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Wood-Based Panel Plant Locations and Timber Availability in Selected U.S. States

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Abstract

This report lists wood-based panel industry plant locations, production capacities, timber inventories, and wood costs for 24 U.S. states. Industry sectors covered include medium-density fiberboard, particleboard, softwood plywood, and oriented strandboard. Maps of major forest producing states show plant locations and the underlying density of timber stocking by county. The study relates physical measures of timber availability to market measures of timber scarcity and draws inferences about the potential of selected states to increase timber output at their present rate of forest productivity.

Keywords: Oriented strandboard, plywood, particleboard, medium-density fiberboard, capacity

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Contents

Wood-Based Panel Plant Locations and Timber Availability in Selected U.S. States

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Introduction

The data for this study were compiled with the U.S. wood-based panel industry in mind, but the study has relevance to the entire spectrum of industrial wood-using activities. Our primary intent was to show visually the dispersion of panel plants, to accompany a recently released report (Spelter and others 1997). But we also wanted to superimpose the location of plants from that report on a visual representation of timber availability in each selected state. To complete the connection between timber use and inventory, we also included tables that summarize overall industrial activity and timber prices. Included in these tables are lumber production and pulpwood receipts that allow for simple comparisons of the magnitude of the panel industries relative to lumber and pulp. From these data, it is possible to obtain a general overview of the location of panel plants and a sense for whether plants of a given type are many or few in relation to each other and to the available timber.

Methods

This publication contains maps of 24 major forest producing states, primarily from the eastern United States. West Coast states were not included because of the unavailability at this time of county-by-county timber inventory.

For every state, the density of timber by county is represented on a shaded gradient, with the darkest shading representing the highest stocking. The boundaries of the stocking density classes were made broad to reflect the heightened uncertainty when the sample data upon which these inventory estimates are made are disaggregated to the county level.

Although some states, such as Missouri, lack panel producers, they are included because of the abundance of timber therein. In general, the timber resource represented is the inventory of growing stock, which is defined by the USDA Forest Service as live trees of commercial species, meeting specified standards of quality and vigor, and at least 12.7 cm in diameter. For Missouri, Minnesota, Montana, and Wisconsin, values for live cull trees were added because this resource forms a significant part of the overall stock. A cull tree is defined as at least 12.7 cm in diameter and unmerchantable for saw logs because of rot, roughness, or species. But such trees are a potential fiber source for composites.

The maps were produced with the Atlas Geographic Information System software package (Atlas GIS) (Environmental Systems Research Inst., Inc., Redlands, CA). The various mills were located on each map according to their zip codes. In certain locales, such as eastern Texas, different types of mills are often contained within the same complex. In some of these cases, we compromised location accuracy for clarity by shifting their positions to nearby zip codes to distinguish one from another. Similarly, if two mills belonging to the same company produced the same product in the same location, we combined them into a single entity.

On the maps, different symbols are used for plywood (circles), for oriented strandboard (OSB) (triangles), and for particleboard/medium-density fiberboard (MDF) plants (stars). The sizes of the symbols, which denote locations of the mills, are proportional to the mills' capacities and are consistent across maps, even though the map scales fluctuate according to state size. Each map is designed by the software to fit onto a single page, and consequently, scale will vary from map to map. The legends to the right of most maps show three sample sizes that are intended to help visualize the amount of capacity indicated at each site.

Accompanying each map is a table containing key industry data consisting of panel sector capacities, softwood lumber production, pulpwood receipts, timber prices, and the ratio

of estimated removals to timber inventory for each state. These data were obtained from a variety of sources. Capacities were derived from Spelter and others (1997) and were modified to reflect changes that have occurred since that report was published.

The USDA Forest Service was the source of timber inventory data (USDA 1996). Values for timber costs were obtained from a southern price reporting concern (University of Georgia, 1980–1997), McLaren (1995–1997), and various State Department of Natural Resources stumpage price reports.

The stumpage prices are statewide averages. Values can vary significantly within a given state based on local market conditions. The U.S. census served as a source for the lumber production and pulpwood receipts.

Results and Discussion

One key item in the tables is the ratio of timber drain to timber inventory. In plant siting studies, this is used as a gauge of physical timber availability, whereas in economic studies (Adams and Haynes 1980), this ratio is often a predictor of timber costs. Another key item is the stumpage price of timber, which is an economic measure of timber scarcity. We contrasted these two items to determine the degree in which the former can be used as a predictor of the latter and what, if anything, these variables imply about relative timber market conditions and timber availability in the various regions.

To obtain a measure of timber drain, we combined plywood, OSB, particleboard, and MDF capacities with lumber production and pulpwood receipts. These categories constitute the bulk of removal except for timber exported from a state in roundwood or chip form or used for miscellaneous products such as fuelwood, posts, poles, pilings, laminated veneer lumber, and hardwood plywood. Residues generated in making plywood and lumber and not accounted for by their capacities or production are picked up in pulpwood receipts and particleboard capacity. These estimates have the advantage of being more current than the periodic timber product utilization estimates made by the Forest Service. Dividing this timber drain number by the inventory approximates the rate of utilization of timber inventory within a given state.

Figures 1 and 2 show this drain/inventory ratio compared with recent pine sawtimber and pulpwood stumpage prices for states located in the East. This region was selected to exclude possible confounding effects of old-growth timber and public forest land set asides on timber values. Figure 1 shows the extent of the correlation that exists between the level of sawtimber stumpage prices and the drain ratios. States with the highest drain ratios, for example, Alabama, Texas, and Mississippi, have the highest stumpage costs while those with the lowest drain ratios, such as Virginia,

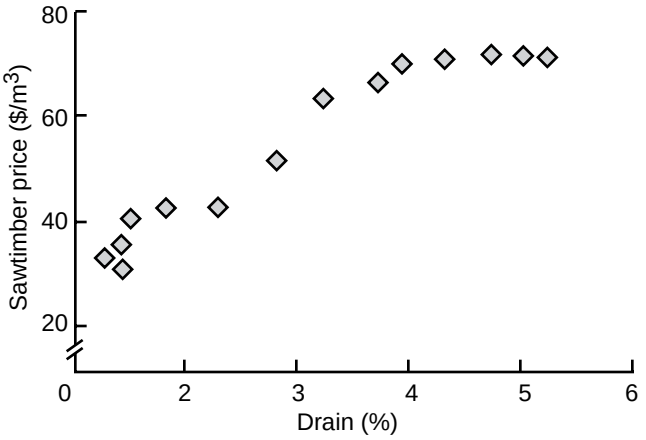

Figure 1—Timber drain compared with sawtimber prices in 14 eastern states.

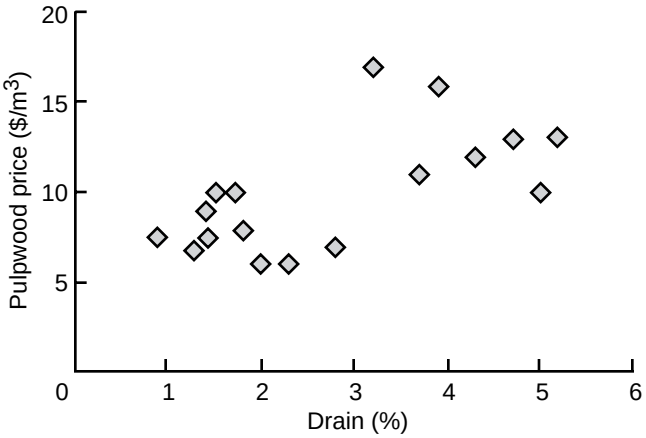

Figure 2—Timber drain compared with pulpwood prices in 17 eastern states.

Tennessee, and Michigan, have the lowest. For pulpwood, the relationship is less exact, but a link between drain and costs is still evident. In states where the drain ratio is greater than 3%, prices for pulpwood tend to be greater than in those where the ratio is less.

The drain/inventory ratio is one of several physical measures of timber availability. By itself, it is incomplete because it omits consideration of timber growth rates. The inverse of the drain/inventory ratio, multiplied by a hundred, represents the number of years to exhaust the present inventory at the given utilization rate, if no replacement were to occur. For Alabama, the 5.2% utilization rate implies about a 20-year harvest cycle, while Minnesota's 1.4% translates to 70 years. Whether or not these represent unsustainable rates of liquidation on the one hand or resource underutilization on the other depends on a region's underlying capacity to grow fiber.

The warm and humid climates of the South with their long growing seasons can sustain shorter harvest cycles than the North with its colder climate and shorter growing seasons.

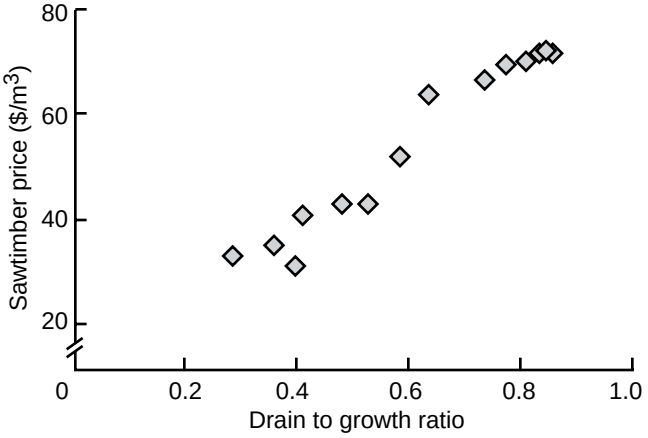

Figure 3—Timber drain to growth ratio compared with sawtimber prices in 14 eastern states.

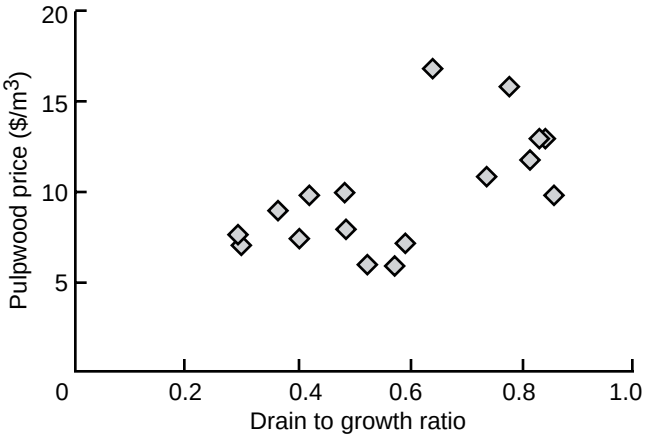

Figure 4—Timber drain to growth ratio compared with pulpwood prices in 17 eastern states.

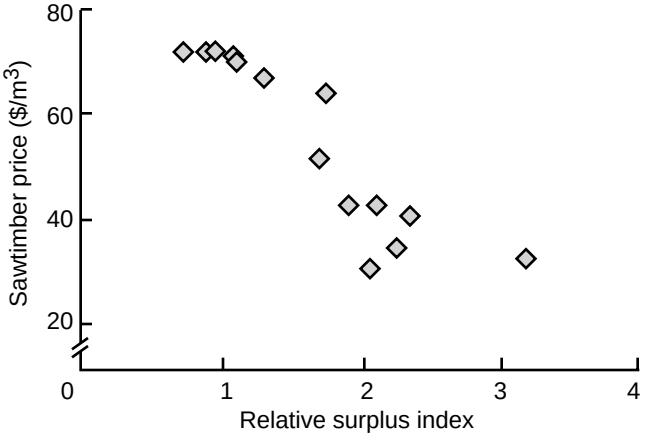

Figure 5—Relative surplus of timber compared with sawtimber prices in 17 eastern states (relative surplus index is gross growth minus drain divided by inventory).

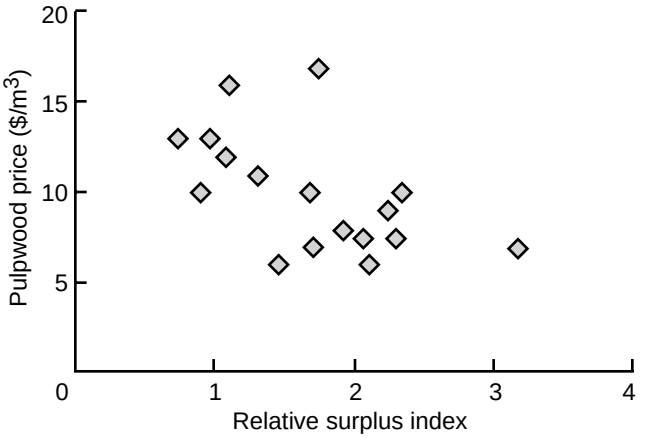

Figure 6—Relative surplus of timber compared with pulpwood prices in 17 eastern states (relative surplus index is gross growth minus drain divided by inventory).

Therefore, another indicator of timber availability complementing the drain/inventory ratio is the ratio between timber drain and growth. When that ratio equals one, harvest and growth are equal. Below one, growth exceeds harvest, while above one, cutting surpasses regrowth.

We define drain the same as before and growth as net growth plus mortality (because that part of the resource remains available for use and is often salvaged). Figures 3 and 4 show this ratio relative to stumpage prices. As before, sawtimber exhibits the clearest correlation between the variables, confirming the results obtained with the drain/inventory ratio. If there existed large stocks of mature timber exhibiting little growth, then the drain/growth ratio could be very large even if the drain/inventory ratio were small, giving mixed signals about the price of timber. The correspondence to prices of the drain/inventory and drain/growth ratios implies that there is little overhang of mature timber in these regions. For pulpwood, the relationship is again not as strong as for sawtimber but shows two distinct zones between which a clear separation in pulpwood costs occurs. Above a drain/growth ratio of about 0.6, pulpwood prices tend to be higher than when the ratio is less than 0.6. One exception is Maine, which despite a moderately high 0.67 ratio of drain/growth, has below average pine pulpwood stumpage prices. This reflects in part the choice of timber species used to represent pulpwood, which for the sake of simplicity and consistency was pine across all states. In Maine, spruce is also a large component of pulpwood supply and its prices tend to be higher than those of pine.

It is reasonable to suppose that a more complete indicator of a region's timber availability is one that combines both of the above indicators and their three components. If we define timber surplus as gross growth less drain and divide that by inventory, then an indicator of relative surplus is obtained that combines all three variables in one compact index. Figures 5 and 6 show how this index compares with timber

Table 1—Summary of timber availability indicators and 1997 pine stumpage prices by state

Location	Total inventory ($\times 10^6$ m^3)	Drain/ inventory (%)	Drain/ growth ratio	Relative surplus (%)	Stumpage price (US$/m^3)		Soft-wood (%)	Federally owned inventory (%)
					Saw-timber	Pulp-wood		
South								
Alabama	654	5.2	0.84	1.0	72	13	50	5
Texas	360	5.0	0.86	0.9	72	10	60	11
Mississippi	580	4.7	0.84	0.7	72	13	45	14
Louisiana	525	4.3	0.82	1.1	71	12	53	9
Georgia	866	3.9	0.78	1.1	70	16	50	8
South Carolina	470	3.7	0.74	1.3	67	11	50	10
Florida	435	3.2	0.64	1.7	64	17	55	12
Arkansas	612	2.8	0.59	1.7	52	7	40	20
North Carolina	930	2.3	0.53	2.1	43	6	38	10
Virginia	740	1.8	0.48	1.9	43	8	26	13
Tennessee	470	1.3	0.29	3.2	33	9	17	10
North								
Maine	590	2.0	0.57	1.5	NA[a]	6	66	1
Wisconsin	500	1.7	0.48	1.7	NA	8	26	15
Michigan	560	1.5	0.41	2.3	41	10	30	14
Missouri	255	1.5	0.43	2.0	31	NA	7	11
Minnesota	485	1.4	0.36	2.2	35	10	30	14
Kentucky	453	1.0	0.33	2.0	NA	NA	8	7
Pennsylvania	675	0.9	0.29	2.3	NA	NA	9	5
New York	617	0.6	0.17	3.0	NA	NA	23	1
West Virginia	551	0.4	0.14	2.4	NA	NA	6	9

[a]Data not available.

costs in some states. They confirm the general relationships observed between prices and the drain/inventory ratio and the drain/growth ratio.

Summary of Timber Availability and Costs

Table 1 summarizes the timber inventory data, the availability indicators, and 1997 pine stumpage prices by state for most of the eastern half of the United States. These physical measures of timber availability and prices used to indicate market scarcity are only two of many factors that investors should consider when planning a site for a timber-using investment.

Also, the indexes are gross aggregate measures of availability involving all species and sizes of timber above a certain diameter, so the conclusions here are only a starting point for an analysis of potential timber investment siting for which the requirements might be more particular. Finally, data on timber inventory do not reflect timber below the 12.7-diameter, as noted earlier. This may be significant because of extensive plantings undertaken within the past decade on Conservation Reserve Program (CRP) lands. The bulge in growth represented by this category will not begin to appear in the data until inventories are taken in the next few years.

With these caveats, our data indicate that states can presently be roughly broken into three broad categories according to timber availability and costs: (i) a high cost group where harvests are close to sustainable levels, (ii) an intermediate cost group where some potential to increase harvests exists, and (iii) a low cost group where there is the greatest potential to increase harvests.

The first group consists of Texas, Louisiana, Mississippi, Alabama, Georgia, and South Carolina. Their drain/inventory ratios range from 3.7% to 5.2%, implying a

harvest cycle of about 25 years or less. Their drain/growth ratios are 74% or higher, implying that their harvests are near or at their sustainable levels at the present rates of growth. Finally, their relative timber surpluses are not much greater than 1% of inventory (depending on how much of the mortality is not recovered, these states could actually be harvesting and losing more than their regrowth, in which case their relative surpluses are actually negative). Prices for pine sawtimber stumpage reflect these conditions and have been around \$70 per m^3 in 1997, the highest among the timber producing states across the eastern half of the United States.

The intermediate group lies at the periphery of the states in the first group and includes Florida, North Carolina, Virginia, Arkansas, and the northern states of Maine, Wisconsin, and Michigan. Their drain/inventory ratios range from 1.5% to 3.2%, at the lower end of the range for the first group. Their drain/growth ratios range from 41% to 64%, implying that their harvests are well below their sustainable levels. Finally, their relative timber surpluses lie between 1.3% and 2.3%. These somewhat slack conditions are reflected in prices for sawtimber, which range from around \$40 to around \$60 per cubic meter.

Finally, the low cost group is made up of states located primarily in the eastern hardwood belt where softwoods constitute a relatively small share of the total inventory. This group includes Kentucky, Tennessee, Missouri, Minnesota, Pennsylvania, New York, and West Virginia. The drain/inventory ratios in these primarily northern states range between 0.4% to 1.5%. Relative to gross growth, current drains range from 41% to a mere 14%. Relative surpluses range from 2% for Missouri to a substantial 3.2% for Tennessee. Sawtimber prices for pine range from the low \$30's to the low \$40's per cubic meter.

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Appendix—Panel Plant Capacity and Timber Inventory by State

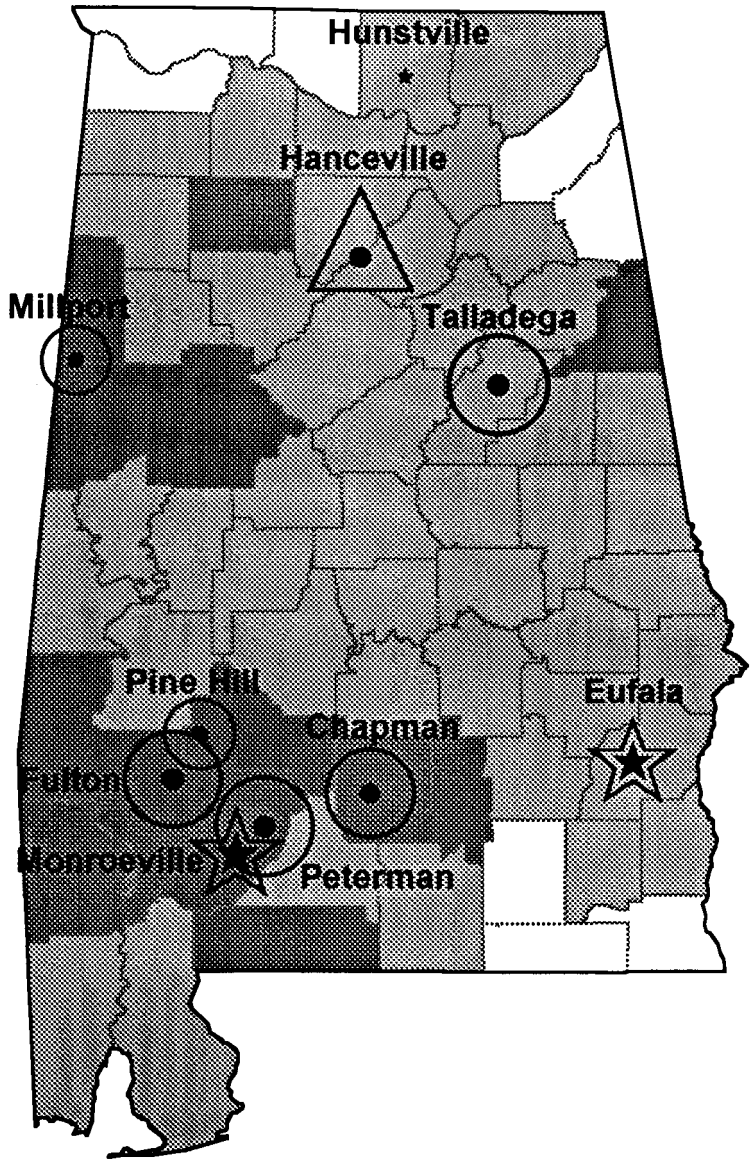
The following maps and tables show past and present capacity of various wood-based panel plants and the availability of timber in the vicinity of these plants for 24 states. The 24 states are presented in alphabetical order.

The symbols on the following maps have been proportionally scaled according to the capacity of the plant they represent. Legends accompany each map that contain the same symbols. The symbols found on the maps are not necessarily the same size as those found in the legends. The symbols in the legends are guidelines to give an indication of the value of capacity. The actual capacity value is given for each plant in the accompanying table.

Abbreviations used in the following maps and tables are as follows: OSB, oriented strandboard; Pbd, particleboard; MDF, medium-density fiberboard.

Alabama

Timber Inventory and Annual Panel Plant Capacity



Timber (cubic meters/hectare)

	0	to	30
	30	to	60
	60	to	120

Note Growing Stock numbers from the USDA, Forest Service.

km

0 50 100 150

Plywood Capacity (Thousand m^3)

100

200

300

OSB Capacity (Thousand m^3)

100

200

300

Pbd/MDF Capacity (Thousand m^3)

100

200

300

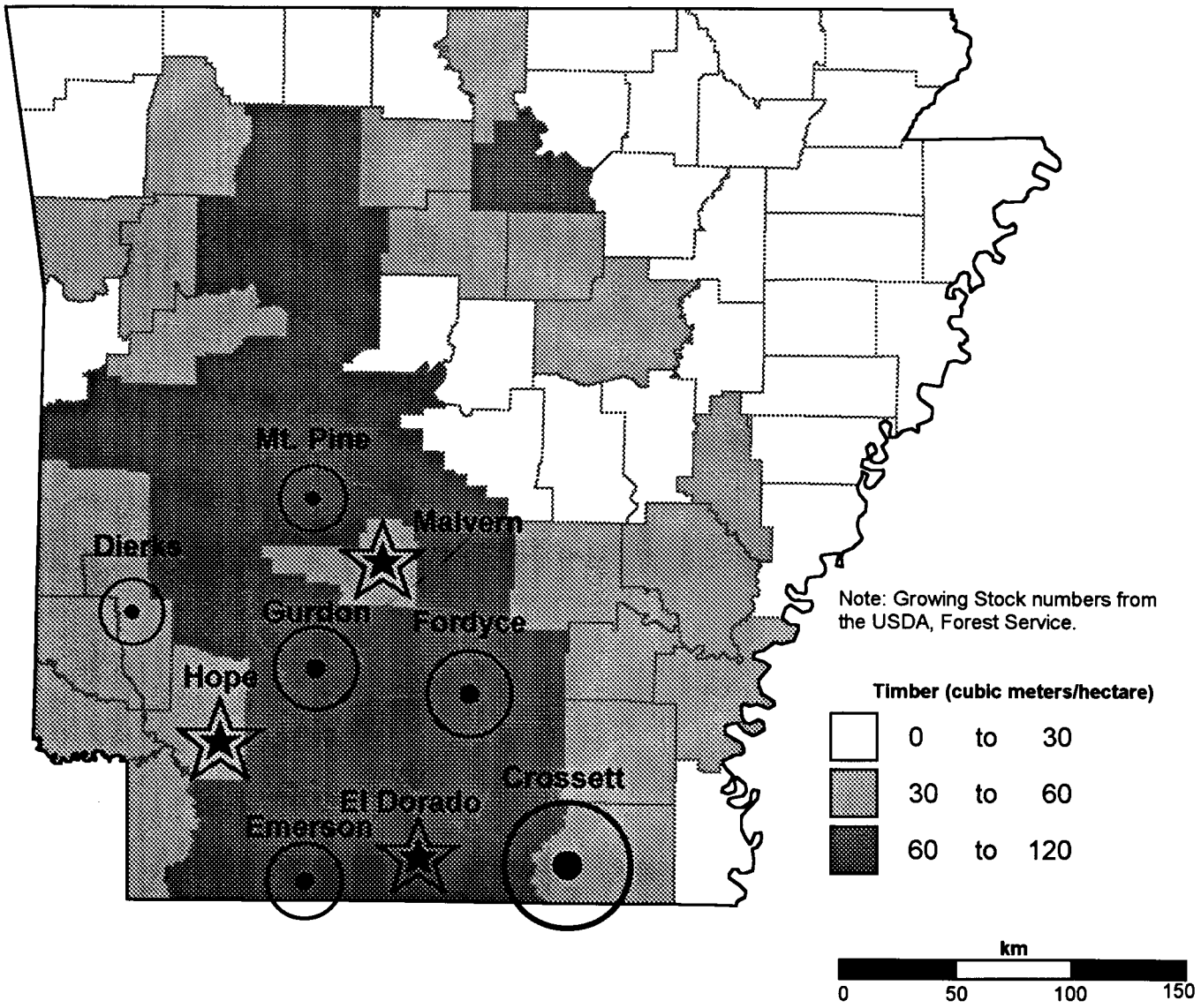
Alabama

Location	Company	Year built	Year closed	Capacity / Production (Thousand m³) 1965	1970	1975	1960	1965	1990	1995	1996	1997	1998
PINE PLYWOOD													
Fulton	Scotch	1965		40	89	89	159	204	235	257	257	257	257
Chapman	Union-Camp	1967			106	106	168	177	186	221	221	221	221
Pine Hill	McM-Bloed	1968			106	106	133	133	119	142	142	142	142
Cordova	Champion	1970	1984		22	62	75						
Andalusia	Independent	1970	1983		27	80	80						
Livingston	Sumter>McBl	1971				89	89						
Talladega	G-P	1975				115	195	200	274	289	289	289	289
Millport	Weyerhaeus	1977					71	80	111	128	140	140	140
Peterman	G-P	1978					204	204	274	274	274	274	274
TOTAL				40	350	646	1173	997	1199	1312	1323	1323	1323
ORIENTED STRANDBOARD													
Hanceville	L-P	1994								310	310	310	310
TOTAL										310	310	310	310
TOTAL PLYWOOD AND OSB				40	350	646	1173	997	1199	1622	1633	1633	1633
PARTICLEBOARD													
Hunstville	Giles-Kend	NA		12	12	12	18	18	11	11	11	11	11
Monroeville	Olinkr>Temp	1974				142	177	177	212	212	266	266	266
Pine Hill	McM-Bloed	1974	1979			177							
Eufala	L-P	1975	1978			191							
TOTAL				12	12	522	195	195	223	223	277	277	277
MEDIUM-DENSITY FIBERBOARD													
Eufala	L-P	1979					106	124	221	239	239	239	239
TOTAL							106	124	221	239	239	239	239
TOTAL PARTICLEBOARD AND MDF				12	12	522	301	319	444	462	516	516	516
LUMBER PRODUCTION				2910	3047	2740	2605	4338	4713	6025	5815	NA	NA
PULPWOOD RECEIPTS				10745	14162	13998	19348	20012	21905	25880	NA	NA	NA
TOTAL DRAIN				13707	17571	17906	23427	25665	28261	33989	NA	NA	NA
1995 DRAIN / INVENTORY RATIO										0.052			

	TYPICAL WOOD COSTS (U.S. $ per m³)						
Pine sawtimber							
Standing	27	30	32	70	55	72	NA
Delivered	37	45	50	88	78	92	NA
Pine pulpwood							
Standing	7	8	9	14	12	13	NA
Delivered	18	22	21	29	28	30	NA
Hardwood pulpwood							
Standing	1	2	5	11	8	11	NA
Delivered	13	14	20	28	25	29	NA

Arkansas

Timber Inventory and Annual Panel Plant Capacity



Plywood Capacity (Thousand m^3)

100

200

300

Pbd/MDF Capacity (Thousand m^3)

100

200

300

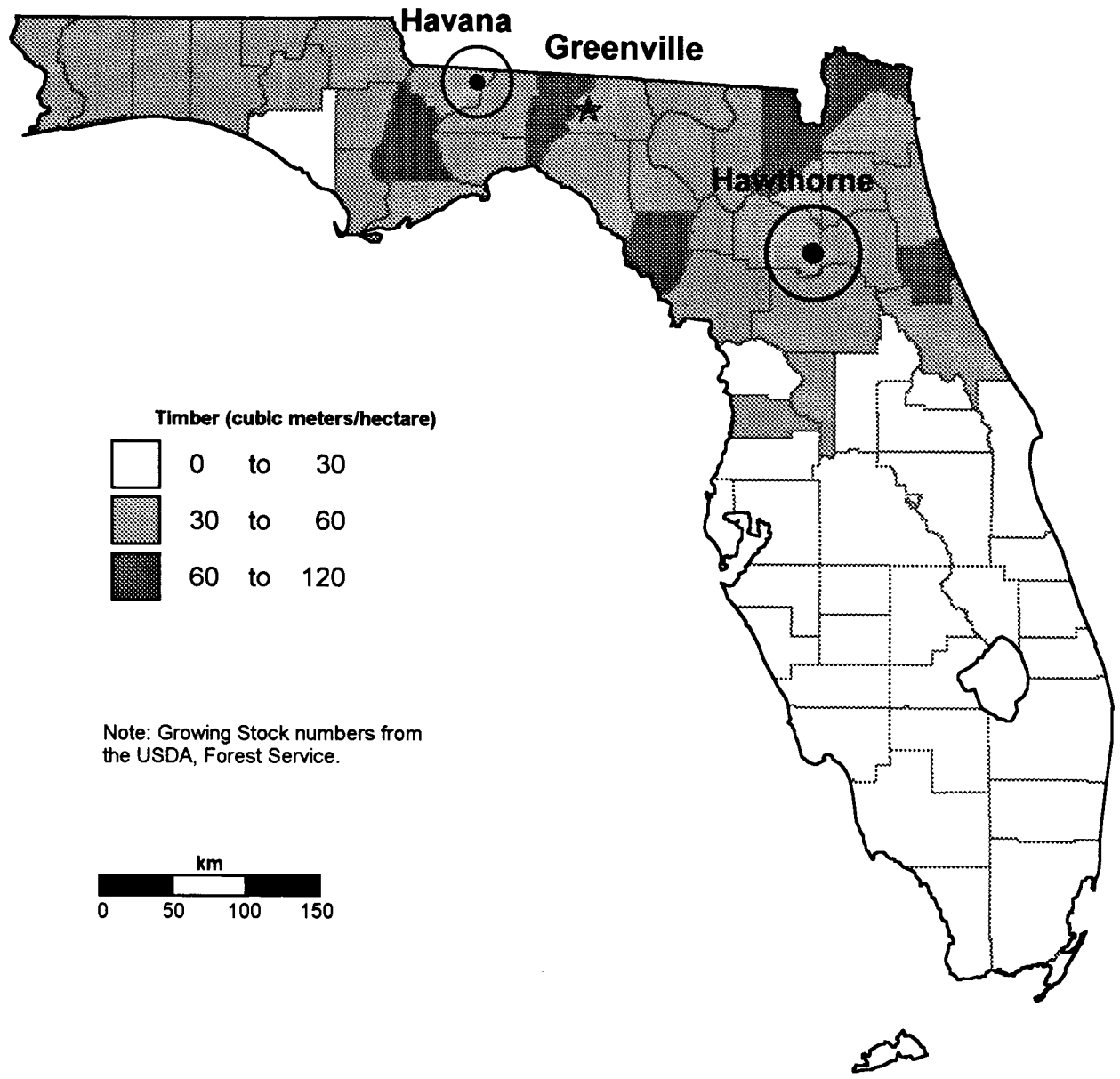
Arkansas

Location	Company	Year built	Year closed	Capacity / Production (Thousand m³) 1965	1970	1975	1980	1985	1990	1995	1996	1997	1998
PINE PLYWOOD													
Fordyce	G-P	1964		80	119	133	177	226	252	270	270	270	270
Crossett1	G-P	1965		53	137	177	177	221	279	292	292	292	292
Crossett2	G-P	1966			128	177	177	221	283	305	305	283	283
Gurdon	Arkla	1967	1978		106	106							
Mt. Pine	Weyerh	1971				75	75	97	106	159	159	159	159
Dierks	Weyerh	1971				75	75	97	106	158	158	158	158
Huttig	OlinM>Manv	1971	1986			62	71	89					
Gurdon	I-P	1979					159	217	230	252	252	252	252
Emerson	Willamette	1979					124	142	164	208	208	208	208
TOTAL				624	491	805	1035	1310	1420	1644	1644	1622	1622
ORIENTED STRANDBOARD													
TOTAL													
TOTAL PLYWOOD AND OSB				624	491	805	1035	1310	1420	1644	1644	1622	1622
PARTICLEBOARD													
Crossett	G-P	NA	1981	64	112	186	239						
Hope	S. Plaswood	NA	1975		25	25							
Trumann	Singer	NA	1981			39	28						
Malvern	I-P	1968	1975			124							
Hope	Temple Inl.	1996										301	301
TOTAL				64	136	373	267					301	301
MEDIUM-DENSITY FIBERBOARD													
Malvern	Willamette	1983						87	212	216	283	283	283
El Dorado	Temple-Inl.	1997										133	226
TOTAL								87	212	216	283	416	416
TOTAL PARTICLEBOARD AND MDF				64	136	373	267	87	212	216	283	717	717
LUMBER PRODUCTION				3332	3094	2971	3361	3247	4371	5178	5426	NA	NA
PULPWOOD RECEIPTS				4623	5688	7165	9549	9128	11017	9899	NA	NA	NA
TOTAL DRAIN				8643	9409	11315	14212	13771	17021	16937	NA	NA	NA
1995 DRAIN / INVENTORY RATIO										0.028			

	TYPICAL WOOD COSTS (U.S. $ per m³)						
Pine sawtimber							
Standing	32	27	27	62	49	52	NA
Delivered	41	38	41	74	65	75	NA
Pine pulpwood							
Standing	4	6	6	8	7	7	NA
Delivered	18	21	21	27	24	27	NA
Hardwood pulpwood							
Standing	1	2	2	6	6	7	NA
Delivered	15	14	18	24	26	27	NA

Florida

Timber Inventory and Annual Panel Plant Capacity



Plywood Capacity (Thousand m^3)

100

200

300

Pbd/MDF Capacity (Thousand m^3)

100

200

300

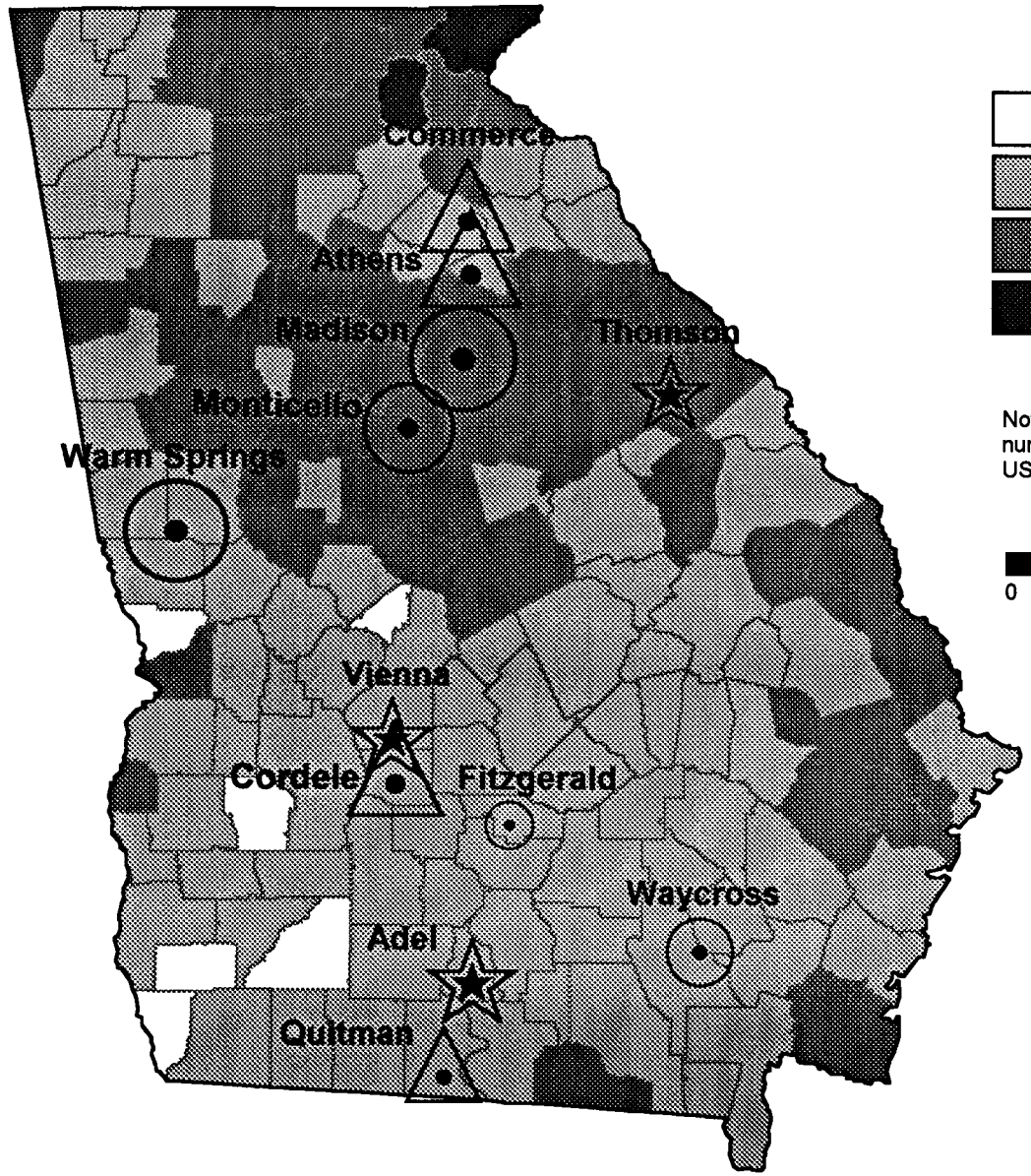
Florida

Location	Company	Year built	Year closed	Capacity / Production (Thousand m³)									
				1965	1970	1975	1980	1985	1990	1995	1996	1997	1998
PINE PLYWOOD													
Chiefland	G-P	1967	1980		80	80	80						
Pensacola	B-C	1971	1974										
Havana	Coastal	1981						124	127	155	177	177	177
Hawthorne	G-P	1982						212	243	274	326	326	326
TOTAL					80	80	80	336	370	429	503	503	503
ORIENTED STRANDBOARD													
TOTAL													
TOTAL PLYWOOD AND OSB				0	80	80	80	336	370	429	503	503	503
PARTICLEBOARD													
Greenville	Fla-ply	1973				18	28	30	30	30	30	30	30
TOTAL						18	28	30	30	30	30	30	30
MEDIUM-DENSITY FIBERBOARD													
TOTAL													
TOTAL PARTICLEBOARD AND MDF				0	0	18	28	30	30	30	30	30	30
LUMBER PRODUCTION				675	812	656	NA	1492	1397	1699	1742	NA	NA
PULPWOOD RECEIPTS				6351	7568	6610	8462	8719	11085	11683	NA	NA	NA
TOTAL DRAIN				7026	8460	7363	NA	10577	12882	13842	NA	NA	NA
1995 DRAIN / INVENTORY RATIO										0.032			

	TYPICAL WOOD COSTS (U.S. $ per m³)						
Pine sawtimber							
Standing	23	28	32	58	51	64	NA
Delivered	34	41	51	104	82	84	NA
Pine pulpwood							
Standing	9	9	14	17	16	17	NA
Delivered	19	22	24	29	30	31	NA
Hardwood pulpwood							
Standing	2	1	4	7	6	6	NA
Delivered	13	14	17	28	24	23	NA

Georgia

Timber Inventory and Annual Panel Plant Capacity



Timber (cubic meters/hectare)

0	to	30
30	to	60
60	to	120
120	to	200

Note: Growing Stock numbers from the USDA, Forest Service.

km

0 50 100 150

Plywood Capacity (Thousand m^3)

100

200

300

OSB Capacity (Thousand m^3)

100

200

300

Pbd/MDF Capacity (Thousand m^3)

100

200

300

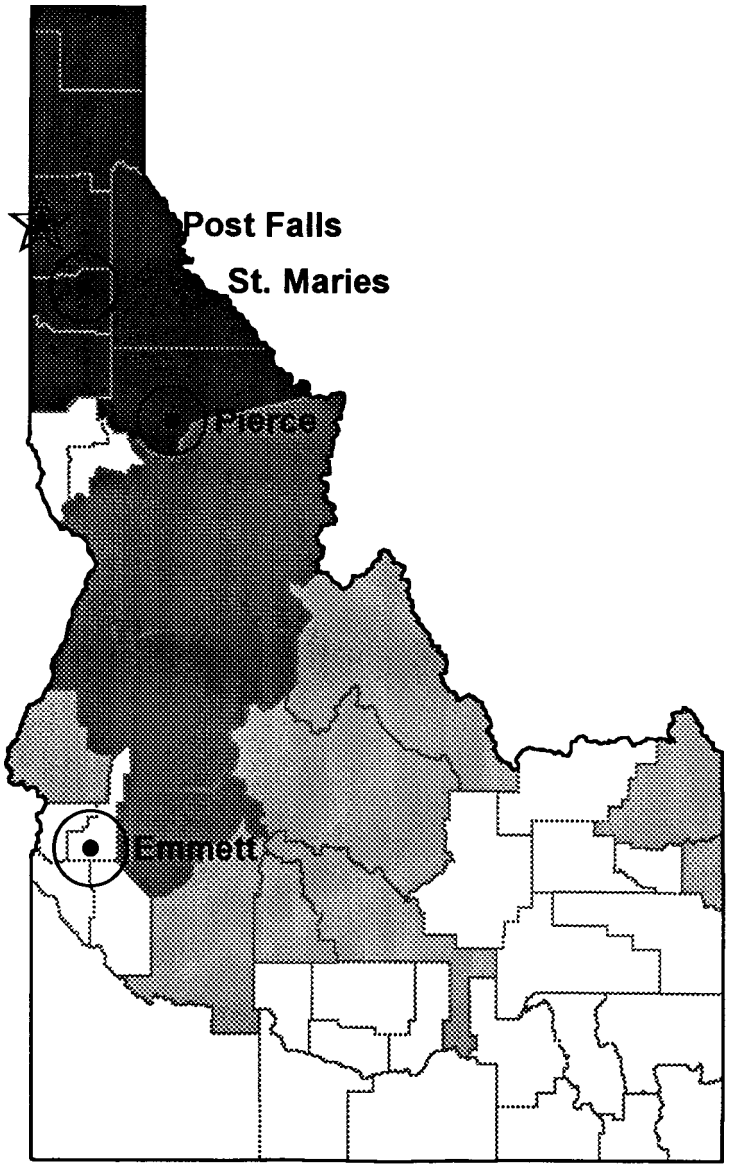
Georgia

Location	Company	Year built	Year closed	Capacity / Production (Thousand m³) 1965	1970	1975	1960	1965	1990	1995	1996	1997	1998
PINE PLYWOOD													
Savannah	G-P	1966	1980		89	89	89						
Cedar Spr.	Gt North>G-P	1968	1994		89	89	89	137	142				
Waycross	USPly>Ch Int	1968			49	49	66	76	89	133	133	133	133
Monticello	G-P	1970			53	177	230	266	274	239	239	239	239
Warm Spr.	G-P	1974				146	177	190	261	301	301	301	301
Madison	GA-Kraft>GP	1979					199	239	274	319	319	319	319
Fitzgerald	Springfield	1995								48	66	66	66
TOTAL					279	549	850	908	1040	1039	1058	1058	1058
ORIENTED STRANDBOARD													
Quitman	Langlade	1988							164	190	168	168	168
Athens	L-P	1989							283	288	288	288	288
Commerce	Huber	1989							253	253	253	253	253
Cordele	I-P	1990							243	270	270	270	270
TOTAL									943	1001	979	979	979
TOTAL PLYWOOD AND OSB				0	279	549	850	908	1983	2041	2037	2037	2037
PARTICLEBOARD													
Adel	Weyerhaeus	1968			62	89	124	133	163	186	248	248	248
Vienna	G-P	1969			133	159	186	198	202	219	219	219	219
Thomson	Temple	1974				177	177	191	186	193	193	193	193
TOTAL					195	425	487	522	550	598	660	660	660
MEDIUM-DENSITY FIBERBOARD													
Wallacoochee	Langlade	1998											212
TOTAL													212
TOTAL PARTICLEBOARD AND MDF				0	195	425	487	522	550	598	660	660	872
LUMBER PRODUCTION				2851	2674	2660	2646	4538	6263	6931	7089	NA	NA
PULPWOOD RECEIPTS				13610	16087	15373	19472	21740	20535	24633	NA	NA	NA
TOTAL DRAIN				16461	19235	19006	23454	27709	29333	34203	NA	NA	NA
1995 DRAIN / INVENTORY RATIO										0.039			

	TYPICAL WOOD COSTS (U.S. $ per m³)						
Pine sawtimber							
Standing	27	32	38	70	63	70	NA
Delivered	37	45	49	87	84	86	NA
Pine pulpwood							
Standing	9	9	12	15	14	16	NA
Delivered	18	22	23	29	29	30	NA
Hardwood pulpwood							
Standing	2	1	5	9	7	8	NA
Delivered	13	14	20	26	24	24	NA

Idaho

Timber Inventory and Annual Panel Plant Capacity



Timber (cubic meters/hectare)

0	to	30
30	to	60
60	to	120
120	to	200

Plywood Capacity (Thousand m3)

100

200

300

Pbd/MDf Capacity (Thousand m³)

100

200

300

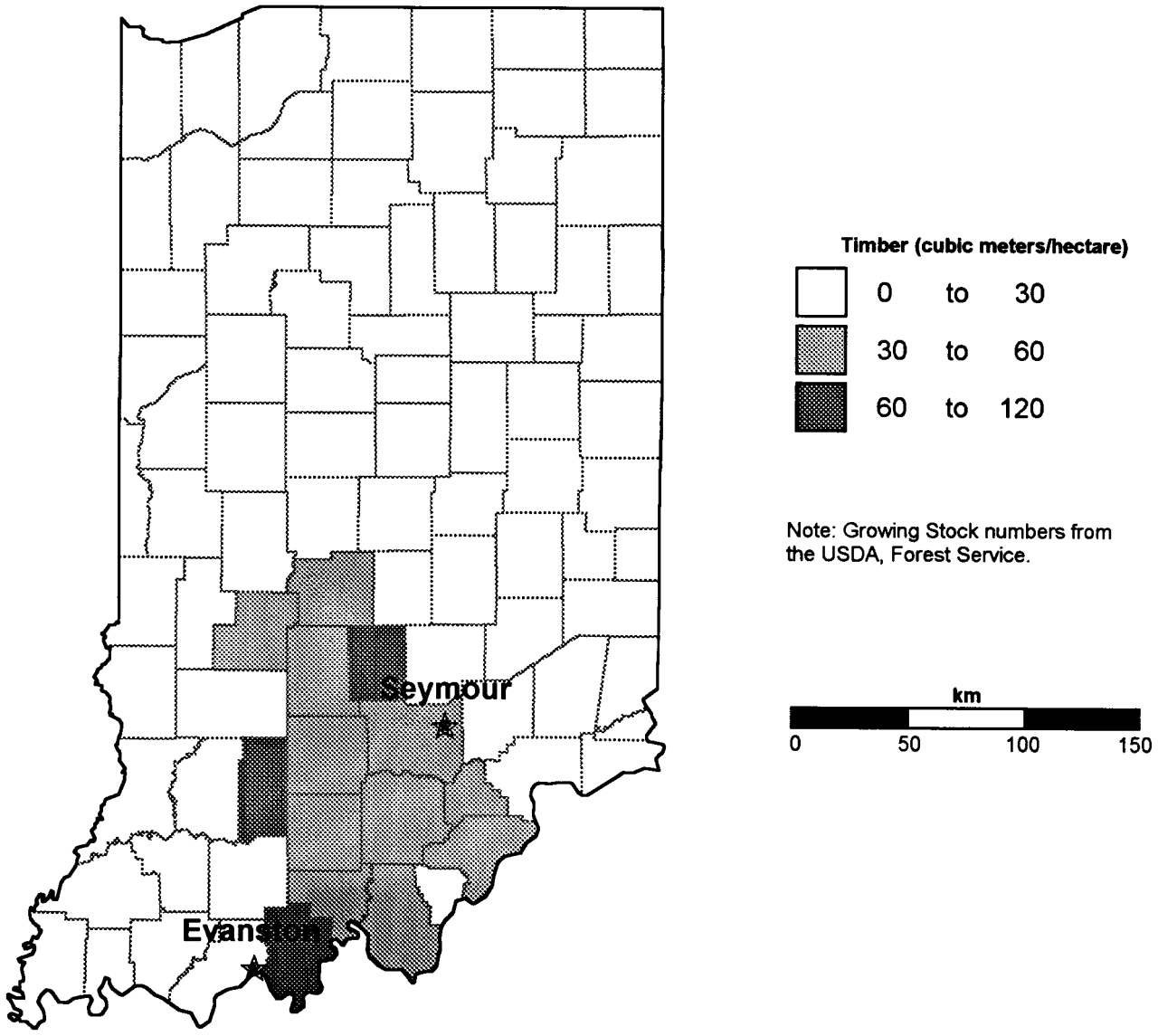
Idaho

Location	Company	Year built	Year closed	Capacity / Production (Thousand m³) 1965	1970	1975	1980	1985	1990	1995	1996	1997	1998
PINE PLYWOOD													
Emmett	Boise Cascade	1971				89	106	133	150	177	159	159	159
Pierce	Potlach Corp.	1966			133	133	130	130	133	133	137	137	137
St. Maries	Potlach Corp.	1964		53	111	111	156	156	127	140	140	140	140
Lewiston	Potlatch Corp.	1952	1988	89	133	133	133	133					
Post Falls	Idaho Veneer C	1964	1985	4	4	4	13						
TOTAL				146	381	469	538	551	410	450	436	436	436
ORIENTED STRANDBOARD													
Chilco	L-P	1984	1997					89	119	133	133		
TOTAL								89	119	133	133		
TOTAL PLYWOOD AND OSB				146	381	469	538	640	529	582	569	436	436
PARTICLEBOARD													
Post Falls	Potlatch	1975				89	120	133	133	129	129	129	129
TOTAL						89	120	133	133	129	129	129	129
MEDIUM-DENSITY FIBERBOARD													
TOTAL													
TOTAL PARTICLEBOARD AND MDF				0	0	89	120	133	133	129	129	129	129
LUMBER PRODUCTION				3948	3849	3849	3282	3955	4800	3922	4331	NA	NA
PULPWOOD RECEIPTS				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL DRAIN				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1995 DRAIN / INVENTORY RATIO										NA			

	TYPICAL WOOD COSTS (U.S. $ per m³)						
Pine sawtimber							
Standing	8	9	13	35	51	51	NA
Delivered	25	30	36	60	77	77	NA
Pine pulpwood							
Standing	1	1	1	5	12	13	NA
Delivered	16	20	20	28	35	36	NA
Hardwood pulpwood							
Standing	NA	NA	NA	NA	NA	NA	NA
Delivered	NA	NA	NA	NA	NA	NA	NA

Indiana

Timber Inventory and Annual Panel Plant Capacity



Timber (cubic meters/hectare)

	0	to	30
	30	to	60
	60	to	120

Note: Growing Stock numbers from the USDA, Forest Service.

km

0 50 100 150

Pbd/MDF Capacity (Thousand m³)

100

200

300

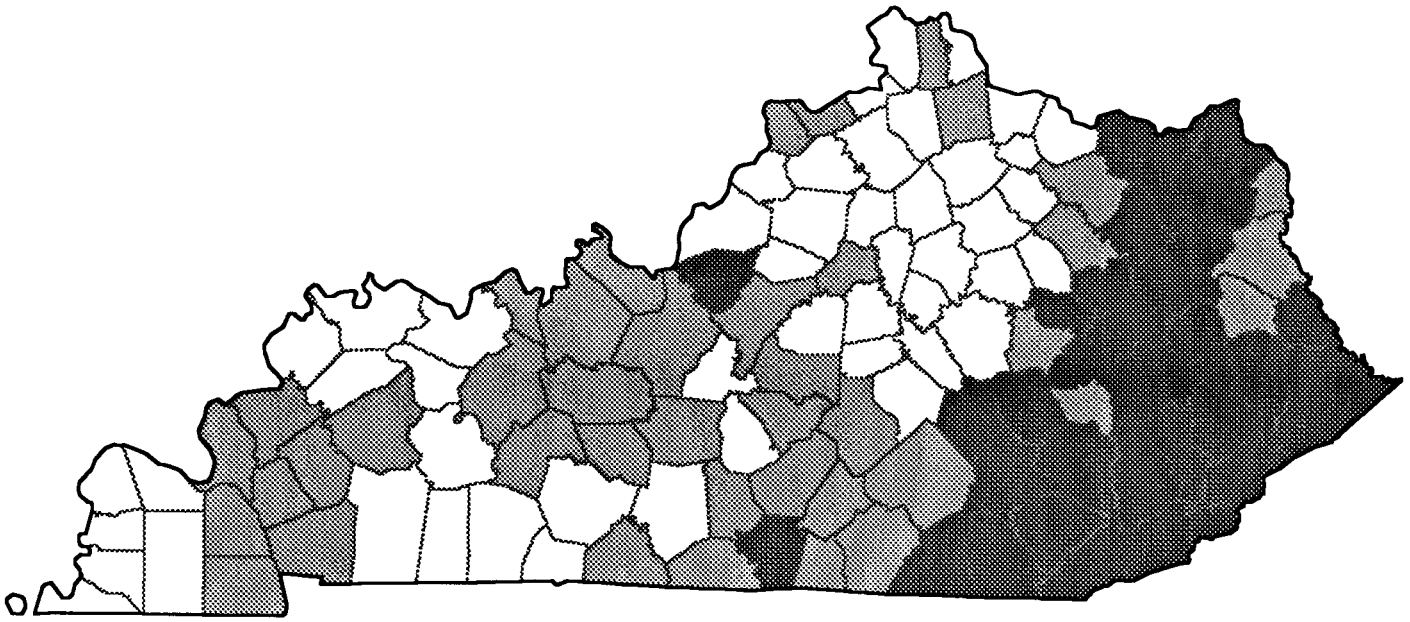
Indiana

Location	Company	Year built	Year closed	Capacity / Production (Thousand m³)									
				1965	1970	1975	1980	1985	1990	1995	1996	1997	1998
PINE PLYWOOD													
TOTAL													
ORIENTED STRANDBOARD													
TOTAL													
TOTAL PLYWOOD AND OSB				0	0	0	0	0	0	0	0	0	0
PARTICLEBOARD													
Seymour	Swain	1947			21	27	27	27	30	28	28	28	28
Evanston	Swain	1973				21	23	27	32	28	28	28	28
TOTAL					21	48	50	53	62	57	57	57	57
MEDIUM-DENSITY FIBERBOARD													
TOTAL													
TOTAL PARTICLEBOARD AND MDF				0	21	48	50	53	62	57	57	57	57
LUMBER PRODUCTION				NA	NA	NA	NA	NA	NA	885	840	NA	NA
PULPWOOD RECEIPTS				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL DRAIN				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1995 DRAIN / INVENTORY RATIO										NA			

	TYPICAL WOOD COSTS (U.S. $ per m³)						
	1980	1985	1990	1995	1996	1997	1998
Pine sawtimber							
Standing	NA	NA	NA	NA	NA	NA	NA
Delivered	NA	NA	NA	NA	NA	NA	NA
Pine pulpwood							
Standing	NA	NA	NA	NA	NA	NA	NA
Delivered	NA	NA	NA	NA	NA	NA	NA
Hardwood pulpwood							
Standing	NA	NA	NA	NA	NA	NA	NA
Delivered	NA	NA	NA	NA	NA	NA	NA

Kentucky

Timber Inventory



km
0 50 100 150

Note: Growing Stock numbers
from the USDA, Forest Service

Timber (cubic meters/hetare)

0 to 30

30 to 60

60 to 120

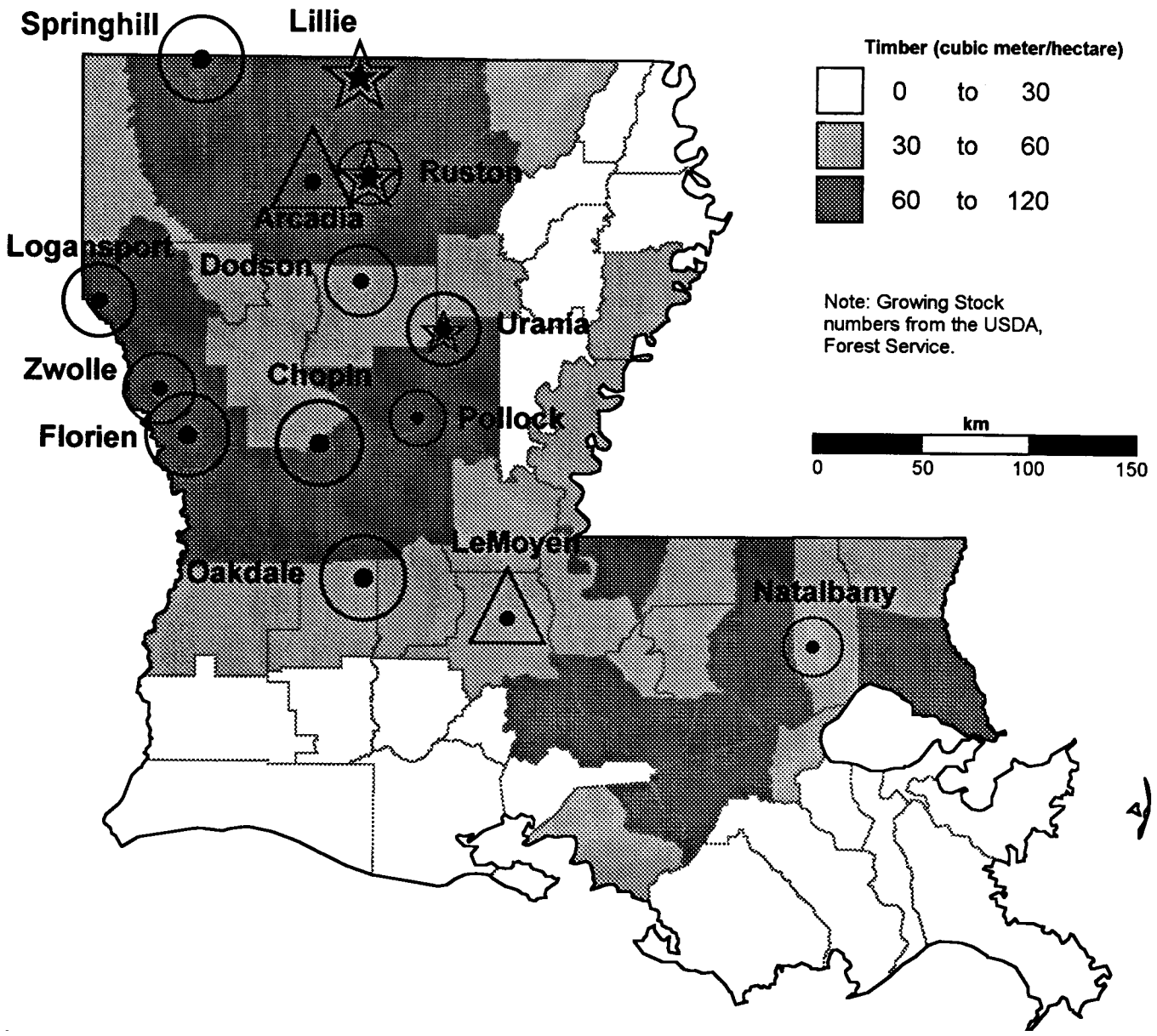
Kentucky

	Capacity / Production (Thousand m³)									
	1965	1970	1975	1980	1985	1990	1995	1996	1997	1998
PINE PLYWOOD										
TOTAL										
ORIENTED STRANDBOARD										
TOTAL										
TOTAL PLYWOOD AND OSB	0	0	0	0	0	0	0	0	0	0
PARTICLEBOARD										
TOTAL										
MEDIUM-DENSITY FIBERBOARD										
TOTAL										
TOTAL PARTICLEBOARD AND MDF	0	0	0	0	0	0	0	0	0	0
LUMBER PRODUCTION	1234	1163	970	951	592	1274	1827	1756	NA	NA
PULPWOOD RECEIPTS	NA	NA	NA	NA	NA	4132	3198	NA	NA	NA
TOTAL DRAIN	NA	NA	NA	NA	NA	5406	5025	NA	NA	NA
1995 DRAIN / INVENTORY RATIO							0.011			

	TYPICAL WOOD COSTS (U.S. $ per m³)						
Pine sawtimber							
Standing	NA	NA	NA	NA	NA	NA	NA
Delivered	NA	NA	NA	NA	NA	NA	NA
Pine pulpwood							
Standing	NA	NA	NA	NA	NA	NA	NA
Delivered	NA	NA	NA	NA	NA	NA	NA
Hardwood pulpwood							
Standing	NA	NA	NA	NA	NA	NA	NA
Delivered	NA	NA	NA	NA	NA	NA	NA

Louisiana

Timber Inventory and Annual Panel Plant Capacity



Plywood Capacity (Thousand m^3)

100

200

300

OSB Capacity (Thousand m^3)

100

200

300

Pbd/MDF Capacity (Thousand m^3)

100

200

300

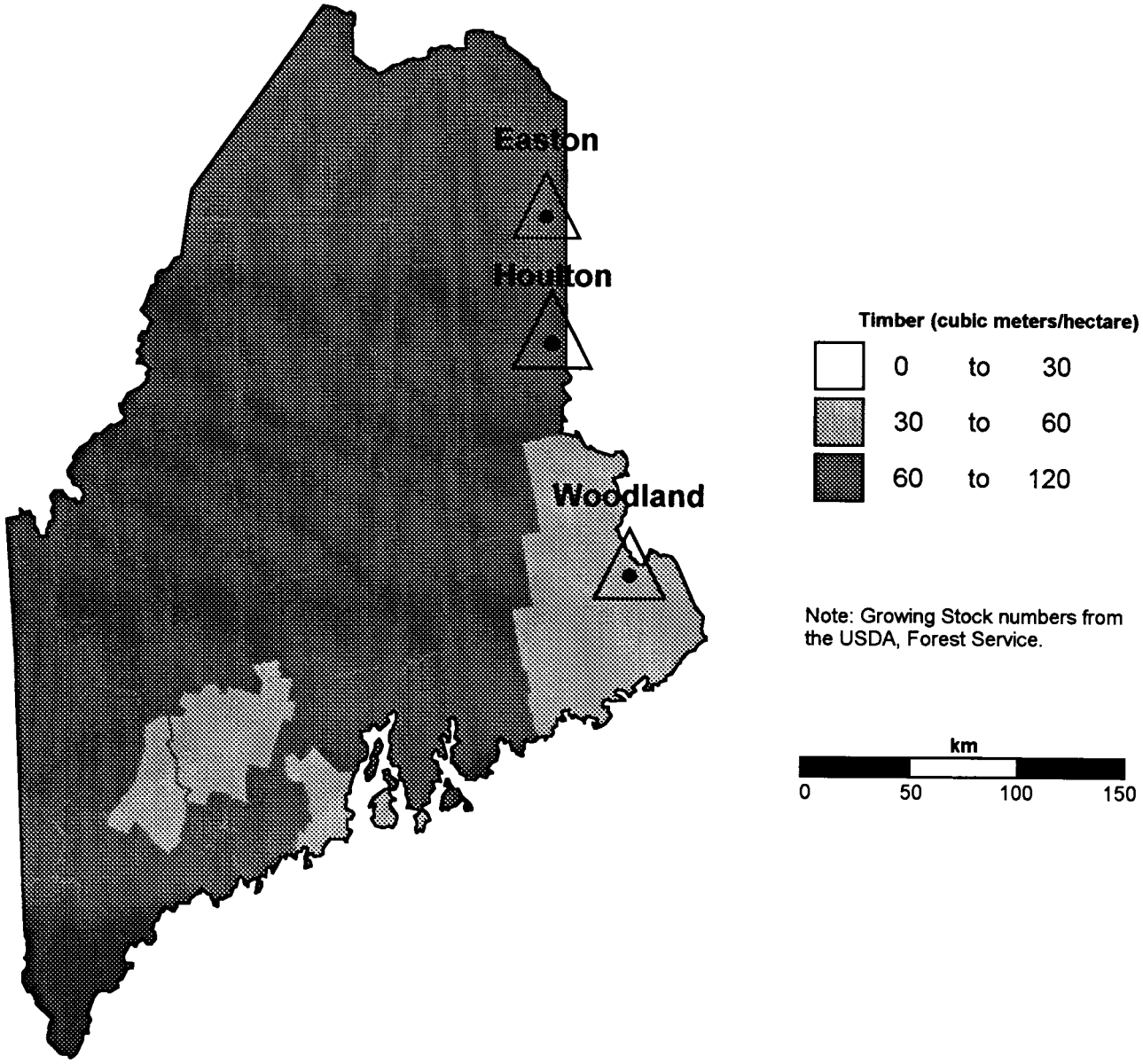
Louisiana

Location	Company	Year built	Year closed	Capacity / Production (Thousand m³) 1965	1970	1975	1980	1985	1990	1995	1996	1997	1998
PINE PLYWOOD													
Oakdale	Vanply>BC	1965		53	111	146	146	155	230	278	283	285	285
Florien	Vanply>BC	1965		44	111	146	146	155	261	274	274	274	274
Ruston	Santm>Wil	1965		31	71	75	75	102	133	155	155	155	155
Dodson	Hunt>Willam	1966			115	115	115	133	173	197	197	197	197
Joyce	CZ>Riverwd	1967	1998		75	75	166	173	173	186	186	186	
Urania	G-P>LP	1970			62	177	195	195	239	212	212	212	212
Taylor	Willamett	1978	1998				115	133	177	186	186	186	
Zwolle	Willamett	1978					93	95	164	200	200	200	200
Logansport	G-P/LP	1979					142	168	212	212	212	212	212
Pollock	Hunt Plywd	1981						111	102	124	124	124	124
Springhill	I-P	1981						221	239	283	283	283	283
Natalbany	Hunt Plywd	1988							133	137	137	137	137
Chopin	Martco	1995								1	133	292	292
TOTAL				128	544	735	1193	1639	2236	2445	2582	2743	2371
ORIENTED STRANDBOARD													
LeMoyen	Martin	1983						142	168	230	230	230	230
Urania	L-P	1984	1997					115	97	119	119		
Arcadia	Willamette	1996									177	266	266
TOTAL								257	266	349	526	496	496
TOTAL PLYWOOD AND OSB				128	544	735	1193	1896	2501	2794	3108	3239	2867
PARTICLEBOARD													
Lillie	Olinkr>Willam	1971				177	177	158	177	212	221	230	230
Urania	G-P > L-P	1971	1983			168	159						
Ruston	Willamette	1972				106	117	149	181	177	177	177	177
TOTAL						451	453	306	358	389	398	407	407
MEDIUM-DENSITY FIBERBOARD													
Urania	L-P	1993								89	89	89	89
TOTAL										89	89	89	89
TOTAL PARTICLEBOARD AND MDF				0	0	451	453	306	358	478	487	496	496
LUMBER PRODUCTION				2275	1930	1600	1291	1232	2162	3040	2962	NA	NA
PULPWOOD RECEIPTS				5422	8653	7882	10238	11055	14173	16166	NA	NA	NA
TOTAL DRAIN				7825	11127	10668	13175	14488	19193	22478	NA	NA	NA
1995 DRAIN / INVENTORY RATIO										0.043			

	TYPICAL WOOD COSTS (U.S. $ per m³)						
Pine sawtimber							
Standing	36	26	31	64	54	71	NA
Delivered	44	38	40	78	67	80	NA
Pine pulpwood							
Standing	4	6	7	11	9	13	NA
Delivered	18	21	21	29	27	30	NA
Hardwood pulpwood							
Standing	2	2	2	6	5	10	NA
Delivered	15	15	19	31	25	24	NA

Maine

Timber Inventory and Annual Panel Plant Capacity



OSB Capacity (Thousand m³)

100

200

300

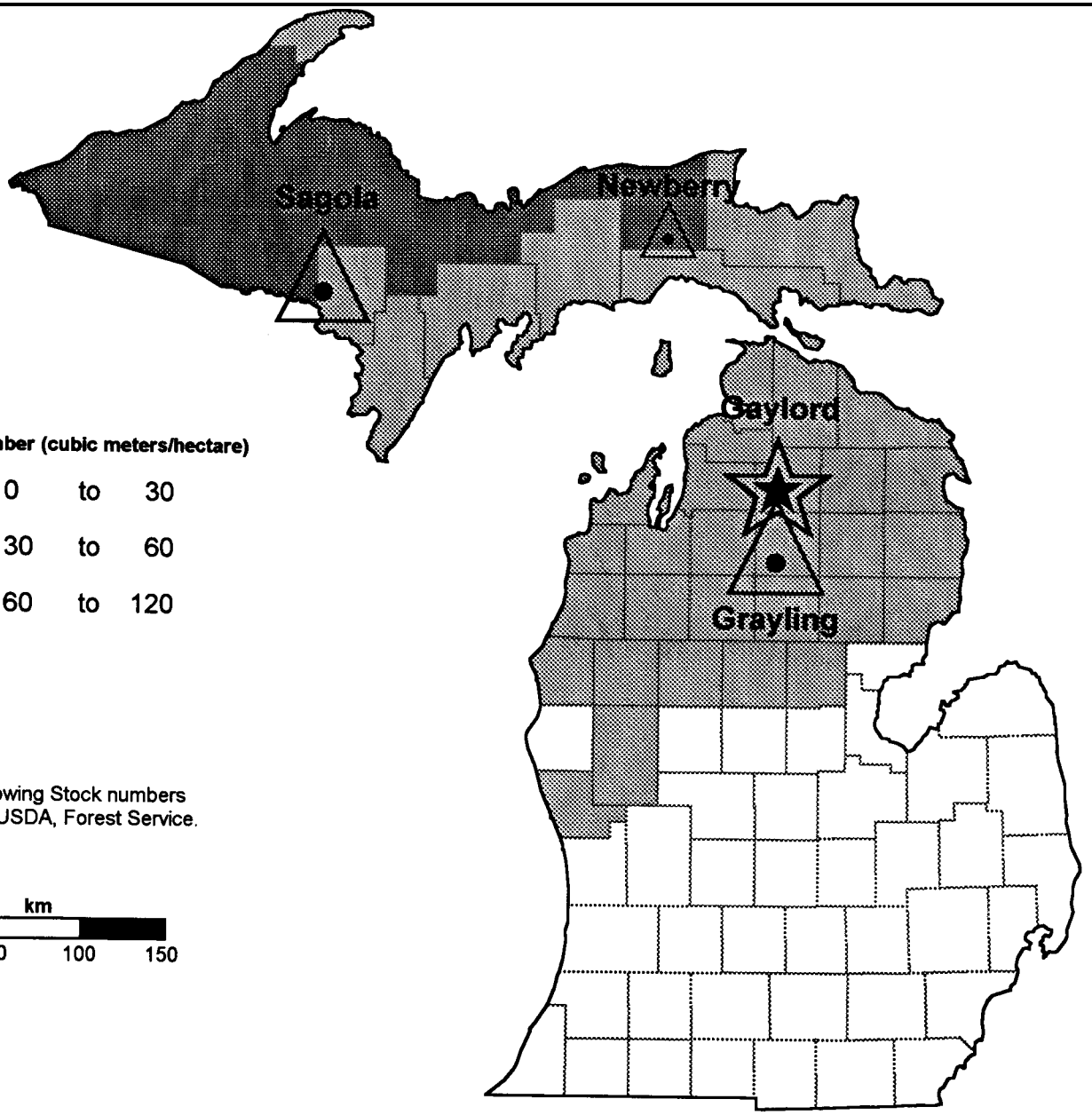
Maine

Location	Company	Year built	Year closed	Capacity / Production (Thousand m³)									
				1965	1970	1975	1980	1985	1990	1995	1996	1997	1998
PINE PLYWOOD													
TOTAL													
ORIENTED STRANDBOARD													
Easton	Huber	1983						119	164	164	164	164	164
Houlton	L-P	1982						133	164	230	230	230	230
Woodland	G-P	1981						124	137	177	190	190	190
TOTAL								376	465	571	584	584	584
TOTAL PLYWOOD AND OSB				0	0	0	0	376	465	571	584	584	584
PARTICLEBOARD													
TOTAL													
MEDIUM-DENSITY FIBERBOARD													
TOTAL													
TOTAL PARTICLEBOARD AND MDF				0	0	0	0	0	0	0	0	0	0
LUMBER PRODUCTION				689	786	861	NA	1723	1975	2438	2523	NA	NA
PULPWOOD RECEIPTS				NA	NA	NA	NA	NA	9170	8976	NA	NA	NA
TOTAL DRAIN				NA	NA	NA	NA	NA	11610	11985	NA	NA	NA
1995 DRAIN / INVENTORY RATIO										0.020			

	TYPICAL WOOD COSTS (U.S. $ per m³)						
	1980	1985	1990	1995	1996	1997	1998
Pine sawtimber							
Standing	NA	NA	NA	NA	NA	NA	NA
Delivered	NA	NA	NA	NA	NA	NA	NA
Pine pulpwood							
Standing	NA	NA	NA	6	5	5	NA
Delivered	NA	NA	NA	24	23	23	NA
Hardwood pulpwood							
Standing	NA	NA	NA	6	5	5	NA
Delivered	NA	NA	NA	24	23	23	NA

Michigan

Timber Inventory and Annual Panel Plant Capacity



Timber (cubic meters/hectare)

	0	to	30
	30	to	60
	60	to	120

Note: Growing Stock numbers from the USDA, Forest Service.

km

0 50 100 150

OSB Capacity (Thousand m^3)

100

200

300

Pbd/MDF Capacity (Thousand m^3)

100

200

300

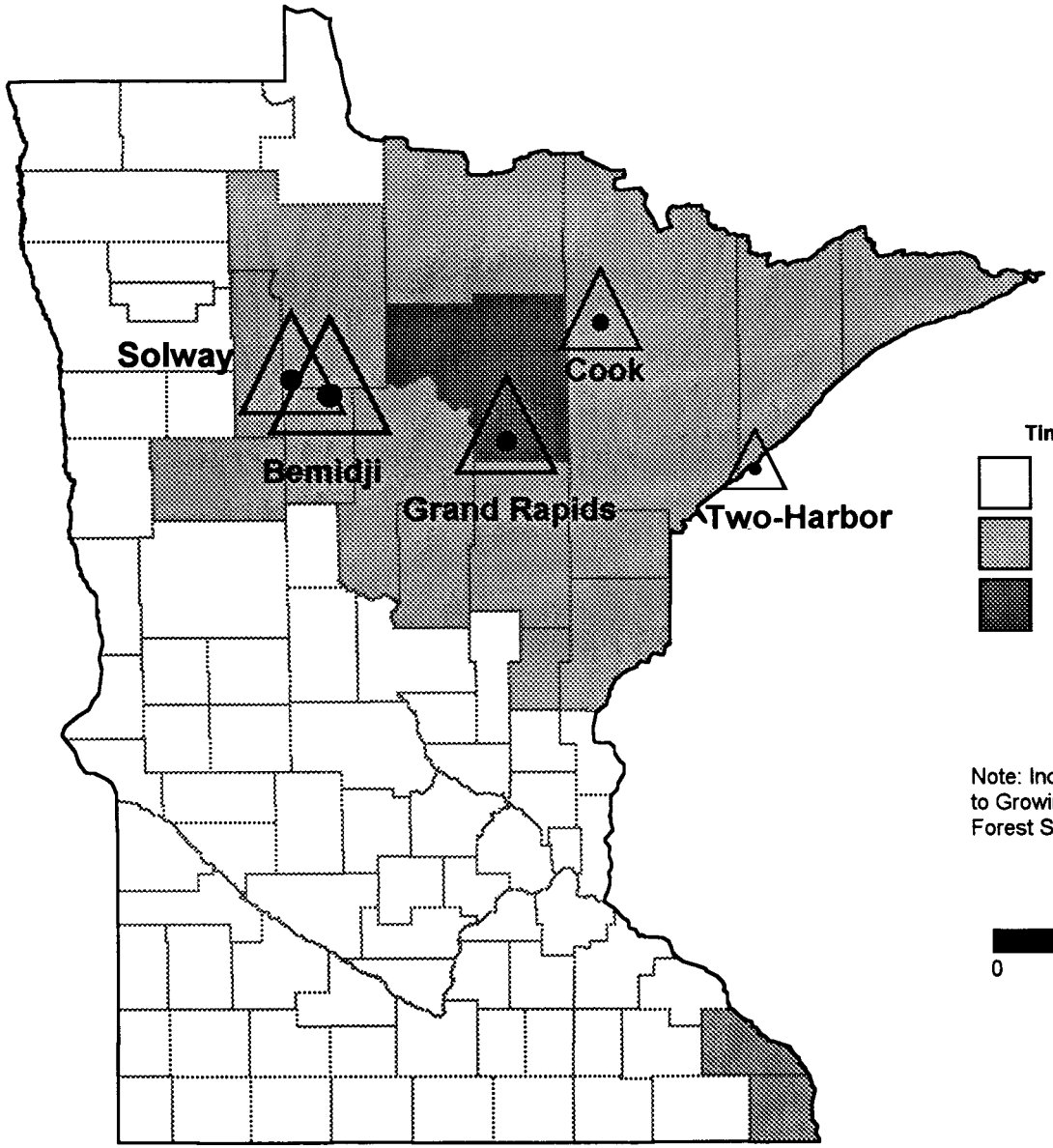
Michigan

Location	Company	Year built	Year closed	Capacity / Production (Thousand m³)									
				1965	1970	1975	1980	1985	1990	1995	1996	1997	1998
PINE PLYWOOD													
TOTAL													
ORIENTED STRANDBOARD													
Grayling	Weyerhaeus	1982						266	266	336	336	336	336
Sagola	L-P	1988							319	310	310	310	310
Newberry	L-P	1990								106	111	111	111
TOTAL								266	584	646	646	646	646
TOTAL PLYWOOD AND OSB				0	0	0	0	266	584	753	757	757	757
MEDIUM-DENSITY FIBERBOARD													
TOTAL													
PARTICLEBOARD													
Gaylord	Cham>G-P	NA		71	177	191	319	354	427	435	435	435	435
TOTAL				71	177	191	319	354	427	435	435	435	435
TOTAL PARTICLEBOARD AND MDF				71	177	191	319	354	427	435	435	435	435
LUMBER PRODUCTION				873	961	748	NA	NA	1652	1543	1539	NA	NA
PULPWOOD RECEIPTS				NA	NA	NA	NA	NA	5400	5370	NA	NA	NA
TOTAL DRAIN				NA	NA	NA	NA	NA	8063	8101	NA	NA	NA
1995 DRAIN / INVENTORY RATIO										0.015			

	TYPICAL WOOD COSTS (U.S. $ per m³)						
Pine sawtimber							
Standing	NA	NA	NA	41	40	41	NA
Delivered	NA	NA	NA	NA	NA	NA	NA
Pine pulpwood							
Standing	NA	4	6	12	11	10	NA
Delivered	NA	16	20	27	29	27	NA
Aspen pulpwood							
Standing	NA	3	5	9	9	9	NA
Delivered	NA	15	19	24	27	26	NA

Minnesota

Timber Inventory and Annual Panel Plant Capacity



Timber (cubic meters/hectare)

0	to	30
30	to	60
60	to	120

Note: Includes Live Cull in addition to Growing Stock - from the USDA, Forest Service.

km

0 50 100 150

OSB Capacity (Thousand m³)

100

200

300

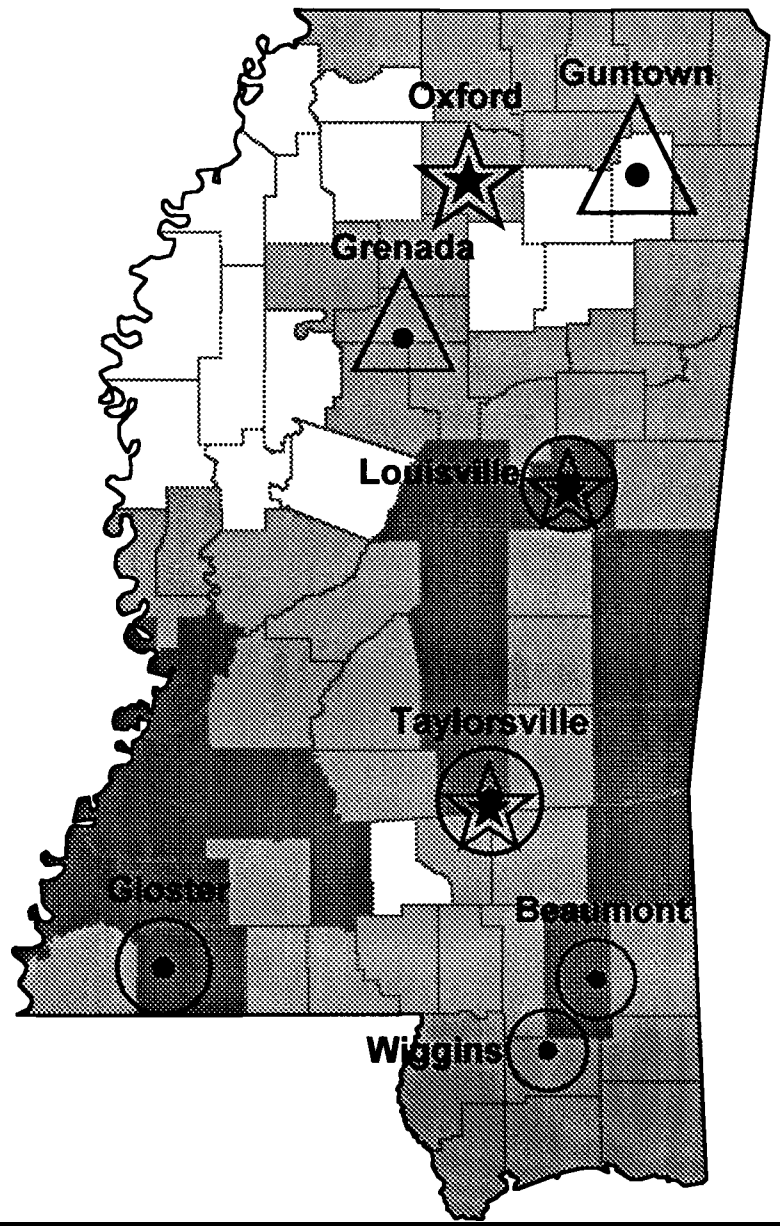
Minnesota

Location	Company	Year built	Year closed	Capacity / Production (Thousand m³) 1965	1970	1975	1980	1985	1990	1995	1996	1997	1998
PINE PLYWOOD													
TOTAL													
ORIENTED STRANDBOARD													
Gr.Rapids	Blandin>Potl	1972				89	124	248	301	310	310	310	310
Bemidji	Potlatch	1981						150	195	212	212	212	212
Solway	Norboard	1981						230	230	266	294	335	335
Cook	Potlatch	1983						159	168	215	215	215	215
Two-Harbor	L-P	1985						89	115	119	119	119	119
Bemidji	Potlatch	1990							195	220	220	220	220
TOTAL						89	124	876	1009	1122	1150	1191	1191
TOTAL PLYWOOD AND OSB				0	0	89	124	876	1204	1343	1371	1411	1411
MEDIUM-DENSITY FIBERBOARD													
TOTAL													
PARTICLEBOARD													
TOTAL													
TOTAL PARTICLEBOARD AND MDF				0	0	0	0	0	0	0	0	0	0
LUMBER PRODUCTION				NA	NA	NA	NA	NA	732	739	NA	NA	NA
PULPWOOD RECEIPTS				NA	NA	NA	NA	NA	3840	4895	NA	NA	NA
TOTAL DRAIN				NA	NA	NA	NA	NA	5775	6976	NA	NA	NA
1995 DRAIN / INVENTORY RATIO										0.014			

	TYPICAL WOOD COSTS (U.S. $ per m³)						
Pine sawtimber							
Standing	NA	NA	20	36	35	NA	NA
Delivered	NA	NA	NA	NA	NA	NA	NA
Pine pulpwood							
Standing	5	4	5	12	10	NA	NA
Delivered	17	18	20	30	27	NA	NA
Aspen pulpwood							
Standing	2	2	3	8	7	NA	NA
Delivered	14	16	18	24	24	NA	NA

Mississippi

Timber Inventory and Annual Panel Plant Capacity



Timber (cubic meters/hectare)

0 to	30
30 to	60
60 to	120

Note: Growing Stock numbers from the USDA, Forest Service.

km

0 50 100 150

Plywood Capacity (Thousand m³)

100

200

300

OSB Capacity (Thousand m³)

100

200

300

Pbd/MDF Capacity (Thousand m³)

100

200

300

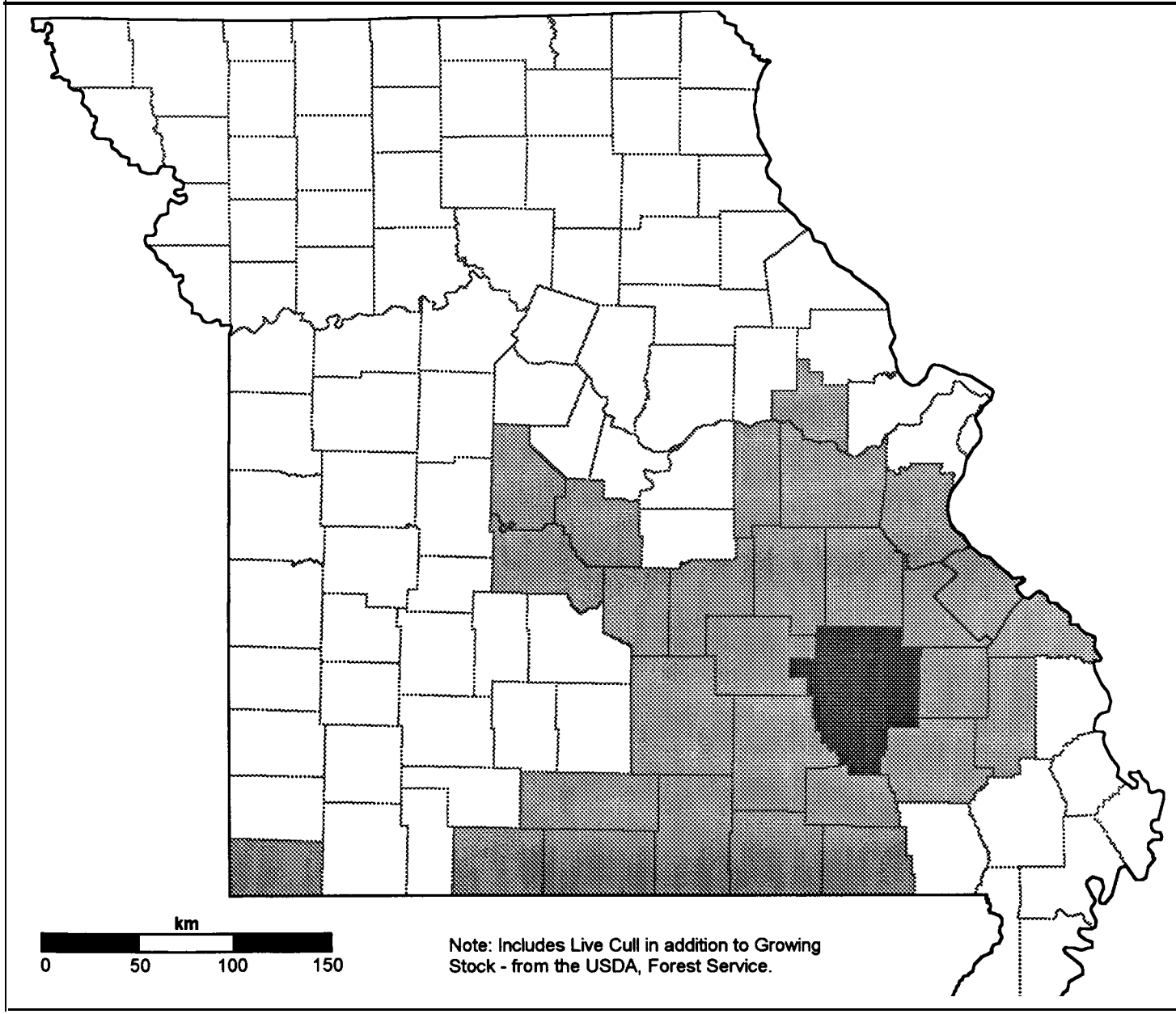
Mississippi

Location	Company	Year built	Year closed	Capacity / Production (Thousand m³) 1965	1970	1975	1980	1985	1990	1995	1996	1997	1998
PINE PLYWOOD													
Beaumont	Del Pn>Hood	1966			80	80	89	106	124	178	178	178	178
Philadelphia	Weyerhaeus	1966	1998		49	49	49	66	75	115	115	115	
Louisville	G-P	1966			80	133	177	248	258	258	258	258	258
Gloster	G-P	1967			124	155	204	239	248	257	261	261	261
Taylorsville	G-P	1969			80	168	221	217	305	323	323	323	323
Wiggins	I-P>Hood	1971				111	133	155	195	187	187	187	187
TOTAL					412	695	872	1031	1205	1318	1322	1322	1207
ORIENTED STRANDBOARD													
Grenada	G-P	1985						221	266	298	298	298	298
Guntown	Norboard	1995								89	381	385	385
TOTAL								221	266	387	679	683	683
TOTAL PLYWOOD AND OSB				0	412	695	872	1252	1471	1705	2002	2006	1890
PARTICLEBOARD													
Louisville	G-P	1967			127	159	177	166	182	230	230	230	230
Oxford	CI>G-P	1969			177	212	269	342	354	354	354	354	354
Taylorsville	G-P	1971				212	186	186	205	274	274	274	274
TOTAL					304	584	632	694	742	858	858	858	858
MEDIUM-DENSITY FIBERBOARD													
Meridian	Kroehler	1970	1978		33	33							
TOTAL					33	33							
TOTAL PARTICLEBOARD AND MDF				0	337	617	632	694	742	858	858	858	858
LUMBER PRODUCTION				2216	2537	2310	2601	3693	5327	6419	6544	NA	NA
PULPWOOD RECEIPTS				5001	11167	10863	13288	12538	17722	18480	NA	NA	NA
TOTAL DRAIN				7217	14453	14485	17392	18177	25261	27462	NA	NA	NA
1995 DRAIN / INVENTORY RATIO										0.047			

	TYPICAL WOOD COSTS (U.S. $ per m³)						
Pine sawtimber							
Standing	32	27	32	70	58	72	NA
Delivered	41	39	45	82	69	84	NA
Pine pulpwood							
Standing	5	6	6	12	11	13	NA
Delivered	18	22	20	26	26	28	NA
Hardwood pulpwood							
Standing	2	2	3	7	7	8	NA
Delivered	14	15	19	26	23	27	NA

Missouri

Timber Inventory



Timber (cubic meters/hectare)

0 to 30

30 to 60

60 to 120

Missouri

	Capacity / Production (Thousand m³)									
	1965	1970	1975	1980	1985	1990	1995	1996	1997	1998
PINE PLYWOOD										
TOTAL										
ORIENTED STRANDBOARD										
TOTAL										
TOTAL PLWOOD AND OSB	0	0	0	0	0	0	0	0	0	0
PARTICLEBOARD										
TOTAL										
MEDIUM-DENSITY FIBERBOARD										
TOTAL										
TOTAL PARTICLEBOARD AND MDF	0	0	0	0	0	0	0	0	0	0
LUMBER PRODUCTION	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PULPWOOD RECEIPTS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL DRAIN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

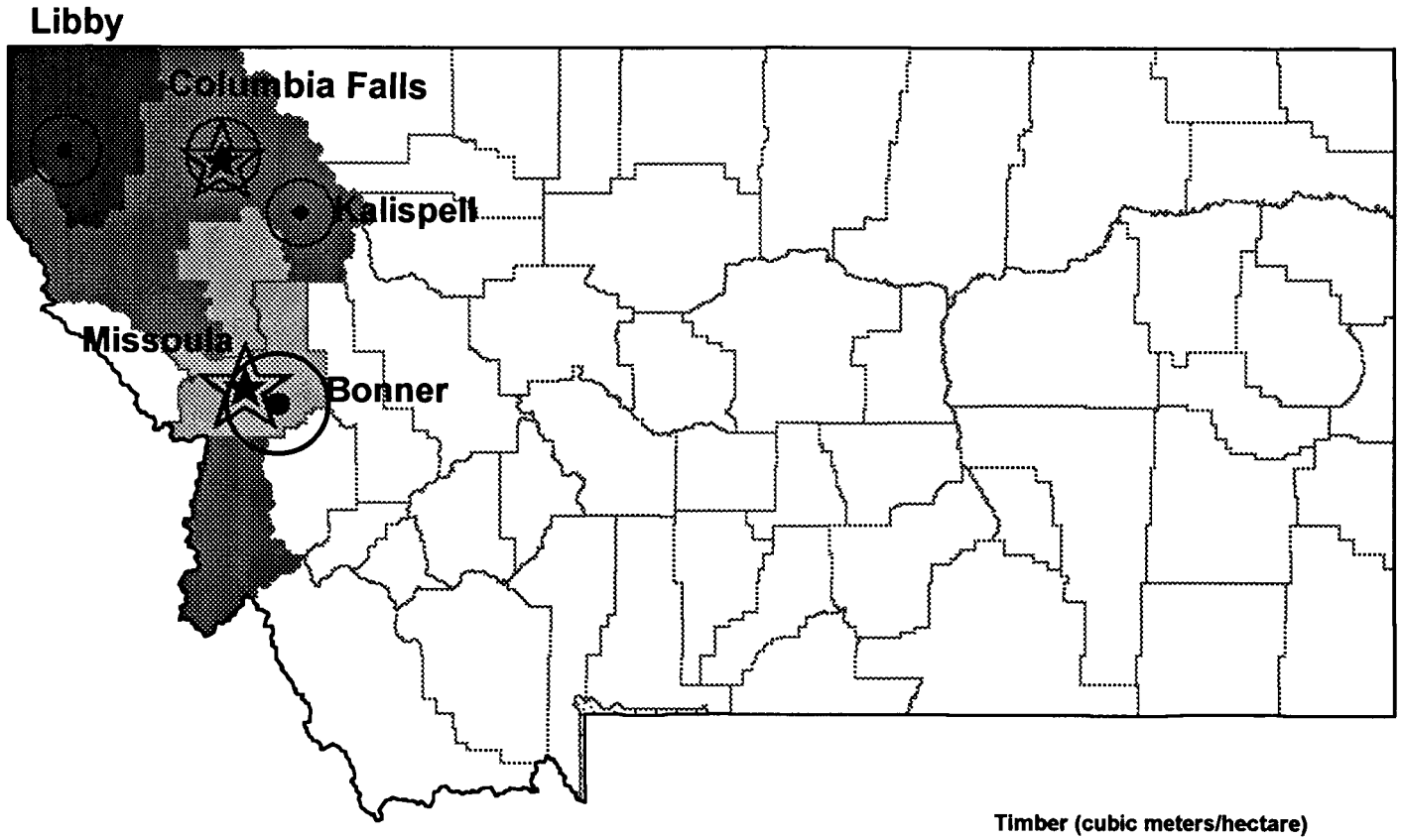
1995 DRAIN / INVENTORY RATIO 0.015

Note: Drain / Inventory Ratio based on inventory estimates by the USDA, Forest Service.

	TYPICAL WOOD COSTS (U.S. $ per m³)						
Pine sawtimber							
Standing	NA	NA	19	33	22	26	NA
Delivered	NA	NA	NA	39	37	46	NA
Pine pulpwood							
Standing	NA	NA	NA	NA	NA	NA	NA
Delivered	NA	NA	NA	NA	NA	NA	NA
Hardwood pulpwood							
Standing	NA	NA	NA	2	2	2	NA
Delivered	NA	NA	NA	NA	NA	NA	NA

Montana

Timber Inventory and Annual Panel Plant Capacity



km
0 50 100 150

Note: Includes Live Cull in addition to Growing Stock - from the USDA, Forest Service.

Timber (cubic meters/hectare)

0	to	30
30	to	60
60	to	120
120	to	200

Plywood Capacity (Thousand m^3)

100

200

300

Pbd/MDF Capacity (Thousand m^3)

100

200

300

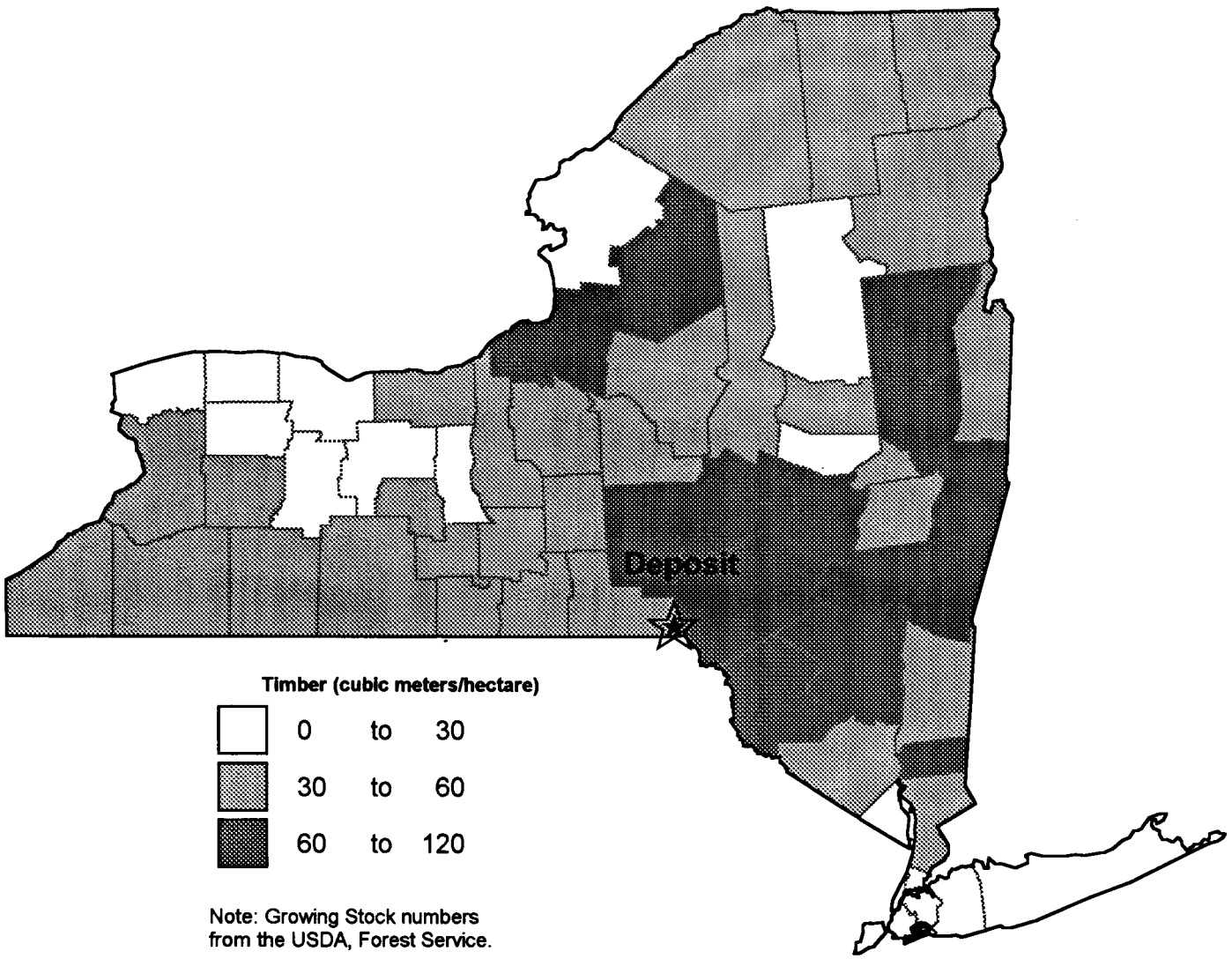
Montana

Location	Company	Year built	Year closed	Capacity / Production (Thousand m³)									
				1965	1970	1975	1980	1985	1990	1995	1996	1997	1998
PINE PLYWOOD													
Bonner	Stimson Lumbe	1974				266	310	282	310	303	303	303	303
Columbia Falls	Plum Creek	1965		62	89	89	89	102	133	151	151	151	151
Libby	Stimson Lumbe	1962		62	71	71	71	75	133	146	146	146	146
Kalispell	Plum Creek	1960		89	89	89	89	102	106	131	131	131	131
Missoula	Evans Products	1960	1980	115	115	115	115						
Polson	Pack River Plyw	1970	1972		58								
Whitefish	Montana Plywoo	1958	1970	13	13								
Polson	Champ Int.	1956	1967	58									
TOTAL				398	434	628	674	561	681	731	731	731	731
ORIENTED STRANDBOARD													
TOTAL													
TOTAL PLYWOOD AND OSB				398	434	628	674	561	681	731	731	731	731
PARTICLEBOARD													
Missoula	Evans Pr>L-P	1970			142	159	177	170	266	266	266	266	266
TOTAL					142	159	177	170	266	266	266	266	266
MEDIUM-DENSITY FIBERBOARD													
Columbia Falls	Plum Creek	1974				124	142	142	177	218	218	218	218
TOTAL						124	142	142	177	218	218	218	218
TOTAL PARTICLEBOARD AND MDF				0	142	283	319	312	443	483	483	483	483
LUMBER PRODUCTION				3094	3023	2450	3283	3410	3443	2811	2952	NA	NA
PULPWOOD RECEIPTS				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL DRAIN				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1995 DRAIN / INVENTORY RATIO										NA			

	TYPICAL WOOD COSTS (U.S. $ per m³)						
Pine sawtimber							
Standing	8	9	13	35	51	51	NA
Delivered	25	30	36	60	77	77	NA
Pine pulpwood							
Standing	1	1	1	5	12	13	NA
Delivered	16	20	20	28	35	36	NA
Hardwood pulpwood							
Standing	NA	NA	NA	NA	NA	NA	NA
Delivered	NA	NA	NA	NA	NA	NA	NA

New York

Timber Inventory and Annual Panel Plant Capacity



Pbd/MDF Capacity (Thousand m³)

100

200

300

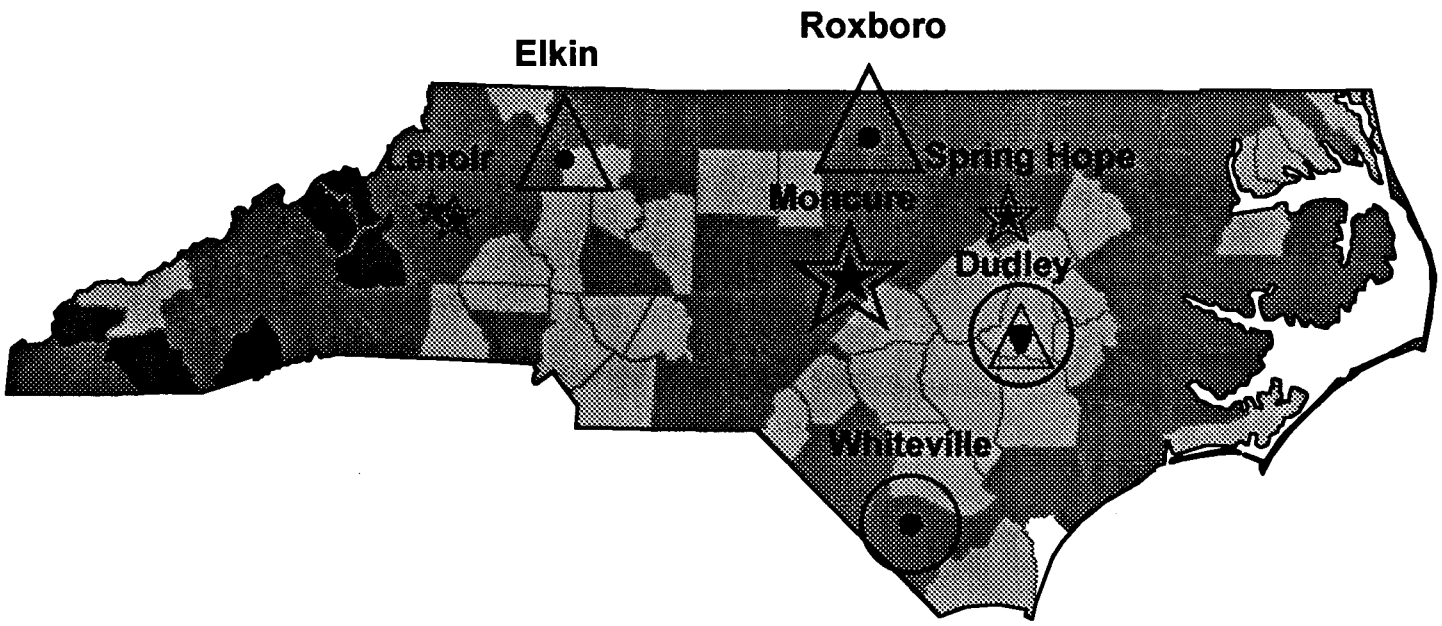
New York

Location	Company	Year built	Year closed	Capacity / Production (Thousand m³) 1965	1970	1975	1980	1985	1990	1995	1996	1997	1998
PINE PLYWOOD													
TOTAL													
ORIENTED STRANDBOARD													
TOTAL													
TOTAL PLYWOOD AND OSB				0	0	0	0	0	0	0	0	0	0
PARTICLEBOARD													
TOTAL													
MEDIUM-DENSITY FIBERBOARD													
Deposit	Norbord	1966			50	50	50		96	110	110	110	110
TOTAL					50	50	50		96	110	110	110	110
TOTAL PARTICLEBOARD AND MDF				0	50	50	50	0	96	110	110	110	110
LUMBER PRODUCTION				736	621	571	NA	NA	883	1222	1260	NA	NA
PULPWOOD RECEIPTS				NA	NA	NA	NA	NA	2200	2200	NA	NA	NA
TOTAL DRAIN				NA	NA	NA	NA	NA	3179	3532	NA	NA	NA
1995 DRAIN / INVENTORY RATIO										0.006			

	TYPICAL WOOD COSTS (U.S. $ per m³)						
Pine sawtimber							
Standing	NA	NA	NA	NA	NA	NA	NA
Delivered	NA	NA	NA	NA	NA	NA	NA
Pine pulpwood							
Standing	NA	NA	NA	NA	NA	NA	NA
Delivered	NA	NA	NA	NA	NA	NA	NA
Hardwood pulpwood							
Standing	NA	NA	NA	NA	NA	NA	NA
Delivered	NA	NA	NA	NA	NA	NA	NA

North Carolina

Timber Inventory and Annual Panel Plant Capacity



Timber (cubic meters/hectare)

0	to	30
30	to	60
60	to	120
120	to	200

km
0 50 100 150

Note: Growing Stock numbers from the USDA, Forest Service.

Plywood Capacity (Thousand m^3)

100
200
300

OSB Capacity (Thousand m^3)

100
200
300

Pbd/MDF Capacity (Thousand m^3)

100
200
300

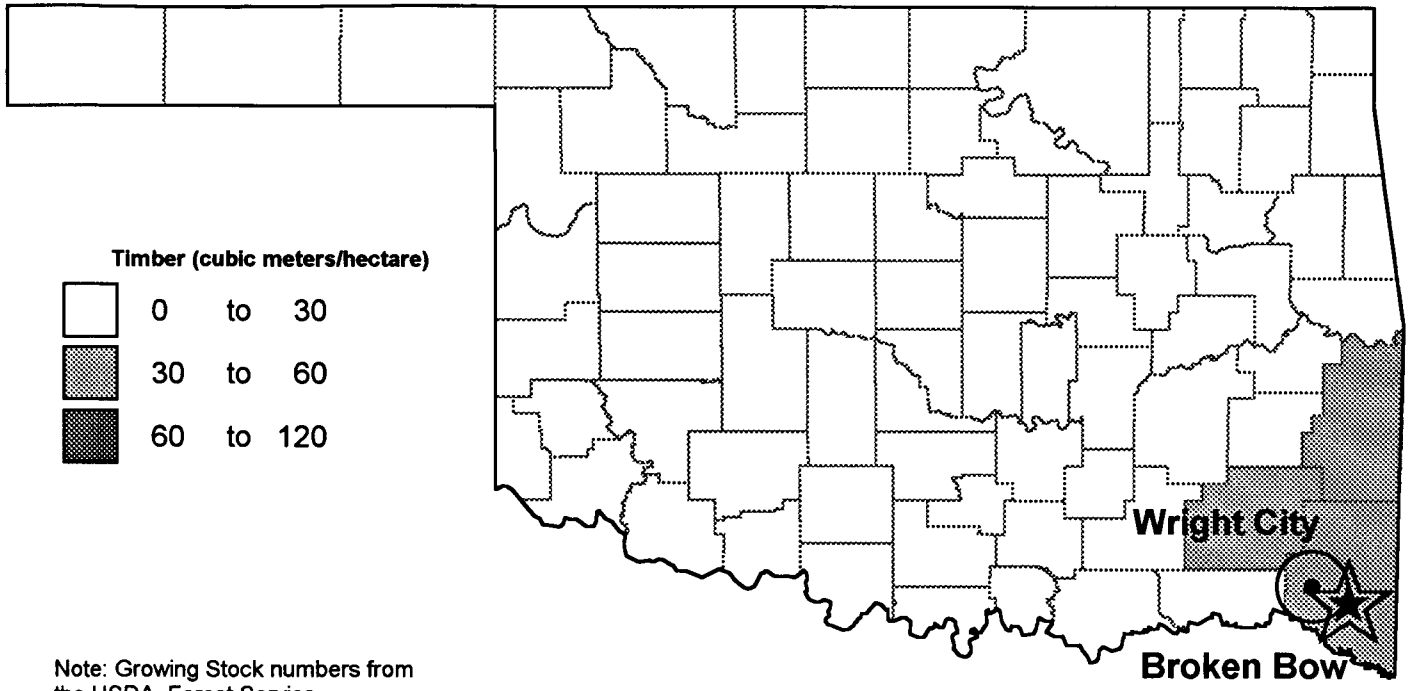
North Carolina

Location	Company	Year built	Year closed	Capacity / Production (Thousand m³) 1965	1970	1975	1980	1985	1990	1995	1996	1997	1998
PINE PLYWOOD													
Plymouth	Weyerhaeus	1965	1997	53	64	64	71	89	97	111	124		
Elizabeth City	Triangle	1966	1978		27	27							
Jacksonville	Weyerhaeus	1966	1990		89	89	115	140	137				
Moncure	BC>Willam	1967	1998		71	74	74	84	97	119	119	119	
Whiteville	G-P	1971			80	133	177	212	248	274	274	274	274
Dudley	G-P	1980					93	124	226	301	301	301	301
TOTAL				53	329	386	530	649	805	805	818	694	575
ORIENTED STRANDBOARD													
Dudley	G-P	1983						111	111	124	124	124	124
Elkin	Weyerhaeus	1986							199	230	266	266	266
Roxboro	L-P	1995									292	332	332
TOTAL								111	310	354	682	722	722
TOTAL PLYWOOD AND OSB				53	329	386	530	759	1115	1159	1500	1416	1297
PARTICLEBOARD													
Farmville	Formica>IP	NA	1973	71	106								
Lenoir	Nu-Wood	1964		13	27	30	42	42	41	41	41	41	41
Lenoir	Broyhill	1976					44	55	50	71	71	71	71
Moncure	Weyerhaeus	1987							186	186	266	266	266
TOTAL				84	133	30	86	97	277	298	378	378	378
MEDIUM-DENSITY FIBERBOARD													
Moncure	Weyerhaeus	1971				110	106	124	133	133	133	133	133
Spring Hope	Masonite	1973				106	131	131	119	122	122	122	122
TOTAL						216	237	255	251	255	255	255	255
TOTAL PARTICLEBOARD AND MDF				84	133	246	323	352	528	553	633	633	633
LUMBER PRODUCTION				3158	2764	2544	2634	3330	3844	5154	5270	NA	NA
PULPWOOD RECEIPTS				6310	9076	8177	10716	10974	12456	14047	NA	NA	NA
TOTAL DRAIN				9605	12302	11353	14204	15415	17944	20913	NA	NA	NA
1995 DRAIN / INVENTORY RATIO										0.023			

	TYPICAL WOOD COSTS (U.S. $ per m³)						
Pine sawtimber							
Standing	25	28	30	36	38	42	NA
Delivered	34	41	42	56	59	62	NA
Pine pulpwood							
Standing	3	4	6	7	6	6	NA
Delivered	16	20	21	24	21	22	NA
Hardwood pulpwood							
Standing	1	1	3	5	5	5	NA
Delivered	13	14	19	23	22	24	NA

Oklahoma

Timber Inventory and Annual Panel Plant Capacity



Note: Growing Stock numbers from the USDA, Forest Service.

km
0 50 100 150

Plywood Capacity (Thousand m^3)

100

200

300

Pdb/MDF Capacity (Thousand m^3)

100

200

300

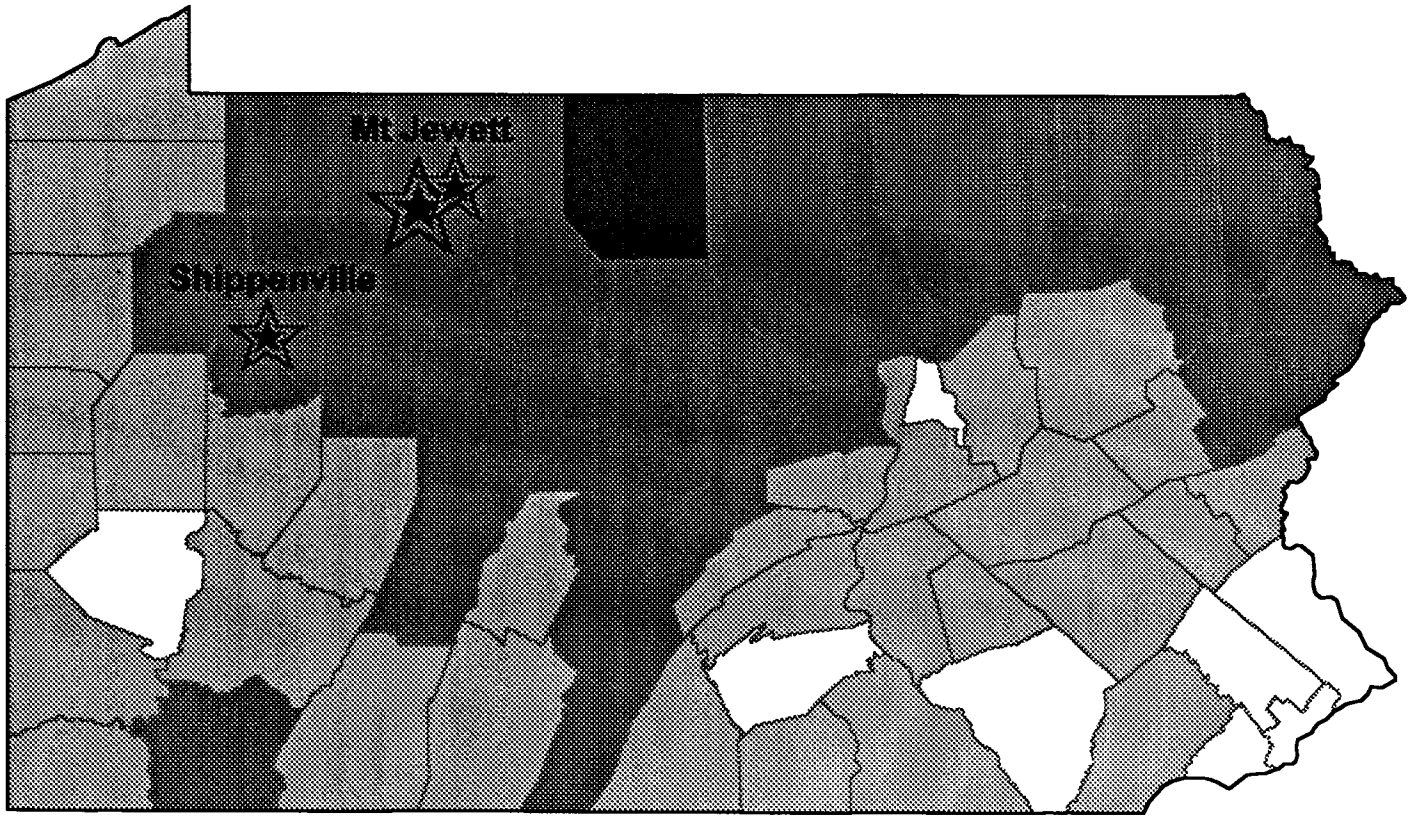
Oklahoma

Location	Company	Year built	Year closed	Capacity / Production (Thousand m³) 1965	1970	1975	1980	1985	1990	1995	1996	1997	1998
PINE PLYWOOD													
Wright City	Weyerhaeus	1971				75	97	106	106	146	146	146	146
TOTAL						75	97	106	106	146	146	146	146
ORIENTED STRANDBOARD													
TOTAL													
TOTAL PLYWOOD AND OSB				0	0	75	97	106	106	146	146	146	146
PARTICLEBOARD													
TOTAL													
MEDIUM-DENSITY FIBERBOARD													
Broken Bow	Pan Pac	1972				127	124	133	53	65	239	239	239
TOTAL						127	124	133	53	65	239	239	239
TOTAL PARTICLEBOARD AND MDF				0	0	127	124	133	53	65	239	239	239
LUMBER PRODUCTION				NA	415	540	380	NA	NA	NA	NA	NA	NA
PULPWOOD RECEIPTS				203	435	862	1235	1418	2556	2193	NA	NA	NA
TOTAL DRAIN				NA	850	1605	1836	NA	NA	NA	NA	NA	NA
1995 DRAIN / INVENTORY RATIO										0.028			

	TYPICAL WOOD COSTS (U.S. $ per m³)						
Pine sawtimber							
Standing	NA	NA	NA	NA	NA	NA	NA
Delivered	NA	NA	NA	NA	NA	NA	NA
Pine pulpwood							
Standing	NA	NA	NA	NA	NA	NA	NA
Delivered	NA	NA	NA	NA	NA	NA	NA
Hardwood pulpwood							
Standing	NA	NA	NA	NA	NA	NA	NA
Delivered	NA	NA	NA	NA	NA	NA	NA

Pennsylvania

Timber Inventory and Annual Panel Plant Capacity



Timber (cubic meters/hectare)

0	to	30
30	to	60
60	to	120
120	to	200

Note: Growing Stock numbers from the USDA, Forest Service.

km

0 50 100 150

Pbd/MDF Capacity (Thousand m³)

100

200

300

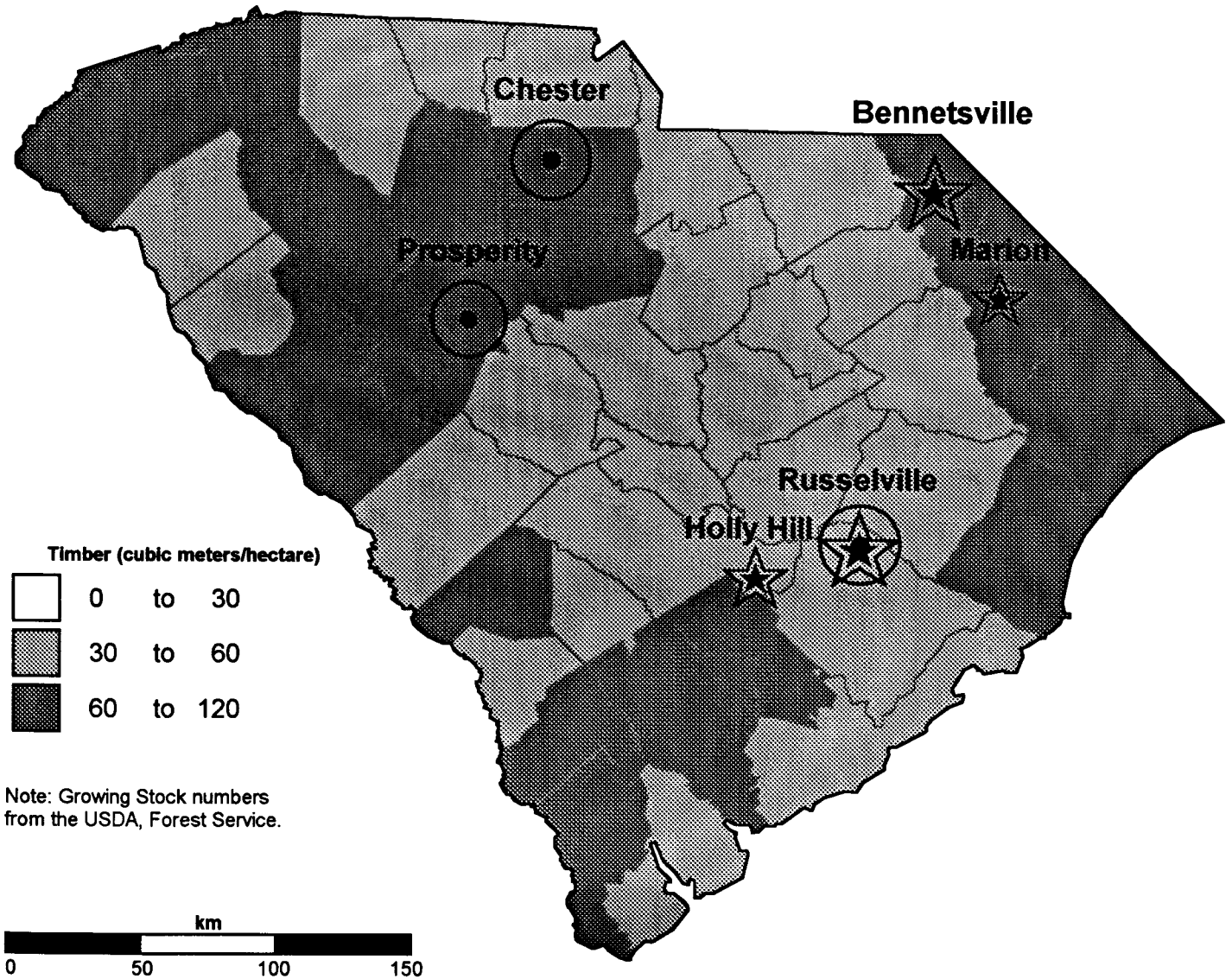
Pennsylvania

Location	Company	Year built	Year closed	Capacity / Production (Thousand m³) 1965	1970	1975	1980	1985	1990	1995	1996	1997	1998
PINE PLYWOOD													
TOTAL													
ORIENTED STRANDBOARD													
TOTAL													
TOTAL PLYWOOD AND OSB				0	0	0	0	0	0	0	0	0	0
PARTICLEBOARD													
Tyrone	Westvaco	NA	1969	44									
Mt Jewett	Allegheny	1990							329	329	329	329	329
TOTAL													
MEDIUM-DENSITY FIBERBOARD													
Mt Jewett	Allegheny	1995								177	177	177	177
Shippenville	MB/Clarion	1996									71	177	230
TOTAL													
TOTAL PARTICLEBOARD AND MDF				44	0	0	0	0	329	506	577	683	736
LUMBER PRODUCTION				1256	1239	1119	NA	998	1593	2556	2438	NA	NA
PULPWOOD RECEIPTS				NA	NA	NA	NA	NA	3003	3062	NA	NA	NA
TOTAL DRAIN				NA	NA	NA	NA	NA	4925	6124	NA	NA	NA
1995 DRAIN / INVENTORY RATIO										0.009			

	TYPICAL WOOD COSTS (U.S. $ per m³)						
Pine sawtimber							
Standing	NA	NA	NA	NA	NA	NA	NA
Delivered	NA	NA	NA	NA	NA	NA	NA
Pine pulpwood							
Standing	NA	NA	NA	NA	NA	NA	NA
Delivered	NA	NA	NA	NA	NA	NA	NA
Hardwood pulpwood							
Standing	NA	NA	NA	NA	NA	NA	NA
Delivered	NA	NA	NA	NA	NA	NA	NA

South Carolina

Timber Inventory and Annual Panel Plant Capacity



Plywood Capacity (Thousand m^3)

100

200

300

Pbd/MDF Capacity (Thousand m^3)

100

200

300

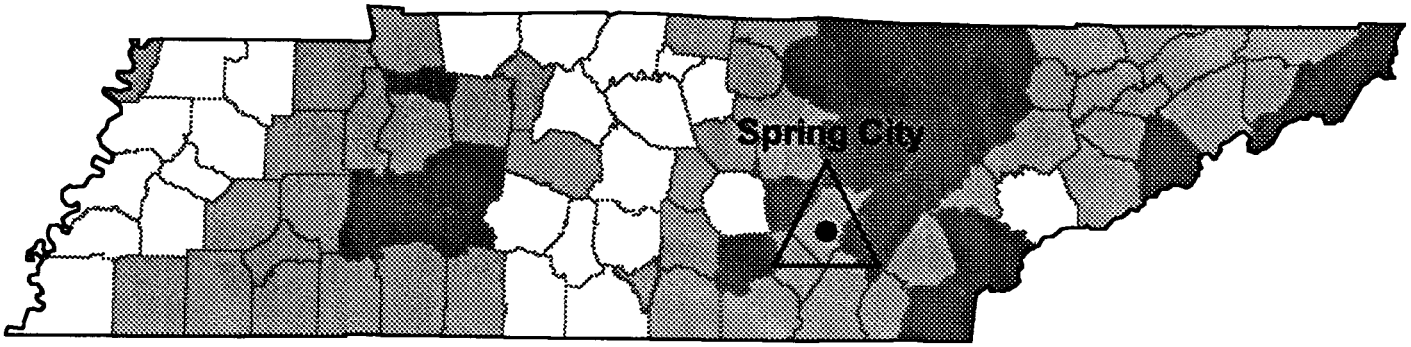
South Carolina

Location	Company	Year built	Year closed	Capacity / Production (Thousand m³)									
				1965	1970	1975	1980	1985	1990	1995	1996	1997	1998
PINE PLYWOOD													
Russelville	G-P	1968			119	133	133	199	243	243	243	243	243
Holly Hill	Holly H.	1972	1981			89	89						
Newberry	USPly>Cl	1974	1989			133	159	164					
Prosperity	G-P	1975				84	115	124	199	218	218	218	218
Chester	B-C>Willam	1981						137	208	232	232	232	232
TOTAL					119	438	496	624	650	693	693	693	693
ORIENTED STRANDBOARD													
TOTAL													
TOTAL PLYWOOD AND OSB				0	119	438	496	624	650	693	693	693	693
PARTICLEBOARD													
Greenwood	I-P	1970	1974		124								
Russelville	G-P	1971				168	186	212	221	278	278	278	278
TOTAL							186	212	221	278	278	278	278
MEDIUM-DENSITY FIBERBOARD													
Marion	Masonite	1974				101	101	101	112	133	133	133	133
Holly Hill	HH>G-P	1975					110	143	177	177	177	177	177
Bennetsville	Willam	1990							177	216	230	257	257
TOTAL						101	211	244	466	526	540	567	567
TOTAL PARTICLEBOARD AND MDF				0	0	101	396	457	687	804	818	845	845
LUMBER PRODUCTION				1610	2209	2084	2169	2728	3549	3122	3339	NA	NA
PULPWOOD RECEIPTS				5814	7294	7798	9494	10622	11536	12670	NA	NA	NA
TOTAL DRAIN				7424	9622	10421	12555	14431	16422	17289	NA	NA	NA
1995 DRAIN / INVENTORY RATIO										0.037			

	TYPICAL WOOD COSTS (U.S. $ per m³)						
Pine sawtimber							
Standing	27	32	34	48	59	67	NA
Delivered	37	43	48	73	76	83	NA
Pine pulpwood							
Standing	6	7	7	10	10	11	NA
Delivered	17	22	20	27	25	27	NA
Hardwood pulpwood							
Standing	1	1	3	6	7	8	NA
Delivered	12	13	16	24	24	25	NA

Tennessee

Timber Inventory and Annual Panel Plant Capacity



Timber (cubic meters/hectare)

- 0 to 30
- 30 to 60
- 60 to 120

km

0 50 100 150

Note: Growing Stock numbers from the USDA, Forest Service.

0SB Capacity (Thousand m^3)

100

200

300

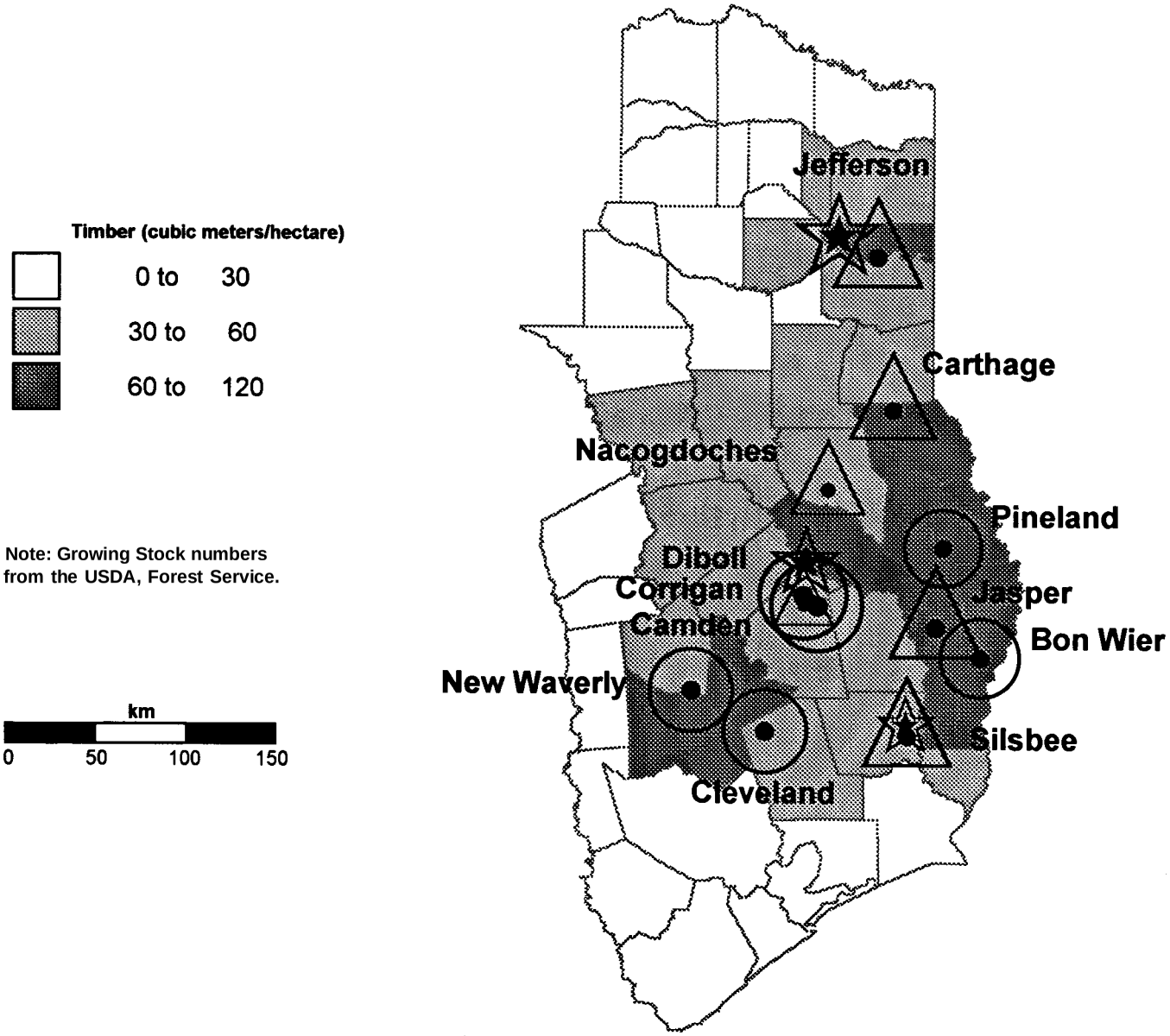
Tennessee

Location	Company	Year built	Year closed	Capacity / Production (Thousand m³) 1965	1970	1975	1980	1985	1990	1995	1996	1997	1998
PINE PLYWOOD													
TOTAL													
ORIENTED STRANDBOARD													
Spring City	Huber	1997										336	336
TOTAL													
TOTAL PLYWOOD AND OSB				0	0	0	0	0	0	0	0	336	336
PARTICLEBOARD													
TOTAL													
MEDIUM-DENSITY FIBERBOARD													
TOTAL													
TOTAL PARTICLEBOARD AND MDF				0	0	0	0	0	0	0	0	0	0
LUMBER PRODUCTION				1428	1291	944	1463	1121	1218	2171	2150	NA	NA
PULPWOOD RECEIPTS				919	1254	1642	2731	2740	3160	3894	NA	NA	NA
TOTAL DRAIN				2347	2544	2586	4194	3861	4378	6065	NA	NA	NA
1995 DRAIN / INVENTORY RATIO										0.013			

	TYPICAL WOOD COSTS (U.S. $ per m³)						
Pine sawtimber							
Standing	NA	NA	NA	NA	NA	NA	NA
Delivered	NA	NA	NA	NA	NA	NA	NA
Pine pulpwood							
Standing	NA	NA	NA	NA	NA	NA	NA
Delivered	NA	NA	NA	NA	NA	NA	NA
Hardwood pulpwood							
Standing	NA	NA	NA	NA	NA	NA	NA
Delivered	NA	NA	NA	NA	NA	NA	NA

Eastern Texas

Timber Inventory and Annual Panel Plant Capacity



Plywood Capacity (Thousand m^3)

100

200

300

OSB Capacity (Thousand m^3)

100

200

300

Pbd/MDF Capacity (Thousand m^3)

100

200

300

Texas

Location	Company	Year built	Year closed	Capacity / Production (Thousand m³) 1965	1970	1975	1980	1985	1990	1995	1996	1997	1998
PINE PLYWOOD													
Diboll	SPPCo>TE	1964	1985	62	62	106	106	44					
Silsbee	Kirby	1964	1985	32	53	106	133	142					
Lufkin / Keltys	Angel>L-P	1965	1998	44	64	64	89	137	168	155	155	155	
Nacogdoch	I-P	1969	1979		89	89							
New Waver	G-P>L-P	1971				177	186	199	266	266	266	266	266
Jasper	O-I>L-P	1971	1996			89	124	133	133	133	62		
Corrigan	G-P>CI	1972				168	177	204	264	292	292	292	292
Pineland	Temple	1974				106	137	173	177	221	235	235	235
Bon Wier	Kirby>LP	1975				142	190	208	243	243	243	243	243
Camden	Champ. Int.	1979					204	252	279	310	310	319	319
Cleveland	Kirby>LP	1980					159	248	266	230	199	266	266
TOTAL				138	267	1046	1505	1739	1795	1850	1762	1776	1621
ORIENTED STRANDBOARD													
Corrigan	L-P	1983						124	124	133	133	133	133
Nacogdoch	I-P	1987							168	212	212	212	212
New Waverly	L-P	1987	1996						80	44	44		
Silsbee	L-P	1991								301	301	301	301
Jefferson	I-P	1996									310	310	310
Jasper	L-P	1996									18	332	332
Carthage	L-P	1997										177	292
TOTAL								124	372	690	1018	1465	1580
TOTAL PLYWOOD AND OSB				138	267	1046	1505	1863	2166	2540	2780	3241	3201
PARTICLEBOARD													
Jacksonville	Wynnewood	NA	1976	21	21	32							
Silsbee	Evans Pr	1967	1971		127								
Diboll	Temple In.	1971				177	177	181	195	195	195	195	195
Corrigan	G-P > L-P	1973	1978			159							
Silsbee	Kirby>L-P	1974				124	127	127	124	142	142	142	142
Jefferson	I-P	1997										301	301
TOTAL						492	304	308	319	336	336	638	638
MEDIUM-DENSITY FIBERBOARD													
TOTAL													
TOTAL PARTICLEBOARD AND MDF				21	149	492	304	308	319	336	336	638	638
LUMBER PRODUCTION				1997	2202	1888	1893	2433	2712	3788	3488	NA	NA
PULPWOOD RECEIPTS				3688	6447	8014	9270	9138	9493	11323	NA	NA	NA
TOTAL DRAIN				5844	9065	11440	12972	13742	14690	17988	NA	NA	NA
1995 DRAIN / INVENTORY RATIO										0.050			

	TYPICAL WOOD COSTS (U.S. $ per m³)						
Pine sawtimber							
Standing	38	25	27	67	57	67	NA
Delivered	46	38	38	81	79	85	NA
Pine pulpwood							
Standing	4	7	6	9	9	11	NA
Delivered	18	21	21	25	25	28	NA
Hardwood pulpwood							
Standing	1	1	3	8	5	8	NA
Delivered	15	15	20	22	22	27	NA

Virginia

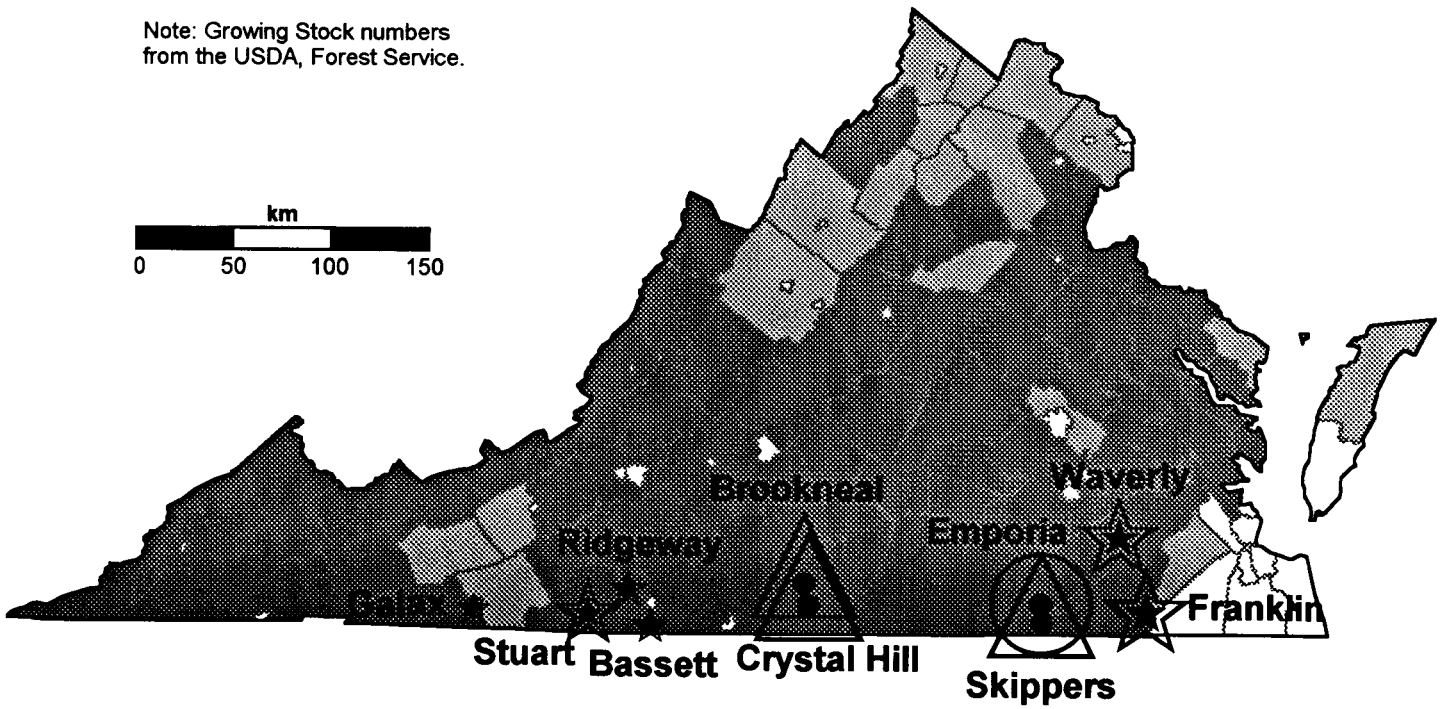
Timber Inventory and Annual Panel Plant Capacity

Timber (cubic meters/hectare)

- 0 to 30
- 30 to 60
- 60 to 120

Note: Growing Stock numbers from the USDA, Forest Service.

km
0 50 100 150



Plywood Capacity (Thousand m³)

- 100
- 200
- 300

OSB Capacity (Thousand m³)

- 100
- 200
- 300

Pbd/MDF Capacity (Thousand m³)

- 100
- 200
- 300

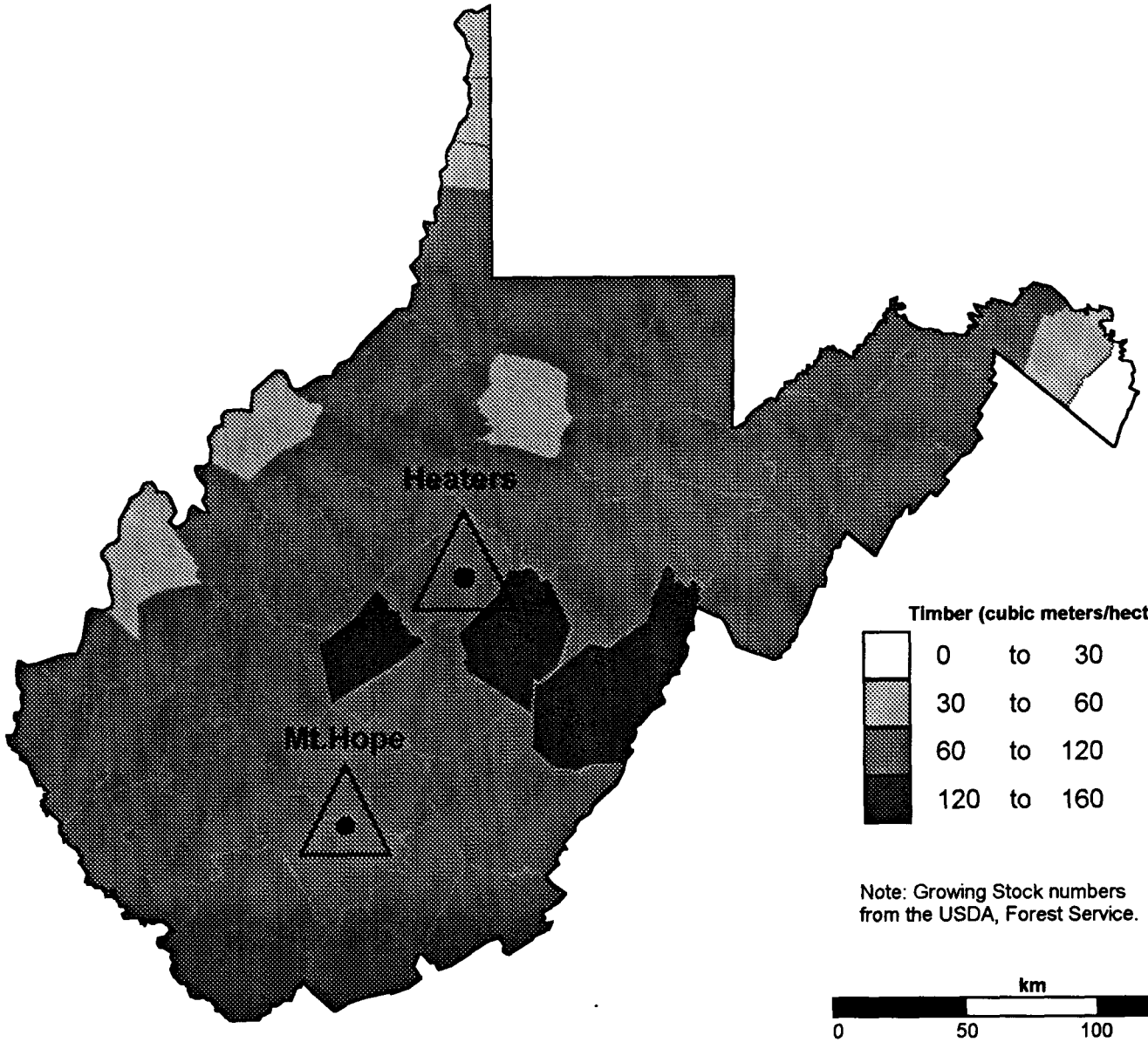
Virginia

Location	Company	Year built	Year closed	Capacity / Production (Thousand m³)									
				1965	1970	1975	1980	1985	1990	1995	1996	1997	1998
PINE PLYWOOD													
Emporia	G-P	1966			133	142	142	221	261	281	281	281	281
TOTAL					133	142	142	221	261	281	281	281	281
ORIENTED STRANDBOARD													
Skippers	G-P	1985						221	248	309	309	309	309
Dungannon	L-P	1986							106	111	111		
Crystal Hill	Huber	1995								221	301	301	301
Brookneal	G-P	1995								319	319	319	319
TOTAL								221	354	960	1039	928	929
TOTAL PLYWOOD AND OSB				0	133	142	142	443	615	1241	1320	1210	1210
PARTICLEBOARD													
S. Boston	Cham>G-P	NA	1996	53	53	113	149	177	191	198	198		
Waverly	Masonite>I-P	NA		106	106	142	172	170	182	184	184	184	184
Franklin	Union Camp	1972				124	142	150	159	221	221	221	221
Stuart	Stuart >I-P	1973				106	97	97	138	127	127	127	127
Galax	Webb	1985						32	27	28	28	28	28
Ridgeway	Triwood Inc.	1985						35	35	35	35	35	35
TOTAL				159	159	485	559	662	733	794	794	595	595
MEDIUM-DENSITY FIBERBOARD													
Bassett	Bassett	1969			35	39	39	39	37	37	37	37	37
TOTAL					35	39	39	39	37	37	37	37	37
TOTAL PARTICLEBOARD AND MDF				159	195	524	598	701	770	831	831	632	632
LUMBER PRODUCTION				2679	2542	2046	NA	1973	2872	3066	2969	NA	NA
PULPWOOD RECEIPTS				5350	5310	5163	6667	7816	8059	8206	NA	NA	NA
TOTAL DRAIN				8187	8180	7874	NA	10933	12316	13344	NA	NA	NA
1995 DRAIN / INVENTORY RATIO										0.018			

	TYPICAL WOOD COSTS (U.S. $ per m³)						
	1980	1985	1990	1995	1996	1997	1998
Pine sawtimber							
Standing	15	21	22	42	39	44	NA
Delivered	29	34	39	62	57	69	NA
Pine pulpwood							
Standing	4	5	5	5	7	8	NA
Delivered	15	18	19	26	25	24	NA
Hardwood pulpwood							
Standing	1	1	2	3	3	3	NA
Delivered	12	13	15	23	24	26	NA

West Virginia

Timber Inventory and Annual Panel Plant Capacity



0SB Capacity (Thousand m^3)

100

200

300

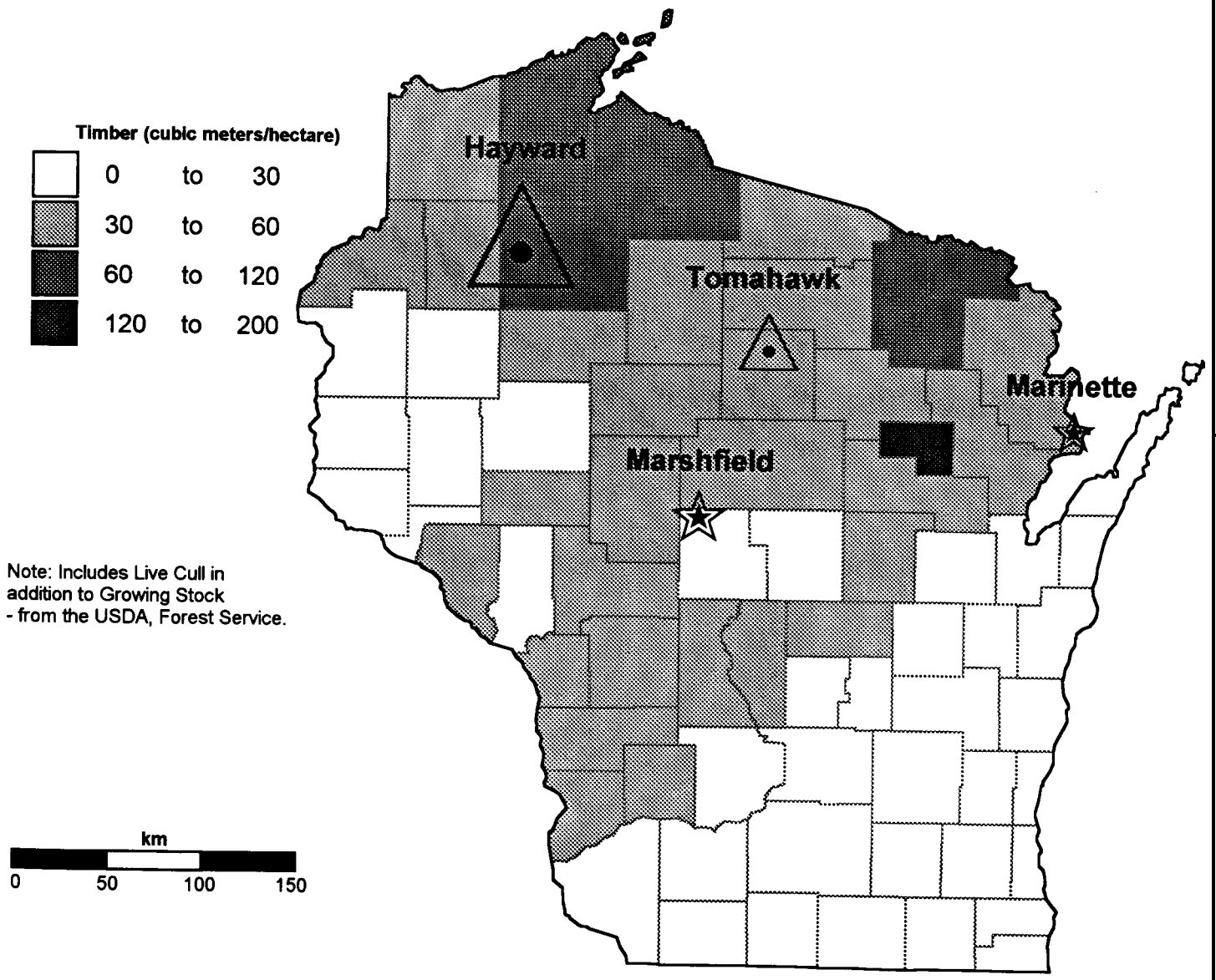
West Virginia

Location	Company	Year built	Year closed	Capacity / Production (Thousand m³) 1965	1970	1975	1980	1985	1990	1995	1996	1997	1998
PINE PLYWOOD													
TOTAL													
ORIENTED STRANDBOARD													
Mt.Hope	G-P	1995								183	314	314	314
Heaters	Weyerhaeus	1996									168	398	398
TOTAL										183	482	712	712
TOTAL PLYWOOD AND OSB				0	0	0	0	0	0	183	482	712	712
PARTICLEBOARD													
TOTAL													
MEDIUM-DENSITY FIBERBOARD													
TOTAL													
TOTAL PARTICLEBOARD AND MDF				0	0	0	0	0	0	0	0	0	0
LUMBER PRODUCTION				1071	1020	890	NA	NA	1500	1652	1541	NA	NA
PULPWOOD RECEIPTS				NA	NA	NA	NA	NA	0	0	NA	NA	NA
TOTAL DRAIN				NA	NA	NA	NA	NA	1500	1835	NA	NA	NA
1995 DRAIN / INVENTORY RATIO										0.003			

	TYPICAL WOOD COSTS (U.S. $ per m³)						
Pine sawtimber							
Standing	NA	NA	NA	NA	NA	NA	NA
Delivered	NA	NA	NA	NA	NA	NA	NA
Pine pulpwood							
Standing	NA	NA	NA	NA	NA	NA	NA
Delivered	NA	NA	NA	NA	NA	NA	NA
Hardwood pulpwood							
Standing	NA	NA	NA	NA	NA	NA	NA
Delivered	NA	NA	NA	NA	NA	NA	NA

Wisconsin

Timber Inventory and Annual Panel Plant Capacity



OSB Capacity (Thousand m^3)

100

200

300

Pbd/MDF Capacity (Thousand m^3)

100

200

300

Wisconsin

Location	Company	Year built	Year closed	Capacity / Production (Thousand m³)									
				1965	1970	1975	1980	1985	1990	1995	1996	1997	1998
PINE PLYWOOD													
TOTAL													
ORIENTED STRANDBOARD													
Hayward	L-P	1978					115	142	204	212	221	221	221
Hayward	L-P	1982						142	204	212	221	221	221
Tomahawk	L-P	1993								133	133	133	133
TOTAL							115	283	407	558	575	575	575
TOTAL PLYWOOD AND OSB				0	0	0	115	283	407	558	575	575	575
PARTICLEBOARD													
Marinette	Rodman	NA		27	42	42	44	62	76	76	76	76	76
Marshfield	Weyerhae	1967			67	110	117	113	124	124	124	124	124
TOTAL				27	110	152	161	175	200	200	200	200	200
MEDIUM-DENSITY FIBERBOARD													
TOTAL													
TOTAL PARTICLEBOARD AND MDF				27	110	152	161	175	200	200	200	200	200
LUMBER PRODUCTION				706	675	873	NA	878	1239	1494	1456	NA	NA
PULPWOOD RECEIPTS				NA	NA	NA	NA	NA	6527	6455	NA	NA	NA
TOTAL DRAIN				NA	NA	NA	NA	NA	8373	8707	NA	NA	NA
1995 DRAIN / INVENTORY RATIO										0.017			

	TYPICAL WOOD COSTS (U.S. $ per m³)						
Pine sawtimber							
Standing	NA	NA	NA	NA	NA	NA	NA
Delivered	NA	NA	NA	NA	NA	NA	NA
Pine pulpwood							
Standing	NA	NA	NA	NA	NA	NA	NA
Delivered	NA	NA	NA	NA	NA	NA	NA
Aspen pulpwood							
Standing	2	3	3	8	8	NA	NA
Delivered	14	17	18	26	25	NA	NA