



# **NATIONAL INVENTORY OF WOODLAND AND TREES**



## **ENGLAND**

**County Report for**

**HERTFORDSHIRE**



**Forestry Commission**

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Woodland Surveys Branch of Forest Research was responsible for carrying out the survey and analysing the data. A large number of Forestry Commission and contract staff were involved in the survey from its inception.

Preparation of the digital cartography for Hertfordshire was carried out by Graham Bull, Woodland Survey Officer, and Woodland GIS Officers Chris Brown, Robert Beck and Esther Whitton. Data processing and analysis was carried out by Woodland Data Officers Justin Gilbert and Shona Cameron.

The authors of this Report are Steve Smith (Head of Woodland Surveys) and Justin Gilbert (Woodland Data Officer) of Forest Research.



## INTRODUCTION

This report presents the results for Hertfordshire from the Forestry Commission National Inventory of Woodland and Trees (NIWT).

The Inventory consists of two separate surveys -

- The Main Woodland Survey (MWS) covering woodlands of 2 hectares and over
- The Survey of Small Woodland and Trees (SSWT) covering Small Woods, Groups of Trees, Linear Features and Individual Trees.

## BACKGROUND

Since 1924 the Forestry Commission has carried out a number of national woodland surveys at intervals of between 15 and 20 years. The previous survey was carried out between 1979 and 1982. With the statistics becoming increasingly out of date the Forestry Commission decided to undertake a new survey: the *National Inventory of Woodland and Trees*.

The survey fieldwork for Great Britain was completed in July 2000. Work began in Scotland in 1994, followed by Southern England, Wales and Northern England.

## SURVEY METHODS

### Main Woodland Survey

In England, Woodland Surveys derived a digital map of all woodland showing Interpreted Forest Types from 1:25 000 scale aerial photography. This provided the basis for the sampling.

The digital map gives the extent of all woodland over 2 hectares and this was updated as survey work progressed. The maps on pages 4-6 show: overall woodland cover; woodland by ownership; and woodland by Interpreted Forest Type, respectively. The total area of woodland was obtained from the digital map with ground sampling undertaken to evaluate a wide range of woodland information such as species, age and stocking.

From the digital map the area of each woodland was recorded and this information was used to determine the intensity at which any selected woodland would be sampled. The overall sampling scheme was as follows:

- 2.0ha - <100ha : every fifth wood
- 100ha - <500ha : two woods in five
- 500ha and larger : all woods

1 hectare square plots were used to sample the selected woodlands on the ground. This was a change of practice from all previous Census surveys, where whole woods have been selected for survey. For each of the three bands of woodland area a different sampling grid was used with the density of the squares being reduced as the woodlands increase in size. The overall aim was to sample 1% of the woodland in each size class.

### Survey of Small Woodland and Trees

The land area of England was stratified into coastal and inland 1 km x 1 km squares and a random sample of 1 km<sup>2</sup> plots were then selected, representing around 1% of the land area. 1:25 000 scale aerial photos were then used to identify features in each sample square. Each 1 km<sup>2</sup> was then divided into 16 parts, and two of these were selected at random for field data collection. Data was collected on Small Woodlands (0.10 - <2.00 ha), Linear Features, Groups and Individual Trees. The survey did not collect information from areas of developed land of 2 hectares or more.

### MAIN POINTS FROM THE SURVEY RESULTS

- The total area of woodland of 0.1 hectares and over in Hertfordshire is 15,503 hectares. This represents 9.5% of the land area. (Table 1)
- Broadleaved woodland is the dominant forest type representing 71.8% of all woodland. Conifer woodland represents 13.5 %, Mixed woodland 9.4% and Open Space within woodlands 3.9%. (Table 2)
- The main conifer species is pine covering 1,512 hectares or 56.6% of all conifer species. The main broadleaved species is oak covering 3,289 hectares or 27.4% of all broadleaved species. (Table 3)
- 491 hectares or 4% of woodland over 2 hectares is owned by or leased to the Forestry Commission, and 12,345 hectares or 96% of woodland is in Other ownership. (Table 6)
- There are a total of 1,045 woods over 2 ha within Hertfordshire with a mean wood area of 12.3 hectares. (Table 7a) There are a total of 4,826 woods from 0.1 - <2.0 hectares with a mean wood area of 0.55 hectares. (Table 14)
- There are 492 thousand live trees outside woodland in Hertfordshire. (Table 15)
- Woodland land cover increased by over 2900 hectares from 7.6% to 9.3% of the land area between 1980 and 1998. (Table 19)
- The area of broadleaves increased by 40% between 1980 and 1998, with the relative proportion of broadleaves to conifers increasing from 79% to 82%. (Table 20)

### INVENTORY REPORTS

As well as this report for Hertfordshire, reports are available for the other counties in the region as shown on the map opposite. Also available are region and county reports for England as well as a report for the country as a whole. Wales and Scotland are also covered by reports.



### Map 1 Regional and county boundaries



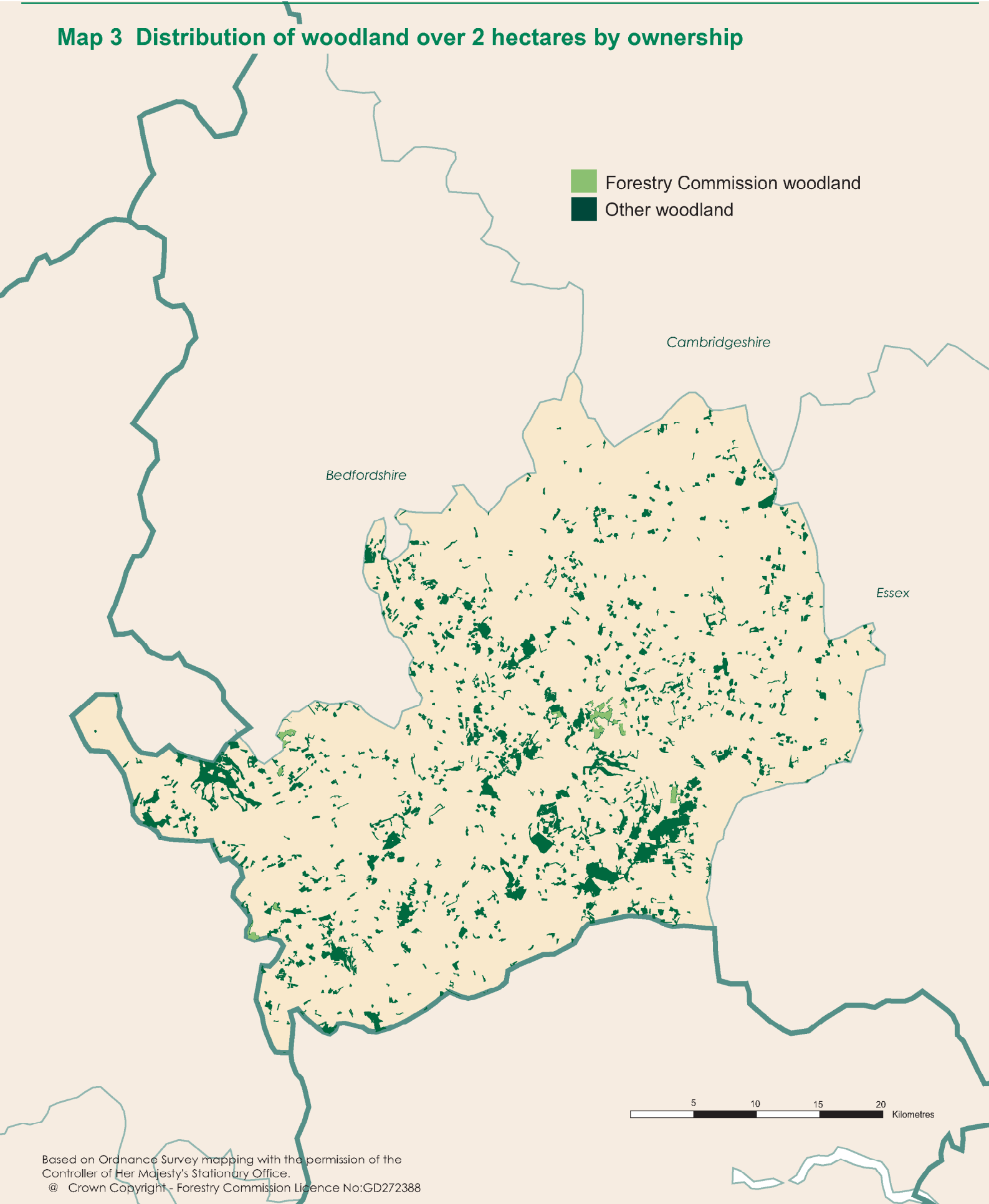
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## Map 2 Distribution of woodland over 2 hectares



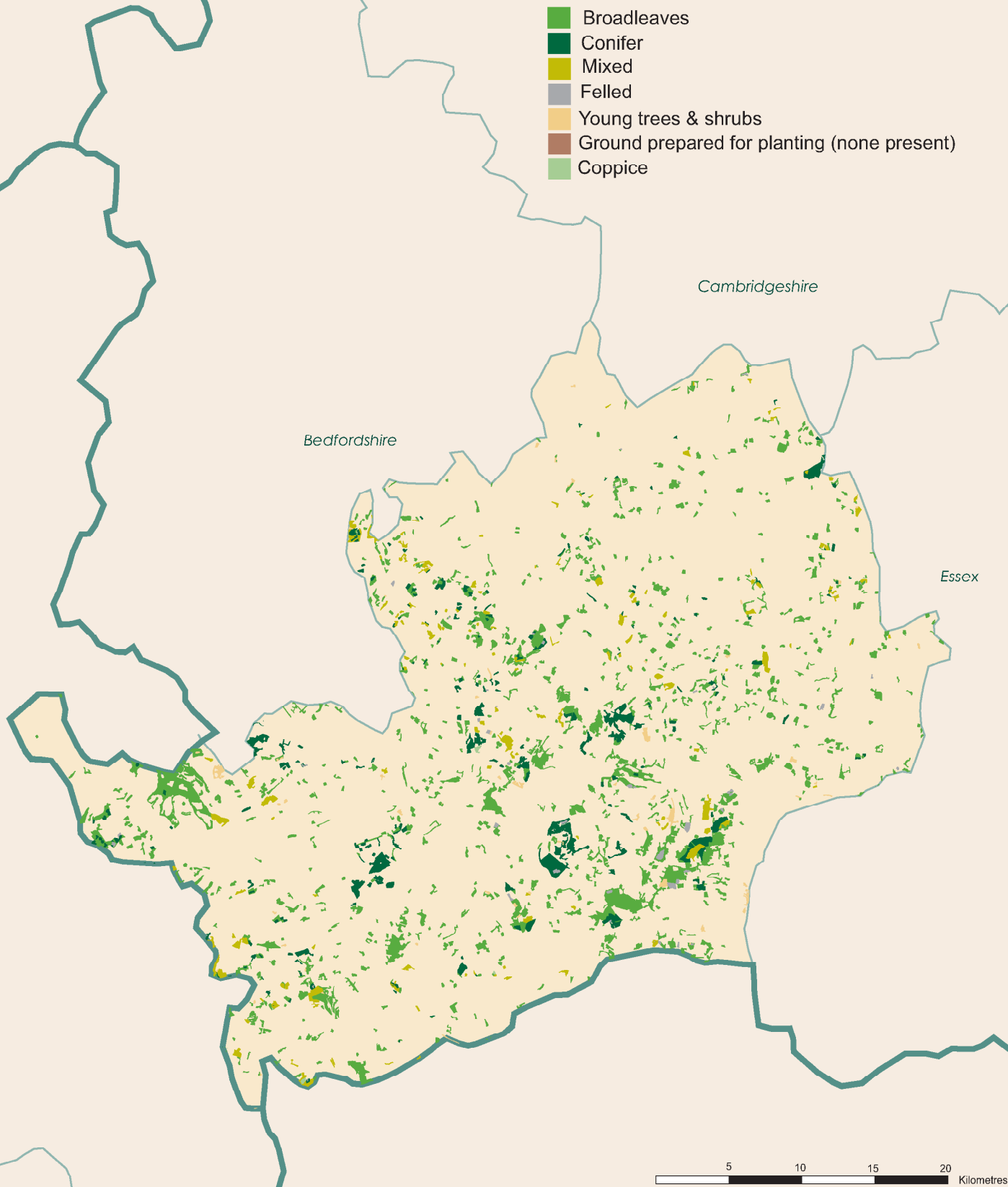
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### Map 3 Distribution of woodland over 2 hectares by ownership



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### Map 4 Distribution of woodland over 2 hectares by Interpreted Forest Type



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## SUMMARY RESULTS FROM THE NATIONAL INVENTORY OF WOODLAND AND TREES (NIWT)

Both the Main Woodland Survey and the Survey of Small Woodland and Trees contributed to the estimate of woodland area for Hertfordshire.

Tables 1-3 show the combined woodland area from the Main Woodland Survey and the Survey of Small Woodland and Trees.

Tables 4 and 5 summarise the numbers of live trees outside woodland, and the lengths of Linear Features from the Survey of Small Woodland and Trees.

Table 1:	Woodland area by woodland size class
Table 2:	Woodland area by forest type and woodland size
Table 3:	Woodland area by principal species and woodland size
Table 4:	Numbers of live trees outside woodland by feature type
Table 5:	Lengths of Linear Features

*Note:* The figures in many of the tables may not add due to rounding



**Table 1** Woodland area by woodland size class

Woodland size (ha)	Woodland area (ha)	% of Woodland area
2.00 and over	12,836	82.8
0.25 - < 2.00	2,438	15.7
0.10 - < 0.25	229	1.5
<b>Total area of woodland</b>	<b>15,503</b>	<b>100.0</b>
<b>% Woodland land cover</b>	<b>9.5</b>	

1. Area of Hertfordshire, including inland water, 163,928 ha based on digital boundaries used in the 1991 Census of Population

**Table 2** Woodland area by forest type and woodland size

Forest type	Woodland size (ha)		Total area (ha)	Percentage of total area
	2.0 and over	0.1 - <2.0		
Conifer	1,815	279	2,094	13.5
Broadleaved	9,056	2,070	11,126	71.8
Mixed	1,213	241	1,454	9.4
Coppiced	12	63	75	0.5
Copp-w-standards	85	0	85	0.5
Windblow	0	0	0	0.0
Felled	57	0	57	0.4
Open Space	599	13	612	3.9
<b>Total</b>	<b>12,836</b>	<b>2,667</b>	<b>15,503</b>	<b>100</b>

1. See Glossary for definitions of forest types.



**Table 3** Woodland area by principal species and woodland size

Species/Groups	Woodland size (ha)		Total area (ha)	Percentage of total area	
	2.0 and over	0.1 - <2.0		Category*	Species**
Pine	1,315	197	1,512	56.6	10.3
Sitka spruce	0	0	0	0.0	0.0
Larch	510	38	548	20.5	3.7
Other conifers	422	152	574	21.5	3.9
Mixed conifers	40	0	40	1.5	0.3
<b>Total conifers</b>	<b>2,286</b>	<b>387</b>	<b>2,673</b>	<b>100.0</b>	<b>18.2</b>
Oak	2,819	470	3,289	27.4	22.4
Beech	827	51	878	7.3	6.0
Sycamore	631	76	707	5.9	4.8
Ash	1,950	235	2,185	18.2	14.9
Birch	973	6	979	8.2	6.7
Elm	28	32	60	0.5	0.4
Other broadleaves	2,133	769	2,902	24.2	19.8
Mixed broadleaves	437	565	1,002	8.3	6.8
<b>Total broadleaves</b>	<b>9,798</b>	<b>2,204</b>	<b>12,002</b>	<b>100.0</b>	<b>81.8</b>
<b>Total all species***</b>	<b>12,083</b>	<b>2,591</b>	<b>14,674</b>		<b>100.0</b>

\*Category - species/group percentage of conifer or broadleaved category

\*\*Species/group percentage of all species

\*\*\*Excludes the 829ha of Coppice, Felled and Open space areas which were included in Table 2

1. The standard errors of the area estimates for woodland of 2 ha and over for the most common species or species groups are as follows

Conifers	12%
Broadleaves	4%
Pine	19%
Oak	9%
Ash	11%

2. Where the standard errors of these summary measures are 10% or less, the confidence intervals will be approximately symmetrical; the true value is expected to be within +/- one standard error for about 68% (or about two-thirds) of all cases, and within +/- two standard errors for about 95% of all cases. Where percentage standard errors are larger, e.g. for less common species or more variable species composition, the confidence intervals will be less symmetrical (and wider).

**Table 4** Numbers of live trees outside woodland by feature type

Feature type	Total number of features	Total number of live trees	Mean number of trees per feature	Tree density (per sq km)
Groups	9,800	83,600	9	51
Narrow Linear Features	5,100	351,800	69	215
Individual Trees	56,600	56,600	1	35
<b>Total</b>		<b>492,000</b>		<b>300</b>

1. Land area used to calculate tree density 163,928ha based on digital boundaries used in 1991 Census of Population
2. The standard errors of the live tree number estimates for these feature types are:

Groups	47%
Narrow Linear Features	48%
Individual Trees	34%
3. Where the standard errors of these summary measures are 10% or less, the confidence intervals will be approximately symmetrical; the true value is expected to be within +/- one standard error for about 68% (or about two-thirds) of all cases, and within +/- two standard errors for about 95% of all cases. Where percentage standard errors are larger, e.g. for less common species or more variable species composition, the confidence intervals will be less symmetrical (and wider).
4. See Glossary for definitions of feature types .

**Table 5** Lengths of Linear Features

Feature type	Total number of features	Total length of features (km)	Density of features (m per sq km)
Wide Linear Features	0	0	0
Narrow Linear Features	5,100	555	339
<b>Total</b>		<b>555</b>	<b>339</b>

1. Land area used to calculate tree density 163,928ha based on digital boundaries used in 1991 Census of Population
2. The standard errors of the length estimates for these feature types are:

Wide Linear Features	-
Narrow Linear Features	36%
3. Where the standard errors of these summary measures are 10% or less, the confidence intervals will be approximately symmetrical; the true value is expected to be within +/- one standard error for about 68% (or about two-thirds) of all cases, and within +/- two standard errors for about 95% of all cases. Where percentage standard errors are larger, e.g. for less common species or more variable species composition, the confidence intervals will be less symmetrical (and wider).
4. See Glossary for definitions of feature type .

## RESULTS FROM THE MAIN WOODLAND SURVEY (MWS)

### Survey Method

Woods were selected from the digital map of woodland of 2 hectares and over, then sampled using a random grid of 1 hectare sample plots. The density of sample plots was reduced as the sampled woodland increase in size, the general aim being to sample 1% of the woodland area. The ground sampling evaluated a wide range of data such as species, age and stocking.

Table 6:	Summary of woodland area by ownership
Chart:	Woodland area by ownership
Table 7a:	Size class distribution of woodland
Table 7b:	Size class distribution of woodland by ownership units
Table 8:	Area of woodland by forest type and ownership
Chart:	Area of woodland by forest type
Table 9a:	Area of High Forest by principal species and ownership
Graph:	Area of High Forest by principal species and ownership
Table 9b:	Area of High Forest by principal species, ownership and category
Graph:	High Forest Category 1 Area by principal species and ownership
Graph:	High Forest Category 2 Area by principal species and ownership
Table 10a:	High Forest Category 1 Area by principal species and planting year class
Graph:	High Forest Category 1 Area by planting year class
Table 10b:	High Forest Category 1 Forestry Commission: area by principal species and planting year class
Graph:	High Forest Category 1 Forestry Commission - area by planting year class
Table 10c:	High Forest Category 1 Other ownership: area by principal species and planting year class
Graph:	High Forest Category 1 Other ownership: area by planting year class
Table 11:	High Forest: principal species by planting year class
Table 12:	Ownership type by area and percentage
Chart:	Ownership type by area

*Note: The figures in many of the tables may not add due to rounding*

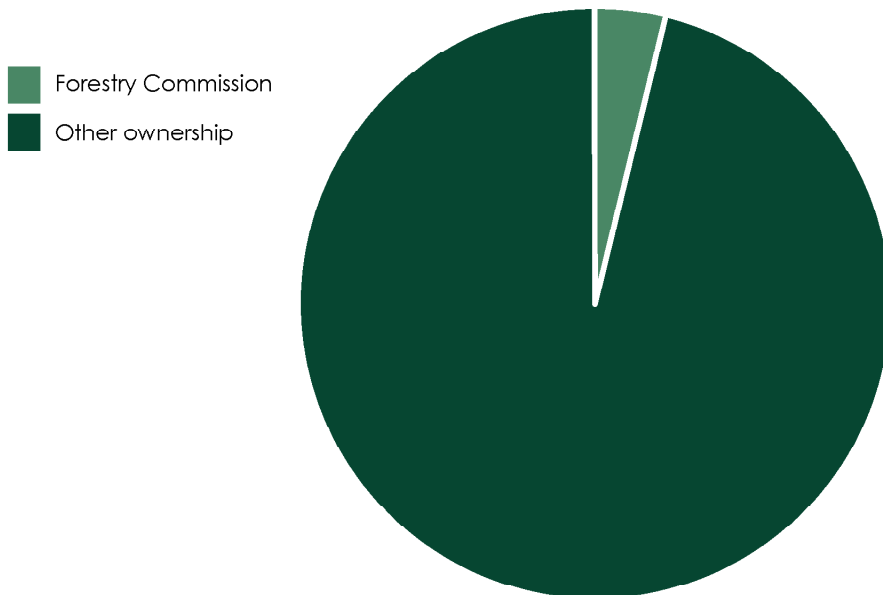


**Table 6** Summary of woodland area by ownership

Ownership	ha	% woodland
Forestry Commission	491	4
Other	12,345	96
<b>Total area of woodland</b>	<b>12,836</b>	<b>100</b>

1. Woodland area from aerial photographic interpretation map updated to 31 March 1998
2. See Glossary for definitions of ownership types

**Woodland area by ownership**



**Table 7a** Size class distribution of woodland

Size class (ha)	Number of woods	Total area (ha)	Percent of total area	Mean wood area (ha)
<10	799	3,562	28	4.5
10 - <20	130	1,807	14	13.9
20 - <50	80	2,398	19	30.0
50 - <100	19	1,244	10	65.5
<b>&lt;100</b>	<b>1,028</b>	<b>9,010</b>	<b>70</b>	<b>8.8</b>
<b>100 - &lt;500</b>	<b>15</b>	<b>2,079</b>	<b>16</b>	<b>138.6</b>
<b>500 and &gt;</b>	<b>2</b>	<b>1,746</b>	<b>14</b>	<b>873.2</b>
<b>All woods</b>	<b>1,045</b>	<b>12,836</b>	<b>100</b>	<b>12.3</b>

**Table 7b** Size class distribution of woodland by ownership units

Size class (ha)	FC or Other	Number of woods	Total area (ha)	Percent of total area	Mean wood area (ha)
<10	FC	5	21	0	4.2
	O	815	3,595	28	4.4
10 - <20	FC	3	40	0	13.3
	O	130	1,825	14	14.0
20 - <50	FC	3	75	1	24.9
	O	77	2,299	18	29.9
50 - <100	FC	3	182	1	60.5
	O	17	1,125	9	66.2
<100	FC	14	318	2	22.7
	O	1,039	8,845	69	8.5
100 - <500	FC	1	174	1	174.4
	O	13	1,753	14	134.9
500 and >	FC	0	0	0	0.0
	O	2	1,746	14	873.2
<b>Total</b>	<b>FC</b>	<b>15</b>	<b>491</b>	<b>4</b>	<b>32.7</b>
	<b>O</b>	<b>1,054</b>	<b>12,344</b>	<b>96</b>	<b>11.7</b>

1. Table 7a and 7b are based solely on the digital woodland map. The other MWS tables are derived from the field sample data

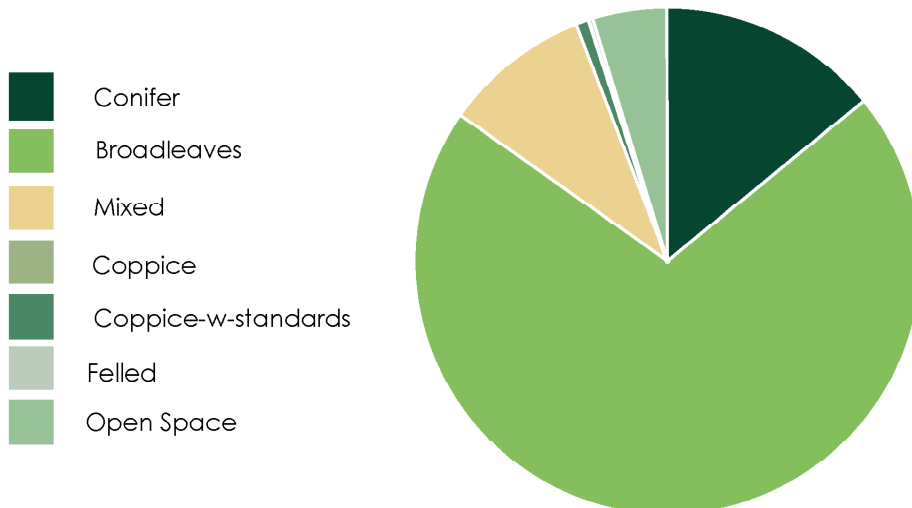
2. The data available from the digital map enable the identification of woodlands according to their ownerships, Forestry Commission or Other. The entries in table 7b cannot be added to derive table 7a as some woods may consist of both Forestry Commission and Other ownership(s)

For example, the Forestry Commission may own most of a large wood with some parts in Other ownership(s). In Table 7a the whole area would be treated as one wood and the area allocated to one size category. In Table 7b each of the ownership units would be allocated to the size category for that unit. Dividing woods by ownership can occasionally generate part woods of less than 2 hectares

**Table 8** Area of woodland by forest type and ownership

Forest type	Forestry Commission		Other		All ownerships	
	ha	%	ha	%	ha	%
Conifer	99	20.2	1,715	13.9	1,815	14.1
Broadleaved	357	72.7	8,699	70.5	9,056	70.6
Mixed	32	6.5	1,181	9.6	1,213	9.4
Coppice	0	0.0	12	0.1	12	0.1
Copp-w-Stds	0	0.0	85	0.7	85	0.7
Windblow	0	0.0	0	0.0	0	0.0
Felled	0	0.0	57	0.5	57	0.4
Open Space	2	0.4	596	4.8	599	4.7
<b>Total</b>	<b>491</b>	<b>99.8</b>	<b>12,345</b>	<b>100.0</b>	<b>12,836</b>	<b>100.0</b>

**Area of woodland by forest type**



**Table 9a** Area of High Forest by principal species and ownership

Species	Forestry Commission			Other			All ownerships		
	area (ha)	cat* %	spp** %	area (ha)	cat* %	spp** %	area (ha)	cat* %	spp** %
Scots pine	2	2	0	788	36	7	790	35	7
Corsican pine	9	8	2	516	24	4	525	23	4
Lodgepole pine	0	0	0	0	0	0	0	0	0
Sitka spruce	0	0	0	0	0	0	0	0	0
Norway spruce	13	12	3	291	13	3	305	13	3
European larch	0	0	0	59	3	1	59	3	0
Jap/Hybrid larch	47	44	10	403	18	3	451	20	4
Douglas fir	10	9	2	4	0	0	15	1	0
Other conifers	20	19	4	82	4	1	102	4	1
Mixed conifers	4	4	1	36	2	0	40	2	0
<b>Total conifers</b>	<b>106</b>	<b>100</b>	<b>22</b>	<b>2,179</b>	<b>100</b>	<b>19</b>	<b>2,286</b>	<b>100</b>	<b>19</b>
Oak	137	36	28	2,682	28	23	2,819	29	23
Beech	111	29	23	716	8	6	827	8	7
Sycamore	0	0	0	631	7	5	631	6	5
Ash	18	5	4	1,932	21	17	1,950	20	16
Birch	32	8	7	941	10	8	973	10	8
Poplar	0	0	0	48	1	0	48	0	0
Sweet chestnut	7	2	1	66	1	1	73	1	1
Elm	0	0	0	28	0	0	28	0	0
Other broadleaves	62	16	13	1,950	21	17	2,012	21	17
Mixed broadleaves	16	4	3	421	4	4	437	4	4
<b>Total broadleaves</b>	<b>382</b>	<b>100</b>	<b>78</b>	<b>9,416</b>	<b>100</b>	<b>81</b>	<b>9,798</b>	<b>100</b>	<b>81</b>
<b>Total - all species</b>	<b>489</b>		<b>100</b>	<b>11,595</b>		<b>100</b>	<b>12,083</b>		<b>100</b>
<b>Felled</b>	<b>0</b>			<b>57</b>			<b>57</b>		
<b>Total High Forest</b>	<b>489</b>			<b>11,652</b>			<b>12,140</b>		

\*cat : species percentage of Conifer or Broadleaved in the ownership category

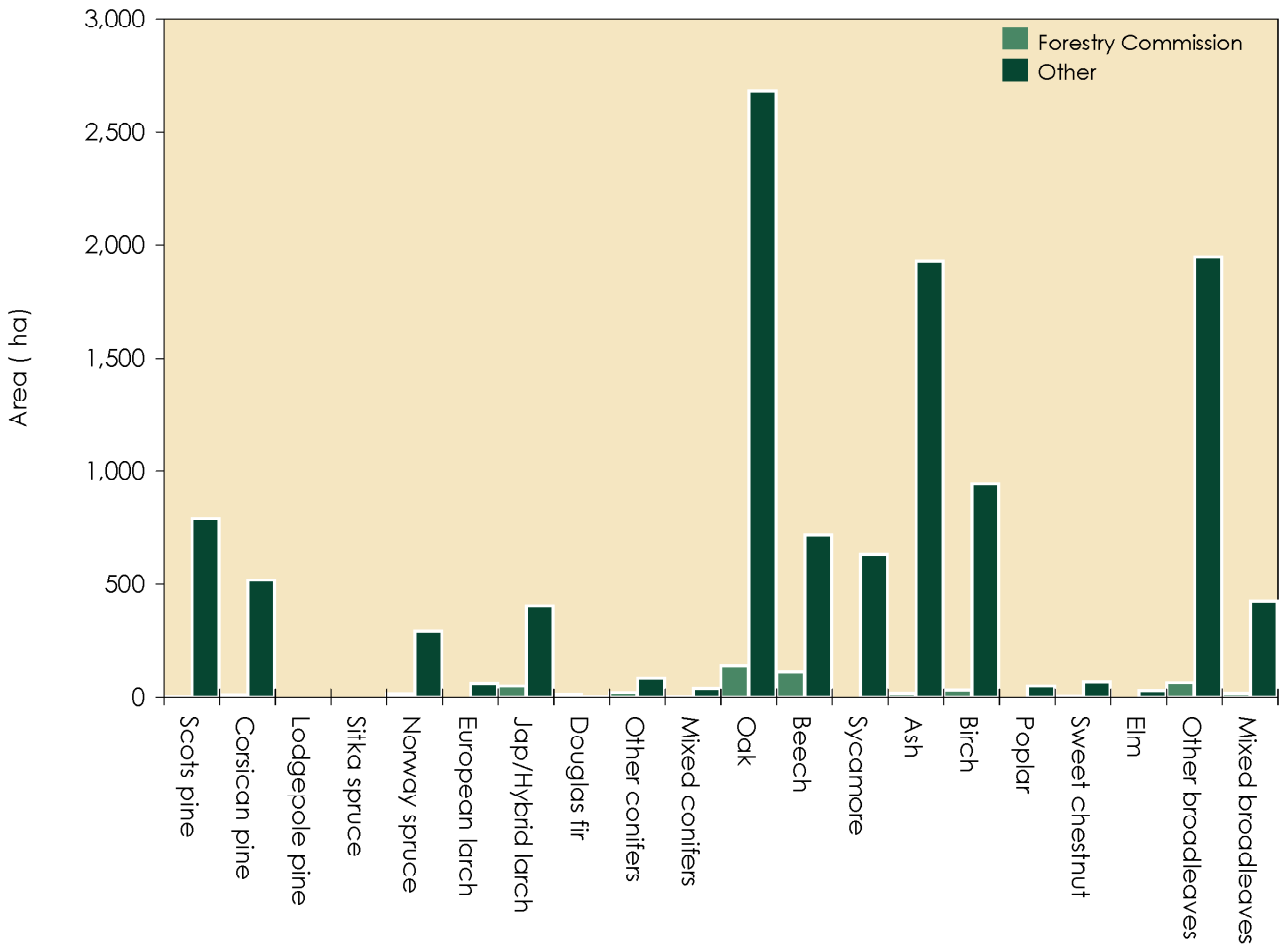
\*\*spp : percentage of all species in the ownership category



- In addition to the areas shown there are 599ha of other areas integral to the woodland not stocked with tree species.
- The standard errors of the all ownerships area estimates for the most common species or species groups are as follows;
 

Conifers	12%
Broadleaves	4%
Scots pine	24%
Oak	7%
Ash	11%
- Mixtures: where possible the species in mixtures have been separately recorded. Where this has not been possible they were described as 'Mixed conifers' or 'Mixed broadleaves'.
- Confidence Intervals: where the standard errors of these summary measures are 10% or less, the confidence intervals will be approximately symmetrical; the true value is expected to be within +/- one standard error for about 68% (or about two-thirds) of all cases, and within +/- two standard errors for about 95% of all cases. Where percentage standard errors are larger, e.g. for less common species or more variable species composition, the confidence intervals will be less symmetrical (and wider).

**Area of High Forest by principal species and ownership**



**Table 9b** Area of High Forest by principal species,ownership and category

Species	Forestry Commission			Other			All ownerships		
	cat. 1	cat. 2	Total (ha)	cat. 1	cat. 2	Total (ha)	cat. 1	cat. 2	Total (ha)
Scots pine	2	0	2	788	0	788	790	0	790
Corsican pine	9	0	9	516	0	516	525	0	525
Lodgepole pine	0	0	0	0	0	0	0	0	0
Sitka spruce	0	0	0	0	0	0	0	0	0
Norway spruce	13	0	13	291	0	291	305	0	305
European larch	0	0	0	56	3	59	56	3	59
Jap/Hybrid larch	47	0	47	403	0	403	451	0	451
Douglas fir	10	0	10	4	0	4	15	0	15
Other conifers	20	0	20	82	0	82	102	0	102
Mixed conifers	4	0	4	36	0	36	40	0	40
<b>Total conifers</b>	<b>106</b>	<b>0</b>	<b>106</b>	<b>2,176</b>	<b>3</b>	<b>2,179</b>	<b>2,282</b>	<b>3</b>	<b>2,286</b>
Oak	137	0	137	2,682	0	2,682	2,819	0	2,819
Beech	111	0	111	716	0	716	827	0	827
Sycamore	0	0	0	631	0	631	631	0	631
Ash	18	0	18	1,932	0	1,932	1,950	0	1,950
Birch	32	0	32	941	0	941	973	0	973
Poplar	0	0	0	48	0	48	48	0	48
Sweet chestnut	7	0	7	66	0	66	73	0	73
Elm	0	0	0	23	5	28	23	5	28
Other broadleaves	62	0	62	1,809	141	1,950	1,871	141	2,012
Mixed broadleaves	16	0	16	421	0	421	437	0	437
<b>Total broadleaves</b>	<b>382</b>	<b>0</b>	<b>382</b>	<b>9,269</b>	<b>146</b>	<b>9,416</b>	<b>9,652</b>	<b>146</b>	<b>9,798</b>
<b>Total - all species</b>	<b>489</b>	<b>0</b>	<b>489</b>	<b>11,445</b>	<b>150</b>	<b>11,595</b>	<b>11,934</b>	<b>150</b>	<b>12,083</b>

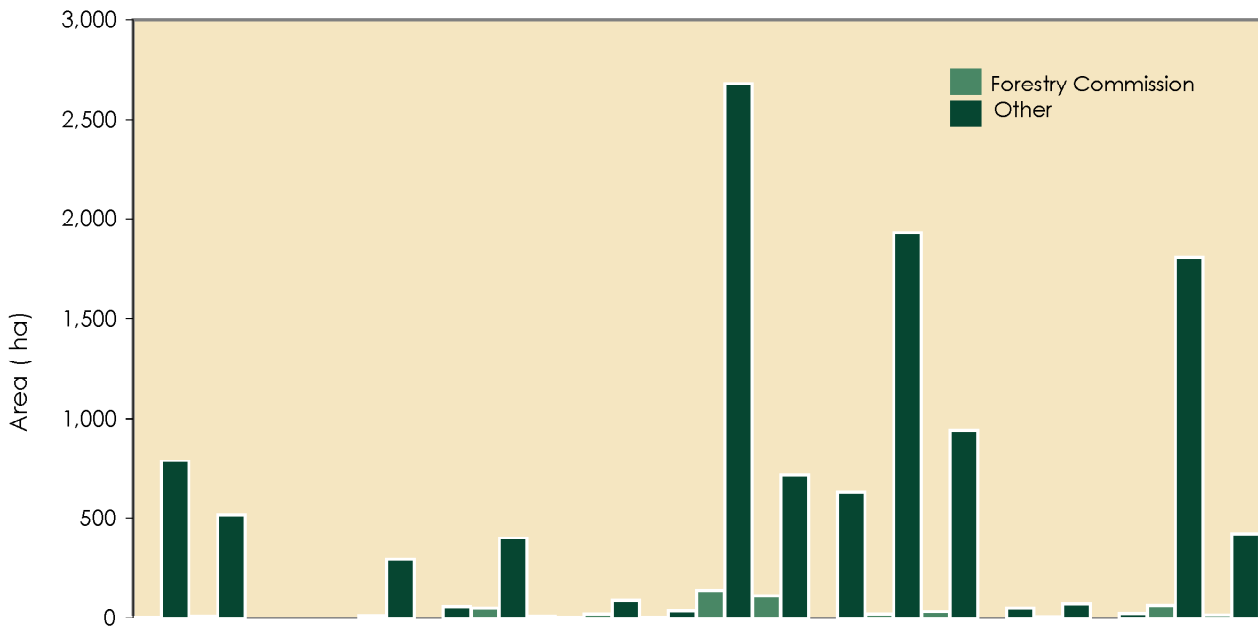
1. The standard errors of the all ownerships area estimates for the most common species or species groups (in all woodland types) are as follows

	Category 1*	Category 2*	Total High Forest	
Conifers	12%	-	12%	
Broadleaves	4%	23%	4%	
Scots pine	24%	-	24%	
Oak	9%	-	9%	
Ash	11%	-	11%	*See Glossary for Category 1 and Category 2 descriptions

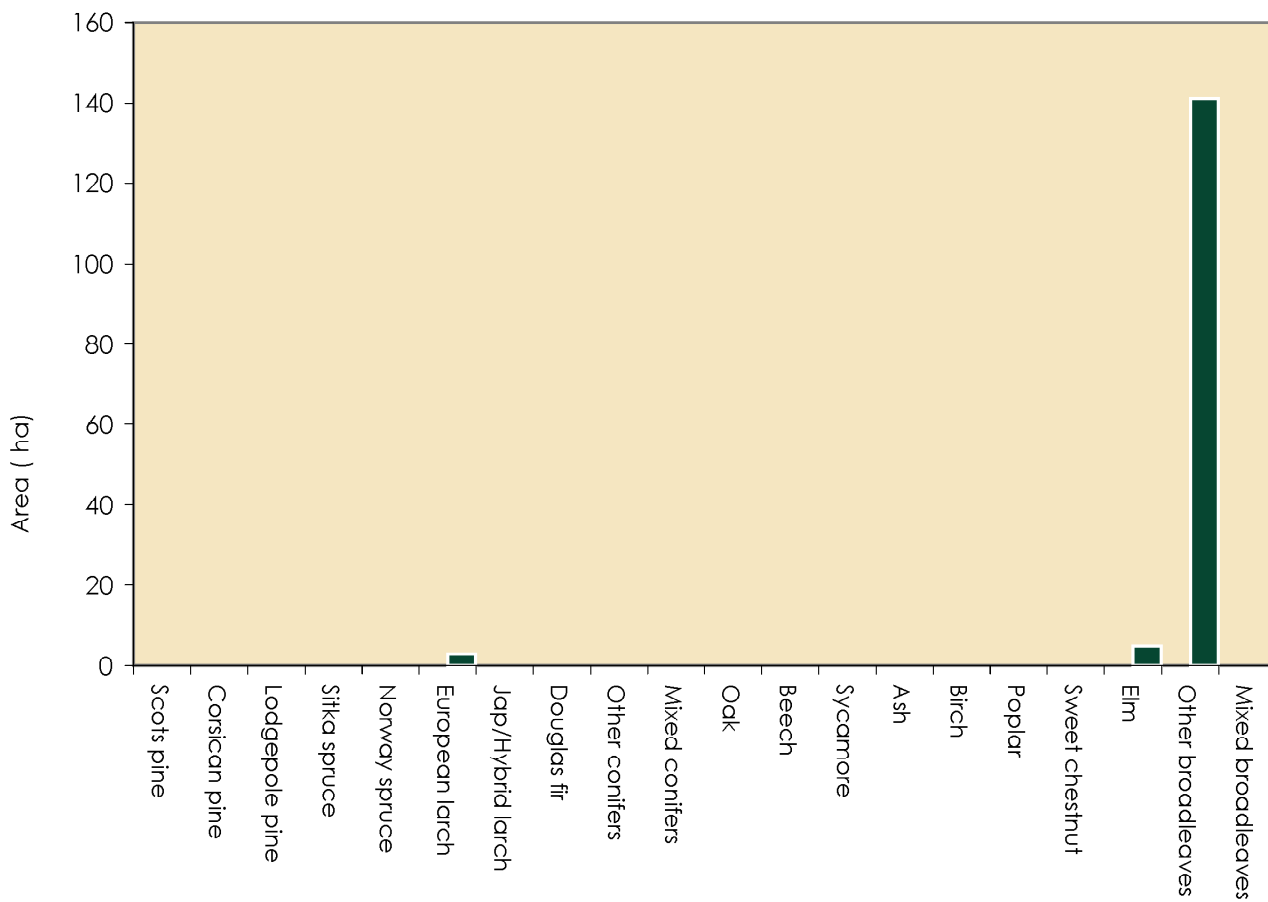
2. Where the standard errors of these summary measures are 10% or less, the confidence intervals will be approximately symmetrical; the true value is expected to be within +/- one standard error for about 68% (or about two-thirds) of all cases, and within +/- two standard errors for about 95% of all cases. Where percentage standard errors are larger, e.g. for less common species or more variable species composition, the confidence intervals will be less symmetrical (and wider).

3. Where possible the species in mixtures have been separately recorded. Where this has not been possible they were described as 'Mixed conifers' or 'Mixed broadleaves'.

High Forest Category 1 - Area by principal species and ownership



High Forest Category 2 - Area by principal species and ownership

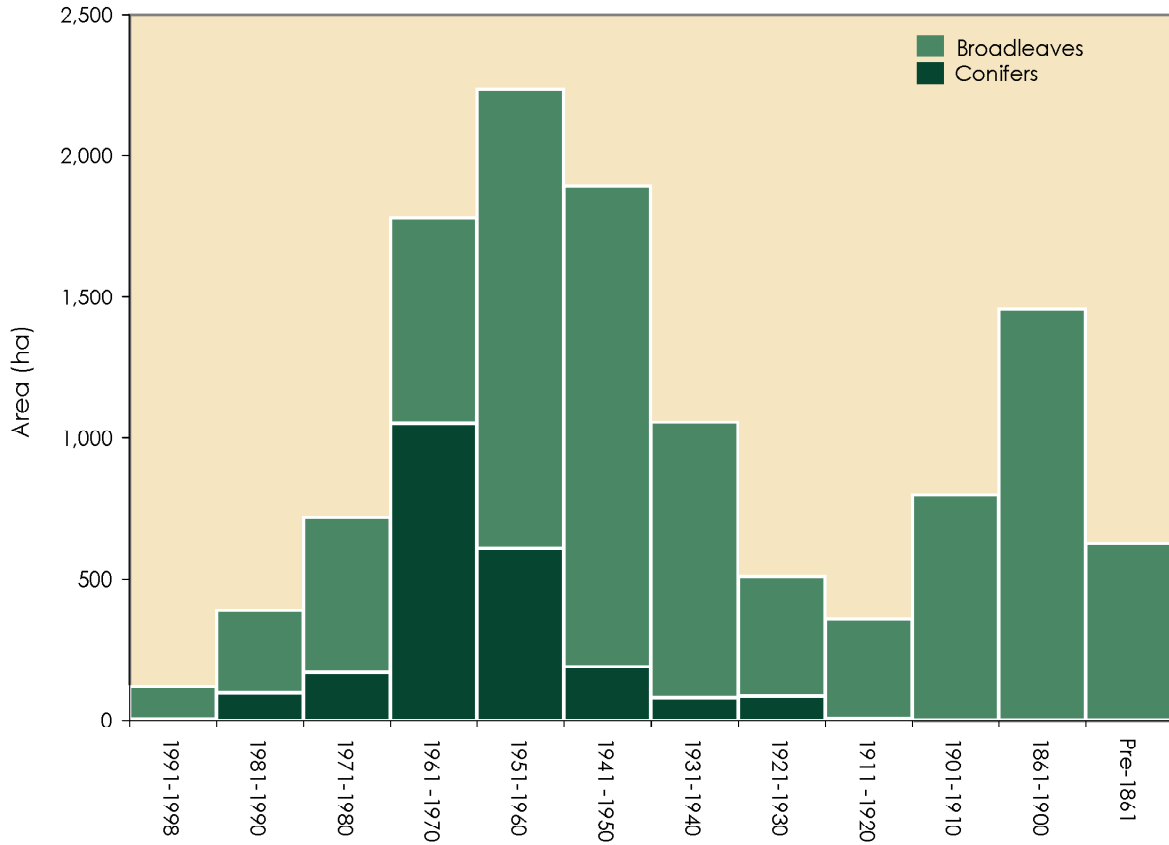


**Table 10a** High Forest Category 1 - Area by principal species and planting year class

Species	Planting year class*												Total (ha)
	1991-1998	1981-1990	1971-1980	1961-1970	1951-1960	1941-1950	1931-1940	1921-1930	1911-1920	1901-1910	1861-1900	Pre-1861	
Scots pine	3	0	89	342	260	26	38	32	0	0	0	0	790
Corsican pine	0	0	0	435	51	13	16	6	4	0	0	0	525
Lodgepole pine	0	0	0	0	0	0	0	0	0	0	0	0	0
Sitka spruce	0	0	0	0	0	0	0	0	0	0	0	0	0
Norway spruce	0	33	42	137	78	9	0	6	0	0	0	0	305
European larch	0	34	0	18	3	0	0	0	0	0	0	0	56
Jap/Hybrid larch	0	24	1	58	203	132	9	23	0	0	0	0	451
Douglas fir	0	0	4	2	2	5	0	0	0	0	0	0	15
Other conifers	0	4	29	56	0	0	8	6	0	0	0	0	102
Mixed conifers	0	0	1	4	10	4	9	11	0	0	0	0	40
<b>Total conifers</b>	<b>3</b>	<b>96</b>	<b>167</b>	<b>1,052</b>	<b>608</b>	<b>189</b>	<b>79</b>	<b>84</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2,282</b>
Oak	15	57	32	60	99	242	165	82	154	433	947	533	2,819
Beech	9	0	6	67	111	59	119	2	72	67	224	90	827
Sycamore	13	0	122	79	107	154	48	68	37	4	0	0	631
Ash	13	39	160	95	255	367	399	104	61	226	226	4	1,950
Birch	18	115	102	207	308	224	0	0	0	0	0	0	973
Poplar	4	0	0	0	25	19	0	0	0	0	0	0	48
Sweet chestnut	3	0	0	3	0	8	0	12	7	0	39	0	73
Elm	0	0	12	8	0	0	0	3	0	0	0	0	23
Other broadleaves	31	73	44	129	616	574	187	136	16	50	13	0	1,871
Mixed broadleaves	9	7	72	79	109	57	60	15	8	15	7	0	437
<b>Total broadleaves</b>	<b>114</b>	<b>292</b>	<b>550</b>	<b>726</b>	<b>1,629</b>	<b>1,705</b>	<b>978</b>	<b>424</b>	<b>354</b>	<b>796</b>	<b>1,457</b>	<b>627</b>	<b>9,652</b>
<b>Total - all species</b>	<b>118</b>	<b>388</b>	<b>717</b>	<b>1,777</b>	<b>2,237</b>	<b>1,895</b>	<b>1,057</b>	<b>507</b>	<b>358</b>	<b>796</b>	<b>1,457</b>	<b>627</b>	<b>11,934</b>

\*Age determined from records where these were available. Where records were not available or were clearly inaccurate age-class was assigned by reference to similar crops of known age in the locality.

High Forest Category 1 - Area by planting year class



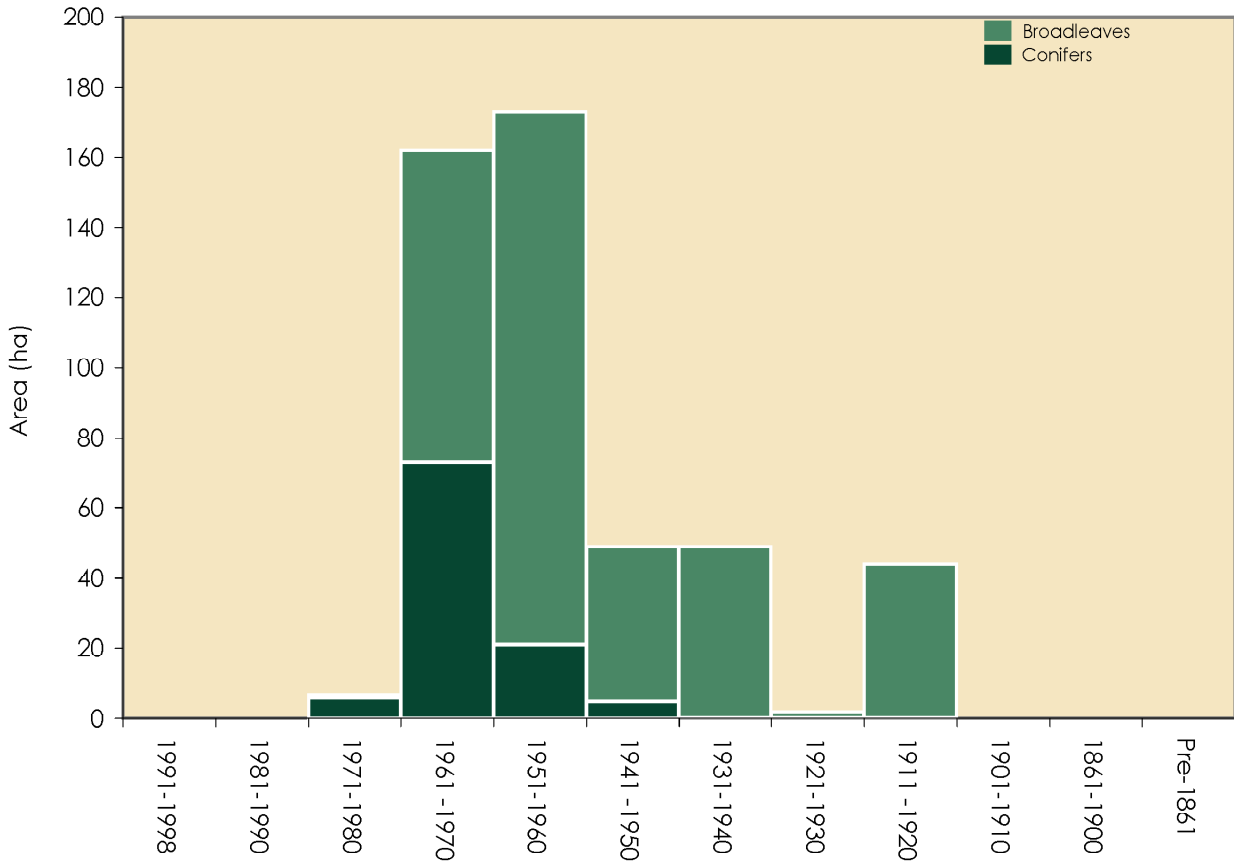
1. Most of the planting year classes cover 10 years, 1991-1998 is 8 years, and the classes prior to 1901 are 40 years or more.

**Table 10b** High Forest Category 1 - Forestry Commission : area by principal species and planting year classes

Species	Planting year class*												Total (ha)
	1991-1998	1981-1990	1971-1980	1961-1970	1951-1960	1941-1950	1931-1940	1921-1930	1911-1920	1901-1910	1861-1900	Pre-1861	
Scots pine	0	0	0	2	0	0	0	0	0	0	0	0	2
Corsican pine	0	0	0	0	9	0	0	0	0	0	0	0	9
Lodgepole pine	0	0	0	0	0	0	0	0	0	0	0	0	0
Sitka spruce	0	0	0	0	0	0	0	0	0	0	0	0	0
Norway spruce	0	0	3	10	0	0	0	0	0	0	0	0	13
European larch	0	0	0	0	0	0	0	0	0	0	0	0	0
Jap/Hybrid larch	0	0	1	39	7	0	0	0	0	0	0	0	47
Douglas fir	0	0	0	2	2	5	0	0	0	0	0	0	10
Other conifers	0	0	0	20	0	0	0	0	0	0	0	0	20
Mixed conifers	0	0	1	0	2	0	0	0	0	0	0	0	4
<b>Total conifers</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>73</b>	<b>21</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>106</b>
Oak	0	0	0	14	42	44	30	0	7	0	0	0	137
Beech	0	0	0	14	44	0	20	2	31	0	0	0	111
Sycamore	0	0	0	0	0	0	0	0	0	0	0	0	0
Ash	0	0	0	0	18	0	0	0	0	0	0	0	18
Birch	0	0	0	22	10	0	0	0	0	0	0	0	32
Poplar	0	0	0	0	0	0	0	0	0	0	0	0	0
Sweet chestnut	0	0	0	0	0	0	0	0	7	0	0	0	7
Elm	0	0	0	0	0	0	0	0	0	0	0	0	0
Other broadleaves	0	0	0	32	29	0	0	0	0	0	0	0	62
Mixed broadleaves	0	0	1	7	7	0	0	0	0	0	0	0	16
<b>Total broadleaves</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>89</b>	<b>152</b>	<b>44</b>	<b>49</b>	<b>2</b>	<b>44</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>382</b>
<b>Total - all species</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>163</b>	<b>173</b>	<b>49</b>	<b>49</b>	<b>2</b>	<b>44</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>489</b>

\*Age determined from records where these were available. Where records were not available or were clearly inaccurate age-class was assigned by reference to similar crops of known age in the locality.

High Forest Category 1 - Forestry Commission: area by planting year class



1. Most of the planting year classes cover 10 years, 1991-1998 is 8 years, and the classes prior to 1901 are 40 years or more.

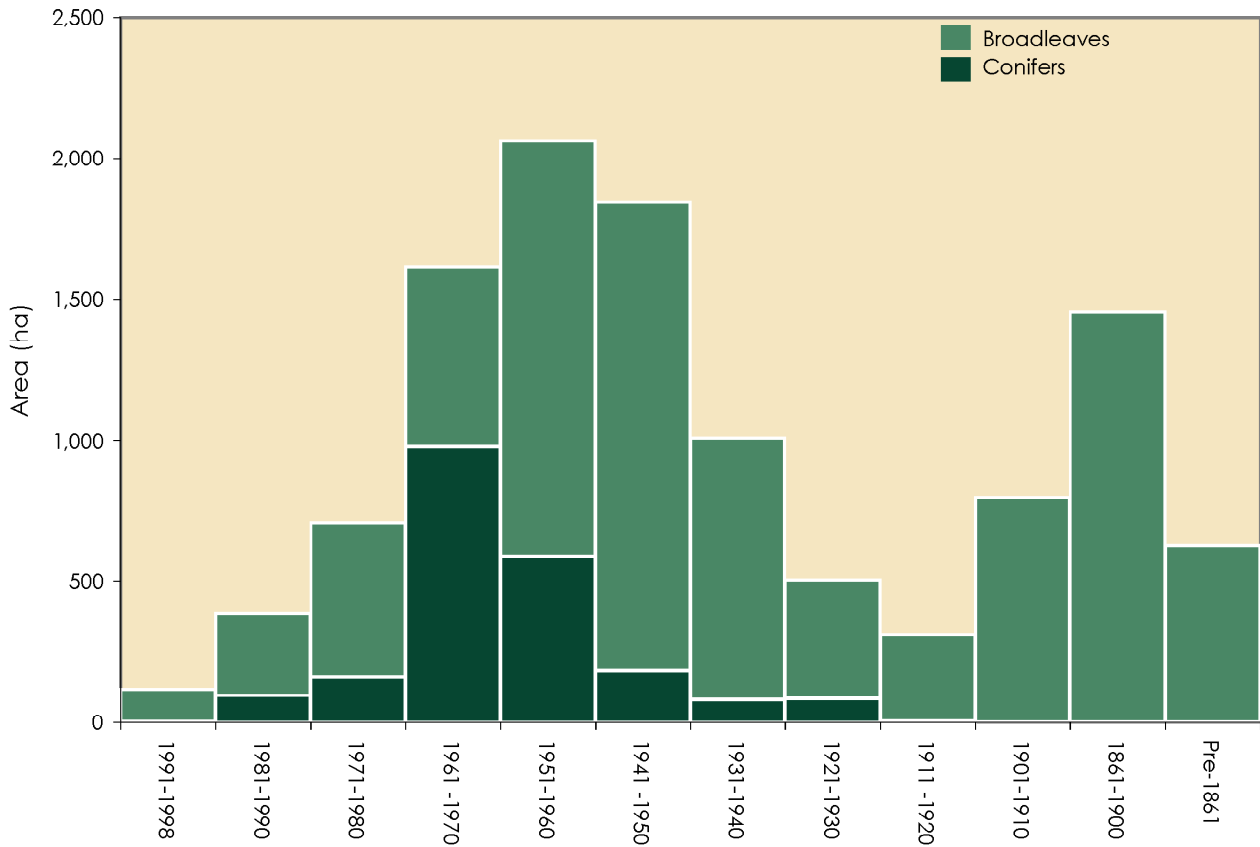
**Table 10c** High Forest Category 1 - Other ownership: area by principal species and planting year classes

Species	Planting year class*												Total (ha)
	1991-1998	1981-1990	1971-1980	1961-1970	1951-1960	1941-1950	1931-1940	1921-1930	1911-1920	1901-1910	1861-1900	Pre-1861	
Scots pine	3	0	89	340	260	26	38	32	0	0	0	0	788
Corsican pine	0	0	0	435	42	13	16	6	4	0	0	0	516
Lodgepole pine	0	0	0	0	0	0	0	0	0	0	0	0	0
Silka spruce	0	0	0	0	0	0	0	0	0	0	0	0	0
Norway spruce	0	33	38	127	78	9	0	6	0	0	0	0	291
European larch	0	34	0	18	3	0	0	0	0	0	0	0	56
Jap/Hybrid larch	0	24	0	19	196	132	9	23	0	0	0	0	403
Douglas fir	0	0	4	0	0	0	0	0	0	0	0	0	4
Other conifers	0	4	29	36	0	0	8	6	0	0	0	0	82
Mixed conifers	0	0	0	4	8	4	9	11	0	0	0	0	36
<b>Total conifers</b>	<b>3</b>	<b>96</b>	<b>161</b>	<b>978</b>	<b>587</b>	<b>184</b>	<b>79</b>	<b>84</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2,176</b>
Oak	15	57	32	45	56	198	136	82	147	433	947	533	2,682
Beech	9	0	6	53	67	59	99	0	42	67	224	90	716
Sycamore	13	0	122	79	107	154	48	68	37	4	0	0	631
Ash	13	39	160	95	237	367	399	104	61	226	226	4	1,932
Birch	18	115	102	185	297	224	0	0	0	0	0	0	941
Poplar	4	0	0	0	25	19	0	0	0	0	0	0	48
Sweet chestnut	3	0	0	3	0	8	0	12	0	0	39	0	66
Elm	0	0	12	8	0	0	0	3	0	0	0	0	23
Other broadleaves	31	73	44	97	587	574	187	136	16	50	13	0	1,809
Mixed broadleaves	9	7	71	72	102	57	60	15	8	15	7	0	421
<b>Total broadleaves</b>	<b>114</b>	<b>292</b>	<b>548</b>	<b>636</b>	<b>1,477</b>	<b>1,662</b>	<b>929</b>	<b>421</b>	<b>309</b>	<b>796</b>	<b>1,457</b>	<b>627</b>	<b>9,269</b>
<b>Total - all species</b>	<b>118</b>	<b>388</b>	<b>709</b>	<b>1,615</b>	<b>2,064</b>	<b>1,845</b>	<b>1,008</b>	<b>505</b>	<b>314</b>	<b>796</b>	<b>1,457</b>	<b>627</b>	<b>11,445</b>

\*Age determined from records where these were available. Where records were not available or were clearly inaccurate age-class was assigned by reference to similar crops of known age in the locality.



High Forest Category 1 - Other Ownership: area by planting year class



1. Most of the planting year classes cover 10 years. 1991-1998 is 8 years, and the classes prior to 1901 are 40 years or more.

**Table 11** High Forest : principal species by planting year class

Planting year class	First	%	Second	%	Third	%
1991-98	Other broadleaves	26	Birch	15	Oak	13
1981-90	Birch	29	Other broadleaves	21	Oak	14
1971-80	Ash	21	Sycamore	16	Birch	13
1961-70	Corsican pine	24	Scots pine	19	Birch	12
1951-60	Other broadleaves	30	Birch	13	Scots pine	11
1941-50	Other broadleaves	31	Ash	19	Oak	13
1931-40	Ash	38	Other broadleaves	18	Oak	16
1921-30	Other broadleaves	27	Ash	20	Oak	16
1911-20	Oak	43	Beech	20	Ash	17
1901-10	Oak	54	Ash	28	Beech	8
1861-1900	Oak	65	Ash	16	Beech	15
Pre 1861	Oak	85	Beech	14	Ash	1
<b>All years</b>	<b>Oak</b>	<b>23</b>	<b>Other broadleaves</b>	<b>17</b>	<b>Ash</b>	<b>16</b>

1. Principal species as a percentage of area in the planting year class.

**Table 12** Ownership type\* by area and percentage

Ownership type	Area (ha)	%
Personal	6,681	52.0
Business	2,946	23.0
Forestry or timber business	0	0.0
Charity	1,087	8.5
Local Authority	1,467	11.4
Other public (not FC)	134	1.0
Forestry Commission	491	3.8
Community ownership or common land	31	0.2
Unidentified	0	0.0
<b>Total</b>	<b>12,836</b>	<b>100.0</b>

\* This table is produced from data contributed on a voluntary basis by owners or their representatives.

**Ownership type by area**





## RESULTS FROM THE SURVEY OF SMALL WOODLAND AND TREES (SSWT)

### Survey Method

The land area of England was stratified into coastal and inland 1 km x 1 km squares and a random sample of 1 km<sup>2</sup> plots were then selected, representing around 1% of the land area. 1:25 000 scale aerial photos were then used to identify features in each sample square. Each 1 km<sup>2</sup> was then divided into 16 parts, and two of these were selected at random for field data collection. Data was collected on Small Woodlands (0.10 - <2.00 ha), Linear Features, Groups and Individual Trees. The survey did not collect information from areas of developed land of 2 hectares or more.

Table 13:	Summary of information from the Survey of Small Woodland and Trees
Table 14:	Woodland area by feature type and woodland size
Table 15:	Numbers of live trees outside woodland by species and feature type
Table 16 :	Numbers of dead trees outside woodland by species and feature type
Table 17:	Numbers of live trees outside woodland by species and height band
Table 18:	Numbers of Groups by group size

*Note: The figures in many of the tables may not add due to rounding*



**Table 13** Summary of information from the Survey of Small Woodlands and Trees

Feature type	Number of features	Total	Unit
Small Woods	4,826	2,667	Area (ha)
Wide Linear Features	0	0	Area (ha)
Wide Linear Features	0	0	Length (Km)
Narrow Linear Features	5,100	555	Length (Km)
Narrow Linear Features	5,100	351,800	Number of live trees
Groups	9,800	83,600	Number of live trees
Individual Trees	56,600	56,600	Number of live trees

1. See Glossary for definitions of feature types.

**Table 14** Woodland area by feature type and woodland size

Feature type	Woodland size (ha)		Total area (ha)	Number of features	Mean size (ha)
	0.1 - <0.25	0.25 - <2.0			
Small Woods	229	2,438	2,667	4,826	0.55
Wide Linear Features	0	0	0	0	0.00
<b>Total</b>	<b>229</b>	<b>2,438</b>	<b>2,667</b>	<b>4,826</b>	<b>0.55</b>

1. See Glossary for definitions of feature types.

**Table 15** Numbers of live trees outside woodland by species and feature type (000's trees)

Species	Feature type				Total live trees	Percent of total trees	
	Boundary Trees	Middle Trees	Groups	Narrow Linear Features		Category	Species
Pine	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Spruce	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Larch	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cypress	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other conifers	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total conifers</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
Oak	17.2	2.5	7.4	41.4	68.5	13.9	13.9
Beech	0.0	0.0	0.0	1.7	1.7	0.3	0.3
Sycamore	0.0	0.0	1.6	5.7	7.3	1.5	1.5
Ash	9.8	0.8	21.3	61.3	93.2	18.9	18.9
Birch	0.0	7.4	2.5	11.9	21.8	4.4	4.4
Poplar	3.3	0.0	9.0	6.2	18.5	3.8	3.8
Sweet chestnut	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Horse chestnut	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Alder	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lime	0.0	0.0	0.0	1.7	1.7	0.3	0.3
Elm	0.0	0.0	4.1	13.6	17.7	3.6	3.6
Willow	2.5	0.0	0.8	9.1	12.4	2.5	2.5
Other broadleaves	7.4	5.7	36.9	199.1	249.1	50.6	50.6
<b>Total broadleaves</b>	<b>40.2</b>	<b>16.4</b>	<b>83.6</b>	<b>351.8</b>	<b>491.9</b>	<b>100.0</b>	<b>100.0</b>
<b>Total - all species</b>	<b>40.2</b>	<b>16.4</b>	<b>83.6</b>	<b>351.8</b>	<b>491.9</b>		<b>100.0</b>

1. Percentages

Category : species percentage of conifer or broadleaved.  
Species : percentage of all species.

2. The standard errors of the total tree number estimates for these feature types are:

Individual Trees	34%
Groups	47%
Narrow Linear Features	48%

3. See Glossary for definitions of feature types.



**Table 16** Numbers of dead trees outside woodland by species and feature type (000's trees)

Species	Feature type				Total dead trees	Percent of total trees	
	Boundary Trees	Middle Trees	Groups	Narrow Linear Features		Category	Species
Pine	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Spruce	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Larch	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cypress	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other conifers	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total conifers</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
Oak	0.8	0.0	0.0	2.3	3.1	100.0	100.0
Beech	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sycamore	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ash	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Birch	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Poplar	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sweet chestnut	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Horse chestnut	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Alder	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lime	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Elm	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Willow	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other broadleaves	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total broadleaves</b>	<b>0.8</b>	<b>0.0</b>	<b>0.0</b>	<b>2.3</b>	<b>3.1</b>	<b>100.0</b>	<b>100.0</b>
<b>Total - all species</b>	<b>0.8</b>	<b>0.0</b>	<b>0.0</b>	<b>2.3</b>	<b>3.1</b>		<b>100.0</b>

1. See Glossary for definitions of feature types.

**Table 17** Numbers of live trees outside woodland by species and height band (000's trees)

Species	Height band (m)				Total live trees
	2-5	5-15	15-20	>20	
Pine	0.0	0.0	0.0	0.0	0.0
Spruce	0.0	0.0	0.0	0.0	0.0
Larch	0.0	0.0	0.0	0.0	0.0
Cypress	0.0	0.0	0.0	0.0	0.0
Other conifers	0.0	0.0	0.0	0.0	0.0
<b>Total conifers</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
Oak	0.8	31.4	34.3	2.0	68.5
Beech	0.0	1.7	0.0	0.0	1.7
Sycamore	1.1	3.3	1.7	1.1	7.2
Ash	5.7	46.9	36.9	3.7	93.2
Birch	2.5	7.4	11.9	0.0	21.8
Poplar	0.0	12.3	6.2	0.0	18.5
Sweet chestnut	0.0	0.0	0.0	0.0	0.0
Horse chestnut	0.0	0.0	0.0	0.0	0.0
Alder	0.0	0.0	0.0	0.0	0.0
Lime	0.0	1.7	0.0	0.0	1.7
Elm	17.7	0.0	0.0	0.0	17.7
Willow	5.4	4.5	0.8	1.7	12.4
Other broadleaves	161.4	59.9	27.8	0.0	249.1
<b>Total broadleaves</b>	<b>194.7</b>	<b>169.1</b>	<b>119.7</b>	<b>8.4</b>	<b>491.9</b>
<b>Total - all species</b>	<b>194.7</b>	<b>169.1</b>	<b>119.7</b>	<b>8.4</b>	<b>491.9</b>

**Table 18** Number of Groups by group size

Number of trees per Group*	Number of Groups (000's)
2	1
3-5	2
6-10	3
11-20	1
21-50	3
51-100	0
>100	0
<b>Total</b>	<b>10</b>

\*The size of the group is determined by the total number of trees, live plus dead.



## COMPARISON OF RESULTS WITH THE 1980 CENSUS AND PREVIOUS SURVEYS

### Survey Method

The 1980 Census and 1998 Inventory were undertaken using very different sampling methods.

Inventory practice and technology have moved on since the 1980 Census; this has led to changes in sampling methodology, scope and woodland definitions. For example, the Main Woodland Survey used the digital woodland map, created from aerial photos as a basis for sampling whereas the 1980 Census relied only on the woodland shown on the 1:50,000 Ordnance Survey map. Also in contrast to the 1980 Census, the Survey of Small Woodland and Trees did not record information within developed land e.g. residential or industrial areas of 2 or more hectares.

Where possible adjustments have been made to both the 1980 Census and the Inventory to achieve the nearest available comparison. The apparent changes indicated in the following tables and charts should therefore be treated with caution, particularly where areas are small.

Table 19:	Comparison of woodland area between 1980 Census and 1998 Inventory
Table 20:	Comparison of High Forest area by species between 1980 Census and 1998 Inventory
Chart:	Comparison of High Forest area by species between 1980 Census and 1998 Inventory
Table 21:	Comparison of High Forest Category 1 area by planting year class between 1980 Census and 1998 Inventory
Chart:	Comparison of High Forest Category 1 area by planting year class between 1980 Census and 1998 Inventory
Table 22:	Comparison of numbers of live trees outside woodland between 1980 Census and 1998 Inventory
Table 23:	Comparison of density of non-woodland features between 1980 Census and 1998 Inventory

### Woodland cover

Chart	Change in woodland cover through time (1890 – 2000)
Maps:	Woodland by county through time (1895 – 1998)

*Note: The figures in many of the tables may not add due to rounding*



**Table 19** Comparison of woodland area between 1980 Census and 1998 Inventory

Woodland size (ha)	1980 Census woodland area		1998 Inventory woodland area		Change (%)
	(ha)	(%)	(ha)	(%)	(%)
2.0 or more	11,278	91.2	12,836	84.0	14
0.25 - <2.0	1,092	8.8	2,438	16.0	123
<b>Total</b>	<b>12,370</b>		<b>15,274</b>		<b>23</b>
<b>% Woodland land cover</b>	<b>7.6</b>		<b>9.3</b>		

1. Differences in sampling methodology may account for some of the apparent differences.
2. The above figures from the 1998 Inventory exclude woodland between 0.1 and <0.25 ha, thereby matching the scope of the 1980 Census. The 1998 figures above will therefore not match those in the previous sections of the report.
3. Land area used to calculate woodland cover percent (1998), 163,928 ha, was based on the 1991 Census of Population digital boundaries.
4. Land area used to calculate woodland cover percent (1980), 163,418 ha, (Ordnance Survey data)

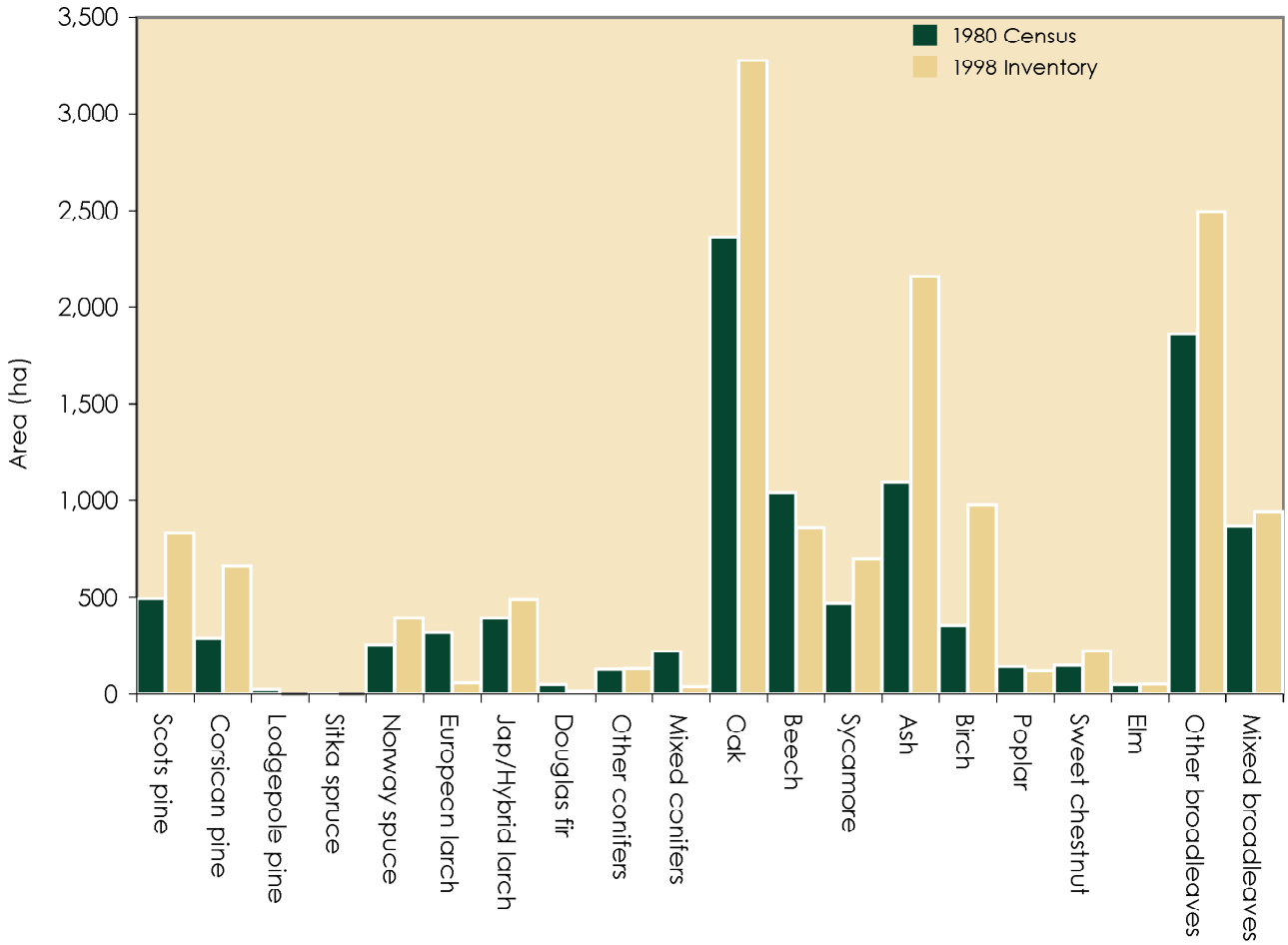
**Table 20** Comparison of High Forest area by species between 1980 Census and 1998 Inventory

Species	1980 Census woodland area (ha)	1998 Inventory woodland area (ha)	Change (%)
Scots pine	494	834	69
Corsican pine	292	665	128
Lodgepole pine	26	0	-100
Sitka spruce	5	0	-100
Norway spuce	256	394	54
European larch	321	59	-82
Jap/Hybrid larch	393	489	24
Douglas fir	50	15	-70
Other conifers	134	134	0
Mixed conifers	220	40	-82
<b>Total conifers</b>	<b>2,190</b>	<b>2,630</b>	<b>20</b>
Oak	2,362	3,276	39
Beech	1,044	859	-18
Sycamore	470	701	49
Ash	1,096	2,160	97
Birch	358	979	173
Poplar	147	124	-16
Sweet chestnut	152	225	48
Elm	51	53	4
Other broadleaves	1,863	2,495	34
Mixed broadleaves	869	945	9
<b>Total broadleaves</b>	<b>8,412</b>	<b>11,817</b>	<b>40</b>
<b>Total all species</b>	<b>10,602</b>	<b>14,447</b>	<b>36</b>
<b>Felled</b>	<b>755</b>	<b>57</b>	<b>-92</b>
<b>Total High Forest</b>	<b>11,357</b>	<b>14,504</b>	<b>28</b>

1. Differences in sampling methodology may account for some of the apparent differences.
2. In the 1980 Census the areas assigned to species included any associated open space such as roads and rides. In the Inventory open spaces are separately identified and the overall proportion is 3.9% (Table 2). To obtain meaningful comparisons between the two datasets the 1980 Census data have therefore been reduced by 3.9%.
3. The above figures from the 1998 Inventory exclude woodland between 0.1 and <0.25 ha, thereby matching the scope of the 1980 Census. The 1998 figures above will therefore not match those in the previous sections of the report.
4. The 1980 figures include scrub to enable comparison



Comparison of High Forest area by species between 1980 Census and 1998 Inventory

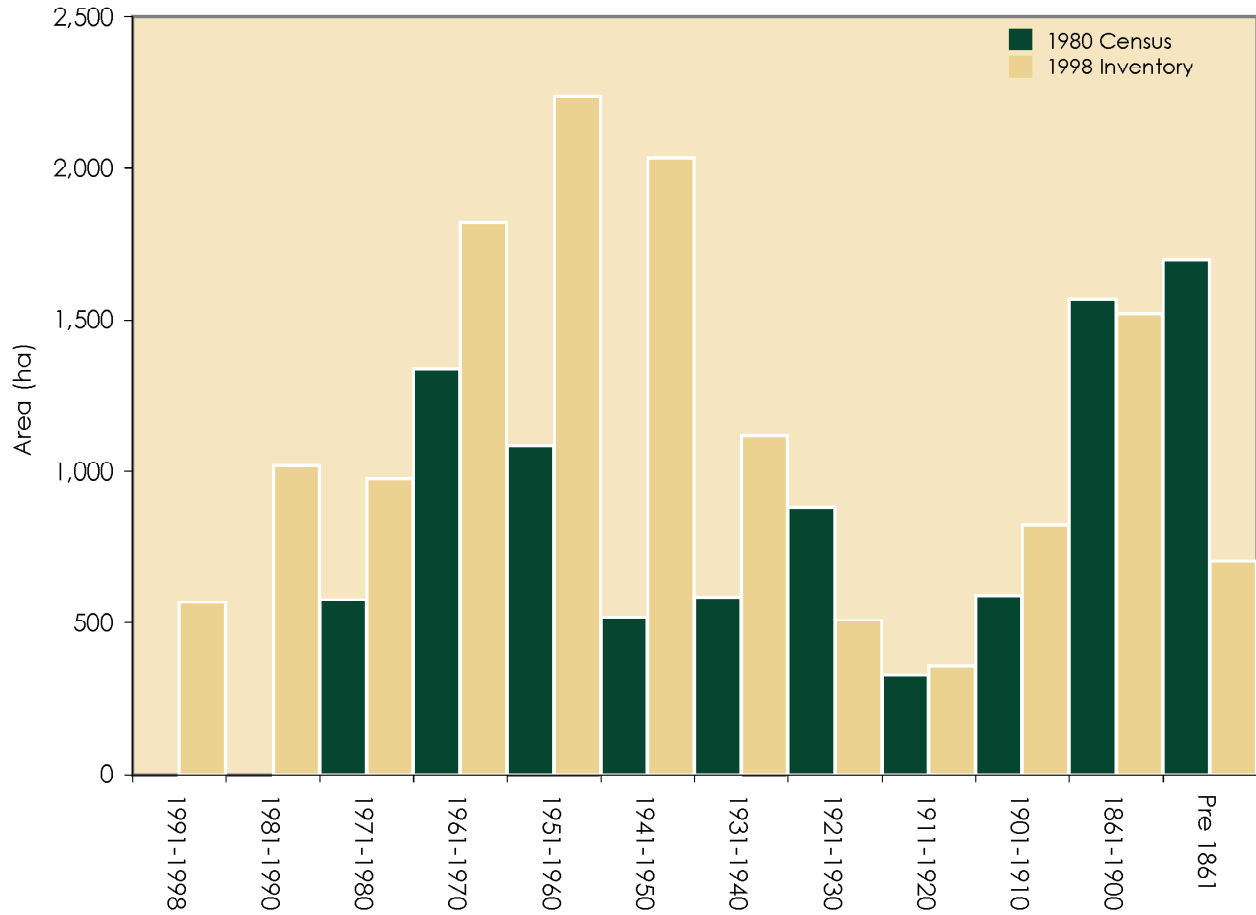


**Table 21** Comparison of High Forest Category 1 area by planting year class between 1980 Census and 1998 Inventory

Planting year class	1980 Census woodland area (ha)	1998 Inventory woodland area (ha)	Change (%)
1991-1998	0	568	see note
1981-1990	0	1,017	see note
1971-1980	576	977	70
1961-1970	1,338	1,822	36
1951-1960	1,086	2,237	106
1941-1950	519	2,034	292
1931-1940	586	1,120	91
1921-1930	881	508	-42
1911-1920	330	358	8
1901-1910	591	821	39
1861-1900	1,569	1,520	-3
Pre 1861	1,697	703	-59
<b>Total all years</b>	<b>9,173</b>	<b>13,685</b>	<b>49</b>

1. The first two classes, 1991-1998 and 1981-1990, cover the period since the 1980 Census and no comparison is therefore available.
2. The definition of High Forest Category 1 in the Inventory does not fully coincide with High Forest as defined in the 1980 Census.

Comparison of High Forest Category 1 area by planting year class between 1980 Census and 1998 Inventory



**Table 22** Comparison of numbers of live trees outside woodland  
between 1980 Census and 1998 Inventory (000's)

Tables 22 and 23 have been excluded from this report. The Survey of Small Woodland and trees does not record information referring to tree features (I.e. Individual trees, Groups and Narrow Linear Features) within developed land. In this respect the survey differs markedly from the 1980 Census. Hertfordshire included a substantial proportion of developed land making comparison inappropriate.

**Table 23** Comparison of density of non-woodland features between 1980  
Census and 1998 Inventory

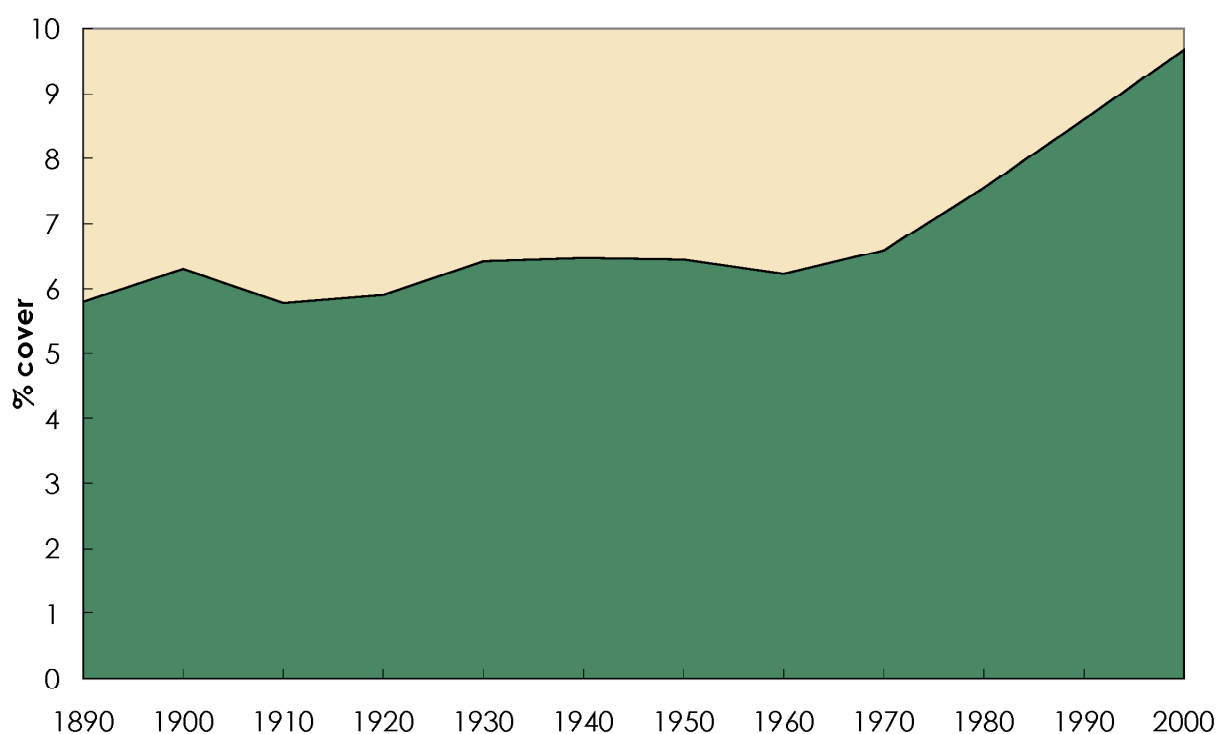
Tables 22 and 23 have been excluded from this report. The Survey of Small Woodland and trees does not record information referring to tree features (I.e. Individual trees, Groups and Narrow Linear Features) within developed land. In this respect the survey differs markedly from the 1980 Census. Hertfordshire included a substantial proportion of developed land making comparison inappropriate.

## WOODLAND COVER

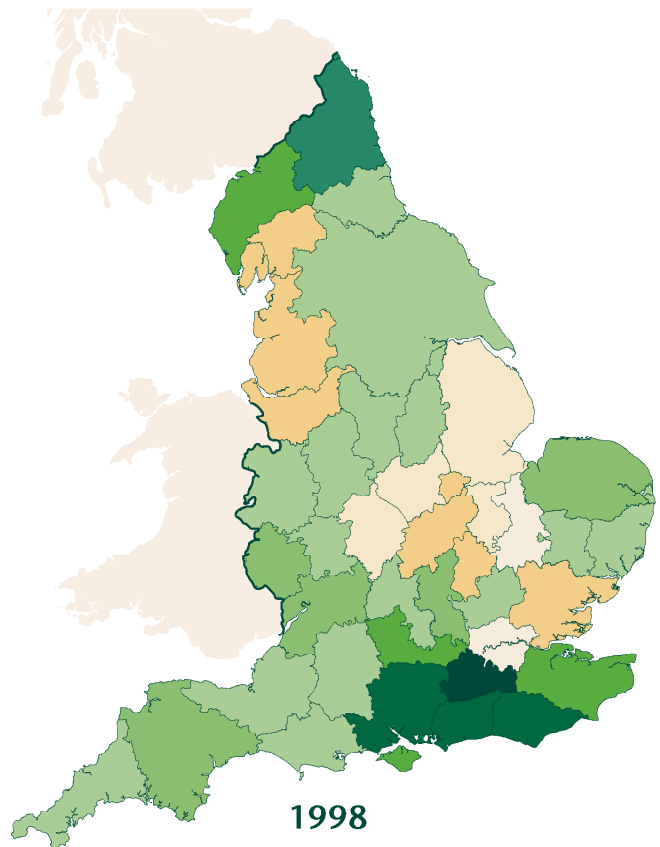
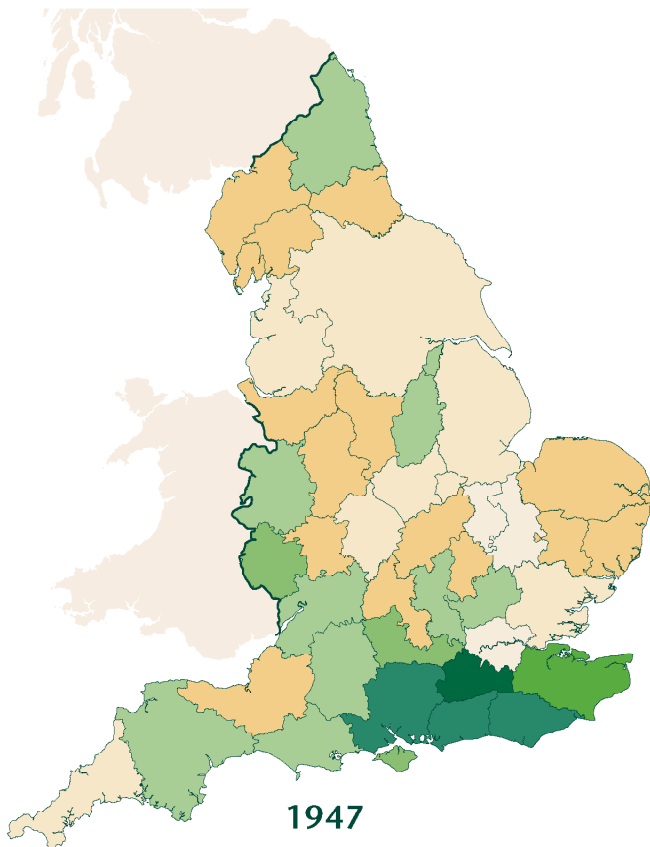
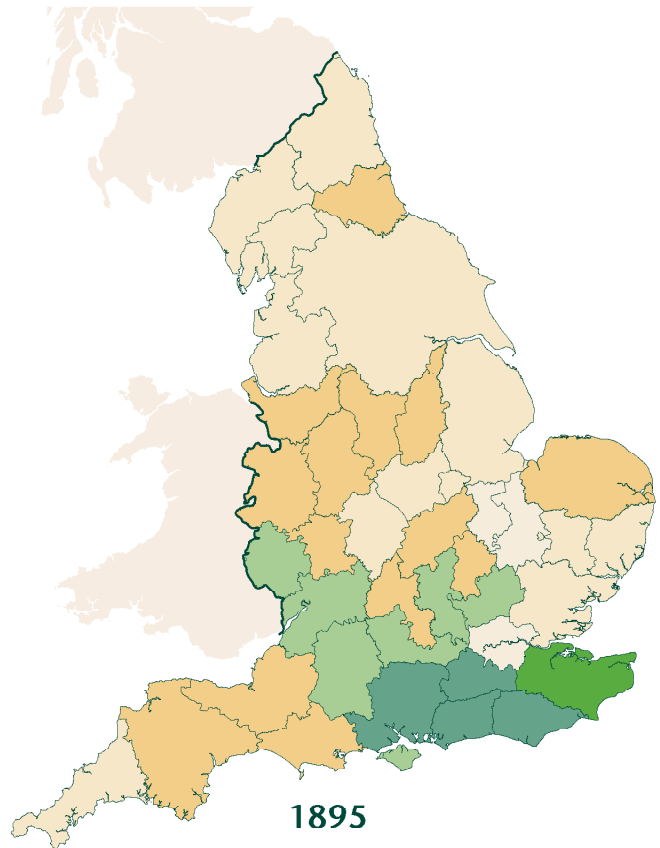
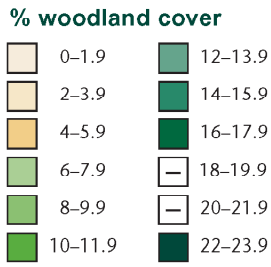
Woodland area data is available from Ministry of Agriculture surveys since 1871, and from Forestry Commission national woodland inventories since 1924. The following chart and maps show the changes in woodland area through time.

The maps use the old County structure data of England, as reported on in 1895 and 1947. The data from these counties could not be re-worked for different geographic areas. In contrast, the digital woodland map, which forms the basis of the current inventory, can be analysed for any geographic area.

**Change in county woodland cover through time (1890 – 2000)**



### Map 5 Woodland Cover in England by County through time (1895–1998)



# GLOSSARY

## Woodland

In the United Kingdom woodland is defined as land with a minimum area of 0.1 ha under stands of trees with, or the potential to achieve, tree crown cover of more than 20%. Areas of open space integral to the woodland are also included. Orchards and urban woodland between 0.1 and 2 ha are excluded. Intervening land-classes such as roads, rivers or pipelines are disregarded if less than 50m in extent. 'Scrubby' vegetation is not included as a separate category but as Conifer, Broadleaved or Mixed tree types. There is additional information on the quality of woodland within the inventory database.

Woodland of 2 ha and over, and with a minimum width of 50m, is included in the Main Woodland Survey; other woodland and trees are assessed in the Survey of Small Woodland and Trees.

## Interpreted Forest Types

The woodland map derived from aerial photographs is differentiated into Interpreted Forest Types (IFTs) which are: Conifer, Broadleaved, Mixed, Coppice, Coppice-with-Standards, Shrubs, Young Trees, Ground Prepared for Planting and Felled. Note that forest types (see below) based on ground survey data are used for reporting purposes because they are more reliable.

## High Forest

All woodland except stands managed as Coppice or Coppice-with-Standards with, or with the potential to achieve a tree cover of more than 20%. Two categories of High Forest are recognised:

- **High Forest Category 1**  
Stands which are, or could become, capable of producing wood of a size and quality suitable for sawlogs.
- **High Forest Category 2**  
Stands of lower quality than High Forest Category 1.

## Mixtures

Where possible the species in mixtures have been separately recorded. Where this has not been possible they were described as 'Mixed conifers' or 'Mixed broadleaves'.

## Forest Types

- **Conifer**  
Woodland containing more than 80% by area of coniferous species.
- **Broadleaved**  
Woodland containing more than 80% by area of broadleaved species.
- **Mixed**  
A combination of broadleaved and coniferous species where each category occupies at least 20% of the canopy (see note on mixtures above.)

- **Coppice**

Crops of marketable broadleaved species that have at least 2 stems per stool and are either being worked or are capable of being worked on rotation. With the exception of hazel coppice more than half the stems should be capable of producing 1m timber lengths of good form.

- **Coppice with Standards**

Two-storey stands where the overstorey consists of at least 25 stems per ha that are older than the understorey of worked coppice by at least one coppice rotation.

- **Felled**

Woodland areas that have been felled or stands where the stocking has been reduced to less than 20% and where it is expected that these areas will be replanted.

- **Windblow**

Areas of blown woodland which remain uncleared and not regenerated.

- **Open Space**

Areas within a woodland that are not covered by trees but are integral to the woodland such as open areas, streamsides, deer glades, rides and forest roads.

### Ownership types

- **Other Ownership**

Woodland other than that owned by, or leased to, the Forestry Commission

- **Personal**

types of private occupation, e.g. individuals, private family trusts and family partnerships.

- **Private forestry or timber business**

owned by wood processing industry. This category does not include forest management companies.

- **Other private business**

occupiers, e.g. companies, partnerships, syndicates and pension funds.

- **Local Authority**

Region, County, District or other Council

- **Other public bodies (not FC)**

Government department/agency, nationalised industry, etc.

- **Charitable organisations**

organisations funded by voluntary public subscription, e.g. National Trust, churches and colleges.



**- Community ownership or common land**

the common property of all members of the community.

- **Forestry Commission**

Land owned by or land leased to the Forestry Commission

**Feature types**

- **Small Wood**

A woodland with an area of 0.1 ha or over but less than 2 ha.

- **Group**

A group containing two or more trees with an area less than 0.1ha.

- **Individual Tree**

A tree the crown of which has no contact with any other tree crown and which is at least 2m tall. Two types of individual tree are recognised:

- Boundary Tree (an Individual Tree on any boundary)

- Middle Tree (an Individual Tree not on a boundary)

- **Linear Feature**

A feature with a length of 25 m or more, and one which is at least four times as long as it is broad. It can be up to 50m wide or as narrow as a single line of trees. Two types of Linear Features are recognised:

- Narrow Linear Features (with a width of 1.6 m or less)

- Wide Linear Features (with a width greater than 1.6 m)

## NOTES



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