

NFI provisional estimates for woodland in the Enterprise M3 and the Coast to Capital Local Enterprise Partnerships

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Summary

This report provides a detailed picture of stocked area of woodland and standing volume of timber for the Enterprise M3 and Coast to Capital Local Enterprise Partnerships (LEP) areas. 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 combined Enterprise M3 and Coast to Capital LEPs. 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

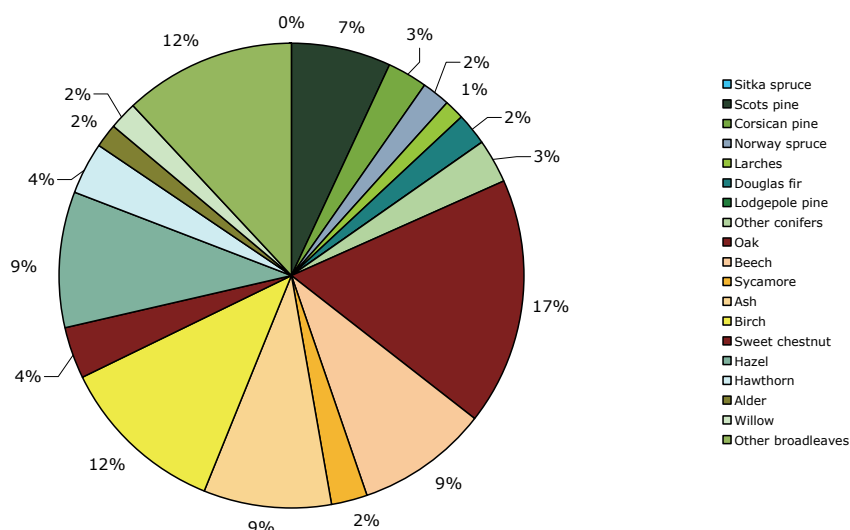


Table 1 Stocked area by principal tree species at 31 March 2012

Principal species	FC	Private sector		Total
	area (000 ha)	area (000 ha)	SE%	area (000 ha)
All conifers	7.3	19.0	5	26.4
Sitka spruce	0.1	0.1	70	0.2
Scots pine	2.1	7.7	11	9.9
Corsican pine	2.5	1.4	28	3.8
Norway spruce	0.4	2.3	20	2.7
Larches	0.3	1.8	19	2.1
Douglas fir	1.2	2.3	22	3.5
Lodgepole pine	0.0	0.0	-	0.0
Other conifers	0.7	3.4	14	4.1
All broadleaves	12.8	105.3	1	118.0
Oak	5.2	19.7	6	24.9
Beech	5.2	8.3	10	13.5
Sycamore	0.0	3.3	15	3.3
Ash	0.3	12.7	7	13.0
Birch	0.6	16.0	7	16.7
Sweet chestnut	0.1	5.1	15	5.2
Hazel	0.0	13.5	7	13.5
Hawthorn	0.0	5.2	10	5.2
Alder	0.1	2.5	18	2.6
Willow	0.0	2.8	14	2.8
Other broadleaves	1.2	16.0	6	17.2
All species	20.1	124.3	1	144.4

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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	0.5	0.7	34	1.2
11-20 years	0.8	0.4	41	1.2
21-40 years	1.3	3.9	14	5.2
41-60 years	2.6	10.3	9	12.9
61-80 years	1.3	2.7	18	4.1
81-100 years	0.5	0.5	44	1.0
100+ years	0.3	0.6	33	0.9
Total	7.3	19.0	5	26.4
All broadleaves				
0-10 years	0.2	9.7	8	9.9
11-20 years	0.2	11.6	8	11.8
21-40 years	0.5	28.0	5	28.5
41-60 years	2.1	19.6	6	21.7
61-80 years	2.4	13.3	7	15.7
81-100 years	1.0	12.3	8	13.3
100+ years	6.3	10.7	9	17.0
Total	12.8	105.3	1	118.0
All species				
0-10 years	0.7	10.5	8	11.2
11-20 years	1.0	12.1	8	13.1
21-40 years	1.8	32.0	5	33.8
41-60 years	4.7	29.9	5	34.6
61-80 years	3.8	16.0	7	19.8
81-100 years	1.5	12.8	8	14.4
100+ years	6.6	11.1	8	17.7
Total	20.1	124.3	1	144.4

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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	0.5	0.6	29	1.2
7-10 cm	0.2	0.8	28	1.0
10-15 cm	0.9	1.3	23	2.3
15-20 cm	0.5	2.0	21	2.5
20-30 cm	1.4	5.1	14	6.5
30-40 cm	1.7	4.5	14	6.2
40-60 cm	1.7	3.7	15	5.4
60-80 cm	0.3	0.8	27	1.1
80+ cm	0.1	0.3	46	0.3
Total	7.3	19.0	5	26.4
All broadleaves				
0-7 cm	0.4	13.6	7	14.0
7-10 cm	0.5	18.4	6	18.9
10-15 cm	0.8	16.0	6	16.8
15-20 cm	1.2	10.1	8	11.2
20-30 cm	5.2	16.0	6	21.2
30-40 cm	3.2	10.5	8	13.8
40-60 cm	1.1	12.8	7	13.8
60-80 cm	0.3	5.3	12	5.6
80+ cm	0.1	2.7	19	2.8
Total	12.8	105.3	1	118.0
All species				
0-7 cm	1.0	14.2	7	15.2
7-10 cm	0.7	19.2	5	19.9
10-15 cm	1.8	17.3	6	19.1
15-20 cm	1.7	12.1	7	13.8
20-30 cm	6.6	21.2	5	27.8
30-40 cm	5.0	15.1	7	20.0
40-60 cm	2.7	16.2	7	18.9
60-80 cm	0.5	6.1	11	6.7
80+ cm	0.2	3.0	18	3.2
Total	20.1	124.3	1	144.4

Table 4 Felled area at 31 March 2012

Clearfelled area	FC	Private sector		Total
	area (ha)	area (ha)	SE%	area (ha)
	587.1	1,192.2	33	1,779.4

Standing volume at 31 March 2012

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

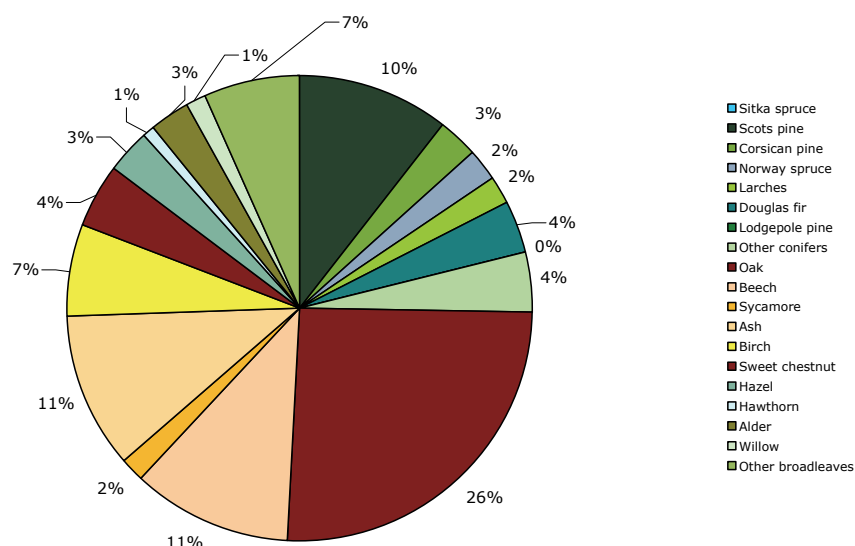


Table 5 Standing volume by principal tree species at 31 March 2012

Principal species	FC	Private sector		Total
	volume (000 m ³ obs)	volume (000 m ³ obs)	SE%	volume (000 m ³ obs)
All conifers	2,081	7,012	6	9,093
Sitka spruce	13	26	59	39
Scots pine	687	3,077	12	3,763
Corsican pine	508	436	32	945
Norway spruce	130	675	21	805
Larches	58	656	19	715
Douglas fir	389	936	22	1,325
Lodgepole pine	3	0	-	3
Other conifers	292	1,187	17	1,479
All broadleaves	3,407	23,365	3	26,772
Oak	1,601	7,552	8	9,154
Beech	1,422	2,616	12	4,037
Sycamore	4	593	18	597
Ash	38	3,807	11	3,845
Birch	77	2,268	9	2,345
Sweet chestnut	32	1,515	15	1,547
Hazel	3	1,063	10	1,066
Hawthorn	0	303	14	303
Alder	19	1,037	21	1,056
Willow	0	471	24	471
Other broadleaves	211	2,175	11	2,385
All species	5,488	30,372	3	35,860

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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	3	2	55	5
11-20 years	44	13	49	58
21-40 years	213	780	17	994
41-60 years	859	3,986	10	4,845
61-80 years	544	1,509	19	2,053
81-100 years	235	320	50	555
100+ years	182	401	38	583
Total	2,081	7,012	6	9,093
All broadleaves				
0-10 years	0	24	38	24
11-20 years	3	511	18	515
21-40 years	28	3,440	6	3,468
41-60 years	345	4,464	7	4,809
61-80 years	498	4,221	8	4,719
81-100 years	218	5,295	9	5,513
100+ years	2,316	5,409	11	7,725
Total	3,407	23,365	3	26,772
All species				
0-10 years	3	26	35	29
11-20 years	48	526	18	574
21-40 years	241	4,237	6	4,478
41-60 years	1,204	8,471	6	9,675
61-80 years	1,042	5,703	8	6,744
81-100 years	453	5,634	9	6,087
100+ years	2,498	5,776	10	8,274
Total	5,488	30,372	3	35,860

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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	43	0
7-10 cm	4	19	37	24
10-15 cm	93	189	29	282
15-20 cm	107	473	21	579
20-30 cm	482	1,665	15	2,147
30-40 cm	677	1,833	13	2,510
40-60 cm	576	2,111	16	2,687
60-80 cm	105	492	27	597
80+ cm	37	230	41	267
Total	2,081	7,012	6	9,093
All broadleaves				
0-7 cm	3	43	15	46
7-10 cm	17	803	8	821
10-15 cm	135	2,021	7	2,156
15-20 cm	260	1,737	8	1,997
20-30 cm	1,675	4,439	6	6,114
30-40 cm	1,011	3,420	9	4,431
40-60 cm	248	5,111	8	5,358
60-80 cm	46	3,366	12	3,411
80+ cm	13	2,425	20	2,438
Total	3,407	23,365	3	26,772
All species				
0-7 cm	3	43	15	46
7-10 cm	22	825	8	847
10-15 cm	228	2,214	7	2,442
15-20 cm	366	2,221	8	2,587
20-30 cm	2,157	6,129	6	8,286
30-40 cm	1,688	5,283	7	6,971
40-60 cm	823	7,154	7	7,978
60-80 cm	151	3,837	11	3,988
80+ cm	50	2,667	19	2,717
Total	5,488	30,372	3	35,860

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)
All conifers	1,317	4,350	6	5,667
Sitka spruce	8	15	59	23
Scots pine	473	2,040	12	2,513
Corsican pine	310	251	32	561
Norway spruce	71	363	21	435
Larches	37	394	19	431
Douglas fir	257	593	22	850
Lodgepole pine	2	0	-	2
Other conifers	159	682	17	841
All broadleaves	3,111	20,157	3	23,268
Oak	1,410	6,288	7	7,698
Beech	1,349	2,282	11	3,631
Sycamore	4	494	18	498
Ash	36	3,115	10	3,151
Birch	75	2,117	8	2,192
Sweet chestnut	30	1,204	14	1,233
Hazel	3	1,042	9	1,045
Hawthorn	0	368	14	368
Alder	16	762	20	778
Willow	0	468	24	468
Other broadleaves	189	2,033	10	2,221
All species	4,428	24,509	3	28,937

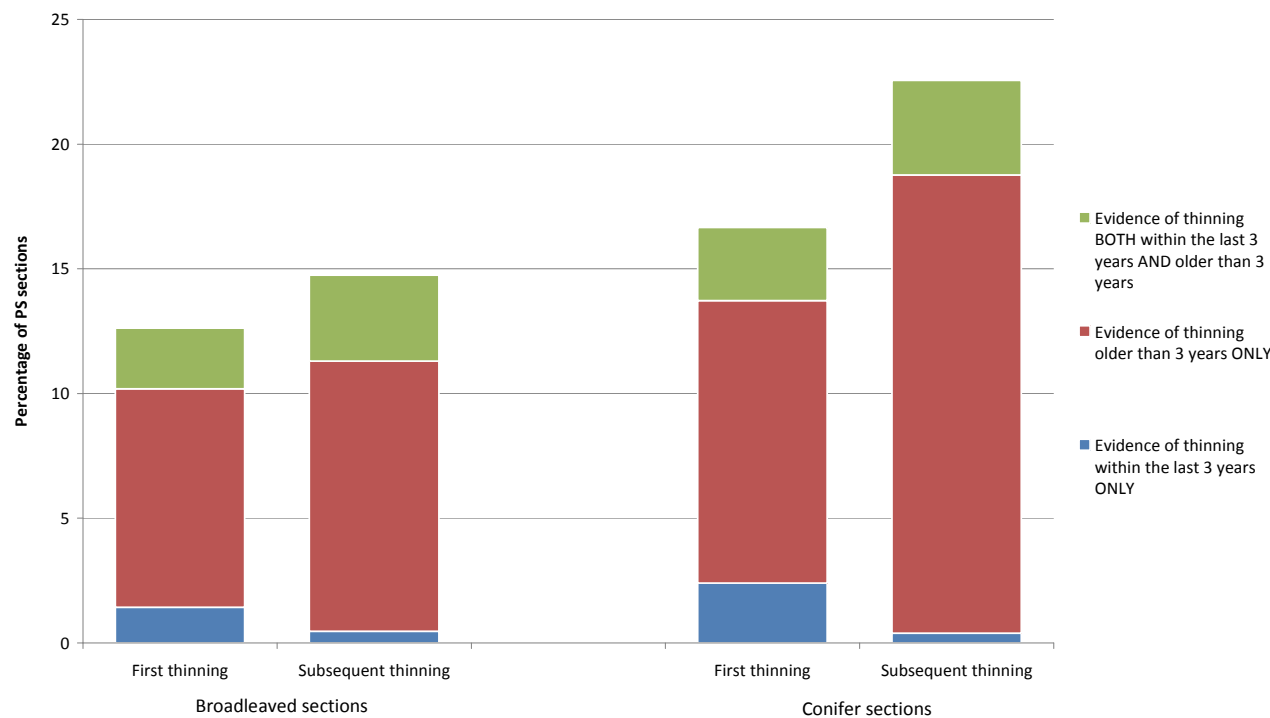
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Table 9 Total carbon stocks in principal tree species at 31 March 2012

Principal species	FC	Private sector		Total
	carbon (000 t)	carbon (000 t)	SE%	carbon (000 t)
All conifers	560	2,175	6	2,734
Sitka spruce	3	8	59	11
Scots pine	183	1,020	12	1,203
Corsican pine	147	126	32	272
Norway spruce	33	182	21	215
Larches	16	197	19	213
Douglas fir	116	296	22	412
Lodgepole pine	1	0	-	1
Other conifers	60	341	17	401
All broadleaves	439	10,079	3	10,518
Oak	99	3,144	7	3,243
Beech	296	1,141	11	1,437
Sycamore	1	247	18	248
Ash	7	1,557	10	1,564
Birch	7	1,058	8	1,066
Sweet chestnut	7	602	14	609
Hazel	0	521	9	521
Hawthorn	0	184	14	184
Alder	0	381	20	381
Willow	0	234	24	234
Other broadleaves	23	1,016	10	1,039
All species	999	12,254	3	13,254

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		FC		Private sector		FC		Private sector		FC		Private sector	
	volume (000m ³ obs)		SE%		volume (000m ³ obs)		SE%		volume (000m ³ obs)		SE%		volume (000m ³ obs)		SE%	
All conifers	78	364	13	442	80	322	10	402	62	330	13	392	54	305	13	358
Sitka spruce	0	1	64	2	0	3	65	3	0	1	76	1	0	2	91	3
Scots pine	20	164	25	184	19	134	20	153	13	138	21	151	14	127	23	141
Corsican pine	26	28	44	54	29	24	60	53	26	46	57	73	16	6	49	22
Norway spruce	5	27	23	32	6	30	23	36	3	24	26	27	5	52	42	57
Larches	2	28	23	31	2	43	33	46	2	25	22	27	1	26	29	28
Douglas fir	14	57	32	71	13	30	23	43	9	52	38	61	9	36	39	45
Lodgepole pine	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0
Other conifers	11	56	20	67	10	57	19	67	8	44	26	52	8	55	31	63
All broadleaves	43	10	12	53	4	28	8	32	35	47	6	82	4	71	6	75
Oak	8	1	13	9	1	2	13	3	6	3	13	9	1	3	13	5
Beech	31	1	14	31	2	1	14	3	25	3	14	28	2	5	14	7
Sycamore	0	0	20	0	0	1	20	1	0	3	20	3	0	5	20	5
Ash	1	1	11	2	0	3	11	3	1	6	11	7	0	12	11	12
Birch	1	1	9	2	0	5	9	6	1	8	9	8	0	10	9	10
Sweet chestnut	0	0	20	0	0	1	20	1	0	2	20	2	0	3	20	3
Hazel	0	0	12	0	0	2	12	2	0	5	12	5	0	7	12	7
Hawthorn	0	2	15	2	0	3	15	3	0	3	15	3	0	4	15	4
Alder	0	0	21	1	0	1	21	1	0	1	21	1	0	1	21	1
Willow	0	1	24	1	0	1	24	1	0	2	24	2	0	3	24	3
Other broadleaves	2	3	14	4	1	8	14	9	2	12	14	14	1	18	14	19
All species	121	371	13	492	84	350	10	434	97	379	11	476	58	377	11	434

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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)	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	50	320	16	369	50	182	20	231	80	216	18	296	65	125	11	190
Sitka spruce	1	4	31	6	1	5	25	7	4	6	19	10	2	8	16	10
Scots pine	9	160	23	169	14	85	38	99	14	72	33	86	11	38	19	49
Corsican pine	20	1	59	21	16	17	66	34	38	10	82	48	25	0	34	26
Norway spruce	4	69	37	73	3	13	32	17	4	49	37	53	5	14	37	19
Larches	1	13	24	14	1	10	27	12	4	8	24	12	2	7	24	10
Douglas fir	9	23	24	32	9	26	36	35	12	26	40	38	11	16	20	27
Lodgepole pine	0	0	-	0	0	0	32	0	0	0	32	0	0	0	32	0
Other conifers	5	49	50	54	4	24	23	29	5	45	54	50	9	41	23	50
All broadleaves	30	82	6	112	29	99	7	128	52	173	8	224	18	163	8	181
Oak	5	4	13	9	5	5	13	9	17	5	13	22	8	5	13	13
Beech	22	7	14	29	21	7	14	28	29	7	14	36	7	7	14	15
Sycamore	0	5	20	5	0	6	20	6	0	9	20	9	0	18	20	18
Ash	1	12	11	12	0	17	11	18	1	25	11	25	0	33	11	33
Birch	0	10	9	10	1	14	9	15	1	45	9	46	1	20	9	21
Sweet chestnut	0	4	20	4	0	4	20	4	0	4	20	4	0	4	20	4
Hazel	0	8	12	8	0	8	12	8	0	21	12	21	0	35	12	35
Hawthorn	0	6	15	6	0	7	15	7	0	8	15	8	0	8	15	8
Alder	0	1	21	1	0	1	21	1	0	6	21	6	0	3	21	3
Willow	0	4	24	4	0	4	24	4	0	4	24	4	0	4	24	4
Other broadleaves	1	21	14	22	1	26	14	27	4	39	14	43	1	25	14	27
All species	80	404	12	483	78	282	13	360	132	390	11	522	83	288	7	371

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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 (000m³ obs)	SE%	volume (000m³ obs)	volume (000m³ obs)	SE%	volume (000m³ obs)		
All conifers	54	183	22	236	57	147	12	204
Sitka spruce	2	11	13	12	2	12	12	14
Scots pine	11	39	17	50	13	58	26	71
Corsican pine	17	1	33	17	13	0	34	14
Norway spruce	3	77	52	80	3	13	22	16
Larches	2	8	22	10	2	8	22	9
Douglas fir	13	24	25	37	15	21	18	36
Lodgepole pine	0	0	32	0	0	0	32	0
Other conifers	6	24	15	30	9	36	20	44
All broadleaves	36	160	10	196	26	64	8	90
Oak	9	5	13	14	6	5	13	11
Beech	24	7	14	31	15	8	14	23
Sycamore	0	16	20	16	0	2	20	2
Ash	0	44	11	44	1	1	11	2
Birch	1	17	9	18	1	2	9	4
Sweet chestnut	0	4	20	4	1	4	20	4
Hazel	0	22	12	22	0	10	12	10
Hawthorn	0	8	15	8	0	8	15	8
Alder	0	0	21	0	0	0	21	0
Willow	0	4	24	4	0	4	24	4
Other broadleaves	1	32	14	33	2	20	14	22
All species	89	344	13	434	83	212	9	295

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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	2,062	6,548	6	8,610
2017-21	2,088	5,991	7	8,079
2022-26	2,128	5,076	8	7,203
2027-31	2,199	4,402	9	6,601
2032-36	2,279	3,491	10	5,769
2037-41	2,334	3,097	10	5,431
2042-46	2,332	2,740	10	5,073
2047-51	2,261	2,895	10	5,156
2052-56	2,253	3,198	9	5,450
2057-61	2,234	3,336	7	5,570
All broadleaves				
2013-16	3,375	24,459	3	27,833
2017-21	3,487	26,586	3	30,073
2022-26	3,561	29,099	3	32,660
2027-31	3,663	31,540	3	35,203
2032-36	3,752	33,795	3	37,547
2037-41	3,747	35,815	3	39,561
2042-46	3,770	37,360	3	41,130
2047-51	3,750	38,605	3	42,355
2052-56	3,784	39,488	3	43,272
2057-61	3,794	40,661	3	44,455
All species				
2013-16	5,437	31,022	3	36,459
2017-21	5,574	32,593	3	38,167
2022-26	5,688	34,192	3	39,880
2027-31	5,862	35,960	3	41,822
2032-36	6,031	37,298	2	43,329
2037-41	6,080	38,921	2	45,001
2042-46	6,102	40,104	2	46,207
2047-51	6,011	41,503	2	47,515
2052-56	6,037	42,688	2	48,726
2057-61	6,029	43,997	2	50,026

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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	76	215	6	291
2017-21	75	199	6	274
2022-26	70	168	8	237
2027-31	67	154	8	221
2032-36	64	140	9	204
3037-41	63	146	8	209
2042-46	61	155	8	216
2047-51	57	180	7	237
2052-56	55	205	6	260
2057-61	56	220	6	276
All broadleaves				
2013-16	37	454	4	490
2017-21	37	516	3	553
2022-26	37	553	2	590
2027-31	37	545	2	582
2032-36	37	516	2	553
3037-41	36	480	3	516
2042-46	35	437	3	472
2047-51	33	390	3	423
2052-56	33	341	3	375
2057-61	32	316	3	349
All species				
2013-16	113	669	3	782
2017-21	112	716	2	828
2022-26	106	723	2	829
2027-31	104	700	2	804
2032-36	101	657	2	758
3037-41	99	626	3	725
2042-46	96	592	3	688
2047-51	91	570	3	661
2052-56	89	547	3	636
2057-61	88	536	3	625

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

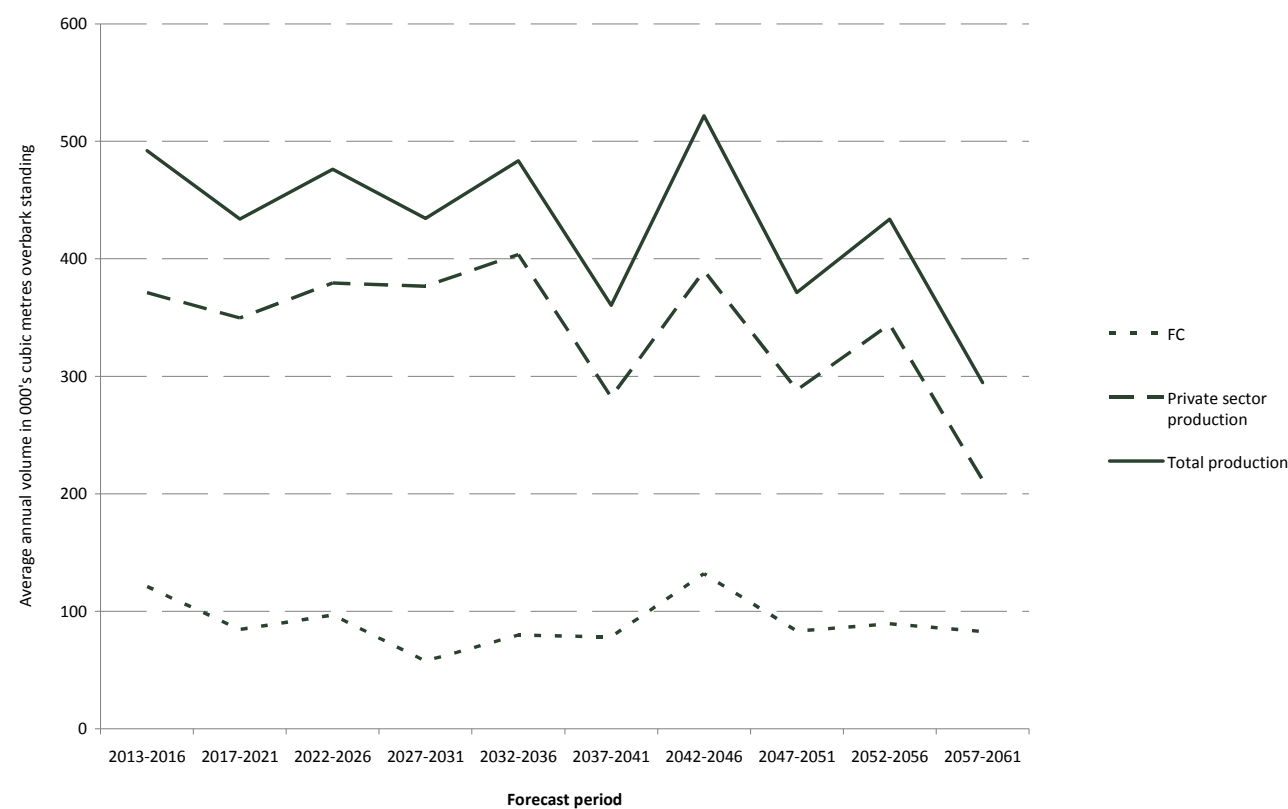


Figure 5 50-year forecast of average annual softwood production

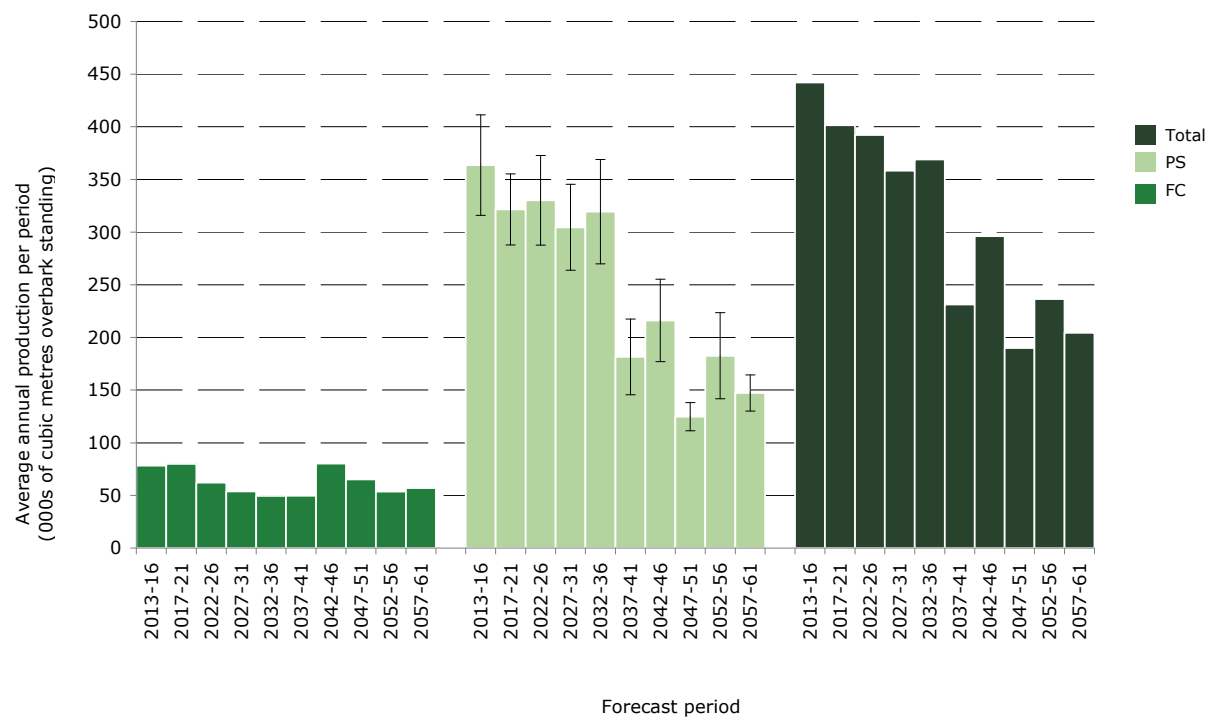


Figure 6 50-year forecast of average annual hardwood production

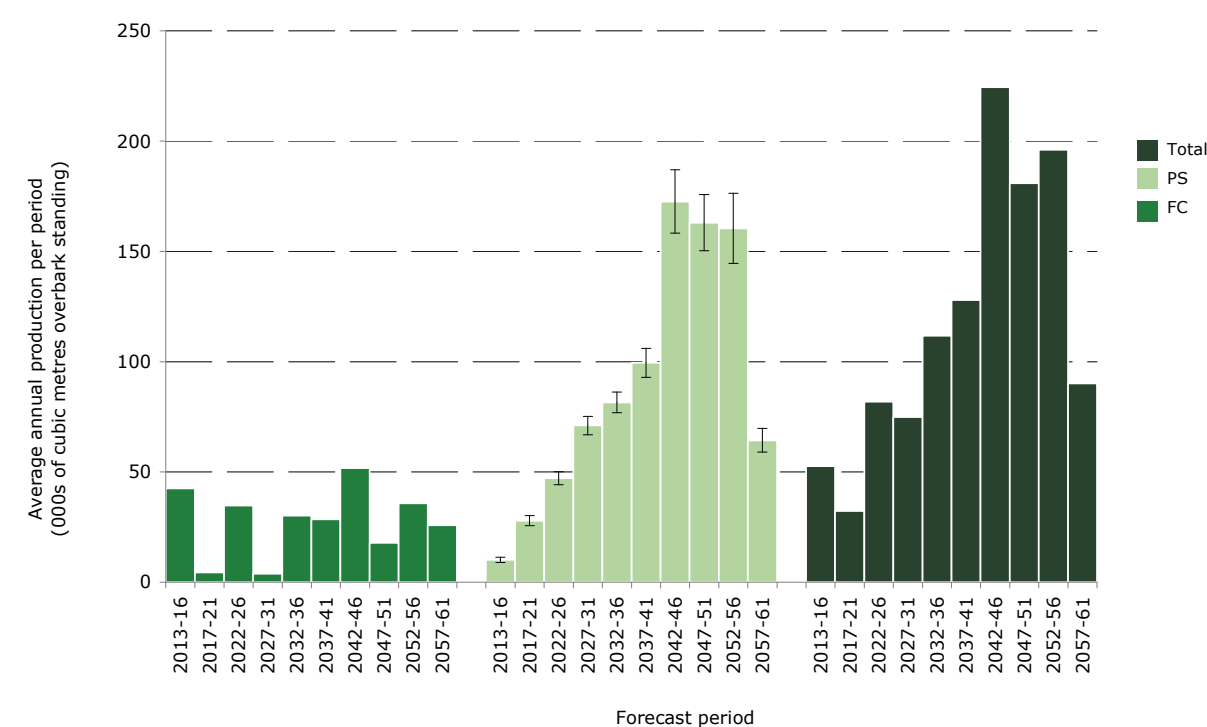


Figure 7 50-year forecast of softwood standing volume, increment and production

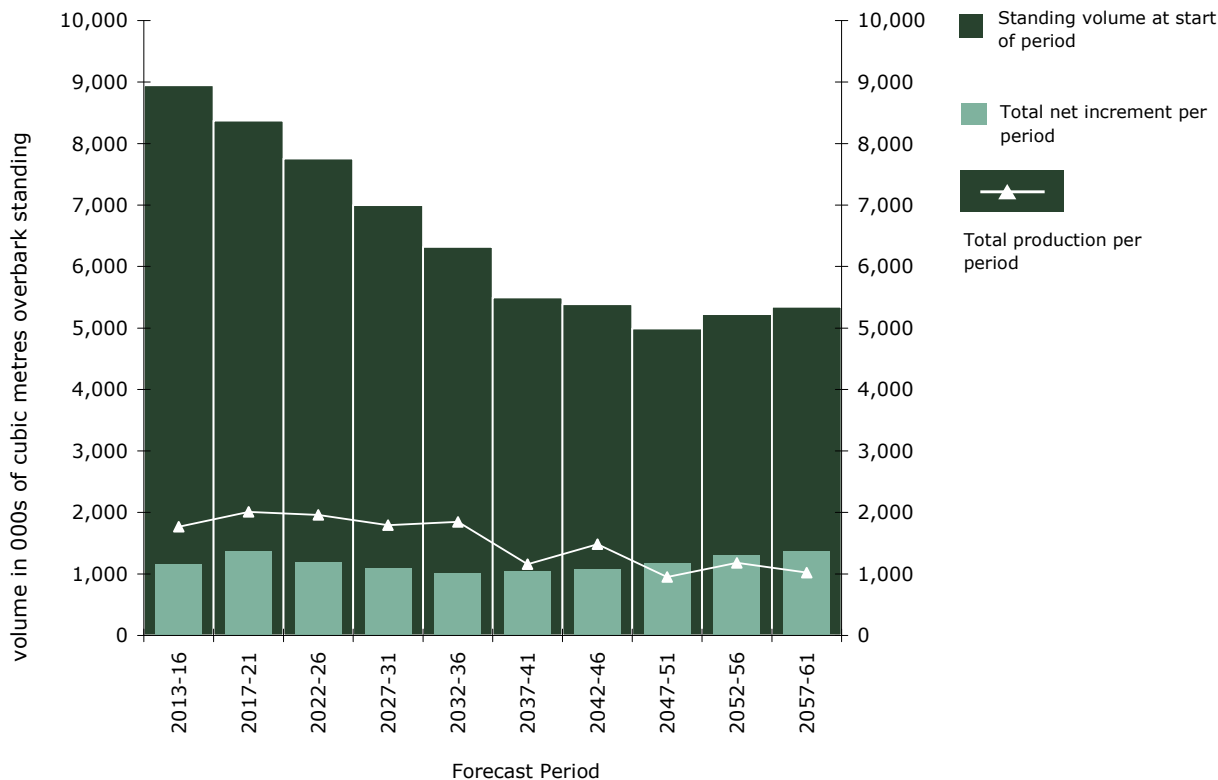
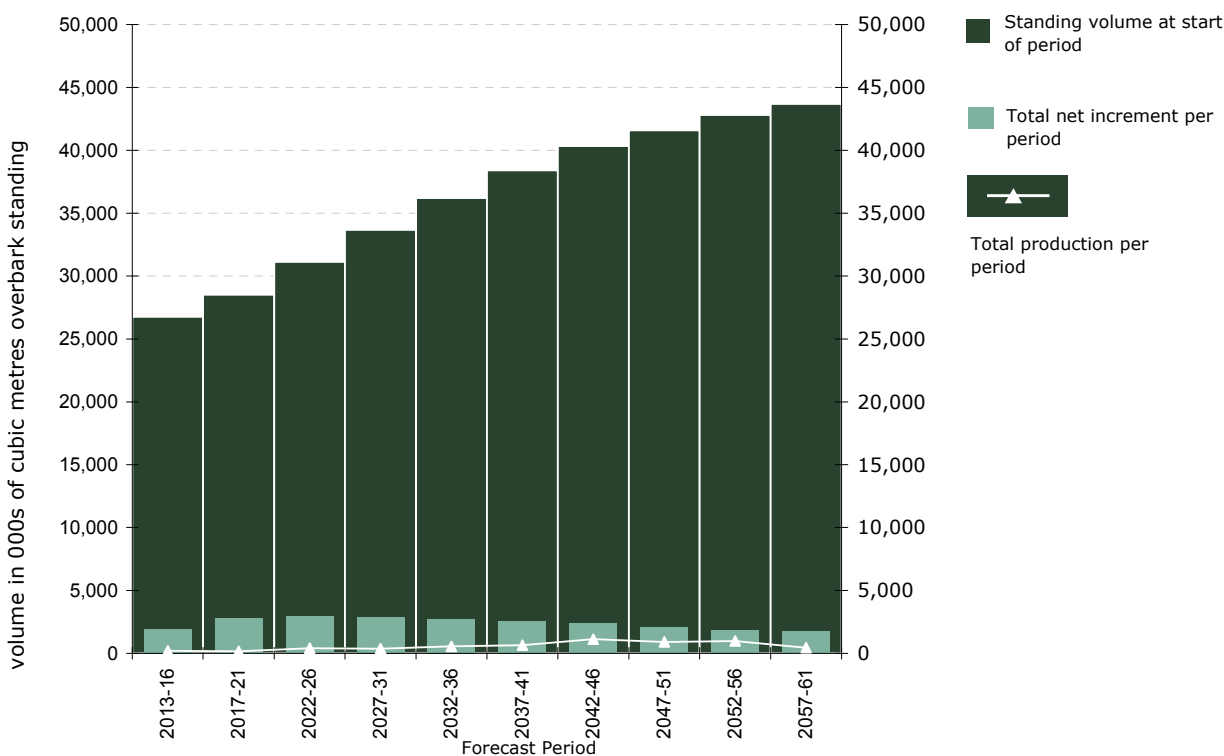


Figure 8 50-year forecast of hardwood standing volume, increment and production



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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	78	364	13	442	80	322	10	402	62	330	13	392	54	305	13	358
Sitka spruce	0	1	64	2	0	3	65	3	0	1	76	1	0	2	91	3
Scots pine	20	164	25	184	19	134	20	153	13	138	21	151	14	127	23	141
Corsican pine	26	28	44	54	29	24	60	53	26	46	57	73	16	6	49	22
Norway spruce	5	27	23	32	6	30	23	36	3	24	26	27	5	52	42	57
Larches	2	28	23	31	2	43	33	46	2	25	22	27	1	26	29	28
Douglas fir	14	57	32	71	13	30	23	43	9	52	38	61	9	36	39	45
Lodgepole pine	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0
Other conifers	11	56	20	67	10	57	19	67	8	44	26	52	8	55	31	63
All broadleaves	43	970	5	1,013	4	1,045	5	1,050	35	581	5	616	4	474	7	478
Oak	8	33	13	41	1	31	13	32	6	60	13	67	1	116	13	117
Beech	31	25	14	55	2	23	14	25	25	57	14	82	2	33	14	34
Sycamore	0	45	20	45	0	52	20	52	0	17	20	17	0	17	20	17
Ash	1	289	11	290	0	296	11	296	1	97	11	97	0	41	11	41
Birch	1	197	9	198	0	247	9	248	1	110	9	111	0	69	9	70
Sweet chestnut	0	61	20	61	0	58	20	58	0	48	20	48	0	49	20	49
Hazel	0	83	12	83	0	84	12	84	0	73	12	73	0	47	12	47
Hawthorn	0	10	15	10	0	10	15	10	0	10	15	10	0	10	15	10
Alder	0	88	21	88	0	90	21	90	0	23	21	23	0	21	21	21
Willow	0	17	24	17	0	15	24	15	0	13	24	13	0	20	24	20
Other broadleaves	2	119	14	121	1	137	14	138	2	72	14	73	1	59	14	60
All species	121	1,334	5	1,455	84	1,370	4	1,454	97	915	6	1,012	58	781	7	838

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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		FC		Private sector		FC		Private sector		FC		Private sector	
	volume (000m ³ obs)		SE%		volume (000m ³ obs)		SE%		volume (000m ³ obs)		SE%		volume (000m ³ obs)		SE%	
All conifers	50	320	16	369	50	182	20	231	80	216	18	296	65	125	11	190
Sitka spruce	1	4	31	6	1	5	25	7	4	6	19	10	2	8	16	10
Scots pine	9	160	23	169	14	85	38	99	14	72	33	86	11	38	19	49
Corsican pine	20	1	59	21	16	17	66	34	38	10	82	48	25	0	34	26
Norway spruce	4	69	37	73	3	13	32	17	4	49	37	53	5	14	37	19
Larches	1	13	24	14	1	10	27	12	4	8	24	12	2	7	24	10
Douglas fir	9	23	24	32	9	26	36	35	12	26	40	38	11	16	20	27
Lodgepole pine	0	0	-	0	0	0	32	0	0	0	32	0	0	0	32	0
Other conifers	5	49	50	54	4	24	23	29	5	45	54	50	9	41	23	50
All broadleaves	30	447	10	478	29	430	7	459	52	529	6	580	18	476	6	494
Oak	5	78	13	83	5	59	13	64	17	65	13	82	8	46	13	54
Beech	22	90	14	112	21	60	14	81	29	66	14	94	7	26	14	33
Sycamore	0	11	20	11	0	17	20	18	0	17	20	17	0	26	20	26
Ash	1	66	11	66	0	59	11	60	1	66	11	67	0	77	11	78
Birch	0	49	9	49	1	54	9	55	1	92	9	93	1	76	9	76
Sweet chestnut	0	35	20	36	0	22	20	22	0	58	20	59	0	58	20	58
Hazel	0	32	12	32	0	46	12	46	0	39	12	39	0	52	12	52
Hawthorn	0	12	15	12	0	19	15	19	0	13	15	13	0	14	15	14
Alder	0	9	21	10	0	11	21	11	0	16	21	16	0	14	21	14
Willow	0	8	24	8	0	19	24	19	0	14	24	14	0	11	24	11
Other broadleaves	1	53	14	55	1	60	14	62	4	79	14	82	1	71	14	73
All species	80	770	9	850	78	614	7	692	132	747	7	879	83	602	6	685

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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	54	183	22	236	57	147	12	204
Sitka spruce	2	11	13	12	2	12	12	14
Scots pine	11	39	17	50	13	58	26	71
Corsican pine	17	1	33	17	13	0	34	14
Norway spruce	3	77	52	80	3	13	22	16
Larches	2	8	22	10	2	8	22	9
Douglas fir	13	24	25	37	15	21	18	36
Lodgepole pine	0	0	32	0	0	0	32	0
Other conifers	6	24	15	30	9	36	20	44
All broadleaves	36	541	6	577	26	465	7	490
Oak	9	43	13	52	6	62	13	68
Beech	24	46	14	70	15	45	14	60
Sycamore	0	26	20	26	0	12	20	12
Ash	0	93	11	93	1	52	11	53
Birch	1	83	9	83	1	77	9	78
Sweet chestnut	0	47	20	47	1	44	20	45
Hazel	0	42	12	42	0	35	12	35
Hawthorn	0	15	15	15	0	32	15	32
Alder	0	12	21	12	0	12	21	12
Willow	0	33	24	33	0	11	24	11
Other broadleaves	1	96	14	98	2	79	14	81
All species	89	726	7	815	83	613	6	696

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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	2,062	6,548	6	8,610
2017-21	2,088	5,991	7	8,079
2022-26	2,128	5,076	8	7,203
2027-31	2,199	4,402	9	6,601
2032-36	2,279	3,491	10	5,769
2037-41	2,334	3,097	10	5,431
2042-46	2,332	2,740	10	5,073
2047-51	2,261	2,895	10	5,156
2052-56	2,253	3,198	9	5,450
2057-61	2,234	3,336	7	5,570
All broadleaves				
2013-16	3,375	21,914	3	25,288
2017-21	3,487	19,403	4	22,889
2022-26	3,561	17,558	4	21,119
2027-31	3,663	17,513	4	21,176
2032-36	3,752	17,775	4	21,527
2037-41	3,747	18,400	4	22,147
2042-46	3,770	18,918	4	22,688
2047-51	3,750	19,472	4	23,222
2052-56	3,784	19,928	4	23,712
2057-61	3,794	20,267	4	24,062
All species				
2013-16	5,437	28,470	3	33,907
2017-21	5,574	25,390	3	30,965
2022-26	5,688	22,620	4	28,308
2027-31	5,862	21,897	3	27,759
2032-36	6,031	21,238	4	27,269
2037-41	6,080	21,464	4	27,544
2042-46	6,102	21,618	4	27,721
2047-51	6,011	22,325	4	28,337
2052-56	6,037	23,083	4	29,120
2057-61	6,029	23,557	3	29,585

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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	76	215	6	291
2017-21	75	199	6	274
2022-26	70	168	8	237
2027-31	67	154	8	221
2032-36	64	140	9	204
3037-41	63	146	8	209
2042-46	61	155	8	216
2047-51	57	180	7	237
2052-56	55	205	6	260
2057-61	56	220	6	276
All broadleaves				
2013-16	37	438	4	475
2017-21	37	450	3	488
2022-26	37	450	3	486
2027-31	37	473	3	510
2032-36	37	520	3	557
3037-41	36	584	3	620
2042-46	35	618	2	653
2047-51	33	620	2	654
2052-56	33	585	2	619
2057-61	32	551	2	584
All species				
2013-16	113	654	3	767
2017-21	112	651	3	763
2022-26	106	619	3	725
2027-31	104	628	3	732
2032-36	101	661	3	762
3037-41	99	731	2	830
2042-46	96	774	2	870
2047-51	91	802	2	892
2052-56	89	791	2	880
2057-61	88	772	2	860

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

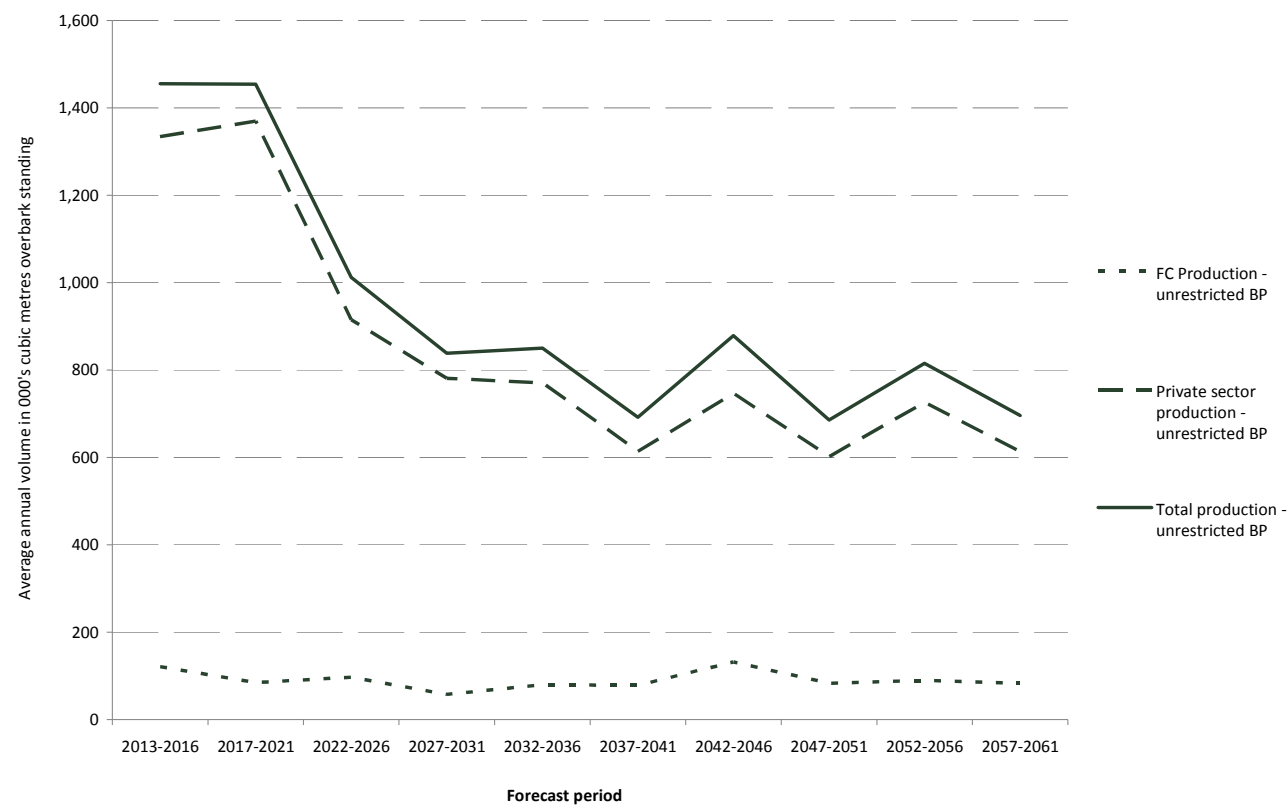


Figure 10 50-year forecast comparison of average annual softwood production – unrestricted biological potential

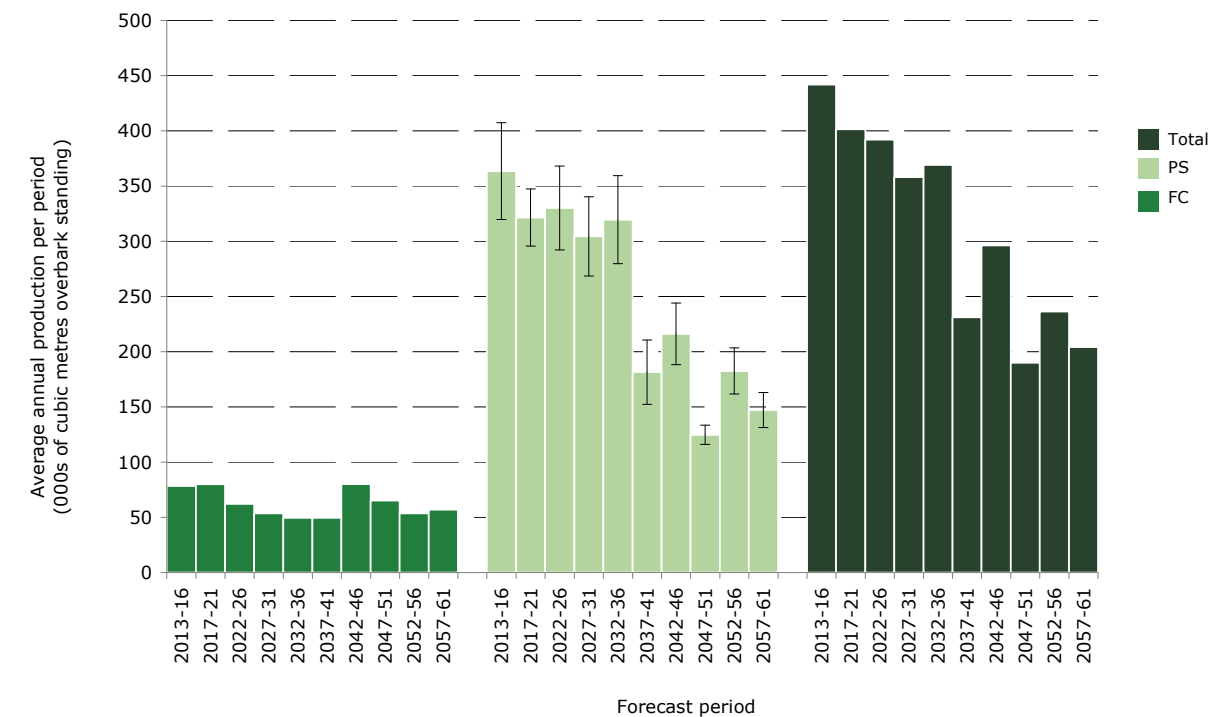


Figure 11 50-year forecast comparison of average annual hardwood production – unrestricted biological potential

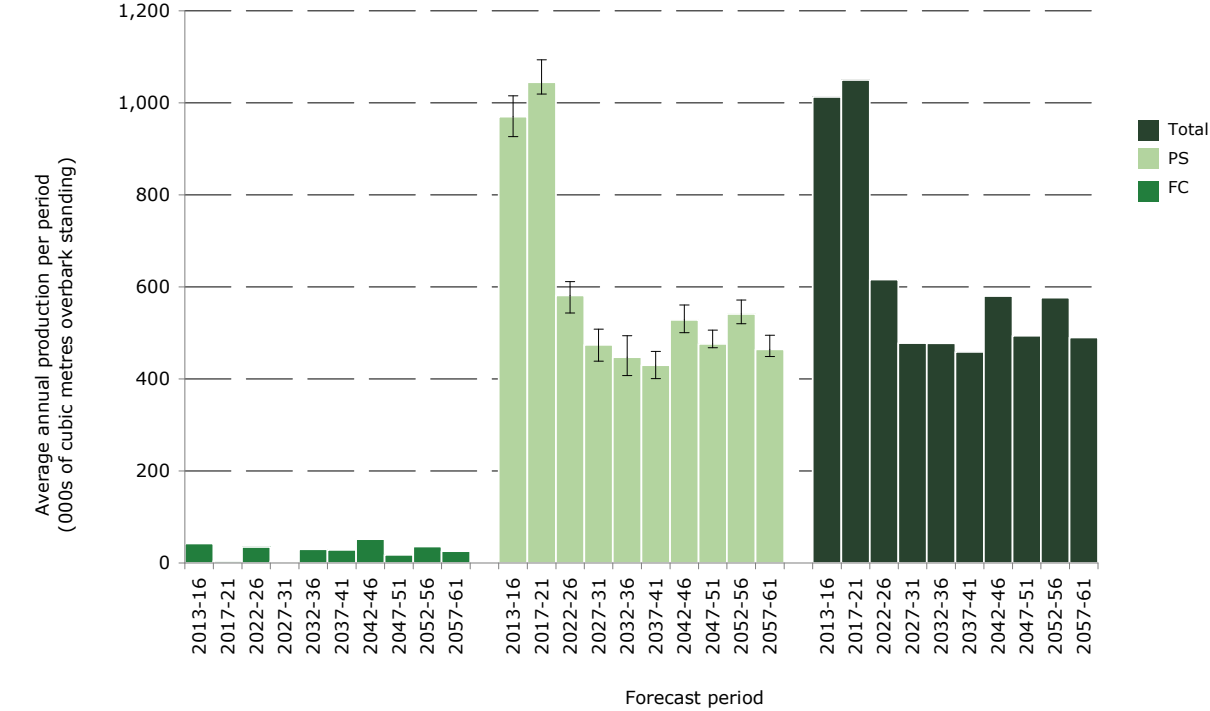


Figure 12 50-year summary of softwood standing volume, increment and production – unrestricted biological potential

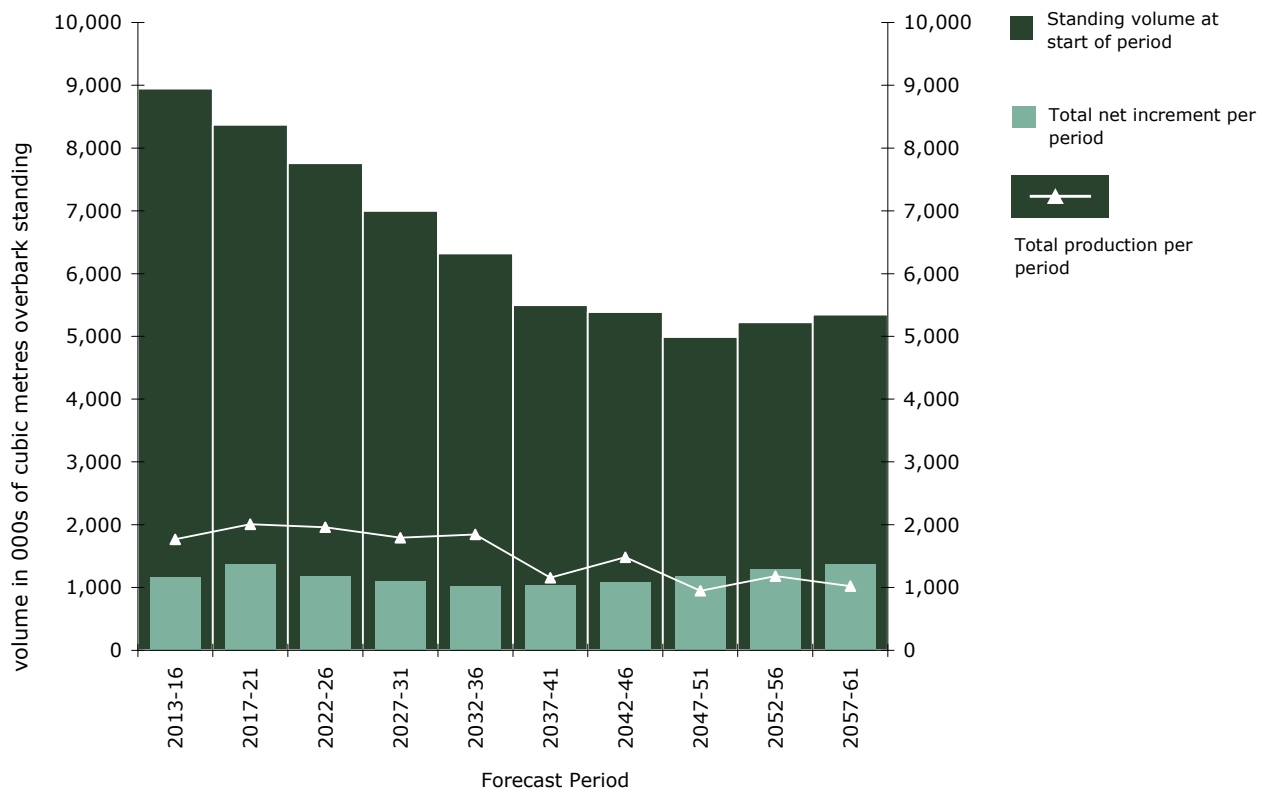
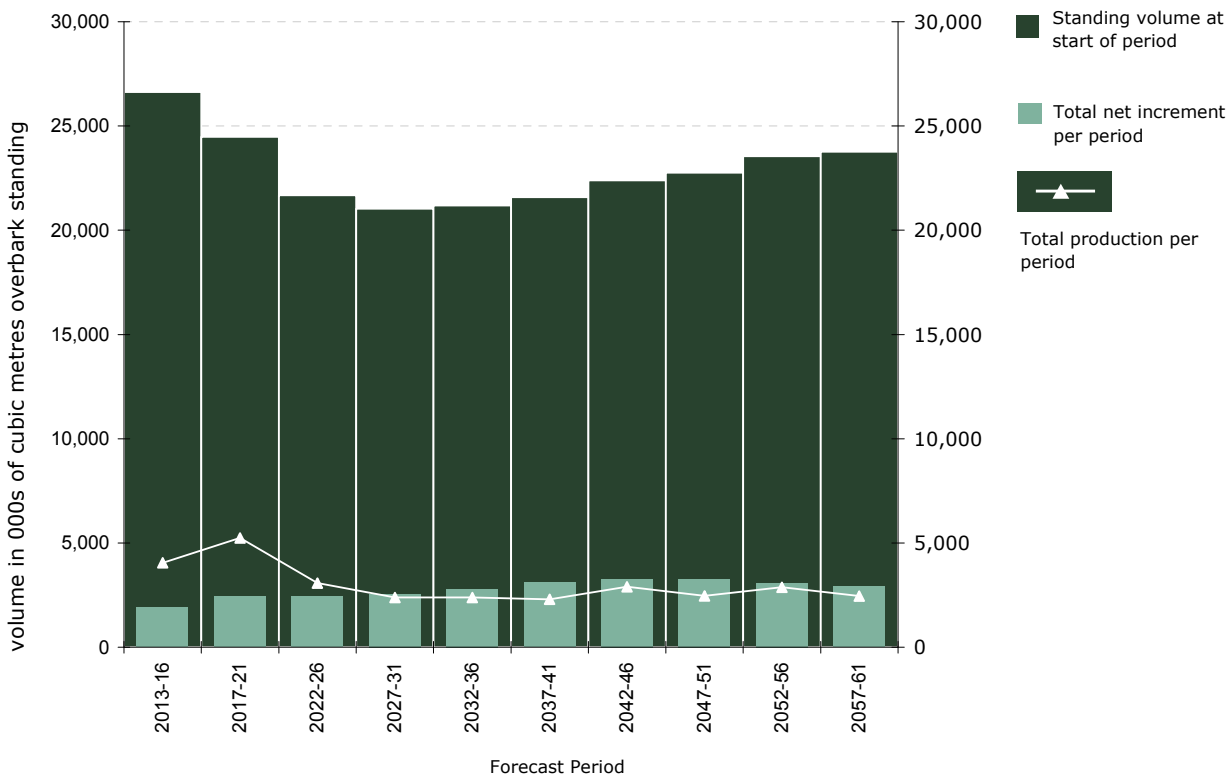


Figure 13 50-year summary of hardwood standing volume, increment and production – unrestricted biological potential



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