NATIONAL INVENTORY OF WOODLAND AND TREES

ENGLAND

County Report for

LANCASHIRE

Forestry Commission

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ACKNOWLEDGEMENTS

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INTRODUCTION

This report presents the results for Lancashire 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 With the statistics becoming increasingly out of date the Forestry Commission decided to undertake a new survey: the *National Inventory of Woodland and Trees*.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^2 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^2 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 Lancashire is 14,078 hectares. This represents 4.6% of the land area. (Table 1)

- Broadleaved woodland is the dominant forest type representing 52.0 % of all woodland. Conifer woodland represents 24.4 %, Mixed woodland 15.0 % and Open Space within woodlands 7.2 %. (Table 2)

- The main conifer species is Sitka spruce covering 2,293 hectares or 52.7 % of all conifer species. The main broadleaved species is oak covering 1,584 hectares or 18.6 % of all broadleaved species. (Table 3)

- 1,662 hectares or 12 % of woodland over 2 hectares is owned by or leased to the Forestry Commission, and 11,742 hectares or 88 % of woodland is in Other ownership. (Table 6)

- There are a total of 1,244 woods over 2 ha within Lancashire with a mean wood area of 10.8 hectares. (Table 7a) There are a total of 2,492 woods from 0.1 - <2.0 hectares with a mean wood area of 0.27 hectares. (Table 14)

- There are 1.6 million live trees outside woodland in Lancashire. (Table 15)

- Woodland land cover increased by over 2,400 hectares from 3.7 % to 4.5 % of the land area between 1980 and 1999. (Table 19)

- The area of broadleaves increased by 25% between 1980 and 1999, with the relative proportion of broadleaves to conifers increasing from 64 % to 66 %. (Table 20)

INVENTORY REPORTS

As well as this report for Lancashire, 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. Inventory reports can also be viewed or downloaded from the website at www.forestry.gov.uk/inventory.

Map 1 Regional and county boundaries

North East
Region

Cumbria

Yorkshire and the
Humber Region

Lancashire

Greater
Manchester

Merseyside

Cheshire

East Midlands
Region

West Midlands
Region

5   10   15   20
Kilometres
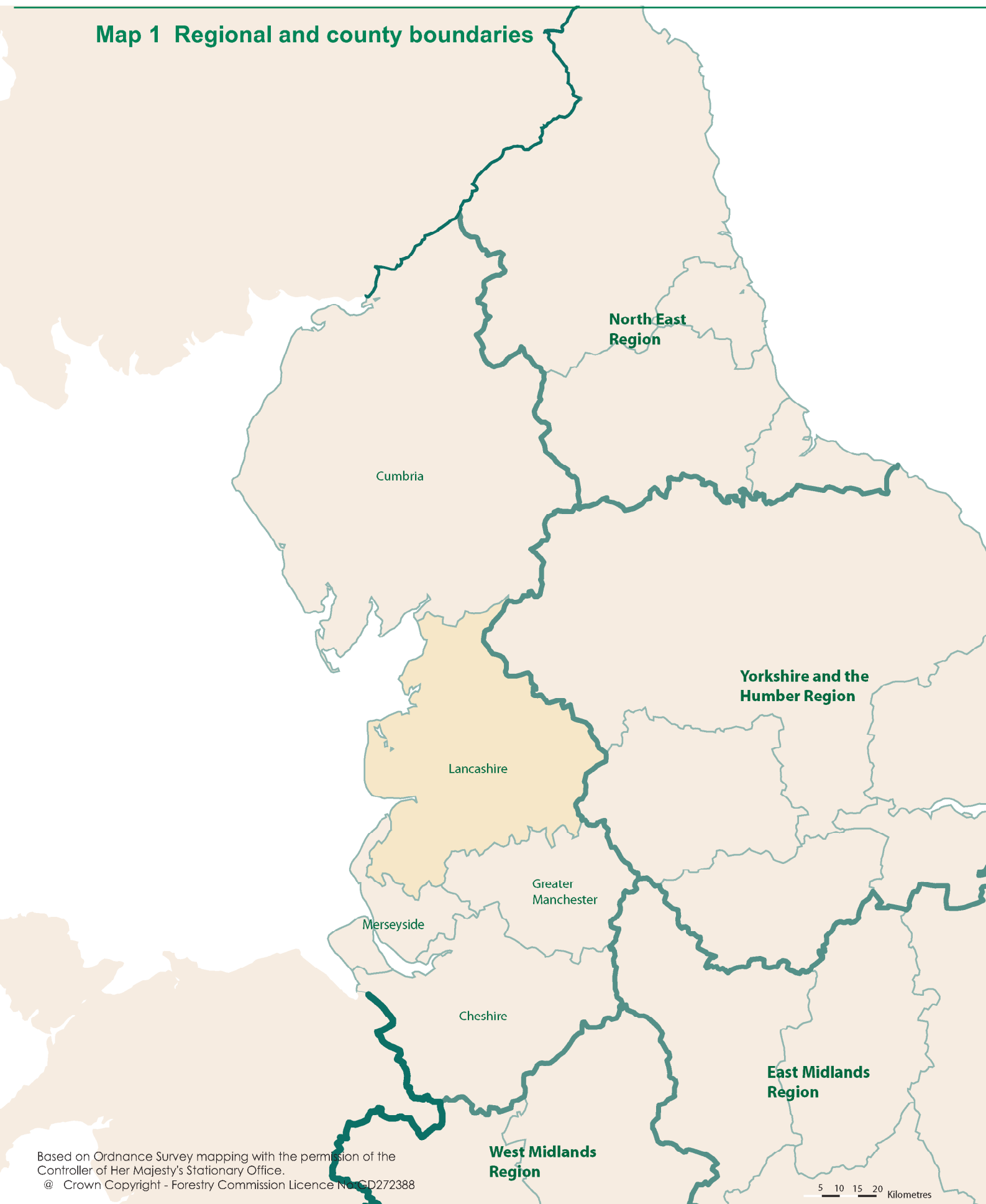
Based on Ordnance Survey mapping with the permission of the
Controller of Her Majesty's Stationary Office.
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Map 2 Distribution of woodland over 2 hectares

Cumbria

Greater Manchester

Merseyside

Cheshire

5   10   15   20   Kilometres

Reference Date 31 March 1999
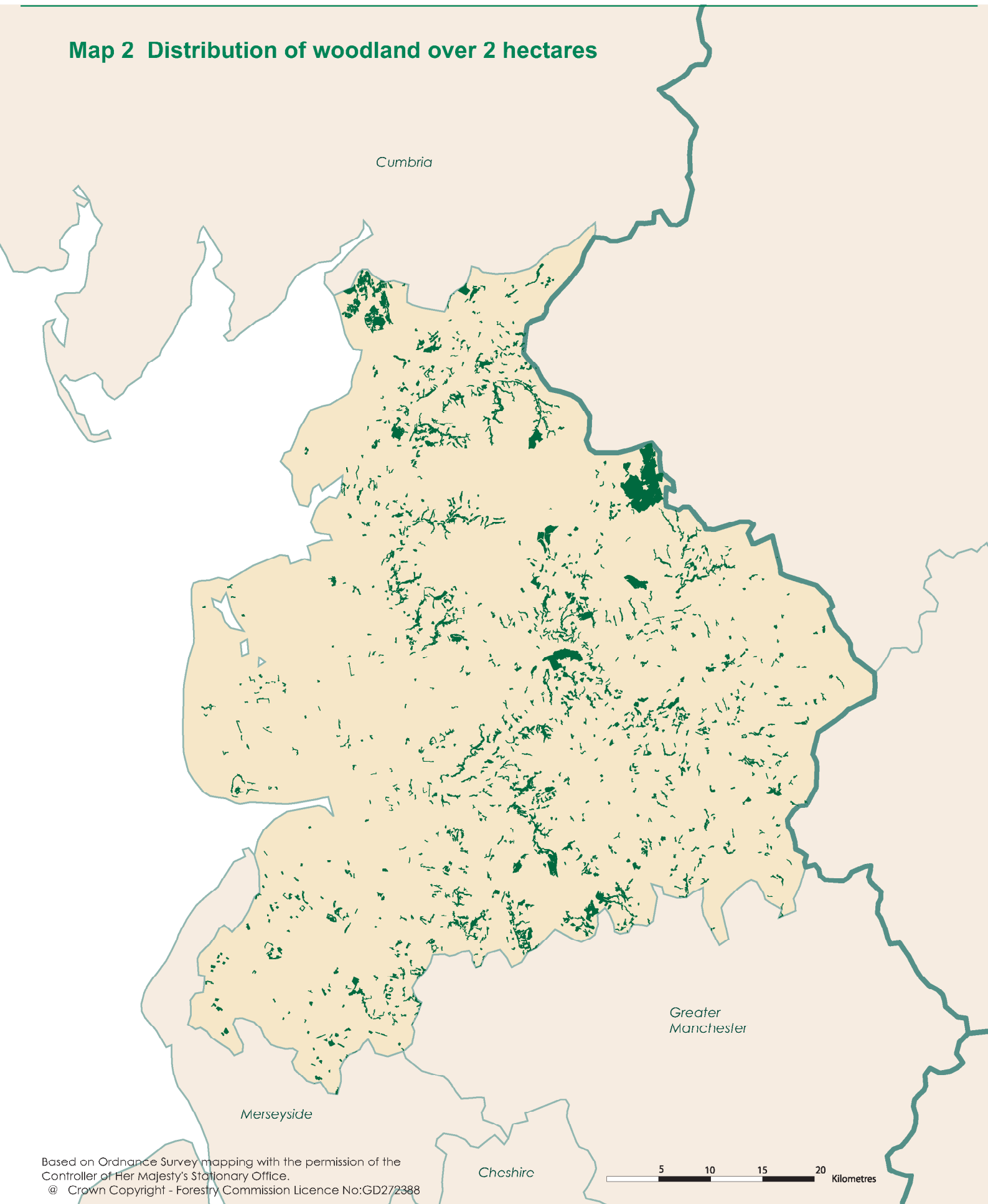
Map 3 Distribution of woodland over 2 hectares by ownership

- Forestry Commission woodland
- Other woodland

Cumbria

Greater
Manchester

Merseyside

Cheshire

5   10   15   20
Kilometres

Reference Date 31 March 1999
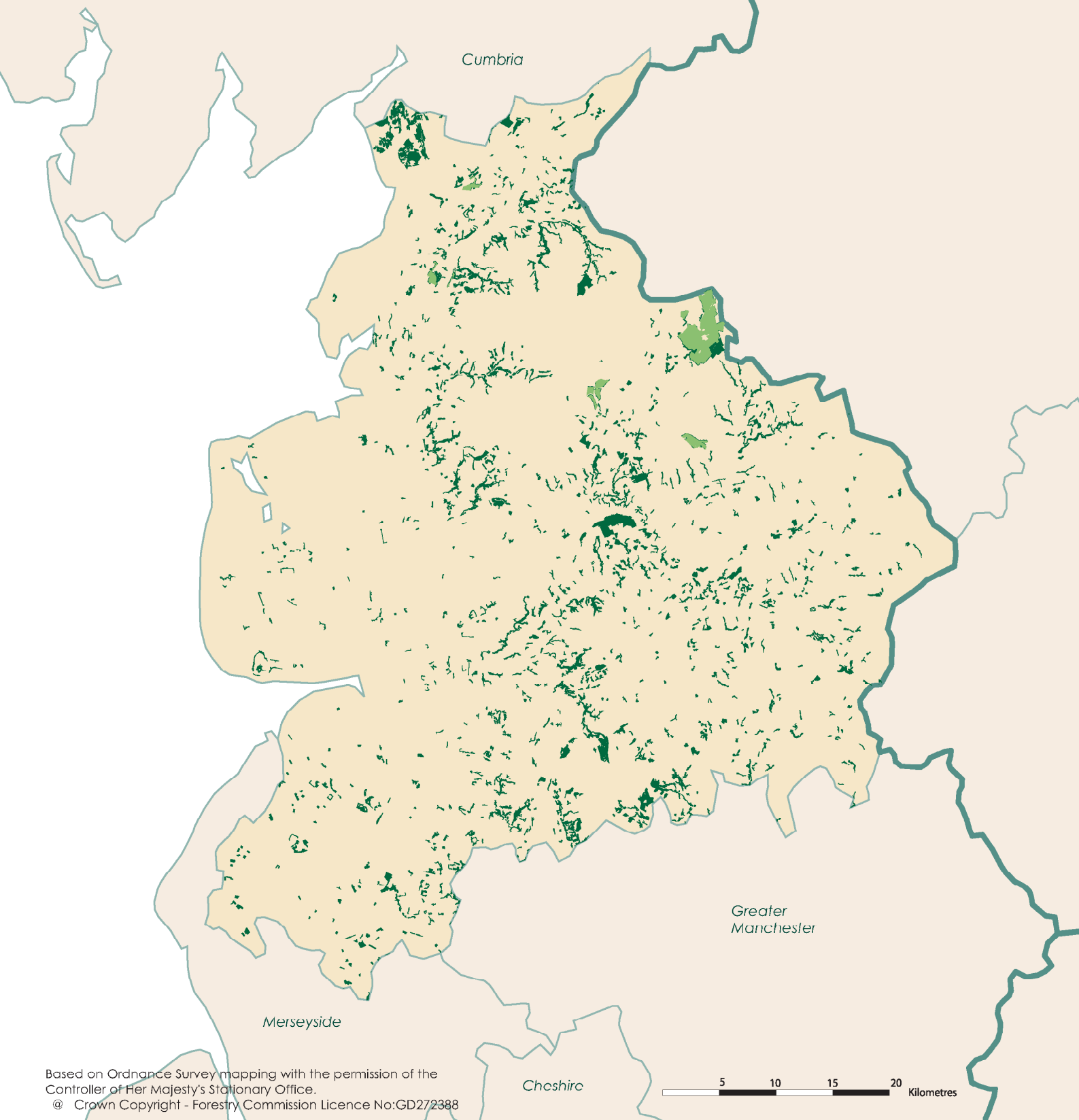
Map 4 Distribution of woodland over 2 hectares by Interpreted Forest Type

- Broadleaves
- Conifer
- Mixed
- Felled
- Young trees & shrubs
- Ground prepared for planting
- Coppice

Cumbria

Greater Manchester

Merseyside

Cheshire

5   10   15   20   **Kilometres**

Reference Date 31 March 1999

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 Lancashire.

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	13,404	95.2
0.25 - < 2.00	505	3.6
0.10 - < 0.25	169	1.2
Total area of woodland	**14,078**	**100.0**
% Woodland land cover	**4.6**	

1.   Area of Lancashire, including inland water, 306,978 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	Percentage of
	2.0 and over	0.1 - <2.0	(ha)	total area
Conifer	3,350	90	3,440	24.4
Broadleaved	6,896	418	7,314	52.0
Mixed	1,949	166	2,115	15.0
Coppiced	0	0	0	0.0
Copp-w-standards	0	0	0	0.0
Windblow	17	0	17	0.1
Felled	184	0	184	1.3
Open Space	1,008	0	1,008	7.2
Total	**13,404**	**674**	**14,078**	**100**

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	Percentage of total area	
	2.0 and over	0.1 -<2.0	(ha)	Category*	Species**
Pine	813	42	855	19.7	6.6
Sitka spruce	2,251	42	2,293	52.7	17.8
Larch	489	48	537	12.3	4.2
Other conifers	583	0	583	13.4	4.5
Mixed conifers	61	21	82	1.9	0.6
Total conifers	**4,197**	**153**	**4,350**	**100.0**	**33.8**
Oak	1,475	109	1,584	18.6	12.3
Beech	902	14	916	10.7	7.1
Sycamore	1,506	14	1,520	17.8	11.8
Ash	1,039	35	1,074	12.6	8.3
Birch	1,175	48	1,223	14.3	9.5
Elm	4	0	4	0.0	0.0
Other broadleaves	1,503	159	1,662	19.5	12.9
Mixed broadleaves	411	143	554	6.5	4.3
Total broadleaves	**8,015**	**522**	**8,537**	**100.0**	**66.3**
Total all species*	**12,212**	**674**	**12,886**		**100.0**

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

***Excludes the 1,192ha 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   6%
           Broadleaves   4%
           Sitka spruce   12%
           Oak   11%
           Sycamore   12%

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	58,100	364,400	6	119
Narrow Linear Features	26,300	1,115,000	42	363
Individual Trees	113,000	113,000	1	37
Total		1,592,400		519

1. Land area used to calculate tree density 306,978ha 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   38%
    Narrow Linear Features   28%
    Individual Trees   22%

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	26,300	2,364	770
Total		2,364	770

1. Land area used to calculate feature density 306,978ha 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   26%

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	1,662	12
Other	11,742	88
Total area of woodland	**13,404**	**100**

1. Woodland area from aerial photographic interpretation map updated to 31 March 1999

2. See Glossary for definitions of ownership types

Woodland area by ownership

- Forestry Commission
- Other ownership
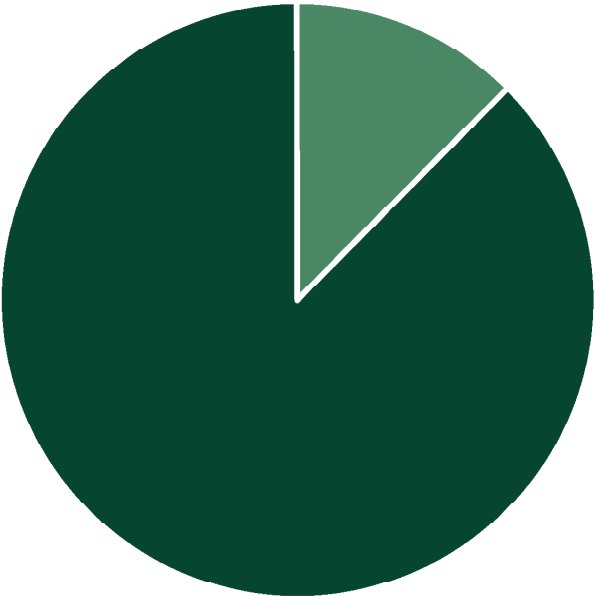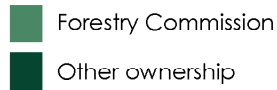
Table 7a Size class distribution of woodland

Size class (ha)	Number of woods	Total area (ha)	Percent of total area	Mean wood area (ha)
<10	986	4,135	31	4.2
10 - <20	152	2,019	15	13.3
20 - <50	71	2,040	15	28.7
50 - <100	28	1,788	13	63.9
<100	**1,237**	**9,983**	**74**	**8.1**
100 - <500	**14**	**2,282**	**17**	**163.0**
500 and >	**1**	**1,140**	**9**	**1139.6**
All woods	**1,244**	**13,405**	**100**	**10.8**

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	3	13	0	4.3
	O	1,003	4,165	31	4.2
10 - <20	FC	2	29	0	14.7
	O	152	2,018	15	13.3
20 - <50	FC	4	138	1	34.6
	O	68	1,906	14	28.0
50 - <100	FC	3	193	1	64.2
	O	26	1,661	12	63.9
<100	FC	12	374	3	31.1
	O	1,249	9,751	73	7.8
100 - <500	FC	2	298	2	148.9
	O	12	1,991	15	165.9
500 and >	FC	1	991	7	991.1
	O	0	0	0	0.0
Total	**FC**	**15**	**1,662**	**12**	**110.8**
	O	**1,237**	**11,742**	**88**	**9.5**

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 total area in Tables 7a and 7b is 1 hectare more than recorded in Table 6. This is mainly due to the field samples recording some land in other land uses not differentiated from woodland in the digital map

3. 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 occasionaly 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	1,248	75.1	2,102	17.9	3,350	25.0
Broadleaved	157	9.4	6,739	57.4	6,896	51.4
Mixed	0	0.0	1,949	16.6	1,949	14.5
Coppice	0	0.0	0	0.0	0	0.0
Copp-w-Stds	0	0.0	0	0.0	0	0.0
Windblow	5	0.3	12	0.1	17	0.1
Felled	125	7.5	59	0.5	184	1.4
Open Space	127	7.6	881	7.5	1,008	7.5
Total	1,662	100.0	11,742	100.0	13,404	100.0

Area of woodland by forest type

- Conifer
- Broadleaves
- Mixed
- Coppice
- Coppice-w-standards
- Felled
- Open Space
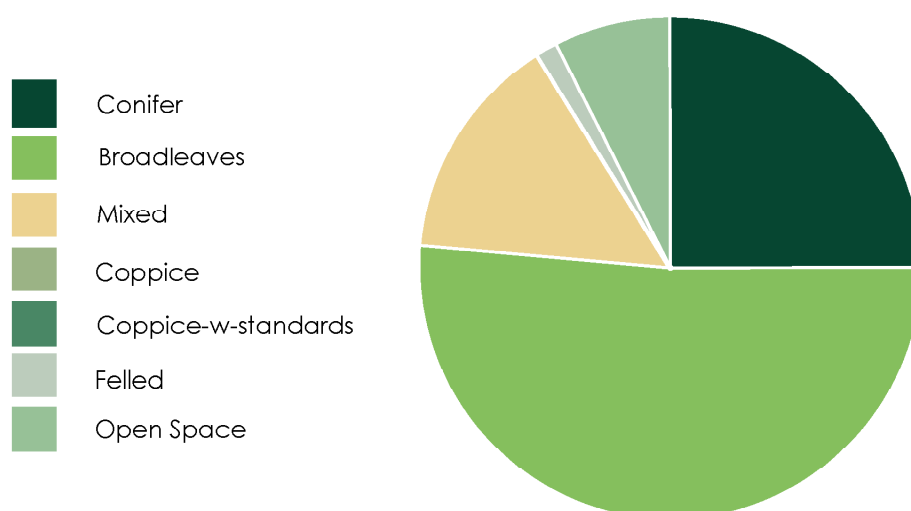
Table 9a Area of High Forest by principal species and ownership

Species	Forestry Commission			Other			All ownerships		
	area (ha)	cat* %	spp** %	area (ha)	cat* %	spp** %	area (ha)	cat* %	spp** %
Scots pine	166	13	12	493	17	5	660	16	5
Corsican pine	0	0	0	18	1	0	18	0	0
Lodgepole pine	56	4	4	79	3	1	135	3	1
Sitka spruce	953	76	68	1,299	44	12	2,251	54	18
Norway spruce	0	0	0	248	8	2	248	6	2
European larch	0	0	0	73	2	1	73	2	1
Jap/Hybrid larch	7	1	0	409	14	4	416	10	3
Douglas fir	0	0	0	8	0	0	8	0	0
Other conifers	66	5	5	261	9	2	327	8	3
Mixed conifers	10	1	1	51	2	0	61	1	0
Total conifers	**1,258**	**100**	**89**	**2,939**	**100**	**27**	**4,197**	**100**	**34**
Oak	71	47	5	1,404	18	13	1,475	18	12
Beech	5	3	0	897	11	8	902	11	7
Sycamore	30	20	2	1,476	19	14	1,506	19	12
Ash	10	7	1	1,029	13	10	1,039	13	9
Birch	15	10	1	1,159	15	11	1,175	15	10
Poplar	0	0	0	23	0	0	23	0	0
Sweet chestnut	0	0	0	9	0	0	9	0	0
Elm	0	0	0	4	0	0	4	0	0
Other broadleaves	20	13	1	1,451	18	13	1,471	18	12
Mixed broadleaves	0	0	0	411	5	4	411	5	3
Total broadleaves	**152**	**100**	**11**	**7,863**	**100**	**73**	**8,015**	**100**	**66**
Total - all species	**1,410**		**100**	**10,802**		**100**	**12,212**		**100**
Felled	**125**			**59**			**184**		
Total High Forest	**1,535**			**10,861**			**12,396**		

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

1.   In addition to the areas shown there are 1008ha of other areas integral to
        the woodland not stocked with tree species.

2.   The standard errors of the all ownerships area estimates for the most common species or species groups are as follows;

Conifers	6%
Broadleaves	4%
Sitka spruce	12%
Oak	11%
Sycamore	12%

3.   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'.

4.   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
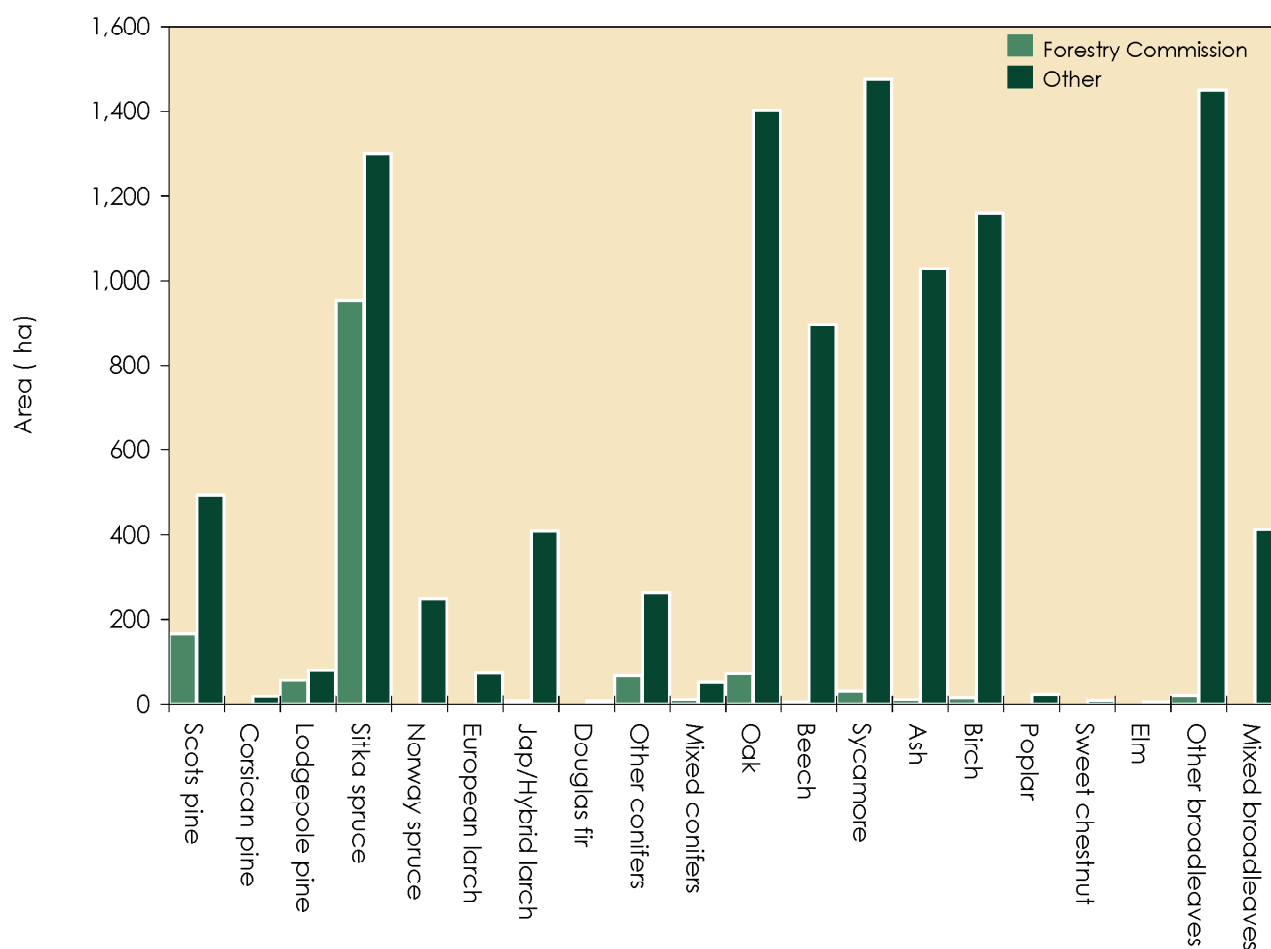
Table 9b Area of High Forest by principal species,ownership and category

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	166	0	166	446	47	493	612	47	660
Corsican pine	0	0	0	8	11	18	8	11	18
Lodgepole pine	56	0	56	79	0	79	135	17	135
Sitka spruce	948	5	953	1,287	12	1,299	2,234	0	2,251
Norway spruce	0	0	0	229	19	248	229	19	248
European larch	0	0	0	73	0	73	73	0	73
Jap/Hybrid larch	7	0	7	409	0	409	416	0	416
Douglas fir	0	0	0	8	0	8	8	0	8
Other conifers	66	0	66	62	200	261	127	200	327
Mixed conifers	10	0	10	22	29	51	32	29	61
Total conifers	**1,253**	**5**	**1,258**	**2,621**	**318**	**2,939**	**3,874**	**324**	**4,197**
Oak	51	20	71	495	909	1,404	546	929	1,475
Beech	5	0	5	379	518	897	384	518	902
Sycamore	0	30	30	920	556	1,476	920	586	1,506
Ash	0	10	10	408	621	1,029	408	631	1,039
Birch	15	0	15	737	422	1,159	752	422	1,175
Poplar	0	0	0	23	0	23	23	0	23
Sweet chestnut	0	0	0	0	9	9	0	9	9
Elm	0	0	0	0	4	4	0	4	4
Other broadleaves	0	20	20	511	940	1,451	511	960	1,471
Mixed broadleaves	0	0	0	208	203	411	208	203	411
Total broadleaves	**71**	**81**	**152**	**3,681**	**4,182**	**7,863**	**3,752**	**4,263**	**8,015**
Total - all species	**1,324**	**86**	**1,410**	**6,302**	**4,500**	**10,802**	**7,626**	**4,587**	**12,212**

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	7%	24%	6%	
Broadleaves	7%	6%	4%	
Sitka spruce	11%	36%	12%	
Oak	21%	13%	11%	*See Glossary for Category 1
Sycamore	16%	18%	12%	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 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'.

Reference Date: 31 March 1999

High Forest Category 1 - Area by principal species and ownership
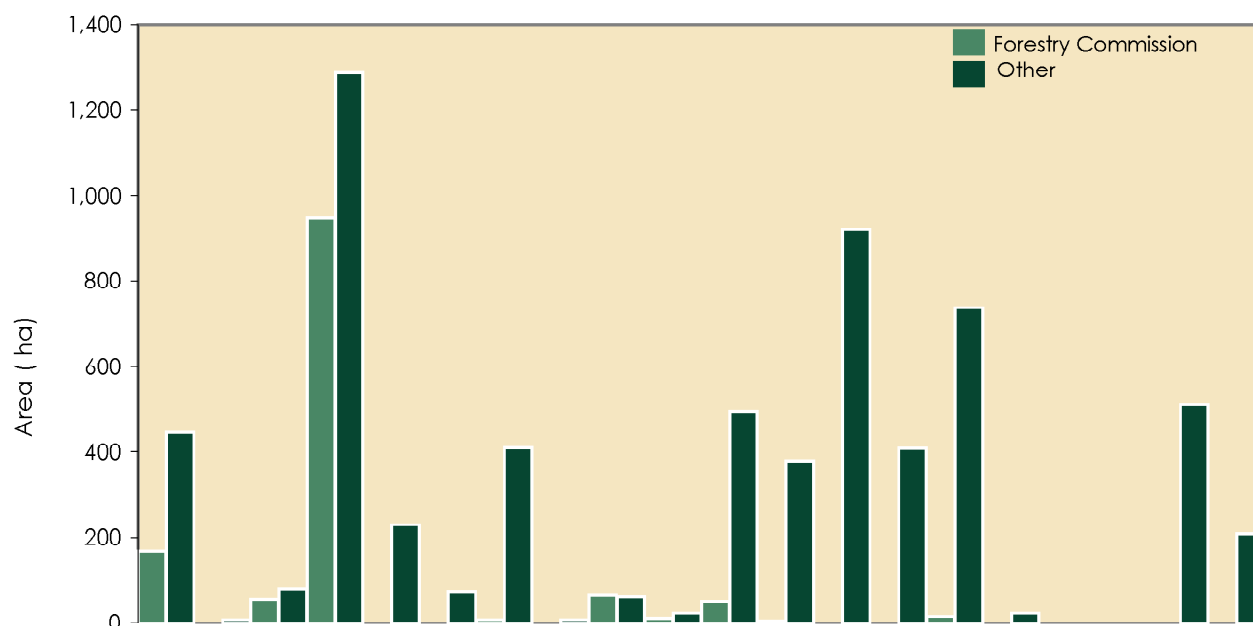
High Forest Category 2 - Area by principal species and ownership
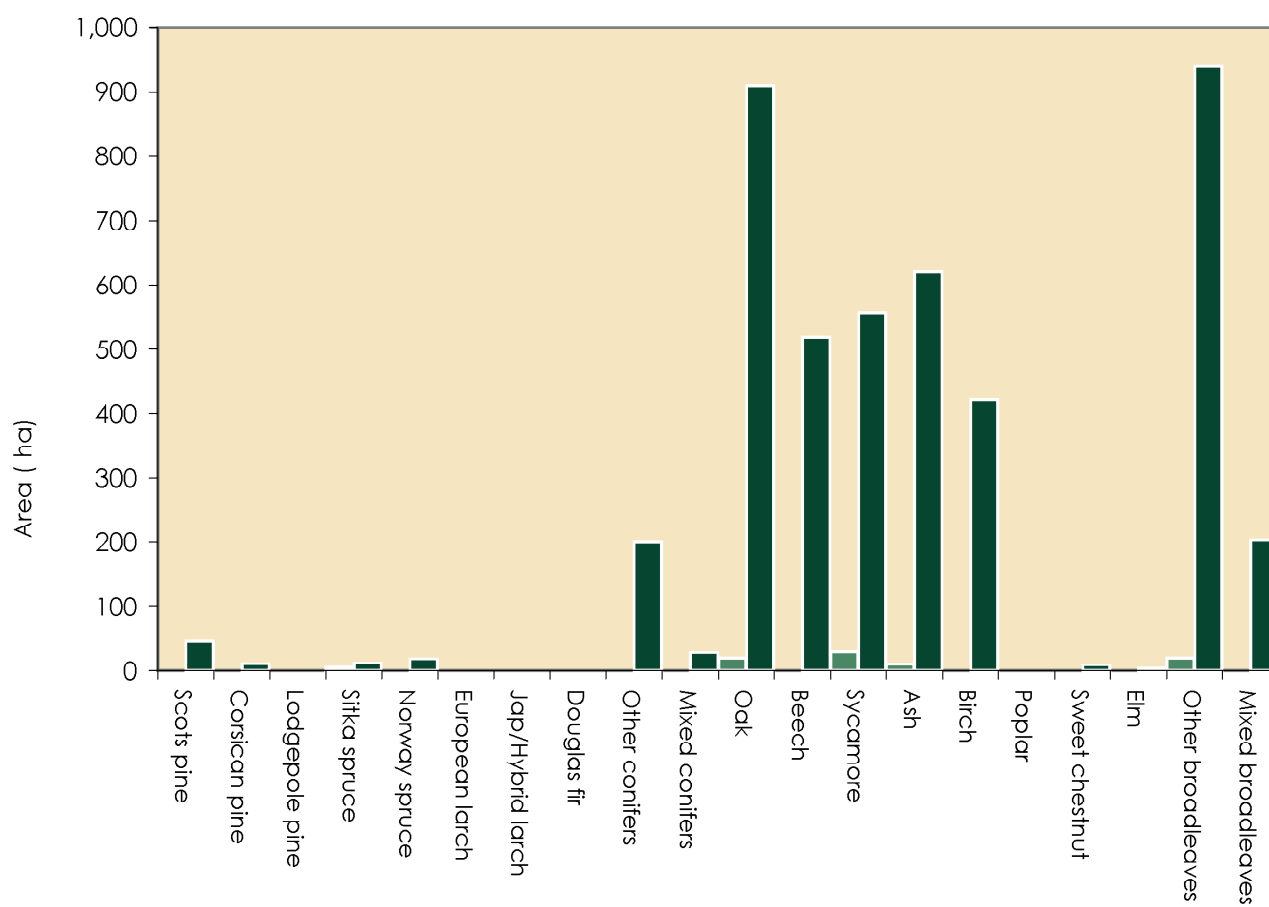
Table 10a High Forest Category 1 - Area by principal species and planting year class

Species	Planting year class*												Total (ha)
	1991-1999	1981-1990	1971-1980	1961-1970	1951-1960	1941-1950	1931-1940	1921-1930	1911-1920	1901-1910	1861-1900	Pre-1861	
Scots pine	11	16	22	189	230	92	21	5	19	0	8	0	612
Corsican pine	0	0	0	0	0	0	0	8	0	0	0	0	8
Lodgepole pine	8	0	21	61	46	0	0	0	0	0	0	0	135
Sitka spruce	643	193	430	772	114	83	0	0	0	0	0	0	2,234
Norway spruce	0	0	79	16	66	68	0	0	0	0	0	0	229
European larch	0	0	0	0	0	0	10	21	43	0	0	0	73
Jap/Hybrid larch	11	0	91	164	106	45	0	0	0	0	0	0	416
Douglas fir	8	0	0	0	0	0	0	0	0	0	0	0	8
Other conifers	0	0	0	15	66	16	0	0	19	0	11	0	127
Mixed conifers	8	0	10	10	0	0	0	0	4	0	0	0	32
Total conifers	**687**	**210**	**651**	**1,227**	**627**	**304**	**30**	**33**	**86**	**0**	**18**	**0**	**3,874**
Oak	107	13	60	0	11	65	74	63	19	0	134	0	546
Beech	0	9	32	16	11	23	0	140	10	0	142	0	384
Sycamore	0	0	50	37	213	49	298	192	50	0	32	0	920
Ash	26	0	5	0	73	36	94	77	97	0	0	0	408
Birch	10	53	367	12	169	59	82	0	0	0	0	0	752
Poplar	0	0	0	4	18	0	0	0	0	0	0	0	23
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 broadleaves	22	73	250	0	11	40	22	87	5	0	0	0	511
Mixed broadleaves	114	8	31	17	10	0	0	12	4	0	12	0	208
Total broadleaves	**279**	**154**	**797**	**86**	**516**	**272**	**570**	**571**	**186**	**0**	**321**	**0**	**3,752**
Total - all species	**966**	**364**	**1,448**	**1,313**	**1,143**	**576**	**600**	**604**	**272**	**0**	**339**	**0**	**7,626**

*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
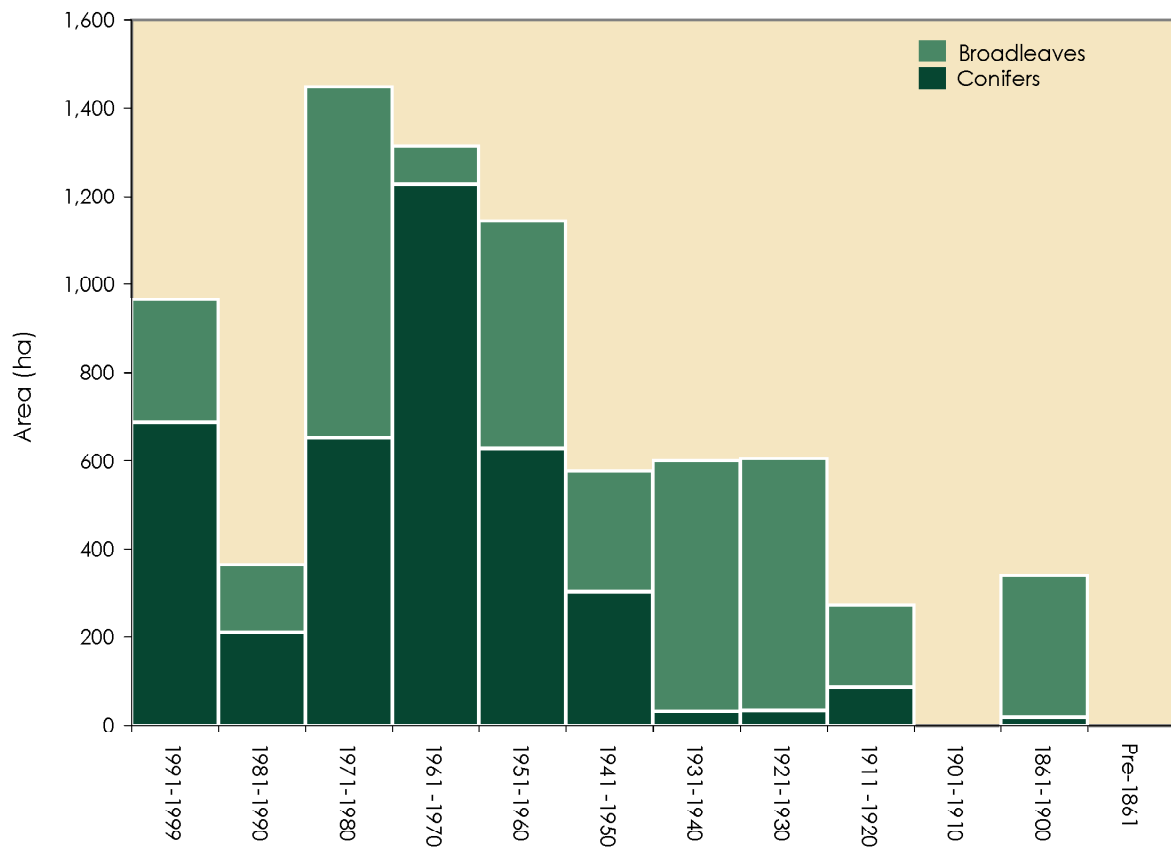
1. Most of the planting year classes cover 10 years, 1991-1999 is 9 years, and the classes prior to 1901 are 40 years or more.

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

Species	Planting year class*												Total (ha)
	1991-1999	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	0	166	0	0	0	0	0	0	0	166
Corsican pine	0	0	0	0	0	0	0	0	0	0	0	0	0
Lodgepole pine	0	0	0	10	46	0	0	0	0	0	0	0	56
Sitka spruce	382	167	0	302	96	0	0	0	0	0	0	0	948
Norway spruce	0	0	0	0	0	0	0	0	0	0	0	0	0
European larch	0	0	0	0	0	0	0	0	0	0	0	0	0
Jap/Hybrid larch	0	0	0	7	0	0	0	0	0	0	0	0	7
Douglas fir	0	0	0	0	0	0	0	0	0	0	0	0	0
Other conifers	0	0	0	0	66	0	0	0	0	0	0	0	66
Mixed conifers	0	0	0	10	0	0	0	0	0	0	0	0	10
Total conifers	**382**	**167**	**0**	**330**	**374**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1,253**
Oak	46	5	0	0	0	0	0	0	0	0	0	0	51
Beech	0	5	0	0	0	0	0	0	0	0	0	0	5
Sycamore	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
Birch	10	5	0	0	0	0	0	0	0	0	0	0	15
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 broadleaves	0	0	0	0	0	0	0	0	0	0	0	0	0
Mixed broadleaves	0	0	0	0	0	0	0	0	0	0	0	0	0
Total broadleaves	**56**	**15**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**71**
Total - all species	**437**	**183**	**0**	**330**	**374**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1,324**

*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
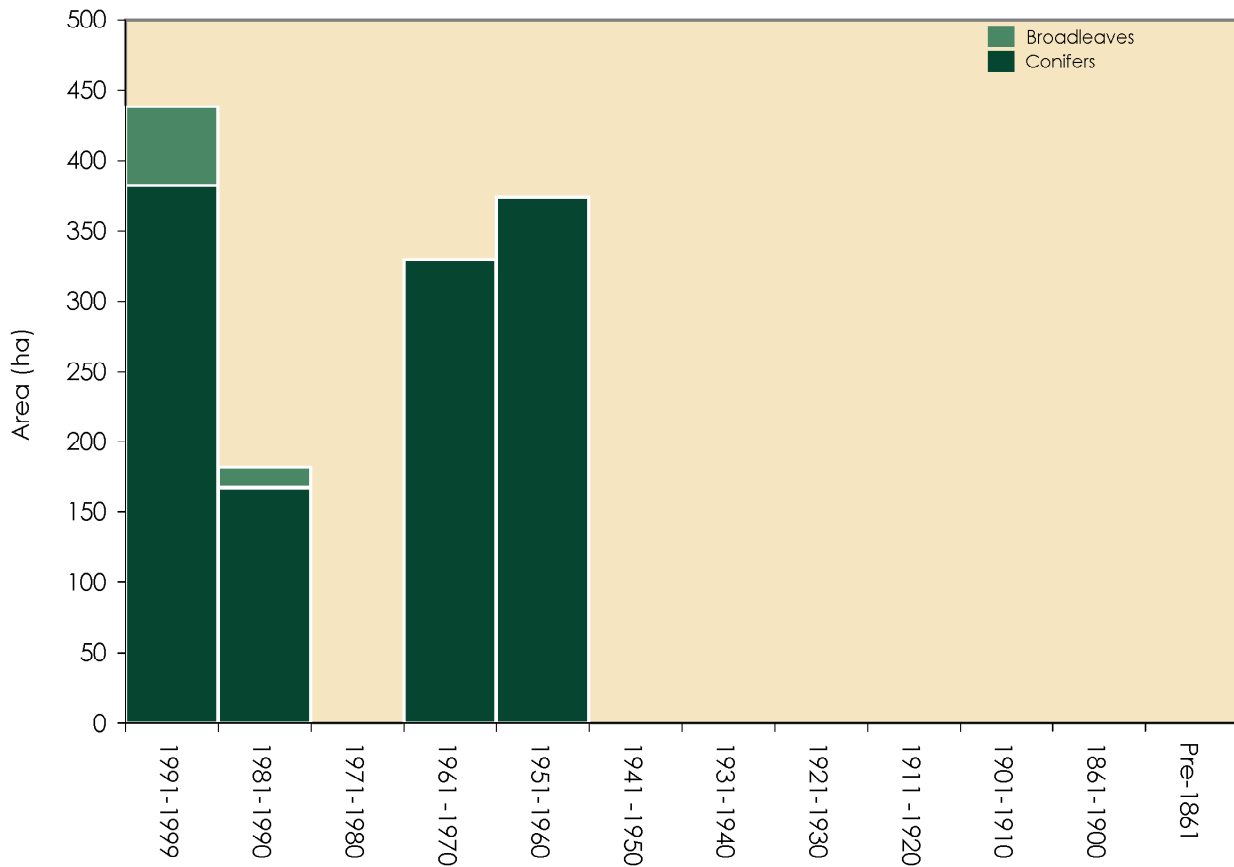

1.   Most of the planting year classes cover 10 years, 1991-1999 is 9 years, and the classes prior to 1901 are 40 years or more.

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

Species	Planting year class*												Total (ha)
	1991-1999	1981-1990	1971-1980	1961-1970	1951-1960	1941-1950	1931-1940	1921-1930	1911-1920	1901-1910	1861-1900	Pre-1861	
Scots pine	11	16	22	189	64	92	21	5	19	0	8	0	446
Corsican pine	0	0	0	0	0	0	0	8	0	0	0	0	8
Lodgepole pine	8	0	21	51	0	0	0	0	0	0	0	0	79
Sitka spruce	261	26	430	470	17	83	0	0	0	0	0	0	1,287
Norway spruce	0	0	79	16	66	68	0	0	0	0	0	0	229
European larch	0	0	0	0	0	0	10	21	43	0	0	0	73
Jap/Hybrid larch	11	0	91	157	106	45	0	0	0	0	0	0	409
Douglas fir	8	0	0	0	0	0	0	0	0	0	0	0	8
Other conifers	0	0	0	15	0	16	0	0	19	0	11	0	62
Mixed conifers	8	0	10	0	0	0	0	0	4	0	0	0	22
Total conifers	**305**	**42**	**651**	**897**	**253**	**304**	**30**	**33**	**86**	**0**	**18**	**0**	**2,621**
Oak	62	8	60	0	11	65	74	63	19	0	134	0	495
Beech	0	4	32	16	11	23	0	140	10	0	142	0	379
Sycamore	0	0	50	37	213	49	298	192	50	0	32	0	920
Ash	26	0	5	0	73	36	94	77	97	0	0	0	408
Birch	0	47	367	12	169	59	82	0	0	0	0	0	737
Poplar	0	0	0	4	18	0	0	0	0	0	0	0	23
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 broadleaves	22	73	250	0	11	40	22	87	5	0	0	0	511
Mixed broadleaves	114	8	31	17	10	0	0	12	4	0	12	0	208
Total broadleaves	**223**	**139**	**797**	**86**	**516**	**272**	**570**	**571**	**186**	**0**	**321**	**0**	**3,681**
Total - all species	**529**	**181**	**1,448**	**983**	**769**	**576**	**600**	**604**	**272**	**0**	**339**	**0**	**6,302**

*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, 1991-1999 is 9 years, and the classes prior to 1901 are 40 years or more.
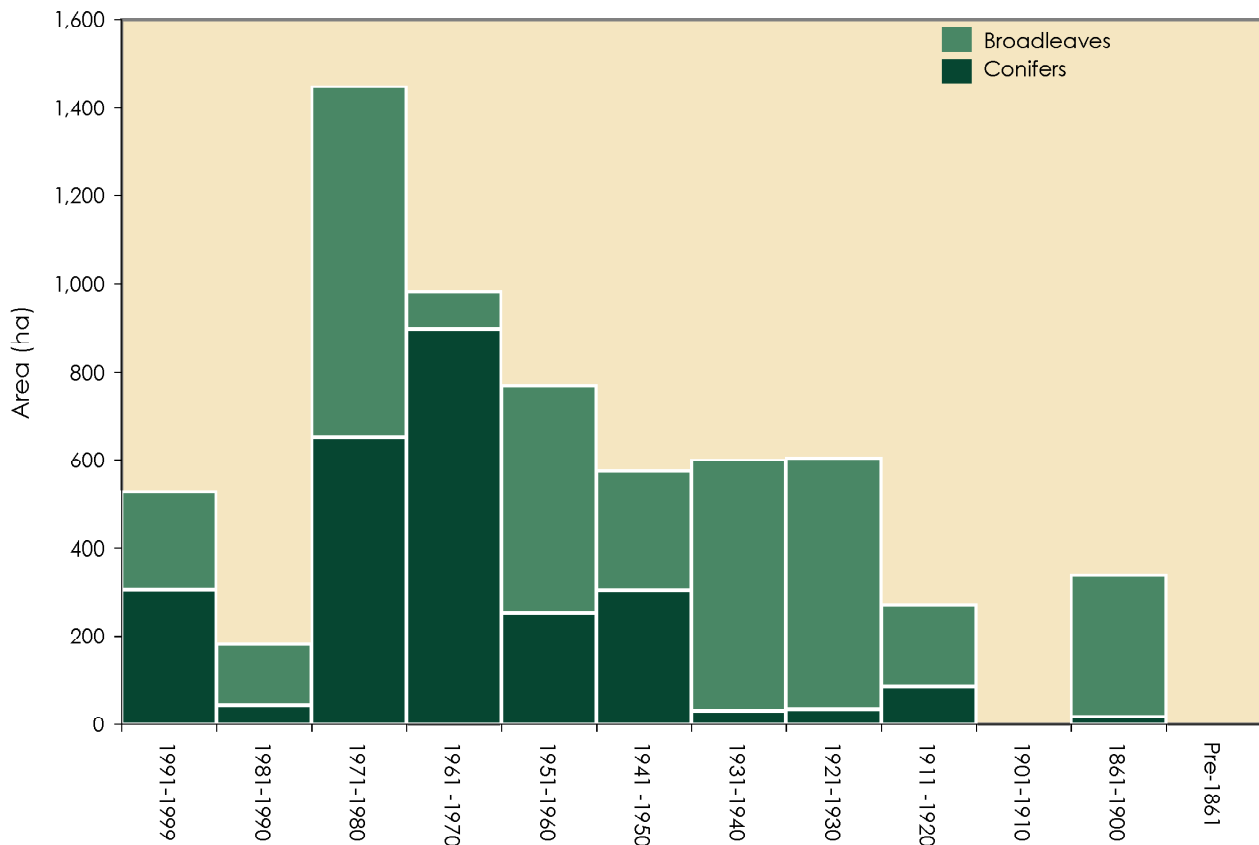
Table 11 High Forest : principal species by planting year class

Planting year class	First	%	Second	%	Third	%
1991-99	Sitka spruce	66	Mixed broadleaves	12	Oak	11
1981-90	Sitka spruce	43	Other broadleaves	23	Birch	20
1971-80	Sitka spruce	29	Birch	25	Other broadleaves	19
1961-70	Sitka spruce	55	Scots pine	14	Jap/Hybrid larch	12
1951-60	Scots pine	18	Sycamore	17	Birch	17
1941-50	Other broadleaves	27	Ash	15	Birch	9
1931-40	Sycamore	40	Birch	23	Ash	14
1921-30	Sycamore	26	Oak	17	Other broadleaves	15
1911-20	Sycamore	26	Other broadleaves	22	Ash	14
1901-10	-		-		-	
1861-1900	Oak	32	Beech	19	Ash	14
Pre 1861	Beech	52	Oak	21	Sycamore	12
All years	**Sitka spruce**	**18**	**Sycamore**	**12**	**Oak**	**12**

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	5,733	42.8
Business	2,090	15.6
Forestry or timber business	895	6.7
Charity	342	2.6
Local Authority	1,949	14.5
Other public (not FC)	733	5.5
Forestry Commission	1,662	12.4
Community ownership or common land	0	0.0
Unidentified	0	0.0
Total	**13,404**	**100.0**

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

Ownership type by area

- Personal
- Business
- Forestry or timber business
- Charity
- Local Authority
- Other public
- Forestry Commission
- Community ownership
- Unidentified
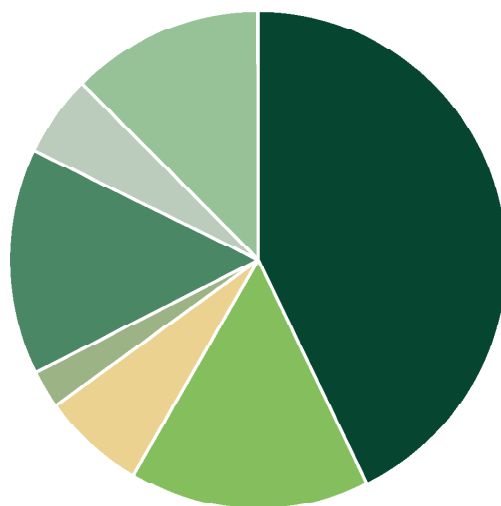
RESULTS FROM THE SURVEY OF SMALL WOODLAND AND TREES (SSWT)

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^2 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^2 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	2,492	674	Area (ha)
Wide Linear Features	0	0	Area (ha)
Wide Linear Features	0	0	Length (Km)
Narrow Linear Features	26,300	2,364	Length (Km)
Narrow Linear Features	26,300	1,115,000	Number of live trees
Groups	58,100	364,400	Number of live trees
Individual Trees	113,000	113,000	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	169	505	674	2,492	0.27
Wide Linear Features	0	0	0	0	0.00
Total	169	505	674	2,492	0.27

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	0.8	0.8	0.8	0.1
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	92.8	92.8	97.5	5.8
Other conifers	0.0	0.8	0.0	0.8	1.6	1.7	0.1
Total conifers	**0.0**	**0.8**	**0.0**	**94.4**	**95.2**	**100.0**	**6.0**
Oak	27.8	2.5	33.4	97.5	161.2	10.8	10.1
Beech	4.8	0.8	4.8	55.7	66.1	4.4	4.2
Sycamore	4.0	3.2	11.1	24.8	43.1	2.9	2.7
Ash	15.9	0.0	25.5	49.5	90.9	6.1	5.7
Birch	0.0	1.6	4.0	26.3	31.9	2.1	2.0
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	0.8	0.0	0.8	0.1	0.1
Alder	6.4	1.6	23.1	48.0	79.1	5.3	5.0
Lime	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Elm	0.8	0.0	0.8	1.5	3.1	0.2	0.2
Willow	2.4	0.0	22.3	19.3	44.0	2.9	2.8
Other broadleaves	33.3	7.3	238.7	697.9	977.2	65.3	61.4
Total broadleaves	**95.4**	**17.0**	**364.4**	**1,020.6**	**1,497.4**	**100.0**	**94.0**
Total - all species	**95.4**	**17.8**	**364.4**	**1,115.0**	**1,592.4**		**100.0**

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	22%
Groups	38%
Narrow Linear Features	28%

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
Total conifers	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Oak	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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	0.8	0.0	1.6	9.3	11.7	62.6	62.6
Birch	0.0	0.0	0.8	0.0	0.8	4.3	4.3
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	0.8	0.0	0.8	4.3	4.3
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	1.6	3.9	5.5	29.4	29.4
Total broadleaves	**0.8**	**0.0**	**4.8**	**13.2**	**18.7**	**100.0**	**100.0**
Total - all species	**0.8**	**0.0**	**4.8**	**13.2**	**18.7**		**100.0**

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	0.8	0.0	0.8
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	92.8	0.0	0.0	92.8
Other conifers	0.8	0.8	0.0	0.0	1.6
Total conifers	**0.8**	**93.6**	**0.8**	**0.0**	**95.2**
Oak	42.1	107.3	11.7	0.0	161.1
Beech	4.0	54.3	7.8	0.0	66.1
Sycamore	4.7	33.7	4.7	0.0	43.1
Ash	18.0	53.4	19.5	0.0	90.9
Birch	8.5	23.4	0.0	0.0	31.9
Poplar	0.0	0.0	0.0	0.0	0.0
Sweet chestnut	0.0	0.0	0.0	0.0	0.0
Horse chestnut	0.0	0.8	0.0	0.0	0.8
Alder	3.1	75.9	0.0	0.0	79.0
Lime	0.0	0.0	0.0	0.0	0.0
Elm	0.8	2.4	0.0	0.0	3.2
Willow	24.5	19.5	0.0	0.0	44.0
Other broadleaves	789.0	188.2	0.0	0.0	977.2
Total broadleaves	**894.7**	**558.9**	**43.7**	**0.0**	**1,497.3**
Total - all species	**895.5**	**652.4**	**44.5**	**0.0**	**1,592.4**

Table 18 Number of Groups by group size

Number of trees per Group*	Number of Groups (000's)
2	10
3-5	22
6-10	10
11-20	10
21-50	6
51-100	0
>100	0
Total	**58**

*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 1999 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 1999 Inventory
Table 20:   Comparison of High Forest area by species
              between 1980 Census and 1999 Inventory
Chart: Comparison of High Forest area by species
              between 1980 Census and 1999 Inventory
Table 21:   Comparison of High Forest Category 1 area by planting year class
              between 1980 Census and 1999 Inventory
Chart: Comparison of High Forest Category 1 area by planting year class
              between 1980 Census and 1999 Inventory
Table 22:   Comparison of numbers of live trees outside woodland
              between 1980 Census and 1999 Inventory
Table 23:   Comparison of density of non-woodland features
              between 1980 Census and 1999 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 1999 Inventory

Woodland size (ha)	1980 Census woodland area		1999 Inventory woodland area		Change (%)
	(ha)	(%)	(ha)	(%)	(%)
2.0 or more	9,709	84.6	13,404	96.4	38
0.25 - <2.0	1,768	15.4	505	3.6	-71
Total	11,477		13,909		21
% Woodland land cover	3.7		4.5		

1.   Differences in sampling methodology may account for some of the apparent differences.

2.   The above figures from the 1999 Inventory exclude
         woodland between 0.1 and <0.25 ha, thereby matching the scope of the 1980 Census.
         The 1999 figures above will therefore not match those in the previous sections of the report.

3.   Land area used to calculate woodland cover percent (1999), 306,978 ha,
         was based on the 1991 Census of Population digital boundaries.

4.   Land area used to calculate woodland cover percent (1980), 306,347ha,
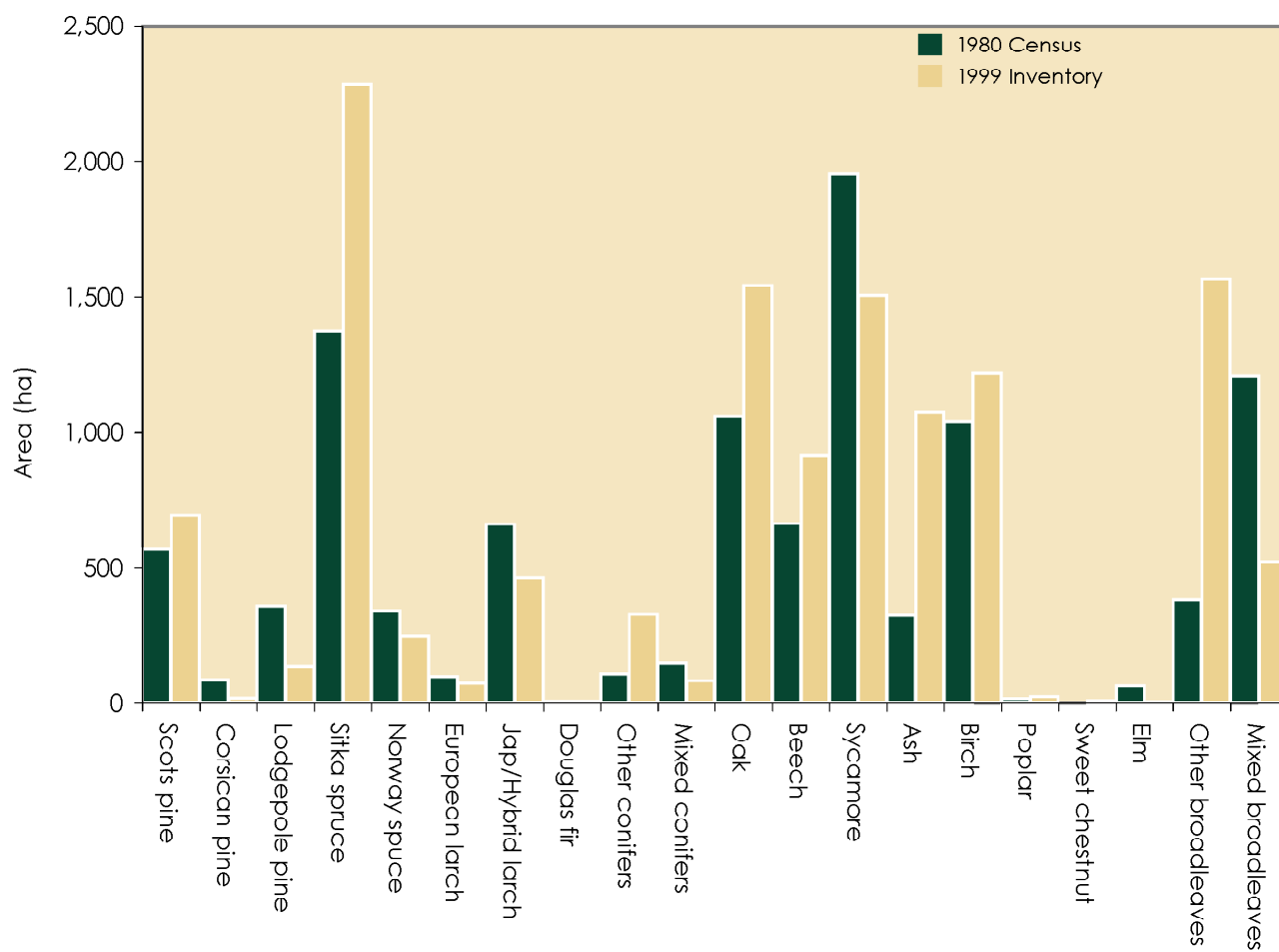
         (Ordnance Survey data)

Table 20 Comparison of High Forest area by species between 1980 Census and 1999 Inventory

Species	1980 Census woodland area (ha)	1999 Inventory woodland area (ha)	Change (%)
Scots pine	568	695	22
Corsican pine	86	18	-79
Lodgepole pine	357	135	-62
Sitka spruce	1,374	2,286	66
Norway spuce	341	248	-27
European larch	98	73	-26
Jap/Hybrid larch	661	464	-30
Douglas fir	7	8	8
Other conifers	108	327	204
Mixed conifers	146	82	-44
Total conifers	**3,746**	**4,336**	**16**
Oak	1,060	1,544	46
Beech	664	916	38
Sycamore	1,954	1,506	-23
Ash	327	1,074	229
Birch	1,041	1,217	17
Poplar	17	23	38
Sweet chestnut	0	9	-
Elm	64	4	-94
Other broadleaves	385	1,568	307
Mixed broadleaves	1,209	522	-57
Total broadleaves	**6,721**	**8,383**	**25**
Total all species	**10,467**	**12,719**	**22**
Felled	**152**	**184**	**21**
Total High Forest	**10,619**	**12,903**	**22**

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 7.2% (Table 2). To obtain meaningful comparisons between the two datasets the 1980 Census data have therefore been reduced by 7.2%.

3. The above figures from the 1999 Inventory exclude woodland between 0.1 and <0.25 ha, thereby matching the scope of the 1980 Census.
The 1999 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 1999 Inventory**

Table 21 Comparison of High Forest Category 1 area by planting year class
between 1980 Census and 1999 Inventory

Planting year class	1980 Census woodland area (ha)	1999 Inventory woodland area (ha)	Change (%)
1991-1999	0	1,063	see note
1981-1990	0	364	see note
1971-1980	641	1,448	126
1961-1970	1,185	1,355	14
1951-1960	2,536	1,143	-55
1941-1950	1,072	618	-42
1931-1940	539	600	11
1921-1930	398	604	52
1911-1920	594	272	-54
1901-1910	593	0	-100
1861-1900	2,005	339	-83
Pre 1861	127	35	-72
Total all years	**9,692**	**7,841**	**-19**

1.   The first two classes, 1991-1999 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 1999 Inventory
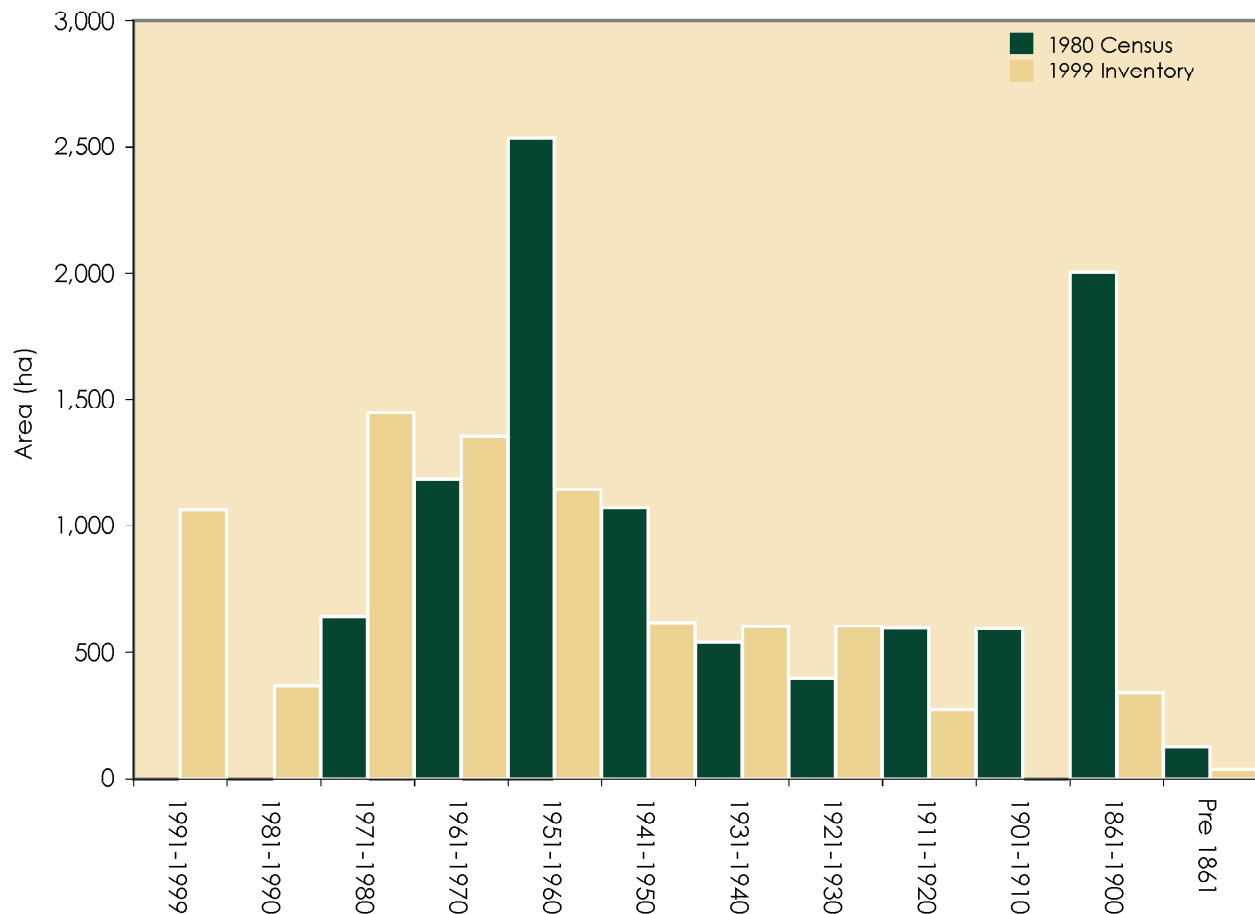
Table 22 Comparison of numbers of live trees outside woodland
between 1980 Census and 1999 Inventory   (000's)

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. Lancashire included
a substantial proportion of developed land making comparison inappropriate.

Table 23 Comparison of density of non-woodland features between 1980
Census and 1999 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. Lancashire 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.
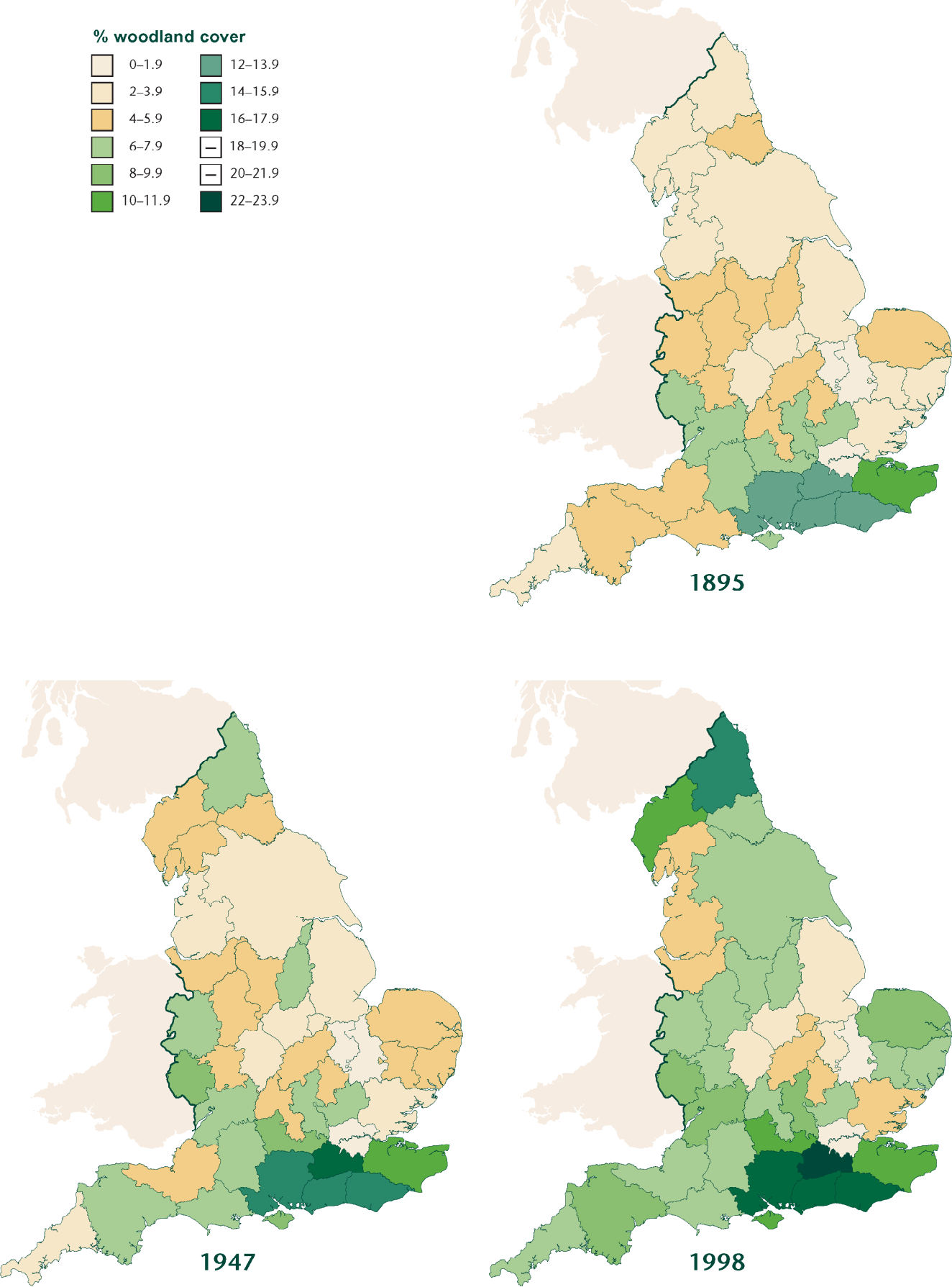
The maps use the old County structure data of England, as reported on in 1895 and 1947. The data from these counties could not be re-worked for different geographic areas. In contrast, the digital woodland map, which forms the basis of the current inventory, can be analysed for any geographic area.

Change in county woodland cover through time (1890 – 2000)
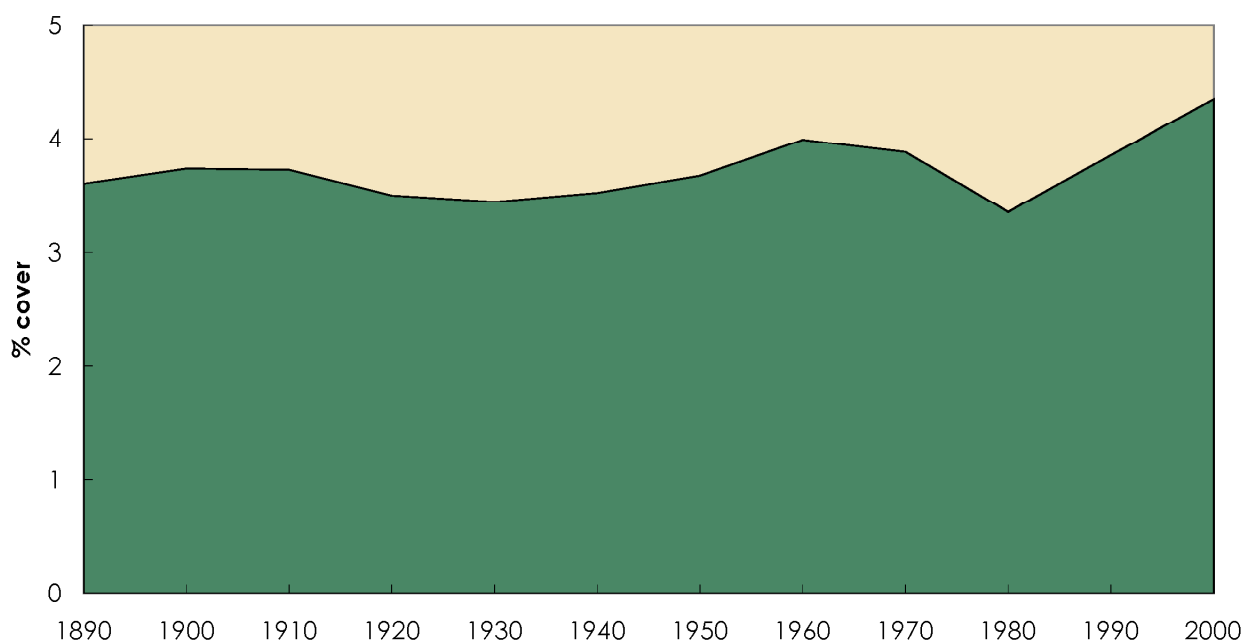
1.   Following local government reorganisation the boundaries of the county of the report have changed significantly since 1890 and therefore data from a wider geographic area have been used.

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

% woodland cover

0–1.9	12–13.9
2–3.9	14–15.9
4–5.9	16–17.9
6–7.9	18–19.9
8–9.9	20–21.9
10–11.9	22–23.9

1895

1947

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 16 m or less)
 - Wide Linear Features (with a width greater than 16 m)

NOTES