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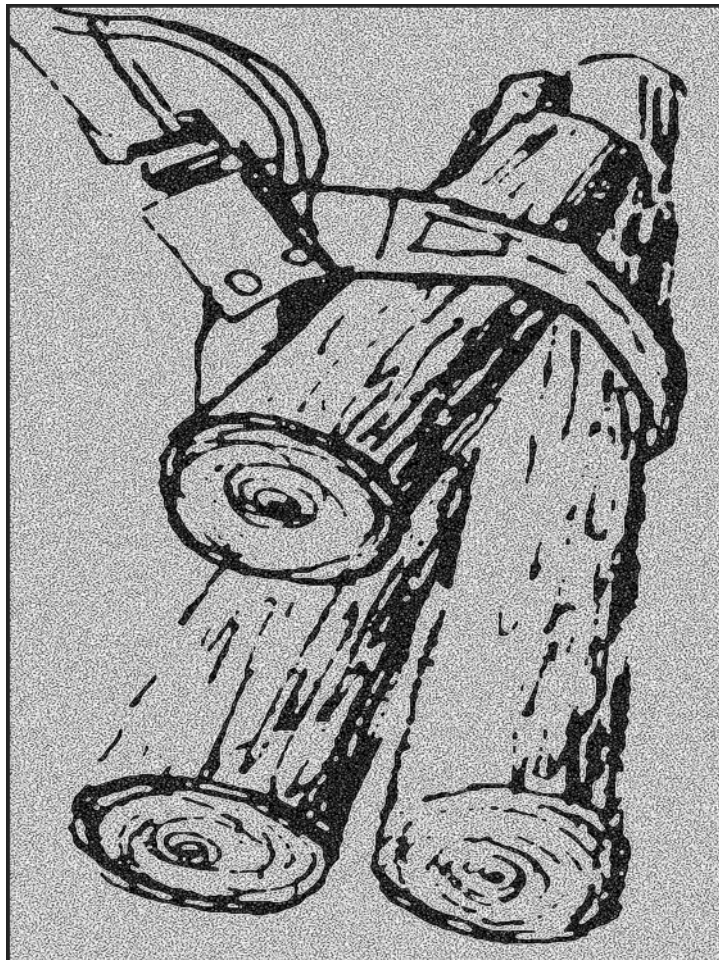
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Pulp Capacity in the United States, 2000

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Abstract

Production capacities of all woodpulp mills in the United States are identified by location, ownership, and process type. For each mill, production capacity is reported for the year 2000 by process type; total mill capacities are also reported for 1961, 1965, 1979, 1974, and 1983. In addition, the report summarizes the recent history and current status of woodpulp production capacity in the United States.

Keywords: woodpulp capacity, pulp mills, capacity trends, geographic distribution

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Pulp Capacity in the United States, 2000

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Introduction

This report summarizes the current state and recent history of woodpulp production capacity in the United States. Detailed information on current and historical capacity, ownership, and location is presented for each U.S. woodpulp mill. The information is organized by State, region, and type of pulp manufactured. Also included are summary tables and exhibits that analyze trends in average capacity, total capacity, pulpwood receipts, pulp production, and capacity by region using historical data. Previous summaries of woodpulp capacity have been published (Anon. 1959, 1961, 1965; McKeever 1977, 1987).

The information in this report is taken from several sources, including industry directories and publicly available corporate information, principally Paperloop Publications (2001). Idled mills are accounted for in various ways by reporters, which has led to discrepancies in capacity and production data.

During the 20th century, U.S. woodpulp capacity increased greatly, while the total number of mills producing woodpulp generally decreased. From 1920 to 2000, for example, total U.S. woodpulp capacity grew from just over 15,000 short tons per day (TPD) to approximately 180,000 TPD. During this period, the total number of mills producing woodpulp dropped from 323 to 202.

Pulpwood Production and Capacity Trends

After climbing fairly steadily throughout the 20th century, annual U.S. woodpulp production peaked historically in 1995 and then dropped by 12% over the next 7 years. The trend in U.S. woodpulp production is illustrated in Figure 1. The trend includes estimates of woodpulp produced for paper and paperboard products, dissolving pulp, and

mechanical pulp produced for construction paper and wet machine board.¹

Figure 2 illustrates the trends in U.S. woodpulp production and production capacity since 1950. As illustrated, both woodpulp production and production capacity reached historical peaks in the mid- to late 1990s and capacity peaked in 1997, according to data published by the American Forest & Paper Association (AF&PA 2001a).

U.S. woodpulp capacity has receded since 1997, according to AF&PA data, but capacity has not receded as much as production, because a number of mills were idled yet have remained in place. The AF&PA estimate of woodpulp capacity for the year 2000 was around 70 million short tons, equivalent to roughly 195,000 tons/day (AF&PA 2001b). The AF&PA data include capacity to produce woodpulp for paper and paperboard, construction paper, wet machine board, and dissolving pulp, but they do not include capacity to produce defibrated/exploded wood pulp for hardboard, insulating board or medium density fiberboard (MDF). Thus, the AF&PA total capacity estimate for 2000 (roughly 195,000 tons/day) agrees very closely with our total potential capacity estimate (202,790 tons/day) after deducting the estimated capacity for defibrated/exploded pulp at

¹ U.S. dissolving pulp capacity is reported by AF&PA, but dissolving pulp production has not been reported since 1992. In that year, dissolving pulp annual capacity was 1.46 million tons and the ratio of production to capacity (or capacity utilization) was 86%. The dissolving pulp capacity of the United States has been declining for decades, and capacity receded to 1.18 million tons in 2000. Woodpulp capacity includes dissolving pulp capacity (Fig. 2). Estimates of woodpulp production shown in the figures include an approximation of dissolving pulp production based on an assumed 86% capacity utilization rate for dissolving pulp since 1992.

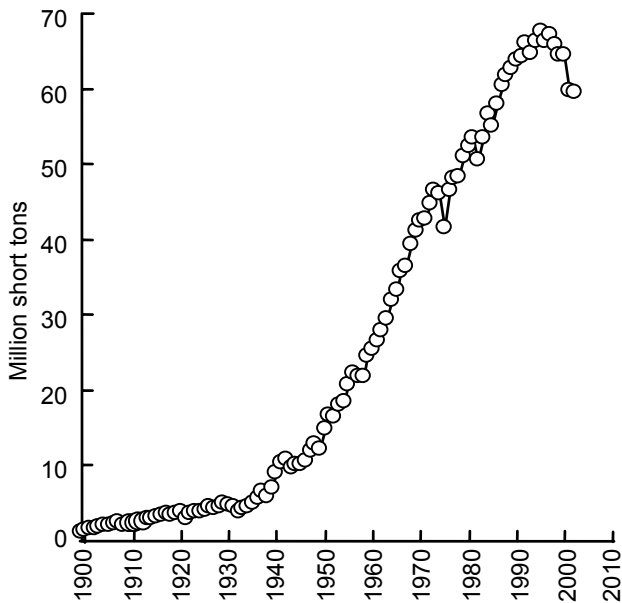


Figure 1—Annual U.S. woodpulp production, 1900–2002.

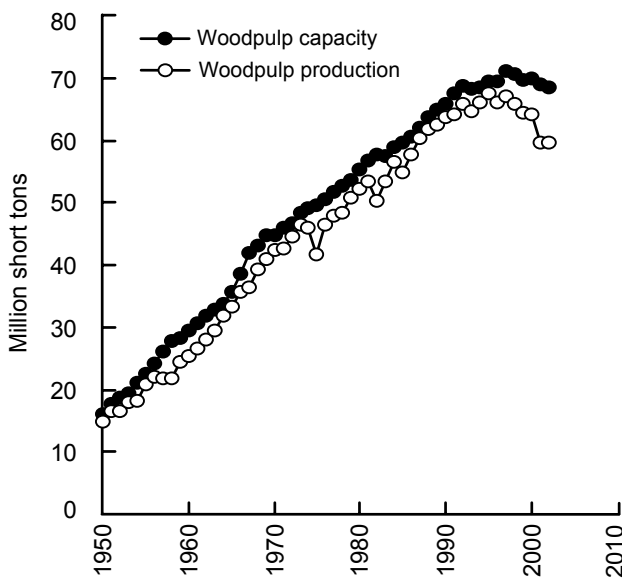


Figure 2—Annual U.S. woodpulp production and production capacity, 1950–2002.

hardboard, insulating board, and MDF mills (7,858 tons/day) (see Appendix). In addition to capacity data for defibrated/explored pulp at hardboard, insulating board, and MDF mills, the data in this report include pulp mills that were actively in production and mills that were reportedly idled. Thus, the estimates of total capacity are total “potential” capacity. About 10% of the total potential U.S. woodpulp capacity was reportedly idled in 2000.

In 2001, capacity utilization for woodpulp was approximately 86%, a level last experienced during the energy crisis of the mid-1970s and previously experienced only during the recessions of the late 1950s and early 1960s and at the end of the Great Depression in 1940. Several circumstances have contributed to the recent declines in U.S. woodpulp production and capacity utilization and the leveling of woodpulp capacity.

An exceptional increase in the trade-weighted value of the U.S. dollar, which began in 1996 and extended through 2001, contributed to a decline in U.S. pulp, paper, and paperboard exports, while simultaneously attracting a flood of imports. The strong dollar along with other economic factors also contributed to recession in the overall U.S. manufacturing sector in 2000 and 2001, dampening domestic demands for paper and paperboard in packaging, business, and advertising media. Thus, U.S. purchases of paper and paperboard dropped by 7.5% between 1999 and 2001, while production dropped by 8.4%. Also contributing to the leveling and decline in woodpulp production has been the significant increase in the use of recycled fiber in the manufacture of paper and paperboard in the United States since the 1980s. The consumption of recovered paper for recycling at U.S. paper and paperboard mills climbed from 20.2 million tons in 1989 to 31.4 million tons in 1995 and 37.9 million tons in 2000 (AF&PA 2001b).

Precise annual data are not available on the production of exploded/defibrated pulp for hardboard, insulating board, and MDF. However, output data suggest that roughly 3 million tons of defibrated/explored pulp were produced for those products in 2000. Production of insulating board and hardboard has been declining in recent decades, while MDF production has been increasing. The product output data indicate that annual production of defibrated/explored pulp for those products in aggregate has increased by roughly 1 million tons over the past several decades.

The annual woodpulp capacity data (Fig. 2) reveal a decelerating trend in growth over recent decades. For example, in the 25-year period between 1940 and 1965, capacity increased at a compound growth rate of 5.1%/year. Over the subsequent 25-year period (1965 to 1990), capacity increased at a compound growth rate of 2.5%/year, just less than half the growth rate in the preceding 25 years. In the 16 years between 1985 and 2001, capacity increased at a compound growth rate of just 0.9%/year, and since the mid-1990s U.S. woodpulp capacity has actually receded.

Likewise, annual woodpulp production data reveal a decelerating trend in growth over recent decades, but with a more pronounced decline since the peak of production in 1995. In the 25-year period between 1940 and 1965, U.S. woodpulp production increased at a compound growth rate of 5.4%/year. Over the subsequent 25 years (1965 to 1990), production increased at a compound growth rate of

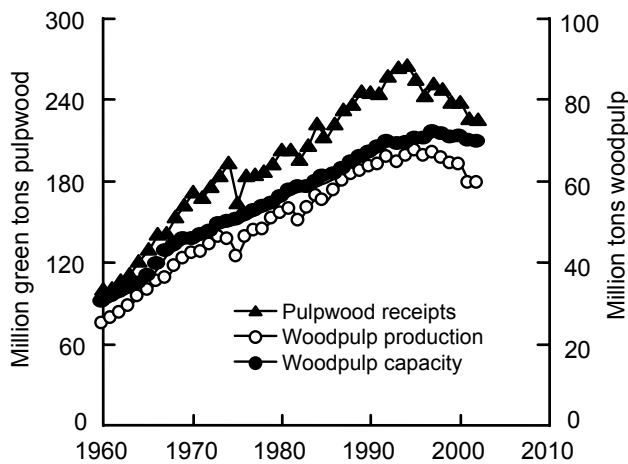


Figure 3—Annual U.S. woodpulp production, capacity, and pulpwood receipts, 1960–2002.

2.6%/year, again just less than half the growth rate in the preceding 25 years. In the 16 years between 1985 and 2001, production increased at a compound growth rate of just 0.5%/year, and U.S. woodpulp production declined substantially (by 11.7%) between the peak in 1995 and 2001 (Fig. 1).

Trends in Pulpwood Receipts

Trends in pulpwood receipts at woodpulp mills have generally followed trends in total woodpulp production. According to data on pulpwood receipts published by the Forest Resources Association (formerly American Pulpwood Association), the annual volume of pulpwood receipts at U.S. woodpulp mills increased fairly steadily over most of the 20th century, along with woodpulp production. However, pulpwood receipts peaked in 1994, just a year before the peak in woodpulp production.

Subsequently, between 1994 and 2001, pulpwood receipts at U.S. woodpulp mills declined by 14.8%; between 1995 and 2002 U.S. woodpulp production declined similarly, by 11.9%. The trend in U.S. pulpwood receipts at woodpulp mills is illustrated in Figure 3, along with the generally correlated trend in U.S. woodpulp production and lagging trend in woodpulp capacity.

The mix of hardwoods and softwoods in total U.S. pulpwood receipts (roundwood and residues) has also shifted over time, although the proportion of softwoods in pulpwood receipts has generally been higher than that of hardwoods. According to historical data published by the Forest Resources Association, the shift in species mix generally favored hardwoods from the 1950s to 1990s, with the hardwood fraction of total pulpwood receipts increasing from 14% in 1950 to 24% in 1970 and peaking at 38% in 1994 (the same year total pulpwood receipts peaked). In recent

years, the hardwood fraction leveled and then declined slightly, standing at 36% in 2001.

The trends in regional volumes and proportions of pulpwood receipts at woodpulp mills have favored the South, with declining proportions in the West and North. By 2001, the South alone accounted for just over three-fourths (76%) of all U.S. pulpwood receipts, according to data published by the Forest Resources Association (Forest Resources Association 2002). This reflects a generally increasing volume of pulpwood receipts at woodpulp mills in the South, until the volume of receipts leveled in the mid-1990s. Meanwhile, the annual volume of receipts in the North climbed more gradually and then declined in the early 1990s (declining more significantly in the Northeast), while the annual volume of receipts in the West increased until the mid-1980s, then subsequently declined (APA 1989).

Pulpwood receipts in the South increased from 59% of total U.S. pulpwood receipts in 1960 to 65% in 1980 and 76% by 2001. Pulpwood receipts in the North fell from 21% of total U.S. pulpwood receipts in 1960 to 16% in 1980 and 14% by 2001. Pulpwood receipts in the West were 20% of total U.S. pulpwood receipts in 1960 and 19% in 1980, but they have dropped significantly since the 1980s, to just 10% by 2001 (APA 1989, Forest Resources Association 2002).

Pulpmill Capacity

Although total U.S. woodpulp capacity has leveled since the late 1990s, capacity generally grew from 1920 to 2000, reaching a total of 182,440 tons/day in 2000, or approximately 66,591,000 tons/year (excluding idled capacity). Since 1920, woodpulp capacity has grown at an average compound growth rate of approximately 3.2%/year, although the rate of growth has decelerated over time. Woodpulp manufacture has changed significantly since 1920, with regard to the average size of production facilities, the mix of pulp types being made, and the locations where the pulp is manufactured.

The average pulpmill increased from 47 TPD in 1920 to 865 TPD in 2000 (weighted averages, Table 1). The increase occurred as a result of several factors. New mills coming online have been designed with capacities far larger than their predecessors to take advantage of economies of scale. Demand has grown significantly, requiring larger facilities; smaller, older mills that were not cost competitive because of outdated technology or size have closed. Newly constructed mills producing sulfate pulp have the largest capacities, often exceeding 2,000 tons/day in a single mill (Table 1). The average capacity of a sulfate mill was 1,220 TPD in 2000, dwarfing all other pulp mill types. In 2000, the average sulfite mill was capable of producing 336 TPD, the average mechanical pulp mill 399 TPD, and the average semi-chemical mill 454 TPD.

Table 1—Average capacity of U.S. wood pulp mills by grade (short tons/day)

Year	Sulfite		Sulfate		Mechanical		Semichemical	
	Number	Avg. cap.	Number	Avg. cap.	Number	Avg. cap.	Number	Avg. cap.
1920	96	57	52	47	175	42		
1930	89	80	70	80	136	60	13	23
1940	80	108	69	189	100	74	10	69
1950	67	136	78	294	91	95	22	133
1955	67	150	83	409	93	103	80	104
1961	62	180	95	537	87	147	58	172
1965	54	209	101	619	77	172	57	191
1970	41	249	121	734	71	207	54	232
1974	33	297	120	826	64	226	50	275
1983	21	364	122	991	79	279	44	322
2000	13	336	114	1,220	52	399	23	454

Regional Pulpmill Capacity

Another change in the woodpulp industry is the shift in capacity towards the South and away from the Northeast, the North Central, and the West regions, as shown by Figure 4 (Paperloop Publications 2001). About 70% of the nation's capacity to manufacture woodpulp lies in the South, an increase from 55% in 1959. In other regions, woodpulp capacity remained flat or decreased over the same period.

Capacity data for U.S. woodpulp mills are shown in Tables 2 to 5 in the Appendix.

Grade Structure

As shown in Figure 5, sulfate (kraft) pulp remains the most extensively produced woodpulp by a wide margin, making up 76% of total U.S. woodpulp manufacturing capacity, an increase of 3% since 1983. Approximately 139,000 TPD of kraft pulp can be produced in the United States by 114 mills, an increase from 121,000 TPD capacity among 122 mills in 1983. This net increase in capacity and loss in total production facilities means that the average kraft mill could produce 160 more tons per day in 2000 than in 1983 (Table 1).

Capacity for semichemical pulp reversed its previous growth trend and declined between 1983 and 2000. Semichemical capacity decreased by approximately 4,000 TPD (to 10,440 TPD), while the size of an average mill climbed considerably over that in 1983 (454 TPD). Mechanical pulp capacity increased by about 6,500 TPD (to 28,521 TPD, Table 5).

Sulfite pulp continued the slide in total capacity begun in the 1960s, falling from 7,650 TPD in 1983 to 4,367 TPD in 2000. The average sulfite mill produced 336 TPD in 2000, the only grade to have a decrease in average mill size since 1983.

Concluding Remarks

After growing at an annual rate of 5.4%/year between 1940 and 1965, woodpulp production in the United States slowed to 2.6%/year between 1965 and 1990 and declined by 11.7% between 1995 and 2001. The strength of the U.S. dollar, soft economic conditions, and the increasing use of recovered paper are among the principal reasons for the decline in both capacity and production. Pulpwood receipts have followed similar trends.

The period from 1920 to 2000 showed the effects of industry consolidation, shifts in pulp preferences, and industry relocation. The number of mills producing pulp declined steadily while the average mill capacity increased.

Kraft pulp, which constituted about 16% of production in 1920, now accounts for about 76% of total production. Moreover, from 1920 to 2000, the average mill capacity for sulfate mills increased from 47 to 1,220 short tons/day.

Relocation has also been an important factor. Although all regions were producing more pulp in 2000 than in 1960, the manufacture of pulp has become increasingly dominated by the Southern region and the percentage of the total produced by all other regions has declined.

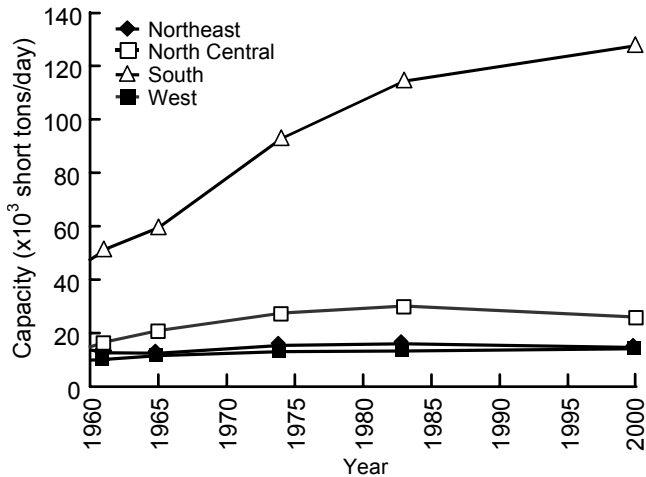


Figure 4—U.S. woodpulp capacity by region, 1960–2000.

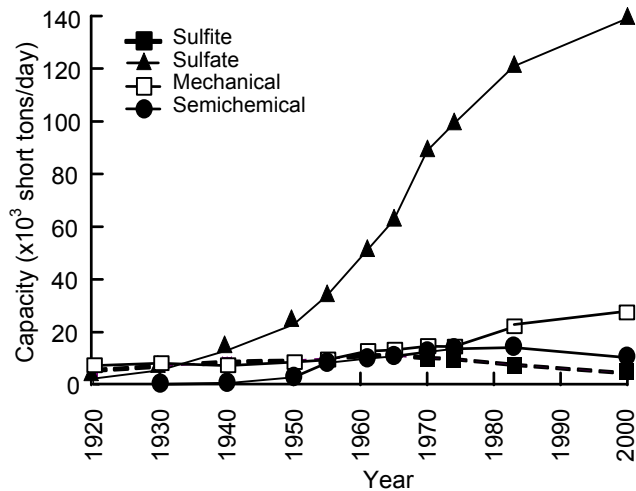


Figure 5—Total U.S. woodpulp capacity by grade, 1920–2000.

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Appendix—Capacity Data

Forest Service regions are defined in Figure 6.

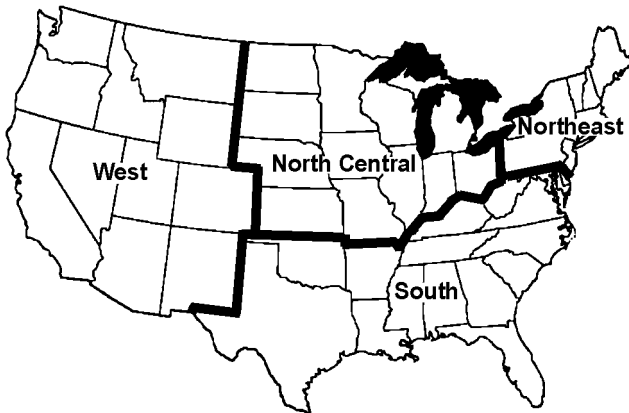


Figure 6—Forest Service Regions.

Northeast—Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont.

North Central—Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin.

South—Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia.

West—Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming.

Capacity data for U.S. woodpulp mills are shown in Tables 2 to 5. Table 2 is a general summary of capacity data by Forest Service region, State, and type of mill as of the year 2000. Capacity data for specific mills by region, State, and type of mill for selected years are given in Table 3. Table 3 also includes total capacity, idled capacity, total potential capacity, total number of mills, and total number of plants for each State. Table 4 is a historical summary of regional capacity since 1959, and Table 5 summarizes capacity by grade since 1920.

Table 3—Capacity of U.S. woodpulp mills by region and State in selected years

Mill no.	Owner	Location	1961	1965	1970	1974	1983	Capacity (short tons/day)					Semi-chemical	Defib/ exploded
								Total	Sulfite	Sulfate	SGW	CTMP/ TMP/RMP		
2000														
Northeast														
Maine														
1	Eastern Paper Co. Inc.	Lincoln	175	195	210	340	340	440	0	440	0	0	0	0
2	Georgia-Pacific Corp.	Old Town	280	350	550	600	600	600	0	600	0	0	0	0
3	Georgia-Pacific Corp.	Woodland	510	510	950	1,040	1,400	1,400	0	1,400	0	0	0	0
4	Great Northern Paper, Inc.	East Millinocket	880	970	920	920	600	600	0	0	600	0	0	0
5	Great Northern Paper, Inc.	Millinocket	1,135	1,225	1,200	1,350	1,485	645	539	0	0	106	0	0
6	International Paper Co.	Bucksport	320	325	275	330	450	600	0	0	350	250	0	0
7	International Paper Co.	Jay			675	775	1,390	1,471	0	unk.	unk.	0	0	0
8	Madison Paper Industries	Madison	70	170	170	170	300	280	0	0	280	0	0	0
9	Masonite Corp.	Libson Falls	100	100	100	100	135	135	0	0	0	135	0	0
10	Mead Corp.	Rumford	590	600	670	670	935	1,525	0	1,170	190	165	0	0
11	Sappi Fine Paper North America	Hinckley				900	1,100	1,100	0	1,100	0	0	0	0
	Total capacity		5,875	6,225	7,020	7,365	8,835	8,796	539	4,710	1,420	656	0	0
	Idled capacity							1,000	0	300	375	325	0	0
	Total potential capacity							9,796	539	5,010	1,795	981	0	0
	Total mills							16	1	6	5	4	0	0
	Total plants							11						
Maryland														
12	Westvaco Corp.	Luke	600	680	745	720	795	882	0	882	0	0	0	0
	Total capacity		630	780	845	820	845	882	0	882	0	0	0	0
	Idled capacity							0	0	0	0	0	0	0
	Total potential capacity							882	0	882	0	0	0	0
	Total mills							1	0	1	0	0	0	0
	Total plants							1						
New Hampshire														
13	Groveton Paper Board Inc.	Groveton	300	330	430	300	300	260	0	0	0	0	260	0
14	Pulp and Paper of America	Berlin	875	450	850	950	1,050	350	0	350	0	0	0	0
	Total capacity		1,265	870	1,380	1,250	1,350	610	0	350	0	0	260	0
	Idled capacity							0	0	0	0	0	0	0
	Total potential capacity							610	0	350	0	0	260	0
	Total mills							2	0	1	0	0	1	0
	Total plants							2						

Table 3—Capacity of U.S. woodpulp mills by region and State in selected years—con.

Mill no.	Owner	Location	Capacity (short tons/day)										Sulfite	Sulfate	SGW	CTMP/ TMP/RMP	Semi- chemical	Defib/ exploded	
			1961	1965	1970	1974	1983	Total	2000										
New York																			
15	Deferiet Paper Co.	Deferiet	320	320	375	240	310	310	0	0	0	0	0	0	0	0	0	0	0
16	Fitch, Pruyn, & Co., Inc.	Glens Falls	200	120	250	250	350	350	350	0	0	0	0	0	0	0	0	0	0
17	International Paper Co.	Corinth		230	255	255	160	160	0	0	160	0	0	0	0	0	0	0	0
18	International Paper Co.	Ticonderoga	125	155	190	590	530	530	0	530	0	0	0	0	0	0	0	0	0
19	Lyons Falls Pulp & Paper Inc.	Lyons Falls	135	180	120	120	120	120	120	0	0	0	0	0	0	0	0	0	0
20	Norboard Industries Inc.	Deposit	150	150	100	100	100	550	0	0	0	0	0	0	0	0	0	0	550
	Total capacity		2,510	1,830	1,980	2,120	1,800	2,020	470	530	470	0	0	0	0	0	0	0	550
	Idled capacity							50	0	0	0	50	0	0	0	0	0	0	0
	Total potential capacity							2,070	470	530	470	50	50	0	0	0	0	0	550
	Total mills							6	2	1	2	0	0	0	0	0	0	0	1
	Total plants							6											
Pennsylvania																			
21	Appleton Papers Inc.	Roaring Spring	110	175	180	180	190	200	0	200	0	0	0	0	0	0	0	0	0
22	International Paper Co.	Erie	250	400	375	640	800	800	0	800	0	0	0	0	0	0	0	0	0
23	Masonite Corp.	Towanda				500	700	700	0	0	0	0	0	0	0	0	0	0	700
24	P. H. Glatfelter Co.	Spring Grove	190	245	500	500	500	630	0	630	0	0	0	0	0	0	0	0	0
25	Willamette Industries Inc.	Johnsonburg	235	260	270	190	180	600	0	600	0	0	0	0	0	0	0	0	0
	Total capacity		1,610	1,865	2,245	2,665	2,840	2,330	0	2,230	0	0	0	0	0	0	0	0	700
	Idled capacity							225	0	0	0	0	0	0	0	0	0	225	0
	Total potential capacity							2,555	0	2,230	0	0	0	0	0	0	0	225	700
	Total mills							5	0	4	0	0	0	0	0	0	0	0	1
	Total plants							5											
Northeast Region																			
	Total capacity		11,890	11,570	13,470	14,220	15,670	14,638	1,009	8,702	1,890	656	260	1,250					
	Idled capacity							2,157	0	1,182	375	375	225	0					
	Total potential capacity							16,795	1,009	9,884	2,265	1,031	485	1,250					
	Total mills							30	3	13	7	4	1	2					
	Total plants							25											

Table 3—Capacity of U.S. woodpulp mills by region and State in selected years—con.

Mill no.	Owner	Location	1961	1965	1970	1974	1983	Capacity (short tons/day)					Semi-chemical	Defib/ exploded	
								SGW	TMP/RMP	CTMP/	Sulfate	Sulfite			Total
2000															
North Central															
Indiana															
26	International Paper Co.	Terre Haute	150	150	250	270	270	300	0	0	0	0	0	0	0
	Total capacity		250	270	370	270	270	300	0	0	0	0	0	300	0
	Idled capacity							0	0	0	0	0	0	0	0
	Total potential capacity							300	0	0	0	0	0	300	0
	Total mills							1	0	0	0	0	0	1	0
	Total plants							1							
Iowa															
27	Four M Paper Corp.	Fort Madison	100	125	135	140	140	150	0	0	0	0	0	150	0
	Total capacity		210	235	225	230	230	150	0	0	0	0	0	150	0
	Idled capacity							0	0	0	0	0	0	0	0
	Total potential capacity							150	0	0	0	0	0	150	0
	Total mills							1	0	0	0	0	0	1	0
	Total plants							1							
Michigan															
28	ABTco, Inc.	Alpena						400	0	0	0	0	0	0	400
29	American Fibrit Inc.	Battle Creek						30	0	0	0	30	0	0	0
30	International Paper Co.	Quinnesec						1,035	0	1,035	0	0	0	0	0
31	Mead Corp.	Escanaba			100	800	800	1,310	0	1,060	0	250	0	0	0
32	Menasha Corp.	Otsego	110	130	225	225	225	300	0	0	0	0	300	0	
33	Packaging Corp. of America	Filer City	565	565	600	400	600	600	0	0	0	0	600	0	
34	Sappi Fine Paper North America	Muskegon	135	125	225	240	250	250	0	250	0	0	0	0	
35	Smurfit-Stone Container Corp.	Ontonagon	200	400	250	220	440	600	0	0	0	0	600	0	
	Total capacity		1,965	2,045	2,085	2,580	2,865	3,675	0	2,345	0	280	1,500	400	
	Idled capacity							0	0	0	0	0	0	0	
	Total potential capacity							3,675	0	2,345	0	280	1,500	400	
	Total mills							9	0	3	0	2	3	1	
	Total plants							8							

Table 3—Capacity of U.S. woodpulp mills by region and State in selected years—con.

Mill no.	Owner	Location	Capacity (short tons/day)										Total	Sulfite	Sulfate	SGW	2000		Semi-chemical	Defib/ exploded	
			1961	1965	1970	1974	1983	TMP/RMP	TMP/RMP												
Kentucky																					
107	Westvaco Corp.	Wickliffe			600	600	650	850	0	0	850	0	0	0	0	0	0	0	0	0	0
108	Willamette Industries Inc.	Hawesville			500	600	1,275	1,400	0	0	1,400	0	0	0	0	0	0	0	0	0	0
109	Willamette Industries Inc.	Hawesville						150	0	0	0	0	0	0	0	0	0	0	150	0	0
Total capacity																					
Idled capacity																					
Total potential capacity																					
Total mills																					
Total plants																					
Louisiana																					
110	Boise Cascade Corp.	Deridder				1,380	1,885	1,975	0	0	1,300	287	388	0	0	0	0	0	0	0	0
111	Crown Vantage Inc.	Saint Francisville			500	500	805	945	0	0	670	275	0	0	0	0	0	0	0	0	0
112	Gaylord Container Corp.	Bogalusa			1,500	1,490	1,560	2,150	0	0	2,150	0	0	0	0	0	0	0	0	0	0
113	Georgia-Pacific Corp.	Zachary			530	530	1,250	1,728	0	0	1,728	0	0	0	0	0	0	0	0	0	0
114	International Paper Co.	Bastrop			1,700	1,660	1,200	1,285	0	0	1,285	0	0	0	0	0	0	0	0	0	0
115	International Paper Co.	Mansfield					1,970	2,240	0	0	1,700	0	0	0	0	0	0	0	540	0	0
116	International Paper Co.	Pineville			850	800	975	1,100	0	0	1,100	0	0	0	0	0	0	0	0	0	0
117	Riverwood International Corp.	West Monroe			1,165	1,325	1,980	1,978	0	0	1,728	0	0	0	0	0	0	0	250	0	0
118	Smurfit-Stone Container Corp.	Hodge			820	650	1,650	1,750	0	0	1,500	0	0	0	0	0	0	0	250	0	0
119	Willamette Industries Inc.	Campti					750	1,050	0	0	1,050	0	0	0	0	0	0	0	0	0	0
Total capacity																					
Idled capacity																					
Total potential capacity																					
Total mills																					
Total plants																					
Total capacity																					
Idled capacity																					
Total potential capacity																					
Total mills																					
Total plants																					

Table 3—Capacity of U.S. woodpulp mills by region and State in selected years—con.

Mill no.	Owner	Location	1961	1965	1970	1974	1983	Capacity (short tons/day)					Semi-chemical	Defib/ exploded
								SGW	TMP/RMP	CTMP/	Sulfate	Sulfite		
2000														
West														
Arizona														
170	Abitibi-Consolidated Inc.	Snowflake	250	450	495	820	940	0	0	150	60	0	0	0
	Total capacity													
	Idled capacity		250	495	495	820	940	0	0	150	60	0	0	0
	Total potential capacity								700	0	0	0	0	0
	Total mills								0	700	150	60	0	0
	Total plants								2	0	1	1	0	0
									1					
California														
171	Masonite Corp.	Ukiah	300	350	350	350	390	0	0	0	0	0	0	unk
172	Samoa-Pacific Cellulose	Samoa		500	550	600	600	0	700	0	0	0	0	0
173	Shasta Paper Co.	Anderson		150	225	150	225	0	250	0	0	0	0	0
174	SierraPine Ltd.	Rocklin				400	400	0	0	0	0	0	0	400
	Total capacity		1,095	1,785	2,615	3,180	3,160	0	950	0	0	0	0	400
	Idled capacity							0	1,404	0	0	0	70	0
	Total potential capacity							0	2,354	0	0	0	70	400
	Total mills							4	0	2	0	0	0	2
	Total plants							4						
Idaho														
175	Pottlatch Corp.	Lewiston	650	700	800	850	1,100	0	1,300	0	0	0	0	0
	Total capacity													
	Idled capacity		650	700	800	850	1,100	0	1,300	0	0	0	0	0
	Total potential capacity								0	0	0	0	0	0
	Total mills								1,300	0	0	0	0	0
	Total plants								1	0	0	0	0	0
									1					
Montana														
176	Smurfit-Stone Container Corp.	Missoula	600	700	1,150	1,150	2,035	0	1,800	0	0	0	0	0
	Total capacity													
	Idled capacity		600	700	1,150	1,150	2,035	0	1,800	0	0	0	0	0
	Total potential capacity							0	0	0	0	0	0	0
	Total mills								0	1,800	0	0	0	0
	Total plants								1	0	1	0	0	0
									1					

Table 3—Capacity of U.S. woodpulp mills by region and State in selected years—con.

Mill no.	Owner	Location	Capacity (short tons/day)										Sulfite	Sulfate	SGW	CTMP/ TMP/RMP	Semi- chemical	Defib/ exploded	
			1961	1965	1970	1974	1983	Total											
Washington																			
191	Abitibi-Consolidated Inc.	Steilacoom				300	450	660	0	0	0	0	0	0	0	0	0	0	0
192	Boise Cascade Corp.	Wailula		500	630	700	910	1,079	0	859	0	0	0	0	0	0	0	220	0
193	Daishowa America Co., Ltd.	Port Angeles	500	505	195	300	710	380	0	0	0	0	0	0	0	0	0	0	0
194	Georgia-Pacific Corp.	Camas	1,065	1,300	1,225	1,200	1,250	1,800	500	1,300	0	0	0	0	0	0	0	0	0
195	Georgia-Pacific West, Inc.	Bellingham	470	520	550	580	620	650	650	0	0	0	0	0	0	0	0	0	0
196	Inland Empire Paper Co.	Spokane	140	135	125	140	170	310	0	0	0	0	0	0	0	0	0	0	0
197	Kimberly-Clark Corp.	Everett	790	820	850	835	835	485	485	0	0	0	0	0	0	0	0	0	0
198	Longview Fibre Co.	Longview	1,390	1,555	1,780	2,100	2,100	2,520	0	2,400	0	0	0	0	0	0	0	120	0
199	North Pacific Paper Corp.	Longview					1,400	1,435	0	0	0	0	0	0	0	0	0	0	0
200	Ponderay Newsprint Co.	Usk					700	700	0	0	0	0	0	0	0	0	0	0	0
201	Port Townsend Paper Corp.	Port Townsend	420	420	420	420	445	550	0	550	0	0	0	0	0	0	0	0	0
202	Simpson Tacoma Kraft Co.	Tacoma	800	800	900	1,090	1,090	1,200	0	1,200	0	0	0	0	0	0	0	0	0
203	Weyerhaeuser Co.	Cosmopolis	400	350	400	400	450	400	400	0	0	0	0	0	0	0	0	0	0
204	Weyerhaeuser Co.	Longview	730	1,080	1,200	1,325	950	1,100	0	1,100	0	0	0	0	0	0	0	0	0
Total capacity			9,185	10,350	10,735	11,350	12,740	13,269	2,035	7,409	0	0	0	0	0	0	0	340	0
Idled capacity								825	825	0	0	0	0	0	0	0	0	0	0
Total potential capacity								14,094	2,860	7,409	0	0	0	0	0	0	0	340	0
Total mills								17	5	6	0	0	0	0	0	0	0	1	0
Total plants								15											
West Region Total capacity																			
Idled capacity			15,270	19,730	24,070	26,070	28,920	26,029	2,035	16,814	150	0	0	0	0	0	0	740	1,510
Total potential capacity								5,099	825	3,904	0	0	0	0	0	0	0	370	0
West Region Total mills								31,128	2,860	20,718	150	0	0	0	0	0	0	1,110	1,510
West Region Total plants								41	5	17	1	0	0	0	0	0	0	2	7
Total plants								37											
US Total capacity																			
US Idled capacity			87,270	100,450	130,315	143,130	172,095	182,440	4,367	139,062	5,545	0	0	0	0	0	0	10,440	7,758
US Total potential capacity								20,350	825	17,055	875	0	0	0	0	0	0	1,020	100
US Total mills								202,790	5,192	156,117	6,420	0	0	0	0	0	0	11,460	7,858
US Total plants								231	13	114	20	0	0	0	0	0	0	23	29

Table 3 corrected January 2004. Capacity in short tons/day.

Table 4—Number and capacity (short tons/day) of woodpulp mills by region

Year	Northeast			North Central			South			West		
	Number	Capacity		Number	Capacity		Number	Capacity		Number	Capacity	
		Total	Average		Total	Average		Total	Average		Total	Average
1959	80	13,910	174	70	9,870	141	76	44,750	589	56	13,625	243
1961	75	12,700	169	71	10,130	143	85	51,130	602	52	16,635	320
1965	67	12,520	187	69	11,605	168	87	59,440	683	57	21,030	369
1974	52	15,434	297	63	13,097	208	120	92,723	773	57	27,508	483
1983	40	16,035	401	50	13,370	267	117	114,315	977	47	30,135	641
2000	30	14,638	488	42	14,189	338	118	127,584	1,081	41	26,029	635

Table 5—Total capacity (short tons/day) of U.S. pulp mills by grade

Year	Sulfite	Sulfate	Mechanical ^a	Semichemical	Total
1920	5,490	2,420	7,430	—	15,340
1930	7,115	5,585	8,190	295	21,185
1940	8,675	13,055	7,425	685	29,840
1950	9,115	22,970	8,640	2,935	43,660
1955	10,020	33,910	9,560	8,310	61,800
1961	11,130	51,050	12,805	9,960	84,945
1965	11,260	62,530	13,270	10,860	97,920
1970	10,205	88,850	14,670	12,515	126,240
1974	9,801	99,060	14,494	13,735	137,090
1983	7,650	120,905	22,080	14,160	164,795
2000	4,367	139,062	28,521	10,440	182,440

^aMechanical includes difibrated/exploded pulp.