

National Forest Inventory statistics for Lincolnshire and Northamptonshire

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Lincolnshire and Northamptonshire

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 Lincolnshire and Northamptonshire

Lincolnshire and Northamptonshire (LNA) has a land area of 1,004,800 hectares making it 6th out of the 14 aligned areas by land area. With 50,114 ha of woodland, LNA ranks 12th out of 14 in terms of woodland area (5% woodland cover). Some 22% of the woodland is under Forestry Commission ownership or management.

Scots pine is the most commonly occurring of the conifer species when assessed by stocked area (30%) or standing volume (34%). Corsican pine is the most commonly occurring of the conifer species when assessed by number of trees (30%).

Oak is the most commonly occurring of the broadleaved species when assessed by stocked area (19%) and number of trees (19%). Ash is the most commonly occurring of the broadleaved species when assessed by standing volume (28%).

Some 14% 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 29% of conifer and mixed broadleaf/conifer sections (PS only) show evidence of thinning.

Overall 64% 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 10% of broadleaved sections (PS only) show evidence of thinning.

Across LNA:

- Ash is estimated as 15% of total stocked area (19% of broadleaved stocked area), 22% of standing volume (28% of broadleaved standing volume) and 13% of the number of trees (15% of the number of broadleaved trees).
- Oak is estimated as 16% of total stocked area (19% of broadleaved stocked area), 18% of standing volume (23% of broadleaved standing volume) and 17% of the number of trees (19% of the number of broadleaved trees).
- Sweet chestnut is estimated as <1% of total stocked area (<1% of broadleaved stocked area), <1% of standing volume (<1% of broadleaved standing volume) and <1% of the number of trees (<1% of the number of broadleaved trees).
- Larch is estimated as 2% of total stocked area (9% of conifer stocked area), 2% of standing volume (10% of conifer standing volume) and 1% of the number of trees (8% of the number of conifer trees).

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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 \pm 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.

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Woodland area statistics

Woodland area by woodland type

Figure 1 Woodland area by woodland type

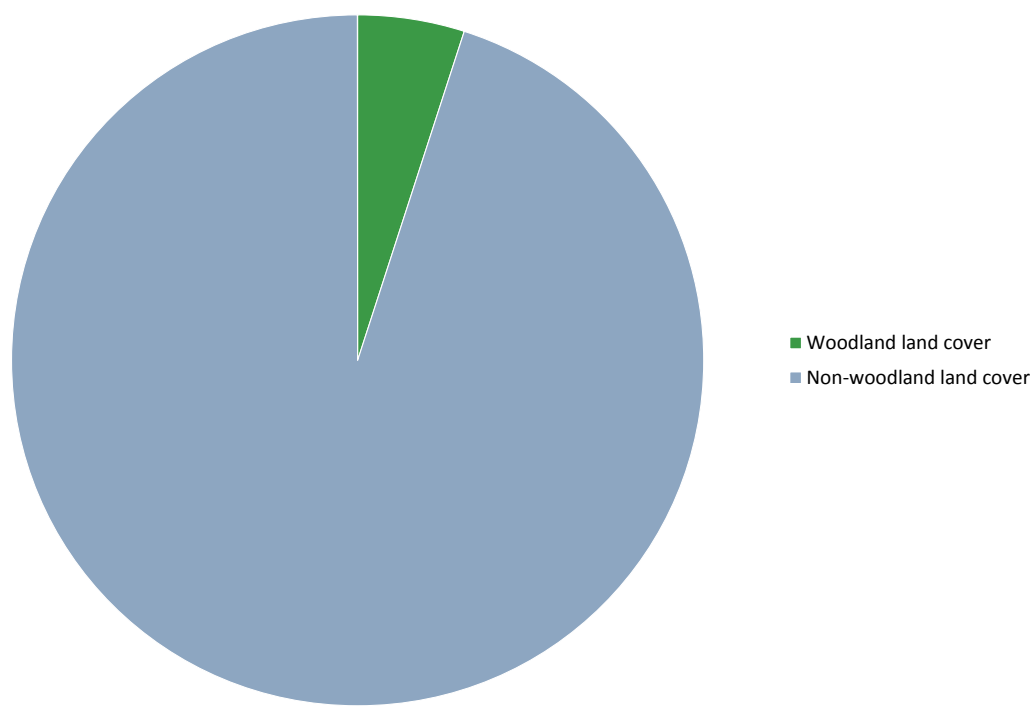


Table 1 Woodland area by woodland type

Woodland Type	Area (ha)	%
Lincolnshire and Northamptonshire		
Woodland	48,623	97%
Assumed woodland	1,337	3%
Low density	154	0%
Total mapped woodland	50,114	100%
Non-woodland area	954,686	
Land area	1,004,800	
Woodland land cover		5%
Non-woodland land cover		95%

Part 2 - what our woodlands are like today

Woodland area by ownership

Figure 2 Woodland area by ownership

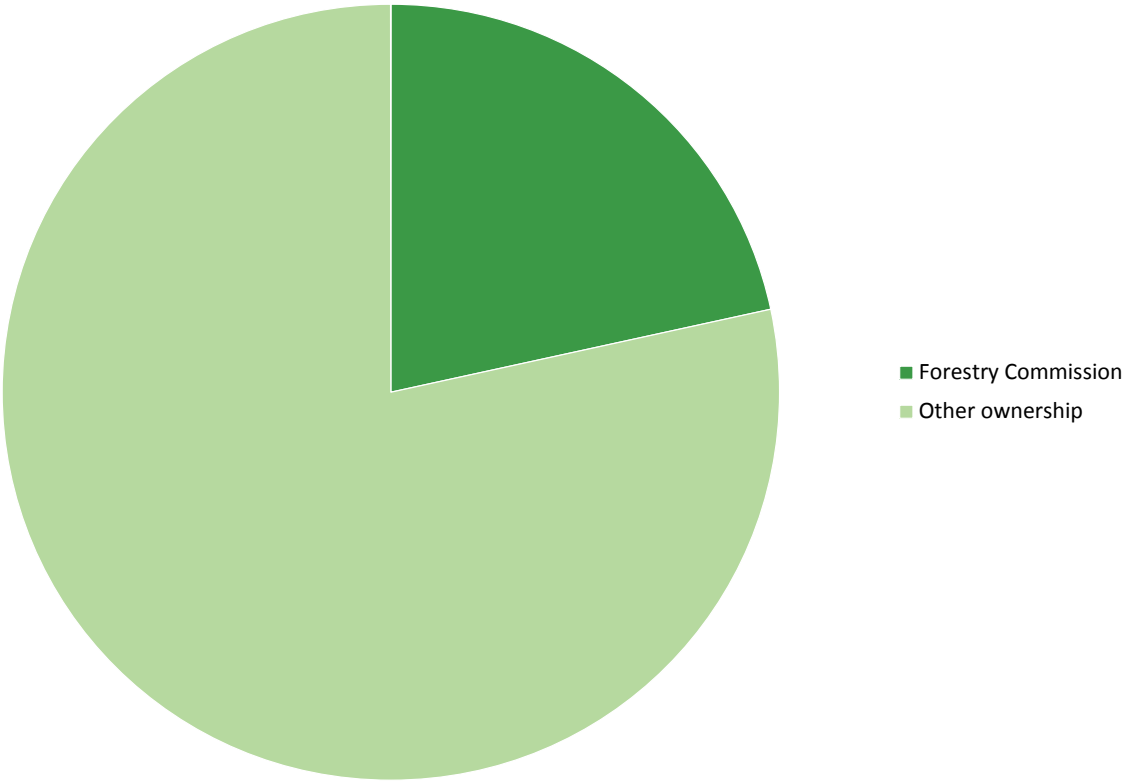


Table 2 Woodland area by ownership

Ownership	Area (ha)	% Woodland
Lincolnshire and Northamptonshire		
Forestry Commission	10,811	22%
Other ownership	39,303	78%
Total area of woodland	50,114	100%

Part 2 - what our woodlands are like today

Woodland area by interpreted forest type

Figure 3 Woodland area by interpreted forest type

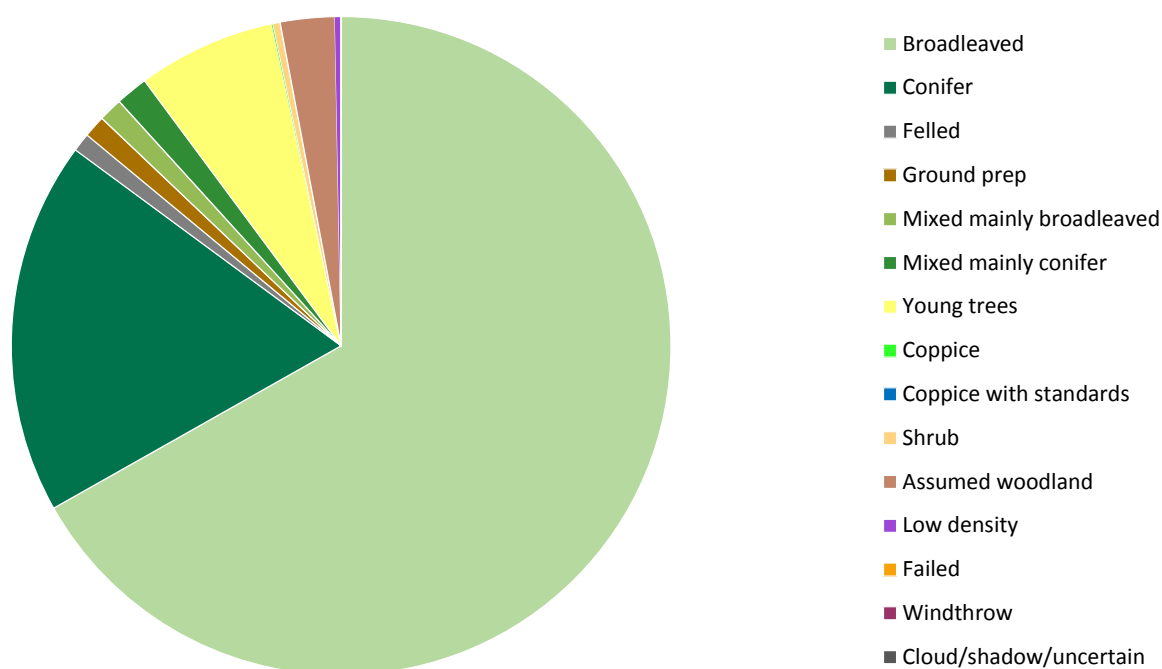


Table 3 Woodland area by interpreted forest type

Forest type	Total area (ha)	% of total area
Lincolnshire and Northamptonshire		
Broadleaved	33,482	67%
Conifer	9,179	18%
Felled	456	1%
Ground prep	539	1%
Mixed mainly broadleaved	588	1%
Mixed mainly conifer	788	2%
Young trees	3,390	7%
Coppice	36	0%
Coppice with standards	0	0%
Shrub	167	0%
Assumed woodland	1,337	3%
Low density	154	0%
Failed	0	0%
Windthrow	0	0%
Cloud/shadow/uncertain	0	0%
TOTALS	50,114	100%

Part 2 - what our woodlands are like today

Woodland area by interpreted forest type and woodland size

Figure 4 Woodland area by interpreted forest type and woodland size

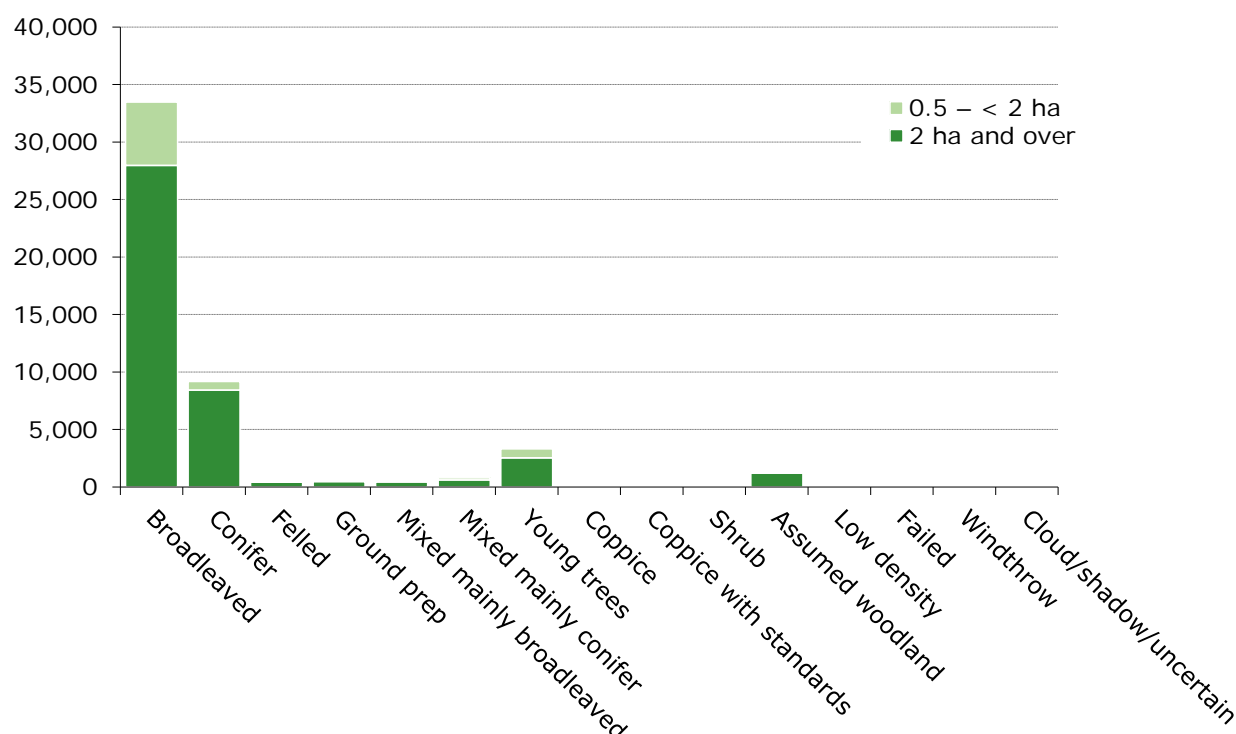


Table 4 Woodland area by interpreted woodland type and woodland size

Forest type	Woodland size		Total area (ha)
	2 ha and over	0.5 – < 2 ha	
Lincolnshire and Northamptonshire			
Broadleaved	27,979	5,503	33,482
Conifer	8,427	751	9,179
Felled	444	12	456
Ground prep	466	62	529
Mixed mainly broadleaved	432	151	584
Mixed mainly conifer	621	167	789
Young trees	2,529	790	3,318
Coppice	34	85	120
Coppice with standards	0	< 1	< 1
Shrub	132	35	167
Assumed woodland	1,199	138	1,337
Low density	144	10	154
Failed	0	0	0
Windthrow	0	0	0
Cloud/shadow/uncertain	0	0	0
TOTALS	42,408	7,706	50,114

Part 2 - what our woodlands are like today

Woodland area by interpreted forest type and ownership

Figure 5 Woodland area by interpreted forest type and ownership

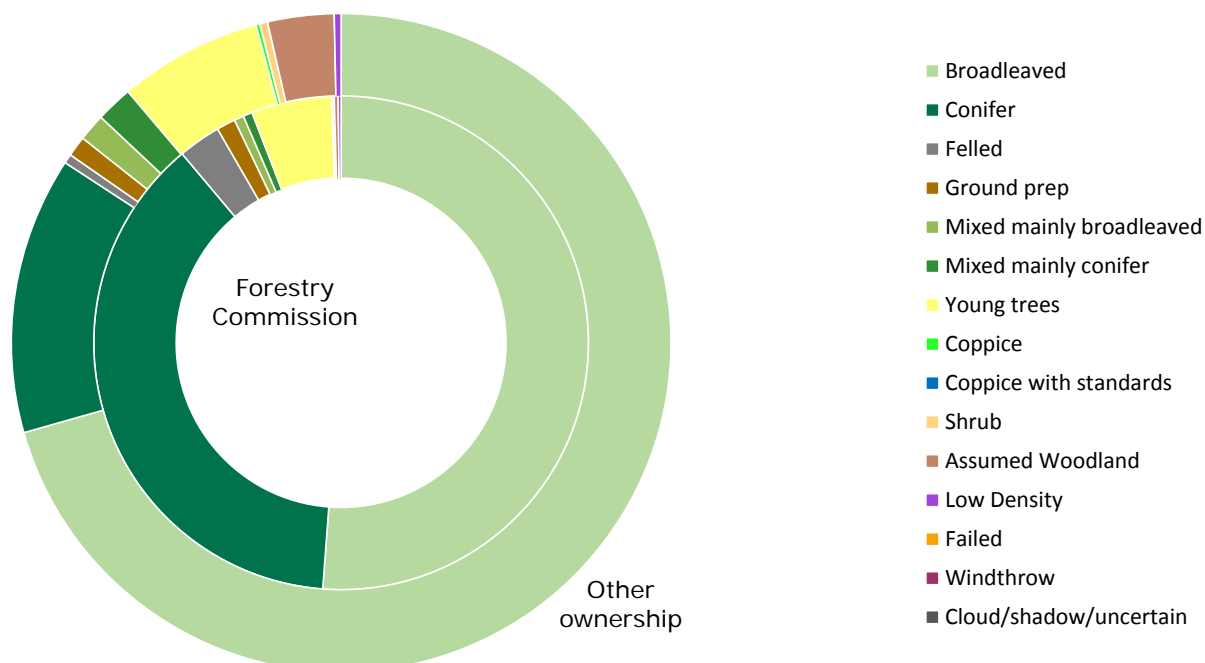


Table 5 Woodland area by interpreted forest type and ownership

Forest type	Forestry Commission		Other ownership	
	Area (ha)	% of total area	Area (ha)	% of total area
Lincolnshire and Northamptonshire				
Broadleaved	5,004	51%	28,478	71%
Conifer	3,685	38%	5,494	14%
Felled	273	3%	183	0%
Ground prep	121	1%	405	1%
Mixed mainly broadleaved	61	1%	540	1%
Mixed mainly conifer	59	1%	728	2%
Young trees	513	5%	2,833	7%
Coppice	3	0%	78	0%
Coppice with standards	0	0%	0	0%
Shrub	14	0%	153	0%
Assumed Woodland	25	0%	1,312	3%
Low Density	19	0%	135	0%
Failed	0	0%	0	0%
Windthrow	0	0%	0	0%
Cloud/shadow/uncertain	0	0%	0	0%
TOTALS	9,775	100%	40,339	100%

Part 2 - what our woodlands are like today

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	
Lincolnshire and Northamptonshire					
Broadleaved	5,002	22,977	2	5,501	33,482
Conifer	3,685	4,742	0	751	9,179
Felled	273	171	0	12	456
Ground prep	121	346	0	72	539
Mixed mainly broadleaved	60	373	< 1	154	588
Mixed mainly conifer	59	563	0	166	788
Young trees	513	2,015	0	861	3,390
Coppice	3	32	0	2	36
Coppice with standards	0	0	0	0	0
Shrub	14	118	0	35	167
Assumed woodland	25	1,175	0	137	1,337
Low Density	19	125	0	10	154
Failed	0	0	0	0	0
Windthrow	0	0	0	0	0
Cloud/shadow/uncertain	0	0	0	0	0
Totals	9,773	32,637	3	7,702	50,114

Part 2 - what our woodlands are like today

Woodland area by size class distribution

Figure 6 Woodland area by size class distribution

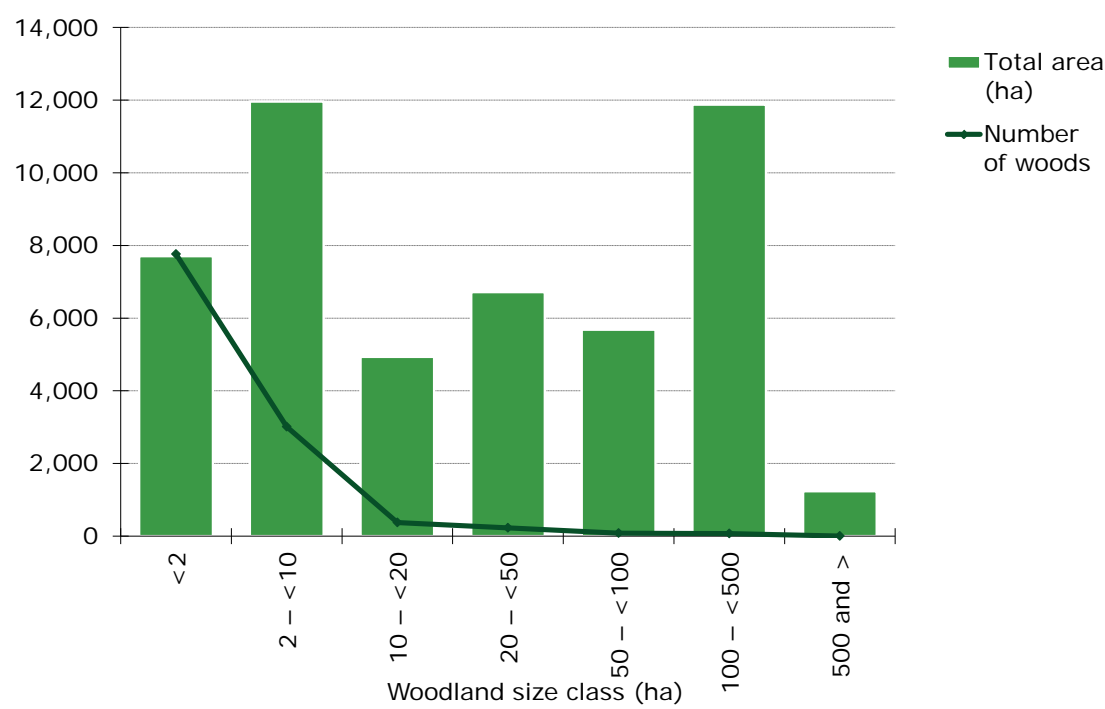


Table 7 Woodland area by size class distribution

Size class (ha)	Total area (ha)	Number of woods	% of total area	Mean wood area (ha)
Lincolnshire and Northamptonshire				
<2	7,706	7,757	15%	< 1
2 – <10	11,962	3,009	24%	4
10 – <20	4,937	370	10%	13
20 – <50	6,714	229	13%	29
50 – <100	5,683	82	11%	69
100 – <500	11,876	67	24%	177
500 and >	1,236	2	2%	618
All woods	50,114	11,516	100%	4

Part 2 - what our woodlands are like today

Open areas in woodland by land use type

Figure 7 Open areas in woodland by land use type

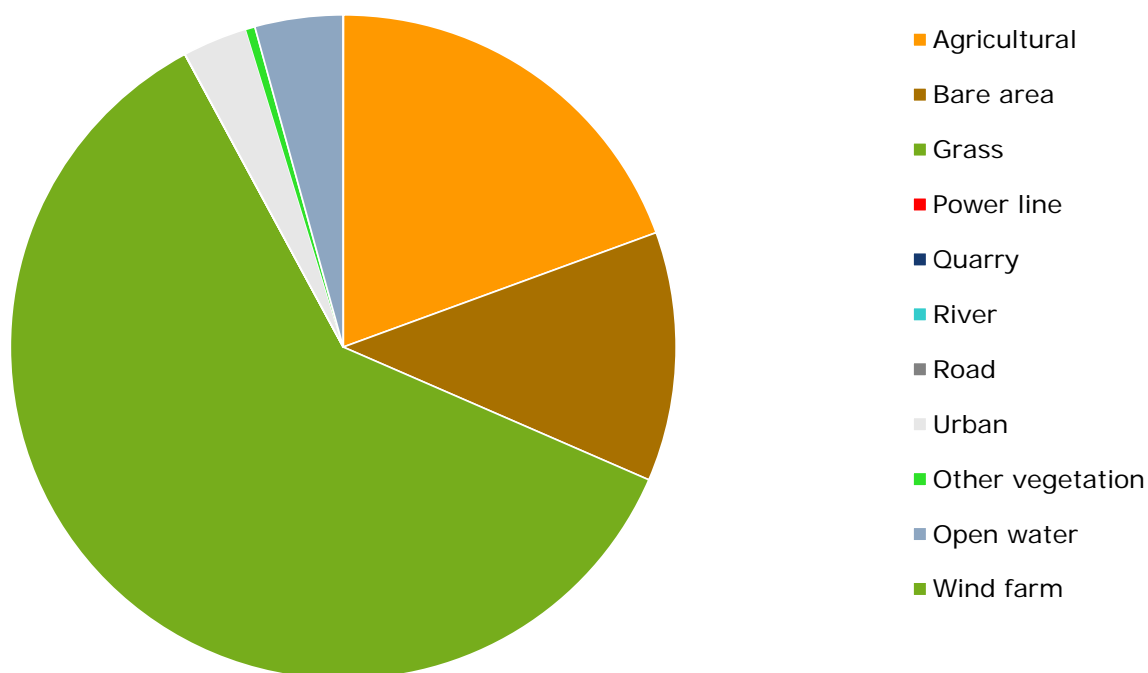


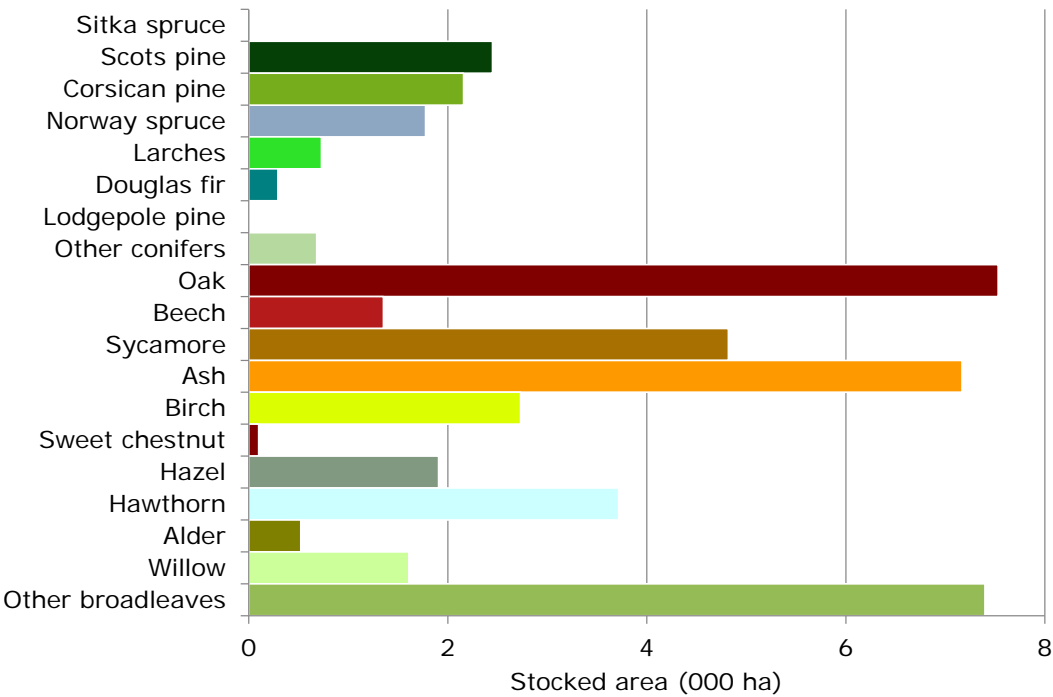
Table 8 Open areas in woodland by land use type

Interpreted open area	Total area (ha)	% of total area
Lincolnshire and Northamptonshire		
Agricultural	104	19%
Bare area	65	12%
Grass	325	61%
Power line	0	0%
Quarry	0	0%
River	0	0%
Road	0	0%
Urban	17	3%
Other vegetation	2	0%
Open water	23	4%
Wind farm	0	0%
TOTALS	536	100%

Net area under canopy

Stocked area by species

Figure 8 Stocked area by principal tree species



Part 2 - what our woodlands are like today

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	< 0.1	< 0.1	109	< 0.1
Scots pine	1.0	1.5	19	2.4
Corsican pine	1.4	0.8	34	2.2
Norway spruce	0.3	1.5	25	1.8
Larches	< 0.1	0.6	26	0.7
Douglas fir	< 0.1	0.2	70	0.3
Lodgepole pine	< 0.1	0.0	-	< 0.1
Other conifers	0.2	0.5	51	0.7
All conifers	3.0	5.1	13	8.1
Broadleaves				
Oak	2.9	4.7	12	7.5
Beech	0.2	1.1	30	1.4
Sycamore	< 0.1	4.8	15	4.8
Ash	0.9	6.3	11	7.2
Birch	0.7	2.0	23	2.7
Sweet chestnut	< 0.1	< 0.1	51	< 0.1
Hazel	< 0.1	1.8	19	1.9
Hawthorn	0.0	3.7	15	3.7
Alder	< 0.1	0.5	46	0.5
Willow	< 0.1	1.6	27	1.6
Other broadleaves	0.9	6.5	12	7.4
All broadleaves	5.7	33.1	3	38.8
All species				
All species	8.7	38.2	2	46.9

Part 2 - what our woodlands are like today

Figure 9 Stocked area by principal conifer species

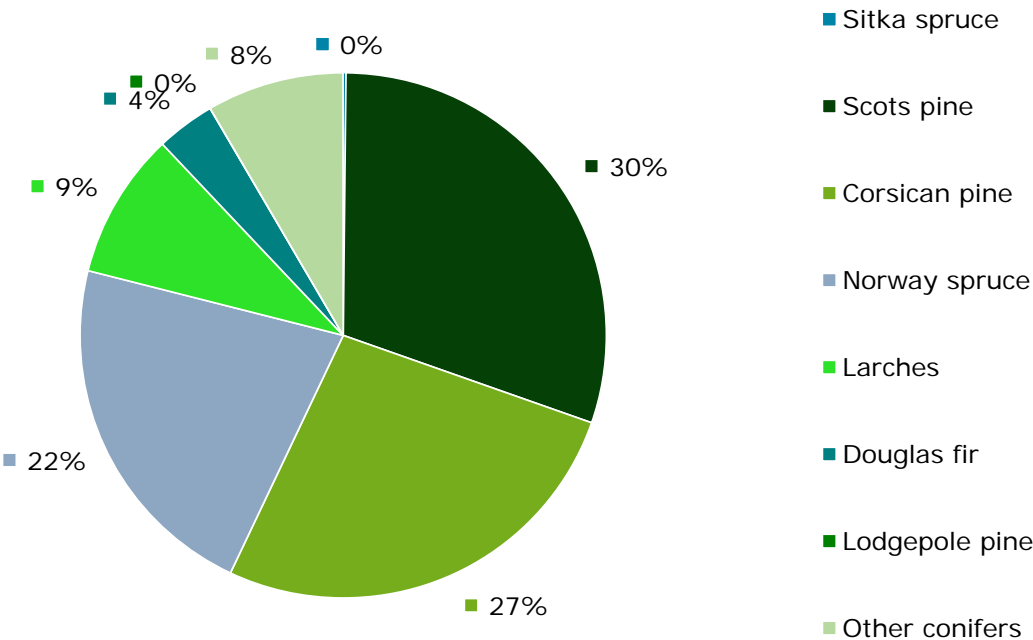
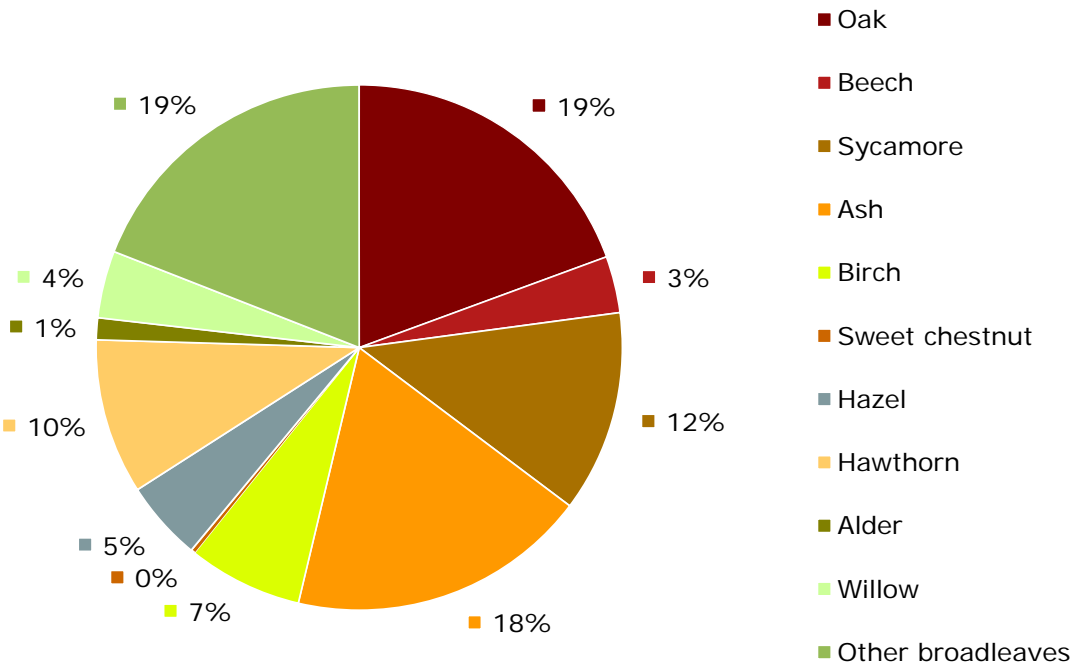


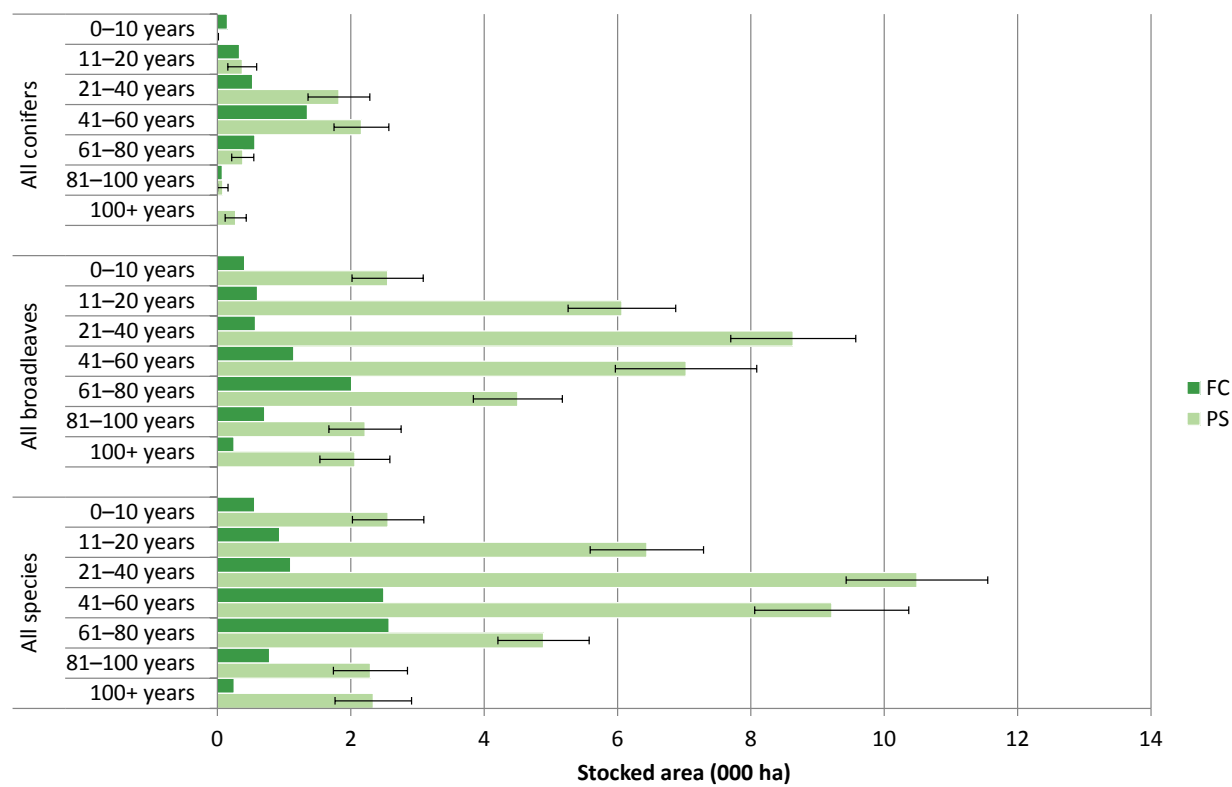
Figure 10 Stocked area by principal broadleaved species



Part 2 - what our woodlands are like today

Stocked area by age class

Figure 11 Stocked area by age class



Part 2 - what our woodlands are like today

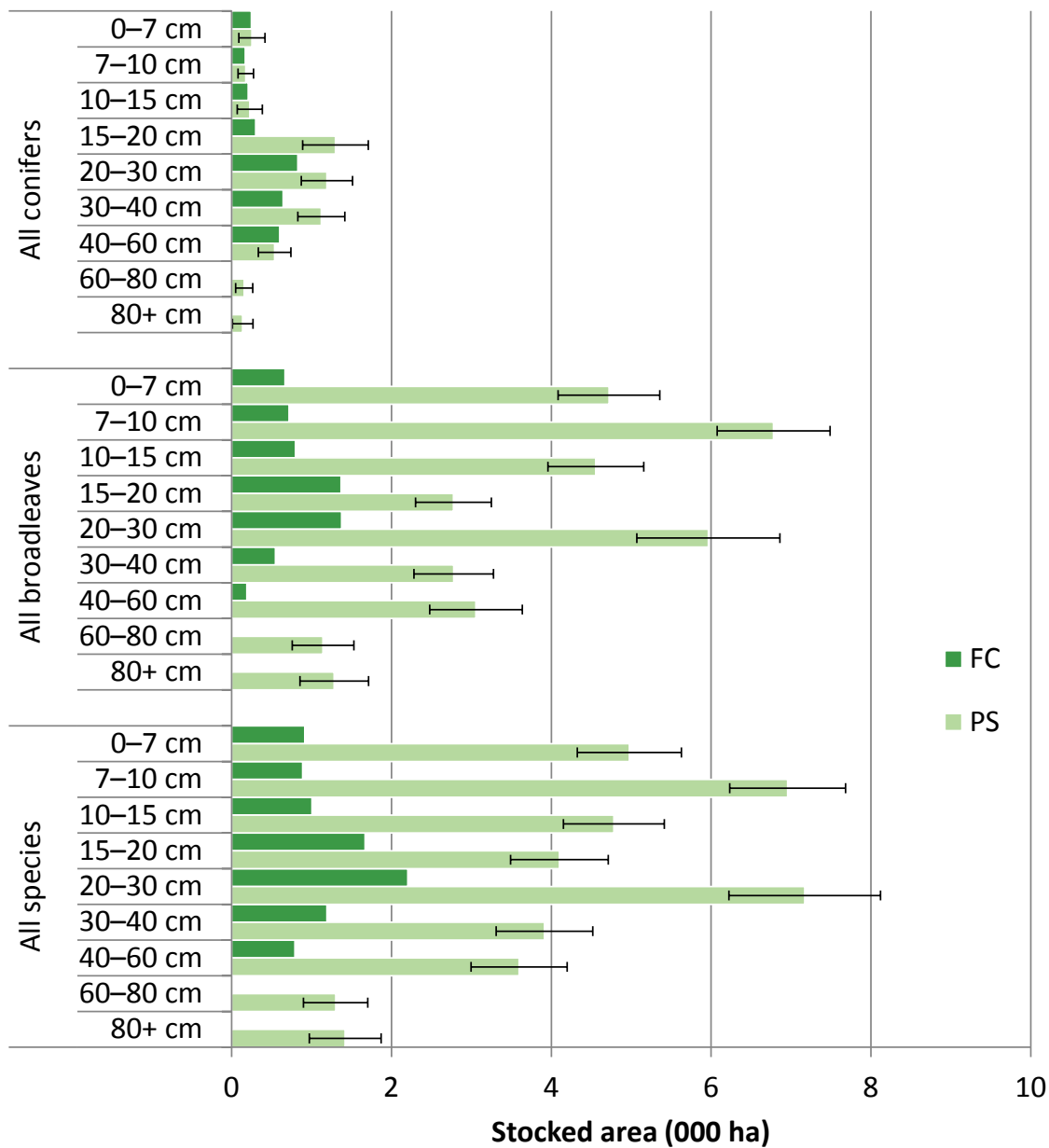
Table 10 Stocked area by age class

Age class (years)	FC	Private sector		Total
	area (000 ha)	area (000 ha)	SE%	area (000 ha)
All conifers				
0–10	0.2	< 0.1	88	0.2
11–20	0.3	0.4	58	0.7
21–40	0.5	1.8	25	2.4
41–60	1.3	2.2	19	3.5
61–80	0.6	0.4	43	0.9
81–100	< 0.1	< 0.1	97	0.2
100+	< 0.1	0.3	58	0.3
Total	3.0	5.1	13	8.1
All broadleaves				
0–10	0.4	2.6	21	3.0
11–20	0.6	6.1	13	6.7
21–40	0.6	8.6	11	9.2
41–60	1.1	7.0	15	8.2
61–80	2.0	4.5	15	6.5
81–100	0.7	2.2	24	2.9
100+	0.2	2.1	25	2.3
Total	5.7	33.1	3	38.8
All species				
0–10	0.6	2.6	21	3.1
11–20	0.9	6.4	13	7.4
21–40	1.1	10.5	10	11.6
41–60	2.5	9.2	13	11.7
61–80	2.6	4.9	14	7.5
81–100	0.8	2.3	24	3.1
100+	0.3	2.3	25	2.6
Total	8.7	38.2	2	46.9

Part 2 - what our woodlands are like today

Stocked area by mean stand dbh class

Figure 12 Stocked area by mean stand dbh class



Part 2 - what our woodlands are like today

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	0.2	0.3	65	0.5
7–10	0.2	0.2	55	0.3
10–15	0.2	0.2	70	0.4
15–20	0.3	1.3	32	1.6
20–30	0.8	1.2	27	2.0
30–40	0.6	1.1	26	1.8
40–60	0.6	0.5	38	1.1
60–80	< 0.1	0.2	69	0.2
80+	< 0.1	0.1	94	0.1
Total	3.0	5.1	13	8.1
All broadleaves				
0–7	0.7	4.7	13	5.4
7–10	0.7	6.8	10	7.5
10–15	0.8	4.6	13	5.4
15–20	1.4	2.8	17	4.1
20–30	1.4	6.0	15	7.3
30–40	0.5	2.8	18	3.3
40–60	0.2	3.1	19	3.2
60–80	< 0.1	1.1	34	1.2
80+	< 0.1	1.3	33	1.3
Total	5.7	33.1	3	38.8
All species				
0–7	0.9	5.0	13	5.9
7–10	0.9	7.0	10	7.8
10–15	1.0	4.8	13	5.8
15–20	1.7	4.1	15	5.8
20–30	2.2	7.2	13	9.4
30–40	1.2	3.9	15	5.1
40–60	0.8	3.6	17	4.4
60–80	< 0.1	1.3	31	1.3
80+	< 0.1	1.4	32	1.4
Total	8.7	38.2	2	46.9

Part 2 - what our woodlands are like today

Clearfelled area

Table 12 Clearfelled area

Clearfelled area	FC	Private sector		Total
	area (000 ha)	area (000 ha)	SE%	area (000 ha)
Lincolnshire and Northamptonshire	0.2	0.2	52	0.4

Comparison of mapped area estimates and stocked area estimates

Figure 13 Simplified comparison of mapped area and stocked area

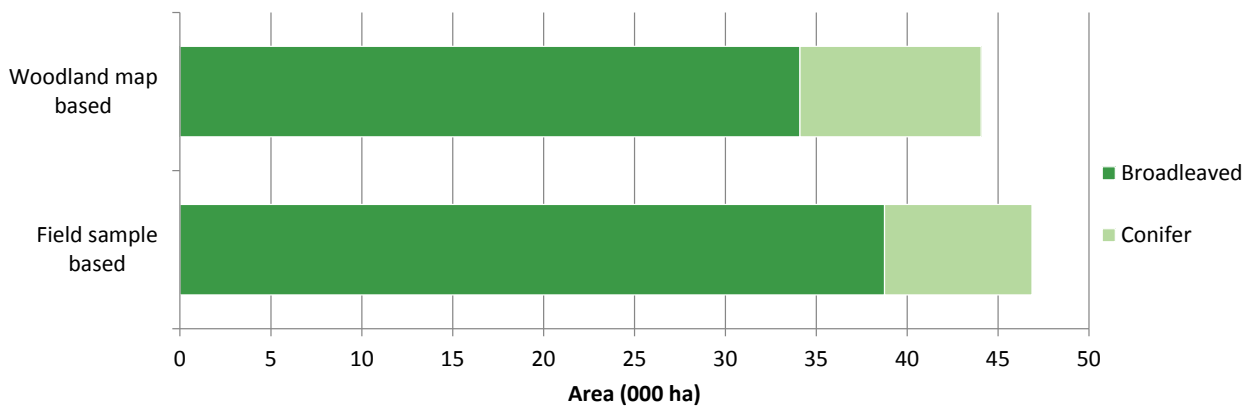


Table 13 Simplified comparison of mapped area and stocked area

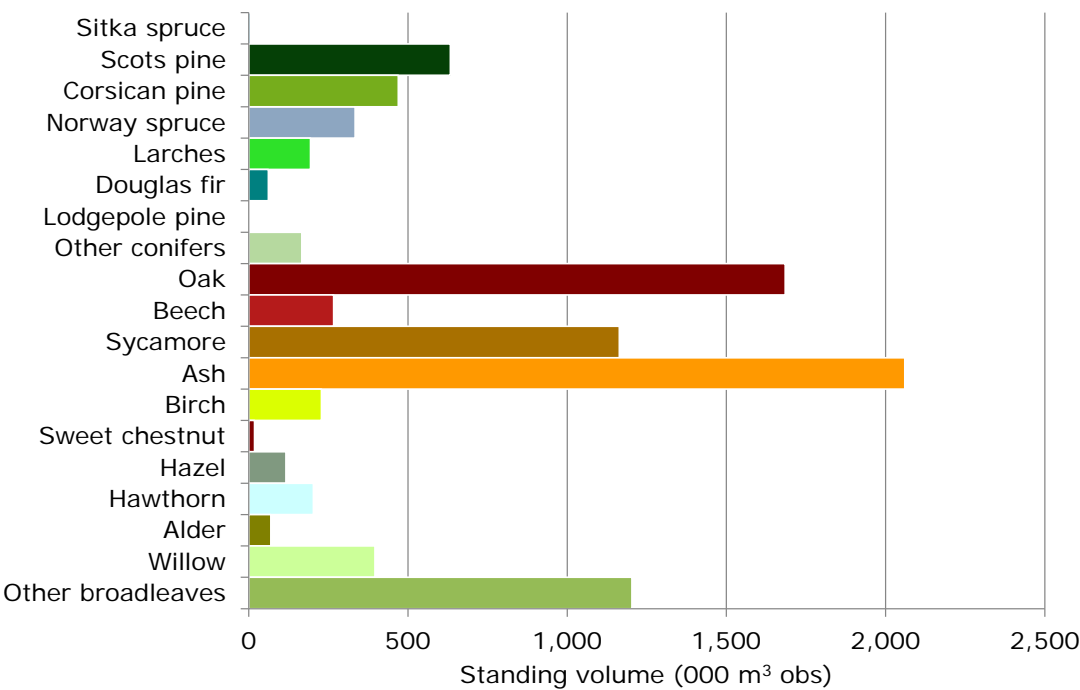
	Woodland map based	Field sample based
	area (000 ha)	
Lincolnshire and Northamptonshire		
Broadleaved	34.1	38.8
Conifer	10.0	8.1

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



Part 2 - what our woodlands are like today

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	1	3	109	5
Scots pine	220	413	18	633
Corsican pine	303	167	36	470
Norway spruce	61	273	25	334
Larches	15	179	29	194
Douglas fir	19	42	63	61
Lodgepole pine	< 1	0	-	< 1
Other conifers	81	86	48	167
All conifers	701	1,162	12	1,863
Broadleaves				
Oak	464	1,220	15	1,685
Beech	41	226	33	267
Sycamore	4	1,160	25	1,164
Ash	130	1,930	16	2,060
Birch	46	182	31	228
Sweet chestnut	1	17	71	18
Hazel	4	112	24	117
Hawthorn	0	203	24	203
Alder	< 1	68	60	69
Willow	< 1	396	41	396
Other broadleaves	92	1,110	22	1,203
All broadleaves	784	6,621	7	7,405
All species				
All species	1,485	7,797	6	9,282

Part 2 - what our woodlands are like today

Figure 15 Standing volume by principal conifer species

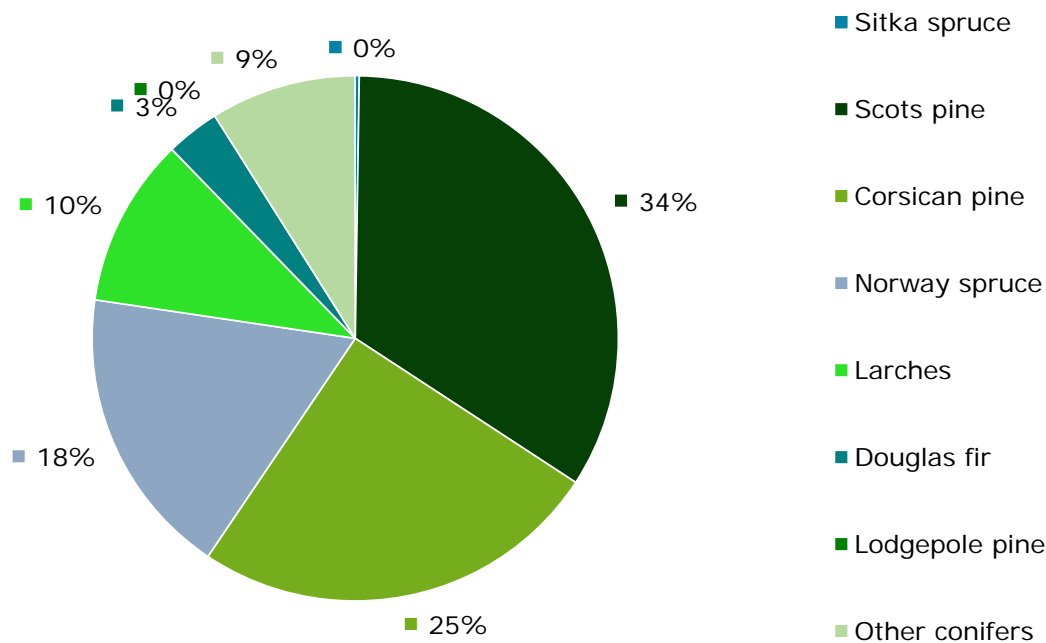
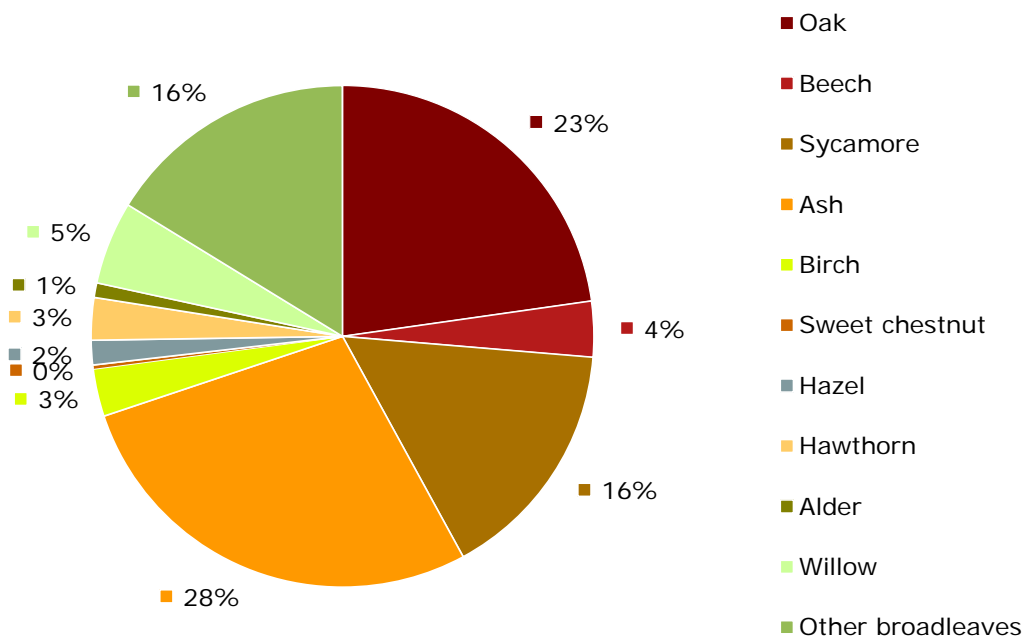


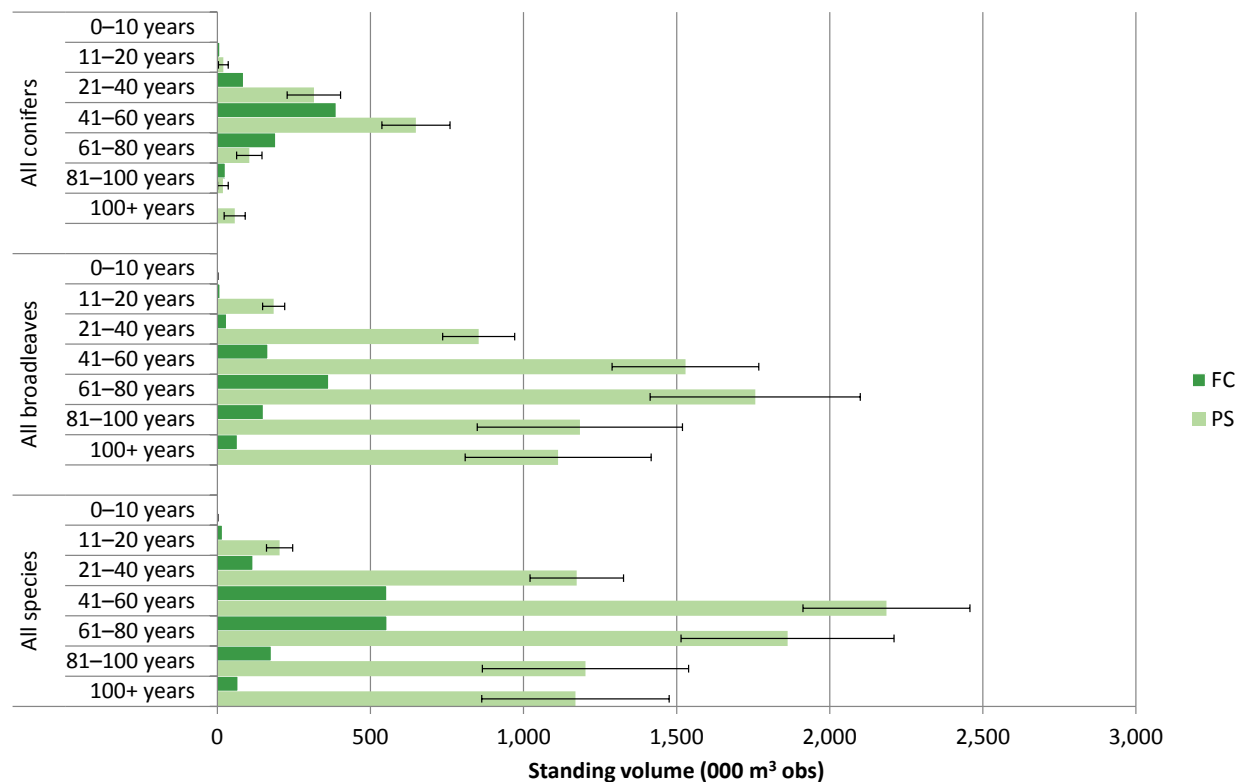
Figure 16 Standing volume by principal broadleaved species



Part 2 - what our woodlands are like today

Standing volume by age class

Figure 17 Standing volume by age class



Part 2 - what our woodlands are like today

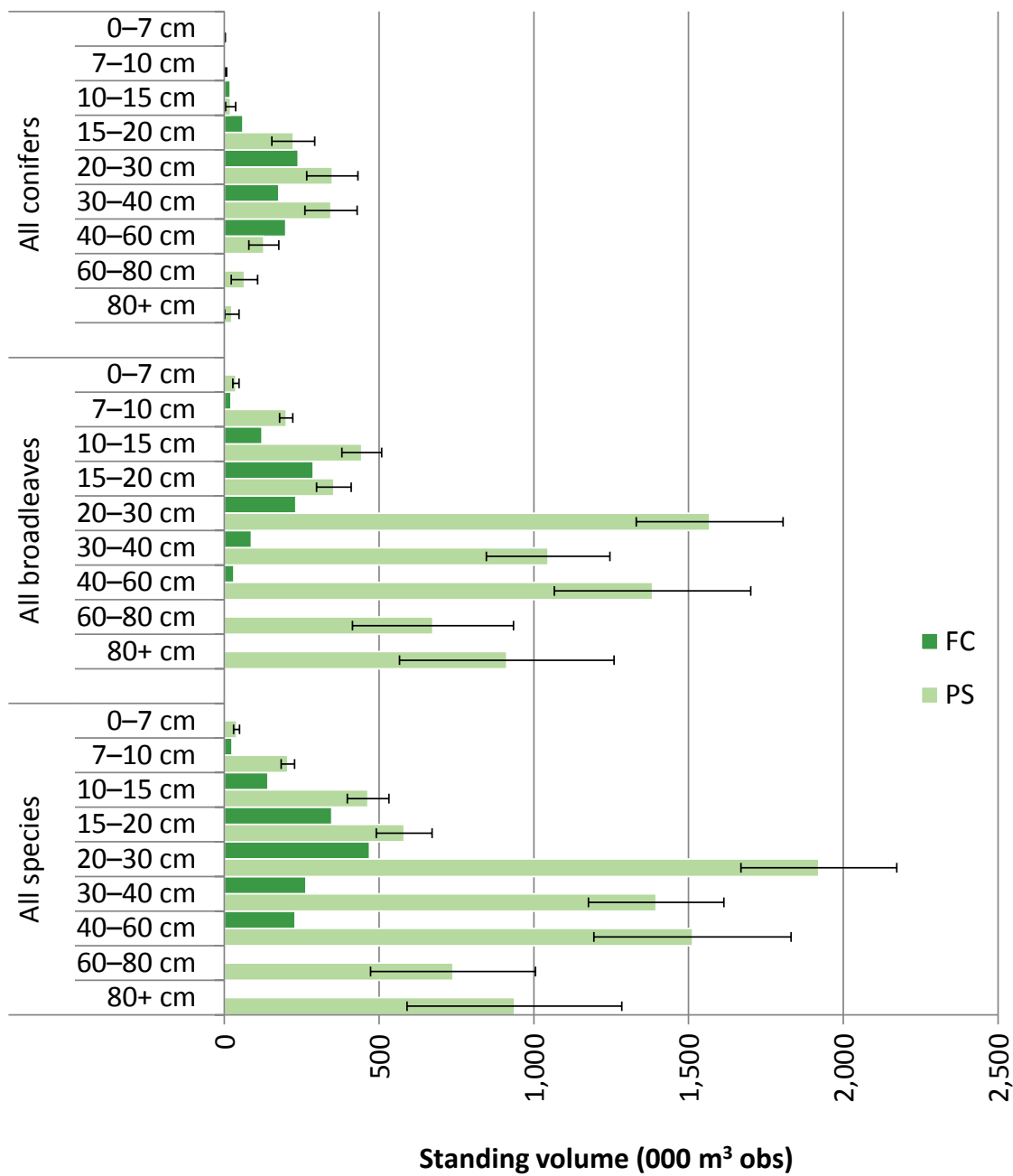
Table 15 Standing volume by age class

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	0	0	-	0
11–20	8	19	83	27
21–40	86	315	28	401
41–60	389	649	17	1,037
61–80	191	104	40	295
81–100	26	18	97	44
100+	2	57	61	59
Total	701	1,162	12	1,863
All broadleaves				
0–10	0	1	47	1
11–20	9	184	19	193
21–40	30	853	14	884
41–60	165	1,529	16	1,694
61–80	363	1,757	20	2,120
81–100	150	1,184	28	1,334
100+	66	1,113	27	1,179
Total	784	6,621	7	7,405
All species				
0–10	0	1	47	1
11–20	17	203	21	220
21–40	116	1,174	13	1,290
41–60	554	2,185	12	2,739
61–80	554	1,862	19	2,416
81–100	176	1,202	28	1,378
100+	68	1,170	26	1,237
Total	1,485	7,797	6	9,282

Part 2 - what our woodlands are like today

Standing volume by mean stand dbh class

Figure 18 Standing volume by stand mean dbh class



Part 2 - what our woodlands are like today

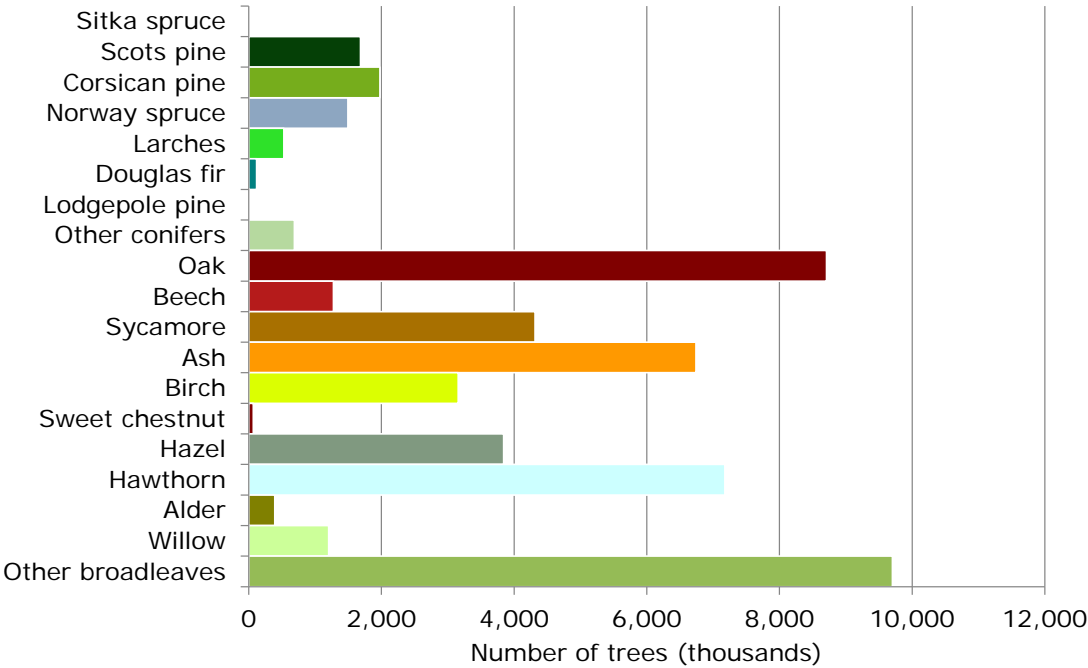
Table 16 Standing volume by mean stand dbh class

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	2	72	2
7–10	3	5	44	9
10–15	19	20	79	40
15–20	60	223	31	283
20–30	239	349	24	588
30–40	176	345	25	521
40–60	199	128	38	326
60–80	< 1	65	65	66
80+	4	25	94	28
Total	701	1,162	12	1,863
All broadleaves				
0–7	1	38	26	39
7–10	22	200	11	222
10–15	122	444	14	566
15–20	287	354	16	641
20–30	231	1,568	15	1,799
30–40	87	1,046	19	1,134
40–60	31	1,384	23	1,414
60–80	2	674	39	676
80+	< 1	913	38	914
Total	784	6,621	7	7,405
All species				
0–7	1	40	25	41
7–10	25	206	11	231
10–15	141	465	14	606
15–20	348	581	16	929
20–30	470	1,921	13	2,391
30–40	264	1,396	16	1,659
40–60	229	1,513	21	1,742
60–80	3	739	36	742
80+	4	937	37	942
Total	1,485	7,797	6	9,282

Number of measureable trees

Number of measureable trees by species

Figure 19 Number of measureable trees by principal tree species



Part 2 - what our woodlands are like today

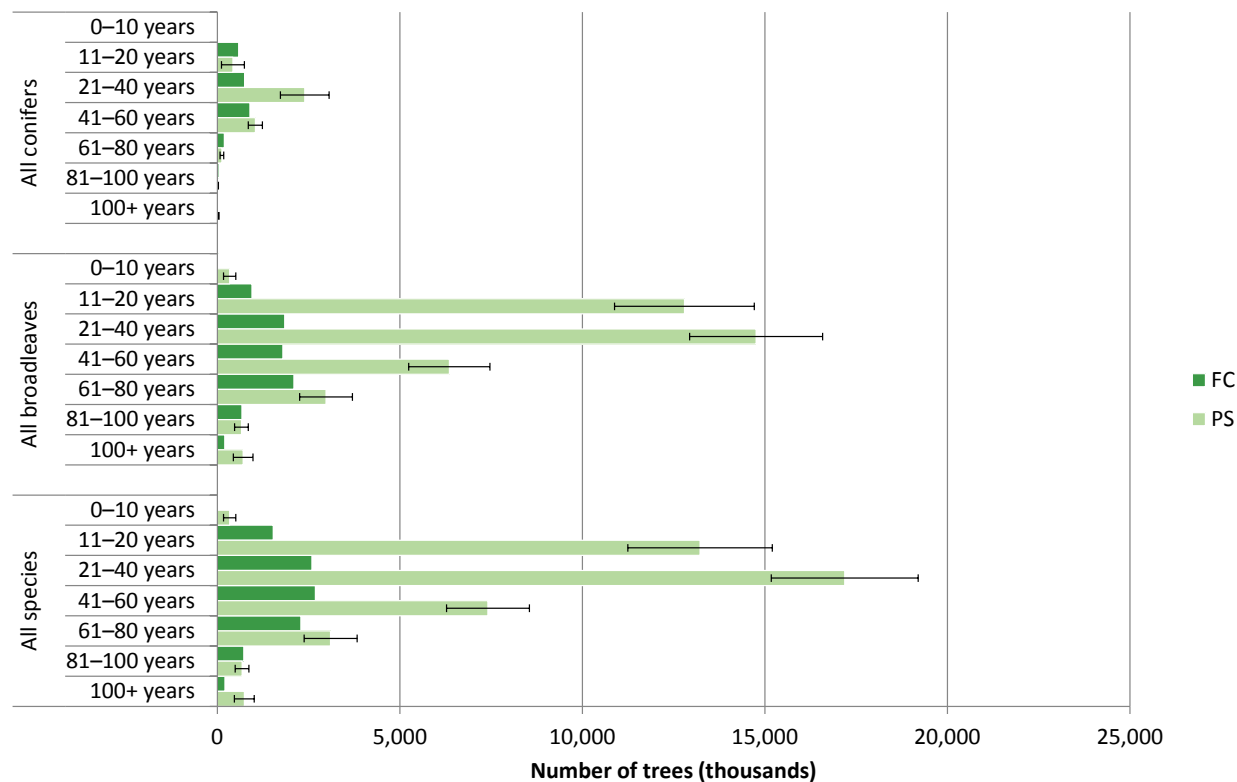
Table 17 Number of measureable trees by principal tree species

Principal species	FC	Private sector		Total
	number of trees (thousands)	number of trees (thousands)	SE%	number of trees (thousands)
Conifers				
Sitka spruce	4	4	109	8
Scots pine	504	1,181	23	1,685
Corsican pine	1,224	751	44	1,975
Norway spruce	352	1,143	29	1,495
Larches	117	412	31	529
Douglas fir	61	57	64	118
Lodgepole pine	< 1	0	-	< 1
Other conifers	200	489	65	689
All conifers	2,462	4,038	18	6,500
Broadleaves				
Oak	4,050	4,660	17	8,710
Beech	311	965	28	1,275
Sycamore	42	4,274	16	4,316
Ash	940	5,801	12	6,741
Birch	808	2,348	20	3,157
Sweet chestnut	7	61	76	68
Hazel	100	3,742	19	3,842
Hawthorn	0	7,178	22	7,178
Alder	16	377	40	393
Willow	5	1,201	34	1,206
Other broadleaves	1,313	8,389	16	9,701
All broadleaves	7,590	38,592	6	46,182
All species				
All species	10,052	42,680	6	52,732

Part 2 - what our woodlands are like today

Number of measureable trees by age class

Figure 20 Number of measureable trees by age class



Part 2 - what our woodlands are like today

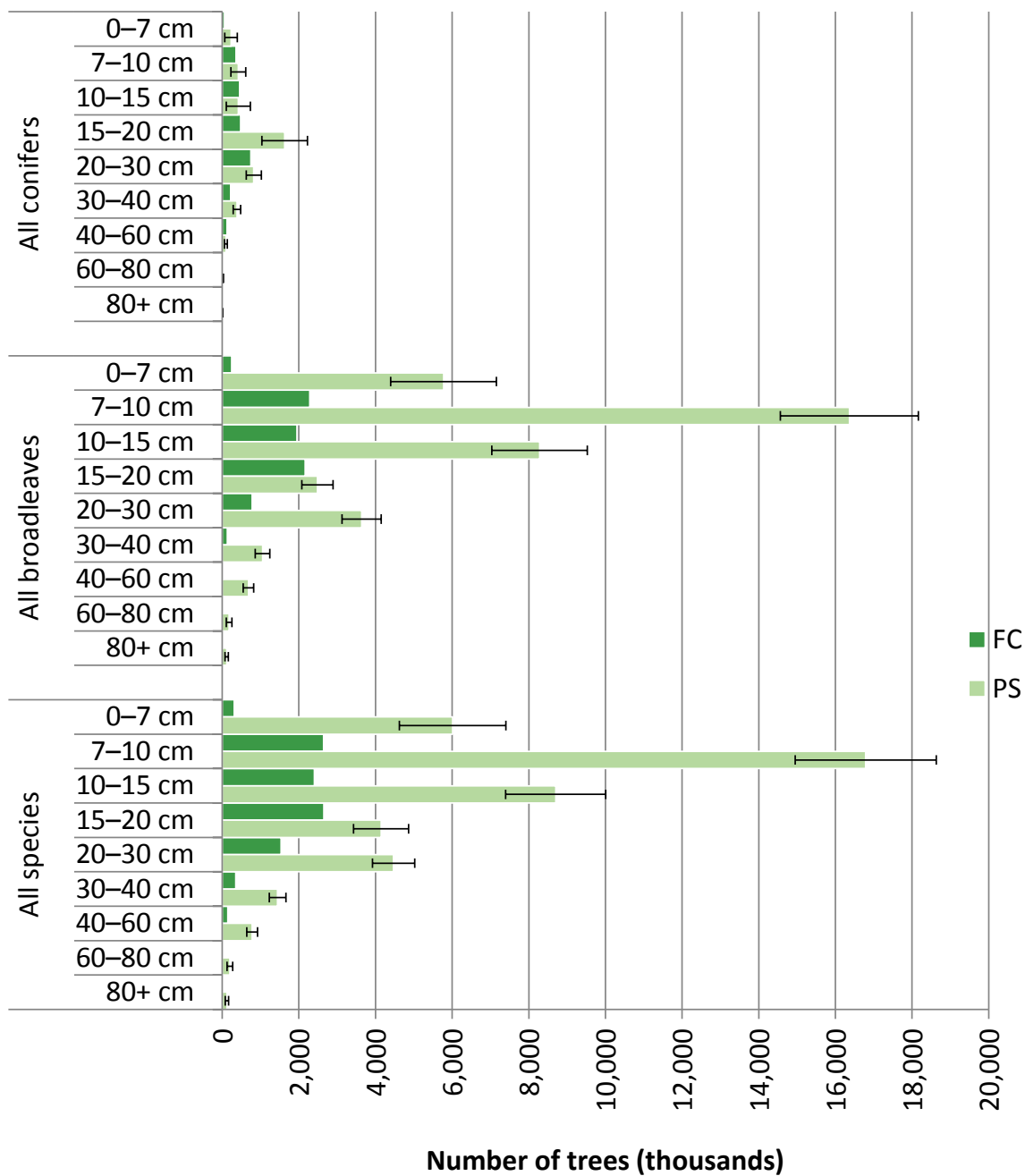
Table 18 Number of measureable trees by age class

Age class (years)	FC	Private sector		Total
	number of trees (thousands)	number of trees (thousands)	SE%	number of trees (thousands)
All conifers				
0–10	0	0	-	0
11–20	582	428	74	1,010
21–40	747	2,393	28	3,140
41–60	891	1,043	19	1,935
61–80	191	125	41	316
81–100	49	16	97	65
100+	3	31	52	34
Total	2,462	4,038	18	6,500
All broadleaves				
0–10	27	338	50	364
11–20	949	12,796	15	13,745
21–40	1,843	14,758	12	16,601
41–60	1,796	6,355	18	8,151
61–80	2,098	2,976	24	5,075
81–100	673	661	28	1,334
100+	204	708	38	911
Total	7,590	38,592	6	46,182
All species				
0–10	27	338	50	364
11–20	1,531	13,224	15	14,755
21–40	2,590	17,186	12	19,777
41–60	2,687	7,412	15	10,099
61–80	2,289	3,103	23	5,392
81–100	722	677	28	1,399
100+	206	739	37	945
Total	10,052	42,680	6	52,732

Part 2 - what our woodlands are like today

Number of measureable trees by mean stand dbh class

Figure 21 Number of measureable trees by mean stand dbh class



Part 2 - what our woodlands are like today

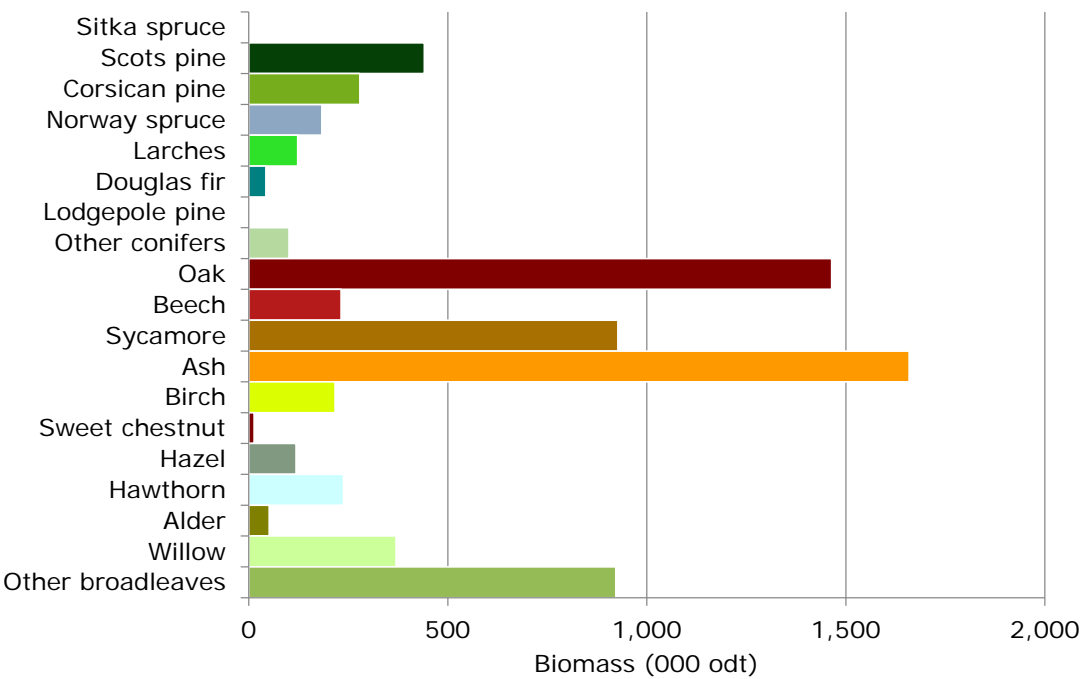
Table 19 Number of measureable trees by mean stand dbh class

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	64	231	72	295
7–10 cm	362	422	46	784
10–15 cm	456	419	75	875
15–20 cm	483	1,631	37	2,114
20–30 cm	749	825	24	1,574
30–40 cm	223	386	25	608
40–60 cm	125	98	39	223
60–80 cm	< 1	19	69	19
80+ cm	< 1	7	94	8
Total	2,462	4,038	18	6,500
All broadleaves				
0–7 cm	250	5,778	24	6,028
7–10 cm	2,284	16,364	11	18,648
10–15 cm	1,950	8,283	15	10,233
15–20 cm	2,167	2,487	16	4,654
20–30 cm	785	3,639	14	4,424
30–40 cm	133	1,055	18	1,188
40–60 cm	20	686	20	706
60–80 cm	1	181	39	182
80+ cm	< 1	119	37	119
Total	7,590	38,592	6	46,182
All species				
0–7 cm	314	6,012	23	6,326
7–10 cm	2,646	16,790	11	19,436
10–15 cm	2,405	8,703	15	11,108
15–20 cm	2,650	4,146	17	6,796
20–30 cm	1,534	4,473	12	6,007
30–40 cm	356	1,446	15	1,802
40–60 cm	145	785	18	930
60–80 cm	1	200	36	202
80+ cm	< 1	126	35	127
Total	10,052	42,680	6	52,732

Biomass stocks in live woodland trees

Biomass stocks by species

Figure 22 Biomass stocks by principal tree species



Part 2 - what our woodlands are like today

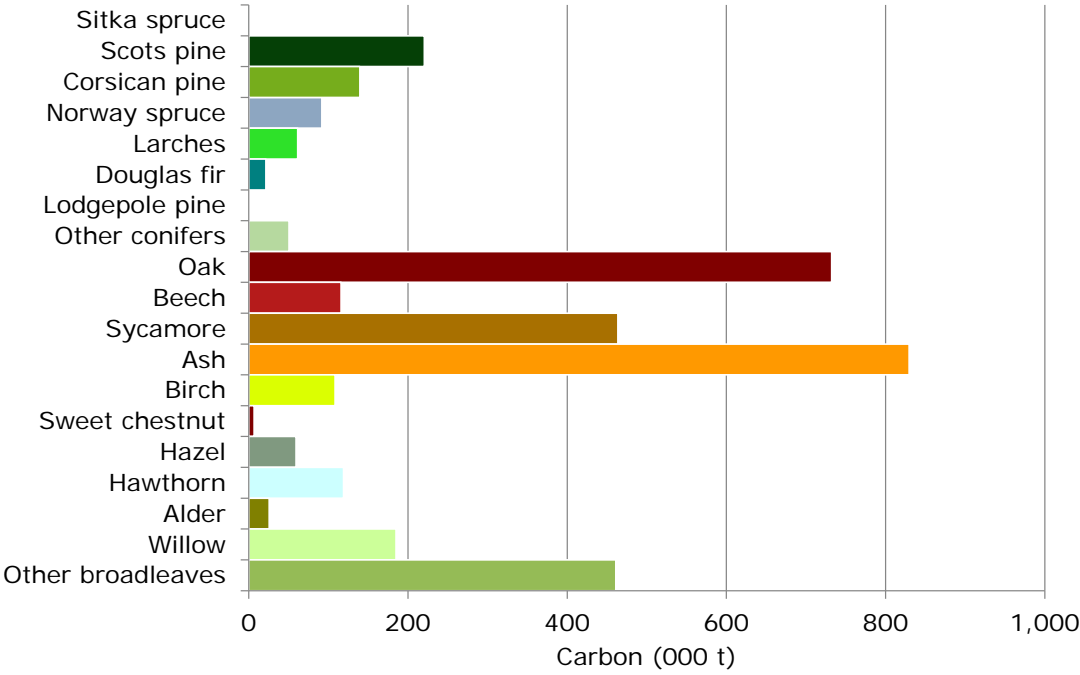
Table 20 Biomass stocks by principal tree species

Principal species	FC	Private sector		Total
	biomass (000 odt)	biomass (000 odt)	SE%	biomass (000 odt)
Conifers				
Sitka spruce	< 1	2	109	3
Scots pine	156	285	18	441
Corsican pine	182	97	35	279
Norway spruce	35	148	25	184
Larches	11	112	28	123
Douglas fir	13	30	60	43
Lodgepole pine	< 1	0	-	< 1
Other conifers	45	56	49	101
All conifers	443	731	12	1,174
Broadleaves				
Oak	440	1,024	15	1,464
Beech	38	194	32	232
Sycamore	3	924	24	927
Ash	121	1,538	15	1,659
Birch	47	170	30	217
Sweet chestnut	< 1	13	68	14
Hazel	4	115	22	119
Hawthorn	0	238	23	238
Alder	< 1	50	56	51
Willow	< 1	370	40	370
Other broadleaves	85	838	20	922
All broadleaves	740	5,466	7	6,205
All species				
All species	1,183	6,205	6	7,388

Carbon stocks in live woodland trees

Carbon stocks by species

Figure 23 Carbon stocks by principal tree species



Part 2 - what our woodlands are like today

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	< 1	< 1	109	1
Scots pine	78	143	18	221
Corsican pine	91	49	35	139
Norway spruce	18	74	25	92
Larches	6	56	28	61
Douglas fir	7	15	60	22
Lodgepole pine	< 1	0	-	< 1
Other conifers	22	28	49	51
All conifers	221	365	12	587
Broadleaves				
Oak	220	512	15	732
Beech	19	97	32	116
Sycamore	2	462	24	464
Ash	60	769	15	829
Birch	23	85	30	109
Sweet chestnut	< 1	6	68	7
Hazel	2	57	22	60
Hawthorn	0	119	23	119
Alder	< 1	25	56	26
Willow	< 1	185	40	185
Other broadleaves	42	419	20	461
All broadleaves	370	2,733	7	3,103
All species				
All species	591	3,103	6	3,694

Part 2 - what our woodlands are like today

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
Lincolnshire and Northamptonshire	171	170	80	164

Part 2 - what our woodlands are like today

Evidence of management

Figure 24 Evidence of management in PS broadleaf sections

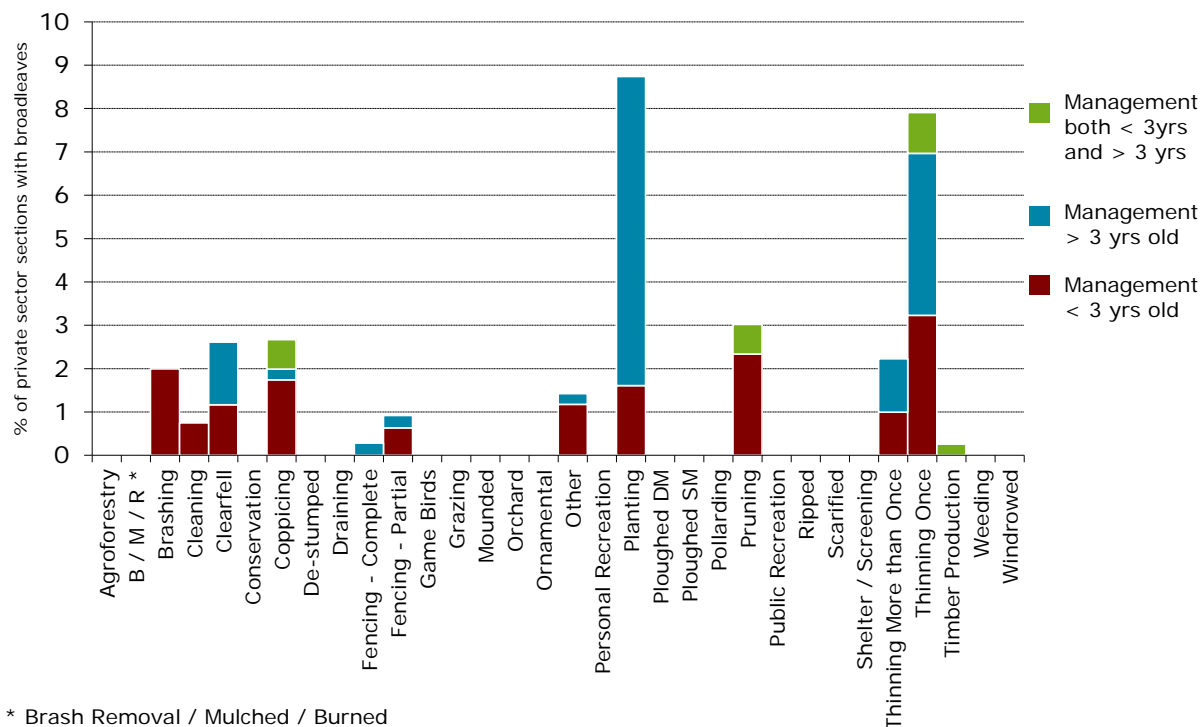
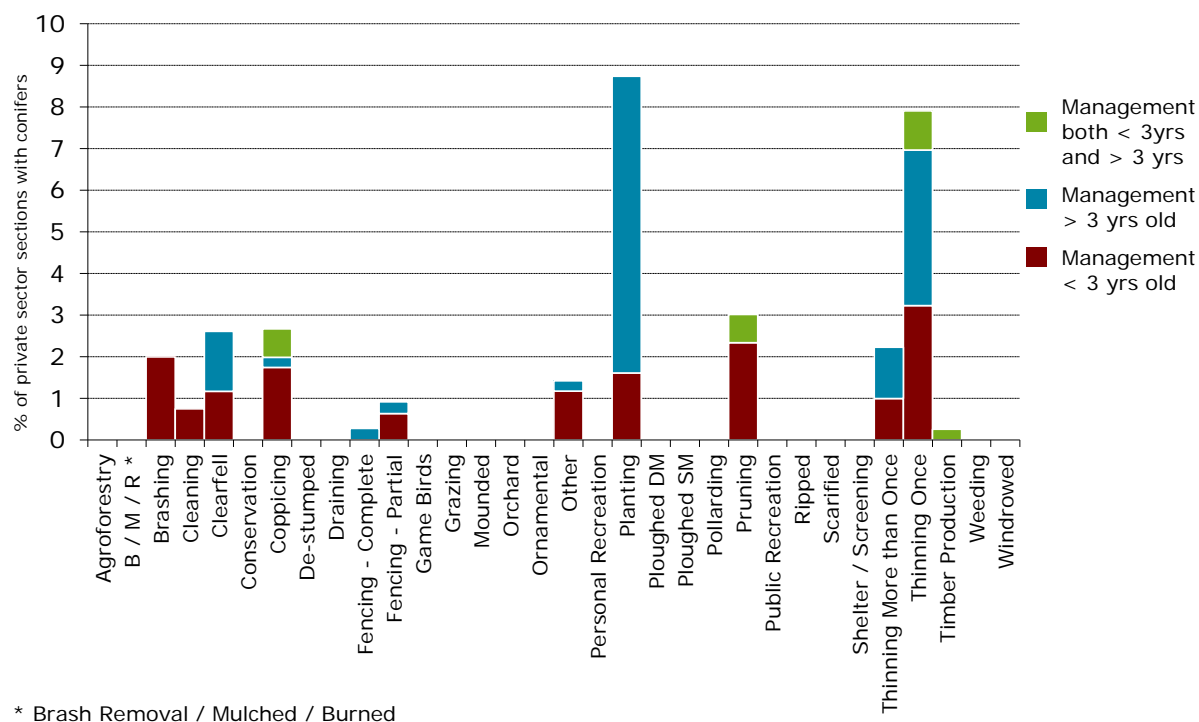


Figure 25 Evidence of management in PS conifer sections



Part 2 - what our woodlands are like today

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

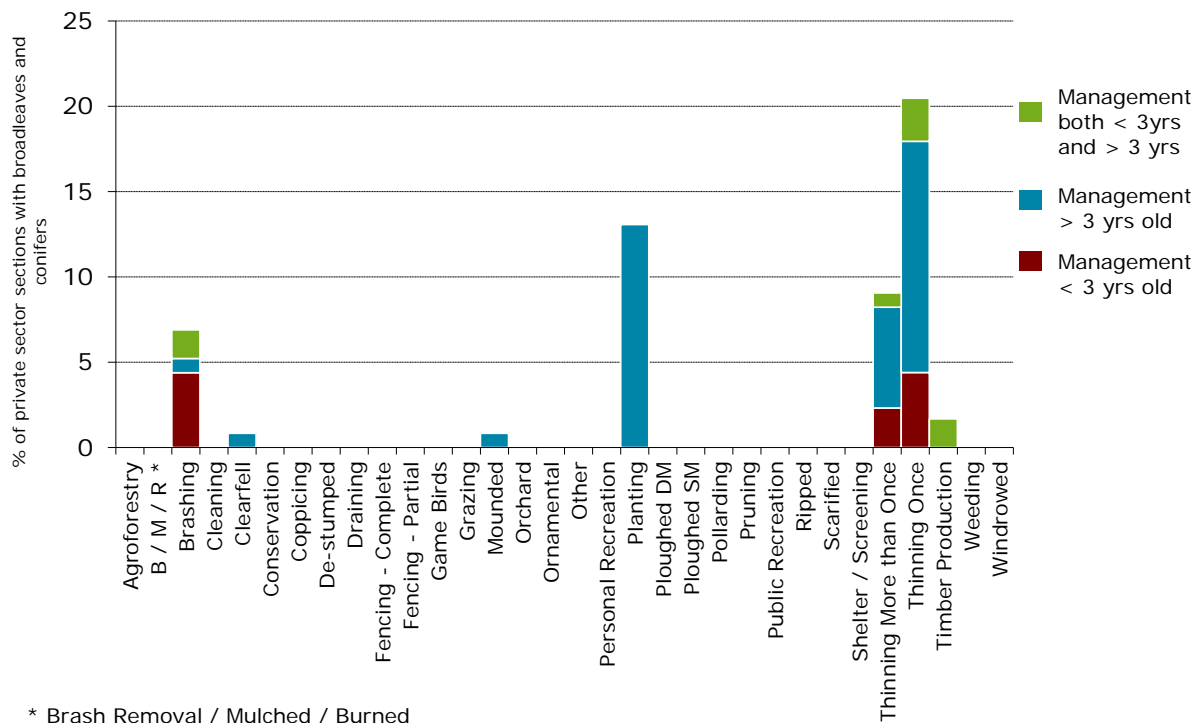
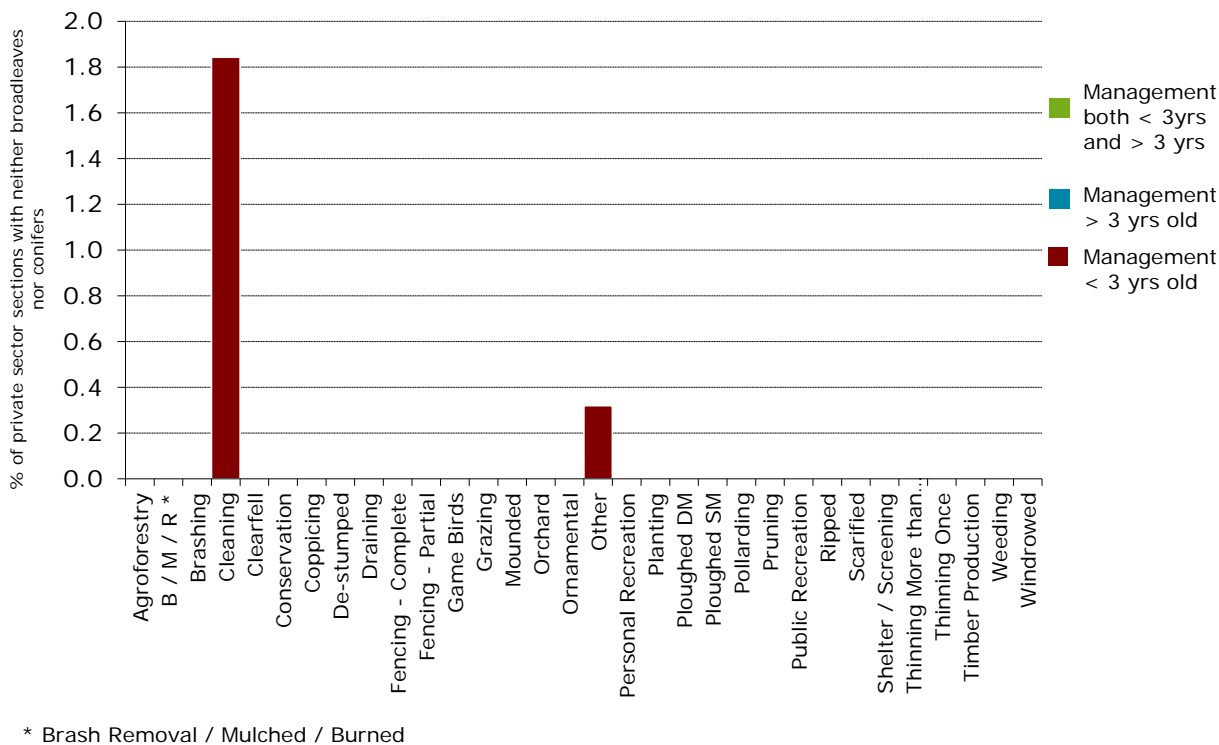


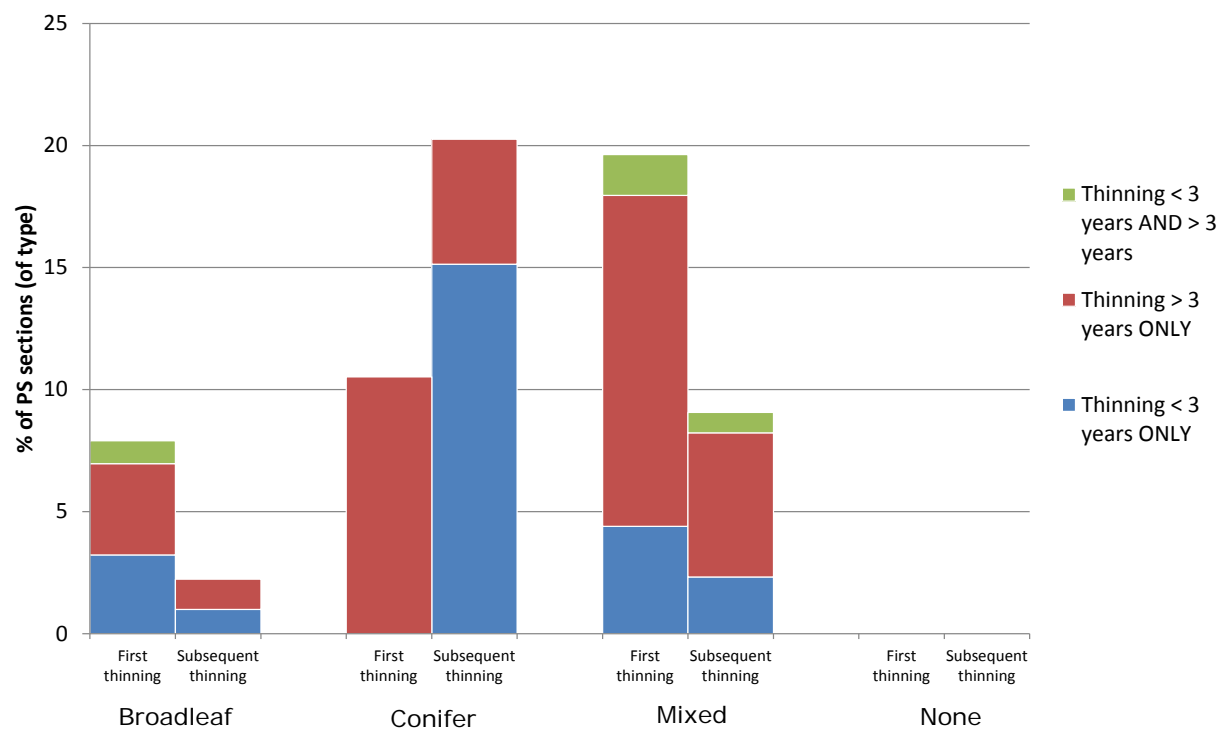
Figure 27 Evidence of management in PS sections with no broadleaf or conifer



Part 2 - what our woodlands are like today

Evidence of thinning

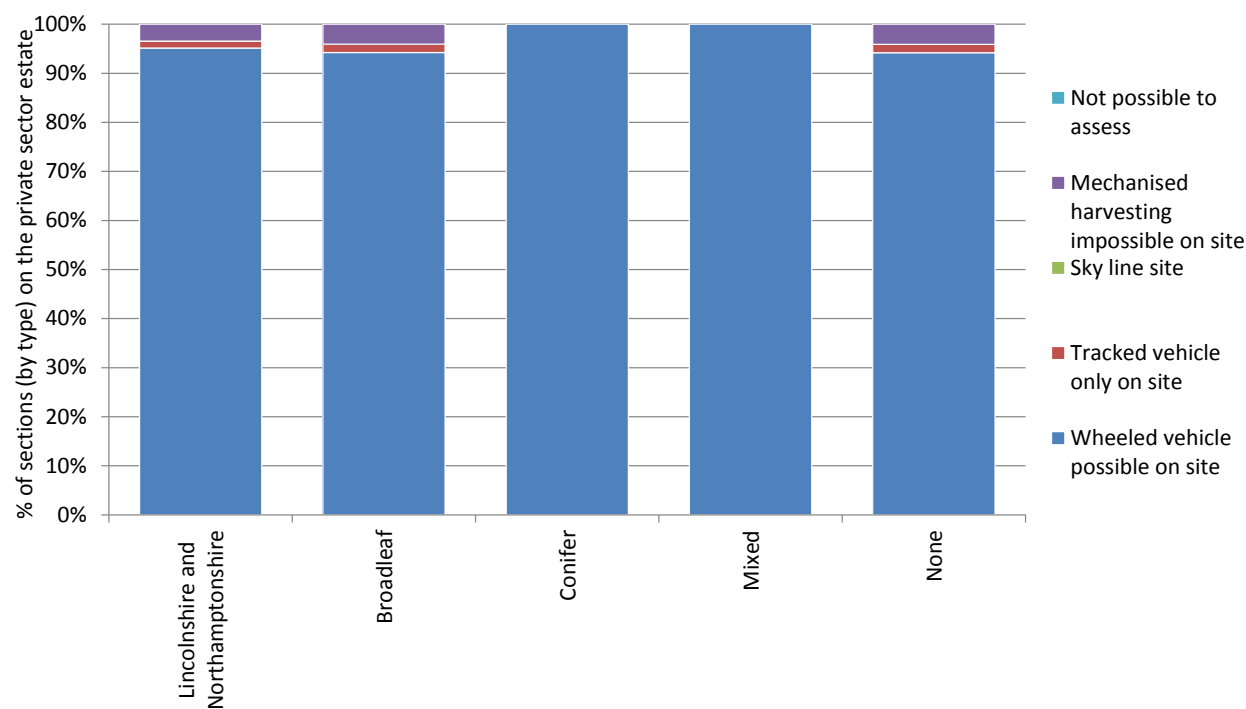
Figure 28 Evidence of thinning



Part 2 - what our woodlands are like today

Suitability for harvesting

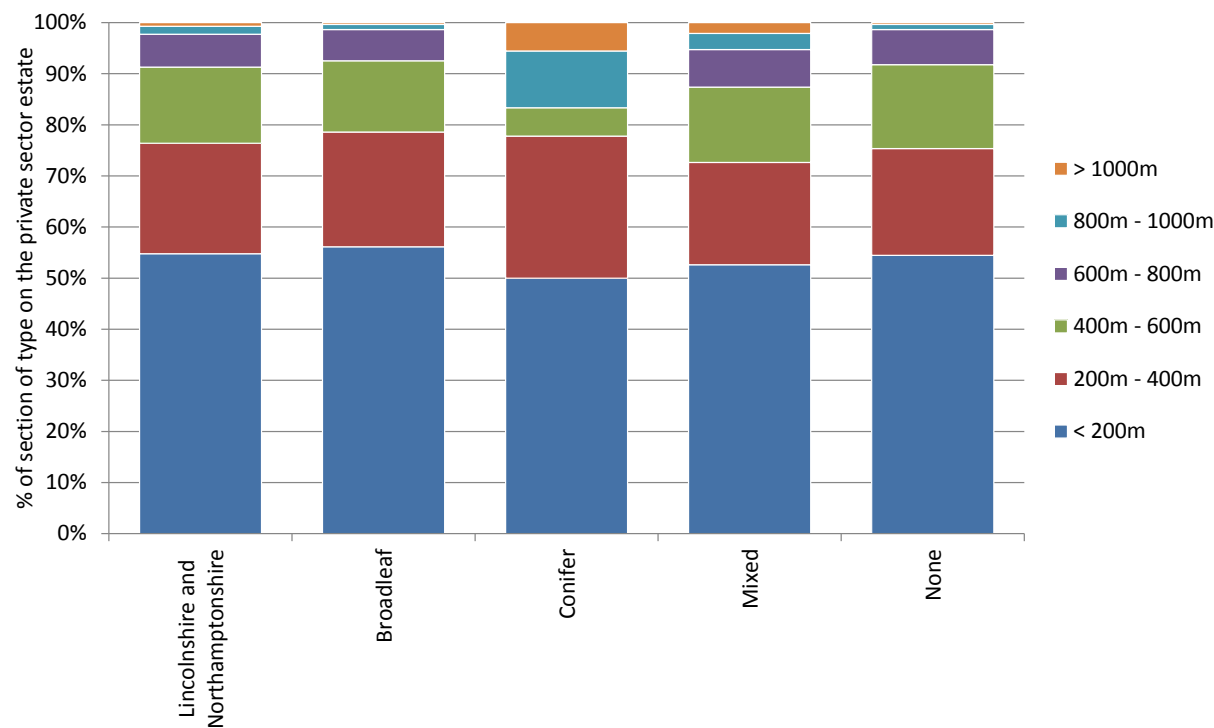
Figure 29 Suitability for harvesting



Part 2 - what our woodlands are like today

Distance to road

Figure 30 Distance to road



Part 2 - what our woodlands are like today

Type of road or ride

Figure 31 Road or ride in survey square

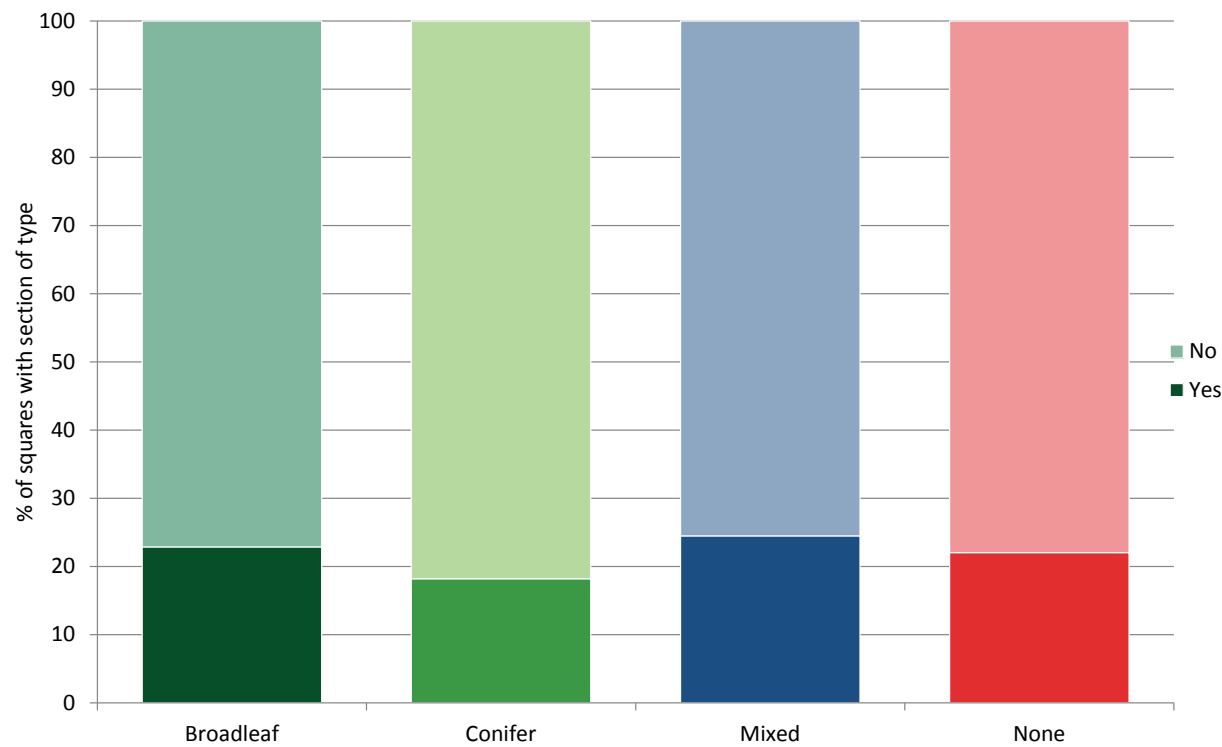
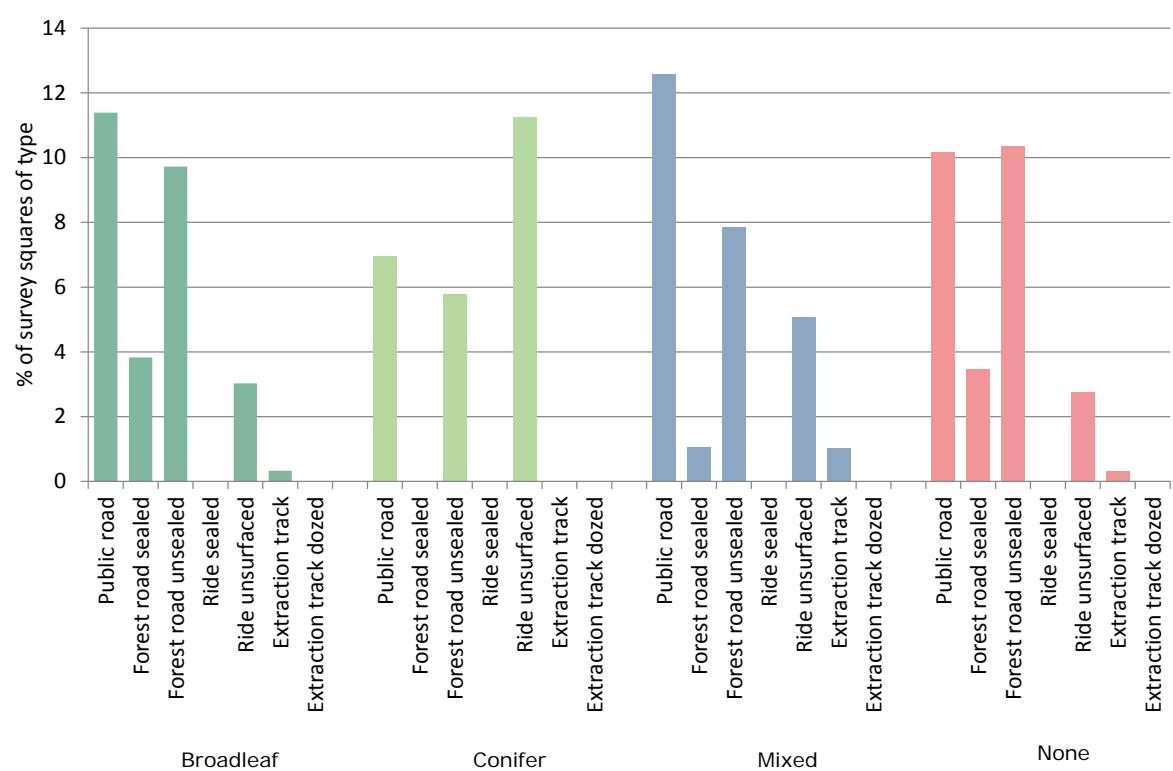


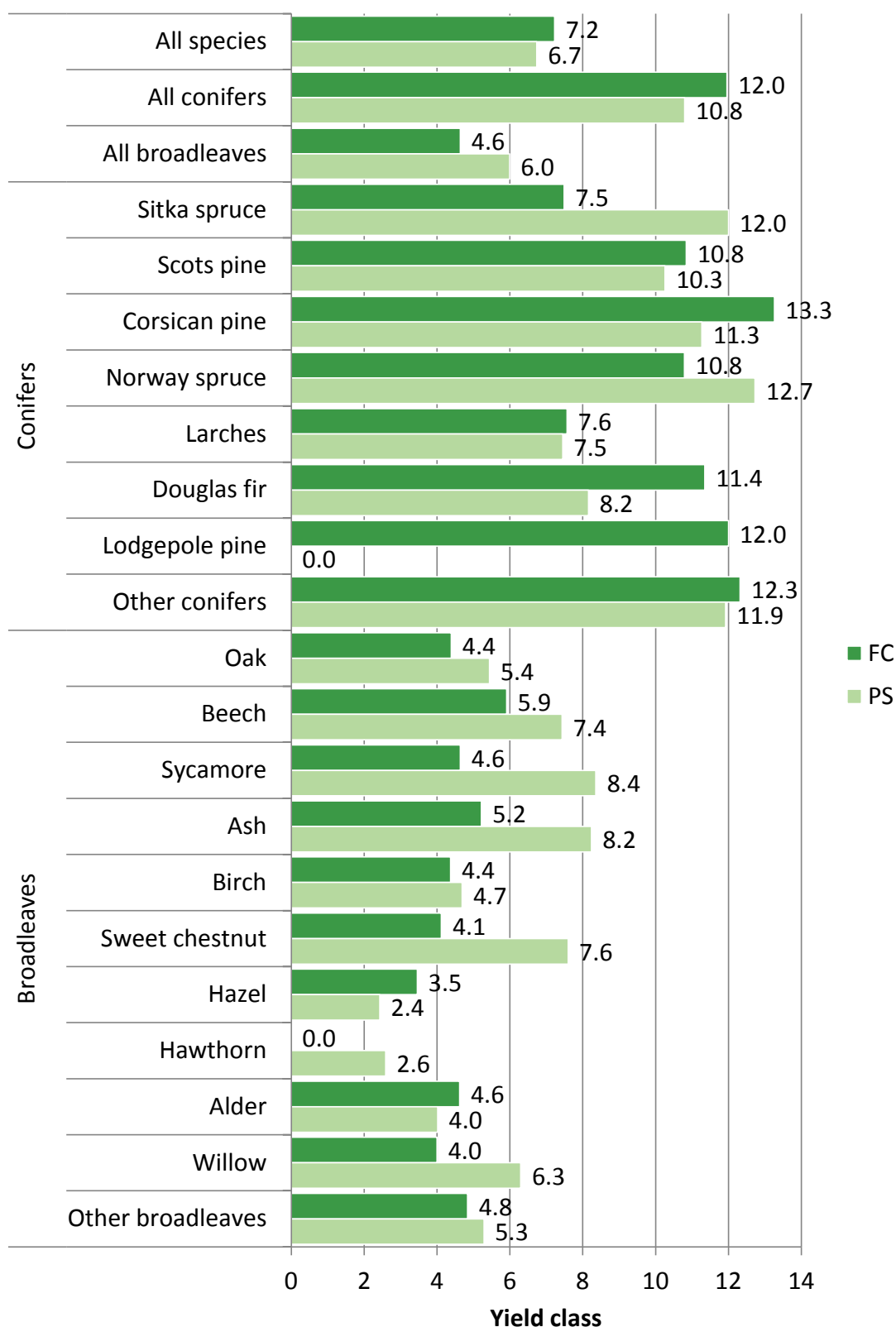
Figure 32 Type of road or ride in survey square



Part 2 - what our woodlands are like today

Mean yield class

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



Part 2 - what our woodlands are like today

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	7.5	12.0
Scots pine	10.8	10.3
Corsican pine	13.3	11.3
Norway spruce	10.8	12.7
Larches	7.6	7.5
Douglas fir	11.4	8.2
Lodgepole pine	12.0	0.0
Other conifers	12.3	11.9
All conifers	12.0	10.8
Broadleaves		
Oak	4.4	5.4
Beech	5.9	7.4
Sycamore	4.6	8.4
Ash	5.2	8.2
Birch	4.4	4.7
Sweet chestnut	4.1	7.6
Hazel	3.5	2.4
Hawthorn	0.0	2.6
Alder	4.6	4.0
Willow	4.0	6.3
Other broadleaves	4.8	5.3
All broadleaves	4.6	6.0
All species		
All species	7.2	6.7

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 %
Lincolnshire and Northamptonshire			
All conifers	59	193	30
All broadleaves	11	4,693	11
All species	70	4,888	11

Table 25 Stocked area of overdue timber stocks

	FC	Private sector	
	area (000 ha)	area (000 ha)	SE %
Lincolnshire and Northamptonshire			
All conifers	0.2	0.7	30
All broadleaves	< 0.1	10.8	8
All species	0.3	11.6	8

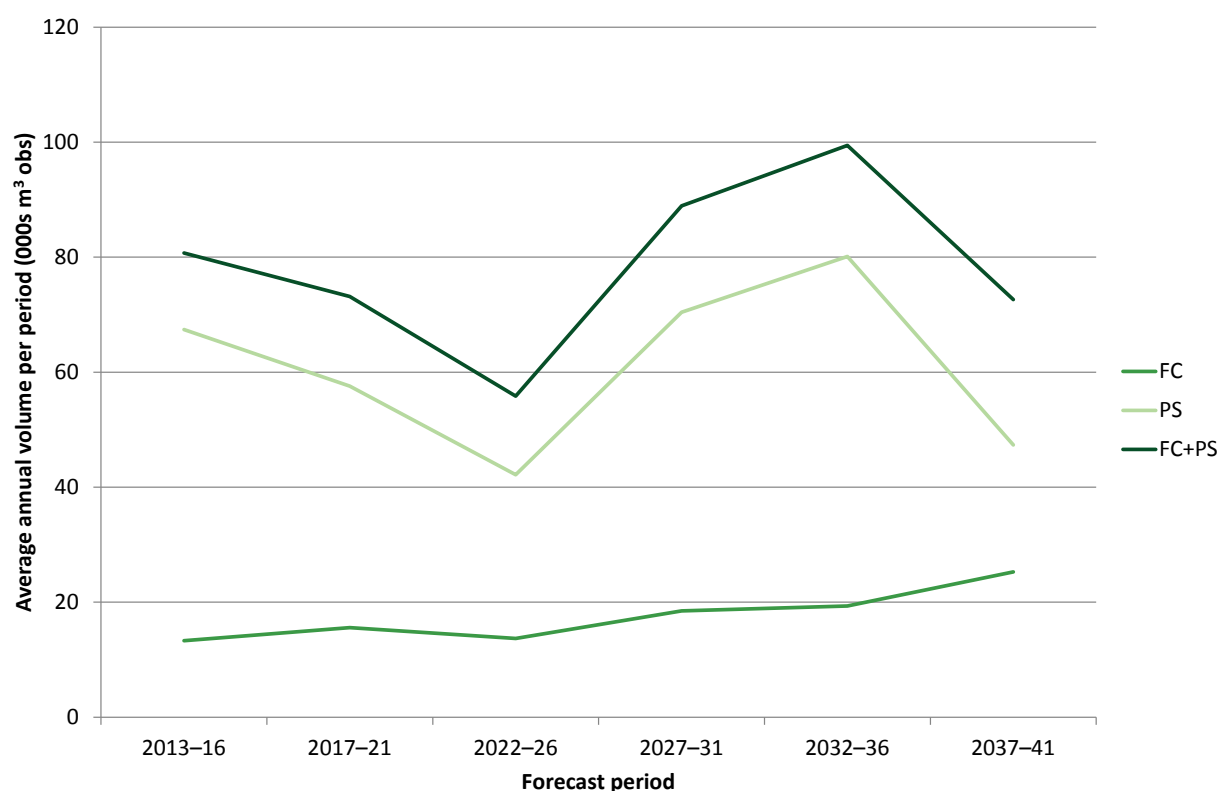
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25-year softwood forecast

25-year forecast of softwood timber availability

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



Part 3 - how our woodlands might change

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

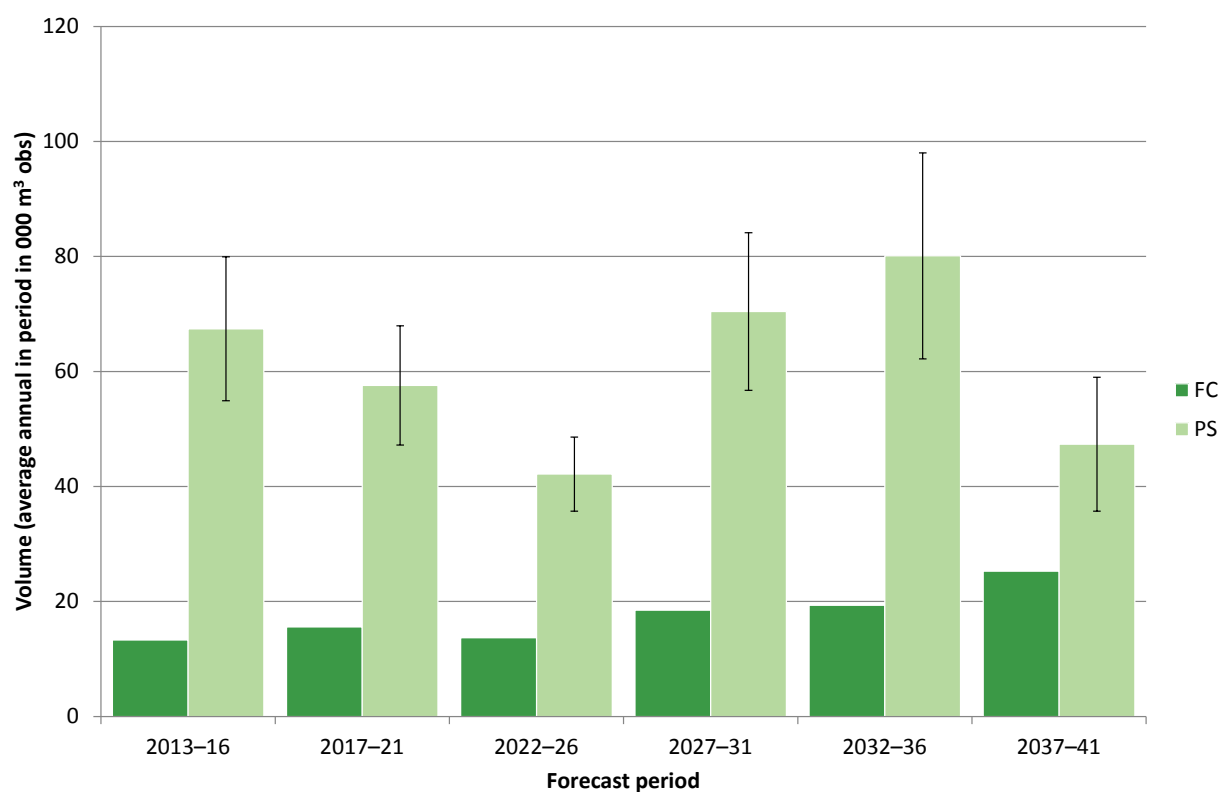


Table 26 25-year forecast of softwood availability; average annual volume within period

Forecast period	FC	Private sector		Total
	volume (000 m³ obs)	volume (000 m³ obs)	SE%	volume (000 m³ obs)
Lincolnshire and Northamptonshire				
2013-16	13	67	19	81
2017-21	16	58	18	73
2022-26	14	42	15	56
2027-31	18	70	19	89
2032-36	19	80	22	99
2037-41	25	47	25	73

Part 3 - how our woodlands might change

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 m³ obs)		SE%	volume (000 m³ obs)		SE%
Lincolnshire and Northamptonshire						
All conifers	13	67	19	16	58	18
Sitka spruce	< 1	< 1	109	< 1	< 1	109
Scots pine	1	15	21	1	12	19
Corsican pine	5	19	50	6	7	43
Norway spruce	< 1	10	29	2	16	34
Larches	< 1	14	36	< 1	8	38
Douglas fir	2	3	65	2	6	91
Lodgepole pine	0	0	–	0	0	–
Other conifers	4	5	62	4	8	61

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 m³ obs)		SE%	volume (000 m³ obs)		SE%
Lincolnshire and Northamptonshire						
All conifers	14	42	15	18	70	19
Sitka spruce	< 1	< 1	109	< 1	< 1	109
Scots pine	2	13	18	1	39	32
Corsican pine	6	4	52	8	7	43
Norway spruce	1	12	28	2	18	30
Larches	< 1	8	31	1	4	36
Douglas fir	2	1	87	3	0	—
Lodgepole pine	0	0	—	0	0	—
Other conifers	2	5	59	3	3	83

Part 3 - how our woodlands might change

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 m³ obs)		SE%	volume (000 m³ obs)		SE%
Lincolnshire and Northamptonshire						
All conifers	19	80	22	25	47	25
Sitka spruce	< 1	< 1	47	< 1	< 1	41
Scots pine	1	36	29	2	23	40
Corsican pine	10	14	89	14	2	69
Norway spruce	2	19	39	2	15	38
Larches	1	7	36	1	2	35
Douglas fir	4	< 1	52	3	< 1	24
Lodgepole pine	0	0	–	< 1	< 1	52
Other conifers	2	3	85	3	3	75

25-year forecast of softwood timber availability % spruce

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

Lincolnshire and Northamptonshire		Top diameter class (cm)								Total
		7–14	14–16	16–18	18–24	24–34	34–44	44–54	54+	
2013–16	FC (%)	16	12	9	7	6	6	6	3	7
	PS (%)	26	27	26	22	11	5	3	< 1	15
2017–21	FC (%)	11	10	9	5	< 1	< 1	< 1	< 1	4
	PS (%)	40	36	34	31	27	23	27	3	29
2022–26	FC (%)	16	14	12	9	3	< 1	< 1	< 1	6
	PS (%)	32	34	35	32	28	28	27	22	30
2027–31	FC (%)	14	12	11	8	4	2	2	1	6
	PS (%)	30	33	33	33	24	21	21	16	25
2032–36	FC (%)	18	12	10	7	6	5	3	2	7
	PS (%)	38	35	31	28	27	21	14	5	24
2037–41	FC (%)	31	21	14	8	7	7	6	5	12
	PS (%)	37	44	41	44	38	31	30	14	34

Part 3 - how our woodlands might change

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 m³ obs)		SE%	volume (000 m³ obs)		SE%
Lincolnshire and Northamptonshire						
7–14	3	10	24	3	6	25
14–16	1	4	19	< 1	3	24
16–18	1	4	16	< 1	4	21
18–24	4	14	15	3	14	17
24–34	8	16	19	5	17	23
34–44	5	8	30	3	7	29
44–54	3	4	36	2	3	33
54+	2	7	63	1	3	47
Total	27	67	19	19	58	18

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 m³ obs)		SE%	volume (000 m³ obs)		SE%
Lincolnshire and Northamptonshire						
7–14	3	5	21	3	4	19
14–16	1	2	24	1	2	19
16–18	1	3	23	1	3	20
18–24	4	11	19	5	12	18
24–34	6	14	16	7	24	19
34–44	3	4	20	4	13	26
44–54	2	2	28	2	7	32
54+	2	1	34	2	6	40
Total	21	42	15	26	70	19

Part 3 - how our woodlands might change

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 m³ obs)		SE%	volume (000 m³ obs)		SE%
Lincolnshire and Northamptonshire						
7–14	3	5	23	3	6	22
14–16	1	2	22	1	1	22
16–18	1	2	21	1	1	22
18–24	6	13	24	5	7	28
24–34	7	29	27	6	14	27
34–44	3	16	25	2	8	30
44–54	1	7	25	< 1	4	31
54+	1	6	35	< 1	7	60
Total	24	80	22	20	47	25

Part 3 - how our woodlands might change

25-year forecast of standing volume in conifers

Figure 36 25-year forecast of standing volume in conifers

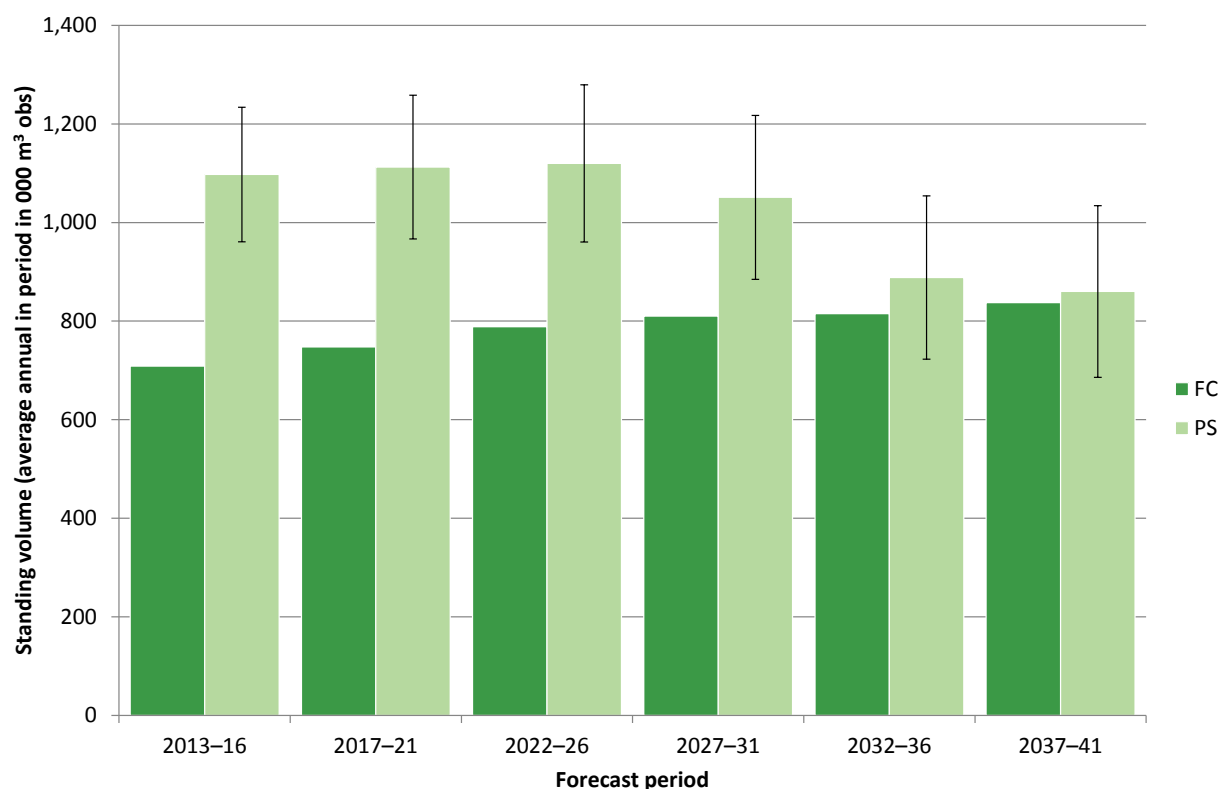


Table 30 25-year forecast of standing volume in conifers; average annual volume within period

Forecast period	FC	Private sector		Total
	volume (000 m³ obs)	volume (000 m³ obs)	SE%	volume (000 m³ obs)
Lincolnshire and Northamptonshire				
2013-16	709	1,097	12	1,806
2017-21	748	1,113	13	1,860
2022-26	788	1,120	14	1,908
2027-31	810	1,051	16	1,861
2032-36	815	888	19	1,704
2037-41	837	860	20	1,698

Part 3 - how our woodlands might change

25-year forecast of net increment in conifers

Figure 37 25-year forecast of net increment in conifers

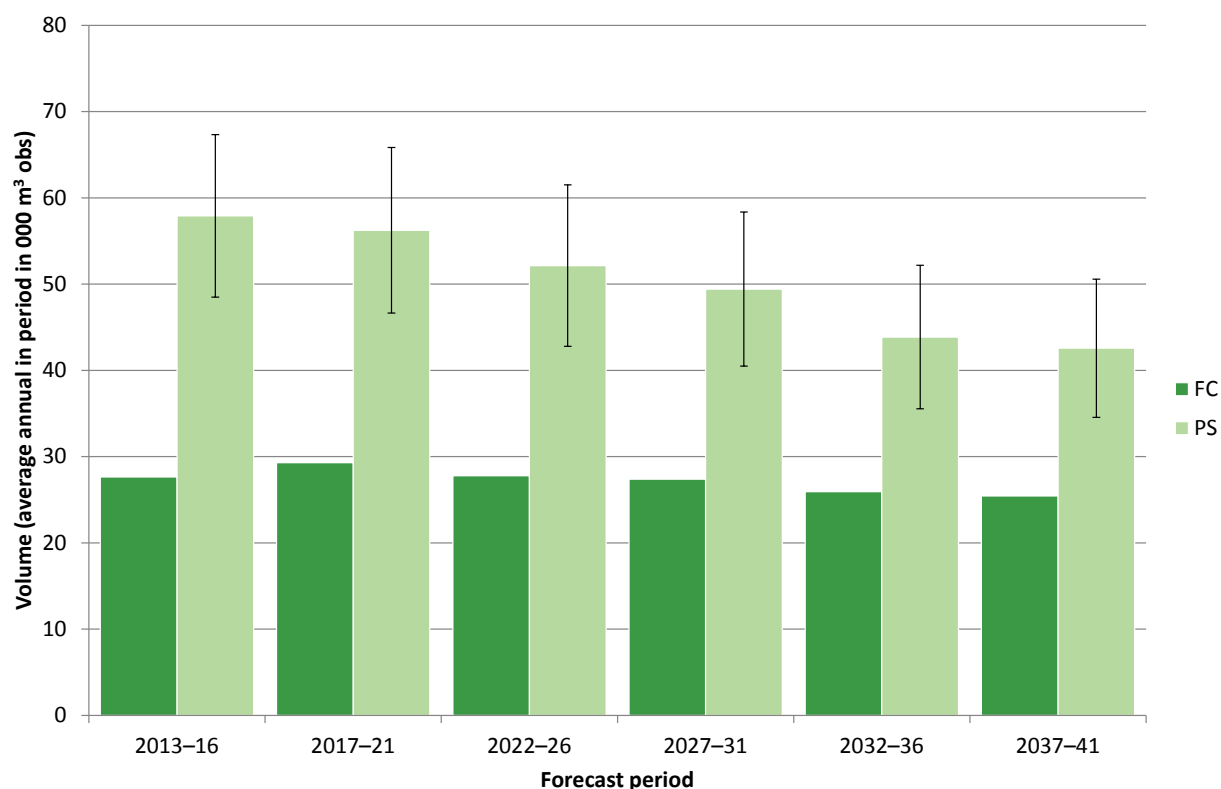


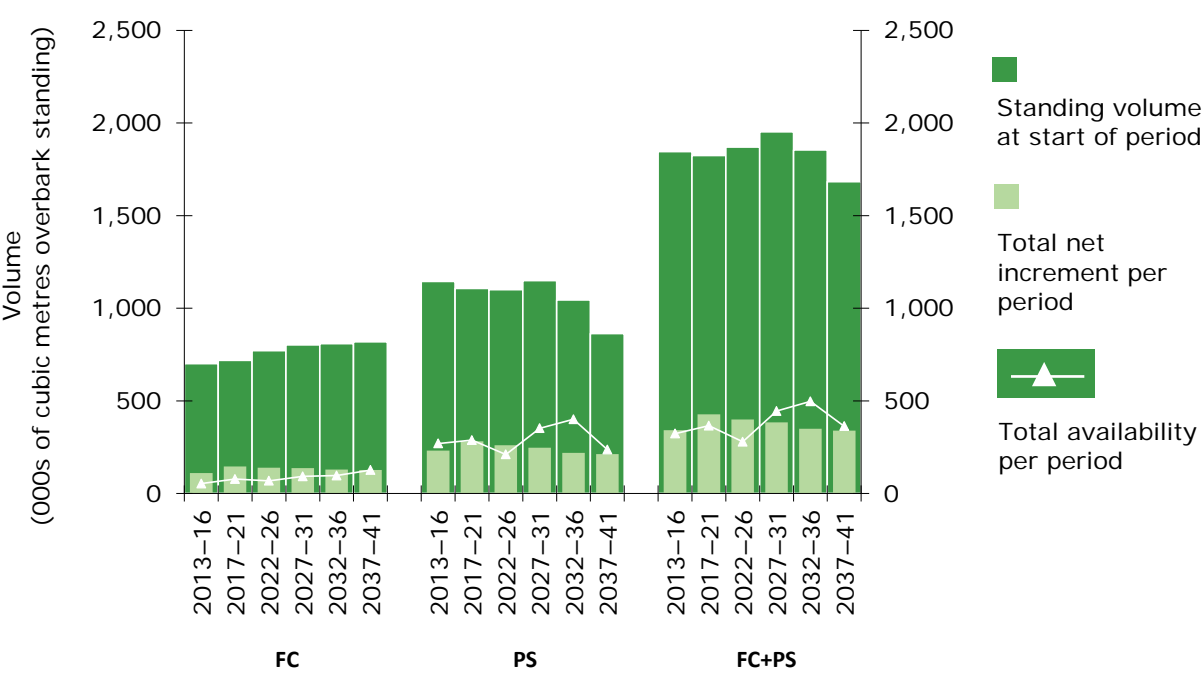
Table 31 25-year forecast of net increment in conifers; average annual volume within period

Forecast period	FC	Private sector		Total
	volume (000 m³ obs)	volume (000 m³ obs)	SE%	volume (000 m³ obs)
Lincolnshire and Northamptonshire				
2013–16	28	58	16	86
2017–21	29	56	17	86
2022–26	28	52	18	80
2027–31	27	49	18	77
2032–36	26	44	19	70
2037–41	25	43	19	68

Part 3 - how our woodlands might change

Combined standing volume, net increment and availability

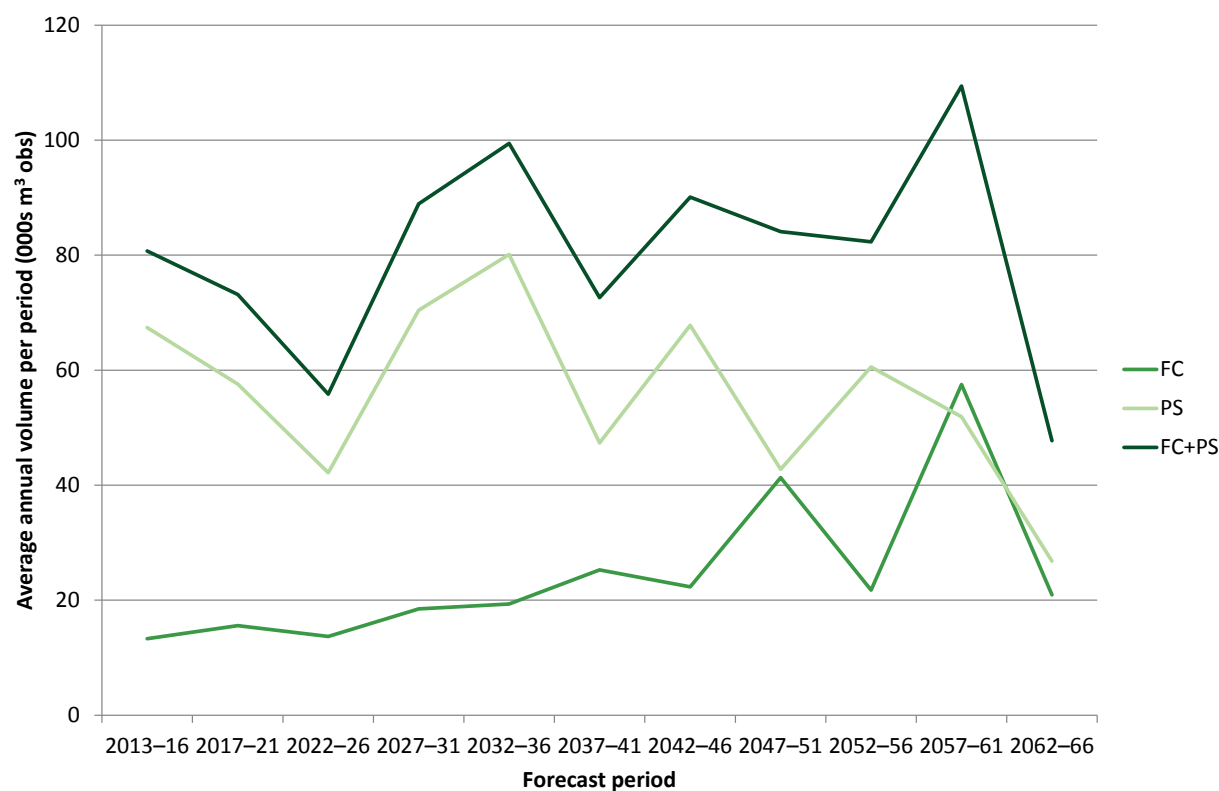
Figure 38 25-year forecast of standing volume, net increment and softwood availability



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



Part 3 - how our woodlands might change

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

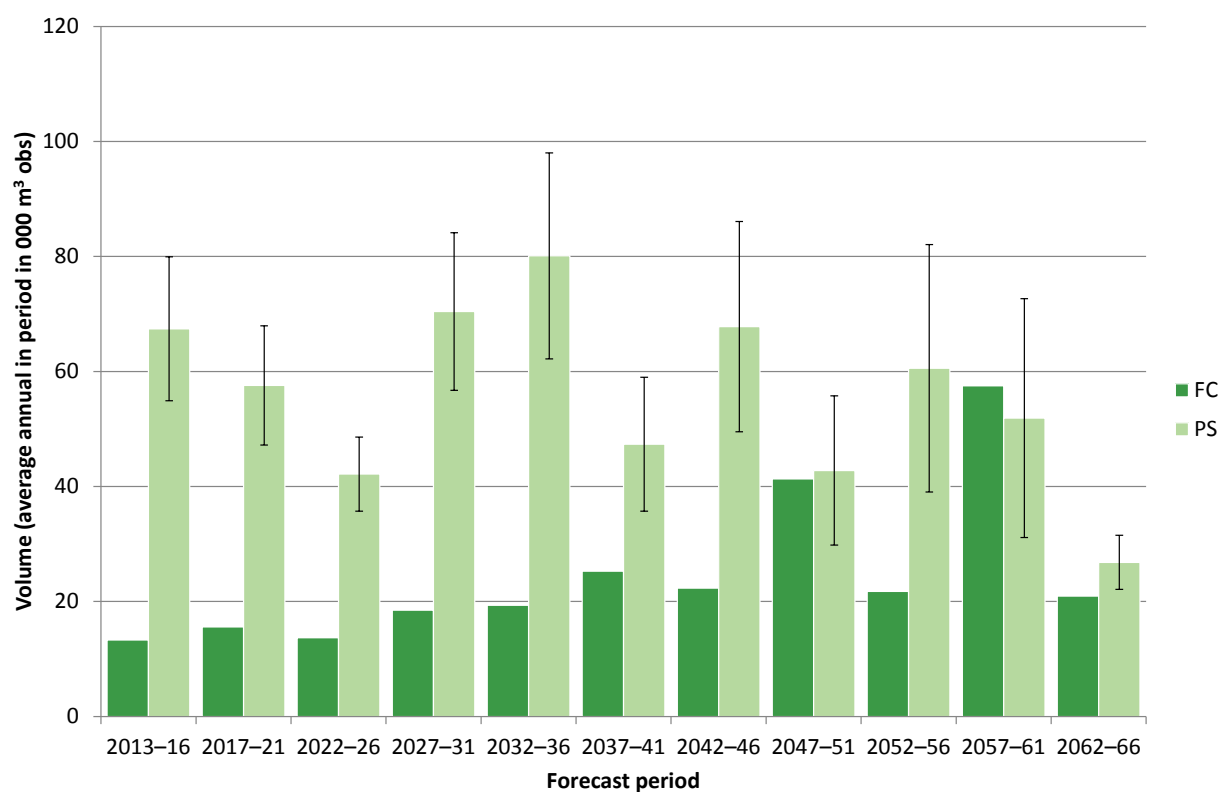


Table 32 Summary of 50-year forecast of softwood timber availability; average annual volume within period

Forecast period	FC	Private sector		Total
	volume (000 m³ obs)	volume (000 m³ obs)	SE%	volume (000 m³ obs)
Lincolnshire and Northamptonshire				
2013-16	13	67	19	81
2017-21	16	58	18	73
2022-26	14	42	15	56
2027-31	18	70	19	89
2032-36	19	80	22	99
2037-41	25	47	25	73
2042-46	22	68	27	90
2047-51	41	43	30	84
2052-56	22	61	36	82
2057-61	58	52	40	109
2062-66	21	27	18	48

Part 3 - how our woodlands might change

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 m³ obs)		SE%	volume (000 m³ obs)		SE%
Lincolnshire and Northamptonshire						
All conifers	13	67	19	16	58	18
Sitka spruce	< 1	< 1	109	< 1	< 1	109
Scots pine	1	15	21	1	12	19
Corsican pine	5	19	50	6	7	43
Norway spruce	< 1	10	29	2	16	34
Larches	< 1	14	36	< 1	8	38
Douglas fir	2	3	65	2	6	91
Lodgepole pine	0	0	-	0	0	-
Other conifers	4	5	62	4	8	61

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 m³ obs)		SE%	volume (000 m³ obs)		SE%
Lincolnshire and Northamptonshire						
All conifers	14	42	15	18	70	19
Sitka spruce	< 1	< 1	109	< 1	< 1	109
Scots pine	2	13	18	1	39	32
Corsican pine	6	4	52	8	7	43
Norway spruce	1	12	28	2	18	30
Larches	< 1	8	31	1	4	36
Douglas fir	2	1	87	3	0	-
Lodgepole pine	0	0	-	0	0	-
Other conifers	2	5	59	3	3	83

Part 3 - how our woodlands might change

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 m³ obs)		SE%	volume (000 m³ obs)		SE%
Lincolnshire and Northamptonshire						
All conifers	19	80	22	25	47	25
Sitka spruce	< 1	< 1	47	< 1	< 1	41
Scots pine	1	36	29	2	23	40
Corsican pine	10	14	89	14	2	69
Norway spruce	2	19	39	2	15	38
Larches	1	7	36	1	2	35
Douglas fir	4	< 1	52	3	< 1	24
Lodgepole pine	0	0	-	< 1	< 1	52
Other conifers	2	3	85	3	3	75

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 m³ obs)		SE%	volume (000 m³ obs)		SE%
Lincolnshire and Northamptonshire						
All conifers	22	68	27	41	43	30
Sitka spruce	< 1	< 1	37	< 1	< 1	36
Scots pine	1	13	38	3	15	47
Corsican pine	10	9	66	27	11	94
Norway spruce	2	29	49	1	8	32
Larches	2	1	31	3	1	30
Douglas fir	5	2	45	5	3	39
Lodgepole pine	< 1	< 1	52	< 1	< 1	52
Other conifers	2	12	67	2	4	47

Part 3 - how our woodlands might change

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 m³ obs)		SE%	volume (000 m³ obs)		SE%
Lincolnshire and Northamptonshire						
All conifers	22	61	36	58	52	40
Sitka spruce	< 1	1	28	< 1	2	22
Scots pine	4	15	66	22	14	65
Corsican pine	6	< 1	72	13	< 1	64
Norway spruce	4	26	60	4	27	69
Larches	1	1	26	3	2	27
Douglas fir	4	3	38	6	4	33
Lodgepole pine	< 1	< 1	52	< 1	< 1	52
Other conifers	2	14	77	9	4	23

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 m³ obs)		SE%
Lincolnshire and Northamptonshire			
All conifers	21	27	18
Sitka spruce	< 1	2	20
Scots pine	7	6	17
Corsican pine	5	2	91
Norway spruce	1	8	42
Larches	1	1	29
Douglas fir	4	4	33
Lodgepole pine	< 1	< 1	52
Other conifers	3	4	22

Part 3 - how our woodlands might change

50-year forecast of softwood timber availability % spruce

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

Lincolnshire and Northamptonshire		Top diameter class (cm)								Total
		7-14	14-16	16-18	18-24	24-34	34-44	44-54	54+	
2013-16	FC (%)	16	12	9	7	6	6	6	3	7
	PS (%)	26	27	26	22	11	5	3	< 1	15
2017-21	FC (%)	11	10	9	5	< 1	< 1	< 1	< 1	4
	PS (%)	40	36	34	31	27	23	27	3	29
2022-26	FC (%)	16	14	12	9	3	< 1	< 1	< 1	6
	PS (%)	32	34	35	32	28	28	27	22	30
2027-31	FC (%)	14	12	11	8	4	2	2	1	6
	PS (%)	30	33	33	33	24	21	21	16	25
2032-36	FC (%)	18	12	10	7	6	5	3	2	7
	PS (%)	38	35	31	28	27	21	14	5	24
2037-41	FC (%)	31	21	14	8	7	7	6	5	12
	PS (%)	37	44	41	44	38	31	30	14	34
2042-46	FC (%)	24	19	16	10	7	7	6	4	11
	PS (%)	24	35	36	43	50	54	54	31	44
2047-51	FC (%)	21	21	19	13	7	6	6	3	11
	PS (%)	19	26	29	26	21	21	22	22	22
2052-56	FC (%)	18	19	17	15	9	8	8	6	12
	PS (%)	26	32	29	42	53	50	51	49	45
2057-61	FC (%)	15	15	15	13	10	8	9	12	12
	PS (%)	36	29	31	44	73	75	75	47	55
2062-66	FC (%)	10	12	13	14	13	12	11	12	12
	PS (%)	35	33	27	24	47	78	84	80	38

Part 3 - how our woodlands might change

50-year forecast of standing volume in conifers

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

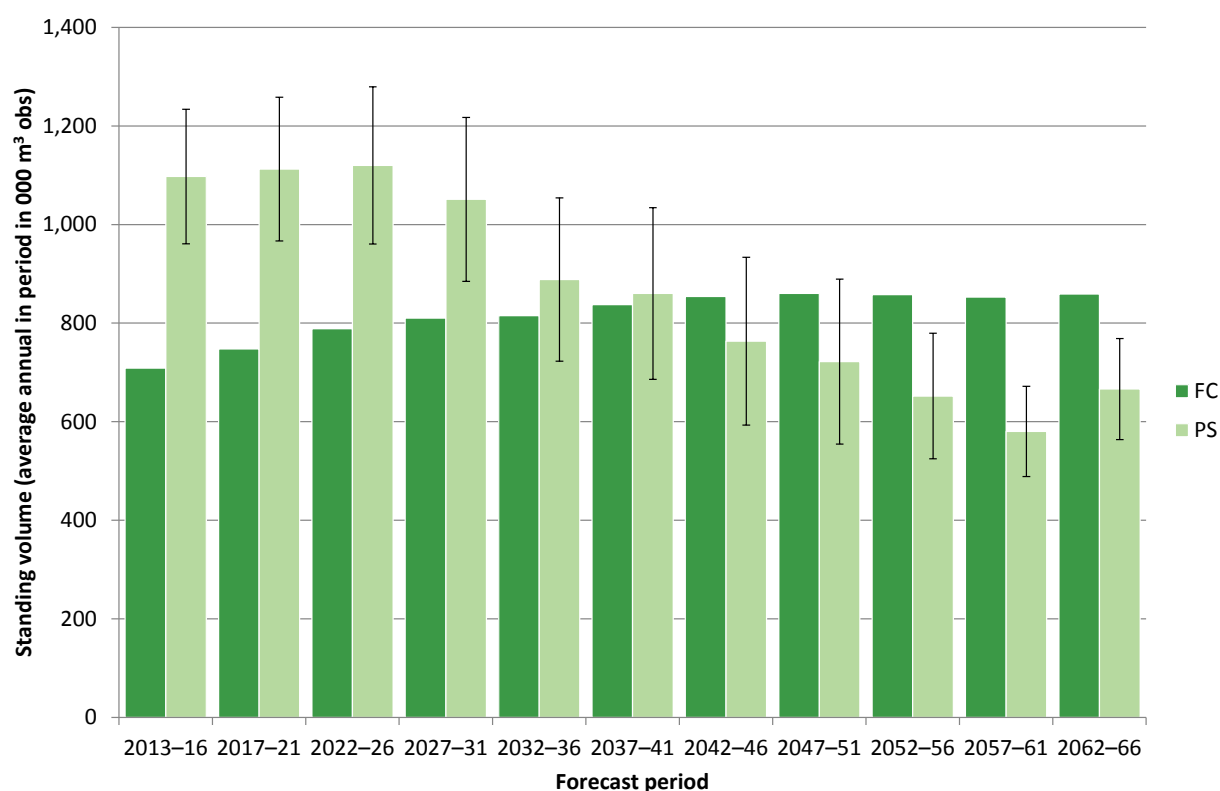


Table 35 50-year forecast of standing volume in conifers; average annual volume within period

Forecast period	FC	Private sector		Total
	volume (000 m³ obs)	volume (000 m³ obs)	SE%	volume (000 m³ obs)
Lincolnshire and Northamptonshire				
2013–16	709	1,097	12	1,806
2017–21	748	1,113	13	1,860
2022–26	788	1,120	14	1,908
2027–31	810	1,051	16	1,861
2032–36	815	888	19	1,704
2037–41	837	860	20	1,698
2042–46	854	763	22	1,617
2047–51	860	722	23	1,582
2052–56	858	652	20	1,510
2057–61	853	580	16	1,433
2062–66	859	666	15	1,525

Part 3 - how our woodlands might change

50-year forecast of net increment in conifers

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

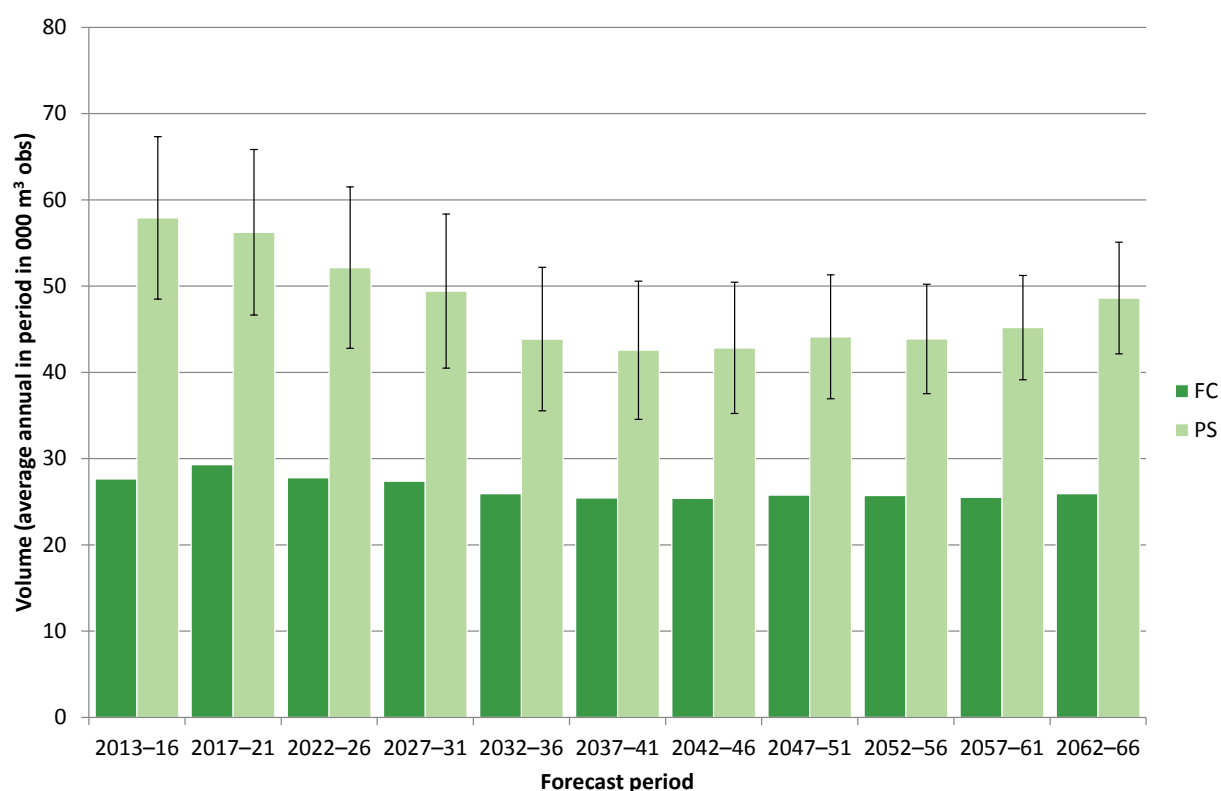


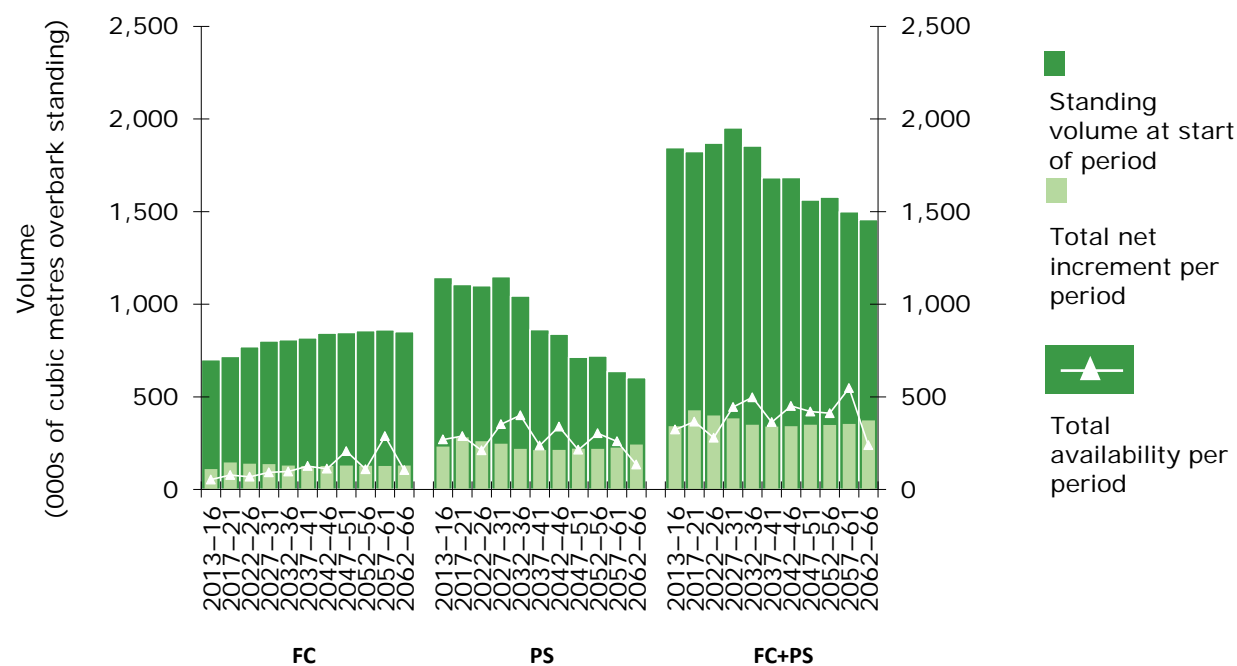
Table 36 50-year forecast of net increment in conifers; average annual volume within period

Forecast period	FC	Private sector		Total
	volume (000 m³ obs)	volume (000 m³ obs)	SE%	volume (000m³ obs)
Lincolnshire and Northamptonshire				
2013-16	28	58	16	86
2017-21	29	56	17	86
2022-26	28	52	18	80
2027-31	27	49	18	77
2032-36	26	44	19	70
2037-41	25	43	19	68
2042-46	25	43	18	68
2047-51	26	44	16	70
2052-56	26	44	14	70
2057-61	26	45	13	71
2062-66	26	49	13	75

Part 3 - how our woodlands might change

Combined standing volume, net increment and availability

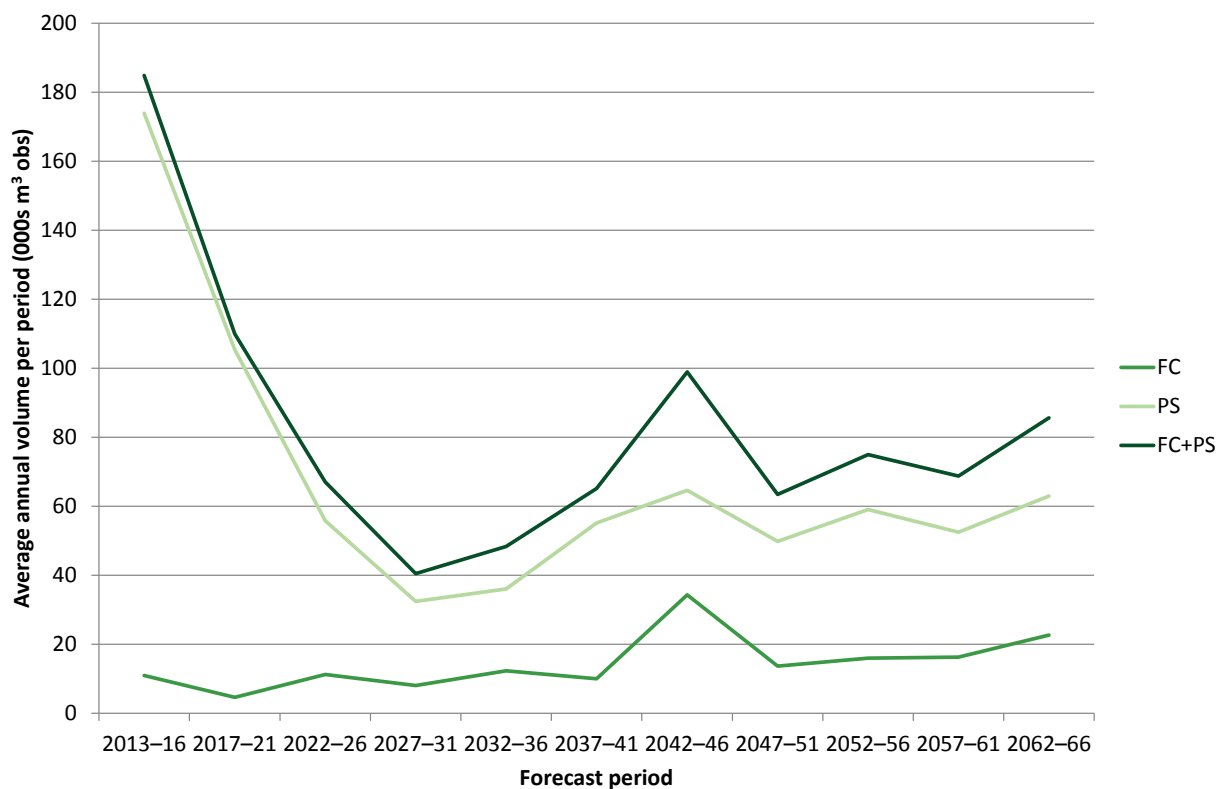
Figure 43 50-year forecast of standing volume, net increment and softwood availability



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



Part 3 - how our woodlands might change

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

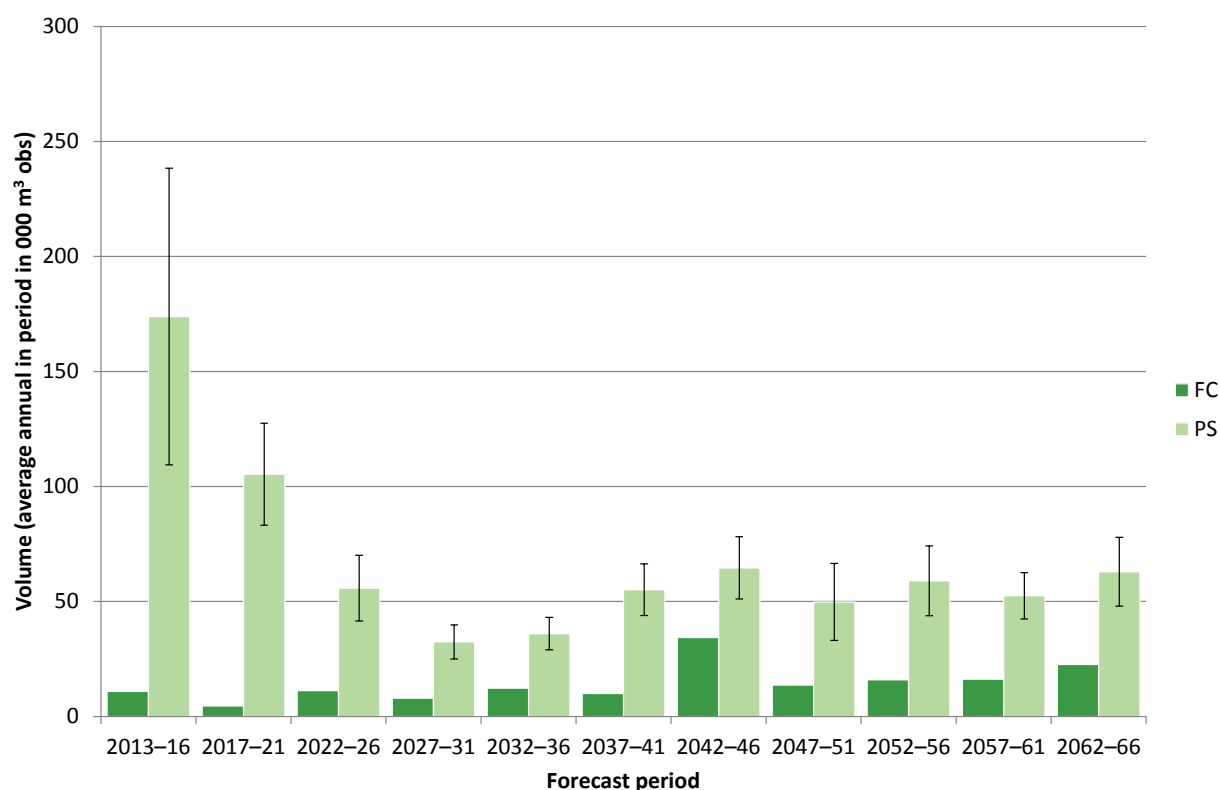


Table 37 50-year forecast of hardwood timber availability; average annual volume within period

Forecast period	FC	Private sector		Total
	volume (000 m³ obs)	volume (000 m³ obs)	SE%	volume (000 m³ obs)
Lincolnshire and Northamptonshire				
2013-16	11	174	37	185
2017-21	5	105	21	110
2022-26	11	56	26	67
2027-31	8	32	23	40
2032-36	12	36	20	48
2037-41	10	55	20	65
2042-46	34	65	21	99
2047-51	14	50	34	63
2052-56	16	59	26	75
2057-61	16	52	19	69
2062-66	23	63	24	86

Part 3 - how our woodlands might change

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 m³ obs)		SE%	volume (000 m³ obs)		SE%
Lincolnshire and Northamptonshire						
All broadleaves	11	174	37	5	105	21
Oak	6	21	46	3	13	44
Beech	< 1	2	84	< 1	2	51
Sycamore	< 1	13	37	< 1	16	34
Ash	2	115	51	< 1	53	32
Birch	< 1	2	54	< 1	3	64
Sweet chestnut	< 1	< 1	76	< 1	< 1	75
Hazel	< 1	< 1	55	< 1	1	53
Hawthorn	0	2	48	0	2	43
Alder	< 1	0	-	0	< 1	92
Willow	0	< 1	74	0	< 1	44
Other broadleaves	2	18	44	< 1	14	47

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 m³ obs)		SE%	volume (000 m³ obs)		SE%
Lincolnshire and Northamptonshire						
All broadleaves	11	56	26	8	32	23
Oak	6	22	51	4	13	42
Beech	< 1	2	49	< 1	2	48
Sycamore	< 1	8	41	< 1	3	37
Ash	2	15	33	2	6	37
Birch	1	1	38	< 1	2	80
Sweet chestnut	< 1	< 1	74	< 1	< 1	74
Hazel	< 1	< 1	58	< 1	< 1	61
Hawthorn	0	2	41	0	2	43
Alder	< 1	< 1	92	< 1	< 1	91
Willow	< 1	< 1	43	0	< 1	43
Other broadleaves	2	5	32	< 1	3	26

Part 3 - how our woodlands might change

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 m³ obs)		SE%	volume (000 m³ obs)		SE%
Lincolnshire and Northamptonshire						
All broadleaves	12	36	20	10	55	20
Oak	6	5	28	5	14	48
Beech	< 1	7	50	< 1	5	64
Sycamore	< 1	4	39	< 1	6	36
Ash	2	9	30	2	13	26
Birch	< 1	< 1	39	1	2	47
Sweet chestnut	< 1	3	90	< 1	< 1	74
Hazel	< 1	< 1	60	< 1	6	67
Hawthorn	0	2	39	0	6	73
Alder	< 1	< 1	91	< 1	< 1	91
Willow	< 1	< 1	39	0	< 1	39
Other broadleaves	2	3	26	< 1	3	25

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 m³ obs)		SE%	volume (000 m³ obs)		SE%
Lincolnshire and Northamptonshire						
All broadleaves	34	65	21	14	50	34
Oak	15	12	73	6	4	28
Beech	< 1	4	68	1	17	84
Sycamore	< 1	19	42	< 1	5	31
Ash	12	15	24	3	14	27
Birch	2	5	41	< 1	2	63
Sweet chestnut	< 1	< 1	74	< 1	< 1	74
Hazel	< 1	< 1	41	< 1	< 1	55
Hawthorn	0	2	39	0	1	42
Alder	< 1	< 1	73	< 1	< 1	119
Willow	< 1	< 1	56	0	< 1	41
Other broadleaves	4	7	44	2	5	38

Part 3 - how our woodlands might change

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 m³ obs)		SE%	volume (000 m³ obs)		SE%
Lincolnshire and Northamptonshire						
All broadleaves	16	59	26	16	52	19
Oak	9	4	28	9	6	42
Beech	< 1	< 1	30	< 1	< 1	42
Sycamore	< 1	6	36	< 1	8	43
Ash	3	36	38	3	28	30
Birch	< 1	1	62	2	2	47
Sweet chestnut	< 1	< 1	74	< 1	< 1	98
Hazel	< 1	< 1	51	< 1	< 1	81
Hawthorn	0	1	44	0	1	44
Alder	< 1	< 1	129	< 1	0	-
Willow	< 1	< 1	41	0	< 1	41
Other broadleaves	2	10	53	2	4	43

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%
Lincolnshire and Northamptonshire			
All broadleaves	23	63	24
Oak	16	6	43
Beech	< 1	< 1	24
Sycamore	< 1	14	41
Ash	2	21	37
Birch	1	7	76
Sweet chestnut	< 1	< 1	81
Hazel	< 1	< 1	68
Hawthorn	0	9	87
Alder	< 1	< 1	92
Willow	< 1	< 1	41
Other broadleaves	3	4	32

Part 3 - how our woodlands might change

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 m³ obs)		SE%	volume (000 m³ obs)		SE%
Lincolnshire and Northamptonshire						
7–14	8	11	19	2	11	17
14–16	< 1	4	24	< 1	3	22
16–18	< 1	5	23	< 1	4	24
18–24	< 1	21	23	< 1	19	23
24–34	< 1	43	27	< 1	35	24
34–44	< 1	29	40	< 1	17	26
44–54	< 1	15	46	< 1	8	30
54+	< 1	46	73	< 1	9	42
Total	11	174	37	5	105	21

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 m³ obs)		SE%	volume (000 m³ obs)		SE%
Lincolnshire and Northamptonshire						
7–14	7	10	16	3	13	18
14–16	1	2	29	< 1	2	25
16–18	< 1	2	31	< 1	1	28
18–24	1	8	30	2	4	28
24–34	< 1	14	28	2	4	24
34–44	< 1	8	37	< 1	2	38
44–54	< 1	4	42	< 1	1	45
54+	< 1	8	46	< 1	5	61
Total	11	56	26	8	32	23

Part 3 - how our woodlands might change

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 m³ obs)		SE%	volume (000 m³ obs)		SE%
Lincolnshire and Northamptonshire						
7–14	6	16	17	4	17	16
14–16	1	2	20	< 1	3	19
16–18	1	2	22	< 1	3	23
18–24	2	4	32	2	11	27
24–34	1	5	32	2	12	32
34–44	< 1	3	34	< 1	5	37
44–54	< 1	1	43	< 1	2	41
54+	< 1	3	46	< 1	1	53
Total	12	36	20	10	55	20

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 m³ obs)		SE%	volume (000 m³ obs)		SE%
Lincolnshire and Northamptonshire						
7–14	10	16	18	5	11	20
14–16	4	4	21	1	3	18
16–18	4	4	22	1	3	18
18–24	9	14	20	3	8	20
24–34	5	15	32	2	10	40
34–44	1	6	43	< 1	6	60
44–54	< 1	3	57	< 1	4	70
54+	< 1	2	47	< 1	5	65
Total	34	65	21	14	50	34

Part 3 - how our woodlands might change

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%
Lincolnshire and Northamptonshire						
7–14	6	9	20	6	8	19
14–16	2	2	17	2	2	24
16–18	2	2	18	1	3	23
18–24	3	8	20	3	9	23
24–34	2	15	28	3	14	24
34–44	< 1	10	36	< 1	8	25
44–54	< 1	6	41	< 1	4	29
54+	< 1	7	42	< 1	4	30
Total	16	59	26	16	52	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)	2062–66		
	FC	Private sector	
	volume (000 m³ obs)		SE%
Lincolnshire and Northamptonshire			
7–14	7	10	17
14–16	2	3	30
16–18	2	4	32
18–24	5	15	30
24–34	4	18	31
34–44	1	8	34
44–54	< 1	3	32
54+	< 1	3	30
Total	23	63	24

Part 3 - how our woodlands might change

50-year forecast of standing volume in broadleaves

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

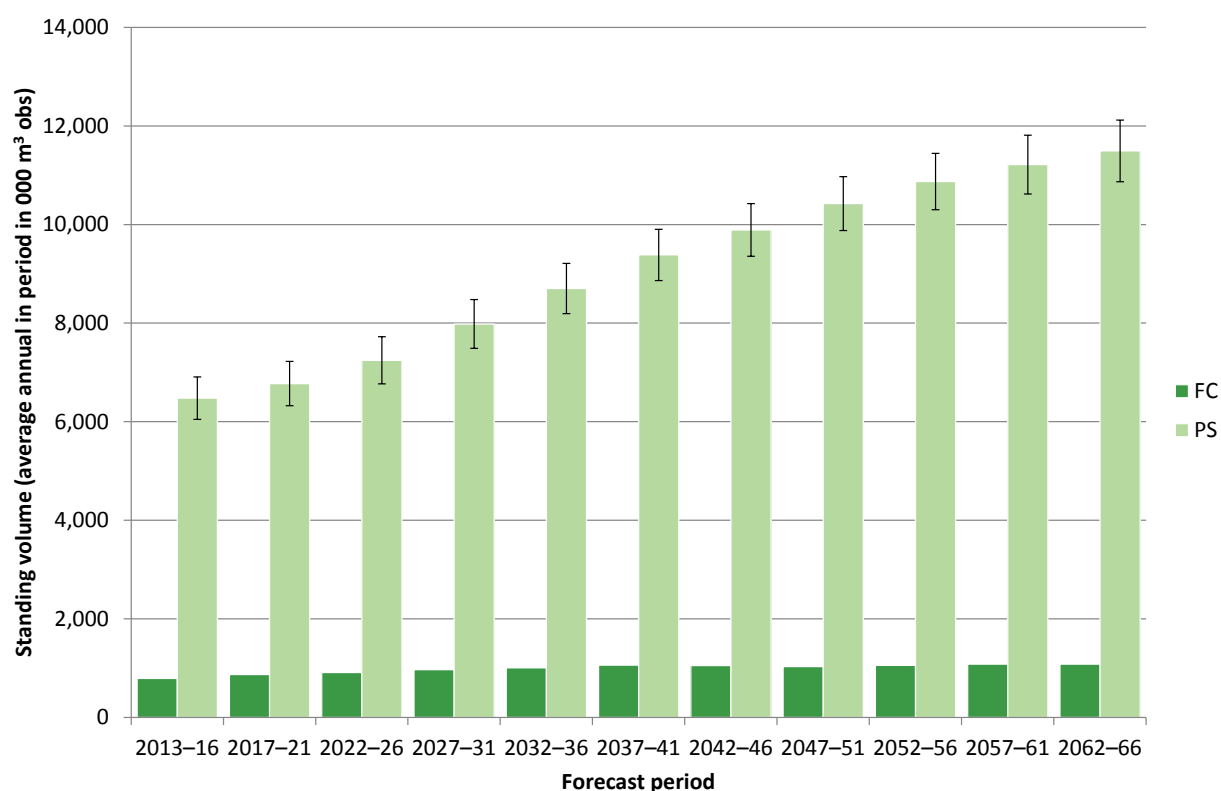


Table 40 50-year forecast of standing volume in broadleaves; average annual volume within period

Forecast period	FC	Private sector		Total
	volume (000 m³ obs)	volume (000 m³ obs)	SE%	volume (000 m³ obs)
Lincolnshire and Northamptonshire				
2013-16	790	6,478	7	7,268
2017-21	867	6,773	7	7,640
2022-26	910	7,246	7	8,156
2027-31	968	7,983	6	8,951
2032-36	1,004	8,700	6	9,704
2037-41	1,060	9,384	6	10,444
2042-46	1,052	9,889	5	10,941
2047-51	1,028	10,424	5	11,453
2052-56	1,055	10,872	5	11,927
2057-61	1,080	11,217	5	12,297
2062-66	1,080	11,495	5	12,574

Part 3 - how our woodlands might change

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 m³ obs)		SE%	volume (000 m³ obs)		SE%
Lincolnshire and Northamptonshire						
All broadleaves	790	6,478	7	867	6,773	7
Oak	467	1,239	15	509	1,295	15
Beech	42	237	32	47	267	31
Sycamore	4	1,192	25	4	1,248	24
Ash	127	1,624	14	134	1,534	15
Birch	49	198	31	59	231	31
Sweet Chestnut	1	18	70	1	19	68
Hazel	5	128	23	6	152	22
Hawthorn	0	224	24	0	271	23
Alder	< 1	72	56	1	80	51
Willow	< 1	419	40	< 1	467	38
Other broadleaves	94	1,134	22	106	1,217	21

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 m³ obs)		SE%	volume (000 m³ obs)		SE%
Lincolnshire and Northamptonshire						
All broadleaves	910	7,246	7	968	7,983	6
Oak	530	1,338	14	561	1,412	14
Beech	52	303	31	56	342	30
Sycamore	4	1,336	24	4	1,454	23
Ash	135	1,516	16	138	1,660	16
Birch	66	275	29	74	316	28
Sweet Chestnut	1	21	65	2	24	62
Hazel	6	178	22	7	202	21
Hawthorn	0	331	22	0	396	21
Alder	1	93	46	1	107	44
Willow	< 1	522	36	< 1	576	35
Other broadleaves	114	1,342	20	124	1,506	18

Part 3 - how our woodlands might change

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 m³ obs)		SE%	volume (000 m³ obs)		SE%
Lincolnshire and Northamptonshire						
All broadleaves	1,004	8,700	6	1,060	9,384	6
Oak	577	1,511	14	605	1,616	14
Beech	58	355	31	61	387	31
Sycamore	4	1,568	22	4	1,671	21
Ash	141	1,809	15	150	1,950	14
Birch	80	352	28	85	391	27
Sweet Chestnut	2	17	46	2	12	48
Hazel	8	223	21	9	221	21
Hawthorn	0	463	20	0	517	19
Alder	1	120	44	1	130	44
Willow	< 1	630	34	< 1	683	33
Other broadleaves	131	1,666	17	141	1,820	16

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 m³ obs)		SE%	volume (000 m³ obs)		SE%
Lincolnshire and Northamptonshire						
All broadleaves	1,052	9,889	5	1,028	10,424	5
Oak	600	1,663	14	591	1,774	14
Beech	63	398	33	64	400	33
Sycamore	4	1,730	21	4	1,769	21
Ash	139	2,073	13	117	2,187	13
Birch	89	412	27	93	435	26
Sweet Chestnut	2	14	49	2	17	49
Hazel	9	228	21	10	236	21
Hawthorn	0	572	19	0	635	19
Alder	1	138	44	1	143	44
Willow	< 1	734	32	1	783	31
Other broadleaves	145	1,947	16	145	2,069	16

Part 3 - how our woodlands might change

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 m³ obs)		SE%	volume (000 m³ obs)		SE%
Lincolnshire and Northamptonshire						
All broadleaves	1,055	10,872	5	1,080	11,217	5
Oak	601	1,880	14	611	1,978	13
Beech	65	384	34	67	415	34
Sycamore	4	1,829	20	4	1,876	20
Ash	122	2,241	13	126	2,179	13
Birch	99	461	26	104	483	26
Sweet Chestnut	2	19	48	2	21	49
Hazel	11	245	21	11	257	20
Hawthorn	0	695	19	0	754	18
Alder	1	147	44	1	152	44
Willow	1	829	31	1	873	30
Other broadleaves	149	2,165	15	153	2,255	15

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%
Lincolnshire and Northamptonshire			
All broadleaves	1,080	11,495	5
Oak	597	2,071	13
Beech	68	446	34
Sycamore	4	1,888	20
Ash	131	2,131	14
Birch	108	494	26
Sweet Chestnut	2	21	53
Hazel	12	268	20
Hawthorn	0	788	18
Alder	1	157	44
Willow	1	913	30
Other broadleaves	156	2,344	15

Part 3 - how our woodlands might change

50-year forecast of net increment in broadleaves

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

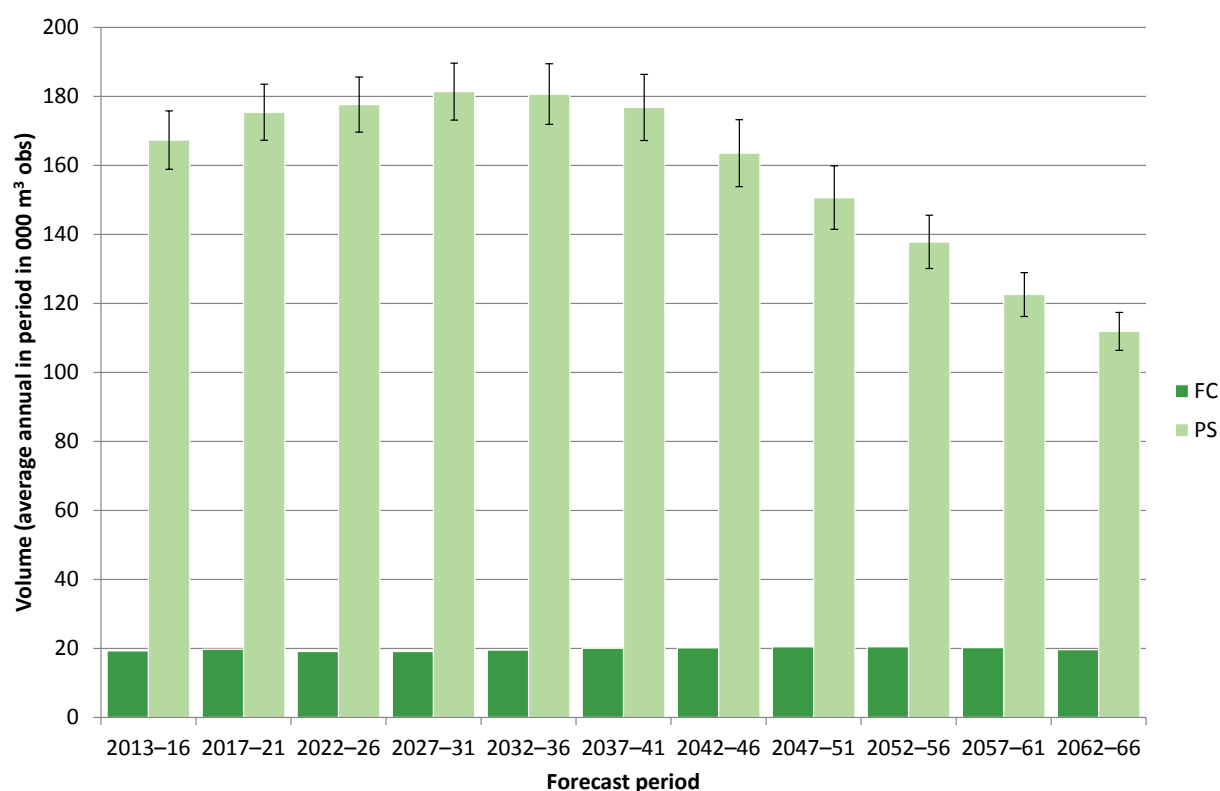


Table 42 50-year forecast of net increment in broadleaves; average annual volume within period

Forecast period	FC	Private sector		Total
	volume (000 m³ obs)	volume (000 m³ obs)	SE%	volume (000 m³ obs)
Lincolnshire and Northamptonshire				
2013-16	19	167	5	187
2017-21	20	175	5	195
2022-26	19	178	5	197
2027-31	19	181	5	200
2032-36	19	181	5	200
2037-41	20	177	5	197
2042-46	20	164	6	184
2047-51	20	151	6	171
2052-56	20	138	6	158
2057-61	20	123	5	143
2062-66	20	112	5	131

Part 3 - how our woodlands might change

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 m³ obs)		SE%	volume (000 m³ obs)		SE%
Lincolnshire and Northamptonshire						
All broadleaves	19	167	5	20	175	5
Oak	11	28	13	11	29	13
Beech	1	9	31	1	9	30
Sycamore	< 1	26	16	< 1	29	16
Ash	2	34	12	2	32	11
Birch	2	10	24	2	11	22
Sweet Chestnut	< 1	< 1	64	< 1	< 1	56
Hazel	< 1	6	24	< 1	6	23
Hawthorn	0	11	20	0	13	18
Alder	< 1	1	74	< 1	2	53
Willow	< 1	10	31	< 1	11	28
Other broadleaves	3	31	15	3	34	15

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 m³ obs)		SE%	volume (000 m³ obs)		SE%
Lincolnshire and Northamptonshire						
All broadleaves	19	178	5	19	181	5
Oak	10	29	12	10	29	12
Beech	1	10	30	1	10	30
Sycamore	< 1	29	17	< 1	28	18
Ash	2	30	11	2	35	14
Birch	2	10	25	2	9	26
Sweet Chestnut	< 1	< 1	53	< 1	< 1	51
Hazel	< 1	6	22	< 1	5	21
Hawthorn	0	14	17	0	15	16
Alder	< 1	3	62	< 1	3	65
Willow	< 1	11	28	< 1	11	27
Other broadleaves	3	35	14	3	35	14

Part 3 - how our woodlands might change

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 m³ obs)		SE%	volume (000 m³ obs)		SE%
Lincolnshire and Northamptonshire						
All broadleaves	19	181	5	20	177	5
Oak	10	29	12	10	28	12
Beech	1	9	31	1	9	32
Sycamore	< 1	26	18	< 1	25	19
Ash	3	39	16	4	40	18
Birch	2	9	26	2	9	27
Sweet Chestnut	< 1	< 1	50	< 1	< 1	60
Hazel	< 1	5	21	< 1	4	17
Hawthorn	0	15	16	0	15	16
Alder	< 1	2	67	< 1	2	66
Willow	< 1	11	27	< 1	11	27
Other broadleaves	3	35	13	3	33	13

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 m³ obs)		SE%	volume (000 m³ obs)		SE%
Lincolnshire and Northamptonshire						
All broadleaves	20	164	6	20	151	6
Oak	10	26	12	10	25	13
Beech	1	9	34	1	8	34
Sycamore	< 1	23	20	< 1	19	19
Ash	4	38	19	4	36	19
Birch	2	8	29	2	7	30
Sweet Chestnut	< 1	< 1	61	< 1	< 1	53
Hazel	< 1	3	17	< 1	2	17
Hawthorn	0	14	16	0	14	16
Alder	< 1	2	65	< 1	1	63
Willow	< 1	11	27	< 1	10	27
Other broadleaves	3	31	13	3	29	14

Part 3 - how our woodlands might change

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 m³ obs)		SE%	volume (000 m³ obs)		SE%
Lincolnshire and Northamptonshire						
All broadleaves	20	138	6	20	123	5
Oak	10	25	13	10	25	13
Beech	1	7	34	1	7	32
Sycamore	< 1	17	19	< 1	15	19
Ash	4	31	19	3	20	19
Birch	2	6	29	2	6	28
Sweet Chestnut	< 1	< 1	53	< 1	< 1	54
Hazel	< 1	2	24	< 1	3	38
Hawthorn	0	13	16	0	13	16
Alder	< 1	1	59	< 1	< 1	58
Willow	< 1	9	27	< 1	9	27
Other broadleaves	3	26	14	3	23	14

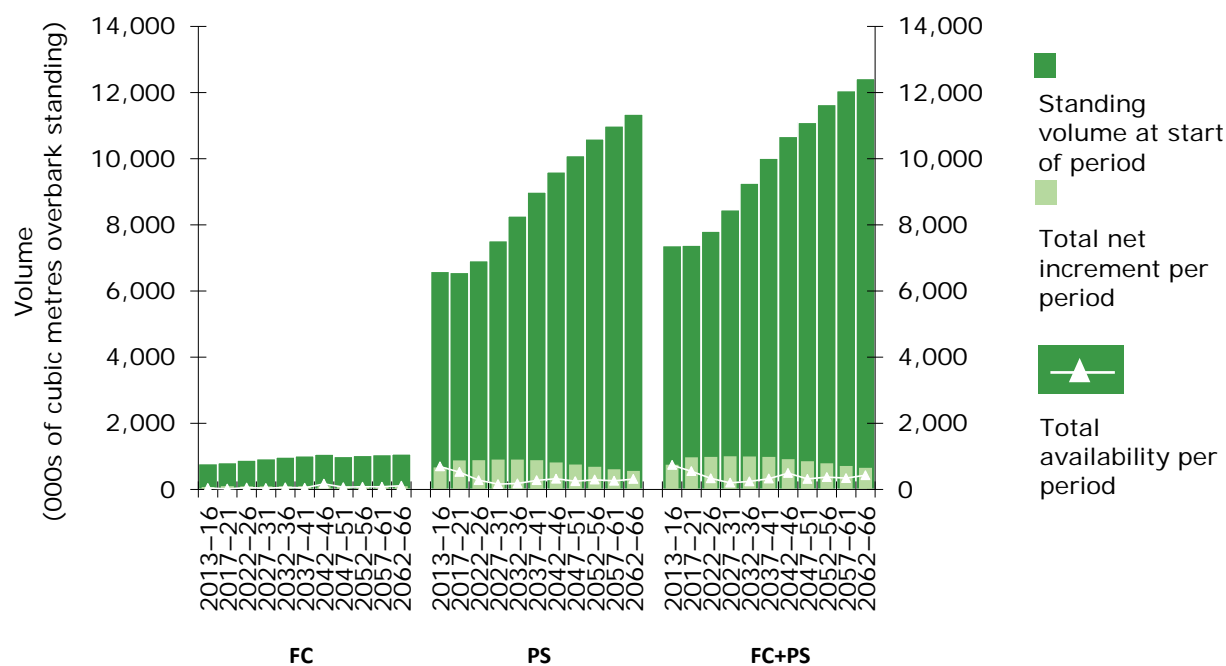
Table 43 (cont'd) 50-year forecast of net increment in broadleaves by principal species; average annual volume within period

Principal species	2062–66		
	FC	Private sector	
	volume (000 m ³ obs)		SE%
Lincolnshire and Northamptonshire			
All broadleaves	20	112	5
Oak	10	24	13
Beech	1	7	30
Sycamore	< 1	14	19
Ash	3	15	16
Birch	2	6	24
Sweet Chestnut	< 1	< 1	59
Hazel	< 1	3	38
Hawthorn	0	12	15
Alder	< 1	< 1	57
Willow	< 1	8	27
Other broadleaves	3	21	14

Part 3 - how our woodlands might change

Combined standing volume, net increment and availability

Figure 48 combined hardwood standing volume, net increment and availability



Part 4 – Tree health

Ash..... 97

Oak..... 106

Sweet chestnut 115

Larch 124

Part 4 – Tree health

Ash

Figure 49 Stocked area of ash by age class

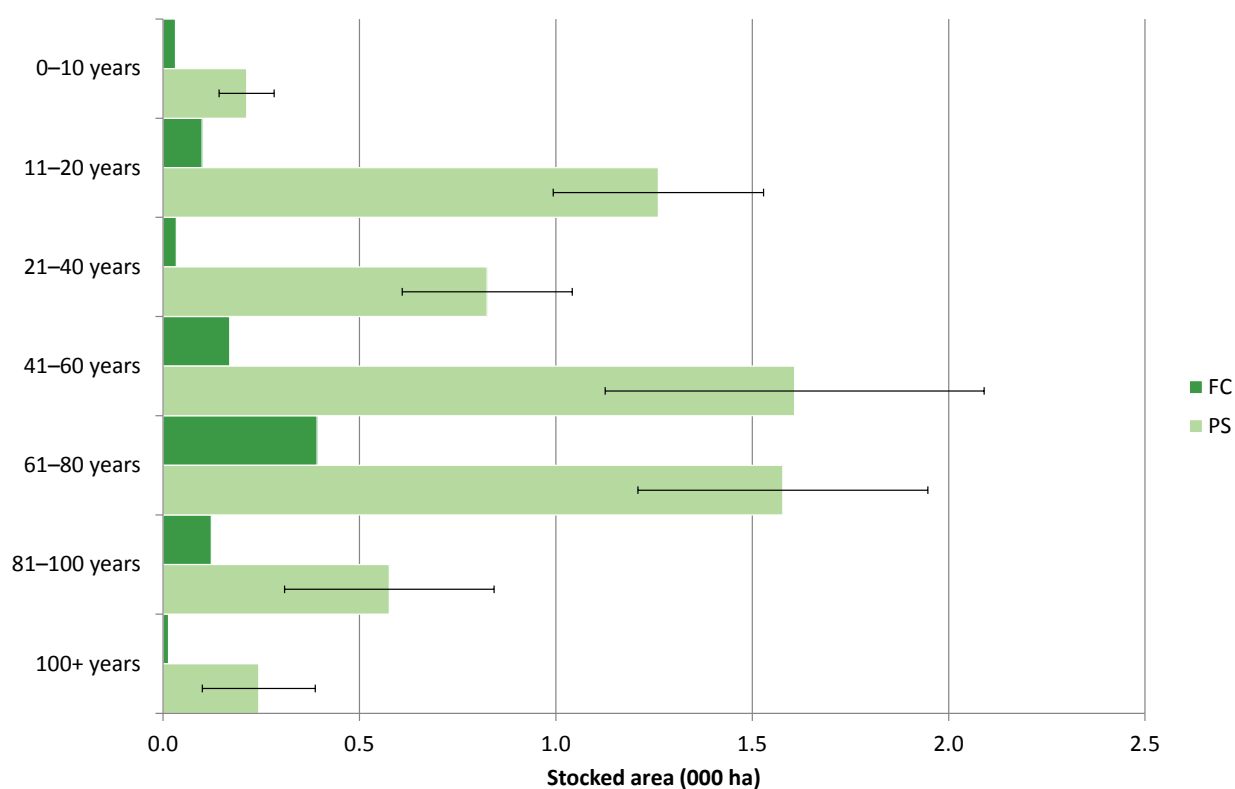


Table 44 Stocked area of ash by age class

Age class (years)	FC	Private sector		Total
	area (000 ha)	area (000 ha)	SE%	area (000 ha)
Lincolnshire and Northamptonshire				
0-10	< 0.1	0.2	33	0.2
11-20	< 0.1	1.3	27	1.4
21-40	< 0.1	0.8	26	0.9
41-60	0.2	1.6	30	1.8
61-80	0.4	1.6	23	2.0
81-100	0.1	0.6	46	0.7
100+	< 0.1	0.2	59	0.3
Total	0.9	6.3	11	7.2

Part 4 – Tree health

Figure 50 Stocked area of ash by mean stand dbh class

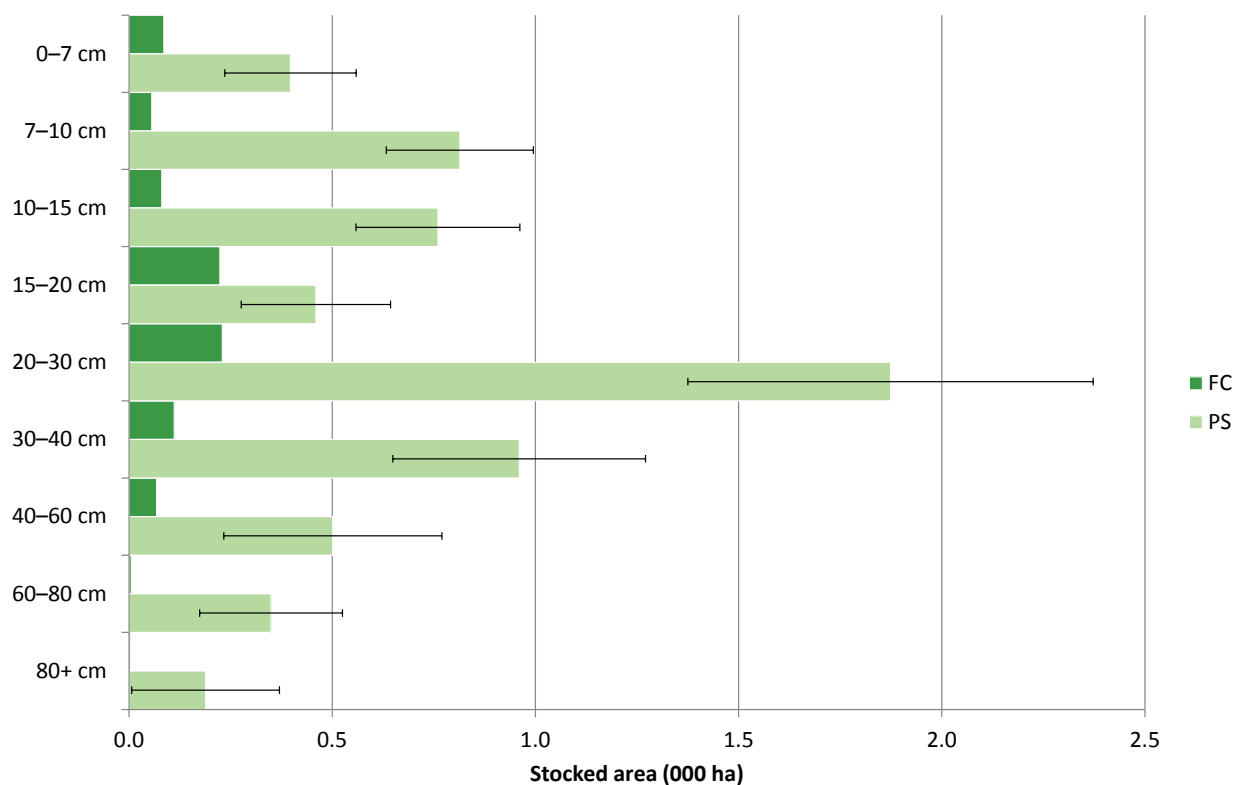


Table 45 Stocked area of ash by mean stand dbh class

Mean stand DBH (cm)	FC	Private sector		Total
	area (000 ha)	area (000 ha)	SE%	area (000 ha)
Lincolnshire and Northamptonshire				
0-7	< 0.1	0.4	41	0.5
7-10	< 0.1	0.8	22	0.9
10-15	< 0.1	0.8	27	0.8
15-20	0.2	0.5	40	0.7
20-30	0.2	1.9	27	2.1
30-40	0.1	1.0	32	1.1
40-60	< 0.1	0.5	53	0.6
60-80	< 0.1	0.3	50	0.4
80+	< 0.1	0.2	97	0.2
Total	0.9	6.3	11	7.2

Part 4 – Tree health

Figure 51 Standing volume of ash by age class

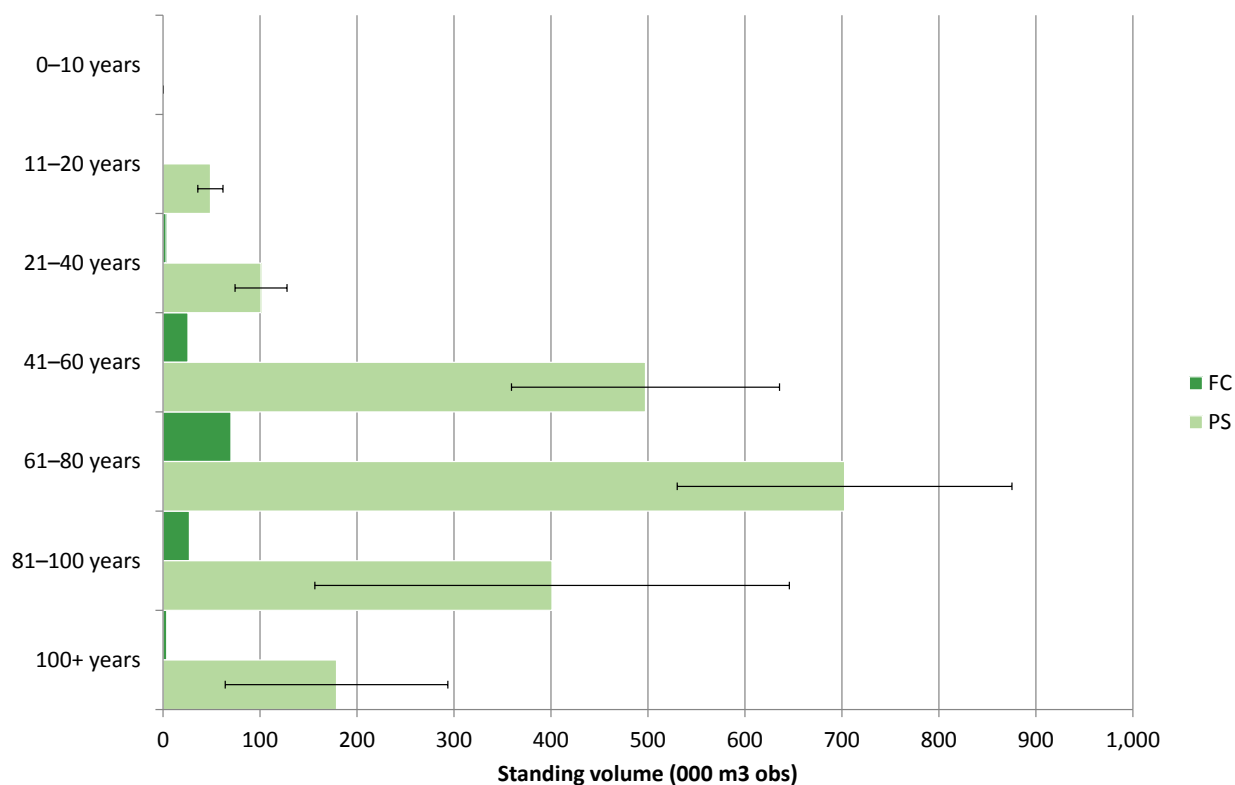


Table 46 Standing volume of ash by age class

Age class (years)	FC	Private sector		Total
	volume (000 m³ obs)	volume (000 m³ obs)	SE%	volume (000 m³ obs)
Lincolnshire and Northamptonshire				
0–10	0	< 1	63	< 1
11–20	< 1	49	27	49
21–40	3	101	27	104
41–60	26	497	28	523
61–80	70	703	25	773
81–100	27	401	61	428
100+	4	179	64	183
Total	130	1,930	16	2,060

Part 4 – Tree health

Figure 52 Standing volume of ash by mean stand dbh class

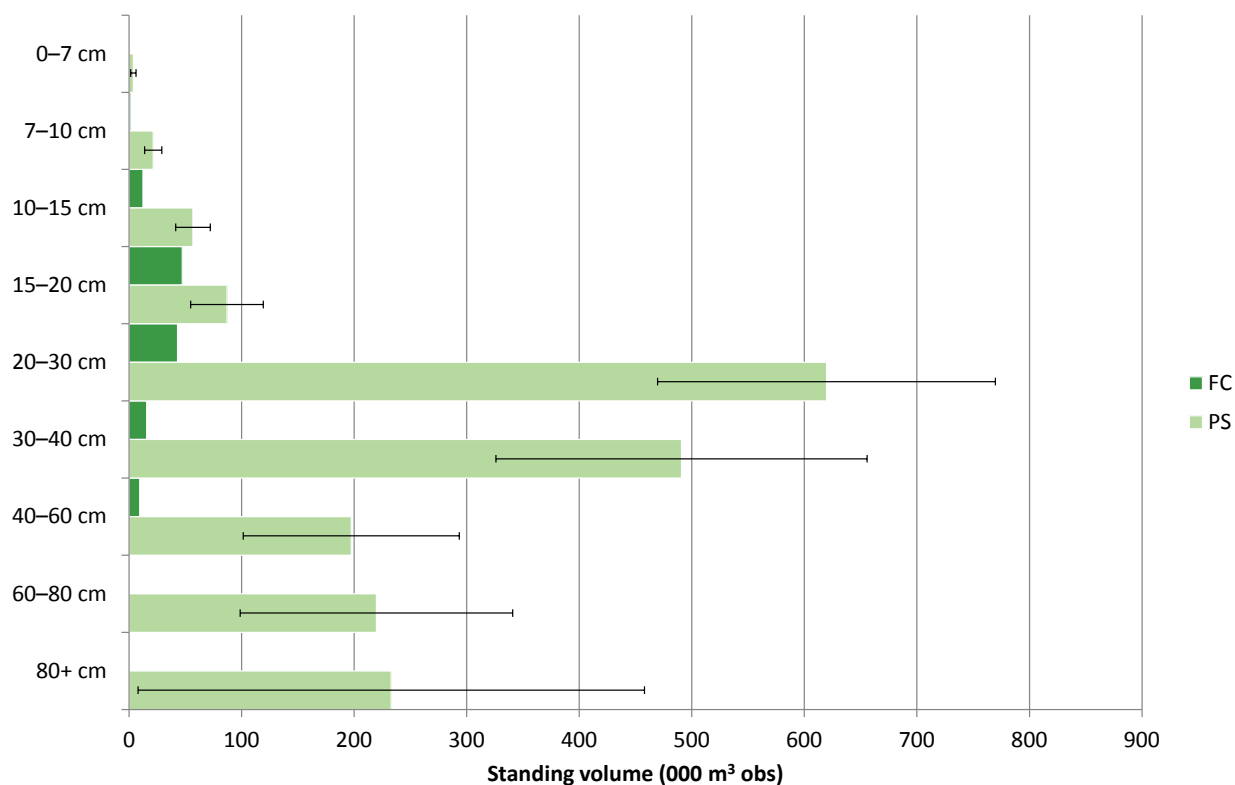


Table 47 Standing volume of ash by mean stand dbh class

Mean stand DBH (cm)	FC	Private sector		Total
	volume (000 m³ obs)	volume (000 m³ obs)	SE%	volume (000 m³ obs)
Lincolnshire and Northamptonshire				
0-7	< 1	4	63	4
7-10	< 1	21	35	22
10-15	12	57	27	69
15-20	47	87	37	134
20-30	43	620	24	663
30-40	16	491	34	507
40-60	9	197	49	207
60-80	< 1	220	55	221
80+	< 1	233	97	234
Total	130	1,930	16	2,060

Part 4 – Tree health

Figure 53 Number of ash trees by age class

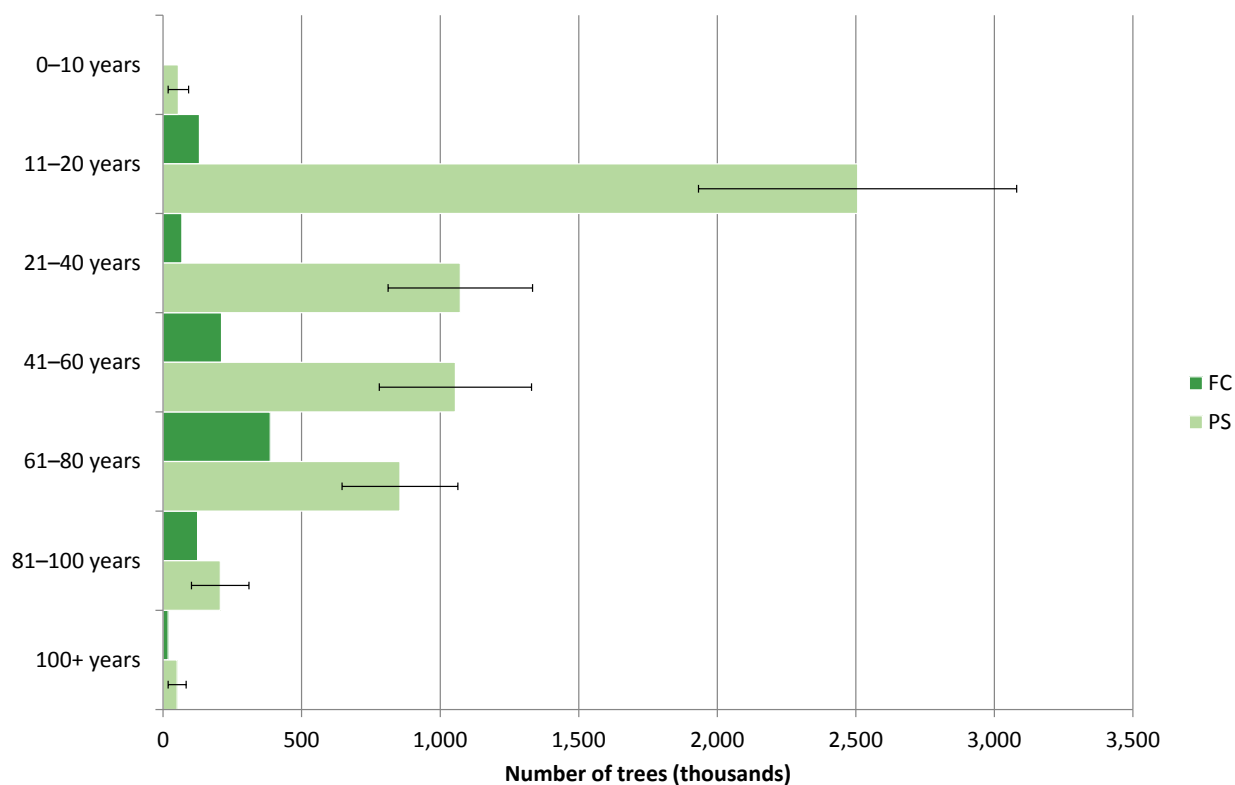


Table 48 Number of ash trees by age class

Age class (years)	FC	Private sector		Total
	number of trees (thousands)	number of trees (thousands)	SE%	number of trees (thousands)
Lincolnshire and Northamptonshire				
0-10	0	55	67	55
11-20	131	2,506	23	2,638
21-40	68	1,072	24	1,140
41-60	211	1,055	26	1,266
61-80	387	855	24	1,242
81-100	124	206	50	331
100+	19	51	63	70
Total	940	5,801	12	6,741

Part 4 – Tree health

Figure 54 Number of ash trees by mean stand dbh class

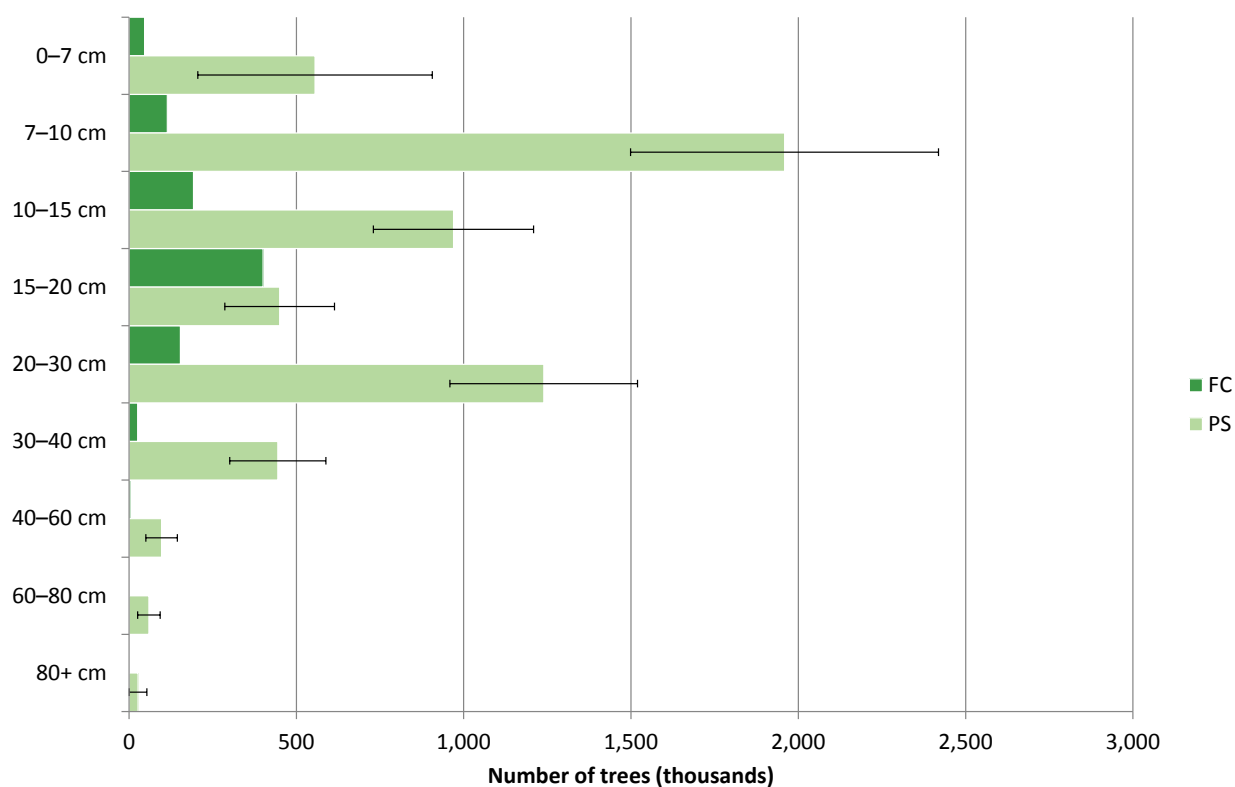
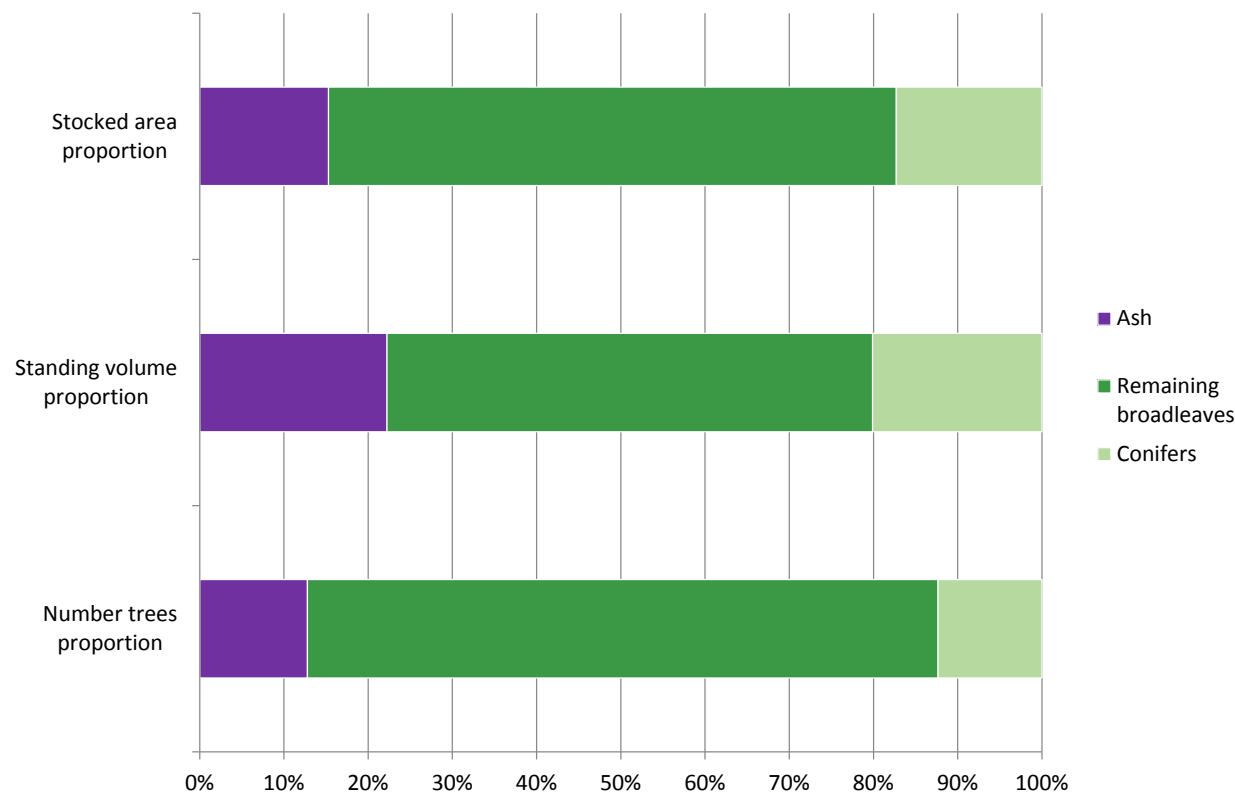


Table 49 Number of ash trees by mean stand dbh class

Mean stand DBH (cm)	FC	Private sector		Total
	number of trees (thousands)	number of trees (thousands)	SE%	number of trees (thousands)
Lincolnshire and Northamptonshire				
0-7	47	556	63	603
7-10	115	1,959	23	2,073
10-15	193	970	25	1,162
15-20	401	450	36	850
20-30	153	1,239	23	1,392
30-40	26	444	32	470
40-60	6	97	49	103
60-80	< 1	59	56	60
80+	< 1	27	97	27
Total	940	5,801	12	6,741

Part 4 – Tree health

Figure 55 Ash as a proportion of woodland



Part 4 – Tree health

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)
Lincolnshire and Northamptonshire	0.9	6.3	11	7.2

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)
Lincolnshire and Northamptonshire	38.8	46.9	18	15

Table 51 Standing volume of ash as a proportion of woodland

Aligned area	Standing volume of ash			
	FC	Private sector		Total
	volume (000 m³ obs)	volume (000 m³ obs)	SE%	volume (000 m³ obs)
Lincolnshire and Northamptonshire	130	1,930	16	2,060

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 m³ obs)	volume (000 m³ obs)	(percent)	(percent)
Lincolnshire and Northamptonshire	7,405	9,282	28	22

Part 4 – Tree health

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)
Lincolnshire and Northamptonshire	940	5,801	12	6,741

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)
Lincolnshire and Northamptonshire	46,182	52,732	15	13

Part 4 – Tree health

Oak

Figure 56 Stocked area of oak by age class

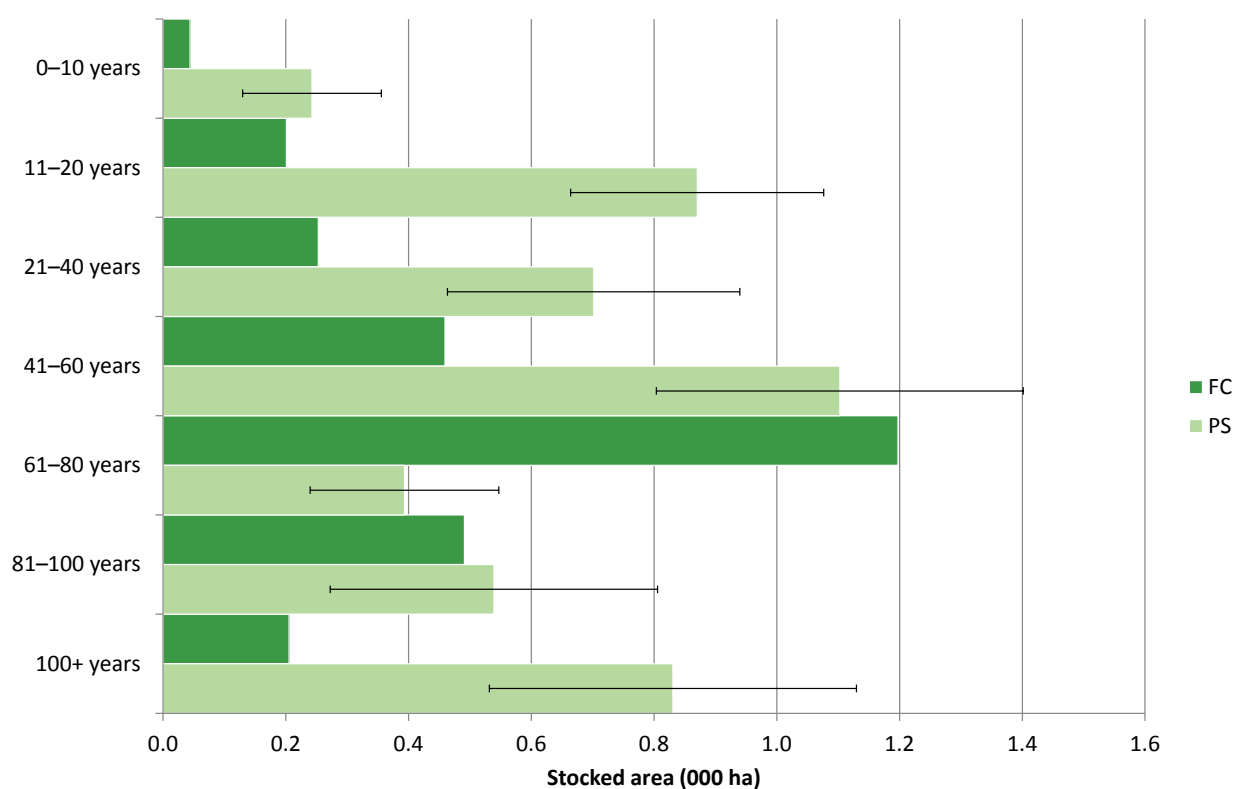


Table 53 Stocked area of oak by age class

Age class (years)	FC	Private sector		Total
	area (000 ha)	area (000 ha)	SE%	area (000 ha)
Lincolnshire and Northamptonshire				
0–10	< 0.1	0.2	47	0.3
11–20	0.2	0.9	24	1.1
21–40	0.3	0.7	34	1.0
41–60	0.5	1.1	27	1.6
61–80	1.2	0.4	39	1.6
81–100	0.5	0.5	50	1.0
100+	0.2	0.8	36	1.0
Total	2.9	4.7	12	7.5

Part 4 – Tree health

Figure 57 Stocked area of oak by mean stand dbh class

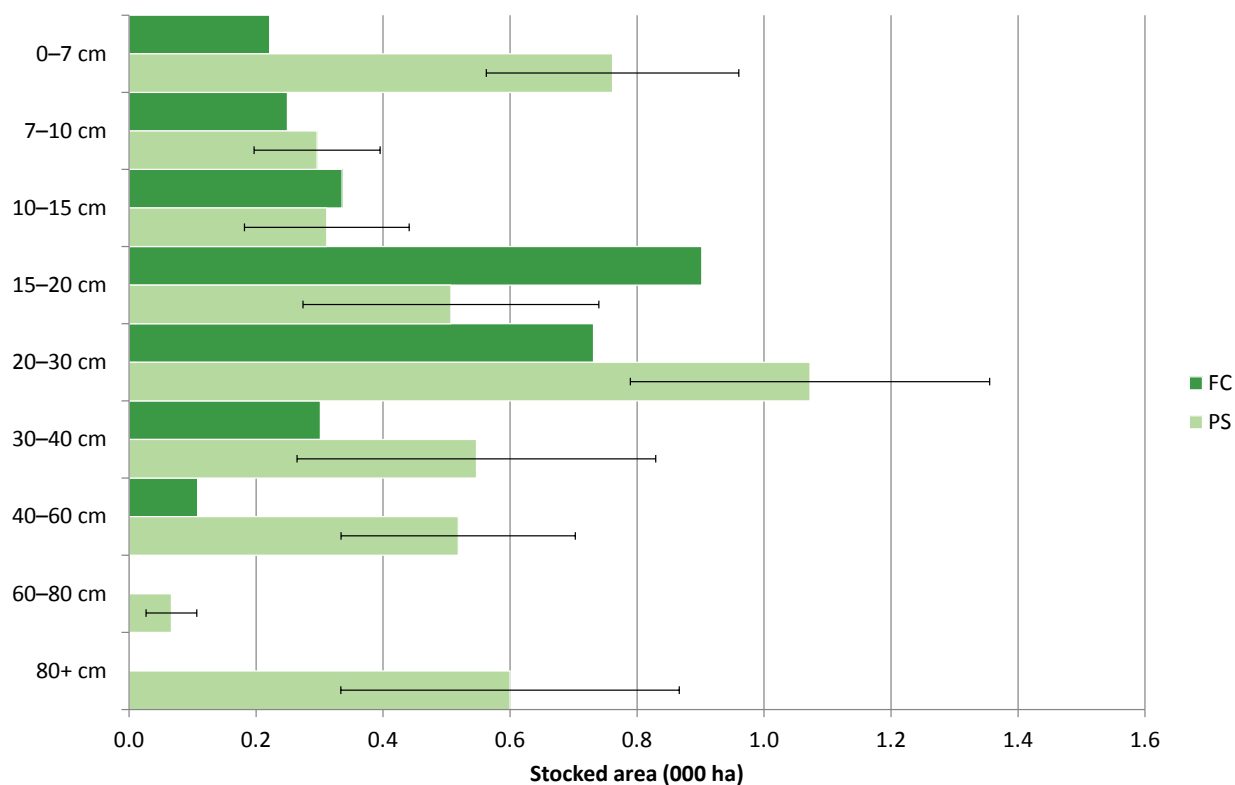


Table 54 Stocked area of oak by mean stand dbh class

Mean stand DBH (cm)	FC	Private sector		Total
	area (000 ha)	area (000 ha)	SE%	area (000 ha)
Lincolnshire and Northamptonshire				
0-7	0.2	0.8	26	1.0
7-10	0.2	0.3	34	0.5
10-15	0.3	0.3	42	0.6
15-20	0.9	0.5	46	1.4
20-30	0.7	1.1	26	1.8
30-40	0.3	0.5	52	0.8
40-60	0.1	0.5	36	0.6
60-80	< 0.1	< 0.1	60	< 0.1
80+	0.0	0.6	44	0.6
Total	2.9	4.7	12	7.5

Part 4 – Tree health

Figure 58 Standing volume of oak by age class

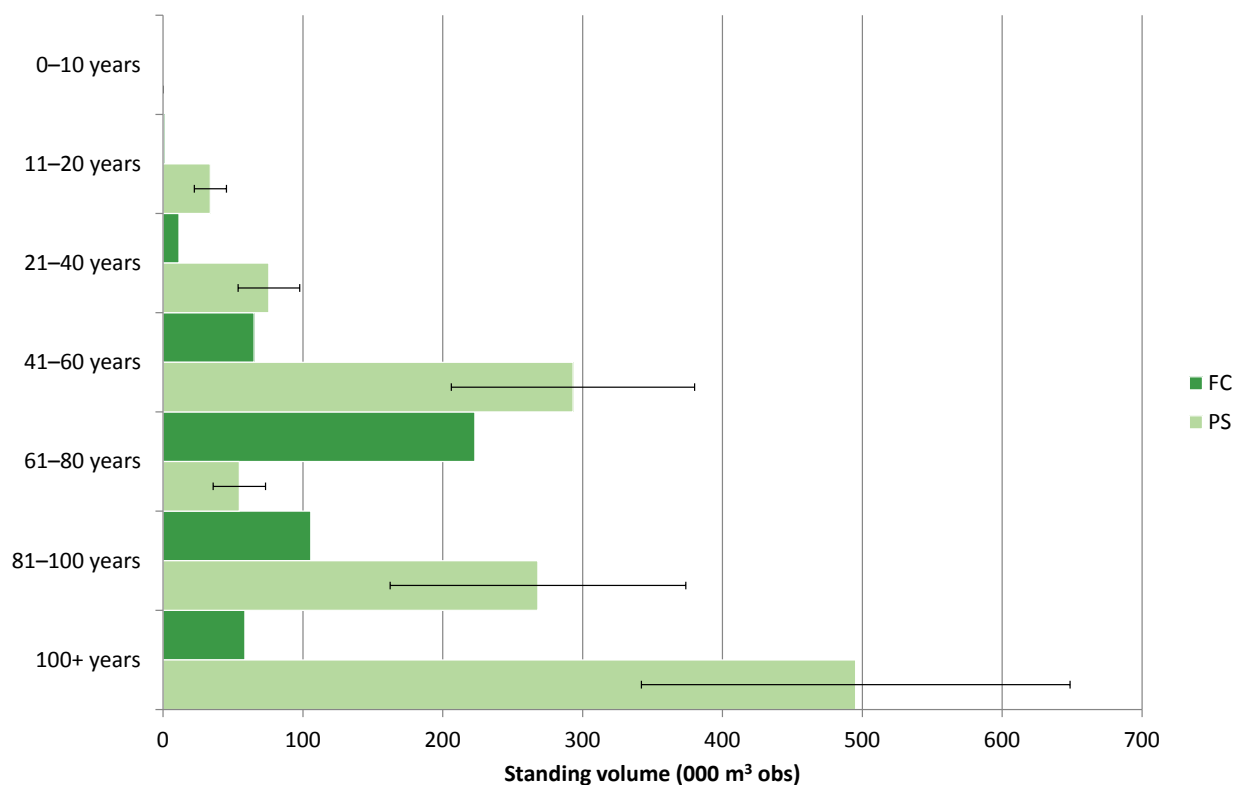


Table 55 Standing volume of oak by age class

Age class (years)	FC	Private sector		Total
	volume (000 m³ obs)	volume (000 m³ obs)	SE%	volume (000 m³ obs)
Lincolnshire and Northamptonshire				
0-10	0	0	-	0
11-20	< 1	34	34	35
21-40	11	76	29	87
41-60	65	293	30	358
61-80	223	55	34	278
81-100	106	268	39	374
100+	58	495	31	554
Total	464	1,220	15	1,685

Part 4 – Tree health

Figure 59 Standing volume of oak by mean stand dbh class

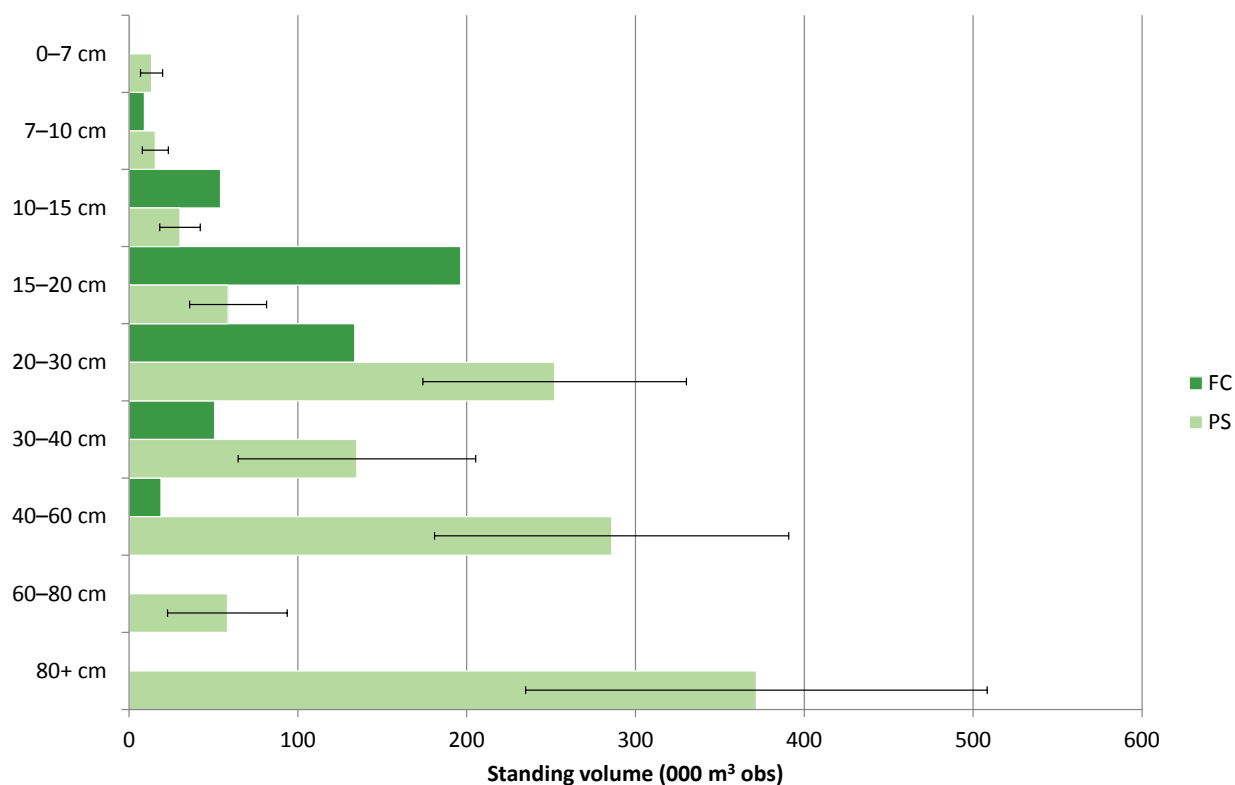


Table 56 Standing volume of oak by mean stand dbh class

Mean stand DBH (cm)	FC	Private sector		Total
	volume (000 m³ obs)	volume (000 m³ obs)	SE%	volume (000 m³ obs)
Lincolnshire and Northamptonshire				
0-7	< 1	13	49	14
7-10	9	16	50	25
10-15	54	30	40	84
15-20	196	59	39	255
20-30	134	252	31	386
30-40	51	135	52	186
40-60	19	286	37	305
60-80	< 1	58	61	59
80+	0	372	37	372
Total	464	1,220	15	1,685

Part 4 – Tree health

Figure 60 Number of oak trees by age class

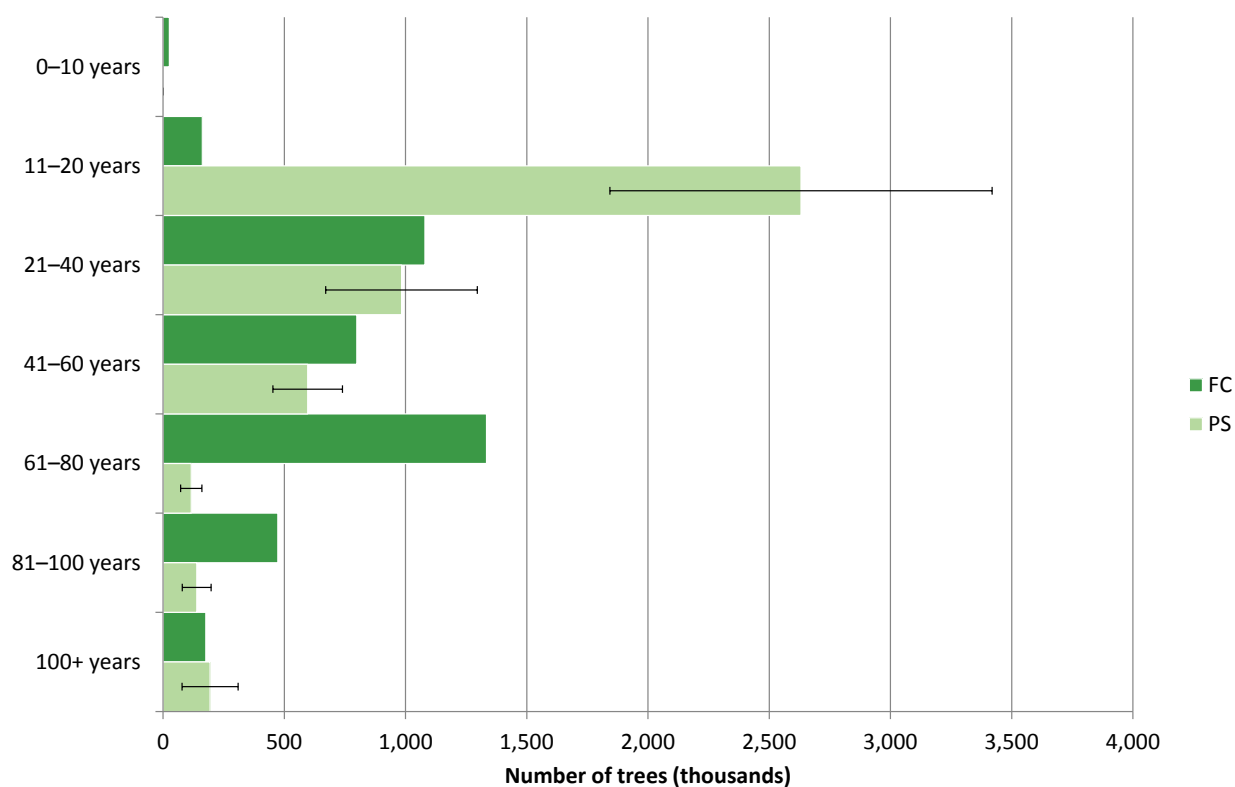


Table 57 Number of oak trees by age class

Age class (years)	FC	Private sector		Total
	number of trees (thousands)	number of trees (thousands)	SE%	number of trees (thousands)
Lincolnshire and Northamptonshire				
0-10	26	0	-	26
11-20	162	2,631	30	2,793
21-40	1,080	984	32	2,063
41-60	799	596	24	1,395
61-80	1,334	116	38	1,451
81-100	473	139	43	612
100+	176	194	60	370
Total	4,050	4,660	17	8,710

Part 4 – Tree health

Figure 61 Number of oak trees by mean stand dbh class

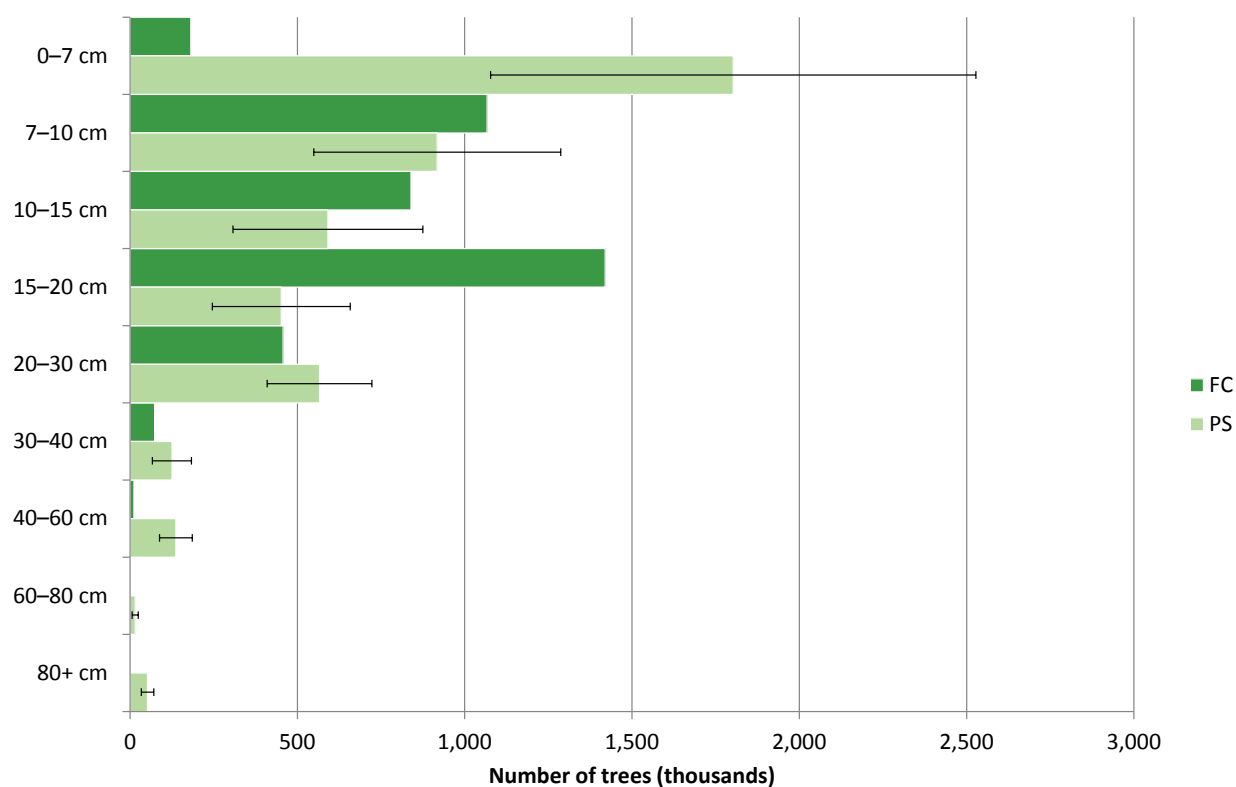
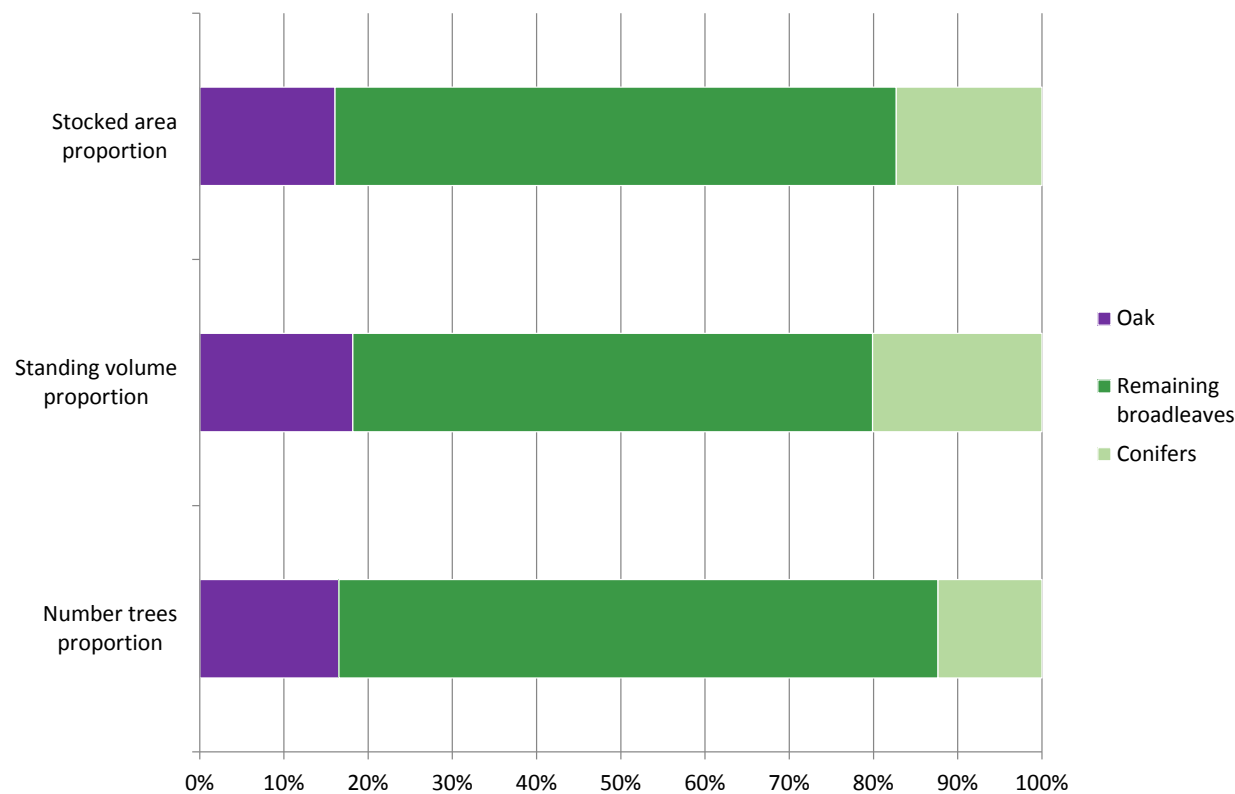


Table 58 Number of oak trees by mean stand dbh class

Mean stand DBH (cm)	FC	Private sector		Total
	number of trees (thousands)	number of trees (thousands)	SE%	number of trees (thousands)
Lincolnshire and Northamptonshire				
0-7	181	1,803	40	1,984
7-10	1,067	918	40	1,985
10-15	839	591	48	1,431
15-20	1,420	452	46	1,872
20-30	457	566	28	1,023
30-40	73	125	47	199
40-60	12	137	36	149
60-80	< 1	15	59	16
80+	0	52	36	52
Total	4,050	4,660	17	8,710

Part 4 – Tree health

Figure 62 Oak as a proportion of woodland



Part 4 – Tree health

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)
Lincolnshire and Northamptonshire	2.9	4.7	12	7.5

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)
Lincolnshire and Northamptonshire	38.8	46.9	19	16

Table 60 Standing volume of oak as a proportion of woodland

Aligned area	Standing volume of oak			
	FC	Private sector		Total
	volume (000 m³ obs)	volume (000 m³ obs)	SE%	volume (000 m³ obs)
Lincolnshire and Northamptonshire	464	1,220	15	1,685

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 m³ obs)	volume (000 m³ obs)	(percent)	(percent)
Lincolnshire and Northamptonshire	7,405	9,282	23	18

Part 4 – Tree health

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)
Lincolnshire and Northamptonshire	4,050	4,660	17	8,710

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)
Lincolnshire and Northamptonshire	46,182	52,732	19	17

Sweet chestnut

Figure 63 Stocked area of sweet chestnut by age class

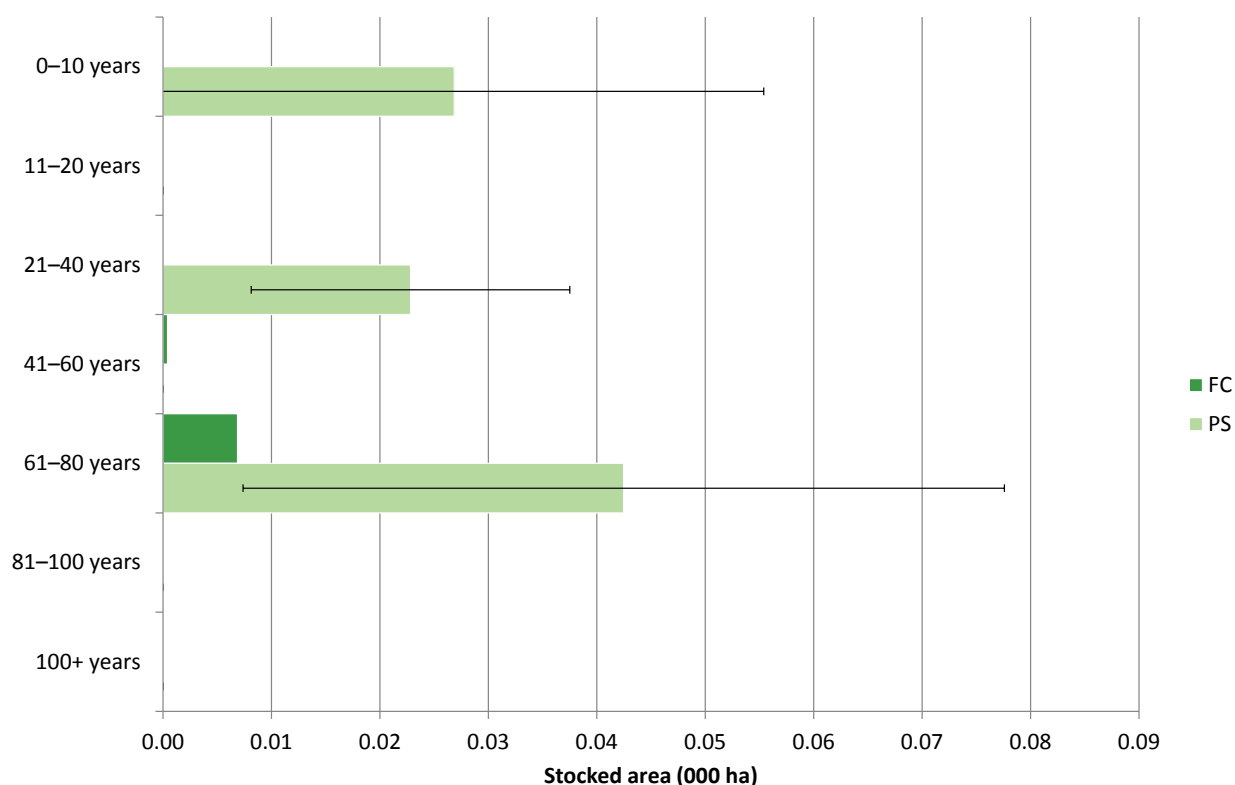


Table 62 Stocked area of sweet chestnut by age class

Age class (years)	FC	Private sector		Total
	area (000 ha)	area (000 ha)	SE%	area (000 ha)
Lincolnshire and Northamptonshire				
0–10	0.0	< 0.1	106	< 0.1
11–20	0.0	0.0	-	0.0
21–40	0.0	< 0.1	64	< 0.1
41–60	< 0.1	0.0	-	< 0.1
61–80	< 0.1	< 0.1	83	< 0.1
81–100	0.0	0.0	-	0.0
100+	0.0	0.0	-	0.0
Total	< 0.1	< 0.1	51	< 0.1

Part 4 – Tree health

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

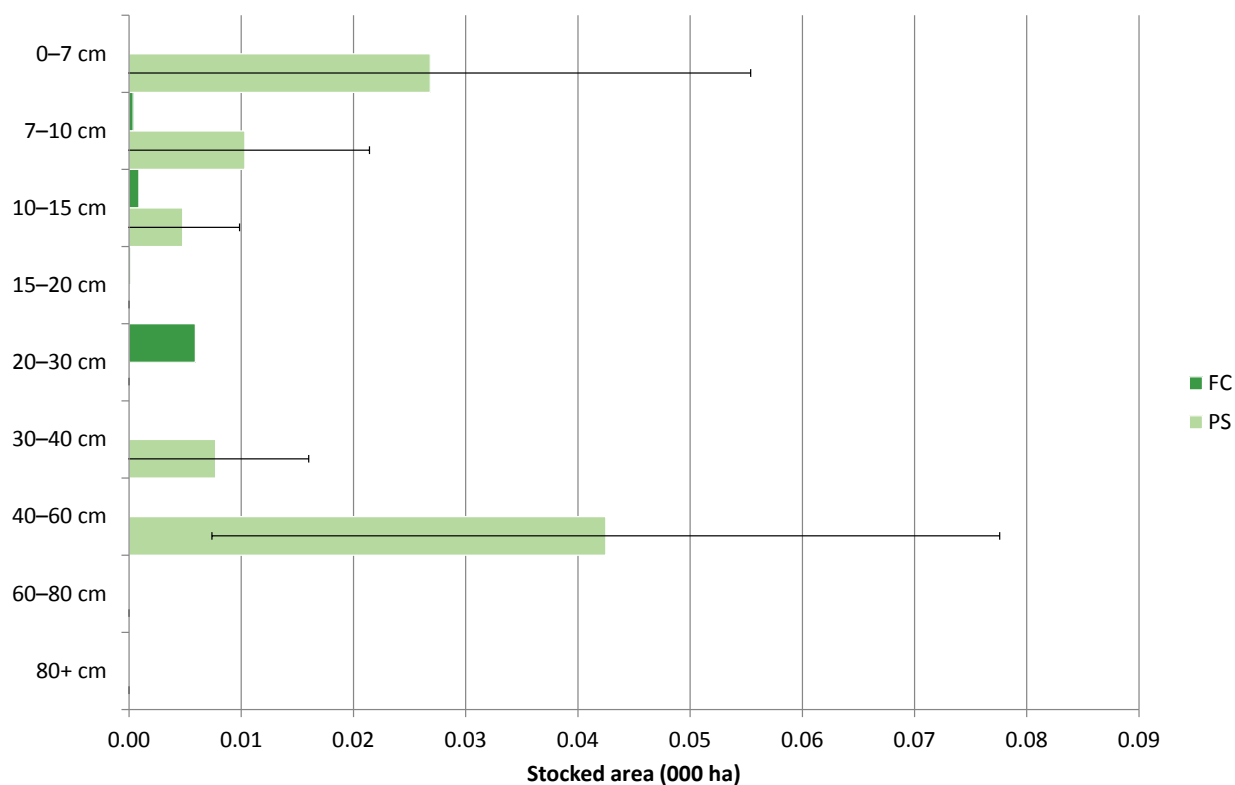


Table 63 Stocked area of sweet chestnut by mean stand dbh class

Mean stand DBH (cm)	FC	Private sector		Total
	area (000 ha)	area (000 ha)	SE%	area (000 ha)
Lincolnshire and Northamptonshire				
0-7	0.0	< 0.1	106	< 0.1
7-10	< 0.1	< 0.1	108	< 0.1
10-15	< 0.1	< 0.1	106	< 0.1
15-20	< 0.1	0.0	-	< 0.1
20-30	< 0.1	0.0	-	< 0.1
30-40	0.0	< 0.1	108	< 0.1
40-60	0.0	< 0.1	83	< 0.1
60-80	0.0	0.0	-	0.0
80+	0.0	0.0	-	0.0
Total	< 0.1	< 0.1	51	< 0.1

Part 4 – Tree health

Figure 65 Standing volume of sweet chestnut by age class

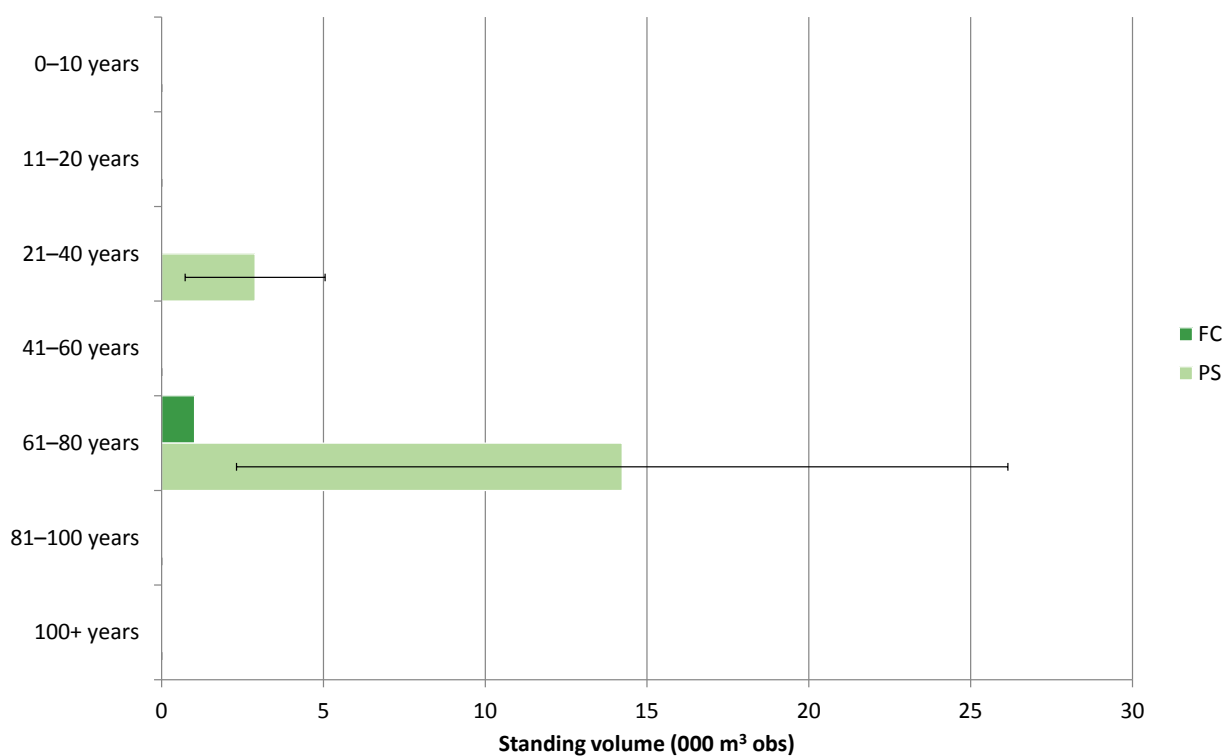


Table 64 Standing volume of sweet chestnut by age class

Age class (years)	FC	Private sector		Total
	volume (000 m³ obs)	volume (000 m³ obs)	SE%	volume (000 m³ obs)
Lincolnshire and Northamptonshire				
0–10	0	0	-	0
11–20	0	0	-	0
21–40	0	3	75	3
41–60	< 1	0	-	< 1
61–80	1	14	84	15
81–100	0	0	-	0
100+	0	0	-	0
Total	1	17	71	18

Part 4 – Tree health

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

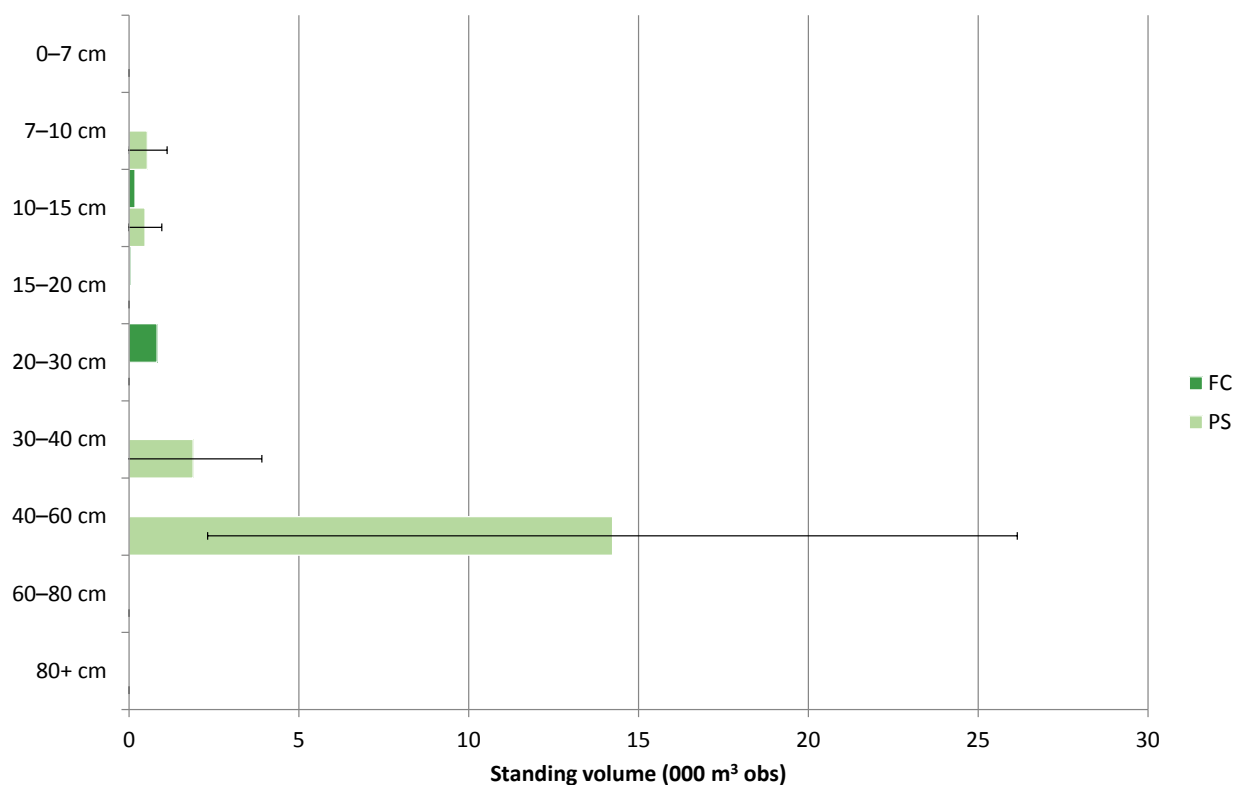


Table 65 Standing volume of sweet chestnut by mean stand dbh class

Mean stand DBH (cm)	FC	Private sector		Total
	volume (000 m³ obs)	volume (000 m³ obs)	SE%	volume (000 m³ obs)
Lincolnshire and Northamptonshire				
0-7	0	0	-	0
7-10	< 1	< 1	108	< 1
10-15	< 1	< 1	106	< 1
15-20	< 1	0	-	< 1
20-30	< 1	0	-	< 1
30-40	0	2	108	2
40-60	0	14	84	14
60-80	0	0	-	0
80+	0	0	-	0
Total	1	17	71	18

Part 4 – Tree health

Figure 67 Number of sweet chestnut trees by age class

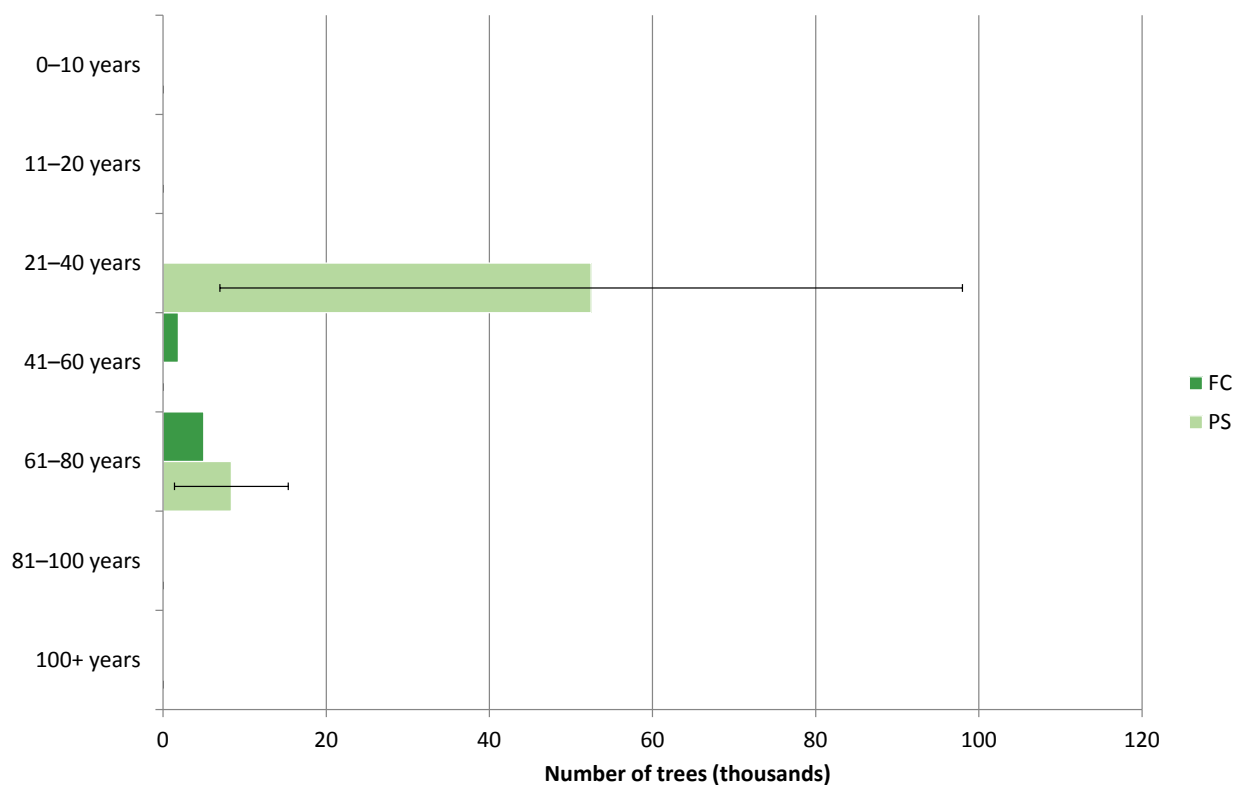


Table 66 Number of sweet chestnut trees by age class

Age class (years)	FC	Private sector		Total
	number of trees (thousands)	number of trees (thousands)	SE%	number of trees (thousands)
Lincolnshire and Northamptonshire				
0-10	0	0	-	0
11-20	0	0	-	0
21-40	0	52	87	52
41-60	2	0	-	2
61-80	5	8	83	13
81-100	0	0	-	0
100+	0	0	-	0
Total	7	61	76	68

Part 4 – Tree health

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

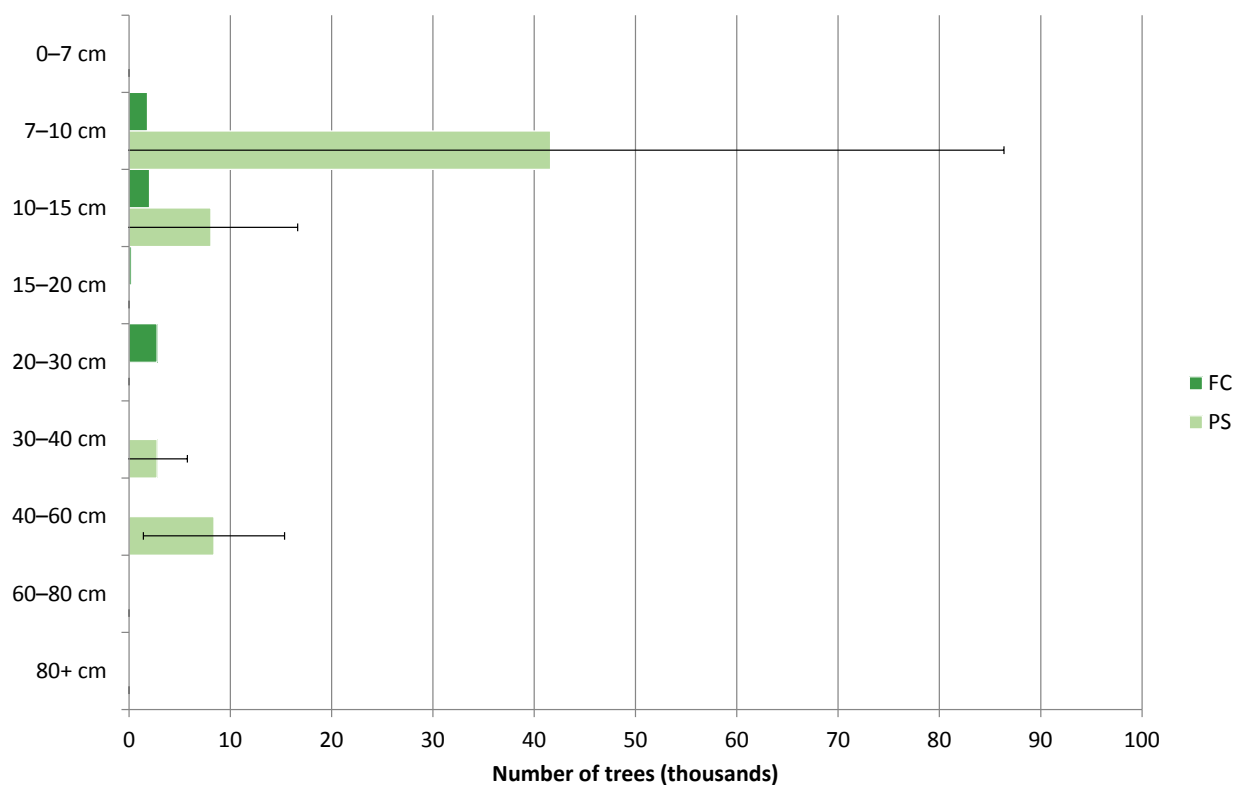
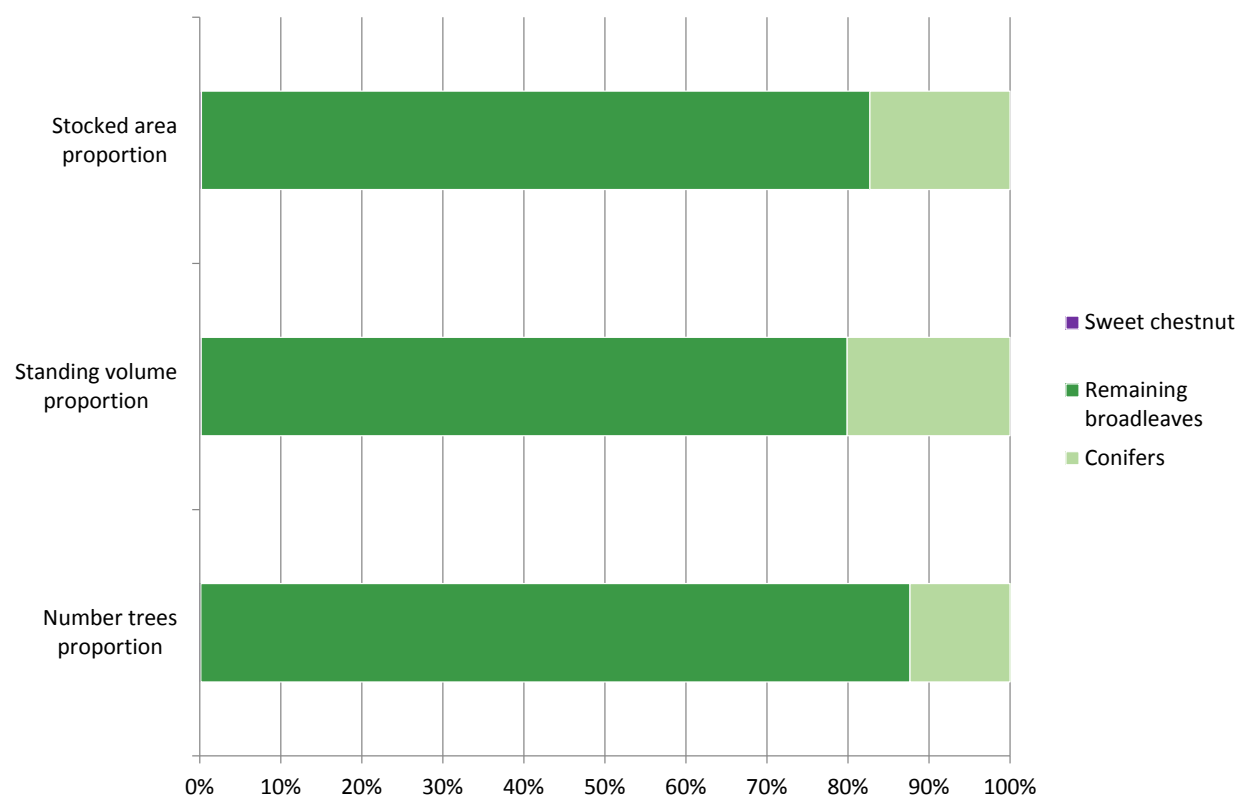


Table 67 Number of sweet chestnut trees by mean stand dbh class

Mean stand DBH (cm)	FC	Private sector		Total
	number of trees (thousands)	number of trees (thousands)	SE%	number of trees (thousands)
Lincolnshire and Northamptonshire				
0-7	0	0	-	0
7-10	2	42	108	43
10-15	2	8	106	10
15-20	< 1	0	-	< 1
20-30	3	0	-	3
30-40	0	3	108	3
40-60	0	8	83	8
60-80	0	0	-	0
80+	0	0	-	0
Total	7	61	76	68

Part 4 – Tree health

Figure 69 Sweet chestnut as a proportion of woodland



Part 4 – Tree health

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)
Lincolnshire and Northamptonshire	< 0.1	< 0.1	51	< 0.1

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)
Lincolnshire and Northamptonshire	38.8	46.9	0	0

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 m³ obs)	volume (000 m³ obs)	SE%	volume (000 m³ obs)
Lincolnshire and Northamptonshire	1	17	71	18

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 m³ obs)	volume (000 m³ obs)	(percent)	(percent)
Lincolnshire and Northamptonshire	7,405	9,282	0	0

Part 4 – Tree health

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)
Lincolnshire and Northamptonshire	7	61	76	68

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)
Lincolnshire and Northamptonshire	46,182	52,732	0	0

Part 4 – Tree health

Larch

Figure 70 Stocked area of larch by age class

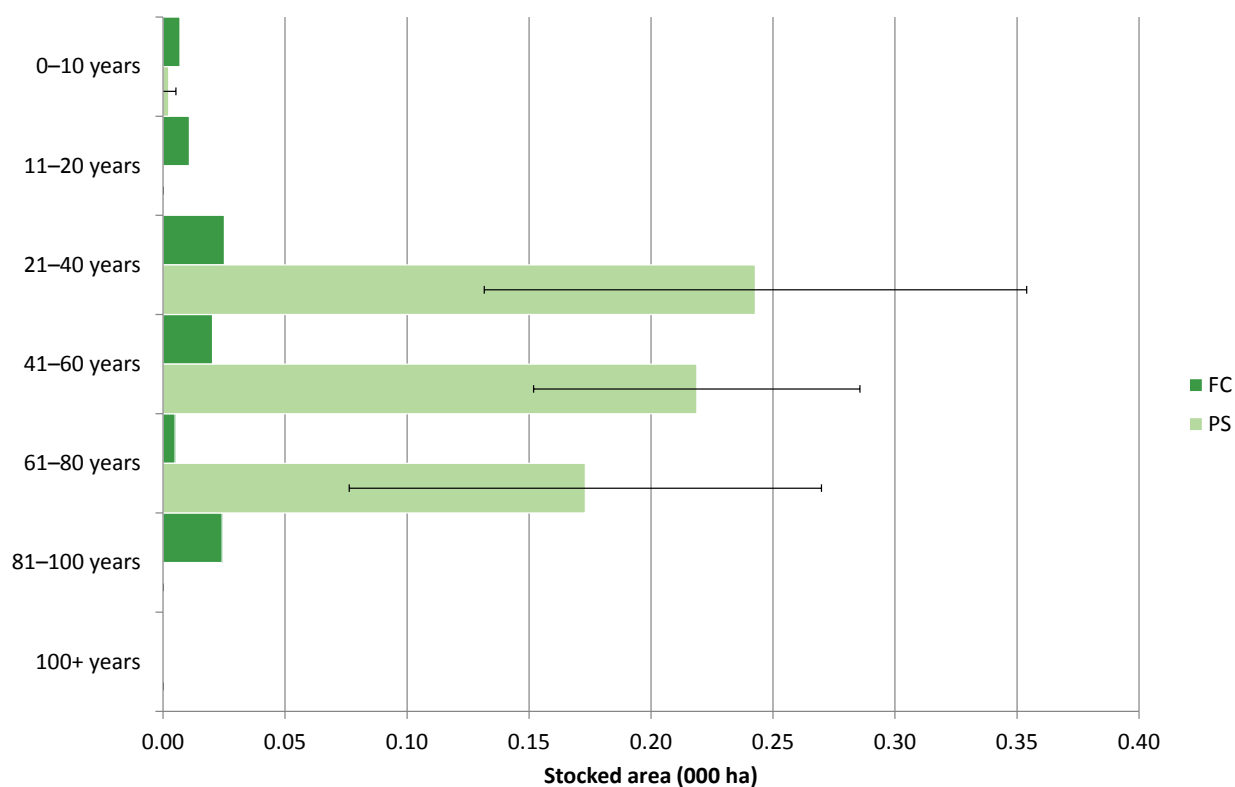


Table 71 Stocked area of larch by age class

Age class (years)	FC	Private sector		Total
	area (000 ha)	area (000 ha)	SE%	area (000 ha)
Lincolnshire and Northamptonshire				
0-10	< 0.1	< 0.1	129	< 0.1
11-20	< 0.1	0.0	-	< 0.1
21-40	< 0.1	0.2	46	0.3
41-60	< 0.1	0.2	31	0.2
61-80	< 0.1	0.2	56	0.2
81-100	< 0.1	0.0	-	< 0.1
100+	0.0	0.0	-	0.0
Total	< 0.1	0.6	26	0.7

Part 4 – Tree health

Figure 71 Stocked area of larch by mean stand dbh class

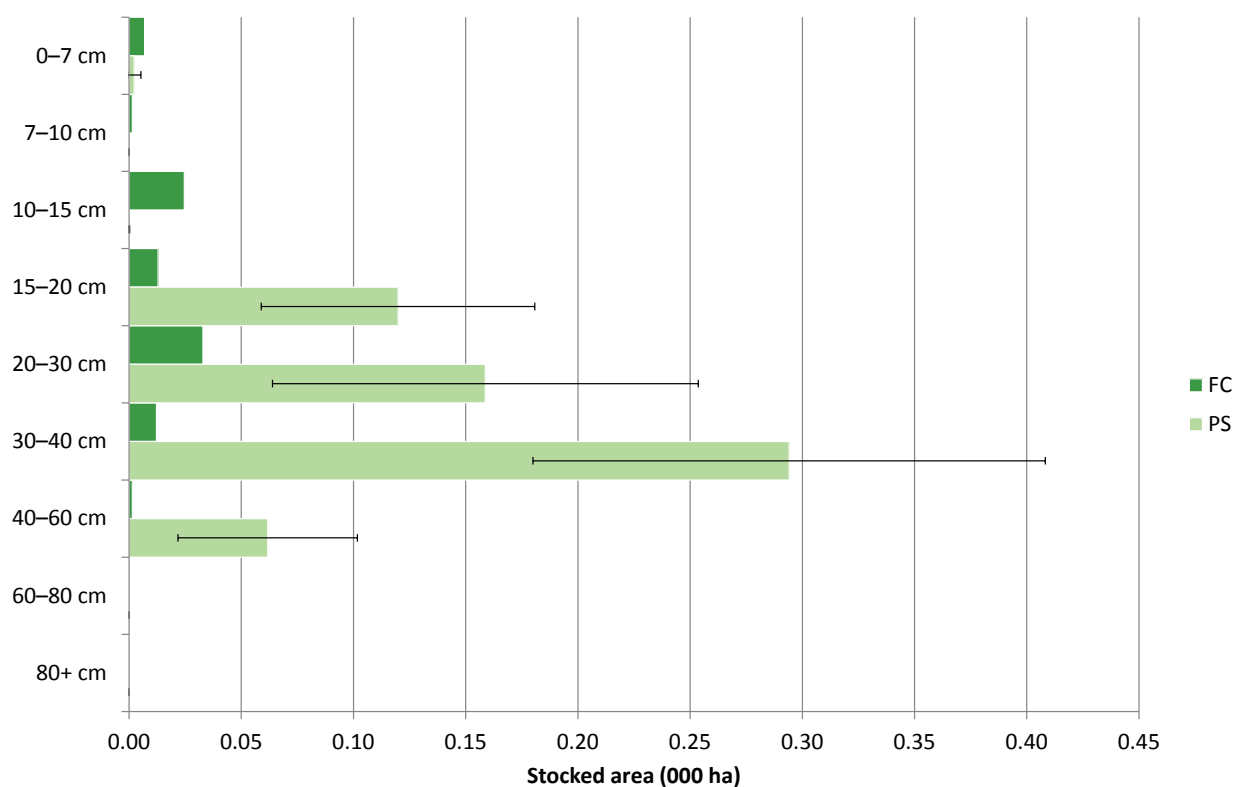


Table 72 Stocked area of larch by mean stand dbh class

Mean stand DBH (cm)	FC	Private sector		Total
	area (000 ha)	area (000 ha)	SE%	area (000 ha)
Lincolnshire and Northamptonshire				
0-7	< 0.1	< 0.1	129	< 0.1
7-10	< 0.1	0.0	-	< 0.1
10-15	< 0.1	< 0.1	97	< 0.1
15-20	< 0.1	0.1	51	0.1
20-30	< 0.1	0.2	60	0.2
30-40	< 0.1	0.3	39	0.3
40-60	< 0.1	< 0.1	65	< 0.1
60-80	0.0	0.0	-	0.0
80+	0.0	0.0	-	0.0
Total	< 0.1	0.6	26	0.7

Part 4 – Tree health

Figure 72 Standing volume of larch by age class

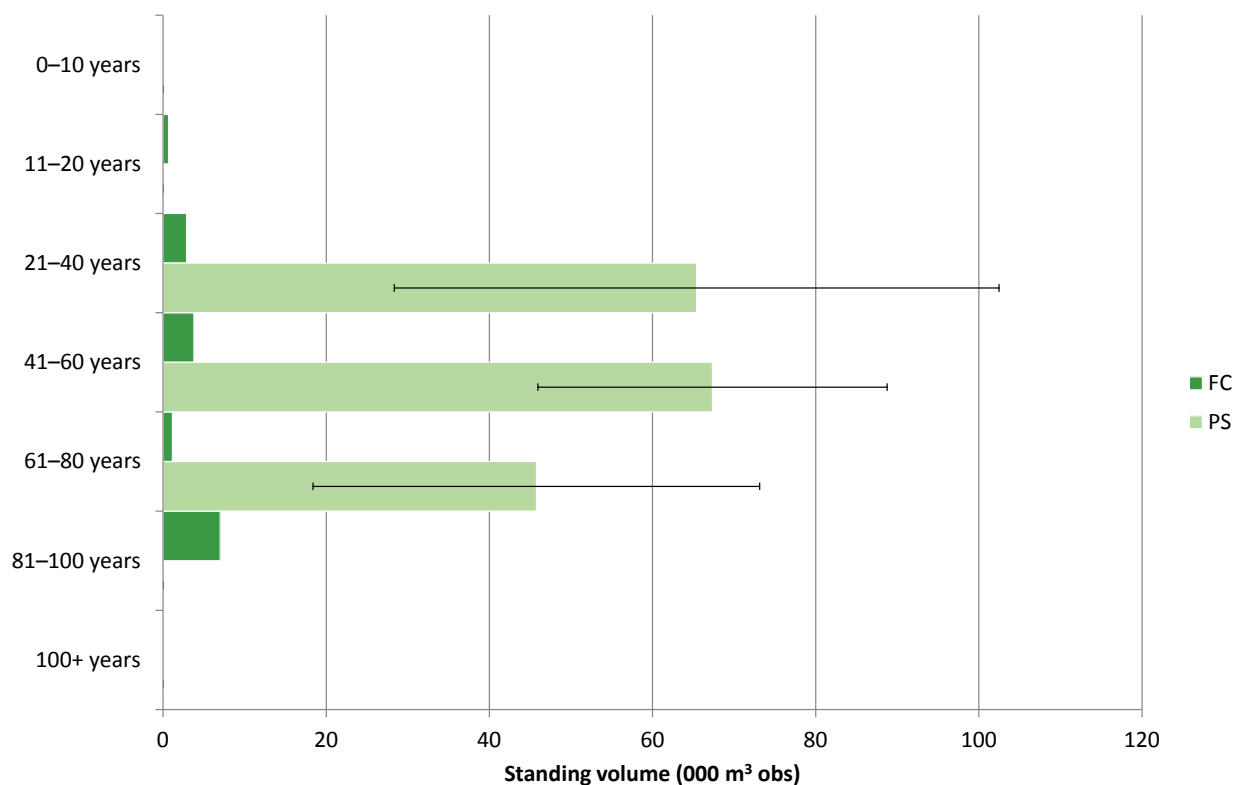


Table 73 Standing volume of larch by age class

Age class (years)	FC	Private sector		Total
	volume (000 m³ obs)	volume (000 m³ obs)	SE%	volume (000 m³ obs)
Lincolnshire and Northamptonshire				
0-10	0	0	-	0
11-20	< 1	0	-	< 1
21-40	3	65	57	68
41-60	4	67	32	71
61-80	1	46	60	47
81-100	7	0	-	7
100+	0	0	-	0
Total	15	179	29	194

Part 4 – Tree health

Figure 73 Standing volume of larch by mean stand dbh class

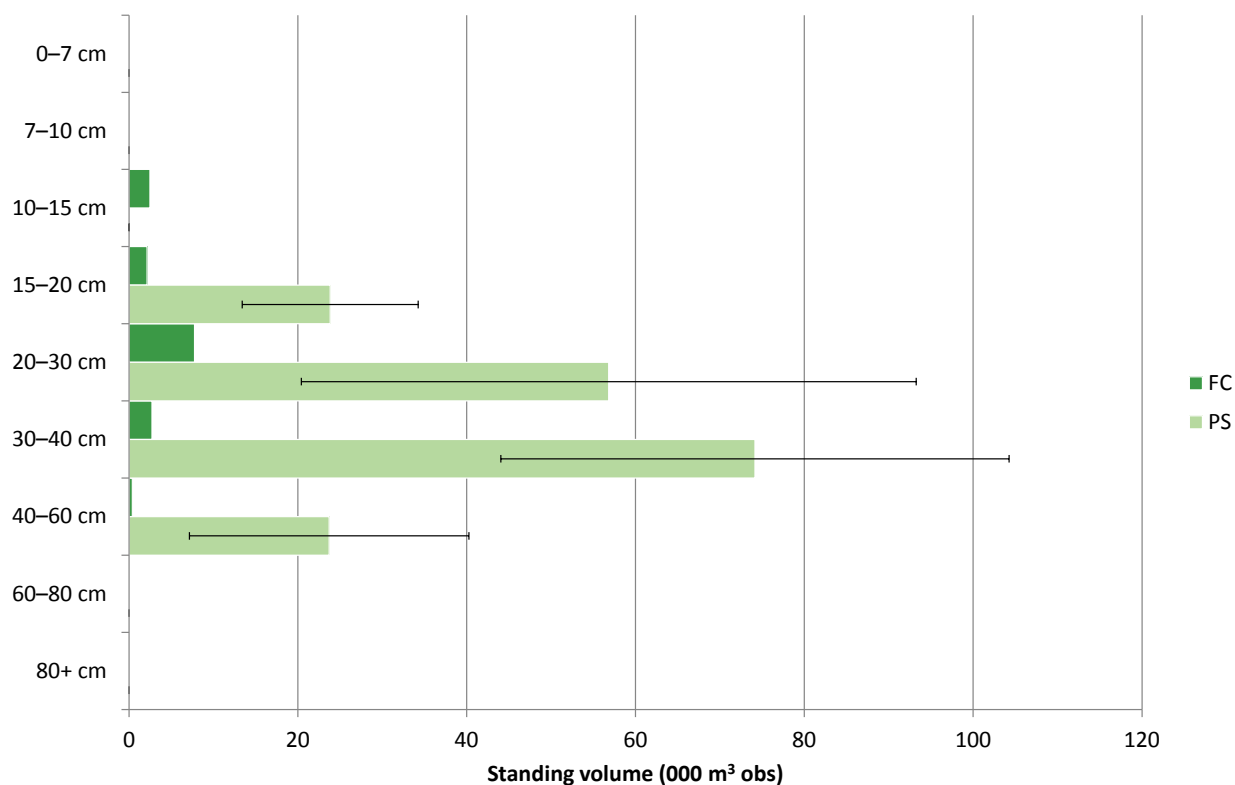


Table 74 Standing volume of larch by mean stand dbh class

Mean stand DBH (cm)	FC	Private sector		Total
	volume (000 m³ obs)	volume (000 m³ obs)	SE%	volume (000 m³ obs)
Lincolnshire and Northamptonshire				
0-7	0	0	-	0
7-10	< 1	0	-	< 1
10-15	2	< 1	97	2
15-20	2	24	44	26
20-30	8	57	64	65
30-40	3	74	41	77
40-60	< 1	24	70	24
60-80	0	0	-	0
80+	0	0	-	0
Total	15	179	29	194

Part 4 – Tree health

Figure 74 Number of larch trees by age class

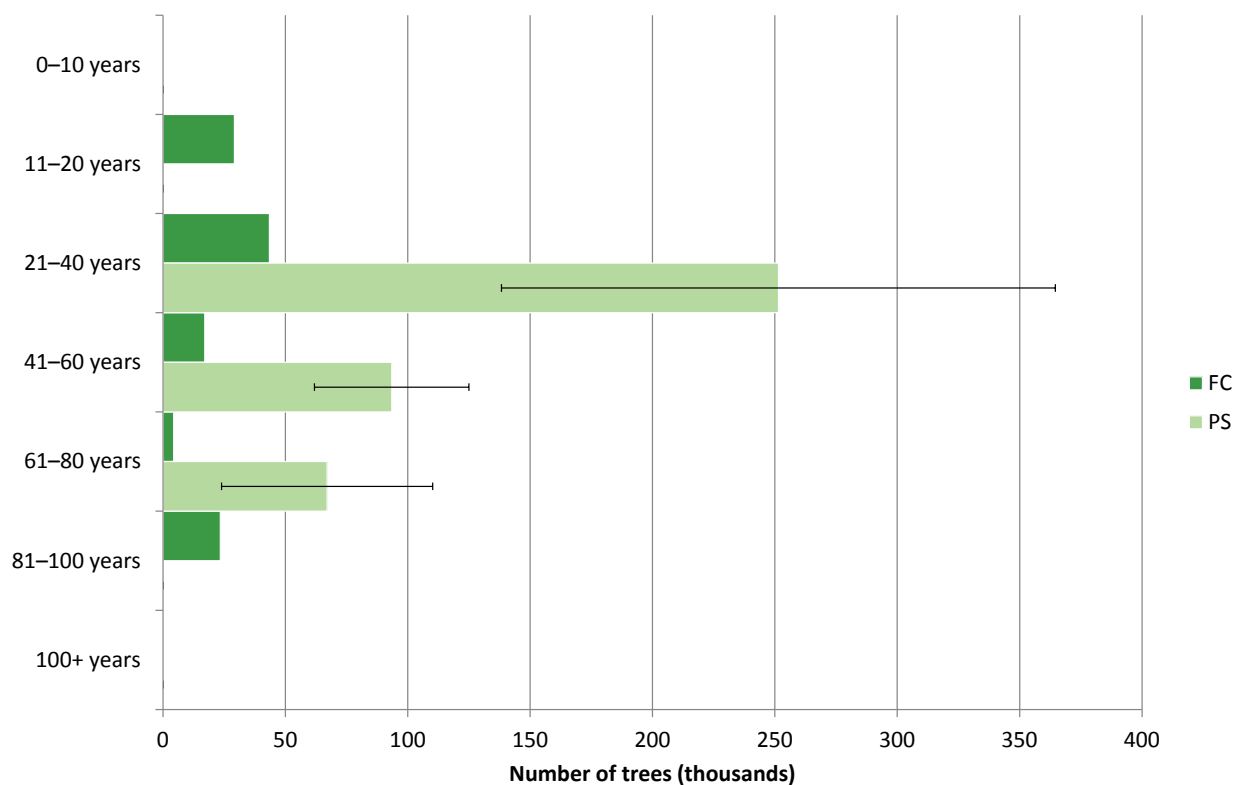


Table 75 Number of larch trees by age class

Age class (years)	FC	Private sector		Total
	number of trees (thousands)	number of trees (thousands)	SE%	number of trees (thousands)
Lincolnshire and Northamptonshire				
0–10	0	0	-	0
11–20	29	0	-	29
21–40	43	251	45	295
41–60	17	93	34	111
61–80	4	67	64	71
81–100	23	0	-	23
100+	0	0	-	0
Total	117	412	31	529

Part 4 – Tree health

Figure 75 Number of larch trees by mean stand dbh class

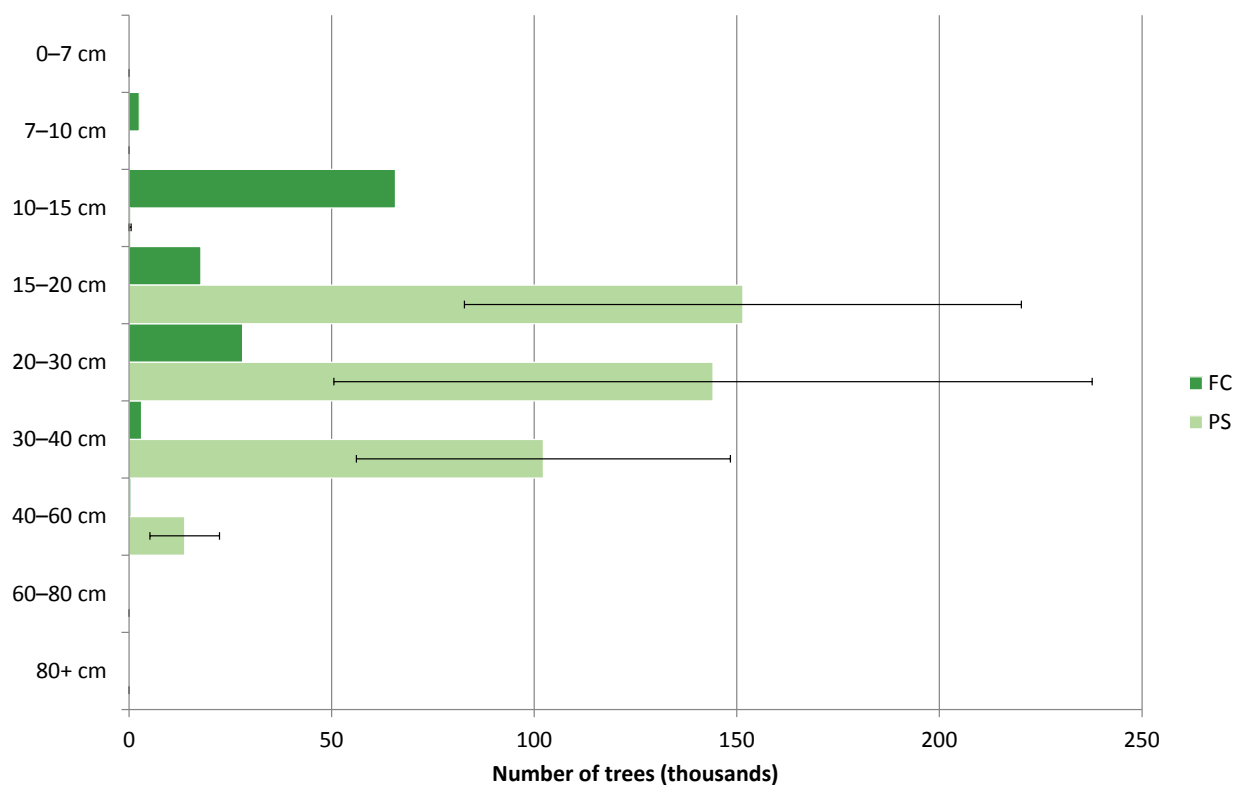
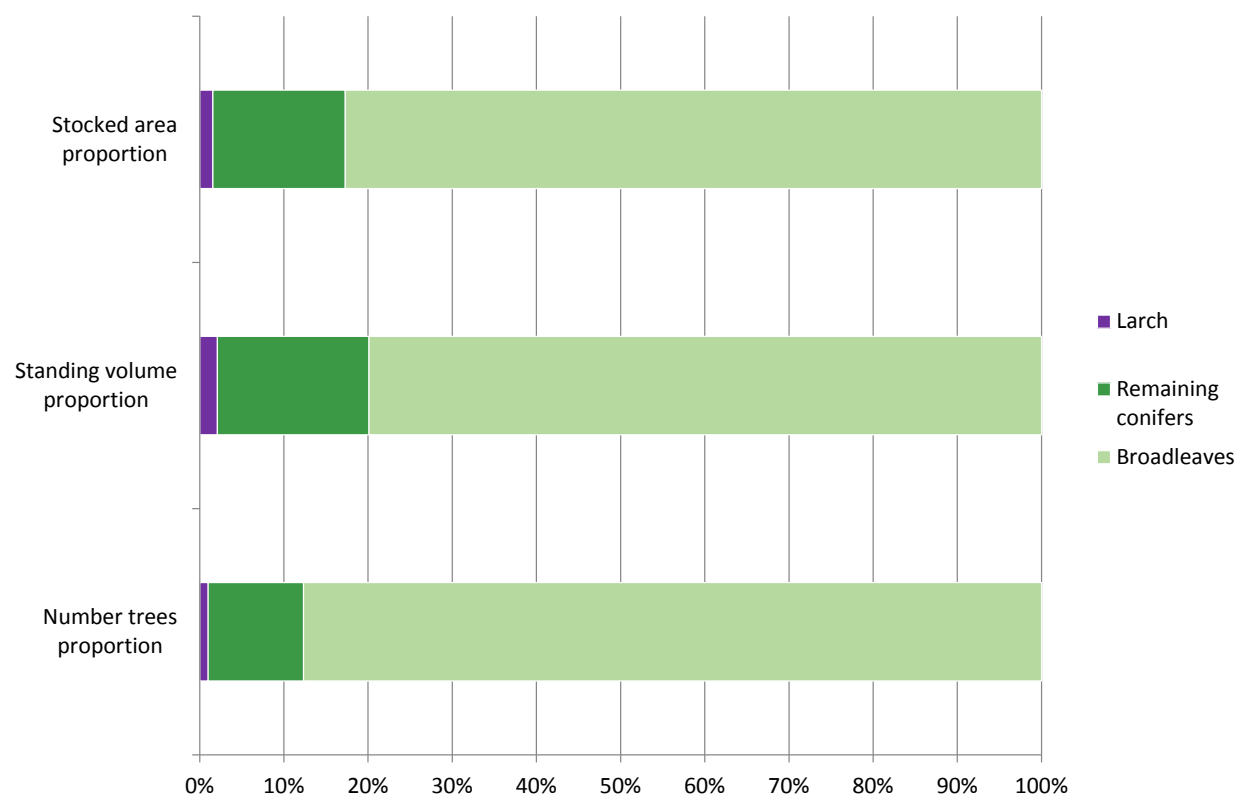


Table 76 Number of larch trees by mean stand dbh class

Mean stand DBH (cm)	FC	Private sector		Total
	number of trees (thousands)	number of trees (thousands)	SE%	number of trees (thousands)
Lincolnshire and Northamptonshire				
0-7	0	0	-	0
7-10	3	0	-	3
10-15	66	< 1	97	66
15-20	18	151	45	169
20-30	28	144	65	172
30-40	3	102	45	105
40-60	< 1	14	63	14
60-80	0	0	-	0
80+	0	0	-	0
Total	117	412	31	529

Part 4 – Tree health

Figure 76 Larch as a proportion of woodland



Part 4 – Tree health

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)
Lincolnshire and Northamptonshire	< 0.1	0.6	26	0.7

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)
Lincolnshire and Northamptonshire	8.1	46.9	9	2

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)
Lincolnshire and Northamptonshire	15	179	29	194

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)
Lincolnshire and Northamptonshire	1,863	9,282	10	2

Part 4 – Tree health

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)
Lincolnshire and Northamptonshire	117	412	31	529

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)
Lincolnshire and Northamptonshire	6,500	52,732	8	1

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.

NFI summary report

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 area 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).

NFI summary report

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.

NFI summary report

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 above).
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 Lincolnshire and Northamptonshire.

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