Forest Research

25-year projection of timber availability in the Stirling, Fife and Clackmannanshire Council Areas (2022)

NFI Forecast Report

The Research Agency of the Forestry Commission

Summary

This report provides a detailed picture of the 25-year forecast of timber availability in the Stirling, Fife and Clackmannanshire Council Areas. These estimates are a subset of those published as part of the 25-year forecast estimates presented in the National Forest Inventory (NFI) *25-year forecast of softwood timber availability* (2022). NFI reports are published at National Forest Inventory - Forest Research.

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Approach

The approach taken in the derivation of these results and to be used in their interpretation is described in the full suite of forecast reports which can be found at National Forest Inventory - Forest Research.

The methodology and interpretation underlying the forecast in this report are discussed in the NFI report *25-year forecast of softwood timber availability* (2022) and the *50-year forecast of hardwood timber availability* (2014) which can be referred to for the wider Scotland and Great Britain context.

The estimates reported here are based upon field samples assessed between 2015 and 2020, the results of which have been subjected to rigorous data quality assurance procedures.

25-year forecast of timber availability

Refer to the NFI report *25-year forecast of softwood timber availability* (2022) for a description of the underlying methodology and interpretation of the softwood forecast, and also for the Scotland and GB context.

Refer to the NFI report *50-year forecast of hardwood timber availability* (2014) for a description of the underlying methodology and interpretation of the hardwood forecast, and also for the Scotland and GB context.

The timber availability estimates for Forestry and Land Scotland (FLS) are derived using the harvesting regimes described in the approved land management plans as of 31 March 2020.

The softwood timber availability estimates for the private sector are based on a scenario which assumes conifers are felled at a target diameter. The full description can be found in Appendix A of the NFI report *25-year forecast of softwood timber availability* (2022) which includes a decision tree showing how felling ages are derived. The hardwood timber availability estimates are derived only from those areas where there is evidence of thinning in broadleaves. This is a conservative assumption but more closely reflects current practice than assuming all broadleaved stands will be managed. Those broadleaved stands that are assumed to be subject to future management under this scenario are felled at age of maximum mean annual increment with moderate wind risk measures being taken.

Where standing conifers are already larger than the target diameter (in this context, they are called 'overdue'), the forecast assumes that a proportion will be felled during the forecast period. The prescriptions for handling the overdue can be found in full in Appendix D of the NFI report *25-year forecast of softwood timber availability* (2022). Where standing broadleaves are already beyond the age of maximum mean annual increment, the forecast assumes that a proportion will be felled during the forecast period. The assumptions can be found in full in the section 'Overdue timber' starting on Page 20 of the NFI report *50-year forecast of hardwood timber availability* (2014).

Restocking assumptions for conifer stands clearfelled during the forecast period have been implemented that provide for:

- a 20% reduction in the area of conifers on the subsequent rotation of which half is allocated to open space and half is stocked with broadleaved species.

- Land currently clearfelled at the start of the forecast is restocked
- a change in the composition of conifer species on restocking

Restocking assumptions for broadleaved stands clearfelled during the forecast period have been included that provide for:

- No reduction in stocked area
- Like for like species choices
- That 50% of the land associated with the reduction in conifer stocked area after felling of conifers is converted to broadleaved species

A full description of the restocking assumptions can be found in Appendix B of the *NFI 25-year forecast of softwood timber availability* (2022). The same restocking assumptions have been applied to both the FLS and private sector forecasts. Woodland that is classed as currently clearfelled will be restocked according to the restock prescription.

It should be noted that a small amount of thinning volume arising from restocking is included in the timber availability estimates for later periods of the forecast.

1 Results

The results presented in this report are estimates of the 25-year forecast of softwood and hardwood availability under the harvesting scenario as described, for the Stirling, Fife and Clackmannanshire Council Areas.

The convention in this report is to define the year 2021 as starting on 1 April 2020 and ending on 31 March 2021. This convention applies to all forecast years or periods quoted. The forecast reports on five-year cycles of production, starting with 2022-2026.

All volumes are given in cubic metres (m^3) 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 the estimates are forecast values determined by applying growth and yield models to current assessments.

Results for the Stirling, Fife and Clackmannanshire Council Areas

Map 1 Stirling, Fife and Clackmannanshire

Table 1 Summary of stocked area 31 March 2021 – Stirling, Fife and Clackmannanshire

	FLS	Private sector	Private sector	Total
	area (000 ha)	area (000 ha)	*SE%*	area (000 ha)
All conifers	16.8	19.2	*5*	**36.0**
All broadleaves	4.9	20.7	*6*	**25.6**
All species	21.7	39.9	*3*	**61.6**

Tables A1 and A2 showing the 25-year forecast broken down by time period, top diameter class and principal species groups can be found in the associated spreadsheet.

Figure 1 Summary of 25-year forecast of annual softwood timber availability – Stirling, Fife and Clackmannanshire

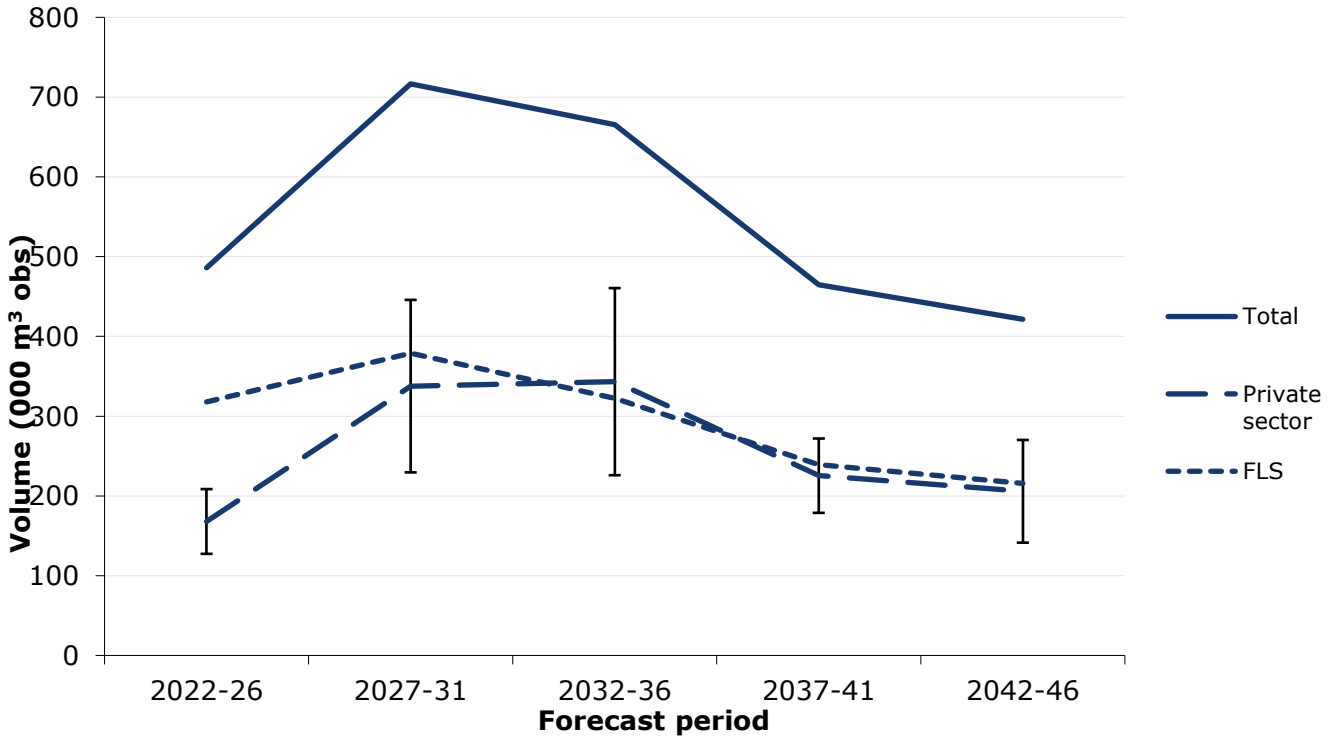

Table 2 Summary of 25-year forecast of average annual timber availability – Stirling, Fife and Clackmannanshire

Forecast period	FLS	Private sector	Private Sector	Total
	volume (000 m^3 obs)	volume (000 m^3 obs)	*SE%*	volume (000 m^3 obs)
Softwood				
2022-26	318	168	*24*	**486**
2027-31	379	338	*32*	**717**
2032-36	322	343	*34*	**666**
2037-41	240	225	*21*	**465**
2042-46	216	206	*31*	**422**
Hardwood				
2022-26	2	36	*37*	**38**
2027-31	3	29	*40*	**32**
2032-36	2	19	*33*	**22**
2037-41	2	18	*47*	**20**
2042-46	3	13	*29*	**16**
Total				
2022-26	320	204	*21*	**524**
2027-31	382	367	*30*	**749**
2032-36	325	363	*32*	**687**
2037-41	241	244	*19*	**485**
2042-46	219	219	*29*	**438**

Figure 2 Cumulative softwood timber availability over the 25-year forecast – Stirling, Fife and Clackmannanshire

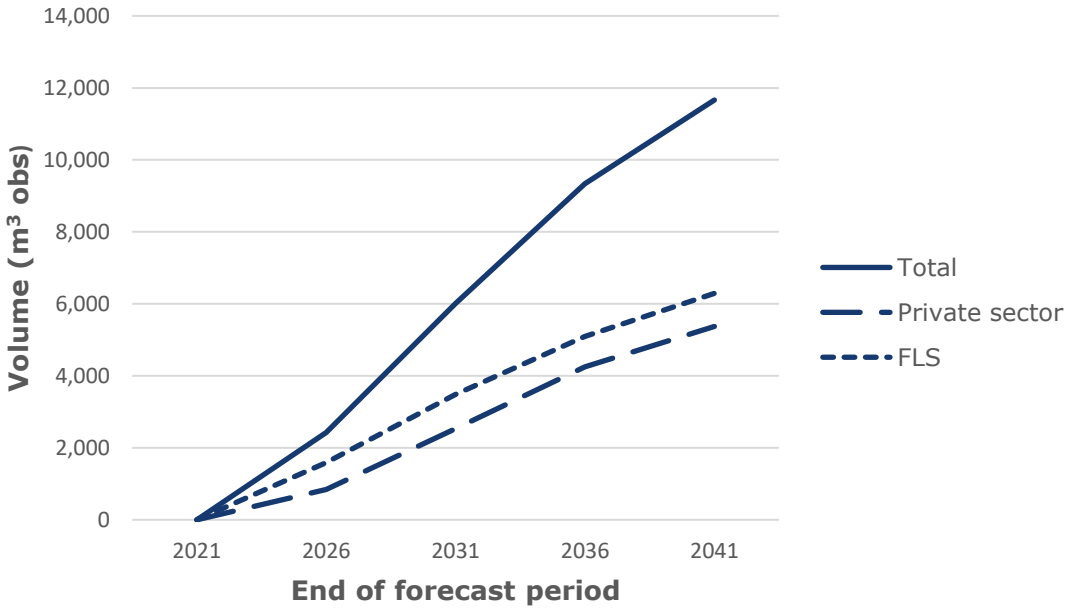

Table 3 Cumulative timber availability over the 25-year forecast – Stirling, Fife and Clackmannanshire

Forecast period	FLS	Private sector	Total
	volume (000 m^3 obs)	volume (000 m^3 obs)	volume (000 m^3 obs)
Softwood			
2022-26	1,590	840	**2,430**
2022-31	3,486	2,528	**6,014**
2022-36	5,097	4,245	**9,342**
2022-41	6,295	5,372	**11,666**
2022-46	7,375	6,401	**13,775**
Hardwood			
2022-26	11	178	**189**
2022-31	24	325	**349**
2022-36	36	422	**458**
2022-41	45	512	**557**
2022-46	59	578	**636**
Total			
2022-26	1,601	1,018	**2,619**
2022-31	3,510	2,853	**6,363**
2022-36	5,134	4,667	**9,800**
2022-41	6,339	5,884	**12,223**
2022-46	7,433	6,978	**14,412**

2 NFI national reports and papers

This inventory report is one of a series of publications reporting the outputs of the Forestry Commission National Forest Inventory. It forms part of the 25-year forecast of softwood availability series, which includes the following 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)
- *25-year forecast of softwood timber availability* (2014)
- *25-year forecast of softwood timber availability* (2016)
- *25-year forecast of softwood timber availability* (2022)

Supporting technical documentation for these reports is available in:

- National Forest Inventory survey methodology
- National Forest Inventory forecasts methodology overview
- Interpreting National Forest Inventory timber volume forecasts

The woodland map and areas derived from it can be found in:

- National Forest Inventory woodland area statistics (for Great Britain, England, Scotland and Wales).

Full details are available from the NFI web pages.

The National Forest Inventory supports sustainable forest management in Great Britain. For more information see the UK Forestry Standard and its supporting Guideline

3 Glossary

A glossary of terms is presented in section 7 of *NFI 25-year forecast of softwood timber availability* (2022).

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