United States
Department of
Agriculture

Forest Service

**Southern Forest
Experiment Station**

New Orleans,
Louisiana

Resource Bulletin
SO-154

Midsouth Veneer Industry

Dennis M. May and John S. Vissage

SUMMARY

The USDA Forest Service, Southern Forest Experiment Station's latest survey of the Midsouth veneer industry shows the softwood veneer industry continuing its dominance as the hardwood veneer industry has continued to decline. The number of softwood mills has stabilized after years of growth, while both commercial and container hardwood mills have decreased in number. Production and consumption of hardwood veneer logs have also decreased in response to the reduction in hardwood mills. Production and consumption of softwood veneer logs have both increased by half since 1972, even though softwood mill numbers have remained constant. Virtually all of the wood residues generated by the Midsouth veneer industry are now utilized, mainly as pulp chips and fuel.

September 1990

Midsouth Veneer Industry

Dennis M. May and John S. Vissage

INTRODUCTION

The USDA Forest Service, Southern Forest Experiment Station has periodically surveyed the Midsouth veneer industry to track changes in the industry's size and composition as well as changes in its use of roundwood and in its generation and disposition of wood residues. To continue tracking the changes, a new survey of all veneer mills receiving veneer logs produced in the Midsouth (fig. I) was conducted in 1988. Although intended to be a 100-percent canvass, not all veneer mills in the Midsouth (fig.1) responded to the survey (table 1). As a consequence, veneer-log production and consumption data from previous surveys, mill directories, and other sources were used to estimate State totals for States with nonresponding mills.

THE PAST

The first Midsouth veneer study was conducted in 1963 (Christopher and Sternitzke 1964) and described a shrinking industry dependent on the region's hardwood resources. In 1963, the industry was about equally comprised of container mills, which produced veneers for the manufacture of crates, boxes, and baskets used in the shipping and packing industries, and commercial mills, which produced veneers for the manufacture of doors, furniture, paneling, and plywood (fig. 2). Mills of both types depended almost exclusively on the hardwood resources of the region, preferring high-quality soft hardwoods, especially sweetgum and tupelo gums (fig. 3). Both sectors of the industry had been declining over the years due to

Table 1.—*Number of operating and responding Midsouth veneer mills by State, 1988*

State	Mills operating	Mills responding	Response rate
	Number		*Percent*
Alabama	25	8	32
Arkansas	8	6	75
Louisiana	13	7	54
Mississippi	10	5	50
Oklahoma	1	1	100
Tennessee	3	3	100
Texas	12	12	100
All States	72	42	58

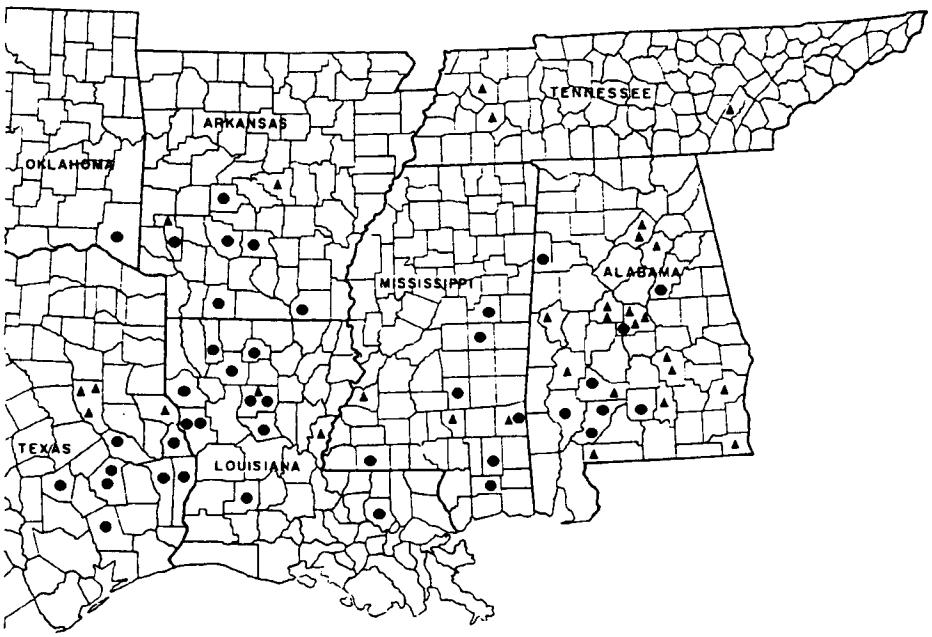

Figure 1.—*The seven Midsouth States and the veneer mills in each. Triangles indicate hardwood veneer mills and dots indicate softwood veneer mills.*

Dennis M. May is research forester and John S. Vissage is forester, U.S. Department of Agriculture, Forest Service, Southern Forest Experiment Station, Starkville, MS 39759.

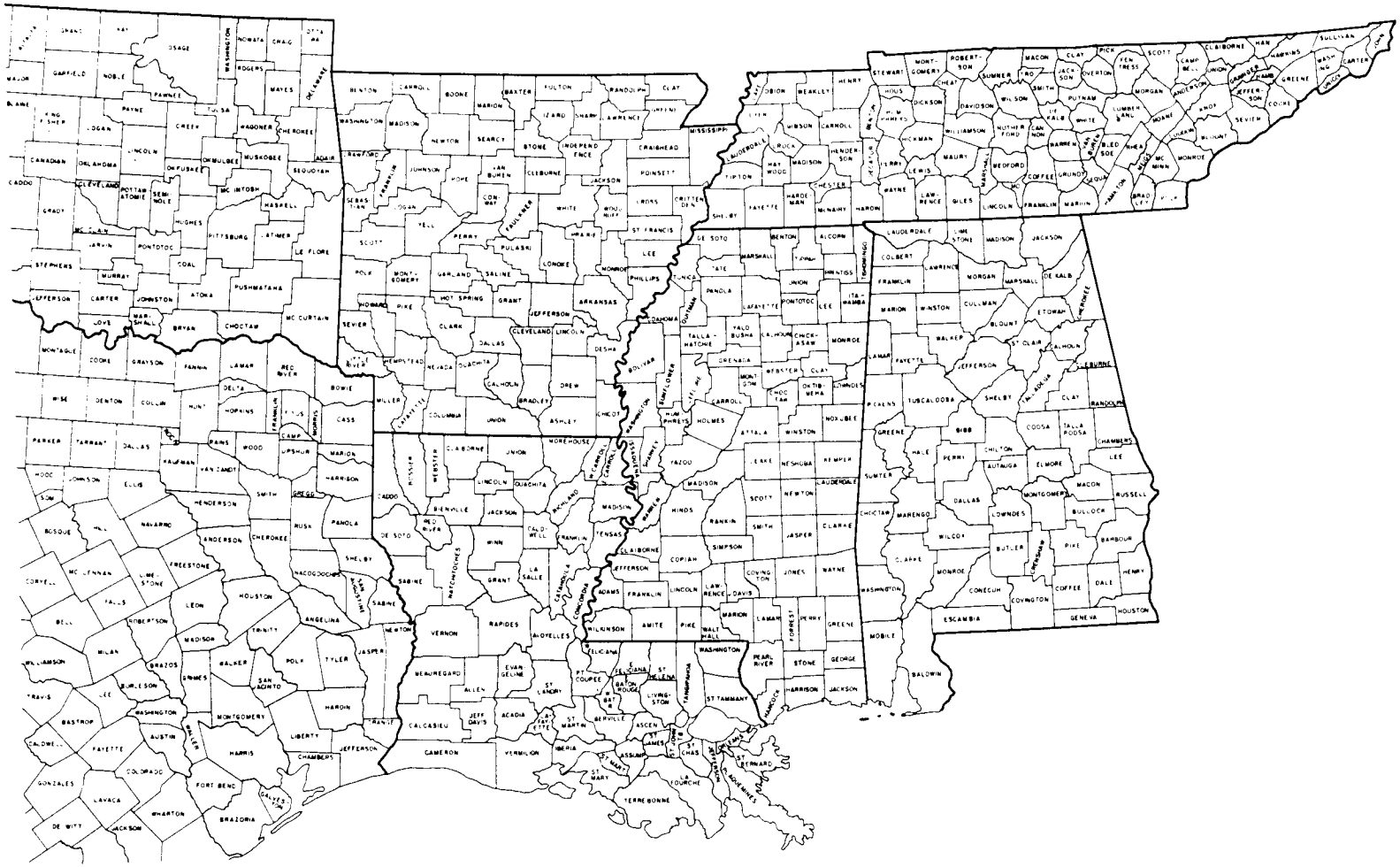

Figure I.—*The States and counties of the Midsouth.*

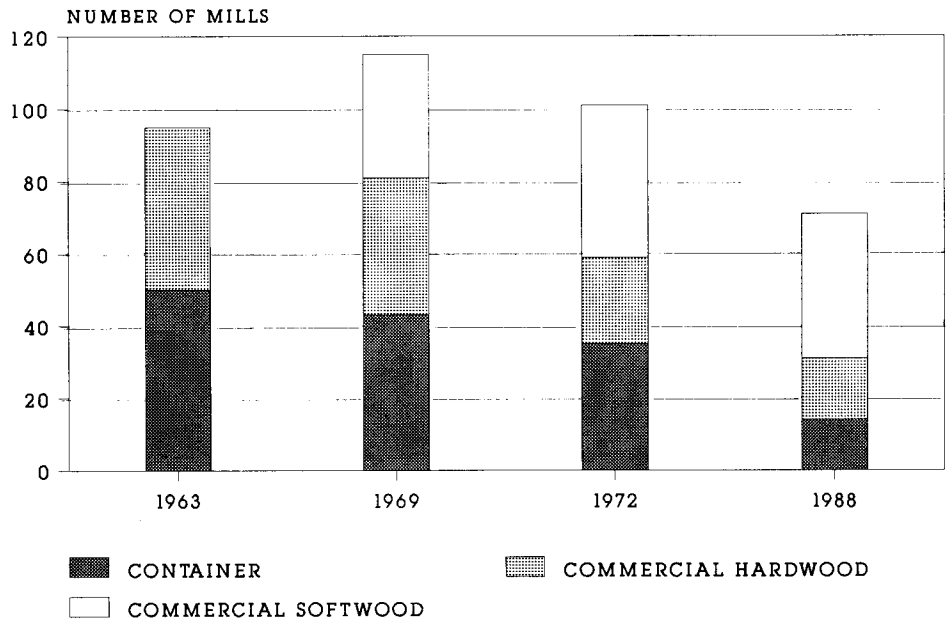

Figure 2.—*Size of the Midsouth veneer industry by mill type.*

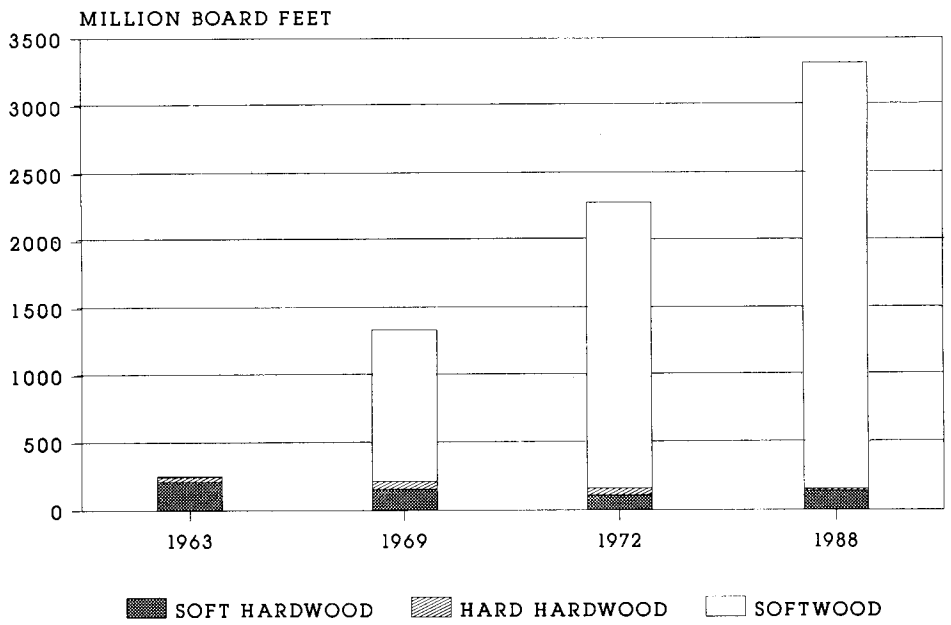

Figure 3.—*Production of Midsouth veneer logs by species group.*

changing markets and shortages of preferred raw materials. This decline was especially true of the container industry, whose products faced stiff competition in the shipping and packing industries from plastics and paperboard.

Surveys in 1969 (Sternitzke 1971) and 1972 (Bertelson 1974) documented the continued decline of these sectors of the industry and revealed a shift in the species composition of the region's production and consumption of hardwood veneer logs. This shift was mainly due to the increased use of soft hardwood species other than the preferred, but increasingly hard-to-obtain, gums and the increased use of hard hardwoods, such as oak and pecan, which were becoming more popular in furniture manufacturing (fig. 4).

The later surveys also documented the birth of the southern pine plywood industry in Arkansas in late 1963. This new sector of the Midsouth veneer industry grew rapidly as it took advantage of the region's expanding southern pine resource and of its proximity to

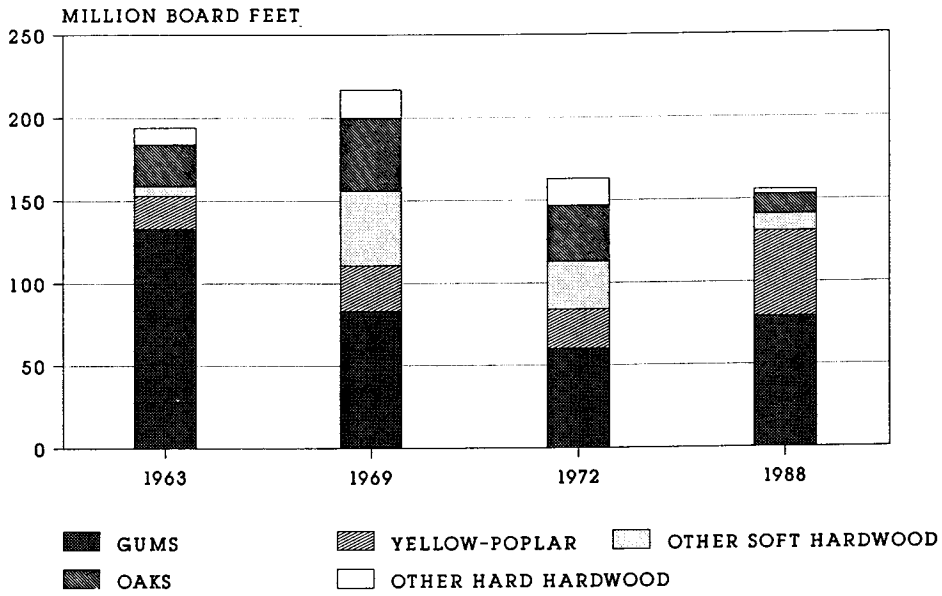

Figure 4.—*Production of Midsouth hardwood veneer logs by species group.*

Table 2.—*Receipts of Midsouth veneer logs by mill type, 1988*

Mill Type	Number	Softwood	Hardwood	Total
		--------- *Thousand board feet** ---------		
Commercial-SW†	41	3,122,237	46,386	3,168,623
Commercial-HW‡	17	1,386	73,689	75,075
Container	14	60	16,827	16,887
All mills	72	3,123,683	136,902	3,260,585

*International ¼-inch rule.
†Mills producing primarily softwood veneer.
‡Mills producing primarily hardwood veneer.

the growing urban centers of the East. The growth of this new sector revitalized the Midsouth veneer industry and shifted the region's veneer-log harvest from predominantly hardwood to predominantly softwood (fig. 3).

THE PRESENT

Hardwood Veneer Mills

The 1988 survey reveals that many of the trends observed in the past have continued to the present. Since 1972, the hardwood sector of the industry has continued to decline. Most of this decline has been concentrated in the container veneer mills (fig. 2), which experienced an 80-percent reduction in the volume of veneer logs processed since 1972 (Bertelson 1974 and table 2). As a result, there were more commercial hardwood mills than container mills in 1988, and the former consumed the majority of the region's hardwood veneer-log receipts (table 2). The region's production of hardwood veneer logs has fallen along with the number of operating hardwood mills (fig. 4). Even a 60-percent increase in the production of hardwood veneer logs exported to other regions of the country since 1972 (Bertelson 1974 and table 3) could not offset the production loss associated with the reduced internal demand. Yellow-poplar, oak, and hickory/pecan were the most prevalent hardwood species exported (table 3). Most of the hardwood veneer-log production that was exported out of the Midsouth came from Alabama and Tennessee and was consumed in Georgia and North Carolina (tables 4, 5). Approximately three-quarters of the region's production of hardwood veneer logs occurred in the States east of the Mississippi River (figs. 5, 6). Alabama was the leading producer and consumer of hardwood veneer logs due to the high concentration of hardwood veneer mills within its borders (tables 6, 7; fig. 1).

Softwood Veneer Mills

In contrast to the declining hardwood veneer sector, the softwood veneer sector has continued to gain in dominance, increasing its consumption of veneer logs

Table 3.—*Species composition of Midsouth veneer-log production and receipts, 1988*

Species	Receipts	Exports	Production
		*Thousand board feet**	
Yellow pine	3,123,683	38,050	3,161,733
Redcedar	0	1	1
Total softwood	3,123,683	38,051	3,161,734
Gum	78,433	479	78,912
Yellow-poplar	37,525	14,399	51,924
Cottonwood	7,208	0	7,208
Sycamore	1,090	0	1,090
Elm	568	0	568
Basswood	291	208	499
Black cherry	182	130	312
Bay, magnolia	65	0	65
Sassafras	12	6	18
Total soft hardwood	125,374	15,222	140,596
Oak	10,002	2,411	12,413
Hickory, pecan	1,173	1,849	3,022
Ash	149	158	307
Walnut	118	181	299
Hard maple	86	132	218
Total hard hardwood†	11,528	4,731	16,259
Total hardwood	136,902	19,953	156,855
All species	3,260,585	58,004	3,318,589

*International ¼-inch rule.
†Includes an insignificant volume of persimmon.

even though its size has stabilized after years of growth (fig. 2). This leveling off in the number of mills is a sign of the sector's maturation as veneer production is concentrated in the most efficient mills and is in balance with demand. Although the number of softwood mills has stabilized, these mills, manufacturing mostly pine plywood veneers, comprise the largest segment of the Midsouth veneer industry and process almost all of the softwood veneer logs consumed in the Midsouth (fig. 2, table 2). In addition, some of these mills also produce small amounts of hardwood veneer for use in manufacturing portions of pine plywood or, in some cases, hardwood plywood. As a result, softwood mills as a group also processed a third of the region's hardwood veneer-log receipts in 1988 (table 2). All of the hardwood veneer logs processed were soft hardwood, mostly yellow-poplar and gums, which may explain the increased production of soft hardwoods since 1972 (fig. 4). Production of softwood veneer logs has also increased since 1972, climbing 49 percent even though the number of mills has remained essentially unchanged (Bertelson 1974 and table 6). This statistic is another testimony to the increasing efficiency of the softwood veneer sector. Unlike the production of hardwood veneer logs, production of softwood veneer logs is concentrated in the States west of the Mississippi River (figs. 7, 8). Louisiana is the leading producer of softwood veneer logs (table 6), and Texas is the leading consumer with Louisiana and Arkansas not far behind (table 7).

Wood Residues

In the manufacture of veneers, the Midsouth veneer industry produced a substantial amount of wood and bark residues in 1988 (table 8). The wood residues were comprised predominantly of coarse residues. Coarse residues, such as veneer cores and trimmings, are suitable for use as pulp fiber, and three-quarters of the coarse residues were in fact used for this purpose (table 9). Processing of veneer cores into dimension lumber and landscaping timbers accounted for much of the remaining coarse residues. Almost all of the fine wood and bark residues were burned for industrial fuel. Only a very small percentage of the residues went unused, an improvement in utilization since 1972 when 4 percent of the residues went unused.

Table 4.—*Destination of Midsouth veneer logs by State of origin, 1988*

State of destination	State of origin	Softwood	Hardwood	Total
		--------- *Thousand board feet** ---------		
Alabama	Alabama	354,980	69,643	424,623
	Mississippi	43,391	7,769	51,160
	Total receipts	398,371	77,412	475,783
Arkansas†	Arkansas	554,521	4,860	559,381
	Louisiana	151,350	2,552	153,902
	Texas	13,887	0	13,887
	Total receipts	719,758	7,412	727,170
Florida	Alabama	0	805	805
	Total receipts	0	805	805
Georgia	Alabama	37,677	10,189	47,866
	Total receipts	37,677	10,189	47,866
Indiana	Arkansas	373	153	526
	Louisiana	0	567	567
	Mississippi	0	662	662
	Oklahoma	0	120	120
	Tennessee	0	683	683
	Texas	0	120	120
	Total receipts	373	2,305	2,678
Kentucky	Tennessee	0	178	178
	Total receipts	0	178	178
Louisiana	Arkansas	11,449	0	11,449
	Louisiana	697,956	14,695	712,651
	Mississippi	35	0	35
	Texas	9,695	0	9,695
	Total receipts	719,135	14,695	733,830
Michigan	Tennessee	0	338	338
	Total receipts	0	338	338
Mississippi	Alabama	83,231	0	83,231
	Louisiana	29,012	0	29,012
	Mississippi	380,946	12,773	393,719
	Total receipts	493,189	12,773	505,962
North Carolina	Arkansas	0	96	96
	Louisiana	0	96	96
	Mississippi	0	96	96
	Tennessee	0	5,107	5,107
	Total receipts	0	5,395	5,395
Ohio	Arkansas	0	12	12
	Mississippi	0	41	41
	Oklahoma	0	9	9
	Total receipts	0	62	62
Tennessee	Tennessee	0	6,555	6,555
	Total receipts	0	6,555	6,555
Texas	Louisiana	89,116	4,079	93,195
	Texas	704,114	13,976	718,090
	Total receipts	793,230	18,055	811,285
Virginia	Mississippi	0	19	19
	Tennessee	1	407	408
	Total receipts	1	426	427
West Virginia	Tennessee	0	255	255
	Total receipts	0	255	255
All States	Total production	3,161,734	156,855	3,318,589

*International $\frac{1}{4}$-inch rule.

†Oklahoma combined with Arkansas to avoid disclosure of individual mill data.

Table 5.—*Movement of Midsouth veneer logs, 1988*

State	Species group	Internal use	Exports within region	Exports out of region	Imports within region
		*Thousand board feet**			
Alabama	Softwood	354,980	83,231	37,677	43,391
	Hardwood	69,643	0	10,994	7,769
	Total	424,623	83,231	48,671	51,160
Arkansas†	Softwood	554,521	11,449	373	165,237
	Hardwood	4,860	0	390	2,552
	Total	559,381	11,449	763	167,789
Louisiana	Softwood	697,956	269,478	0	21,179
	Hardwood	14,695	6,631	663	0
	Total	712,651	276,109	663	21,179
Mississippi	Softwood	380,946	43,426	0	112,243
	Hardwood	12,773	7,769	818	0
	Total	393,719	51,195	818	112,243
Tennessee	Softwood	0	0	1	0
	Hardwood	6,555	0	6,968	0
	Total	6,555	0	6,969	0
Texas	Softwood	704,114	23,582	0	89,116
	Hardwood	13,976	0	120	4,079
	Total	718,090	23,582	120	93,195
All States	Softwood	2,692,517	431,166	38,051	431,166
	Hardwood	122,502	14,400	19,953	14,400
	Total	2,815,019	445,566	58,004	445,566

*International $\frac{1}{4}$-inch rule.

†Oklahoma combined with Arkansas to avoid disclosure of individual mill data.

Table 6.— *Midsouth veneer-log production by State, 1988*

State	Softwood	Hardwood	Total
	*Thousand board feet**		
Alabama	475,888	80,637	556,525
Arkansas	531,610	5,057	536,667
Louisiana	967,434	21,989	989,423
Mississippi	424,372	21,360	445,732
Oklahoma	34,733	193	34,926
Tennessee	1	13,523	13,524
Texas	727,696	14,096	741,792
All States	3,161,734	156,855	3,318,589

*International $\frac{1}{4}$-inch rule.

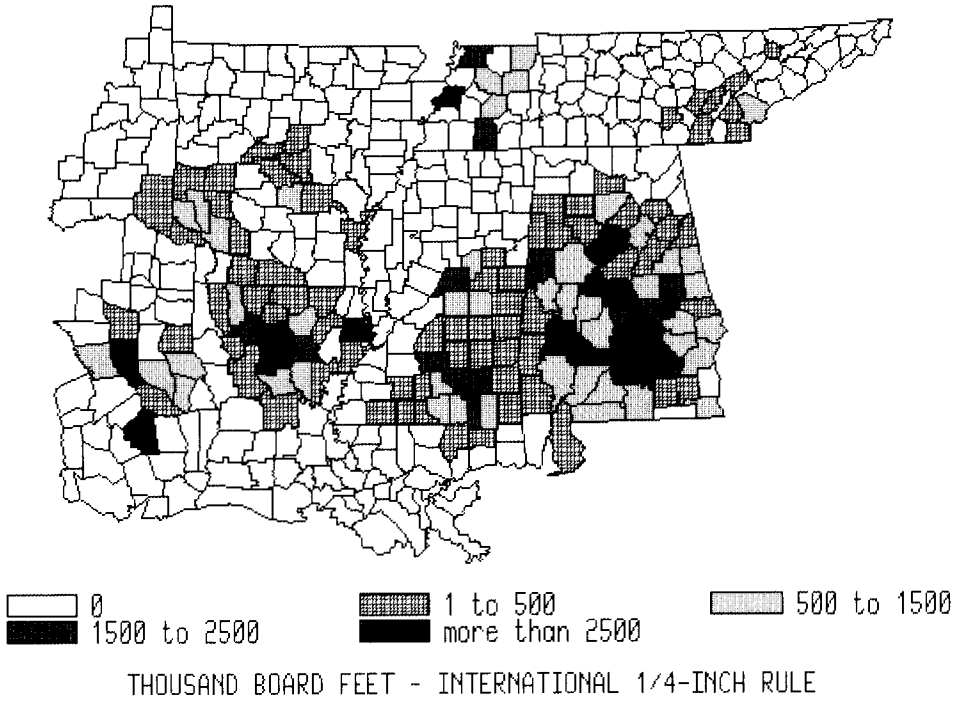

Figure 5.—*Hardwood veneer-log production by county, 1988.*

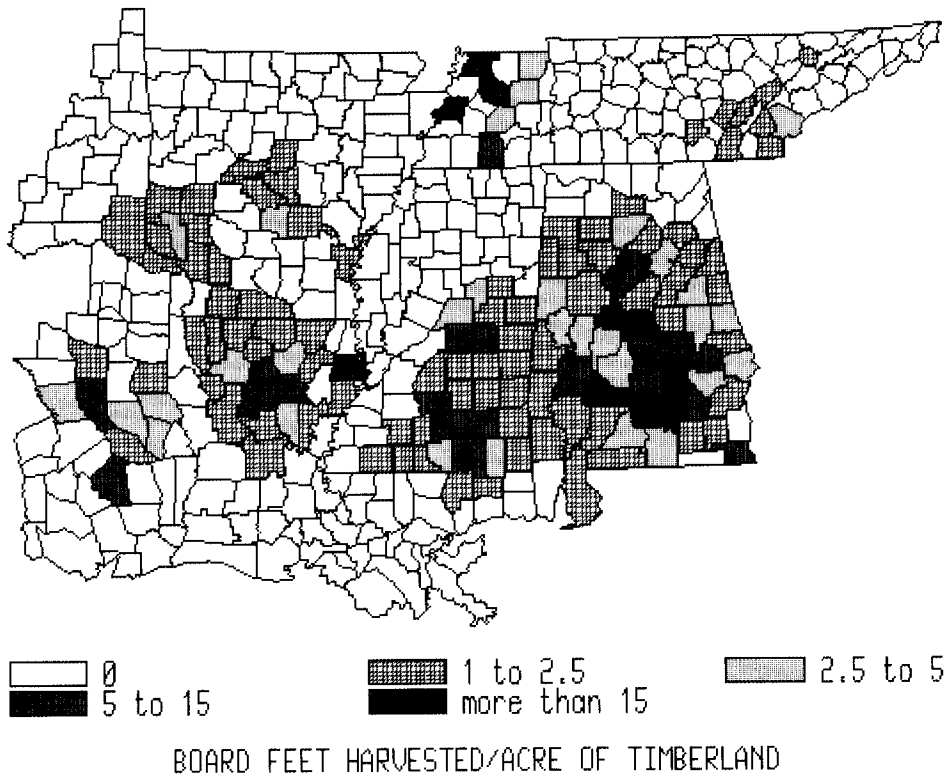

Figure 6.—*Hardwood veneer-log harvesting intensity by county, 1988.*

Table 7.— *Midsouth veneer-log receipts by State, 1988*

State	Softwood	Hardwood	Total
	*Thousand board feet**		
Alabama	398,371	77,412	475,783
Arkansas†	719,758	7,412	727,170
Louisiana	719,135	14,695	733,830
Mississippi	493,189	12,773	505,962
Tennessee	0	6,555	6,555
Texas	793,230	18,055	811,285
All States	3,123,683	136,902	3,260,585

*International $\frac{1}{4}$-inch rule.

†Oklahoma combined with Arkansas to avoid disclosure of individual mill data.

Table 8.—*Volume of wood residues produced from Midsouth veneer mills, 1988*

State	Softwood			Hardwood		
	Bark	Coarse	Fine	Bark	Coarse	Fine
	Thousand cubic feet					
Alabama	12,724	24,739	1,076	1,438	4,807	209
Arkansas*	22,988	44,697	1,943	138	460	20
Louisiana	22,969	44,658	1,942	273	913	40
Mississippi	15,752	30,627	1,332	237	793	34
Tennessee	0	0	0	122	407	18
Texas	25,335	49,260	2,142	336	1,121	49
All States	99,768	193,981	8,435	2,544	8,501	370

*Oklahoma combined with Arkansas to avoid disclosure of individual mill data.

Table 9.—*Disposition of Midsouth veneer mill wood residues, 1988*

Disposition	Softwood			Hardwood		
	Bark	Coarse	Fine	Bark	Coarse	Fine
	Thousand cubic feet					
Fiber	0	153,322	852	2	6,678	*
Industrial fuel	99,438	11,367	7,558	2,541	1,230	370
Bedding, mulch	160	136	0	0	0	0
Dimension lumber, specialty items	0	28,826	0	0	590	0
Not used	170	330	25	1	3	*
Total	99,768	193,981	8,435	2,544	8,501	370

*Less than 0.5 thousand cubic feet.

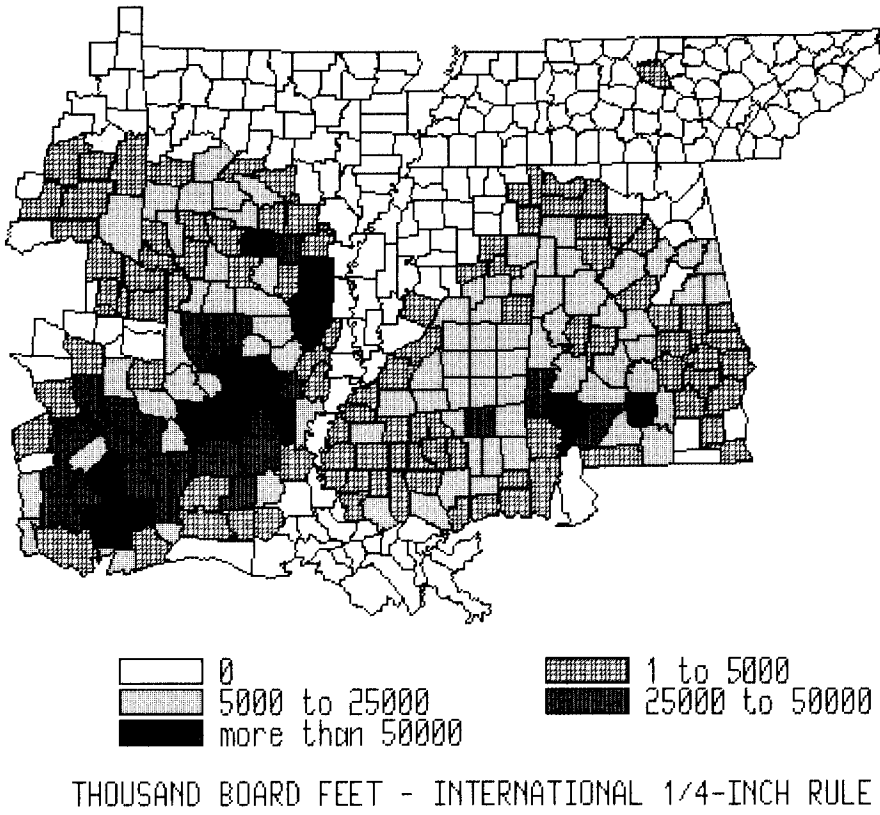

Figure 7.—*Softwood veneer-log production by county, 1988.*

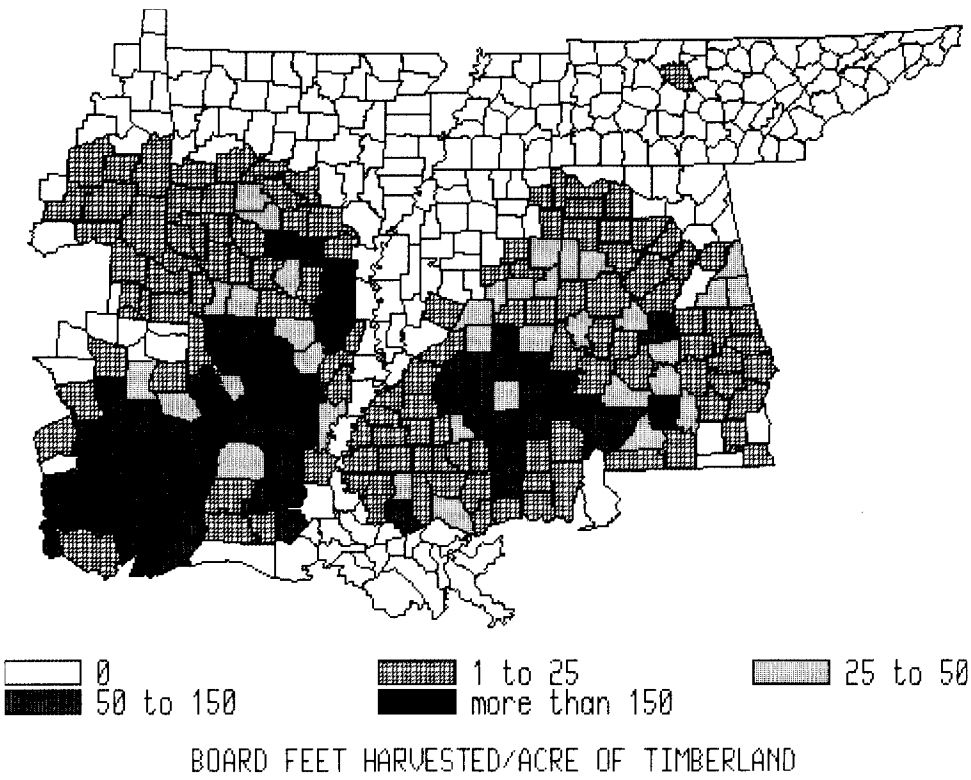

Figure 8.—*Softwood veneer-log harvesting intensity by county, 1988.*

THE FUTURE

The Midsouth veneer industry has changed considerably over the years and is today one of the leading primary forest industries in the region. Today's industry was built around the expanding southern pine resource of the region, and its future depends on its ability to continue to utilize this resource. However, the shifting of this resource from natural to planted stands (USDA FS 1988) has raised concerns over the size, quality, and quantity of future veneer logs, especially if the plantations are managed on short rotations (Kellison 1986, Kluender and others 1988). One method of coping with the changing resource base will be the adoption of current and future technologies, such as the spindleless lathe, that will allow more efficient conversion of smaller logs into veneer (Baldwin 1987, Kellison 1986, Spelter and Sleet 1989). Additionally, new technologies may provide opportunities to market new products, such as dimension lumber and structural beams produced from laminated veneers, which may strengthen the position of the Midsouth veneer industry (Pease 1987, Price 1986).

On the other hand, other new technologies are currently threatening the position of today's veneer industry. Reconstituted panel products, such as waferboard and oriented strandboard, are continually gaining market shares over veneer plywoods. Similar structural performance and lower cost are the main reasons for their market acceptance (Dickerhoff 1986, Seward and Sinclair 1988). The lower cost is due in part to lower raw material costs because these products utilize traditionally underutilized, smaller, and poorer quality trees (Price 1986). Ultimately, the future of the Midsouth veneer industry will depend on its continued ability to change in order to utilize its raw material source and take advantage of new technologies to meet market demands.

LITERATURE CITED

Baldwin, Richard F. 1987. New developments in plywood green ends. Forest Industries. 114(6): 18–23.

Bertelson, Daniel F. 1974. Midsouth veneer industries, 1972. Resour. Bull. SO-47. New Orleans, LA: U.S. Department of Agriculture, Forest Service, Southern Forest Experiment Station. 11 p.

Christopher, Joe F.; Sternitzke, Herbert S. 1964. Midsouth veneer industry. Resour. Bull. SO-5. New Orleans, LA: U.S. Department of Agriculture, Forest Service, Southern Forest Experiment Station. 12 p.

Dickerhoff, H. Edward. 1986. Changing U.S. softwood timber markets and international trade trends with implications for domestic forest products production. Forest Products Journal. 36(10): 35–40.

Kellison, Robert C. 1986. Future technology and timber supply may change construction lumber products. Forest Farmer. 45(9): 24–26.

Kluender, R.A.; McCoy, E.W.; and Easterling, J.K. 1988. The Arkansas forest products industry. Bull 908. Fayetteville, AR: Arkansas Agricultural Experiment Station, University of Arkansas, Division of Agriculture. 41 p.

Pease, Davis A. 1987. Symposium takes a look at lumber composites. Forest Industries. 114(5): 16–17.

Price, Eddie W. 1986. New products for southern timber resources. In: Carpenter, Stanley B., ed. Proceedings: southern forestry symposium; 1985 November 19–21; Atlanta, GA. Stillwater, OK: Oklahoma State University Agricultural Conference Services. 181–184.

Seward, Kevin E; Sinclair, Steven A. 1988. Retailer's perceptions of structural panel attributes and market segments. Forest Products Journal. 38(4): 25–31.

Spelter, Henry; Sleet, George. 1989. Potential reductions in plywood manufacturing costs resulting from improved technology. Forest Products Journal. 39(1): 8–15.

Sternitzke, Herbert S. 1971. Midsouth veneer log production Resour. Bull. SO-25. New Orleans, LA: U.S. Department of Agriculture, Forest Service, Southern Forest Experiment Station. 8 p.

U.S. Deparment of Agriculture, Forest Service. 1988. The South's fourth forest: alternatives for the future. Forest Resource Report 24. Washington, DC: U.S. Department of Agriculture Forest Service. 512 p.

Persons of any race, color, national origin, sex, age, religion, or with any handicapping condition are welcome to use and enjoy all facilities, programs, and services of the USDA. Discrimination in any form is strictly against agency policy, and should be reported to the Secretary of Agriculture, Washington, DC 20250.

May, Dennis M.; Vissage, John S. Midsouth veneer industry. Resour. Bull. SO-154. New Orleans, LA: U.S. Department of Agriculture, Forest Service, Southern Forest Experiment Station; 1990. 11 p.

Reports the findings of a survey of all veneer mills receiving veneer logs from the Midsouth in 1988. Production and receipts of veneer logs are reported by State, mill type, and species. The production and disposition of wood and bark residues generated by the Midsouth veneer industry are also reported. Changes in veneer-log production and receipts and wood residue production from previous surveys are also followed and discussed.

Keywords: Bark, consumption, production, veneer log, wood residue.