



Forestry Commission

SAWMILL SURVEY 1998

Report on the survey of sawmill consumption and production in Great Britain in 1998, carried out by Economics & Statistics Unit of the Forestry Commission on behalf of the Forestry Commission Advisory Panel (FCAP) Sub-Committee on Supply and Demand.

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GB SAWMILL SURVEY 1998

INTRODUCTION

This report gives results from the Sawmill Survey for 1998. The survey of sawmills in Great Britain is carried out by the Economics & Statistics Unit of the Forestry Commission, for the Forestry Commission Advisory Panel Sub-Committee on Supply and Demand (SSD). We gratefully acknowledge the assistance of all sawmills that completed the survey questionnaire, of the UK Forest Products Association and the members of SSD who provided advice.

It consists of two sections, the first reports results from the annual survey, the second results from the full survey now carried out every second year.

GB SAWMILLS - ANNUAL SURVEY 1998

1. This section gives results for timber consumption and sawnwood production from the Sawmill Survey for 1998, covering all sawmills that saw British logs. It incorporates some minor corrections to the results first published in November 1999 in the 'Wood Supply and Demand 1998'.

1998 Survey responses

2. In the 1998 Survey, 407 questionnaires were sent out and there were 225 responses of some form, a response rate of 55%. Due to the higher response rate from larger mills, the respondents are estimated to have represented 82% of total softwood consumption and 60% of total hardwood consumption. This is a good response rate for a voluntary survey and further details are in Appendix 1.

Revisions to 1998 and earlier years

3. During the processing of each year's survey, information is received which enables a more accurate data set to be compiled for previous years. Better estimates may be able to be imputed for non-respondents in previous years, and the record is also amended if it is discovered that the mill had closed down. Due to these amendments the figures in this report differ slightly from those published in the 'Wood Supply and Demand Report 1998'. The latest estimates for consumption and production in 1994 to 1998, incorporating revisions to all years, are shown in Table 1, expressed in thousand cubic metres underbark for consumption and thousand cubic metres sawnwood for production.

Table 1: Consumption and production 1994-1998

			1994	1995	1996	1997	1998
Softwood:	consumption	000 m ³ ub	3,366	3,333	3,431	3,497	3,584
	production	000 m ³	1,923	1,901	1,921	1,984	2,003
Hardwood:	consumption	000 m ³ ub	316	332	260	261	229
	production	000 m ³	180	191	153	144	127

Number of mills

4. Based on all of the 1998 survey responses, together with data from previous years for those who did not respond (see Appendix 1), it is estimated that there were 361 sawmills processing British timber in 1998, of which 79 produced more than 5,000 m³ sawnwood. Of the 79 large mills, 60 processed softwood only, 2 hardwood only and 17 both hardwood and softwood. Of the 282 smaller mills, 156 processed softwood only, 26 hardwood only and 100 both softwood and hardwood. Over 40 mills had closed in the previous two years.

Table 2: Number of sawmills 1998

	Size category (000 m ³ production: soft + hard)						Total
	< 1	1 - <5	5 - <10	10 - <25	25 - <50	50+	
GB Total	163	119	38	19	11	11	361
Scotland	38	25	13	9	4	6	95
England	112	85	21	9	5	3	235
Wales	13	9	4	1	2	2	31

Imported round timber

5. It is estimated that 19 mills used imported round timber in 1998, totalling 21,000 m³ ub softwood and 5,000m³ ub hardwood. This is based on responses for 1998 and estimates for non-respondents that had reported using imported round timber in earlier years.

British softwood

6. Softwood consumption (in thousand cubic metres underbark) and production (in thousand cubic metres sawnwood) are shown in the following tables, including estimates for mills as described in Appendix 1. Results for the larger size categories are combined, to avoid disclosure of individual returns. Total softwood consumption was 3.58 million m³ underbark and sawn softwood production was 2.0 million m³ sawnwood. This shows an increase of about 8% in total for the largest mills (over 10,000 m³), and a slight decrease for the smaller.

Apparent recovery was 56% - the same as for 1996. This is calculated as the ratio of production to consumption; it is not representative of the recovery figures used by management at mill level for production management purposes.

Table 3: Softwood consumption

	000 m³ underbark				
	Size category (000 m³ production: soft + hard)				Total
	< 1	1 - <5	5 - <25	25+	
GB Total	66	372	911	2,234	3,584
Scotland	21	117	425	942	1,505
England	43	224	396	808	1,470
Wales	3	32	91	483	608

Table 4: Softwood production

	000 m³ sawnwood				
	Size category (000 m³ production: soft + hard)				Total
	< 1	1 - <5	5 - <25	25+	
GB Total	38	225	514	1,226	2,003
Scotland	12	69	234	518	834
England	24	138	232	449	843
Wales	2	17	49	259	326

Summary – Mills over 5,000m³

7. Table 5 (on the next page) gives a summary of production and consumption, for softwood, for the years 1987 to 1998, together with figures for 1983 and 1980.

Table 5 - Summary softwood statistics¹

Year	Log consumption (000 m³ ub)		Sawnwood production (000 m³ sawnwood)		Apparent recovery (%)	
Great Britain						
1980	1,638		937		57	
1983	2,139		1,227		57	
1988	2,856		1,602		56	
1989	3,044		1,775		58	
1990	3,121		1,854		59	
1991	2,925		1,713		59	
1992	3,135		1,823		58	
1993	3,247		1,897		58	
1994	3,366		1,923		57	
1995	3,333		1,901		57	
1996	3,431		1,921		56	
1997	3,497		1,984		57	
1998	3,584		2,003		56	
Scotland						
1980	721		423		59	
1983	949		537		56	
1988	1,204		676		56	
1989	1,322		770		58	
1990	1,397		812		58	
1991	1,405		797		57	
1992	1,337		740		55	
1993	1,334		781		59	
1994	1,440		814		57	
1995	1,394		784		56	
1996	1,444		799		55	
1997	1,478		823		56	
1998	1,505		834		55	
England & Wales						
1980	917		514		56	
1983	1,190		690		58	
1988	1,652		926		56	
1989	1,722		1,005		58	
1990	1,724		1,042		62	
1991	1,520		916		60	
1992	1,798		1,083		60	
1993	1,913		1,116		58	
	England	Wales	England	Wales	England	Wales
1994	1,427	499	828	281	58	56
1995	1,385	554	813	304	59	55
1996	1,406	581	806	316	57	54
1997	1,414	605	827	333	58	55
1998	1,470	608	843	326	57	54

¹ Before 1994 all Sawmill survey results excluded mills producing less than 1,000 m³ per year (500 m³ for 1980 and 1983).

British Hardwood

8. Hardwood consumption (in thousand cubic metres underbark) and production (in thousand cubic metres sawnwood) are shown in the following tables, including estimates for mills as described in the Appendix. Results for the larger size categories are combined, to avoid disclosure of individual returns. Total hardwood consumption was 229,000 m³ underbark and total sawn hardwood production was 127,000 m³ sawnwood, showing a decrease of over 10% from 1996 and 1997.

Table 6: Hardwood consumption

	000 m³ underbark			
	Size category (000 m³ production: soft + hard)			Total
	< 5	5 - <25	25+	
GB Total	132	86	11	229
Scotland	3	8	0	10
England	122	79	11	211
Wales	7	0	0	7

Table 7: Hardwood production

	000 m³ sawnwood			
	Size category (000 m³ production: soft + hard)			Total
	< 5	5 - <25	25+	
GB Total	72	48	6	127
Scotland	2	4	0	6
England	66	45	6	117
Wales	5	0	0	5

Summary – mills over 5,000m³

9. Table 8 (on the next page) gives a summary of production and consumption, for hardwood, for the years 1987 to 1998, together with figures for 1983 and 1980.

Table 8 - Summary hardwood statistics¹

Year	Log consumption (000 m³ ub)		Sawnwood production (000 m³ sawnwood)		Apparent recovery (%)	
Great Britain						
1980	942		604		64	
1983	663		390		59	
1988	475		260		55	
1989	614		364		59	
1990	517		338		65	
1991	558		347		62	
1992	303		181		60	
1993	238		143		60	
1994	316		180		57	
1995	332		191		58	
1996	260		153		59	
1997	261		144		55	
1998	230		128		55	
Scotland						
1980	71		42		59	
1983	39		19		49	
1988	42		21		50	
1989	24		13		53	
1990	32		18		56	
1991	30		16		53	
1992	21		12		57	
1993	7		4		50	
1994	12		6		51	
1995	16		9		56	
1996	12		6		51	
1997	13		6		50	
1998	10		6		53	
England & Wales						
1980	871		562		65	
1983	624		371		59	
1988	433		239		55	
1989	590		352		59	
1990	485		320		66	
1991	528		331		63	
1992	282		169		60	
1993	231		139		60	
	England	Wales	England	Wales	England	Wales
1994	294	10	167	7	57	63
1995	306	11	176	7	57	64
1996	240	8	141	5	59	62
1997	241	8	133	5	55	63
1998	212	7	117	5	55	66

¹ Before 1994 all Sawmill survey results excluded mills producing less than 1,000 m³ per year (500 m³ for 1980 and 1983).

GB SAWMILLS - FULL SURVEY

10. Additional information was collected in 1998 from mills that produced at least 5000 m³ sawnwood. Similar information had been collected in 1996, 1993 and 1990, but the scope had then included mills producing 1000-5000 m³ sawnwood. The reduction in the range of mills surveyed had been agreed after a review in 1998, to reduce the statistical burden on small businesses, while still covering around 88% of softwood throughput. Of the estimated 79 mills producing over 5000 m³ sawnwood, 52 completed a full questionnaire. Most non-respondents were in the 5000-10000 m³ size category, so respondents accounted for 86% of the softwood throughput of mills in the survey scope and 75% of the softwood throughput of all mills. All results are shown rated up to the total of 79 mills and to their consumption and production figures reported in the annual survey. Further details of the response rates and rating factors are given in Appendix 1.

Days and hours worked

10. Most mills (85%) worked for between 220 and 260 days in 1998; none worked for less than this. This is similar to 1996 and 1993.

11. About three-quarters of all mills worked for either 8 hours a day (43%) or 9 hours (35%); very few worked less than this. The largest mills (over 25,000 m³ production) tended to work longer hours. Less than half (44%) said that the site could sustain double-shift or continuous working. The unweighted average was around 9.3 hours per day, compared with around 8.5 hours/day in 1996 and 8.8 hours/ day in 1993.

Converting long length logs

12. Over half the mills (58%) indicated that they converted long length logs into shorter logs before primary breakdown. This figure is lower than in 1996, when around three-quarters of mills indicated that they converted long length logs into shorter logs before primary breakdown.

Softwood

GB Summary (see Table 10)

13. Total **softwood capacity** in 1998, defined as the level that the site could sustain on single-shift working, was 3,056,000 cubic metres underbark. It should be noted that this is a different definition from previous surveys. About 40% of the softwood capacity was in mills producing more than 50,000 cubic metres sawnwood. Softwood consumption in 1998 was running at 103% of capacity, because of double-shift working.

14. For mills that reported a breakdown of softwood consumption by **size category**, 76% was top diameter (16 cm and over). One half of mills reported a maximum butt diameter between 30-70 cm, about 17% reported a maximum below 30cm and one third over 70cm. The **species breakdown** showed an increase in spruce compared with 1996. The species reported were spruce 68%, pine 18% and other conifers 14%.

15. Softwood production broken down by **market classification** showed that in 1998, 31% went to construction (including agricultural buildings), 32% to fencing, 33% to packaging and pallets and 4% to all other markets. This breakdown was similar to 1996.

16. Softwood **co-products** added up to 1,748,000 green tonnes. In 1998, 83% of softwood co-products (1,454,000 green tonnes) were sold to wood processing industries, 4% to other industries, 11% sold as bark, and 2% burnt (for heat) or disposed of.

England, Scotland & Wales

17. The main flows of softwood logs between countries were from Scotland and Wales into England. Around 82% of reported Scottish logs were sawn in Scottish mills. Around 61% of reported Welsh logs were sawn in Welsh mills; the rest were sawn in English mills just over the border.

Table 9: Flow of softwood logs between countries

Source	GB	Sawmills in		
		Scotland	England	Wales
England	550	55	439	56
Scotland	1,459	1,197	215	47
Wales	663	0	257	406
Imports	18	6	12	0
Total response	2,691	1,259	924	509
Non-response to question or survey	454	108	280	65
Total	3,145	1,367	1,204	574

18. Table 11 presents the same information as Table 10, but broken down by country (England, Scotland and Wales) instead of size category. The main differences were

- English mills sawed less spruce (54%) and a higher proportion of pines (27%) and other conifers (19%);
- More Scottish timber went to construction (41%) and less to fencing (20%).

Table 10: Softwood - consumption and production (1998 full survey)

	Mill size category (000 m ³ total production) ¹				Total
	5 - <10	10 - <25	25 - <50	50+	
Capacity (000 m ³ underbark)	422	625	713	1,298	3,056
% of consumption against capacity	91	84	100	117	103
Consumption (000 m ³ underbark)	386	525	713	1,521	3,145
Top diameter 16cm+	228	239	522	1,278	2,267
Top diameter <16cm	106	177	191	243	717
Not reported	52	109	0	0	161
Spruce	182	197	481	1,250	2,110
Pine	97	234	133	111	575
Other conifer	83	94	99	160	435
Not reported	24	0	0	0	24
Sawnwood production (000 m ³)	220	294	387	840	1,741
Construction	21	29	78	415	543
Fencing	93	109	193	155	550
Packaging & pallets	93	153	87	241	573
Mining timber	8	1	8	0	17
Furniture	0	0	0	0	1
Other	5	2	20	28	55
Not reported	0	0	1	1	2
Co-products (000 green tonnes)	176	287	392	894	1,748
To wood processing industries	146	240	334	735	1,454
Sawdust	26	58	51	151	286
Slabwood	3	0	1	0	4
Peeled Chips	69	148	234	581	1,034
Unpeeled chips	45	31	43	1	119
Other	3	3	3	3	12
To other sales	13	20	13	19	65
Sawdust	10	8	6	11	35
Slabwood	1	0	0	0	1
Peeled Chips	0	0	7	0	7
Unpeeled chips	1	0	0	0	1
Firewood	1	2	0	1	5
Other	0	10	0	8	17
Sold as bark	16	25	39	110	191
Burnt for heat	0	2	3	28	32
Disposed rubbish/burning	1	1	3	1	5

¹ Size category is based on total production of mill (softwood and hardwood), not just softwood production

Table 11: Softwood-consumption and production (1998 full survey) - breakdown by country

	Scotland	England	Wales
Capacity (000 m ³ underbark)	1,501	1,138	420
% of consumption against capacity	91	106	137
Consumption (000 m ³ underbark)	1,367	1,204	574
Top diameter 16cm+	1,050	807	411
Top diameter <16cm	286	278	153
Not reported	31	119	11
Spruce	1,013	634	464
Pine	219	322	34
Other conifer	136	223	76
Not reported	0	24	0
Sawnwood production (000 m ³)	752	681	308
Construction	309	170	64
Fencing	149	285	116
Packaging & pallets	270	190	113
Mining timber	6	10	0
Furniture	0	1	0
Other	18	24	13
Not reported	1	0	1
Co-products (000 green tonnes)	759	648	341
To wood processing industries	614	544	296
Sawdust	99	114	72
Slabwood	0	2	2
Peeled Chips	475	340	218
Unpeeled chips	32	84	3
Other	8	4	1
To other Sales	38	25	2
Sawdust	26	7	2
Slabwood	0	0	0
Peeled Chips	0	7	0
Unpeeled chips	0	1	0
Firewood	4	1	0
Other	8	10	0
Sold as bark	74	77	40
Burnt for heat	29	2	2
Disposed rubbish/burning	5	1	0

Hardwood

GB Summary (See Table 12)

19. In 1998, total **hardwood capacity** (defined as for softwood) was 97,000 cubic metres underbark. **Hardwood consumption** was 97,000 cubic metres underbark, 100% of single shift capacity. The 1998 survey gives a more limited coverage of hardwood than previous years, because of the exclusion of mills producing less than 5000 m³ sawnwood, and the results are more subject to distortion by variable response rates.

20. For mills that reported a breakdown of hardwood consumption by size category, over half of the hardwood consumed was top diameter 40 cm and over. The maximum butt diameter of log most mills were able to cut was over 100cm. The **main species** reported were oak 37%, beech 26%, ash 13% and sycamore 13%.

21. Hardwood production broken down by **market classification** showed that the main markets were sawn mining timber (22%) and furniture (36%). **Hardwood co-products** added up to 33,000 green tonnes, of which around 26,000 green tonnes were sold to wood processing industries.

England, Scotland & Wales

22. No Welsh mills that sawed hardwood were in the scope for the survey (mills sawing over 5,000m³), and little was in the scope for Scotland, so only GB totals are given.

Table 12: Hardwood - consumption and production (1998 full survey)

	All mills with total production¹ over 5,000m³
Capacity (000 m ³ underbark)	97
% of consumption against capacity	100
Consumption (000 m ³ underbark)	97
Top diameter 40cm+	45
Top diameter <40cm	36
Not reported	17
Oak	36
Ash	13
Beech	25
Sycamore	13
Elm	3
Other white hard	5
Other hard	3
Not reported	1
Sawnwood production (000 m ³)	54
Construction	8
Fencing	4
Packaging & pallets	6
Mining timber	12
Furniture	20
Other	6
Co-products (000 green tonnes)	33
To wood processing industries	26
Sawdust	2
Slabwood	0
Peeled Chips	2
Unpeeled chips	22
Other	0
To other sales	7
Sawdust	3
Slabwood	1
Peeled Chips	0
Unpeeled chips	1
Firewood	2
Other	0
Sold as bark	0
Burnt for heat	0
Disposed rubbish/burning	0

¹ Size category is based on total production of mill (softwood and hardwood), not just hardwood

Additional Facilities of Mill

23. Of the (rated up) total of 79 mills, the number with each of the additional facilities is shown below (treating non-response to this question as “no”). Capacity and throughput for machine strength grading and kiln drying were estimated by rating up respondents’ figures by the same factor used to rate up softwood production for each size category (as described in the Appendix). The capacity and throughput of the machine strength grading has increased since 1996. The capacity for kiln drying has decreased since 1996, although throughput has increased.

Table 13: Additional facilities of mills (1998 full survey)

	Number of mills			
	GB	Scotland	England	Wales
Total number of mills	79	32	38	9
Debarker	56	27	22	7
Log sorter	30	14	12	4
Drop sorter	17	11	5	1
Automatic sticker/stacker	19	12	6	1
Additional resawing/cross-cutting	75	31	35	9
Machining (e.g. planing, moulding)	40	15	18	7
Treatment plant	45	19	19	7

	GB	Scotland	England	Wales
Machine strength grading				
Number of mills	15	9	5	1
Capacity (000m ³)	523	319	149	55
Throughput (000m ³)	321	198	99	24
Kiln Drying				
Number of mills	24	10	12	2
Capacity (000m ³)	479	302	145	32
Throughput (000m ³)	344	206	112	26

Employment

24. The numbers of direct employees and of contractors and subcontractors are shown below, rated up according to the number of mills responding in each size category. Contractors or sub-contractors accounted for around three-quarters of the employment on haulage, but less than 2% of other employment.

Table 14 : Sawmill Employment (1998 Full Survey)

	Direct	Contract	Total
Sawmill line workers	1,573	17	1,590
Secondary process workers	1,078	10	1,088
Others (e.g. fitters)	291	33	324
Haulage to mill	78	196	274
Haulage from mill	79	252	331
Clerical staff	197	5	202
Marketing & sales staff	108	0	108
Supervising & managerial	278	0	278
Total	3682	513	4,195

Table 15: Sawmill Employment (1998 Full Survey) Country breakdown

	Scotland		England		Wales	
	Direct	Contract	Direct	Contract	Direct	Contract
Sawmill line workers	613	0	720	17	240	0
Secondary process workers	302	3	722	7	54	0
Others (e.g. fitters)	121	9	131	22	39	2
Haulage to mill	29	103	47	83	2	10
Haulage from mill	19	122	55	116	5	14
Clerical staff	50	5	126	0	21	0
Marketing & sales staff	29	0	74	0	5	0
Supervising & managerial	99	0	137	0	42	0
Total	1,262	242	2,012	245	408	26

SURVEY METHODOLOGY

1998 Annual Survey Responses

1. In the 1998 Survey 407 questionnaires were sent out in February 1999. One reminder was issued in April to all non-respondents. Non-respondents estimated to have annual production of over 10,000 m³, were contacted again by telephone. At the end of this process, responses had been received for 34 of the 41 mills producing over 10,000 m³ (a response rate of 83%), 18 of the 38 mills between 5,000 and 10,000 (47% response), 136 of the estimated 286 smaller mills (47% response) and 35 mills were reported as having closed or having consumed no British timber in the year. In total, 225 responses were returned in some form, a response rate of 55%. Because of the much higher response rate from large mills, the respondents are estimated to have represented 82% of total softwood consumption and 60% of total hardwood consumption. The last survey in which estimates were obtained for all non-respondents was the survey for 1994.

2. Of the 225 responses for 1998:

- 57 completed the full (pink) questionnaire, intended for mills over 5000 m³ production,
- 132 completed the shorter (yellow) questionnaire, intended for smaller mills,
- 36 reported that the sawmill no longer exists, or that they didn't saw any British logs in 1998.

Full Survey Responses and Rating Factors

3. Of the estimated 79 mills producing over 5000 m³ sawnwood, 52 completed a full questionnaire, 2 reported their 1998 figures on the short yellow questionnaire, and 25 did not report any figures for 1998, so estimates based on previous years were used in the report on the Annual Survey. The response rate to the full questionnaire is 66% if measured by the number of mills, but 86% by softwood volume. The full questionnaire was also completed for 5 mills that produced less than 5000 m³ sawnwood; these were excluded from the full survey analysis. The response rate (number of mills) for each size category is shown below.

	Size category (000 m ³ production)				Total
	5 - <10	10 - <25	25 - <50	50+	
Mills with full (pink) questionnaire	18	14	9	11	52
Other mills	20	5	2	0	27
Total	38	19	11	11	79
<i>Response rate</i>	<i>47%</i>	<i>74%</i>	<i>82%</i>	<i>100%</i>	<i>66%</i>

4. In all paragraphs and tables produced only from the full (pink) questionnaire, data reported by the 52 respondents were rated up to give estimates for all 79 mills producing over 5000 m³ sawnwood. Separate rating factors were used for each of the four size categories. Capacity and consumption were rated up by factors based on consumption, with separate factors for hardwood and softwood. Production and residues were rated up by factors based on production, again with separate factors for hardwood and softwood. This ensured that production and consumption estimates in these tables are consistent with those given in the report on the Annual Survey. Responses to all other questions were rated up by factors based on the number of mills - the inverse of the response rates shown above.