NFI provisional estimates for woodland in the Cornwall and Scilly Isles Local Enterprise Partnership

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Date: July 2015
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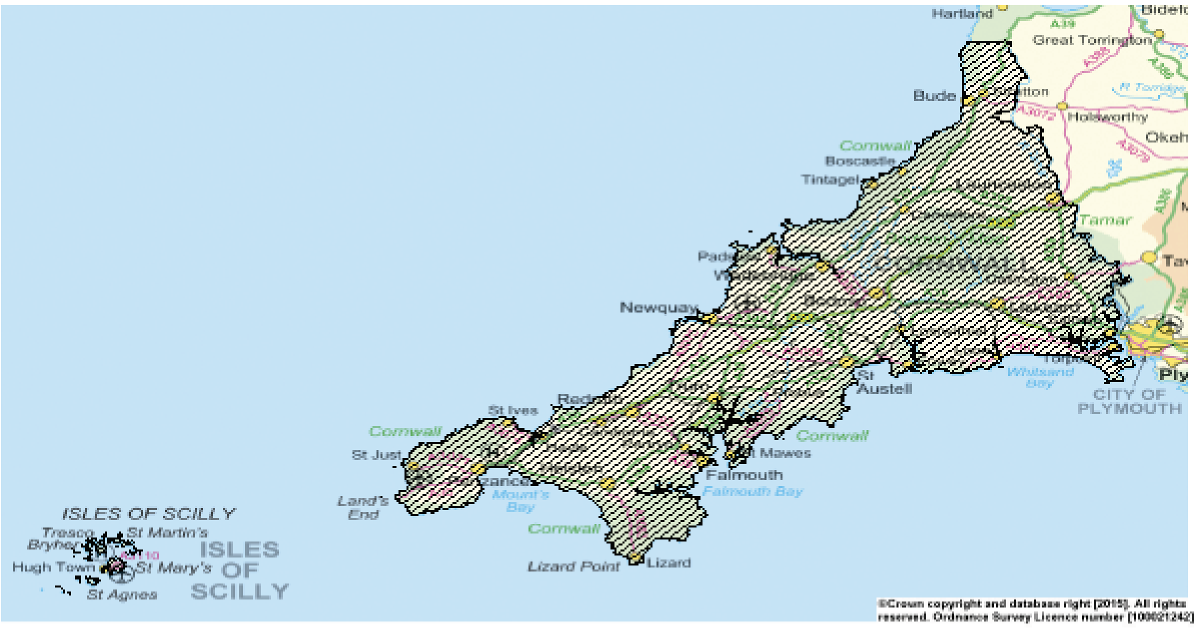
Summary

This report provides a detailed picture of the stocked area in woodland, the standing volume of timber and the associated live biomass and carbon stocks for woodland in the Cornwall and Scilly Isles Local Enterprise Partnership. These estimates are a subset of those published as part of the 2012 growing stock information presented in the National Forest Inventory (NFI) *50-year forecast of softwood timber availability* (2014) and *50-year forecast of hardwood timber availability* (2014). NFI reports are published at www.forestry.gov.uk/inventory.

In addition, the report provides forecasts of timber availability, standing volume and increment for softwoods and hardwoods arising from the stocked area and standing volume. Forecasts are based on the 'headline' harvesting scenario described in the 50-year forecasts NFI reports. An alternative forecast is provided using a harvesting scenario which brings all Private sector broadleaved woodland into production.

The estimates provided in this report are provisional in nature.



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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 www.forestry.gov.uk/forecast. Refer to the *Standing timber volume for coniferous trees in Britain* (2012) and the *NFI preliminary estimates of quantities of broadleaved species in British Woodlands with special focus on ash* (2012) reports for a description of the underlying methodologies and interpretation, and also for the Scotland and Great Britain (GB) context. Refer to the *NFI forecasts methodology* (2012) overview report for a detailed description and discussion of forecasting future availability of timber from NFI field survey data and from information in the Forestry Commission's sub-compartment database (SCDB). The wider context of forecasts of timber production from woodland in GB and its constituent countries under a range of harvesting scenarios can be found in the *50-year forecast of softwood timber availability* (2014) and the *50-year forecast of hardwood timber availability* (2014).

The estimates reported here are based upon field samples assessed between October 2009 and August 2013, the results of which have been subjected to rigorous data quality assurance procedures. These field samples constitute approximately two-thirds of the sites to be sampled within the first cycle of NFI field sampling. As a consequence, the estimates in this report are classed as provisional.

Results

The results presented in this report are estimates of the stocked area, the standing volume and the associated biomass and carbon stocks at 31 March 2012, and 50-year forecasts of softwood and hardwood availability under the 'headline' harvesting scenario and also under a scenario assuming all hardwoods are harvested in Private sector woodland in the Cornwall and the Scilly Isles Local Enterprise Partnership. The data sources used for the compilation of these estimates are the same as described in the NFI reports *Standing timber volume for coniferous trees in Britain* (2012), the *50-year forecast of softwood availability* (2014) and the *50-year forecast of hardwood availability* (2014). Estimates for the Forestry Commission (FC) estate are derived from the FC's SCDB, while those for the Private sector (i.e. non-FC) estate are derived from information collected in the NFI field survey. A fuller description of these data sources and how they are used in the production of estimates, including sampling standard errors (SEs) attached to the Private sector estimates, is provided in the earlier documents.

Results are provided for stocked area at 31 March 2012 (**Figure 1** and **Tables 1–3**), felled area (**Table 4**), standing volume at 31 March 2012 (**Figure 2** and **Tables 5–7**), biomass and carbon stocks at 31 March 2012 (**Tables 8–9**), evidence of thinning in

Private sector stands from the NFI field survey (**Figure 3**), the 'headline' 50-year forecast (**Figures 4–9** and **Tables 10–12**) and the 'unrestricted' 50-year forecast (**Figures 10–15** and **Tables 13–15**). **Figures 16-17** and **Table 16** compare the hardwood production under the two scenarios.

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 independently generated by the estimation procedure used for results from the NFI sample survey. Sampling SEs attached to Private sector estimates are expressed in relative terms (%) to the right of the relevant estimate. Percentages in the pie charts may also not sum to 100 due to rounding.

Stocked area at 31 March 2012

Figure 1 Principal tree species composition by stocked area at 31 March 2012

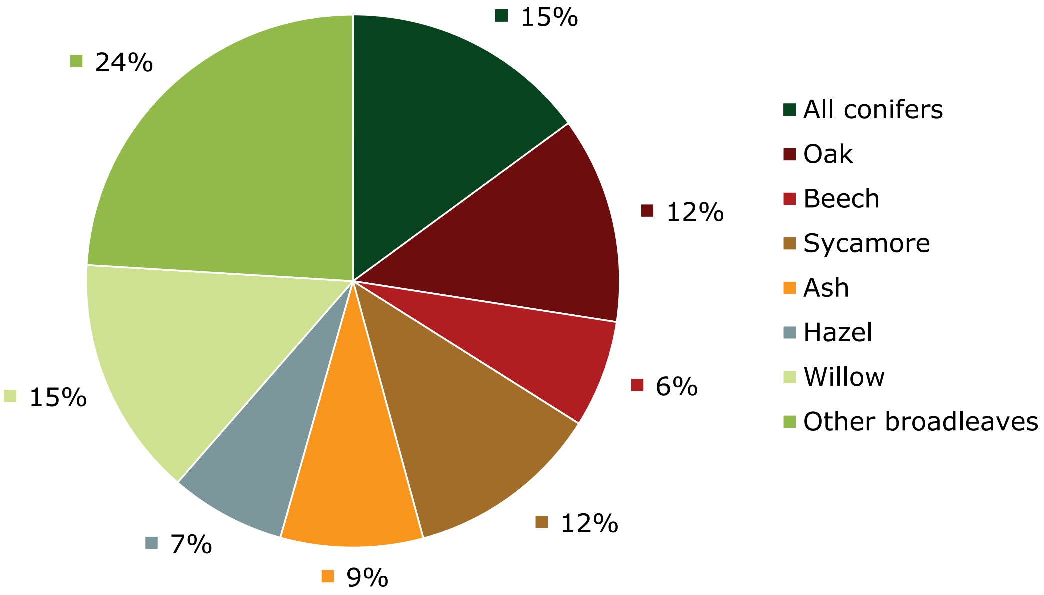


Table 1 Stocked area by principal tree species at 31 March 2012

Principal species	FC	Private sector		Total
	area (000 ha)	area (000 ha)	*SE%*	area (000 ha)
Conifers				
All conifers	**1.9**	**3.0**	***12***	**4.9**
Broadleaves				
Oak	0.1	4.0	*13*	**4.1**
Beech	0.2	1.9	*22*	**2.1**
Sycamore	0.0	3.9	*16*	**3.9**
Ash	0.0	2.8	*16*	**2.8**
Hazel	0.0	2.3	*15*	**2.3**
Willow	0.0	4.8	*17*	**4.8**
Other broadleaves	0.3	7.5	*10*	**7.9**
All broadleaves	**0.7**	**27.1**	***3***	**27.8**
All species				
All species	**2.6**	**30.1**	***3***	**32.7**

Table 2 Stocked area by age class at 31 March 2012

Age class	FC	Private sector		Total
	area (000 ha)	area (000 ha)	*SE%*	area (000 ha)
All conifers				
All conifers	**1.9**	**3.0**	***12***	**4.9**
All broadleaves				
0–10 years	0.0	4.2	*17*	**4.2**
11–20 years	0.0	5.4	*15*	**5.4**
21–40 years	0.0	6.5	*11*	**6.6**
41–60 years	0.2	5.3	*14*	**5.5**
61–80 years	0.2	3.0	*17*	**3.2**
81+ years	0.2	2.7	*18*	**2.9**
Total	**0.7**	**27.1**	***3***	**27.8**
All species				
0–10 years	0.2	4.2	*17*	**4.3**
11–20 years	0.4	5.4	*15*	**5.9**
21–40 years	0.6	7.2	*11*	**7.7**
41–60 years	0.9	7.1	*11*	**8.0**
61–80 years	0.4	3.4	*17*	**3.8**
81+ years	0.2	2.8	*18*	**3.0**
Total	**2.6**	**30.1**	***3***	**32.7**

Table 3 Stocked area by mean stand DBH class at 31 March 2012

Mean stand DBH	FC	Private sector		Total
	area (000 ha)	area (000 ha)	*SE%*	area (000 ha)
All conifers				
All conifers	**1.9**	**3.0**	***12***	**4.9**
All broadleaves				
0–7 cm	0.1	5.0	*13*	**5.1**
7–10 cm	0.0	5.1	*14*	**5.1**
10–15 cm	0.1	4.6	*14*	**4.7**
15–20 cm	0.1	2.2	*18*	**2.3**
20–30 cm	0.2	2.2	*17*	**2.4**
30–40 cm	0.1	3.0	*17*	**3.1**
40–60 cm	0.1	3.9	*16*	**4.0**
60+ cm	0.0	1.0	*30*	**1.0**
Total	**0.7**	**27.1**	***3***	**27.8**
All species				
0–7 cm	0.3	5.0	*13*	**5.3**
7–10 cm	0.2	5.1	*14*	**5.3**
10–15 cm	0.3	4.7	*14*	**5.1**
15–20 cm	0.3	2.3	*17*	**2.6**
20–30 cm	0.6	3.9	*12*	**4.4**
30–40 cm	0.5	3.8	*15*	**4.3**
40–60 cm	0.4	4.1	*15*	**4.5**
60+ cm	0.1	1.0	*30*	**1.1**
Total	**2.6**	**30.1**	***3***	**32.7**

Table 4 Felled area at 31 March 2012

Clearfelled area	FC	Private sector		Total
	area (000 ha)	area (000 ha)	*SE%*	area (000 ha)
	0.2	0.3	*66*	**0.5**

Standing volume at 31 March 2012

Figure 2 Principal tree species composition by standing volume at 31 March 2012

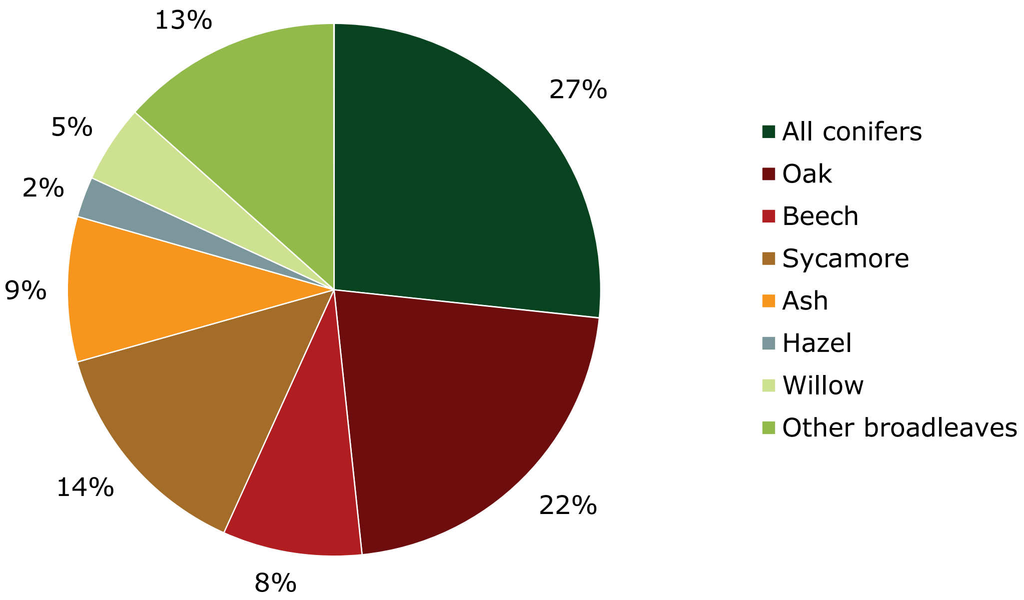


Table 5 Standing volume by principal tree species at 31 March 2012

Principal species	FC	Private sector		Total
	volume (000 m^3 obs)	volume (000 m^3 obs)	*SE%*	volume (000 m^3 obs)
Conifers				
All conifers	**418**	**1,346**	***16***	**1,764**
Broadleaves				
Oak	21	1,409	*17*	**1,430**
Beech	38	521	*23*	**559**
Sycamore	0	917	*28*	**917**
Ash	1	580	*28*	**581**
Hazel	0	163	*26*	**163**
Willow	0	312	*21*	**312**
Other broadleaves	44	841	*24*	**885**
All broadleaves	**105**	**4,768**	***10***	**4,873**
All species				
All species	**523**	**6,125**	***8***	**6,648**

Table 6 Standing volume by age class at 31 March 2012

Age class	FC area (000 ha)	Private sector area (000 ha)	Private sector *SE%*	Total area (000 ha)
All conifers				
All conifers	**418**	**1,346**	***16***	**1,764**
All broadleaves				
0–10 years	0	17	*34*	**17**
11–20 years	0	232	*22*	**232**
21–40 years	4	633	*13*	**637**
41–60 years	34	1,089	*19*	**1,123**
61–80 years	31	1,126	*25*	**1,157**
81+ years	36	1,670	*21*	**1,706**
Total	**105**	**4,768**	***10***	**4,873**
All species				
0–10 years	0	17	*34*	**17**
11–20 years	16	234	*22*	**250**
21–40 years	97	787	*13*	**884**
41–60 years	262	2,064	*15*	**2,326**
61–80 years	101	1,327	*23*	**1,428**
81+ years	46	1,695	*21*	**1,742**
Total	**523**	**6,125**	***8***	**6,648**

Table 7 Standing volume by mean stand DBH class at 31 March 2012

Mean stand DBH	FC volume (000 m^3 obs)	Private sector volume (000 m^3 obs)	Private sector *SE%*	Total volume (000 m^3 obs)
All conifers				
All conifers	**418**	**1,346**	***16***	**1,764**
All broadleaves				
0–7 cm	0	18	*22*	**18**
7–10 cm	0	193	*19*	**193**
10–15 cm	15	410	*15*	**425**
15–20 cm	17	331	*21*	**348**
20–30 cm	35	441	*18*	**476**
30–40 cm	24	893	*23*	**917**
40–60 cm	11	1,692	*21*	**1,703**
60+ cm	3	790	*34*	**793**
Total	**105**	**4,768**	***10***	**4,873**
All species				
0–7 cm	0	18	*22*	**18**
7–10 cm	4	193	*19*	**197**
10–15 cm	35	415	*15*	**450**
15–20 cm	51	379	*21*	**430**
20–30 cm	115	1,195	*18*	**1,310**
30–40 cm	137	1,337	*19*	**1,474**
40–60 cm	147	1,797	*20*	**1,945**
60+ cm	34	790	*34*	**824**
Total	**523**	**6,125**	***8***	**6,648**

Biomass and carbon stocks at 31 March 2012

Table 8 Standing biomass by principal tree species at 31 March 2012

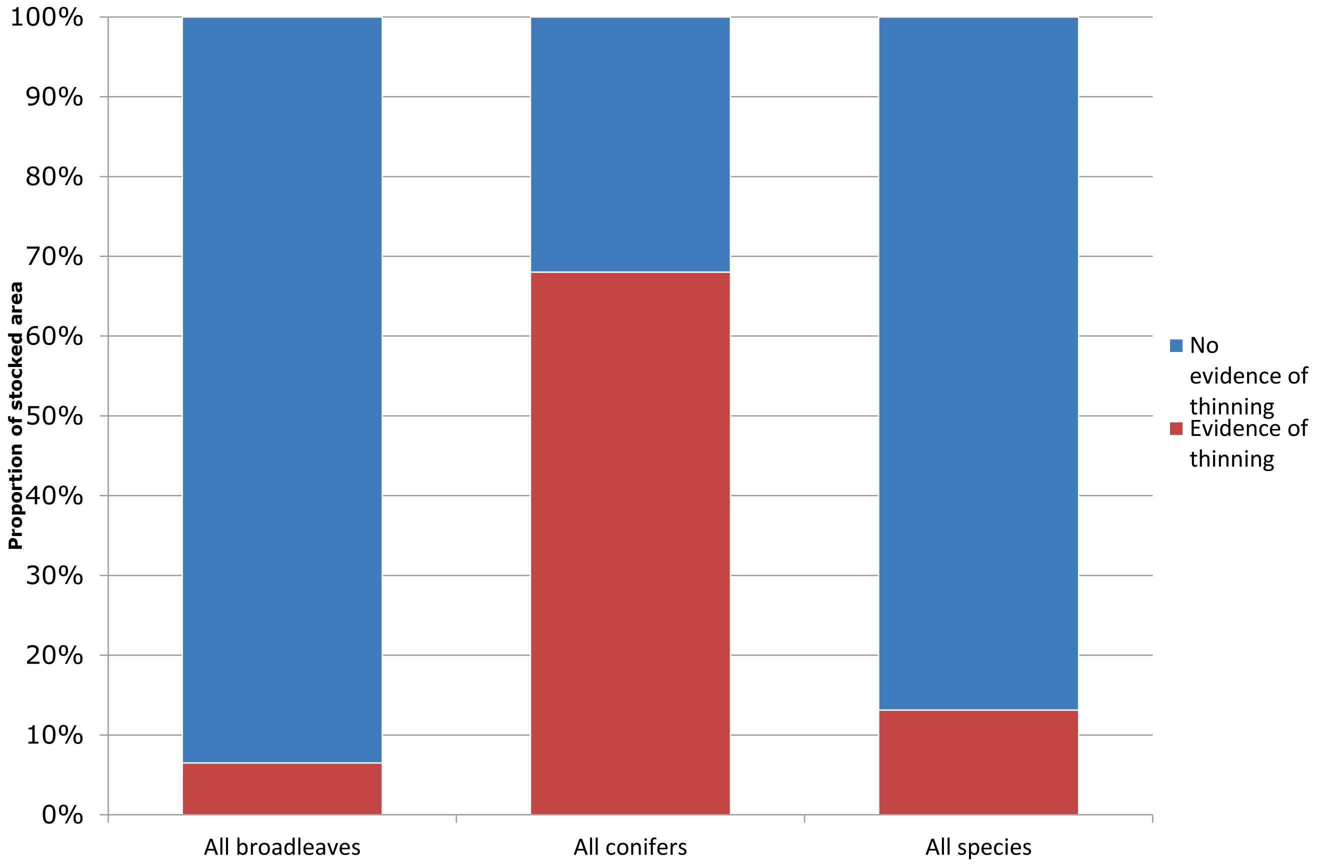
Principal species	FC	Private sector		Total
	biomass (000 odt)	biomass (000 odt)	*SE%*	biomass (000 odt)
Conifers				
All conifers	**267**	**778**	***15***	**1,044**
Broadleaves				
Oak	20	1,237	*16*	**1,257**
Beech	35	472	*22*	**507**
Sycamore	0	781	*27*	**781**
Ash	1	501	*26*	**502**
Hazel	0	159	*23*	**159**
Willow	0	402	*20*	**159**
Other broadleaves	40	754	*20*	**795**
All broadleaves	**96**	**4,317**	***8***	**4,413**
All species				
All species	**362**	**5,102**	***7***	**5,465**

Table 9 Total carbon stocks in principal tree species at 31 March 2012

Principal species	FC	Private sector		Total
	carbon (000 t)	carbon (000 t)	*SE%*	carbon (000 t)
Conifers				
All conifers	**133**	**389**	***15***	**522**
Broadleaves				
Oak	10	619	*16*	**628**
Beech	17	236	*22*	**253**
Sycamore	0	391	*27*	**391**
Ash	0	250	*26*	**251**
Hazel	0	79	*23*	**79**
Willow	0	201	*20*	**201**
Other broadleaves	20	377	*20*	**397**
All broadleaves	**48**	**2,159**	***8***	**2,207**
All species				
All species	**181**	**2,551**	***7***	**2,732**

Evidence of thinning

Figure 3 Evidence of thinning in Private sector sites



50-year forecast of timber availability

Refer to the NFI report *50-year forecast of softwood timber availability* (2014) 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.

In **Figures 4–9** and **Tables 10–12** the estimates for the Forestry Commission are based on harvesting regimes derived from Forestry Commission felling and thinning plans as of 31 March 2012.

For the Private sector, information for **Figures 4 - 9** and **Tables 10–12** is based on a scenario which assumes felling at age of maximum mean annual increment with moderate wind risk measures for conifers. For broadleaves, however, only those areas where there is evidence of thinning are assumed to be managed in future. This is a highly conservative assumption but better reflects current practice than assuming all stands will be managed. In turn it is assumed that these broadleaved stands are managed to felling at age of maximum mean annual increment with moderate wind risk measures.

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

- a 10% reduction in the area of conifers on the subsequent rotation
- restocking of currently clearfelled land
- a change in the composition of conifer species on restocking

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

- no reduction in stocked area
- like-for-like species choices are used for broadleaves
- 50% of the land associated with the reduction in conifer stocked area arising from the assumption above is stocked with broadleaves

Woodland that is classed as currently clearfelled will be restocked according to the above conifer restock prescription.

A full description of the restocking assumptions is to be found in Table D3 of the *50-year forecast of softwood timber availability* (2014). The same restocking assumptions have been applied to both the Forestry Commission and Private sector forecasts.

In **Figures 10–15** and **Tables 13–15** the management assumptions for the Private sector hardwoods have been changed to assume all hardwoods are thinned and felled rather than only those in areas that have evidence of thinning. In this report, the tables and figures for estimates under this management scenario will be labelled as ‘unrestricted’.

Figure 16 compares the Private sector hardwood timber availability under the two scenarios, while **Figure 17** and **Table 16** compare the hardwood availability in the first 15 years of the forecast under the two scenarios.

50-year forecast of timber availability under the ‘headline’ harvesting scenario

Table 10 50-year forecast of timber availability by time period and principal species

Principal species	2013–16				2017–21				2022–26				2027–31			
	FC	Private sector		Total	FC	Private sector		Total	FC	Private sector		Total	FC	Private sector		Total
	volume (000 m^3 obs)		*SE%*	volume (000 m^3 obs)	volume (000 m^3 obs)		*SE%*	volume (000 m^3 obs)	volume (000 m^3 obs)		*SE%*	volume (000 m^3 obs)	volume (000 m^3 obs)		*SE%*	volume (000 m^3 obs)
All conifers	**19**	**81**	***46***	**101**	**10**	**87**	***47***	**98**	**14**	**53**	***27***	**67**	**17**	**43**	***30***	**60**
All broadleaves	**2**	**21**	***49***	**23**	**0**	**12**	***27***	**12**	**1**	**11**	***26***	**13**	**1**	**18**	***26***	**19**
Oak	0	2	*73*	2	0	2	*63*	2	0	2	*58*	2	0	7	*50*	7
Beech	1	1	*79*	2	0	2	*59*	2	1	3	*61*	4	1	3	*58*	4
Sycamore	0	0	*75*	0	0	0	*50*	0	0	1	*42*	1	0	2	*74*	2
Ash	0	3	*55*	3	0	3	*53*	3	0	1	*38*	1	0	1	*36*	1
Hazel	0	0	*35*	0	0	0	*24*	0	0	0	*24*	0	0	1	*23*	1
Willow	0	0	*36*	0	0	0	*27*	0	0	0	*29*	0	0	1	*24*	1
Other broadleaves	0	14	*70*	14	0	3	*34*	3	0	3	*29*	3	0	3	*26*	4
All species	**21**	**103**	***38***	**123**	**10**	**100**	***42***	**110**	**15**	**65**	***24***	**80**	**18**	**62**	***25***	**80**

Table 10 (cont'd) 50-year forecast of timber availability by time period and principal species

Principal species	2032–36				2037–41				2042–46				2047–51			
	FC	Private sector		Total	FC	Private sector		Total	FC	Private sector		Total	FC	Private sector		Total
	volume (000 m^3 obs)		*SE%*	volume (000 m^3 obs)	volume (000 m^3 obs)		*SE%*	volume (000 m^3 obs)	volume (000 m^3 obs)		*SE%*	volume (000 m^3 obs)	volume (000 m^3 obs)		*SE%*	volume (000 m^3 obs)
All conifers	**18**	**50**	***33***	**68**	**15**	**33**	***28***	**48**	**20**	**27**	***39***	**47**	**27**	**33**	***50***	**60**
All broadleaves	**1**	**14**	***24***	**15**	**1**	**14**	***23***	**16**	**1**	**27**	***29***	**28**	**1**	**17**	***20***	**18**
Oak	0	2	*63*	2	0	2	*61*	2	0	2	*60*	2	0	2	*52*	2
Beech	1	5	*50*	5	1	3	*57*	5	0	9	*73*	9	1	3	*63*	4
Sycamore	0	0	*30*	0	0	0	*29*	0	0	2	*56*	2	0	1	*29*	1
Ash	0	1	*38*	1	0	2	*42*	2	0	3	*46*	3	0	1	*51*	1
Hazel	0	1	*20*	1	0	1	*28*	1	0	2	*30*	2	0	3	*34*	3
Willow	0	1	*23*	1	0	1	*23*	1	0	1	*23*	1	0	1	*23*	1
Other broadleaves	0	4	*24*	4	0	4	*21*	5	0	8	*26*	8	0	6	*27*	6
All species	**19**	**64**	***26***	**83**	**16**	**47**	***20***	**64**	**21**	**55**	***24***	**75**	**28**	**51**	***35***	**79**

Table 10 (cont'd) 50-year forecast of timber availability by time period and principal species

Principal species	2052–56				2057–61			
	FC	Private sector		Total	FC	Private sector		Total
	volume (000 m^3 obs)		*SE%*	volume (000 m^3 obs)	volume (000 m^3 obs)		*SE%*	volume (000 m^3 obs)
All conifers	**18**	**17**	***30***	**35**	**20**	**25**	***21***	**45**
All broadleaves	**1**	**14**	***20***	**15**	**2**	**19**	***32***	**21**
Oak	0	2	*55*	2	0	2	*54*	2
Beech	0	3	*54*	4	1	3	*56*	4
Sycamore	0	1	*49*	1	0	0	*75*	0
Ash	0	1	*40*	1	0	1	*50*	1
Hazel	0	1	*63*	1	0	1	*43*	1
Willow	0	1	*23*	1	0	1	*23*	1
Other broadleaves	1	4	*23*	5	0	11	*51*	11
All species	**19**	**31**	***19***	**50**	**22**	**44**	***20***	**66**

Table 11 50-year forecast of standing volume; average annual volumes within periods

Forecast period	FC	Private sector		Total
	volume (000 m^3 obs)	volume (000 m^3 obs)	*SE%*	volume (000 m^3 obs)
All conifers				
2013–16	443	1,276	*17*	**1,719**
2017–21	491	915	*18*	**1,406**
2022–26	528	843	*19*	**1,371**
2027–31	588	709	*21*	**1,297**
2032–36	634	562	*22*	**1,197**
2037–41	655	494	*24*	**1,149**
2042–46	662	499	*23*	**1,161**
2047–51	656	489	*22*	**1,145**
2052–56	634	595	*21*	**1,229**
2057–61	625	682	*22*	**1,307**
All broadleaves				
2013–16	108	5,007	*9*	**5,115**
2017–21	116	5,551	*8*	**5,667**
2022–26	122	6,263	*8*	**6,385**
2027–31	129	6,994	*7*	**7,123**
2032–36	136	7,693	*7*	**7,829**
2037–41	141	8,364	*6*	**8,505**
2042–46	146	8,972	*6*	**9,118**
2047–51	151	9,503	*6*	**9,654**
2052–56	156	10,037	*5*	**10,192**
2057–61	159	10,512	*5*	**10,671**
All species				
2013–16	550	6,295	*8*	**6,846**
2017–21	607	6,476	*7*	**7,084**
2022–26	650	7,115	*7*	**7,765**
2027–31	717	7,710	*7*	**8,427**
2032–36	770	8,262	*6*	**9,032**
2037–41	796	8,864	*6*	**9,660**
2042–46	808	9,478	*6*	**10,286**
2047–51	807	9,995	*5*	**10,802**
2052–56	790	10,636	*5*	**11,426**
2057–61	784	11,199	*5*	**11,983**

Table 12 50-year forecast of net increment; average annual volumes within periods

Forecast period	FC	Private sector		Total
	volume (000 m^3 obs)	volume (000 m^3 obs)	*SE%*	volume (000 m^3 obs)
All conifers				
2013–16	26	41	*13*	**67**
2017–21	25	30	*16*	**55**
2022–26	24	26	*17*	**50**
2027–31	24	22	*18*	**47**
2032–36	23	25	*19*	**48**
2037–41	23	26	*22*	**49**
2042–46	22	30	*22*	**52**
2047–51	20	35	*20*	**55**
2052–56	20	39	*17*	**59**
2057–61	21	42	*15*	**62**
All broadleaves				
2013–16	3	124	*7*	**126**
2017–21	3	145	*6*	**148**
2022–26	3	160	*5*	**162**
2027–31	2	160	*5*	**162**
2032–36	2	153	*5*	**155**
2037–41	2	146	*5*	**148**
2042–46	2	137	*5*	**139**
2047–51	2	127	*5*	**129**
2052–56	2	118	*5*	**120**
2057–61	2	110	*5*	**112**
All species				
2013–16	28	165	*6*	**194**
2017–21	28	176	*6*	**204**
2022–26	27	186	*5*	**213**
2027–31	27	182	*5*	**209**
2032–36	26	178	*5*	**204**
2037–41	25	172	*5*	**197**
2042–46	24	168	*5*	**192**
2047–51	23	162	*5*	**184**
2052–56	22	157	*5*	**179**
2057–61	23	151	*5*	**175**

Figure 4 Overview of 50-year forecast of average annual softwood availability

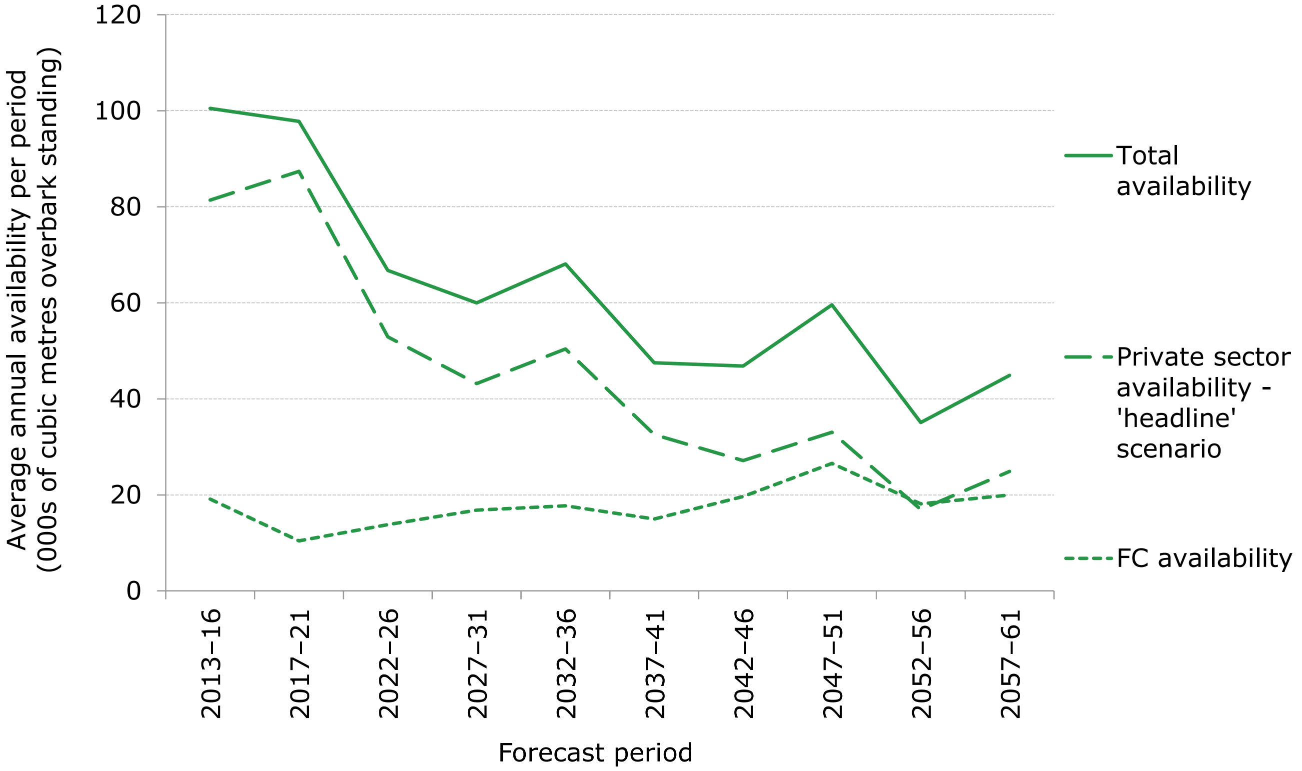


Figure 5 Overview of 50-year forecast of average annual hardwood availability

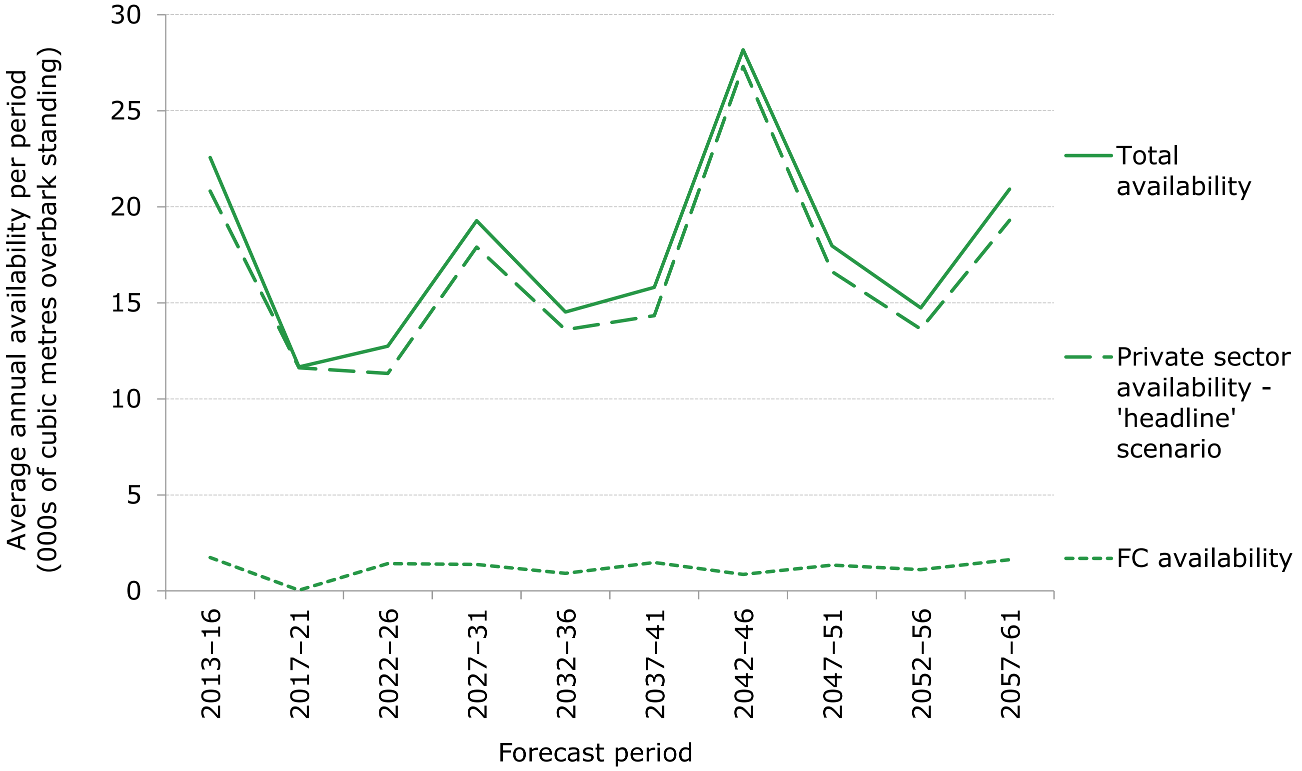


Figure 6 50-year forecast of average annual softwood availability

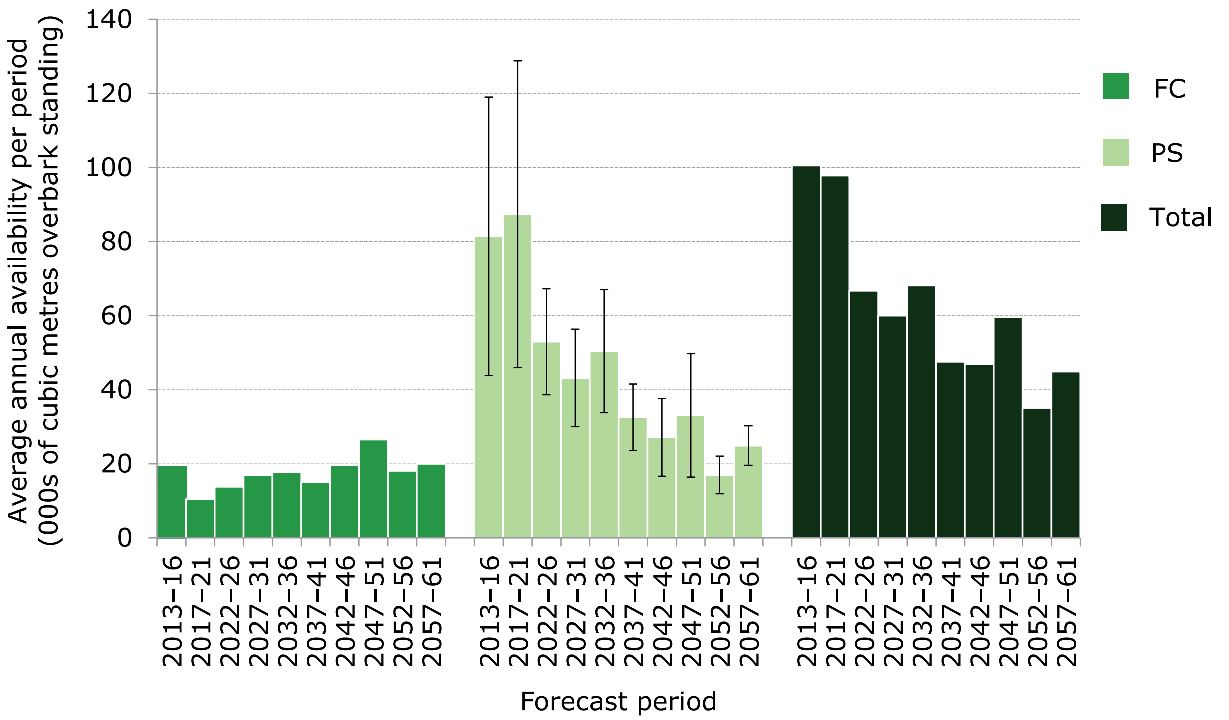


Figure 7 50-year forecast of average annual hardwood availability

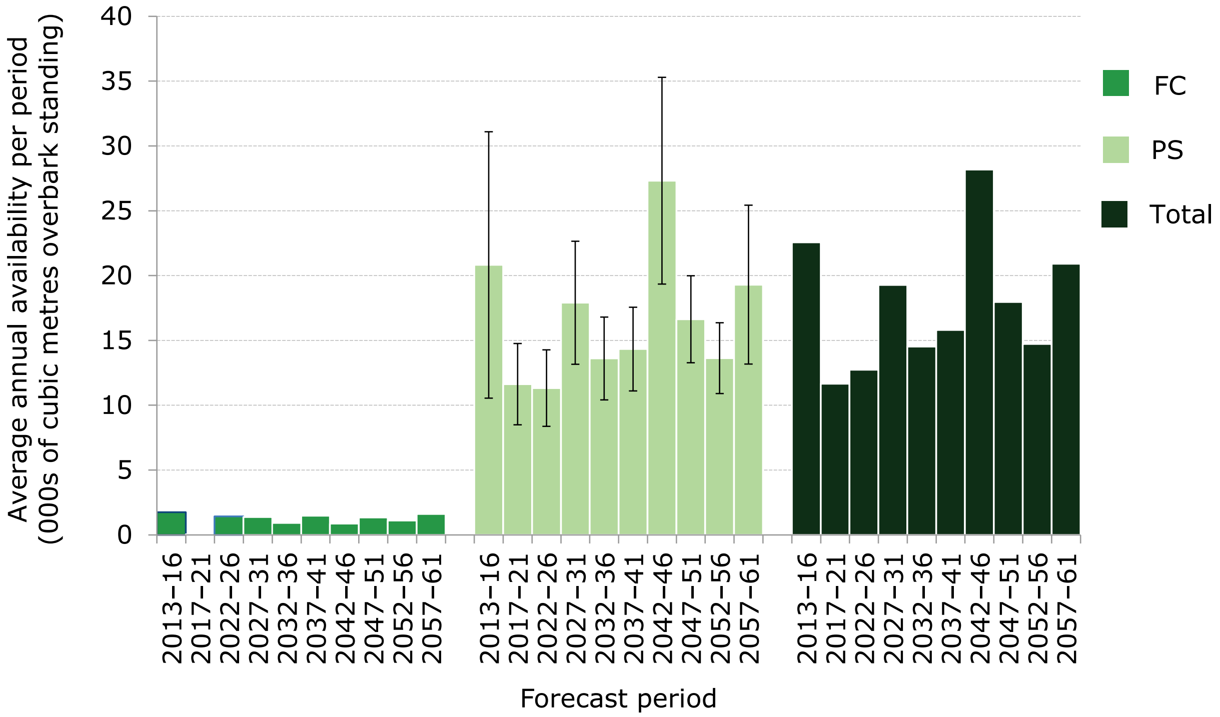


Figure 8 50-year forecast of softwood standing volume, increment and availability

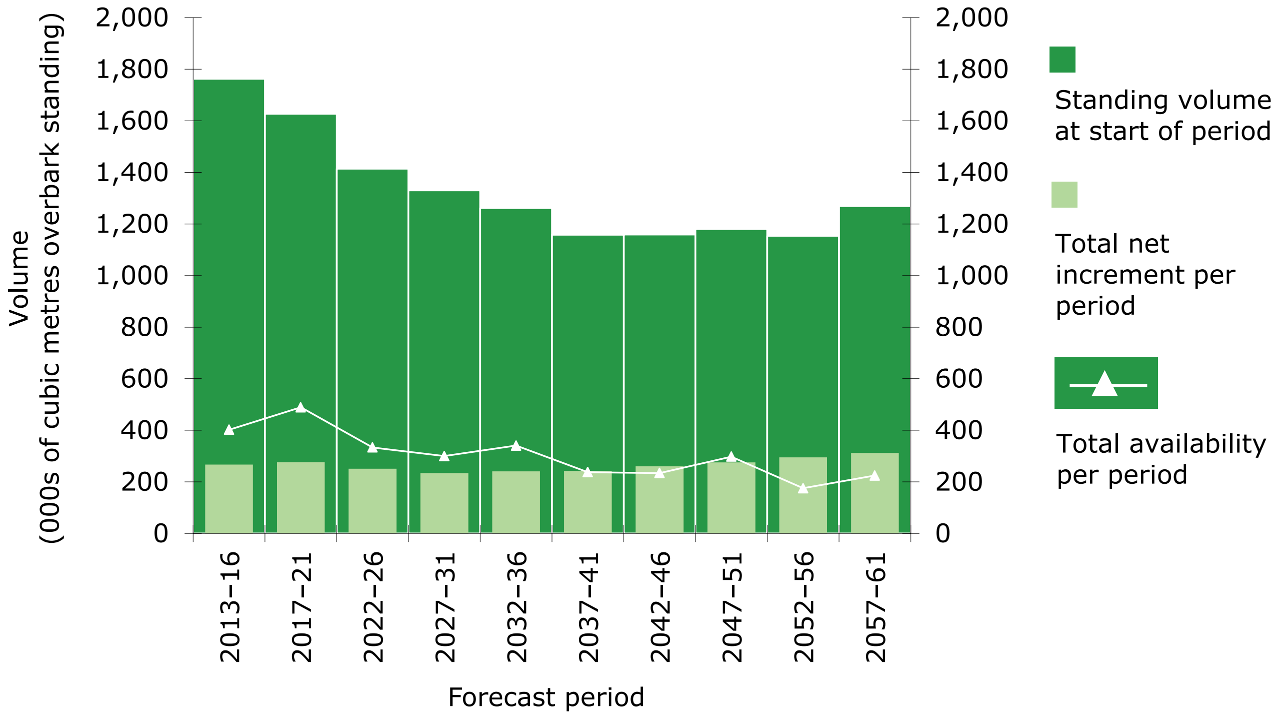
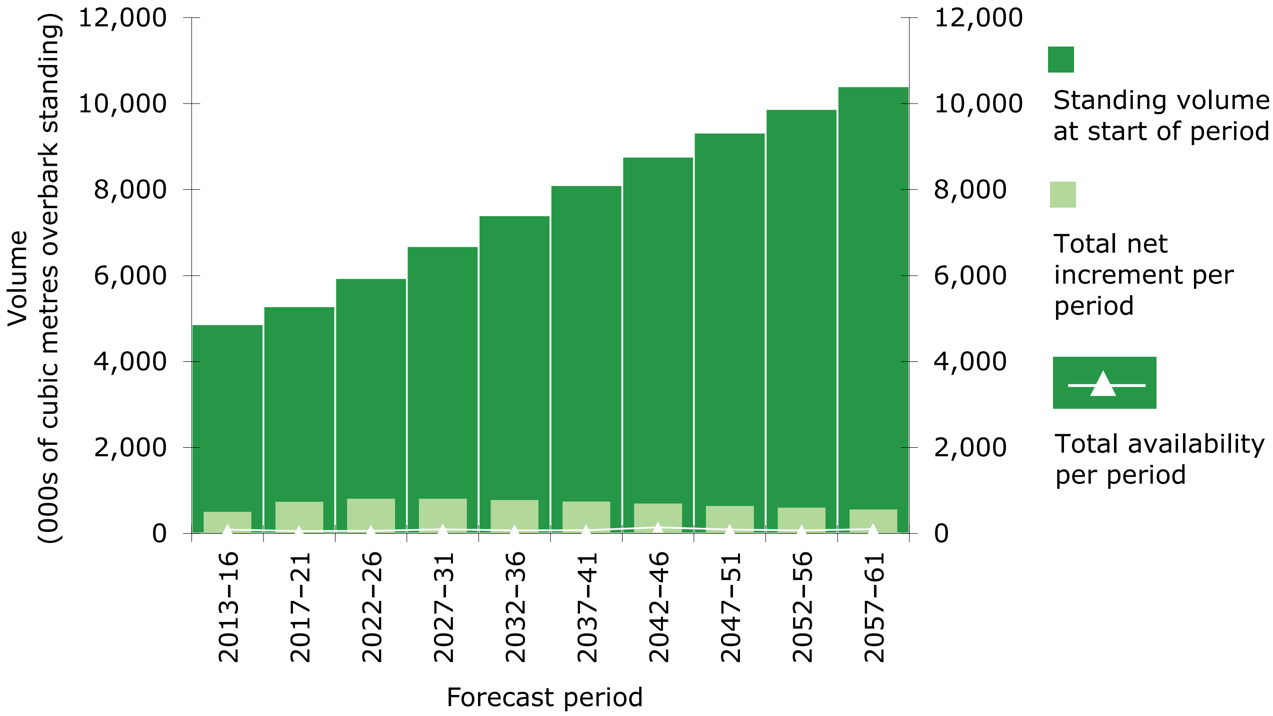


Figure 9 50-year forecast of hardwood standing volume, increment and availability



50-year forecast of timber availability under the ‘unrestricted’ scenario

Table 13 50-year forecast of timber availability by time period and principal species – unrestricted biological potential for Private sector hardwoods

Principal species	2013–16				2017–21				2022–26				2027–31			
	FC	Private sector		Total	FC	Private sector		Total	FC	Private sector		Total	FC	Private sector		Total
	volume (000 m^3 obs)		*SE%*	volume (000 m^3 obs)	volume (000 m^3 obs)		*SE%*	volume (000 m^3 obs)	volume (000 m^3 obs)		*SE%*	volume (000 m^3 obs)	volume (000 m^3 obs)		*SE%*	volume (000 m^3 obs)
All conifers	**19**	**81**	***46***	**101**	**10**	**87**	***47***	**98**	**14**	**53**	***27***	**67**	**17**	**43**	***30***	**60**
All broadleaves	**2**	**279**	***17***	**281**	**0**	**237**	***12***	**237**	**1**	**123**	***9***	**124**	**1**	**141**	***13***	**142**
Oak	0	16	*19*	16	0	18	*14*	18	0	21	*18*	21	0	51	*32*	51
Beech	1	14	*36*	16	0	17	*33*	17	1	14	*33*	15	1	13	*34*	14
Sycamore	0	76	*34*	76	0	83	*31*	83	0	30	*27*	30	0	27	*26*	27
Ash	0	91	*41*	91	0	43	*20*	43	0	14	*20*	14	0	8	*38*	8
Hazel	0	13	*33*	13	0	15	*29*	15	0	7	*17*	7	0	6	*31*	6
Willow	0	5	*30*	5	0	10	*20*	10	0	12	*19*	12	0	14	*18*	14
Other broadleaves	0	62	*29*	62	0	52	*23*	52	0	25	*17*	26	0	22	*16*	23
All species	**21**	**361**	***17***	**382**	**10**	**325**	***15***	**335**	**15**	**176**	***10***	**191**	**18**	**185**	***12***	**203**

Table 13 (cont'd) 50-year forecast of timber availability by time period and principal species – unrestricted biological potential for Private sector hardwoods

Principal species	2032–36				2037–41				2042–46				2047–51			
	FC	Private sector		Total	FC	Private sector		Total	FC	Private sector		Total	FC	Private sector		Total
	volume (000 m^3 obs)		*SE%*	volume (000 m^3 obs)	volume (000 m^3 obs)		*SE%*	volume (000 m^3 obs)	volume (000 m^3 obs)		*SE%*	volume (000 m^3 obs)	volume (000 m^3 obs)		*SE%*	volume (000 m^3 obs)
All conifers	**18**	**50**	***33***	**68**	**15**	**33**	***28***	**48**	**20**	**27**	***39***	**47**	**27**	**33**	***50***	**60**
All broadleaves	**1**	**126**	***11***	**126**	**1**	**143**	***9***	**144**	**1**	**160**	***13***	**161**	**1**	**154**	***26***	**156**
Oak	0	22	*38*	22	0	25	*28*	26	0	16	*24*	16	0	15	*18*	15
Beech	1	26	*31*	27	1	23	*35*	24	0	13	*51*	13	1	7	*29*	8
Sycamore	0	15	*25*	15	0	18	*26*	18	0	26	*36*	26	0	16	*20*	16
Ash	0	8	*21*	8	0	14	*23*	14	0	23	*39*	23	0	11	*33*	11
Hazel	0	5	*19*	5	0	16	*24*	16	0	11	*32*	11	0	20	*34*	20
Willow	0	15	*17*	15	0	15	*17*	15	0	19	*21*	19	0	16	*18*	16
Other broadleaves	0	32	*24*	32	0	29	*15*	29	0	51	*24*	51	0	70	*54*	71
All species	**19**	**176**	***12***	**195**	**16**	**175**	***9***	**192**	**21**	**187**	***12***	**208**	**28**	**188**	***23***	**216**

Table 13 (cont'd) 50-year forecast of timber availability by time period and principal species – unrestricted biological potential for Private sector hardwoods

Principal species	2052–56				2057–61			
	FC	Private sector		Total	FC	Private sector		Total
	volume (000 m^3 obs)		*SE%*	volume (000 m^3 obs)	volume (000 m^3 obs)		*SE%*	volume (000 m^3 obs)
All conifers	**18**	**17**	***30***	**35**	**20**	**25**	***21***	**45**
All broadleaves	**1**	**117**	***10***	**118**	**2**	**173**	***13***	**174**
Oak	0	24	*31*	24	0	23	*50*	23
Beech	0	9	*27*	10	1	12	*39*	14
Sycamore	0	22	*25*	22	0	15	*20*	15
Ash	0	11	*23*	11	0	11	*23*	11
Hazel	0	8	*51*	8	0	7	*29*	7
Willow	0	15	*17*	15	0	75	*28*	75
Other broadleaves	1	27	*18*	28	0	33	*20*	33
All species	**19**	**134**	***9***	**153**	**22**	**198**	***12***	**220**

Table 14 50-year forecast of standing volume; average annual volumes within periods – unrestricted biological potential for Private sector hardwoods

Forecast period	FC	Private sector		Total
	volume (000 m^3 obs)	volume (000 m^3 obs)	*SE%*	volume (000 m^3 obs)
All conifers				
2013–16	443	1,276	*17*	**1,719**
2017–21	491	915	*18*	**1,406**
2022–26	528	843	*19*	**1,371**
2027–31	588	709	*21*	**1,297**
2032–36	634	562	*22*	**1,197**
2037–41	655	494	*24*	**1,149**
2042–46	662	499	*23*	**1,161**
2047–51	656	489	*22*	**1,145**
2052–56	634	595	*21*	**1,229**
2057–61	625	682	*22*	**1,307**
All broadleaves				
2013–16	108	4,238	*9*	**4,346**
2017–21	116	3,778	*8*	**3,894**
2022–26	122	3,553	*9*	**3,675**
2027–31	129	3,634	*9*	**3,764**
2032–36	136	3,740	*9*	**3,876**
2037–41	141	3,832	*8*	**3,972**
2042–46	146	3,902	*8*	**4,048**
2047–51	151	3,784	*7*	**3,934**
2052–56	156	3,982	*7*	**4,138**
2057–61	159	3,913	*7*	**4,072**
All species				
2013–16	550	5,526	*7*	**6,077**
2017–21	607	4,704	*8*	**5,311**
2022–26	650	4,405	*8*	**5,055**
2027–31	717	4,351	*8*	**5,068**
2032–36	770	4,308	*8*	**5,078**
2037–41	796	4,332	*8*	**5,128**
2042–46	808	4,409	*7*	**5,217**
2047–51	807	4,276	*7*	**5,083**
2052–56	790	4,582	*7*	**5,371**
2057–61	784	4,600	*7*	**5,384**

Table 15 50-year forecast of net increment; average annual volumes within periods – unrestricted biological potential for Private sector hardwoods

Forecast period	FC volume (000 m^3 obs)	Private sector volume (000 m^3 obs)	Private sector *SE%*	Total volume (000 m^3 obs)
All conifers				
2013–16	26	41	*13*	**67**
2017–21	25	30	*16*	**55**
2022–26	24	26	*17*	**50**
2027–31	24	22	*18*	**47**
2032–36	23	25	*19*	**48**
2037–41	23	26	*22*	**49**
2042–46	22	30	*22*	**52**
2047–51	20	35	*20*	**55**
2052–56	20	39	*17*	**59**
2057–61	21	42	*15*	**62**
All broadleaves				
2013–16	3	120	*6*	**123**
2017–21	3	130	*6*	**132**
2022–26	3	137	*6*	**140**
2027–31	2	144	*5*	**146**
2032–36	2	151	*5*	**153**
2037–41	2	159	*5*	**162**
2042–46	2	161	*5*	**163**
2047–51	2	153	*5*	**155**
2052–56	2	151	*5*	**153**
2057–61	2	147	*4*	**150**
All species				
2013–16	28	162	*5*	**190**
2017–21	28	160	*6*	**188**
2022–26	27	163	*6*	**190**
2027–31	27	166	*5*	**193**
2032–36	26	176	*5*	**202**
2037–41	25	185	*5*	**211**
2042–46	24	192	*5*	**216**
2047–51	23	188	*5*	**211**
2052–56	22	191	*4*	**213**
2057–61	23	189	*4*	**212**

Figure 10 Overview of 50-year forecast of average annual softwood availability – unrestricted biological potential for Private sector hardwoods

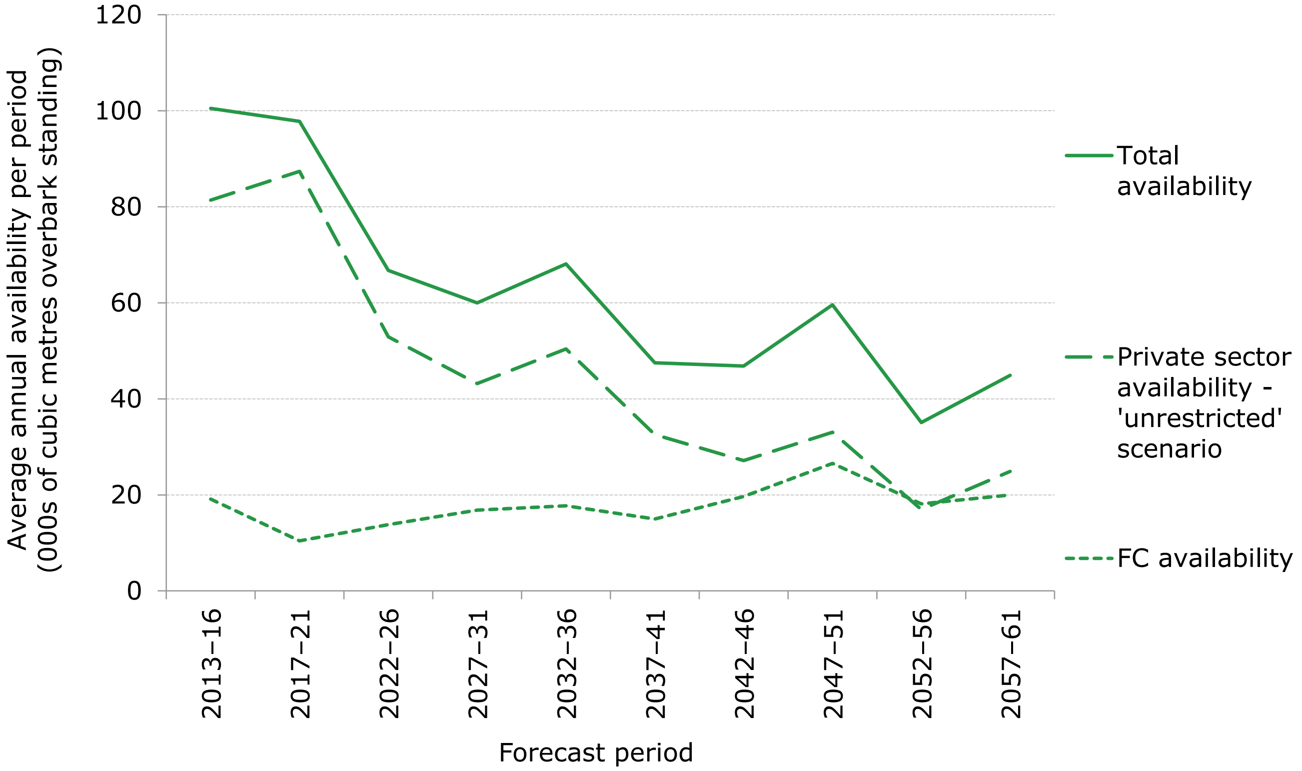


Figure 11 Overview of 50-year forecast of average annual hardwood availability – unrestricted biological potential for Private sector hardwoods

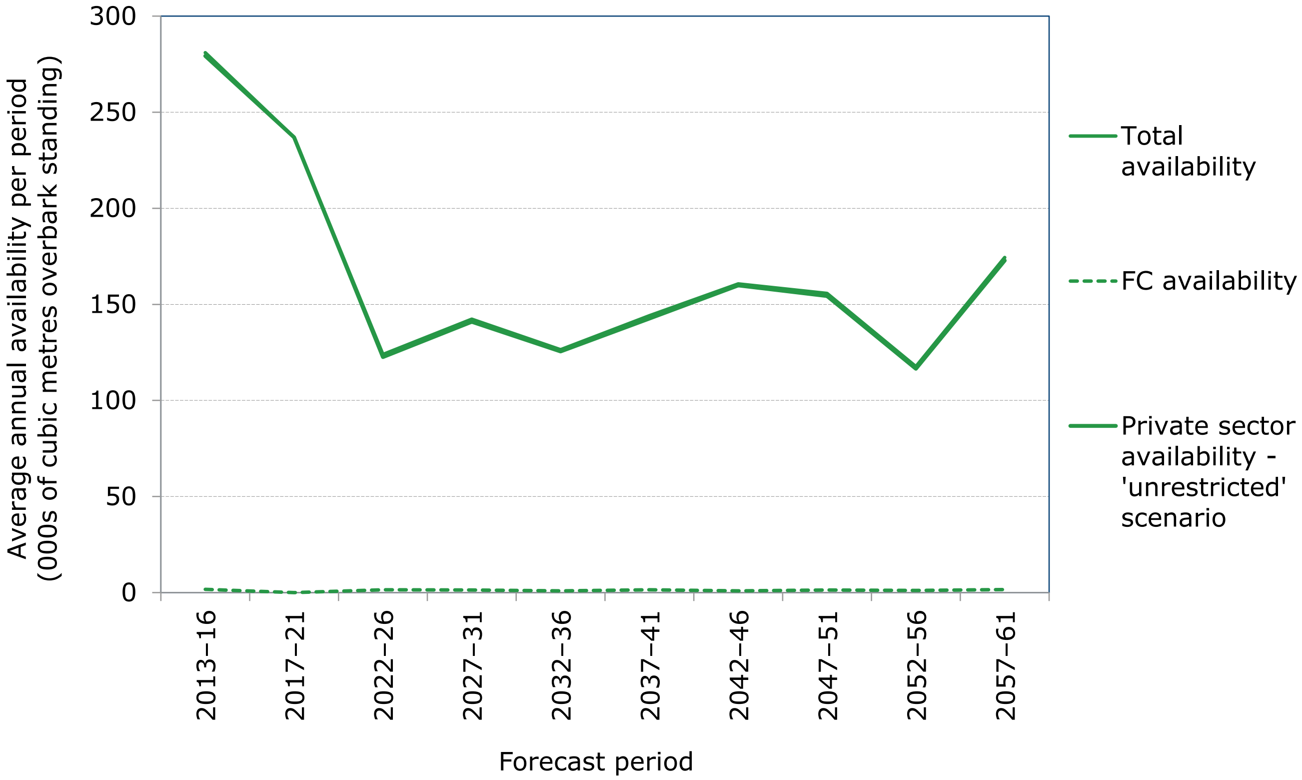


Figure 12 50-year forecast of average annual softwood availability– unrestricted biological potential for Private sector hardwoods

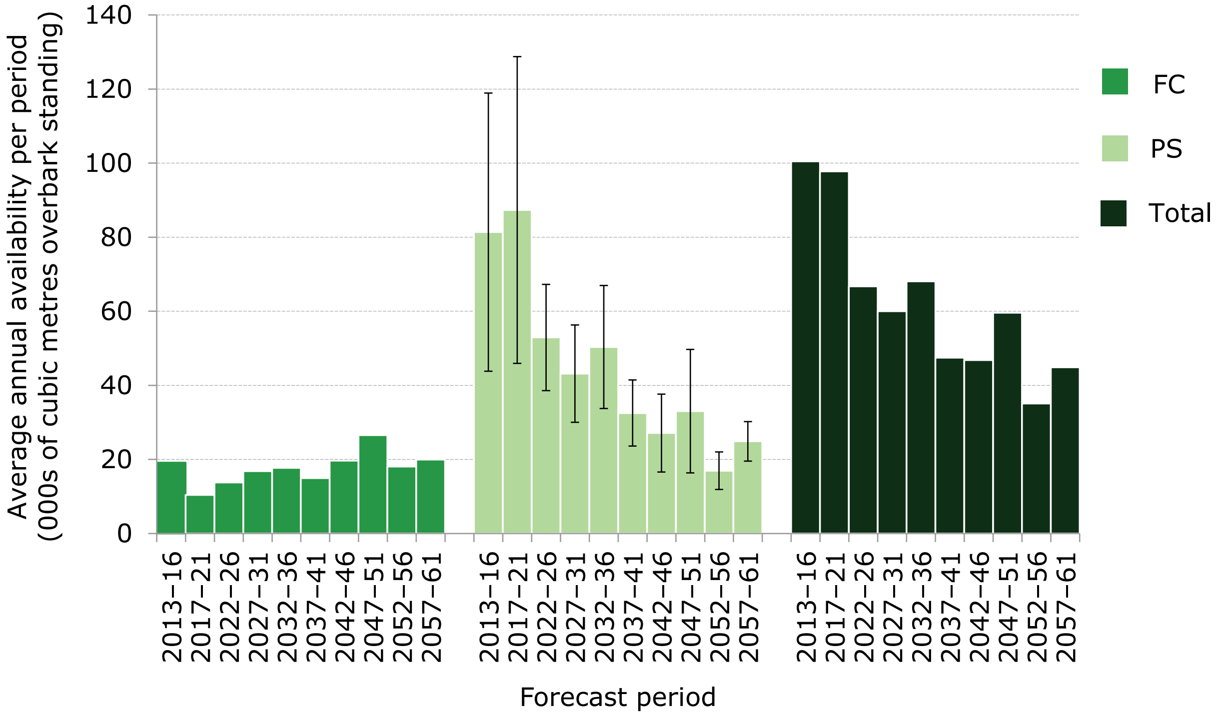


Figure 13 50-year forecast of average annual hardwood availability – unrestricted biological potential for Private sector hardwoods

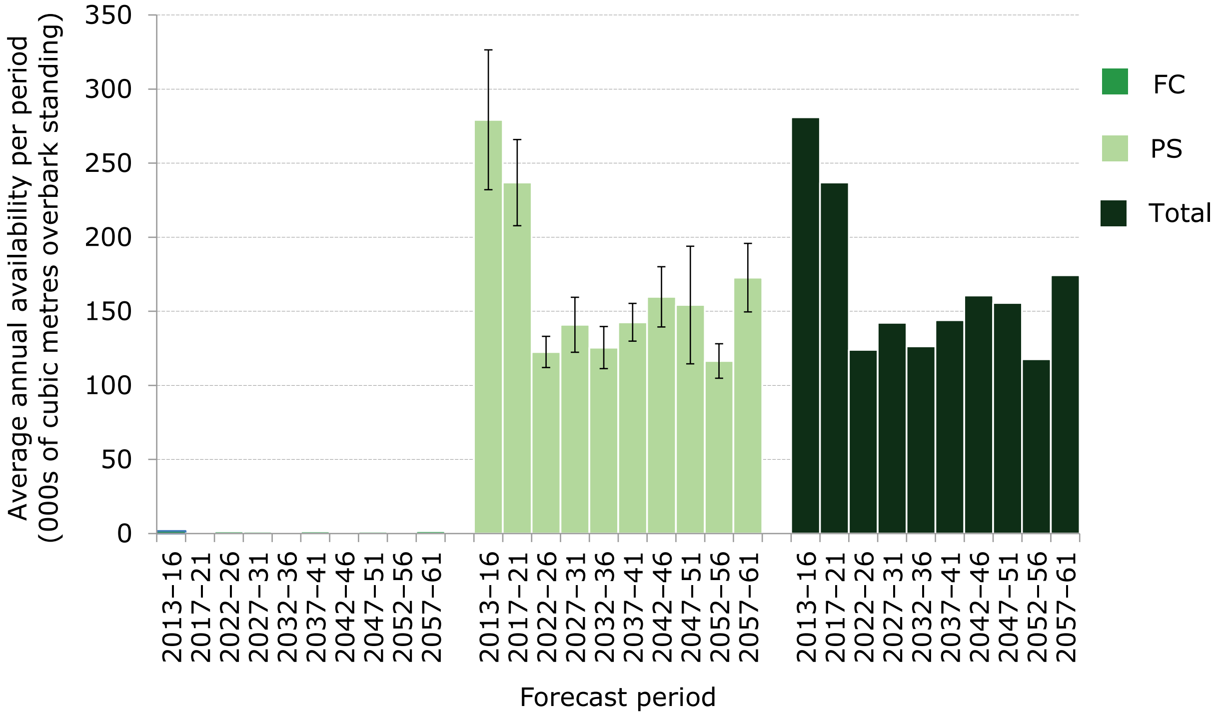


Figure 14 50-year summary of softwood standing volume, increment and availability – unrestricted biological potential for Private sector hardwoods

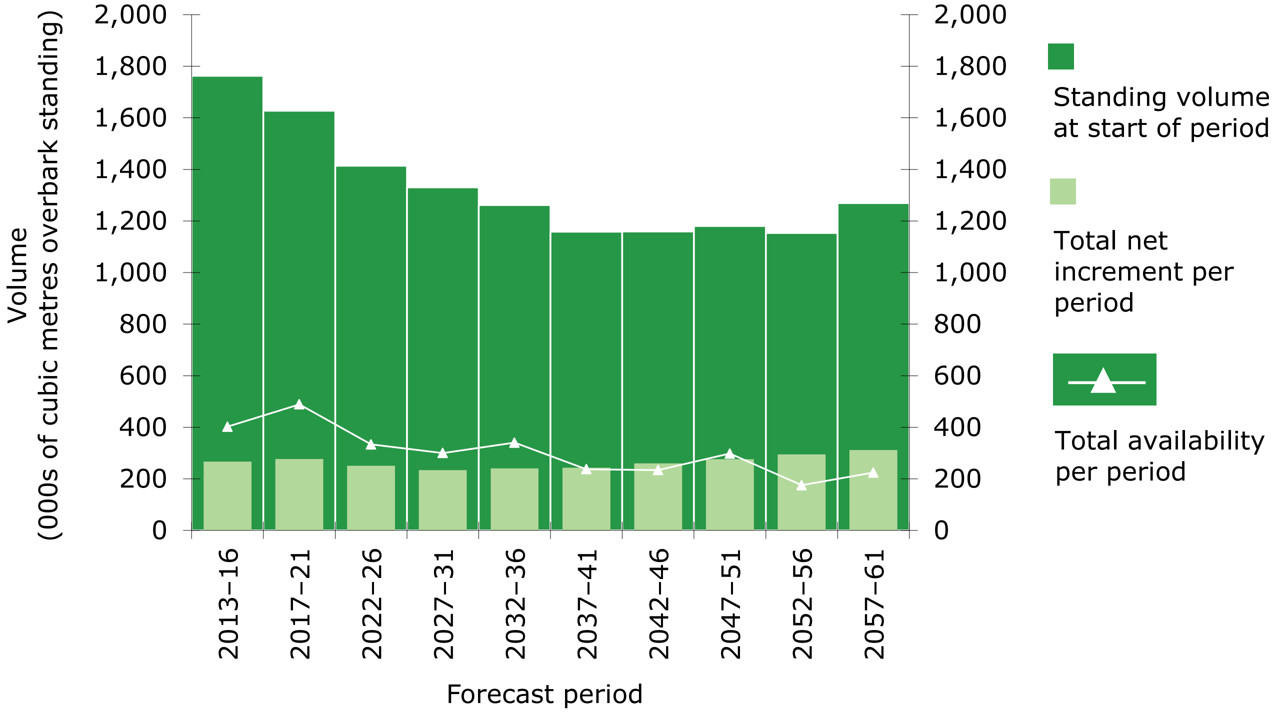
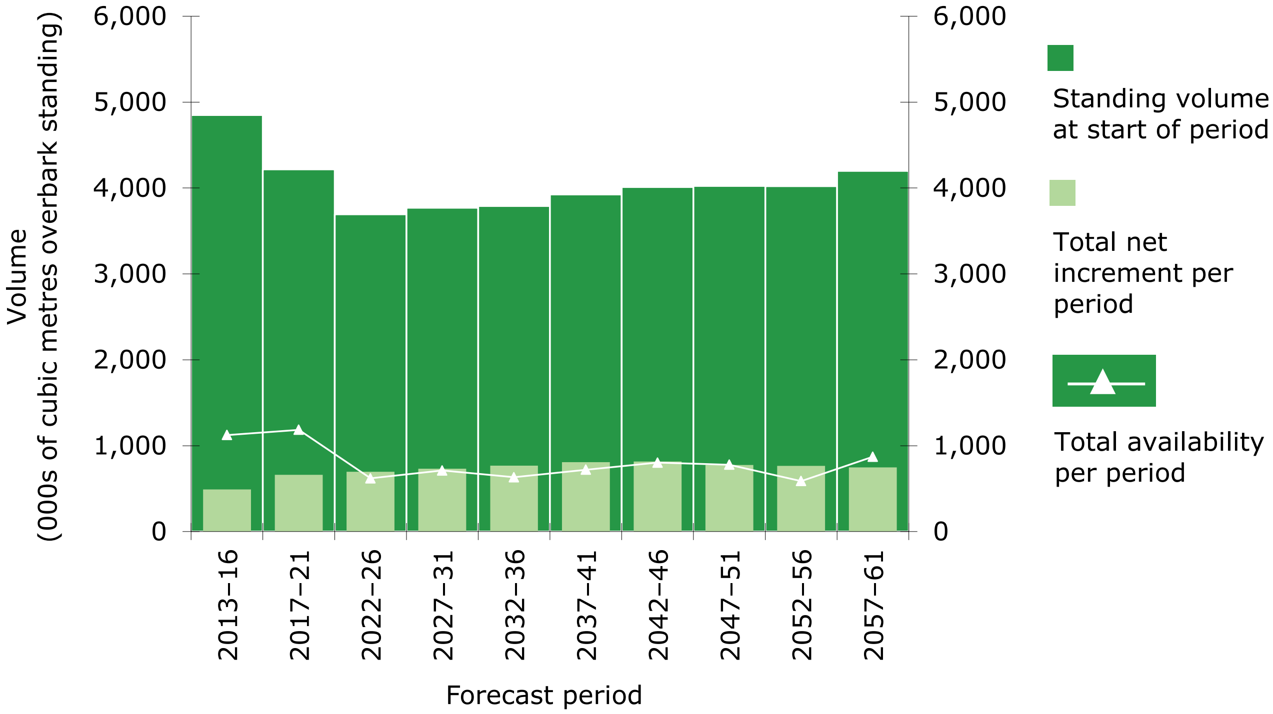


Figure 15 50-year summary of hardwood standing volume, increment and availability – unrestricted biological potential for Private sector hardwoods



Comparison of hardwood production between harvesting scenarios

Figure 16 50-year forecast comparison of average annual hardwood timber availability

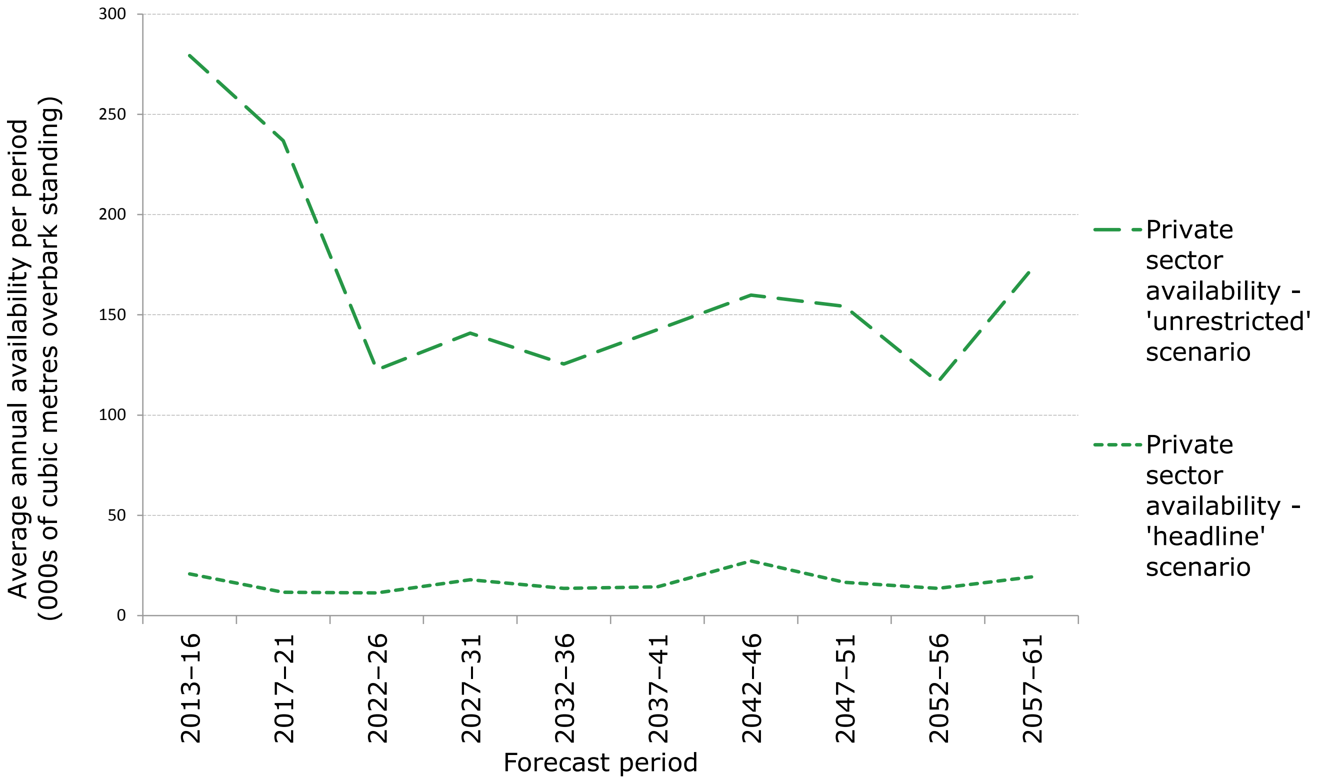
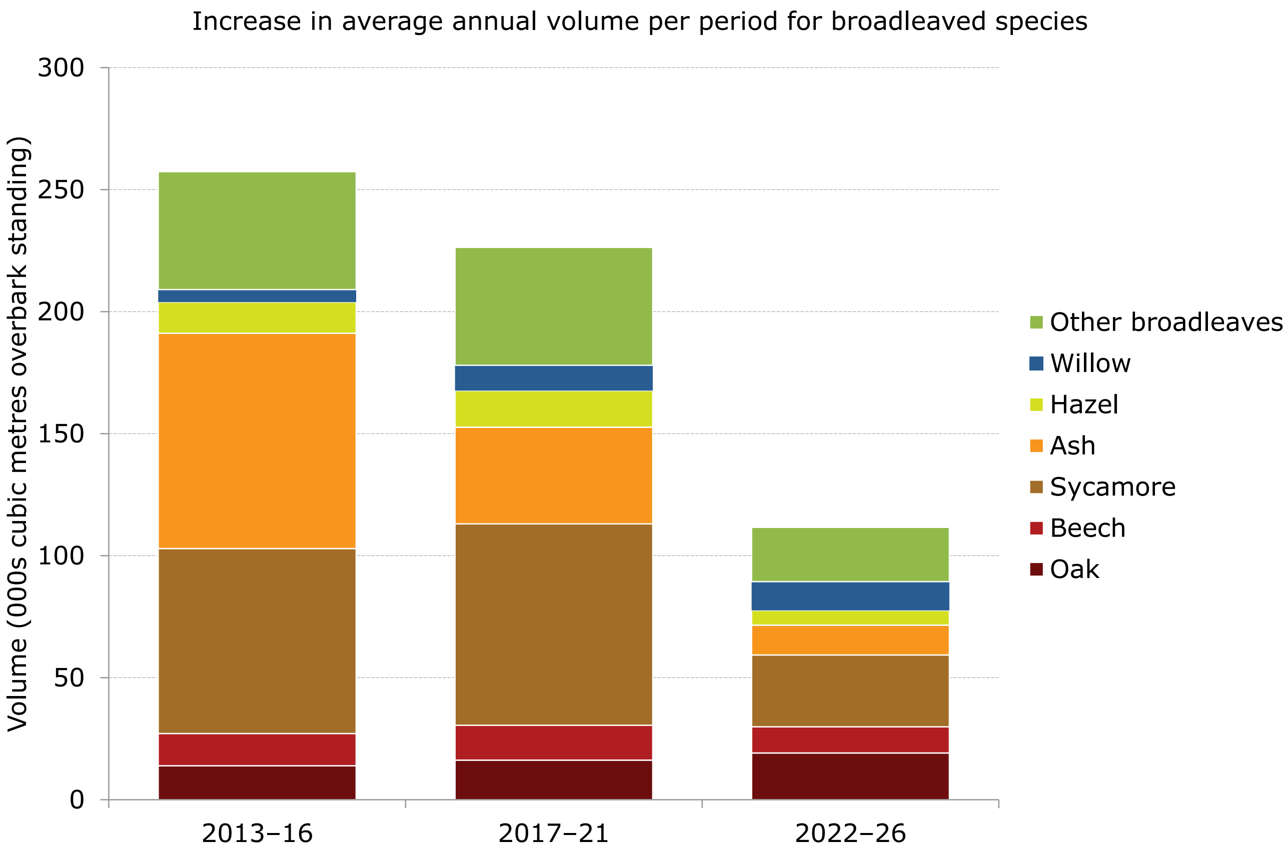


Table 16 15-year forecast comparison of average annual timber availability

Principal species	2013–16 Headline	2013–16 Unrestricted volume	2013–16 Difference	2017–21 Headline	2017–21 Unrestricted volume	2017–21 Difference	2022–26 Headline	2022–26 Unrestricted volume	2022–26 Difference
	(000 m^3 obs)			(000 m^3 obs)			(000 m^3 obs)		
All conifers	**101**	**101**	**0**	**98**	**98**	**0**	**67**	**67**	**0**
All broadleaves	**23**	**281**	**258**	**12**	**237**	**225**	**13**	**124**	**111**
Oak	2	16	14	2	18	16	2	21	19
Beech	2	16	13	2	17	14	4	15	11
Sycamore	0	76	76	0	83	83	1	30	29
Ash	3	91	88	3	43	40	1	14	12
Hazel	0	13	13	0	15	15	0	7	6
Willow	0	5	5	0	10	10	0	12	12
Other broadleaves	14	62	48	3	52	48	3	26	22
All species	**123**	**382**	**258**	**110**	**335**	**225**	**80**	**191**	**111**

Figure 17 Species composition of the difference in hardwood availability under the alternative harvesting scenarios in the first three forecast periods



NFI national reports and papers

The principal themes reported on for the 2011 woodland profile and future forecasts are:

- 2011 preliminary estimates of broadleaved species in British woodlands
- 2011 standing coniferous timber volume
- 25-year forecast of softwood availability
- 25-year forecast of coniferous standing volume and increment
- 2011 biomass in live woodland trees in Britain
- 2011 carbon in live woodland trees in Britain

The principal themes reported on for the 2012 woodland profile and future forecasts are:

- 50 year forecast of softwood availability
- 50 year forecast of hardwood availability

Each theme has a series of reports, papers and data, tailored for different audiences and uses. All the documents and data can be found on the NFI website www.forestry.gov.uk/inventory.

Glossary

A glossary of terms is presented in the full suite of forecast reports which can be found at www.forestry.gov.uk/forecast.

Official Statistics

This is an Official Statistics publication. More information about Official Statistics and the UK Statistics Authority is available at www.statisticsauthority.gov.uk

National Forest Inventory Statistician: Alan Brewer