National Inventory of Woodland and Trees

Wales

County Report for

Gwynedd

Forestry Commission

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

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

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

INTRODUCTION

This report presents the results for Gwynedd 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 With the statistics becoming increasingly out of date the Forestry Commission decided to undertake a new survey: the *National Inventory of Woodland and Trees.*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 Wales, 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 Wales 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.

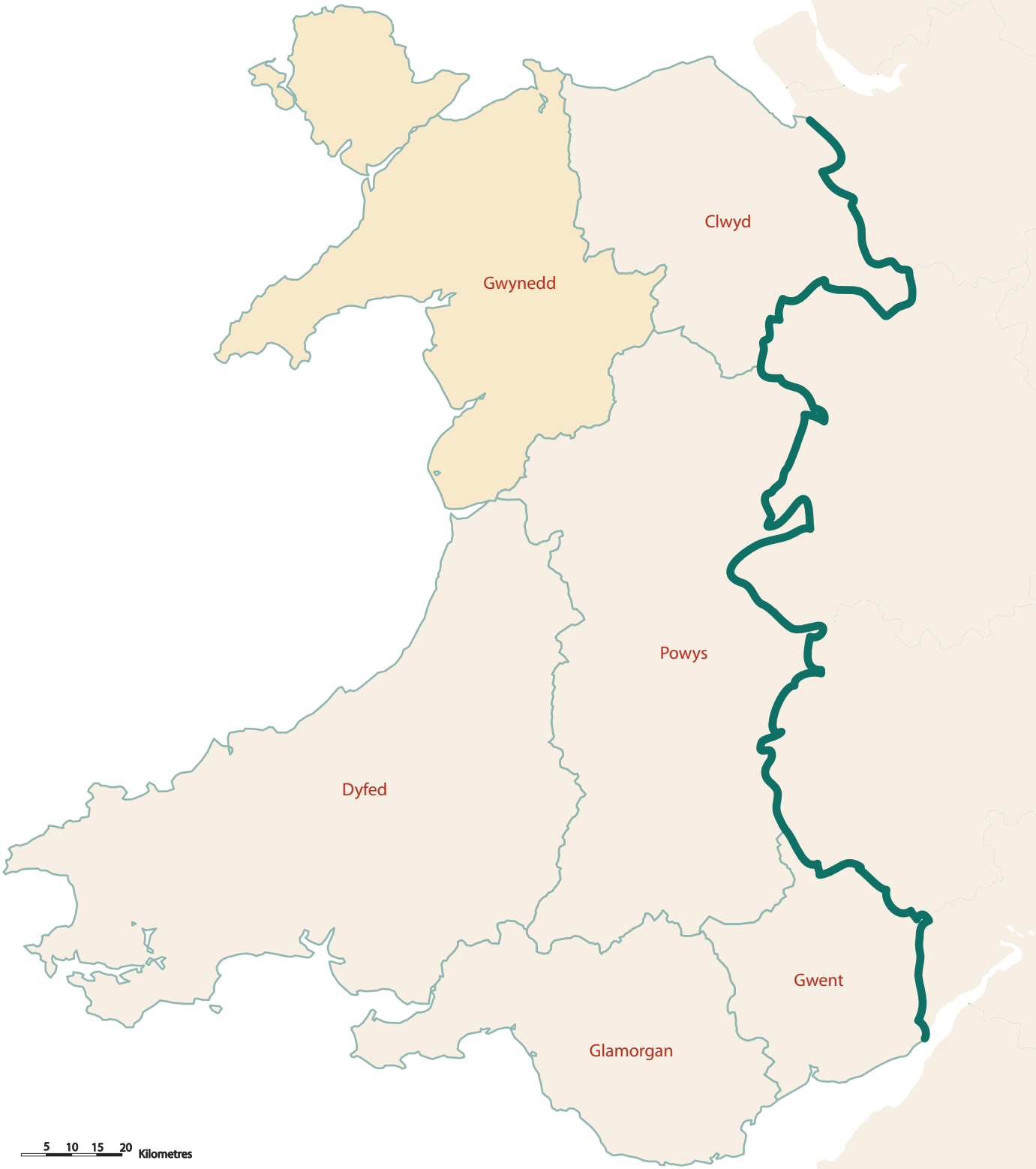
MAIN POINTS FROM THE SURVEY RESULTS

- The total area of woodland of 0.1 hectares and over in Gwynedd is 48,616 hectares. This represents 12.6% of the land area. (Table 1)
- Conifer woodland is the dominant forest type representing 52.1 % of all woodland. Broadleaved woodland represents 32.2 %, Mixed woodland 6.9 % and Open Space within woodlands 5.4 %. (Table 2)
- The main conifer species is Sitka spruce covering 14,865 hectares or 54.8 % of all conifer species. The main broadleaved species is oak covering 9,002 hectares or 52.5 % of all broadleaved species. (Table 3)
- 23,250 hectares or 50 % of woodland over 2 hectares is owned by or leased to the Forestry Commission, and 23,591 hectares or 50 % of woodland is in Other ownership. (Table 6)
- There are a total of 1,213 woods over 2 ha within Gwynedd with a mean wood area of 38.6 hectares. (Table 7a) There are a total of 2,218 woods from 0.1 - <2.0 hectares with a mean wood area of 0.8 hectares. (Table 14)
- There are 349 thousand live trees outside woodland in Gwynedd. (Table 15)
- Woodland land cover increased by over 6,000 hectares from 11.0 % to 12.6 % of the land area between 1980 and 1998. (Table 19)
- The area of broadleaves increased by 11 % between 1980 and 1998, with the relative proportion of broadleaves to conifers increasing from 25 % to 39 %. (Table 20)

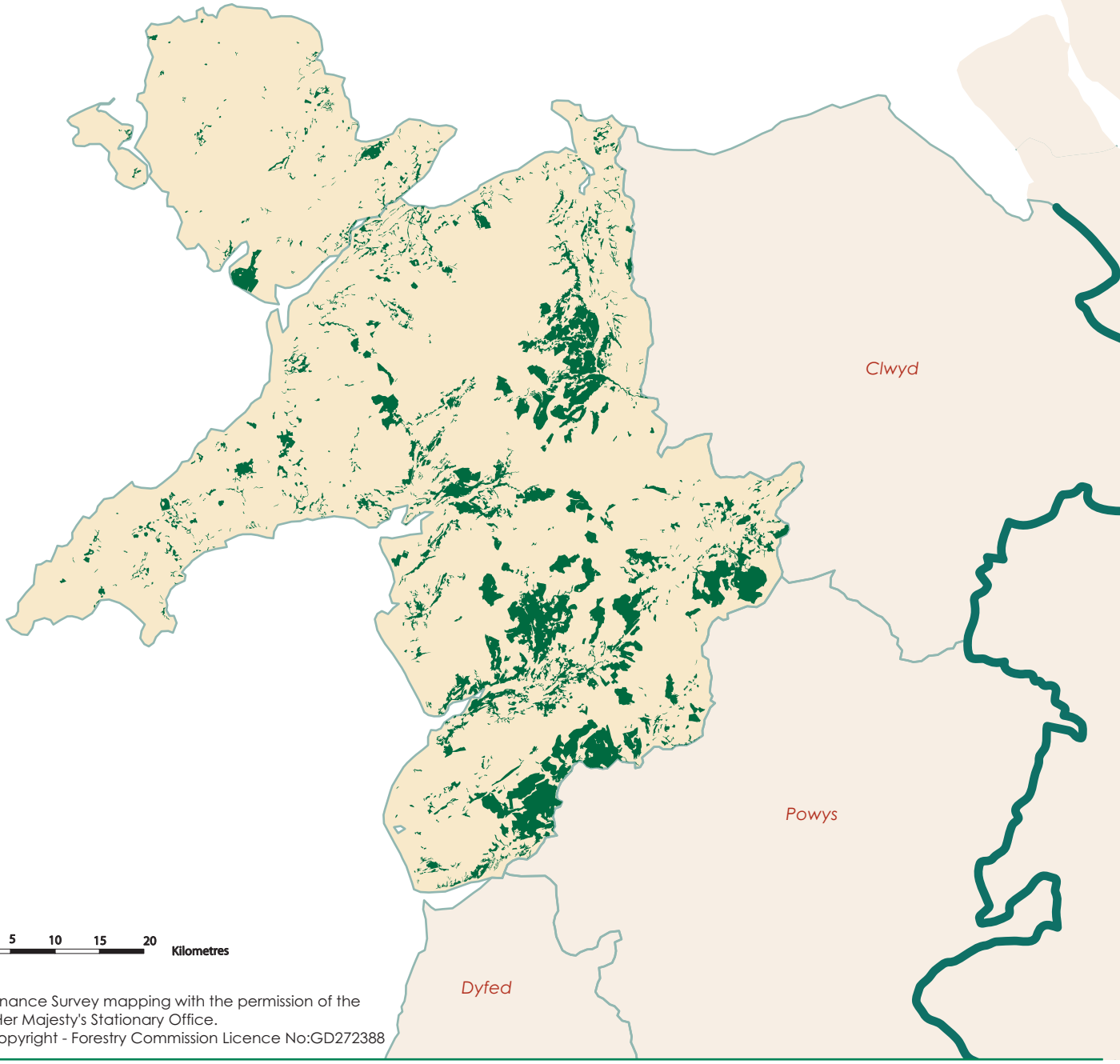
INVENTORY REPORTS

As well as this report for Gwynedd, reports are available for the other counties in Wales as shown on the map opposite as well as a report for the country as a whole. England 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 County boundaries

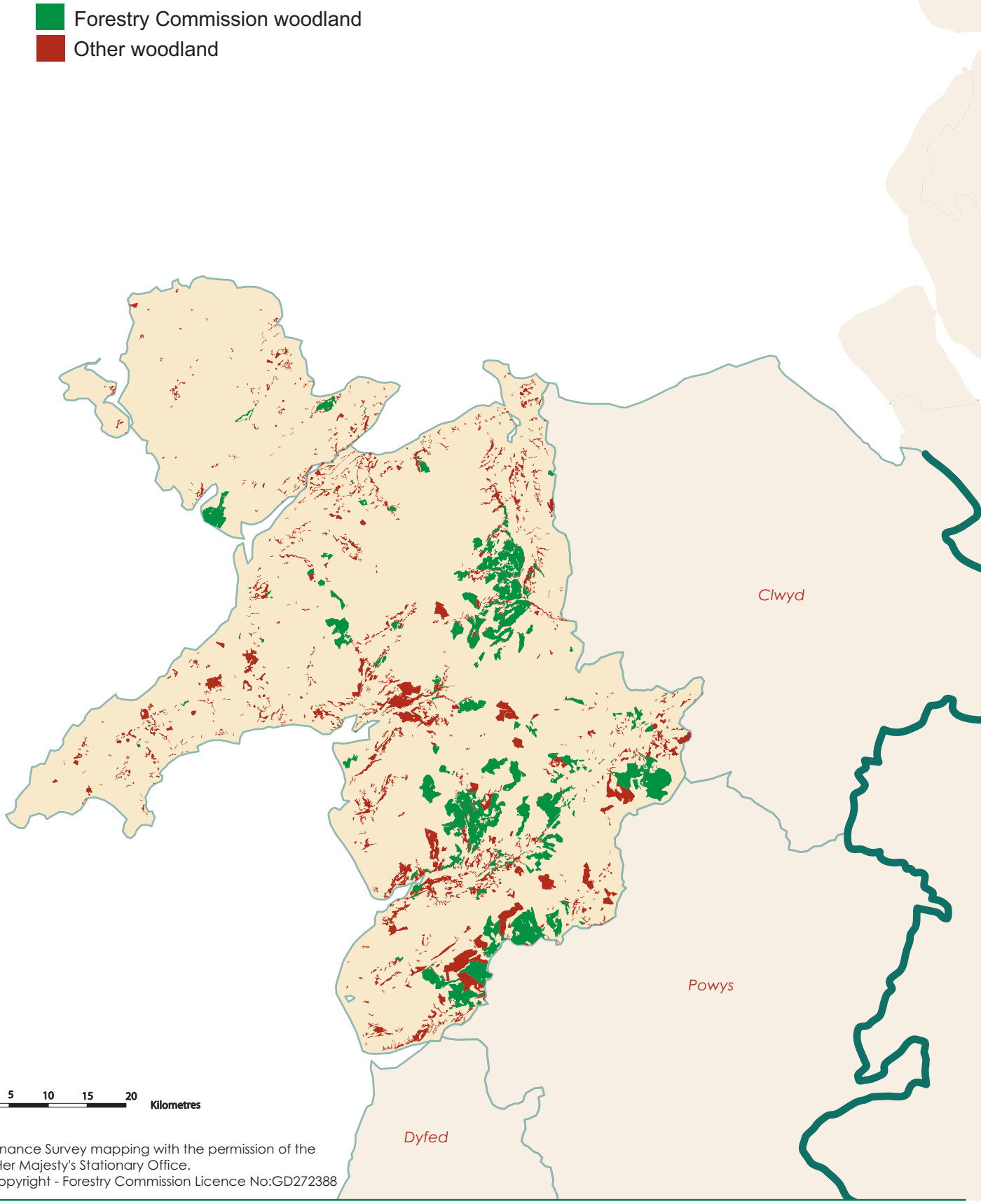


Map 2 Distribution of woodland over 2 hectares

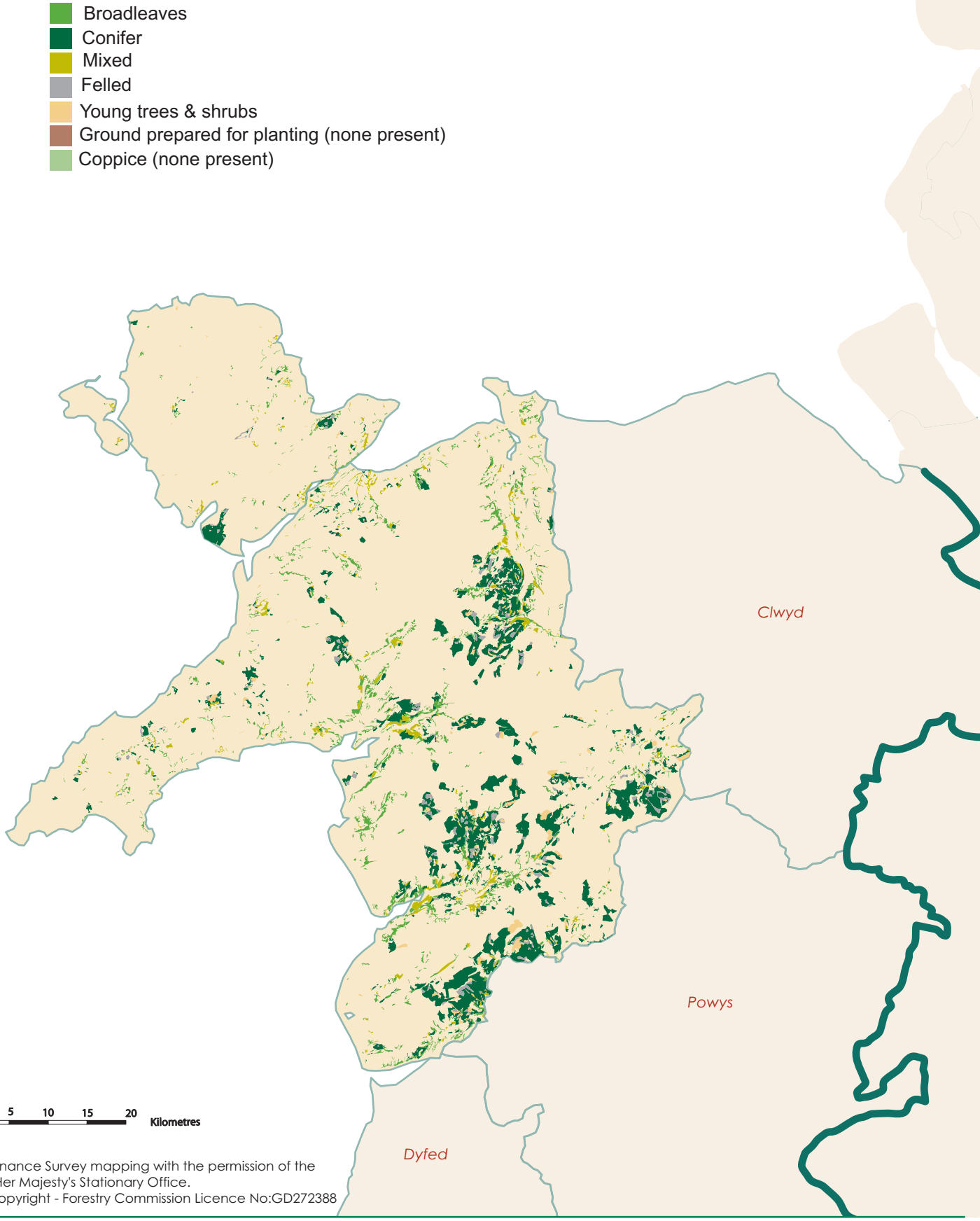


Reference Date 31 March 1998

Map 3 Distribution of woodland over 2 hectares by ownership



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



Reference Date 31 March 1998

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 Gwynedd.

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	46,841	96.3
0.25 - < 2.00	1,775	3.7
0.10 - < 0.25	0	0.0
Total area of woodland	**48,616**	**100.0**
% Woodland land cover	**12.6**	

1. Area of Gwynedd, including inland water, 386,331 ha based on digital boundaries used in the 1991 Census of Population

Table 2 Woodland area by forest type and woodland size

Forest type	Woodland size (ha)		Total area (ha)	Percentage of total area
	2.0 and over	0.1 - <2.0		
Conifer	25,314	0	25,314	52.1
Broadleaved	13,857	1,775	15,632	32.2
Mixed	3,338	0	3,338	6.9
Coppiced	0	0	0	0.0
Copp-w-standards	0	0	0	0.0
Windblow	0	0	0	0.0
Felled	1,716	0	1,716	3.5
Open Space	2,615	0	2,615	5.4
Total	**46,841**	**1,775**	**48,616**	**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	4,047	0	4,047	14.9	9.1
Sitka spruce	14,865	0	14,865	54.8	33.6
Larch	3,569	0	3,569	13.2	8.1
Other conifers	4,632	0	4,632	17.1	10.5
Mixed conifers	14	0	14	0.1	0.0
Total conifers	**27,127**	**0**	**27,127**	**100.0**	**61.3**
Oak	8,336	666	9,002	52.5	20.3
Beech	688	222	910	5.3	2.1
Sycamore	724	444	1,168	6.8	2.6
Ash	1,590	222	1,812	10.6	4.1
Birch	2,403	222	2,625	15.3	5.9
Elm	0	0	0	0.0	0.0
Other broadleaves	1,622	0	1,622	9.5	3.7
Mixed broadleaves	20	0	20	0.1	0.0
Total broadleaves	**15,383**	**1,775**	**17,158**	**100.0**	**38.7**
Total all species* **	**42,510**	**1,775**	**44,285**		**100.0**

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

***Excludes the 4,331ha 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	4%
Pines	12%
Sitka spruce	5%
Oak	6%

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

Table 4 Numbers of live trees outside woodland by feature type

Feature type	Total number of features	Total number of live trees	Mean number of trees per feature	Tree density (per sq km)
Groups	9,300	69,400	7	18
Narrow Linear Features	4,300	142,800	33	37
Individual Trees	136,600	136,600	1	35
Total		**348,800**		**90**

1. Land area used to calculate tree density 386,331ha 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	35%
Narrow Linear Features	53%
Individual Trees	19%

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	4,300	449	116
Total		**449**	**116**

1. Land area used to calculate tree density 386,331ha 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	50%

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.

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	23,250	50
Other	23,591	50
Total area of woodland	**46,841**	**100**

1. Woodland area from aerial photographic interpretation map updated to 31 March 1998

2. See Glossary for definitions of ownership types

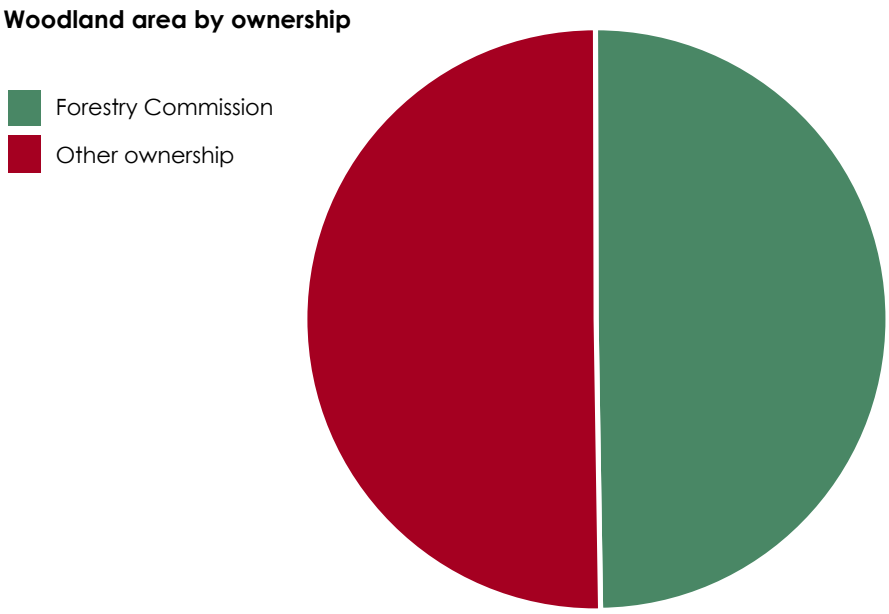


Table 7a Size class distribution of woodland

Size class (ha)	Number of woods	Total area (ha)	Percent of total area	Mean wood area (ha)
<10	834	3,649	8	4.4
10 - <20	141	2,003	4	14.2
20 - <50	126	3,791	8	30.1
50 - <100	46	3,226	7	70.1
<100	**1,147**	**12,670**	**27**	**11.0**
100 - <500	**52**	**11,929**	**25**	**229.4**
500 and >	**14**	**22,270**	**48**	**1,590.7**
All woods	**1,213**	**46,869**	**100**	**38.6**

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	51	254	1	5.0
	O	1,157	4,416	9	3.8
10 - <20	FC	24	354	1	14.8
	O	151	2,153	5	14.3
20 - <50	FC	25	894	2	35.8
	O	131	3,966	8	30.3
50 - <100	FC	26	1,822	4	70.1
	O	32	2,233	5	69.8
<100	FC	126	3,324	7	26.4
	O	1,471	12,768	27	8.7
100 - <500	FC	21	5,616	12	267.4
	O	39	8,047	17	206.3
500 and >	FC	12	14,339	31	1,194.9
	O	4	2,775	6	693.8
Total	**FC**	**159**	**23,279**	**50**	**146.4**
	O	**1,514**	**23,591**	**50**	**15.6**

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 28 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	17,018	73.2	8,296	35.2	25,314	54.0
Broadleaved	1,652	7.1	12,205	51.7	13,857	29.6
Mixed	1,212	5.2	2,126	9.0	3,338	7.1
Coppice	0	0.0	0	0.0	0	0.0
Copp-w-Stds	0	0.0	0	0.0	0	0.0
Windblow	0	0.0	0	0.0	0	0.0
Felled	1,166	5.0	551	2.3	1,716	3.7
Open Space	2,202	9.5	413	1.8	2,615	5.6
Total	**23,250**	**100.0**	**23,591**	**100.0**	**46,841**	**100.0**

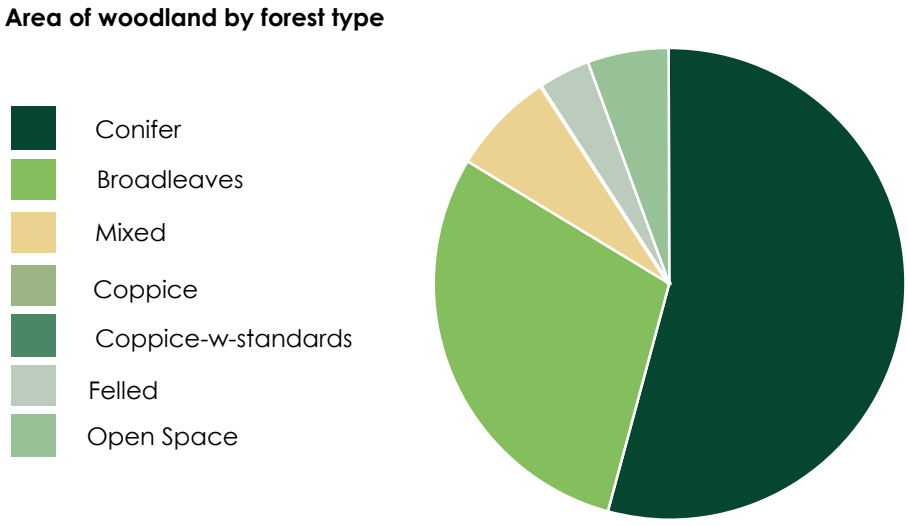


Table 9a Area of High Forest by principal species and ownership

Species	Forestry Commission			Other			All ownerships		
	area (ha)	cat* %	spp** %	area (ha)	cat* %	spp** %	area (ha)	cat* %	spp** %
Scots pine	638	4	3	543	6	2	1,181	4	3
Corsican pine	1,158	7	6	131	1	1	1,288	5	3
Lodgepole pine	870	5	4	708	8	3	1,578	6	4
Sitka spruce	10,568	60	53	4,296	46	19	14,865	55	35
Norway spruce	787	4	4	418	4	2	1,204	4	3
European larch	121	1	1	4	0	0	125	0	0
Jap/Hybrid larch	1,744	10	9	1,699	18	8	3,444	13	8
Douglas fir	1,090	6	5	1,067	11	5	2,156	8	5
Other conifers	725	4	4	547	6	2	1,272	5	3
Mixed conifers	14	0	0	0	0	0	14	0	0
Total conifers	**17,714**	**100**	**89**	**9,413**	**100**	**42**	**27,127**	**100**	**64**
Oak	822	38	4	7,514	57	33	8,336	54	20
Beech	102	5	1	586	4	3	688	4	2
Sycamore	37	2	0	687	5	3	724	5	2
Ash	292	13	1	1,298	10	6	1,590	10	4
Birch	571	26	3	1,832	14	8	2,403	16	6
Poplar	0	0	0	0	0	0	0	0	0
Sweet chestnut	93	4	0	73	1	0	166	1	0
Elm	0	0	0	0	0	0	0	0	0
Other broadleaves	251	12	1	1,205	9	5	1,456	9	3
Mixed broadleaves	0	0	0	20	0	0	20	0	0
Total broadleaves	**2,168**	**100**	**11**	**13,215**	**100**	**58**	**15,383**	**100**	**36**
Total - all species	**19,883**		**100**	**22,627**		**100**	**42,510**		**100**
Felled	**1,166**			**551**			**1,716**		
Total High Forest	**21,049**			**23,178**			**44,226**		

*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 2,615 ha 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	3%
Broadleaves	4%
Sitka spruce	5%
Jap/Hybrid larch	12%
Oak	6%

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

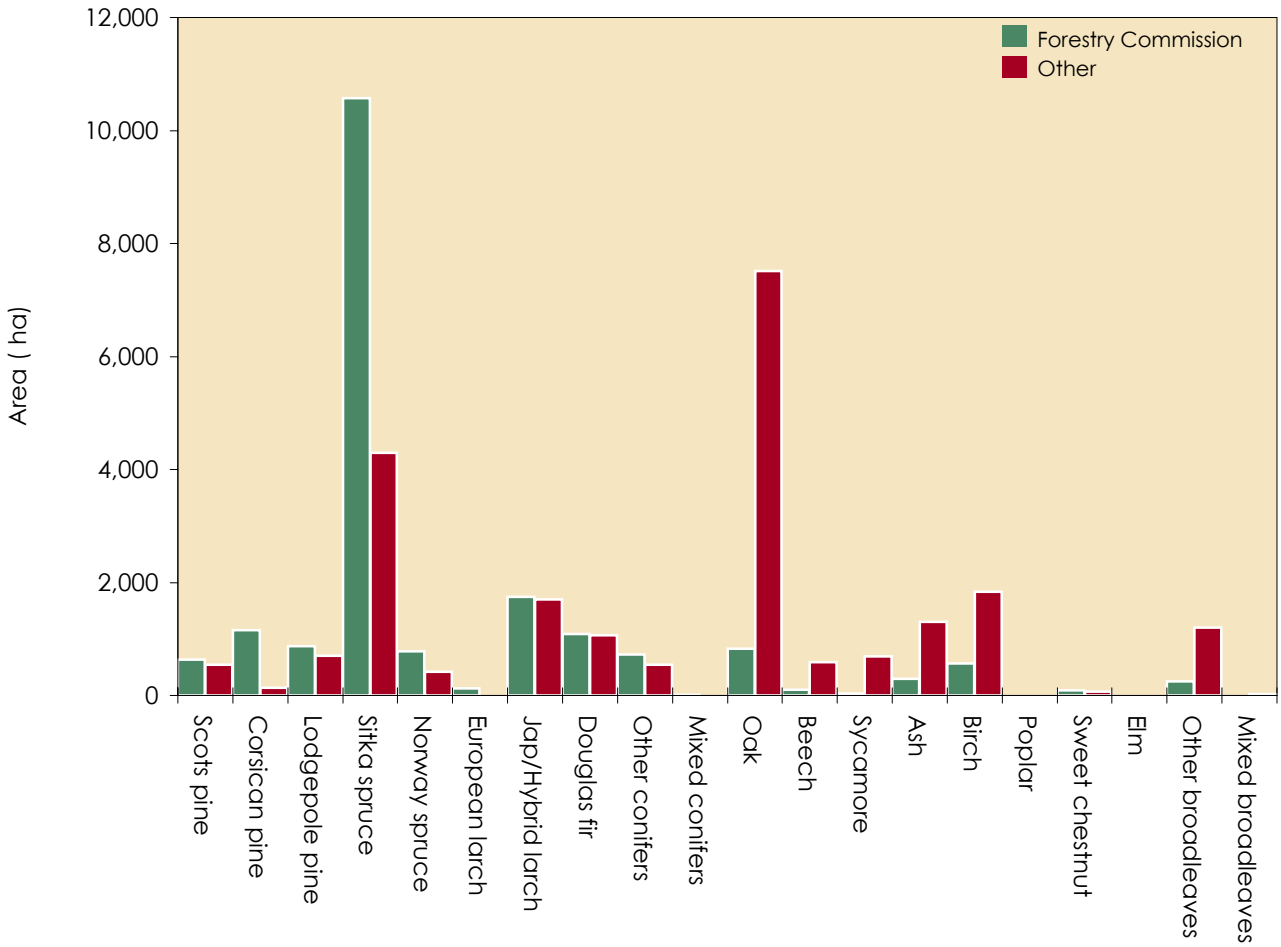


Table 9b Area of High Forest by principal species,ownership and category

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	611	27	638	448	94	543	1,059	121	1,181
Corsican pine	954	204	1,158	126	5	131	1,080	208	1,288
Lodgepole pine	652	218	870	679	29	708	1,331	247	1,578
Sitka spruce	10,383	185	10,568	4,296	0	4,296	14,680	185	14,865
Norway spruce	787	0	787	418	0	418	1,204	0	1,204
European larch	121	0	121	4	0	4	125	0	125
Jap/Hybrid larch	1,744	0	1,744	1,699	0	1,699	3,444	0	3,444
Douglas fir	1,090	0	1,090	1,067	0	1,067	2,156	0	2,156
Other conifers	725	0	725	437	110	547	1,162	110	1,272
Mixed conifers	14	0	14	0	0	0	14	0	14
Total conifers	**17,080**	**634**	**17,714**	**9,175**	**238**	**9,413**	**26,255**	**872**	**27,127**
Oak	14	808	822	617	6,896	7,514	631	7,704	8,336
Beech	42	60	102	78	508	586	120	568	688
Sycamore	0	37	37	59	628	687	59	665	724
Ash	46	245	292	103	1,195	1,298	150	1,440	1,590
Birch	5	566	571	0	1,832	1,832	5	2,398	2,403
Poplar	0	0	0	0	0	0	0	0	0
Sweet chestnut	5	88	93	0	73	73	5	162	166
Elm	0	0	0	0	0	0	0	0	0
Other broadleaves	65	186	251	13	1,192	1,205	78	1,378	1,456
Mixed broadleaves	0	0	0	0	20	20	0	20	20
Total broadleaves	**177**	**1,992**	**2,168**	**871**	**12,344**	**13,215**	**1,048**	**14,335**	**15,383**
Total - all species	**17,257**	**2,626**	**19,883**	**10,046**	**12,581**	**22,627**	**27,303**	**15,207**	**42,510**

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

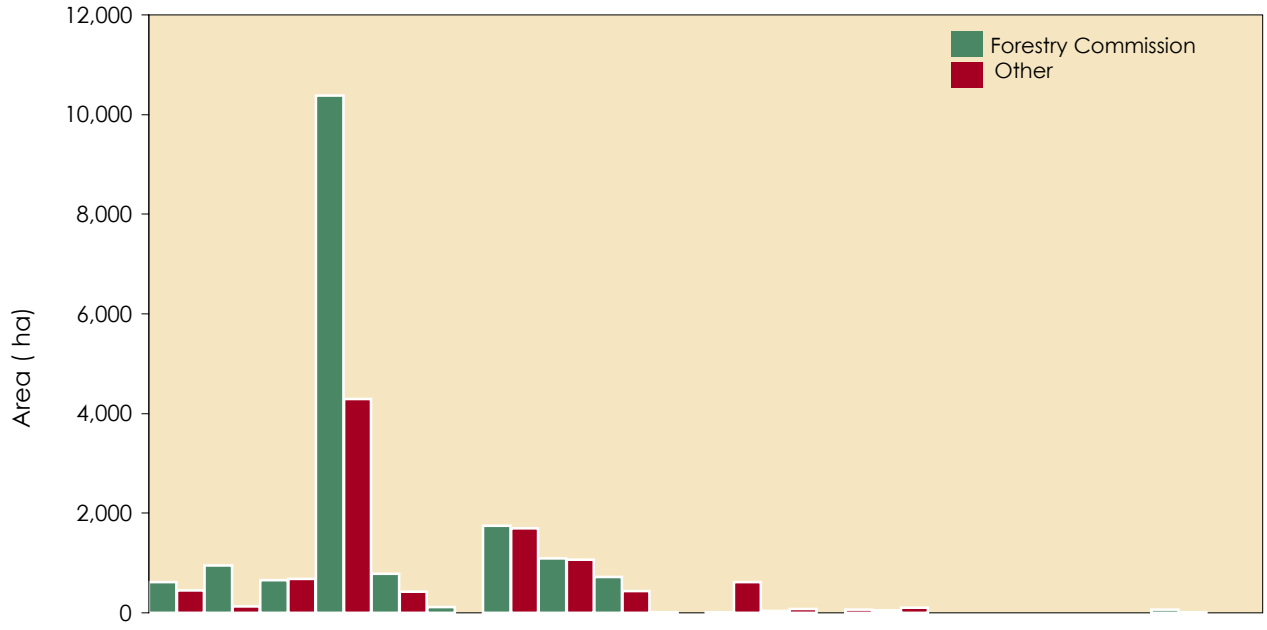
	Category 1*	Category 2*	Total High Forest
Conifers	2%	20%	3%
Broadleaves	22%	4%	4%
Sitka spruce	5%	58%	5%
Jap/Hybrid larch	11%	-	12%
Oak	29%	6%	6%

*See Glossary for Category 1 and Category 2 descriptions

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

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

High Forest Category 1 - Area by principal species and ownership



High Forest Category 2 - Area by principal species and ownership

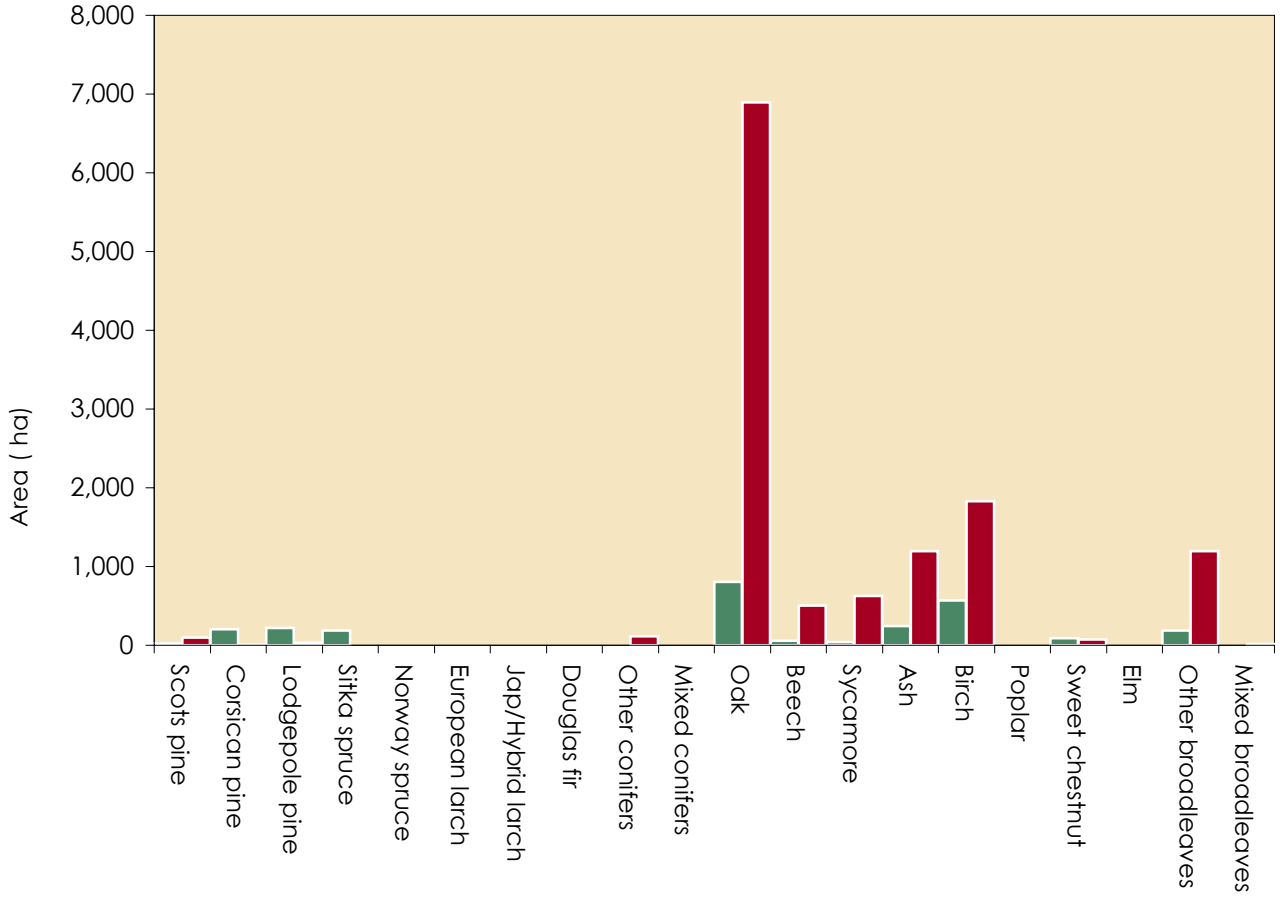
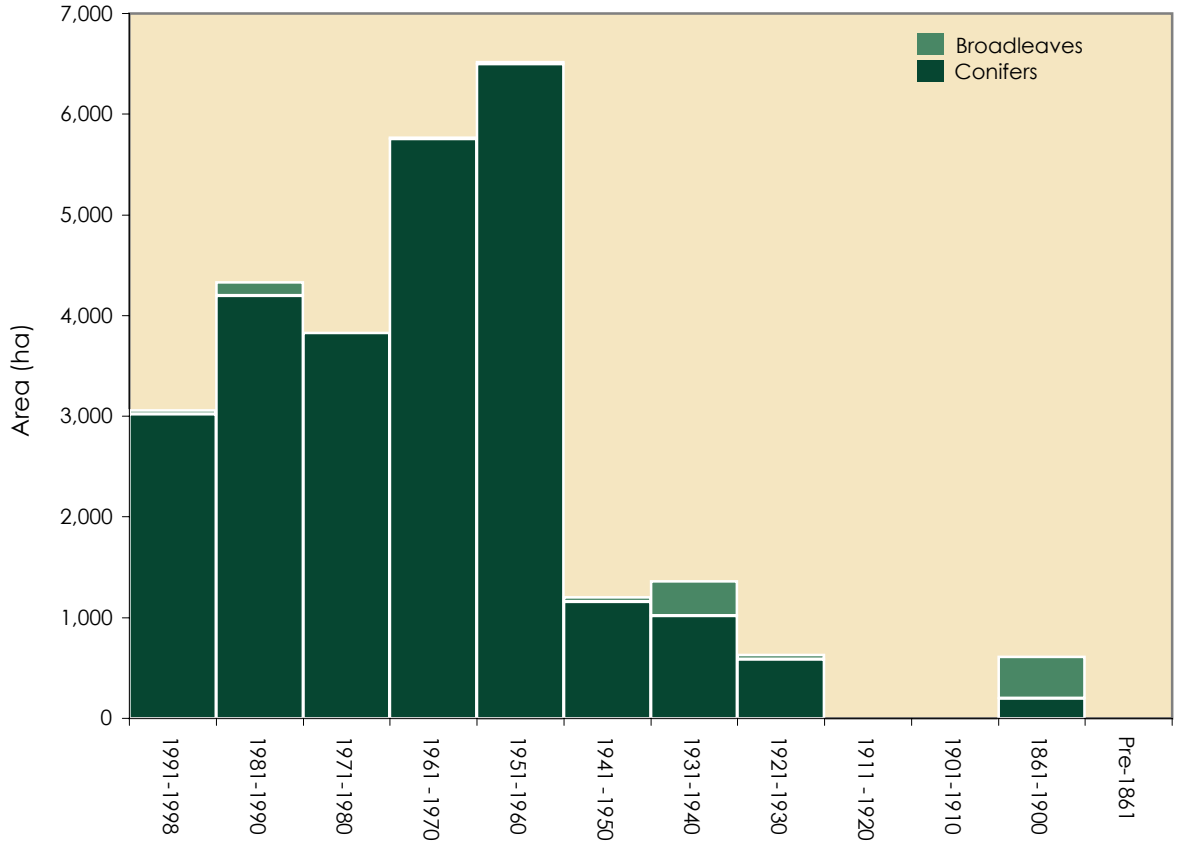


Table 10a High Forest Category 1 - Area by principal species and planting year class

Species	Planting year class*												Total (ha)
	1991-1998	1981-1990	1971-1980	1961 - 1970	1951-1960	1941 - 1950	1931-1940	1921-1930	1911 - 1920	1901-1910	1861-1900	Pre-1861	
Scots pine	87	0	5	94	379	245	39	51	0	0	158	0	1,059
Corsican pine	258	7	0	209	518	0	55	0	0	0	33	0	1,080
Lodgepole pine	19	156	404	148	497	33	0	74	0	0	0	0	1,331
Sitka spruce	2,261	3,409	2,815	3,140	2,114	485	379	70	0	0	7	0	14,680
Norway spruce	36	13	0	288	609	86	172	0	0	0	0	0	1,204
European larch	0	0	0	0	0	0	22	102	0	0	0	0	125
Jap/Hybrid larch	226	345	335	420	1,530	305	223	60	0	0	0	0	3,444
Douglas fir	131	227	271	909	297	0	93	228	0	0	0	0	2,156
Other conifers	0	37	0	532	557	0	37	0	0	0	0	0	1,162
Mixed conifers	0	0	0	14	0	0	0	0	0	0	0	0	14
Total conifers	**3,018**	**4,194**	**3,830**	**5,755**	**6,500**	**1,154**	**1,020**	**586**	**0**	**0**	**198**	**0**	**26,255**
Oak	9	98	0	9	0	0	275	0	0	0	240	0	631
Beech	0	0	0	5	16	0	0	37	0	0	62	0	120
Sycamore	0	0	0	0	0	0	18	0	0	0	41	0	59
Ash	0	0	0	0	0	46	34	0	0	0	69	0	150
Birch	5	0	0	0	0	0	0	0	0	0	0	0	5
Poplar	0	0	0	0	0	0	0	0	0	0	0	0	0
Sweet chestnut	0	0	0	0	0	0	0	5	0	0	0	0	5
Elm	0	0	0	0	0	0	0	0	0	0	0	0	0
Other broadleaves	28	37	0	0	0	0	13	0	0	0	0	0	78
Mixed broadleaves	0	0	0	0	0	0	0	0	0	0	0	0	0
Total broadleaves	**42**	**135**	**0**	**13**	**16**	**46**	**341**	**42**	**0**	**0**	**412**	**0**	**1,048**
Total - all species	**3,060**	**4,329**	**3,830**	**5,768**	**6,516**	**1,201**	**1,361**	**628**	**0**	**0**	**611**	**0**	**27,303**

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

High Forest Category 1 - Area by planting year class



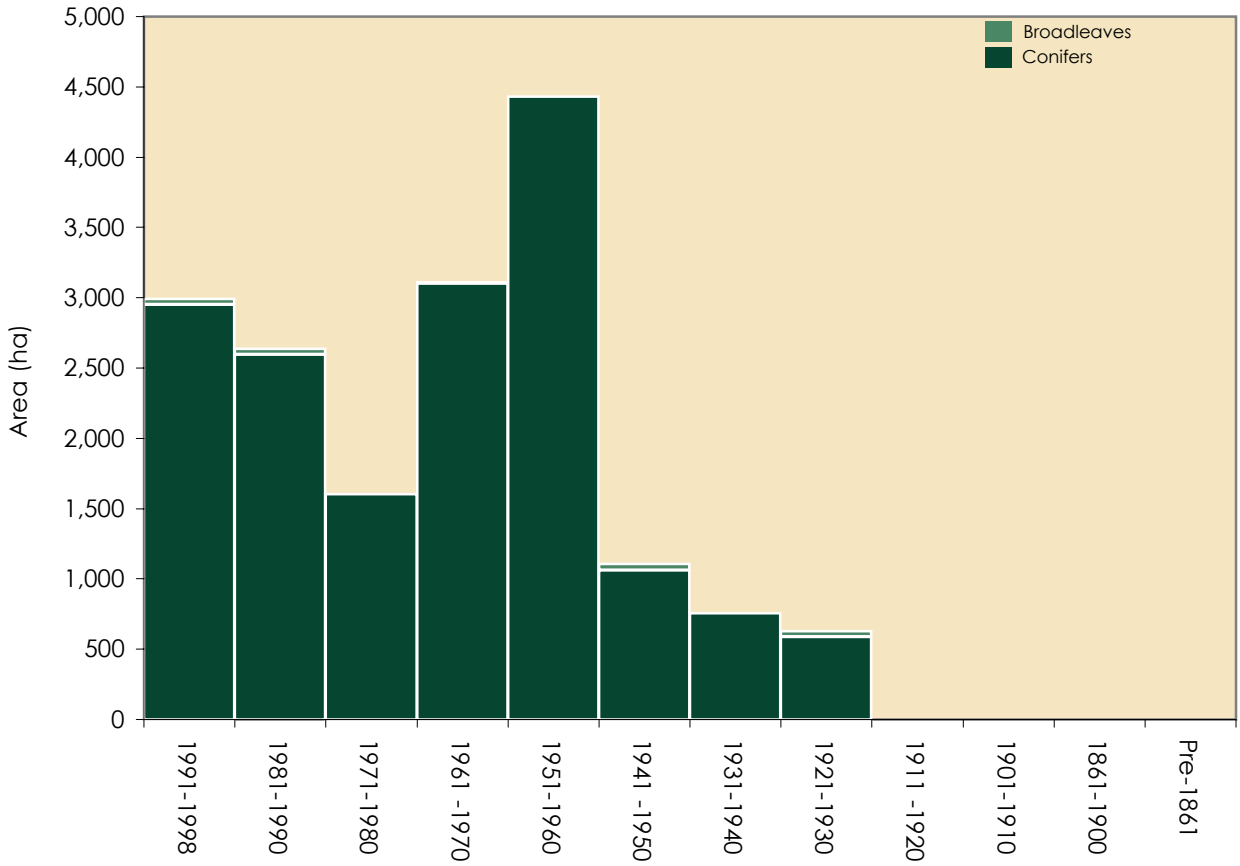
1. Most of the planting year classes cover 10 years, 1991-1998 is 8 years, and the classes prior to 1901 are 40 years or more.

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

Species	Planting year class*												Total (ha)
	1991-1998	1981-1990	1971-1980	1961 - 1970	1951-1960	1941 - 1950	1931-1940	1921-1930	1911 - 1920	1901-1910	1861-1900	Pre-1861	
Scots pine	87	0	5	0	218	245	5	51	0	0	0	0	611
Corsican pine	258	0	0	209	487	0	0	0	0	0	0	0	954
Lodgepole pine	19	5	164	93	265	33	0	74	0	0	0	0	652
Sitka spruce	2,242	2,206	1,200	2,279	1,650	458	278	70	0	0	0	0	10,383
Norway spruce	36	13	0	85	394	86	172	0	0	0	0	0	787
European larch	0	0	0	0	0	0	19	102	0	0	0	0	121
Jap/Hybrid larch	226	107	28	38	887	236	163	60	0	0	0	0	1,744
Douglas fir	84	227	205	130	128	0	88	228	0	0	0	0	1,090
Other conifers	0	37	0	256	400	0	33	0	0	0	0	0	725
Mixed conifers	0	0	0	14	0	0	0	0	0	0	0	0	14
Total conifers	**2,951**	**2,595**	**1,601**	**3,103**	**4,429**	**1,059**	**757**	**586**	**0**	**0**	**0**	**0**	**17,080**
Oak	9	5	0	0	0	0	0	0	0	0	0	0	14
Beech	0	0	0	5	0	0	0	37	0	0	0	0	42
Sycamore	0	0	0	0	0	0	0	0	0	0	0	0	0
Ash	0	0	0	0	0	46	0	0	0	0	0	0	46
Birch	5	0	0	0	0	0	0	0	0	0	0	0	5
Poplar	0	0	0	0	0	0	0	0	0	0	0	0	0
Sweet chestnut	0	0	0	0	0	0	0	5	0	0	0	0	5
Elm	0	0	0	0	0	0	0	0	0	0	0	0	0
Other broadleaves	28	37	0	0	0	0	0	0	0	0	0	0	65
Mixed broadleaves	0	0	0	0	0	0	0	0	0	0	0	0	0
Total broadleaves	**42**	**42**	**0**	**5**	**0**	**46**	**0**	**42**	**0**	**0**	**0**	**0**	**177**
Total - all species	**2,993**	**2,637**	**1,601**	**3,107**	**4,429**	**1,105**	**757**	**628**	**0**	**0**	**0**	**0**	**17,257**

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

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



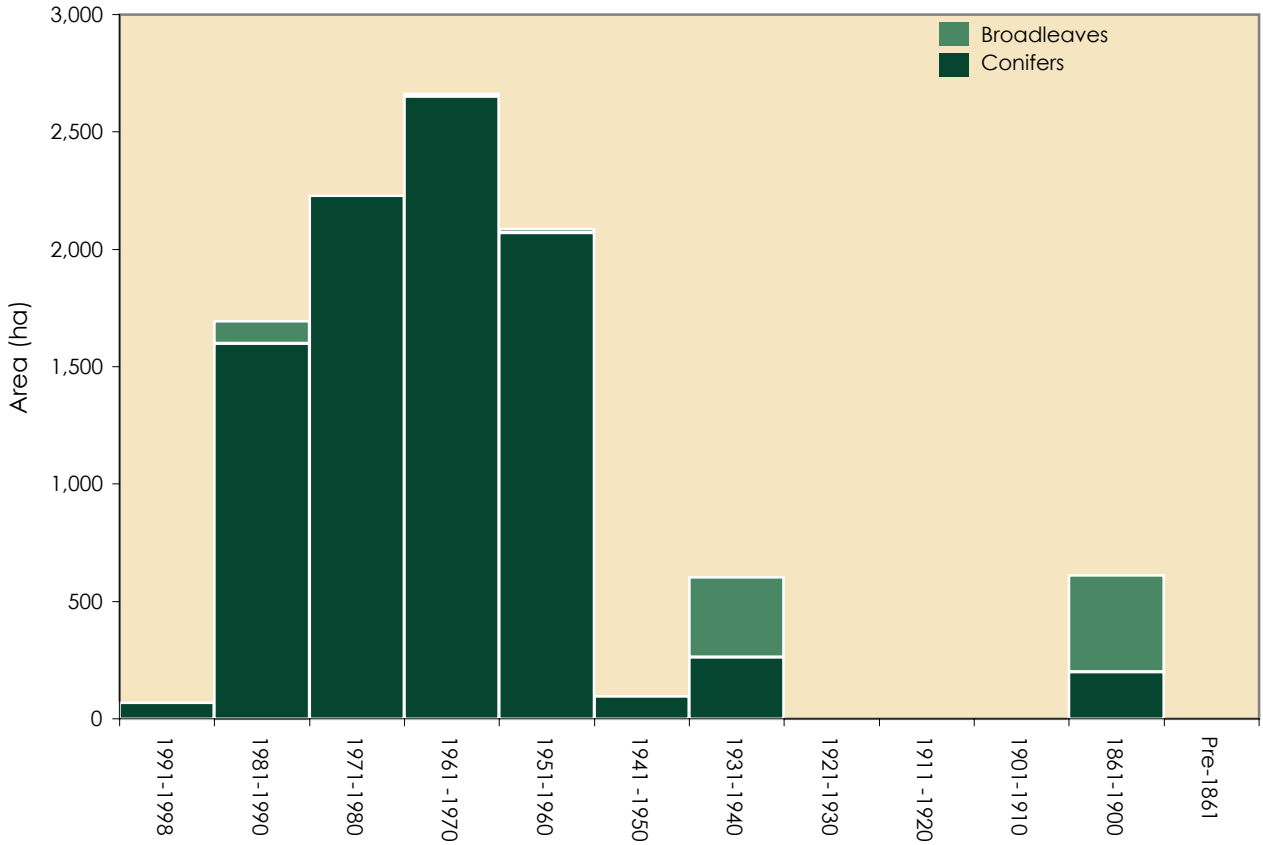
1. Most of the planting year classes cover 10 years, 1991-1998 is 8 years, and the classes prior to 1901 are 40 years or more.

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

Species	Planting year class*												Total (ha)
	1991-1998	1981-1990	1971-1980	1961 - 1970	1951-1960	1941 - 1950	1931-1940	1921-1930	1911 - 1920	1901-1910	1861-1900	Pre-1861	
Scots pine	0	0	0	94	161	0	34	0	0	0	158	0	448
Corsican pine	0	7	0	0	31	0	55	0	0	0	33	0	126
Lodgepole pine	0	152	240	55	232	0	0	0	0	0	0	0	679
Sitka spruce	19	1,203	1,614	862	464	27	101	0	0	0	7	0	4,296
Norway spruce	0	0	0	203	215	0	0	0	0	0	0	0	418
European larch	0	0	0	0	0	0	4	0	0	0	0	0	4
Jap/Hybrid larch	0	238	307	383	643	69	60	0	0	0	0	0	1,699
Douglas fir	48	0	67	779	169	0	5	0	0	0	0	0	1,067
Other conifers	0	0	0	277	157	0	4	0	0	0	0	0	437
Mixed conifers	0	0	0	0	0	0	0	0	0	0	0	0	0
Total conifers	**67**	**1,599**	**2,229**	**2,652**	**2,070**	**95**	**263**	**0**	**0**	**0**	**198**	**0**	**9,175**
Oak	0	94	0	9	0	0	275	0	0	0	240	0	617
Beech	0	0	0	0	16	0	0	0	0	0	62	0	78
Sycamore	0	0	0	0	0	0	18	0	0	0	41	0	59
Ash	0	0	0	0	0	0	34	0	0	0	69	0	103
Birch	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
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	13	0	0	0	0	0	13
Mixed broadleaves	0	0	0	0	0	0	0	0	0	0	0	0	0
Total broadleaves	**0**	**94**	**0**	**9**	**16**	**0**	**341**	**0**	**0**	**0**	**412**	**0**	**871**
Total - all species	**67**	**1,693**	**2,229**	**2,661**	**2,087**	**95**	**604**	**0**	**0**	**0**	**611**	**0**	**10,046**

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

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



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

Table 11 High Forest : principal species by planting year class

Planting year class	First	%	Second	%	Third	%
1991-98	Sitka spruce	71	Corsican pine	8	Jap/Hybrid larch	7
1981-90	Sitka spruce	66	Birch	8	Jap/Hybrid larch	7
1971-80	Sitka spruce	70	Lodgepole pine	10	Jap/Hybrid larch	8
1961-70	Sitka spruce	52	Douglas fir	14	Other conifers	8
1951-60	Sitka spruce	27	Jap/Hybrid larch	19	Corsican pine	9
1941-50	Birch	24	Other broadleaves	16	Sitka spruce	14
1931-40	Oak	47	Birch	10	Sitka spruce	8
1921-30	Douglas fir	33	European larch	15	Lodgepole pine	11
1911-20	Oak	100	-		-	
1901-10	-		-		-	
1861-1900	Oak	74	Ash	8	Sycamore	7
Pre 1861	-		-		-	
All years	**Sitka spruce**	**35**	**Oak**	**20**	**Jap/Hybrid larch**	**8**

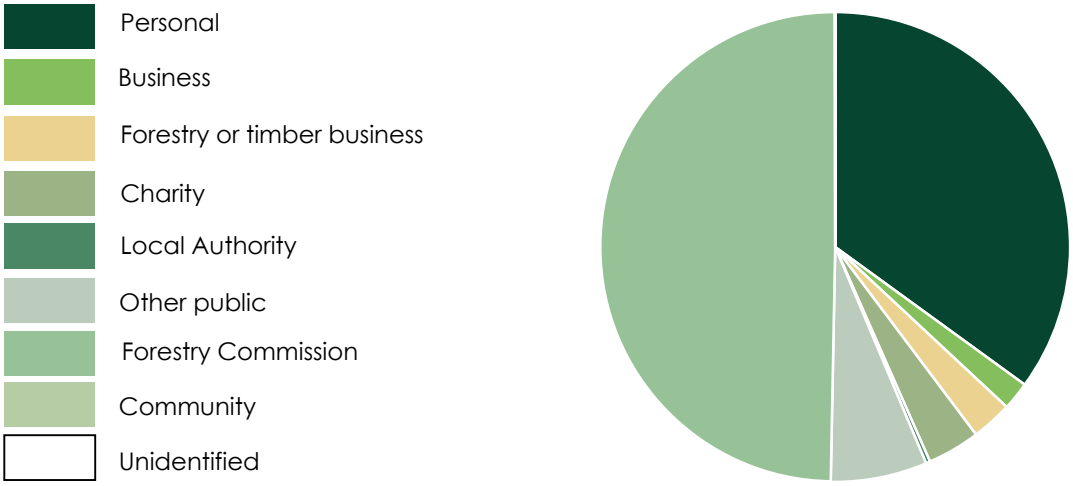
1. Principal species as a percentage of area in the planting year class.

Table 12 Ownership type* by area and percentage

Ownership type	Area (ha)	%
Personal	16,378	35.0
Business	903	1.9
Forestry or timber business	1,271	2.7
Charity	1,697	3.6
Local Authority	232	0.5
Other public (not FC)	3,062	6.5
Forestry Commission	23,250	49.6
Community ownership or common land	0	0.0
Unidentified	49	0.1
Total	**46,841**	**100.0**

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

Ownership type by area



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

Survey Method

The land area of Wales 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.

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	2,218	1,775	Area (ha)
Wide Linear Features	0	0	Area (ha)
Wide Linear Features	0	0	Length (Km)
Narrow Linear Features	4,300	449	Length (Km)
Narrow Linear Features	4,300	142,800	Number of live trees
Groups	9,300	0	Number of live trees
Individual Trees	136,600	136,600	Number of live trees

1. See Glossary for definitions of feature types.

Table 14 Woodland area by feature type and woodland size

Feature type	Woodland size (ha)		Total area (ha)	Number of features	Mean size (ha)
	0.1 - <0.25	0.25 - <2.0			
Small Woods	0	1,775	1,775	2,218	0.80
Wide Linear Features	0	0	0	0	0.00
Total	**0**	**1,775**	**1,775**	**2,218**	**0.80**

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	2.3	0.8	8.5	10.8	22.4	72.3	6.4
Spruce	3.1	0.8	3.1	0.0	7.0	22.6	2.0
Larch	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cypress	0.8	0.0	0.0	0.0	0.8	2.6	0.2
Other conifers	0.8	0.0	0.0	0.0	0.8	2.6	0.2
Total conifers	**6.9**	**1.5**	**11.6**	**10.8**	**31.0**	**100.0**	**8.9**
Oak	15.4	6.9	13.1	20.2	55.6	17.5	15.9
Beech	0.0	0.0	0.0	2.9	2.9	0.9	0.8
Sycamore	8.5	0.0	0.8	7.2	16.5	5.2	4.7
Ash	27.8	6.2	5.4	18.0	57.4	18.1	16.5
Birch	18.5	14.7	21.6	38.9	93.7	29.5	26.9
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	1.5	0.0	1.5	9.4	12.4	3.9	3.6
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	6.2	0.0	0.0	2.9	9.1	2.9	2.6
Other broadleaves	11.6	10.8	15.4	32.4	70.2	22.1	20.1
Total broadleaves	**89.5**	**38.6**	**57.9**	**131.9**	**317.8**	**100.0**	**91.1**
Total - all species	**96.5**	**40.1**	**69.4**	**142.8**	**348.8**		**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	19%
Groups	35%
Narrow Linear Features	53%

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	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Birch	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Poplar	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sweet chestnut	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Horse chestnut	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Alder	0.0	0.0	3.1	0.0	3.1	100.0	100.0
Lime	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Elm	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Willow	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other broadleaves	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total broadleaves	**0.0**	**0.0**	**3.1**	**0.0**	**3.1**	**100.0**	**100.0**
Total - all species	**0.0**	**0.0**	**3.1**	**0.0**	**3.1**		**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	3.1	19.3	0.0	22.4
Spruce	0.0	3.1	3.9	0.0	7.0
Larch	0.0	0.0	0.0	0.0	0.0
Cypress	0.0	0.8	0.0	0.0	0.8
Other conifers	0.0	0.8	0.0	0.0	0.8
Total conifers	**0.0**	**7.8**	**23.2**	**0.0**	**31.0**
Oak	0.8	6.9	48.0	0.0	55.7
Beech	0.0	0.0	2.9	0.0	2.9
Sycamore	0.8	1.5	9.8	4.3	16.4
Ash	0.0	20.1	35.0	2.3	57.4
Birch	6.7	79.5	7.5	0.0	93.7
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	0.0	11.7	0.8	0.0	12.5
Lime	0.0	0.0	0.0	0.0	0.0
Elm	0.0	0.0	0.0	0.0	0.0
Willow	5.4	3.7	0.0	0.0	9.1
Other broadleaves	17.0	53.3	0.0	0.0	70.3
Total broadleaves	**30.7**	**176.7**	**104.0**	**6.6**	**318.0**
Total - all species	**30.7**	**184.4**	**127.1**	**6.6**	**348.8**

Table 18 Number of Groups by group size

Number of trees per Group*	Number of Groups (000's)
2	0
3-5	2
6-10	4
11-20	2
21-50	2
51-100	0
>100	0
Total	**9**

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

COMPARISON OF RESULTS WITH THE 1980 CENSUS AND PREVIOUS SURVEYS

Survey Method

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

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

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

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

Woodland cover

Chart	Change in woodland cover through time (1890 – 2000)
Maps:	Woodland by county through time (1895 – 1997)

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

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

Woodland size (ha)	1980 Census woodland area		1998 Inventory woodland area		Change (%)
	(ha)	(%)	(ha)	(%)	(%)
2.0 or more	39,868	93.6	46,841	96.3	17
0.25 - <2.0	2,722	6.4	1,775	3.7	-35
Total	**42,590**		**48,616**		**14**
% Woodland land cover	**11.0**		**12.6**		

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

2. The above figures from the 1998 Inventory exclude woodland between 0.1 and <0.25 ha, thereby matching the scope of the 1980 Census. The 1998 figures above will therefore not match those in the previous sections of the report.

3. Land area used to calculate woodland cover percent (1998), 386,331 ha, was based on the 1991 Census of Population digital boundaries.

4. Land area used to calculate woodland cover percent (1980), 386,686ha, (Ordnance Survey data)

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

Species	1980 Census woodland area (ha)	1998 Inventory woodland area (ha)	Change (%)
Scots pine	1,095	1,181	8
Corsican pine	1,058	1,288	22
Lodgepole pine	1,602	1,578	-1
Sitka spruce	16,725	14,865	-11
Norway spuce	2,847	1,204	-58
European larch	248	125	-50
Jap/Hybrid larch	2,297	3,444	50
Douglas fir	1,745	2,156	24
Other conifers	1,659	1,272	-23
Mixed conifers	537	14	-97
Total conifers	**29,812**	**27,127**	**-9**
Oak	4,613	9,002	95
Beech	626	910	45
Sycamore	698	1,168	67
Ash	970	1,812	87
Birch	1,155	2,625	127
Poplar	13	0	-100
Sweet chestnut	68	166	144
Elm	153	0	-100
Other broadleaves	1,193	1,456	22
Mixed broadleaves	661	20	-97
Total broadleaves	**10,152**	**17,159**	**69**
Total all species	**39,964**	**44,286**	**11**
Felled	**316**	**1,716**	**443**
Total High Forest	**40,280**	**46,002**	**14**

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

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 5.4% (Table 2). To obtain meaningful comparisons between the two datasets the 1980 Census data have therefore been reduced by 5.4%.

3. The above figures from the 1998 Inventory exclude woodland between 0.1 and <0.25 ha, thereby matching the scope of the 1980 Census.
The 1998 figures above will therefore not match those in the previous sections of the report.

4. The 1980 figures include scrub to enable comparison

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

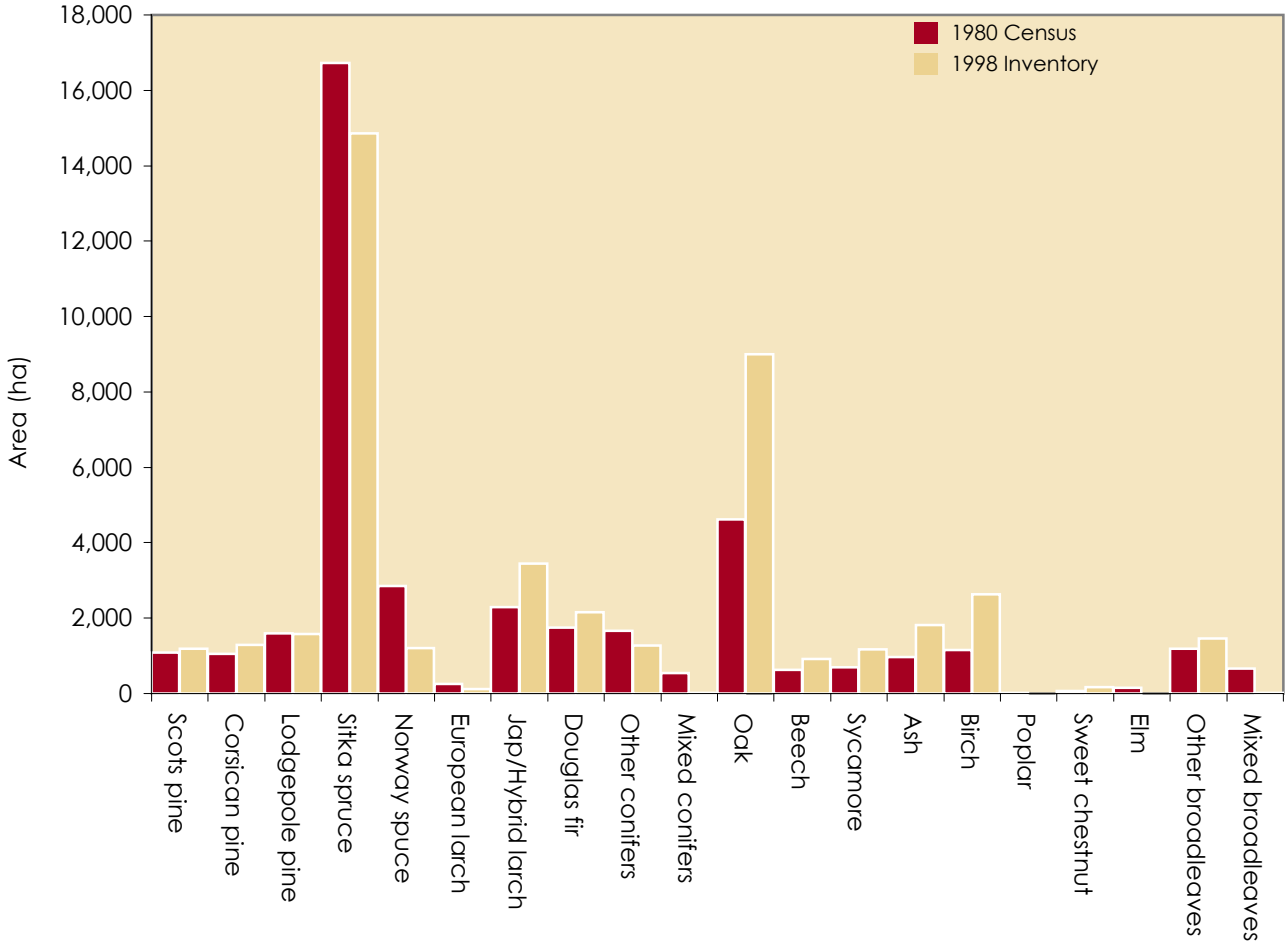


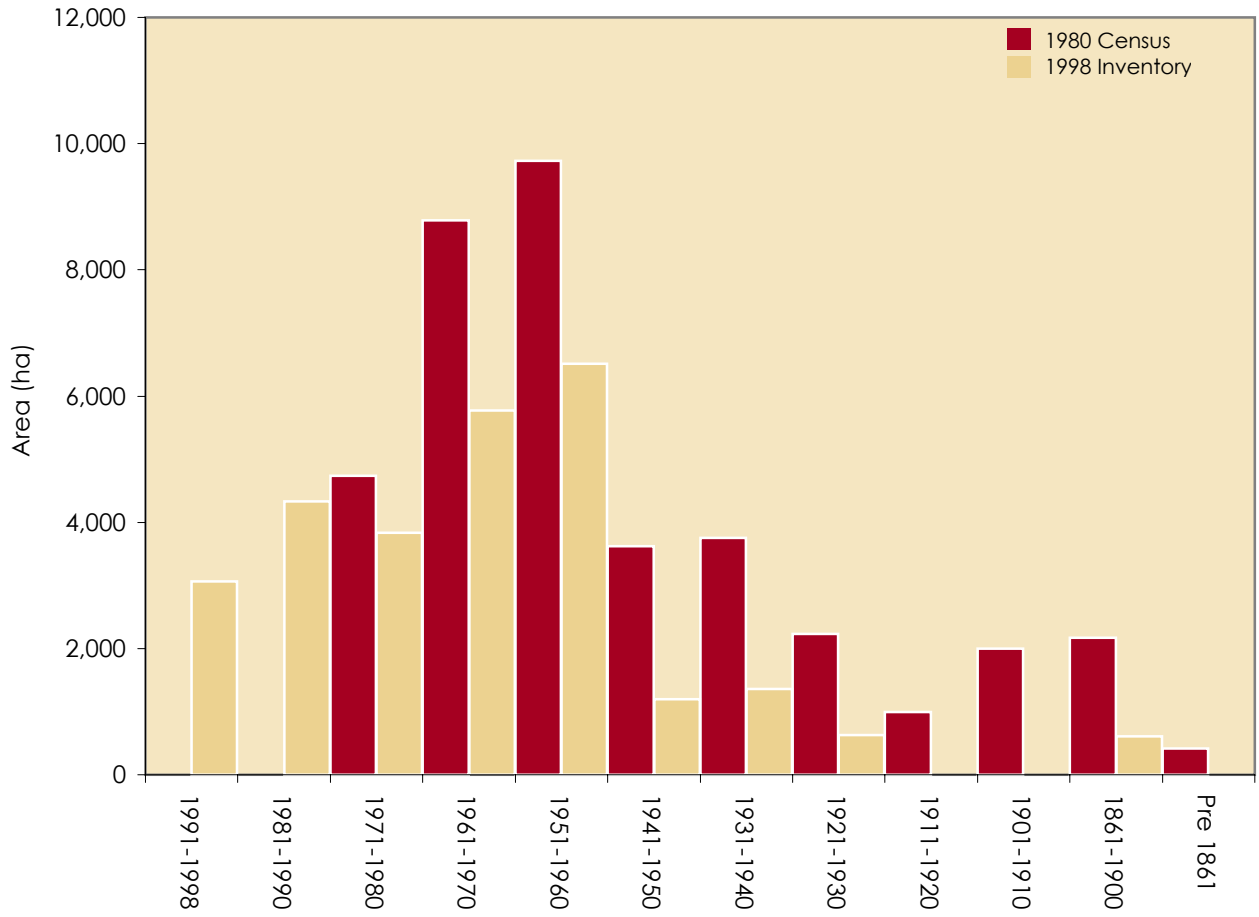
Table 21 Comparison of High Forest Category 1 area by planting year class between 1980 Census and 1998 Inventory

Planting year class	1980 Census woodland area (ha)	1998 Inventory woodland area (ha)	Change (%)
1991-1998	0	3,060	see note
1981-1990	0	4,329	see note
1971-1980	4,741	3,830	-19
1961-1970	8,789	5,768	-34
1951-1960	9,731	6,516	-33
1941-1950	3,622	1,200	-67
1931-1940	3,757	1,361	-64
1921-1930	2,227	628	-72
1911-1920	990	0	-100
1901-1910	1,997	0	-100
1861-1900	2,173	610	-72
Pre 1861	420	0	-100
Total all years	**38,448**	**27,303**	**-29**

1. The first two classes, 1991-1998 and 1981-1990, cover the period since the 1980 Census and no comparison is therefore available.

2. The definition of High Forest Category 1 in the Inventory does not fully coincide with High Forest as defined in the 1980 Census.

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



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

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

Feature type	1980 Census	1998 Inventory	Change (%)
Boundary Tree	129	82	-37
Middle Tree	92	32	-66
Total Individual Trees	221	113	-49
Groups	770	64	-92
Linear Features	875	126	-86
Total	**1,866**	**303**	**-84**

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 1998 Inventory figures have been adjusted accordingly. The 1998 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 1998 Inventory, the two surveys are not directly comparable - 1980 used 7cm diameter at breast height, and 1998 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 1998 Inventory

Feature type	1980 Census	1998 Inventory	Change (%)
Individual Trees (per sq km)	57.2	29.4	-49
Groups (per sq km)	40.8	2.4	-94
Linear Features (m per sq km)	465.5	116.3	-75

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 1998 Inventory figures have been adjusted accordingly. The 1998 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 1998 Inventory, the two surveys are not directly comparable - 1980 used 7cm diameter at breast height, and 1998 used 2m height, as minimum criteria for inclusion.

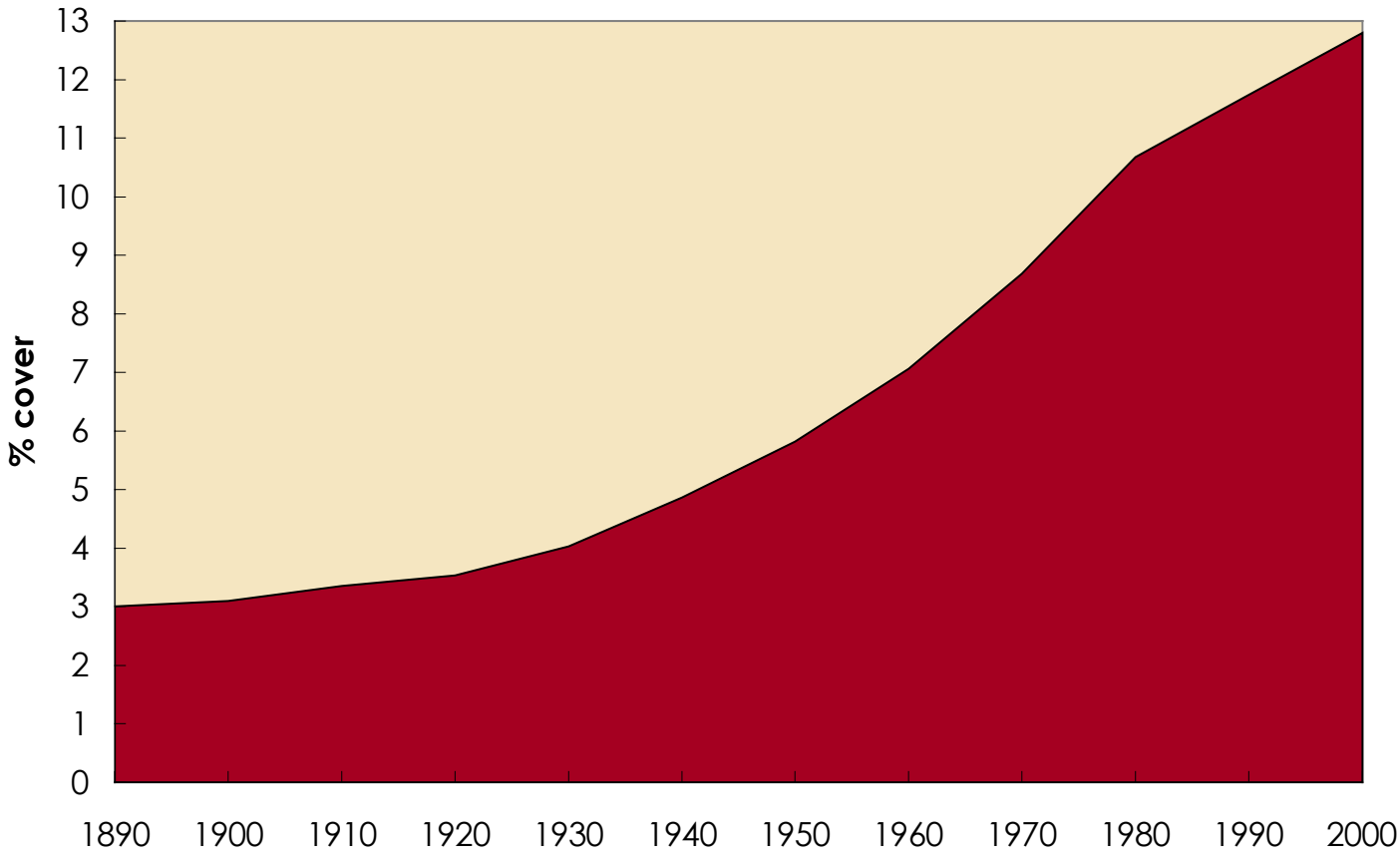
4. See Glossary for definitions of feature type.

WOODLAND COVER

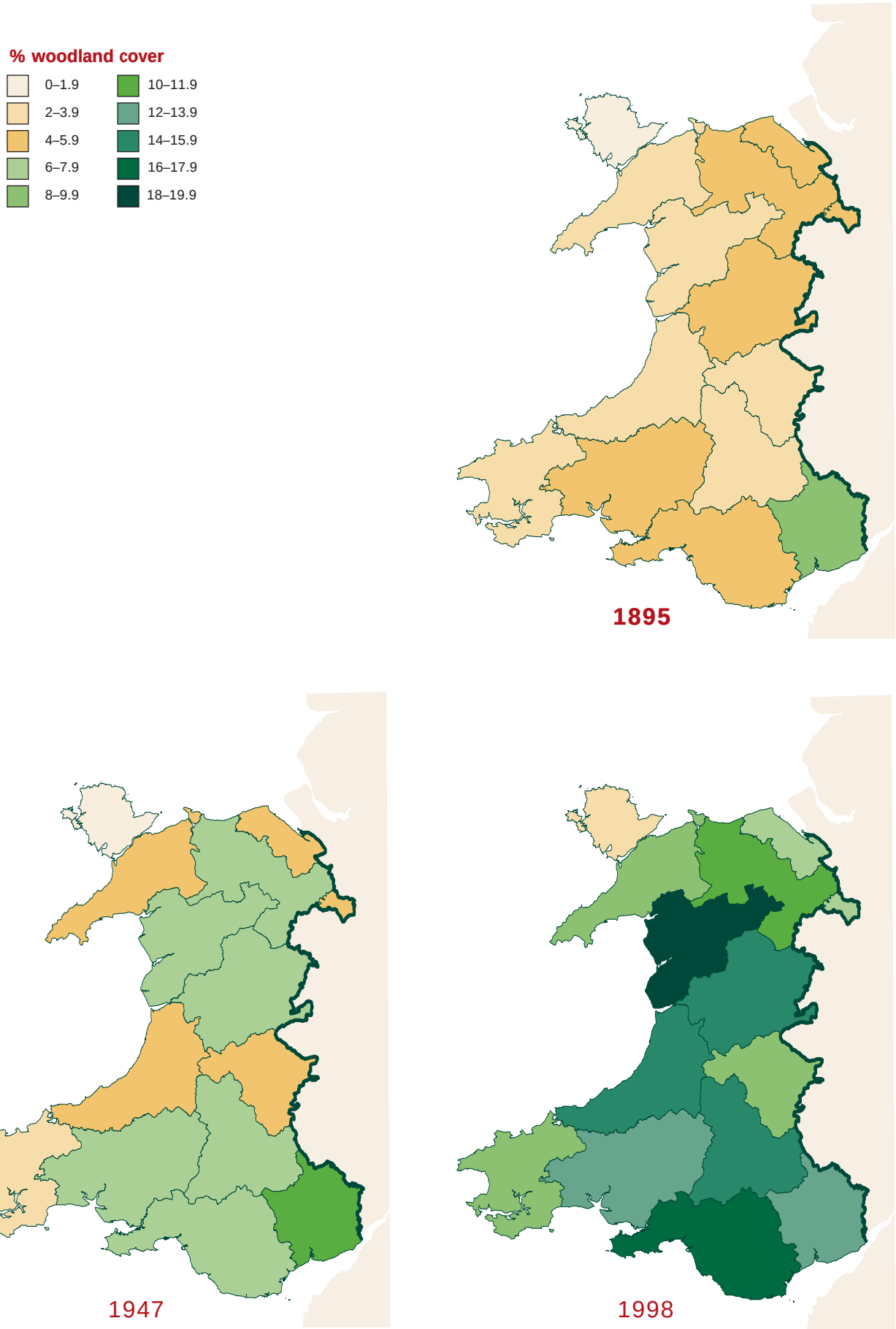
Woodland area data is available from Ministry of Agriculture surveys since 1871, and from Forestry Commission national woodland inventories since 1924. The following chart and maps show the changes in woodland area through time.

The maps use the old County structure data of Wales, 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 by county through time (1895–1998)



GLOSSARY

Woodland

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

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

Interpreted Forest Types

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

High Forest

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

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

- **High Forest Category 2**
  Stands of lower quality than High Forest Category 1.

Mixtures

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

Forest Types

- **Conifer**

  Woodland containing more than 80% by area of coniferous species.

- **Broadleaved**

  Woodland containing more than 80% by area of broadleaved species.

- **Mixed**

A combination of broadleaved and coniferous species where each category occupies at least 20% of the canopy (see note on mixtures above.)

- **Coppice**

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

- **Coppice with Standards**

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

- **Felled**

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

- **Windblow**

Areas of blown woodland which remain uncleared and not regenerated.

- **Open Space**

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

Ownership types

- **Other Ownership**

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

- Personal

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

- Private forestry or timber business

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

- Other private business

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

- Local Authority

Region, County, District or other Council

- Other public bodies (not FC)

Government department/agency, nationalised industry, etc.

- Charitable organisations

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

- Community ownership or common land

the common property of all members of the community.

- **Forestry Commission**

Land owned by or land leased to the Forestry Commission

Feature types

- **Small Wood**

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

- **Group**

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

- **Individual Tree**

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

- Boundary Tree (an Individual Tree on any boundary)

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

- **Linear Feature**

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

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

NOTES