Forestry Commission

NFI summary report

National Forest Inventory statistics for West Midlands

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West Midlands

Map 1 Map of England and the aligned areas

The map shows shortened names for some of the aligned areas. The short names and their full equivalents are to be found in **Appendix A**.

Key findings for West Midlands

West Midlands (WMD) has a land area of 1,487,400 hectares making it the 2nd largest of the 14 aligned areas by land area. With 9.5% of this land covered by woodland, WMD ranks 8th out of 14 in terms of percentage woodland cover. Some 16% of this woodland is under Forestry Commission ownership or management.

Douglas fir is the most commonly occurring of the conifer species when assessed by stocked area (18%) or standing volume (19%). Norway spruce is the most commonly occurring of the conifer species when assessed by number of trees (19%).

Oak is the most commonly occurring of the broadleaved species when assessed by stocked area (21%) or standing volume (34%). Hazel is the most commonly occurring of the broadleaved species when assessed by number of trees (17%).

Some 32% of standing coniferous volume is beyond the age of maximum mean annual increment (or above terminal height of 25m in higher windthrow risk areas). The harvesting assumptions applied in the forecast assume that a proportion of this volume will be felled over a period of time from the start of the forecast. Some 43% of conifer and mixed broadleaf/conifer sections (PS only) show evidence of thinning.

Overall 61% of standing broadleaved volume is beyond the age of maximum mean annual increment (or above terminal height of 25m in higher windthrow risk areas). Some 18% of broadleaved sections (PS only) show evidence of thinning.

Across WMD:

- Ash is estimated as 13% of total stocked area (16% of broadleaved stocked area), 15% of standing volume (23% of broadleaved standing volume) and 10% of the number of trees (12% of the number of broadleaved trees).
- Oak is estimated as 16% of total stocked area (21% of broadleaved stocked area), 22% of standing volume (34% of broadleaved standing volume) and 10% of the number of trees (11% of the number of broadleaved trees).
- Sweet chestnut is estimated as 2% of total stocked area (3% of broadleaved stocked area), 2% of standing volume (4% of broadleaved standing volume) and 3% of the number of trees (3% of the number of broadleaved trees).
- Larch is estimated as 4% of total stocked area (18% of conifer stocked area), 4% of standing volume (13% of conifer standing volume) and 3% of the number of trees (18% of the number of conifer trees).

Contents

Maps

Figures

Tables

Part 1 – introduction and methodology

Introduction

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

The current National Forest Inventory (NFI), which began in 2010, is a multipurpose operation that has involved the production of a forest and woodland map for Britain and a continuing programme of field surveys (the first cycle of field surveys completed in late 2015) of the mapped forest and woodland areas.

Information and data collected by the National Forest Inventory is being used for a number of purposes, including estimates and 25-year forecasts of forest metrics such as:

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

Estimates of aspects of the biodiversity and social value of forests and woodlands will also be provided by the NFI.

This report brings together key woodland information for England previously published across the range of NFI thematic reports. Within the NFI programme, results are presented by the NUTS 1 boundaries*. This report heads a series of reports where the woodland statistics are broken down by aligned area. The data sources and methodology covering the suite of reports is to found in the report for England and the aligned areas.

* See http://ec.europa.eu/eurostat/web/nuts/overview for a description of the Nomenclature of territorial units for statistics (NUTS) classification system.

How the estimates are prepared

The methodology, data sources and assumptions are described in the England report. It is important that the estimates presented in this report are interpreted in the light of the information provided in the England report.

The methodology introduces the sub-compartment database and the National Forest Inventory. It describes the metrics presented in this report and how they are derived. The methodology covers how the FC and private sector (PS) forecasts are prepared and includes commentary on the assumptions made in order to calculate the forecast estimates. Finally the methodology covers the tree health metrics.

Note on the estimates

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 standard errors attached to Private sector estimates are expressed in relative terms (%) to the right of the relevant estimate and as ± error bars in the figures. Percentages in the pie charts may also not sum to 100 due to rounding.

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

Go to Part 1

Part 2 – What our woodlands are like today

Go to Part 2

Part 2 - what our woodlands are like today

Woodland area statistics

Woodland area by woodland type

Figure 1 Woodland area by woodland type

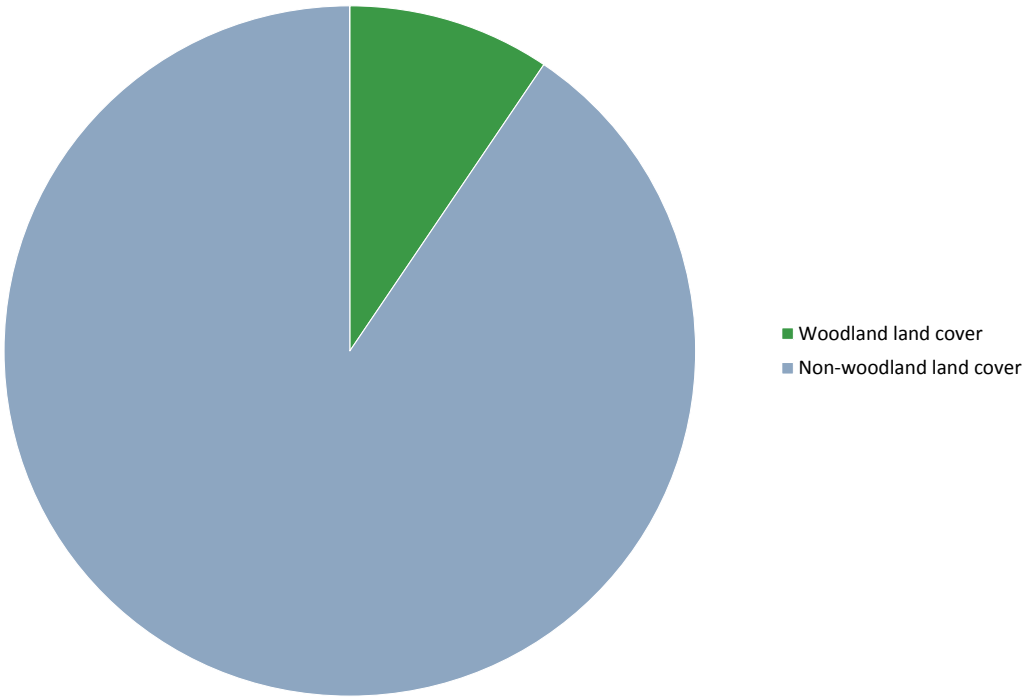


Table 1 Woodland area by woodland type

Woodland Type	Area (ha)	%
West Midlands		
Woodland	137,117	97%
Assumed woodland	3,247	2%
Low density	300	0%
Total mapped woodland	**140,664**	**100%**
Non-woodland area	1,346,736	
Land area	1,487,400	
Woodland land cover		**9%**
Non-woodland land cover		**91%**

Go to Part 2

Woodland area by ownership

Figure 2 Woodland area by ownership

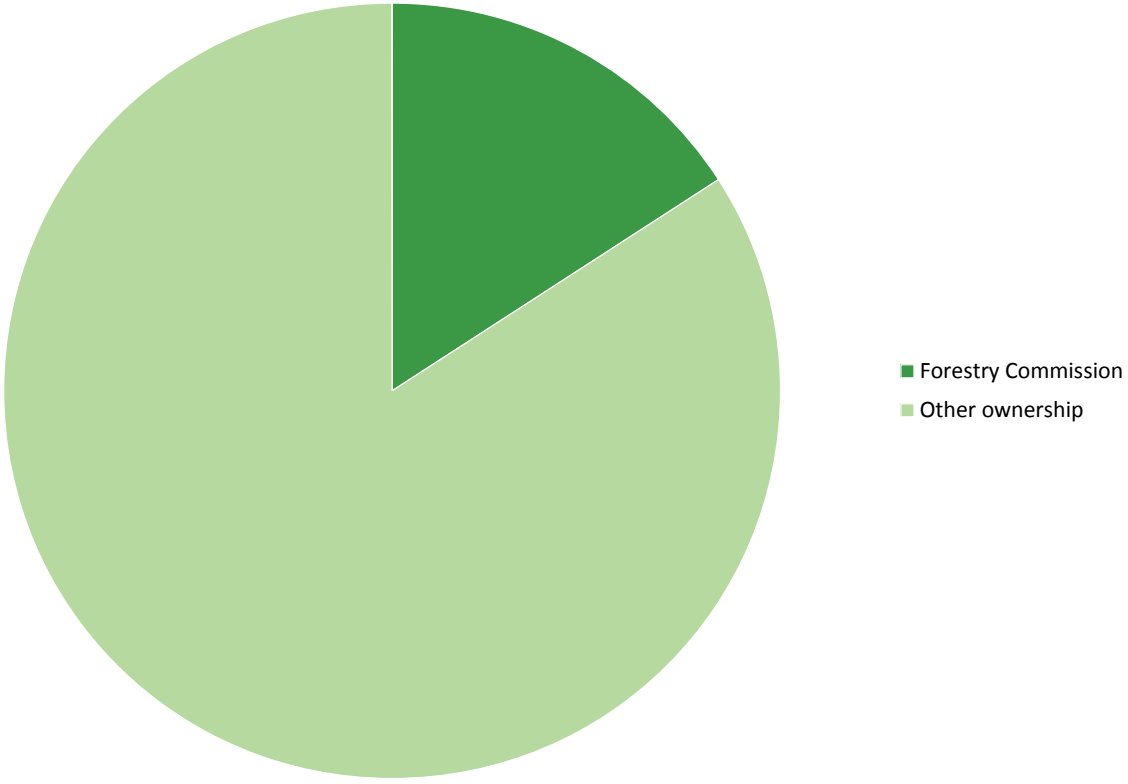


Table 2 Woodland area by ownership

Ownership	Area (ha)	% Woodland
West Midlands		
Forestry Commission	22,285	16%
Other ownership	118,379	84%
Total area of woodland	**140,664**	**100%**

Go to Part 2

Woodland area by interpreted forest type

Figure 3 Woodland area by interpreted forest type

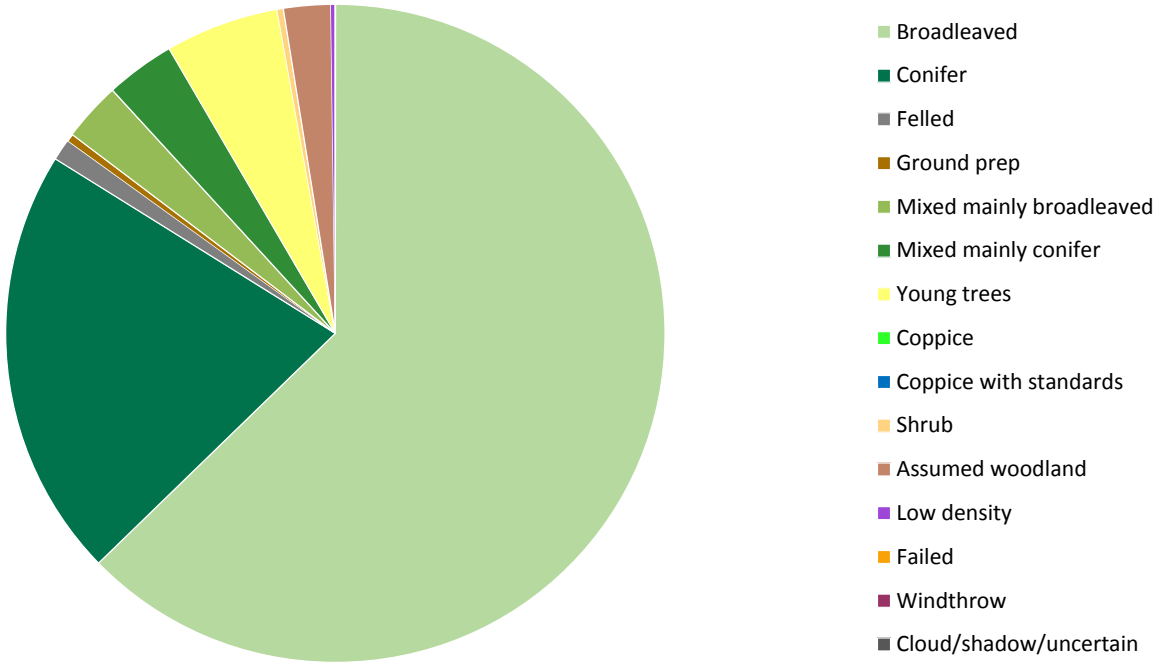


Table 3 Woodland area by interpreted forest type

Forest type	Total area (ha)	% of total area
West Midlands		
Broadleaved	88,237	63%
Conifer	29,759	21%
Felled	1,502	1%
Ground prep	513	0%
Mixed mainly broadleaved	4,065	3%
Mixed mainly conifer	4,776	3%
Young trees	7,820	6%
Coppice	29	0%
Coppice with standards	0	0%
Shrub	415	0%
Assumed woodland	3,247	2%
Low density	300	0%
Failed	0	0%
Windthrow	0	0%
Cloud/shadow/uncertain	0	0%
TOTALS	**140,664**	**100%**

Go to Part 2

Woodland area by interpreted forest type and woodland size

Figure 4 Woodland area by interpreted forest type and woodland size

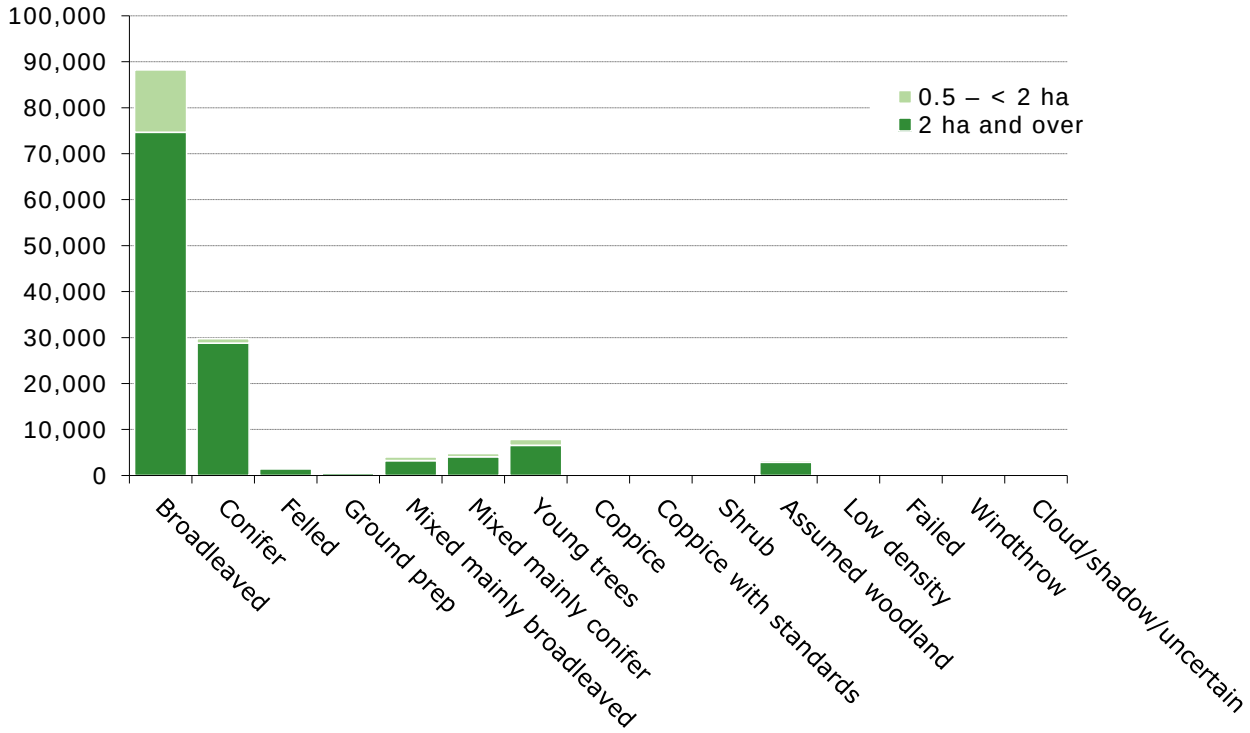


Table 4 Woodland area by interpreted woodland type and woodland size

Forest type	Woodland size		Total area (ha)
	2 ha and over	0.5 – < 2 ha	
West Midlands			
Broadleaved	74,688	13,549	88,237
Conifer	28,795	964	29,759
Felled	1,477	26	1,503
Ground prep	478	35	513
Mixed mainly broadleaved	3,231	798	4,029
Mixed mainly conifer	4,060	706	4,766
Young trees	6,541	1,273	7,814
Coppice	79	< 1	80
Coppice with standards	0	0	0
Shrub	294	121	415
Assumed woodland	2,868	379	3,247
Low density	246	54	300
Failed	0	0	0
Windthrow	0	0	0
Cloud/shadow/uncertain	0	0	0
TOTALS	**122,758**	**17,906**	**140,664**

Go to Part 2

Woodland area by interpreted forest type and ownership

Figure 5 Woodland area by interpreted forest type and ownership

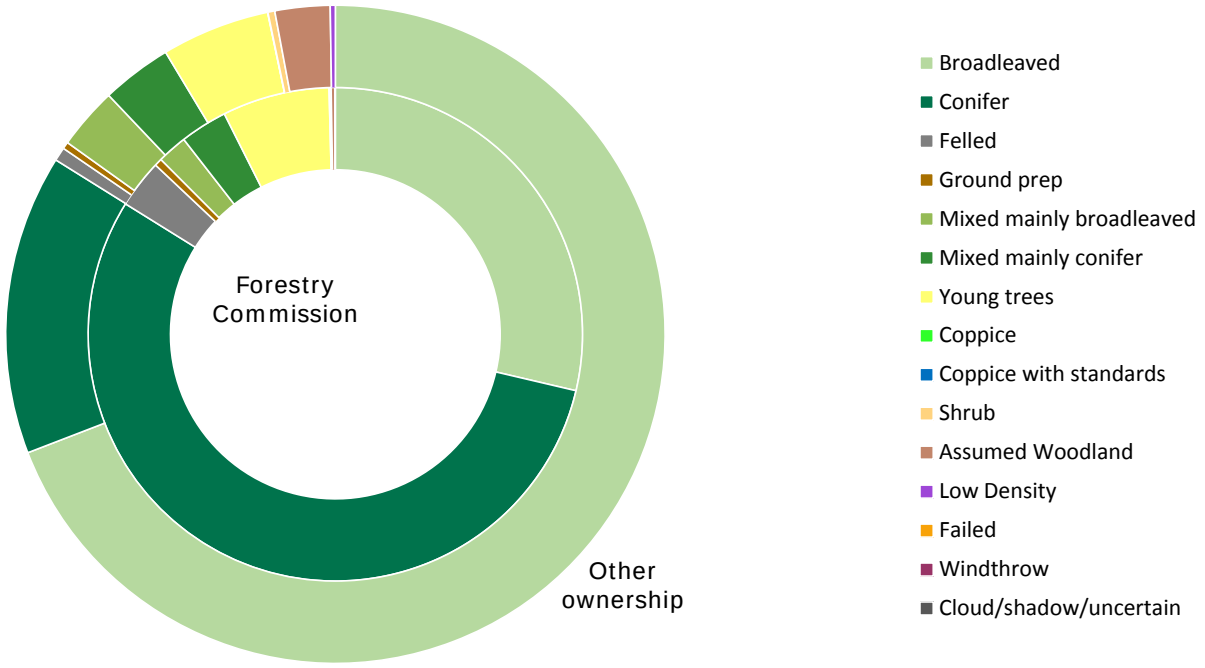


Table 5 Woodland area by interpreted forest type and ownership

Forest type	Forestry Commission		Other ownership	
	Area (ha)	% of total area	Area (ha)	% of total area
West Midlands				
Broadleaved	6,390	29%	81,847	69%
Conifer	12,299	55%	17,461	15%
Felled	706	3%	794	1%
Ground prep	111	0%	403	0%
Mixed mainly broadleaved	437	2%	3,593	3%
Mixed mainly conifer	690	3%	4,091	3%
Young trees	1,561	7%	6,290	5%
Coppice	12	0%	18	0%
Coppice with standards	0	0%	0	0%
Shrub	18	0%	397	0%
Assumed Woodland	55	0%	3,193	3%
Low Density	6	0%	294	0%
Failed	0	0%	0	0%
Windthrow	0	0%	0	0%
Cloud/shadow/uncertain	0	0%	0	0%
TOTALS	**22,285**	**100%**	**118,379**	**100%**

Go to Part 2

Woodland area by interpreted forest type, woodland size and ownership

Table 6 Woodland area by interpreted forest type, woodland size and ownership

Forest type	2 ha and over		0.5 – < 2 ha		Total area (ha)
	Forestry Commission	Other	Forestry Commission	Other	
West Midlands					
Broadleaved	6,352	68,371	38	13,475	88,236
Conifer	12,298	16,500	< 1	960	29,759
Felled	705	773	1	21	1,500
Ground prep	111	366	0	35	512
Mixed mainly broadleaved	435	2,797	2	795	4,030
Mixed mainly conifer	687	3,383	3	704	4,776
Young trees	1,561	5,023	0	1,273	7,857
Coppice	12	17	0	< 1	29
Coppice with standards	0	0	0	0	0
Shrub	17	277	< 1	120	415
Assumed woodland	55	2,814	< 1	379	3,247
Low Density	6	240	0	54	300
Failed	0	0	0	0	0
Windthrow	0	0	0	0	0
Cloud/shadow/uncertain	0	0	0	0	0
Totals	**22,240**	**100,561**	**45**	**17,817**	**140,663**

Woodland area by size class distribution

Figure 6 Woodland area by size class distribution

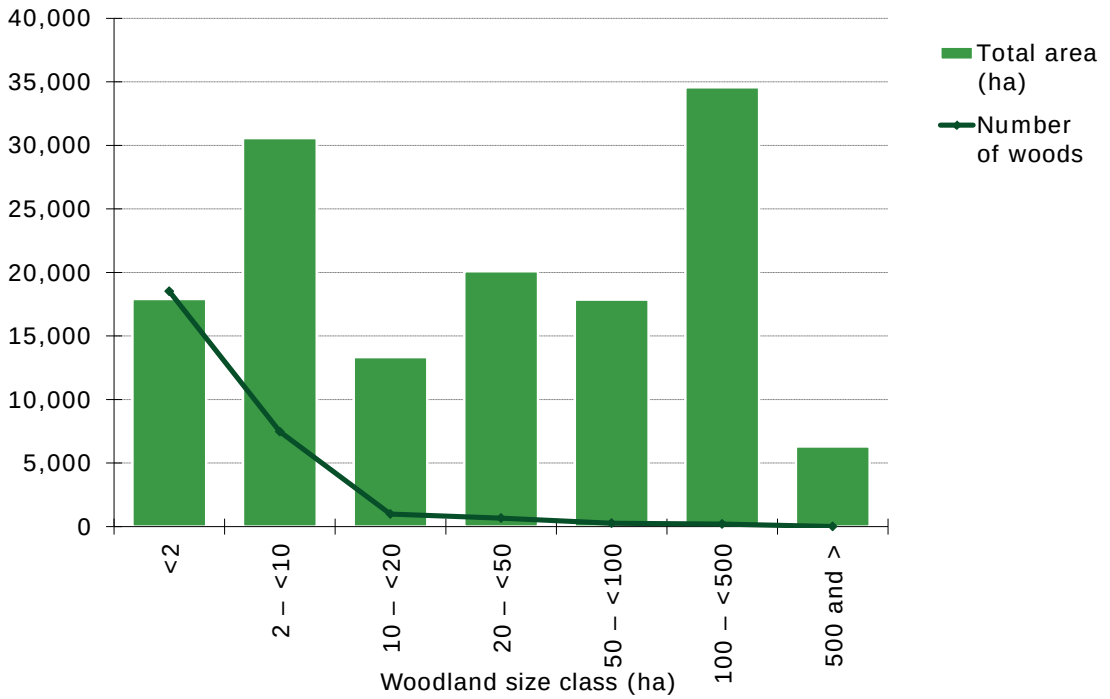


Table 7 Woodland area by size class distribution

Size class (ha)	Total area (ha)	Number of woods	% of total area	Mean wood area (ha)
West Midlands				
<2	17,906	18,508	13%	< 1
2 – <10	30,581	7,468	22%	4
10 – <20	13,339	978	9%	14
20 – <50	20,095	664	14%	30
50 – <100	17,867	265	13%	67
100 – <500	34,578	191	25%	181
500 and >	6,298	7	4%	900
All woods	**140,664**	**28,081**	**100%**	**5**

Go to Part 2

Open areas in woodland by land use type

Figure 7 Open areas in woodland by land use type

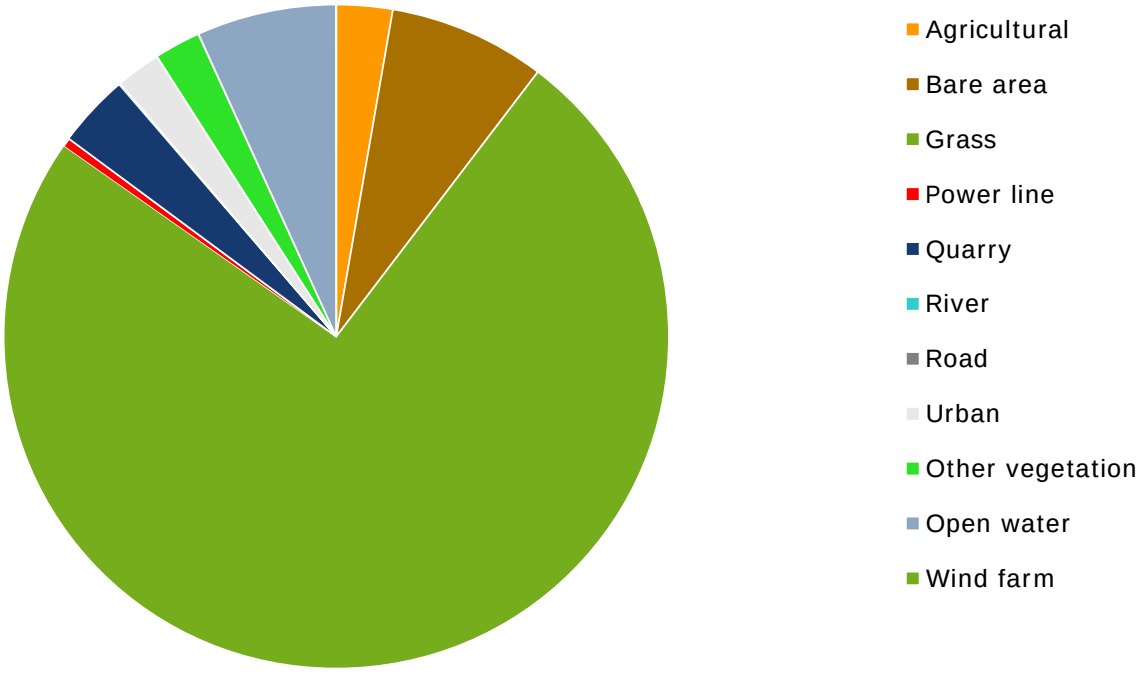


Table 8 Open areas in woodland by land use type

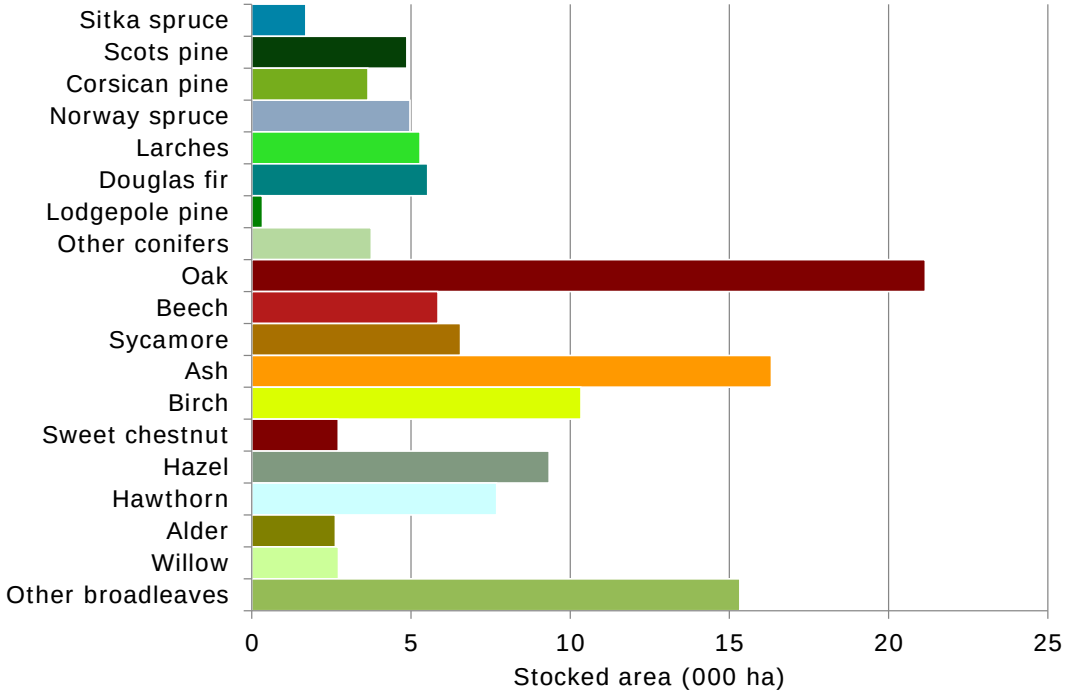
Interpreted open area	Total area (ha)	% of total area
West Midlands		
Agricultural	51	3%
Bare area	143	8%
Grass	1,399	74%
Power line	8	0%
Quarry	67	4%
River	1	0%
Road	0	0%
Urban	41	2%
Other vegetation	42	2%
Open water	128	7%
Wind farm	0	0%
TOTALS	**1,880**	**100%**

Go to Part 2

Net area under canopy

Stocked area by species

Figure 8 Stocked area by principal tree species



Go to Part 2

Table 9 Stocked area by principal tree species

Principal species	FC	Private sector		Total
	area (000 ha)	area (000 ha)	*SE%*	area (000 ha)
Conifers				
Sitka spruce	0.6	1.1	*43*	**1.7**
Scots pine	1.5	3.4	*17*	**4.9**
Corsican pine	2.3	1.4	*27*	**3.7**
Norway spruce	1.1	3.9	*17*	**5.0**
Larches	2.2	3.1	*16*	**5.3**
Douglas fir	3.3	2.2	*19*	**5.5**
Lodgepole pine	< 0.1	0.2	*67*	**0.3**
Other conifers	0.7	3.1	*20*	**3.8**
All conifers	**11.6**	**18.5**	***6***	**30.1**
Broadleaves				
Oak	3.4	17.8	*8*	**21.2**
Beech	1.2	4.6	*17*	**5.8**
Sycamore	< 0.1	6.5	*16*	**6.6**
Ash	0.4	15.9	*7*	**16.3**
Birch	0.8	9.6	*11*	**10.3**
Sweet chestnut	0.4	2.4	*23*	**2.7**
Hazel	< 0.1	9.3	*11*	**9.3**
Hawthorn	0.0	7.7	*12*	**7.7**
Alder	0.1	2.5	*20*	**2.6**
Willow	< 0.1	2.7	*17*	**2.7**
Other broadleaves	1.4	13.9	*8*	**15.3**
All broadleaves	**7.9**	**93.1**	***2***	**101.0**
All species				
All species	**19.5**	**111.3**	***1***	**130.8**

Figure 9 Stocked area by principal conifer species

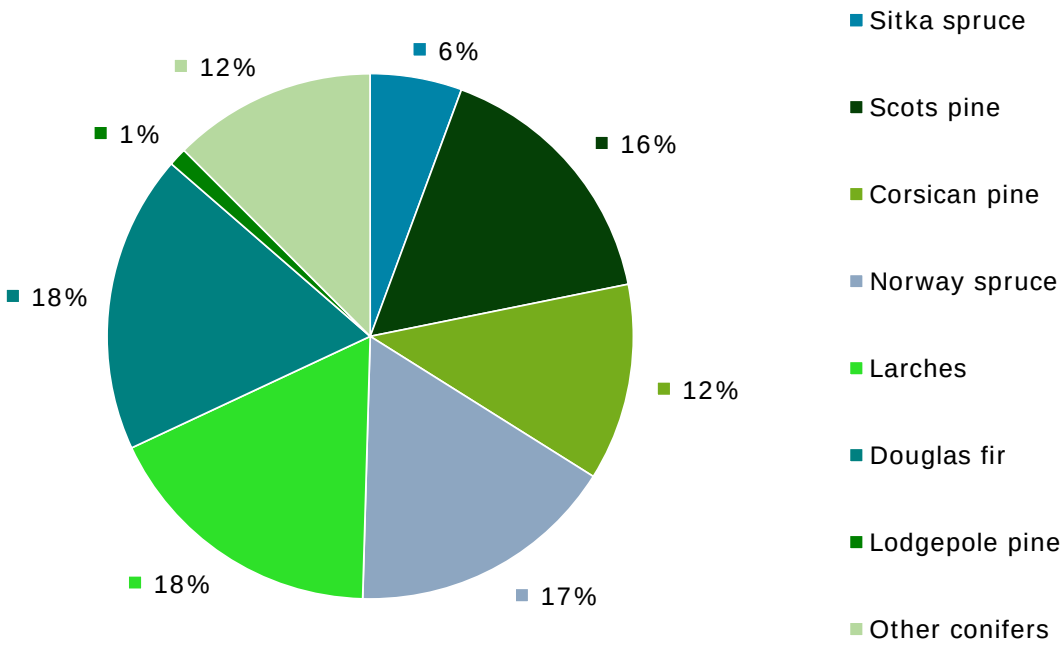
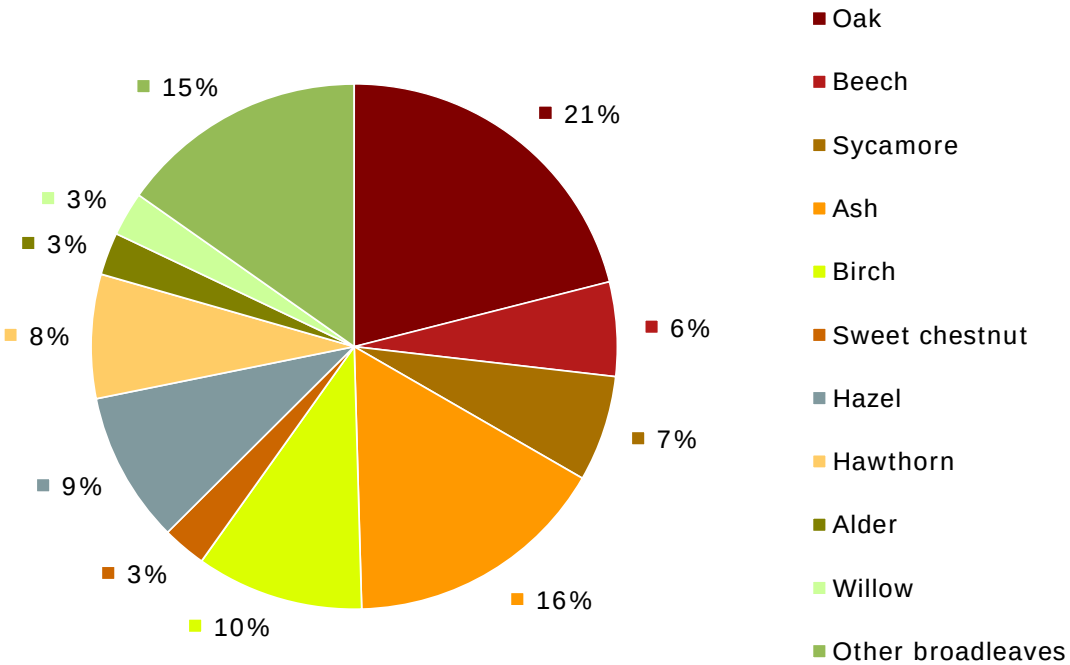


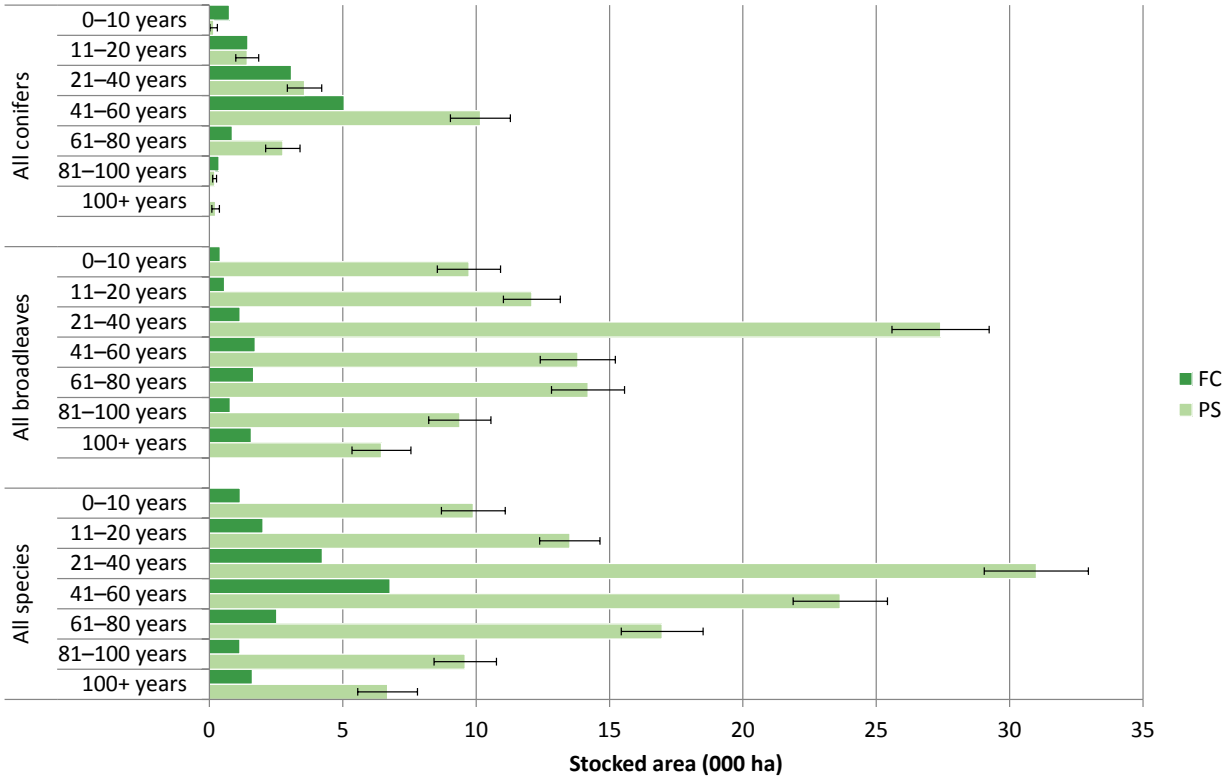
Figure 10 Stocked area by principal broadleaved species



Go to Part 2

Stocked area by age class

Figure 11 Stocked area by age class



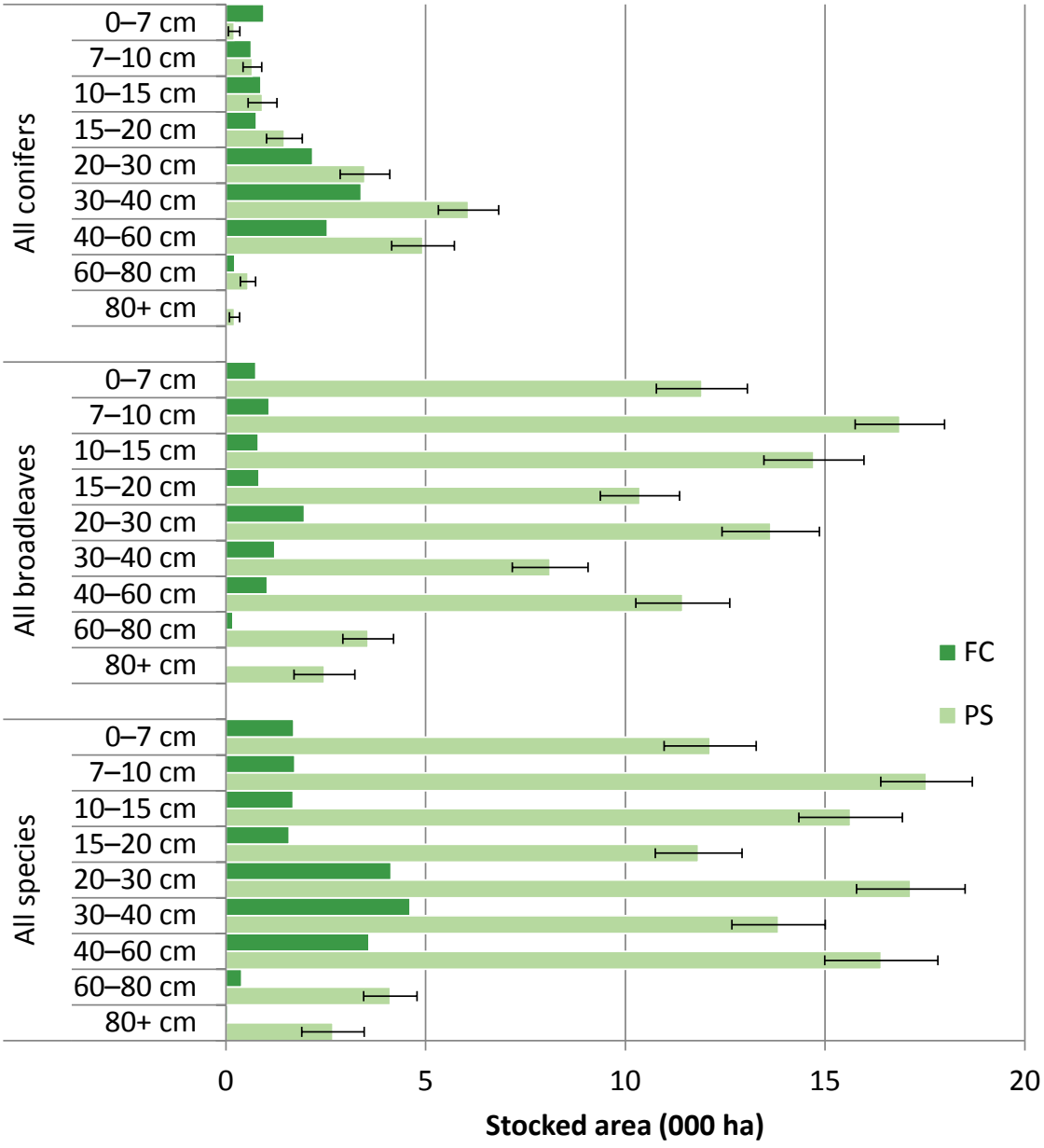
Go to Part 2

Table 10 Stocked area by age class

Age class (years)	FC	Private sector		Total
	area (000 ha)	area (000 ha)	*SE%*	area (000 ha)
All conifers				
0–10	0.7	0.2	*85*	**0.9**
11–20	1.4	1.4	*30*	**2.9**
21–40	3.1	3.6	*18*	**6.6**
41–60	5.1	10.2	*11*	**15.2**
61–80	0.9	2.8	*23*	**3.6**
81–100	0.4	0.2	*36*	**0.6**
100+	< 0.1	0.2	*60*	**0.3**
Total	**11.6**	**18.5**	***6***	**30.1**
All broadleaves				
0–10	0.4	9.7	*12*	**10.1**
11–20	0.6	12.1	*9*	**12.7**
21–40	1.2	27.4	*7*	**28.6**
41–60	1.7	13.8	*10*	**15.5**
61–80	1.7	14.2	*10*	**15.9**
81–100	0.8	9.4	*12*	**10.2**
100+	1.6	6.4	*17*	**8.0**
Total	**7.9**	**93.1**	***2***	**101.0**
All species				
0–10	1.2	9.9	*12*	**11.1**
11–20	2.0	13.5	*8*	**15.5**
21–40	4.2	31.0	*6*	**35.2**
41–60	6.8	23.7	*7*	**30.4**
61–80	2.5	17.0	*9*	**19.5**
81–100	1.1	9.6	*12*	**10.7**
100+	1.6	6.7	*17*	**8.3**
Total	**19.5**	**111.3**	***1***	**130.8**

Stocked area by mean stand dbh class

Figure 12 Stocked area by mean stand dbh class



Go to Part 2

Table 11 Stocked area by mean stand dbh class

Mean stand DBH (cm)	FC	Private sector		Total
	area (000 ha)	area (000 ha)	*SE%*	area (000 ha)
All conifers				
0–7	0.9	0.2	*70*	**1.2**
7–10	0.6	0.7	*35*	**1.3**
10–15	0.9	0.9	*39*	**1.8**
15–20	0.8	1.5	*31*	**2.2**
20–30	2.2	3.5	*18*	**5.7**
30–40	3.4	6.1	*12*	**9.5**
40–60	2.5	4.9	*16*	**7.5**
60–80	0.2	0.6	*35*	**0.8**
80+	< 0.1	0.2	*58*	**0.3**
Total	**11.6**	**18.5**	***6***	**30.1**
All broadleaves				
0–7	0.8	11.9	*10*	**12.7**
7–10	1.1	16.9	*7*	**18.0**
10–15	0.8	14.7	*9*	**15.5**
15–20	0.8	10.4	*10*	**11.2**
20–30	2.0	13.6	*9*	**15.6**
30–40	1.2	8.1	*12*	**9.3**
40–60	1.0	11.4	*10*	**12.5**
60–80	0.2	3.6	*18*	**3.7**
80+	< 0.1	2.5	*31*	**2.5**
Total	**7.9**	**93.1**	***2***	**101.0**
All species				
0–7	1.7	12.1	*10*	**13.8**
7–10	1.7	17.5	*7*	**19.3**
10–15	1.7	15.6	*8*	**17.3**
15–20	1.6	11.8	*9*	**13.4**
20–30	4.1	17.1	*8*	**21.3**
30–40	4.6	13.8	*8*	**18.4**
40–60	3.6	16.4	*9*	**20.0**
60–80	0.4	4.1	*16*	**4.5**
80+	< 0.1	2.7	*29*	**2.7**
Total	**19.5**	**111.3**	***1***	**130.8**

Clearfelled area

Table 12 Clearfelled area

Clearfelled area	FC	Private sector		Total
	area (000 ha)	area (000 ha)	*SE%*	area (000 ha)
West Midlands	0.9	0.4	*47*	**1.3**

Comparison of mapped area estimates and stocked area estimates

Figure 13 Simplified comparison of mapped area and stocked area

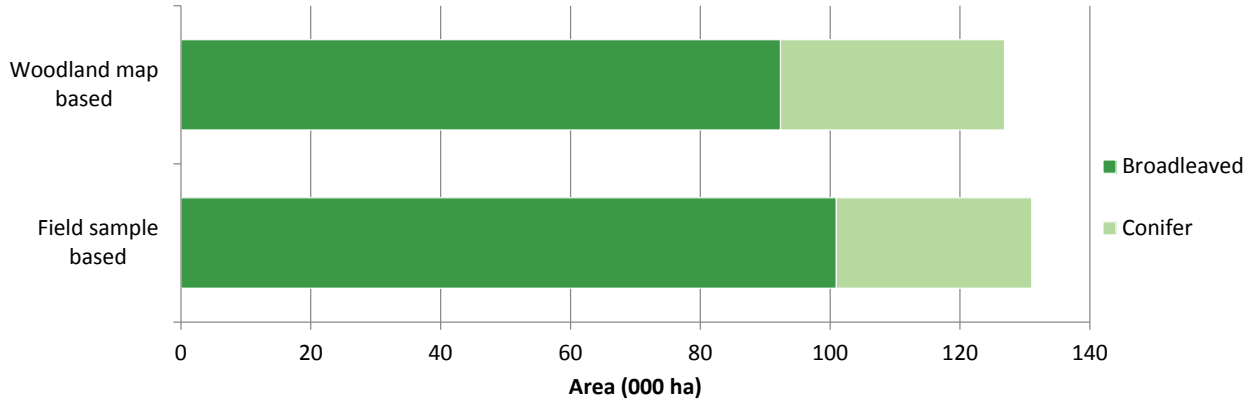


Table 13 Simplified comparison of mapped area and stocked area

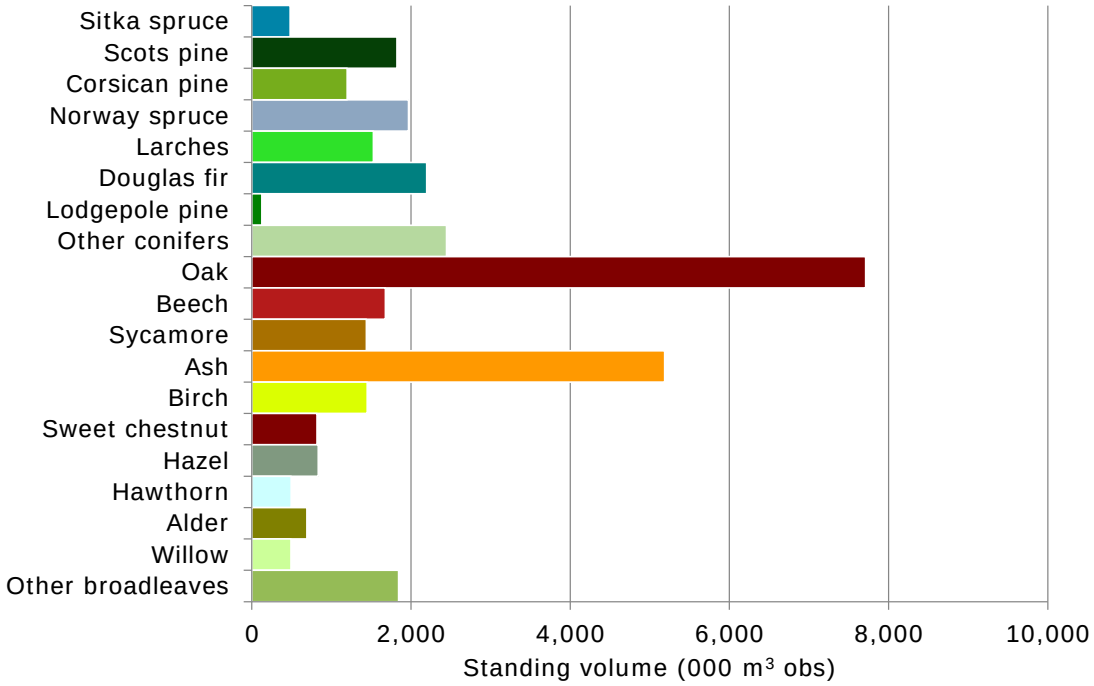
	Woodland map based	Field sample based
	area (000 ha)	
West Midlands		
Broadleaved	92.3	101.0
Conifer	34.5	30.1

The broadleaved class includes broadleaved, mixed mainly broadleaved, coppice and coppice with standards. The conifer class includes conifer and mixed mainly conifer. The transition class is excluded from this table as it is not possible to differentiate between conifer and broadleaves with aerial photography interpretation. The area of young trees is included in the field sample based estimates.

Standing volume

Standing volume by species

Figure 14 Standing volume by principal tree species



Go to Part 2

Table 14 Standing volume by principal tree species

Principal species	FC	Private sector		Total
	volume (000 m^3 obs)	volume (000 m^3 obs)	*SE%*	volume (000 m^3 obs)
Conifers				
Sitka spruce	101	377	*42*	**479**
Scots pine	386	1,437	*20*	**1,823**
Corsican pine	524	674	*28*	**1,198**
Norway spruce	368	1,600	*20*	**1,968**
Larches	393	1,135	*17*	**1,528**
Douglas fir	994	1,204	*20*	**2,198**
Lodgepole pine	25	101	*65*	**126**
Other conifers	267	2,178	*27*	**2,445**
All conifers	**3,058**	**8,707**	***9***	**11,765**
Broadleaves				
Oak	531	7,180	*11*	**7,711**
Beech	223	1,456	*21*	**1,679**
Sycamore	11	1,429	*26*	**1,441**
Ash	56	5,130	*13*	**5,186**
Birch	70	1,381	*13*	**1,451**
Sweet chestnut	43	778	*28*	**821**
Hazel	7	828	*17*	**835**
Hawthorn	0	496	*17*	**496**
Alder	14	678	*22*	**692**
Willow	< 1	492	*25*	**492**
Other broadleaves	149	1,694	*18*	**1,844**
All broadleaves	**1,105**	**21,614**	***5***	**22,719**
All species				
All species	**4,163**	**30,266**	***5***	**34,429**

Go to Part 2

Figure 15 Standing volume by principal conifer species

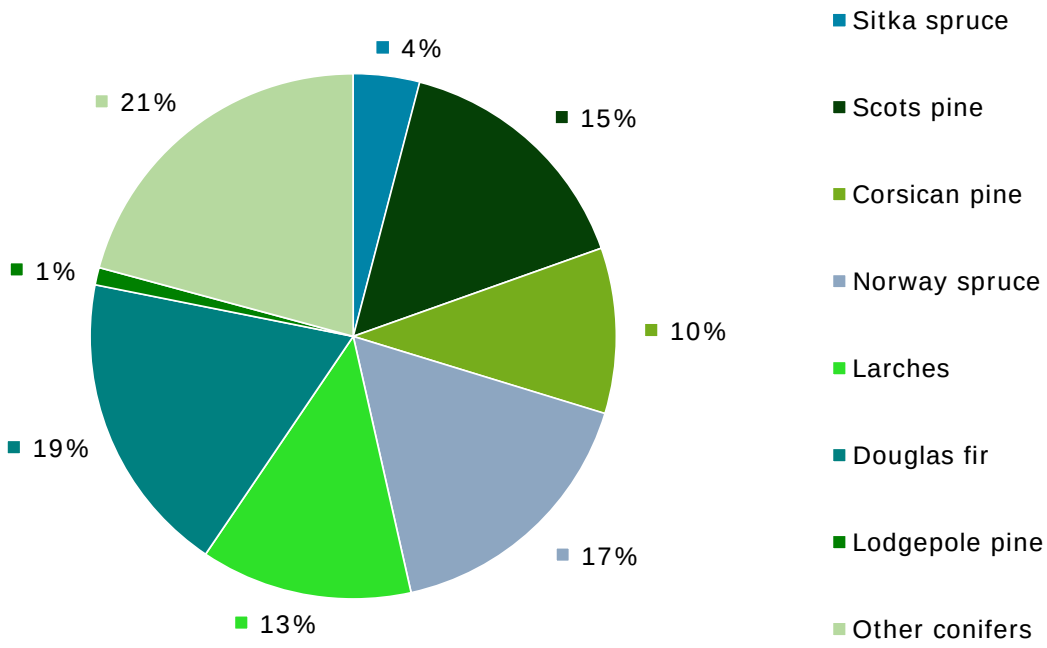
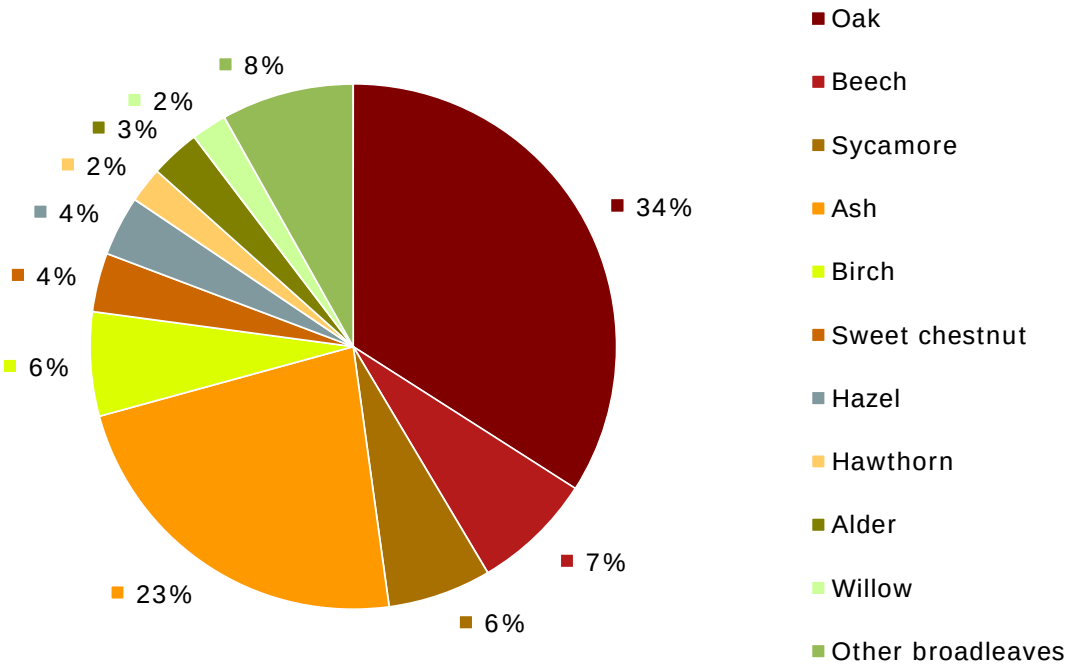


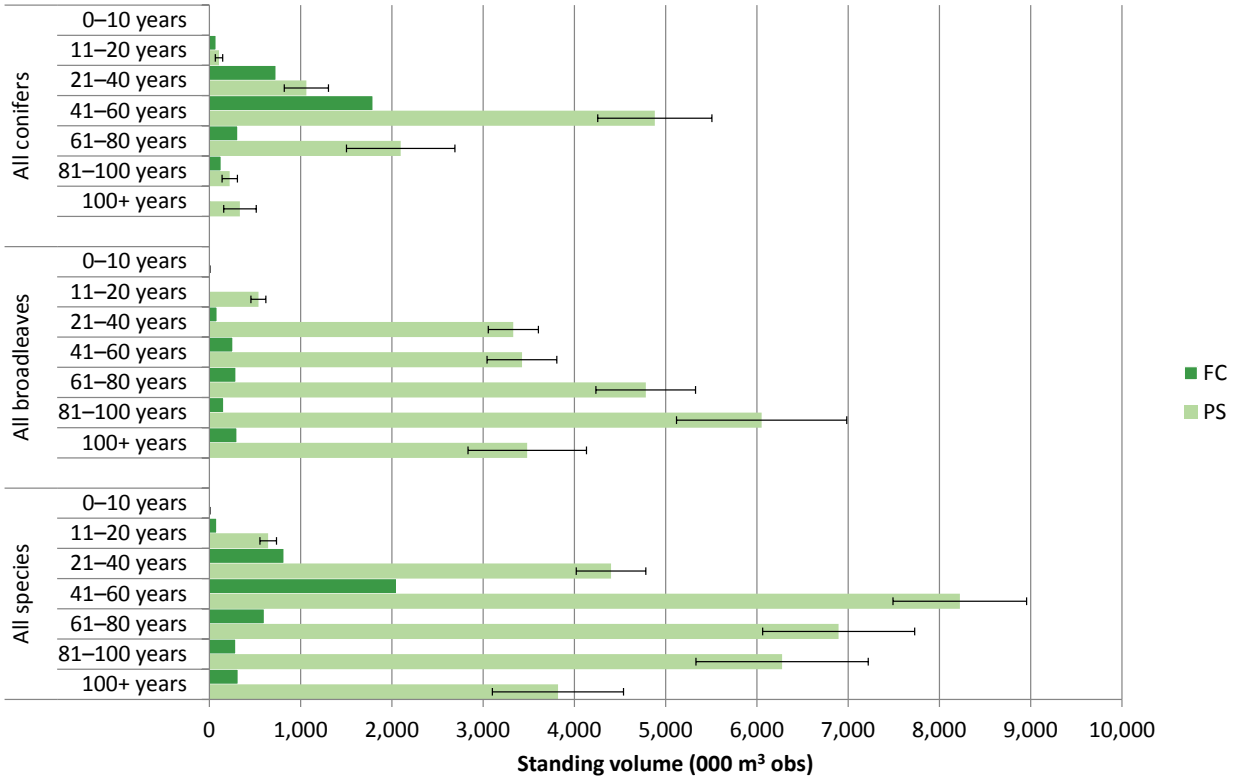
Figure 16 Standing volume by principal broadleaved species



Go to Part 2

Standing volume by age class

Figure 17 Standing volume by age class



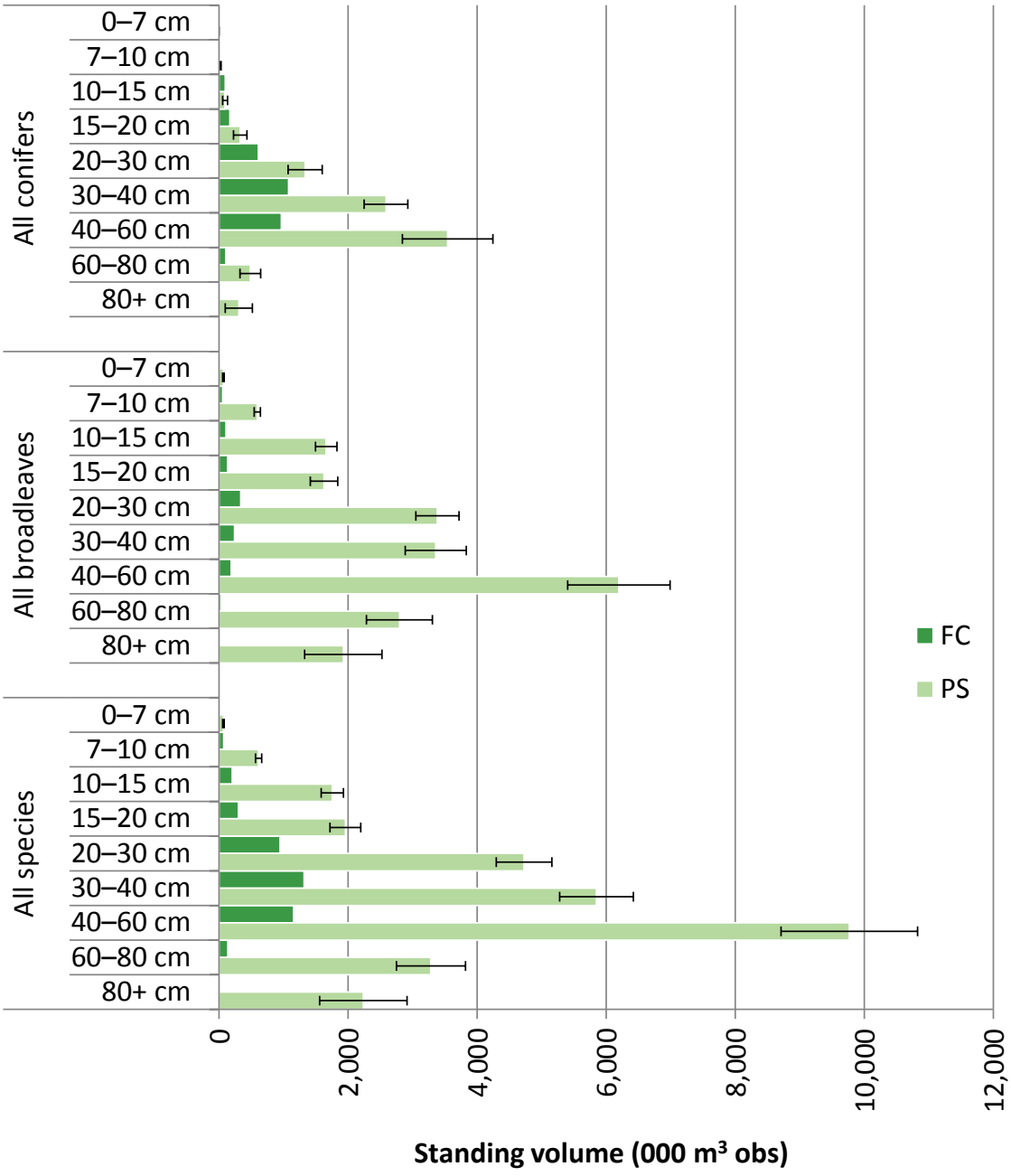
Go to Part 2

Table 15 Standing volume by age class

Age class (years)	FC	Private sector		Total
	volume (000 m^3 obs)	volume (000 m^3 obs)	*SE%*	volume (000 m^3 obs)
All conifers				
0–10	1	0	-	**1**
11–20	74	107	*37*	**181**
21–40	732	1,064	*23*	**1,795**
41–60	1,794	4,881	*13*	**6,676**
61–80	313	2,097	*28*	**2,410**
81–100	131	223	*38*	**354**
100+	12	335	*53*	**348**
Total	**3,058**	**8,707**	***9***	**11,765**
All broadleaves				
0–10	< 1	3	*28*	**3**
11–20	7	538	*15*	**545**
21–40	86	3,330	*8*	**3,417**
41–60	258	3,425	*11*	**3,683**
61–80	291	4,782	*11*	**5,073**
81–100	158	6,052	*15*	**6,210**
100+	304	3,483	*19*	**3,787**
Total	**1,105**	**21,614**	***5***	**22,719**
All species				
0–10	1	3	*28*	**5**
11–20	82	644	*14*	**726**
21–40	818	4,401	*9*	**5,219**
41–60	2,052	8,224	*9*	**10,276**
61–80	604	6,896	*12*	**7,500**
81–100	289	6,276	*15*	**6,565**
100+	316	3,821	*19*	**4,137**
Total	**4,163**	**30,266**	***5***	**34,429**

Standing volume by mean stand dbh class

Figure 18 Standing volume by stand mean dbh class



Go to Part 2

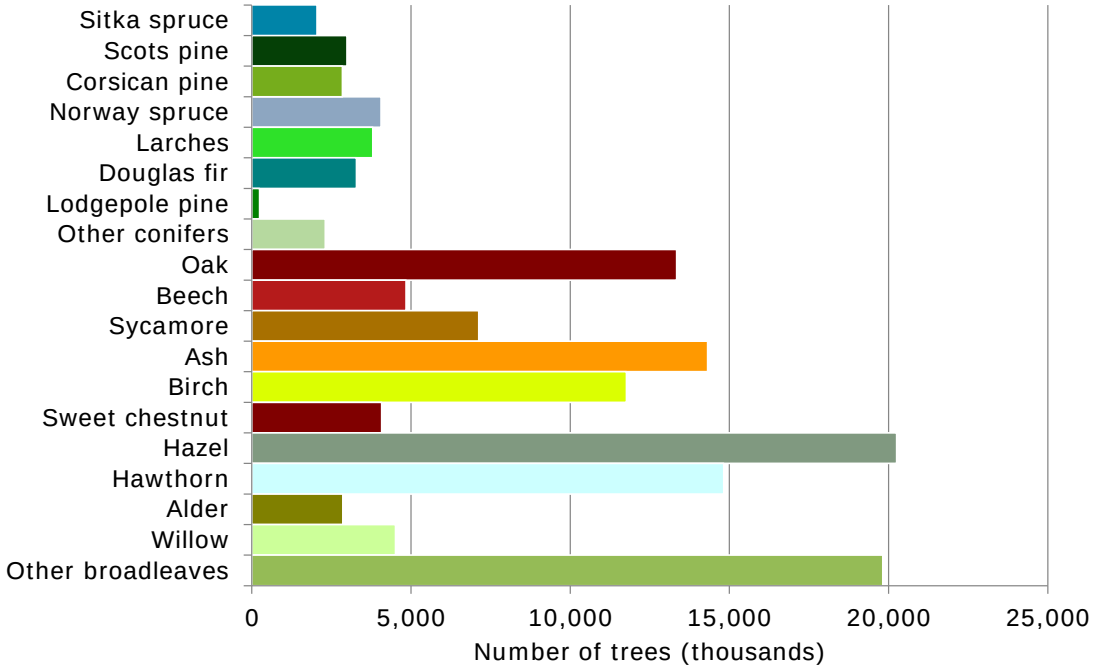
Table 16 Standing volume by mean stand dbh class

Mean stand DBH (cm)	FC	Private sector		Total
	volume (000 m^3 obs)	volume (000 m^3 obs)	*SE%*	volume (000 m^3 obs)
All conifers				
0–7	< 1	< 1	*95*	**1**
7–10	16	22	*44*	**39**
10–15	97	94	*40*	**192**
15–20	167	329	*32*	**496**
20–30	609	1,334	*20*	**1,944**
30–40	1,078	2,588	*13*	**3,666**
40–60	965	3,544	*20*	**4,509**
60–80	104	485	*33*	**590**
80+	20	309	*68*	**329**
Total	**3,058**	**8,707**	***9***	**11,765**
All broadleaves				
0–7	6	69	*18*	**75**
7–10	56	592	*8*	**648**
10–15	107	1,662	*10*	**1,769**
15–20	133	1,628	*13*	**1,761**
20–30	336	3,384	*10*	**3,720**
30–40	243	3,360	*14*	**3,603**
40–60	190	6,196	*13*	**6,386**
60–80	33	2,796	*18*	**2,830**
80+	1	1,927	*31*	**1,928**
Total	**1,105**	**21,614**	***5***	**22,719**
All species				
0–7	6	69	*18*	**76**
7–10	72	614	*8*	**687**
10–15	205	1,756	*10*	**1,960**
15–20	300	1,959	*12*	**2,259**
20–30	946	4,728	*9*	**5,673**
30–40	1,321	5,850	*10*	**7,171**
40–60	1,155	9,767	*11*	**10,922**
60–80	137	3,285	*16*	**3,422**
80+	21	2,238	*30*	**2,259**
Total	**4,163**	**30,266**	***5***	**34,429**

Number of measureable trees

Number of measureable trees by species

Figure 19 Number of measureable trees by principal tree species



Go to Part 2

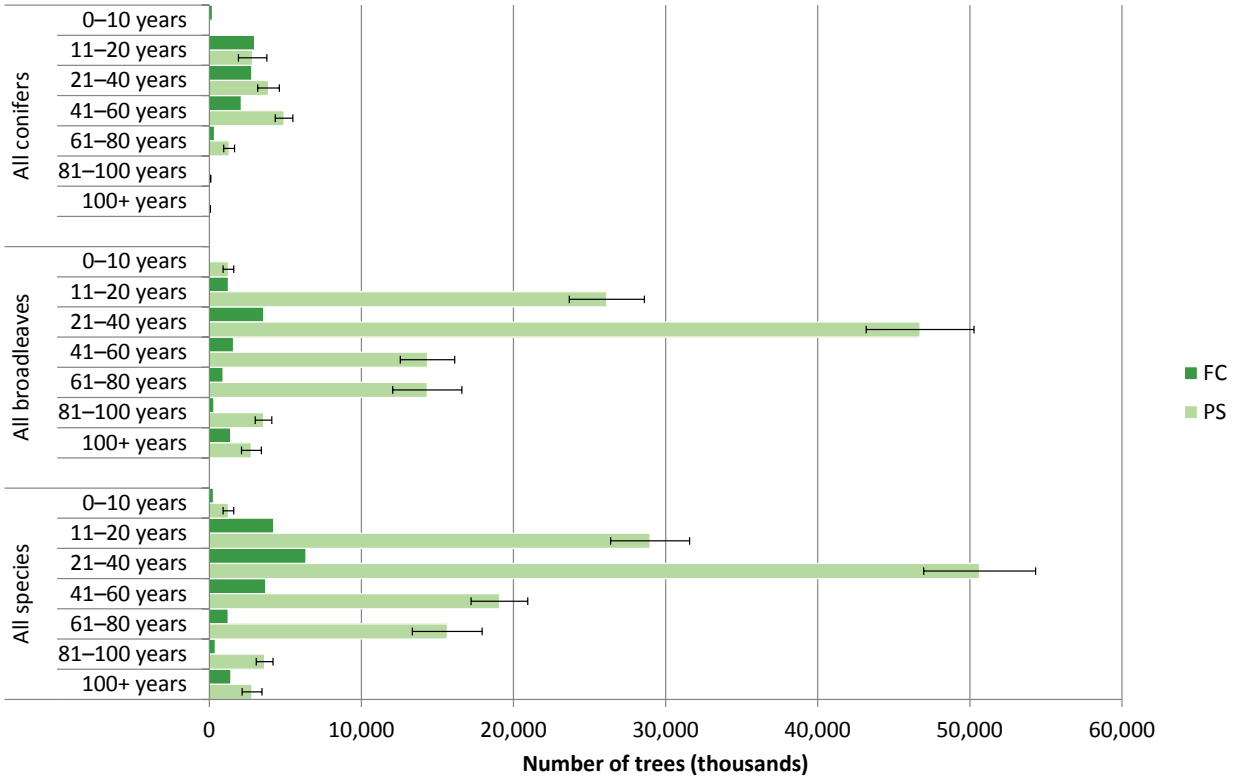
Table 17 Number of measureable trees by principal tree species

Principal species	FC	Private sector		Total
	number of trees (thousands)	number of trees (thousands)	*SE%*	number of trees (thousands)
Conifers				
Sitka spruce	496	1,549	*55*	**2,045**
Scots pine	764	2,229	*18*	**2,992**
Corsican pine	1,885	961	*26*	**2,846**
Norway spruce	570	3,488	*19*	**4,057**
Larches	2,081	1,720	*15*	**3,801**
Douglas fir	2,243	1,043	*21*	**3,286**
Lodgepole pine	69	179	*65*	**248**
Other conifers	415	1,892	*20*	**2,307**
All conifers	**8,522**	**13,061**	***9***	**21,583**
Broadleaves				
Oak	3,647	9,697	*10*	**13,344**
Beech	1,194	3,652	*18*	**4,846**
Sycamore	70	7,058	*16*	**7,129**
Ash	405	13,914	*8*	**14,319**
Birch	1,114	10,652	*14*	**11,766**
Sweet chestnut	683	3,399	*30*	**4,082**
Hazel	119	20,132	*13*	**20,251**
Hawthorn	0	14,820	*15*	**14,820**
Alder	174	2,688	*19*	**2,862**
Willow	< 1	4,513	*20*	**4,513**
Other broadleaves	1,672	18,145	*10*	**19,817**
All broadleaves	**9,078**	**109,117**	***4***	**118,195**
All species				
All species	**17,600**	**122,038**	***4***	**139,638**

Go to Part 2

Number of measureable trees by age class

Figure 20 Number of measureable trees by age class



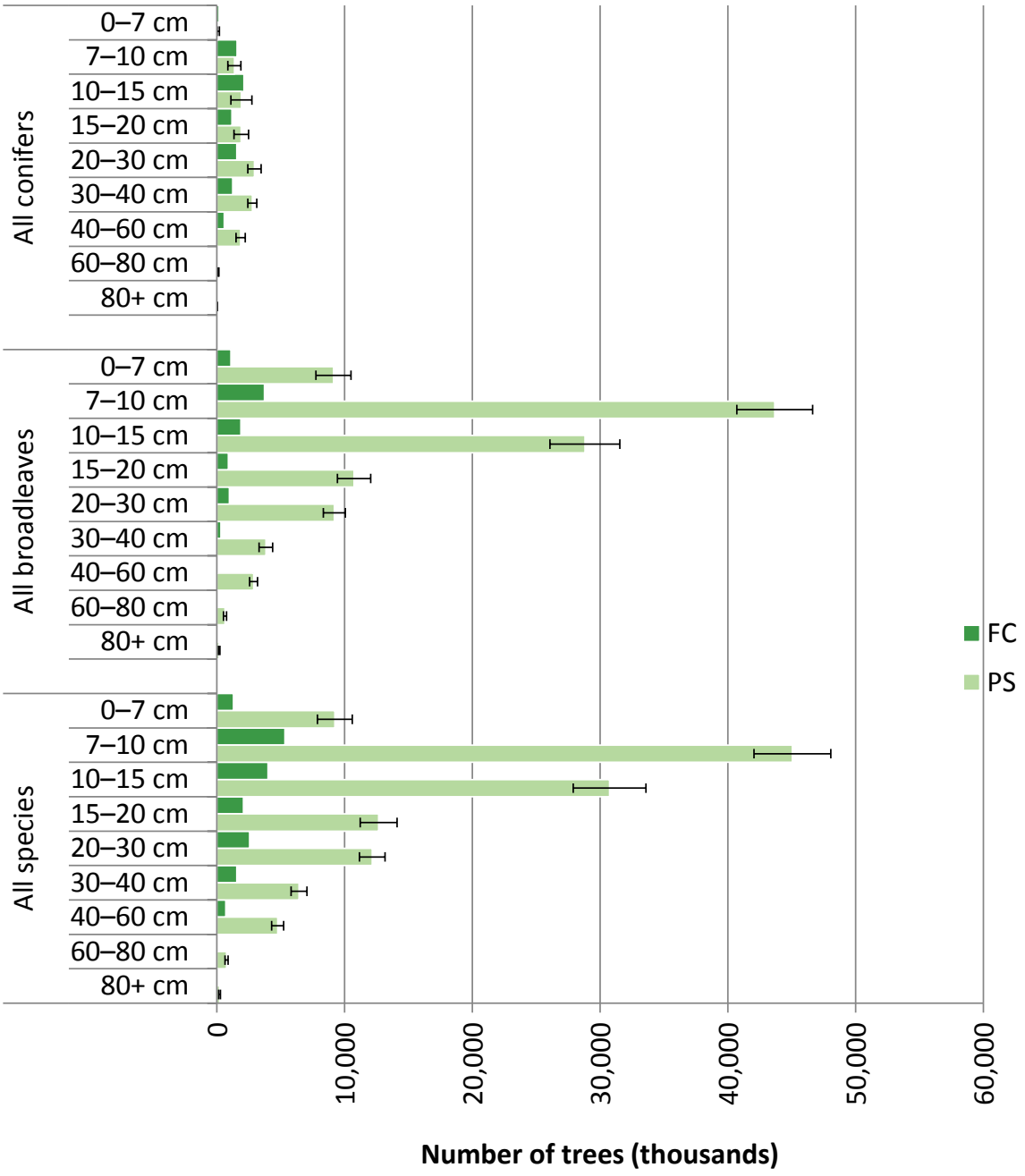
Go to Part 2

Table 18 Number of measureable trees by age class

Age class (years)	FC	Private sector		Total
	number of trees (thousands)	number of trees (thousands)	*SE%*	number of trees (thousands)
All conifers				
0–10	211	0	-	**211**
11–20	2,970	2,843	*33*	**5,813**
21–40	2,785	3,891	*18*	**6,675**
41–60	2,108	4,914	*12*	**7,021**
61–80	345	1,304	*27*	**1,649**
81–100	86	68	*36*	**153**
100+	17	42	*61*	**59**
Total	**8,522**	**13,061**	***9***	**21,583**
All broadleaves				
0–10	57	1,257	*28*	**1,314**
11–20	1,258	26,133	*9*	**27,391**
21–40	3,571	46,729	*8*	**50,300**
41–60	1,590	14,339	*12*	**15,929**
61–80	900	14,329	*16*	**15,229**
81–100	305	3,565	*15*	**3,870**
100+	1,396	2,764	*24*	**4,160**
Total	**9,078**	**109,117**	***4***	**118,195**
All species				
0–10	269	1,257	*28*	**1,526**
11–20	4,229	28,980	*9*	**33,209**
21–40	6,356	50,643	*7*	**56,999**
41–60	3,698	19,074	*10*	**22,773**
61–80	1,245	15,644	*15*	**16,889**
81–100	390	3,633	*15*	**4,023**
100+	1,413	2,806	*23*	**4,220**
Total	**17,600**	**122,038**	***4***	**139,638**

Number of measureable trees by mean stand dbh class

Figure 21 Number of measureable trees by mean stand dbh class



Go to Part 2

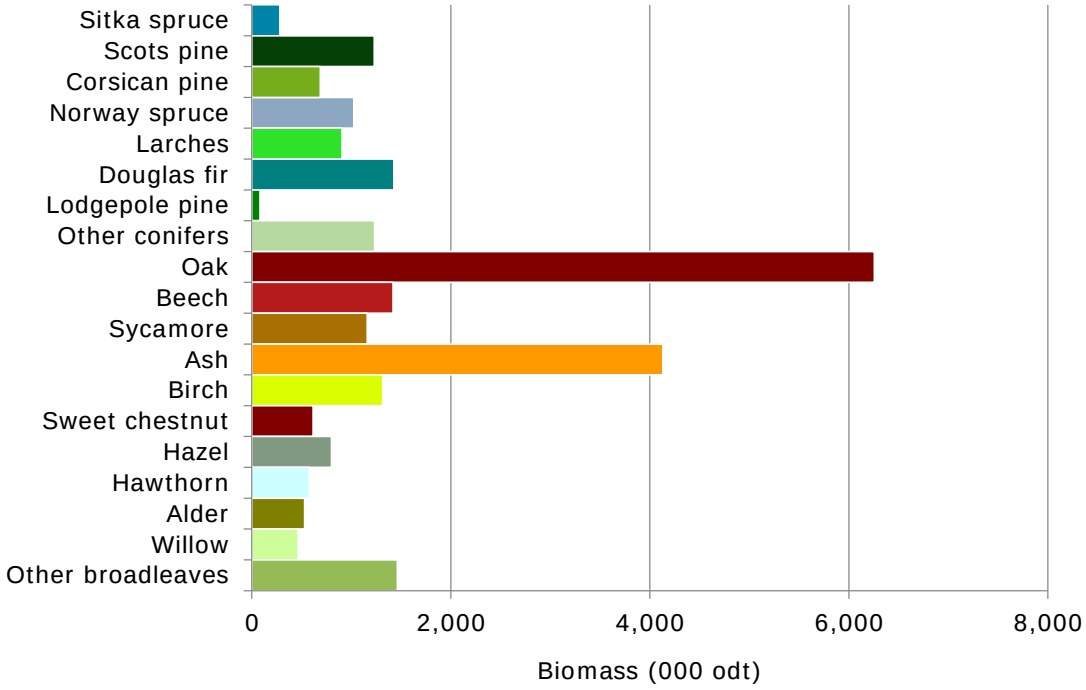
Table 19 Number of measureable trees by mean stand dbh class

Mean stand DBH	FC	Private sector		Total
	number of trees (thousands)	number of trees (thousands)	*SE%*	number of trees (thousands)
All conifers				
0–7 cm	190	106	*87*	**295**
7–10 cm	1,589	1,380	*37*	**2,969**
10–15 cm	2,121	1,923	*43*	**4,044**
15–20 cm	1,194	1,915	*30*	**3,109**
20–30 cm	1,574	2,944	*18*	**4,518**
30–40 cm	1,244	2,782	*13*	**4,026**
40–60 cm	581	1,869	*19*	**2,450**
60–80 cm	27	114	*33*	**141**
80+ cm	3	28	*61*	**31**
Total	**8,522**	**13,061**	***9***	**21,583**
All broadleaves				
0–7 cm	1,112	9,134	*15*	**10,246**
7–10 cm	3,735	43,670	*7*	**47,405**
10–15 cm	1,880	28,817	*9*	**30,697**
15–20 cm	901	10,748	*12*	**11,649**
20–30 cm	985	9,201	*9*	**10,186**
30–40 cm	328	3,842	*14*	**4,170**
40–60 cm	126	2,879	*11*	**3,005**
60–80 cm	10	641	*18*	**651**
80+ cm	< 1	186	*31*	**186**
Total	**9,078**	**109,117**	***4***	**118,195**
All species				
0–7 cm	1,302	9,240	*15*	**10,542**
7–10 cm	5,324	45,053	*7*	**50,377**
10–15 cm	4,001	30,744	*9*	**34,745**
15–20 cm	2,095	12,673	*11*	**14,767**
20–30 cm	2,559	12,166	*8*	**14,724**
30–40 cm	1,572	6,431	*10*	**8,003**
40–60 cm	707	4,762	*10*	**5,470**
60–80 cm	37	756	*16*	**793**
80+ cm	4	214	*29*	**218**
Total	**17,600**	**122,038**	***4***	**139,638**

Biomass stocks in live woodland trees

Biomass stocks by species

Figure 22 Biomass stocks by principal tree species



Go to Part 2

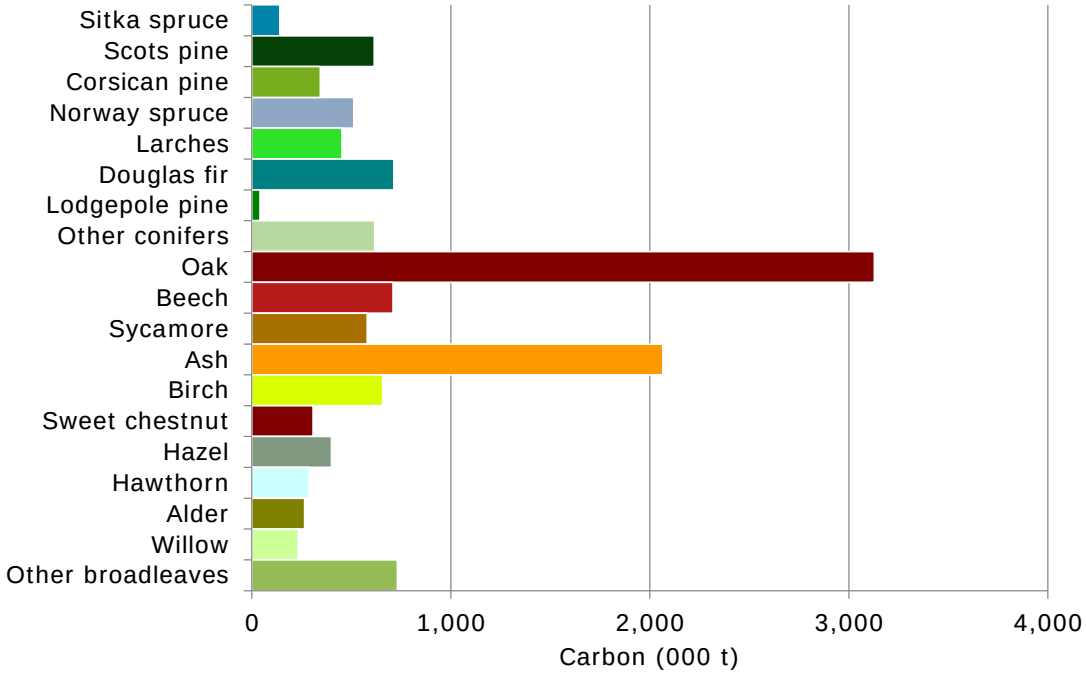
Table 20 Biomass stocks by principal tree species

Principal species	FC	Private sector		Total
	biomass (000 odt)	biomass (000 odt)	*SE%*	biomass (000 odt)
Conifers				
Sitka spruce	63	217	*41*	**280**
Scots pine	269	963	*20*	**1,232**
Corsican pine	311	378	*28*	**689**
Norway spruce	198	827	*20*	**1,025**
Larches	253	653	*17*	**907**
Douglas fir	669	758	*20*	**1,427**
Lodgepole pine	17	66	*65*	**83**
Other conifers	144	1,090	*26*	**1,234**
All conifers	**1,923**	**4,952**	***9***	**6,876**
Broadleaves				
Oak	491	5,766	*11*	**6,257**
Beech	207	1,214	*20*	**1,420**
Sycamore	10	1,150	*24*	**1,160**
Ash	53	4,078	*12*	**4,131**
Birch	69	1,246	*13*	**1,316**
Sweet chestnut	37	580	*28*	**617**
Hazel	7	794	*16*	**801**
Hawthorn	0	579	*16*	**579**
Alder	12	520	*22*	**532**
Willow	< 1	466	*23*	**466**
Other broadleaves	137	1,326	*14*	**1,463**
All broadleaves	**1,023**	**17,777**	***5***	**18,800**
All species				
All species	**2,946**	**22,669**	***4***	**25,615**

Carbon stocks in live woodland trees

Carbon stocks by species

Figure 23 Carbon stocks by principal tree species



Go to Part 2

Table 21 Carbon stocks by principal tree species

Principal species	FC	Private sector		Total
	carbon (000 t)	carbon (000 t)	*SE%*	carbon (000 t)
Conifers				
Sitka spruce	32	108	*41*	**140**
Scots pine	134	481	*20*	**616**
Corsican pine	155	189	*28*	**344**
Norway spruce	99	414	*20*	**512**
Larches	127	327	*17*	**453**
Douglas fir	334	379	*20*	**714**
Lodgepole pine	8	33	*65*	**41**
Other conifers	72	545	*26*	**617**
All conifers	**962**	**2,476**	***9***	**3,438**
Broadleaves				
Oak	245	2,883	*11*	**3,129**
Beech	103	607	*20*	**710**
Sycamore	5	575	*24*	**580**
Ash	26	2,039	*12*	**2,065**
Birch	35	623	*13*	**658**
Sweet chestnut	19	290	*28*	**308**
Hazel	3	397	*16*	**400**
Hawthorn	0	289	*16*	**289**
Alder	6	260	*22*	**266**
Willow	< 1	233	*23*	**233**
Other broadleaves	69	663	*14*	**732**
All broadleaves	**511**	**8,888**	***5***	**9,400**
All species				
All species	**1,473**	**11,334**	***4***	**12,807**

Go to Part 2

Existing woodland management information and economic viability data (PS only)

Sample square distribution

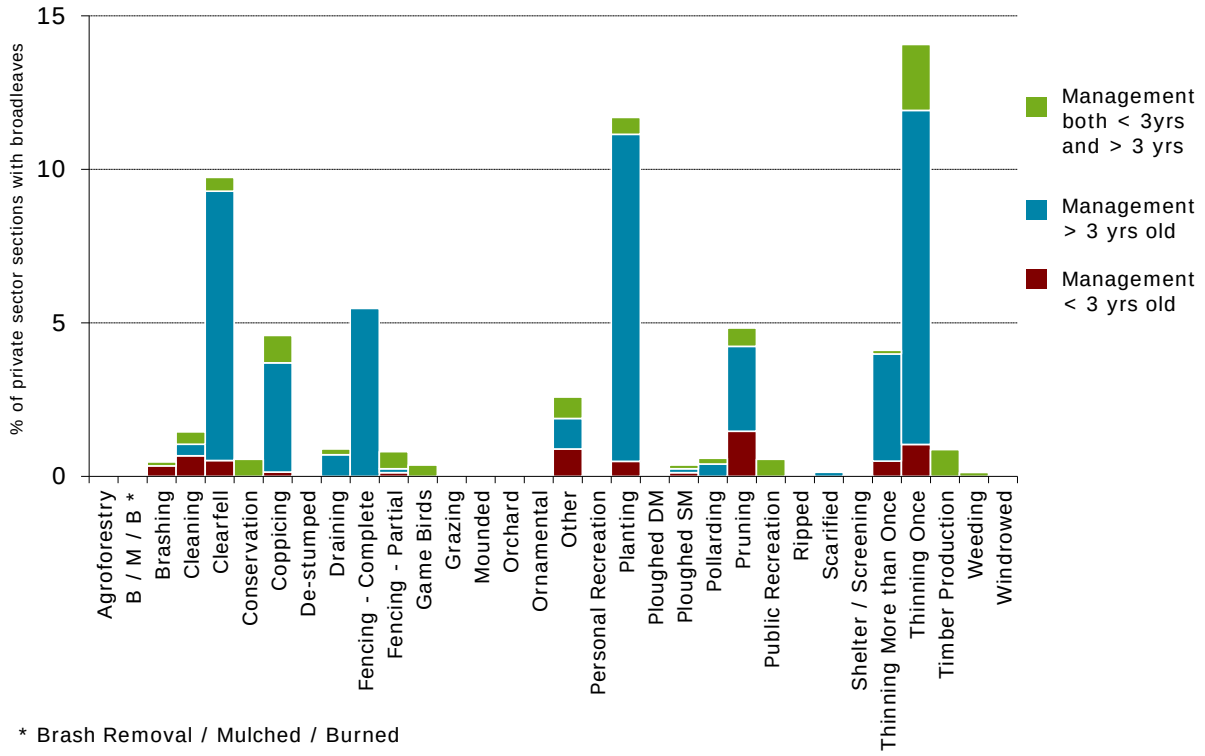
Table 22 Sample square distribution

Number of squares surveyed	Number of squares surveyed	Number of Private sector squares surveyed	Number of Private sector squares containing coniferous species	Number of Private sector squares containing broadleaved species
West Midlands	338	322	205	299

Go to Part 2

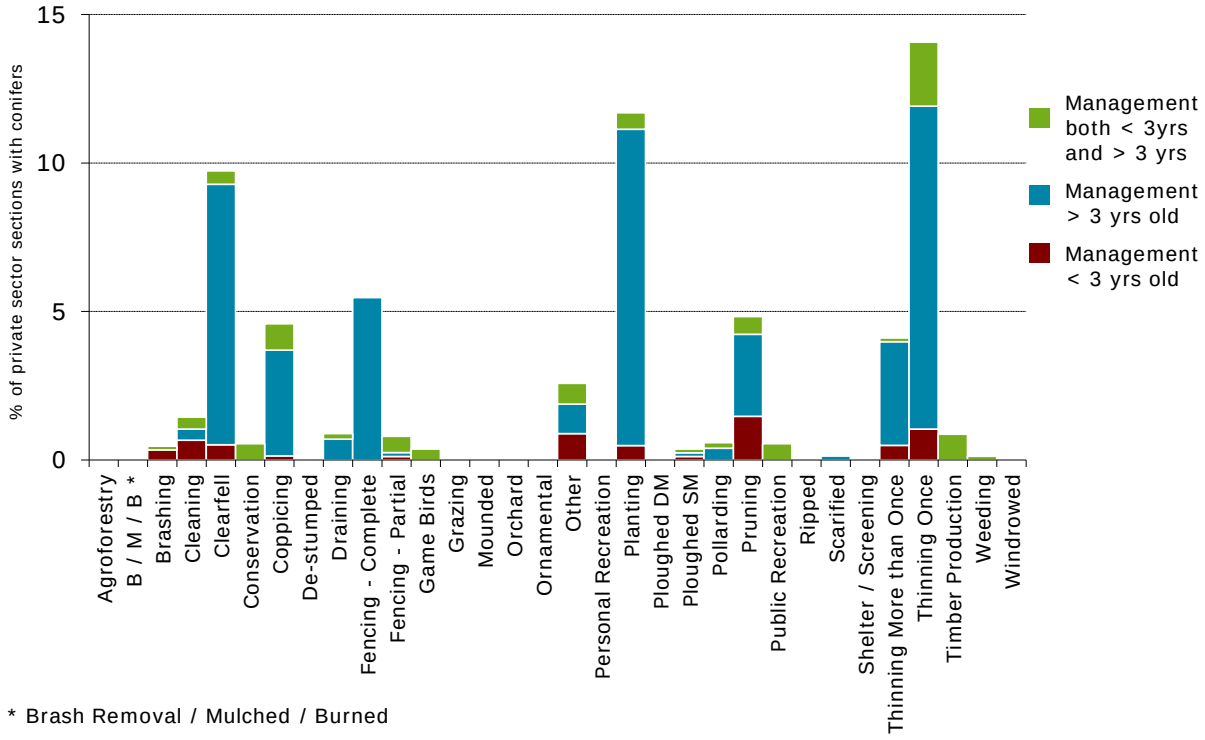
Evidence of management

Figure 24 Evidence of management in PS broadleaf sections



* Brash Removal / Mulched / Burned

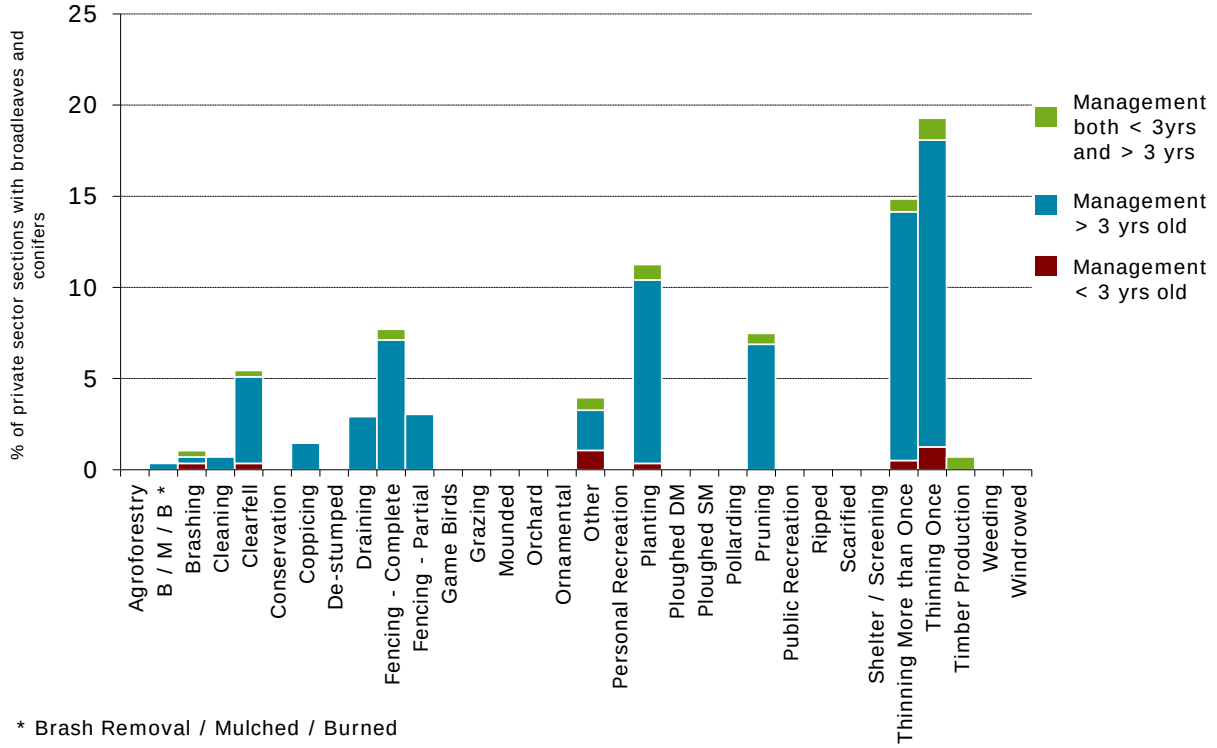
Figure 25 Evidence of management in PS conifer sections



* Brash Removal / Mulched / Burned

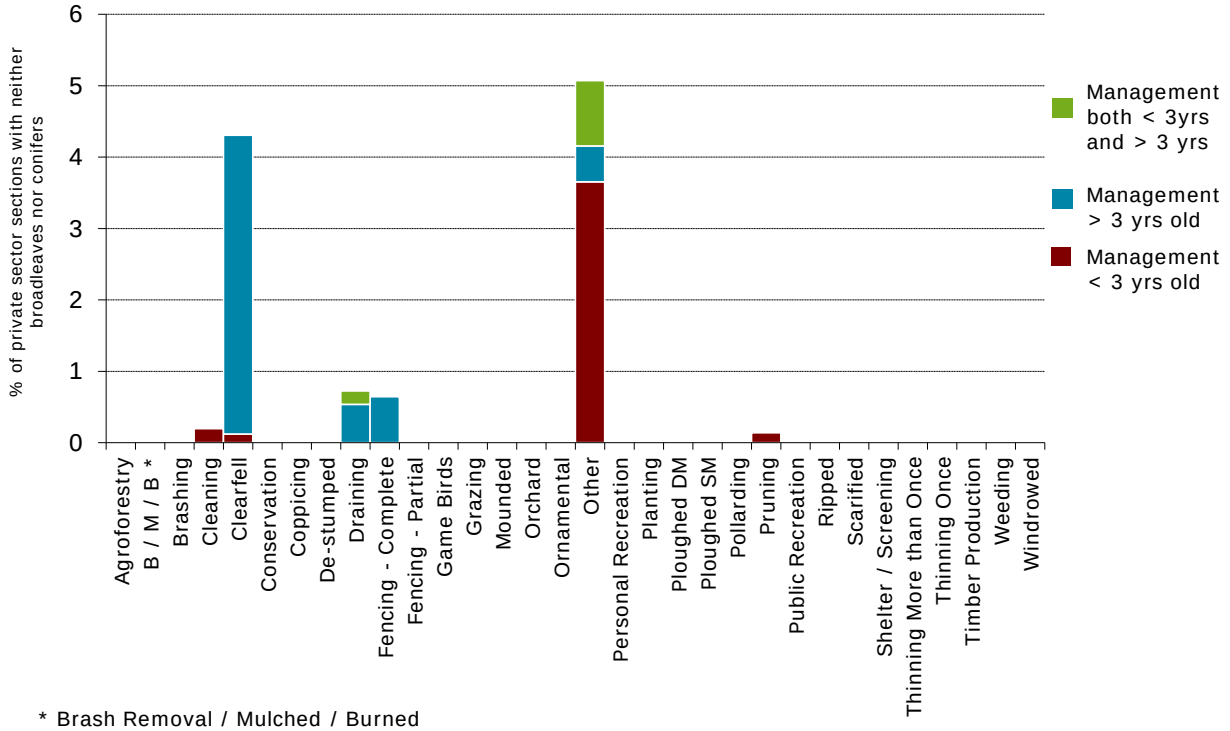
Go to Part 2

Figure 26 Evidence of management in PS mixed broadleaf/conifer sections



* Brash Removal / Mulched / Burned

Figure 27 Evidence of management in PS sections with no broadleaf or conifer

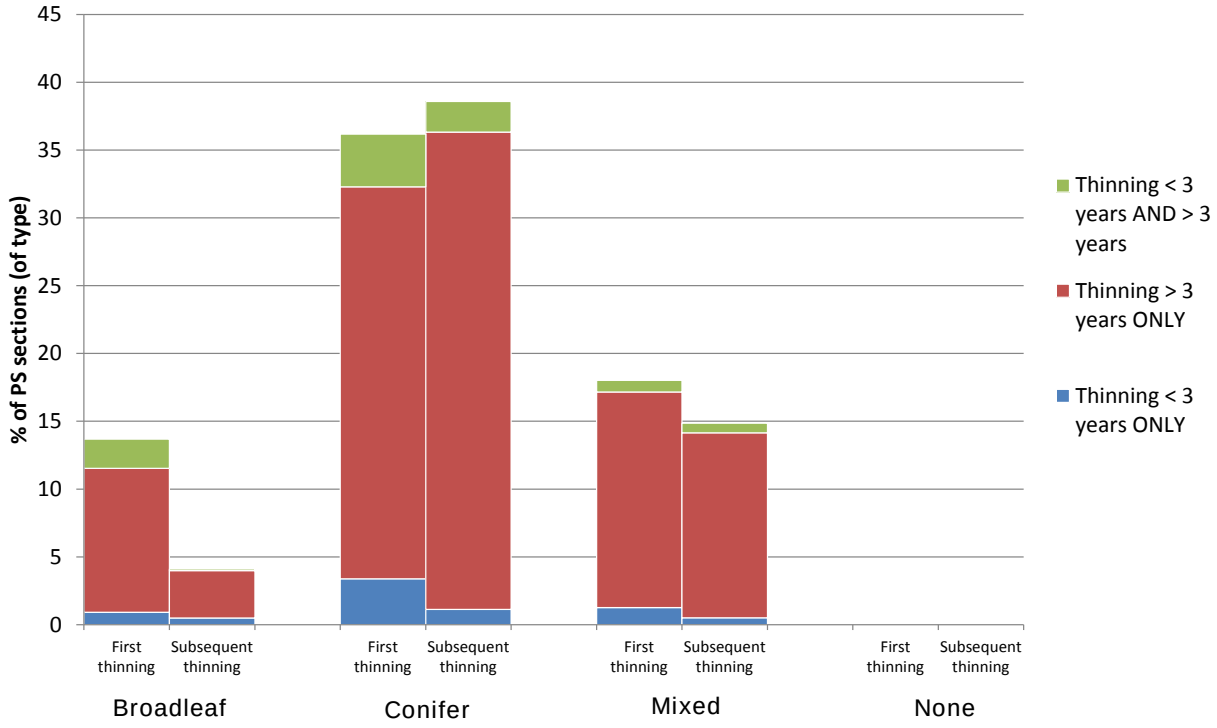


* Brash Removal / Mulched / Burned

Go to Part 2

Evidence of thinning

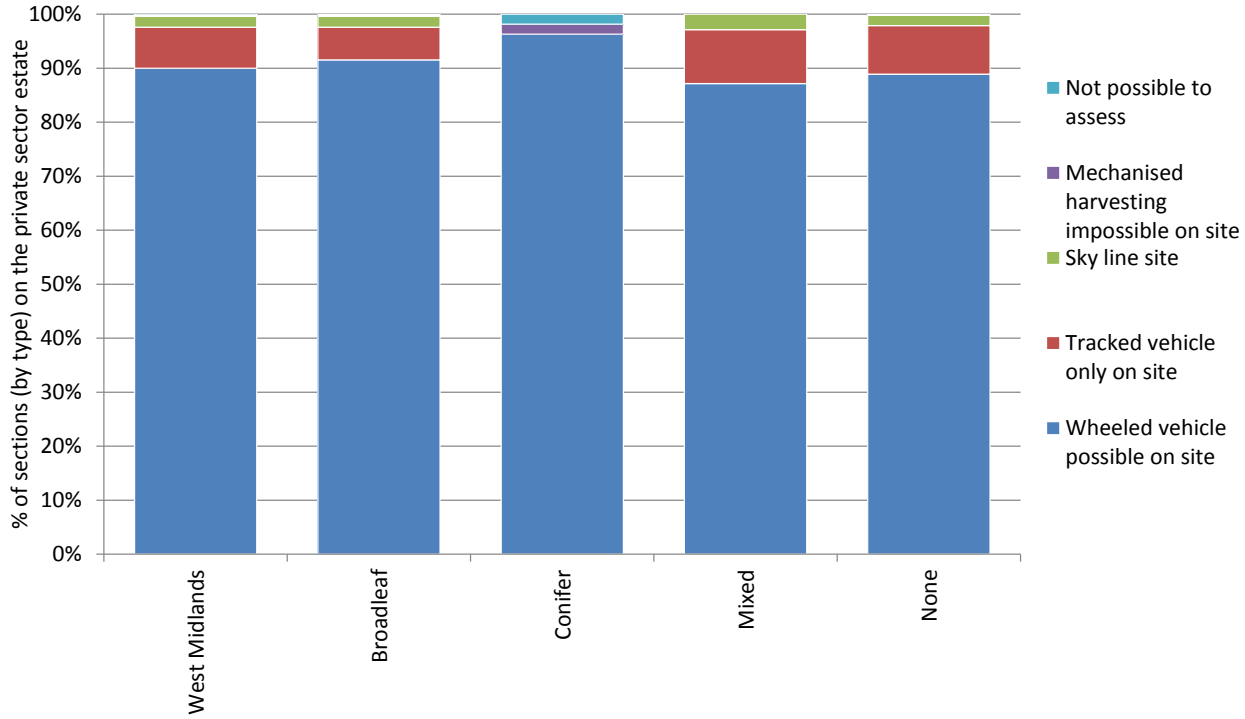
Figure 28 Evidence of thinning



Go to Part 2

Suitability for harvesting

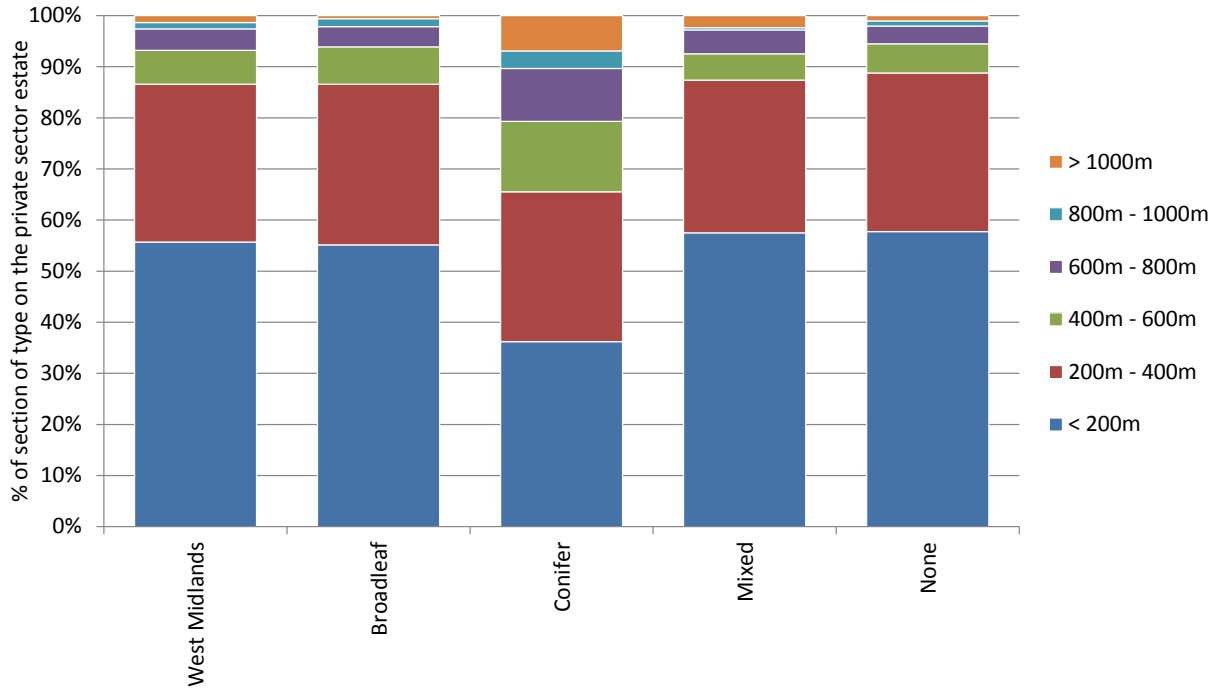
Figure 29 Suitability for harvesting



Go to Part 2

Distance to road

Figure 30 Distance to road



Go to Part 2

Type of road or ride

Figure 31 Road or ride in survey square

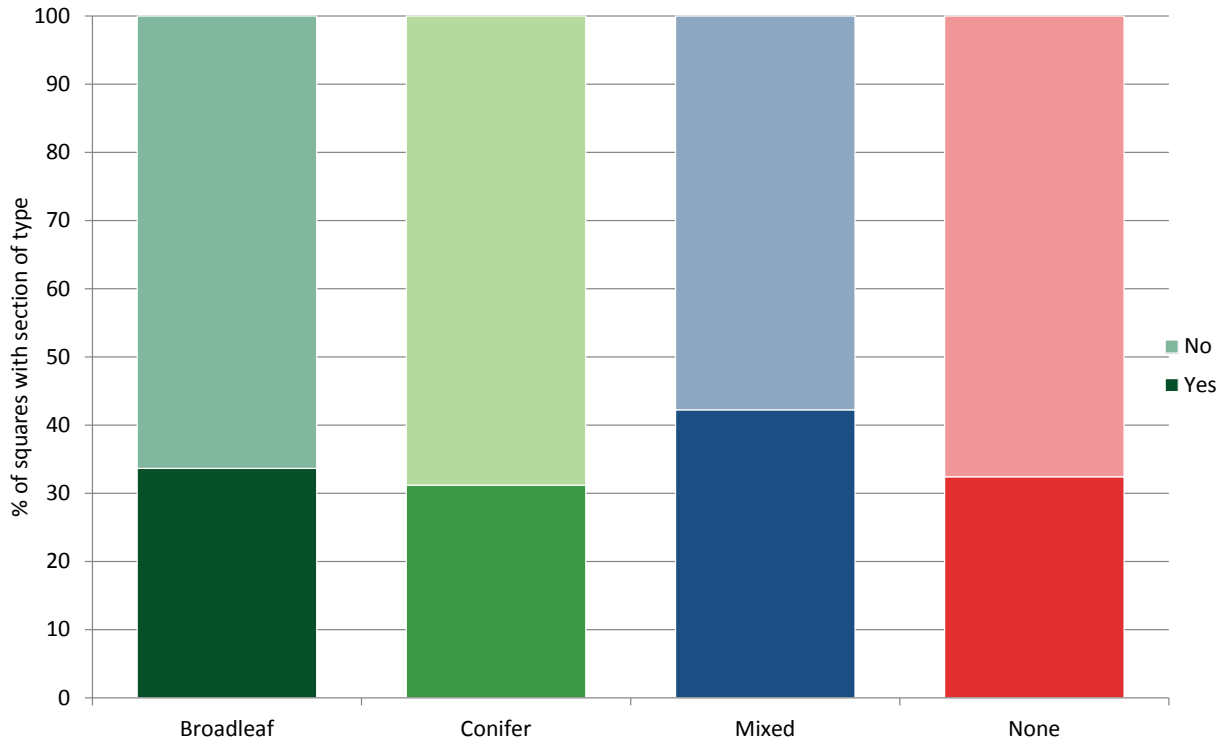
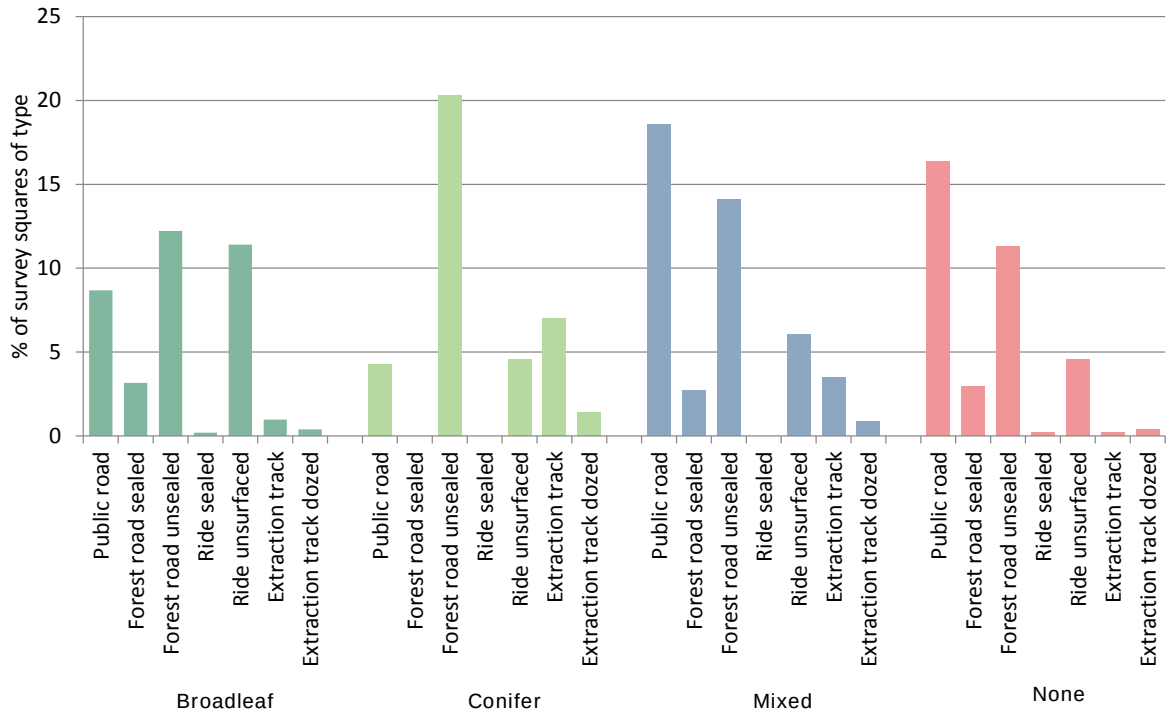


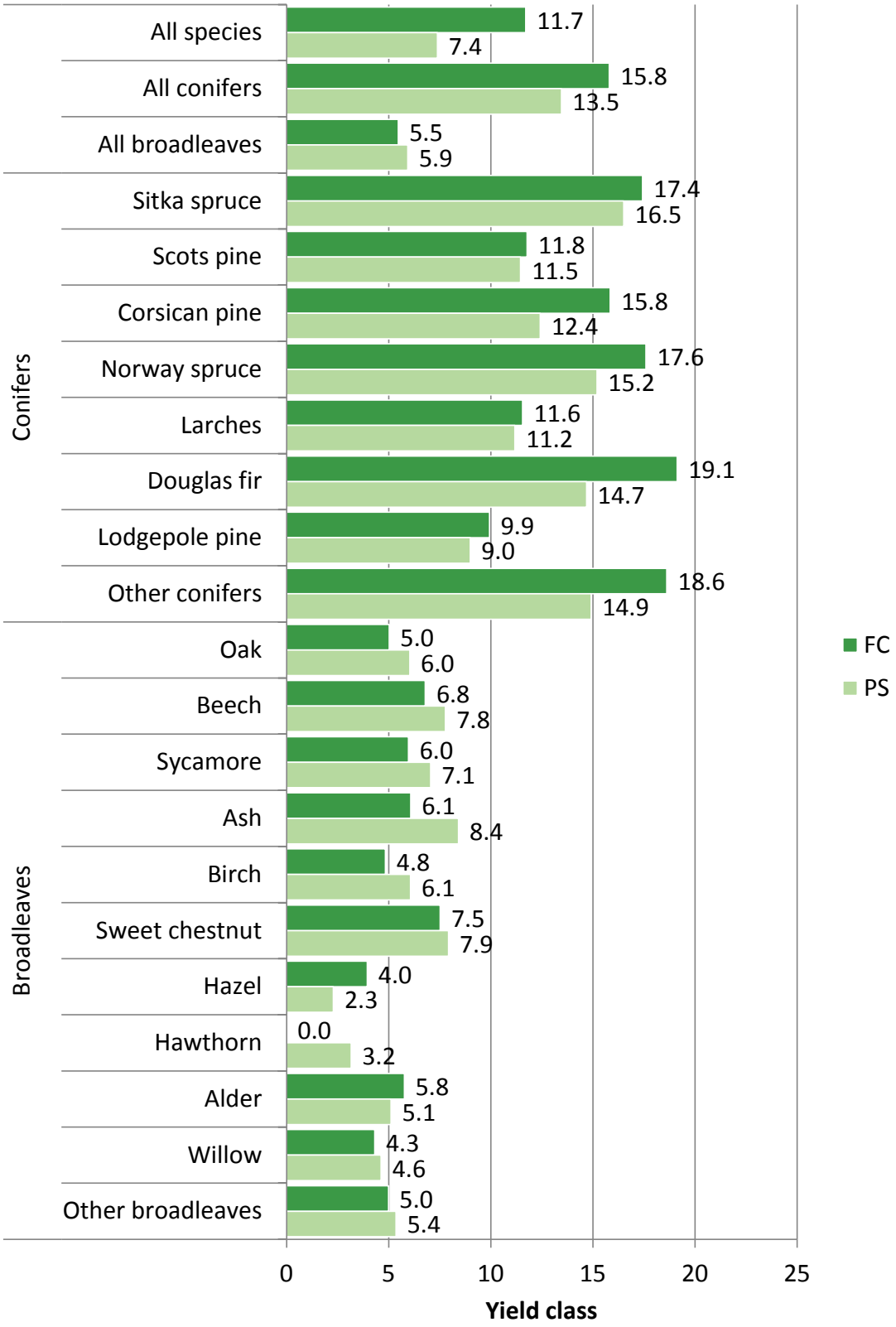
Figure 32 Type of road or ride in survey square



Go to Part 2

Mean yield class

Figure 33 Mean yield class by principal tree species (FC and PS)



Go to Part 2

Table 23 Mean yield class by principal tree species (FC and PS)

Principal species	FC	Private sector
	mean yield class weighted by area	
Conifers		
Sitka spruce	17.4	16.5
Scots pine	11.8	11.5
Corsican pine	15.8	12.4
Norway spruce	17.6	15.2
Larches	11.6	11.2
Douglas fir	19.1	14.7
Lodgepole pine	9.9	9.0
Other conifers	18.6	14.9
All conifers	15.8	13.5
Broadleaves		
Oak	5.0	6.0
Beech	6.8	7.8
Sycamore	6.0	7.1
Ash	6.1	8.4
Birch	4.8	6.1
Sweet chestnut	7.5	7.9
Hazel	4.0	2.3
Hawthorn	0.0	3.2
Alder	5.8	5.1
Willow	4.3	4.6
Other broadleaves	5.0	5.4
All broadleaves	5.5	5.9
All species		
All species	11.7	7.4

Overdue timber stocks

Overdue volume and area

Table 24 Standing volume in overdue timber stocks

	FC	Private sector	
	volume (000 m^3 obs)	volume (000 m^3 obs)	*SE %*
West Midlands			
All conifers	123	3,691	*18*
All broadleaves	105	13,777	*9*
All species	**228**	**17,486**	***8***

Table 25 Stocked area of overdue timber stocks

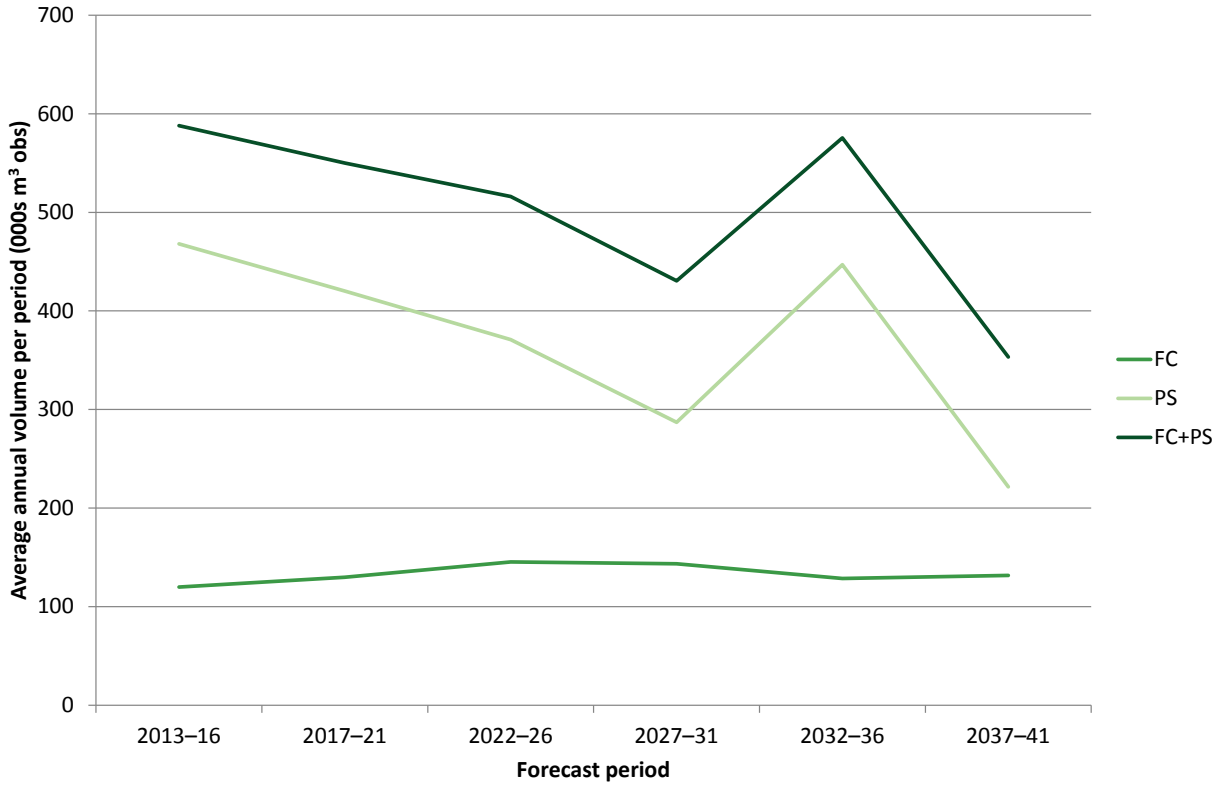
	FC	Private sector	
	area (000 ha)	area (000 ha)	*SE %*
West Midlands			
All conifers	0.4	5.3	*15*
All broadleaves	0.6	28.3	*6*
All species	**1.0**	**33.6**	***6***

Part 3 – How our woodlands might change over time

25-year softwood forecast

25-year forecast of softwood timber availability

Figure 34 Summary of 25–year forecast of softwood timber availability; average annual volume within period



Go to Part 3

Figure 35 25–year forecast of softwood timber availability; average annual volume within period

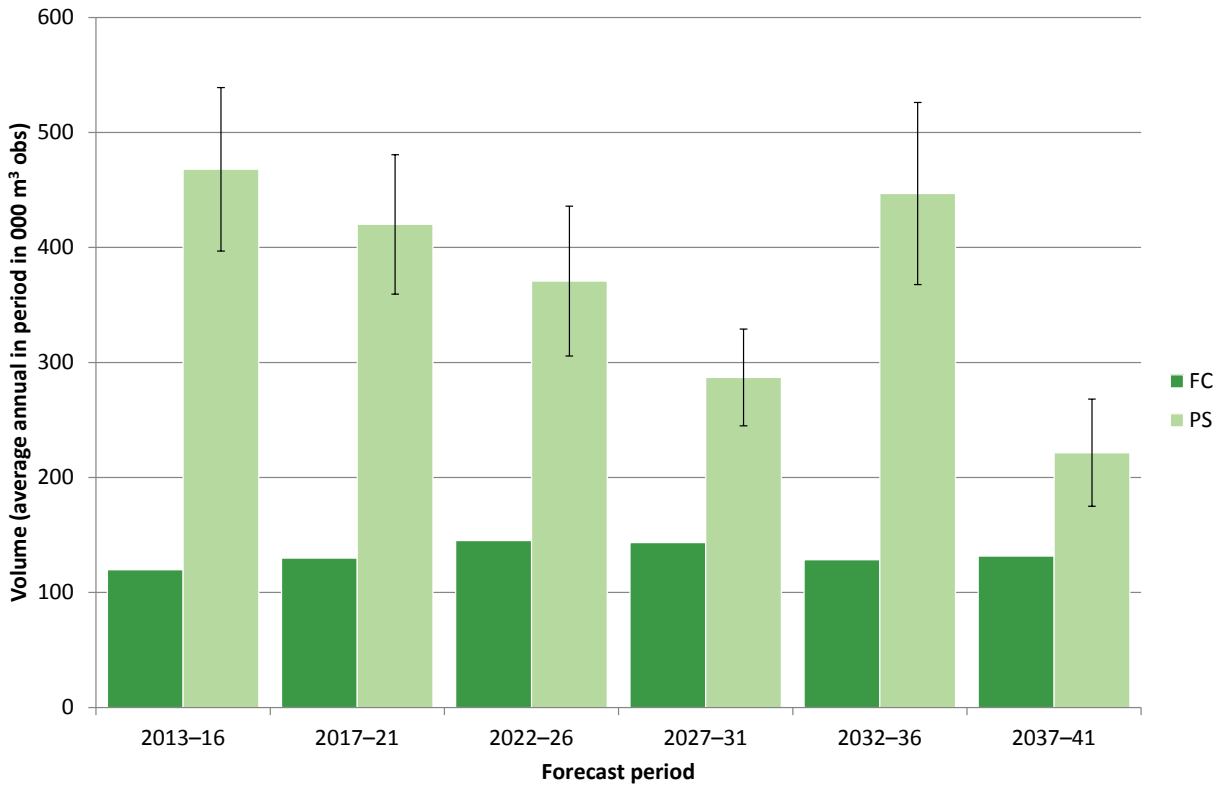


Table 26 25–year forecast of softwood availability; average annual volume within period

Forecast period	FC	Private sector		Total
	volume (000 m^3 obs)	volume (000 m^3 obs)	*SE%*	volume (000 m^3 obs)
West Midlands				
2013–16	120	468	*15*	**588**
2017–21	130	420	*14*	**550**
2022–26	145	371	*18*	**516**
2027–31	143	287	*15*	**430**
2032–36	129	447	*18*	**575**
2037–41	132	222	*21*	**353**

25-year forecast of softwood timber availability by principal species

Table 27 25-year forecast of softwood timber availability by principal species; average annual volume within period

Principal species	2013–16			2017–21		
	FC	Private sector		FC	Private sector	
	volume (000 m^3 obs)		*SE%*	volume (000 m^3 obs)		*SE%*
West Midlands						
All conifers	**120**	**468**	***15***	**130**	**420**	***14***
Sitka spruce	8	12	*46*	8	32	*89*
Scots pine	11	58	*48*	17	54	*29*
Corsican pine	29	66	*43*	25	23	*33*
Norway spruce	14	67	*38*	17	75	*37*
Larches	14	51	*16*	18	53	*16*
Douglas fir	34	125	*33*	32	63	*28*
Lodgepole pine	1	3	*93*	2	9	*91*
Other conifers	9	86	*29*	12	111	*28*

Table 27 (cont'd) 25-year forecast of softwood timber availability by principal species; average annual volume within period

Principal species	2022–26			2027–31		
	FC	Private sector		FC	Private sector	
	volume (000 m^3 obs)		*SE%*	volume (000 m^3 obs)		*SE%*
West Midlands						
All conifers	**145**	**371**	***18***	**143**	**287**	***15***
Sitka spruce	6	7	*54*	7	4	*55*
Scots pine	25	51	*39*	19	73	*42*
Corsican pine	24	19	*29*	23	15	*31*
Norway spruce	14	136	*44*	17	72	*28*
Larches	21	41	*17*	17	38	*20*
Douglas fir	40	30	*30*	43	20	*30*
Lodgepole pine	1	9	*101*	1	< 1	*108*
Other conifers	14	78	*29*	17	65	*36*

Table 27 (cont'd) 25-year forecast of softwood timber availability by principal species; average annual volume within period

Principal species	2032–36			2037–41		
	FC	Private sector		FC	Private sector	
	volume (000 m^3 obs)		*SE%*	volume (000 m^3 obs)		*SE%*
West Midlands						
All conifers	**129**	**447**	***18***	**132**	**222**	***21***
Sitka spruce	5	102	*58*	7	4	*29*
Scots pine	12	69	*33*	8	95	*45*
Corsican pine	17	23	*37*	22	8	*27*
Norway spruce	15	112	*35*	16	24	*47*
Larches	16	32	*18*	17	26	*19*
Douglas fir	55	20	*29*	51	22	*35*
Lodgepole pine	< 1	< 1	*108*	< 1	4	*108*
Other conifers	9	89	*36*	10	39	*42*

25-year forecast of softwood timber availability % spruce

Table 28 25-year forecast of softwood timber availability % spruce

West Midlands		Top diameter class (cm)								
		7–14	14–16	16–18	18–24	24–34	34–44	44–54	54+	Total
2013–16	FC (%)	18	20	20	20	19	18	18	12	**19**
	PS (%)	34	29	26	20	14	13	14	14	**17**
2017–21	FC (%)	22	27	26	22	18	16	14	8	**19**
	PS (%)	32	35	36	36	27	17	14	21	**25**
2022–26	FC (%)	18	22	23	20	13	10	8	5	**14**
	PS (%)	38	39	38	37	38	39	40	39	**38**
2027–31	FC (%)	17	22	24	23	18	15	14	9	**17**
	PS (%)	33	30	29	28	27	27	28	20	**26**
2032–36	FC (%)	22	21	21	20	15	11	9	9	**15**
	PS (%)	67	73	73	68	50	35	32	29	**48**
2037–41	FC (%)	25	29	29	26	17	11	9	6	**17**
	PS (%)	16	20	19	15	12	11	11	8	**12**

Go to Part 3

25-year forecast of softwood timber availability by top diameter class

Table 29 25-year forecast of softwood timber availability by top diameter class; average annual volume within period

Top diameter class (cm)	2013–16			2017–21		
	FC	Private sector		FC	Private sector	
	volume (000 m^3 obs)		*SE%*	volume (000 m^3 obs)		*SE%*
West Midlands						
7–14	20	26	*12*	17	22	*14*
14–16	7	13	*12*	6	11	*17*
16–18	7	16	*12*	7	15	*18*
18–24	24	75	*13*	24	70	*19*
24–34	34	158	*16*	38	139	*17*
34–44	16	90	*19*	20	75	*16*
44–54	7	45	*23*	10	38	*19*
54+	5	45	*31*	8	51	*26*
Total	**120**	**468**	***15***	**130**	**420**	***14***

Table 29 (cont'd) 25-year forecast of softwood timber availability by top diameter class; average annual volume within period

Top diameter class (cm)	2022–26			2027–31		
	FC	Private sector		FC	Private sector	
	volume (000 m^3 obs)		*SE%*	volume (000 m^3 obs)		*SE%*
West Midlands						
7–14	15	14	*14*	13	12	*18*
14–16	5	7	*13*	5	5	*15*
16–18	6	8	*14*	6	6	*15*
18–24	25	45	*13*	23	34	*16*
24–34	42	117	*17*	43	91	*16*
34–44	25	80	*20*	26	62	*16*
44–54	13	46	*24*	14	34	*18*
54+	14	54	*28*	15	42	*24*
Total	**145**	**371**	***18***	**143**	**287**	***15***

Table 29 (cont'd) 25-year forecast of softwood timber availability by top diameter class; average annual volume within period

Top diameter class (cm)	2032–36			2037–41		
	FC	Private sector		FC	Private sector	
	volume (000 m^3 obs)		*SE%*	volume (000 m^3 obs)		*SE%*
West Midlands						
7–14	15	22	*31*	19	20	*15*
14–16	4	12	*36*	5	5	*14*
16–18	5	14	*37*	5	5	*19*
18–24	20	74	*31*	19	26	*25*
24–34	36	142	*18*	33	70	*27*
34–44	22	84	*17*	21	46	*25*
44–54	12	48	*18*	11	25	*25*
54+	16	52	*22*	18	26	*28*
Total	**129**	**447**	***18***	**132**	**222**	***21***

25-year forecast of standing volume in conifers

Figure 36 25-year forecast of standing volume in conifers

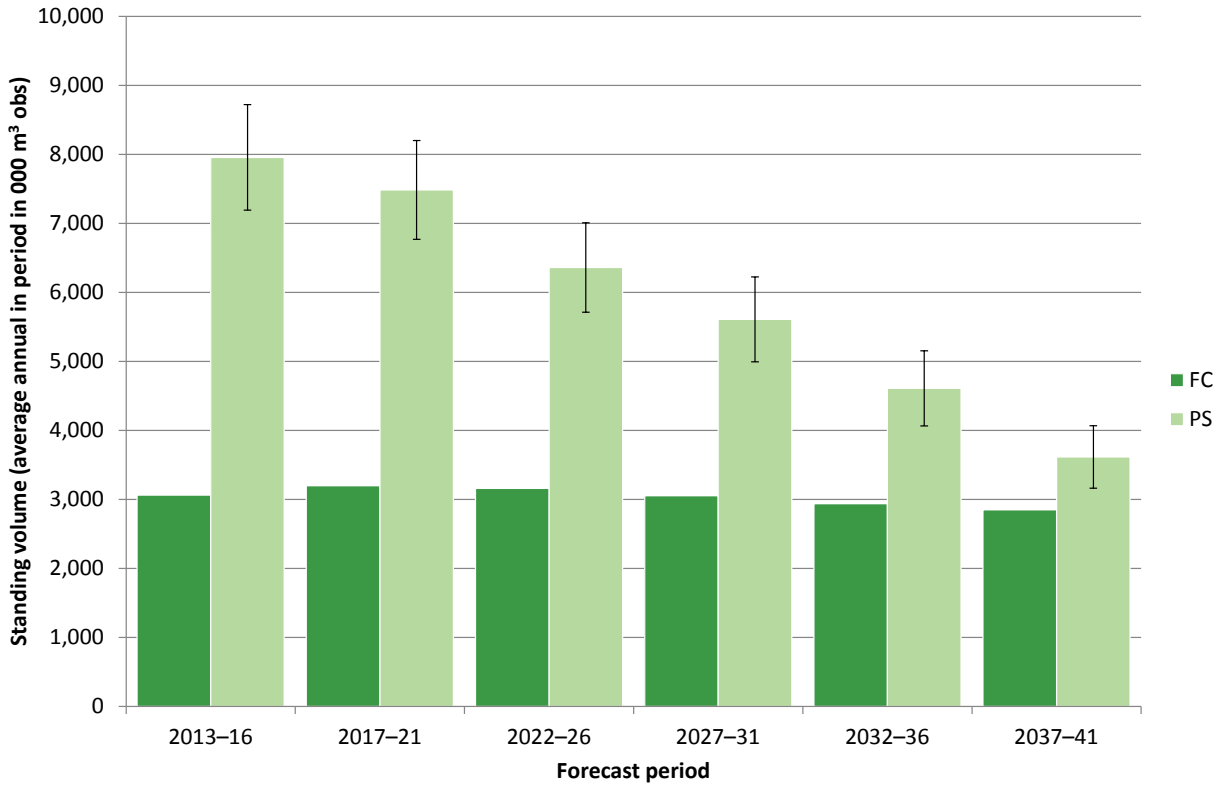


Table 30 25-year forecast of standing volume in conifers; average annual volume within period

Forecast period	FC	Private sector		Total
	volume (000 m³ obs)	volume (000 m³ obs)	*SE%*	volume (000 m³ obs)
West Midlands				
2013–16	3,061	7,955	*10*	**11,017**
2017–21	3,196	7,484	*10*	**10,681**
2022–26	3,159	6,361	*10*	**9,521**
2027–31	3,053	5,608	*11*	**8,661**
2032–36	2,936	4,609	*12*	**7,545**
2037–41	2,850	3,614	*13*	**6,464**

Go to Part 3

25-year forecast of net increment in conifers

Figure 37 25-year forecast of net increment in conifers

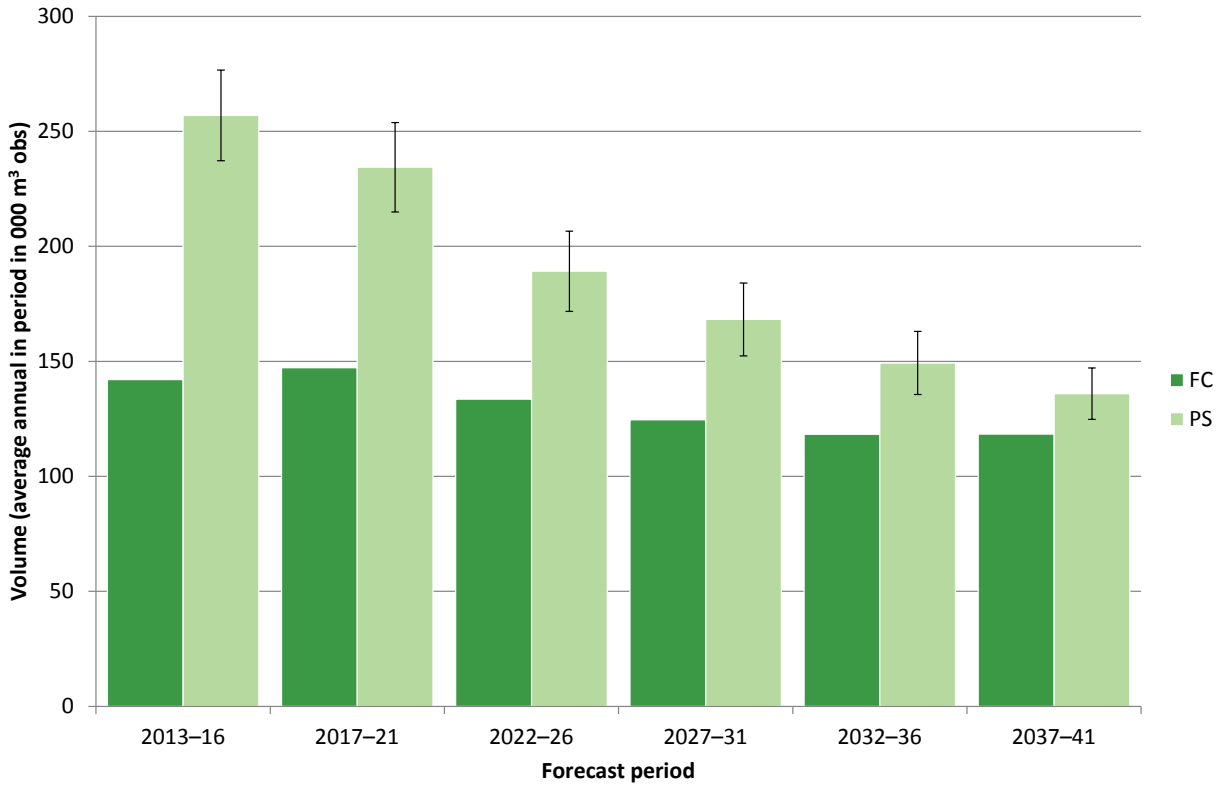


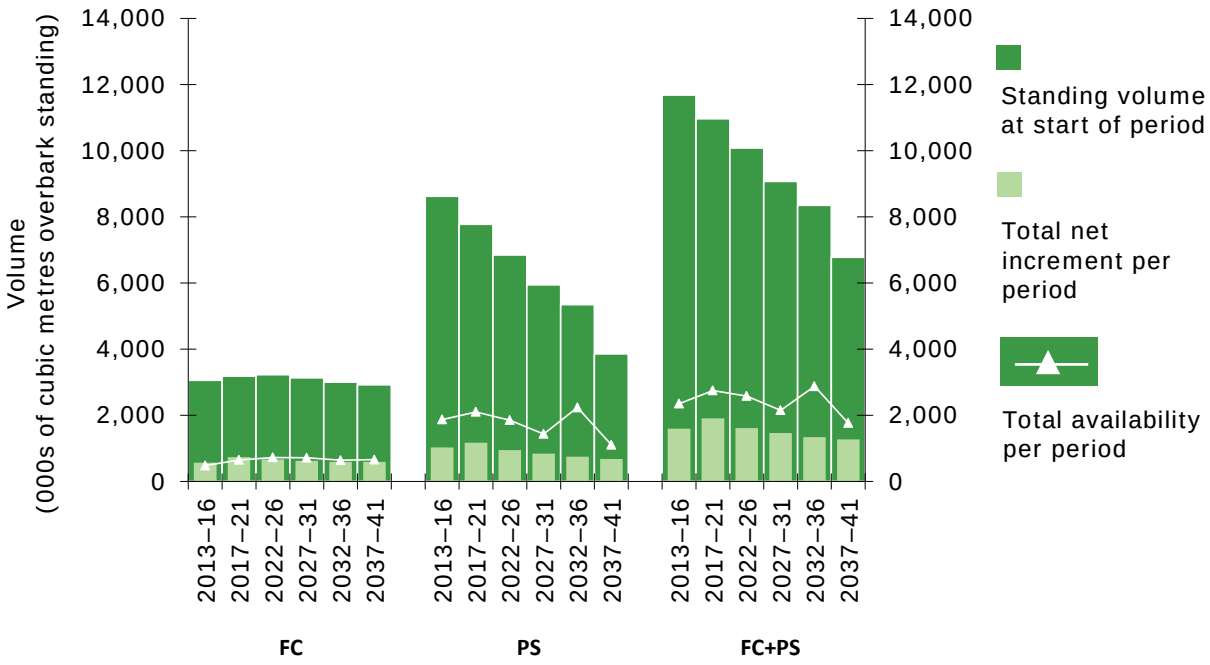
Table 31 25-year forecast of net increment in conifers; average annual volume within period

Forecast period	FC	Private sector		Total
	volume (000 m³ obs)	volume (000 m³ obs)	*SE%*	volume (000 m³ obs)
West Midlands				
2013–16	142	257	*8*	**399**
2017–21	147	234	*8*	**382**
2022–26	134	189	*9*	**323**
2027–31	125	168	*9*	**293**
2032–36	118	149	*9*	**268**
2037–41	118	136	*8*	**254**

Go to Part 3

Combined standing volume, net increment and availability

Figure 38 25-year forecast of standing volume, net increment and softwood availability

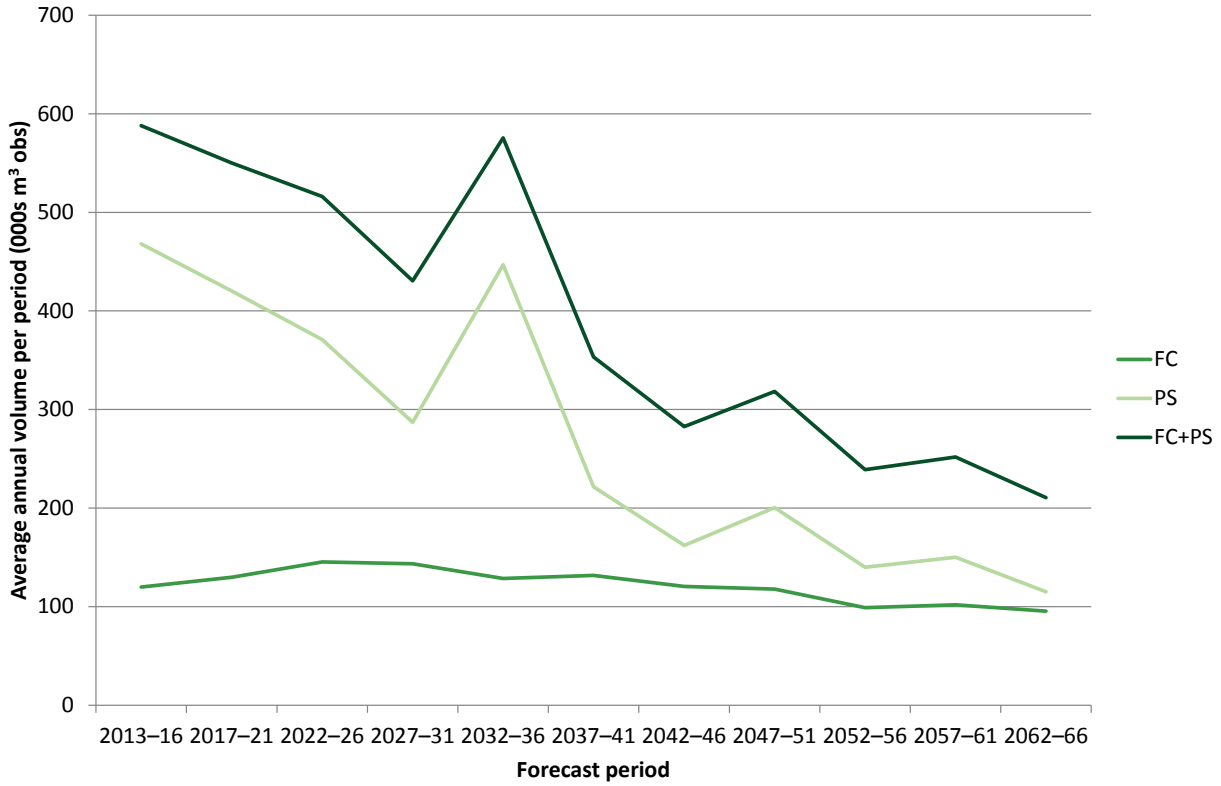


Go to Part 3

50-year softwood forecast

50-year forecast of softwood timber availability

Figure 39 Summary of 50-year forecast of softwood timber availability; average annual volume within period



Go to Part 3

Figure 40 50–year forecast of softwood timber availability; average annual volume within period

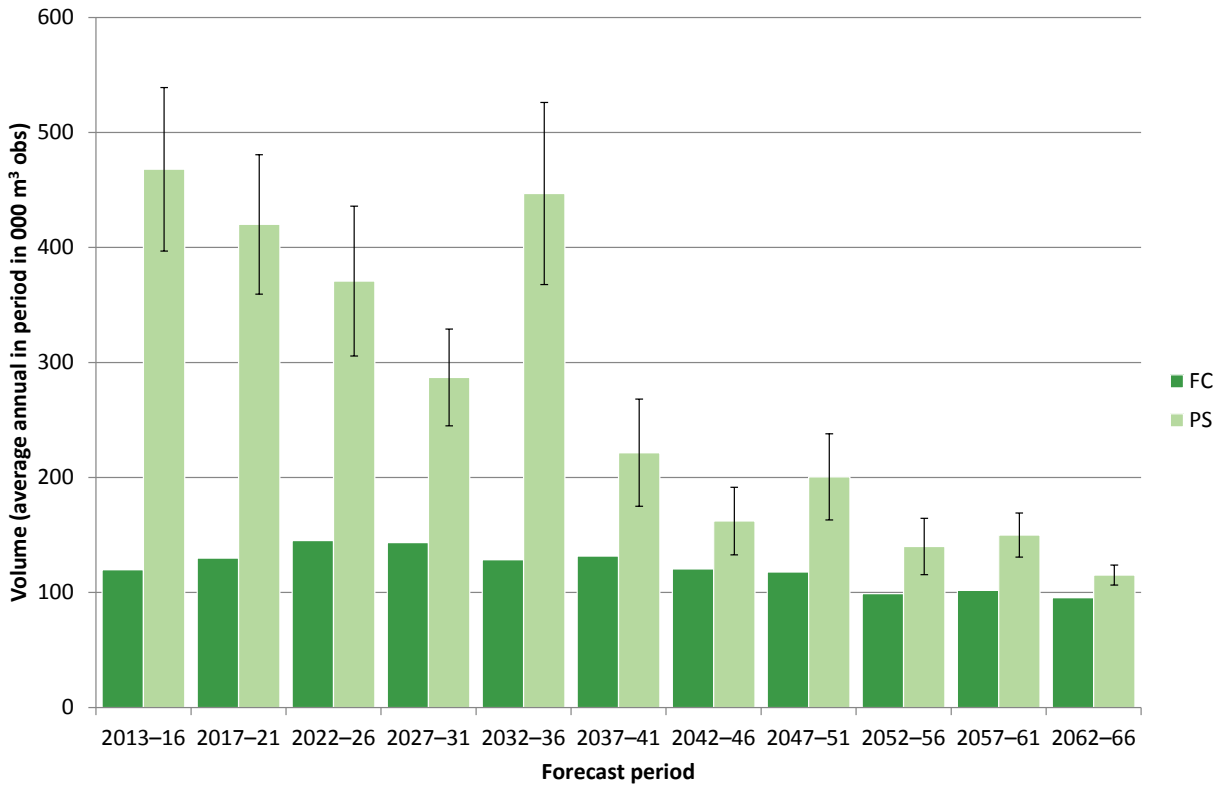


Table 32 Summary of 50–year forecast of softwood timber availability; average annual volume within period

Forecast period	FC	Private sector		Total
	volume (000 m^3 obs)	volume (000 m^3 obs)	*SE%*	volume (000 m^3 obs)
West Midlands				
2013–16	120	468	*15*	**588**
2017–21	130	420	*14*	**550**
2022–26	145	371	*18*	**516**
2027–31	143	287	*15*	**430**
2032–36	129	447	*18*	**575**
2037–41	132	222	*21*	**353**
2042–46	121	162	*18*	**283**
2047–51	118	201	*19*	**318**
2052–56	99	140	*18*	**239**
2057–61	102	150	*13*	**252**
2062–66	95	115	*7*	**211**

50-year forecast of softwood timber availability by principal species

Table 33 50-year forecast of softwood timber availability by principal species; average annual volume within period

Principal species	2013–16			2017–21		
	FC	Private sector		FC	Private sector	
	volume (000 m^3 obs)		*SE%*	volume (000 m^3 obs)		*SE%*
West Midlands						
All conifers	**120**	**468**	*15*	**130**	**420**	*14*
Sitka spruce	8	12	*46*	8	32	*89*
Scots pine	11	58	*48*	17	54	*29*
Corsican pine	29	66	*43*	25	23	*33*
Norway spruce	14	67	*38*	17	75	*37*
Larches	14	51	*16*	18	53	*16*
Douglas fir	34	125	*33*	32	63	*28*
Lodgepole pine	1	3	*93*	2	9	*91*
Other conifers	9	86	*29*	12	111	*28*

Table 33 (cont'd) 50-year forecast of softwood timber availability by principal species; average annual volume within period

Principal species	2022–26			2027–31		
	FC	Private sector		FC	Private sector	
	volume (000 m^3 obs)		*SE%*	volume (000 m^3 obs)		*SE%*
West Midlands						
All conifers	**145**	**371**	*18*	**143**	**287**	*15*
Sitka spruce	6	7	*54*	7	4	*55*
Scots pine	25	51	*39*	19	73	*42*
Corsican pine	24	19	*29*	23	15	*31*
Norway spruce	14	136	*44*	17	72	*28*
Larches	21	41	*17*	17	38	*20*
Douglas fir	40	30	*30*	43	20	*30*
Lodgepole pine	1	9	*101*	1	< 1	*108*
Other conifers	14	78	*29*	17	65	*36*

Table 33 (cont'd) 50-year forecast of softwood timber availability by principal species; average annual volume within period

Principal species	2032–36			2037–41		
	FC	Private sector		FC	Private sector	
	volume (000 m^3 obs)		*SE%*	volume (000 m^3 obs)		*SE%*
West Midlands						
All conifers	**129**	**447**	*18*	**132**	**222**	*21*
Sitka spruce	5	102	*58*	7	4	*29*
Scots pine	12	69	*33*	8	95	*45*
Corsican pine	17	23	*37*	22	8	*27*
Norway spruce	15	112	*35*	16	24	*47*
Larches	16	32	*18*	17	26	*19*
Douglas fir	55	20	*29*	51	22	*35*
Lodgepole pine	< 1	< 1	*108*	< 1	4	*108*
Other conifers	9	89	*36*	10	39	*42*

Table 33 (cont'd) 50-year forecast of softwood timber availability by principal species; average annual volume within period

Principal species	2042–46			2047–51		
	FC	Private sector		FC	Private sector	
	volume (000 m^3 obs)		*SE%*	volume (000 m^3 obs)		*SE%*
West Midlands						
All conifers	**121**	**162**	*18*	**118**	**201**	*19*
Sitka spruce	5	6	*32*	7	8	*28*
Scots pine	12	25	*32*	12	75	*39*
Corsican pine	19	8	*39*	22	3	*43*
Norway spruce	12	58	*47*	9	43	*44*
Larches	17	20	*22*	17	28	*25*
Douglas fir	46	18	*24*	43	17	*18*
Lodgepole pine	< 1	< 1	*81*	< 1	< 1	*69*
Other conifers	9	27	*28*	7	27	*29*

Table 33 (cont'd) 50-year forecast of softwood timber availability by principal species; average annual volume within period

Principal species	2052–56			2057–61		
	FC	Private sector		FC	Private sector	
	volume (000 m^3 obs)		*SE%*	volume (000 m^3 obs)		*SE%*
West Midlands						
All conifers	**99**	**140**	*18*	**102**	**150**	*13*
Sitka spruce	6	9	*25*	6	10	*22*
Scots pine	10	25	*29*	13	30	*42*
Corsican pine	9	3	*42*	11	3	*42*
Norway spruce	8	38	*58*	10	33	*33*
Larches	13	17	*23*	13	18	*22*
Douglas fir	44	19	*17*	38	22	*16*
Lodgepole pine	< 1	< 1	*72*	< 1	< 1	*72*
Other conifers	9	30	*26*	11	34	*24*

Table 33 (cont'd) 50-year forecast of softwood timber availability by principal species; average annual volume within period

Principal species	2062–66		
	FC	Private sector	
	volume (000 m^3 obs)		*SE%*
West Midlands			
All conifers	**95**	**115**	*7*
Sitka spruce	6	10	*21*
Scots pine	11	20	*19*
Corsican pine	7	< 1	*32*
Norway spruce	10	24	*21*
Larches	11	7	*18*
Douglas fir	37	21	*17*
Lodgepole pine	< 1	< 1	*83*
Other conifers	12	30	*14*

Go to Part 3

50-year forecast of softwood timber availability % spruce

Table 34 50–year forecast of softwood timber availability % spruce

West Midlands		Top diameter class (cm)								
		7–14	14–16	16–18	18–24	24–34	34–44	44–54	54+	Total
2013–16	FC (%)	18	20	20	20	19	18	18	12	**19**
	PS (%)	34	29	26	20	14	13	14	14	**17**
2017–21	FC (%)	22	27	26	22	18	16	14	8	**19**
	PS (%)	32	35	36	36	27	17	14	21	**25**
2022–26	FC (%)	18	22	23	20	13	10	8	5	**14**
	PS (%)	38	39	38	37	38	39	40	39	**38**
2027–31	FC (%)	17	22	24	23	18	15	14	9	**17**
	PS (%)	33	30	29	28	27	27	28	20	**26**
2032–36	FC (%)	22	21	21	20	15	11	9	9	**15**
	PS (%)	67	73	73	68	50	35	32	29	**48**
2037–41	FC (%)	25	29	29	26	17	11	9	6	**17**
	PS (%)	16	20	19	15	12	11	11	8	**12**
2042–46	FC (%)	22	23	21	15	11	11	12	9	**14**
	PS (%)	22	40	48	58	55	41	30	10	**39**
2047–51	FC (%)	21	21	21	18	12	9	8	8	**14**
	PS (%)	31	29	27	28	28	25	25	13	**25**
2052–56	FC (%)	20	21	21	20	13	7	6	4	**14**
	PS (%)	34	31	29	29	36	35	38	29	**33**
2057–61	FC (%)	18	20	21	20	16	12	11	8	**16**
	PS (%)	40	33	27	21	19	19	17	35	**29**
2062–66	FC (%)	17	19	20	21	19	14	12	8	**17**
	PS (%)	37	40	34	25	23	15	11	7	**30**

50-year forecast of standing volume in conifers

Figure 41 50–year forecast of standing volume in conifers; average annual volume within period

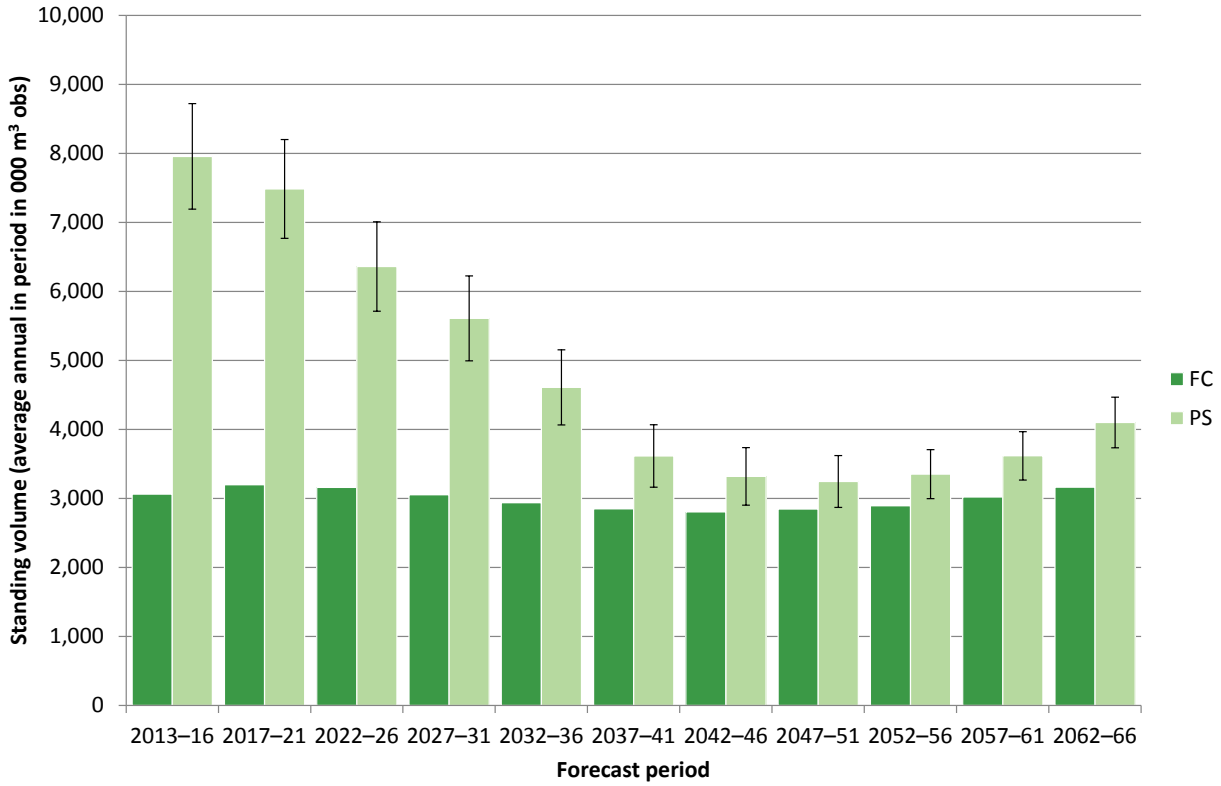


Table 35 50–year forecast of standing volume in conifers; average annual volume within period

Forecast period	FC	Private sector		Total
	volume (000 m^3 obs)	volume (000 m^3 obs)	*SE%*	volume (000 m^3 obs)
West Midlands				
2013–16	3,061	7,955	*10*	**11,017**
2017–21	3,196	7,484	*10*	**10,681**
2022–26	3,159	6,361	*10*	**9,521**
2027–31	3,053	5,608	*11*	**8,661**
2032–36	2,936	4,609	*12*	**7,545**
2037–41	2,850	3,614	*13*	**6,464**
2042–46	2,805	3,319	*13*	**6,124**
2047–51	2,845	3,245	*12*	**6,090**
2052–56	2,892	3,351	*11*	**6,243**
2057–61	3,020	3,616	*10*	**6,636**
2062–66	3,163	4,099	*9*	**7,262**

50-year forecast of net increment in conifers

Figure 42 50-year forecast of net increment in conifers; average annual volume within period

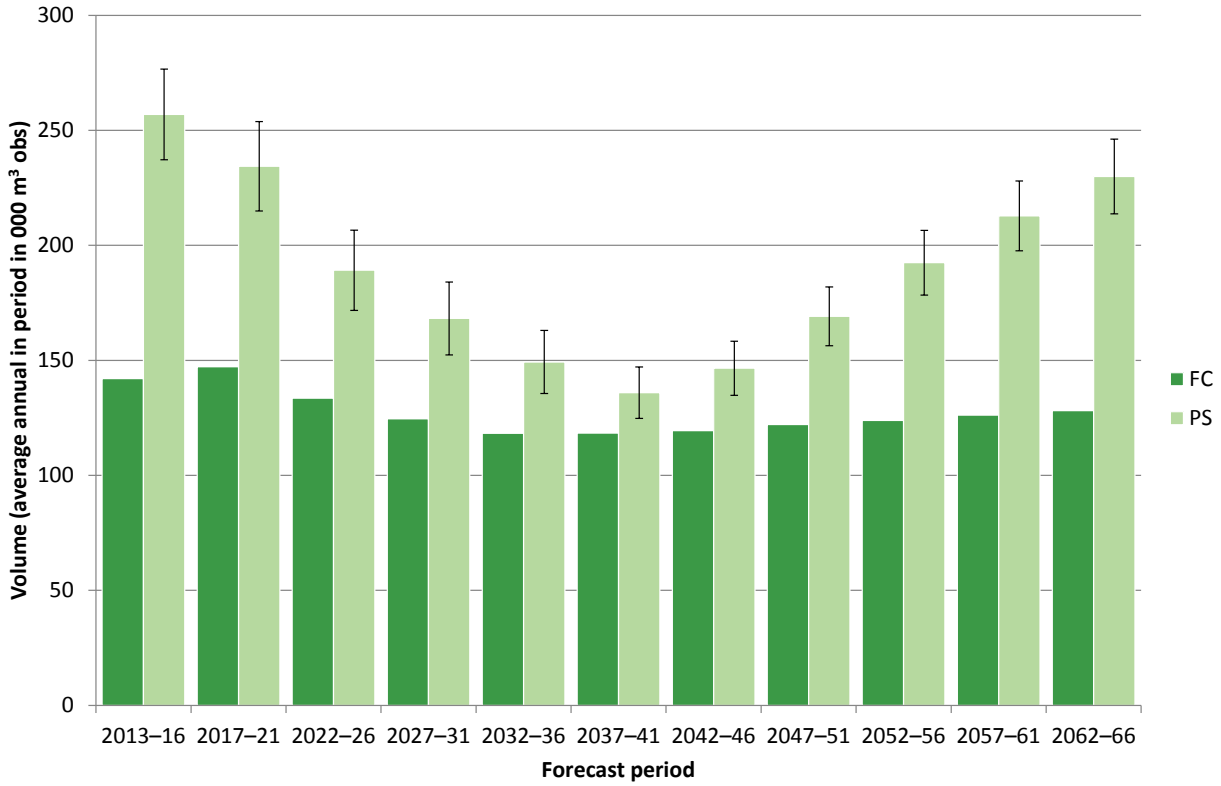


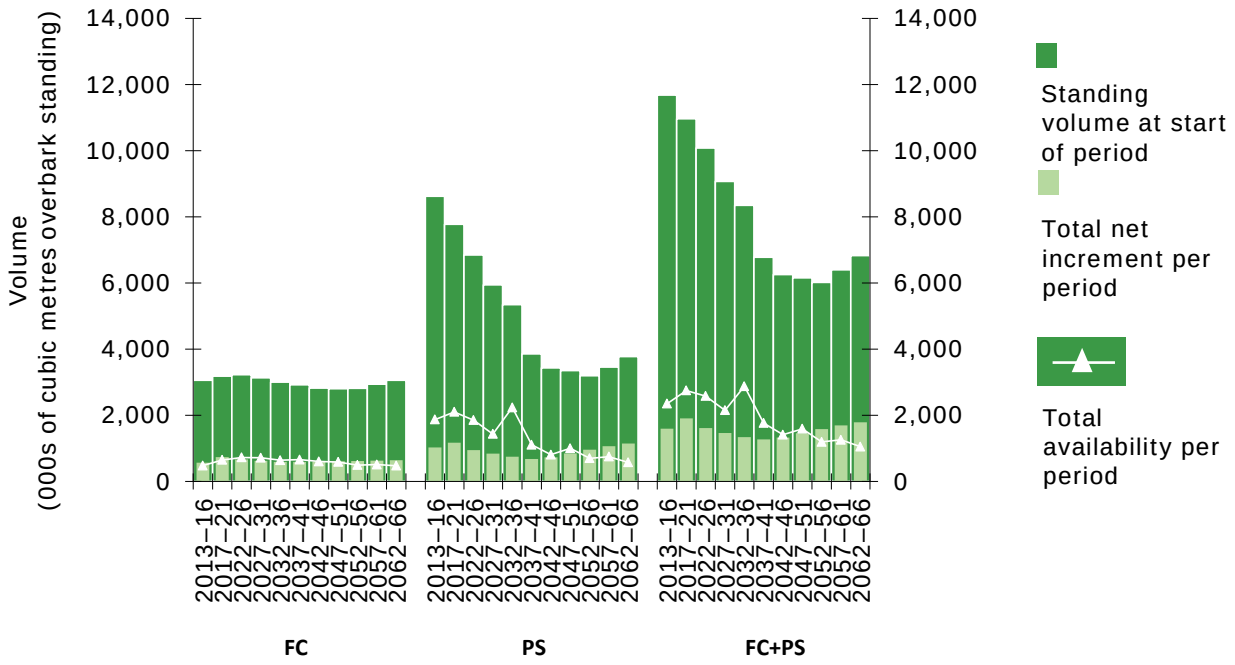
Table 36 50-year forecast of net increment in conifers; average annual volume within period

Forecast period	FC	Private sector		Total
	volume (000 m³ obs)	volume (000 m³ obs)	*SE%*	volume (000m³ obs)
West Midlands				
2013–16	142	257	*8*	**399**
2017–21	147	234	*8*	**382**
2022–26	134	189	*9*	**323**
2027–31	125	168	*9*	**293**
2032–36	118	149	*9*	**268**
3037–41	118	136	*8*	**254**
2042–46	119	147	*8*	**266**
2047–51	122	169	*8*	**291**
2052–56	124	192	*7*	**316**
2057–61	126	213	*7*	**339**
2062–66	128	230	*7*	**358**

Go to Part 3

Combined standing volume, net increment and availability

Figure 43 50-year forecast of standing volume, net increment and softwood availability

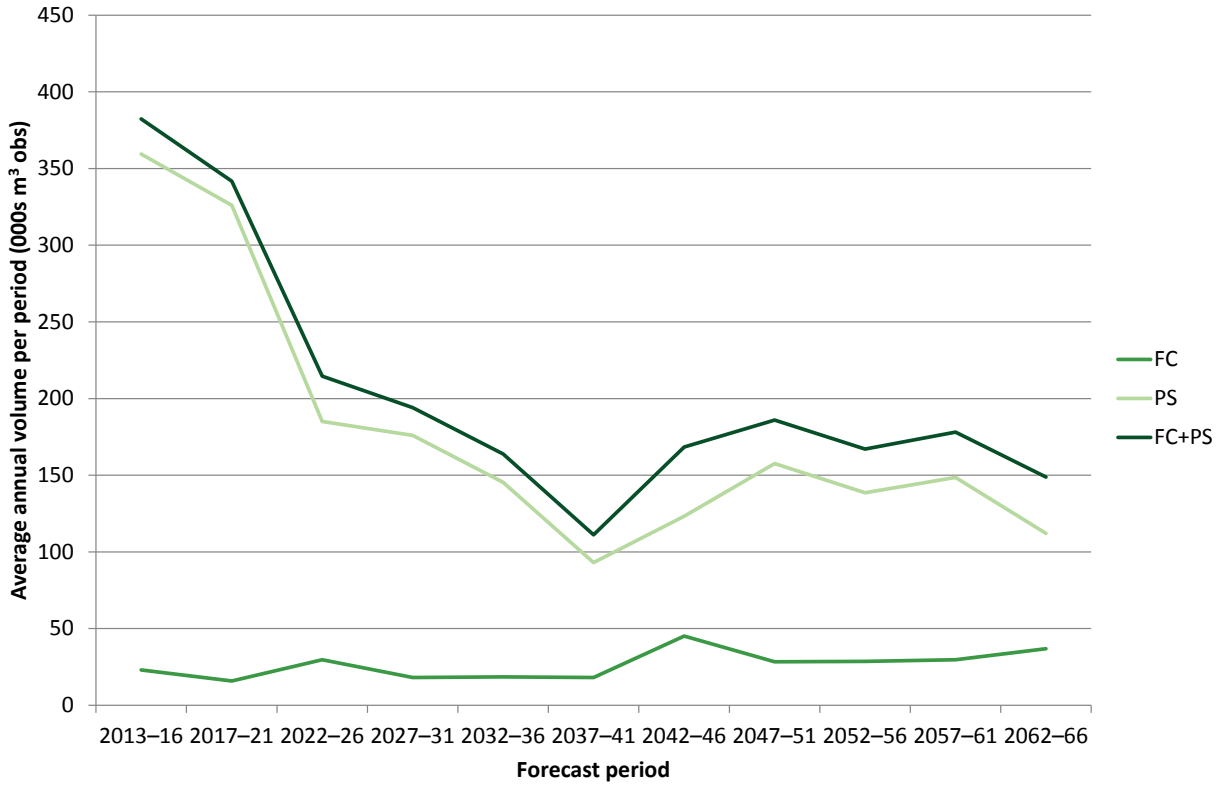


Go to Part 3

50-year hardwood forecast

50-year forecast of hardwood timber availability

Figure 44 Summary of 50-year forecast of hardwood timber availability; average annual volume within period



Go to Part 3

Figure 45 50–year forecast of hardwood timber availability; average annual volume within period

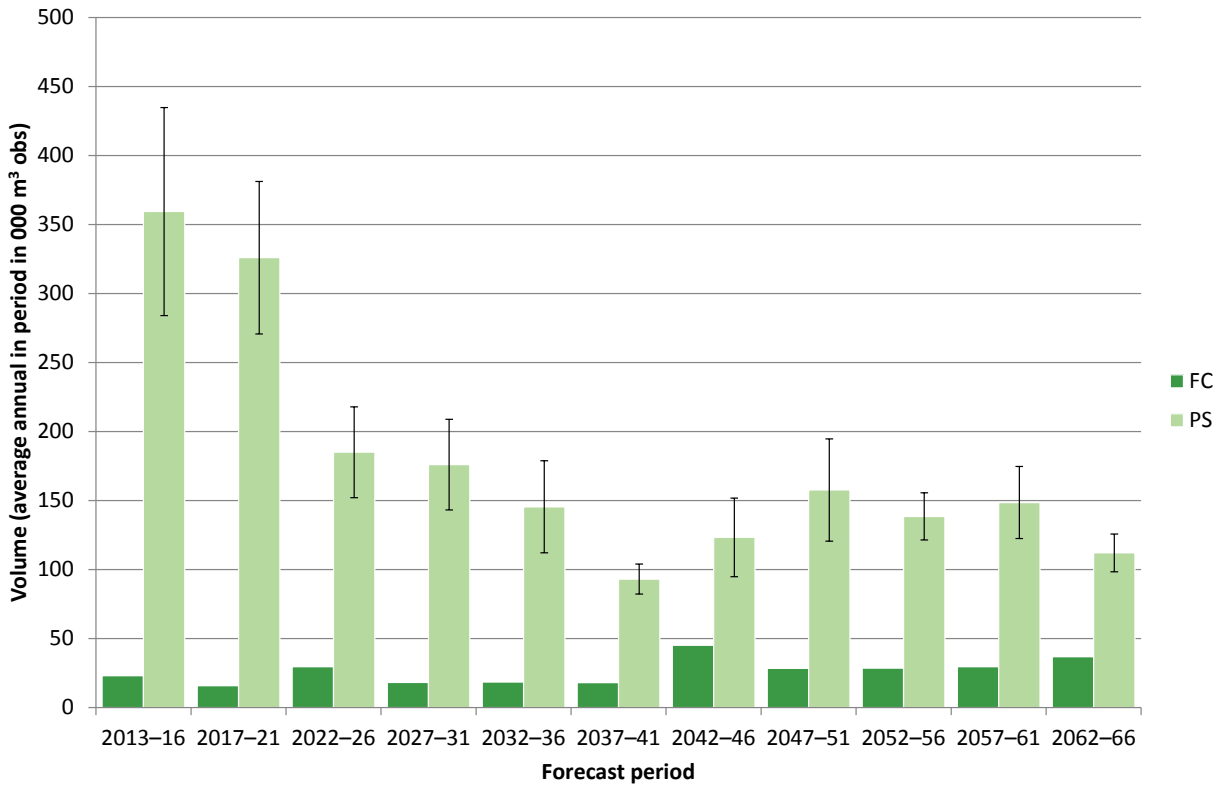


Table 37 50–year forecast of hardwood timber availability; average annual volume within period

Forecast period	FC	Private sector		Total
	volume (000 m^3 obs)	volume (000 m^3 obs)	*SE%*	volume (000 m^3 obs)
West Midlands				
2013–16	23	359	*21*	**382**
2017–21	16	326	*17*	**342**
2022–26	30	185	*18*	**215**
2027–31	18	176	*19*	**194**
2032–36	18	145	*23*	**164**
2037–41	18	93	*12*	**111**
2042–46	45	123	*23*	**168**
2047–51	28	158	*23*	**186**
2052–56	29	138	*12*	**167**
2057–61	30	149	*18*	**178**
2062–66	37	112	*12*	**149**

Go to Part 3

50-year forecast of hardwood timber availability by principal species

Table 38 50-year forecast of hardwood timber availability by principal species; average annual volume within period

Principal species	2013–16			2017–21		
	FC	Private sector		FC	Private sector	
	volume (000 m^3 obs)		*SE%*	volume (000 m^3 obs)		*SE%*
West Midlands						
All broadleaves	**23**	**359**	***21***	**16**	**326**	***17***
Oak	9	101	*33*	5	151	*29*
Beech	5	25	*59*	5	40	*46*
Sycamore	< 1	41	*48*	< 1	20	*45*
Ash	1	117	*40*	< 1	56	*25*
Birch	2	21	*40*	2	21	*42*
Sweet chestnut	2	8	*58*	< 1	4	*34*
Hazel	< 1	< 1	*37*	< 1	< 1	*31*
Hawthorn	0	< 1	*42*	0	< 1	*29*
Alder	< 1	< 1	*50*	< 1	< 1	*46*
Willow	0	< 1	*55*	0	< 1	*39*
Other broadleaves	3	43	*51*	2	30	*64*

Table 38 (cont'd) 50-year forecast of hardwood timber availability by principal species; average annual volume within period

Principal species	2022–26			2027–31		
	FC	Private sector		FC	Private sector	
	volume (000 m^3 obs)		*SE%*	volume (000 m^3 obs)		*SE%*
West Midlands						
All broadleaves	**30**	**185**	***18***	**18**	**176**	***19***
Oak	10	87	*26*	6	97	*25*
Beech	10	27	*46*	3	10	*29*
Sycamore	< 1	9	*34*	< 1	12	*55*
Ash	2	29	*46*	1	10	*25*
Birch	1	6	*32*	1	3	*32*
Sweet chestnut	2	14	*52*	1	22	*71*
Hazel	< 1	< 1	*22*	< 1	< 1	*24*
Hawthorn	0	< 1	*30*	0	< 1	*29*
Alder	< 1	< 1	*34*	< 1	< 1	*46*
Willow	0	< 1	*31*	< 1	< 1	*29*
Other broadleaves	5	11	*40*	4	18	*58*

Table 38 (cont'd) 50-year forecast of hardwood timber availability by principal species; average annual volume within period

Principal species	2032–36			2037–41		
	FC	Private sector		FC	Private sector	
	volume (000 m^3 obs)		*SE%*	volume (000 m^3 obs)		*SE%*
West Midlands						
All broadleaves	**18**	**145**	***23***	**18**	**93**	***12***
Oak	6	38	*22*	7	28	*21*
Beech	4	38	*62*	3	12	*29*
Sycamore	< 1	6	*33*	< 1	12	*51*
Ash	1	15	*44*	1	15	*19*
Birch	2	5	*32*	2	5	*28*
Sweet chestnut	2	33	*64*	2	4	*38*
Hazel	< 1	2	*44*	< 1	2	*32*
Hawthorn	0	< 1	*27*	0	< 1	*23*
Alder	< 1	< 1	*63*	< 1	< 1	*32*
Willow	< 1	< 1	*32*	< 1	< 1	*40*
Other broadleaves	3	7	*15*	3	12	*27*

Table 38 (cont'd) 50-year forecast of hardwood timber availability by principal species; average annual volume within period

Principal species	2042–46			2047–51		
	FC	Private sector		FC	Private sector	
	volume (000 m^3 obs)		*SE%*	volume (000 m^3 obs)		*SE%*
West Midlands						
All broadleaves	**45**	**123**	***23***	**28**	**158**	***23***
Oak	26	52	*53*	12	24	*18*
Beech	8	14	*34*	6	76	*47*
Sycamore	< 1	10	*26*	< 1	18	*55*
Ash	2	21	*17*	2	18	*20*
Birch	3	11	*23*	2	8	*28*
Sweet chestnut	2	1	*30*	1	2	*30*
Hazel	< 1	3	*34*	< 1	4	*25*
Hawthorn	0	1	*19*	0	1	*20*
Alder	< 1	< 1	*47*	< 1	< 1	*41*
Willow	< 1	< 1	*40*	< 1	< 1	*40*
Other broadleaves	4	9	*16*	4	10	*19*

Table 38 (cont'd) 50-year forecast of hardwood timber availability by principal species; average annual volume within period

Principal species	2052–56			2057–61		
	FC	Private sector		FC	Private sector	
	volume (000 m^3 obs)		*SE%*	volume (000 m^3 obs)		*SE%*
West Midlands						
All broadleaves	**29**	**138**	***12***	**30**	**149**	***18***
Oak	13	35	*21*	15	38	*25*
Beech	6	21	*42*	6	33	*65*
Sycamore	< 1	10	*36*	< 1	6	*52*
Ash	2	35	*24*	1	32	*26*
Birch	2	12	*37*	2	12	*38*
Sweet chestnut	1	5	*62*	1	4	*50*
Hazel	< 1	3	*31*	< 1	12	*52*
Hawthorn	0	1	*20*	0	1	*20*
Alder	< 1	< 1	*57*	< 1	< 1	*62*
Willow	0	< 1	*40*	0	< 1	*40*
Other broadleaves	3	14	*23*	3	8	*24*

Table 38 (cont'd) 50-year forecast of hardwood timber availability by principal species; average annual volume within period

Principal species	2062–66		
	FC	Private sector	
	volume (000 m^3 obs)		*SE%*
West Midlands			
All broadleaves	**37**	**112**	***12***
Oak	17	31	*17*
Beech	9	13	*39*
Sycamore	< 1	8	*39*
Ash	1	24	*24*
Birch	3	18	*44*
Sweet chestnut	1	3	*35*
Hazel	< 1	< 1	*70*
Hawthorn	0	2	*31*
Alder	< 1	< 1	*47*
Willow	< 1	1	*43*
Other broadleaves	3	10	*29*

50-year forecast of hardwood timber availability by top diameter class

Table 39 50-year forecast of hardwood timber availability by top diameter class; average annual volume within period

Top diameter class (cm)	2013–16			2017–21		
	FC	Private sector		FC	Private sector	
	volume (000 m^3 obs)		*SE%*	volume (000 m^3 obs)		*SE%*
West Midlands						
7–14	8	19	*17*	5	18	*14*
14–16	2	8	*19*	< 1	6	*19*
16–18	2	9	*19*	< 1	8	*19*
18–24	5	38	*17*	3	34	*16*
24–34	4	75	*17*	4	77	*16*
34–44	2	63	*23*	1	61	*19*
44–54	< 1	36	*24*	< 1	36	*21*
54+	< 1	111	*35*	< 1	85	*28*
Total	**23**	**359**	***21***	**16**	**326**	***17***

Table 39 (cont'd) 50-year forecast of hardwood timber availability by top diameter class; average annual volume within period

Top diameter class (cm)	2022–26			2027–31		
	FC	Private sector		FC	Private sector	
	volume (000 m^3 obs)		*SE%*	volume (000 m^3 obs)		*SE%*
West Midlands						
7–14	7	17	*11*	5	23	*10*
14–16	2	4	*16*	1	4	*20*
16–18	2	4	*18*	1	4	*25*
18–24	7	22	*20*	4	19	*25*
24–34	7	49	*21*	4	45	*23*
34–44	2	31	*20*	1	32	*23*
44–54	< 1	16	*23*	< 1	17	*24*
54+	< 1	41	*32*	< 1	32	*32*
Total	**30**	**185**	***18***	**18**	**176**	***19***

Table 39 (cont'd) 50-year forecast of hardwood timber availability by top diameter class; average annual volume within period

Top diameter class (cm)	2032–36			2037–41		
	FC	Private sector		FC	Private sector	
	volume (000 m^3 obs)		*SE%*	volume (000 m^3 obs)		*SE%*
West Midlands						
7–14	6	27	*10*	7	30	*11*
14–16	1	3	*13*	1	4	*11*
16–18	1	3	*18*	1	3	*12*
18–24	3	13	*24*	3	10	*15*
24–34	4	35	*28*	3	17	*18*
34–44	2	26	*32*	1	11	*19*
44–54	< 1	15	*36*	< 1	6	*20*
54+	< 1	23	*31*	< 1	11	*30*
Total	**18**	**145**	***23***	**18**	**93**	***12***

Table 39 (cont'd) 50-year forecast of hardwood timber availability by top diameter class; average annual volume within period

Top diameter class (cm)	2042–46			2047–51		
	FC	Private sector		FC	Private sector	
	volume (000 m^3 obs)		*SE%*	volume (000 m^3 obs)		*SE%*
West Midlands						
7–14	12	35	*11*	9	34	*13*
14–16	3	6	*10*	2	7	*16*
16–18	3	6	*10*	2	8	*20*
18–24	8	19	*16*	6	24	*22*
24–34	9	23	*39*	5	28	*32*
34–44	5	14	*52*	2	20	*42*
44–54	2	8	*56*	< 1	13	*44*
54+	3	11	*37*	< 1	24	*48*
Total	**45**	**123**	***23***	**28**	**158**	***23***

Table 39 (cont'd) 50-year forecast of hardwood timber availability by top diameter class; average annual volume within period

Top diameter class (cm)	2052–56			2057–61		
	FC	Private sector		FC	Private sector	
	volume (000 m^3 obs)		*SE%*	volume (000 m^3 obs)		*SE%*
West Midlands						
7–14	11	30	*12*	10	30	*12*
14–16	2	7	*12*	2	7	*16*
16–18	2	7	*13*	2	8	*17*
18–24	5	21	*14*	6	22	*17*
24–34	4	26	*17*	6	28	*22*
34–44	2	18	*20*	2	20	*30*
44–54	< 1	10	*21*	< 1	12	*34*
54+	< 1	19	*24*	< 1	22	*35*
Total	**29**	**138**	***12***	**30**	**149**	***18***

Table 39 (cont'd) 50-year forecast of hardwood timber availability by top diameter class; average annual volume within period

Top diameter class (cm)	2062–66		
	FC	Private sector	
	volume (000 m^3 obs)		*SE%*
West Midlands			
7–14	11	19	*17*
14–16	3	8	*19*
16–18	3	9	*19*
18–24	7	38	*17*
24–34	8	75	*17*
34–44	3	63	*23*
44–54	2	36	*24*
54+	< 1	111	*35*
Total	**37**	**359**	***21***

50-year forecast of standing volume in broadleaves

Figure 46 50–year forecast of standing volume in broadleaves; average annual volume within period

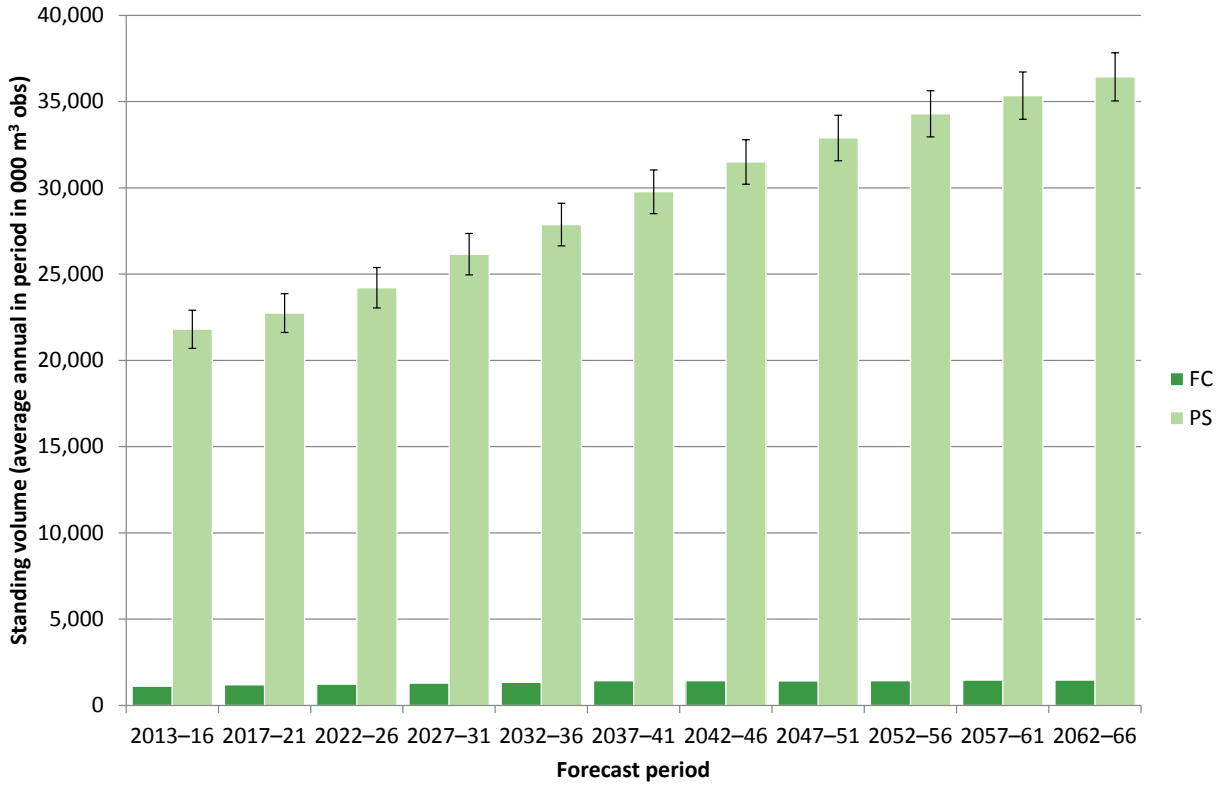


Table 40 50–year forecast of standing volume in broadleaves; average annual volume within period

Forecast period	FC	Private sector		Total
	volume (000 m^3 obs)	volume (000 m^3 obs)	*SE%*	volume (000 m^3 obs)
West Midlands				
2013–16	1,107	21,804	*5*	**22,911**
2017–21	1,195	22,741	*5*	**23,936**
2022–26	1,229	24,209	*5*	**25,438**
2027–31	1,284	26,154	*5*	**27,438**
2032–36	1,339	27,872	*4*	**29,210**
2037–41	1,425	29,769	*4*	**31,193**
2042–46	1,430	31,504	*4*	**32,934**
2047–51	1,414	32,892	*4*	**34,306**
2052–56	1,430	34,295	*4*	**35,725**
2057–61	1,469	35,349	*4*	**36,818**
2062–66	1,465	36,439	*4*	**37,903**

Go to Part 3

Table 41 50-year forecast of standing volume in broadleaves by principal species; average annual volume within period

Principal species	2013–16			2017–21		
	FC	Private sector		FC	Private sector	
	volume (000 m^3 obs)		*SE%*	volume (000 m^3 obs)		*SE%*
West Midlands						
All broadleaves	**1,107**	**21,804**	***5***	**1,195**	**22,741**	***5***
Oak	531	7,201	*11*	566	7,067	*11*
Beech	223	1,474	*20*	241	1,508	*20*
Sycamore	11	1,375	*27*	11	1,452	*26*
Ash	55	5,005	*13*	58	5,188	*13*
Birch	71	1,473	*13*	79	1,651	*13*
Sweet Chestnut	42	811	*28*	48	884	*27*
Hazel	8	893	*17*	9	1,011	*16*
Hawthorn	0	553	*17*	0	668	*16*
Alder	13	708	*22*	14	762	*22*
Willow	< 1	524	*24*	< 1	587	*24*
Other broadleaves	152	1,718	*16*	168	1,887	*14*

Table 41 (cont'd) 50-year forecast of standing volume in broadleaves by principal species; average annual volume within period

Principal species	2022–26			2027–31		
	FC	Private sector		FC	Private sector	
	volume (000 m^3 obs)		*SE%*	volume (000 m^3 obs)		*SE%*
West Midlands						
All broadleaves	**1,229**	**24,209**	***5***	**1,284**	**26,154**	***5***
Oak	584	7,150	*11*	609	7,266	*11*
Beech	236	1,506	*21*	246	1,654	*20*
Sycamore	12	1,579	*25*	10	1,740	*23*
Ash	59	5,460	*13*	62	5,853	*12*
Birch	86	1,892	*13*	94	2,179	*13*
Sweet Chestnut	50	925	*28*	54	960	*28*
Hazel	11	1,148	*15*	12	1,279	*14*
Hawthorn	0	815	*15*	0	977	*15*
Alder	15	821	*21*	16	877	*21*
Willow	< 1	664	*23*	< 1	743	*22*
Other broadleaves	176	2,171	*14*	181	2,540	*13*

Table 41 (cont'd) 50-year forecast of standing volume in broadleaves by principal species; average annual volume within period

Principal species	2032–36			2037–41		
	FC	Private sector		FC	Private sector	
	volume (000 m^3 obs)		*SE%*	volume (000 m^3 obs)		*SE%*
West Midlands						
All broadleaves	**1,339**	**27,872**	***4***	**1,425**	**29,769**	***4***
Oak	634	7,457	*11*	671	7,813	*11*
Beech	259	1,745	*20*	280	1,794	*20*
Sycamore	10	1,862	*23*	11	1,962	*22*
Ash	64	6,234	*12*	68	6,591	*11*
Birch	100	2,433	*13*	108	2,666	*13*
Sweet Chestnut	54	882	*25*	57	934	*26*
Hazel	13	1,402	*14*	14	1,506	*13*
Hawthorn	0	1,145	*14*	0	1,314	*14*
Alder	16	923	*21*	17	963	*20*
Willow	< 1	821	*21*	< 1	897	*21*
Other broadleaves	188	2,873	*12*	199	3,226	*11*

Table 41 (cont'd) 50-year forecast of standing volume in broadleaves by principal species; average annual volume within period

Principal species	2042–46			2047–51		
	FC	Private sector		FC	Private sector	
	volume (000 m^3 obs)		*SE%*	volume (000 m^3 obs)		*SE%*
West Midlands						
All broadleaves	**1,430**	**31,504**	***4***	**1,414**	**32,892**	***4***
Oak	654	8,085	*11*	621	8,440	*10*
Beech	287	1,901	*20*	295	1,749	*21*
Sycamore	11	2,058	*22*	11	2,105	*22*
Ash	71	6,899	*11*	72	7,163	*11*
Birch	113	2,858	*13*	117	3,019	*13*
Sweet Chestnut	56	1,007	*25*	56	1,085	*25*
Hazel	14	1,595	*13*	15	1,662	*13*
Hawthorn	0	1,479	*14*	0	1,636	*13*
Alder	17	995	*20*	17	1,025	*20*
Willow	< 1	971	*20*	< 1	1,041	*20*
Other broadleaves	206	3,543	*11*	210	3,843	*11*

Table 41 (cont'd) 50-year forecast of standing volume in broadleaves by principal species; average annual volume within period

Principal species	2052–56			2057–61		
	FC	Private sector		FC	Private sector	
	volume (000 m^3 obs)		*SE%*	volume (000 m^3 obs)		*SE%*
West Midlands						
All broadleaves	**1,430**	**34,295**	***4***	**1,469**	**35,349**	***4***
Oak	618	8,791	*10*	627	9,095	*10*
Beech	301	1,765	*21*	314	1,711	*22*
Sycamore	12	2,151	*21*	13	2,203	*21*
Ash	72	7,368	*11*	73	7,455	*11*
Birch	122	3,146	*13*	125	3,261	*13*
Sweet Chestnut	59	1,153	*25*	62	1,214	*25*
Hazel	15	1,719	*13*	15	1,729	*13*
Hawthorn	0	1,785	*13*	0	1,925	*13*
Alder	17	1,050	*20*	17	1,074	*20*
Willow	< 1	1,108	*20*	< 1	1,170	*20*
Other broadleaves	215	4,106	*10*	222	4,355	*10*

Table 41 (cont'd) 50-year forecast of standing volume in broadleaves by principal species; average annual volume within period

Principal species	2062–66		
	FC	Private sector	
	volume (000 m^3 obs)		*SE%*
West Midlands			
All broadleaves	**1,465**	**36,439**	***4***
Oak	612	9,397	*10*
Beech	316	1,782	*22*
Sycamore	13	2,257	*21*
Ash	75	7,516	*11*
Birch	125	3,318	*13*
Sweet Chestnut	64	1,280	*25*
Hazel	14	1,763	*13*
Hawthorn	0	2,055	*13*
Alder	17	1,096	*20*
Willow	< 1	1,227	*19*
Other broadleaves	228	4,588	*10*

Go to Part 3

50-year forecast of net increment in broadleaves

Figure 47 50-year forecast of net increment in broadleaves; average annual volume within period

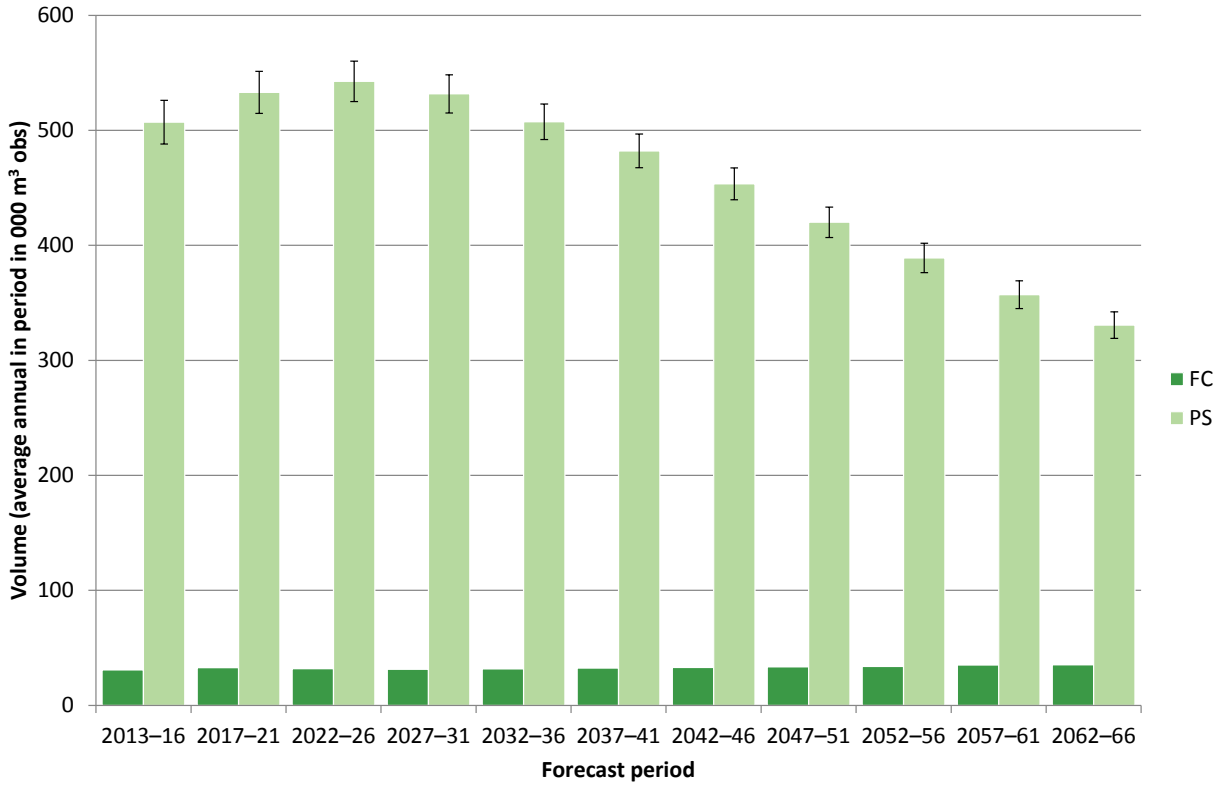


Table 42 50–year forecast of net increment in broadleaves; average annual volume within period

Forecast period	FC	Private sector		Total
	volume (000 m³ obs)	volume (000 m³ obs)	*SE%*	volume (000 m³ obs)
West Midlands				
2013–16	31	507	*4*	**538**
2017–21	33	533	*3*	**566**
2022–26	32	543	*3*	**575**
2027–31	31	532	*3*	**563**
2032–36	32	507	*3*	**539**
3037–41	32	482	*3*	**515**
2042–46	33	454	*3*	**487**
2047–51	33	420	*3*	**454**
2052–56	34	389	*3*	**423**
2057–61	35	357	*3*	**392**
2062–66	35	331	*4*	**366**

Go to Part 3

Table 43 50–year forecast of net increment in broadleaves by principal species; average annual volume within period

Principal species	2013–16			2017–21		
	FC	Private sector		FC	Private sector	
	volume (000 m^3 obs)		*SE%*	volume (000 m^3 obs)		*SE%*
West Midlands						
All broadleaves	**31**	**507**	***4***	**33**	**533**	***3***
Oak	12	119	*9*	12	116	*9*
Beech	7	39	*19*	8	41	*18*
Sycamore	< 1	34	*16*	< 1	39	*16*
Ash	1	98	*10*	2	99	*9*
Birch	3	58	*15*	3	61	*14*
Sweet Chestnut	2	21	*23*	2	22	*23*
Hazel	< 1	27	*15*	< 1	28	*14*
Hawthorn	0	24	*15*	0	27	*14*
Alder	< 1	13	*22*	< 1	13	*20*
Willow	< 1	13	*20*	< 1	15	*19*
Other broadleaves	5	61	*12*	5	71	*10*

Table 43 (cont'd) 50–year forecast of net increment in broadleaves by principal species; average annual volume within period

Principal species	2022–26			2027–31		
	FC	Private sector		FC	Private sector	
	volume (000 m^3 obs)		*SE%*	volume (000 m^3 obs)		*SE%*
West Midlands						
All broadleaves	**32**	**543**	***3***	**31**	**532**	***3***
Oak	12	113	*8*	12	108	*8*
Beech	7	40	*18*	7	40	*18*
Sycamore	< 1	40	*16*	< 1	38	*16*
Ash	2	96	*9*	2	92	*8*
Birch	3	62	*13*	3	58	*13*
Sweet Chestnut	2	22	*23*	2	21	*23*
Hazel	< 1	27	*13*	< 1	27	*13*
Hawthorn	0	31	*13*	0	34	*13*
Alder	< 1	12	*20*	< 1	11	*19*
Willow	< 1	16	*18*	< 1	16	*17*
Other broadleaves	5	81	*9*	5	84	*9*

Table 43 (cont'd) 50–year forecast of net increment in broadleaves by principal species; average annual volume within period

Principal species	2032–36			2037–41		
	FC	Private sector		FC	Private sector	
	volume (000 m^3 obs)		*SE%*	volume (000 m^3 obs)		*SE%*
West Midlands						
All broadleaves	**32**	**507**	***3***	**32**	**482**	***3***
Oak	12	105	*8*	12	103	*8*
Beech	7	39	*18*	7	37	*18*
Sycamore	< 1	34	*17*	< 1	30	*17*
Ash	2	89	*8*	2	85	*9*
Birch	3	54	*13*	3	50	*13*
Sweet Chestnut	2	19	*22*	2	18	*22*
Hazel	< 1	25	*14*	< 1	22	*14*
Hawthorn	0	35	*12*	0	35	*12*
Alder	< 1	9	*19*	< 1	8	*19*
Willow	< 1	16	*17*	< 1	16	*17*
Other broadleaves	5	81	*9*	5	78	*9*

Table 43 (cont'd) 50–year forecast of net increment in broadleaves by principal species; average annual volume within period

Principal species	2042–46			2047–51		
	FC	Private sector		FC	Private sector	
	volume (000 m^3 obs)		*SE%*	volume (000 m^3 obs)		*SE%*
West Midlands						
All broadleaves	**33**	**454**	***3***	**33**	**420**	***3***
Oak	13	102	*8*	13	100	*8*
Beech	7	36	*17*	8	32	*16*
Sycamore	< 1	27	*18*	< 1	23	*18*
Ash	2	78	*10*	2	70	*10*
Birch	3	45	*14*	3	40	*14*
Sweet Chestnut	2	17	*22*	2	17	*22*
Hazel	< 1	19	*14*	< 1	16	*14*
Hawthorn	0	34	*12*	0	32	*12*
Alder	< 1	7	*19*	< 1	6	*19*
Willow	< 1	15	*17*	< 1	15	*17*
Other broadleaves	5	73	*9*	5	68	*8*

Table 43 (cont'd) 50–year forecast of net increment in broadleaves by principal species; average annual volume within period

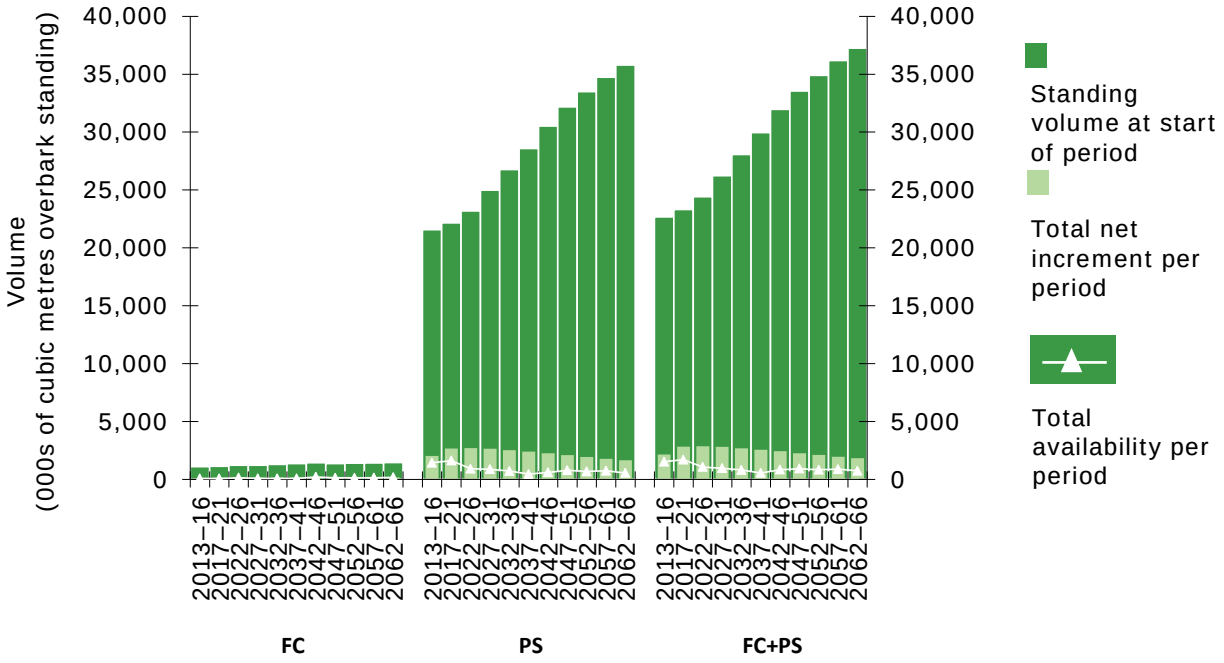
Principal species	2052–56			2057–61		
	FC	Private sector		FC	Private sector	
	volume (000 m^3 obs)		*SE%*	volume (000 m^3 obs)		*SE%*
West Midlands						
All broadleaves	**34**	**389**	***3***	**35**	**357**	***3***
Oak	14	99	*8*	15	98	*9*
Beech	8	28	*17*	8	27	*16*
Sycamore	< 1	20	*19*	< 1	18	*20*
Ash	2	61	*11*	2	49	*11*
Birch	3	35	*14*	3	31	*14*
Sweet Chestnut	2	17	*23*	2	17	*23*
Hazel	< 1	14	*14*	< 1	11	*12*
Hawthorn	0	30	*12*	0	29	*12*
Alder	< 1	6	*19*	< 1	5	*19*
Willow	< 1	14	*17*	< 1	13	*17*
Other broadleaves	5	63	*8*	4	58	*9*

Table 43 (cont'd) 50–year forecast of net increment in broadleaves by principal species; average annual volume within period

Principal species	2062–66		
	FC	Private sector	
	volume (000 m^3 obs)		*SE%*
West Midlands			
All broadleaves	**35**	**331**	***4***
Oak	15	95	*9*
Beech	9	27	*17*
Sycamore	< 1	17	*19*
Ash	2	40	*11*
Birch	3	27	*12*
Sweet Chestnut	2	17	*24*
Hazel	< 1	9	*12*
Hawthorn	0	27	*12*
Alder	< 1	5	*19*
Willow	< 1	12	*17*
Other broadleaves	4	55	*9*

Combined standing volume, net increment and availability

Figure 48 combined hardwood standing volume, net increment and availability



Go to Part 3

Part 4 – Tree health

Ash

Figure 49 Stocked area of ash by age class

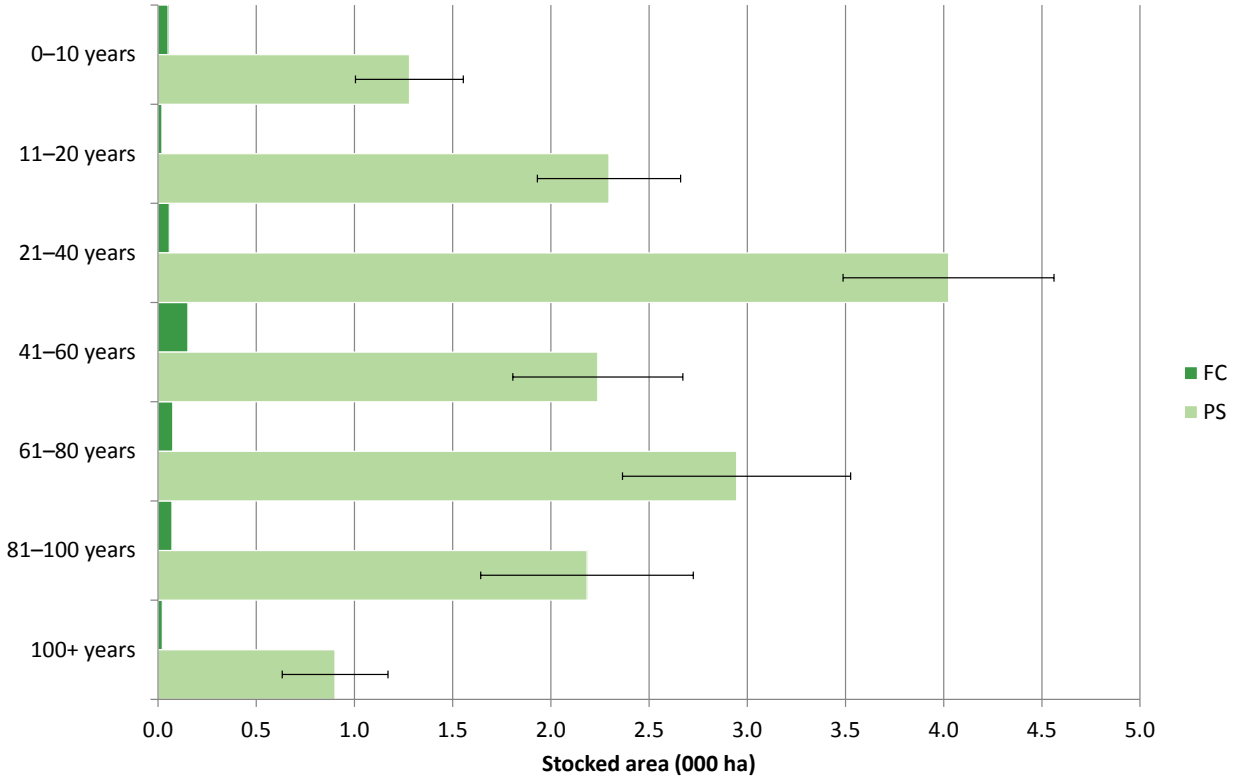


Table 44 Stocked area of ash by age class

Age class (years)	FC	Private sector		Total
	area (000 ha)	area (000 ha)	*SE%*	area (000 ha)
West Midlands				
0–10	< 0.1	1.3	*21*	**1.3**
11–20	< 0.1	2.3	*16*	**2.3**
21–40	< 0.1	4.0	*13*	**4.1**
41–60	0.2	2.2	*19*	**2.4**
61–80	< 0.1	2.9	*20*	**3.0**
81–100	< 0.1	2.2	*25*	**2.3**
100+	< 0.1	0.9	*30*	**0.9**
Total	**0.4**	**15.9**	***7***	**16.3**

Figure 50 Stocked area of ash by mean stand dbh class

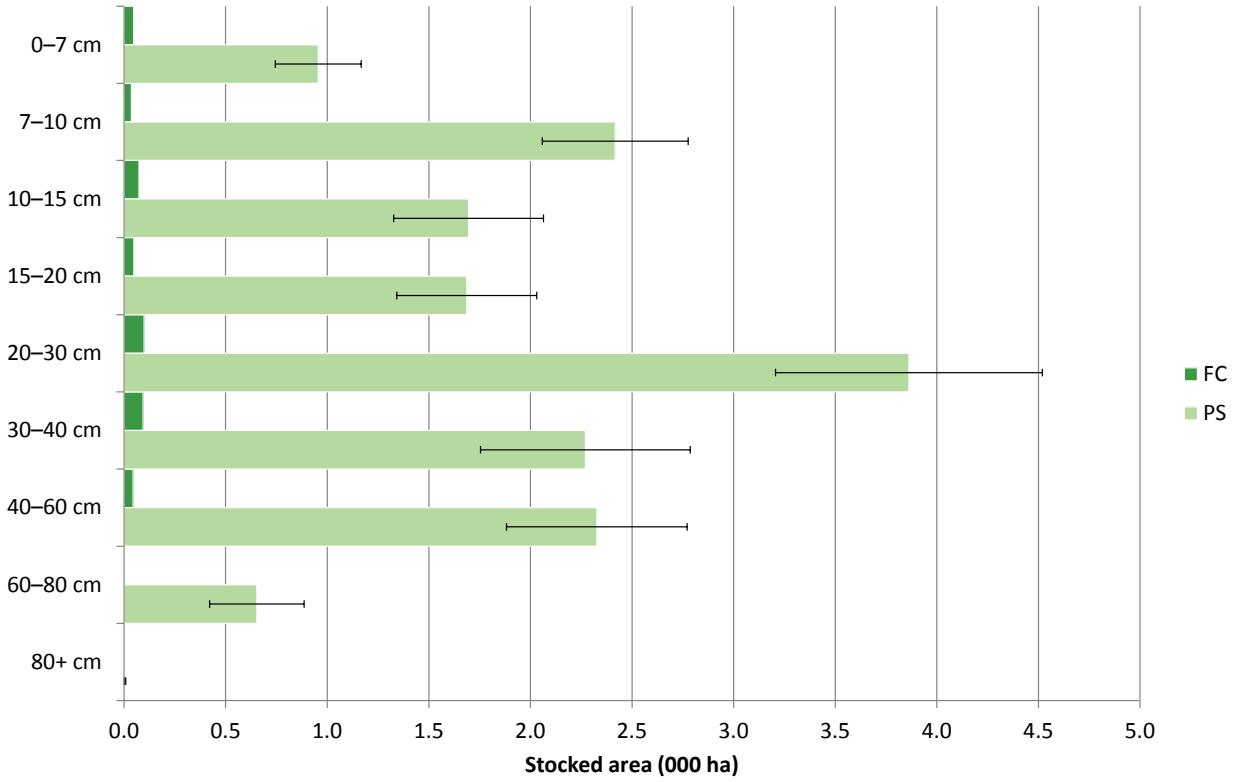


Table 45 Stocked area of ash by mean stand dbh class

Mean stand DBH (cm)	FC	Private sector		Total
	area (000 ha)	area (000 ha)	*SE%*	area (000 ha)
West Midlands				
0–7	< 0.1	1.0	*22*	**1.0**
7–10	< 0.1	2.4	*15*	**2.5**
10–15	< 0.1	1.7	*22*	**1.8**
15–20	< 0.1	1.7	*20*	**1.7**
20–30	< 0.1	3.9	*17*	**4.0**
30–40	< 0.1	2.3	*23*	**2.4**
40–60	< 0.1	2.3	*19*	**2.4**
60–80	< 0.1	0.7	*36*	**0.7**
80+	< 0.1	< 0.1	*83*	**< 0.1**
Total	**0.4**	**15.9**	***7***	**16.3**

Figure 51 Standing volume of ash by age class

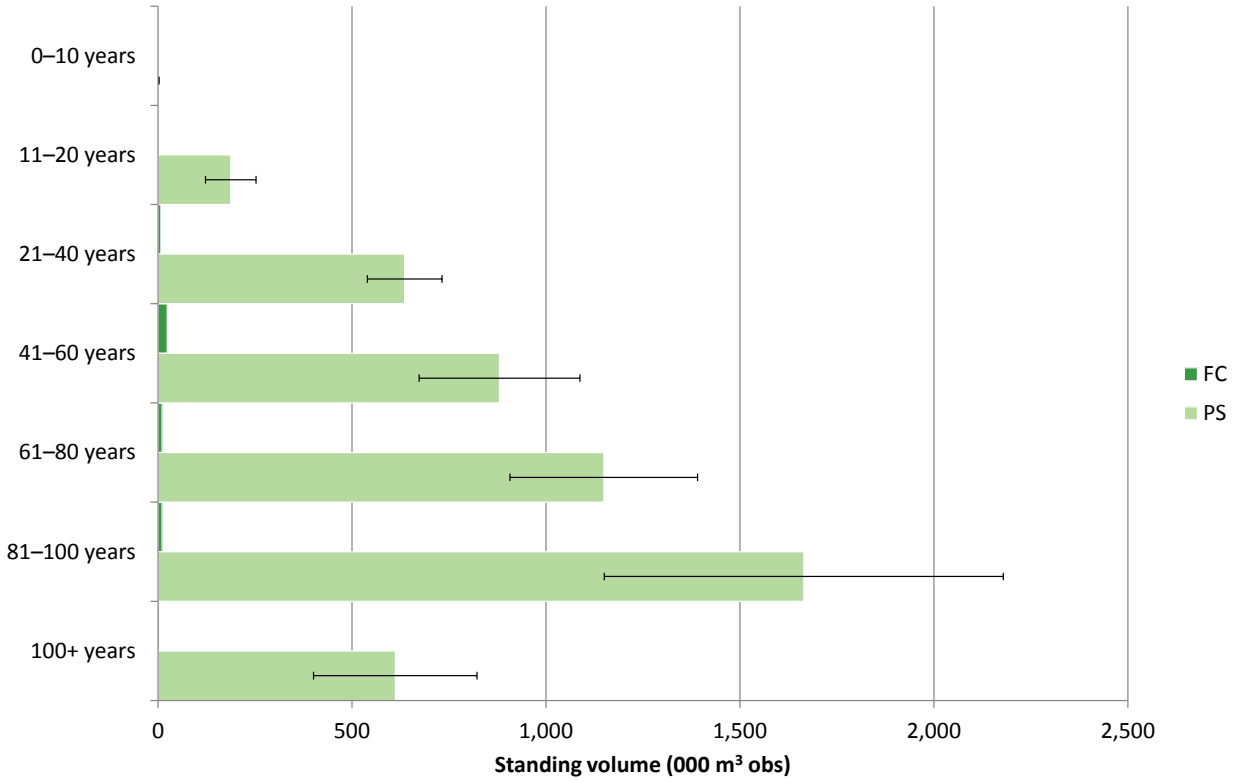


Table 46 Standing volume of ash by age class

Age class (years)	FC	Private sector		Total
	volume (000 m^3 obs)	volume (000 m^3 obs)	*SE%*	volume (000 m^3 obs)
West Midlands				
0–10	< 1	2	*36*	**2**
11–20	< 1	187	*35*	**188**
21–40	7	636	*15*	**643**
41–60	23	880	*24*	**904**
61–80	10	1,149	*21*	**1,159**
81–100	10	1,664	*31*	**1,675**
100+	4	611	*34*	**615**
Total	**56**	**5,130**	***13***	**5,186**

Figure 52 Standing volume of ash by mean stand dbh class

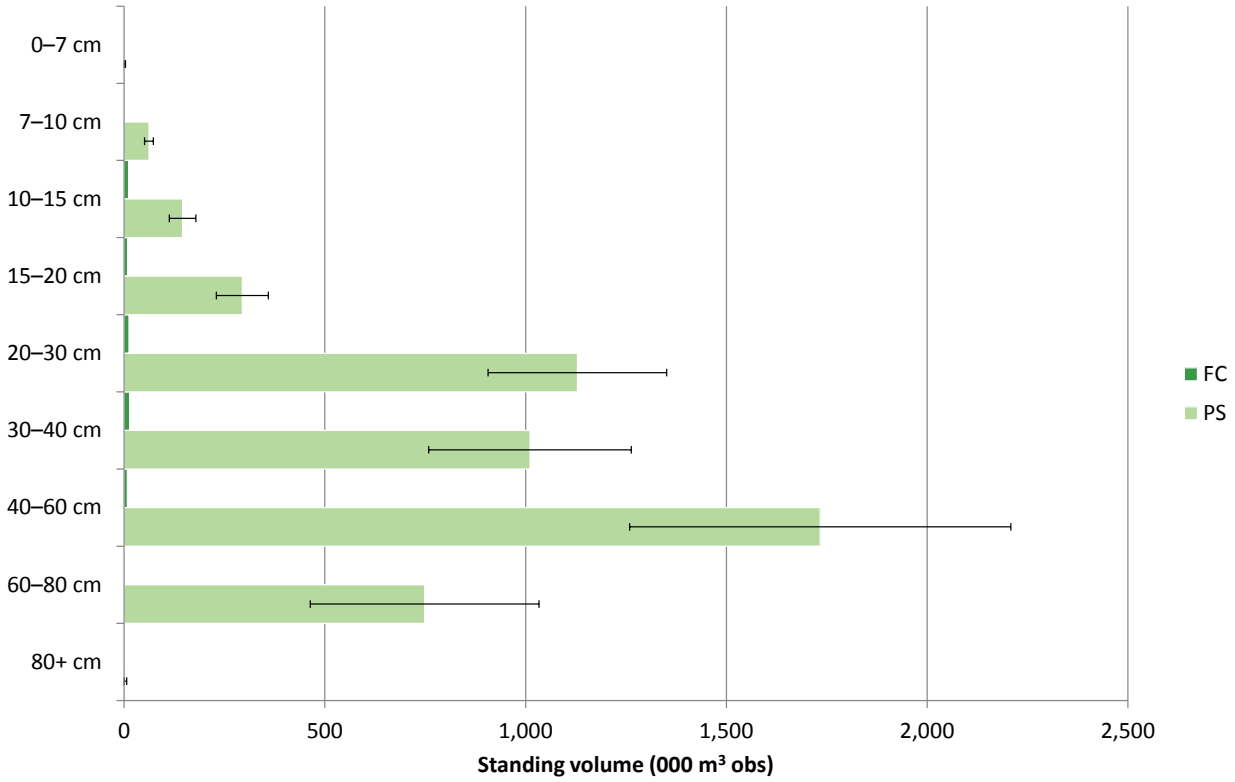


Table 47 Standing volume of ash by mean stand dbh class

Mean stand DBH (cm)	FC	Private sector		Total
	volume (000 m^3 obs)	volume (000 m^3 obs)	*SE%*	volume (000 m^3 obs)
West Midlands				
0–7	< 1	2	*75*	**2**
7–10	1	62	*17*	**63**
10–15	11	146	*23*	**157**
15–20	9	295	*22*	**303**
20–30	12	1,129	*20*	**1,141**
30–40	14	1,011	*25*	**1,025**
40–60	8	1,734	*27*	**1,742**
60–80	< 1	748	*38*	**749**
80+	< 1	4	*83*	**4**
Total	**56**	**5,130**	***13***	**5,186**

Go to Part 4

Figure 53 Number of ash trees by age class

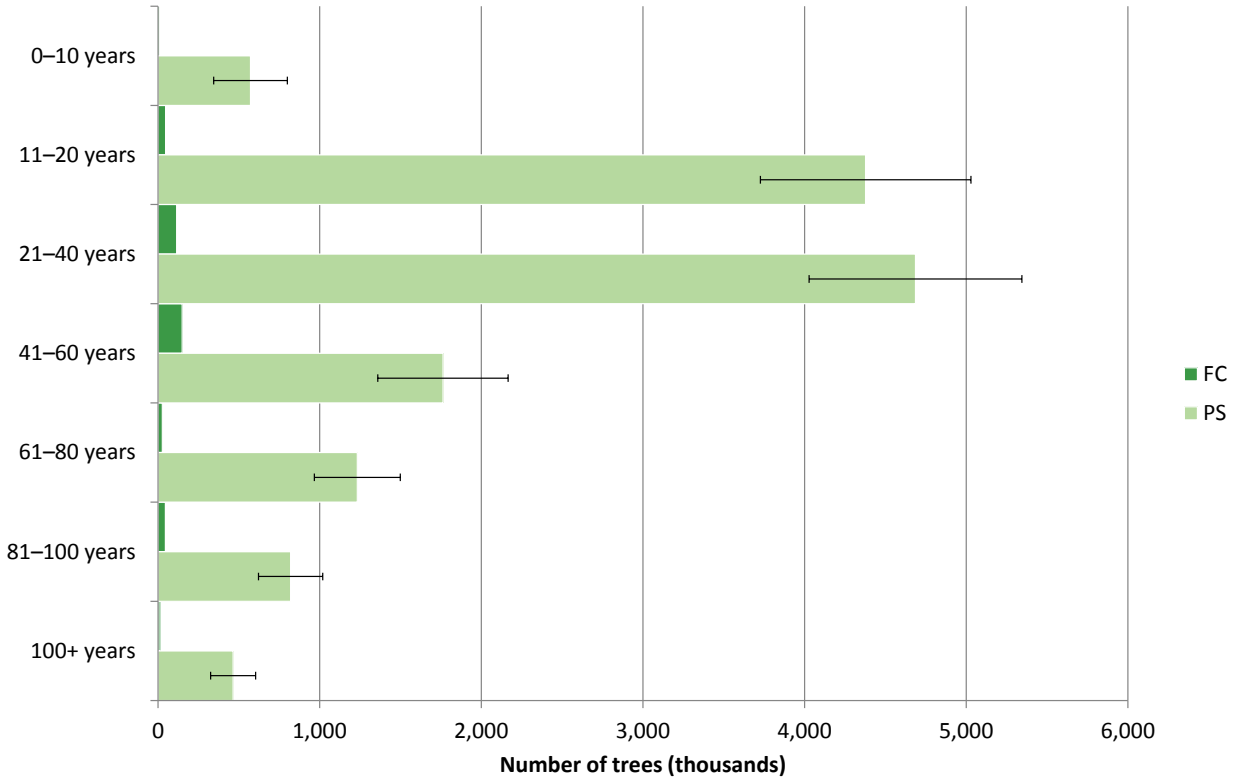


Table 48 Number of ash trees by age class

Age class (years)	FC	Private sector		Total
	number of trees (thousands)	number of trees (thousands)	*SE%*	number of trees (thousands)
West Midlands				
0–10	10	572	*40*	**582**
11–20	46	4,377	*15*	**4,423**
21–40	115	4,686	*14*	**4,801**
41–60	149	1,763	*23*	**1,912**
61–80	26	1,233	*22*	**1,259**
81–100	46	820	*24*	**866**
100+	12	464	*30*	**477**
Total	**405**	**13,914**	***8***	**14,319**

Go to Part 4

Figure 54 Number of ash trees by mean stand dbh class

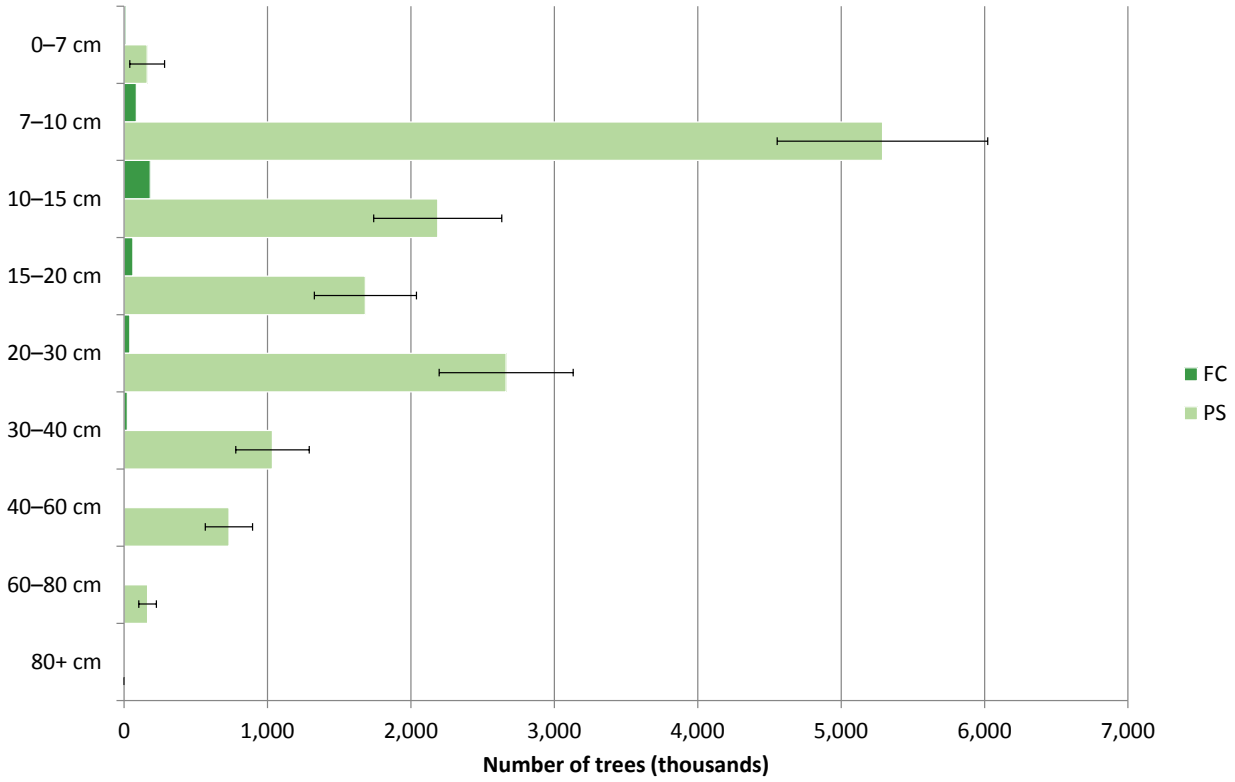
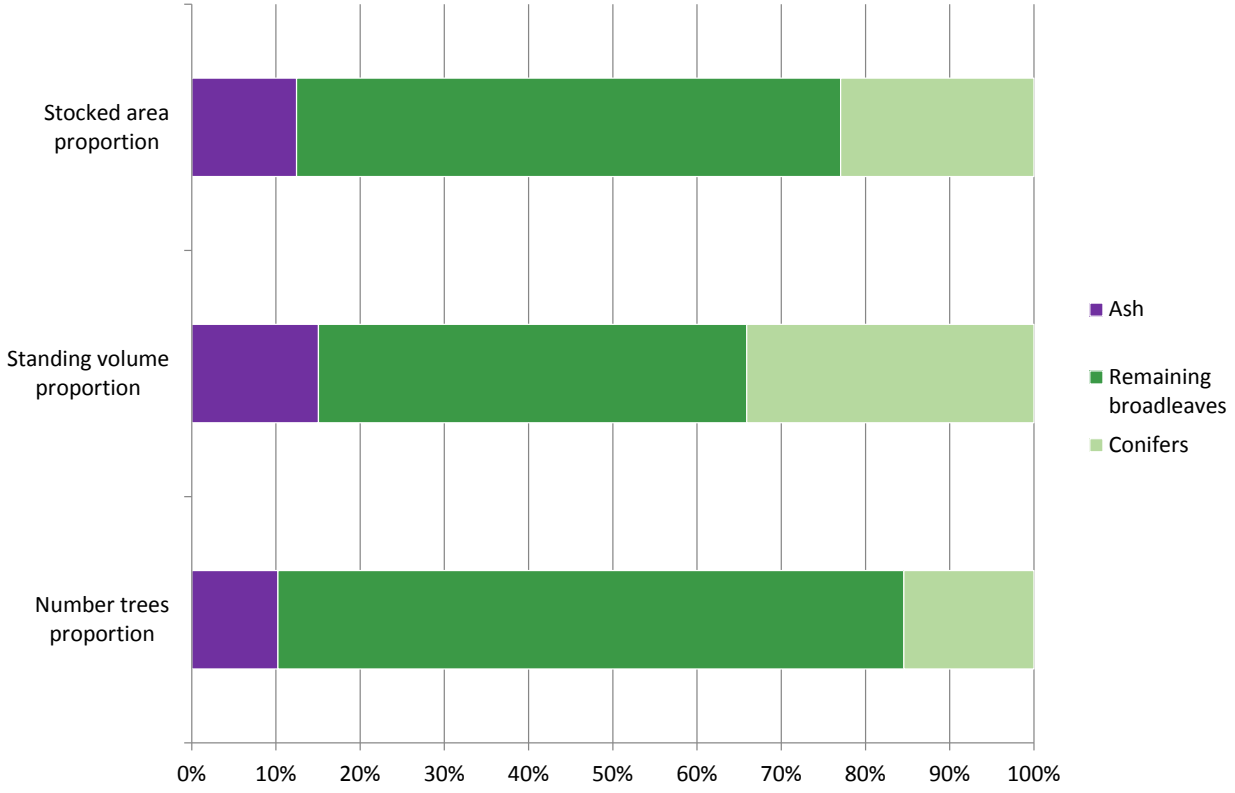


Table 49 Number of ash trees by mean stand dbh class

Mean stand DBH (cm)	FC	Private sector		Total
	number of trees (thousands)	number of trees (thousands)	*SE%*	number of trees (thousands)
West Midlands				
0–7	7	161	*75*	**168**
7–10	85	5,288	*14*	**5,373**
10–15	183	2,187	*20*	**2,370**
15–20	61	1,682	*21*	**1,743**
20–30	40	2,664	*18*	**2,704**
30–40	23	1,035	*25*	**1,058**
40–60	6	731	*23*	**738**
60–80	< 1	164	*37*	**164**
80+	< 1	< 1	*83*	**< 1**
Total	**405**	**13,914**	***8***	**14,319**

Go to Part 4

Figure 55 Ash as a proportion of woodland



Go to Part 4

Table 50 Stocked area of ash as a proportion of woodland

Aligned area	Stocked area of ash			
	FC	Private sector		Total
	area (000 ha)	area (000 ha)	*SE%*	area (000 ha)
West Midlands	0.4	15.9	*7*	**16.3**

Table 50 (cont'd) Stocked area of ash as a proportion of woodland

Aligned area	Stocked area of all broadleaves and all species			
	Total of all broadleaves	Total of all species	Percentage of ash in all broadleaves	Percentage of ash in all species
	area (000 ha)	area (000 ha)	(percent)	(percent)
West Midlands	101.0	130.8	16	12

Table 51 Standing volume of ash as a proportion of woodland

Aligned area	Standing volume of ash			
	FC	Private sector		Total
	volume (000 m^3 obs)	volume (000 m^3 obs)	*SE%*	volume (000 m^3 obs)
West Midlands	56	5,130	*13*	**5,186**

Table 51 (cont'd) Standing volume of ash as a proportion of woodland

Aligned area	Standing volume of all broadleaves and all species			
	Total of all broadleaves	Total of all species	Percentage of ash in all broadleaves	Percentage of ash in all species
	volume (000 m^3 obs)	volume (000 m^3 obs)	(percent)	(percent)
West Midlands	22,719	34,429	23	15

Go to Part 4

Table 52 Number of ash trees as a proportion of woodland

Aligned Area	Numbers of trees of ash			
	FC	Private sector		Total
	number of trees (thousands)	number of trees (thousands)	*SE%*	number of trees (thousands)
West Midlands	405	13,914	*8*	**14,319**

Table 52 (cont'd) Number of ash trees as a proportion of woodland

Aligned Area	Number of trees of all broadleaves and all species			
	Total of all broadleaves	Total of all species	Percentage of ash in all broadleaves	Percentage of ash in all species
	number of trees (thousands)	number of trees (thousands)	(percent)	(percent)
West Midlands	118,195	139,638	12	10

Go to Part 4

Oak

Figure 56 Stocked area of oak by age class

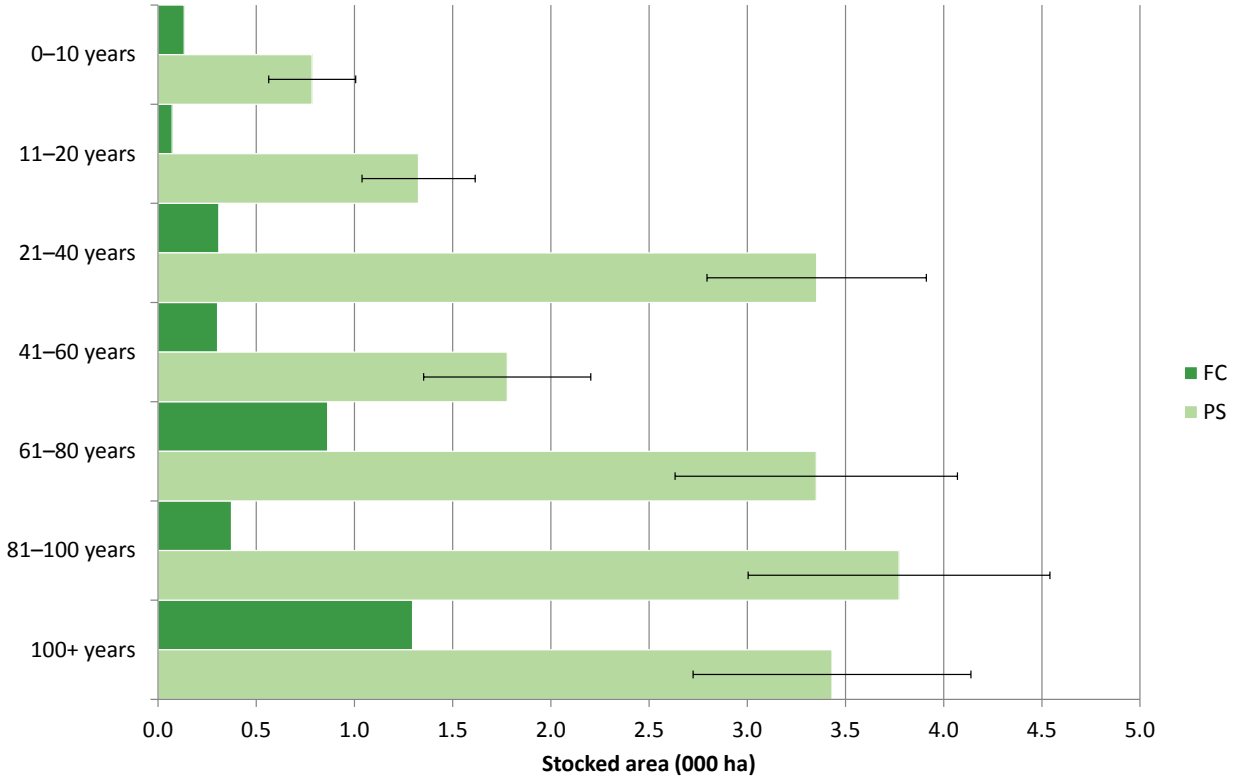


Table 53 Stocked area of oak by age class

Age class (years)	FC	Private sector		Total
	area (000 ha)	area (000 ha)	*SE%*	area (000 ha)
West Midlands				
0–10	0.1	0.8	*28*	**0.9**
11–20	< 0.1	1.3	*22*	**1.4**
21–40	0.3	3.4	*17*	**3.7**
41–60	0.3	1.8	*24*	**2.1**
61–80	0.9	3.4	*21*	**4.2**
81–100	0.4	3.8	*20*	**4.1**
100+	1.3	3.4	*21*	**4.7**
Total	**3.4**	**17.8**	***8***	**21.2**

Go to Part 4

Figure 57 Stocked area of oak by mean stand dbh class

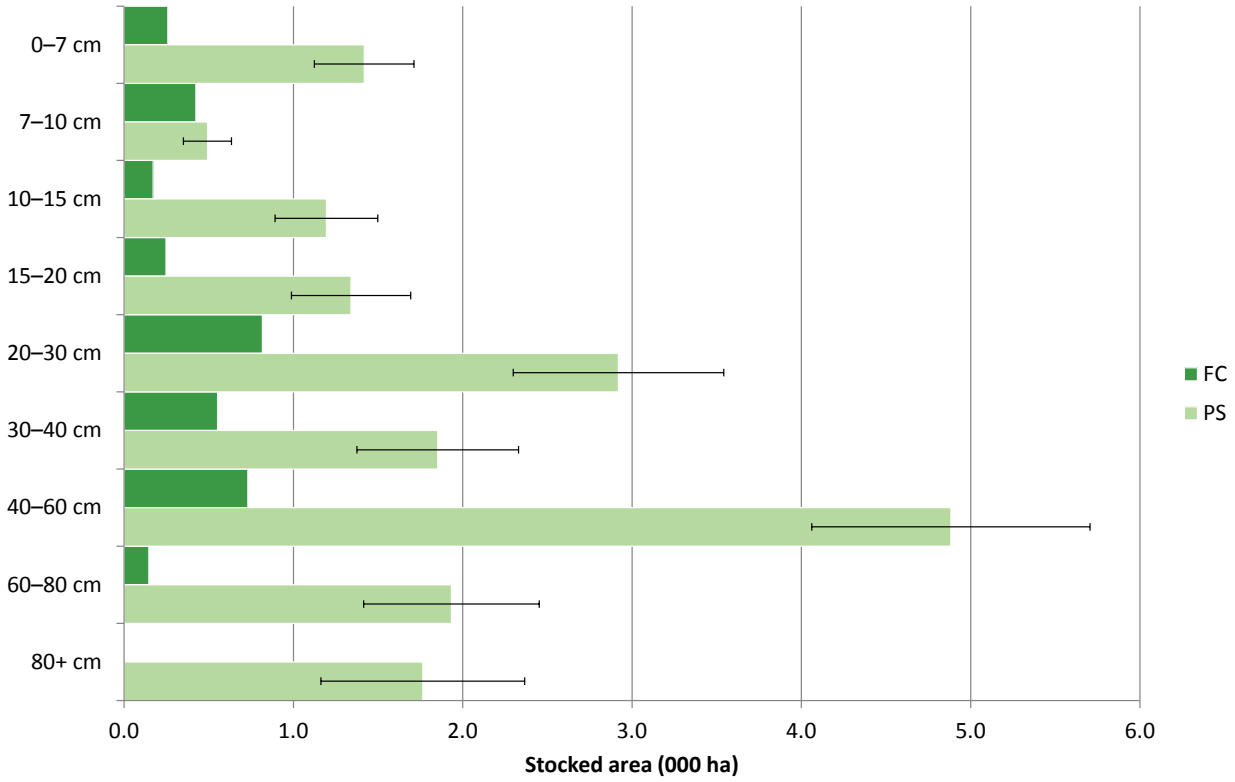


Table 54 Stocked area of oak by mean stand dbh class

Mean stand DBH (cm)	FC	Private sector		Total
	area (000 ha)	area (000 ha)	*SE%*	area (000 ha)
West Midlands				
0–7	0.3	1.4	*21*	**1.7**
7–10	0.4	0.5	*29*	**0.9**
10–15	0.2	1.2	*25*	**1.4**
15–20	0.2	1.3	*26*	**1.6**
20–30	0.8	2.9	*21*	**3.7**
30–40	0.6	1.9	*26*	**2.4**
40–60	0.7	4.9	*17*	**5.6**
60–80	0.1	1.9	*27*	**2.1**
80+	< 0.1	1.8	*34*	**1.8**
Total	**3.4**	**17.8**	***8***	**21.2**

Go to Part 4

Figure 58 Standing volume of oak by age class

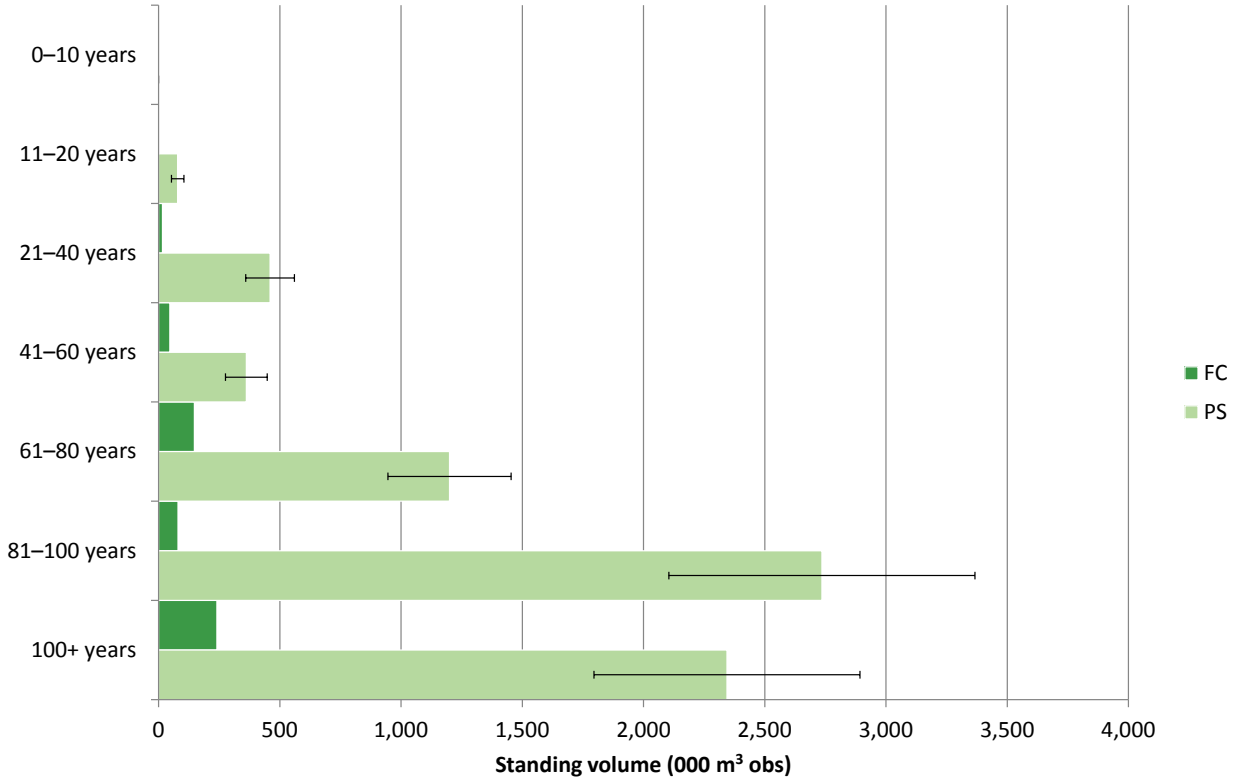


Table 55 Standing volume of oak by age class

Age class (years)	FC	Private sector		Total
	volume (000 m^3 obs)	volume (000 m^3 obs)	*SE%*	volume (000 m^3 obs)
West Midlands				
0–10	0	0	-	**0**
11–20	< 1	79	*33*	**80**
21–40	16	460	*22*	**476**
41–60	46	362	*24*	**408**
61–80	147	1,200	*21*	**1,347**
81–100	80	2,736	*23*	**2,816**
100+	241	2,344	*23*	**2,585**
Total	**531**	**7,180**	***11***	**7,711**

Go to Part 4

Figure 59 Standing volume of oak by mean stand dbh class

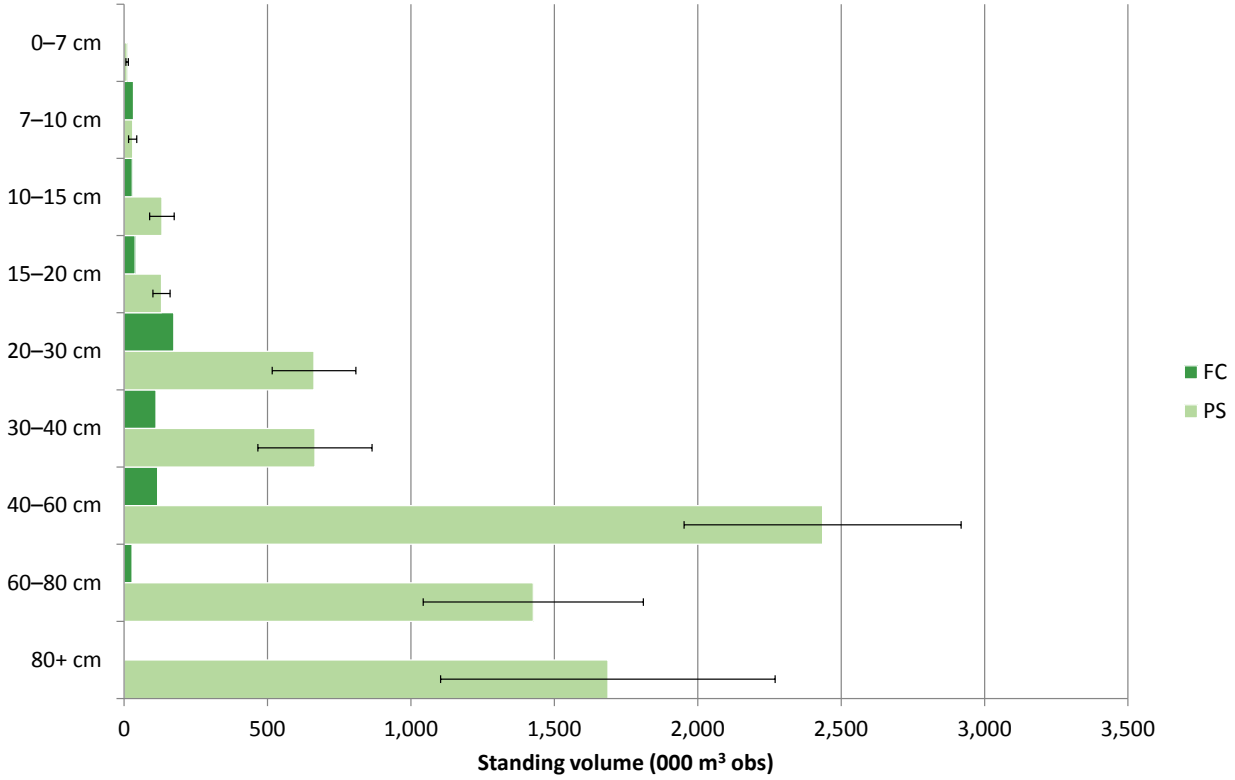


Table 56 Standing volume of oak by mean stand dbh class

Mean stand DBH (cm)	FC	Private sector		Total
	volume (000 m^3 obs)	volume (000 m^3 obs)	*SE%*	volume (000 m^3 obs)
West Midlands				
0–7	2	11	*39*	**13**
7–10	33	30	*48*	**62**
10–15	28	132	*33*	**160**
15–20	39	130	*23*	**169**
20–30	173	662	*22*	**836**
30–40	111	666	*30*	**777**
40–60	117	2,435	*20*	**2,553**
60–80	28	1,427	*27*	**1,454**
80+	< 1	1,687	*35*	**1,687**
Total	**531**	**7,180**	***11***	**7,711**

Go to Part 4

Figure 60 Number of oak trees by age class

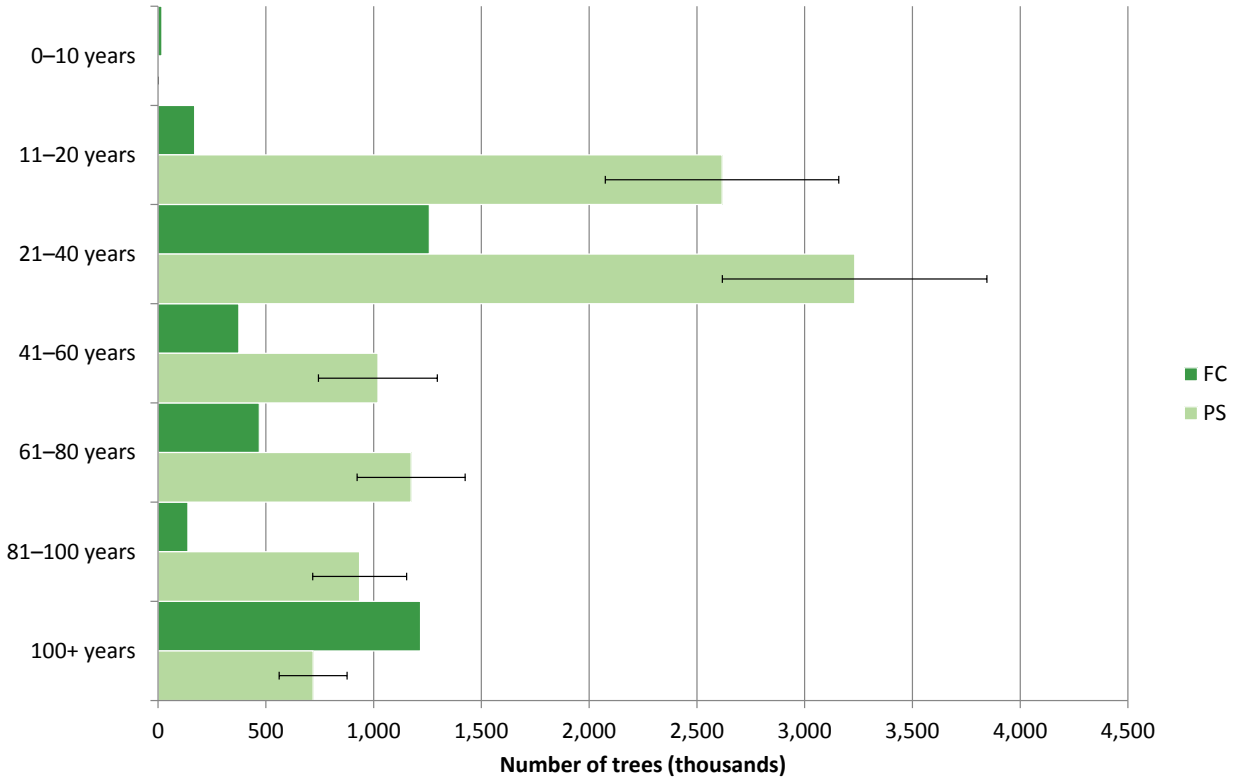


Table 57 Number of oak trees by age class

Age class (years)	FC	Private sector		Total
	number of trees (thousands)	number of trees (thousands)	*SE%*	number of trees (thousands)
West Midlands				
0–10	17	0	-	**17**
11–20	170	2,617	*21*	**2,787**
21–40	1,259	3,232	*19*	**4,491**
41–60	375	1,020	*27*	**1,395**
61–80	470	1,174	*21*	**1,644**
81–100	138	935	*23*	**1,073**
100+	1,218	719	*22*	**1,937**
Total	**3,647**	**9,697**	***10***	**13,344**

Go to Part 4

Figure 61 Number of oak trees by mean stand dbh class

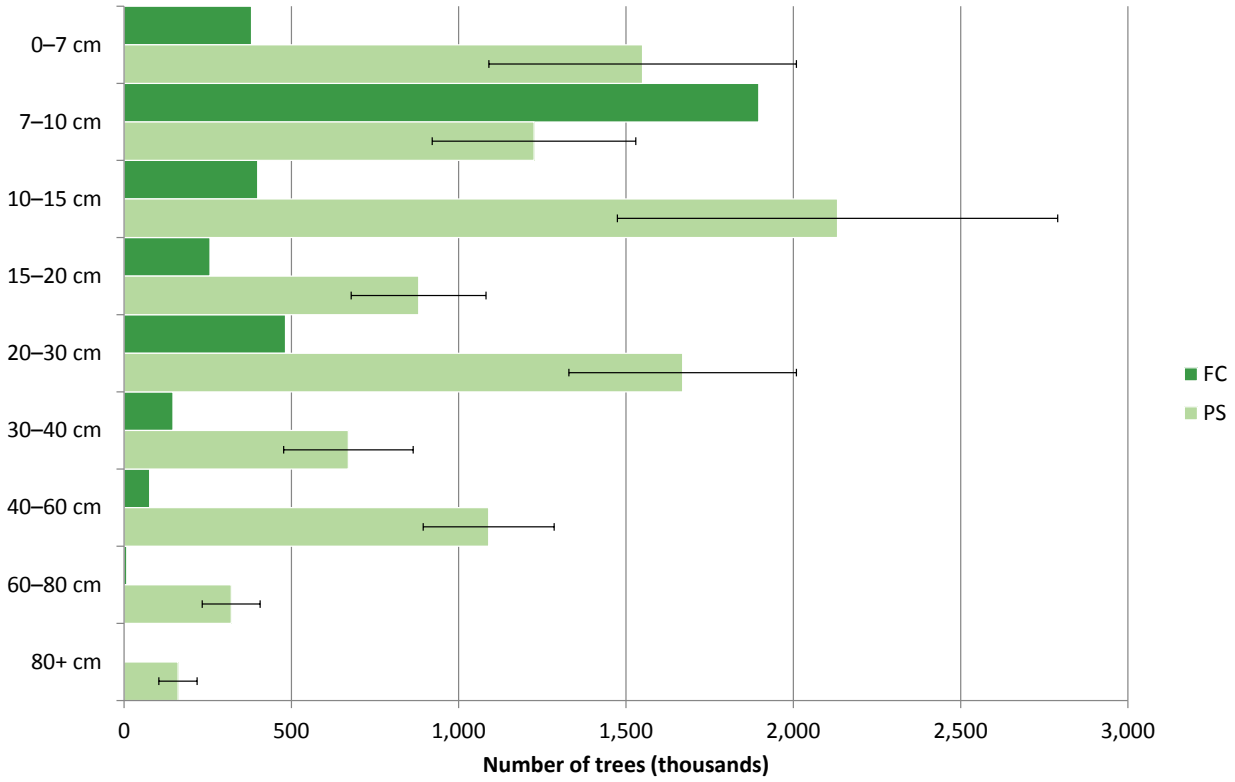
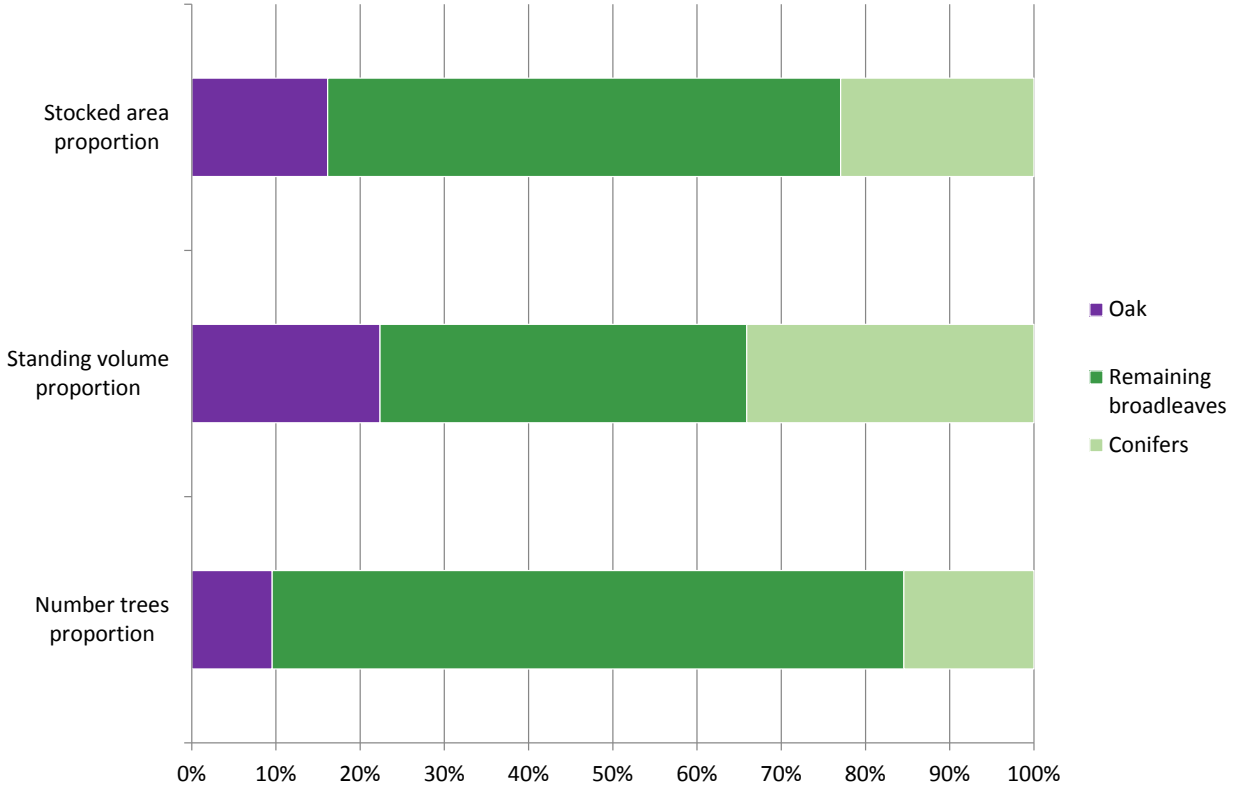


Table 58 Number of oak trees by mean stand dbh class

Mean stand DBH (cm)	FC	Private sector		Total
	number of trees (thousands)	number of trees (thousands)	*SE%*	number of trees (thousands)
West Midlands				
0–7	381	1,549	*30*	**1,930**
7–10	1,897	1,225	*25*	**3,122**
10–15	400	2,132	*31*	**2,532**
15–20	257	880	*23*	**1,137**
20–30	482	1,669	*20*	**2,151**
30–40	146	670	*29*	**817**
40–60	77	1,089	*18*	**1,166**
60–80	8	320	*27*	**328**
80+	< 1	161	*35*	**161**
Total	**3,647**	**9,697**	***10***	**13,344**

Go to Part 4

Figure 62 Oak as a proportion of woodland



Go to Part 4

Table 59 Stocked area of oak as a proportion of woodland

Aligned area	Stocked area of oak			
	FC	Private sector		Total
	area (000 ha)	area (000 ha)	*SE%*	area (000 ha)
West Midlands	3.4	17.8	*8*	**21.2**

Table 59 (cont'd) Stocked area of oak as a proportion of woodland

Aligned area	Stocked area of all broadleaves and all species			
	Total of all broadleaves	Total of all species	Percentage of oak in all broadleaves	Percentage of oak in all species
	area (000 ha)	area (000 ha)	(percent)	(percent)
West Midlands	101.0	130.8	21	16

Table 60 Standing volume of oak as a proportion of woodland

Aligned area	Standing volume of oak			
	FC	Private sector		Total
	volume (000 m^3 obs)	volume (000 m^3 obs)	*SE%*	volume (000 m^3 obs)
West Midlands	531	7,180	*11*	**7,711**

Table 60 (cont'd) Standing volume of oak as a proportion of woodland

Aligned area	Standing volume of all broadleaves and all species			
	Total of all broadleaves	Total of all species	Percentage of oak in all broadleaves	Percentage of oak in all species
	volume (000 m^3 obs)	volume (000 m^3 obs)	(percent)	(percent)
West Midlands	22,719	34,429	34	22

Go to Part 4

Table 61 Number of oak trees as a proportion of woodland

Aligned Area	Numbers of trees of oak			
	FC	Private sector		Total
	number of trees (thousands)	number of trees (thousands)	*SE%*	number of trees (thousands)
West Midlands	3,647	9,697	*10*	**13,344**

Table 61 (cont'd) Number of oak trees as a proportion of woodland

Aligned Area	Number of trees of all broadleaves and all species			
	Total of all broadleaves	Total of all species	Percentage of oak in all broadleaves	Percentage of oak in all species
	number of trees (thousands)	number of trees (thousands)	(percent)	(percent)
West Midlands	118,195	139,638	11	10

Go to Part 4

Sweet chestnut

Figure 63 Stocked area of sweet chestnut by age class

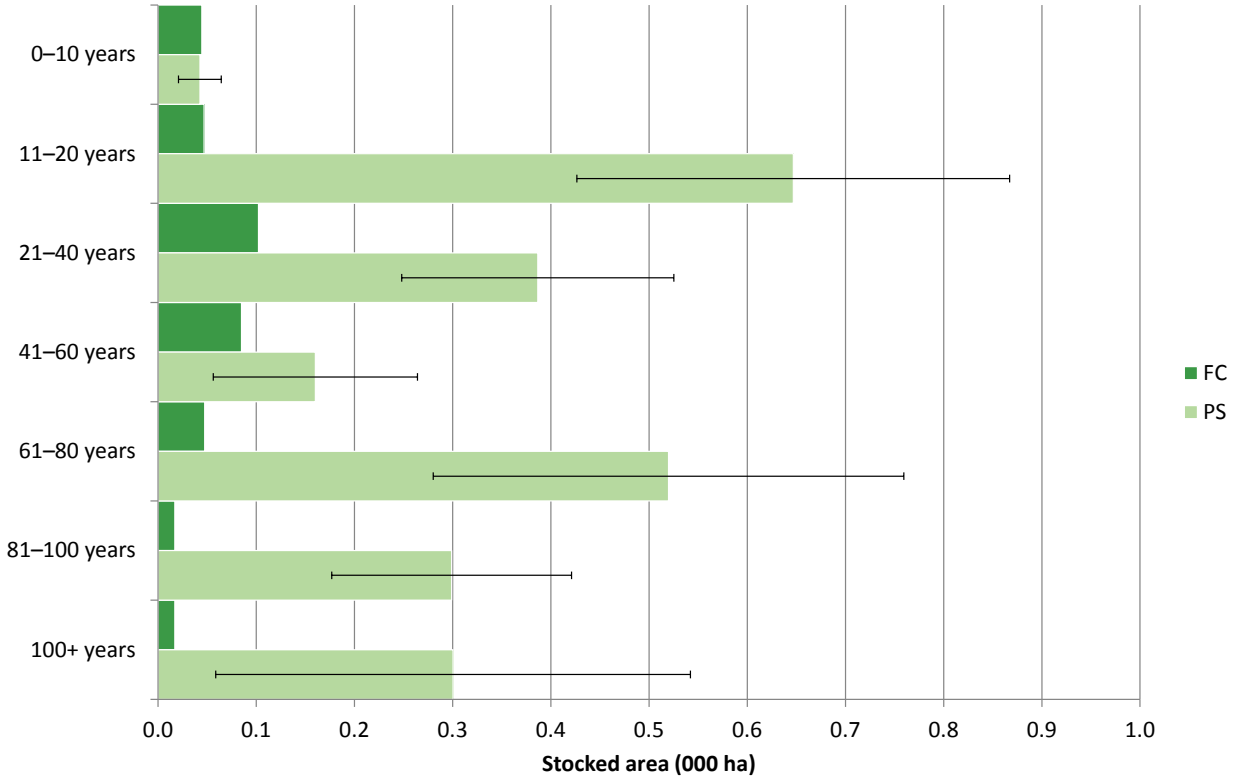


Table 62 Stocked area of sweet chestnut by age class

Age class (years)	FC	Private sector		Total
	area (000 ha)	area (000 ha)	*SE%*	area (000 ha)
West Midlands				
0–10	< 0.1	< 0.1	*51*	**< 0.1**
11–20	< 0.1	0.6	*34*	**0.7**
21–40	0.1	0.4	*36*	**0.5**
41–60	< 0.1	0.2	*65*	**0.2**
61–80	< 0.1	0.5	*46*	**0.6**
81–100	< 0.1	0.3	*41*	**0.3**
100+	< 0.1	0.3	*80*	**0.3**
Total	**0.4**	**2.4**	***23***	**2.7**

Go to Part 4

Figure 64 Stocked area of sweet chestnut by mean stand dbh class

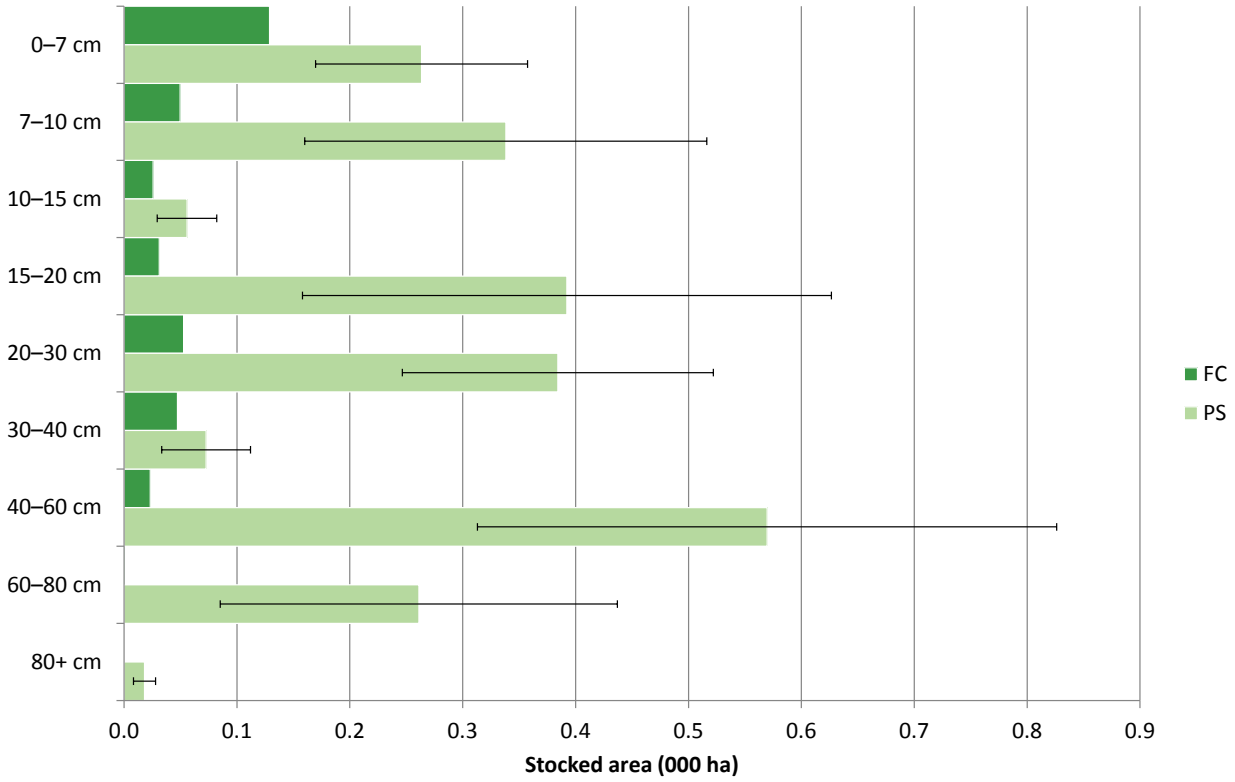


Table 63 Stocked area of sweet chestnut by mean stand dbh class

Mean stand DBH (cm)	FC	Private sector		Total
	area (000 ha)	area (000 ha)	*SE%*	area (000 ha)
West Midlands				
0–7	0.1	0.3	*36*	**0.4**
7–10	< 0.1	0.3	*53*	**0.4**
10–15	< 0.1	< 0.1	*47*	**< 0.1**
15–20	< 0.1	0.4	*60*	**0.4**
20–30	< 0.1	0.4	*36*	**0.4**
30–40	< 0.1	< 0.1	*54*	**0.1**
40–60	< 0.1	0.6	*45*	**0.6**
60–80	< 0.1	0.3	*67*	**0.3**
80+	0.0	< 0.1	*54*	**< 0.1**
Total	**0.4**	**2.4**	***23***	**2.7**

Go to Part 4

Figure 65 Standing volume of sweet chestnut by age class

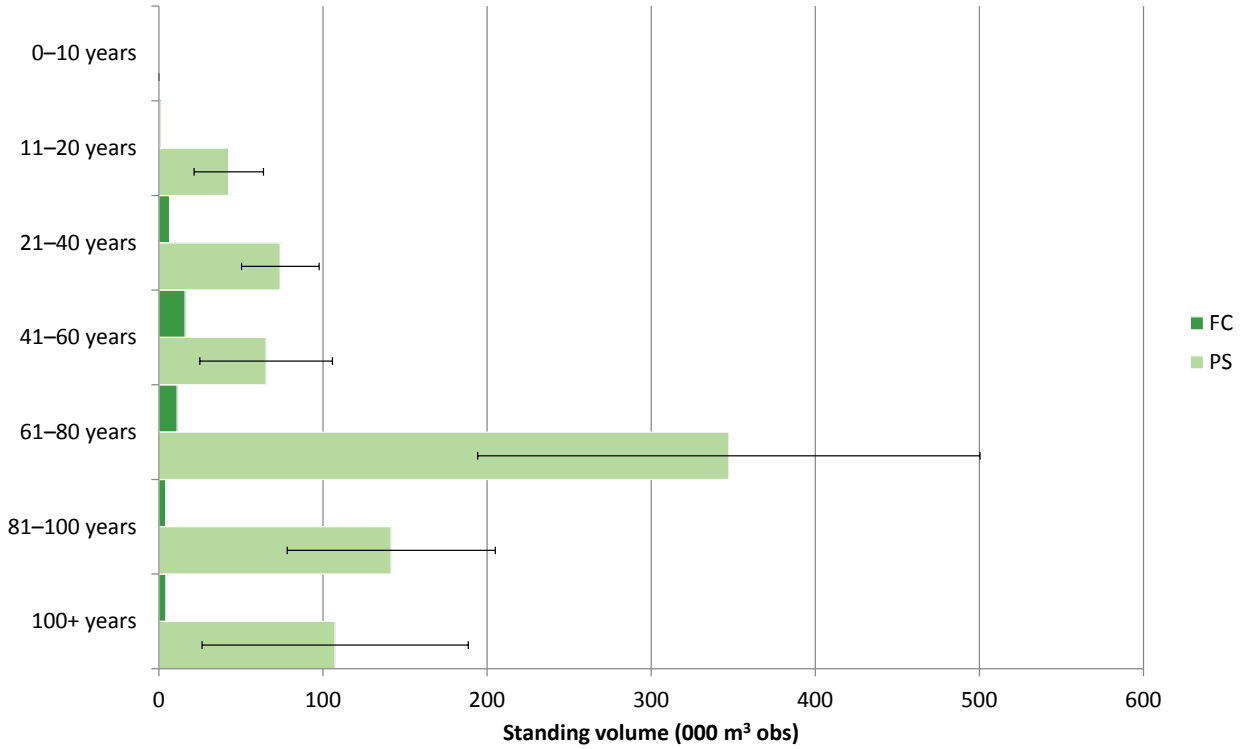


Table 64 Standing volume of sweet chestnut by age class

Age class (years)	FC volume (000 m³ obs)	Private sector volume (000 m³ obs)	Private sector *SE%*	Total volume (000 m³ obs)
West Midlands				
0–10	0	0	-	**0**
11–20	< 1	43	*50*	**43**
21–40	7	74	*32*	**80**
41–60	16	65	*62*	**81**
61–80	11	347	*44*	**358**
81–100	4	142	*45*	**146**
100+	4	107	*76*	**112**
Total	**43**	**778**	***28***	**821**

Go to Part 4

Figure 66 Standing volume of sweet chestnut by mean stand dbh class

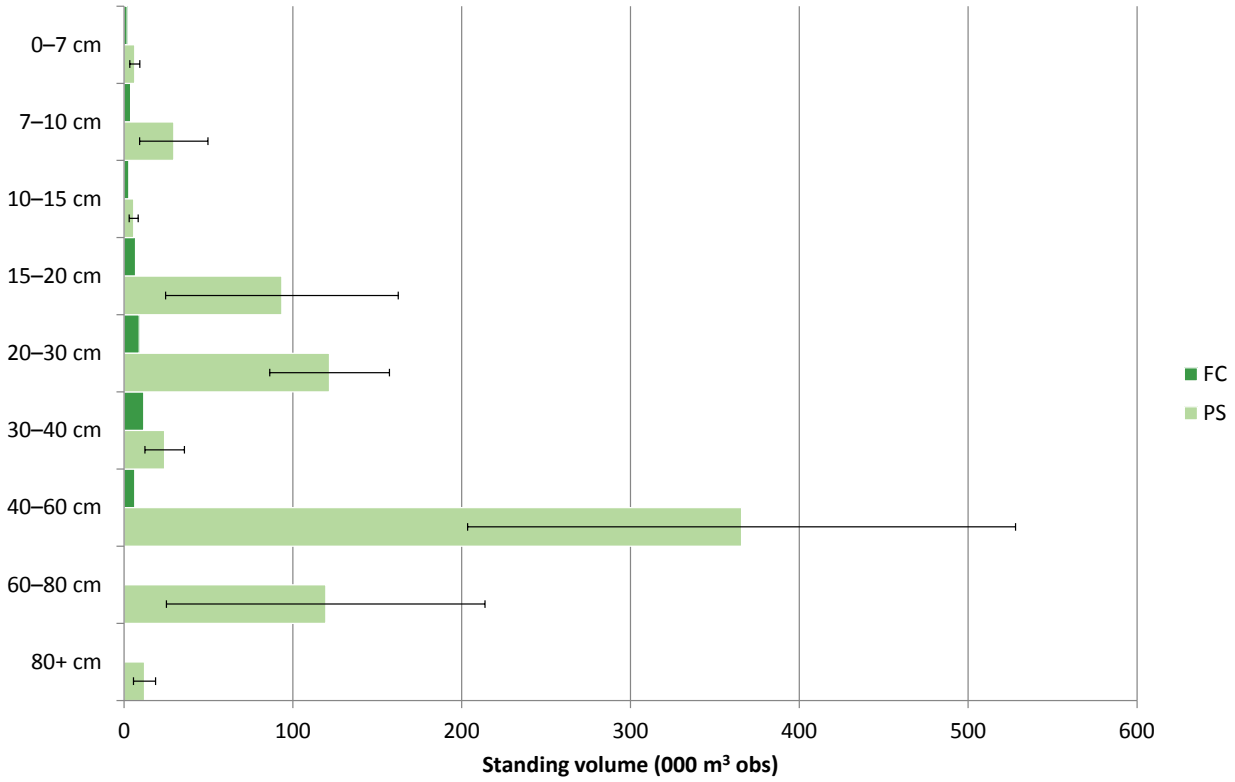


Table 65 Standing volume of sweet chestnut by mean stand dbh class

Mean stand DBH (cm)	FC	Private sector		Total
	volume (000 m³ obs)	volume (000 m³ obs)	*SE%*	volume (000 m³ obs)
West Midlands				
0–7	2	6	*47*	**8**
7–10	4	29	*69*	**33**
10–15	3	6	*46*	**8**
15–20	7	93	*74*	**100**
20–30	9	122	*29*	**131**
30–40	12	24	*49*	**36**
40–60	6	366	*44*	**372**
60–80	< 1	119	*79*	**120**
80+	0	12	*54*	**12**
Total	**43**	**778**	***28***	**821**

Go to Part 4

Figure 67 Number of sweet chestnut trees by age class

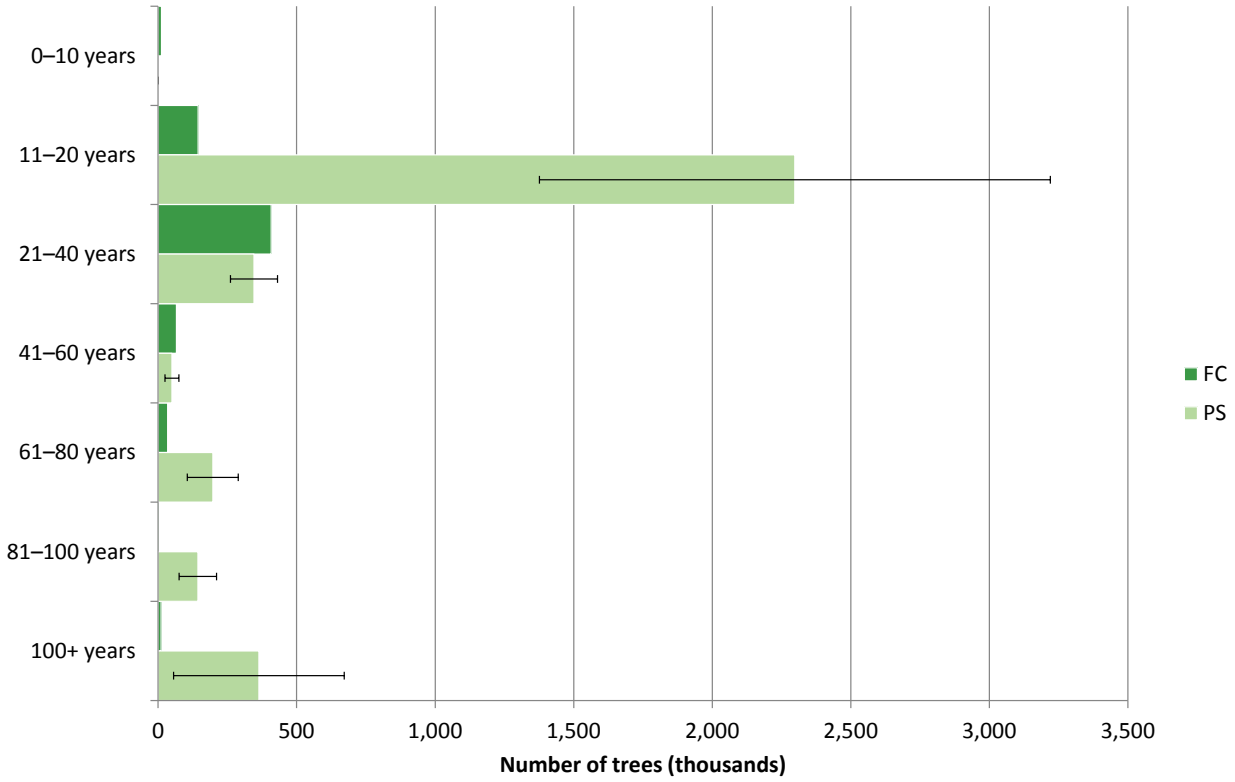


Table 66 Number of sweet chestnut trees by age class

Age class (years)	FC	Private sector		Total
	number of trees (thousands)	number of trees (thousands)	*SE%*	number of trees (thousands)
West Midlands				
0–10	12	0	-	**12**
11–20	145	2,298	*40*	**2,443**
21–40	408	347	*25*	**754**
41–60	67	50	*50*	**117**
61–80	35	197	*47*	**232**
81–100	5	144	*47*	**149**
100+	11	364	*85*	**375**
Total	**683**	**3,399**	***30***	**4,082**

Go to Part 4

Figure 68 Number of sweet chestnut trees by mean stand dbh class

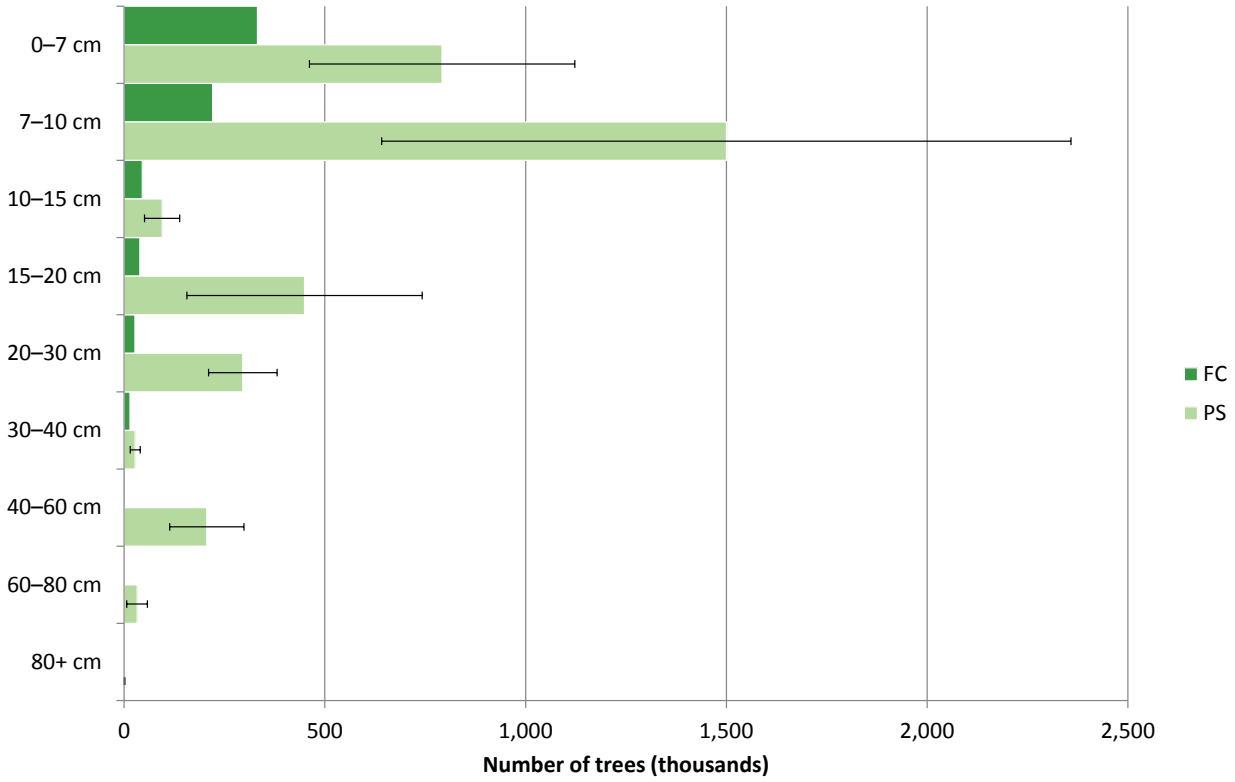
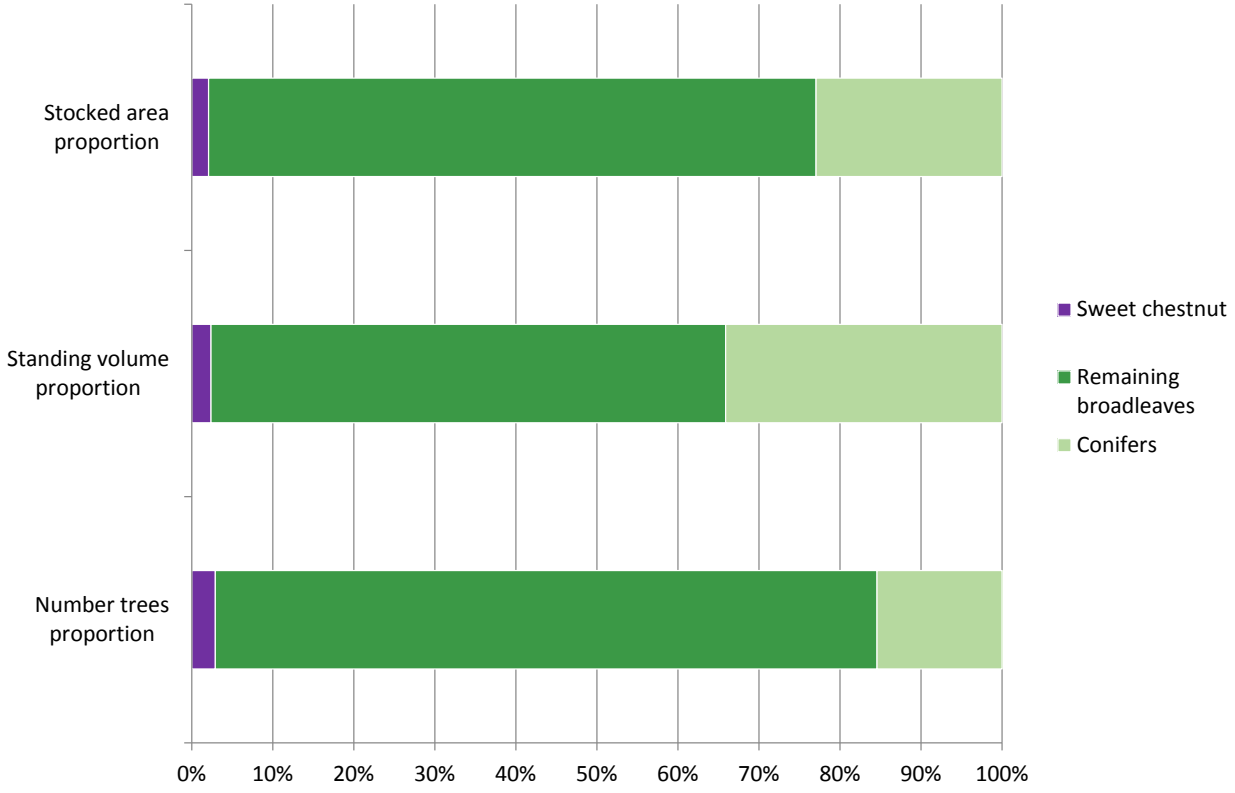


Table 67 Number of sweet chestnut trees by mean stand dbh class

Mean stand DBH (cm)	FC	Private sector		Total
	number of trees (thousands)	number of trees (thousands)	*SE%*	number of trees (thousands)
West Midlands				
0–7	332	792	*42*	**1,124**
7–10	221	1,500	*57*	**1,721**
10–15	45	95	*46*	**140**
15–20	39	449	*65*	**489**
20–30	27	296	*29*	**323**
30–40	15	28	*45*	**42**
40–60	4	206	*45*	**210**
60–80	< 1	32	*80*	**32**
80+	0	1	*54*	**1**
Total	**683**	**3,399**	***30***	**4,082**

Go to Part 4

Figure 69 Sweet chestnut as a proportion of woodland



Go to Part 4

Table 68 Stocked area of sweet chestnut as a proportion of woodland

Aligned area	Stocked area of sweet chestnut			
	FC	Private sector		Total
	area (000 ha)	area (000 ha)	*SE%*	area (000 ha)
West Midlands	0.4	2.4	*23*	**2.7**

Table 68 (cont'd) Stocked area of sweet chestnut as a proportion of woodland

Aligned area	Stocked area of all broadleaves and all species			
	Total of all broadleaves	Total of all species	Percentage of sweet chestnut in all broadleaves	Percentage of sweet chestnut in all species
	area (000 ha)	area (000 ha)	(percent)	(percent)
West Midlands	101.0	130.8	3	2

Table 69 Standing volume of sweet chestnut as a proportion of woodland

Aligned area	Standing volume of sweet chestnut			
	FC	Private sector		Total
	volume (000 m^3 obs)	volume (000 m^3 obs)	*SE%*	volume (000 m^3 obs)
West Midlands	43	778	*28*	**821**

Table 69 (cont'd) Standing volume of sweet chestnut as a proportion of woodland

Aligned area	Standing volume of all broadleaves and all species			
	Total of all broadleaves	Total of all species	Percentage of sweet chestnut in all broadleaves	Percentage of sweet chestnut in all species
	volume (000 m^3 obs)	volume (000 m^3 obs)	(percent)	(percent)
West Midlands	22,719	34,429	4	2

Go to Part 4

Table 70 Number of sweet chestnut trees as a proportion of woodland

Aligned Area	Numbers of trees of sweet chestnut			
	FC	Private sector		Total
	number of trees (thousands)	number of trees (thousands)	*SE%*	number of trees (thousands)
West Midlands	683	3,399	*30*	**4,082**

Table 70 (cont'd) Number of sweet chestnut trees as a proportion of woodland

Aligned Area	Number of trees of all broadleaves and all species			
	Total of all broadleaves	Total of all species	Percentage of sweet chestnut in all broadleaves	Percentage of sweet chestnut in all species
	number of trees (thousands)	number of trees (thousands)	(percent)	(percent)
West Midlands	118,195	139,638	3	3

Go to Part 4

Larch

Figure 70 Stocked area of larch by age class

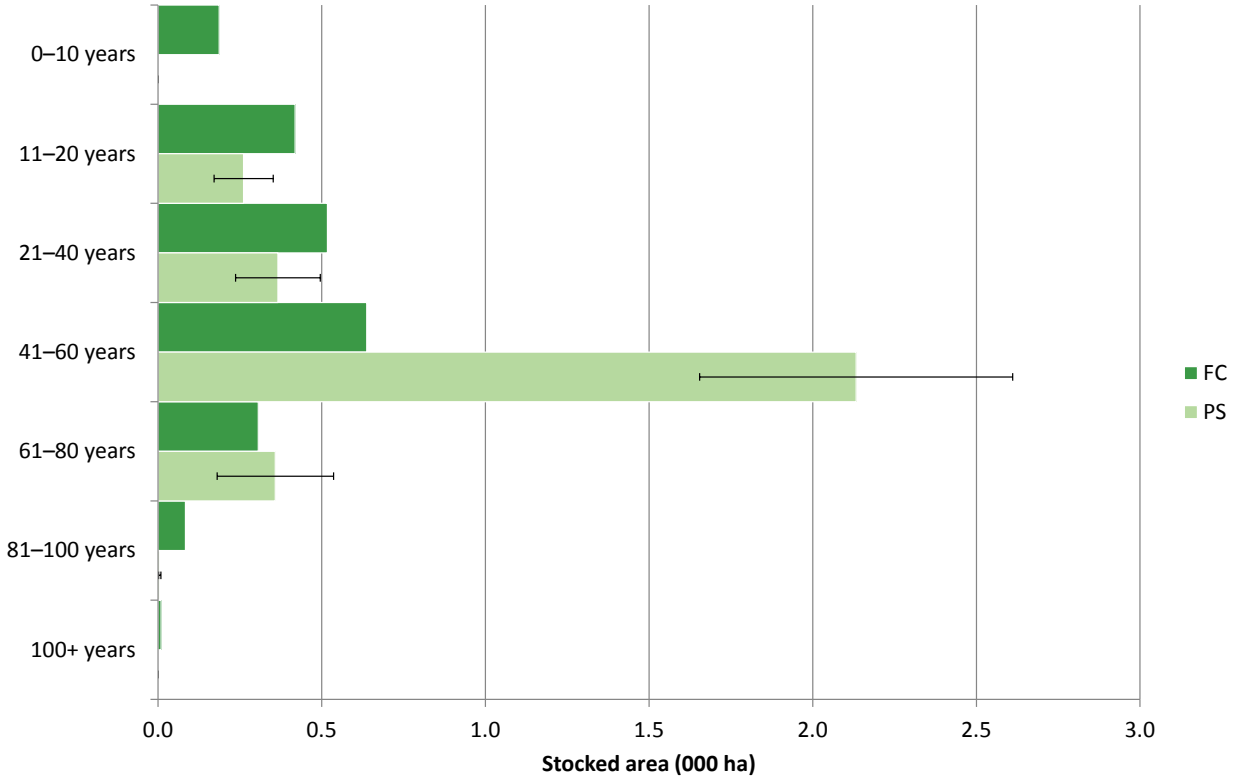


Table 71 Stocked area of larch by age class

Age class (years)	FC	Private sector		Total
	area (000 ha)	area (000 ha)	*SE%*	area (000 ha)
West Midlands				
0–10	0.2	0.0	-	**0.2**
11–20	0.4	0.3	*35*	**0.7**
21–40	0.5	0.4	*35*	**0.9**
41–60	0.6	2.1	*22*	**2.8**
61–80	0.3	0.4	*50*	**0.7**
81–100	< 0.1	< 0.1	*69*	**< 0.1**
100+	< 0.1	0.0	-	**< 0.1**
Total	**2.2**	**3.1**	***16***	**5.3**

Go to Part 4

Figure 71 Stocked area of larch by mean stand dbh class

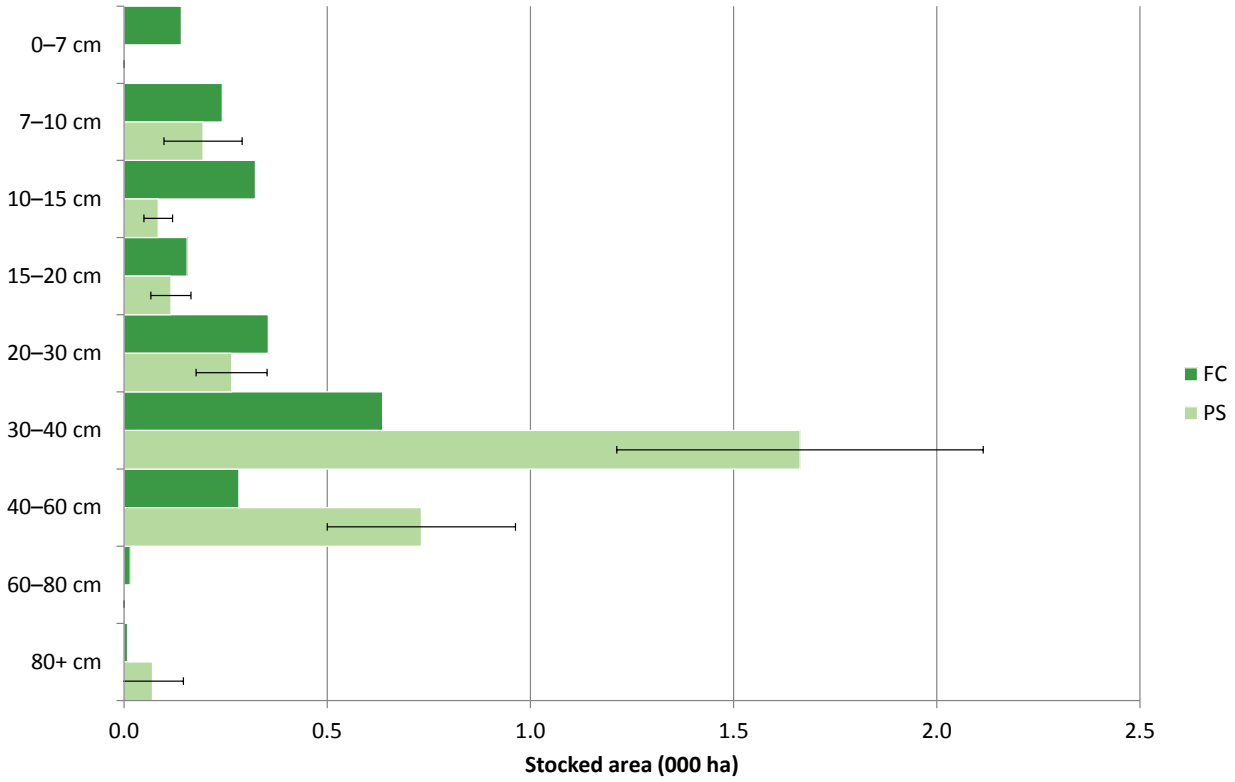


Table 72 Stocked area of larch by mean stand dbh class

Mean stand DBH (cm)	FC	Private sector		Total
	area (000 ha)	area (000 ha)	*SE%*	area (000 ha)
West Midlands				
0–7	0.1	0.0	-	**0.1**
7–10	0.2	0.2	*49*	**0.4**
10–15	0.3	< 0.1	*42*	**0.4**
15–20	0.2	0.1	*43*	**0.3**
20–30	0.4	0.3	*33*	**0.6**
30–40	0.6	1.7	*27*	**2.3**
40–60	0.3	0.7	*32*	**1.0**
60–80	< 0.1	0.0	-	**< 0.1**
80+	< 0.1	< 0.1	*108*	**< 0.1**
Total	**2.2**	**3.1**	***16***	**5.3**

Go to Part 4

Figure 72 Standing volume of larch by age class

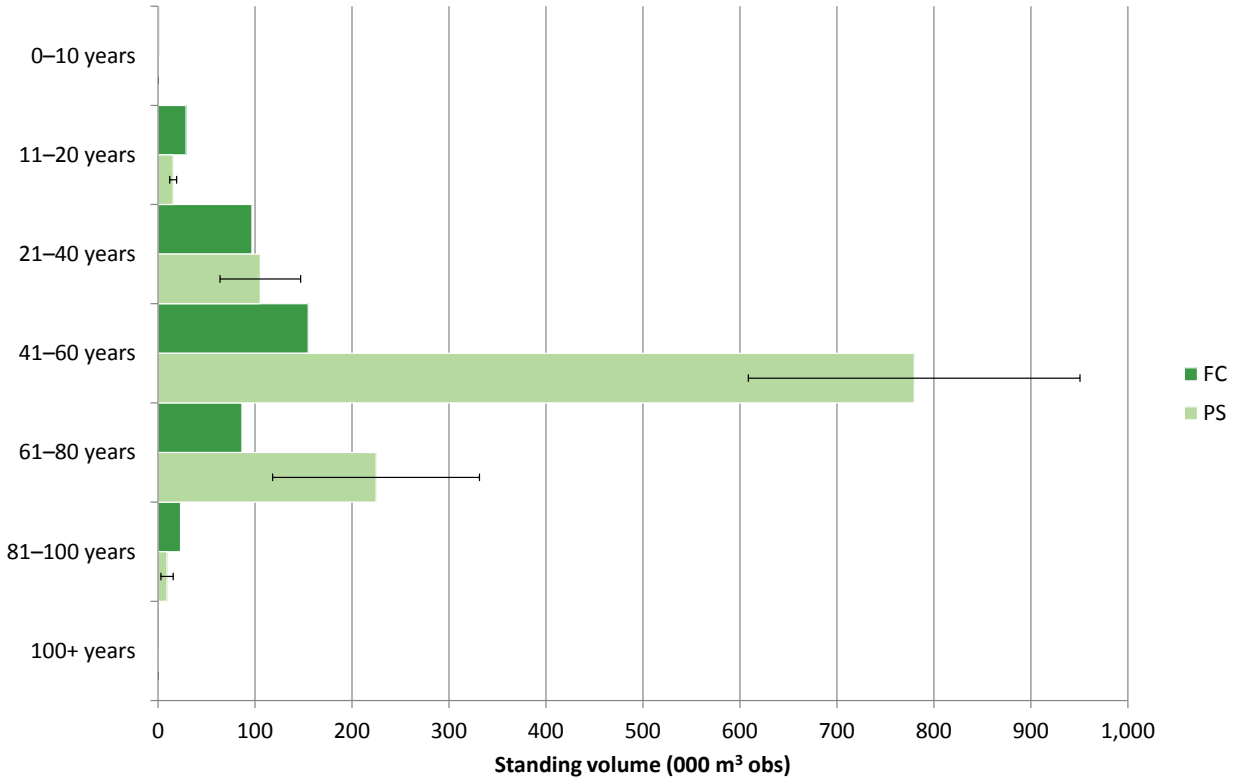


Table 73 Standing volume of larch by age class

Age class (years)	FC	Private sector		Total
	volume (000 m^3 obs)	volume (000 m^3 obs)	*SE%*	volume (000 m^3 obs)
West Midlands				
0–10	1	0	-	**1**
11–20	29	16	*23*	**45**
21–40	97	105	*39*	**202**
41–60	155	780	*22*	**934**
61–80	86	225	*47*	**311**
81–100	23	9	*69*	**33**
100+	2	0	-	**2**
Total	**393**	**1,135**	***17***	**1,528**

Go to Part 4

Figure 73 Standing volume of larch by mean stand dbh class

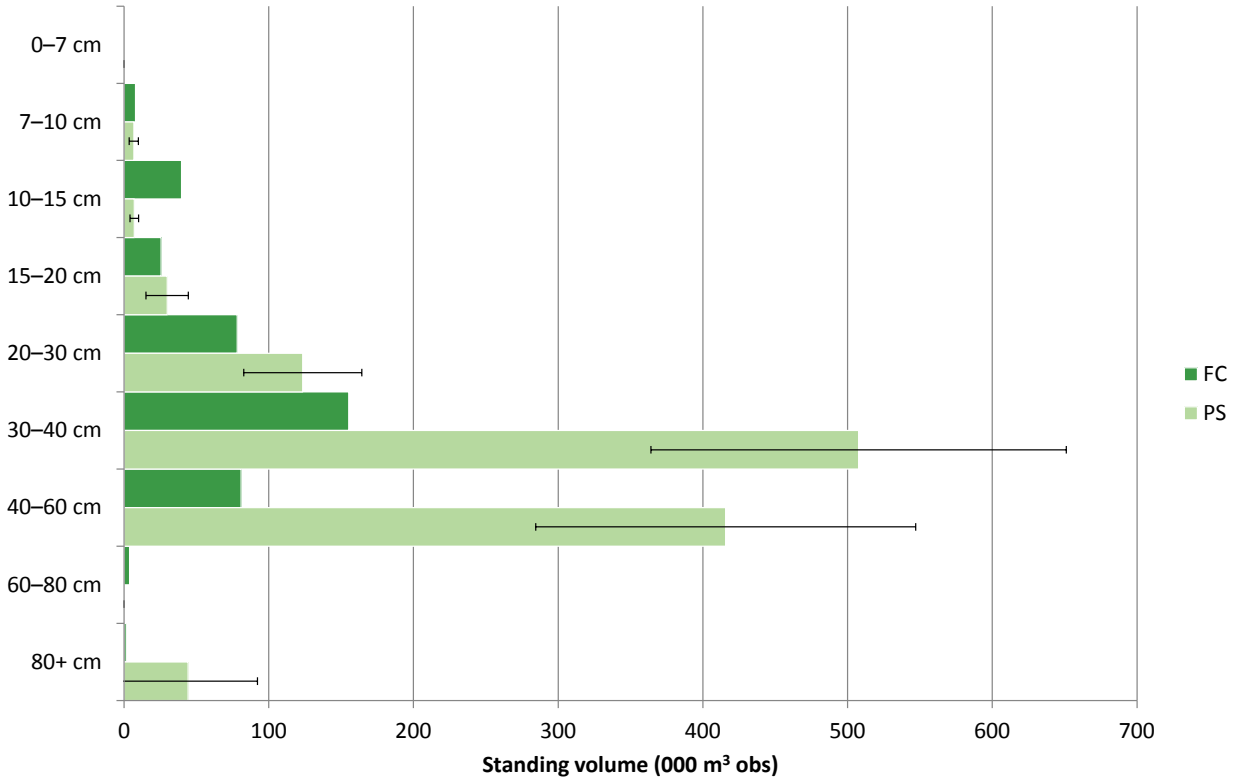


Table 74 Standing volume of larch by mean stand dbh class

Mean stand DBH (cm)	FC	Private sector		Total
	volume (000 m^3 obs)	volume (000 m^3 obs)	*SE%*	volume (000 m^3 obs)
West Midlands				
0–7	< 1	0	-	**< 1**
7–10	8	7	*47*	**15**
10–15	40	7	*43*	**47**
15–20	26	30	*49*	**55**
20–30	78	123	*33*	**202**
30–40	155	508	*28*	**663**
40–60	81	416	*32*	**497**
60–80	4	0	-	**4**
80+	2	44	*108*	**46**
Total	**393**	**1,135**	***17***	**1,528**

Go to Part 4

Figure 74 Number of larch trees by age class

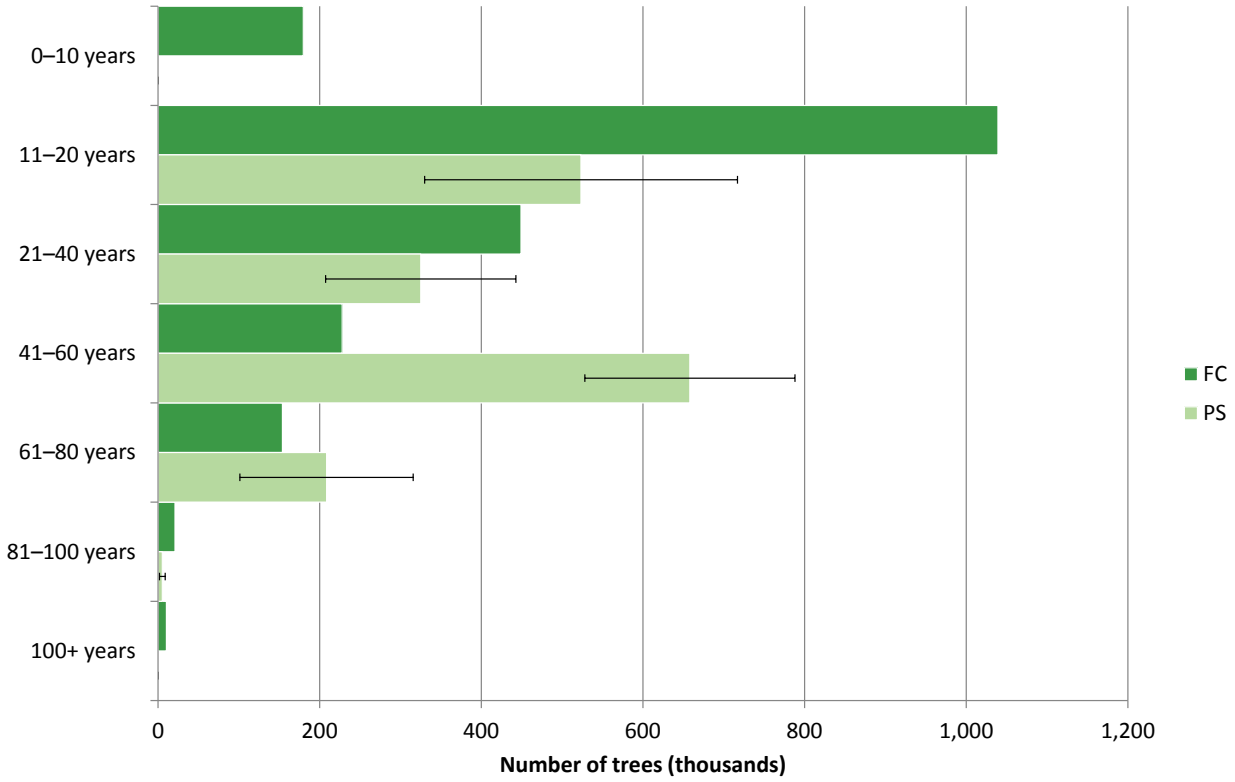


Table 75 Number of larch trees by age class

Age class (years)	FC	Private sector		Total
	number of trees (thousands)	number of trees (thousands)	*SE%*	number of trees (thousands)
West Midlands				
0–10	180	0	-	**180**
11–20	1,039	523	*37*	**1,562**
21–40	449	325	*36*	**774**
41–60	228	658	*20*	**886**
61–80	154	208	*51*	**362**
81–100	21	5	*69*	**26**
100+	10	0	-	**10**
Total	**2,081**	**1,720**	***15***	**3,801**

Go to Part 4

Figure 75 Number of larch trees by mean stand dbh class

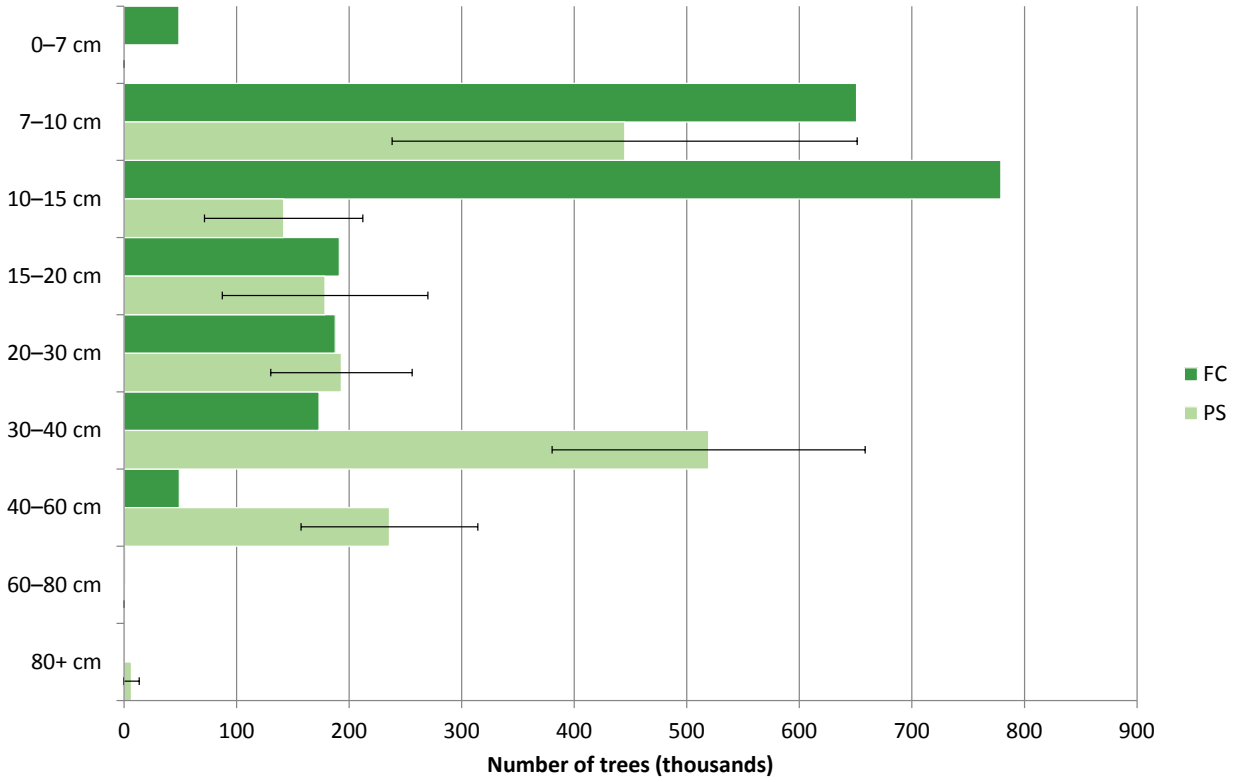
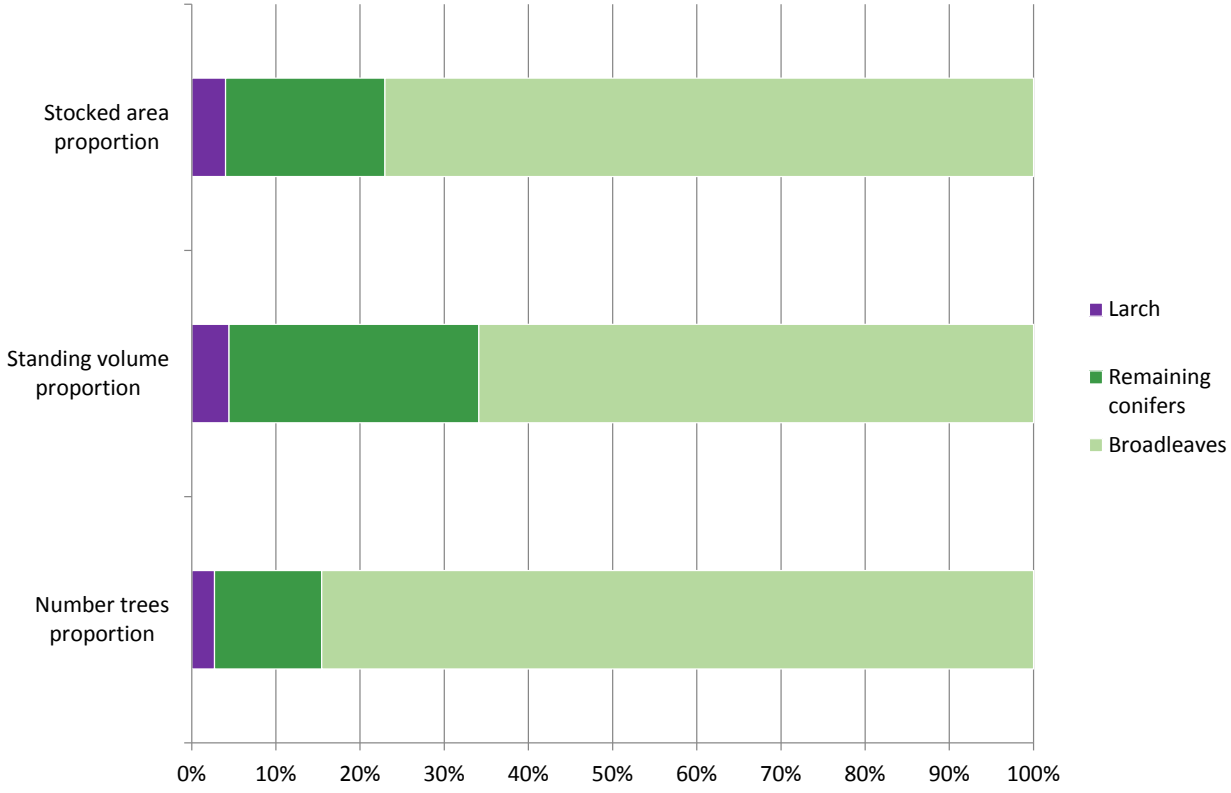


Table 76 Number of larch trees by mean stand dbh class

Mean stand DBH (cm)	FC	Private sector		Total
	number of trees (thousands)	number of trees (thousands)	*SE%*	number of trees (thousands)
West Midlands				
0–7	49	0	-	**49**
7–10	651	445	*46*	**1,096**
10–15	779	142	*50*	**921**
15–20	191	179	*51*	**370**
20–30	188	193	*33*	**381**
30–40	173	519	*27*	**693**
40–60	49	236	*33*	**285**
60–80	1	0	-	**1**
80+	< 1	6	*108*	**7**
Total	**2,081**	**1,720**	***15***	**3,801**

Go to Part 4

Figure 76 Larch as a proportion of woodland



Go to Part 4

Table 77 Stocked area of larch as a proportion of woodland

Aligned area	Stocked area of larch			
	FC	Private sector		Total
	area (000 ha)	area (000 ha)	*SE%*	area (000 ha)
West Midlands	2.2	3.1	*16*	**5.3**

Table 77 (cont'd) Stocked area of larch as a proportion of woodland

Aligned area	Stocked area of all conifers and all species			
	Total of all conifers	Total of all species	Percentage of larch in all conifers	Percentage of larch in all species
	area (000 ha)	area (000 ha)	(percent)	(percent)
West Midlands	30.1	130.8	18	4

Table 78 Standing volume of larch as a proportion of woodland

Aligned area	Standing volume of larch			
	FC	Private sector		Total
	volume (000 m^3 obs)	volume (000 m^3 obs)	*SE%*	volume (000 m^3 obs)
West Midlands	393	1,135	*17*	**1,528**

Table 78 (cont'd) Standing volume of larch as a proportion of woodland

Aligned area	Standing volume of all conifers and all species			
	Total of all conifers	Total of all species	Percentage of larch in all conifers	Percentage of larch in all species
	volume (000 m^3 obs)	volume (000 m^3 obs)	(percent)	(percent)
West Midlands	11,765	34,429	*13*	**4**

Table 79 Number of larch trees as a proportion of woodland

Aligned Area	Numbers of trees of larch			
	FC	Private sector		Total
	number of trees (thousands)	number of trees (thousands)	*SE%*	number of trees (thousands)
West Midlands	2,081	1,720	*15*	**3,801**

Table 79 (cont'd) Number of larch trees as a proportion of woodland

Aligned Area	Number of trees of all conifers and all species			
	Total of all conifers	Total of all species	Percentage of larch in all conifers	Percentage of larch in all species
	number of trees (thousands)	number of trees (thousands)	(percent)	(percent)
West Midlands	21,583	139,638	18	3

Go to Part 4

Appendix A – Aligned area nomenclature

Table 80 Aligned area long and short names

Long name	Short name	Abbreviation
Cumbria and Lancashire	Cumbria and Lancashire	CLA
Devon Cornwall and the Isles of Scilly	Devon and Cornwall	DCS
East Anglia	East Anglia	EAN
East Midlands	East Midlands	EMD
Greater Manchester Merseyside and Cheshire	Gtr Mancs Mersey and Ches	GMC
Hertfordshire and North London	Herts and North London	HNL
Kent South London and East Sussex	Kent S London and E Sussex	KSL
Lincolnshire and Northamptonshire	Lincs and Northants	LNA
North East	North East	NEA
Solent and South Downs	Solent and South Downs	SSD
Thames	Thames	THS
Wessex	Wessex	WSX
West Midlands	West Midlands	WMD
Yorkshire	Yorkshire	YOR

Glossary

Actual production	Timber reported as having been felled and removed from the forest. The Forestry Commission keeps records of actual production for its estate, while estimates for the Private sector come from surveys of harvesting companies and timber processors. These figures are available from Forestry Commission Statistics.
Aerial photograph	Photograph of the ground taken from an elevated/direct–down position, with a camera that is not supported by a ground-based structure.
Age class	A grouping of trees into specific age ranges for classification purposes.
Area (forest/woodland)	Forest and woodland area can be defined in net or gross terms. Net area is the land actually covered by trees (in the National Forest Inventory that is to the drip line of the canopy). Gross area includes both the area covered by trees and the open spaces (<0.5 hectare) within (e.g. rides, glades, ponds).
Availability	A term to describe what timber could potentially be available for harvesting within a forest area.
Biological potential	A term applied to forecast scenarios with the objective of maximising timber production. It typically involves felling stands in the year of maximum MAI and management table thinning. It may not take account of factors that constrain thinning and felling (e.g. wind risk or pest attack). The forecast results set out in this report involve constraints on thinning and times of felling to take account of wind risk.
Broadleaves	Trees and shrubs that belong to the angiosperm division of the plant kingdom (as distinct from the gymnosperm division that includes conifers). Most in the UK have laminar leaves and are deciduous. Sometimes referred to as ‘hardwoods’.
Canopy cover	Area covered by a mass of foliage and branches formed collectively by the crowns of trees.
Clearfell area	Area here all the trees have been felled at once. In non-clearfell areas, only some of the trees are felled at any one time.
Clearfelling	Cutting down of an area of woodland (if it is within a larger area of woodland it is typically a felling greater than 0.25 hectare). Sometimes a scatter or small clumps of trees may be left standing within the felled area.
Conifers	Trees and shrubs that belong to the gymnosperm division of the plant kingdom (as distinct from the angiosperm division that includes broadleaves). Conifers mostly have needles or scale-like leaves and are usually evergreen. Sometimes referred to as ‘softwoods’.
Cumulative volume production	The total volume of timber that is forecast to be produced over the entire forecast period, including any overdue timber.
DAMS (Detailed Aspect Methodology Score)	A measure of exposure at a particular location. Can be used as a proxy indicator of the risk of catastrophic wind damage to a stand of trees. May be used to influence decisions on thinning and timing of clearfelling where wind is a risk factor.
DBH (diameter at breast height)	The diameter on the stem of a tree at ‘breast height’, defined as 1.3 m from ground level.
Dothistroma needle blight	A disease of conifers (especially pine) which causes defoliation, losses in yield and, in severe cases, tree death. Also known as red band needle blight.

Felling plan	A spatial and temporal plan of harvesting activities within a forest or woodland.
Forest (or woodland)	Land predominately covered in trees (defined as land under stands of trees with a canopy cover of at least 20%, or the ability to achieve this, and with a minimum area of 0.5 hectare and minimum width of 20 m), whether in large tracts (generally called forests) or smaller areas known by a variety of terms (including woods, copses, spinneys or shelterbelts).
Forest management plan	A holistic spatial and temporal plan stating the objectives of management together with details of forestry proposals over a period of five years and outlining intentions over a minimum total of 10 years. Such plans allow managers to communicate proposals and demonstrate sustainable forest management. They can be used to authorise thinning, felling and other management operations.
Forest Service	An agency within the Department of Agriculture and Rural Development (DARD) in Northern Ireland responsible for the regulation of forestry and the management of state forests in Northern Ireland.
Forestry Commission	The government department responsible for regulating forestry, implementing forestry policy and managing state forests in England and Scotland. Forestry policy is devolved, with the exception of common issues addressed on a GB or UK basis, such as international forestry, plant health and forestry standards.
Forestry Commission (FC) estate	Forests, woodlands, open land and other property managed by the Forestry Commission.
Great Britain (GB)	England, Scotland and Wales.
Hardwood	The wood of broadleaved trees or the broadleaves themselves.
High forest	Woodland which is not managed as coppice or pollards and which may or may not be managed for timber.
Increment	The increase in volume of a tree or a stand over a year or annualised over a specified period measured either in m^3 per year or in m^3 per hectare per year. See also Mean Annual Increment (MAI).
Interpreted forest type (IFT)	Interpreted forest type is a classification of woodland into woodland types as identified from aerial photography and satellite imagery.
Interpreted open area (IOA)	Interpreted open are is a classification of open spaces within woodlands as identified from aerial photography and satellite imagery.
Like-for-like (restocking)	The restocking of areas of felled trees with trees of the same species and yield class.
Maximising productivity	The management of woodland to maximise volume production by thinning at the MTI.
Mean annual increment (MAI)	The average annual rate of volume production from year of planting to a given year, expressed in m^3 obs per hectare per year. In even-aged stands it is calculated by dividing cumulative volume production by age.
MTT (management table thinning)	A sequence of thinnings prescribed by Forestry Commission yield tables over the life of a forest stand. Management table thinning refers to the pattern of thinning recommended in these yield tables. In standard yield tables the thinnings are set to an intensity which aims to maximise diameter increment whilst also maintaining maximum cumulative volume production
MTI (marginal thinning intensity)	The maximum sustainable intensity of thinning defined as 70% of yield class per hectare per year (m^3 obs/ha/year).

Maximum MAI (maximum mean annual increment) (MMAI)	The age at which a stand reaches the maximum average rate of volume increment which it can achieve. Felling the stand at this age will ensure that the stand reaches its highest average production per annum for its lifespan, thus optimising the stand in terms of volume production over the long term.
Mean annual increment (MAI)	The average rate of volume production up to a given year, expressed in m^3 per hectare per year. In even-aged stands it is calculated by dividing cumulative volume production by age.
Mensuration	The study of the measurement of lengths, areas, volumes and related quantities. Forest mensuration is concerned with the measurement of trees, woodlands and forests, including standing and felled timber.
National Forest Inventory (NFI)	An inventory run by the Forestry Commission, set up in 2009, to provide a record of key information about GB forests and woodlands.
National Inventory of Woodland and Trees (NIWT)	An inventory run by the Forestry Commission, set up in 1995 and completed in 2002, to provide a record of key information about GB forests and woodlands.
Natural Resources Wales (NRW)	Natural Resources Wales is the largest Welsh Government Sponsored Body - employing 1,900 staff across Wales with a budget of £180 million. NRW was formed in April 2013, largely taking over the functions of the Countryside Council for Wales, Forestry Commission Wales and the Environment Agency in Wales, as well as certain Welsh Government functions.
Overbark	Used as a qualification when the diameter or volume of wood includes the bark.
Overbark standing (OBS)	Timber is defined in this report as the volume of stemwood to 7 cm top diameter in m^3 overbark standing (obs), including stump (above ground) and usable branchwood (of minimum 3 m in length and 7 cm top diameter).
Overdue	Timber contained in stands that are beyond the felling age prescribed by the harvesting scenario at the start of the forecast.
Phytophthora	Fungus-like pathogens that can cause extensive damage and mortality to trees and other plants.
Planned production	The volumes and assortments published in the removals forecast, reflecting the cumulative impact of managing the FC estate (as of 31 March 2012) in accordance with approved forest design and thinning plans.
Potential production	A forecast which will not necessarily transpire. As the private sector estate forecast makes assumptions about future levels of harvest, and the assumptions may not transpire, this forecast is one of potential production.
Private sector estate	Forests and woodlands in the UK not managed by the Forestry Commission, Natural Resources Wales or Forest Service. In the context of the National Forest Inventory, 'Private sector' is used for convenience although it includes land owned or managed by bodies such as local authorities and charities.
Production forecast	A forecast of softwood volume production based on a firm plan of harvesting.
Restocking plan	A spatial and temporal plan describing how felled areas are to be replanted or regenerated.
Satellite imagery	Imagery of the earth taken from space from a satellite.
Softwood	The wood of coniferous trees or the conifers themselves.

Stand	A distinct area of woodland, generally composed of a uniform group of trees in terms of species composition and spatial distribution, and age and size class distribution.
Standard error (SE)	The measure of the margin of error associated with an estimate as a result of sampling from a population with statistical variability. Larger standard errors indicate less precision in the estimate. Standard errors in this report are quoted in relative terms (i.e. as percentages of the value of the estimate).
Standing volume	The live stemwood and usable branchwood of trees (up to 7 cm top diameter). It excludes roots, below ground stump material, small branches, foliage and deadwood. For Private sector woodland only, it also excludes trees in woodlands of less than 0.5 hectare. Usually expressed as m^3 overbark standing (m^3 obs).
Stemwood	The woody material forming the above ground main growing shoot(s) of a tree or stand of trees. The stem includes all woody volume above ground with a diameter greater than 7 cm overbark. Stemwood includes wood in major branches where there is at least 3 m of straight length to 7 cm top diameter.
Stocked area	The area stocked with living trees. The stocked areas in this report are quoted in gross terms for the FC/NRW estate and in net terms for the private sector estate (see the definition of area abve).
Sub-compartment database (SCDB)	A database owned and maintained by the Forestry Commission that holds an inventory of all stands of trees managed by the Forestry Commission (including that formerly managed by Forestry Commission Wales which is now managed by Natural Resources Wales).
Sustainable forest management	The stewardship and use of forests and forest lands in a way, and at a rate, that maintains their biodiversity, productivity, regeneration capacity and vitality and their potential to fulfil, now and in the future, relevant ecological, economic and social functions at local, national and global levels, and that does not cause damage to other ecosystems.
Terminal height	The top height of a stand at which wind damage is expected to reach a level necessitating clearfelling.
Thinning	The periodic harvesting of trees in a woodland, involving the removal of some trees for commercial use and the retention of others for future production or long-term retention.
Thinning plan	A spatial and temporal plan of harvesting activities within a forest or woodland.
Top diameter	The diameter of the smaller (top) end of a length of stemwood, branchwood or log, often used to define different categories of wood products (e.g. sawlogs, roundwood, pulp) and merchantable timber.
Top height	The mean total height of the 100 largest dbh trees per hectare.
UK (United Kingdom)	Great Britain and Northern Ireland.
Windthrow	Uprooting of trees by the wind. Windthrow can be endemic – i.e. that caused by frequently recurring peak winds – or catastrophic – an infrequent occurrence associated with exceptionally strong winds where large areas/numbers of trees are blown down.
Woodland	see Forest.
Yield class (YC)	An index used in the UK of the potential productivity of even-aged stands of trees based on maximum MAI. It reflects the potential productivity of the site for the tree species growing on it.

Aligned area reports in this series

This report is one in a series of reports describing the current stocks in woodland, the economic viability data, timber availability forecasts and estimates of the current stocks within woodland of four species currently at risk from pests and diseases.

Reports are available for:

- England
- Cumbria and Lancashire
- Devon Cornwall and the Isles of Scilly
- East Anglia
- East Midlands
- Greater Manchester Merseyside and Cheshire
- Hertfordshire and North London
- Kent South London and East Sussex
- Lincolnshire and Northamptonshire
- North East
- Solent and South Downs
- Thames
- Wessex
- **West Midlands**
- Yorkshire

The methodology, data sources and assumptions are described in the England report. It is important that the estimates presented in this report are interpreted in the light of the information provided in the England report.

NFI national reports and papers

This series of reports is part of the wider suite of publications from the National Forest Inventory (NFI). NFI reports that contain information relating to this series of reports are:

- NFI woodland area statistics, Great Britain, England, Scotland, Wales (2011)
- Standing timber volume for coniferous trees in Britain (2012)
- 25-year forecast of softwood availability (2012)
- 25-year forecast of standing coniferous volume and increment (2012)
- Preliminary estimates of broadleaved species in British woodlands, with special focus on ash (2012)
- Biomass in live woodland trees in Britain (2014)
- Carbon in live woodland trees in Britain (2014)
- 50-year forecast of softwood availability (2014)
- 50-year forecast of hardwood availability (2014)
- 25-year forecast of softwood availability (2016)

Each theme has a series of associated reports, papers and data, tailored for different audiences and uses.

This report is a supporting document for the Official Statistics report *National Forest Inventory statistics for England and aligned areas* (2017) and provides more detailed results for West Midlands.

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