

NFI provisional estimates for woodland in the Coast to Capital Local Enterprise Partnership

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Summary

This report provides a detailed picture of stocked area of woodland and standing volume of timber for the Coast to Capital Local Enterprise Partnership (LEP) area. These estimates are a subset of those published as part of the 2012 National Forest Inventory (NFI) *50-year forecasts of softwood timber availability* and *50-year forecast of hardwood timber availability*. Reports are published at www.forestry.gov.uk/inventory.

In addition the report provides forecasts of increment, standing volume and of timber availability for softwoods and hardwoods arising from this stocked area and standing volume. Forecasts are based on the 'headline' harvesting scenarios described in the 50-year forecast suite of NFI reports. 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 in coniferous trees in Britain* and the *NFI preliminary estimates of quantities of broadleaved species in British Woodlands with special focus on ash* reports for a description of the underlying methodologies and interpretation, and also for the England and GB context. Refer to the *NFI forecasts methodology 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 Great Britain and its constituent countries under a range of harvesting scenarios can be found in the *50-year forecast of softwood timber availability* and the *50-year forecast of hardwood timber availability*.

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.

Results

The results presented in this report are estimates of standing volumes and stocked areas 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 for the Coast to Capital LEP. The data sources used for the compilation of these estimates are the same as described in the National Forest Inventory 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 sub-compartment database, 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 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 4-8** and **Tables 10-12**) and the "unrestricted" 50-year forecast (**Figures 9-13** and **Tables 13-15**). **Figure 14** compares the hardwood production under the two scenarios.

Stocked area at 31 March 2012

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

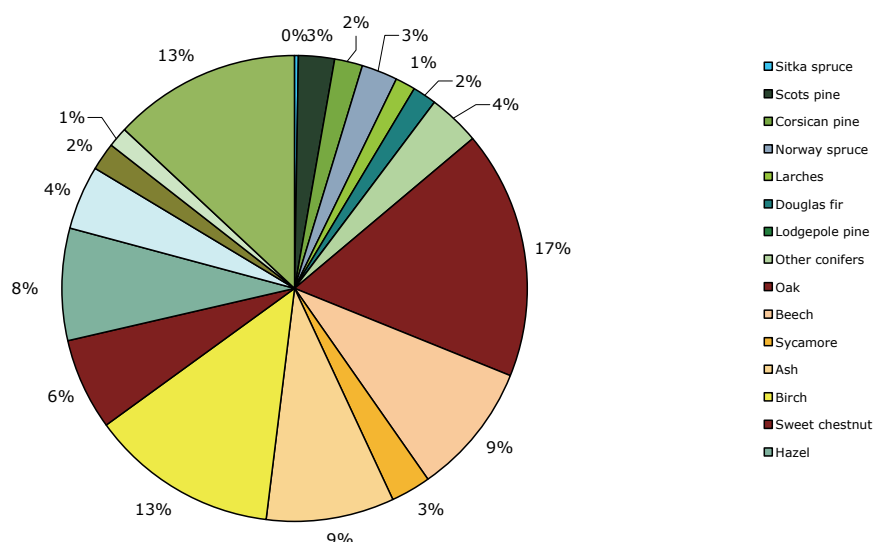


Table 1 Stocked area by principal tree species at 31 March 2012

Principal species	FC	Private sector		Total
	area (000 ha)	area (000 ha)	SE%	area (000 ha)
Coast to Capital LEP				
All conifers	1.1	7.0	7	8.0
Sitka spruce	0.0	0.1	77	0.1
Scots pine	0.2	1.3	24	1.5
Corsican pine	0.3	0.7	36	1.1
Norway spruce	0.1	1.4	25	1.5
Larches	0.0	0.7	27	0.7
Douglas fir	0.1	1.0	28	1.1
Lodgepole pine	0.0	0.0	-	0.0
Other conifers	0.2	1.8	19	2.0
All broadleaves	2.6	47.0	2	49.6
Oak	0.2	9.7	9	9.9
Beech	1.8	3.5	14	5.3
Sycamore	0.0	1.6	25	1.6
Ash	0.1	5.0	11	5.1
Birch	0.2	7.3	11	7.4
Sweet chestnut	0.0	3.6	19	3.6
Hazel	0.0	4.5	12	4.5
Hawthorn	0.0	2.6	14	2.6
Alder	0.0	1.0	32	1.1
Willow	0.0	0.8	20	0.8
Other broadleaves	0.2	7.3	9	7.5
All species	3.6	53.9	2	57.6

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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				
0-10 years	0.1	0.0	44	0.1
11-20 years	0.1	0.1	57	0.2
21-40 years	0.2	2.0	20	2.2
41-60 years	0.5	3.7	15	4.2
61-80 years	0.0	0.7	29	0.7
81-100 years	0.0	0.1	98	0.1
100+ years	0.1	0.4	41	0.5
Total	1.1	7.0	7	8.0
All broadleaves				
0-10 years	0.0	3.2	15	3.2
11-20 years	0.0	3.9	12	3.9
21-40 years	0.2	13.9	7	14.1
41-60 years	1.0	9.4	9	10.4
61-80 years	1.0	6.2	11	7.2
81-100 years	0.1	5.7	13	5.8
100+ years	0.2	4.7	14	4.9
Total	2.6	47.0	2	49.6
All species				
0-10 years	0.1	3.3	15	3.4
11-20 years	0.1	4.0	11	4.1
21-40 years	0.4	15.9	7	16.3
41-60 years	1.6	13.1	8	14.7
61-80 years	1.1	6.8	10	7.9
81-100 years	0.1	5.7	13	5.9
100+ years	0.2	5.1	13	5.3
Total	3.6	53.9	2	57.6

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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				
0-7 cm	0.0	0.1	49	0.1
7-10 cm	0.5	0.2	39	0.7
10-15 cm	18.3	0.8	31	19.1
15-20 cm	12.7	1.0	28	13.7
20-30 cm	76.1	2.0	20	78.1
30-40 cm	81.5	1.9	20	83.3
40-60 cm	71.3	0.9	27	72.2
60-80 cm	9.0	0.1	70	9.1
80+ cm	0.0	0.0	72	0.1
Total	1.1	7.0	7	8.0
All broadleaves				
0-7 cm	1.9	4.1	13	6.0
7-10 cm	4.3	8.2	8	12.5
10-15 cm	44.3	8.2	9	52.5
15-20 cm	62.4	4.8	11	67.2
20-30 cm	188.1	7.5	9	195.6
30-40 cm	140.0	5.1	12	145.1
40-60 cm	8.7	6.1	11	14.9
60-80 cm	2.9	2.0	20	4.9
80+ cm	1.4	1.0	33	2.4
Total	2.6	47.0	2	49.6
All species				
0-7 cm	1.9	4.2	13	6.1
7-10 cm	4.8	8.4	8	13.2
10-15 cm	62.6	9.0	9	71.6
15-20 cm	75.1	5.8	11	80.9
20-30 cm	264.2	9.5	8	273.7
30-40 cm	221.5	7.0	10	228.5
40-60 cm	80.0	6.9	10	87.0
60-80 cm	11.9	2.1	19	14.0
80+ cm	1.4	1.0	32	2.4
Total	3.6	53.9	2	57.6

Table 4 Felled area at 31 March 2012

Clearfelled area	FC	Private sector		Total
	area (ha)	area (ha)	SE%	area (ha)
Coast to Capital LEP	93.5	241.2	38	334.7

Standing volume at 31 March 2012

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

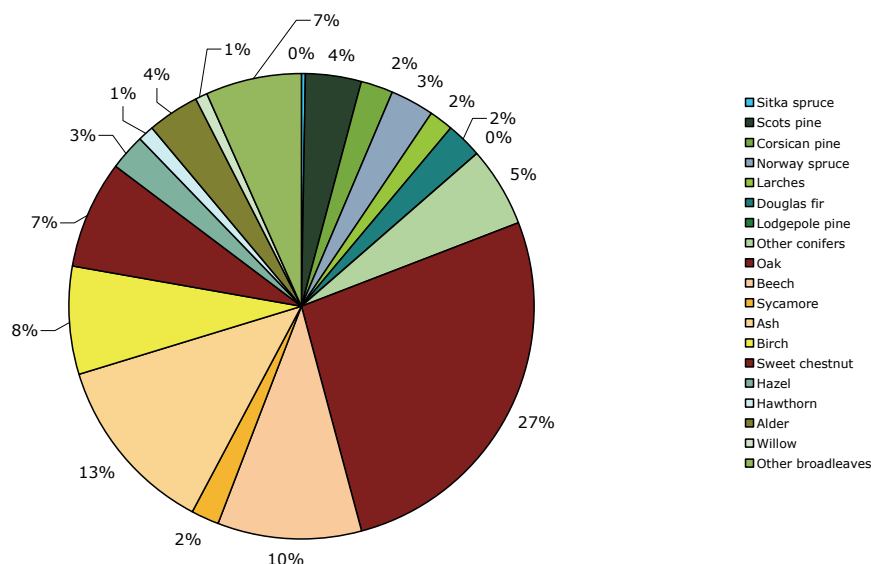


Table 5 Standing volume by principal tree species at 31 March 2012

Principal species	FC	Private sector		Total
	volume (000 m ³ obs)	volume (000 m ³ obs)	SE%	volume (000 m ³ obs)
Coast to Capital LEP				
All conifers	269	2,283	10	2,552
Sitka spruce	0	24	64	24
Scots pine	44	493	26	537
Corsican pine	58	248	38	305
Norway spruce	35	369	26	404
Larches	8	223	29	231
Douglas fir	22	297	28	318
Lodgepole pine	0	0	-	0
Other conifers	103	630	26	733
All broadleaves	454	10,323	5	10,777
Oak	38	3,532	11	3,569
Beech	332	992	16	1,324
Sycamore	1	248	28	249
Ash	19	1,658	16	1,677
Birch	23	981	13	1,004
Sweet chestnut	5	994	19	999
Hazel	1	337	15	338
Hawthorn	0	158	21	158
Alder	4	465	34	469
Willow	0	97	25	97
Other broadleaves	32	876	16	907
All species	724	12,585	4	13,309

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Table 6 Standing volume by age class at 31 March 2012

Age class	FC	Private sector		Total
	volume (000 m ³ obs)	volume (000 m ³ obs)	SE%	volume (000 m ³ obs)
All conifers				
0-10 years	0	0	-	0
11-20 years	6	8	76	14
21-40 years	29	390	23	420
41-60 years	182	1,304	16	1,485
61-80 years	16	321	33	337
81-100 years	6	6	83	12
100+ years	31	253	39	285
Total	269	2,283	10	2,552
All broadleaves				
0-10 years	0	3	82	3
11-20 years	1	233	28	234
21-40 years	7	1,592	9	1,598
41-60 years	169	2,091	11	2,260
61-80 years	212	2,007	13	2,219
81-100 years	22	2,457	15	2,479
100+ years	43	1,939	16	1,983
Total	454	10,323	5	10,777
All species				
0-10 years	0	3	82	3
11-20 years	7	241	27	248
21-40 years	36	1,985	8	2,021
41-60 years	350	3,412	9	3,762
61-80 years	228	2,286	12	2,514
81-100 years	28	2,463	15	2,491
100+ years	75	2,195	16	2,269
Total	724	12,585	4	13,309

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

Mean stand DBH	FC	Private sector		Total
	volume (000 m ³ obs)	volume (000 m ³ obs)	SE%	volume (000 m ³ obs)
All conifers				
0-7 cm	0	0	101	0
7-10 cm	0	11	60	11
10-15 cm	18	130	39	148
15-20 cm	13	220	29	233
20-30 cm	76	602	21	678
30-40 cm	81	747	21	829
40-60 cm	71	437	30	508
60-80 cm	9	90	51	99
80+ cm	0	46	72	46
Total	269	2,283	10	2,552
All broadleaves				
0-7 cm	2	8	23	10
7-10 cm	4	387	15	391
10-15 cm	44	1,091	11	1,135
15-20 cm	62	810	12	873
20-30 cm	188	2,071	10	2,259
30-40 cm	140	1,564	14	1,704
40-60 cm	9	2,405	12	2,414
60-80 cm	3	1,195	21	1,198
80+ cm	1	791	31	792
Total	454	10,323	5	10,777
All species				
0-7 cm	2	8	22	10
7-10 cm	5	398	14	403
10-15 cm	63	1,220	11	1,283
15-20 cm	75	1,033	11	1,108
20-30 cm	264	2,680	9	2,944
30-40 cm	221	2,320	12	2,542
40-60 cm	80	2,840	11	2,920
60-80 cm	12	1,248	20	1,260
80+ cm	1	837	30	839
Total	724	12,585	4	13,309

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)
Coast to Capital LEP				
All conifers	163	1,378	9	1,541
Sitka spruce	0	14	65	14
Scots pine	31	332	26	363
Corsican pine	36	142	38	178
Norway spruce	19	200	26	219
Larches	5	134	28	139
Douglas fir	15	194	28	208
Lodgepole pine	0	0	-	0
Other conifers	56	362	25	419
All broadleaves	427	8,950	5	9,377
Oak	36	2,940	10	2,976
Beech	310	854	16	1,164
Sycamore	1	212	27	213
Ash	18	1,364	16	1,382
Birch	22	931	13	953
Sweet chestnut	6	805	18	811
Hazel	1	337	14	338
Hawthorn	0	198	21	198
Alder	4	344	34	348
Willow	0	96	24	96
Other broadleaves	29	875	15	904
All species	589	10,317	4	10,906

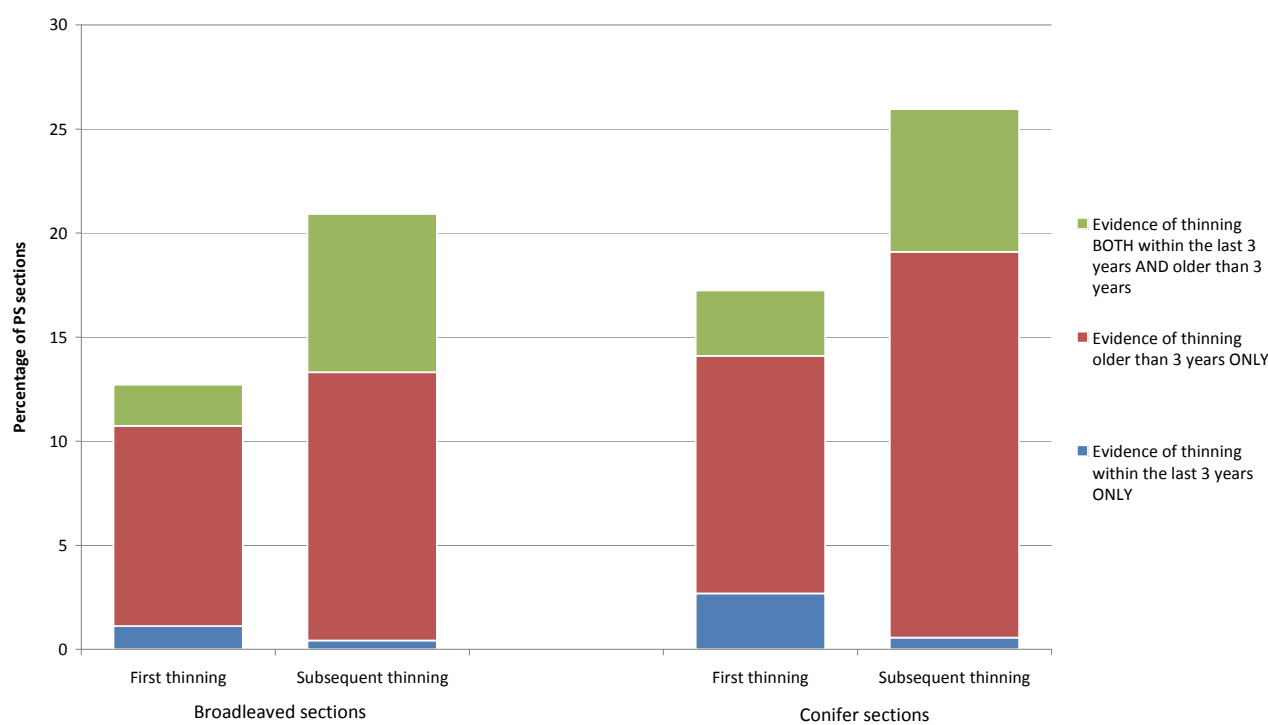
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Table 9 Total carbon stocks in principal tree species at 31 March 2012

Principal species	FC	Private sector		Total
	carbon (000 t)	carbon (000 t)	SE%	carbon (000 t)
Coast to Capital LEP				
All conifers	81	689	9	770
Sitka spruce	0	7	65	7
Scots pine	15	166	26	181
Corsican pine	18	71	38	89
Norway spruce	10	100	26	110
Larches	3	67	28	70
Douglas fir	7	97	28	104
Lodgepole pine	0	0	-	0
Other conifers	28	181	25	209
All broadleaves	213	4,475	5	4,688
Oak	18	1,470	10	1,488
Beech	155	427	16	582
Sycamore	1	106	27	107
Ash	9	682	16	691
Birch	11	466	13	477
Sweet chestnut	3	403	18	405
Hazel	1	168	14	169
Hawthorn	0	99	21	99
Alder	2	172	34	174
Willow	0	48	24	48
Other broadleaves	14	438	15	452
All species	295	5,158	4	5,453

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 England 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 England and GB context.

In **Tables 10-12** and **Figures 4-8** the figures 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 these tables is based on a scenario which assumes felling at age of maximum mean annual increment with moderate wind risk measures for conifers and for hardwoods. For hardwoods however, only those areas that have evidence of thinning are assumed to be managed in future. This is a highly conservative assumption but does better reflect current practice than assuming all stands will be managed. In turn it is assumed that these 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 included that provide for:

- a 10% reduction in the area of conifers on the subsequent rotation
- currently clearfelled land is restocked
- predicted species choices are used for the 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 are used for broadleaves.
- That 50% of the land associated with the reduction in conifer stocked area arising from the assumption above is stocked with broadleaves.

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 FC and Private sector forecasts.

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

In **Tables 13-15** and **Figures 9-13** 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 14 compares the Private sector hardwood timber availability under the two scenarios.

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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 (000m³ obs)	SE%	volume (000m³ obs)	volume (000m³ obs)	SE%	volume (000m³ obs)	volume (000m³ obs)	SE%	volume (000m³ obs)	volume (000m³ obs)	SE%	volume (000m³ obs)				
All conifers	12	112	17	124	14	121	18	135	12	111	17	122	9	102	19	111
Sitka spruce	0	1	72	1	0	3	68	3	0	1	89	1	0	2	96	2
Scots pine	2	17	40	19	2	32	49	34	2	42	41	44	1	20	36	21
Corsican pine	4	22	54	27	3	18	78	21	4	13	78	17	2	5	56	7
Norway spruce	2	15	32	17	2	14	29	16	1	15	35	16	1	28	49	29
Larches	0	10	35	10	0	12	34	12	0	12	34	12	0	6	34	6
Douglas fir	1	12	29	13	2	12	26	14	0	13	30	13	0	21	61	22
Lodgepole pine	0	0	-	-	0	0	-	-	0	0	-	-	0	0	-	-
Other conifers	3	34	27	37	4	30	28	34	4	15	24	19	4	20	29	24
All broadleaves	18	4	17	22	1	11	12	11	15	18	10	33	0	25	10	25
Oak	1	0	47	1	0	1	60	1	1	2	43	2	0	2	34	2
Beech	17	0	53	17	0	1	33	1	13	1	25	14	0	1	20	1
Sycamore	0	0	50	0	0	0	47	0	0	1	39	1	0	2	34	2
Ash	0	0	42	0	0	1	30	1	0	2	30	2	0	3	27	3
Birch	0	1	37	1	0	2	26	2	0	3	23	3	0	4	20	4
Sweet chestnut	0	0	90	0	0	1	39	1	0	1	34	1	0	2	44	2
Hazel	0	0	36	0	0	1	28	1	0	1	22	1	0	2	19	2
Hawthorn	0	1	33	1	0	2	26	2	0	2	22	2	0	2	21	2
Alder	0	0	71	0	0	0	52	0	0	0	56	0	0	0	56	0
Willow	0	0	46	0	0	0	37	0	0	0	37	0	0	0	31	0
Other broadleaves	0	1	36	1	0	3	26	3	0	4	19	5	0	6	16	6
All species	30	115	17	145	14	132	17	146	26	128	15	155	9	127	16	136

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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 (000m³ obs)		SE%	volume (000m³ obs)	volume (000m³ obs)		SE%	volume (000m³ obs)	volume (000m³ obs)		SE%	volume (000m³ obs)	volume (000m³ obs)		SE%	volume (000m³ obs)
All conifers	6	97	30	103	6	78	27	84	9	87	31	96	11	56	18	66
Sitka spruce	0	2	57	2	0	1	27	1	0	2	25	2	0	2	20	3
Scots pine	1	11	34	11	1	19	82	20	1	12	39	13	1	9	34	10
Corsican pine	2	0	68	3	2	16	69	19	4	0	60	4	6	0	52	6
Norway spruce	1	40	48	41	1	7	47	8	1	22	45	23	1	10	49	11
Larches	0	6	32	6	0	5	44	5	1	2	31	3	0	3	30	3
Douglas fir	1	8	27	9	1	17	52	17	1	18	57	18	2	5	21	6
Lodgepole pine	0	0	-	-	0	0	37	0	0	0	37	0	0	0	37	0
Other conifers	1	31	78	32	1	12	33	13	1	32	77	33	1	27	33	28
All broadleaves	14	29	10	43	1	35	10	36	18	62	13	80	1	58	15	59
Oak	1	2	34	3	0	2	33	2	1	2	33	3	0	2	32	2
Beech	13	2	21	15	1	2	20	3	16	2	20	18	0	2	19	2
Sycamore	0	2	34	2	0	3	33	3	0	3	32	3	0	8	40	8
Ash	0	3	27	3	0	3	27	3	0	8	24	8	0	13	41	13
Birch	0	4	20	4	0	7	24	7	0	17	35	17	0	6	38	6
Sweet chestnut	0	3	44	3	0	3	42	3	0	3	42	3	0	3	42	3
Hazel	0	2	18	2	0	2	18	2	0	6	28	6	0	6	31	6
Hawthorn	0	3	18	3	0	3	16	3	0	3	16	3	0	3	16	3
Alder	0	0	56	0	0	0	56	0	0	1	50	1	0	2	67	2
Willow	0	1	36	1	0	1	35	1	0	1	35	1	0	1	35	1
Other broadleaves	0	8	15	8	0	9	16	9	0	16	23	17	0	11	17	11
All species	21	126	24	146	7	113	19	121	27	149	19	176	12	114	12	125

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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 (000m ³ obs)		SE%	volume (000m ³ obs)	volume (000m ³ obs)		SE%	volume (000m ³ obs)
All conifers	8	87	40	95	8	44	15	53
Sitka spruce	0	3	21	3	0	4	24	4
Scots pine	1	6	23	7	1	7	21	8
Corsican pine	4	0	50	4	3	0	50	3
Norway spruce	1	55	64	55	1	6	34	6
Larches	1	2	28	3	0	2	28	3
Douglas fir	1	12	43	12	1	8	27	10
Lodgepole pine	0	0	37	0	0	0	37	0
Other conifers	1	9	18	10	1	17	34	18
All broadleaves	16	44	16	60	3	22	12	25
Oak	0	2	31	3	2	2	30	4
Beech	15	2	18	17	1	2	18	3
Sycamore	0	8	54	8	0	1	76	1
Ash	0	5	50	5	0	0	100	0
Birch	0	5	36	5	0	1	19	1
Sweet chestnut	0	3	42	3	0	3	42	3
Hazel	0	4	32	4	0	1	56	1
Hawthorn	0	3	16	3	0	3	16	3
Alder	0	0	-	0	0	0	96	0
Willow	0	1	35	1	0	1	35	1
Other broadleaves	0	10	27	10	0	7	18	7
All species	23	132	27	155	12	66	11	78

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

Forecast period	FC	Private sector		Total
	volume (000m ³ obs)	volume (000m ³ obs)	SE%	volume (000m ³ obs)
All conifers				
2013-16	275	2,165	9	2,440
2017-21	273	2,004	9	2,276
2022-26	273	1,760	10	2,034
2027-31	283	1,543	13	1,826
2032-36	303	1,302	14	1,605
2037-41	328	1,234	15	1,562
2042-46	345	978	16	1,323
2047-51	349	994	17	1,343
2052-56	348	1,031	15	1,379
2057-61	350	982	11	1,333
All broadleaves				
2013-16	438	10,844	5	11,281
2017-21	484	11,848	5	12,331
2022-26	512	13,012	4	13,524
2027-31	550	14,126	4	14,677
2032-36	574	15,155	4	15,730
2037-41	607	16,079	4	16,686
2042-46	612	16,822	4	17,434
2047-51	628	17,451	4	18,079
2052-56	632	17,972	4	18,604
2057-61	644	18,587	4	19,231
All species				
2013-16	712	12,993	4	13,705
2017-21	756	13,838	4	14,594
2022-26	785	14,760	4	15,546
2027-31	833	15,659	4	16,493
2032-36	877	16,448	4	17,325
2037-41	935	17,304	4	18,239
2042-46	957	17,789	4	18,746
2047-51	977	18,433	4	19,410
2052-56	979	18,990	4	19,969
2057-61	995	19,552	4	20,547

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

Forecast period	FC	Private sector		Total
	volume (000m ³ obs)	volume (000m ³ obs)	SE%	volume (000m ³ obs)
All conifers				
2013-16	12	82	9	94
2017-21	12	78	11	90
2022-26	12	67	13	79
2027-31	11	60	14	71
2032-36	10	54	14	64
3037-41	11	56	13	67
2042-46	10	54	12	65
2047-51	10	62	11	71
2052-56	9	69	10	79
2057-61	9	73	9	82
All broadleaves				
2013-16	15	215	6	230
2017-21	15	240	4	255
2022-26	14	251	4	265
2027-31	14	241	4	255
2032-36	13	227	4	240
3037-41	13	211	4	224
2042-46	12	193	4	205
2047-51	11	174	4	185
2052-56	11	155	4	166
2057-61	10	145	4	156
All species				
2013-16	26	298	5	324
2017-21	27	318	4	345
2022-26	26	318	4	344
2027-31	25	301	4	325
2032-36	24	281	4	305
3037-41	24	267	4	290
2042-46	22	247	4	269
2047-51	21	235	4	256
2052-56	20	224	4	244
2057-61	19	218	4	238

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



Figure 5 50-year forecast of average annual softwood production

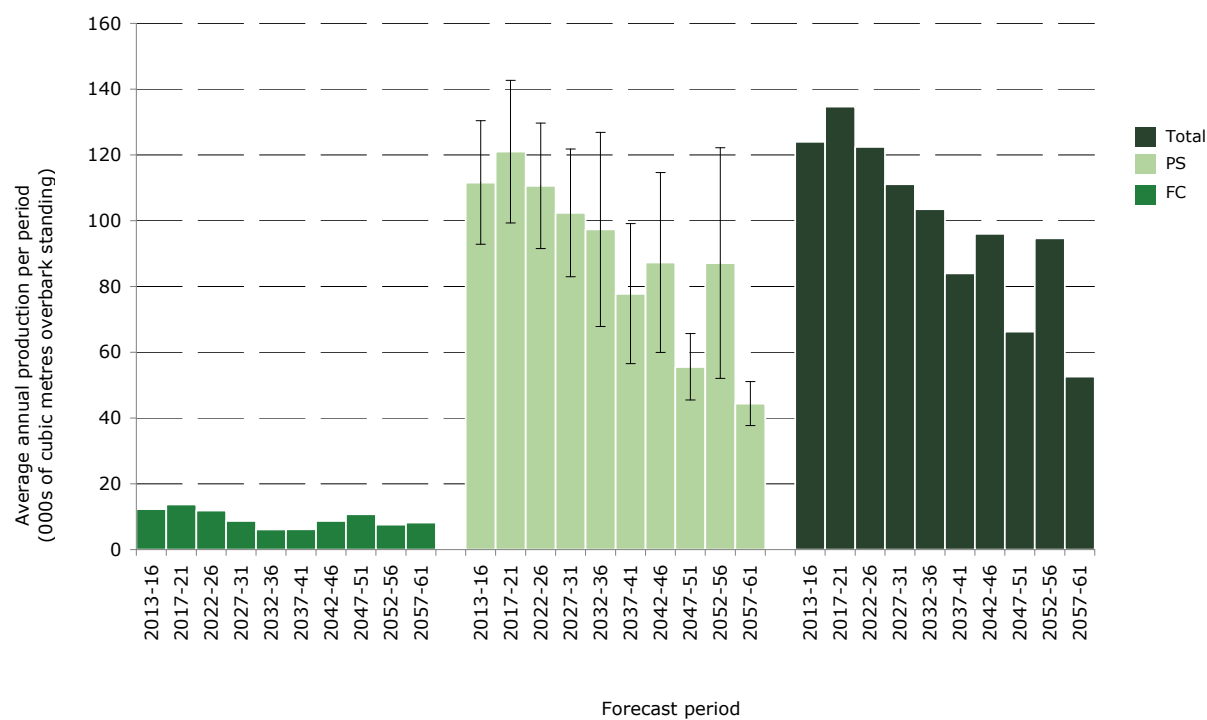


Figure 6 50-year forecast of average annual hardwood production

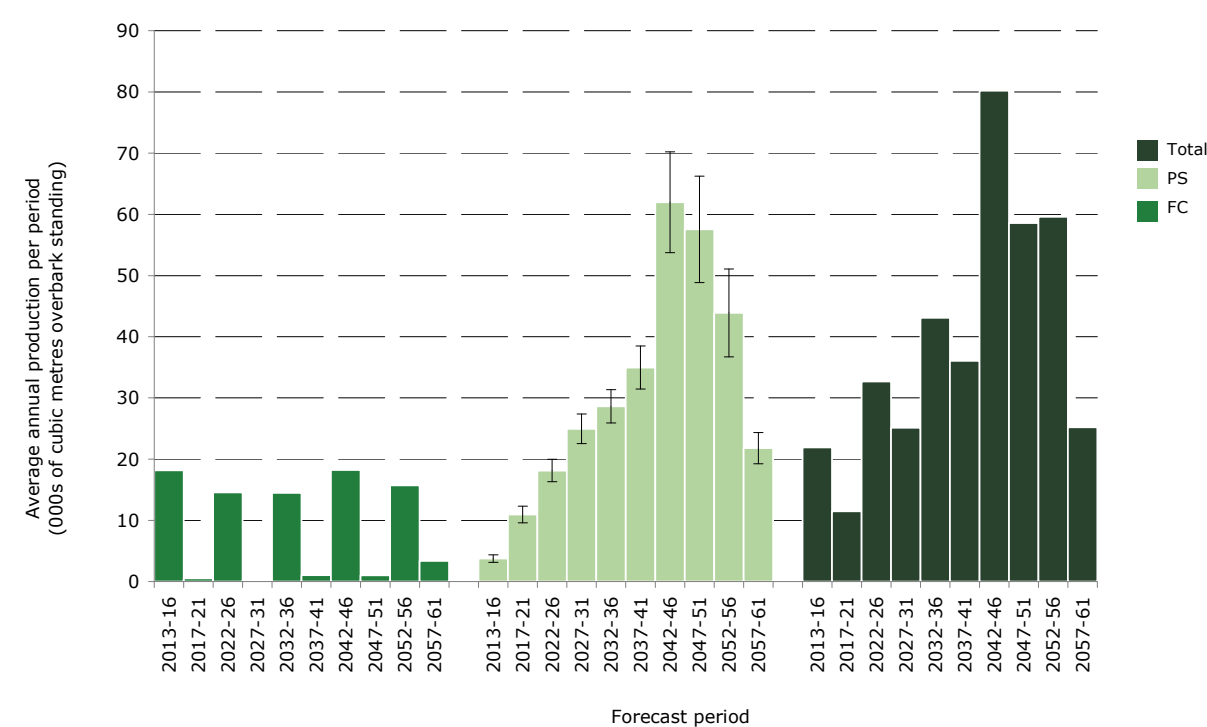


Figure 7 50-year forecast of softwood standing volume, increment and production

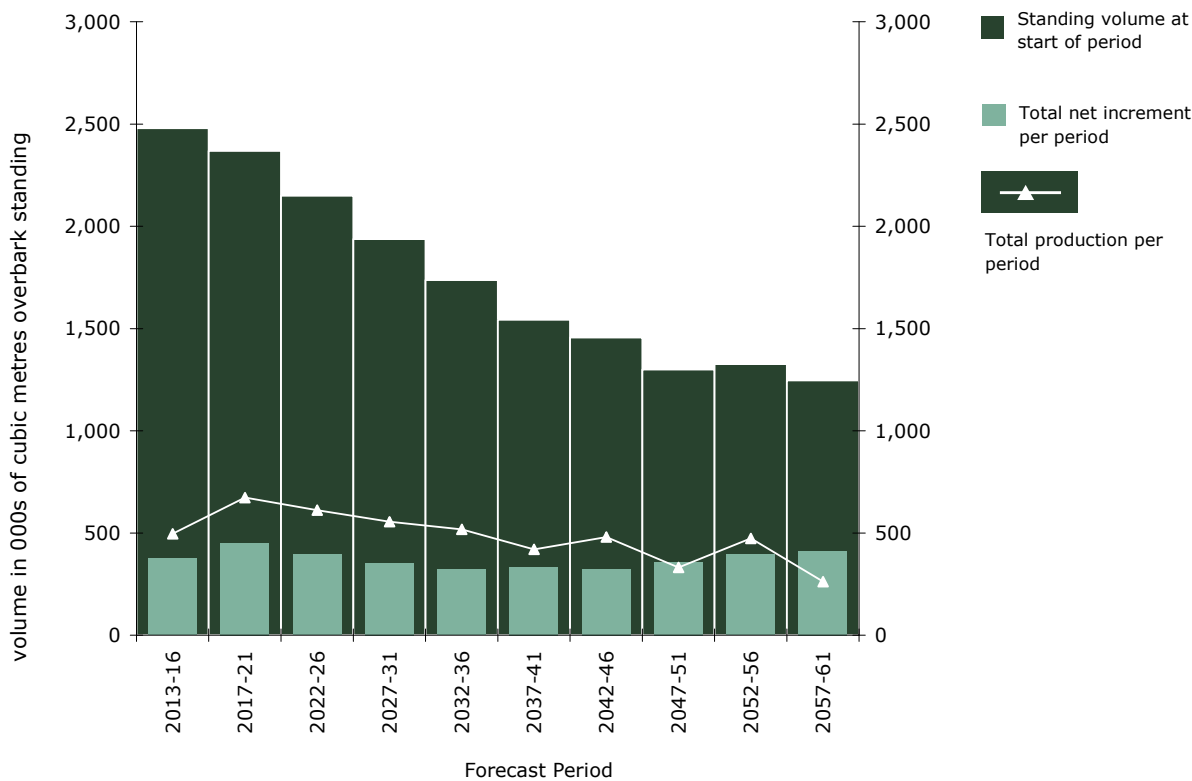
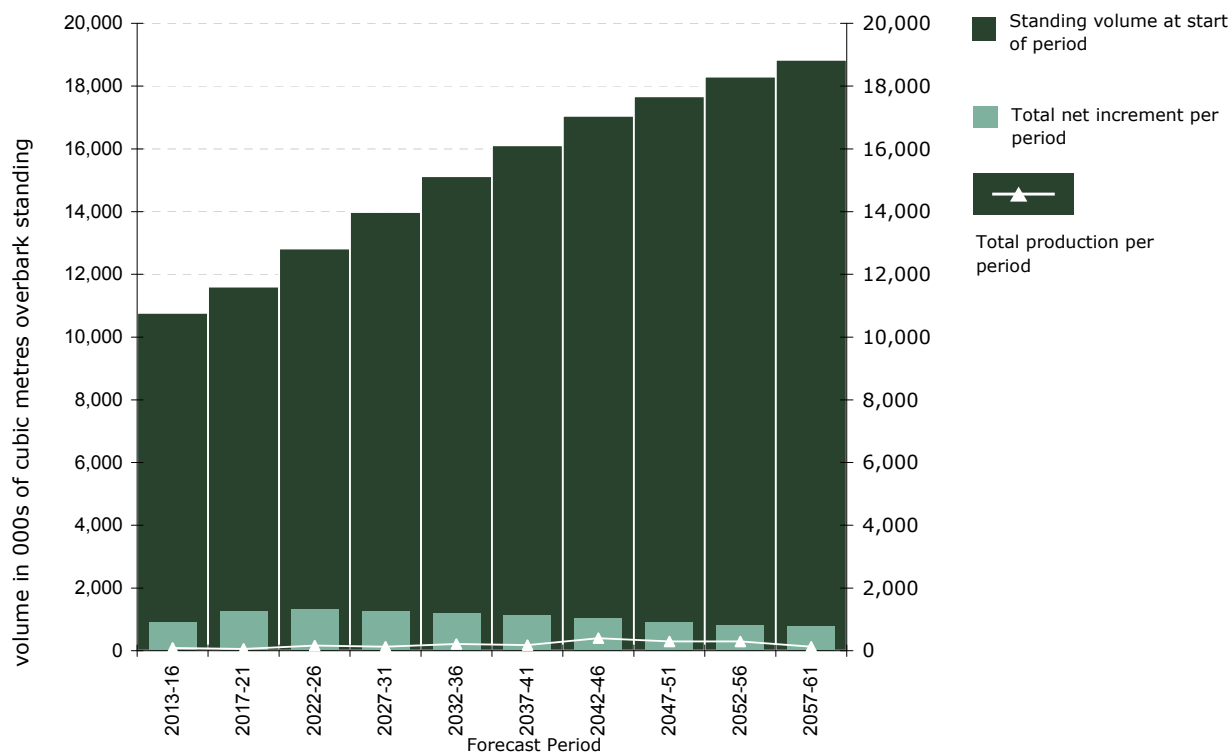


Figure 8 50-year forecast of hardwood standing volume, increment and production



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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 PS 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 (000m³ obs)		SE%	volume (000m³ obs)	volume (000m³ obs)		SE%	volume (000m³ obs)	volume (000m³ obs)		SE%	volume (000m³ obs)	volume (000m³ obs)		SE%	volume (000m³ obs)
All conifers	12	112	17	124	14	121	18	135	12	111	17	122	9	102	19	111
Sitka spruce	0	1	72	1	0	3	68	3	0	1	89	1	0	2	96	2
Scots pine	2	17	40	19	2	32	49	34	2	42	41	44	1	20	36	21
Corsican pine	4	22	54	27	3	18	78	21	4	13	78	17	2	5	56	7
Norway spruce	2	15	32	17	2	14	29	16	1	15	35	16	1	28	49	29
Larches	0	10	35	10	0	12	34	12	0	12	34	12	0	6	34	6
Douglas fir	1	12	29	13	2	12	26	14	0	13	30	13	0	21	61	22
Lodgepole pine	0	0	-	-	0	0	-	-	0	0	-	-	0	0	-	-
Other conifers	3	34	27	37	4	30	28	34	4	15	24	19	4	20	29	24
All broadleaves	18	433	8	451	1	467	7	468	15	277	8	291	0	242	11	242
Oak	1	20	18	21	0	17	17	17	1	40	30	40	0	51	39	51
Beech	17	12	19	29	0	11	17	12	13	43	30	56	0	16	20	16
Sycamore	0	19	31	19	0	20	29	20	0	9	31	9	0	12	60	12
Ash	0	133	19	133	0	138	18	138	0	40	17	40	0	15	25	15
Birch	0	82	14	82	0	104	13	104	0	48	20	48	0	35	23	35
Sweet chestnut	0	46	25	46	0	44	25	44	0	31	28	31	0	30	38	30
Hazel	0	25	20	25	0	25	19	25	0	18	15	18	0	26	27	26
Hawthorn	0	6	21	6	0	6	19	6	0	5	17	5	0	5	17	5
Alder	0	30	39	30	0	31	38	31	0	9	35	9	0	17	52	17
Willow	0	4	25	4	0	3	24	3	0	3	24	3	0	6	53	6
Other broadleaves	0	54	22	54	0	65	19	65	0	30	15	30	0	27	20	27
All species	30	544	7	575	14	588	7	602	26	387	7	414	9	344	10	353

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

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 (000m³ obs)	SE%	volume (000m³ obs)	SE%	volume (000m³ obs)	SE%	volume (000m³ obs)	SE%	volume (000m³ obs)	SE%	volume (000m³ obs)	SE%	volume (000m³ obs)	SE%	volume (000m³ obs)	SE%
All conifers	6	97	30		6	78	27		9	87	31		11	56	18	
Sitka spruce	0	2	57		0	1	27		0	2	25		0	2	20	
Scots pine	1	11	34		1	19	82		1	12	39		1	9	34	
Corsican pine	2	0	68		2	16	69		4	0	60		6	0	52	
Norway spruce	1	40	48		1	7	47		1	22	45		1	10	49	
Larches	0	6	32		0	5	44		1	2	31		0	3	30	
Douglas fir	1	8	27		1	17	52		1	18	57		2	5	21	
Lodgepole pine	0	0	-		0	0	37		0	0	37		0	0	37	
Other conifers	1	31	78		1	12	33		1	32	77		1	27	33	
All broadleaves	14	210	14		1	203	12		18	236	10		1	191	11	
Oak	1	49	45		0	42	34		1	28	32		0	17	30	
Beech	13	32	45		1	24	61		16	28	39		0	10	27	
Sycamore	0	5	29		0	9	47		0	7	23		0	11	31	
Ash	0	36	34		0	18	16		0	25	14		0	32	19	
Birch	0	22	22		0	23	14		0	36	20		0	29	14	
Sweet chestnut	0	17	25		0	17	28		0	42	39		0	22	51	
Hazel	0	10	22		0	20	26		0	12	27		0	11	19	
Hawthorn	0	6	16		0	11	45		0	6	15		0	7	20	
Alder	0	5	49		0	4	38		0	4	34		0	6	30	
Willow	0	3	22		0	3	22		0	6	36		0	6	29	
Other broadleaves	0	24	16		0	30	16		0	40	26		0	39	28	
All species	21	307	13		7	281	11		27	324	11		12	247	10	

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

Principal species	2052-56				2057-61			
	FC	Private sector		Total	FC	Private sector		Total
	volume (000m ³ obs)	SE%		volume (000m ³ obs)	volume (000m ³ obs)	SE%		volume (000m ³ obs)
All conifers	8	87	40	95	8	44	15	53
Sitka spruce	0	3	21	3	0	4	24	4
Scots pine	1	6	23	7	1	7	21	8
Corsican pine	4	0	50	4	3	0	50	3
Norway spruce	1	55	64	55	1	6	34	6
Larches	1	2	28	3	0	2	28	3
Douglas fir	1	12	43	12	1	8	27	10
Lodgepole pine	0	0	37	0	0	0	37	0
Other conifers	1	9	18	10	1	17	34	18
All broadleaves	16	238	10	254	3	219	11	223
Oak	0	28	29	28	2	33	39	35
Beech	15	15	30	30	1	17	36	18
Sycamore	0	13	38	13	0	5	33	5
Ash	0	26	17	26	0	22	17	22
Birch	0	31	12	32	0	30	13	31
Sweet chestnut	0	40	43	40	0	34	47	34
Hazel	0	10	15	10	0	10	15	10
Hawthorn	0	6	16	6	0	18	40	18
Alder	0	5	34	5	0	5	33	5
Willow	0	18	37	18	0	1	26	1
Other broadleaves	0	43	21	44	0	42	24	43
All species	23	326	13	349	12	264	9	276

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

Forecast period	FC	Private sector		Total
	volume (000m ³ obs)	volume (000m ³ obs)	SE%	volume (000m ³ obs)
All conifers				
2013-16	275	2,165	9	2,440
2017-21	273	2,004	9	2,276
2022-26	273	1,760	10	2,034
2027-31	283	1,543	13	1,826
2032-36	303	1,302	14	1,605
2037-41	328	1,234	15	1,562
2042-46	345	978	16	1,323
2047-51	349	994	17	1,343
2052-56	348	1,031	15	1,379
2057-61	350	982	11	1,333
All broadleaves				
2013-16	438	9,701	5	10,139
2017-21	484	8,650	6	9,133
2022-26	512	7,845	6	8,357
2027-31	550	7,665	7	8,215
2032-36	574	7,587	7	8,161
2037-41	607	7,790	7	8,397
2042-46	612	7,930	7	8,543
2047-51	628	8,167	6	8,795
2052-56	632	8,432	6	9,064
2057-61	644	8,585	6	9,229
All species				
2013-16	712	11,850	4	12,563
2017-21	756	10,640	5	11,396
2022-26	785	9,593	5	10,378
2027-31	833	9,198	6	10,031
2032-36	877	8,879	6	9,756
2037-41	935	9,015	6	9,950
2042-46	957	8,897	6	9,854
2047-51	977	9,149	6	10,126
2052-56	979	9,450	6	10,429
2057-61	995	9,551	5	10,545

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

Forecast period	FC	Private sector		Total
	volume (000m ³ obs)	volume (000m ³ obs)	SE%	volume (000m ³ obs)
All conifers				
2013-16	12	82	9	94
2017-21	12	78	11	90
2022-26	12	67	13	79
2027-31	11	60	14	71
2032-36	10	54	14	64
3037-41	11	56	13	67
2042-46	10	54	12	65
2047-51	10	62	11	71
2052-56	9	69	10	79
2057-61	9	73	9	82
All broadleaves				
2013-16	15	210	6	224
2017-21	15	213	5	228
2022-26	14	208	5	222
2027-31	14	206	5	219
2032-36	13	217	5	230
3037-41	13	244	4	257
2042-46	12	263	4	275
2047-51	11	268	4	279
2052-56	11	260	4	271
2057-61	10	251	4	261
All species				
2013-16	26	292	5	318
2017-21	27	292	4	318
2022-26	26	275	5	301
2027-31	25	266	5	290
2032-36	24	271	4	295
3037-41	24	300	4	323
2042-46	22	317	4	339
2047-51	21	329	4	350
2052-56	20	330	3	350
2057-61	19	324	3	344

Figure 9 Overview of 50-year forecast of average annual timber availability – unrestricted biological potential

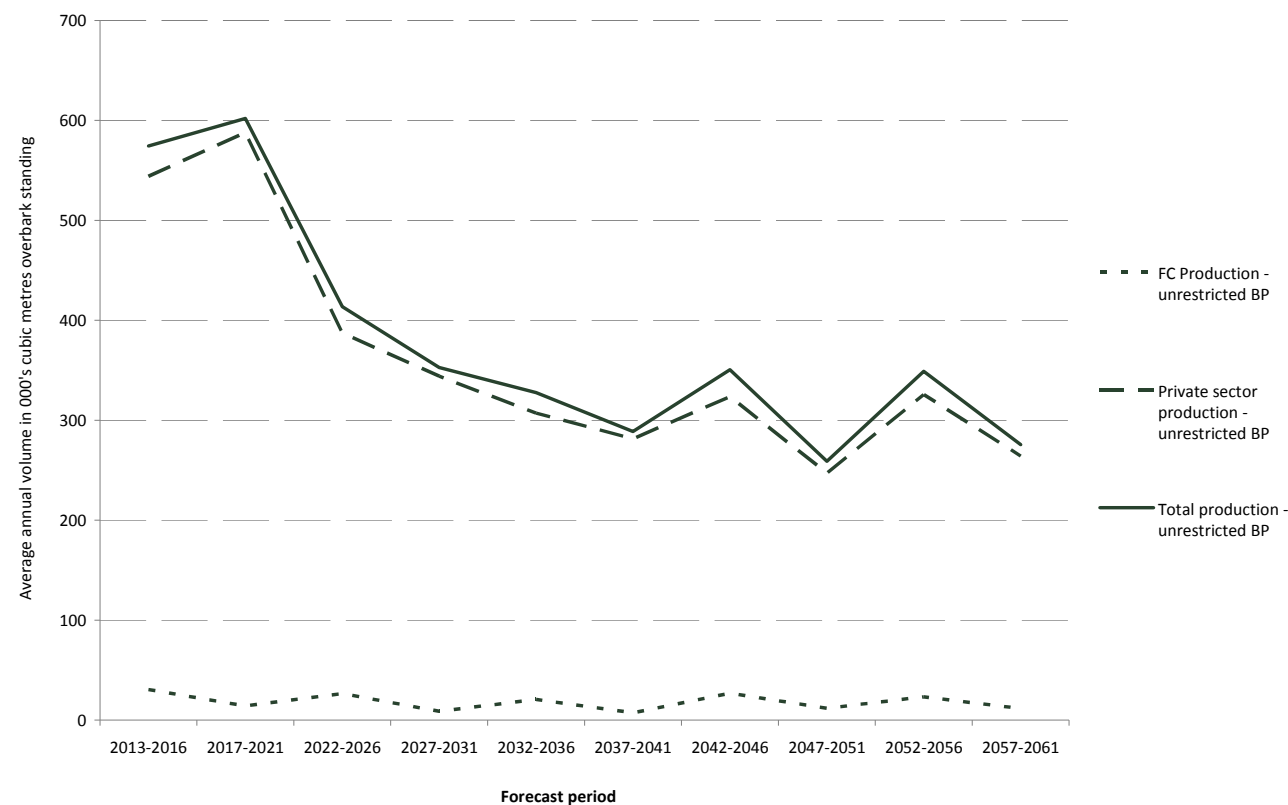


Figure 10 50-year forecast comparison of average annual softwood production – unrestricted biological potential

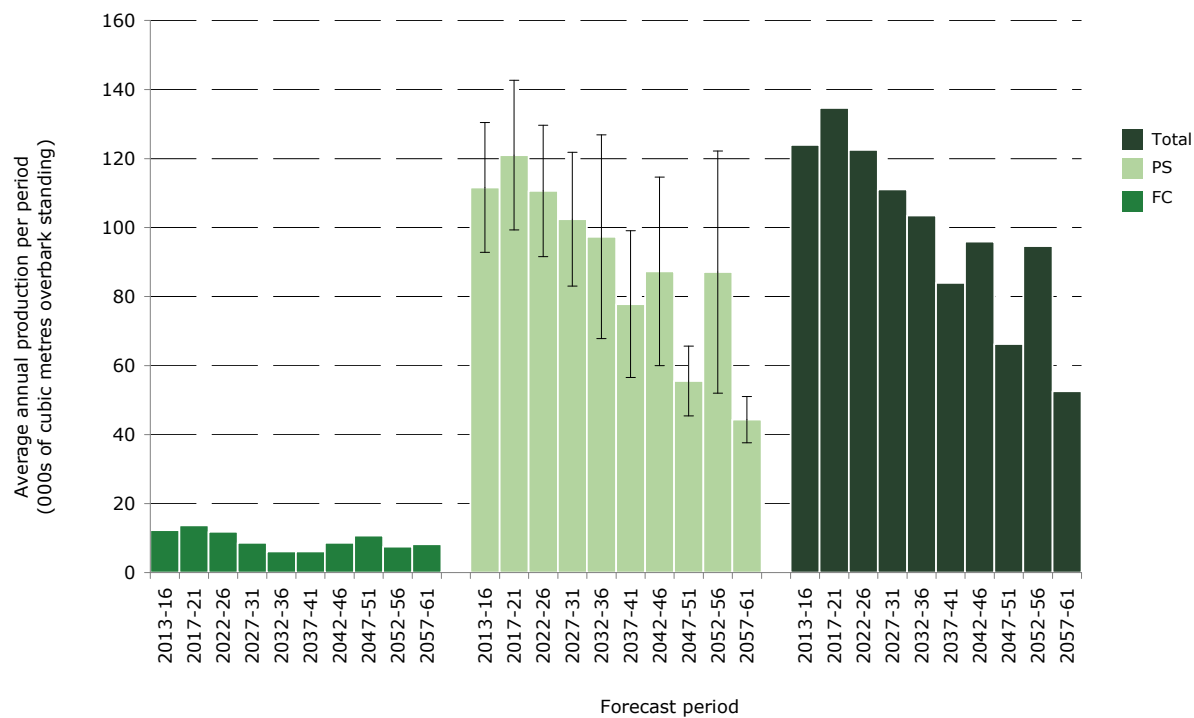


Figure 11 50-year forecast comparison of average annual hardwood production – unrestricted biological potential

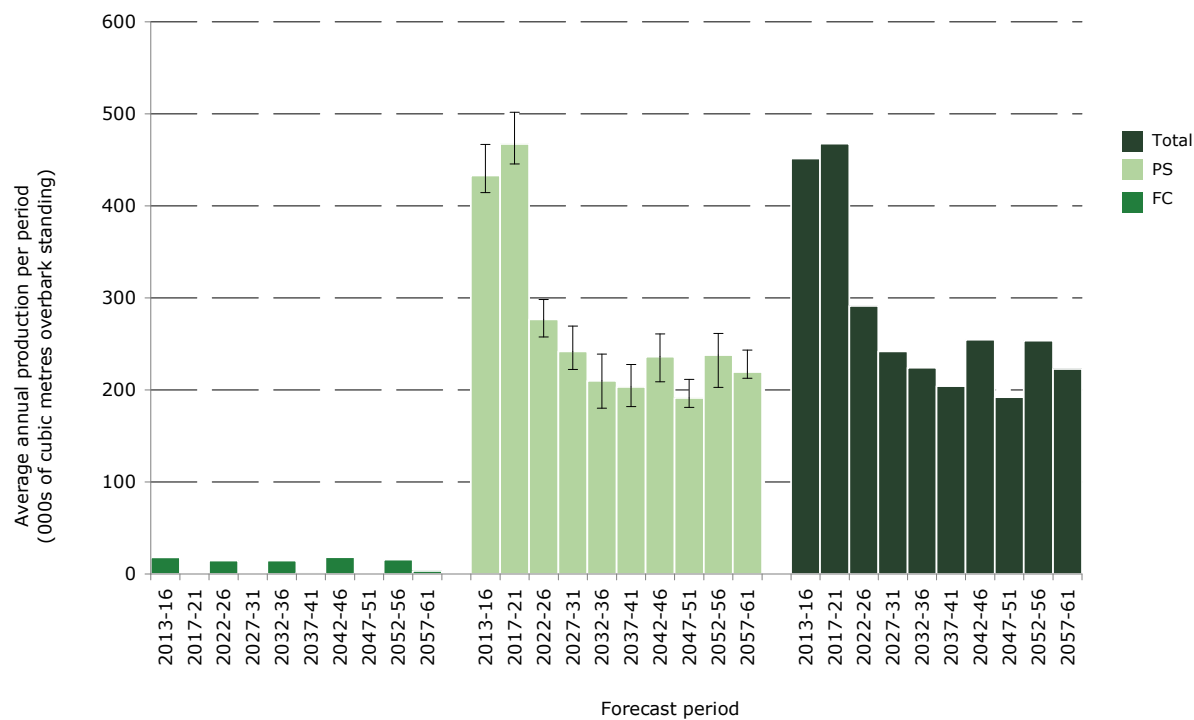


Figure 12 50-year summary of softwood standing volume, increment and production – unrestricted biological potential

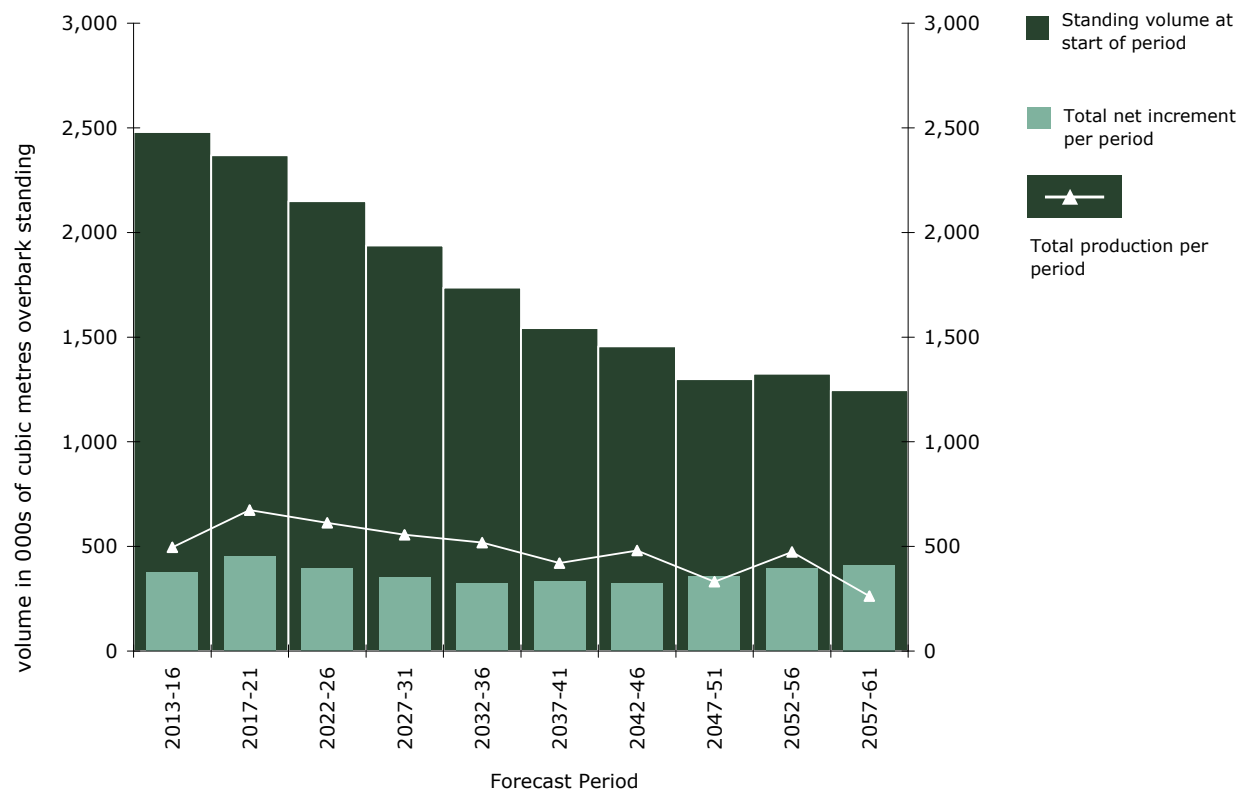
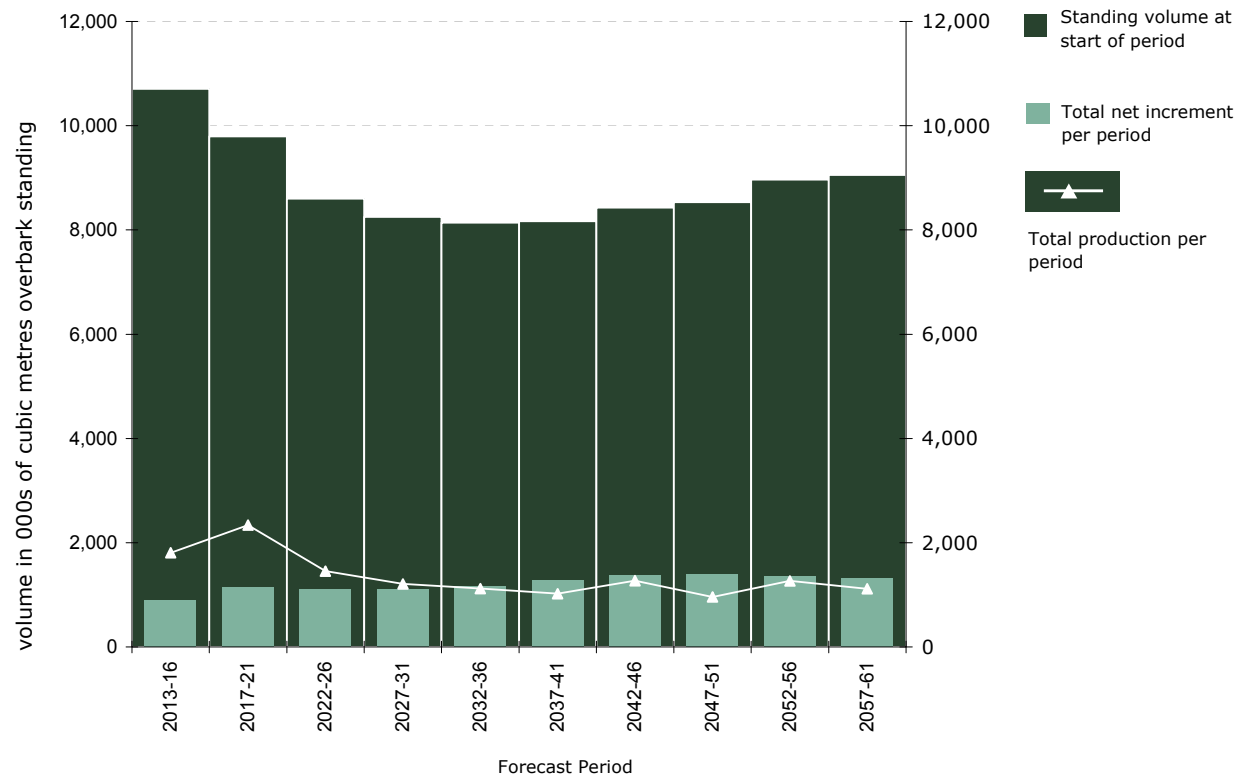


Figure 13 50-year summary of hardwood standing volume, increment and production – unrestricted biological potential



Comparison of hardwood production between harvesting scenarios

Figure 14 50-year forecast comparison of average annual hardwood timber availability



NFI national reports and papers

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

- GB 2011 preliminary estimates of broadleaved species
- GB 2011 standing coniferous timber volume
- UK 25-year forecast of softwood availability
- GB 25-year forecast of coniferous standing volume and increment
- Biomass in live woodland trees in Britain
- 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 timber availability
- 50-year forecast of hardwood timber 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