



Forestry Commission

INVENTORY REPORT

# National Inventory of Woodland and Trees



**Scotland -  
Tayside Region**

**Part 1 - Woodlands of 2 hectares and over**





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### **Part 1 - Woodlands of 2 hectares and over**

**Woodland Surveys, Forest Research**



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# CONTENTS

<b>Acknowledgements</b>	<b>iv</b>
<b>Introduction</b>	<b>1</b>
Background	1
Survey Method	1
Main Points from the Tayside Results	2
Map 1    Distribution of Woodland within Tayside Region	3
Map 2    Distribution of Woodland by Ownership within Tayside Region	4
<b>Results</b>	<b>5</b>
Table 1   Summary of Areas by Ownership	5
Chart    Woodland Area by Ownership	5
Table 2a Size Class Distribution of Woodland	6
Table 2b Size Class Distribution of Woodland by Ownership Units	6
Table 3   Areas of Woodland by Forest Type and Ownership	7
Chart    Percentage Forest Type by Area - All Woodland	7
Table 4a Areas of High Forest by Principal Species and Ownership	8
Graph    Areas of High Forest by Principal Species and Ownership	9
Table 4b High Forest - Areas by Principal Species, Ownership and Category	10
Graph    High Forest Category 1 - Areas by Principal Species and Ownership	11
Graph    High Forest Category 2 - Areas by Principal Species and Ownership	11
Table 5a High Forest Category 1 - Areas by Principal Species and Planting Year Classes	12
Graph    High Forest Category 1 - Areas by Planting Year Class	13
Table 5b High Forest Category 1 - Forestry Commission - Areas by Principal Species and Planting Year Classes	14
Graph    High Forest Category 1 - Forestry Commission - Areas by Planting Year Class	15
Table 5c High Forest Category 1 - Other Ownerships - Areas by Principal Species and Planting Year Classes	16
Graph    High Forest Category 1 - Other Ownerships - Areas by Planting Year Class	17
Table 6   High Forest - Principal Species by Planting Year Classes	18
Table 7   Ownership Type by Area and Percentage	18
<b>Comparison of Results with the 1980 Census</b>	<b>19</b>
Table 8   Woodland Areas and Ownership	19
Table 9   Comparison between 1995 Inventory and 1980 Census	
High Forest - Areas by Principal Species	20
Graph    Comparison between 1995 Inventory and 1980 Census	
High Forest - Areas by Principal Species	21
Graph    Comparison between 1995 Inventory and 1980 Census	
High Forest Category 1 - Areas by Planting Year Class	21
<b>Glossary</b>	<b>22</b>

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Staff concerned with the survey work were: Douglas Wright, Head of Woodland Surveys Branch (to Dec.1997), who was in overall charge. Alex Herd (Survey Officer) supervised the fieldwork which was undertaken by Nick Evans (Survey Forester) and Julia Tilson, Andrew Wright, Claire Glaister and Harriet Lindsay (Survey Assistants). Simon Gillam (Head of Statistics) provided valuable statistical advice.

Preparation of the digital cartography for the Region was carried out by Graham Bull, Woodland Survey Officer, and Woodland GIS Officers Chris Brown, Esther Whitton and Robert Beck.

The authors of this Report are Steve Smith, Head of Woodland Surveys and Justin Gilbert, Woodland Data Officer.

# INTRODUCTION

The following report presents the results of the main woodland survey for Tayside Region from the Forestry Commission National Inventory of Woodlands and Trees.

The Inventory consists of two parts:

**Part 1: the main woodland survey covering woodlands of 2 or more hectares and**

**Part 2: the small woodland and trees survey covering small woodlands, groups of trees and individual trees.**

The results which follow are for Part 1, the main woodland survey, with a reference date of 31 March 1995. Woodland Surveys Branch of Forest Research was responsible for carrying out the survey and for compiling the report.

Part 2 of the Inventory will be published separately in 2000.

## BACKGROUND

The Forestry Commission has carried out a number of national woodland surveys since 1924 with the interval between surveys being 15–20 years. The most recent of these surveys was in 1979–82. With the statistics becoming increasingly out of date the Forestry Commission decided to undertake a new survey called the National Inventory of Woodland and Trees.

The aim is to complete the survey for Great Britain by March 2001. Priority is being given to Scotland followed by Southern England, Wales and Northern England.

Although Tayside Region ceased to exist as a local authority on 31 March 1996 it remains a useful geographical unit for presentation and also for comparison with results from the previous survey.

## SURVEY METHOD

In Scotland the main survey has been able to use the digital map from the Land Cover of Scotland (LCS) 1988 project.

For Tayside Region, this digital map has been updated to 31 March 1995 and gives the extent of all woodland over 2 hectares. The total area of woodland in Tayside 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:

- a) 2.0 ha - <100 ha : every fifth wood
- b) 100 ha - <500 ha : two woods in five
- c) 500 ha 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.

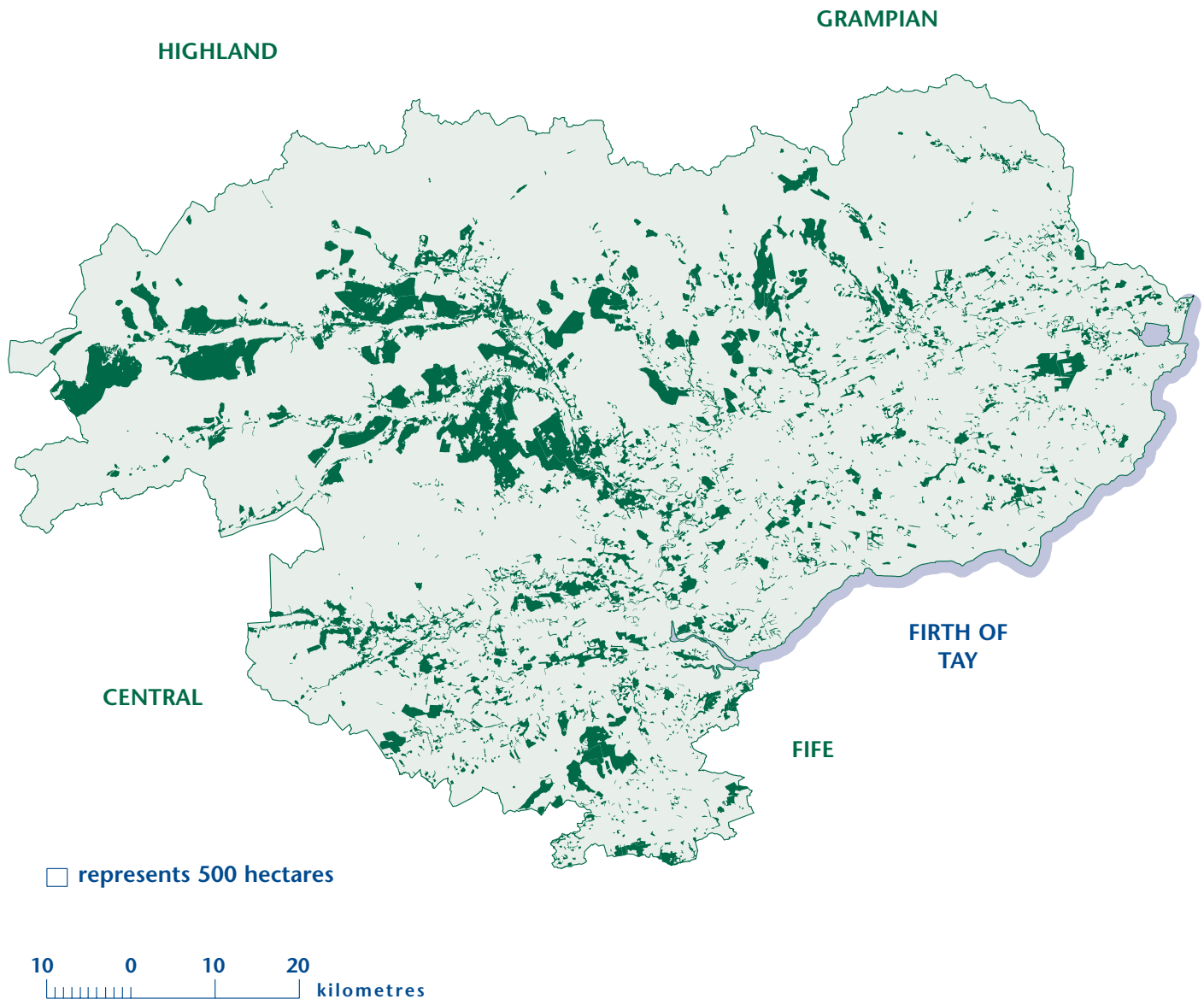
The main difference from the 1980 Census is the change in the minimum woodland area from 0.25 to 2.0 hectares. This means at this stage that the results of the main survey in the Inventory can only be compared approximately with the 1980 Census. However, when the next part of the Inventory is completed data will be available for Small Woodland between 0.25 and 2.0 hectares. This will make an analysis of change possible using comparable sets of information.

## MAIN POINTS FROM THE TAYSIDE RESULTS

- The total area of woodland in Tayside Region is 97 818 hectares. This represents 12.9% of the land area. (Table 1)
- 33 908 hectares or 35% of woodland is owned by or leased to the Forestry Commission and 63 910 hectares or 65% of woodland is in Other ownerships. (Table 1)
- There are a total of 2392 woods over 2 hectares within Tayside Region with a mean wood area of 41 hectares. (Table 2a)
- Conifer woodland is the dominant forest type representing 61% of all woodland. Broadleaved woodland represents 19%, mixed woodland 7% and open space within woodlands 11%. (Table 3)
- The main conifer species is Sitka spruce covering 28 374 hectares or 45% of all conifer species. 54% of all conifers are within Other ownerships. (Table 4a)
- The main broadleaved species is Birch covering 8 572 hectares or 38% of all broadleaved species. 92% of all broadleaves are within Other ownerships. (Table 4a)
- Woodland land cover has increased by 24 735 hectares from 9.6% to 12.9% of the land area since 1980. (Table 8)

## MAP 1 - DISTRIBUTION OF WOODLAND WITHIN TAYSIDE REGION

 Woodland over 2 hectares



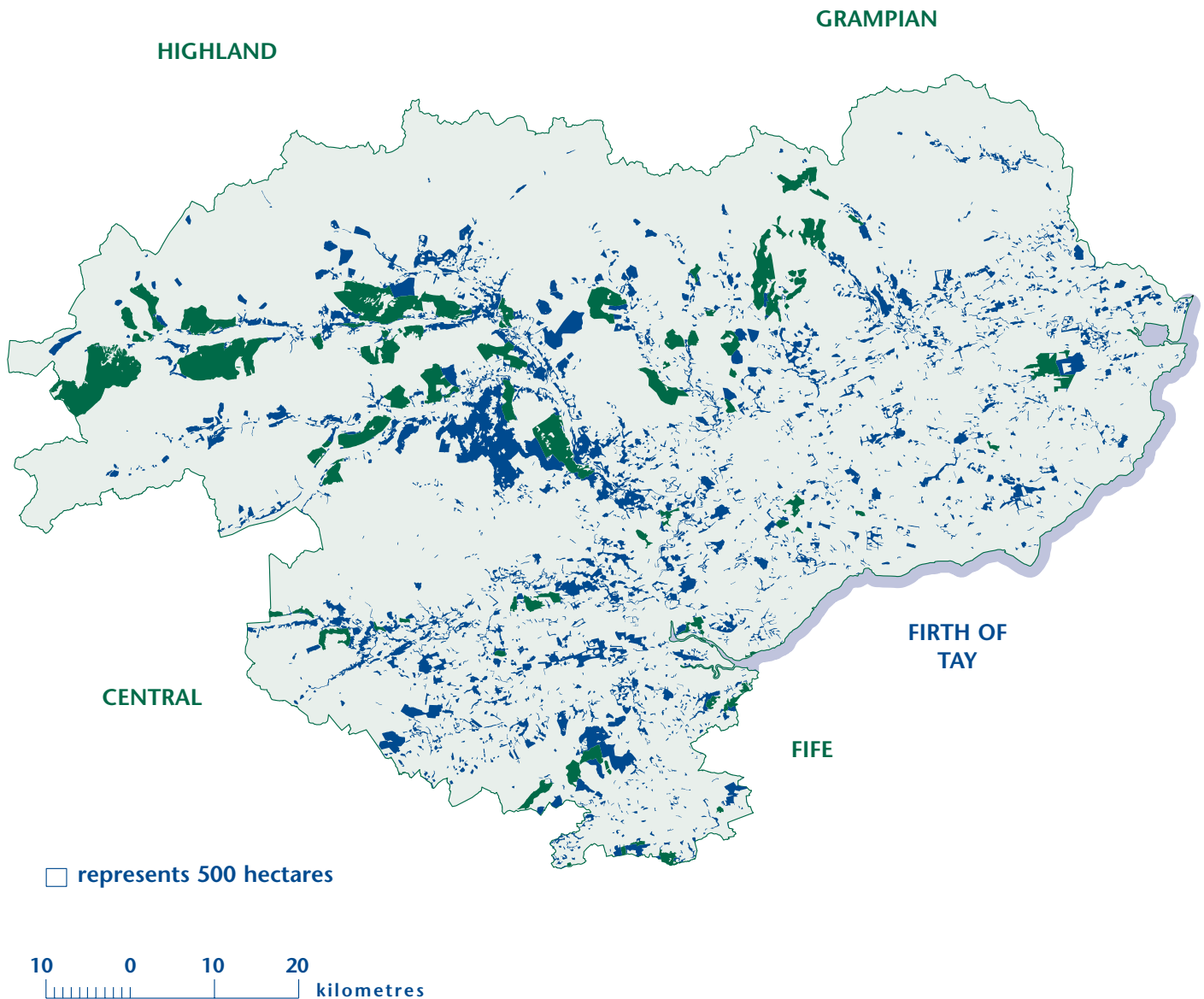
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Reference Date 31 March 1995



## MAP 2 - DISTRIBUTION OF WOODLAND BY OWNERSHIP WITHIN TAYSIDE REGION

- Forestry Commission Woodland over 2 hectares
- Other Woodland over 2 hectares



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## RESULTS

**TABLE 1 SUMMARY OF AREAS BY OWNERSHIP**

<b>Area (including inland water)</b>	<b>755809 ha</b>	
<b>Ownership</b>	<b>ha</b>	<b>% woodland</b>
<b>Forestry Commission</b>	<b>33908</b>	<b>35</b>
<b>Other</b>	<b>63910</b>	<b>65</b>
<b>Total Area of Woodland</b>	<b>97818</b>	<b>100</b>
<b>% Woodland Land Cover</b>	<b>12.9</b>	

**NOTE (Table 1)**

Area of Local Authority Unit based on digital boundaries used for 1991 Census of Population.

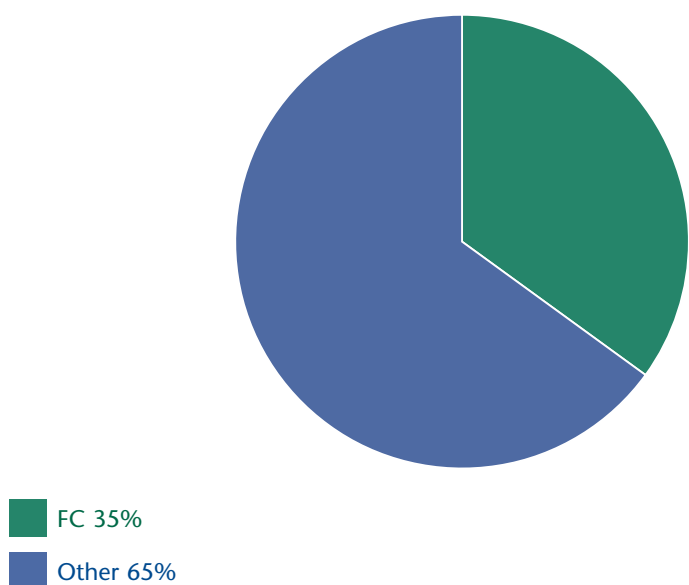
Woodland Area from LCS map updated to 31 March 1995.

**Ownership Categories:**

Forestry Commission (FC) All woodland owned by, or leased to, the Forestry Commission.

Other (O) Woodland other than FC woodland. Includes woodland owned by private individuals, partnerships trusts, business interests, local authorities, other government departments and agencies.

### WOODLAND AREA BY OWNERSHIP



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

TABLE 2a SIZE CLASS DISTRIBUTION OF WOODLAND

Size Class (ha)	Number of Woods	Total Area (ha)	Percent of Total Area	Mean Wood Area (ha)
0 - < 2	30	9	0	0.3
2 - < 10	1606	6969	7	4.3
10 - < 20	312	4390	4	14.1
20 - < 50	235	7742	8	32.9
50 - < 100	89	6087	6	68.4
2 - < 100	2242	25187	26	11.2
100 - < 500	124	27115	28	218.7
500 - and >	26	45722	47	1758.5
All Woods	2422	98033	100	40.5

NOTE (Table 2a)

The total area is 215ha more than that recorded in tables based on the sample data. This is mainly due to the field samples recording some land in other land uses not differentiated from woodland in the LCS map which was prepared from aerial photographs.

Some woods, over 2 hectares, are divided by the Regional boundary and only a part of their area falls within the Region. These part-woods are included above in the appropriate size category and are often less than 2 hectares.

TABLE 2b 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)
0 - < 2	FC	13	5	0	0.4
	Other	62	51	0	0.8
2 - < 10	FC	9	41	0	4.6
	Other	1653	7245	7	4.4
10 - < 20	FC	6	99	0	16.5
	Other	321	4494	5	14.0
20 - < 50	FC	12	385	0	32.1
	Other	247	8167	8	33.1
50 - < 100	FC	23	1644	2	71.5
	Other	97	6735	7	69.4
2 - < 100	FC	50	2169	2	43.4
	Other	2318	26641	27	11.5
100 - < 500	FC	29	7034	7	242.5
	Other	109	22169	23	203.4
500 - and >	FC	18	24783	25	1376.8
	Other	13	15181	15	1167.8
Total	FC	110	33991	35	309.0
	Other	2502	64042	65	25.6
Grand Total		2422	98033	100	40.5

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

**NOTE (Table 2b)**

The total area is 215ha more than that recorded in tables based on the sample data. This is mainly due to the field samples recording some land in other land uses not differentiated from woodland in the LCS map which was prepared from aerial photographs.

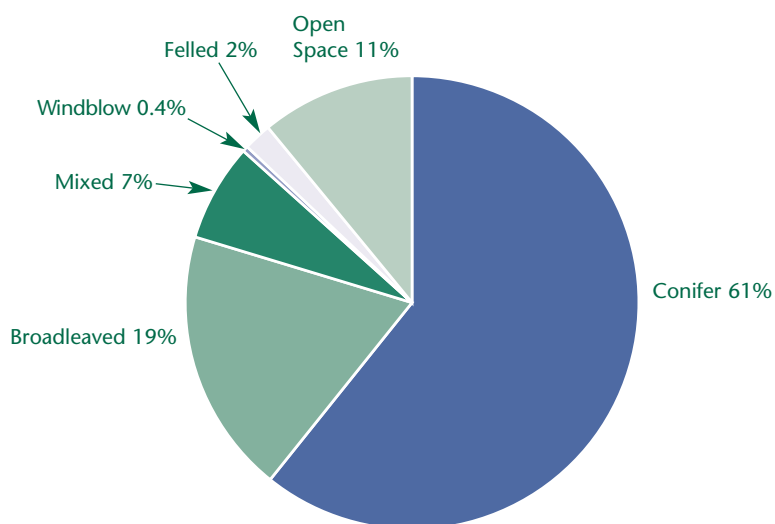
The data available from the digital map enable the identification of woodlands according to their ownerships, Forestry Commission or Other. The entries in the table cannot be added, to derive Table 2a, as some woods may consist of both FC and Other ownerships. For example, the Forestry Commission may own most of a large wood with some parts in Other ownership(s). In Table 2a the whole area would be treated as one wood and the area allocated to one size category. In Table 2b 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 3 AREAS OF WOODLAND BY FOREST TYPE AND OWNERSHIP**

Forest Type	FC		Other		All Woods	
	ha	%	ha	%	ha	%
Conifer	27890	82.3	31458	49.2	59348	60.7
Broadleaved	1086	3.2	17509	27.4	18595	19.0
Mixed	1302	3.8	5867	9.2	7169	7.3
Coppice	0	0.0	0	0.0	0	0.0
Copp-w-Stds	0	0.0	66	0.1	66	0.1
Windblow	292	0.9	143	0.2	435	0.4
Felled	204	0.6	1447	2.3	1651	1.7
Open space	3134	9.2	7421	11.6	10554	10.8
<b>Total</b>	<b>33908</b>	<b>100.0</b>	<b>63911</b>	<b>100.0</b>	<b>97818</b>	<b>100.0</b>

**NOTE (Table 3)**

Please refer to the Glossary on page 22 for definitions of forest types.

**% FOREST TYPE BY AREA - ALL WOODLAND**

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

**TABLE 4a AREAS OF HIGH FOREST BY PRINCIPAL SPECIES AND OWNERSHIP**

	FC			Other			All Woodland		
Species	Area (ha)	cat %	spp %	Area (ha)	cat %	spp %	Area (ha)	cat %	spp %
Scots pine	5271	18	17	7004	20	13	12274	19	14
Corsican pine	4	0	0	95	0	0	98	0	0
Lodgepole pine	5410	19	18	1510	4	3	6920	11	8
Sitka spruce	13383	46	44	14991	44	27	28374	45	33
Norway spruce	1480	5	5	3487	10	6	4967	8	6
European larch	387	1	1	1283	4	2	1670	3	2
Jap/Hybrid larch	1741	6	6	3485	10	6	5226	8	6
Douglas fir	599	2	2	818	2	1	1417	2	2
Other conifers	404	1	1	274	1	0	678	1	1
Mixed conifers	149	1	0	1338	4	2	1487	2	2
<b>Total conifers</b>	<b>28826</b>	<b>100</b>	<b>94</b>	<b>34285</b>	<b>100</b>	<b>62</b>	<b>63111</b>	<b>100</b>	<b>74</b>
Oak	32	2	0	1857	9	3	1889	8	2
Beech	39	2	0	1171	6	2	1210	5	1
Sycamore	18	1	0	945	5	2	963	4	1
Ash	12	1	0	644	3	1	655	3	1
Birch	897	51	3	7676	37	14	8572	38	10
Poplar	0	0	0	28	0	0	28	0	0
Sweet chestnut	0	0	0	3	0	0	3	0	0
Elm	0	0	0	79	0	0	79	0	0
Other broadleaves	125	7	0	1633	8	3	1758	8	2
Mixed broadleaves	622	36	2	6655	32	12	7277	32	9
<b>Total broadleaves</b>	<b>1744</b>	<b>100</b>	<b>6</b>	<b>20693</b>	<b>100</b>	<b>38</b>	<b>22437</b>	<b>100</b>	<b>26</b>
<b>Total - all species</b>	<b>30570</b>		<b>100</b>	<b>54977</b>		<b>100</b>	<b>85547</b>		<b>100</b>
<b>Felled</b>	<b>204</b>			<b>222</b>			<b>1651</b>		
<b>Total High Forest</b>	<b>30774</b>			<b>55199</b>			<b>87198</b>		

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

## NOTE (Table 4a)

**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 10554 hectares of other areas integral to the woodland not stocked with tree species.

The standard errors of the area estimates for the most common species are as follows:

Conifers	2%
Broadleaves	4%
Sitka spruce	4%
Scots pine	6%
Birch	7%

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).

These standard errors are for the species areas in all woodland types.

## AREAS OF HIGH FOREST BY PRINCIPAL SPECIES AND OWNERSHIP

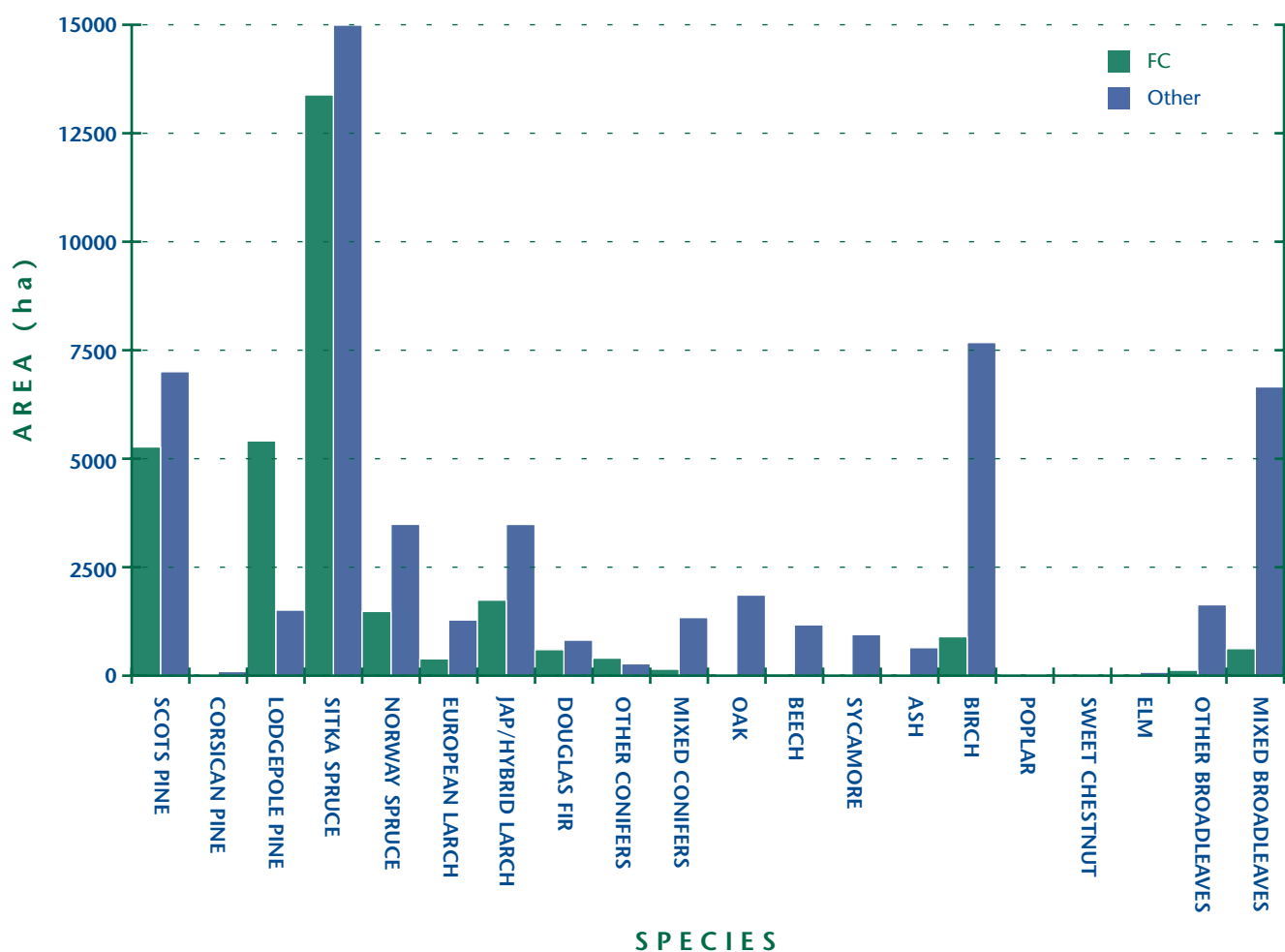


TABLE 4b AREAS OF HIGH FOREST BY PRINCIPAL SPECIES, OWNERSHIP AND CATEGORY

	FC			Other			All Ownerships		
Species	Cat 1	Cat 2	Tot HF	Cat 1	Cat 2	Tot HF	Cat 1	Cat 2	Tot HF
Scots pine	4907	363	5271	6705	298	7004	11612	662	12274
Corsican pine	4	0	4	95	0	95	98	0	98
Lodgepole pine	4977	433	5410	1373	136	1510	6350	570	6920
Sitka spruce	13018	364	13383	14682	309	14991	27700	674	28374
Norway spruce	1366	114	1480	3350	137	3487	4716	251	4967
European larch	369	18	387	1236	47	1283	1605	65	1670
Jap/Hybrid larch	1705	36	1741	3316	169	3485	5022	205	5226
Douglas fir	599	0	599	796	21	818	1395	21	1417
Other conifers	404	0	404	257	17	274	661	17	678
Mixed conifers	131	18	149	1184	153	1338	1315	171	1487
<b>Total conifers</b>	<b>27480</b>	<b>1346</b>	<b>28826</b>	<b>32994</b>	<b>1291</b>	<b>34285</b>	<b>60474</b>	<b>2637</b>	<b>63111</b>
Oak	2	30	32	1022	834	1857	1025	864	1889
Beech	21	18	39	780	391	1171	802	409	1210
Sycamore	6	12	18	669	276	945	675	288	963
Ash	0	12	12	320	323	644	320	335	655
Birch	239	658	897	1099	6576	7676	1338	7234	8572
Poplar	0	0	0	14	15	28	14	15	28
Sweet chestnut	0	0	0	3	0	3	3	0	3
Elm	0	0	0	79	0	79	79	0	79
Other broadleaves	12	113	125	229	1406	1633	241	1518	1758
Mixed broadleaves	330	292	622	2600	4054	6655	2930	4346	7277
<b>Total broadleaves</b>	<b>610</b>	<b>1134</b>	<b>1744</b>	<b>6817</b>	<b>13876</b>	<b>20693</b>	<b>7427</b>	<b>15010</b>	<b>22437</b>
<b>Total - all species</b>	<b>28091</b>	<b>2480</b>	<b>30570</b>	<b>39811</b>	<b>15167</b>	<b>54977</b>	<b>67901</b>	<b>17646</b>	<b>85547</b>

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

## NOTE (Table 4b)

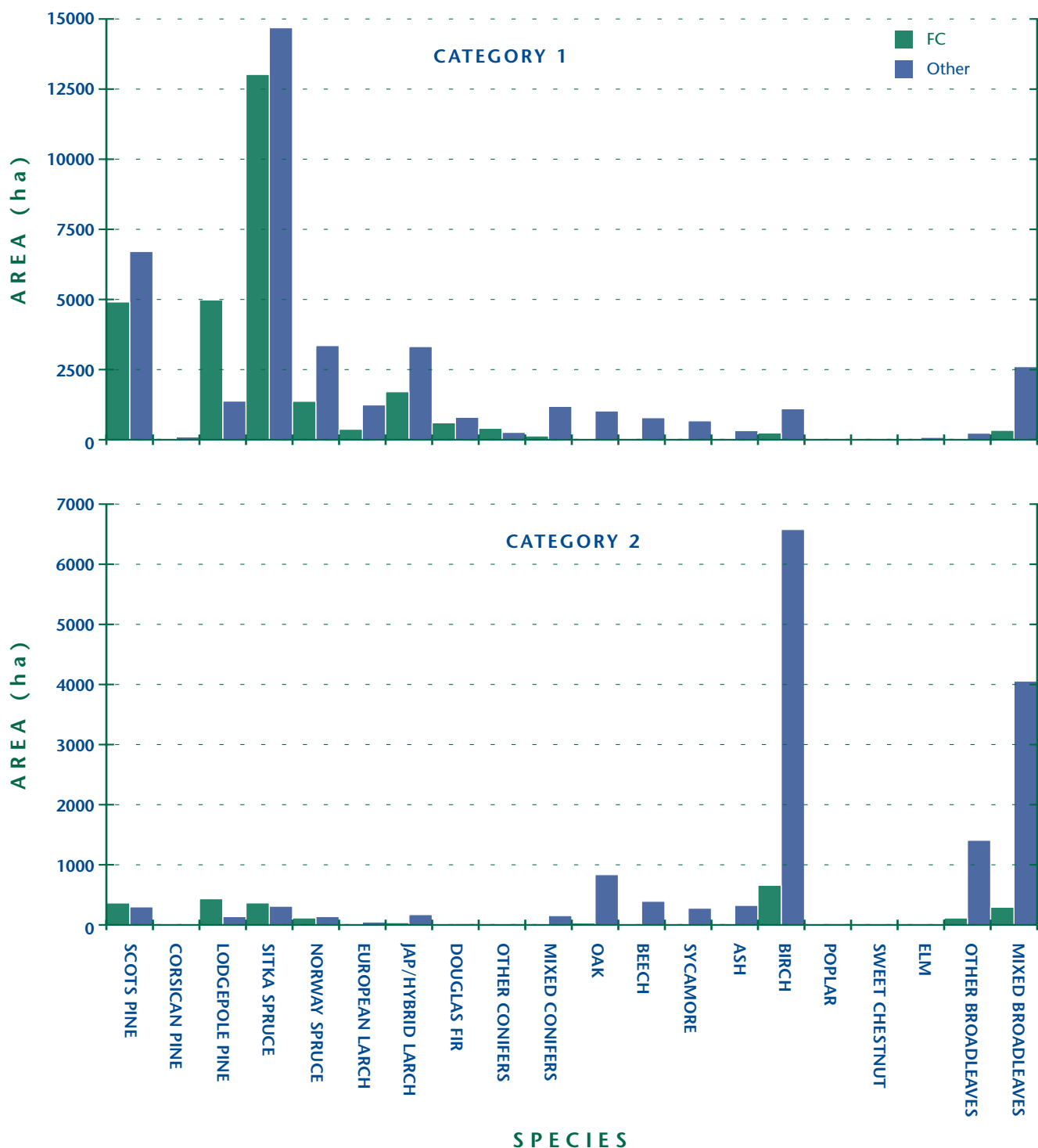
The standard errors of the area estimates for the most common species or species groups are as follows:

	Cat 1	Cat 2	Total HF
Conifers	2%	12%	2%
Broadleaves	6%	4%	4%
Scots pine	6%	26%	6%
Sitka spruce	4%	27%	4%
Mixed broadleaves	10%	9%	7%
Birch	16%	7%	7%

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).

These standard errors are for the species areas in all woodland types.

## AREAS OF HIGH FOREST BY PRINCIPAL SPECIES AND OWNERSHIP





**TABLE 5a HIGH FOREST CATEGORY 1 -  
AREAS BY PRINCIPAL SPECIES AND PLANTING YEAR CLASSES**

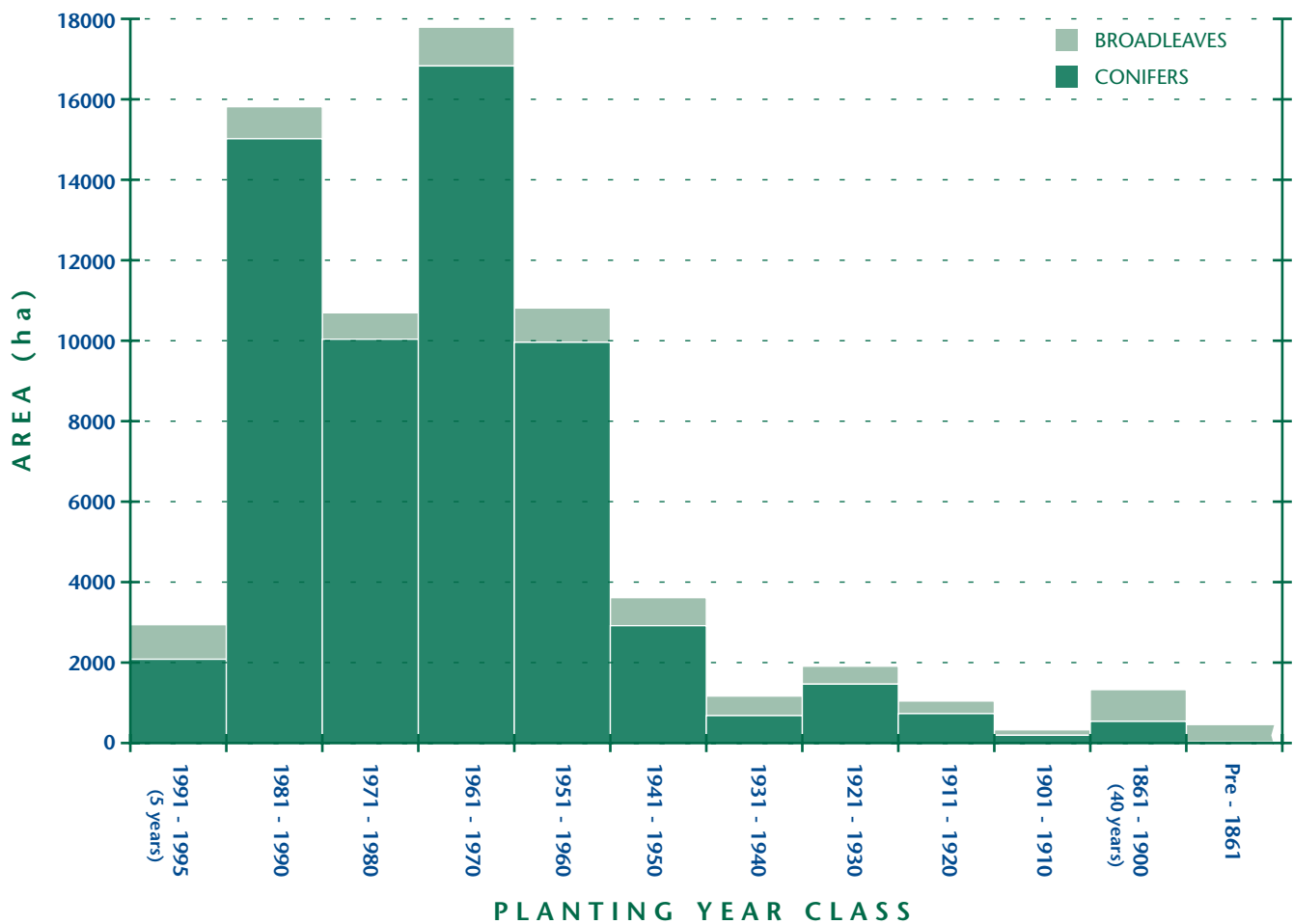
Species	PLANTING YEAR CLASS												TOTAL
	1991 -1995	1981 -1990	1971 -1980	1961 -1970	1951 -1960	1941 -1950	1931 -1940	1921 -1930	1911 -1920	1901 -1910	1861 -1900	pre - 1861	
Scots pine	78	999	538	2770	4400	959	352	984	235	25	274	0	11612
Corsican pine	0	0	95	0	0	4	0	0	0	0	0	0	98
Lodgepole pine	142	1436	2325	2162	270	16	0	0	0	0	0	0	6350
Sitka Spruce	1531	10623	5564	7843	1604	399	65	29	35	6	0	0	27700
Norway spruce	81	221	698	1853	961	641	92	80	28	32	16	12	4716
European larch	13	203	186	249	390	103	12	123	260	42	24	0	1605
Jap/Hybrid larch	66	737	276	1461	1556	576	105	179	54	11	0	0	5022
Douglas fir	44	513	33	282	262	130	16	21	78	0	15	0	1395
Other conifers	0	13	177	87	346	32	0	0	0	0	5	0	661
Mixed conifers	128	274	145	123	170	57	39	47	40	77	204	11	1315
<b>Total conifers</b>	<b>2082</b>	<b>15020</b>	<b>10037</b>	<b>16829</b>	<b>9960</b>	<b>2917</b>	<b>681</b>	<b>1464</b>	<b>731</b>	<b>193</b>	<b>538</b>	<b>23</b>	<b>60474</b>
Oak	81	82	4	24	48	35	98	154	76	54	255	115	1025
Beech	155	32	4	5	39	18	42	82	83	24	126	191	802
Sycamore	12	0	113	140	48	223	50	49	9	0	21	12	675
Ash	78	28	4	44	74	24	54	0	0	0	11	3	320
Birch	28	210	240	321	338	104	77	11	3	0	0	5	1338
Poplar	0	0	0	9	0	0	0	4	0	0	0	0	14
Sweet chestnut	0	3	0	0	0	0	0	0	0	0	0	0	3
Elm	0	0	23	54	0	0	0	2	0	0	0	0	79
Other blvs	76	90	32	30	11	0	0	0	0	0	0	0	241
Mixed blvs	429	351	236	336	293	293	165	142	142	58	377	109	2930
<b>Total broadleaves</b>	<b>859</b>	<b>796</b>	<b>656</b>	<b>964</b>	<b>852</b>	<b>696</b>	<b>486</b>	<b>445</b>	<b>313</b>	<b>135</b>	<b>789</b>	<b>436</b>	<b>7427</b>
<b>Total - all species</b>	<b>2942</b>	<b>15815</b>	<b>10693</b>	<b>17793</b>	<b>10812</b>	<b>3614</b>	<b>1167</b>	<b>1909</b>	<b>1044</b>	<b>328</b>	<b>1327</b>	<b>458</b>	<b>67901</b>

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

## NOTE (Table 5a)

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 - AREAS BY PLANTING YEAR CLASS



**TABLE 5b HIGH FOREST CATEGORY 1 - FORESTRY COMMISSION  
AREAS BY PRINCIPAL SPECIES AND PLANTING YEAR CLASSES**

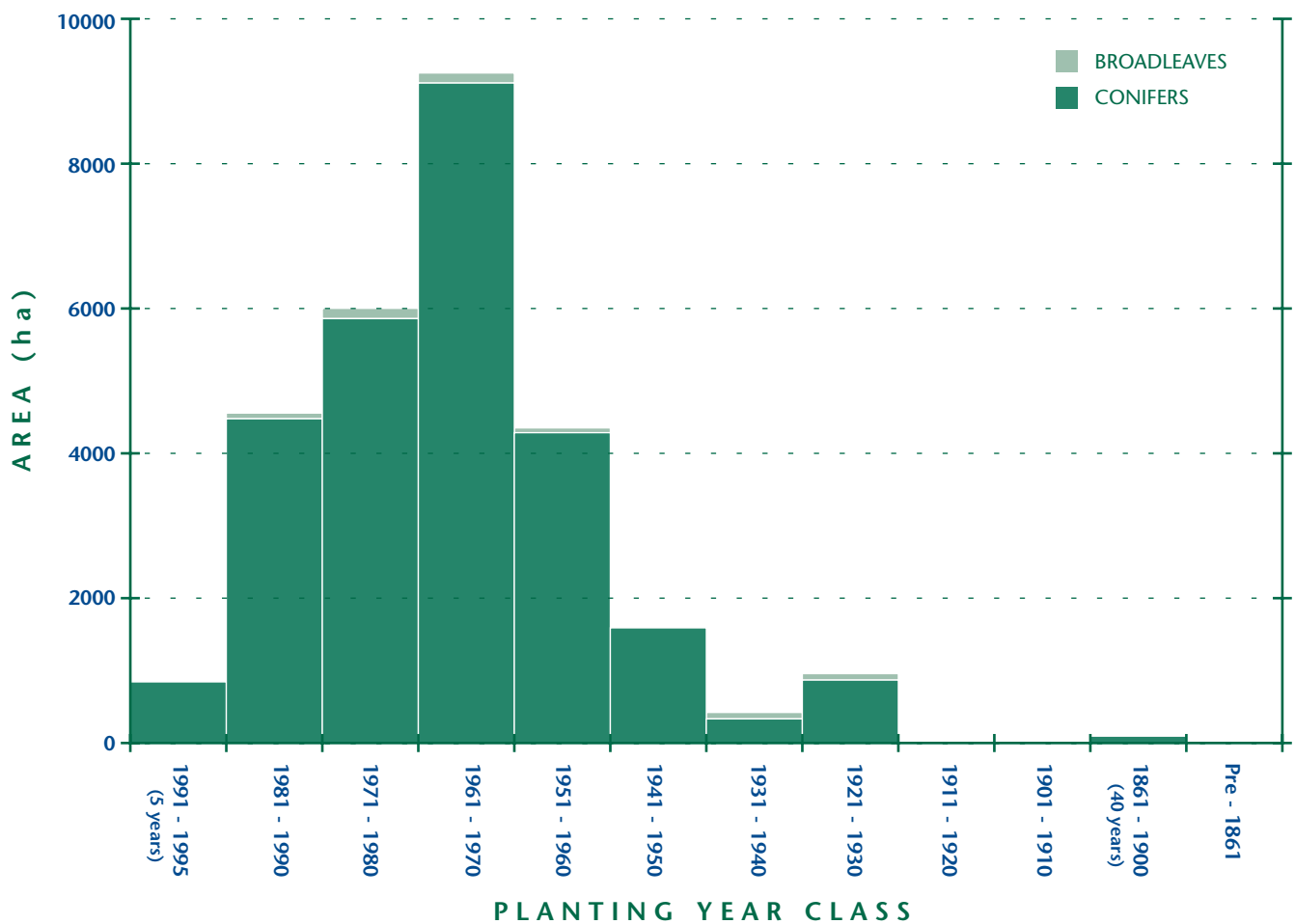
Species	PLANTING YEAR CLASS												TOTAL
	1991 -1995	1981 -1990	1971 -1980	1961 -1970	1951 -1960	1941 -1950	1931 -1940	1921 -1930	1911 -1920	1901 -1910	1861 -1900	pre - 1861	
Scots pine	2	382	249	1051	1819	464	173	670	1	0	95	0	4907
Corsican pine	0	0	0	0	0	4	0	0	0	0	0	0	4
Lodgepole pine	142	848	1798	1969	204	16	0	0	0	0	0	0	4977
Sitka spruce	683	2546	3521	4902	982	302	65	16	0	0	0	0	13018
Norway spruce	0	89	36	395	273	432	83	46	0	0	0	12	1366
European larch	5	12	12	79	126	24	12	101	0	0	0	0	369
Jap/Hybrid larch	0	243	138	493	536	260	0	36	0	0	0	0	1705
Douglas fir	12	261	6	166	95	59	0	0	0	0	0	0	599
Other conifers	0	0	78	54	243	30	0	0	0	0	0	0	404
Mixed conifers	0	97	24	5	6	0	0	0	0	0	0	0	131
<b>Total conifers</b>	<b>844</b>	<b>4477</b>	<b>5860</b>	<b>9113</b>	<b>4285</b>	<b>1590</b>	<b>333</b>	<b>869</b>	<b>1</b>	<b>0</b>	<b>95</b>	<b>12</b>	<b>27480</b>
Oak	1	0	0	0	0	0	0	0	0	0	0	1	2
Beech	0	0	0	1	1	0	18	0	1	0	0	0	21
Sycamore	0	0	0	0	0	0	0	6	0	0	0	0	6
Ash	0	0	0	0	0	0	0	0	0	0	0	0	0
Birch	0	49	18	113	24	0	30	6	0	0	0	0	239
Poplar	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
Elm	0	0	0	0	0	0	0	0	0	0	0	0	0
Other blvs	0	0	12	0	0	0	0	0	0	0	0	0	12
Mixed blvs	1	30	112	25	41	0	41	77	2	0	0	0	330
<b>Total broadleaves</b>	<b>2</b>	<b>79</b>	<b>142</b>	<b>139</b>	<b>66</b>	<b>0</b>	<b>89</b>	<b>89</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>610</b>
<b>Total - all species</b>	<b>847</b>	<b>4556</b>	<b>6002</b>	<b>9251</b>	<b>4351</b>	<b>1590</b>	<b>422</b>	<b>958</b>	<b>5</b>	<b>0</b>	<b>95</b>	<b>13</b>	<b>28091</b>

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

## NOTE (Table 5b)

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 - AREAS BY PLANTING YEAR CLASS



**TABLE 5c HIGH FOREST CATEGORY 1 - OTHER OWNERSHIPS  
AREAS BY PRINCIPAL SPECIES AND PLANTING YEAR CLASSES**

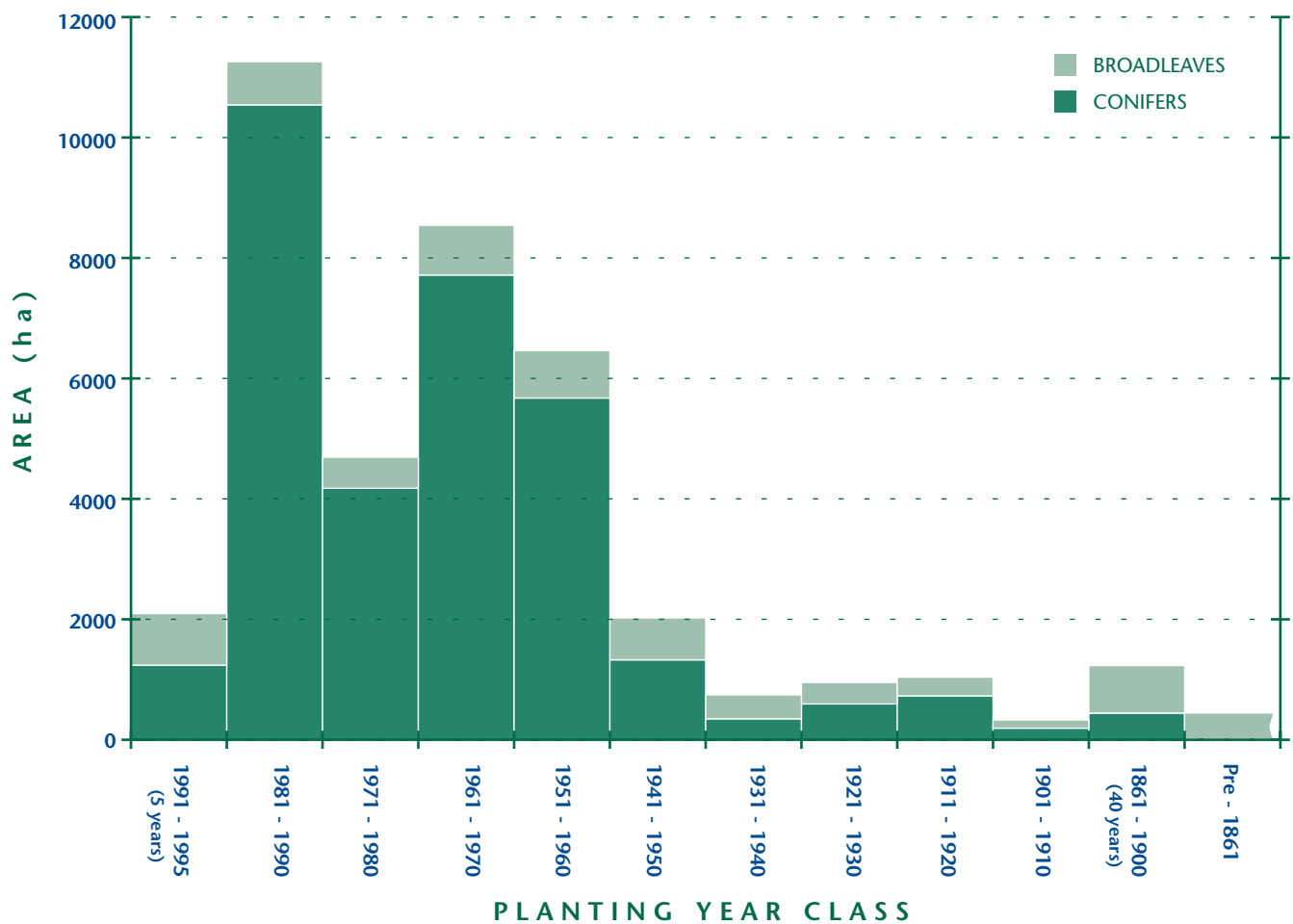
Species	PLANTING YEAR CLASS												TOTAL
	1991 -1995	1981 -1990	1971 -1980	1961 -1970	1951 -1960	1941 -1950	1931 -1940	1921 -1930	1911 -1920	1901 -1910	1861 -1900	pre - 1861	
Scots pine	75	617	289	1719	2581	495	179	313	234	25	179	0	6705
Corsican pine	0	0	95	0	0	0	0	0	0	0	0	0	95
Lodgepole pine	0	588	527	192	65	0	0	0	0	0	0	0	1373
Sitka spruce	849	8076	2043	2941	623	96	0	13	35	6	0	0	14682
Norway spruce	81	133	662	1459	689	209	9	34	28	32	16	0	3350
European larch	9	191	174	171	264	80	0	22	260	42	24	0	1236
Jap/Hybrid larch	66	494	138	968	1020	316	105	144	54	11	0	0	3316
Douglas fir	32	253	27	116	167	71	16	21	78	0	15	0	796
Other conifers	0	13	100	33	102	2	0	0	0	0	5	0	257
Mixed conifers	128	178	121	118	164	57	39	47	40	77	204	11	1184
<b>Total conifers</b>	<b>1238</b>	<b>10542</b>	<b>4177</b>	<b>7717</b>	<b>5675</b>	<b>1327</b>	<b>348</b>	<b>595</b>	<b>729</b>	<b>193</b>	<b>443</b>	<b>11</b>	<b>32994</b>
Oak	80	82	4	24	48	35	98	154	76	54	255	114	1022
Beech	155	32	4	4	38	18	25	82	82	24	126	191	780
Sycamore	12	0	113	140	48	223	50	43	9	0	21	12	669
Ash	78	28	4	44	74	24	54	0	0	0	11	3	320
Birch	28	161	222	208	315	104	47	5	3	0	0	5	1099
Poplar	0	0	0	9	0	0	0	4	0	0	0	0	14
Sweet chestnut	0	3	0	0	0	0	0	0	0	0	0	0	3
Elm	0	0	23	54	0	0	0	2	0	0	0	0	79
Other blvs	76	90	20	30	11	0	0	0	0	0	0	0	229
Mixed blvs	428	321	124	311	251	293	124	65	140	58	377	109	2600
<b>Total broadleaves</b>	<b>857</b>	<b>718</b>	<b>515</b>	<b>825</b>	<b>786</b>	<b>696</b>	<b>397</b>	<b>356</b>	<b>310</b>	<b>135</b>	<b>789</b>	<b>434</b>	<b>6817</b>
<b>Total - all species</b>	<b>2095</b>	<b>11259</b>	<b>4691</b>	<b>8542</b>	<b>6460</b>	<b>2023</b>	<b>745</b>	<b>951</b>	<b>1039</b>	<b>328</b>	<b>1232</b>	<b>445</b>	<b>39811</b>

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

## NOTE (Table 5c)

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 OWNERSHIPS - AREAS BY PLANTING YEAR CLASS



**TABLE 6 HIGH FOREST -  
PRINCIPAL SPECIES BY PLANTING YEAR CLASSES**

Planting Year Class	First	%	Second	%	Third	%
1991-1995	Sitka spruce	48	Mixed broadleaves	14	Beech	5
1981-1990	Sitka spruce	64	Lodgepole pine	9	Scots pine	6
1971-1980	Sitka spruce	44	Lodgepole pine	19	Birch	7
1961-1970	Sitka spruce	38	Scots pine	14	Lodgepole pine	12
1951-1960	Scots pine	31	Birch	15	Sitka spruce	12
1941-1950	Birch	28	Scots pine	15	Mixed broadleaves	15
1931-1940	Birch	30	Mixed broadleaves	17	Scots pine	15
1921-1930	Scots pine	41	Mixed broadleaves	12	Oak	11
1911-1920	Scots pine	21	Mixed broadleaves	18	European larch	15
1901-1910	Mixed broadleaves	44	Mixed conifers	14	Birch	12
1861-1900	Mixed broadleaves	36	Oak	20	Scots pine	13
Pre 1861	Beech	33	Mixed broadleaves	27	Oak	3
All years	Sitka spruce	33	Scots pine	14	Birch	10

**TABLE 7 OWNERSHIP TYPE BY AREA  
AND PERCENTAGE**

Ownership Type	Area (ha)	%
Personal	51113	52.3
Private forestry or timber business	348	0.4
Other private business	10928	11.2
Local Authority	878	0.9
Other public body (not FC)	0	0.0
Forestry Commission	33908	34.7
Charity	563	0.6
Community ownership or common land	0	0.0
Unclassified	80	0.1
<b>Total</b>	<b>97818</b>	<b>100.0</b>

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

NOTE (Table 7)

Please refer to the Glossary on page 22 for definitions of ownership types.

## COMPARISON OF RESULTS WITH THE 1980 CENSUS

The 1980 Census and 1995 Inventory were undertaken by very different sampling methods. The comparison with the 1980 Census of Woodlands and Trees is not yet complete because of the difference in minimum area for woodland. Within the 1980 Census the minimum area of woodland was 0.25 hectares whilst in the National Inventory of Woodland it is 2 hectares. The total area of woodland within the Inventory will be revised to include an estimate of the area between 0.25 - 2.0 hectares once the Small Woodlands and Trees Survey is completed.

The apparent differences shown in the following tables should therefore be treated with caution, particularly where areas are small.

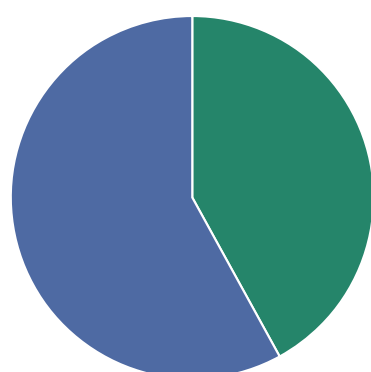
**TABLE 8 WOODLAND AREAS AND OWNERSHIP**

	<b>CENSUS 31/3/80</b>	<b>INVENTORY 31/3/95</b>	<b>CHANGE (%)</b>
<b>Area (inc. inland water)</b>	<b>764189</b>	<b>755809</b>	<b>-1.1</b>
<b>FC Woodland area</b>	<b>30685</b>	<b>33908</b>	<b>10.5</b>
<b>Other ownership area</b>	<b>42398</b>	<b>63910</b>	<b>50.7</b>
<b>Total Area of Woodland</b>	<b>73083</b>	<b>97818</b>	<b>33.8</b>
<b>% Woodland Cover</b>	<b>9.6</b>	<b>12.9</b>	<b>35.3</b>

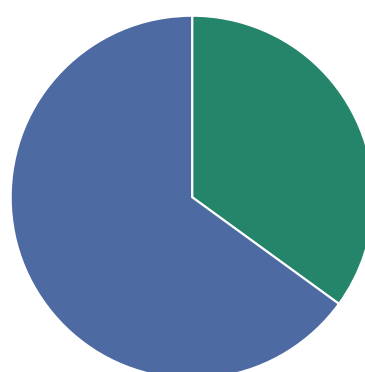
**NOTE (Table 8)**

Area (including inland water)-in the interval between the two surveys the Regional boundary was revised. The method of measurement has also undergone development.

**CENSUS 1980**



**INVENTORY 1995**



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

FC 42%  
Other ownerships 58%

FC 35%  
Other ownerships 65%



**TABLE 9 COMPARISON BETWEEN 1995 INVENTORY  
AND 1980 CENSUS  
HIGH FOREST - AREAS BY PRINCIPAL SPECIES**

SPECIES	1980 CENSUS	1995 INVENTORY
Scots pine	14474	12274
Corsican pine	12	98
Lodgepole pine	4931	6920
Sitka spruce	15051	28374
Norway spruce	5765	4967
European larch	2308	1670
Jap/Hybrid larch	5071	5226
Douglas fir	1219	1417
Other conifers	461	678
Mixed conifers	921	1487
<b>Total conifers</b>	<b>50118</b>	<b>63111</b>
Oak	2350	1889
Beech	1369	1210
Sycamore	926	963
Ash	348	655
Birch	5006	8572
Poplar	17	28
Sweet chestnut	0	3
Elm	198	79
Other broadleaves	1488	1758
Mixed broadleaves	937	7277
<b>Total broadleaves</b>	<b>12638</b>	<b>22437</b>
<b>TOTAL - all species</b>	<b>62850</b>	<b>85547</b>
<b>Felled</b>	<b>2340</b>	<b>1651</b>
<b>Total - High Forest</b>	<b>65190</b>	<b>87198</b>

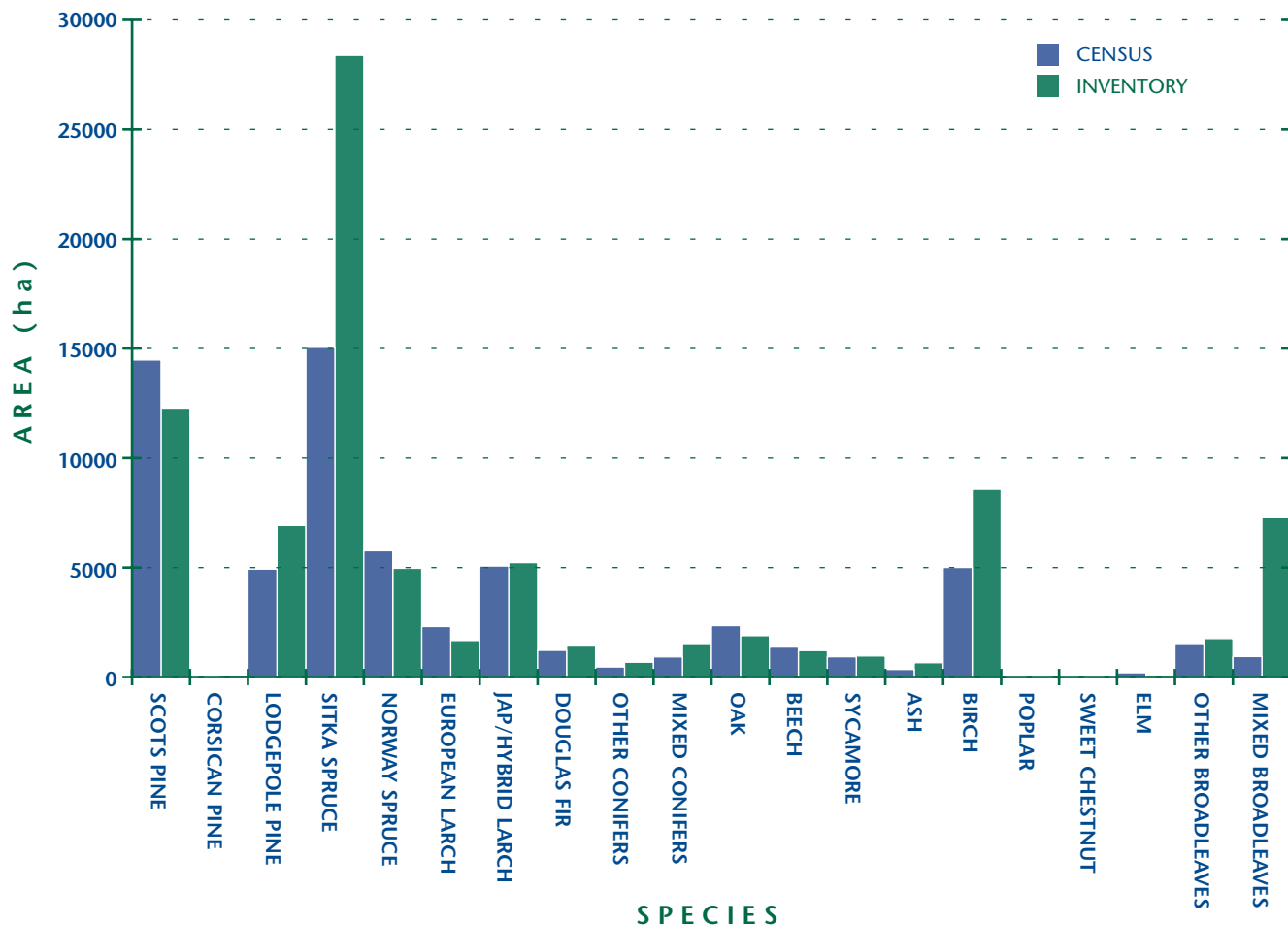
**NOTE (Table 9)**

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 10.8% (Table 3). To obtain meaningful comparisons between the two datasets the 1980 Census data have therefore been reduced by 10.8%. Area allocated to scrub has also been included in the 1980 Census data to make it comparable with the 1995 Inventory data.

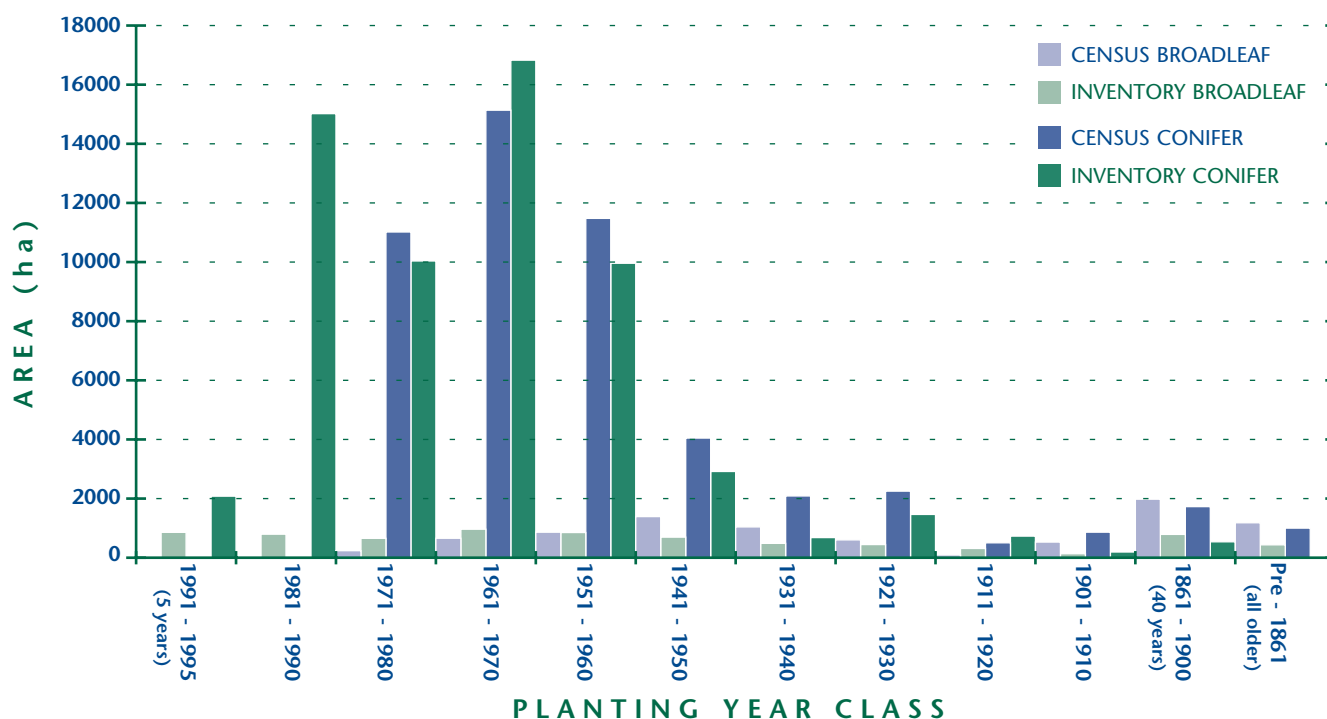
N.B. Woodlands between 0.25 and 2.0 hectares are not yet included in the 1995 Inventory figures (above). These are expected to contain a high proportion of broadleaved species.

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

### COMPARISON BETWEEN 1995 INVENTORY AND 1980 CENSUS - HIGH FOREST - AREAS BY PRINCIPAL SPECIES



### COMPARISON BETWEEN 1995 INVENTORY AND 1980 CENSUS - HIGH FOREST CATEGORY 1 - AREAS BY PLANTING YEAR CLASS



## GLOSSARY

### Woodland

In the United Kingdom woodland is defined as land 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. Intervening land-classes such as roads, rivers or pipelines are disregarded if less than 50 m 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 hectares and over, and with a minimum width of 50 m, is included in the main woodland survey, Part 1 of the Inventory; other woodland and trees are assessed in Part 2, the small woodland and trees survey.

### High Forest

All woodland with the exception of stands managed as coppice or coppice with standards with, or 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 and small roundwood.

#### *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 hectare 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 Ownerships**

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 Body (not FC)*

Government department/agency, nationalised industry, etc.

*Charitable*

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.

## NOTES



**Forestry Commission**

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**£5 net**

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