NATIONAL INVENTORY OF WOODLAND AND TREES

ENGLAND

County Report for

NORTHUMBERLAND

Forestry Commission

CONTENTS

ACKNOWLEDGEMENTS

INTRODUCTION

This report presents the results for Northumberland 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 With the statistics becoming increasingly out of date the Forestry Commission decided to undertake a new survey: the *National Inventory of Woodland and Trees.*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 km² 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 km² 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 Northumberland is 80645 hectares. This represents 16% of the land area. (Table 1)

- Conifer woodland is the dominant forest type representing 71.7 % of all woodland. Broadleaved woodland represents 13.3 %, Mixed woodland 3.7 % and Open Space within woodlands 4.8 %. (Table 2)

- The main conifer species is sitka spruce covering 40580 hectares or 68 % of all conifer species. The main broadleaved species is birch covering 2475 hectares or 20 % of all broadleaved species. (Table 3)

- 47464 hectares or 60 % of woodland over 2 hectares is owned by or leased to the Forestry Commission, and 31844 hectares or 40 % of woodland is in Other ownership. (Table 6)

- There are a total of 2103 woods over 2 ha within Northumberland with a mean wood area of 38.1 hectares. (Table 7a) There are a total of 1185 woods from 0.1 - <2.0 hectares with a mean wood area of 1.13 hectares. (Table 14)

- There are 243.7 thousand live trees and 1.1 thousand dead trees outside woodland in Northumberland. (Table 15)

- Woodland land cover increased by over 4875 hectares from 15.1 % to 16 % of the land area between 1980 and 1999. (Table 19)

- The area of broadleaves increased by 54 % between 1980 and 1999, with the relative proportion of broadleaves to conifers increasing from 11 % to 17 %. (Table 20)

- The area of broadleaves increased by 55% between 1980 and 1998, with the relative proportion of broadleaves to conifers increasing from 56 % to 68 %. (Table 20)

INVENTORY REPORTS

As well as this report for Northumberland, 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

Northumberland

North East Region

Tyne & Wear

North West Region

Durham

Cleveland

Yorkshire & the Humber Region

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Map 2 Distribution of woodland over 2 hectares

Tyne & Wear

Durham
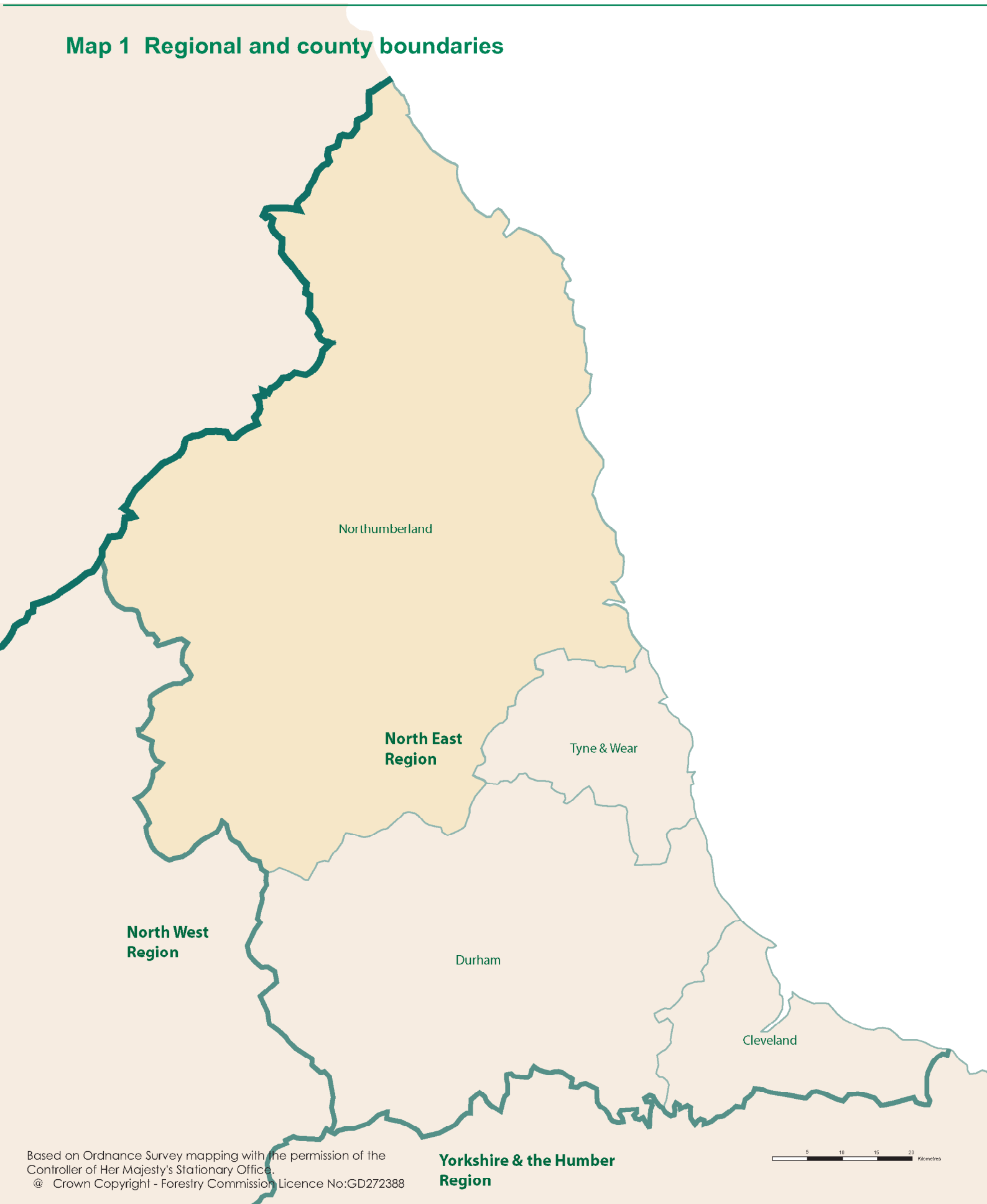
5   10   15   20
Kilometres
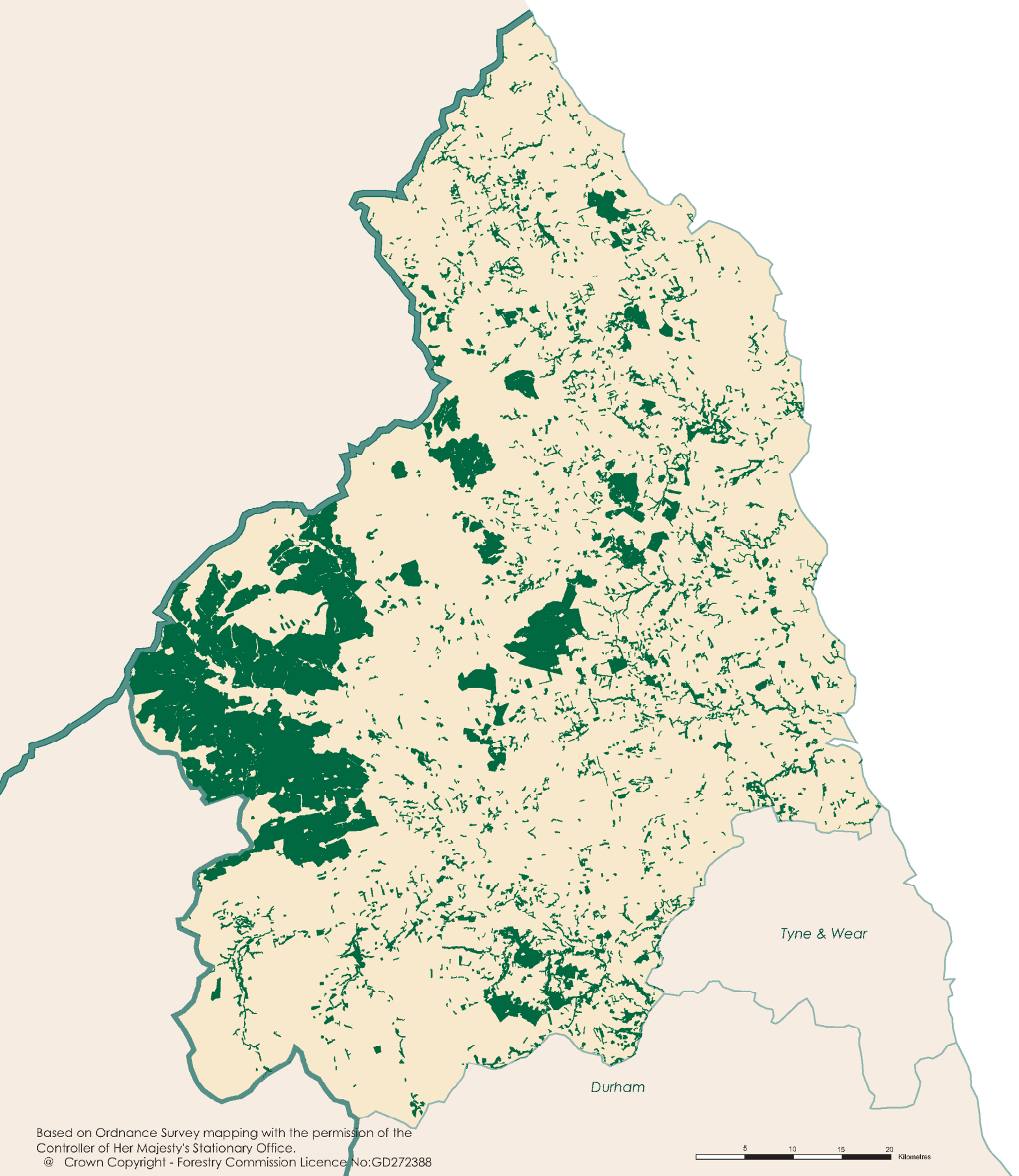
Map 3 Distribution of woodland over 2 hectares by ownership

Forestry Commission woodland
Other woodland
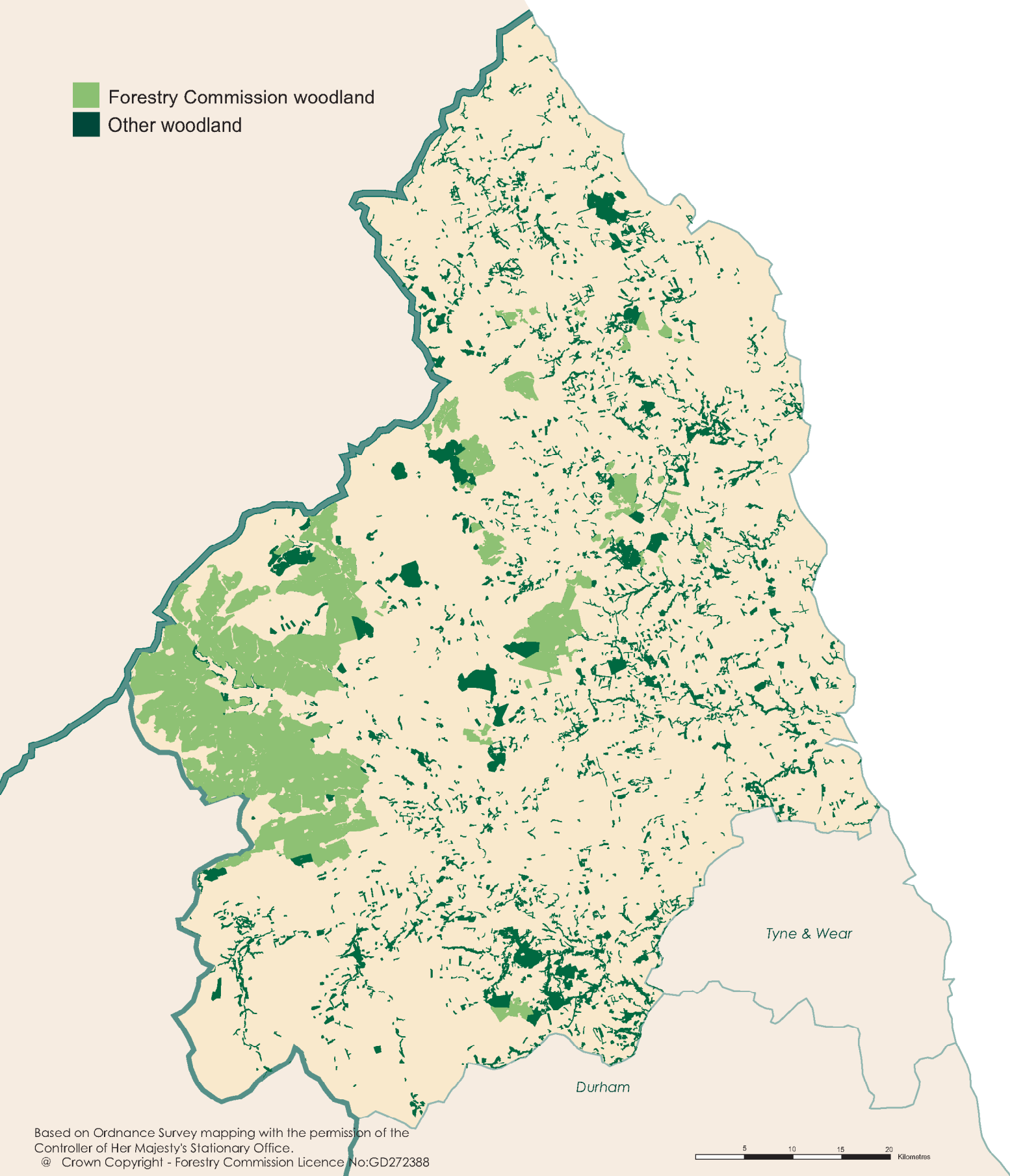
Tyne & Wear

Durham

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5   10   15   20
Kilometres

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

- Broadleaves
- Conifer
- Mixed
- Felled
- Young trees & shrubs
- Ground prepared for planting
- Coppice (none present)

Tyne & Wear

Durham

5   10   15   20
Kilometres

Reference Date 31 March 1999
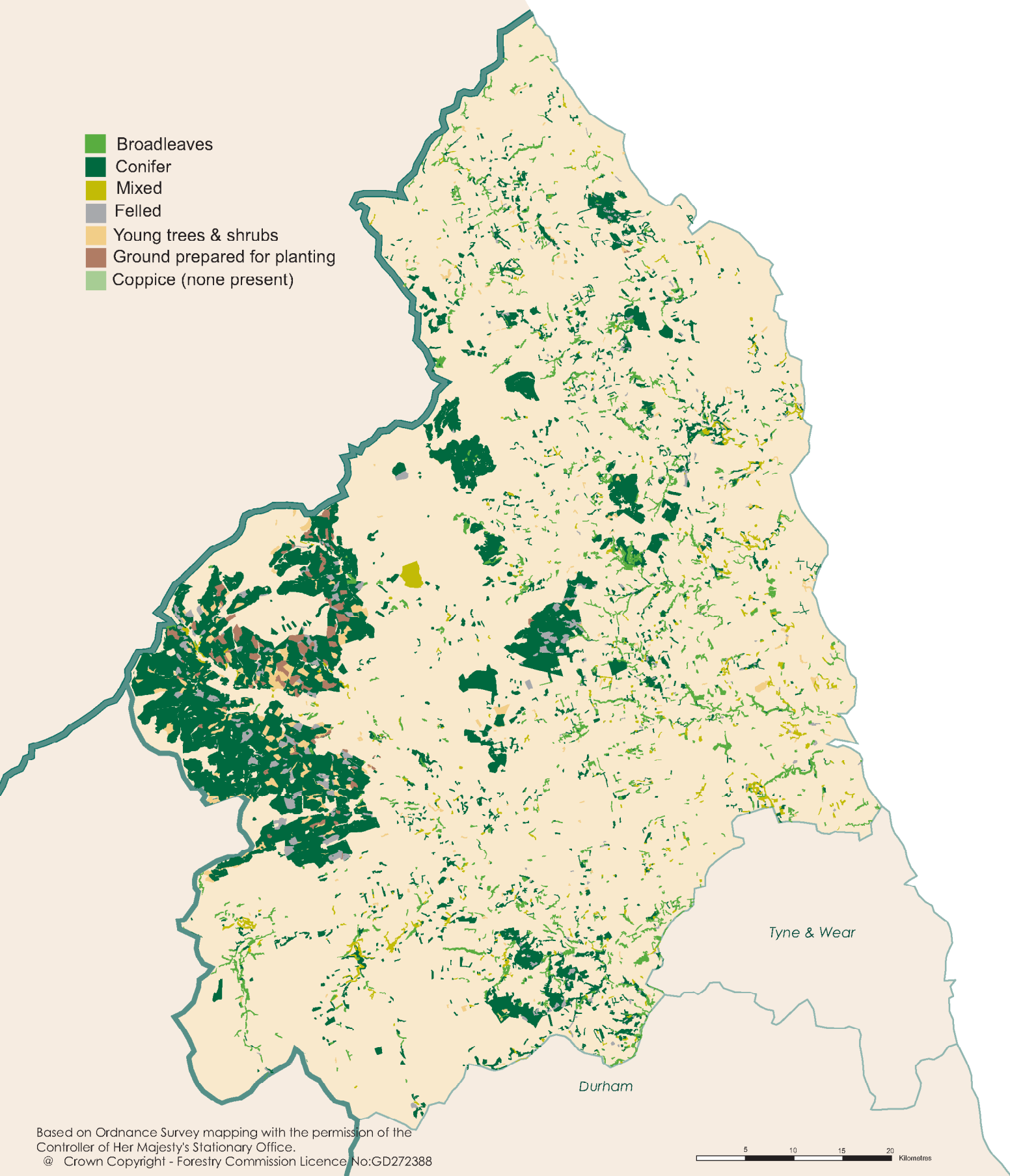
SUMMARY RESULTS FROM THE NATIONAL INVENTORY OF WOODLAND AND TREES (NIWT)

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

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	79,308	98.3
0.25 - < 2.00	1,337	1.7
0.10 - < 0.25	0	0.0
Total area of woodland	**80,645**	**100.0**
% Woodland land cover	**16.0**	

1.   Area of Northumberland, including inland water, 502,591 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
Coniter	56,614	1,222	57,836	71.7
Broadleaved	10,613	115	10,728	13.3
Mixed	3,001	0	3,001	3.7
Coppiced	0	0	0	0.0
Copp-w-standards	0	0	0	0.0
Windblow	426	0	426	0.5
Felled	4,819	0	4,819	6.0
Open Space	3,835	0	3,835	4.8
Total	79,308	1,337	80,645	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	10,356	224	10,580	17.8	14.7
Sitka spruce	40,091	489	40,580	68.2	56.4
Larch	2,978	204	3,182	5.3	4.4
Other conifers	4,781	285	5,066	8.5	7.0
Mixed conifers	80	0	80	0.1	0.1
Total conifers	**58,287**	**1,202**	**59,489**	**100.0**	**82.6**
Oak	2,444	0	2,444	19.5	3.4
Beech	1,232	0	1,232	9.9	1.7
Sycamore	2,162	22	2,184	17.5	3.0
Ash	1,441	19	1,460	11.7	2.0
Birch	2,455	20	2,475	19.8	3.4
Elm	52	0	52	0.4	0.1
Other broadleaves	1,436	56	1,492	11.9	2.1
Mixed broadleaves	1,144	19	1,163	9.3	1.6
Total broadleaves	**12,367**	**136**	**12,503**	**100.0**	**17.4**
Total all species*	**70,654**	**1,337**	**71,992**		**100.0**

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

***Excludes the 8.654ha 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   3%
        Broadleaves   5%
        Pine   7%
        Sitka spruce   3%
        Birch   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	21,300	91,800	4	18
Narrow Linear Features	1,500	33,100	22	7
Individual Trees	118,800	118,800	1	24
Total		**243,700**		**48**

1.   Land area used to calculate tree density 502,594ha 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   55%
   Narrow Linear Features   99%
   Individual Trees   25%

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	371	51	10
Narrow Linear Features	1,500	100	20
Total		**150**	**30**

1.   Land area used to calculate tree density 502,594ha 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   99%
   Narrow Linear Features   99%

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	47,464	60
Other	31,844	40
Total area of woodland	**79,308**	**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
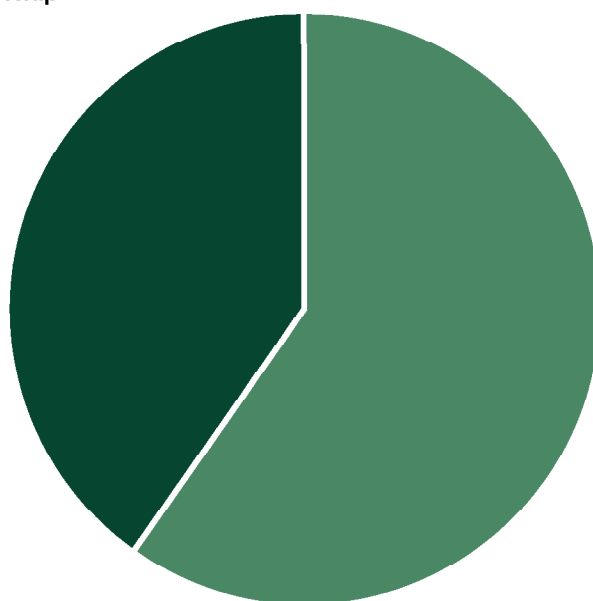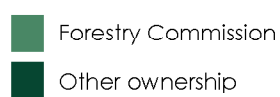
Table 7a Size class distribution of woodland

Size class (ha)	Number of woods	Total area (ha)	Percent of total area	Mean wood area (ha)
<10	1,530	6,598	8	4.3
10 - <20	289	4,051	5	14.0
20 - <50	165	5,029	6	30.5
50 - <100	67	4,721	6	70.5
<100	2,051	20,399	25	9.9
100 - <500	40	7,985	10	199.6
500 and >	12	51,686	65	4307.2
All woods	2,103	80,070	100	38.1

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	22	77	0	3.5
	O	1,617	6,805	8	4.2
10 - <20	FC	13	194	0	14.9
	O	290	4,044	5	13.9
20 - <50	FC	15	524	1	34.9
	O	167	5,100	6	30.5
50 - <100	FC	11	809	1	73.6
	O	60	4,248	5	70.8
<100	FC	61	1,604	2	26.3
	O	2,134	20,197	25	9.5
100 - <500	FC	12	2,820	4	235.0
	O	34	6,863	9	201.9
500 and >	FC	7	43,207	54	6172.4
	O	6	5,378	7	896.4
Total	FC	80	47,631	59	595.4
	O	2,174	32,439	41	14.9

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 762 hectares 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	38,319	80.7	18,295	57.5	56,614	71.4
Broadleaved	1,333	2.8	9,280	29.1	10,613	13.4
Mixed	27	0.1	2,974	9.3	3,001	3.8
Coppice	0	0.0	0	0.0	0	0.0
Copp-w-Stds	0	0.0	0	0.0	0	0.0
Windblow	310	0.7	116	0.4	426	0.5
Felled	4,629	9.8	190	0.6	4,819	6.1
Open Space	2,847	6.0	988	3.1	3,835	4.8
Total	47,464	100.0	31,844	100.0	79,308	100.0

Area of woodland by forest type

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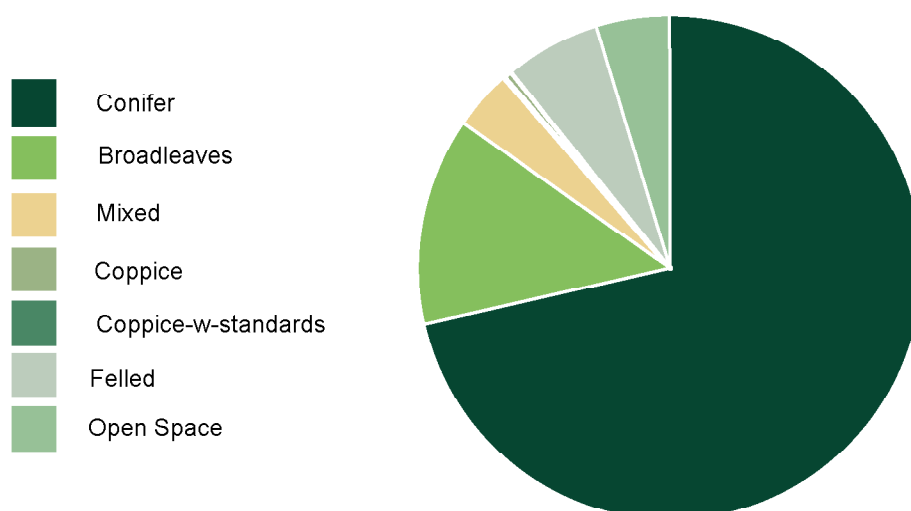
Table 9a Area of High Forest by principal species and ownership

Species	Forestry Commission			Other			All ownerships		
	area (ha)	cat* %	spp** %	area (ha)	cat* %	spp** %	area (ha)	cat* %	spp** %
Scots pine	2,205	6	6	5,508	28	18	7,713	13	11
Corsican pine	0	0	0	254	1	1	254	0	0
Lodgepole pine	1,891	5	5	498	3	2	2,389	4	3
Sitka spruce	31,855	82	80	8,237	42	27	40,091	69	57
Norway spruce	2,036	5	5	2,015	10	7	4,051	7	6
European larch	123	0	0	528	3	2	651	1	1
Jap/Hybrid larch	386	1	1	1,941	10	6	2,327	4	3
Douglas fir	94	0	0	514	3	2	608	1	1
Other conifers	11	0	0	111	1	0	122	0	0
Mixed conifers	16	0	0	64	0	0	80	0	0
Total conifers	**38,618**	**100**	**97**	**19,669**	**100**	**64**	**58,287**	**100**	**82**
Oak	21	2	0	2,422	22	8	2,444	20	3
Beech	5	0	0	1,227	11	4	1,232	10	2
Sycamore	16	1	0	2,146	20	7	2,162	17	3
Ash	11	1	0	1,431	13	5	1,441	12	2
Birch	429	31	1	2,026	18	7	2,455	20	3
Poplar	0	0	0	95	1	0	95	1	0
Sweet chestnut	0	0	0	0	0	0	0	0	0
Elm	0	0	0	52	0	0	52	0	0
Other broadleaves	129	9	0	1,212	11	4	1,341	11	2
Mixed broadleaves	759	55	2	385	4	1	1,144	9	2
Total broadleaves	**1,370**	**100**	**3**	**10,997**	**100**	**36**	**12,367**	**100**	**18**
Total - all species	**39,988**		**100**	**30,666**		**100**	**70,654**		**100**
Felled	**4,629**			**190**			**4,819**		
Total High Forest	**44,617**			**30,856**			**75,473**		

*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 3835ha 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   2%
          Broadleaves   5%
          Scots pine   8%
          Sitka spruce   3%
          Birch   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
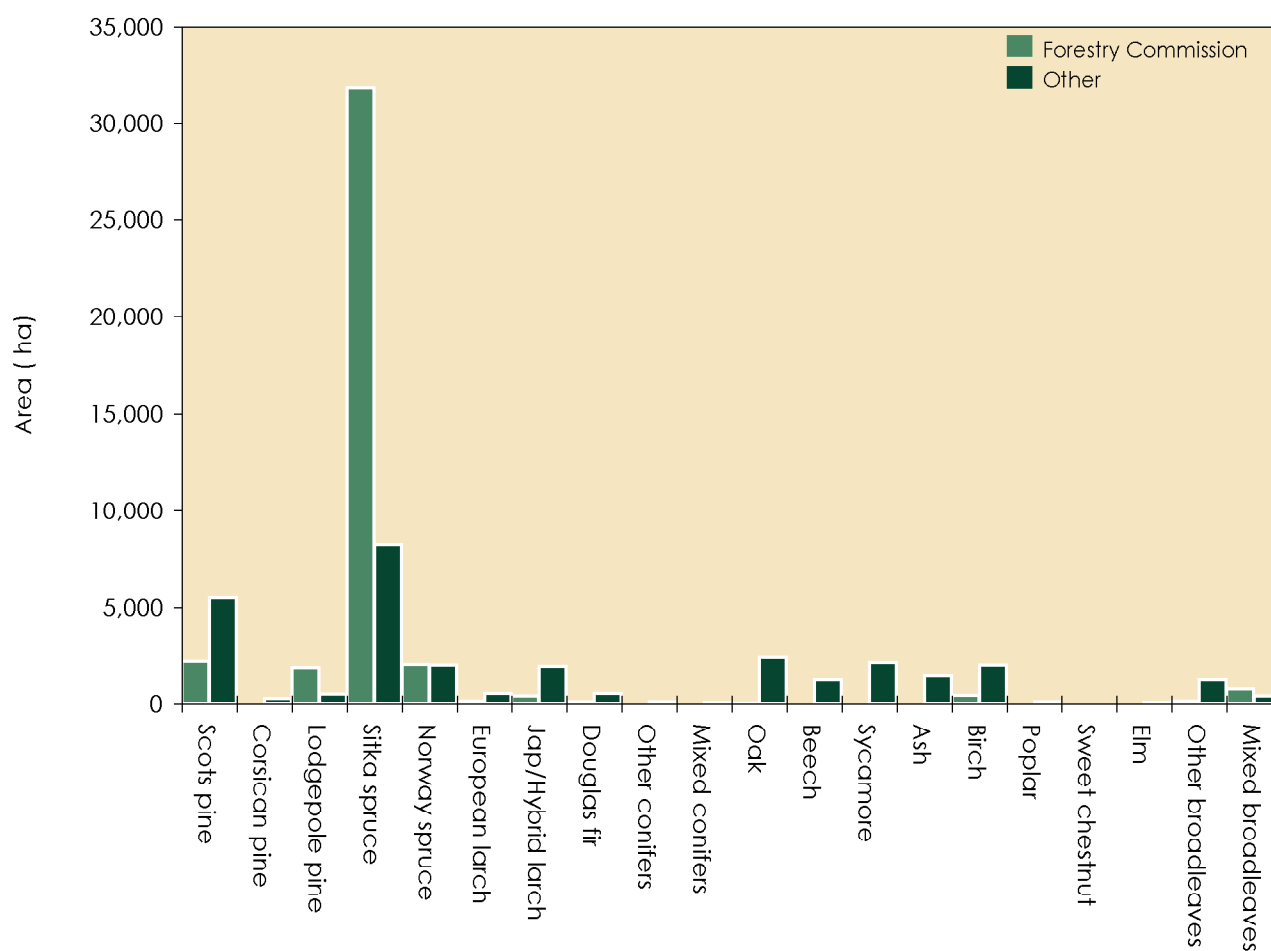
Table 9b Area of High Forest by principal species,ownership and category

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	2,160	45	2,205	5,293	215	5,508	7,453	260	7,713
Corsican pine	0	0	0	236	17	254	236	17	254
Lodgepole pine	1,513	378	1,891	397	101	498	1,910	479	2,389
Sitka spruce	30,784	1,071	31,855	8,212	25	8,237	38,996	1,096	40,091
Norway spruce	1,904	132	2,036	1,986	29	2,015	3,890	161	4,051
European larch	21	102	123	460	68	528	481	170	651
Jap/Hybrid larch	386	0	386	1,941	0	1,941	2,327	0	2,327
Douglas fir	94	0	94	505	8	514	600	8	608
Other conifers	5	5	11	59	52	111	64	57	122
Mixed conifers	11	5	16	59	5	64	70	10	80
Total conifers	**36,879**	**1,739**	**38,618**	**19,149**	**520**	**19,669**	**56,028**	**2,259**	**58,287**
Oak	21	0	21	1,676	746	2,422	1,697	746	2,444
Beech	5	0	5	1,017	210	1,227	1,022	210	1,232
Sycamore	0	16	16	1,809	337	2,146	1,809	353	2,162
Ash	11	0	11	1,174	256	1,431	1,185	256	1,441
Birch	155	273	429	720	1,306	2,026	875	1,580	2,455
Poplar	0	0	0	89	6	95	89	6	95
Sweet chestnut	0	0	0	0	0	0	0	0	0
Elm	0	0	0	52	0	52	52	0	52
Other broadleaves	64	64	129	319	893	1,212	383	958	1,341
Mixed broadleaves	16	743	759	167	218	385	183	961	1,144
Total broadleaves	**273**	**1,097**	**1,370**	**7,023**	**3,974**	**10,997**	**7,297**	**5,071**	**12,367**
Total - all species	**37,152**	**2,836**	**39,988**	**26,172**	**4,494**	**30,666**	**63,325**	**7,330**	**70,654**

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	2%	15%	2%	
Broadleaves	7%	7%	5%	
Scots pine	8%	40%	8%	
Sitka spruce	3%	24%	3%	*See Glossary for category 1
Birch	21%	15%	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'.

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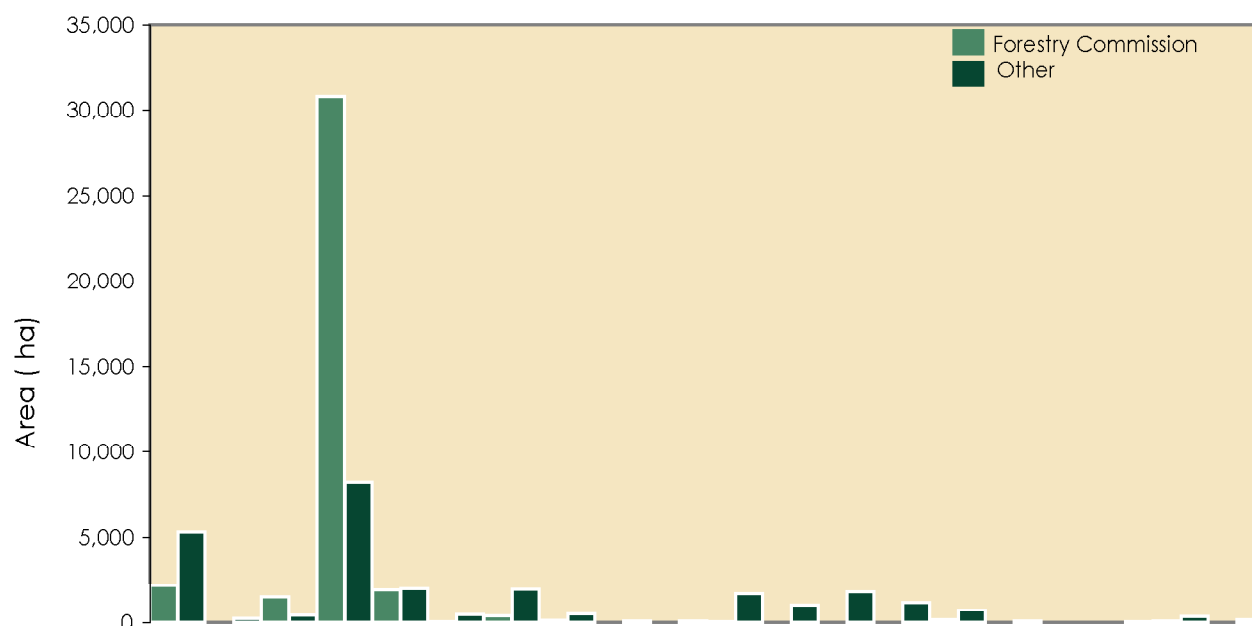
High Forest Category 2 - Area by principal species and ownership
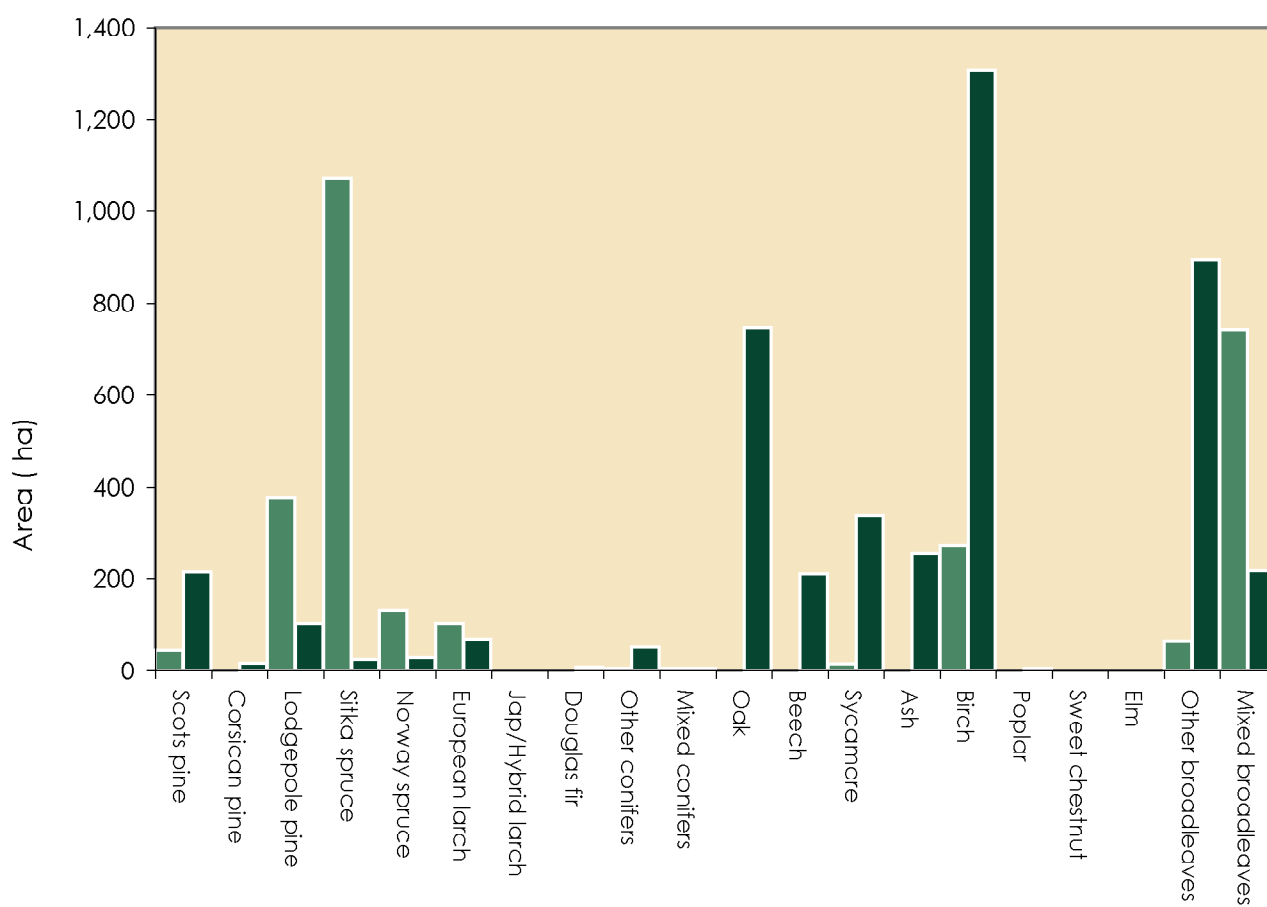
Table 10a High Forest Category 1 - Area by principal species and planting year class

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	722	622	1,487	1,217	1,497	1,305	294	155	91	25	38	0	7,453
Corsican pine	14	0	150	13	0	5	25	25	5	0	0	0	236
Lodgepole pine	7	162	358	748	629	5	0	0	0	0	0	0	1,910
Sitka spruce	6,640	9,026	8,071	6,187	6,351	2,162	546	13	0	0	0	0	38,996
Norway spruce	107	159	630	754	803	826	595	0	16	0	0	0	3,890
European larch	17	8	83	98	60	138	51	5	0	0	22	0	481
Jap/Hybrid larch	154	173	515	385	567	248	145	88	43	8	0	0	2,327
Douglas fir	35	5	56	120	136	126	67	33	22	0	0	0	600
Other conifers	5	0	8	8	30	0	13	0	0	0	0	0	64
Mixed conifers	0	0	5	21	15	15	0	0	0	15	0	0	70
Total conifers	**7,700**	**10,155**	**11,362**	**9,552**	**10,090**	**4,830**	**1,736**	**319**	**176**	**48**	**59**	**0**	**56,028**
Oak	183	97	143	76	76	66	26	97	201	173	414	145	1,697
Beech	22	9	46	77	85	87	0	66	98	72	201	258	1,022
Sycamore	29	163	249	145	362	187	254	241	26	36	82	35	1,809
Ash	62	51	144	145	174	208	195	15	76	35	65	17	1,185
Birch	232	10	245	211	83	55	35	0	5	0	0	0	875
Poplar	0	0	25	46	17	0	0	0	0	0	0	0	89
Sweet chestnut	0	0	0	0	0	0	0	0	0	0	0	0	0
Elm	52	0	0	0	0	0	0	0	0	0	0	0	52
Other broadleaves	141	5	5	68	112	0	0	0	41	4	8	0	383
Mixed broadleaves	35	0	14	25	40	8	9	9	0	7	36	0	183
Total broadleaves	**755**	**334**	**870**	**795**	**949**	**613**	**518**	**428**	**448**	**326**	**805**	**455**	**7,297**
Total - all species	**8,455**	**10,489**	**12,232**	**10,347**	**11,039**	**5,442**	**2,254**	**747**	**624**	**374**	**865**	**455**	**63,325**

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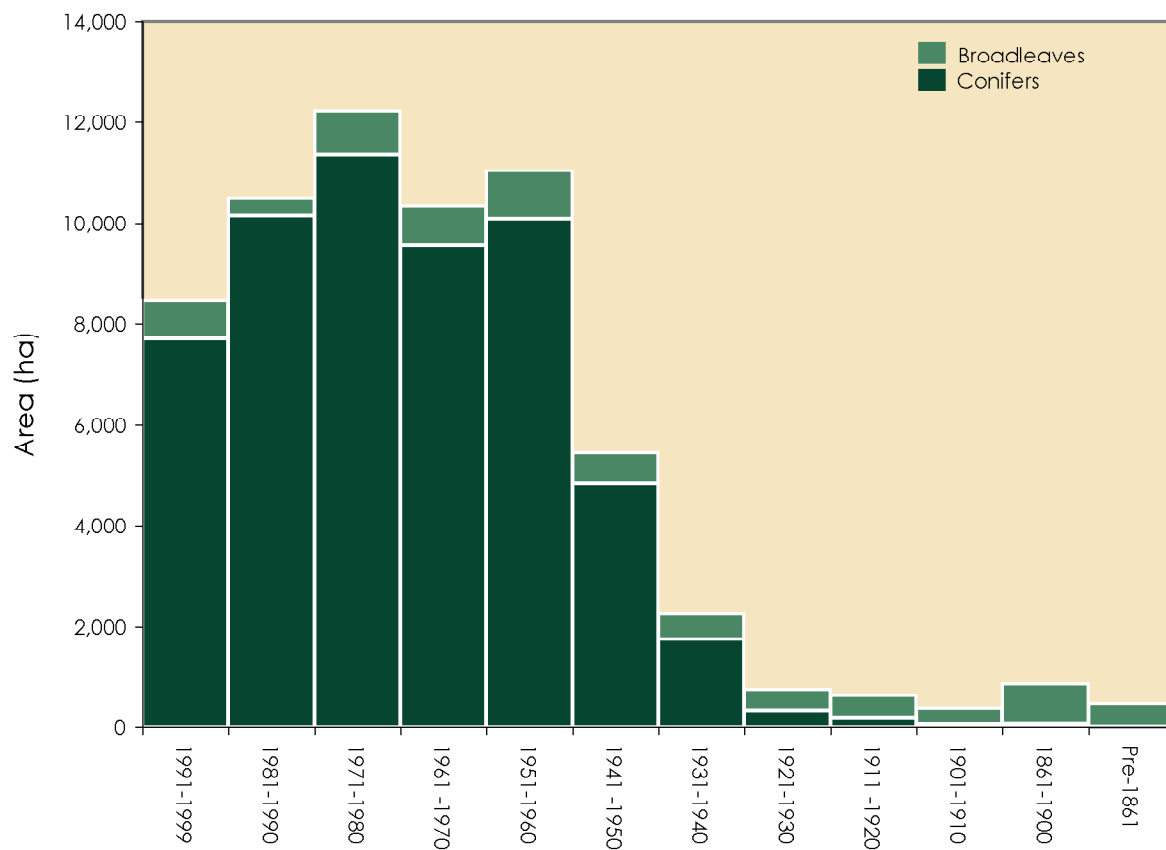
1. Most of the planting year classes cover 10 years, 1991-1999 is 9 years, and the classes prior to 1901 are 40 years or more.

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	225	32	552	241	659	214	0	107	91	0	38	0	2,160
Corsican pine	0	0	0	0	0	0	0	0	0	0	0	0	0
Lodgepole pine	0	0	220	658	629	5	0	0	0	0	0	0	1,513
Sitka spruce	5,846	5,961	6,188	4,571	5,787	2,032	400	0	0	0	0	0	30,784
Norway spruce	26	31	0	54	494	697	586	0	16	0	0	0	1,904
European larch	0	0	0	0	0	0	21	0	0	0	0	0	21
Jap/Hybrid larch	80	38	21	0	236	11	0	0	0	0	0	0	386
Douglas fir	0	0	0	0	0	35	59	0	0	0	0	0	94
Other conifers	0	0	0	0	5	0	0	0	0	0	0	0	5
Mixed conifers	0	0	0	0	11	0	0	0	0	0	0	0	11
Total conifers	**6,177**	**6,062**	**6,981**	**5,524**	**7,822**	**2,995**	**1,067**	**107**	**107**	**0**	**38**	**0**	**36,879**
Oak	11	0	0	0	0	5	5	0	0	0	0	0	21
Beech	0	0	0	0	5	0	0	0	0	0	0	0	5
Sycamore	0	0	0	0	0	0	0	0	0	0	0	0	0
Ash	11	0	0	0	0	0	0	0	0	0	0	0	11
Birch	32	5	86	32	0	0	0	0	0	0	0	0	155
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	64	0	0	0	0	0	0	0	0	0	0	0	64
Mixed broadleaves	5	0	0	0	11	0	0	0	0	0	0	0	16
Total broadleaves	**123**	**5**	**86**	**32**	**16**	**5**	**5**	**0**	**0**	**0**	**0**	**0**	**273**
Total - all species	**6,300**	**6,068**	**7,067**	**5,556**	**7,838**	**3,000**	**1,072**	**107**	**107**	**0**	**38**	**0**	**37,152**

*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
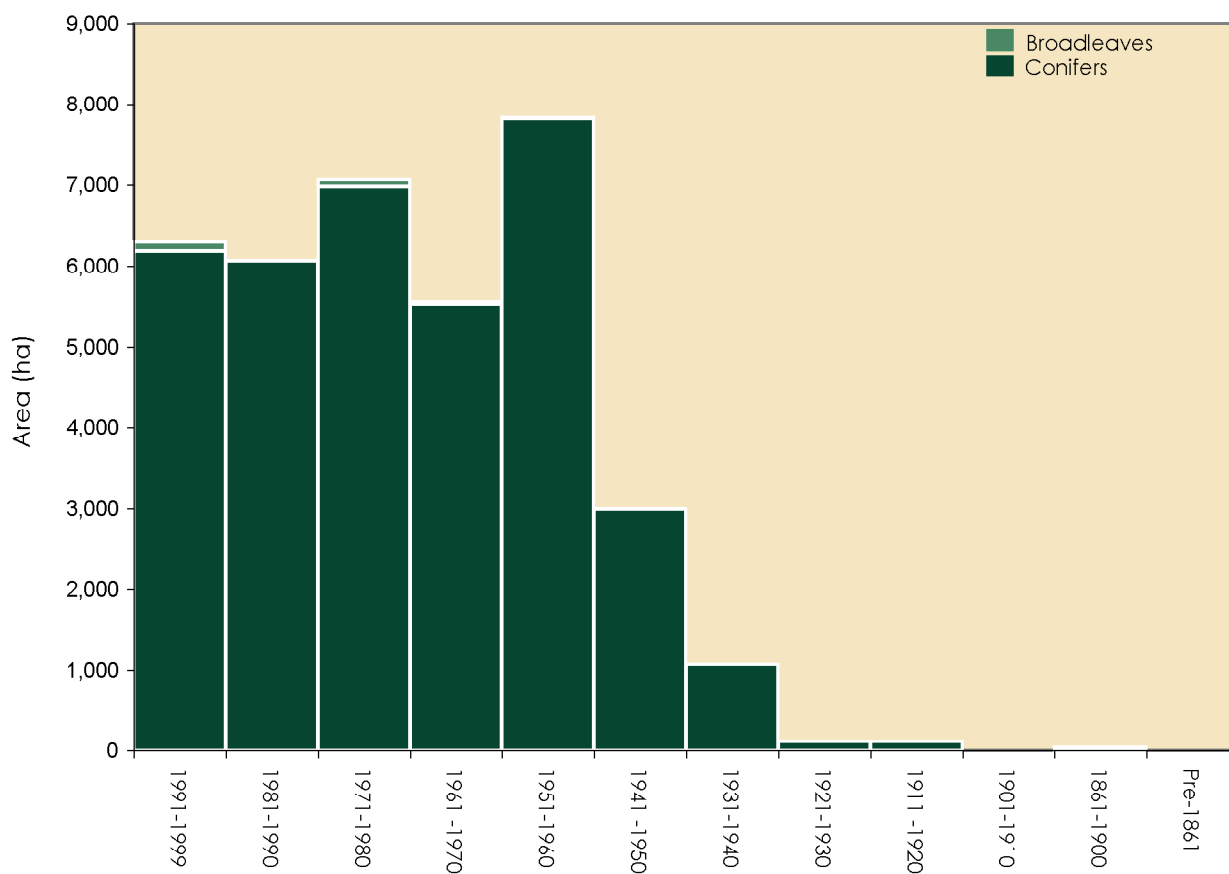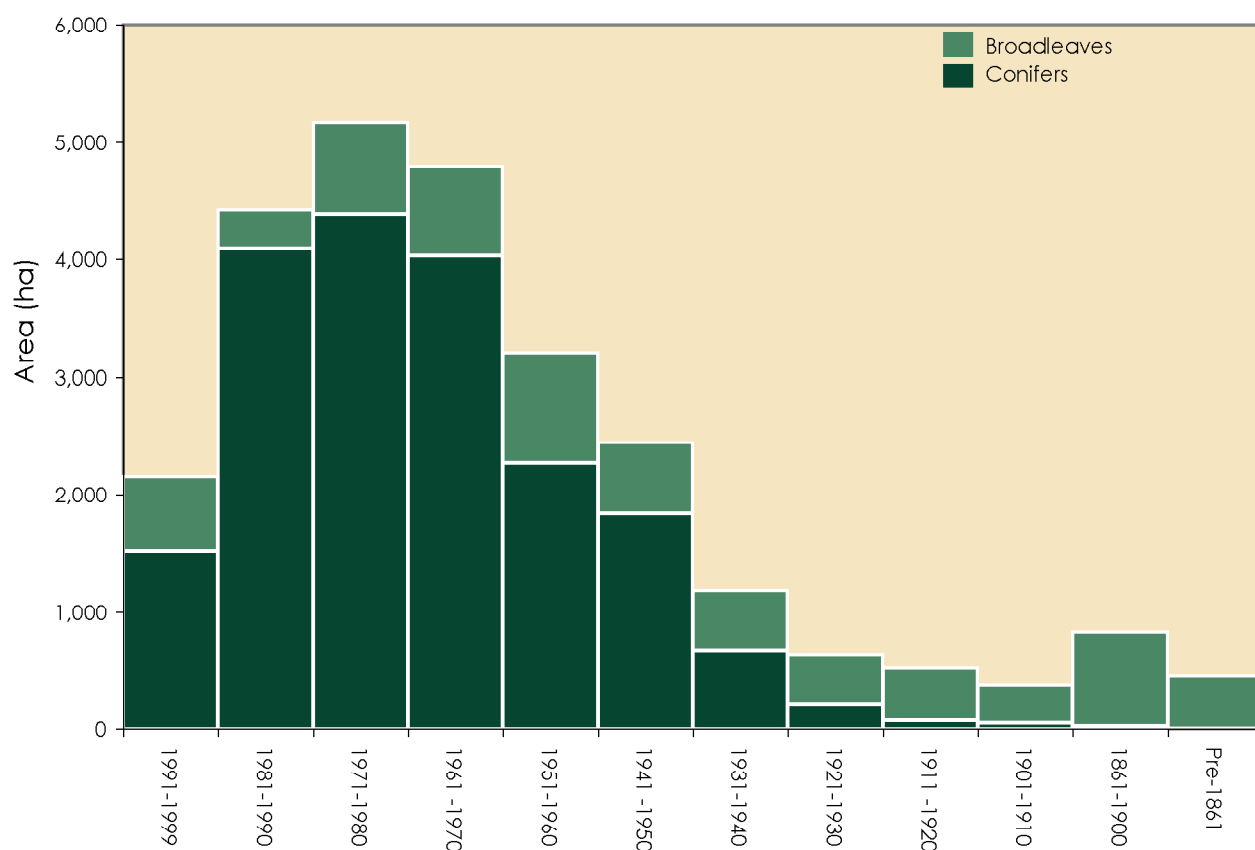

1. Most of the planting year classes cover 10 years, 1991-1999 is 9 years, and the classes prior to 1901 are 40 years or more.

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	497	590	934	976	837	1,091	294	48	0	25	0	0	5,293
Corsican pine	14	0	150	13	0	5	25	25	5	0	0	0	236
Lodgepole pine	7	162	138	90	0	0	0	0	0	0	0	0	397
Sitka spruce	794	3,065	1,883	1,616	564	130	146	13	0	0	0	0	8,212
Norway spruce	81	128	630	701	309	129	8	0	0	0	0	0	1,986
European larch	17	8	83	98	60	138	29	5	0	0	22	0	460
Jap/Hybrid larch	74	136	494	385	332	238	145	88	43	8	0	0	1,941
Douglas fir	35	5	56	120	136	91	8	33	22	0	0	0	505
Other conifers	5	0	8	8	25	0	13	0	0	0	0	0	59
Mixed conifers	0	0	5	21	5	15	0	0	0	15	0	0	59
Total conifers	**1,523**	**4,093**	**4,381**	**4,028**	**2,269**	**1,835**	**669**	**212**	**69**	**48**	**22**	**0**	**19,149**
Oak	172	97	143	76	76	61	21	97	201	173	414	145	1,676
Beech	22	9	46	77	80	87	0	66	98	72	201	258	1,017
Sycamore	29	163	249	145	362	187	254	241	26	36	82	35	1,809
Ash	51	51	144	145	174	208	195	15	76	35	65	17	1,174
Birch	200	5	159	179	83	55	35	0	5	0	0	0	720
Poplar	0	0	25	46	17	0	0	0	0	0	0	0	89
Sweet chestnut	0	0	0	0	0	0	0	0	0	0	0	0	0
Elm	52	0	0	0	0	0	0	0	0	0	0	0	52
Other broadleaves	77	5	5	68	112	0	0	0	41	4	8	0	319
Mixed broadleaves	30	0	14	25	29	8	9	9	0	7	36	0	167
Total broadleaves	**632**	**329**	**784**	**763**	**933**	**607**	**513**	**428**	**448**	**326**	**805**	**455**	**7,023**
Total - all species	**2,155**	**4,422**	**5,165**	**4,791**	**3,201**	**2,442**	**1,182**	**640**	**517**	**374**	**827**	**455**	**26,172**

*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	71	Mixed broadleaves	8	Scots pine	8
1981-90	Sitka spruce	82	Scots pine	6	Birch	3
1971-80	Sitka spruce	62	Scots pine	12	Lodgepole pine	4
1961-70	Sitka spruce	56	Scots pine	11	Lodgepole pine	7
1951-60	Sitka spruce	54	Scots pine	12	Norway spruce	8
1941-50	Sitka spruce	37	Scots pine	21	Norway spruce	14
1931-40	Sitka spruce	22	Norway spruce	21	Scots pine	14
1921-30	Sycamore	31	Scots pine	18	Oak	15
1911-20	Oak	36	Beech	14	Ash	11
1901-10	Oak	53	Beech	16	Sycamore	8
1861-1900	Oak	54	Beech	19	Ash	8
Pre 1861	Beech	52	Oak	39	Sycamore	6
All years	**Sitka spruce**	**57**	**Scots pine**	**11**	**Norway spruce**	**6**

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	24,800	31.3
Business	3,616	4.6
Forestry or timber business	64	0.1
Charity	640	0.8
Local Authority	1,395	1.8
Other public (not FC)	1,330	1.7
Forestry Commission	47,463	59.8
Community ownership or common land	0	0.0
Unidentified	0	0.0
Total	**79,308**	**100.0**

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

Ownership type by area

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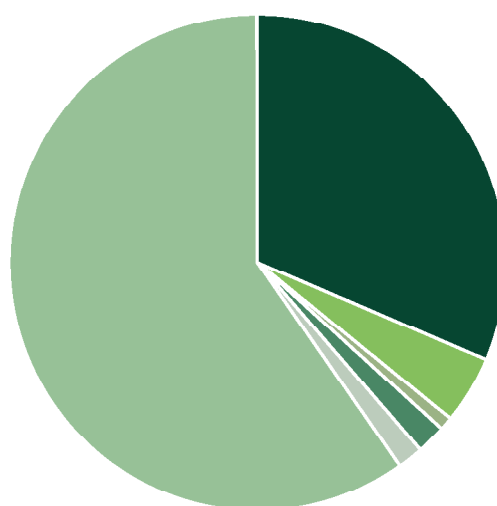
RESULTS FROM THE SURVEY OF SMALL WOODLAND AND TREES (SSWT)

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	814	1,222	Area (ha)
Wide Linear Features	371	115	Area (ha)
Wide Linear Features	371	51	Length (Km)
Narrow Linear Features	1,500	100	Length (Km)
Narrow Linear Features	1,500	33,100	Number of live trees
Groups	21,300	91,800	Number of live trees
Individual Trees	118,800	118,800	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	Number of	Mean size
	0.1 - <0.25	0.25 - <2.0	(ha)	features	(ha)
Small Woods	0	1,222	1,222	814	1.50
Wide Linear Features	0	115	115	371	0.31
Total	0	1,337	1,337	1,185	1.13

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	0.8	0.0	0.0	1.5	2.3	41.1	0.9
Spruce	0.0	0.0	0.0	3.3	3.3	58.9	1.4
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	**0.8**	**0.0**	**0.0**	**4.8**	**5.6**	**100.0**	**2.3**
Oak	20.5	4.1	2.5	0.0	27.1	11.4	11.1
Beech	1.6	0.0	0.0	0.0	1.6	0.7	0.7
Sycamore	1.6	4.1	5.7	0.7	12.1	5.1	5.0
Ash	39.3	0.8	4.9	0.7	45.7	19.2	18.8
Birch	0.8	2.5	6.6	0.0	9.9	4.2	4.1
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	1.6	0.8	3.3	4.1	9.8	4.1	4.0
Lime	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Elm	0.0	0.0	0.0	1.5	1.5	0.6	0.6
Willow	4.1	0.0	16.4	8.5	29.0	12.2	11.9
Other broadleaves	22.1	13.9	52.4	12.6	101.0	42.5	41.4
Total broadleaves	**91.6**	**26.4**	**91.8**	**28.2**	**237.7**	**100.0**	**97.5**
Total - all species	**92.4**	**26.4**	**91.8**	**33.1**	**243.7**		**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   25%
        Groups   55%
        Narrow Linear Features   99%

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	0.4	0.4	100.0	4.7
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**	**0.4**	**0.4**	**100.0**	**4.7**
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	0.0	0.0	0.8	7.0	6.7
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	0.8	0.0	0.0	0.0	0.8	7.0	6.7
Lime	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Elm	0.0	0.0	0.0	0.4	0.4	3.5	3.4
Willow	0.0	0.0	0.0	0.4	0.4	3.5	3.4
Other broadleaves	0.8	2.5	2.5	0.0	5.8	79.1	76.5
Total broadleaves	**2.5**	**2.5**	**2.5**	**0.7**	**8.2**	**100.0**	**95.3**
Total - all species	**2.5**	**2.5**	**2.5**	**1.1**	**8.6**		**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	0.4	1.9	0.0	0.0	2.3
Spruce	0.4	3.0	0.0	0.0	3.4
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
Total conifers	**0.8**	**4.9**	**0.0**	**0.0**	**5.7**
Oak	11.5	10.7	4.9	0.0	27.1
Beech	0.0	0.8	0.8	0.0	1.6
Sycamore	0.4	11.0	0.8	0.0	12.2
Ash	18.8	19.6	7.4	0.0	45.8
Birch	7.4	2.5	0.0	0.0	9.9
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	0.0	0.0	0.0	0.0
Alder	0.8	9.0	0.0	0.0	9.8
Lime	0.0	0.0	0.0	0.0	0.0
Elm	0.4	1.1	0.0	0.0	1.5
Willow	20.3	8.7	0.0	0.0	29.0
Other broadleaves	75.3	25.8	0.0	0.0	101.1
Total broadleaves	**134.9**	**89.2**	**13.9**	**0.0**	**238.0**
Total - all species	**135.6**	**94.1**	**13.9**	**0.0**	**243.7**

Table 18 Number of Groups by group size

Number of trees per Group*	Number of Groups (000's)
2	2
3-5	12
6-10	5
11-20	3
21-50	0
51-100	0
>100	0
Total	**21**

*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	72,990	96.3	79,308	98.3	9
0.25 - <2.0	2,780	3.7	1,337	1.7	-52
Total	75,770		80,645		6
% Woodland land cover	15.1		16.0		

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), 502,594 ha,
   was based on the 1991 Census of Population digital boundaries.

4. Land area used to calculate woodland cover percent (1980), 503,166ha,
   (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	8,474	7,937	-6
Corsican pine	242	254	5
Lodgepole pine	5,772	2,389	-59
Sitka spruce	33,424	40,580	21
Norway spuce	8,321	4,051	-51
European larch	823	651	-21
Jap/Hybrid larch	2,097	2,531	21
Douglas fir	724	608	-16
Other conifers	440	122	-72
Mixed conifers	2,646	365	-86
Total conifers	**62,962**	**59,488**	**-6**
Oak	1,093	2,444	124
Beech	552	1,232	123
Sycamore	758	2,184	188
Ash	613	1,460	138
Birch	1,755	2,475	41
Poplar	25	95	284
Sweet chestnut	0	0	-
Elm	393	52	-87
Other broadleaves	1,092	1,397	28
Mixed broadleaves	1,844	1,163	-37
Total broadleaves	**8,124**	**12,502**	**54**
Total all species	**71,087**	**71,990**	**1**
Felled	**1,041**	**4,819**	**363**
Total High Forest	**72,128**	**76,809**	**6**

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 4.8% (Table 2). To obtain meaningful comparisons between the two datasets the 1980 Census data have therefore been reduced by 4.8%.

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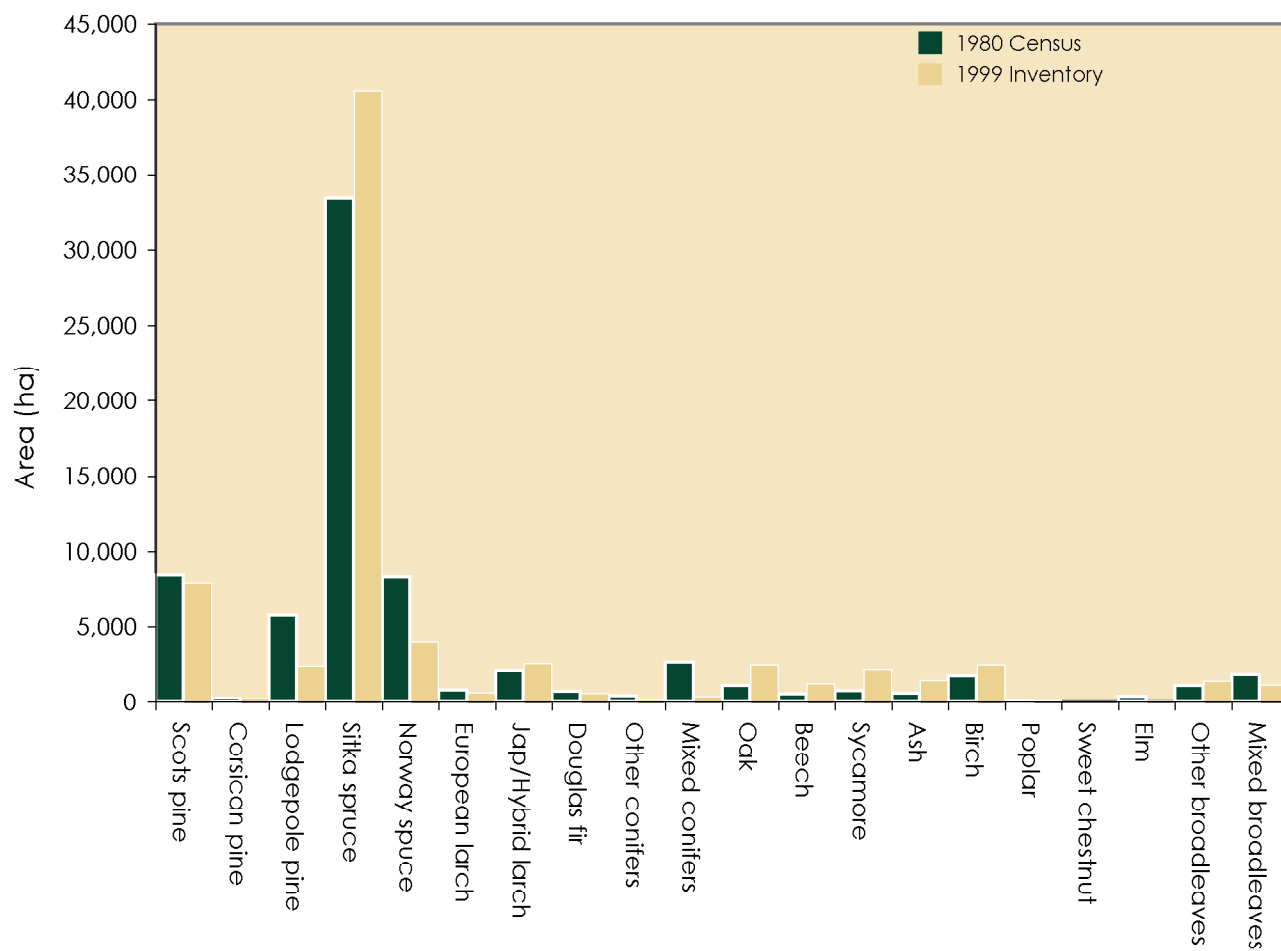
Table 21 Comparison of High Forest Category 1 area by planting year class between 1980 Census and 1999 Inventory

Planting year class	1980 Census woodland area (ha)	1999 Inventory woodland area (ha)	Change (%)
1991-1999	0	8,455	see note
1981-1990	0	10,978	see note
1971-1980	10,878	12,232	12
1961-1970	11,652	10,367	-11
1951-1960	21,164	11,752	-44
1941-1950	12,529	5,443	-57
1931-1940	6,083	2,254	-63
1921-1930	2,447	747	-69
1911-1920	1,038	624	-40
1901-1910	502	374	-25
1861-1900	2,710	864	-68
Pre 1861	304	455	50
Total all years	**69,306**	**64,545**	**-7**

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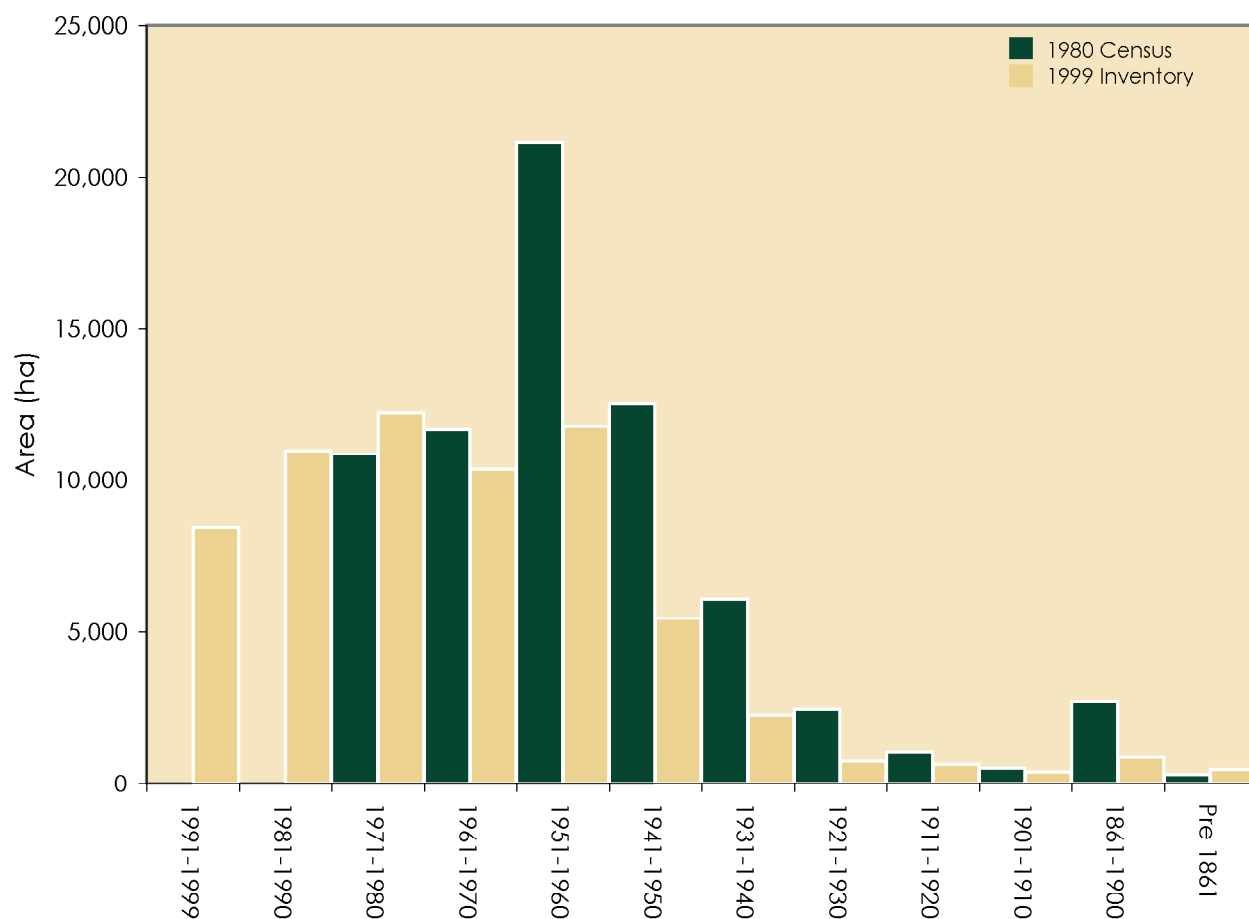
Comparison of High Forest Category 1 area by planting year class between 1980 Census and 1999 Inventory

Table 22 Comparison of numbers of live trees outside woodland between 1980 Census and 1999 Inventory   (000's)

Feature type	1980 Census	1999 Inventory	Change (%)
Boundary Tree	82	79	-5
Middle Tree	49	13	-73
Total Individual Trees	132	92	-30
Groups	302	35	-88
Linear Features	276	20	-93
Total	709	147	-79

1. The Survey of Small Woodland and Trees did not record information referring to tree features (I.e. Individual trees, Groups and Narrow Linear Features) within developed land.

2. In the 1980 Census hazel, hawthorn, blackthorn and goat willow were excluded, the 1999 Inventory figures have been adjusted accordingly.
   The 1999 figures above will therefore not match those in the previous sections of the report.

3. Changes stated in this table are indicative only. Even with adjustments to the 1999 Inventory, the two surveys are not directly comparable - 1980 used 7cm diameter at breast height, and 1999 used 2m height, as minimum criteria for inclusion.

4. See Glossary for definitions of feature type.

Table 23 Comparison of density of non-woodland features between 1980 Census and 1999 Inventory

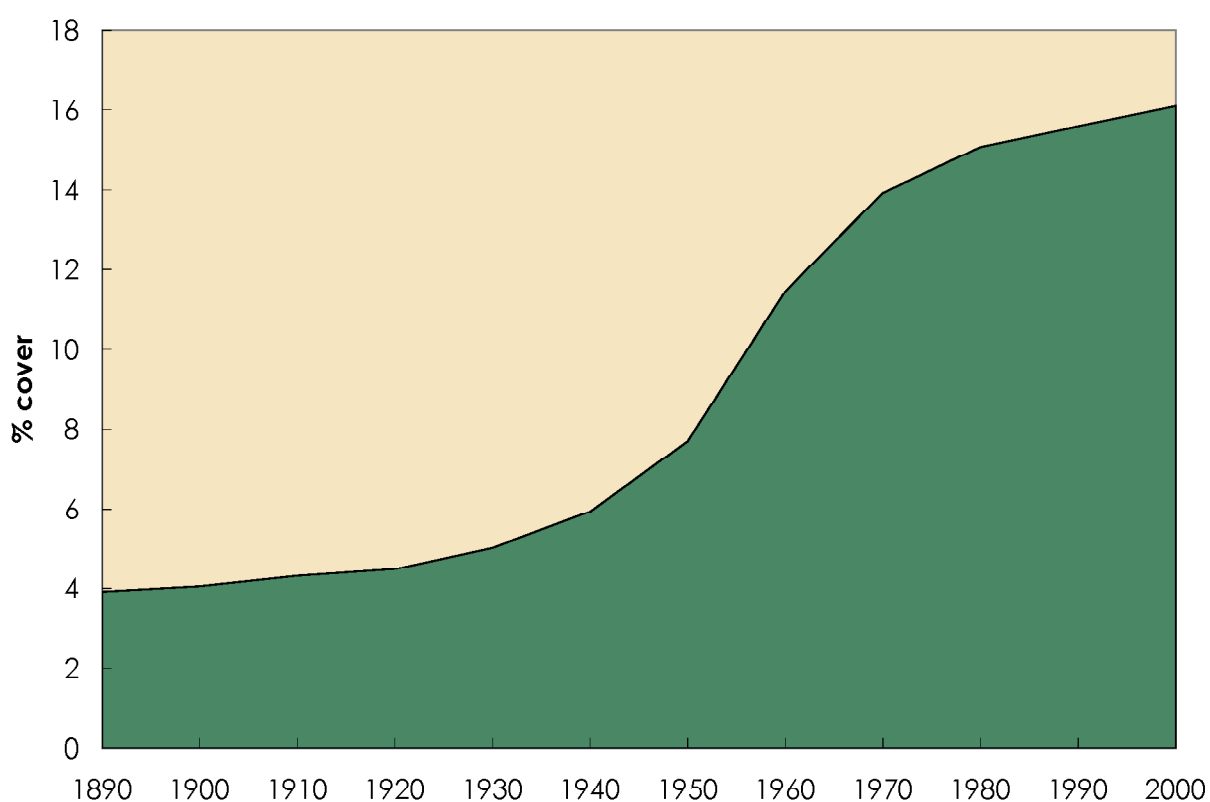| Feature type	1980 Census	1999 Inventory	Change (%)
Individual Trees (per sq km)	26.2	18.2	-30
Groups (per sq km)	6.7	1.9	-72
Linear Features (m per sq km)	196.8	19.8	-90

1. The Survey of Small Woodland and Trees did not record information referring to tree features (I.e. Individual trees, Groups and Narrow Linear Features) within developed land.

2. In the 1980 Census hazel, hawthorn, blackthorn and goat willow were excluded, the 1999 Inventory figures have been adjusted accordingly.
   The 1999 figures above will therefore not match those in the previous sections of the report.

3. Changes stated in this table are indicative only. Even with adjustments to the 1999 Inventory, the two surveys are not directly comparable - 1980 used 7cm diameter at breast height, and 1999 used 2m height, as minimum criteria for inclusion.

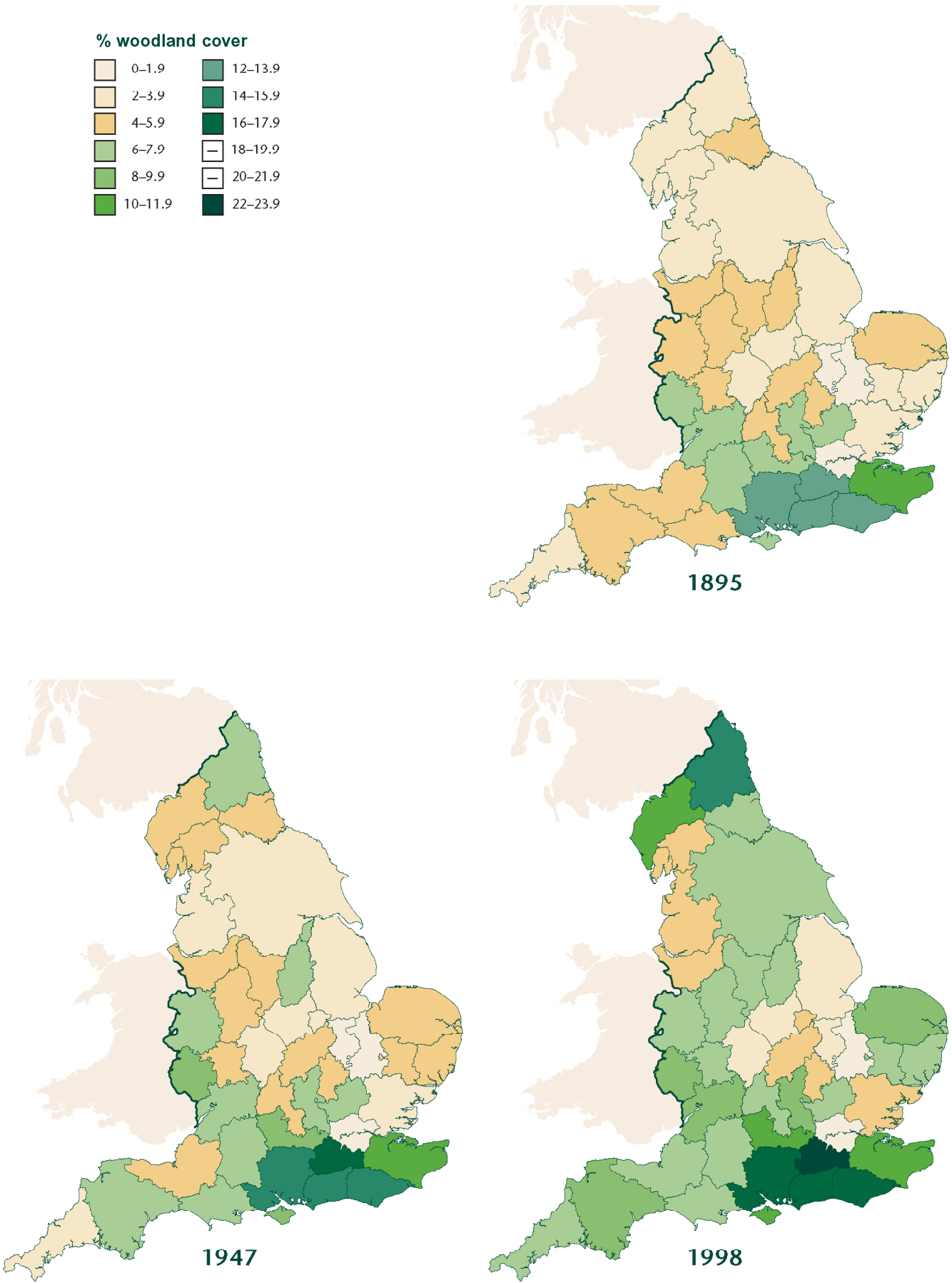4. See Glossary for definitions of feature type.

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)

% 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.

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- **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

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