

# WOOD SUPPLY AND DEMAND 1996

**Statistics on Supply and Demand for Home-Grown Timber in Great Britain  
1986-1996**



Forestry Commission

# WOOD SUPPLY AND DEMAND 1996

**Report prepared by Forestry Commission HQ Statistics on behalf of  
the Sub-Committee on Supply and Demand of the Home Grown  
Timber Advisory Committee.**

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**TABLE 1 Deliveries of Coniferous Roundwood Great Britain**

(000's GREEN TONNES)

	<b>Sawmills~</b>	<b>Pulpmills</b>	<b>Woodpanel</b>	<b>British Coal</b>	<b>Fencing*</b>	<b>Miscellaneous*</b>	<b>Pulp Exports</b>	<b>TOTAL</b>
<b>BRW</b>								
1986	2,433	605	645	91	-	158	332	4,264
1987	2,618	647	741	68	-	185	396	4,655
1988	2,907	709	763	48	-	200	267	4,894
1989	3,099	794	914	37	-	225	168	5,237
1990	3,180	857	998	32	-	262	59	5,388
1991	2,978	939	1,198	22	-	272	66	5,475
1992	3,191	949	1,216	16	186	163	66	5,787
1993	3,305	1,037	1,285	10	237	163	15	6,052
1994	3,325	1,104	1,407	0	406	136	48	6,426
1995	3,302	1,106	1,699	0	387	134	8	6,636
1996	3,438	853	1,500	0	337	134	0	6,262
<b>IMPORTS</b>								
1986	-	0	-	7	-	0	0	7
1987	-	0	-	4	-	0	0	4
1988	-	0	-	-	-	0	0	0
1989	-	0	-	-	-	0	0	0
1990	-	0	-	-	-	0	0	0
1991	-	25	2	0	-	0	0	27
1992	-	1	1	0	0	0	0	2
1993	39	36	30	0	0	0	0	105
1994	40	2	65	0	0	0	0	107
1995	50	4	23	0	0	0	0	77
1996	42	0	3	0	0	0	0	45

BRW = British Roundwood - Not available

~Sawmills exclude small sawmills before 1994.

\*Fencing is included in miscellaneous up to 1991

**TABLE 2 Comparison between Removals and Deliveries of British Coniferous Roundwood**

(000's GREEN TONNES)

	<b>FC Removal</b>	<b>PW Removal</b>	<b>TOTAL</b>	<b>Deliveries</b>	<b>Balance</b>
1986	2,576	1,211	3,787	4,264	-477
1987	2,737	1,464	4,201	4,655	-454
1988	2,834	1,723	4,557	4,894	-338
1989	2,854	1,848	4,702	5,237	-535
1990	2,831	1,801	4,632	5,388	-756
1991	3,076	1,623	4,699	5,475	-775
1992	3,321	1,701	5,022	5,787	-765
1993	3,388	1,947	5,335	6,052	-727
1994	3,534	2,476	6,010	6,426	-416
1995	3,379	2,708	6,087	6,636	-549
1996	3,723	2,634	6,357	6,262	+95

FC = Forestry Commission      PW = Private Woodland

**TABLE 3 Deliveries of Softwood Residues - Great Britain**

(000's GREEN TONNES)

	<b>Pulpmills</b>	<b>Wood Panel</b>		<b>Exports</b>	<b>TOTAL</b>
	<b>BRW</b>	<b>BRW</b>	<b>Imports</b>		
1986	95	672	94	42	903
1987	93	862	0	80	1,035
1988	85	835	121	50	1,091
1989	89	1,009	120	50	1,268
1990	116	1,116	110	50	1,392
1991	112	1,150	75	0	1,337
1992	135	1,197	98	0	1,430
1993	144	1,319	143	0	1,606
1994	176	1,368	156	0	1,700
1995	284	1,521	162	0	1,967
1996	305	1,542	160	0	2,007

BRW = British Roundwood

**TABLE 4 Deliveries of Hardwood Roundwood Great Britain**

(000's GREEN TONNES)

	<b>Sawmills~</b>	<b>Pulpmills</b>	<b>Wood Panel</b>	<b>Fencing*</b>	<b>Miscellaneous*</b>	<b>TOTAL</b>
1986	741	210	41	-	124	1,116
1987	503	241	43	-	145	932
1988	543	276	107	-	201	1,127
1989	701	274	102	-	215	1,292
1990	591	272	46	-	215	1,124
1991	638	158	99	-	220	1,115
1992	347	161	69	30 <sup>#</sup>	175	782
1993	272	156	78	30 <sup>#</sup>	175	711
1994	328	190	96	30 <sup>#</sup>	175	819
1995	348	196	113	30 <sup>#</sup>	175	862
1996	278	202	91	30 <sup>#</sup>	175	776

~Sawmills exclude small sawmills before 1994.

\*Fencing is included in miscellaneous up to 1991

#Estimate

**TABLE 5 Comparison Between Removals and Deliveries of British Hardwood Roundwood**

(000's GREEN TONNES)

	<b>FC Removal</b>	<b>PW Removal</b>	<b>TOTAL</b>	<b>Deliveries</b>	<b>Balance</b>
1986	0	1,110	1,110	1,116	-6
1987	0	1,002	1,002	932	+70
1988	109	1,151	1,260	1,127	+133
1989	111	1,165	1,276	1,292	-16
1990	97	1,025	1,122	1,124	-2
1991	97	1,015	1,112	1,115	-3
1992	72	755	827	782	+45
1993	124	750 <sup>#</sup>	874	711	+163
1994	128	750 <sup>#</sup>	878	819	+59
1995	107	750 <sup>#</sup>	857	862	-5
1996	100	750 <sup>#</sup>	850	776	+74

FC = Forestry Commission PW = Private Woodland

# Estimate



# REMOVALS OF CONIFER ROUNDWOOD

## PRIVATE SECTOR

Estimates of Private Sector Removals were obtained from two sources:

- Forestry Commission (FC) carry out an annual survey of the 33 largest harvesting companies (increased to 38 for 1996), to ask for the quantity of private sector removals for the last two years. The 38 companies surveyed were responsible for about two-thirds of the total of private removals.
- Timber Growers Association (TGA) undertook an annual survey of the 4 or 5 largest forestry companies, to ask the % rise or fall in activity compared with the previous year. This % change was used to update the estimated total for the previous year.

The FC survey received a 100% response for 1994, but 9 out of the 33 did not respond in 1995 and 6 out of the 38 did not respond in 1996. Results for previous years have been revised, as some companies reported errors in their previous figures. The percentage changes are similar in the FC and TGA surveys.

**TABLE 6 Private Sector Softwood Removals: FC Survey**

Year	% change on previous years	
	FC survey	TGA survey
1994	+23%	+27.2%
1995	+13%	+ 9.5%
1996	- 4%	- 2.8%

Table 7 compares forecast and reported removals for Private Woodlands. The “reported” figures were calculated from the % changes in the TGA survey; it has been agreed that the FC survey will be used for this purpose from 1997. Forecasts are based on published forecasts for private woods interpolated for the years between the 5 year averages.

**TABLE 7 Private Sector Softwood Removals: TGA Survey**

Year	000 m <sup>3</sup> overbark standing		
	Forecast	Reported	% of forecast
1986	1,810	1,480	82
1987	1,687	1,790	106
1988	1,759	2,106	120
1989	1,780	2,259	127
1990	1,900	2,202	116
1991	1,800	1,984	110
1992	2,200	2,079	95
1993	2,360	2,380	101
1994	2,518	3,027	120
1995	2,700	3,313	123
1996	2,900	3,220	111

## FORESTRY COMMISSION

Forest Enterprise report figures for forecast, planned and actual removals. In Table 8, planned and actual removals are shown as % of the forecast. Forestry Commission removals in 1996 were 10% above those in 1995.

**TABLE 8 Forestry Commission Softwood Removals, 000 m<sup>3</sup> overbark standing**

Year	Forecast	Planned		Removals	
	000 m <sup>3</sup> ob	000 m <sup>3</sup> ob	% of forecast	000 m <sup>3</sup> ob	% of forecast
1986	3,187	3,107	97	3,149	99
1987	3,260	3,211	98	3,345	103
1988	3,415	3,457	101	3,464	101
1989	3,435	3,564	104	3,488	102
1990	3,530	3,602	102	3,460	98
1991	3,603	3,872	107	3,760	104
1992	3,682	3,859	105	4,059	110
1993	3,763	3,848	102	4,141	110
1994	3,880	4,100	106	4,320	111
1995*	4,228	4,204	99	4,131	98
1996*	4,360	4,448	102	4,551	104

\* Figures for 1995 and 1996 are those for financial years 1995/96 and 1996/97.

## TOTAL : PRIVATE + FORESTRY COMMISSION

Total softwood removals in 1996 (7,771,000 cubic metres overbark) were 4.2% above 1995; 59% of the total was Forestry Commission.

## SAWMILL SURVEY 1996

The sawmill survey for the calendar year ending December 1996 was carried out by Forestry Commission Statistics Branch, following procedures agreed with HGTAC-SSD. Questionnaires were sent to all mills, based on a comprehensive list compiled from the results of the 1994 survey. The survey asked all mills to report the total quantities of consumption and production, for soft and hard woods. Mills with annual production of over 1000 m<sup>3</sup> sawnwood were also asked to complete a more detailed questionnaire, sent out every third year; results from this are given in a separate report.

The response rate was 55% by number of mills (85% by volume). Estimates for non-respondents were based on the consumption and production reported for 1995 or 1994, using 1994 estimates by Forest Enterprise and Forestry Authority staff for mills that have not responded in any of the three years.

The main results:

- The total number of sawmills producing more than 1,000 m<sup>3</sup> per annum has fallen to 195.
- They produced 1,839,000 m<sup>3</sup> of softwood sawnwood, little change from the revised figures for 1995 and 1994.
- They produced 133,000 m<sup>3</sup> of hardwood sawnwood, about 20% below the revised figures for 1995 and 1994.

All results have been individually rounded to the nearest 1000 m<sup>3</sup>. Totals and apparent consumption percentages were calculated from the unrounded figures, so may not agree exactly with results calculated from the rounded figures. The sawmill categories are based on total sawnwood production (m<sup>3</sup>/year), softwood plus hardwood, and are defined as follows:-

- 1,000 - 4,999
- 5,000 - 9,999
- 10,000 - 24,999
- 25,000 - 49,999
- 50,000 and over

Results for mills with production of less than 1000 m<sup>3</sup>/year are shown in footnotes for the 1996 survey, but are excluded from the tables that show results for a run of years.

The number of sawmills in each size category is shown in Table 9, with revised 1995 figures in brackets for comparison.

**TABLE 9 Number of Sawmills by Production Category**

<b>Sawmill Category</b>	<b>1000 - 4999</b>	<b>5000 - 9999</b>	<b>10000 - 24999</b>	<b>25000 - 49999</b>	<b>50000 and over</b>	<b>Total</b>
Sawnwood Production m <sup>3</sup> /year						
Scotland	24 (29)	14 (14)	7 (10)	7 (7)	3 (2)	55 (62)
England & Wales	89 (101)	26 (24)	13 (14)	8 (8)	4 (3)	140 (150)
Great Britain	113 (130)	40 (38)	20 (24)	15 (15)	7 (5)	195 (212)

It is estimated that a further 212 mills (47 in Scotland, 165 in England & Wales) produced less than 1,000 m<sup>3</sup> each per year.

The log consumption, sawnwood production and apparent recovery for the sawmill size categories are shown in Table 10. Figures for earlier years are given in the summaries on pages 10 and 11.

**TABLE 10 Softwood Log Consumption (000's m<sup>3</sup> ub) and Sawnwood Production (000's m<sup>3</sup>)**

<b>Sawmill Category</b>	<b>1000 -</b>	<b>5000 -</b>	<b>10000 -</b>	<b>25000 -</b>	<b>50000</b>	<b>Total</b>
Sawnwood Production m <sup>3</sup> /year (soft + hard)	<b>4999</b>	<b>9999</b>	<b>24999</b>	<b>49999</b>	<b>and over</b>	
<b>Scotland</b>						
Log Consumption	105	184	206	499	396	1,390
Sawnwood Production	60	98	111	286	213	768
Apparent Recovery %	57	53	54	57	54	55
<b>England &amp; Wales</b>						
Log Consumption	252	204	329	514	602	1,902
Sawnwood Production	156	118	197	267	333	1,072
Apparent Recovery %	62	58	60	52	55	56
<b>Great Britain</b>						
Log Consumption	357	388	535	1013	998	3,291
Sawnwood Production	216	216	309	553	546	1,839
Apparent Recovery %	61	56	58	55	55	56

It is estimated that mills with less than 1000 m<sup>3</sup> production in 1996 had total softwood log consumption of 86,000 m<sup>3</sup> and total softwood sawnwood production of 49,000 m<sup>3</sup> (57% apparent recovery).

Hardwood results are given in Table 11 Categories over 10,000m<sup>3</sup> are combined, to avoid disclosing results for individual mills.

**TABLE 11 Hardwood Log Consumption (000's m<sup>3</sup>ub) and Sawnwood Production (000's m<sup>3</sup>)**

<b>Sawmill Category</b> Sawn Production m <sup>3</sup> /year (soft+hard)	<b>1000 - 4999</b>	<b>5000 - 9999</b>	<b>10000 and over</b>	<b>Total</b>
<b>Scotland</b>				
Log Consumption	10	10	0	20
Sawnwood Production	5	5	0	10
Apparent Recovery %	51	51	0	51
<b>England &amp; Wales</b>				
Log Consumption	90	77	32	200
Sawnwood Production	57	49	17	123
Apparent Recovery %	63	64	53	61
<b>Great Britain</b>				
Log Consumption	101	87	32	220
Sawnwood Production	62	54	17	133
Apparent Recovery %	62	62	53	60

It is estimated that mills with less than 1000 m<sup>3</sup> production (softwood + hardwood) in 1996 had total hardwood log consumption of 23,000 m<sup>3</sup> and total hardwood sawnwood production of 12,000 m<sup>3</sup>.

### Summary Statistics

Tables 12 and 13 (on the next two pages) give summaries of the consumption and production for softwood and hardwood, for the years 1987 to 1996. The figures are just for mills producing at least 1,000 m<sup>3</sup> per year. Results for 1995 and 1994 have been revised to take account of revised information noted during the 1996 survey. Softwood sawnwood production in Great Britain increased during the 1980's, but has been fairly constant since 1990. Hardwood sawnwood production is now less than half the level recorded in 1990 or 1991.

**TABLE 12 Summary Softwood Statistics 1987-1996 (excluding small mills\*)**

<b>Year</b>	<b>Log Consumption (000's m<sup>3</sup> ub)</b>	<b>Sawnwood Production (000's m<sup>3</sup> sawn)</b>	<b>Apparent Recovery (%)</b>
<b>Scotland</b>			
1987	1,071	623	58
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	1,381	781	57
1995	1,342	754	56
1996	1,390	768	55
<b>England &amp; Wales</b>			
1987	1,501	907	60
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
1994	1,792	1,031	58
1995	1,823	1,050	58
1996	1,902	1,072	56
<b>Great Britain</b>			
1987	2,572	1,530	59
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	3,174	1,812	57
1995	3,164	1,804	57
1996	3,291	1,839	56

\* This summary table excludes small sawmills that have total production less than 1000 m<sup>3</sup> per year.

**TABLE 13 Summary Hardwood Statistics 1987-1996 (excluding small mills\*)**

<b>Year</b>	<b>Log Consumption (000's m<sup>3</sup> ub)</b>	<b>Sawnwood Production (000's m<sup>3</sup> sawn)</b>	<b>Apparent Recovery (%)</b>
<b>Scotland</b>			
1987	38	24	63
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	17	9	53
1995	22	13	59
1996	20	10	51
<b>England &amp; Wales</b>			
1987	402	237	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
1994	249	146	59
1995	264	156	59
1996	200	123	61
<b>Great Britain</b>			
1987	440	261	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	266	155	58
1995	286	169	59
1996	220	133	60

\* This summary table excludes small sawmills that have total production less than 1000 m<sup>3</sup> per year.

## PULP INDUSTRY

Figures for the Pulp Industry were provided by the UK Wood Processors' Association.

Table 14 shows pulpwood exports; no pulpwood was exported in 1996.

**TABLE 14 Pulpwood Exports**

000's green tonnes

Year	England	Wales	Scotland	Great Britain
1986	49	0	283	332
1987	85	10	301	396
1988	163	0	104	267
1989	95	0	73	168
1990	25	0	34	59
1991	28	0	38	66
1992	21	0	45	66
1993	4	0	11	15
1994	2	0	46	48
1995	0	0	8	8
1996	0	0	0	0

Table 15 shows the pulp industry's use of softwood and hardwood roundwood and residues.



**TABLE 15 Pulp Industry**

000's green tonnes

Year	Capacity		Deliveries (consumption before 1988)								Sources of British Roundwood					
			British RW		Imported RW		Residues		Total		England		Wales		Scotland	
	Soft	Hard	Soft	Hard	Soft	Hard	Soft	Hard	Soft	Hard	Soft	Hard	Soft	Hard	Soft	Hard
1986	714	265	605	210	0	0	95	31	700	241	231	192	204	18	170	0
1987	757	302	647	241	0	0	93	24	740	265	258	216	211	21	204	0
1988	794	326	709	276	0	0	85	50	794	326	225	256	204	20	280	0
1989	883	304	794	274	0	0	89	30	883	304	225	244	220	30	349	0
1990	1,074	303	857	272	0	0	116	31	973	303	240	264	221	8	396	0
1991	1,266	303	939	158	25	0	112	19	1,076	177	223	152	240	6	469	0
1992	1,175	181	949	161	1	0	135	20	1,085	181	203	156	242	5	504	0
1993	1,316	178	1,037	156	36	5	144	22	1,217	183	232	153	247	3	558	0
1994	1,356	208	1,104	190	2	3	176	18	1,282	211	184	176	252	14	668	0
1995	1,457*	212	1,106	196	4	0	284	4	1,394	200	197	188	250	8	659	0
1996	1,267	202	853	202	0	0	305	0	1,158	202	175	194	200	8	478	0

\* Softwood capacity reclassified from 1995

BRW = British Roundwood

# WOODBASED PANEL PRODUCTS

Figures for woodbased panel products were supplied by the Wood Panel Industries Federation.

## Particleboard Industry

The figures given in Table 16 are combined totals for Particleboard (wood chipboard and cement bonded particleboard) and for Oriented Strand Board (OSB). In 1996 the Particleboard Industry used 1.4 million tonnes of British Roundwood and 1.1 million tonnes of residues.

## Medium Density Fibreboard

Figures for Medium Density Fibreboard (MDF) manufacturers are given in Table 17. MDF manufacture uses 0.2 million tonnes of British Roundwood and 0.5 million tonnes of residues.

## Other Fibreboard

Figures for other fibre board manufacturers are given in Table 18.

## Summary

Table 19 gives the totals for this sector, adding figures from Tables 16, 17 and 18.

**TABLE 16 Particleboard**

000's green tonnes

Year	Capacity	Deliveries (consumption before 1988)									
		BRW		Imported Roundwood		Residues of BRW		Residues (Imported)		Total	
		Soft	Hard	Soft	Hard	Soft	Hard	Soft	Hard	Soft	Hard
1986	1,341	626	39	0	0	543	0	94	0	1,263	39
1987	1,526	724	42	0	0	685	3	0	4	1,409	49
1988	2,212	744	107	0	0	601	0	121	22	1,466	129
1989	2,300	900	102	0	5	677	28	120	21	1,700	151
1990	2,120	979	46	0	0	719	28	110	20	1,808	94
1991	2,340	1,180	99	2	0	745	23	75	32	2,002	154
1992	2,600	1,216	69	1	0	751	25	68	25	2,036	119
1993	2,600	1,161	78	30	3	842	29	78	10	2,111	120
1994	2,600	1,217	96	65	15	910	21	86	10	2,278	142
1995	2,850	1,499	113	23	7	1,053	21	102	11	2,677	152
1996	2,850	1,330	91	3	0	952	23	130	21	2,415	135

BRW = British Roundwood

Notes: Particleboard covers chipboard, oriented strand board and cement bonded particleboard.

Residues (Imported) includes residues produced from imported wood.

**TABLE 17 Medium Density Fibreboard**

000's green tonnes

Year	Capacity	Deliveries (consumption before 1988)							
		BRW		Residues of BRW		Residues (Imported)		Total	
		Soft	Hard	Soft	Hard	Soft	Hard	Soft	Hard
1986	110	2	0	109	0	0	0	111	0
1987	146	1	0	145	0	0	0	146	0
1988	250	5	0	207	0	0	0	212	0
1989	315	0	0	317	0	0	0	317	0
1990	400	5	0	383	0	0	0	388	0
1991	400	3	0	397	0	0	0	400	0
1992	475	0	0	443	0	30	0	473	0
1993	670	124	0	474	0	65	0	663	0
1994	750	190	0	455	0	70	0	715	0
1995	750	200	0	465	0	60	0	725	0
1996	750	170	0	550	0	30	0	750	0

BRW = British Roundwood

Residues (Imported) includes residues from imported wood.

**TABLE 18 Other Fibreboard**

000's green tonnes

Year	Capacity	Deliveries (consumption before 1988)					
		BRW		Residues of BRW		Total	
		Soft	Hard	Soft	Hard	Soft	Hard
1986	54	17	2	20	5	37	7
1987	58	16	1	32	5	48	6
1988	48	14	0	27	5	41	5
1989	30	14	0	15	0	29	0
1990	30	14	0	14	0	28	0
1991	30	15	0	8	0	23	0
1992	3	0	0	3	0	3	0
1993	3	0	0	3	0	3	0
1994	3	0	0	3	0	3	0
1995	3	0	0	3	0	3	0
1996	45	0	0	40	5	40	5

BRW = British Roundwood

**TABLE 19 Woodbased Panel Products Summary**

000's green tonnes

Year	Capacity	Deliveries (consumption before 1988)									
		BRW		Imported Roundwood		Residues of BRW		Residues (Imported)		Total	
		Soft	Hard	Soft	Hard	Soft	Hard	Soft	Hard	Soft	Hard
1986	1,505	645	41	0	0	672	5	94	0	1,411	46
1987	1,730	741	43	0	0	862	8	0	4	1,603	55
1988	2,510	763	107	0	0	835	5	121	22	1,719	134
1989	2,645	914	102	0	5	1,009	28	120	21	2,043	156
1990	2,550	998	46	0	0	1,116	28	110	20	2,224	94
1991	2,770	1,198	99	2	0	1,150	23	75	32	2,425	154
1992	3,078	1,216	69	1	0	1,197	25	98	25	2,512	119
1993	3,273	1,285	78	30	3	1,319	29	143	10	2,777	120
1994	3,353	1,407	96	65	15	1,368	21	156	10	2,996	142
1995	3,603	1,699	113	23	7	1,521	21	162	11	3,405	152
1996	3,645	1,500	91	3	0	1,542	23	160	21	3,205	140

BRW = British Roundwood

Residues (Imported) include residues produced from imported wood.

# MISCELLANEOUS PRODUCTS

## ROUNDWOOD FENCING MANUFACTURERS

Surveys of roundwood fencing manufacturers have been carried out for the four years 1993, 1994, 1995 and 1996. In preparation for the 1995 survey, many more fencing manufacturers were identified, extending the list from around 70 to around 130; a few more were added for 1996. The survey distribution list is now believed to give a good coverage of softwood, but only a very limited coverage of hardwood (less than 1,000 tonnes a year in total, compared with the Sub-Committee's estimate of around 30,000 tonnes).

For 1996, 137 questionnaires were sent out, and 75 responses were received (55% response); eight were nil returns. The softwood figures reported by the 67 active respondents to the 1996 survey totalled 232,000 tonnes, a fall of 73,000 tonnes (24%) from the total reported by the 64 active respondents in 1995 (305,000 tonnes). The 50 companies that supplied data for both the 1995 and 1996 surveys reported a fall of 55,000 tonnes (around 24%) from 232,000 tonnes to 178,000 tonnes.

Based on the 1996 survey, including estimates for non-respondents, it is estimated that in 1996 there were 120 manufacturers using a total of 337,000 tonnes of softwood, a fall of about 13% from 1995. This estimate uses the actual figures (232,000 tonnes) reported for 1996 by the 67 respondents, adds on 75,000 tonnes for the 20 non-respondents who had responded for 1995 or 1994 (assuming no change from their previous figure), and adds a further 30,000 tonnes as a rough estimate for 33 companies that have not responded in any year. Adding on 8 nil returns and 9 assumed nil returns for non-respondents brings the total to the distribution list's 137 total.

Comparing 1996 and 1995, the estimated fall (13%) is less than the falls reported by respondents, because new respondents in 1996 reported larger volumes than had been estimated for them as non-respondents in 1995, and because estimates for non-respondents were assumed to be the same as their previous year's figures.

Figures for the years 1994, 1995 and 1996, broken down by size category, including estimates for non-respondents, are shown in Table 20.

**TABLE 20 Softwood Round Fencing**

Size category (Green Tonnes p.a.)	1996		1995		1994	
	Number	000 tonnes	Number	000 tonnes	Number	000 tonnes
Under 1,000	56	17	67	17	68	17
1,000-4,999	43	92	43	77	35	76
5,000-9,999	13	87	13	115	19	126
10,000+	8	141	9	178	10	187
Total	120	337	132	387	132	406

The Sub-Committee recommend caution in the interpretation of the 1996 figures, as the falls are at variance with the experience and expectation of members closest to the fencing market.

## SUMMARY FOR MISCELLANEOUS PRODUCTS

For softwood fencing the figures shown in Table 21 are based on the Fencing Surveys for 1993 to 1996 and Sub-Committee estimate for 1992. For hardwood fencing, the estimate has been revised for all years based on advice by the Sub-Committee. Woodwool figures are reported by the Manufacturer's association. All other figures are estimates by the Sub-Committee. British Coal softwood round mining timber, which used to be shown separately, is now included in the "other" category.

**TABLE 21** Miscellaneous: Uses of British Wood

Softwood							000's green tonnes
	Fuelwood	Poles	Woodwool	Fencing	Other	TOTAL	
1992	100	30	8	186 <sup>#</sup>	41	365	
1993	100	30	8	237 <sup>*</sup>	35	410	
1994	100	4	7	406	25	542	
1995	100	4	5	387	25	521	
1996	100	4	5	337	25	471	

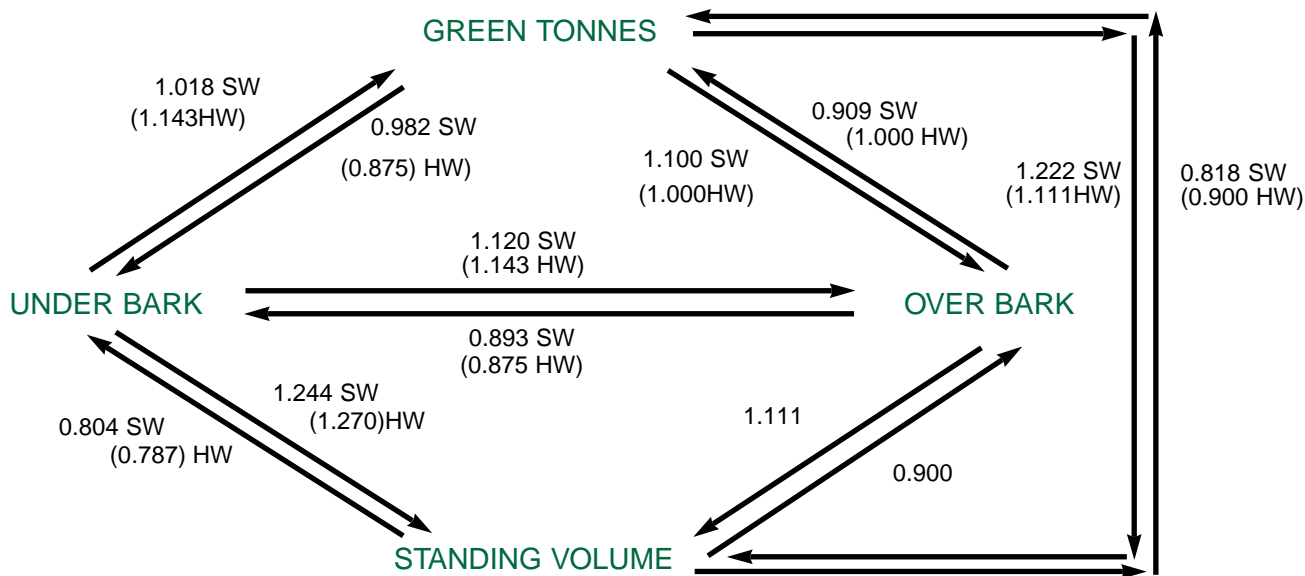
Hardwood							000's green tonnes
	Fuelwood	Poles	Woodwool	Fencing	Other	TOTAL	
1992	150	0	0	30 <sup>#</sup>	25	205	
1993	150	0	0	30 <sup>#</sup>	25	205	
1994	150	0	0	30 <sup>#</sup>	25	205	
1995	150	0	0	30 <sup>#</sup>	25	205	
1996	150	0	0	30 <sup>#</sup>	25	205	

<sup>#</sup> Sub-committee estimate

<sup>\*</sup> Original survey result for 1993 (not revised to adjust for limited scope of survey)

# APPENDIX 1: CONVERSION FACTORS

Conversion factors were used in this report to convert between cubic metres (standing, overbark, underbark) and green tonnes. These are illustrated in the following diagram (where different factors apply to softwood and hardwood, these are marked SW and HW).



Factors are generalised, based on a range of different types of timber and processing methods. They are shown to 3 decimal places to ensure the diagram balances.

A revised set of factors that indicate the volume of standing tree crop (wood raw material equivalent - WRME) to produce one unit of final product were published in 'Revised Forecasts of the Supply and Demand for Wood in the UK' by Adrian Whiteman (FC Technical Paper 19). The factor for paper products includes allowance for the proportion of recycled paper manufactured in the UK. The factors are shown below:

**TABLE 22 Conversion factors to WRME**

Product	Measurement Unit	Factor to WRME
Fuelwood and charcoal	m <sup>3</sup>	1.25
Other industrial roundwood	m <sup>3</sup>	1.25
Coniferous sawnwood	m <sup>3</sup>	2.13
Non-coniferous sawnwood	m <sup>3</sup>	2.09
Newsprint	tonnes )	
Printing and writing paper	tonnes )	4.30
Other paper and paperboard	tonnes )	
Plywood	m <sup>3</sup>	3.67
Fibreboard	m <sup>3</sup>	2.35
Particleboard	m <sup>3</sup>	1.61
Veneer sheets	m <sup>3</sup>	3.67

- Notes**
1. The charcoal conversion factor is for volume to volume. About 7.8m<sup>3</sup> of wood is required to make one tonne of charcoal, but one tonne of charcoal is equal to about 6m<sup>3</sup> in volume.
  2. The conversion factor for OSB is higher than for other types of particleboard, and the average for particleboard has been constructed by assuming that OSB is 25% of the total.



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