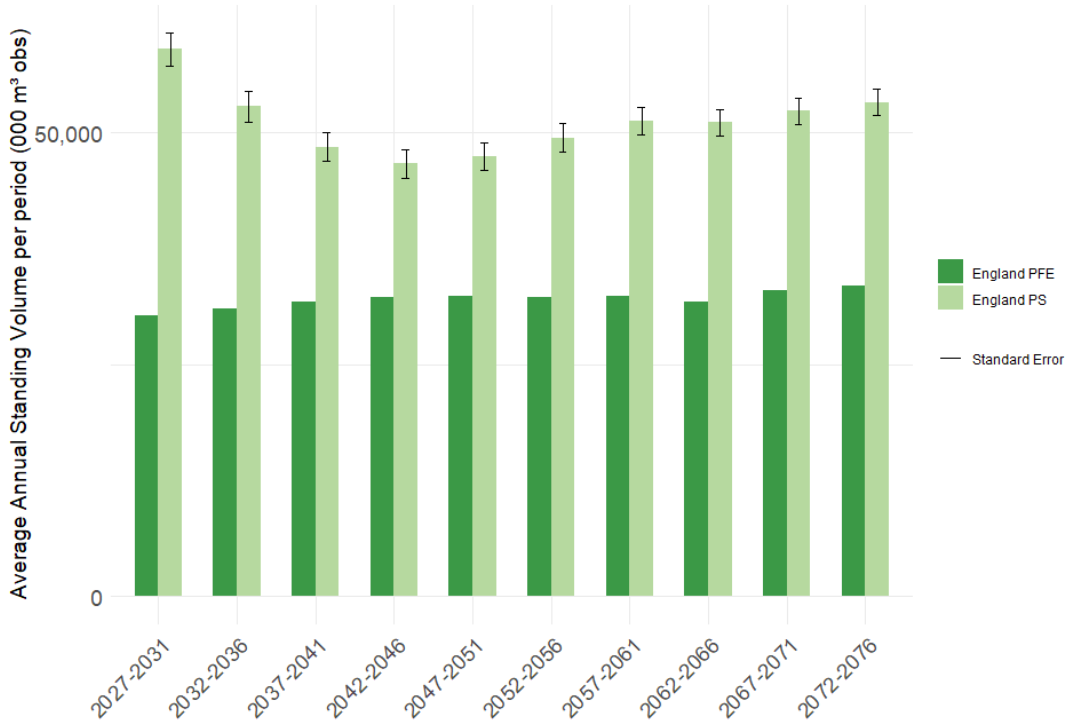
All conifers	GB PFE	Private sector		Total
	area (000 ha)		SE%	area (000 ha)
England	7.1	8.9	10	15.9
Scotland	38.7	42.3	5	81.0
Wales	5.4	2.8	15	8.3
<b>Great Britain</b>	<b>51.2</b>	<b>54.0</b>	<b>4</b>	<b>105.2</b>

**Table 9** and **Figure 4** show the evolution of standing volume. **Table 10** and **Figure 5** show the net increment under the headline scenario used to derive the forecast results. The forecast uses the international definitions of gross and net increment as described in **Appendix F**. **Figure 6** and **Figure 7** show the relationship between forecast standing volume, increment (i.e. gain in volume over time), and subsequent timber availability over the forecast period. **Figure 8** shows the age class distribution of woodlands by ownership.

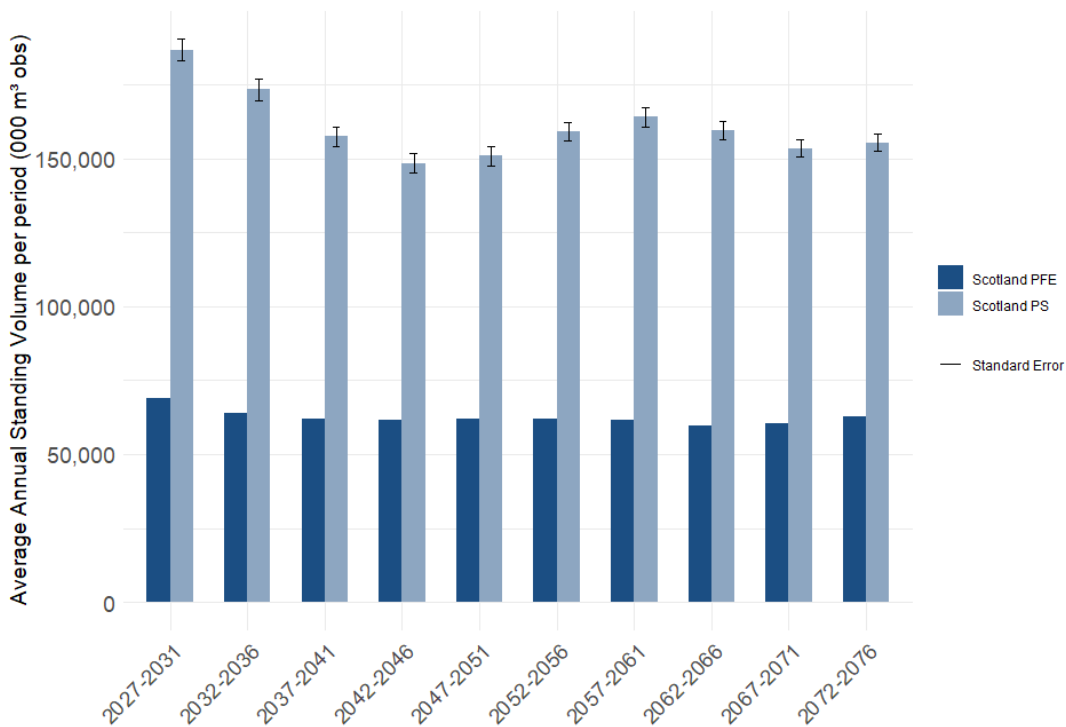
**Table 9.** 50-year forecast of coniferous standing volume; average annual volumes

Forecast period	GB PFE		Private sector		Total
	volume (000m <sup>3</sup> obs)	volume (000m <sup>3</sup> obs)	SE%	volume (000m <sup>3</sup> obs)	
<b>England</b>					
2027-31	30,332	58,989	3	<b>89,321</b>	
2032-36	30,998	52,843	3	<b>83,840</b>	
2037-41	31,813	48,470	3	<b>80,284</b>	
2042-46	32,269	46,648	3	<b>78,917</b>	
2047-51	32,385	47,437	3	<b>79,822</b>	
2052-56	32,266	49,471	3	<b>81,737</b>	
2057-61	32,335	51,212	3	<b>83,546</b>	
2062-66	31,735	51,096	3	<b>82,831</b>	
2067-71	33,017	52,334	3	<b>85,351</b>	
2072-76	33,430	53,293	3	<b>86,722</b>	
<b>Scotland</b>					
2027-31	68,975	186,733	2	<b>255,708</b>	
2032-36	64,113	173,326	2	<b>237,439</b>	
2037-41	61,844	157,422	2	<b>219,266</b>	
2042-46	61,583	148,411	2	<b>209,994</b>	
2047-51	61,958	150,918	2	<b>212,876</b>	
2052-56	62,088	159,194	2	<b>221,282</b>	
2057-61	61,453	164,062	2	<b>225,515</b>	
2062-66	59,758	159,492	2	<b>219,250</b>	
2067-71	60,620	153,400	2	<b>214,019</b>	
2072-76	62,719	155,452	2	<b>218,171</b>	
<b>Wales</b>					
2027-31	21,587	18,579	5	<b>40,166</b>	
2032-36	20,490	17,927	5	<b>38,418</b>	
2037-41	19,782	16,487	6	<b>36,270</b>	
2042-46	20,036	15,762	6	<b>35,798</b>	
2047-51	20,778	15,252	5	<b>36,030</b>	
2052-56	21,974	15,349	5	<b>37,323</b>	
2057-61	23,623	14,164	5	<b>37,788</b>	
2062-66	24,811	13,824	5	<b>38,635</b>	
2067-71	25,914	13,837	5	<b>39,750</b>	
2072-76	26,678	14,439	5	<b>41,116</b>	
<b>Great Britain</b>					
2027-31	120,894	264,301	2	<b>385,195</b>	
2032-36	115,601	244,096	2	<b>359,697</b>	
2037-41	113,439	222,379	2	<b>335,819</b>	
2042-46	113,888	210,821	2	<b>324,709</b>	
2047-51	115,121	213,607	2	<b>328,728</b>	
2052-56	116,328	224,014	2	<b>340,342</b>	
2057-61	117,411	229,438	2	<b>346,849</b>	
2062-66	116,303	224,412	2	<b>340,715</b>	
2067-71	119,551	219,570	1	<b>339,121</b>	
2072-76	122,826	223,183	1	<b>346,009</b>	

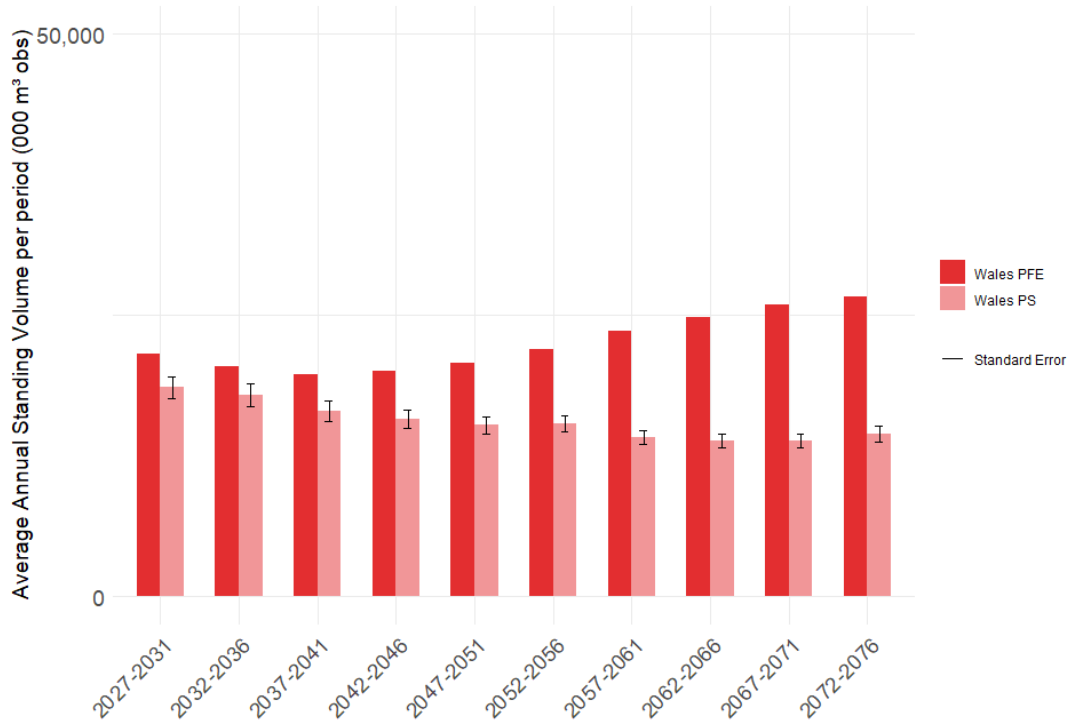
**Figure 4.1** 50-year forecast of average annual coniferous standing volume – England



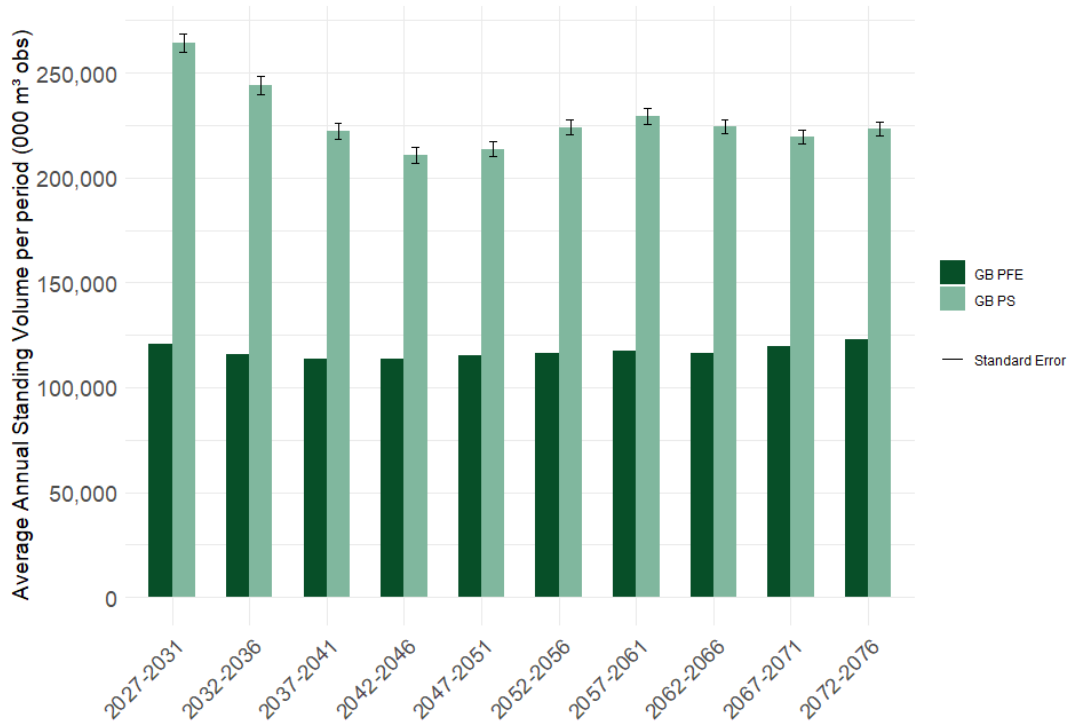
**Figure 4.2** 50-year forecast of average annual coniferous standing volume – Scotland



**Figure 4.3** 50-year forecast of average annual coniferous standing volume – Wales



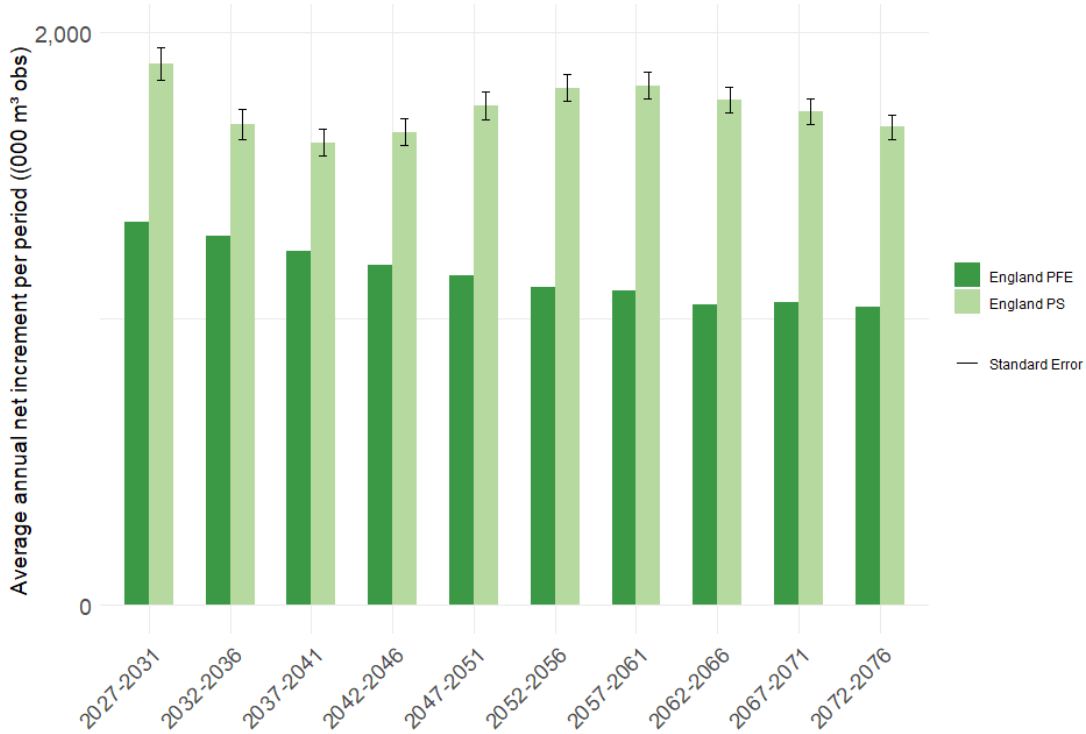
**Figure 4.4** 50-year forecast of average annual coniferous standing volume – Great Britain



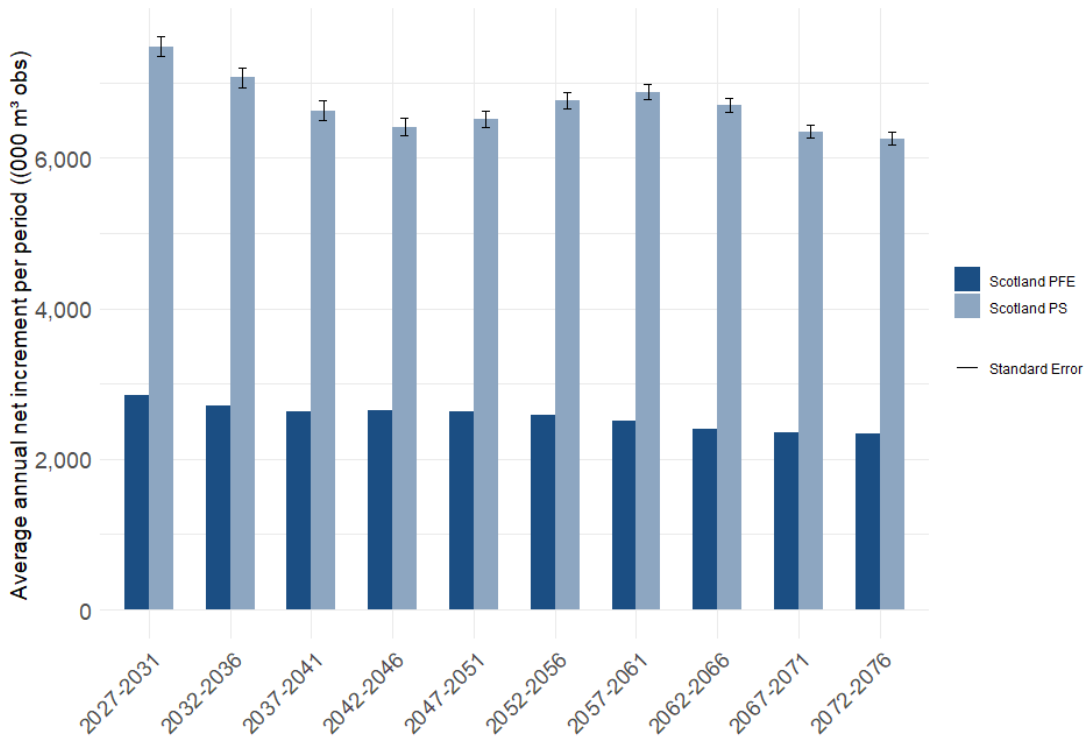
**Table 10.** 50-year forecast of coniferous net increment: average annual volumes

Forecast period	GB PFE	Private sector		Total
	volume (000m <sup>3</sup> obs)	volume (000m <sup>3</sup> obs)	SE%	volume (000m <sup>3</sup> obs)
<b>England</b>				
2027-31	1,339	1,891	3	<b>3,230</b>
2032-36	1,290	1,681	3	<b>2,971</b>
2037-41	1,235	1,617	3	<b>2,852</b>
2042-46	1,189	1,653	3	<b>2,842</b>
2047-51	1,151	1,745	3	<b>2,896</b>
2052-56	1,111	1,808	3	<b>2,919</b>
2057-61	1,098	1,816	3	<b>2,914</b>
2062-66	1,049	1,767	3	<b>2,816</b>
2067-71	1,058	1,726	3	<b>2,784</b>
2072-76	1,040	1,671	3	<b>2,711</b>
<b>Scotland</b>				
2027-31	2,853	7,476	3	<b>10,329</b>
2032-36	2,714	7,067	3	<b>9,781</b>
2037-41	2,628	6,629	3	<b>9,257</b>
2042-46	2,644	6,410	3	<b>9,054</b>
2047-51	2,637	6,515	3	<b>9,152</b>
2052-56	2,578	6,768	3	<b>9,346</b>
2057-61	2,500	6,876	3	<b>9,376</b>
2062-66	2,395	6,699	3	<b>9,094</b>
2067-71	2,352	6,350	3	<b>8,702</b>
2072-76	2,339	6,255	3	<b>8,594</b>
<b>Wales</b>				
2027-31	959	662	3	<b>1,621</b>
2032-36	904	635	3	<b>1,539</b>
2037-41	838	616	3	<b>1,454</b>
2042-46	810	611	3	<b>1,421</b>
2047-51	792	617	3	<b>1,409</b>
2052-56	782	625	3	<b>1,407</b>
2057-61	782	605	3	<b>1,387</b>
2062-66	764	584	3	<b>1,348</b>
2067-71	738	592	3	<b>1,330</b>
2072-76	692	603	3	<b>1,295</b>
<b>Great Britain</b>				
2027-31	5,151	10,029	3	<b>15,180</b>
2032-36	4,908	9,383	3	<b>14,291</b>
2037-41	4,702	8,861	3	<b>13,563</b>
2042-46	4,643	8,675	3	<b>13,318</b>
2047-51	4,580	8,877	3	<b>13,457</b>
2052-56	4,471	9,201	3	<b>13,672</b>
2057-61	4,380	9,297	3	<b>13,677</b>
2062-66	4,208	9,049	3	<b>13,257</b>
2067-71	4,147	8,668	3	<b>12,815</b>
2072-76	4,072	8,529	3	<b>12,601</b>

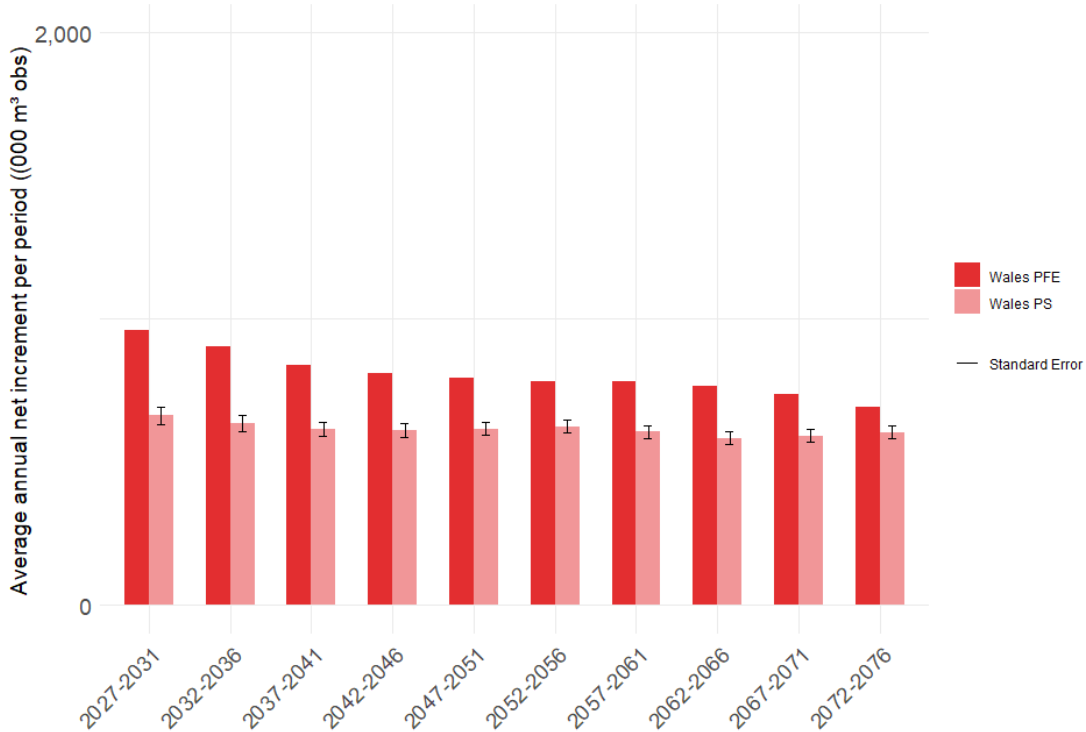
**Figure 5.1** 50-year forecast of average annual coniferous net increment – England



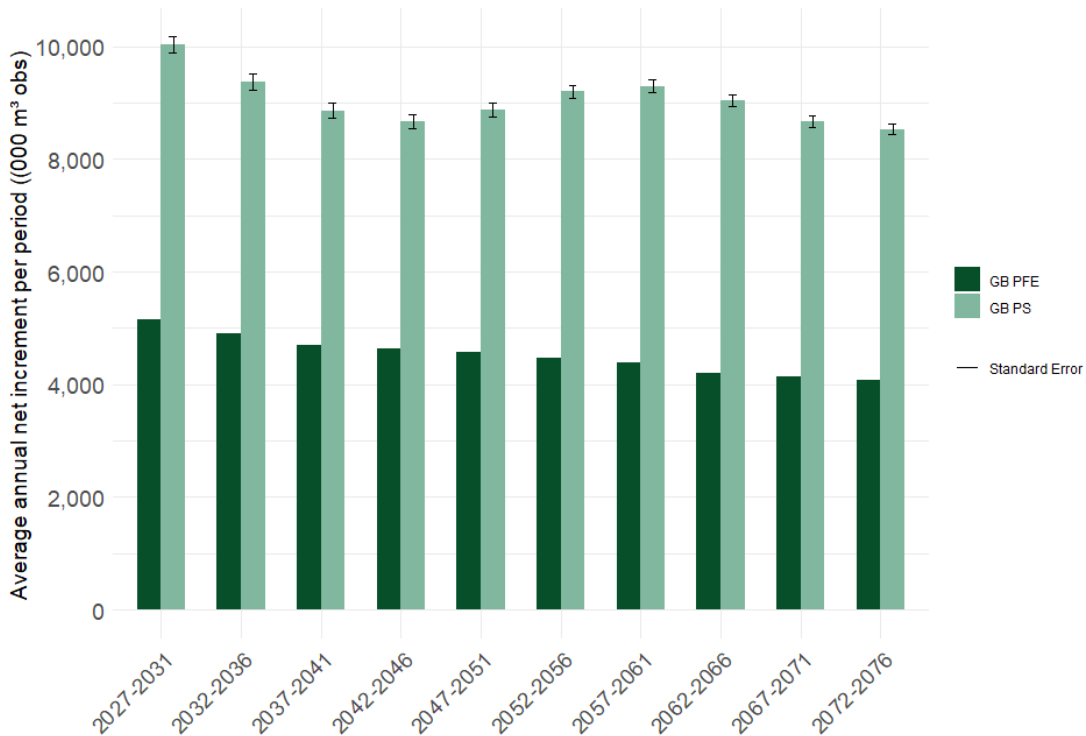
**Figure 5.2** 50-year forecast of average annual coniferous net increment – Scotland



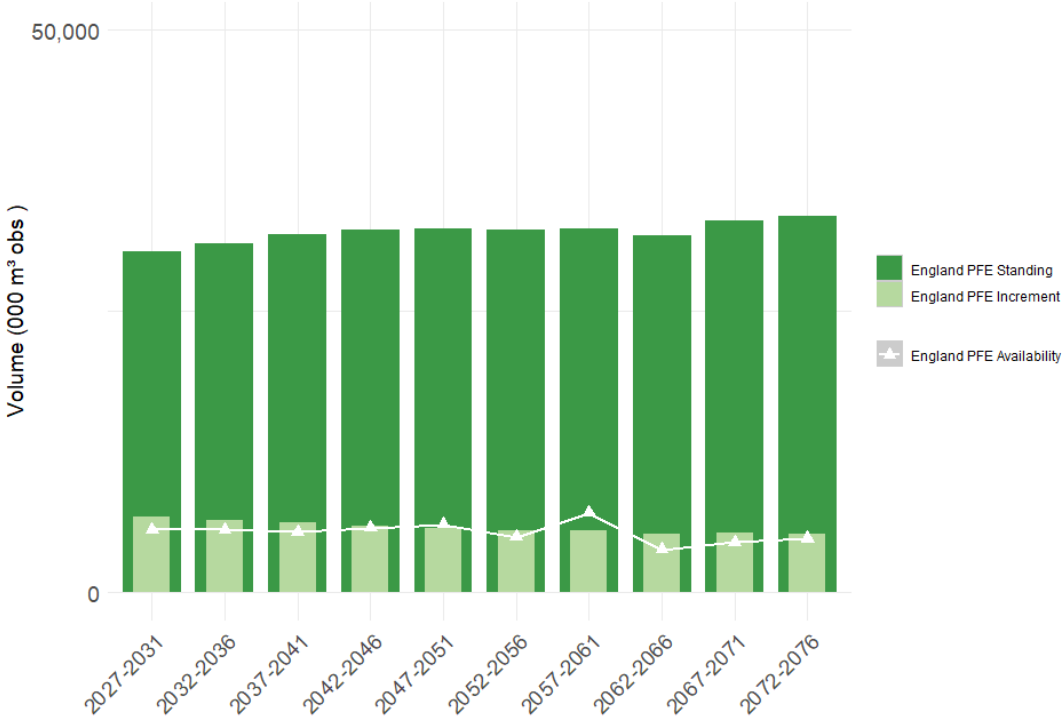
**Figure 5.3** 50-year forecast of average annual coniferous net increment – Wales



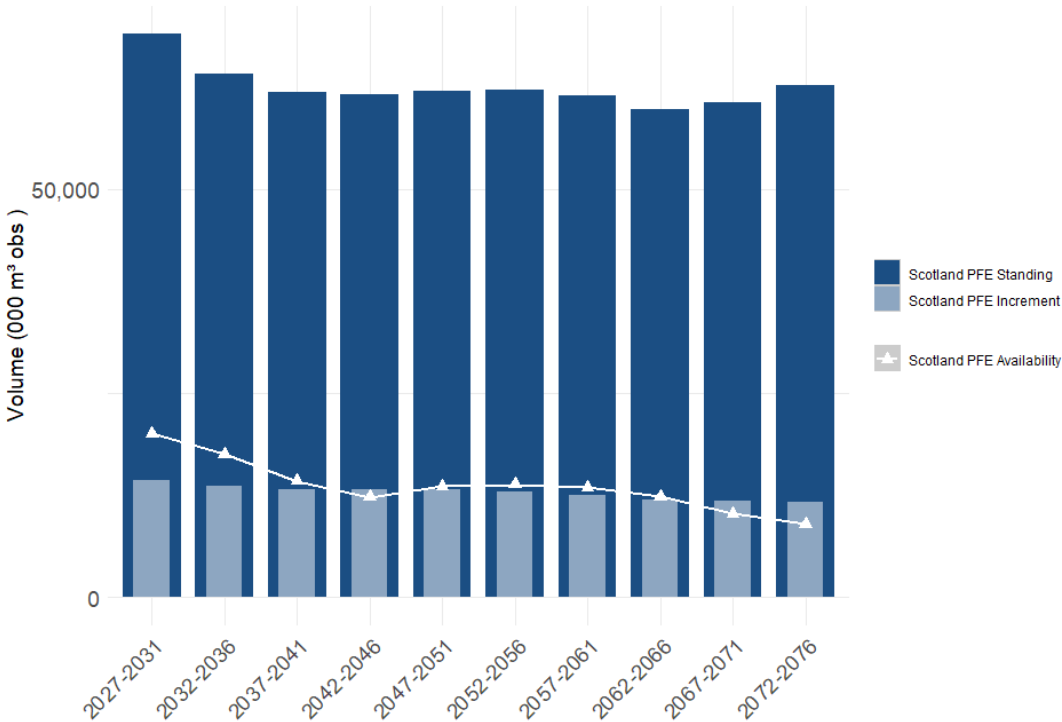
**Figure 5.4** 50-year forecast of average annual coniferous net increment – Great Britain



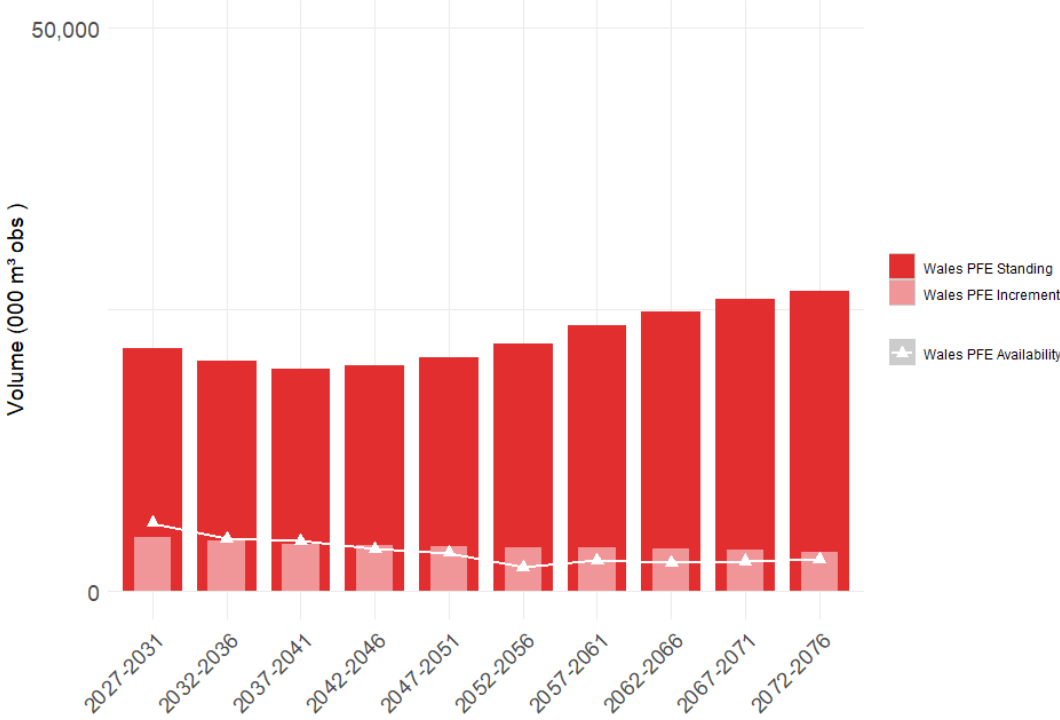
**Figure 6.1** 50-year summary of softwood standing volume, increment, and availability by country – Forestry England



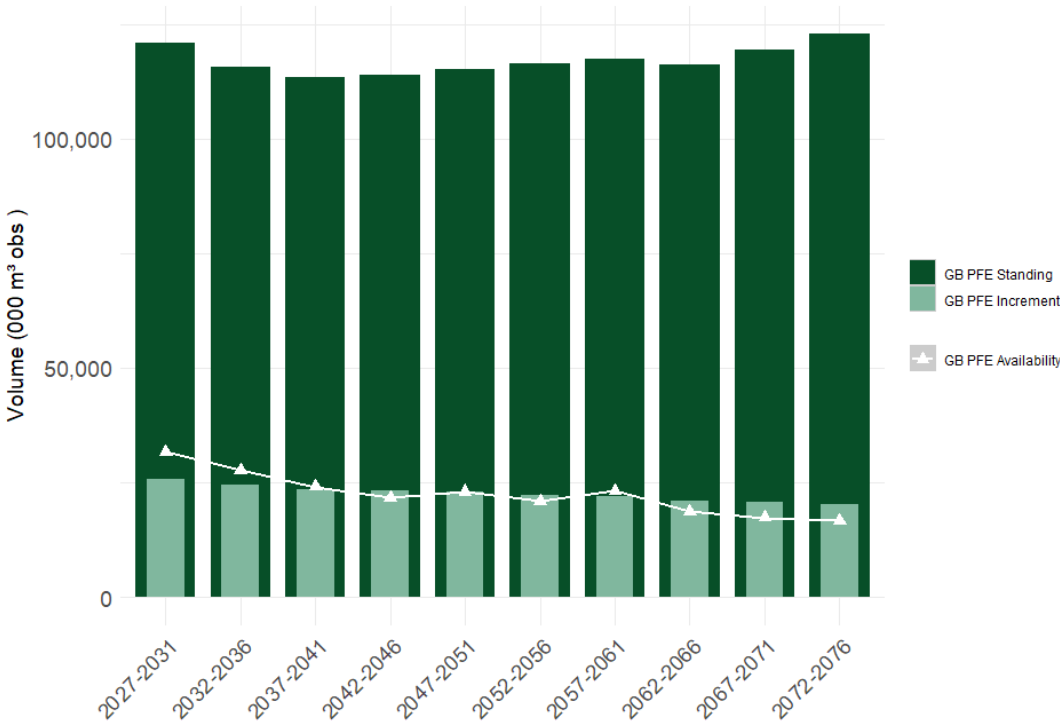
**Figure 6.2** 50-year summary of softwood standing volume, increment, and availability by country – Forestry and Land Scotland



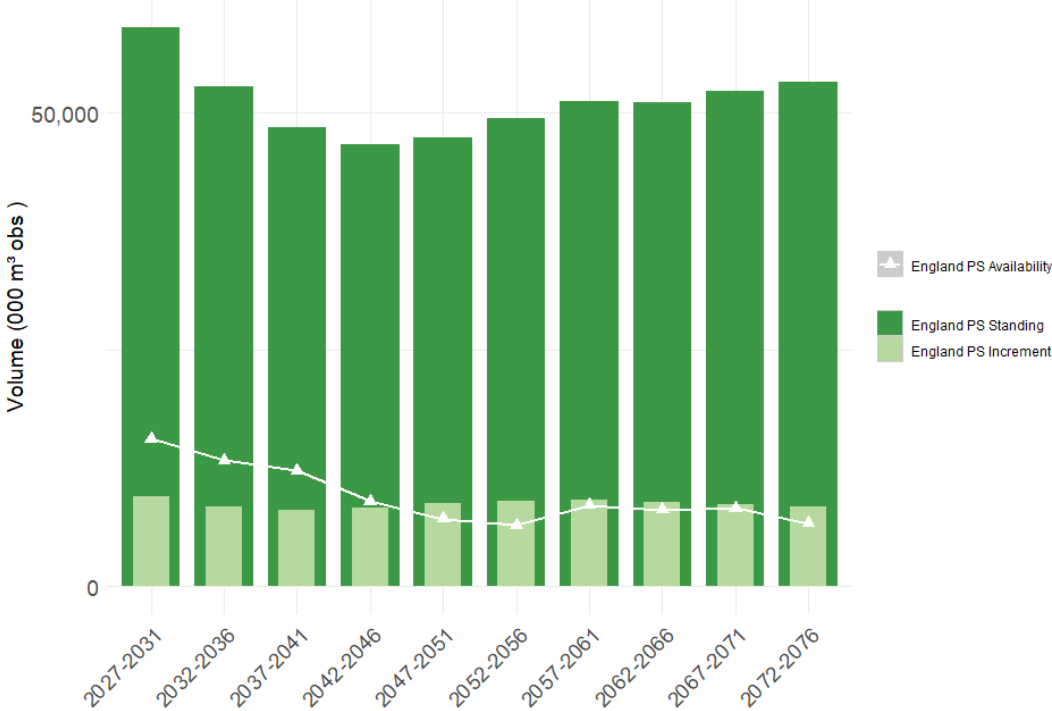
**Figure 6.3** 50-year summary of softwood standing volume, increment, and availability by country – Natural Resources Wales



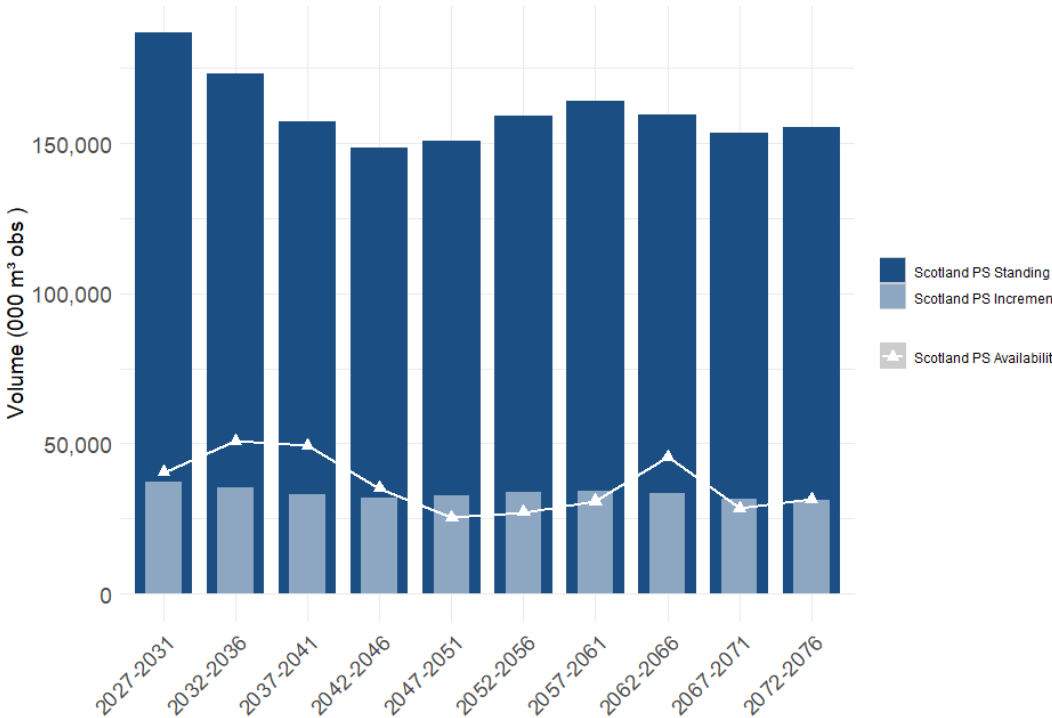
**Figure 6.4** 50-year summary of softwood standing volume, increment, and availability by country – Public Forest Estate in Great Britain



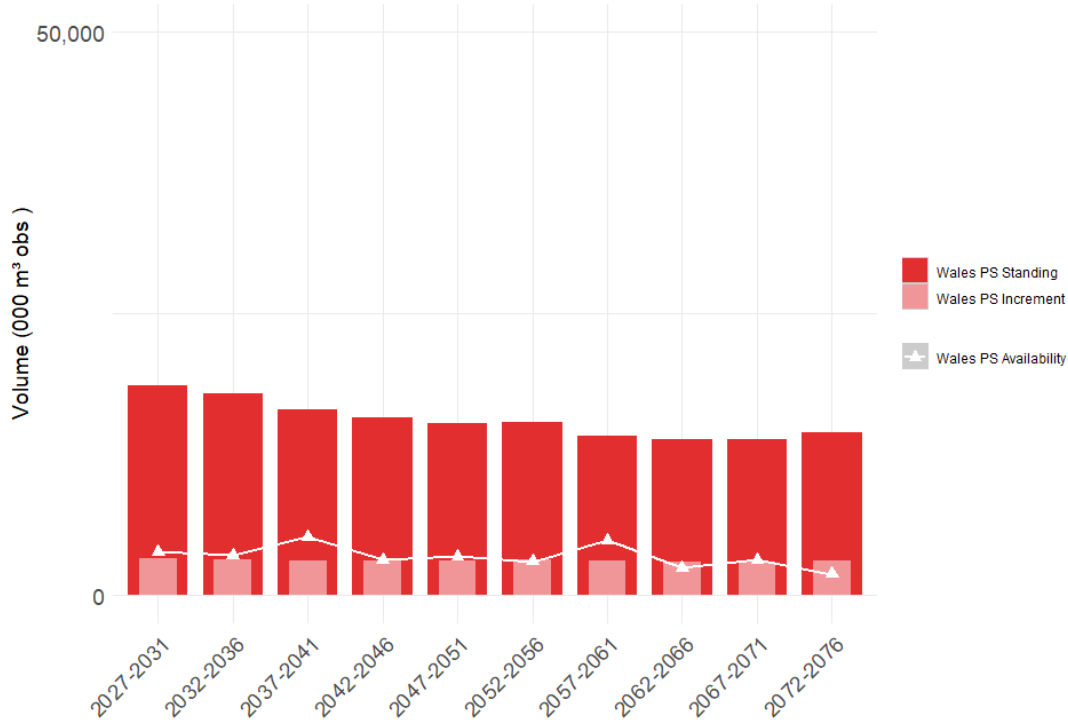
**Figure 7.1** 50-year summary of softwood standing volume, increment, and availability by country – English private sector



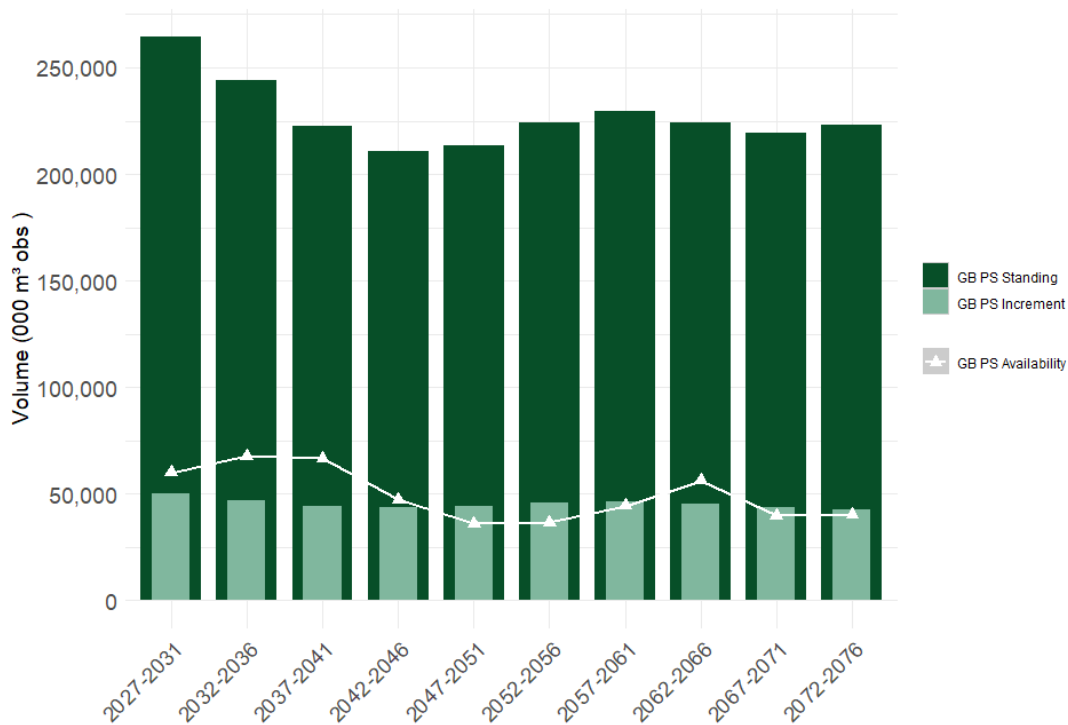
**Figure 7.2** 50-year summary of softwood standing volume, increment, and availability by country – Scottish private sector



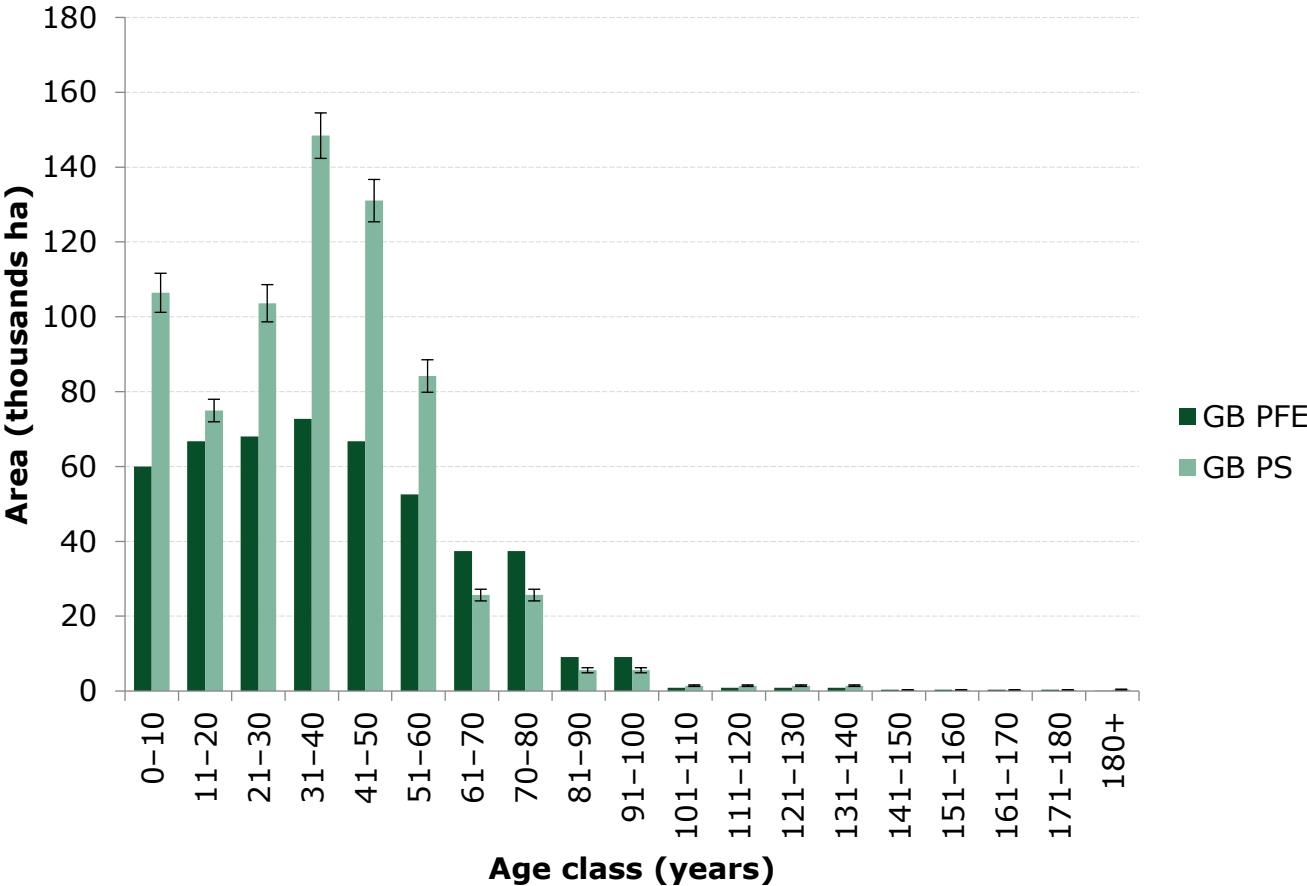
**Figure 7.3** 50-year summary of softwood standing volume, increment, and availability by country – Welsh private sector



**Figure 7.4** 50-year summary of softwood standing volume, increment, and availability by country – GB private sector



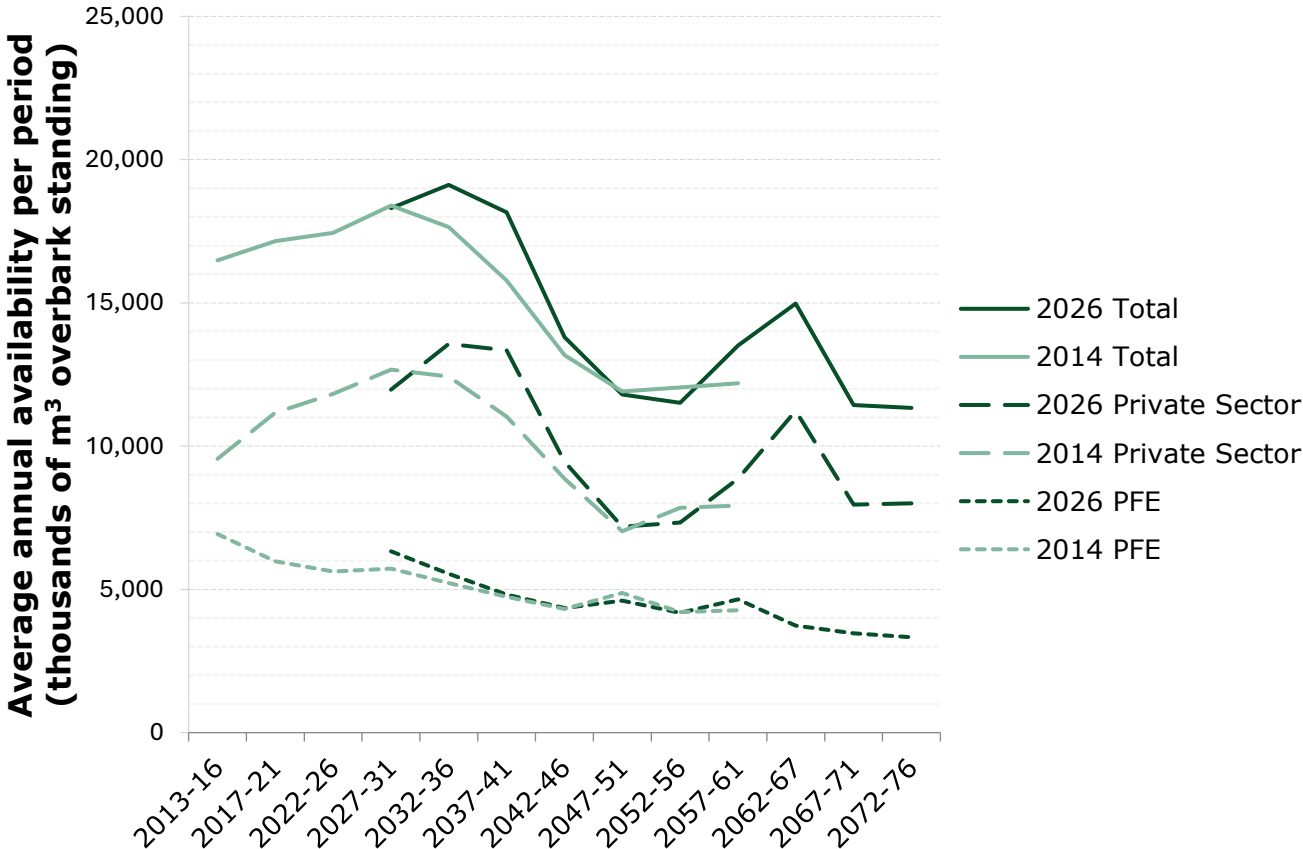
**Figure 8.** All conifers – area by age class and ownership for GB



## 4 What the results tell us

The general trend of the current forecast is broadly consistent with previous forecasts (see **Figure 9** – harvesting volumes are given in units of m<sup>3</sup> overbark standing), showing a rise in availability during early periods, and a subsequent decline. However, the current forecast shows a later peak in volumes and a sharper decline. This uneven availability across the forecast duration is driven by the uneven age profile of woodlands in GB (see **Figure 8**), which results in peaks and troughs of availability.

**Figure 9.** Comparison of the 50-year forecast of softwood timber availability for the Public Forest Estate and private sector estate in GB (2014 vs 2026)



There is good consistency between the projections of timber availability from the last 50-year softwood forecast (2014) and those presented in this forecast, despite

a number of differences in the assumptions underlying each forecast. The volume profiles at the GB-level are approximately consistent in both forecasts, though the peak average volumes in the current forecast come later (2032–2036 as opposed to 2027–2031) and are slightly higher than reported in the 2014 forecast (19.1 million m<sup>3</sup> compared with 18.4 million m<sup>3</sup>).

As discussed in the last 25-year forecast (2022) – which also drew comparisons with the last 50-year forecast (2014) – the increase in volume and later peak are caused by the change to the M1v2 models in tandem with defining the timing of felling as the age at which a target diameter is reached (as opposed to using the age of maximum mean annual increment).

Both 50-year forecasts predict a decline in timber availability into the mid-century, which is most pronounced between 2037 and 2046; the current forecast predicts average annual volume will drop from 18.2 million m<sup>3</sup> to 13.8 million m<sup>3</sup> – a decline of 24% between these periods. Average annual softwood availability then remains relatively low for the subsequent decade at just under 12 million m<sup>3</sup>. While comparison with previous forecasts shows similar trends in the early periods, the current forecast is the first to capture the subsequent rise in availability following the predicted decline. Availability is expected to increase in the latter half of the forecast, returning to a second peak of around 15.0 million m<sup>3</sup> in the period 2062–2066. However, the final two forecast periods predict further decline, with minimum annual availability expected at around 11.3 million m<sup>3</sup> in the final period 2072–2076.

As in previous forecasts, trends are distinct for each sector, and the distinctive form of the GB forecast's profile is driven primarily by trends in the private sector.

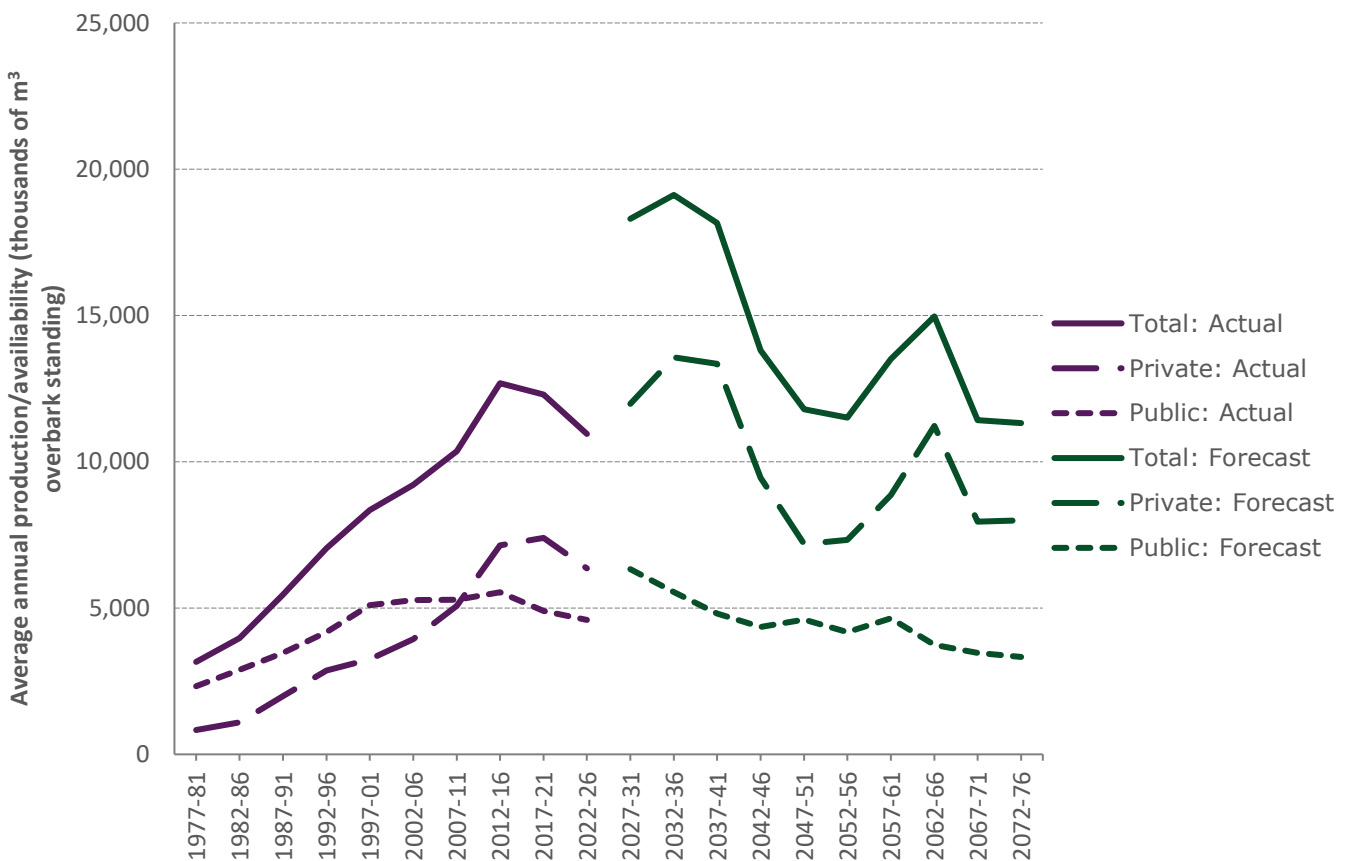
The main drivers of change since the last 25-year forecast (2022) are caused by:

- Changes in woodland area in both the private sector and the Public Forest Estate – this reflects the use of the 2023 NFI woodland map for the private sector and the 2025 SCDB snapshot for the public sector; and the removal of 7.5 thousand hectares from conifer area in the private sector.
- Application of the Public Forest Estate’s own restock prescriptions.
- The application of M1v2 growth and yield models in the Public Forest Estate forecast.
- The change in how stands with mean stand diameter 30–32 cm (i.e. ‘marginally overdue’ stands) are handled in the private sector.
- Reduced thinning in both the public and private sector forecasts.

### 4.1 Actual production vs forecasted availability

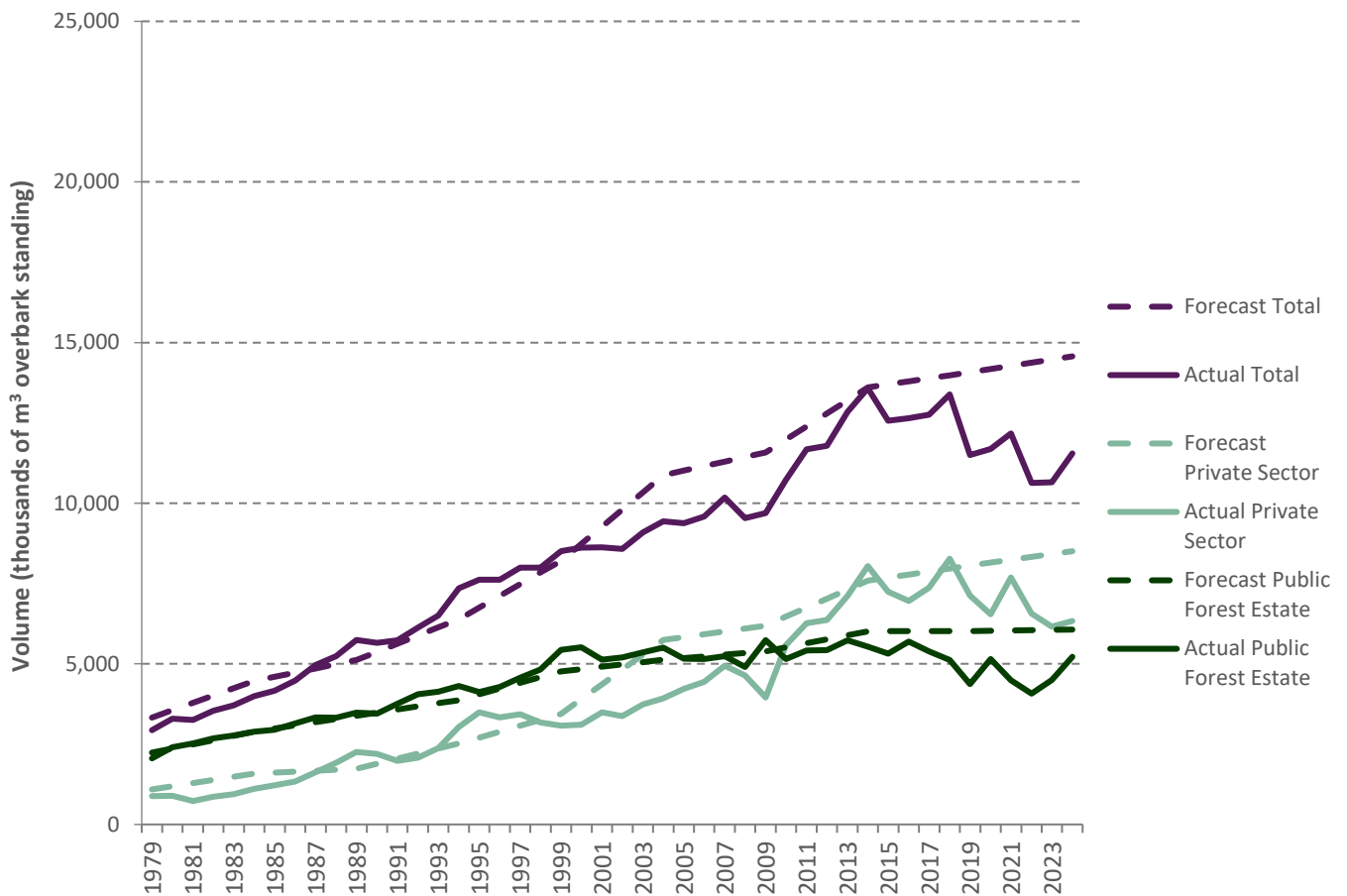
The average annual availability across the first 25 years of this forecast (16.2 million m<sup>3</sup>) is around 28% higher than the historic peak production (an average of 12.7 million m<sup>3</sup> in during 2012–16 – see **Figure 10**). Average availability is predicted to drop to 11.5 million m<sup>3</sup> by 2067–71 and 11.3 million m<sup>3</sup> by the end of the forecast. The average available volume for the latter 25 years of this forecast (12.6 million m<sup>3</sup>) is significantly lower than in the first 25 years.

**Figure 10.** Actual production vs forecasted available volume (average annual)



While forecasting under this set of assumptions outlines a certain level of annual availability, actual production volumes in future will be shaped significantly by market demand, as well as the sector’s capacity to increase harvesting output. It is therefore likely that a substantial volume of unharvested overdue/overmature

timber will be carried forward into subsequent periods. Harvesting capacity is unlikely to expand rapidly enough to absorb this additional volume since new major industrial developments will require several years to come online. Consequently, even with a theoretical forecast of 17–18 million m<sup>3</sup> available per year, current harvesting levels (around 12 million m<sup>3</sup> – see **Figure 11**) suggest a persistent annual carryover in the region of 5–6 million m<sup>3</sup>. This is likely to result in a backlog of standing timber in certain regions. The accumulation of overstood crops introduces heightened exposure to windblow risk; in regions already vulnerable to severe weather events, the combination of increasing stand age with climatic variability could amplify unplanned losses, disrupting supply stability in the near term and introducing strategic risk in longterm resource planning.

**Figure 11.** Actual softwood production volumes vs historic forecasting (annual)

- Forecast values for past years have been compiled from a number of previously published softwood forecasts, therefore, the main assumptions behind each forecast (e.g. trigger for felling) differ between years.
- Time series data for wood production and roundwood removals are available from [Forestry Statistics 2025](#).

## 4.2 Changes in stocked area and standing volume

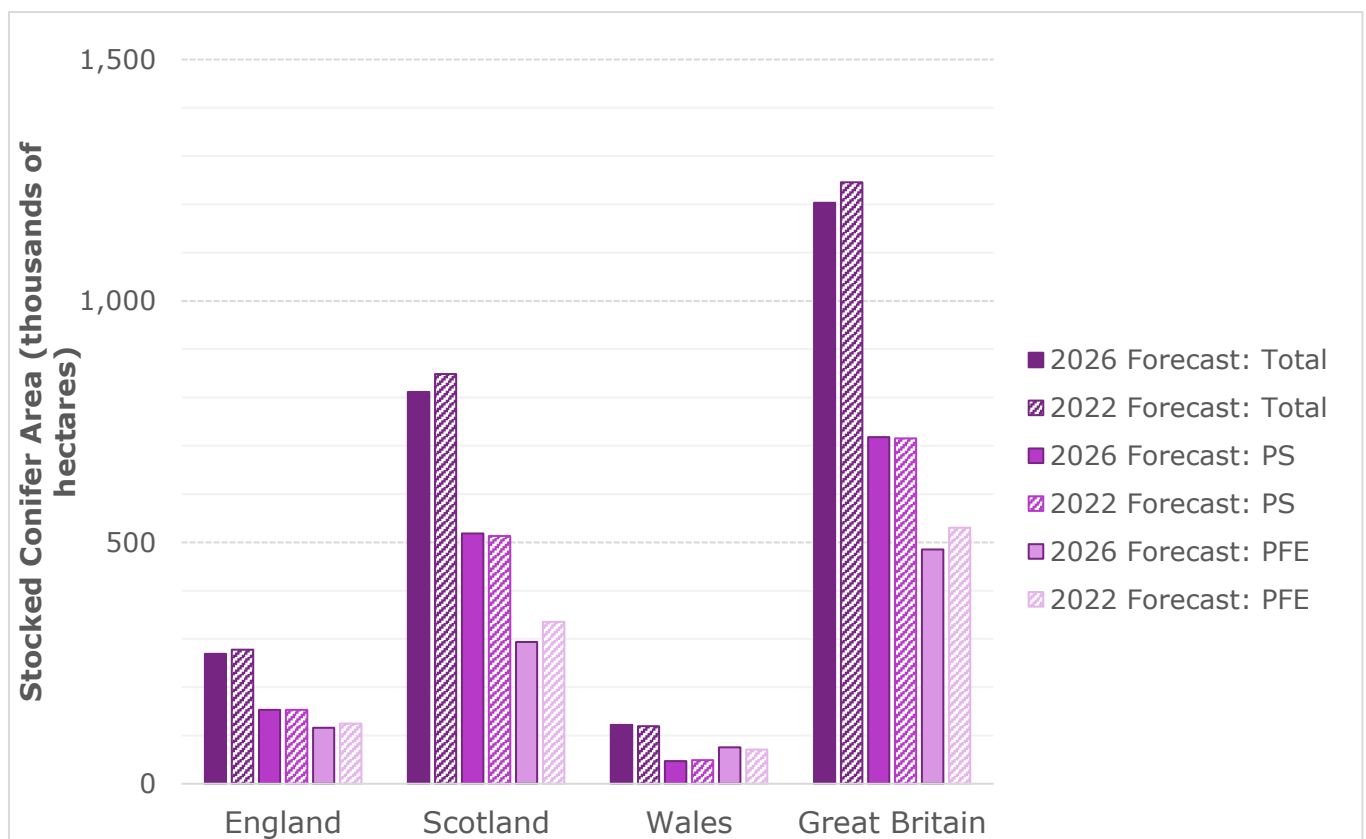
Compared with the 25-year forecast of softwood availability (2022), the opening conifer standing volume has increased in both sectors and across all countries. The change in the Public Forest Estate is more pronounced than in the private sector; this is because the public sector forecast uses a different woodland inventory (the 2025 SCDB snapshot as opposed to the 2021 snapshot) and applies different yield models (M1v2 as opposed to M1 – see **Section 4.5.2** for more detail). For the private sector, the woodland inventory and yield models remain unchanged since the 25-year forecast (both use NFI second cycle data and M1v2 growth and yield models); differences in opening areas and volumes arise from using an updated woodland map (2023) for bulking up the NFI survey data to GB-levels.

The increase in opening standing volume for the private sector is around 2.5 million m<sup>3</sup> overall. The difference is primarily in Scotland due to Scotland's private stocked conifer area increasing by 4.8 thousand hectares; England's has increased by only 0.02 thousand hectares, while Wales's has decreased by 1.8 thousand hectares (see **Figure 12**). The increase in conifer area is observed despite the introduction of the assumption around permanent removals, which removed 7.5 thousand hectares of conifer area from the 2023 Woodland Map in regions where developments on conifer woodland (e.g. windfarms) are thought to be most prominent (i.e. all Scottish NFI regions and North East/North West England, with approximately 710 hectares from the two English regions and the remainder across Scotland). The reduction was applied in amounts proportional to the total conifer area within each region, equating to a 2% reduction in conifer area in each of these regions. Despite this reduction, conifer area has increased in Scotland's private sector and has remained approximately static in England's private sector.

Since the 2022 forecast, stocked conifer area has decreased by 41.6 thousand hectares in the FLS estate and by 8.4 thousand hectares in the FE estate (see **Figure 12**). After correcting an error in the 25-year forecast (2022) which

underestimated NRW's conifer area by around 5 thousand hectares, NRW's conifer area has decreased by approximately 0.3 thousand hectares. Despite the overall reduction in conifer area, the opening standing volume in the Public Forest Estate has increased by 11.1 million m<sup>3</sup> (approximately 9.5 million m<sup>3</sup> after accounting for the revision to NRW's 2022 conifer area).

**Figure 12.** Changes in conifer stocked area since the last 25-year forecast (2022)



While changes in opening conifer area are driving much of the difference that can be observed between the current forecast and the last 25-year forecast (2022), the change from M1 to M1v2 growth and yield models in the Public Forest Estate is offsetting the effect of a reduced conifer area. This is because there is an overall increase in the estimation of conifer volume when M1v2 growth and yield models are applied to the PFE's woodland inventory (see **Table 11**); this is also reflected in the increased average yield class in all national estates (see **Table 12**). **Table**

**11** shows how using M1v2 produces higher estimates for opening standing conifer volume compared with M1.

While the opening standing volume has increased since the 2022 forecast, the average annual standing conifer volume per 5-year period (see **Table 9**) tends to be lower than previously estimated. The private sector on the whole shows lower volumes in every country when viewed at the GB-level. The FE and NRW estate both show increased average annual volumes, which can be attributed to both the M1v2 models, and the correction to NRW's stocked area. FLS's estate tends to be lower which likely arises from the overall reduced conifer area since the last forecast.

**Table 11.** Differences in opening standing volume since the 25-year forecast of softwood availability (2022) using M1 and M1v2 growth and yield models

Country	M1 (25-year forecast)	M1 (50-year forecast)	M1v2 (50-year forecast)	Change: M1 (25-year vs 50-year forecast)	Change: M1 (25-year) vs M1v2	Change: M1 (50-year) vs M1v2
	(000 m <sup>3</sup> obs)	(000 m <sup>3</sup> obs)	(000 m <sup>3</sup> obs)	(%)	(%)	(%)
England	25,753	28,580	29,649	11.0	15.1	3.7
Scotland	76,143	76,958	79,713	1.1	4.7	3.6
Wales	19,951	22,198	23,625	11.3	18.4	6.4
<b>Great Britain</b>	<b>121,847</b>	<b>127,736</b>	<b>132,987</b>	<b>4.8</b>	<b>10.4</b>	<b>5.3</b>

**Table 12.** Coniferous mean yield classes for GB

All conifers	GB PFE	Private sector
	(m <sup>3</sup> per ha per yr)	(m <sup>3</sup> per ha per yr)
England	15.7	15.9
Scotland	14.3	16.5
Wales	17.4	17.0
<b>Great Britain</b>	<b>15.1</b>	<b>16.4</b>

*\*Note: The data in this table are for stands aged between 15 and 50 years old*

### 4.3 Net increment vs. harvested volume

The trends in available volume are driven by the balance between net increment (see **Table 10**) and harvesting (see **Table 3**). Net increment tends on average to be lower than available volume in the first few periods of the GB forecast, however, this balances out mid-century. As mentioned previously, current GB production volumes are around 11–12 million m<sup>3</sup> per year (see **Figure 11**), which is within the average annual availability for the first 25 years of the forecast (16.2 million m<sup>3</sup>), and is lower than net increment for most of the forecast. Harvesting less than is theoretically available should have the effect of smoothing the volume profile presented in this forecast, with the added caveat that overmature stands will be at risk from extreme weather events. However, should harvesting and processing capacity increase substantially in the short term, planners may find they come up against the limits of production capacity, and actual availability could decline. It should also be noted that this forecast does not consider future afforestation, and estimates are calculated on the basis of already-existing woodlands. This is likely to result in a small underestimate of future production which will be marginally evident in the later years of the forecast.

## 4.4 Changes in relative levels of species and of timber

Another factor driving the overall downward trajectory in available softwood volumes presented in this report is the changing planting profile throughout the forecast, i.e. species diversification away from single-species stands of Sitka spruce, which can be observed in all countries and sectors. In the GB private sector, the proportion of the total woodland area occupied by Sitka spruce declines from 18% to 13% over the forecast duration; in the Public Forest Estate (PFE), Sitka spruce area declines from 46% to 37%. The decline is especially pronounced in Scotland, where the proportion of Sitka spruce declines from 37% to 29% in the private sector and from 56% to 44% in the PFE. The overall decline in the proportion of Sitka spruce area, which has comparatively high rates of growth, can explain some of the decline in periodic net increment that can be observed across the forecast duration.

In all countries/sectors, the decline in Sitka spruce area is accompanied by an increase in the area of broadleaved species, as well as an increase in open area; this is to be expected due to the private sector restocking prescriptions designed to reflect current UKFS guidelines, which encourage a shift away from single-species forest management units and the apportioning of approximately 10% of restocked area to broadleaved species, and 10% to open area (see **Appendix C**). Since these guidelines also apply in the public sector, it is not surprising that a similar trend emerges from forecasting using their own restocking plans.

The changes to the proportions of Sitka spruce are also reflected in **Table 5**, which shows the shift in percentage of total conifer volume arising from spruce felling. For the GB Public Forest Estate, this declines from 75% in the period 2027–2031, to 64% by the final period 2072–2076. For the private sector, this declines from 69% in the period 2027–2031, to a minimum of 56% in 2047–2051, before rising again to a peak of 78% in 2062–2066; in the final period 2072–2076, the proportion of spruce is 71% of total softwood volume. **Table 3.3** in the

accompanying spreadsheets also indicates the changes that can be expected in the planting profile for GB woodland, where Douglas fir, Scots pine, Norway spruce, and other conifer species are seen to represent higher proportions of the total harvested softwood volumes by the end of the forecast.

While recent changes to UKFS restructuring guidelines will not yet have fully manifested in the current woodland inventories (NFI and SCDB), their influence will become more evident over time. A gradual shift away from single-species conifer stands toward more diverse and resilient species mixtures, with a greater emphasis on native woodland types, is anticipated. These emerging patterns are unlikely to affect near term availability but will shape the longer-term landscape. As future stands reach maturity – typically 35 to 50 years from establishment – differences in species composition, growth rates, and management objectives may lead to harvesting patterns that differ from those associated with today’s conifer resource.

## 4.5 Forecast for the Public Forest Estate (FE/FLS/NRW)

### 4.5.1 Changes in inventory data and assumptions

The forecast set out in this report for the public sector uses the most up to date sub-compartment database (SCDB – snapshot as at March 31st 2025) as its base data. This forecast is the first softwood availability forecast to use the public sector's own restock plans, meaning that felling, thinning, fallow, clearfell-alternative management prescriptions, and restock prescriptions are all now based on SCDB data (compared with the 25-Year Forecast of Softwood Timber Availability (2022), which used only the (2020) SCDB’s inventory data and management plans – restock and fallow period followed a ‘strategic’ prescription). It is also the first forecast where the M1v2 growth and yield models have been applied (M1 was used for the last 25-year forecast). A 30% reduction in intensity was applied to SCDB thinning prescriptions where possible, reflecting real operational limitations which are generally resulting in less thinning than planned.

The combination of these differences in assumptions when compared with previous forecasts is driving much of the change that can be seen when comparing against previous forecasts for the public sector. Despite the changes to the base data and management assumptions, the overall trajectory of public sector available volumes is substantially consistent with both the last 50-year forecast (2014) and the 25-year forecast (2022), both of which predicted a gradual decline in available volume up to the period 2042–2046. The last 50-year forecast (2014) also predicted a modest spike in volume in the period 2047–2051 (see **Figure 9**), which is also observed in the current forecast (increasing to 4.6 million m<sup>3</sup>). The current forecast indicates that availability will then decline to around 4.2 million m<sup>3</sup>, before increasing again to around 4.7 million m<sup>3</sup>. Following this period of fluctuation, availability will then continue its initial downward trajectory, reaching its minimum of 3.3 million m<sup>3</sup> in the final forecast period 2072–2076.

#### 4.5.2 Application of M1v2 growth and yield models

Comparisons using the same base data (the 2025 SCDB) but applying M1 growth and yield models show similar volume profiles, with the primary difference being greater softwood volumes – 2.1% greater on average across the entire 50-year forecast duration (see **Table 11**). The M1v2 models are a refined set of models based on a larger empirical dataset; the volumes calculated using M1v2 represent a more realistic reflection of future volumes than those based on M1. However, since growth curves are different between M1 and M1v2, it is possible that public sector management plans which were designed to fell at age of maximum mean annual increment (MAI) no longer prescribe felling at the age of maximum MAI based on M1v2, or that optimal thinning windows are changed. As noted in the 25-Year Forecast of Softwood Timber Availability (2022), when developing the M1v2 growth and yield models, it was found that some species, including spruces, had ages of maximum MAI much later than those predicted by the M1 models (e.g. up to 20 years later in the case of Sitka spruce). One consequence of this is that there may be some potential volume lost due to thinning/felling plans that are out of

step with M1v2. Once the M1v2 models are fully available, planners may decide to review timings on the basis of the new growth curves.

### 4.5.3 Management intentions

The published intention of the three state forestry organisations is to manage production to ensure a long-term sustainable harvest, in balance with long-term increment, and this means that the volume of timber offered to market may differ from the forecast:

- Forestry and Land Scotland is committed to offer at least 3.2 million m<sup>3</sup> per annum ( $\pm 10\%$ ) to market in the period to 2029 in line with the [Marketing & Sales Timber Marketing Framework 2020–2029](#). Forestry and Land Scotland's aim is to smooth production in the medium to long term, although management of storm damage and diseases such as *Phytophthora* and Dothistroma needle blight may result in production variations in the short term.
- Forestry England is committed to offer to market 1.1 million m<sup>3</sup> per annum ( $\pm 5\%$ ) in the period 2027–2031, with the caveat that this figure does not account for unforeseen events such as plant health issues and storm damage. Beyond 2031 the forecast indicates availability only, and although it is based on existing forest plans, these will change over time to reflect evolving policies and their implementation in forest plans.
- Potential available volume from the Welsh Government Woodland Estate shows a steady trend over the next two decades, reflecting volume from approved coupes in the current forest resource plans. The approval period for 2052–56 currently shows a dip because more coupes remain to be assigned to this period, which takes place through the Forest Resource Plan revisions. NRW's commitment of 'timber to market' is published in their Timber Sales & Marketing Plan, which can be found on [NRW's website](#).

## 4.6 Forecast for the private sector estate

The GB private sector forecast used the same base data and applied the same growth and yield models as the 25-year Forecast of Softwood Timber Availability (2022). A number of changes were made to the strategic management and restocking prescriptions and much of the difference in the volume profile between this forecast and the previous softwood forecast (2022) arises from these changes. Of note is the 20% reduction in applied thinning and the accelerated removal of spruce species from South East England and London, and East England regions, and their removal from the restock prescriptions in those regions (due to the current spruce ban in the *Ips typographus* demarcated area). This accelerated spruce harvesting contributes to the higher peak available volumes at the start of the forecast (1.1 million m<sup>3</sup> in the first forecast period).

### 4.6.1 Changes in overdue handling

One contributing factor in producing higher initial peak volumes is the change in how overdue timber is handled in the private sector, through the application of a buffer. The buffer applies to stands up to 2cm above the target diameter at breast height (DBH). For stands in this buffer at the start of the forecast, they are assumed to be felled when they reach 31 cm or 32 cm (26 cm or 27 cm for larches), rather than applying overdue prescriptions (see **Appendix E** for detail on overdue prescriptions). The approach used in the last two 25-year forecasts for handling overdue timber – which assumes that a portion of overdue stands are harvested over 25 or 50 years – has been continued for this forecast, but there is likely to be a smaller portion of stands being managed in this way due to the introduction of the buffer assumption.

### 4.6.2 The prominence of Sitka spruce

The distinctive 'saddle' morphology of the overall GB volume profile is primarily driven by Sitka spruce in the Scottish private sector, which itself is sufficient to shape the overall morphology for the softwood volume profile for Great Britain. The

average annual volume of available Sitka spruce in Scotland alone peaks at 8.1 million m<sup>3</sup> in 2032–2036, before beginning a downward trajectory to its minimum of 2.9 million m<sup>3</sup> in 2047–2051. Availability then rises again from 2052–2056 onwards, peaking again at 7.3 million m<sup>3</sup> in 2062–2066 (see **Table 3.3** in the accompanying spreadsheet). This return of availability arises primarily from the prominence of like-for-like restocking of Sitka spruce (except in those regions within the *Ips typographus* demarcated area).

#### 4.6.3 Age class structure and diameter class structure

As mentioned previously, the availability profile for the next 50-years is substantially driven by the uneven age class/diameter class structure of British woodlands, resulting from historic planting trends. This is evident in declining volumes coinciding with:

- a decline in stocked conifer area between 20 and 40 cm mean stand diameter
- an increase in the average age of felled stands.

Together, this indicates a shortfall of mature conifer throughout the mid-century. The reduction of area comprising these diameter classes is particularly crucial given the private sector felling prescription fells at the target diameter of 30 cm (25 cm for larches). Conversely, the increase in volumes following the trough coincides with a decline in the average age of felled stands, reflecting the maturation of fast-growing Sitka spruce in the restock.

## 4.7 Impact of future events

The availability outlined in current and previous forecast reports is dependent on a set of assumptions around management objectives and harvesting. Where actual management plans and restock prescriptions for the public sector are available, these have been used, providing the best possible estimate of expected timber availability based on these plans. However, these may be subject to change in response to shifting management priorities, changes in policy, or natural disturbances (e.g. severe weather events or pests and diseases). Additionally, this forecast assumes a target diameter of 30 cm (25 cm for larches) as the trigger for felling in the private sector, which is itself sufficient in scale to shape the overall volume profile for all of Great Britain; this, as well as the assumptions applied for thinning and overdue harvesting, will never be entirely consistent with the broad range of management decisions made in actual practice, due to the wide range of management objectives different owners will have. Therefore, timing of actual production is likely to fluctuate from that presented in this report. However, given the prominence of the target diameter approach to harvesting in commercial forestry, it is reasonable to assume that there will be some degree of correlation.

## 5. Conclusions

The forecast indicates that potential softwood availability from the GB forest estate will average 14.4 million cubic metres per annum over the next 50 years, with Scotland contributing around 10.0 million cubic metres, England contributing 3.0 million cubic metres, and Wales contributing 1.4 million cubic metres. Across Great Britain, this projected average is approximately 25% higher than the actual annual softwood production for 2024, which stood at 11.6 million cubic metres (9.9 million green tonnes, Forestry Statistics 2025). It is important to note, however, that historical production has fluctuated, and despite remaining above levels seen between 1980 and 2010, output has declined over the past decade.

Softwood availability is not constant throughout the forecast period. It rises from 18.3 million cubic metres per annum in 2027–31 to a peak of 19.1 million cubic metres in 2032–36, before a steep decline, reaching a minimum of 11.5 million cubic metres by 2052–56, which is below approximate current production levels. This is predominantly due to the uneven age class structure of British woodlands, and in-part due to net increment being lower than the volumes harvested in the early forecast periods under the scenarios used in this forecast. However, since current production is substantially lower than the availability outlined in this forecast, it is likely that the carry-over of unharvested timber will lead to a production profile which is smoother than the availability profile shown in this report.

Availability is projected to recover to 15.0 million cubic metres in 2062–66 before declining again to a forecast minimum of 11.3 million cubic metres in the final period, 2072–76. The profile of volume availability is predominantly driven by Sitka spruce, and the return of availability later in the forecast coincides with the maturation of restocked Sitka spruce stands felled early in the forecast.

The volume profiles differ between the public and private forest estates; the public estate generally shows a gradual decline over time, with some fluctuations between 2042 and 2061, whereas the private sector experiences initial growth in the first three periods, followed by a pronounced trough between 2041 and 2061, then a second peak in 2062–66 before falling again towards the end of the forecast.

If current forest plans are maintained, the Public Forest Estate is expected to provide an average of 4.5 million cubic metres of softwood timber annually over the next 50 years, starting at 6.3 million cubic metres in 2027–31 and reducing to 3.3 million cubic metres by 2072–76. Under the target diameter felling scenario, the private sector could theoretically supply an average of 9.9 million cubic metres per annum, with England contributing 1.9 million cubic metres, Scotland 7.3 million cubic metres, and Wales 0.7 million cubic metres.

Actual production will depend on harvesting decisions made by forest and woodland owners, so these figures represent potential availability rather than guaranteed output. This report provides the 50-year forecast for softwood timber availability, and a separate NFI report will provide corresponding forecasts for hardwood timber in Great Britain.

## 6. Future work

There are several areas where additional data would further enhance future forecast iterations:

### Permanent removals data

Due to the inherent lag in how removals are captured within the NFI, current figures for permanent crop removal rely on estimates supplied by Confor. Further work is required to investigate how best to ensure that recent and potential future permanent woodland removals are accounted for adequately.

### Restocking information and establishment outcomes

The private sector restocking prescriptions used in this forecast are based on analyses from around a decade prior to this report. Though adjustments have been made to account for recent changes in UKFS policy – which mandate an upper limit of 65% for a single species across a forest management unit – repeating this analysis using third cycle NFI data, alongside supplementary data from other sources, will support a clearer picture of establishment success, species composition, and recent changes in industry practice. Ongoing monitoring of restocking practices in the private sector will be crucial to predicting timber availability in future, as well as understanding the longer-term impact of UKFS restructuring guidelines.

### Assessment of overdue volume

Given the scale of overmature timber in some regions, further analysis into how these volumes are being handled over time – especially in the private sector – with attention paid to the handling of individual species, will help anticipate supply patterns and identify potential regional pressures.

## Pests and pathogens

While the current forecast attempts to account for the impacts of *Ips typographus* on spruce in the South East England and London and East England regions, there is a growing need to explicitly represent the increasing risks of endemic (both biotic and abiotic) timber losses within Britain's forests. Historically, Great Britain's relatively 'sterile' pest and pathogen environment has kept such losses low; however, this is expected to change as climate pressures intensify and new organisms establish. Endemic pressures – ranging from established diseases such as *Dothistroma* in pine and *Phytophthora* in larch, to recurring abiotic events such as windthrow and drought – are likely to exert increasing influence over restocking strategies, management practices, and long-term stand viability. Importantly, these risks often sit outside conventional insurance cover, particularly for older stands, leaving forest managers exposed to chronic, unplanned losses. Given these emerging dynamics, future work could acknowledge the growing expectation of background endemic losses and the implications they may hold for sustainable timber supply over time.

## 7. Glossary

Term	Description
Actual production	Timber reported as having been felled and removed from the forest. Forestry England, Forestry and Land Scotland, and Natural Resources Wales keep records of actual production for their estates, while estimates for the private sector come from surveys of harvesting companies and timber processors. These figures are available from the Forest Research website.
Age class	A grouping of trees into specific age ranges for classification purposes.
Annual increment	The volume growth in a year; often expressed in terms of the mean annual increment (MAI) – see below.
Area (forest/woodland)	Forest and woodland area can be defined in net or gross terms. Net area is the land actually covered by trees (in the National Forest Inventory is measured according to the drip line of the canopy). Gross area includes both the area covered by trees and the open spaces (less than 0.5 hectare) within (e.g. rides, glades, ponds).
Biological potential	A term applied to forecast scenarios with the objective of maximising timber production. It typically involves felling stands that are in the year of maximum mean annual increment (MAI) and applying management table thinning. It may not take account of factors that constrain thinning and felling (e.g. wind risk or pest attack).
Broadleaves	Trees and shrubs that belong to the angiosperm division of the plant kingdom (as distinct from the gymnosperm division that includes conifers). Most in the UK have laminar leaves and are deciduous. Sometimes referred to as 'hardwoods'.
Clearfelling	Cutting down of an area of woodland (if it is within a larger area of woodland it is typically a felling greater than 0.25 hectare). Sometimes a scatter or small clumps of trees may be left standing within the felled area.

Conifers	Trees and shrubs that belong to the gymnosperm division of the plant kingdom (as distinct from the angiosperm division that includes broadleaves). Conifers mostly have needles or scale-like leaves and are usually evergreen. Sometimes referred to as 'softwoods'.
Confor	The Confederation of Forest Industries is a membership organisation whose stated aim is to support sustainable forestry and wood-using businesses through political engagement, market promotion, and supporting the competitiveness of members.
Coupe	An area of forest that is harvested in a single operation.
Cumulative volume production	The total volume of timber that is forecast to be produced over the entire forecast period, including any overdue timber.
DAMS (Detailed Aspect Method of Scoring)	A measure of exposure at a particular location. Can be used as a proxy indicator of the risk of catastrophic wind damage to a stand of trees. May be used to influence decisions on thinning and timing of clearfelling where wind is a risk factor.  See the Forest Research webpage about <a href="#">ForestGALES</a> for more information.
DBH (diameter at breast height)	The diameter on the stem of a tree at 'breast height', defined as 1.3 m from ground level.
Dothistroma needle blight	A disease of conifers (especially pine) which causes defoliation, losses in yield and, in severe cases, tree death. Also known as red band needle blight.
Felling plan	A spatial and temporal plan of harvesting activities within a forest or woodland.
Forest (or woodland)	Land predominately covered in trees (defined as land underneath stands of trees with a canopy cover of at least 20%, or the ability to achieve this, and with a minimum area of 0.5 hectare and minimum width of 20 m).

Forestry Commission	The government department responsible for forestry matters in England. The Forestry Commission's functions in Wales transferred to the Welsh Government and to Natural Resources Wales on 1 April 2013. The Forestry Commission's functions in Scotland transferred to Scottish Forestry and to Forestry and Land Scotland on 1 April 2019. The Forestry Commission is supported by two agencies: Forestry England and Forest Research.
Forestry Commission (FC) estate	Forests, woodlands, open land, and other property managed by Forestry England.
Forestry England (FE)	The Forestry Commission agency responsible for managing the national forests in England. Prior to April 2019, Forestry England was known as Forest Enterprise England.
Forestry and Land Scotland (FLS)	The Scottish Government agency responsible for managing the national forests and lands in Scotland, created on 1 April 2019.
Forest plan	<p>A holistic spatial and temporal plan stating the objectives of management together with details of forestry proposals over a period of five years, and outlining intentions over a minimum total of 10 years. Such plans allow managers to communicate proposals and demonstrate sustainable forest management. They can be used to authorise thinning, felling, and other management operations.</p> <p>FLS use the alternative term 'land management plan'.</p> <p>NRW use the term 'forest resource plan'.</p> <p>FE use the term 'forest plan'.</p>
Great Britain (GB)	Great Britain includes England, Scotland, and Wales.
Global Positioning System (GPS)	A U.S. owned utility that provides users with positioning, navigation, and timing (PNT) services.

Increment	The increase in volume of a tree or a stand over a year or annualised over a specified period, measured either in m <sup>3</sup> per year or in m <sup>3</sup> per hectare per year. See also 'Mean annual increment' (MAI).
<i>Ips typographus</i> (European spruce bark beetle)	<p>The larger eight-toothed European spruce bark beetle is a destructive pest of spruce trees (trees in the <i>Picea</i> genus) as well as some tree species in other conifer genera.</p> <p>It is also known as European spruce bark beetle, eight-toothed spruce bark beetle, bark beetle, eight-dentate beetle, engraver beetle, eight-spined beetle, and spruce bark beetle.</p>
Like-for-like (restocking)	The restocking of areas of felled trees with trees of the same species and yield class.
M1 growth and yield model	A dynamic representation of the yield tables originally published as FC Booklet 48. Provides a flexible model for predicting forest growth and yield, in terms of the types of management prescriptions that can be applied and the growing stock that can be represented.
M1v2 growth and yield model	An extension of the earlier M1 model developed with the key aim of addressing and removing major inaccuracies identified in some of the earlier models of growth and yield. Refers to a revised set of yield tables.
Management table thinning	A sequence of thinnings prescribed by Forestry Commission yield tables over the life of a forest stand. Management table thinning refers to the pattern of thinning recommended in these yield tables. In standard yield tables the thinnings are set to an intensity which aims to maximise diameter increment while also maintaining maximum cumulative volume production.
Mean annual increment (MAI)	The average rate of volume production up to a given year, expressed in m <sup>3</sup> per hectare per year. In even-aged stands it is calculated by dividing cumulative volume production by age.

Mensuration	The study of the measurement of lengths, areas, volumes, and related quantities. Forest mensuration is concerned with the measurement of trees, woodlands, and forests, including standing and felled timber.
Modified biological potential	A term applied to a biological potential forecast scenario which takes account of factors that constrain thinning and felling (e.g. wind risk or pest attack).
Natural Resources Wales (NRW)	A Welsh government sponsored body that manages and protects Wales's natural resources and environment, with a core duty of sustainable management of natural resources. Created on 1 April 2013.
Net increment	The volume growth less loss due to mortality, including windthrow, but not subtracting any harvested volume.
Overbark	Used as a qualification when the diameter or volume of wood includes the bark.
Overdue	Timber contained in stands that are beyond the target felling diameter prescribed by the harvesting scenario at the start of the forecast.
<i>Phytophthora</i>	Fungus-like pathogens that can cause extensive damage and mortality to trees and other plants.
Public Forest Estate	In this report, the combined FE/FLS/NRW is referred to as the 'Public Forest Estate'.
Private sector estate	Forests and woodlands in Great Britain not managed by the Forestry England, Forestry and Land Scotland, or Natural Resources Wales. In the context of the National Forest Inventory, 'private sector' is used for convenience, although it includes land owned or managed by organisations such as local authorities and charities.
Production forecast	A forecast of softwood volume production based on a firm plan of harvesting.

Restocking plan	A spatial and temporal plan describing how felled areas are to be replanted or regenerated.
Scottish Forestry	The Scottish Government agency responsible for forestry policy, support, and regulations.
Softwood	The wood of coniferous trees or the conifers themselves.
Stand	A distinct area of woodland, generally composed of a uniform group of trees in terms of species composition and spatial distribution, and age and size class distribution.
Standard error (SE)	The measure of the margin of error associated with an estimate as a result of sampling from a population with statistical variability. Larger standard errors indicate less precision in the estimate. Standard errors in this report are quoted in relative terms (i.e. as percentages of the value of the estimate).
Standing volume	The live stemwood and usable branchwood of trees (up to 7 cm top diameter). It excludes roots, below ground stump material, small branches, brash, foliage, and deadwood. For private sector woodland only, it also excludes trees in woodlands of less than 0.5 hectare. Usually expressed as m <sup>3</sup> overbark standing (m <sup>3</sup> obs).
Stemwood	The woody material forming the above ground main growing shoot(s) of a tree or stand of trees. The stem includes all woody volume above ground with a diameter greater than 7 cm overbark. Stemwood includes wood in major branches where there is at least 3 m of straight length to 7 cm top diameter.
Sustainable forest management	The stewardship and use of forests and forest lands in a way, and at a rate, that maintains their biodiversity, productivity, regeneration capacity and vitality, and their potential to fulfil, now and in the future, relevant ecological, economic, and social functions at local, national, and global levels, without causing damage to other ecosystems.

Terminal height	The top height of a stand at which wind damage is expected to reach a level necessitating clearfelling.
Thinning	The periodic harvesting of trees in a woodland, involving the removal of some trees for commercial use and the retention of others for future production or long-term retention.
Thinning plan	A spatial and temporal plan of harvesting activities within a forest or woodland.
Top diameter	The diameter of the smaller (top) end of a length of stemwood, branchwood, or log, often used to define different categories of wood products (e.g. sawlogs, roundwood, pulp) and merchantable timber.
Top height	The mean total height of the 100 largest DBH trees per hectare.
UK (United Kingdom)	Great Britain and Northern Ireland.
Windthrow	Uprooting of trees by the wind. Windthrow can be endemic (i.e. that caused by frequently recurring peak winds) or catastrophic – an infrequent occurrence associated with exceptionally strong winds where large areas/numbers of trees are blown down.
Woodland	see 'Forest'.
Yield class (YC)	An index used in the UK of the potential productivity of even-aged stands of trees based on age of maximum MAI. It reflects the potential productivity of the site for the tree species growing on it.

## 8. NFI national reports and papers

This report is one of a series of publications produced under the National Forest Inventory (NFI). It is part of the softwood availability series, which includes the following reports:

### **Forecast reports**

*Standing Timber Volume for Coniferous Trees in Britain* (April 2012)

*25-Year Forecast of Standing Coniferous Volume and Increment* (2012)

*25-Year Forecast of Softwood Timber Availability* (July 2012)

*50-Year Forecast of Softwood Timber Availability* (2014)

*25-Year Forecast of Hardwood Timber Availability* (2014)

*25-Year Forecast of Softwood Timber Availability* (2016)

*25-Year Forecast of Softwood Timber Availability* (2022)

### **Supporting technical documentation**

*National Forest Inventory Survey Methodology*

*National Forest Inventory Forecasts Methodology Overview*

*Interpreting National Forest Inventory Timber Volume Forecasts*

*Evaluation of alternative harvesting and afforestation scenarios on British softwood timber availability* (2015)

Full details and access to these publications are available on the [National Forest Inventory web pages](#).

[Forestry Statistics](#) (2025)

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# 9 Appendices

## Appendix A – Summary of assumptions

**Table 13.** Assumptions used in the 2025 forecast

<b>Assumption</b>	<b>Public Forest Estate</b>	<b>Private sector</b>
Inventory	Sub-compartment database, reference date 31 March 2025.	National Forest Inventory field data collection 2016–2020 (cycle 2).
Thinning	Modified from approved land management plans (reference date 31 March 2025). A reduction factor of 0.7 was applied to thinning intensity of coupes (where possible) to reflect operational limitations.	20% of growing stock: no thin  80% of growing stock: thin twice at most per rotation where the DAMS score is <16.  Thin 12% of stands (by area) which are young or before the model age of first thin.
Felling	From approved land management plans, reference date 31 March 2025	Target diameter 30 cm (larch 25 cm).  Accelerated spruce felling in the <i>Ips typographus</i> demarcated areas (SE and E England).
Overdue		Specified as DBH ranges greater than 30 cm (larch 25 cm). A 2 cm buffer was introduced, meaning trees with DBH 30–31 cm are felled at 31 cm and trees 31–32 cm are felled at 32 cm (analogous rules apply for larch between 25–27

		<p>cm). Beyond 32 cm DBH, overdue management rulesets are applied.</p> <p>Modified for spruce felling in the <i>Ips typographus</i> demarcated area (SE and E England). All spruce now considered overdue, with prescription to remove 90% of all spruce after 10 years – 10% left as zero intervention.</p>
Fallow period	From approved land management plans, reference date 31 March 2025	1 year
Restocking	From approved land management plans, reference date 31 March 2025	<p>Region based (14 regions).</p> <p>Conifer felling:</p> <ul style="list-style-type: none"> <li>• 10% (by area) converted to open space</li> <li>• 10% converted to a range of broadleaved (BL) species</li> <li>• 80% converted to a range of conifer species.</li> </ul> <p>Broadleaf felling:</p> <ul style="list-style-type: none"> <li>• Like-for-like species restock.</li> </ul> <p>Currently felled land:</p> <ul style="list-style-type: none"> <li>• 10% (by area) becomes open space</li> <li>• 10% becomes a range of BLs</li> </ul>

		<ul style="list-style-type: none"> <li>80% becomes a range of conifer species.</li> </ul> <p>When restocking with a range of conifer species, a cap of 65% for a single species is applied if the stand being restocked was planted before 2017 or is currently felled.</p> <p>Stands planted 2017 or later assume a revised cap which will equate to approximately 65% upon restock.</p> <p>No spruce planting and revised mix of conifer and BL restocking species in South East and East England, representing alternative management due to the spruce planting ban in the <i>Ips typographus</i> demarcated area.</p>
Growth and yield models	M1v2	M1v2
Permanent removals	Accounted for in approved land management plans, reference date 31 March 2025	7,500 ha of conifer woodland area removed across Scotland, North East England, and North West England in proportion to the conifer woodland area in each region – this equates to a reduction of 1.99% of conifer area in each affected region.

**Table 14.** Comparison of assumptions with those used in PF2020 – Public Forest Estate

<b>Assumption</b>	<b>PF2020</b>	<b>50-year softwood forecast</b>
Inventory	Sub-compartment database, reference date 31 March 2020	Sub-compartment database, reference date 31 March 2025
Thinning	From approved land management plans, reference date 31 March 2020	Modified from approved land management plans, reference date 31 March 2025. A reduction factor of 0.7 was applied to thinning intensity of coupes (where possible) to reflect operational limitations.
Felling	From approved land management plans, reference date 31 March 2020	From approved land management plans, reference date 31 March 2025
Overdue	-	-
Fallow period	From approved land management plans, reference date 31 March 2020	From approved land management plans, reference date 31 March 2025.

Restocking	<p>Region based (8 regions).</p> <p>Conifer felling:</p> <ul style="list-style-type: none"> <li>• 10% (by area) converted to open space</li> <li>• 10% converted to a range of BL species</li> <li>• 80% converted to a range of conifer species.</li> </ul> <p>Broadleaf felling:</p> <ul style="list-style-type: none"> <li>• Like-for-like species restock.</li> </ul> <p>Currently felled land:</p> <ul style="list-style-type: none"> <li>• 10% (by area) becomes open space</li> <li>• 10% becomes a range of BLs</li> <li>• 80% becomes a range of conifer species.</li> </ul> <p>When restocking with a range of conifer species, a cap of 75% for a single species is applied.</p>	From approved land management plans, reference date 31 March 2025.
Growth and yield models	M1	M1v2
Permanent removals	No assumption made.	Assumed to have been accounted for in approved land management plans, reference date 31 March 2025.

**Table 15.** Comparison of assumptions with those used in PF2020 – private sector

<b>Assumption</b>	<b>PF2020</b>	<b>50-year softwood forecast</b>
Inventory	National Forest Inventory field data collection 2016–2020 (cycle 2).	National Forest Inventory field data collection 2016–2020 (cycle 2).
Thinning	<p>100% of growing stock: thin twice at most per rotation where the DAMS score is &lt;16.</p> <p>Thin 15% of stands (by area) which are young or before the model age of first thin.</p>	<p>20% of growing stock: no thin</p> <p>80% of growing stock: thin twice at most per rotation where the DAMS score is &lt;16.</p> <p>Thin 12% of stands (by area) which are young or before the model age of first thin.</p>
Felling	Target diameter 30 cm (larch 25 cm)	Target diameter 30 cm (larch 25 cm). Accelerated spruce felling for <i>Ips typographus</i> demarcated area (SE and E England).
Overdue	Specified as years beyond age at which 30 cm is modelled	<p>Specified as DBH ranges greater than 30 cm (larch 25 cm).</p> <p>A 2 cm buffer was introduced, meaning trees with DBH 30–31 cm are felled at 31 cm and trees 31–32 cm are felled at 32 cm (analogous rules apply for larch between 25–27 cm). Beyond 32 cm DBH, overdue</p>

		<p>management rulesets are applied.</p> <p>Modified for spruce felling in the <i>Ips typographus</i> demarcated area (SE and E England). All spruce now considered overdue, with prescription to remove 90% of all spruce after 10 years – 10% left as zero intervention.</p>
Fallow period	2 years	1 year
Restocking	<p>Region based (8 regions).</p> <p>Conifer felling:</p> <ul style="list-style-type: none"> <li>• 10% (by area) converted to open space</li> <li>• 10% converted to a range of BL species</li> <li>• 80% converted to a range of conifer species.</li> </ul> <p>Broadleaf felling:</p> <ul style="list-style-type: none"> <li>• Like-for-like species restock.</li> </ul> <p>Currently felled land:</p> <ul style="list-style-type: none"> <li>• 10% (by area) becomes open space</li> <li>• 10% becomes a range of BLs</li> <li>• 80% becomes a range of conifer species.</li> </ul> <p>When restocking with a range of conifer species, a</p>	<p>Region based (14 regions).</p> <p>Conifer felling:</p> <ul style="list-style-type: none"> <li>• 10% (by area) converted to open space</li> <li>• 10% converted to a range of BL species</li> <li>• 80% converted to a range of conifer species.</li> </ul> <p>Broadleaf felling:</p> <ul style="list-style-type: none"> <li>• Like-for-like species restock.</li> </ul> <p>Currently felled land:</p> <ul style="list-style-type: none"> <li>• 10% (by area) becomes open space</li> <li>• 10% becomes a range of BLs</li> <li>• 80% becomes a range of conifer species</li> </ul> <p>When restocking with a range of conifer species, a cap of 65% for a single species is</p>

	cap of 75% for a single species is applied.	<p>applied if the stand being restocked was planted before 2017 or is currently felled.</p> <p>Stands planted 2017 or later assume a revised cap which will equate to approximately 65% upon restock.</p> <p>No spruce planting and revised mix of conifer and BL restocking species in South East and East England, representing alternative management due to the spruce planting ban in the <i>Ips typographus</i> demarcated area.</p>
Growth and yield models	M1v2	M1v2
Permanent removals	No assumption made.	7,500 ha of conifer woodland area removed across Scotland, North East England, and North West England in proportion to the conifer woodland area in each region – this equates to a reduction of 1.99% of conifer area in each affected region.

## Appendix B Target diameter management assumptions

Under this scenario, private sector forests are managed under a regime designed to:

- Fell according to a target stand mean diameter. For conifers other than larches, a maximum diameter of 30 cm is used; for larches 25 cm is used.
- Take account of thinning and wind constraints, with stands thinned where evidence shows that there has been previous thinning or where they are assessed with a DAMS (Detailed Aspect Method of Scoring) of less than 16.
- Harvest a proportion of overdue stands (i.e. stands that have exceeded the prescribed size for felling according to the scenario, or are older than the age of maximum MAI or, where wind constraints apply, taller than the terminal height of 25 m). Overdue handling is described in **Appendix E**.
- Harvest stands which are slow growing and which forest growth and yield models indicate will not reach the target diameter, according to the age of maximum mean annual increment or (where wind constraints apply) at a terminal height of 25 m. (the 'headline' modified biological potential assumptions used in the 2016 forecast.)
- Restock stands which are currently felled, and restock stands which are felled within the forecast period, according to the country level restocking options described in **Appendix C**.

This scenario, selected after consultation with private sector woodland owners and processors, aims to reflect current softwood management practices in a way that involves relatively straightforward and transparent prescriptions. They largely reflect the same scenarios used in the Forecast of Softwood Availability (2022), with some minor alterations to reflect current practice.

The key elements of the target diameter assumptions are that each stand is assessed at the start of the forecast and falls into one of three categories, which then determines the age of felling. The criteria for these categories are:

- 'Standard felling':
  - The mean stand diameter is less than 30 cm (25 cm for larch) AND
  - the stand is younger than the model age of maximum mean annual increment AND
  - the stand is shorter than the terminal height (25 m) AND
  - the yield class for the stand is over a given threshold which means that, according to the modelled growth, the stand will achieve the target diameter.
  - An allowance has been made for overdue stands which are just beyond the 30 cm mean stand diameter threshold. Stands  $\leq 31$  cm are felled at 31 cm, and stands  $\leq 32$  cm are felled at 32 cm, rather than being subject to overdue prescriptions. For larches, the same rules apply for stands  $\leq 26$  cm and  $\leq 27$  cm.
- 'Underdue'
  - The mean stand diameter is less than 30 cm (25 cm for larch) AND
  - the stand is younger than the model age of maximum mean annual increment AND
  - the stand is shorter than the terminal height (25 m) AND
  - the yield class for the stand is below a given threshold which means that, according to the modelled growth, the stand will not achieve the target diameter.
- 'Overdue'

- The mean stand diameter is greater than 30 cm (25 cm for larch) OR
- the mean stand diameter is less than 30 cm (25 cm for larch) AND
- the stand is older than the model age of maximum mean annual increment OR
- the mean stand diameter is less than 30 cm (25 cm for larch) AND
- the stand is younger than the model age of maximum mean annual increment AND
- the stand is taller than the terminal height (25 m).

The age of felling is taken as:

- 'Standard felling' – age at the point when the growth and yield model indicates that the main stand diameter will reach 30 cm.
- 'Underdue' – age is determined as in the modified biological potential with windthrow risk assumptions on which the 2016 forecast was based. Timber is felled at the age of maximum MAI or (where wind constraints apply) at a terminal height of 25 m.
- 'Overdue' – a schedule of how felling ages are derived is included in **Appendix E**.

The decision whether and when to thin is similar for 'standard felling' and 'underdue':

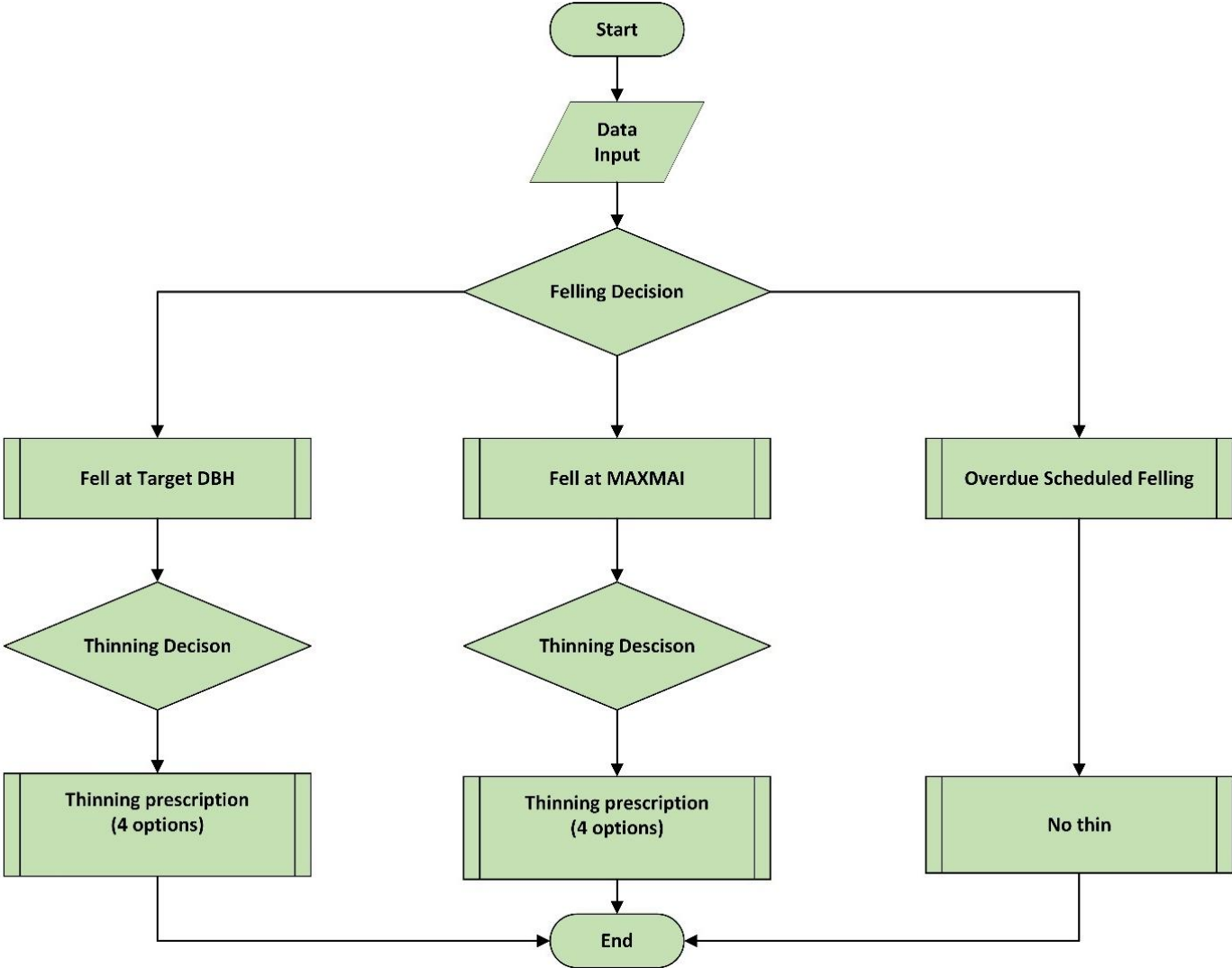
- If the stand has been thinned before, one further thinning will be scheduled in the forecast period for 80% of the area.

- If the stand has not been thinned before AND the stand is older than the age of first thin as indicated by the growth and yield model, no thinnings will be scheduled during the forecast period.
- If the stand has not been thinned before AND the stand is younger than the age of first thin as indicated by the growth and yield model, the determination of whether and when to thin is based on windthrow risk. If the stand is in an area of low windthrow risk (a threshold DAMS score of 16 is used), a proportional approach is adopted, with 87% of the stands receiving no thinning during the forecast period and 12% of the stands receiving two thinnings, while if the stand is in an area of high windthrow risk, no thinnings are assumed.

For 'overdue' stands, no further thinning is assumed.

Decision trees describing the assumptions are shown below in **Figure 13** (felling and thinning), **Error! Reference source not found.** (felling prescription), and **Error! Reference source not found.** (thinning prescription).

**Figure 13.** Overview of decision tree for felling and thinning



**Figure 14.** Overview of decision tree for felling prescription

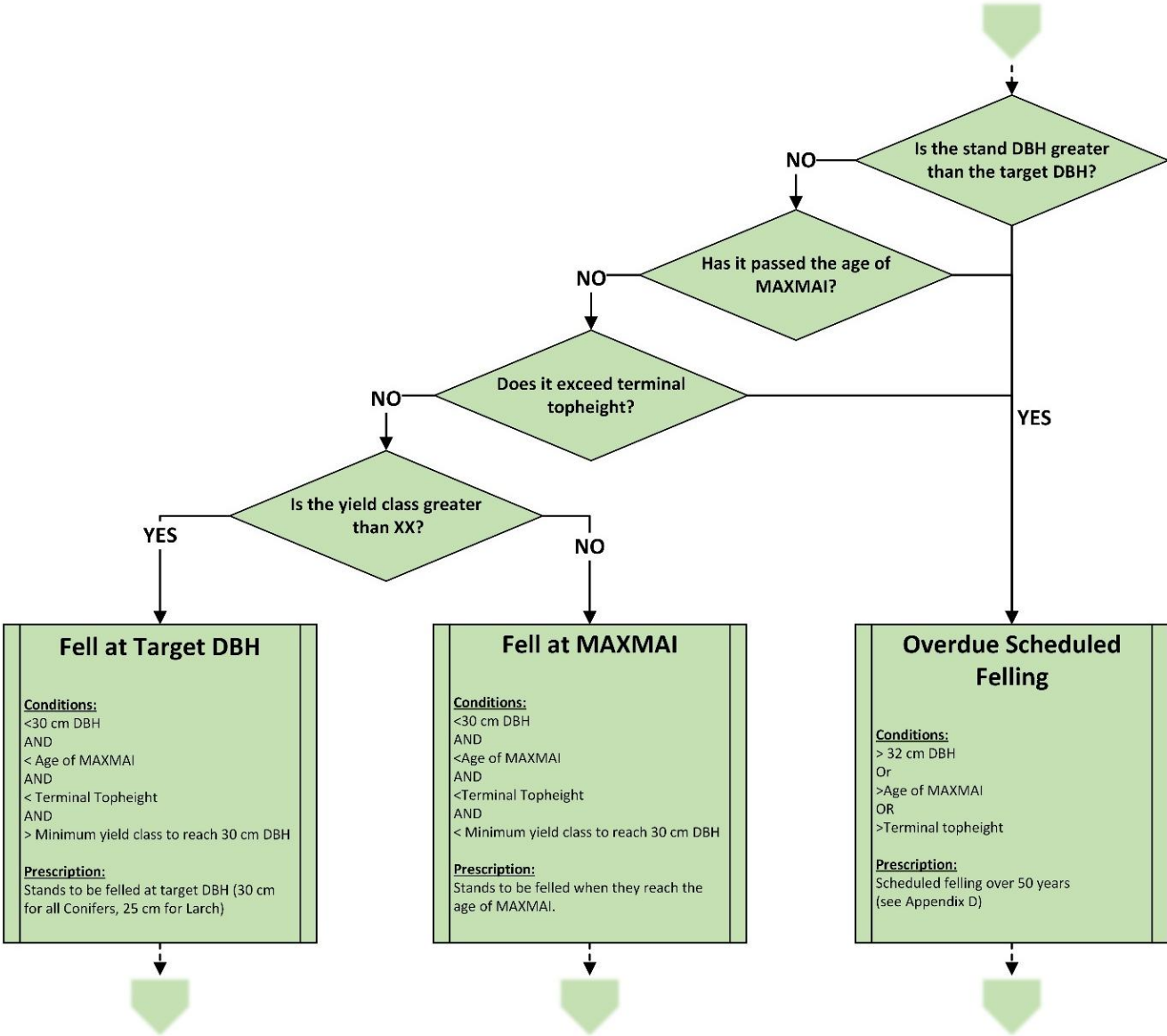
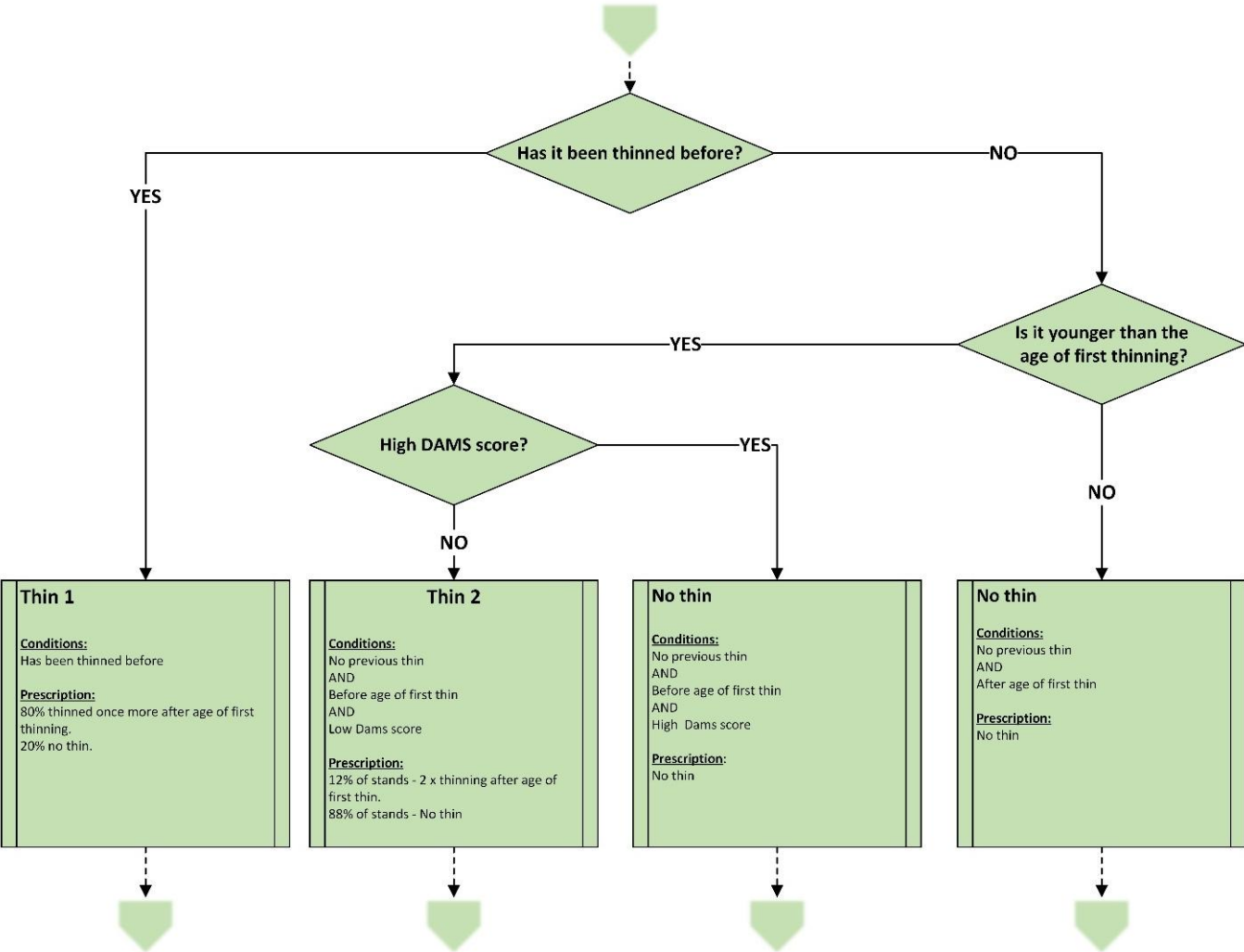


Figure 15. Overview of decision tree for thinning prescription



## Appendix C Restocking assumptions (private sector)

In line with the UK Forestry Standard, assumptions are made about the species choice and the amount of open space introduced when conifer crops are felled during the forecast period.

The following tables describe the restocking assumptions applied in each country following felling of conifer species in the 2020 forecast. To account for the current spruce planting ban and accelerated spruce removal in the *Ips typographus* demarcated area (DMA), the restocking areas and assumptions for the regions East England, and South East England and London, are reported separately, and these regions are excluded from the overall England restocking percentages.

A fallow period of one year from clearfelling to restocking is assumed.

**Table 16.** Restock assumptions for England (including *Ips typographus* DMA)

Species	Current stocked area (000 ha)	Conifer species as a % of conifer area	Proposed conifer species as a % of conifer area	Assumed % change to conifer woodland
Sitka spruce	31.2	20.4	20.4	
Scots pine	36.8	24.1	27.5	
Corsican pine	9.9	6.5	1.0	
Norway spruce	17.6	11.5	7.8	
Larches	21.2	13.9	4.3	
Douglas fir	12.4	8.1	13.2	
Lodgepole pine	4.3	2.8	0.7	
Other conifer species	19.4	12.7	25.1	
Total	153.0	100	100.0	-20
Areas	Area (000 ha)	% of total woodland area		
Total conifer stocked area	153.0	14.1		
Total broadleaved stocked area	921.5	85.0		
Total conifer and broadleaved stocked area	1,074.6	99.2		
Total unstocked area	8.9	0.8		
Woodland area at 2021	1,083.4			
Projected change after one rotation	Area (000 ha)			
Resultant total conifer stocked area	122.1	11.4		
Resultant total broadleaved stocked area	932.7	87.2		
Resultant total conifer and broadleaved stocked area	1,054.8	98.6	Figures assume 50% of the conifer reduction goes to BL trees and 50% to open.	

**Table 17.** Restock assumptions for England (excluding *Ips typographus* DMA)

Species	Current stocked area (000 ha)	Conifer species as a % of conifer area	Proposed conifer species as a % of conifer area	Assumed % change to conifer woodland
Sitka spruce	30.8	28.1	28.3	
Scots pine	20.1	18.3	21.2	
Corsican pine	4.4	4.0	0.6	
Norway spruce	12.6	11.5	10.4	
Larches	16.4	14.9	4.3	
Douglas fir	9.3	8.5	12.9	
Lodgepole pine	4.3	3.9	0.9	
Other conifer species	11.7	10.7	21.2	
Total	109.7	100	100.0	-20
Areas	Area (000 ha)	% of total woodland area		
Total conifer stocked area	109.7	16.3		
Total broadleaved stocked area	555.7	82.6		
Total conifer and broadleaved stocked area	665.5	98.9		
Total unstocked area	7.4	1.1		
Woodland area at 2021	672.9			
Projected change after one rotation	Area (000 ha)			
Resultant total conifer stocked area	87.9	13.2		
Resultant total broadleaved stocked area	564.9	85.1		
Resultant total conifer and broadleaved stocked area	652.9	98.3	Figures assume 50% of the conifer reduction goes to BL trees and 50% to open.	

**Table 18.** Restock assumptions for Ips typographus demarcated area

Species	Current stocked area (000 ha)	Conifer species as a % of conifer area	Proposed conifer species as a % of conifer area	Assumed % change to conifer woodland
Sitka spruce	0.4	0.9	0.1	
Scots pine	16.8	38.7	43.4	
Corsican pine	5.5	12.8	1.9	
Norway spruce	5.0	11.5	1.2	
Larches	4.9	11.2	4.3	
Douglas fir	3.1	7.2	14.0	
Lodgepole pine	0.1	0.2	0.2	
Other conifer species	7.7	17.8	34.9	
Total	43.3	100	100	-21
Areas	Area (000 ha)	% of total woodland area		
Total conifer stocked area	43.3	10.6		
Total broadleaved stocked area	365.7	89.4		
Total conifer and broadleaved stocked area	409.0	99.6		
Total unstocked area	1.5	0.4		
Woodland area at 2021	410.5			
Projected change after one rotation	Area (000 ha)			
Resultant total conifer stocked area	34.2	8.4		
Resultant total broadleaved stocked area	367.7	90.6		
Resultant total conifer and broadleaved stocked area	402.0	99.0		

**Table 19.** Restock assumptions for Scotland

Species	Current stocked area (000 ha)	Conifer species as a % of conifer area	Proposed conifer species as a % of conifer area	Assumed % change to conifer woodland
Sitka spruce	305.6	59.0	53.5	
Scots pine	102	19.7	26.4	
Corsican pine	0.3	0.1	0.0	
Norway spruce	11.8	2.3	4.8	
Larches	38.2	7.4	2.8	
Douglas fir	6.7	1.3	3.6	
Lodgepole pine	45.0	8.7	1.4	
Other conifer species	6.6	1.3	7.4	
Total	518.1	100.0	100.0	-20
Areas	Area (000 ha)	% of total woodland area		
Total conifer stocked area	518.1	60.1		
Total broadleaved stocked area	301.2	35.0		
Total conifer and broadleaved stocked area	819.2	95.1		
Total unstocked area	42.3	4.9		
Woodland area at 2021	861.6			
Projected change after one rotation	Area (000 ha)			
Resultant total conifer stocked area	415.7	50.1		
Resultant total broadleaved stocked area	362.0	43.6		
Resultant total conifer and broadleaved stocked area	777.8	93.7	Figures assume 50% of the conifer reduction goes to BL trees and 50% to open.	

**Table 20.** Restock assumptions for Wales

Species	Current stocked area (000 ha)	Conifer species as a % of conifer area	Proposed conifer species as a % of conifer area	Assumed % change to conifer woodland
Sitka spruce	27.4	58.5	49.9	
Scots pine	0.8	1.7	4.7	
Corsican pine	0.5	1.0	0.1	
Norway spruce	2.7	5.8	7.3	
Larches	8.2	17.4	1.8	
Douglas fir	3.9	8.3	18.2	
Lodgepole pine	1.1	2.3	0.6	
Other conifer species	2.1	4.4	17.3	
<b>Total</b>	<b>46.9</b>	<b>100.0</b>	<b>100.0</b>	<b>-20</b>
<b>Areas</b>	<b>Area (000 ha)</b>	<b>% of total woodland area</b>		
Total conifer stocked area	46.9	25.3		
Total broadleaved stocked area	134.9	73		
Total conifer and broadleaved stocked area	182.1	98.3		
Total unstocked area	2.8	1.5		
Woodland area at 2021	184.9			
<b>Projected change after one rotation</b>	<b>Area (000 ha)</b>			
Resultant total conifer stocked area	35.8	19.7		
Resultant total broadleaved stocked area	141.1	77.7		
Resultant total conifer and broadleaved stocked area	177.2	97.5	Figures assume 50% of the conifer reduction goes to BL trees and 50% to open.	

In long-term forecasts, these restock assumptions are applied only to the restocking of current stands and current clearfell areas. Should any of these restocked areas be felled during the forecast period, they are replaced by an identical crop in any subsequent rotations.

## Appendix D Managing the restock

The management assumptions applied to current stands are also applied to the restocking (whether first or subsequent restocking) during the forecast period.

## Appendix E Overdue assumptions

These prescriptions have been adapted from those used in the *25-year forecast of softwood availability (2022)* and instead apply mean diameter ranges as the basis for categorising overdue handling prescriptions. These assumptions are best interpreted in conjunction with the decision trees in **Appendix B**.

Overdue volumes reported in **Table 6** are reported as of the beginning of the forecast (2021) – the prescriptions detailed below are applied from 2021, however, the first reported period of the forecast is 2027–2031. Therefore, the volumes harvested through these prescriptions between 2022–2025 are not given in this report.

**Table 21.** Overdue assumptions for GB

Prescription by cm beyond target diameter				
Species	30–32 cm	32–35 cm	35–50 cm	>50 cm
Sitka spruce		Fell 50% 1–25 years	Fell 50% 1–25 years	Fell 75% 1–25 years
		Fell 50% 26–50 years	Fell 40% 26–50 years	
	Buffer: clearfelled at 31 cm or 32 cm		10% zero intervention	25% zero intervention
Norway spruce		Fell 50% 1–25 years	Fell 75% 1–25 years	Fell 75% 1–25 years
		Fell 50% 26–50		
	Buffer: clearfelled at 31 cm or 32 cm		25% zero intervention	25% zero intervention
Douglas fir		Fell 50% 1–25 years	Fell 75% 1–25 years	Fell 75% over 10 years
		Fell 25% 26–50 years	25% zero intervention	25% zero intervention
	Buffer: clearfelled at 31 cm or 32 cm	25% zero intervention		
Scots pine		Fell 0% 1–25 yrs	Fell 50% 1–25 years	Fell 50% 1–25 years
		Fell 75% 26–50 years	Fell 25% 26–50 years	50% zero intervention
	Buffer: clearfelled at 31 cm or 32 cm	25% zero intervention	25% zero intervention	

Prescription by cm beyond target diameter				
Species	30–32 cm	32–35 cm	35–50 cm	>50 cm
Corsican pine		Fell 50% 1–10 years	Fell 50 % 1–25 years	Fell 75% 1–10 years
		Fell 40% 11–25 years	Fell 25 % 26–50 years	25% zero intervention
	Buffer: clearfelled at 31 cm or 32 cm	10% zero intervention	25% zero intervention	
Lodgepole pine		Fell 50% 1–10 years	Fell 50% 1–25 years	Fell 75% 1–10 years
		Fell 40% 11–25 years	Fell 25% 26–50 years	25% zero intervention
	Buffer: clearfelled at 31 cm or 32 cm	10% zero intervention	25% zero intervention	
Other species		Fell 50% 1–25 years	Fell 75% 1–25 years	Fell 75% 1–10 years
		Fell 25% 26–50 years	25% zero intervention	25% zero intervention
	Buffer: clearfelled at 31 cm or 32 cm	25% zero intervention		

Prescription by cm beyond target diameter				
Larches (25 cm)	25–27 cm	27–35 cm	35–50 cm	>50 cm
		Fell 50% 1–10 years	Fell 50% 1–25 years	Fell 75% 1–10 years
		Fell 40% 11–25 years	Fell 40 % 26–50 years	25% zero intervention
	Buffer: clearfelled at 26 cm or 27 cm	10% zero intervention	10% zero intervention	

## Appendix F International definitions of gross and net increment

Increment can be calculated on a **gross** or **net** basis.

Gross increment: defined as the volume growth ignoring losses. Gross increment therefore includes both losses due to natural processes and any cut volume resulting from forest harvesting operations. To calculate the gross increment for successive years, this would be:

((standing volume at the end of a year + natural losses, e.g. due to mortality and windthrow, + harvested volume) – (standing volume at the beginning of a year))

**Gross** increment is always positive.

Net increment: defined as the volume growth less loss due to mortality, including windthrow, but not subtracting any harvested volume. To calculate the net increment for successive years, this would be:

(gross increment) – (losses, not including harvested volume, in the year)

**Net** increment may be negative for a stand.

This is discussed fully with worked examples in the Forecast Technical Document [Volume Increment Forecasts \(2011\)](#).

## Appendix H Public Forest Estate yield class mapping – M1 to M1v2

In contrast with earlier softwood forecasts, this forecast applied the M1v2 growth and yield model for both the public and private sector – previously only the private sector had applied this newer model. The public sector’s inventory data has not yet been able to transition from the older M1 growth and yield model towards fully implementing the M1v2 model – doing so is likely to require a phase of re-evaluation of their current growing stock, assessing general yield classes of coupes based on the M1v2 yield model. However, in-built functionality within the Forecast System allows conversion from the M1 yield classes to their analogous M1v2 yield class, applying refined growth models for each principal species. More information about how and why M1v2 was developed can be found in **Appendix H** in the Forecast of Softwood Availability (2022).

Where the SCDB holds mensuration data on a stand, the appropriate M1v2 yield class will be calculated directly by the Forecast System based on the top height/age relationship, as well as spacing. However, this only accounts for a portion of the public sector’s inventory. Where we have no mensuration (i.e. top height) data, with only an age and estimated yield class for a given stand, the Forecast System must convert the M1 yield class into an appropriate M1v2 analogue. A value is needed for the age of the stand at which the yield class was estimated. Generally, this age is not known, and so a notional stand age of 25 years is assumed as when the yield class was estimated. Since any given yield class for a species in either model represents a potential range of top heights at this age, the conversion requires calculating the overlaps between the top height boundaries for the old yield class and those of the new yield classes. This information is used to partition the forest component into subcomponents with

areas proportional to the relative overlaps between the top height boundaries of the old and new yield class curves.

For example, a 10 ha stand of Sitka spruce at a given yield class will be converted into the corresponding yield class(es) in proportions determined by the overlap of the two distinct yield curves across a range of possible top height/age relationships –e.g. 10 ha of YC 16 (M1) will be converted into 3.32 ha of YC 17, 5.02 ha of YC 18, and 1.66 ha of YC 19 (M1v2).

Note that, for the new yield models, yield class is dependent not only on tree species, top height and age but also initial planting/restocking spacing. If the initial planting/restocking spacing is not known, it is estimated (e.g. from numbers of trees per hectare) or a value of 2 m is assumed.

## Appendix I Thin reduction factors

Consultation with representatives of both the public and private forestry sector indicated that past forecasts and current management plans had potentially overrepresented the amount of thinning that was occurring across Great Britain, and that a reduction in thinning would be more in line with current practice. This is attributed both to available machinery being deployed at operational capacity as well as logistical difficulties of accessing stands in remote/steep areas. To reflect this in the 50-year forecast, it was recommended that a reduction factor be applied to the current thinning prescriptions. This was implemented differently by sector due to the technological differences in forecasting each sector.

For the private sector, a factor of 0.8 was applied to the percentages specified in the thinning prescriptions from the 25-year forecast of softwood availability (2022). The instances where thinning is applied and the proportion of woodland by area to which it is applied are specified in **Appendix B** – Target diameter management assumptions: **Figure 15**.

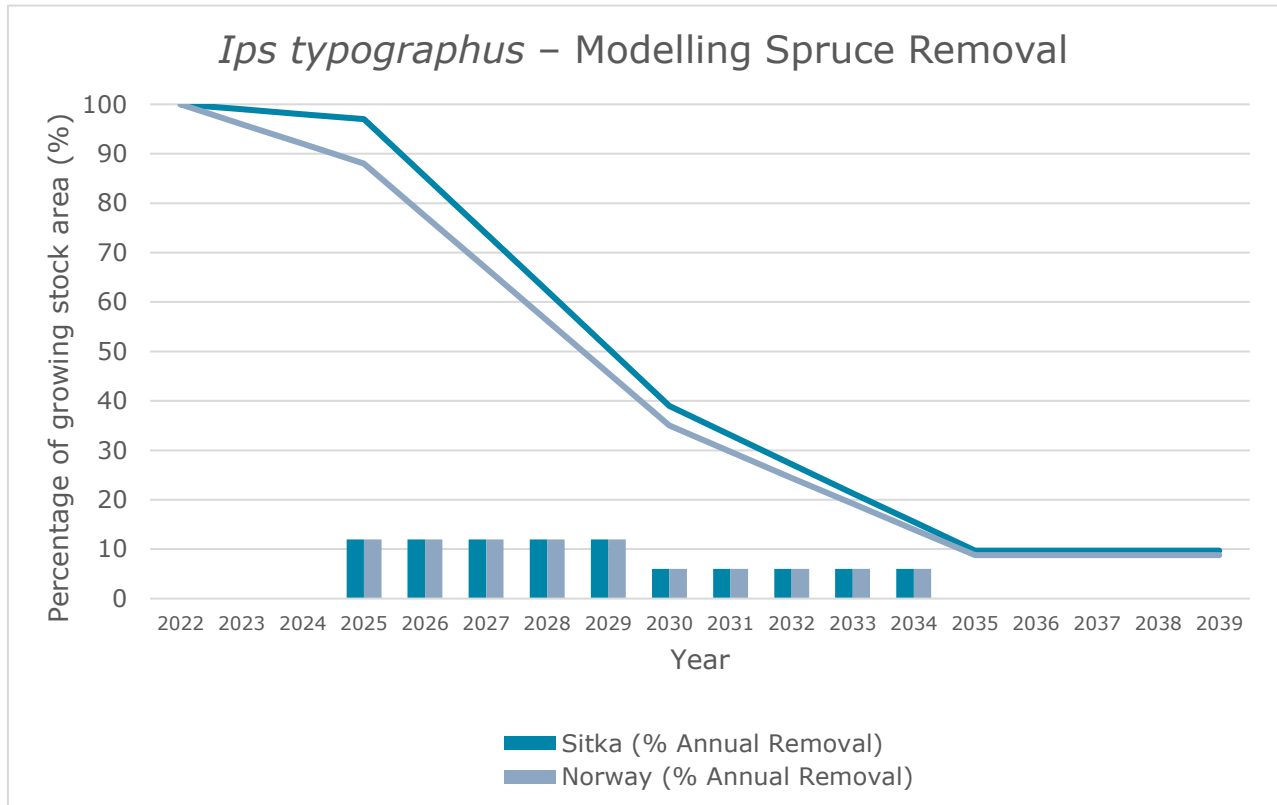
For the public sector, a factor of 0.7 was applied to the specified thinning intensities in the management prescriptions where technically possible. This more intense reduction factor is to compensate for the technological limitations of the Forecast System not being able to adjust thinning intensity for every thinning type.

## Appendix J Spruce handling in the *Ips typographus* demarcated area

In response to the outbreak of *Ips typographus* in East/South East England, a ban on spruce planting within the *Ips typographus* demarcated area (DMA) was instituted by the government. For this forecast, the *Ips typographus* DMA prescriptions for spruce cover the entire regions of East England and South East England and London.

As of 2025, the Forestry Commission's aim was to fell all spruce within the DMA within the next 10 years. In order to account for the normal harvesting of spruce prior to the introduction of the spruce planting ban and escalated felling schedule, it is assumed that 1% of the growing stock of Sitka spruce and 4% of Norway Spruce will be felled each year from the start of the forecast until 2025. These percentages are based on forecasted felling volumes in these regions when forecasts were run under normal target diameter assumptions. From 2025 onwards, 90% of all **remaining** spruce is assumed to be felled between the years 2025–2035 (12% felled per annum from 2025–2030, and 6% felled per annum from 2030–2035). 10% of the remaining stock as of 2025 is treated as zero intervention. This is to reflect the likelihood that despite efforts to remove spruce in its entirety from this area, some portion will inevitably be left standing at the end of the ten-year period. This assumption is in line with Defra's own approach to modelling spruce removal in the *Ips typographus* DMA (see **Figure 16**).

**Figure 16.** Spruce removal prescriptions in the *Ips typographus* DMA



## Appendix K Forecasting gap – ‘grow on period’ and overdue reporting

The private sector forecast was run using cycle 2 NFI data – this is due to validated cycle 3 data not yet being available. Since the cycle 2 survey began in 2015 and closed in 2020, this creates a problematic gap of 5–10 years between data collection and forecasting. To run the forecast from 2025 (as was done in the public sector) would leave a gap of five or more years where no forestry operations are modelled (i.e. no thinning, felling, or restocking could be modelled across this period). A forecast start date of 31 March 2021 was therefore used for the private sector to account for forestry operations between the end of cycle 2 and the start of the first reporting period. This has the consequence that the estimates for private sector stocked area in **Table 1**, standing volume in **Table 2**, overdue volumes in **Table 6**, standing volume by country and stand mean DBH class in **Table 7**, clearfelled area in **Table 8**, and coniferous mean yield classes in **Table 12** are all reported as of 31 March 2021, and the overdue prescriptions detailed in **Appendix E** take effect from 31 March 2021. Consequently, any volume from prescribed target diameter harvesting operations, as well as from overdue harvesting prescriptions in the period 2022–2026 is not reported in the thin or fell volume forecast reports.

## Appendix L Known data issues and effect on forecast

For the Public Forest Estate forecasts, the most recent snapshot of the three state forestry organisations' databases was used as the baseline inventory (snapshot as of 31 March 2025), however, there is a known issue with some restocking prescriptions in the 2025 snapshot, where like-for-like restocking of felled coupes is known to be overrepresented (this type of restocking is the default for the Forecast System where specific restock prescriptions are missing). This issue is mainly affecting NRW's data, with the issue affecting approximately 9,005 ha of woodland; FE's data is unaffected, and FLS's data is very marginally affected (42 ha). In order to estimate the effect this has had on NRW's forecast, the affected coupes were forecasted separately using both the 2025 snapshot (with the known data issue) and the 2024 snapshot, which is known to be clear of the issue. The results of this comparison show that by 2076, there is approximately 477 ha less broadleaved area and 164 ha less open area in the current forecast than would result from using the (clean) 2024 snapshot data. This indicates that in lieu of restocking prescriptions which ordinarily would convert a portion of felled conifer woodland to broadleaved woodland and open land, like-for-like restocking of conifer stands is resulting in an overrepresentation of conifer area and, consequently, volume (see **Table 22**).

**Table 22** Estimated effects of NRW restock data issues resulting in like-for-like restocking – volumes reported in 000 m<sup>3</sup> obs

Natural Resources Wales			
Forecast Period	All Conifer volume (based on 2025 snapshot)	All Conifer Volume (based on 2024 snapshot)	% Difference
2027–31	1,206	1,205	-0.11
2032–36	931	936	+0.57
2037–41	890	887	-0.37
2042–46	746	771	+3.46
2047–51	679	690	+1.55
2052–56	431	443	+2.76
2057–61	548	557	+1.64
2062–66	508	521	+2.53
2067–71	534	547	+2.44
2072–76	568	585	+2.86

While this comparison provides an estimate of the magnitude of difference, it is difficult to know the true effect of the issue on the forecast without the correct records from the 2025 database, since this assumes that the inventory, management plans, and restocking plans have not changed since 2024.

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