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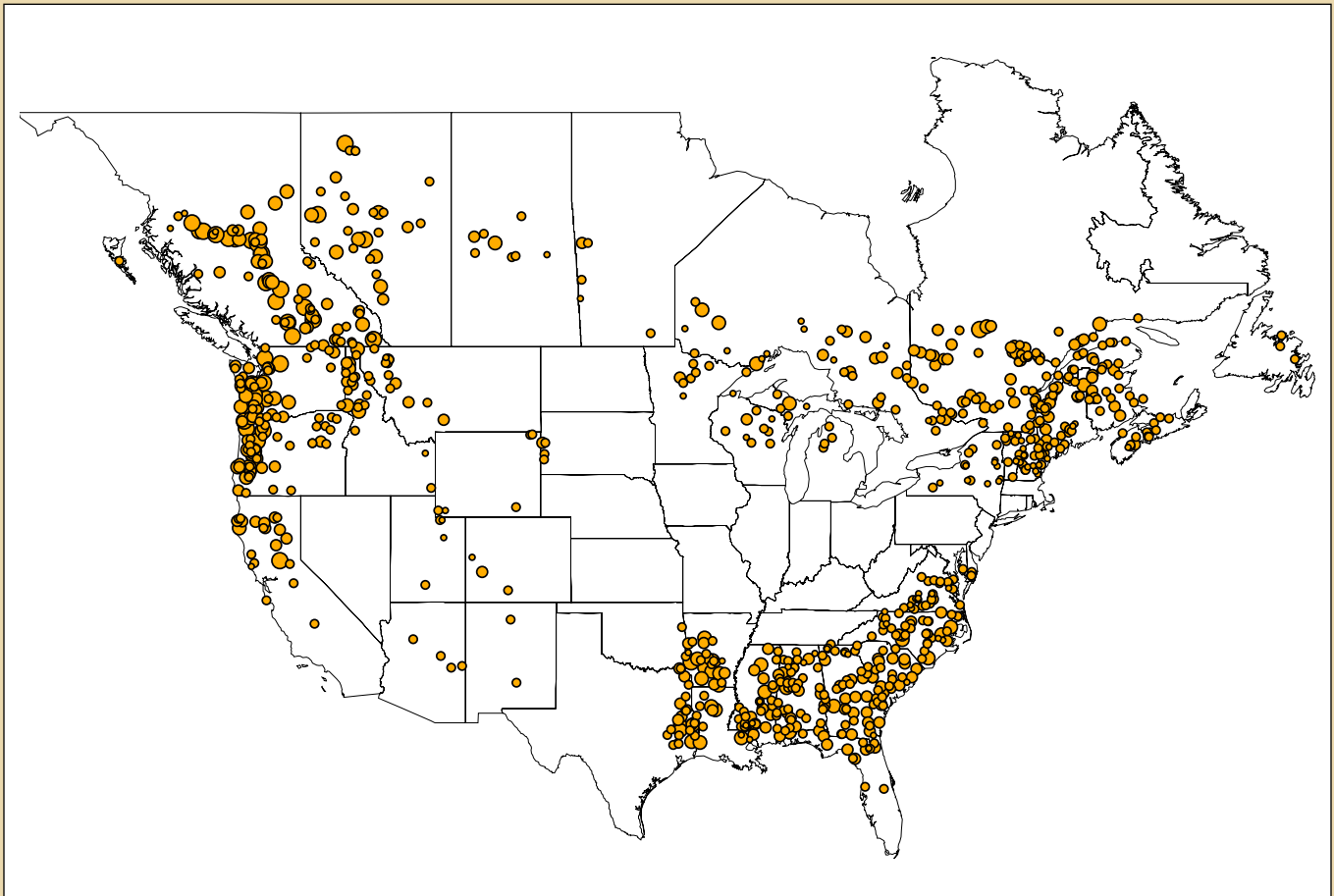
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Profile 2009: Softwood Sawmills in the United States and Canada

Henry Spelter
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Abstract

Between 2006 and the end of 2009, the production capacity of the softwood lumber sector covered by this report in the United States and Canada has shrunk from 190.8 million m³ (nominal) to 166.4 million m³. The corresponding number of mills slumped from 1,025 to 875 over the same time and from 1,322 recorded in 1995. The Canadian capacity went from 88.2 million m³ to 71.6 million m³, a loss of 19%, while the U.S. capacity dropped from 102.6 million m³ to 94.8 million m³, a loss of 8%. These losses are attributable to three unprofitable years of sawmilling caused by the contraction in construction. Construction and repair and remodeling of homes each accounted for about 35% of total lumber consumption in 2006. Their downturn has caused demand to lag substantially behind the capacity that was built up to supply the prior boom. The greater drop in Canadian capacity can be deduced from a number of factors including the imposition of tariffs of up to 15% on exports to the U.S. and the strengthening of the Canadian dollar. Based on underlying population growth, the demand for home building is expected to rebound but somewhat slowly until the overhang of unoccupied homes built in the former building surge is absorbed. Further attrition of capacity is likely, as profitability is unlikely to return until a combination of recovering demand and contracting supply due to further capacity attrition equalize in the market.

Keywords: softwood sawmill capacity, sawmill employment, wood end-use markets, market review, lumber demand and supply

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Conversion Table

To convert item	To	Multiply item by
Thousand ^a board feet nominal lumber	m ³ (nominal)	2.36

Profile 2009: Softwood Sawmills in the United States and Canada

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Introduction

The cyclical nature of sawmilling often leads to capacity changes. Current economic conditions are particularly volatile and capacity changes have increased. These have implications for the status and prospects of this branch of the wood products sector, which this paper analyzes.

As of June 2009, the conventional softwood lumber industry in the United States and Canada consisted of 891 sawmills with a combined capacity of 167.7 million m³ (71.1 billion board feet). At the end of 2008, sawmills directly employed about 77,000 people, who between them produced 124.7 million m³ (52.8 billion board feet) of lumber. The capacities of these larger, permanent plants are laid out in Appendix A and summarized in Table 1. We note that small or seasonal operations, whose contributions to lumber production are minimal, are not in this listing.

The softwood lumber industry largely depends on the construction sector for demand for its products. We estimate that in the United States, about 80% of the sawmill industry's output ends up on a building project of some kind in a normal year. Accordingly, sawmilling enjoyed prosperity during 2003 to 2006, an era now recognized as a boom period in real estate. Sawmilling subsequently deflated hard in the crash from 2007 to the present. These changes in fortune are reflected in the capacity numbers, which show that the industry expanded strongly from 2002 to 2006 and then shrank from 2007 to now (Table 2). Prices and their effects on the industry's finances were critical conduits for these changes, as well as upheavals in major end-use markets, which this paper documents.

Lumber Using Markets

The main markets for softwood lumber in Canada and the United States are highlighted in Tables 3 and 4. For an in-depth overview of recent U.S. lumber market studies, consult McKeever (2002).

During normal economic conditions in the United States, single family homes consume the largest share of lumber. Single-family homes are also big users of lumber in Canada, but form a proportionately smaller share of the total. This is due partly to tariffs on direct lumber shipments to the United States, which exporters can avoid if the lumber is exported

Table 1—Capacity^a and production^b of U.S. and Canadian softwood lumber sawmills, 2004–2009

	Mills (no.)	Capacity ^c (×10 ⁶ m ³)	Production (×10 ⁶ m ³)	Capacity utilization (%)
2004	1,104	185.9	174.5	94
2005	1,076	189.9	176.6	93
2006	1,025	190.8	170.6	89
2007	983	188.1	153.6	82
2008	939	175.5	124.7	71
2009	891	167.7	—	—

^a Capacity data are detailed in Table 2.

^b WWPA 2008, Statistics Canada 2008.

^c Cubic meters (m³) are based on North American nominal measurements and are therefore also nominal.

Table 2—U.S. and Canadian softwood sawmill capacity estimates, 1995–2009

	Capacity (×10 ⁶ nominal m ³) ^a		
	United States	Canada	Total
1995	83	67	150
1996	84	68	152
1997	87	70	157
1998	90	72	162
1999	92	76	168
2000	94	78	172
2001	92	80	172
2002	92	82	174
2003	96	83	179
2004	99	87	186
2005	102	88	190
2006	103	88	191
2007	102	86	188
2008	101	75	176
2009 ^b	96	72	168
Annual increase (%)			
	1.0	0.5	0.9

^a Spelter and others 2007.

^b Predicted.

Table 3—Canadian softwood lumber end-use by market, 2003–2009

	Volume ($\times 10^6$ nominal m ³) ^a				Total Canada
	Homes, single- family	Homes, multi- family	Residential remodeling	All other inventory	
2003	3.8	1.2	6.5	15.8	27.2
2004	4.4	1.2	7.2	15.2	28.1
2005	4.6	1.2	8.0	12.3	26.1
2006	5.0	1.2	8.8	11.0	26.0
2007	5.0	1.2	9.0	11.2	26.4
2008	4.0	1.4	9.0	9.6	24.0
2009 ^b	3.5	0.8	8.0	7.3	19.6
	Shares (%)				
	Homes, single- family	Homes, multi- family	Residential remodeling	All other inventory	
2006	19	5	34	42	—
2007	19	4	34	43	—
2008	17	6	37	40	—
2009	18	4	41	37	—

^a Adair and McKeever 2009a, 2009b; CMHC 2009 (housing starts); WPC 2009a, 2009b.

^b Estimated.

as components of fabricated assemblies, mainly wood trusses. In statistical reports, however, these internal shipments to intermediate assembly sites boost apparent consumption and decrease the share of single-family homes.

The effects on lumber end-use of the cyclical nature of home building are evident in the demand data. In both countries, the share of consumption destined for housing fell from 2007 to 2009. Other less cyclical end markets such as residential repair and remodeling, manufacturing, shipping, and railroad ties experienced less severe downturns so their market shares rose. In all, 2009 demand in the United States fell by almost 50% from the 2006 peak, while Canadian demand slipped by 30%.

In an increasingly global trading system, offshore markets form another outlet for lumber (Table 5). Two decades ago, U.S. exports were as much as seven times greater than they were in recent years, but a strong U.S. dollar from the mid-1990s onward dampened exports. Different size and grade standards overseas also complicate production when converting logs sized for imperial units to metric, leading to waste, inefficiencies, and higher costs. Accordingly, most producers have focused on North American sales. However, in slack periods such as the present, efforts have been made to rekindle offshore interest. A longer perspective of U.S. export activity shows mild upticks during recessions amidst a generally downward trend (Figure 1). Working against gains in exports is the perception that North American suppliers will allow relationships to lapse when domestic recoveries set in. For those who have cultivated overseas ties, however, the present situation has rewarded their perseverance.

Softwood lumber competes with numerous alternatives in domestic end uses. Steel and concrete dominate larger residential and nonresidential projects where fire and building codes dictate allowable material use. Brick, concrete block, poured concrete, and vinyl are also important non-wood competitors vying for low-rise residential and nonresidential uses. Within the last decade, wood-plastic composite lumber has become popular for outdoor decking, railing, trim, and fencing. Other wood-based products such as laminated veneer lumber (LVL) and I-joists have also made inroads where lumber would have been used. A historical perspective on the evolution of the latter two products in relation to softwood lumber is shown in Figure 2.

A full accounting of lumber's market share changes in relation to competing products in a time context is impossible because of the lack of consistent data on material use. For example, data on substitution between softwood and hardwood lumber in applications such as furniture, railroad ties, and pallets are unavailable. Light-gage steel studs and joists have been promoted as alternatives to wood in residential construction, but the available data for a few discreet years (i.e., WPC 2009a) indicate that its inroads have been small. Table 6 provides an accounting of softwood lumber's market position against a limited number of competing products where data are available: LVL, I-joists, concrete slabs, structural insulated panels (SIPs), siding, and decking.

Laminated veneer lumber is used mainly as a lumber replacement in window and door headers, floor girders, and flanges in I-joists. In turn, I-joists substitute for wider dimension lumber (2 by 10s and 2 by 12s) in floor construction. Available data published in lineal feet are converted to lumber equivalents at the rate of two board feet per lineal foot.

Concrete slabs are used in place of full basement or crawl-space foundations. This displaces wood that would be required in a floor assembly above the excavated void. Slabs are widely used in warmer climates where the absence of a frost line makes deep foundations superfluous. Raised floor wood systems are potentially an advantageous alternative in flood-prone areas. We calculated the potential volumes of wood in slab floors on the basis of wood use in conventional floor assemblies, or one board foot per square foot (ft²) of floor area.

Structural insulated panels consist of a rigid core of insulating foam sandwiched between structural load-bearing panels such as OSB or plywood. These panels are used mainly for walls, but also for roof and floor assemblies. We convert square footage of SIPs to wood equivalents based on one board foot per ft² of panel surface area.

Various sidings, ranging from vinyl and aluminum to brick and stucco, have also been widely used in lieu of lumber. Wood sidings need periodic painting, whereas the alternatives require less maintenance. That has made these popular in contemporary construction. Use of wood siding was more

Table 4—United States softwood lumber end-use by market, 2003–2009

	Volume (×10 ⁶ nominal m ³) ^a															Total U.S.
	Homes, single	North- east	Mid- west	South	West	Homes, multi	North- east	Mid- west	South	West	Homes, mobile	Residential, remodeling	Non- residential, buildings	Non- residential, other	Industrial and other	
2003	47.6	4.0	10.6	21.6	11.3	4.0	0.6	0.9	1.7	0.8	2.5	45.6	8.6	1.3	24.1	133.6
2004	52.3	4.5	10.7	24.0	13.0	4.3	0.7	0.7	2.0	0.9	2.5	47.8	9.1	1.2	26.2	143.3
2005	57.8	5.3	10.7	27.4	14.3	4.6	0.9	0.6	2.0	1.1	2.8	49.4	9.0	1.4	27.5	152.5
2006	50.2	4.8	8.2	25.3	11.9	4.5	0.8	0.6	1.9	1.2	2.2	50.6	8.5	1.4	26.6	144.0
2007	35.1	3.6	5.8	17.8	7.9	4.1	1.0	0.5	1.5	1.1	1.8	46.6	9.5	1.4	26.8	125.2
2008	19.8	2.3	3.3	10.1	4.1	3.3	0.9	0.4	1.2	0.7	1.5	41.2	9.3	1.3	22.6	99.0
2009 ^b	12.5	1.5	2.3	6.1	2.6	1.7	0.3	0.3	0.7	0.5	0.9	33.6	8.6	1.3	18.3	76.7
	Shares (%)															
2006	35	—	—	—	—	3	—	—	—	—	2	35	6	1	18	—
2007	28	—	—	—	—	3	—	—	—	—	1	37	8	1	21	—
2008	20	—	—	—	—	3	—	—	—	—	1	42	9	1	23	—
2009	16	—	—	—	—	2	—	—	—	—	1	44	11	2	24	—

^a Adair and McKeever 2009a, 2009b; U.S. Census Bureau 2009; WPC 2005a, 2005b; WPC 2009a, 2009b.

^b Estimated.

Table 5—U.S. and Canadian softwood lumber domestic and offshore demand, 2003–2009

	Volume ($\times 10^6$ nominal m ³) ^a						Offshore (%)
	Domestic			Exports			
	Total U.S.	Total Canada	Total demand	U.S. offshore	Canada offshore	Total demand	
2003	133.6	27.2	167.5	1.4	5.3	167.5	4.0
2004	143.3	28.1	179.1	1.1	6.6	179.1	4.3
2005	152.5	26.1	185.3	1.2	5.5	185.3	3.6
2006	144.0	26.0	177.4	1.3	5.9	177.4	4.1
2007	125.2	26.4	158.7	1.3	5.9	158.7	4.5
2008	99.0	24.0	130.1	1.4	5.7	130.1	5.5
2009 ^b	76.7	19.6	103.2	1.3	5.6	103.2	6.7

^a Export data from WWPA 2008.

^b Estimated.

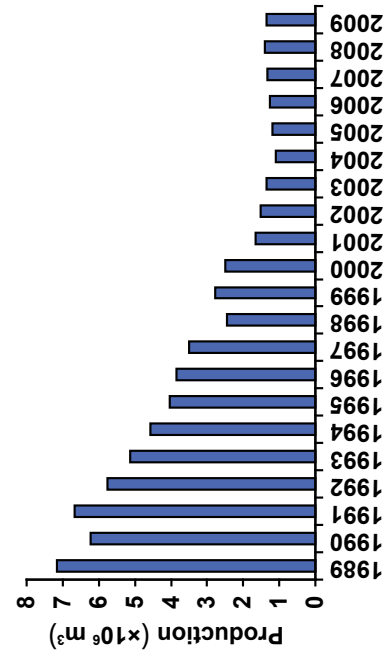


Figure 1. Softwood lumber exported from the United States to all countries but Canada.

Table 6—U.S. and Canadian consumption of softwood lumber and lumber equivalent of substitute materials^a

	Products ($\times 10^6$ nominal m ³)								Total (%)			
	Lumber	LVL ^b	I-joists	SIPs ^c	Slabs	Siding	Decking	Total	Lumber	LVL	I-joists	Slabs
1995	135.2	0.8	1.9	—	2.2	0.4	0.2	140.7	96.1	0.6	1.3	1.6
1996	139.5	0.9	2.4	—	2.5	0.5	0.3	146.0	95.5	0.6	1.6	1.7
1997	145.7	1.1	3.0	—	2.5	0.6	0.4	153.2	95.1	0.7	1.9	1.7
1998	145.9	1.2	3.3	—	2.7	0.7	0.6	154.5	94.5	0.8	2.1	1.8
1999	154.8	1.5	4.2	—	3.1	0.9	0.7	165.2	93.7	0.9	2.6	1.9
2000	159.1	1.5	4.1	—	3.0	0.9	0.8	169.3	93.9	0.9	2.4	1.8
2001	153.2	1.7	4.4	—	3.3	1.0	0.9	164.4	93.2	1.0	2.7	2.0
2002	162.0	1.8	4.6	—	3.6	1.1	1.0	174.2	93.0	1.0	2.7	2.1
2003	162.9	1.9	5.1	0.1	4.0	1.2	1.3	176.5	92.3	1.1	2.9	2.3
2004	174.2	2.5	6.1	0.1	4.6	1.4	1.5	190.4	91.5	1.3	3.2	2.4
2005	176.8	2.6	6.0	0.1	5.0	1.5	1.8	193.8	91.2	1.3	3.1	2.6
2006	170.7	2.5	5.5	0.1	5.3	1.5	2.1	187.8	90.9	1.3	3.0	2.8
2007	153.7	2.1	4.5	0.1	3.9	1.2	2.0	167.5	91.8	1.3	2.7	2.3
2008	124.7	1.5	2.9	0.1	2.5	0.8	1.7	134.1	93.0	1.1	2.2	1.9

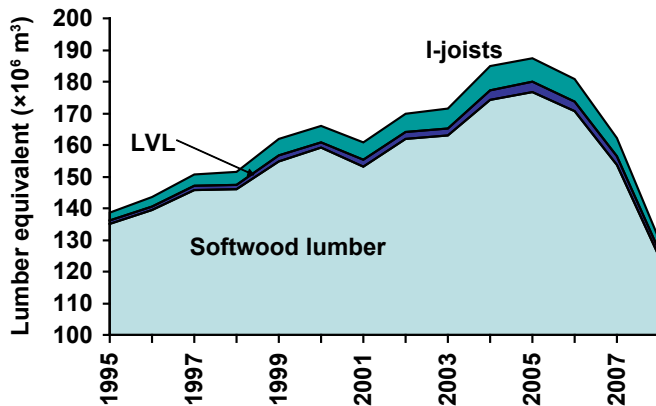
^a Statistics Canada 2008.^b Laminated veneer lumber.^c Structural insulated panels.

Figure 2. North American production of softwood lumber, laminated veneer lumber (LVL), and I-joists. Sources: WWPA (2008), APA—The Engineered Wood Association (2008).

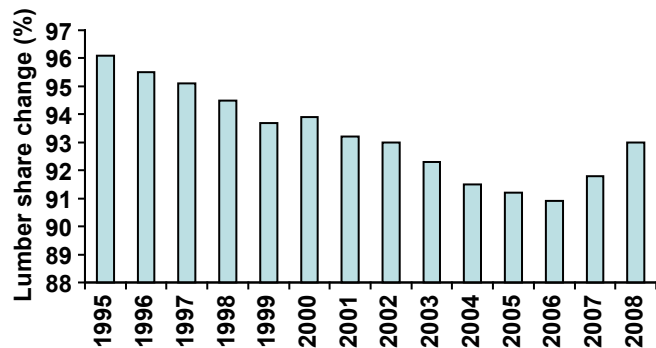


Figure 3. Five substitutes for softwood lumber (LVL, I-joists, concrete slabs, SIPs, non-wood sidings, and composite decking) have contributed to the change in the market share of softwood lumber.

widespread in the past, though never much greater than 40% of homes in the era since World War II (U.S. Census Bureau 2009). Such use has declined to single-digit shares over the past two decades, and we calculate the loss in relation to the 40% benchmark that prevailed in the late 1970s.

Composite decks made of recycled plastic and wood flour came on the market about two decades ago and made in-roads as a solution to the disadvantages of lumber such as warping, splitting, cracking, and decay. The market share of composites in the decking market has grown steadily from 5% in the mid-1990s to 17% in 2006, according to analysts (Kang 2007).

Other areas where lumber is displaced in readily accessible markets include concrete block walls used frequently in hurricane and termite-prone regions, but annual data on their incidence of use is not available. Insulated poured concrete wall construction has also established a niche in residential buildings, though its use to date has been minimal.

By this partial reckoning, the market share of softwood lumber has dropped from 96% in 1995 to 91% in 2006 because of advances by LVL, I-joists, concrete slabs, SIPs, non-wood sidings, and composite decking. This seemed to reverse in 2007 and 2008 but mainly because lumber's more diverse markets provided better insulation against the decline in housing (Figure 3). Overall, lumber demand was below its potential by as much as 17 million m³ because of the progress of these alternatives. With the slump in housing, the gap has narrowed to 9.4 million m³ in 2008.

Competition between wood and a variety of non-wood products for market share in new residential construction in the United States and Canada was examined more extensively in a recent study conducted for the Wood Products Council (WPC 2009a). Results from the study were used to estimate

Table 7—Potential gains for lumber and engineered wood to replace nonwood building products in new residential construction in the U.S. and Canada, 2006

Application	Volume ($\times 10^6$ m ³) ^a						North America total
	United States			Canada			
	Single family	Multi- family	Total	Single family	Multi- family	Total	
Floors	6.6	0.8	7.3	0.0	0.0	0.1	7.4
Walls	1.6	0.3	1.8	0.1	0.0	0.1	2.0
Roofs	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Outdoor structures	3.8	0.2	4.0	0.5	0.1	0.6	4.6
Siding, soffits, fascia, and trim	4.6	0.3	4.9	0.8	0.2	1.0	5.9
Total	16.5	1.6	18.1	1.4	0.4	1.8	20.0

^a Adair and McKeever 2009a.

potential gains for lumber and engineered wood products by replacing with wood the entirety of floors, walls, and roofs using concrete or steel framing, all siding and trim using non-wood materials, and plastic composite products typically used for outdoor structures (Adair and McKeever 2009a). Table 7 is based on the premise that wood products would replace nonwood products in each application at current wood usage rates. For example, if wood were to replace concrete in floors, the wood floor system would be built similarly to existing wood floors with the same mix of lumber and engineered wood structural products.

These estimates show much larger potential gains for lumber and engineered wood products in North America. For 2006, they were estimated to be 20 million m³, of which 18 million m³ are in the United States. Overall, the conversion of concrete floors to wood-framed floor systems provides the largest potential for wood products. Wood for exterior siding, soffits, fascia, and trim have the second largest potential, followed by outdoor structures and then walls. Roofs have very little potential.

In summary, softwood lumber is a mature product but well entrenched within its primary markets where substitution occurs mainly from other wood-based substitutes. The increasing share of construction in warmer parts of the continent also favors the more economical concrete slab floor system. Overseas markets are a potential but largely unexploited opportunity where the mainstream lumber industry is handicapped by size differences. On the other hand, in the domestic market where competition with foreign suppliers takes place on U.S. terms with respect to sizes and grades, local producers have clawed back markets as the weakness of the U.S. dollar has disadvantaged overseas suppliers.

Price and Cost Trends

To be viable, any business needs prices for its products to cover costs and yield a reasonable return on capital. This is not guaranteed in markets, such as lumber, where prices are

set competitively with many buyers and sellers bidding in the context of a cyclical business. Prices therefore often adjust rapidly in response to shifts in demand or supply. Since 2003, prices have traced a circular route from lows to mid-decade highs and then back and even below starting levels (see Fig. 4).

These price movements were mostly the result of severe dislocations in demand. Supply disruptions were mostly regional factors, such as those in the interior U.S. West, where constraints on timber availability forced some mills to close. The dispute with Canada over lumber imports that culminated in a 15% export levy for some U.S.-bound shipments and quotas on others after October 2006 was also a supply changer. Another factor was a rising Canadian dollar that caused Canada's market share to fall from 33.3% in 2006 to 32.0% in 2007, 28.5% in 2008, and 25.7% through April of 2009. Under normal conditions, this would have been a major market disruption, but with demand falling to levels where the U.S. industry alone could have met needs, its effect was muted.

The counterpoint to prices is input costs and those for lumber can be classified broadly as wood, labor, and general operating expenses. Table 8 shows trends in these expenses over the past 6 years based on model sawmills that approximate typical mill configurations and input costs in three regions.

Log transactions in the United States occur for the most part at arm's-length negotiations between buyers and sellers. The sale of much of their timberland by forest products companies has furthered this tendency. Firms often enter into long-term supply contracts with timber owners in which the price is renegotiated quarterly on the basis of comparable sales and market conditions. These arrangements contribute to U.S. wood costs lagging lumber prices by about two to three quarters (Spelter 2004). In British Columbia, by contrast, wood costs have been more responsive to lumber prices because much of the timber was sold using a formula

Table 8—Typical sawmill operating costs in three North American regions, 2003–2008

	Cost (\$/m ³)											
	Oregon ^a				Georgia ^c				British Columbia ^f			
	Wood ^b	Labor ^c	Other ^d	Total	Wood ^b	Labor ^c	Other ^d	Total	Wood ^b	Labor ^c	Other ^d	Total
2003	88	20	18	125	88	21	23	132	52	22	16	90
2004	101	20	19	140	98	22	22	142	57	24	18	99
2005	108	21	19	148	103	23	23	148	65	26	20	111
2006	102	21	19	142	101	23	23	148	62	27	21	111
2007	86	22	19	126	81	23	23	127	52	29	22	102
2008	60	22	19	101	72	23	24	119	40	28	22	90

^a Oregon (coast) is based on sawmill with 425 thousand m³ capacity.

^b Wood is delivered at mill, net of revenue from byproducts. Timber Mart South 2008, Oregon Department of Forestry 2008, British Columbia Ministry of Forests 2008.

^c Labor includes social insurance and benefits. U.S. Bureau of Labor Statistics 2009.

^d Other includes fuel, power, materials and supplies, general administration, overhead, and depreciation.

^e Georgia data are based on sawmills with 265 thousand m³ capacity.

^f British Columbia (interior) data are based on sawmills with 635 thousand m³ capacity.

Table 9—Typical sawmill operating costs, revenue, and margins^a for three North American regions, 2003–2008

	Oregon			Georgia			British Columbia			Public firms ^b
	Costs (\$/m ³)	Revenue (\$/m ³)	Margins (%)	Costs (\$/m ³)	Revenue (\$/m ³)	Margins (%)	Costs (\$/m ³)	Revenue (\$/m ³)	Margins (%)	
2003	125	131	4	132	137	4	90	90	0	1
2004	140	178	21	142	160	11	99	130	24	21
2005	148	157	6	148	177	16	111	123	9	8
2006	142	134	–6	148	140	–6	111	108	–3	–3
2007	126	110	–15	127	114	–12	102	90	–14	–12
2008	101	93	–8	119	111	–7	90	80	–12	–10

^a Margins are before taxes and are calculated as (revenue – costs)/revenue.

^b British Columbia public firms.

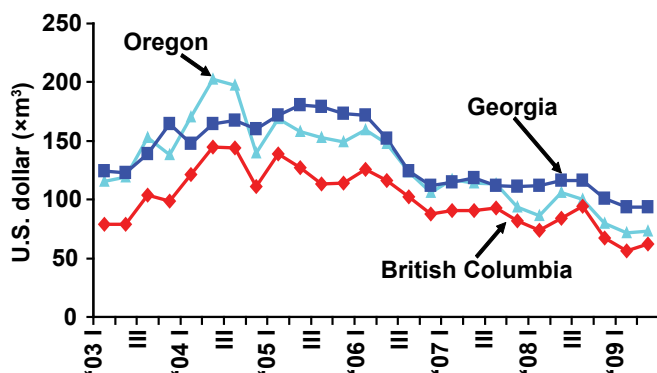


Figure 4. Mill realizations for softwood construction lumber in three regions, net of discounts and tariffs. Source: Derived from Random Lengths f.o.b. mill price quotes.

that explicitly tied stumpage to downstream product prices. Costs in Table 8 are in U.S. dollars, so substantial volatility in U.S./Canada exchange rates has amplified changes in underlying costs denoted in Canadian currency.

Labor is the second biggest component of lumber costs. Wages in America have increased at about a 3% per year rate in this decade (U.S. Department of Labor 2009). At the same time, labor productivity in sawmilling has increased by a like amount, thus largely leaving unit labor costs flat. In Canada, as before, exchange-rate fluctuations have boosted costs expressed in terms of U.S. currency.

Energy prices have been a main driver of other costs, but most mills use their own residues to generate heat for their drying needs. This has lessened the impact of rising energy prices on their balance sheets.

Table 9 summarizes the balances between revenues and costs for the period. As a point of reference and validity check, the table also contains margins on lumber operations of publicly traded corporations in British Columbia. Both these and our estimates show 3 years of generally

Table 10—Softwood sawmill capacity by region, 1995–2009

	Capacity ($\times 10^6$ m ³)						Total
	U.S. South	U.S. North	U.S. West	B.C. ^a Interior	B.C. Coast	Other Canada	
1995	37.4	4.3	41.1	26.4	9.3	30.9	149.5
1997	40.3	4.7	42.0	26.5	8.6	34.4	156.6
1999	42.7	5.2	43.7	27.3	8.7	40.3	167.9
2001	43.8	4.7	43.6	28.5	8.2	43.2	172.0
2003	45.0	4.7	46.4	31.4	7.8	44.1	179.3
2005	47.8	4.5	49.5	35.6	7.6	44.7	189.9
2007	48.3	4.8	49.1	37.0	7.4	41.5	188.1
2009	45.6	4.6	46.0	30.6	6.2	34.8	167.7
	Capacity (indexed)						Total
	U.S. South	U.S. North	U.S. West	B.C. ^a Interior	B.C. Coast	Other Canada	
1995	1.00	1.00	1.00	1.00	1.00	1.00	1.00
1997	1.08	1.09	1.02	1.01	0.93	1.11	1.05
1999	1.14	1.21	1.06	1.03	0.94	1.30	1.12
2001	1.17	1.08	1.06	1.08	0.88	1.40	1.15
2003	1.20	1.07	1.13	1.19	0.84	1.43	1.20
2005	1.28	1.05	1.20	1.35	0.82	1.44	1.27
2007	1.29	1.11	1.19	1.40	0.80	1.35	1.26
2009	1.22	1.05	1.12	1.16	0.67	1.12	1.12

^aBritish Columbia, Canada.

profitable operating conditions followed by three lean ones, a string that is likely to extend into a fourth as 2009 unfolds. That falling costs, mainly a result of declines in wood costs, failed to stanch losses reflects the highly inelastic nature of lumber demand (Spelter 1985). Cost savings facilitate the operation of mills in the short run, but that causes supply to be out of sync with demand, feeding a downward spiral of prices. Lower prices, because of the low demand elasticity, stimulate only modest extra demand; hence, falling prices ultimately trump falling costs until the losses force capacity to shrink.

Capacity Trends

Demands for lumber in the first half of the decade were largely robust and margins were favorable. That motivated firms to expand capacity by 19 million m³ between 2001 and 2006 (Table 2). When housing peaked in 2005, the industry became saddled with excess capacity that was difficult to unwind. In the ensuing glut, prices fell, margins contracted, and attrition of capacity began to replace growth. As of mid-2009, total North American lumber capacity had declined by 23 million m³ (–12%). This, however, fell short of the 44% drop-off in demand (Table 5), leading to chronic oversupply (Table 1), low prices, and negative margins (Table 9). Table 10 provides a 14-year perspective on capacity trends by region.

South

The U.S. South is a timber-rich region with a good growing climate and with most timberland privately managed. That arrangement places the least constraints on managing

forests for timber production and makes the region attractive for lumber investment. The predominant species are pines that grow fast, becoming merchantable for lumber in about 25 to 30 years. Southern pines exhibit higher than average mechanical properties, comparable to Douglas-fir in strength and stiffness, and are especially amenable to treatment with preservatives. Consequently, perhaps a third or more of the region's lumber is sold to treaters for further processing (Micklewright 1998).

A decade ago, we tallied 420 operating southern, mostly small, often family-owned softwood sawmills. Average size per mill was just over 100 thousand m³. Since then, seven new mills have been added to the list while 122 were erased, 10% of those within the last 18 months (January 2008–June 2009). Yet the industry's capacity grew from 37 million m³ in 1995 to over 48 million m³ in 2007, mainly through the upgrading of remaining mills' capacities; the average per mill jumped to almost 150,000 m³. Since the peak, closures have lopped 3 million m³ from the total for a net loss of 6%. In the first quarter of 2009, the remaining mills were running at only 75% of their potential.

North

The bulk of the North's softwood lumber industry is located in Maine where the predominant species are white spruce and balsam fir. These trees are weaker than the southern pines but the lumber is convenient for light framing such as wall studs. Second growths of red pine planted in the 1930s and later have reached merchantability and have been exploited by a few firms in the lake states. Red pine is also easy to treat and much of it is so processed. Alongside this

construction-grade material are also substantial volumes of white pine, valued for millwork, joinery, and paneling. This resource supports a string of mostly small operations throughout the region.

The North has not shown much growth over the last 15 years. A few new mills were offset by the closure of others, leaving 2009 capacity at roughly the same level as that in the mid-1990s. Small operations dominate the population with the average size being around 50 thousand m³, not much changed since the late 1990s when the average was closer to 40 thousand m³. Attrition has reduced the number of mills from 130 in the late 1990s to 95 currently. In the first quarter of 2009, the remaining mills were running at only about 60% of capacity.

West

The U.S. West is diverse in its climate and resources. The temperate coastal Pacific Northwest contains the bulk of the timber and enjoys excellent growing conditions. Douglas-fir and hemlock dominate while farther south in northern California, redwood, suitable for outdoor applications like fences, siding and decks, enters the mix. East of these regions, in the drier interior, ponderosa pine is the dominant commercial species, valued for millwork and joinery, but often scattered across the landscape at higher elevations where moisture is more available. Northern Idaho and Montana contain large concentrations of lodgepole pine and other species suitable for light framing. Many of the forests in the West are publicly owned, and supply from these lands has contracted because of changes in management practices and conservation policies.

Besides many indefinite curtailments, since January of 2007 capacity attrition in the U.S. West has led to the permanent loss of 26 sawmills. At the same time, three large mills were opened in the coastal Pacific Northwest which, along with the ramping up of other new mills built earlier, held the overall regional loss to under 4 million m³ (–8%). Most negatively affected were the states of Montana and California, whose losses in this period (2007–2009) were 26% and 25%, respectively. Idaho was not far behind with 15% loss. As a result of these changes, the average capacity per mill was 256 thousand m³, up from 160 thousand m³, a decade ago. Use of the remaining capacity, however, was constrained to only 66% in the first quarter of 2009.

Eastern Canada

Most of eastern Canada's timberlands are dominated by the boreal forest in which balsam fir, white spruce, and jack pine are the main softwood components. The region's generally severe winters and short growing seasons limit the size of its trees, making them less practical for sawmilling than larger sized trees found elsewhere. The region has been further handicapped by export restrictions to the United States in the form of tariffs and quotas as well as the strength of the Canadian currency. Last, many of these mills serve as

fiber baskets for pulp mills, but the simultaneous downturn in the pulp and paper sector has reduced that source of demand for these mills.

The recession, export constraints, and reductions in allowable cuts from public timberlands have severely strained this region. Besides the outright closure of 46 mills since January 2006, at least nine other mills have gone into receivership and have sat closed for over a year. Together, these closed and paralyzed operations have cut eastern Canadian capacity by 5.6 million m³ (–14%). Average size per mill was 171 thousand m³ in 2009 compared with 135 thousand m³, in 1995. The remaining mills were held to an operating rate of only two-thirds in the first quarter of 2009.

Interior British Columbia

Extensive stocks of lodgepole pine exist in the interior of British Columbia, along with white and Engelmann spruces and subalpine fir. Tree sizes are bigger than the trees in the boreal forest, making this a more favorable region for sawmilling. Exports to the United States are not constrained by quotas but have been subject to a 15% tariff since October 2006. Trade normally accounts for over two-thirds of the output, so the rise in the currency was a major disadvantage.

Operations tend to be larger than in other regions. In 1999, the 102 operating mills had an average capacity of 267 thousand m³. By 2009, the number of mills had fallen to 76, but the average per mill jumped to 397 thousand m³, the highest among the regions. Twenty mills have been closed since 2006, resulting in capacity loss of 6 million m³ (–16%). In the first quarter of 2009, the remaining mills ran at less than 60% of capacity.

Coastal British Columbia

Coastal British Columbia is an extension of the temperate coastal forest ecosystem of the U.S. Pacific Northwest with the addition of a more significant presence of western redcedar, a light but durable species valued for outdoor uses. Sawmills geared to processing this large diameter old-growth resource became disadvantaged when second-growth trees appeared more prominently in the supply flow.

Mill capacities are smaller than in the interior, but as older mills were decommissioned, the average capacity per operation increased from 197 thousand m³ to the 207 thousand m³, average of the 30 remaining mills in 2009. The challenging economic conditions in this region were reflected in a utilization of only 35% capacity in the first quarter of 2009.

Capacity Outlook

For the sawnwood industry, 2006 to 2009 offers a case study of the speed and extent of adjustments to capacity under conditions of extreme economic duress. The sector entered the downturn with substantial financial reserves accumulated during the three prior profitable years. A settlement of a lumber trade dispute with Canada that resulted in a cash

Table 11—North American capacity closures, 2005–2009 with extrapolation to 2012

	Capacity ($\times 10^6$ m ³)	Gross shuts ^a ($\times 10^6$ m ³)	Gross shuts (% capacity)	Gross attrition rate (%)			
				United States		Canada	
				South	West	Western	Eastern
2005	189.9	—	—	—	—	—	—
2006	190.8	4.5	2.4	–0.6	–2.6	–0.7	–5.9
2007	188.1	6.0	3.2	–0.9	–2.6	–4.4	–5.6
2008	175.5	12.8	7.3	–3.7	–4.4	–10.0	–9.3
2009	167.7	4.2	2.5	–4.5	–4.8	0.0	–0.2
2010	161.0	—	—	—	—	—	—
2011	154.6	—	—	—	—	—	—
2012	148.0	—	—	—	—	—	—

^a Gross shuts excludes new capacity from creep and new facilities.

payout of over 5 billion dollars, 80% of which accrued to Canadian firms, also bolstered balance sheets. Thus the relatively modest financial losses in 2006 were absorbed with only 2.4% of capacity being shuttered (Table 11). The brunt of the losses was taken by eastern Canada, where a reduction in Quebec's allowable cut contributed to a heavier 5.9% reduction.

Financial losses climbed to more burdensome levels in 2007. The attrition rate also increased with 6.0 million m³ of mill capacity closed, though this still represented a relatively modest loss of 3.2%. Again, eastern Canada was the most heavily affected region.

By the third year of the downturn, the accumulated losses and weakened finances caused the overall attrition rate to rise to 7.3%. Heavy losses in eastern Canada were joined by similarly large capacity withdrawals in the West. The rate of attrition in the U.S rose too, though by a lesser amounts.

Through the first half of 2009, the fourth year of the downturn, the attrition rate was 2.5%, or an annual rate of 5.0%. In all, over these 3-1/2 years, 28 million m³ of capacity were shuttered, representing a gross loss of 14%. This converts to an average attrition rate of 3.5%. Looking ahead, given the longevity of the downturn and the accumulated impact of losses on firms' balance sheets, a continuation of the recent negative margin environment would likely result in more attrition. Assuming the continuation of recessionary conditions, a further loss rate of 4% seems a conservative expectation. Applying this to the 2009 capacity results in a shrinkage to 148 million m³ by 2012, or 22% below its 2006 peak.

Economic Questions

Housing Construction

Looking ahead, the foremost question for sawmilling is the timing and extent of recovery in home building. Home construction thrived in the earlier part of this decade when interest rates were low and relaxed credit controls made loans easily available. Underpinning growth were favorable

demographics fueled in part by immigration. Legally admitted immigrants were in excess of a million persons per year (U.S. Department of Homeland Security 2009).

Problems began when the confluence of these factors began to drive home values up and beyond the underlying demographic and economic fundamentals. Spiraling prices generated their own momentum, and speculation in and purchase of homes for investment began to account for a rising share of activity. To rein in what authorities began referring to as "frothy conditions" in real estate, the central bank (Federal Reserve) gradually lifted interest rates, from 1% at the trough in June of 2003 to 5.25% by July 2006. As these measures were put into place, the rise in home prices slowed and then stopped altogether in July of 2006 (Standard & Poor's 2009).

When home prices crested, the speculative momentum reversed and the drooping home values exposed the excesses in the previous upswing. As the values of a growing number of homes fell below what was owed, borrowers began to default. This set in motion a self-reinforcing cycle of price drops, more defaults, and belated credit tightening, which sent real estate into a major correction. The deterioration of the vital signs of the real estate market is summarized in Table 12. The salient fact in the table is the increase in the unsold backlog and a related metric, the rise in the number of unoccupied units. A necessary condition for a rebound is to work this overhang off.

A context for home building activities in Table 13 is the underlying need for housing. Its primary driver is the change in the size and composition of the population from which the number of new households are formed. To the new households must also be added removals (demolitions, conversions) from the existing stock, units bought as second homes, and vacant units.

Projections of the population of potential home owners have been made by the Census Bureau (2008). This converts to the number of households by applying the rates of household heads within each age class to the number of

Table 12—Housing market conditions, 2005–2009 as of June 2009 (data in thousands)^a

	Starts	Sales, new	Sales, existing	Unsold backlog, all	Month's supply, number	Median new home price (\$)	Median existing home price (\$)	Change in vacant units
2005	2,073	1,279	7,063	3,357	4.8	234	218	427
2006	1,812	1,049	6,510	3,986	6.3	243	222	1,100
2007	1,342	768	5,672	4,468	8.3	244	217	1,050
2008	900	481	4,893	4,050	9.0	230	197	1,215
2009	536	355	4,636	4,090	9.8	207	169	74
Change, 2005–2009 (%)								
	–75	–73	–34	22	106	–12	–23	—

^a U.S. Census Bureau 2009, National Association of Realtors 2009.

people in the class. To project future households, we used the headship rates reported for 2007. However, recognizing the possibility that current economic conditions may limit peoples' abilities to form independent households, we reduced them by up to 1% during 2008 to 2011 before phasing them back to the 2007 level by 2015. The resulting growth of households is shown in Figures 5 and 6.

A large part of the current imbalance in the housing market resulted from the construction of too many homes, resulting in homes that now sit vacant (Figure 7). A return to equilibrium conditions based on household growth requires vacancy levels to fall back to normal. We assumed the absorption process to take place over a 4-year span according to the path in Figure 7. Combined with new household formations, these result in estimates of new housing construction shown in Figure 8 and Table 14.

The salient feature of this projection is the relatively slow rebound. Previous post-war housing contractions recovered swiftly when interest rates were cut and credit loosened. This time, interest rates are at multi-decade lows, but creditors remain cautious in light of the growing defaults and the expanded backlog of unsold and unoccupied properties. Accordingly, the recovery faces unusual headwinds that are likely to slow its progress until the overhang of vacant units returns to normal, which, in our scenario, occurs near mid-decade. For comparison, we contrast these projections with a recent industry projection. With more government incentives along the lines of the \$8,000 new home purchaser credit (in effect until November 2009), a more vigorous rebound, such as the industry forecast, is possible though likely to come at the expense of later activity when any incentives expire.

Changes in the population mix are also likely to have an effect on the mix of construction. According to the Census analysis, the U.S. population is aging and among older age classes the probability of inhabiting apartments instead of single family homes increases. This slants activity toward multi-unit dwellings which increase from 17% of the mix

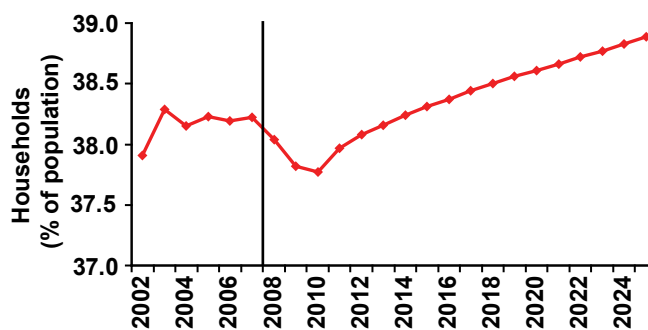


Figure 5. Total U.S. households as a percentage of population.

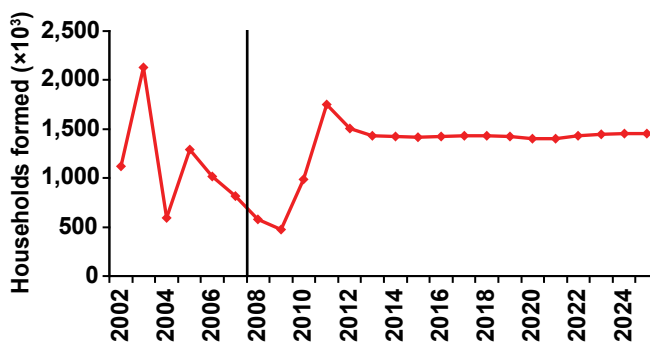


Figure 6. New U.S. household formations.

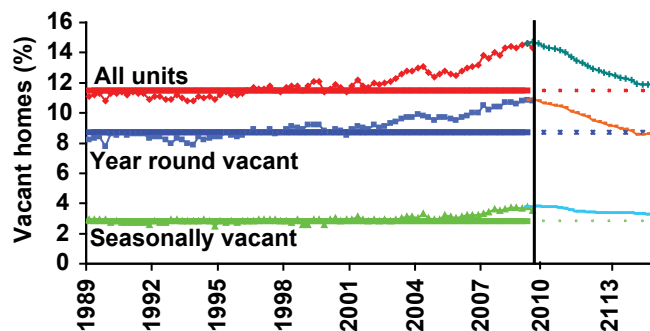


Figure 7. Shares of U.S. homes that are vacant, 1989 to 2015.

Table 13—Fundamentals of new household formation, 2010–2025

	Population increases			Total population	Average age (years)	New households, trend
	Natural increase	Immigration	Total			
2010	—	—	—	307,212	37.0	—
2015	8,556	6,653	15,209	322,423	37.6	1,507
2020	8,692	7,076	15,768	338,190	38.2	1,423
2025	8,488	7,555	16,043	354,235	38.8	1,437

Table 14—Housing market projections, average of 5-year increments, 2010–2020

	New households, trend	Removals	Vacancies		Totals			
			Seasonal	Year-round	Single-family	Multi-family	Mobile	All
2010	—	—	—	—	813	250	81	1,144
2015	1,507	232	–59	–377	890	301	111	1,303
2020	1,423	285	50	76	1,251	423	159	1,834

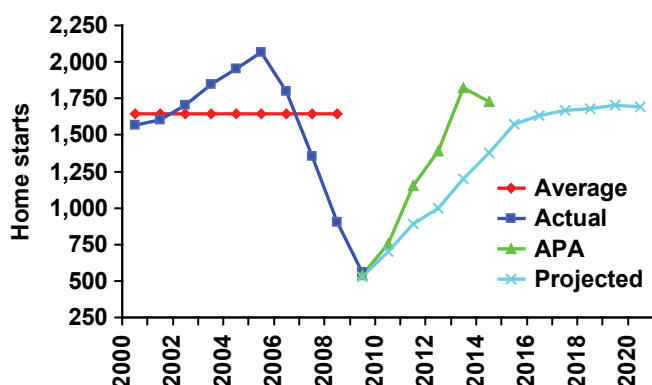


Figure 8. Total U.S. single and multi-home starts, 2000 to 2020. For comparison, a recent forecast from the American Plywood Association is also graphed (APA 2009).

over 2006–2010 to 23% in the next decade and 25% after 2020 (Table 14).

Market Growth Initiatives

As an antidote to the collapse of markets and their possible slow recovery, might offsetting demand be created by recapturing lost markets or gaining footholds in new ones? One idea being contemplated is a promotional campaign funded by an industry-wide check-off program whereby small fees on industry production are used to fund a promotion and education campaign (U.S. Endowment for Forestry & Communities, Inc. 2008). For such an initiative to work, areas of the market disposed to persuasion need to be identified and the advantages of using lumber defined.

Lumber is an economical building material but handicapped by some functional disadvantages including its tendency to warp, split, crack, and decay. In the past, decay-resistant

woods such as cypress, red cedar, and redwood held sway in exposed situations, but limited availability of these species made supply unable to keep up with demand. The preservative-treated wood industry expanded to fill the void. However, issues with dimensional stability, straightness, and cracking remain and lumber requires periodic maintenance to forestall deterioration. Wood–plastic and wood–cement composites emerged as lower-maintenance alternatives and have captured significant shares in the siding, fencing, railing, and decking markets. Attempts to increase lumber use in these markets require that lumber’s weaknesses be addressed.

One potential answer is heat-treated lumber. Like regular lumber, the process begins with a high-temperature drying schedule to bring the moisture down essentially to zero while avoiding internal checks. Immediately thereafter, the temperature is raised to 185–225 °C (365–437 °F) for two to three hours with steam or some inert gas (i.e., nitrogen) to shield the wood from scorching (ThermoWood Association 2003). This improves the biological durability of wood, making it equivalent to naturally durable species such as redcedar, and allows its use in exterior settings without the need for chemical preservatives. Heat treatment also decreases swelling and shrinkage caused by moisture changes. Though this greater stability and moisture resistance does not prevent flaking off of paint, waterborne and acid-curable paints on heat-treated panels have performed better than on untreated surfaces (Jämsä and others 2000). This suggests a potential opportunity to market such wood in high-value exterior uses previously lost to non-wood products as well as an alternative to preservative treated wood.

Caveats include higher greater visual requirements and thus a need for a higher grade of log for high-value uses such as

Table 15—North American standard lumber lengths and their nearest metric equivalents

Imperial (ft)	Metric equivalent (m)	Nearest metric (m)	Volume loss (%)
8	2.4	2	–18.0
9	2.7	3	–27.1
10	3.0	3	–1.6
12	3.7	3	–18.0
14	4.3	4	–6.3
16	4.9	4	–18.0
18	5.5	5	–8.9
20	6.1	6	–1.6
22	6.7	6	–10.5
24	7.3	7	–4.3

siding. Heat-treated wood darkens and may be a problem in applications where it is not painted. Where paint-holding ability is concerned, sawing wood perpendicular to the grain (edge grained) outperforms plain sawn wood, so sawing may have to be different (Williams 1999). Finally, the process makes wood more brittle, which likely increases wastage when nailing, so screw-based fastening may need to be used. Heat-treated wood has made modest inroads in Europe, especially in outdoor uses such as playgrounds, gazebos, decks, and fences where visual requirements are less demanding. One Canadian firm is also marketing such wood siding (Maibec 2009).

A second potential area of opportunity is modification of lumber coloring so that it can substitute for higher priced tropical woods in applications where coloration is a key feature. Although wood's color can be changed through steaming or heat treatment, these have negative consequences on properties such as brittleness. Complete modification of color is also possible with solvent-based systems, but often with impairment to dimensional stability. Using “supercritical carbon dioxide” (carbon dioxide held within certain temperature and pressure ranges where they remain in gaseous form but behave as a liquid) as the transport medium was found to solve wood coloration problems without imparting negative consequences. The developers of this process were one the winners of the 2009 biannual Schweighofer Awards for wood innovations (Kompetenzzentrum Holz GmbH 2009). Their process expands markets for light-colored northern hemispheric woods in flooring, furniture, and timber applications.

A further marketing prospect is framing for low-rise non-residential buildings where metal systems are used. Wood is one of the most economical building materials and its use in light framing is deeply embedded in North American residential building practices. Periodic anecdotal reports of switching by builders in low-rise nonresidential markets

when lumber prices are low have surfaced in the building trade magazines, indicating price sensitivity in this segment. Emphasizing this competitiveness of wood could drive demand where building codes are not an impediment to use.

Another potential for market development in light of the increasingly weaker U.S. dollar is offshore. Size differences in lumber, however, pose an impediment here because North American practices are based on imperial measurement units of feet and inches, whereas most offshore markets use metric measurements. Sawing logs initially sized for standard North American lengths can involve substantial volume losses, depending on the length (Table 15). European and U.K. lumber thicknesses and widths are also usually bigger and are marketed in rough and dry condition, further complicating operations for a North American oriented operation. To produce for both markets seamlessly and without excessive waste would require an expanded sorting capacity, both at the log input end and the lumber output sides.

Summary

The North American lumber industry faces difficult near-term economic conditions. The question is how soon its markets will regain their equilibrium. For that to happen, either demand rebounds, capacity shrinks, or a combination of the two equally balances the two to market clearing levels.

Since 2006, we have recorded a gross capacity shrinkage of 14%. Looking ahead, we extrapolated this to slip further to a total 22% by 2012 if margins remain near their recent depressed levels.

On the demand side, the prospects for housing starts recovering rapidly appear problematic in the face of an excess overhang of vacant homes. Using our “trend” housing projection together with an average recovery in the wider economy where lumber is used, we project U.S. demand rising by 30% from its 2009 nadir of 77 million m³ to 100 million m³ in 2012. We projected total North American demand (U.S. and Canadian domestic demands, offshore exports less offshore imports) to increase by 27%, from 106.5 million m³ in 2009 to 135.5 million m³ in 2012. When we combine these demand increases with the permanent capacity reductions, the gap between the two narrows. These result in demand-to-capacity ratios rising from 64% in 2009 to 91% in 2012 (Figure 9). Historically, at around 90% capacity utilization, pricing power begins to shift to producers. Thus under these circumstances, the peak building season of 2012 should exhibit a strong pricing trend. This prognosis, however, requires that the lumber industry emerge in a slimmed-down size.

Steps to bolster demand in other markets could improve the outlook. Potential areas include high value exterior markets that may be reclaimed through application of heat-treated lumber, marketing campaigns aimed at low-rise nonresidential builders who have discretion to switch

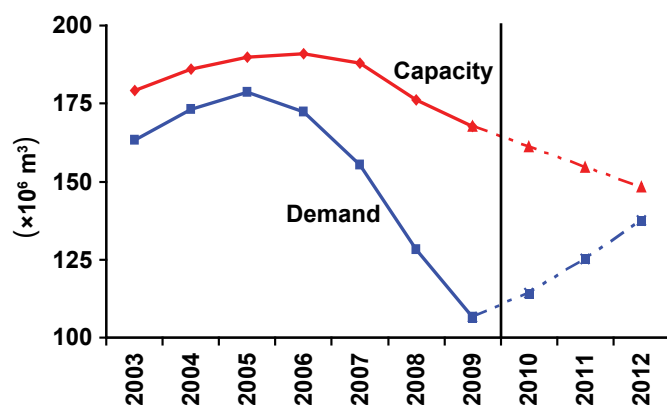


Figure 9. North American capacity and demand curves, 2003 to 2009 and projections to 2012.

framing materials, or offshore markets where the current weak state of the dollar provides U.S. suppliers with an edge.

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WPC (Wood Products Council). 2005b. 2003 Wood Products Used in Residential Repair and Remodeling, with Comparison to 1997. Tacoma, WA: APA—The Engineered Wood Association. 38 p.

WPC (Wood Products Council). 2009a. 2006 Wood Used in New Residential Construction U.S. and Canada, with Comparison to 1995, 1998, and 2003. Tacoma, WA: APA—The Engineered Wood Association. 169 p.

WPC (Wood Products Council). 2009b. 2006 Wood Used in Residential Repair and Remodeling U.S. and Canada, with Comparison to 1997 and 2003. Tacoma, WA: APA—The Engineered Wood Association. 120 p.

Appendix—Sawmill Capacity and Timber Inventory by State and Province

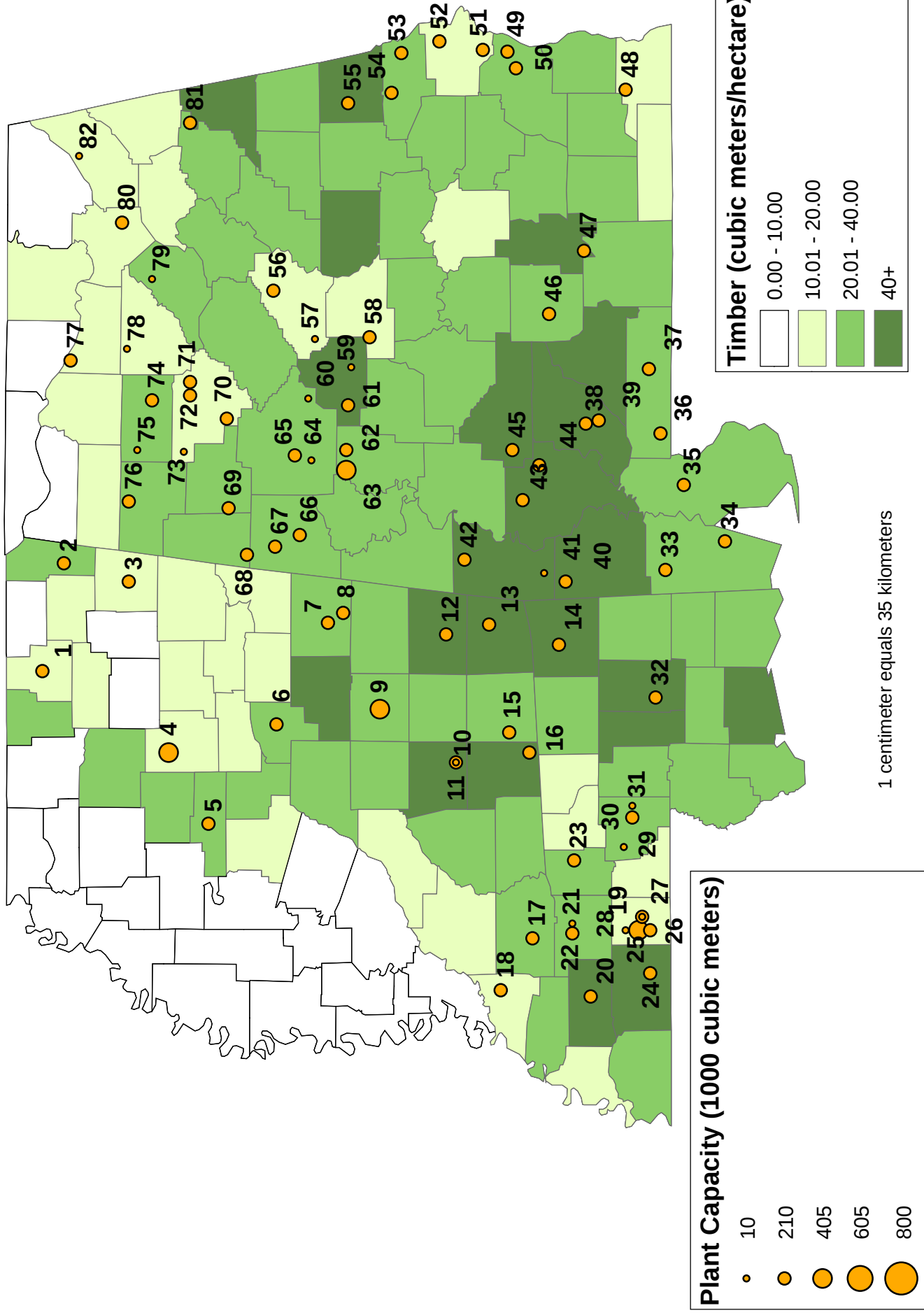
The following maps and tables show past and current capacity of sawmills and the availability of timber, by county, in the vicinity of these mills in 30 States. Information on timber density by county in Canada is not available; hence, those maps contain only sawmill sites. The maps, and their associated tables, are arranged in alphabetical order, as follows:

Alabama
 Alberta
 Arizona
 Arkansas
 British Columbia, Coastal
 British Columbia, Interior
 California
 Colorado—*see* Arizona
 Florida
 Georgia—*see* Florida
 Idaho
 Louisiana—*see* Arkansas
 Maine
 Manitoba
 Maritime Provinces (New Brunswick, Newfoundland, Nova Scotia and Prince Edward Island)
 Maryland
 Michigan
 Minnesota—*see* Michigan
 Mississippi—*see* Alabama
 Montana—*see* Idaho
 New Brunswick—*see* Maritime Provinces
 Newfoundland—*see* Maritime Provinces
 New Hampshire—*see* Maine
 New Mexico—*see* Arizona
 New York
 North Carolina
 Nova Scotia— *see* Maritime Provinces
 Oklahoma—*see* Arkansas

Ontario
 Oregon
 Quebec
 Prince Edward Island—*see* Maritime Provinces
 Saskatchewan —*see* Manitoba
 South Carolina—*see* North Carolina
 South Dakota—*see* Arizona
 Texas, eastern—*see* Arkansas
 Utah—*see* Arizona
 Vermont—*see* Maine
 Virginia—*see* Maryland
 Washington
 Wisconsin—*see* Michigan
 Wyoming—*see* Arizona

Alabama & Mississippi

Softwood Roundwood Inventory & Softwood Sawmill Capacity



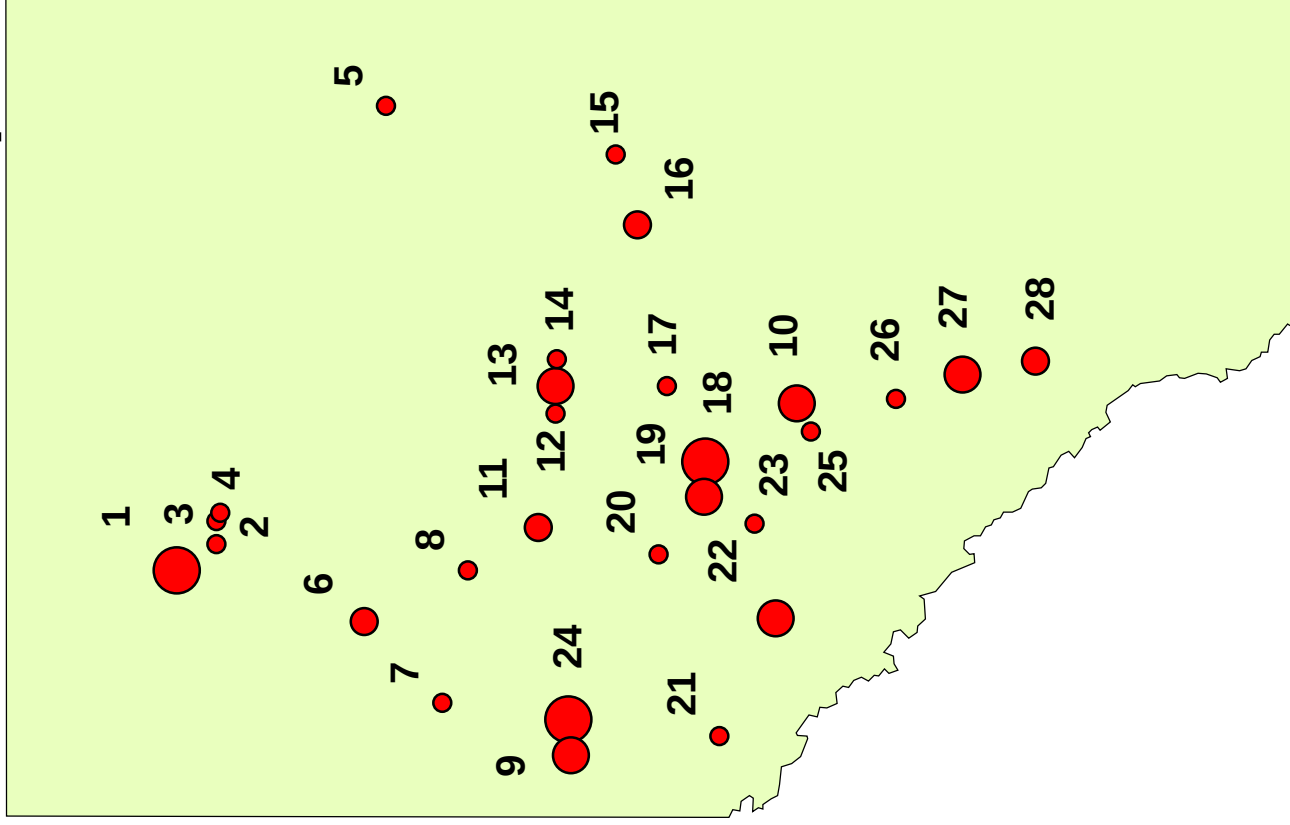
Alabama, Mississippi

Mill			Former name or DBA	Location	Capacity / Production (1,000 m³)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
I.D.	Name	2004			2005	2006	2007	2008	2009																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
A C Swindle Newton Lum Co Robins Lum Co J H Nash Lum Co Garrison Sawmill Vance Lum Co Hankins Lum Co Broadhead Lum & Mfg Sterling Lum & Sup Co Columbus Lbr Co McKinney Lum Co 19 GeorgiaPacifiKoch Co M C Dixon Lum Co 80 AbitibiBowater 46 Chapman For Prod 22 Columbus Lbr Co 45 Weyerhaeuser Co				Quinton																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								

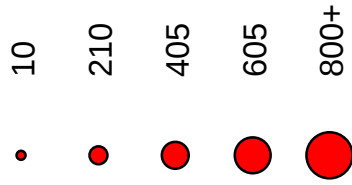
Mill		Former name or DBA	Location	Capacity / Production (1,000 m³)				
I.D.	Name			2004	2005	2006	2007	2008
72 Jasper Lum Co		SE Wood	W Jasper	198	212	218	224	224
71 Jasper Lum Co			Jasper	118	118	118	118	153
23 Joe N Miles & Sons			Silver Creek	401	425	401	401	401
24 Mabry Lum Co			Liberty	47	47	57	57	57
51 Mead Westvaco		Georgia Kraft	Cottonton	319	342	361	361	361
61 Olon Belcher Lum Co			Brent	65	65	65	65	65
6 Packaging		Tenneco	Ackerman	276	276	276	276	278
66 Pate Lum Co			Carrollton	50	50	52	52	52
44 Scotch Lum Co			Fulton	236	236	307	307	307
8 Shuqualak Lum Co			Shuqualak	278	278	295	307	295
18 Southern Lum Co			Hermanville	194	194	191	198	203
37 T R Miller Mill Co			Brewton	236	236	255	255	255
43 Thomasville Lum Co		Coastal Lum	Thomasville	47	47	47	47	47
58 West Fraser Tim Co		Int Pap	Maplesville	271	271	271	271	271
54 West Fraser Tim Co		Int Pap	Citronelle	212	212	212	212	177
54 West Fraser Tim Co		Int Pap	Opelika	224	224	224	224	224
63 Westervelt		Gulf States Pap	Moundville	401	566	590	590	590
25 Weyerhaeuser Co		Cavenham	Fernwood/McCt	543	555	566	566	566
9 Weyerhaeuser Co			Philadelphia	543	543	543	543	543
4 Weyerhaeuser Co			Bruce	543	543	543	543	543
				Board Mills				
42 Jachin Lum Co			Jachin	34	34	34	34	34
10 King Lum Co			Forest	65	65	65	71	71
59 Kornegay Lum Co			Centreville	14	14	14	14	14
78 Littrell Bros Lum Co			Vinemont	15	15	15	15	15
77 Littrell Lum Mill			Decatur	42	42	42	42	57
67 McShan Lum Co			McShan	63	63	63	63	63
27 Seago Lum Co		3 S Enterprises	McComb	84	101	101	101	101
				Specialty or Unknown				
81 Bennett Lum Co			Piedmont	53	53	53	53	53
50 Brabham Lum Co			Eufaula	30	30	30	30	30
35 Crosby Lum Co			Bay Minette	47	47	47	47	47
48 Custom Lum Mfg Co			Dothan	28	28	28	28	28
47 Dozier Lum Co			Dozier	28	28	28	28	28
73 Earley Lum Co			Carbon Hill	7	7	7	7	7
55 East Alabama Lum Co			Lafayette	132	132	132	132	132
82 F G Lum Co			Sylvania	7	7	7	7	7
29 Foxworth & Thompson			Foxworth	9	9	9	9	9
49 Garrison Bros Lum Co			Eufaula	35	35	35	35	35
75 Great Southern Enterprises			Haleyville	16	16	16	16	16
60 KyKenKee			Vance	21	21	21	21	21
41 Lassiter Lum Co			Silas	15	15	15	15	15
70 LKL Lum Co			Oakman	47	47	47	47	47
28 Magnolia Lum Co		Guthrie Lum	Fernwood	17	17	17	17	17
40 Millry Mill Co			Millry	24	24	24	24	31
79 Mooneyham Lum Co			Blountsville	4	4	4	4	4
64 Pearson Lum Co			Tuscaloosa	23	23	23	23	23
52 Phenix Lum Co			Phenix City	59	59	59	94	106
57 Seaman Tim Co			Montevallo	18	18	18	18	18
36 Swift Lum Co			Atmore	71	71	94	94	94
65 W G Sullivan Lum Co			Northport	66	66	66	66	66
Number of sawmills				2004	2005	2006	2007	2008
Number employed ('000)				95	87	86	85	83
Output per employee (m³)				7.2	7.0	7.0	7.0	6.4
				1530	1650	1580	1380	1180

Alberta

Softwood Sawmill Capacity



Plant Capacity (1000 cubic meters)



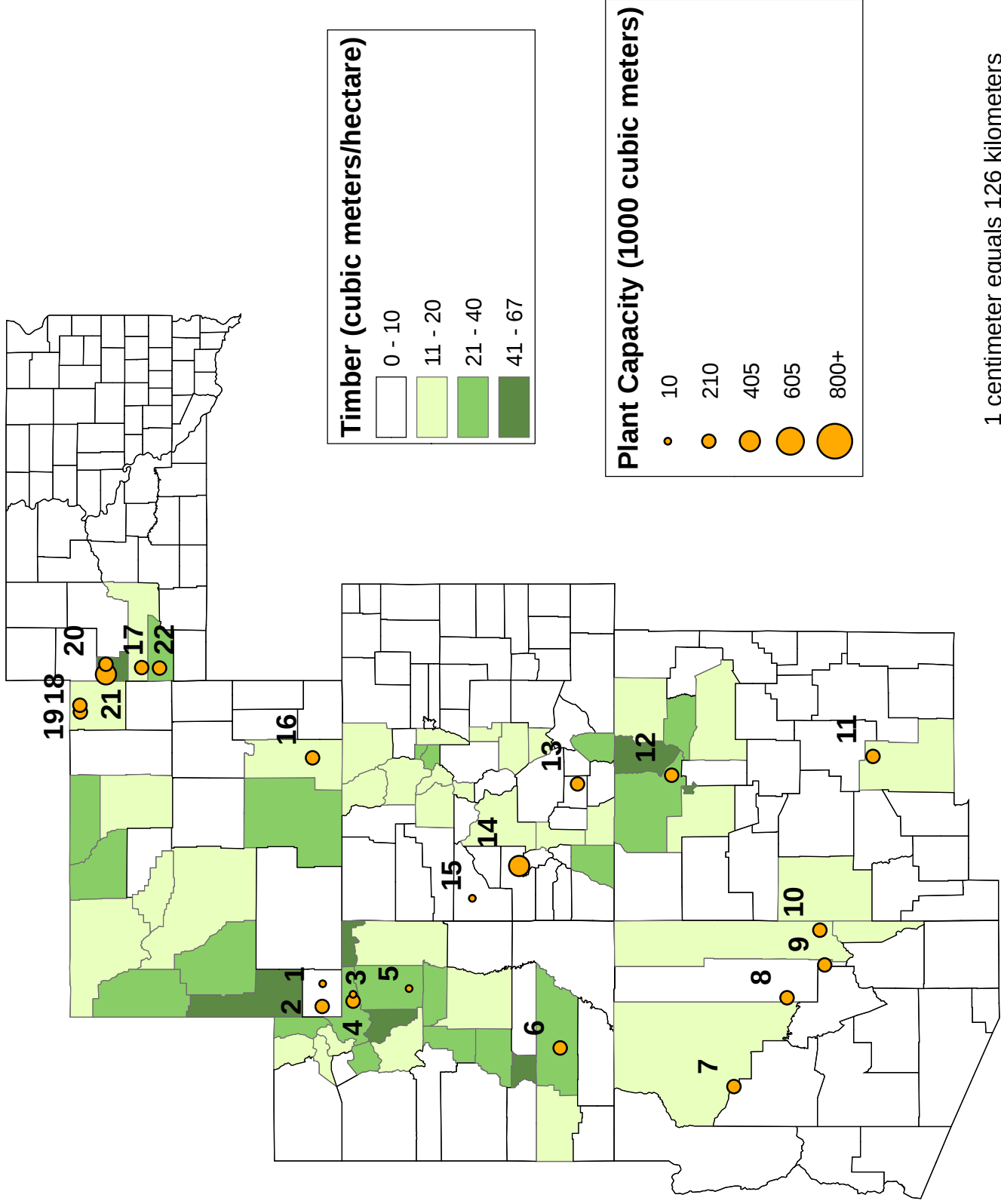
1 centimeter equals 66 kilometers

Alberta

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Arizona, Colorado, New Mexico, South Dakota, Utah, Wyoming

Softwood Roundwood Inventory & Softwood Sawmill Capacity

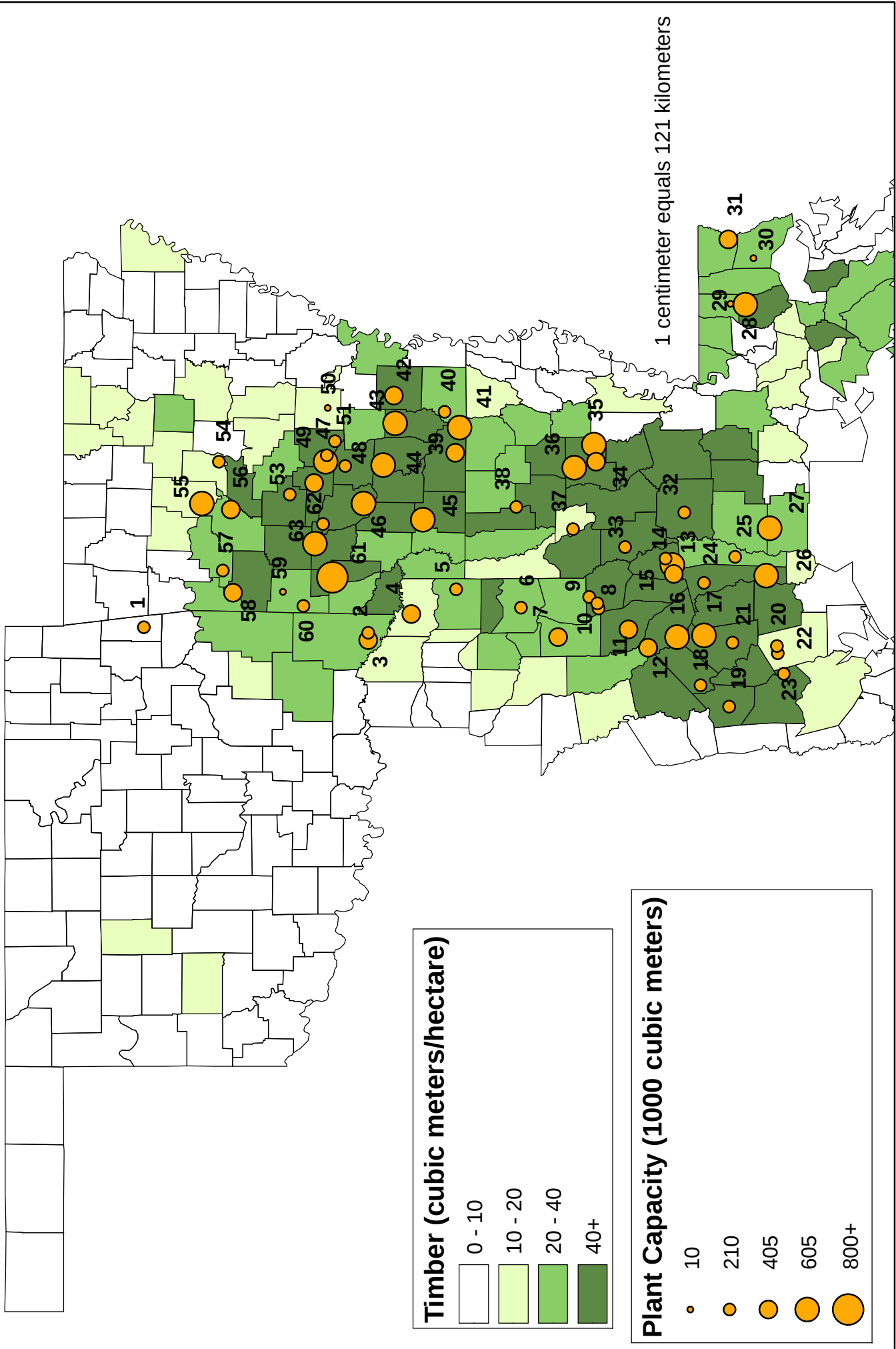


Colorado/S. Dakota/Wyoming

Mill I.D.	Name	Former name or DBA	Location	Capacity / Production (1,000 m ³)					
				2004	2005	2006	2007	2008	2009
	Mescalero For Prod Cody Lum Co R L Hammer Tim & Lum Co Wyoming Sawmills 16 Big Horn Lum Co	Allied For Prod	Alamogordo Cody Enampment Sheridan Laramie	73 12 23 94 52	71 12 23 94 57	Closed Mills 71 12 23 94 59			
	1 Ayres & Baker 19 Bear Lodge For Prod 7 Southwest Forest Products		Mt. View Hulett Ash Fork	7 14 0	7 14 24	7 14 24	9 14 24	9 14 24	9 14 24
	14 Intermountain For Prod		Montrose	94	94	201 224	224	224	224
	9 Fort Apache Tim Co 11 Mescalero For Prod 22 Neimann/Rushmore		White River Mescalero Hill City	177 41 137	177 41 137	165 41 142	142 41 142	142 41 142	142 41 142
	21 McLaughlin Sawmill Co 18 Neimann Sawmill 20 Neimann/Spearfish 13 Pleasant Logging&Milling 8 Precision Pine 10 Reidhead Bros Lum Co		Spearfish Hulett Spearfish Monte Vista Heber Nutrioso	17 118 297 30 28 19	14 118 295 30 28 19	14 106 295 30 24 19	14 106 295 30 24 19	14 106 295 30 24 19	14 106 295 30 24 19
	4 Blazzard Lum Co 15 Doug Jones Sawmill 5 Fabrizio Sawmill 3 Leavitt Lum Co 17 R E Linde Sawmills 6 Skyline For Res 2 South & Jones 12 Vallecitos		Kamas Grand Junction Duchesne Kamas Custer Escalante Evanston Vallecitos	16 5 14 7 12 47 24 19	16 5 14 7 12 47 24 19	17 5 7 7 12 47 24 19	17 5 7 7 12 47 24 19	17 5 7 7 12 47 24 19	17 5 7 7 12 47 24 19
	Softwood lumber (1,000 m ³)			2004	2005	2006	2007	2008	2009
	Estimated capacity			1377	1399	1477	1409	1338	1220
	Production (WWPA)			1107	1074	1102	1239	1071	
	Implied capacity utilization			80%	77%	75%	88%	80%	
	Number of sawmills			25	26	26	24	23	21
	Number employed ('000)			1.5	1.4	1.4	1.4	1.3	
	Output per employee (m ³)			730	760	810	920	840	

Arkansas, Louisiana, Oklahoma, Eastern Texas

Softwood Roundwood Inventory & Softwood Sawmill Capacity

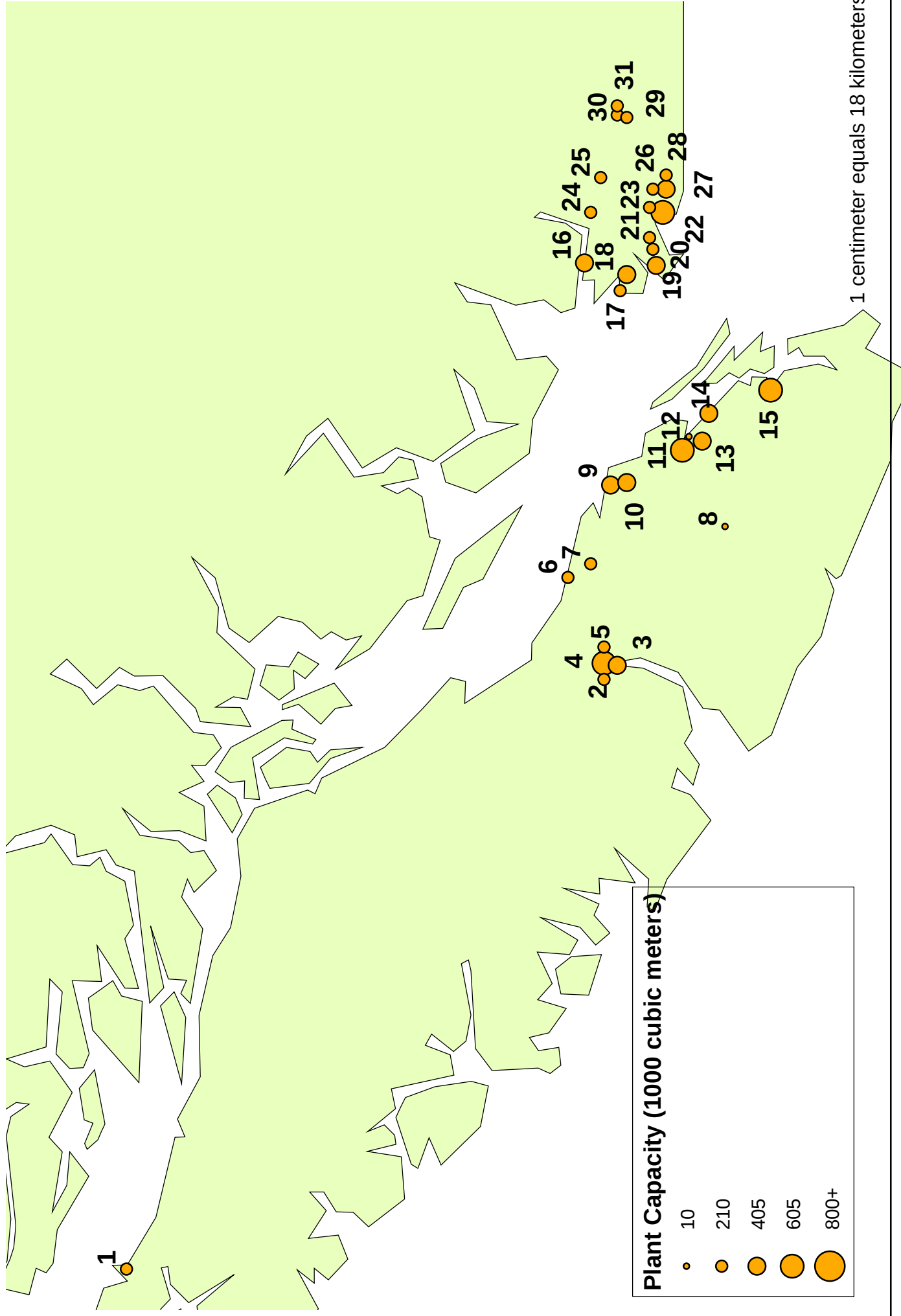


Arkansas,Oklahoma,Texas,Louisiana

Mill I.D.	Name	Former name or DBA	Location	Capacity / Production (1,000 m³)					Mill I.D.	Name	Former name or DBA	Location	Capacity / Production (1,000 m³)							
				2004	2005	2006	2007	2008					2009	2004	2005	2006	2007	2008	2009	
	Leesville Lum	Louisiana-Pacific	Bernice	47		Closed Mills				54	Green Bay Pkg	Pinecrest Lum	Plumerville	160	165	151	118	142	142	
	C & M Lum		Waldron	14	14				48	Idaho Tim		Carthage	83	83	83	83	83	83	83	
	St t unity Lum Prod		Waldron	23	23				31	Joe N Miles & Sons		Bogalusa	354	366	378	378	378	378	378	
	Eas-Tex Lum		Livingston	9	9				42	JP Price Lum		Monticello			24	212	212			
	PBS Lum Manufac		Camden	12	47	47			32	Leesville Lum		Leesville	106	106	118	118	118	118	118	
	Potlatch	Garland Gaston Lt	Prescott	531	543	425	425	118	34	PBS Lum Mfg	Freestone Sawmill	F Winnfield	165	202	202	202	202	203	202	
	GeorgiaPacificKoch		El Dorado	260	260	260	260	260	19	Steely Lum		Warren	531	531	472	401	401	401	401	
	GeorgiaPacificKoch	Int Pap	Springhill	271	271	271	271	271	26	Temple-Inland		Huntsville	83	94	94	94	94	94	94	
	Hood Ind	Int Pap	Coushatta	260	260	260	260	59	27	Temple-Inland		Buna	373	413	413	413	467	467	467	
	Buddy Bean Lum Co		Coushatta	59	59	71	59	59	16	Temple-Inland		Dequincy	378	401	439	439	467	467	467	
53	Weyerhaeuser Co	Willamette Ind	Hot Springs	189	189	194	194	194	94	13	Temple-Inland	Pineland	283	283	283	283	472	472	472	
38	Weyerhaeuser		Taylor	543	543	543	543	543	137	58	Travis Lum	Mansfield	248	248	248	248	283	283	283	
			Wright City			Timber Mills			57	US Tim	South	Booneville	118	118	118	118	118	118	118	
25	Southern For Prod	Hughes Sawmill	Bon Wier	39	38	38	38	38	38	7	West Fraser Tim	Int Pap	Henderson	307	321	330	330	330	330	
						Stud Mills			40	West Fraser Tim	Plum Creek Tim	Huttig	330	519	519	519	477	477	477	
22	GeorgiaPacificKoch	Louisiana-Pacific	Cleveland	153	165	165	165	165	165	35	West Fraser Tim	Plum Creek Tim	Joyce	460	472	496	496	496	496	
41	GeorgiaPacificKoch		Crossett	165	165	165	165	130	130	49	West Fraser Tim	Int Pap	Leola	401	401	401	401	378	378	
15	Temple-Inland		Pineland	248	248	248	248	260	260	4	West Fraser Tim	Int Pap	New Boston	354	378	396	401	375	375	
28	Weyerhaeuser	Cavenham	Holden	378	401	401	401	401	401	61	Weyerhaeuser	Dierks	661	661	708	708	708	708	708	
33	Weyerhaeuser	Willamette Ind	Zwolle	165	165	165	165	165	165	36	Weyerhaeuser	Dodson	425	425	425	425	425	425	425	
						Dimension Mills			3	Weyerhaeuser	Bibler Brothers	Idabel	309	319	319	319	319	319	319	
5	Anthony For Prod		Atlanta	177	177	189	189	196	196				Board Mills							
39	Anthony For Prod		Strong/Urbana	224	224	238	248	248	248	9	Arkansas For Prod	Tenaha	59	59	59	59	59	59	59	
44	Anthony Timberlands	Bearden Lum	Bearden	319	319	460	460	413	413	51	H G Toler & Son	Leola	71	71	71	71	71	71	71	
52	Anthony Timberlands		Malvern	271	283	283	283	283	283	24	Hart Lum	Jasper	35	35	35	35	35	35	35	
18	Atchley Lum & Sup		Trinity	31	31	31	31	31	31	10	Nix For Ind	Timpson	52	52	52	52	52	52	52	
62	Bean Lum		Glenwood	413	413	413	413	413	413	47	Ray White Lum	Sparkman	61	66	66	66	66	66	66	
55	Bibler Brothers	Nekoosa Pap	Russellville	389	389	389	389	389	389	6	Snider Ind	Marshall	106	106	106	106	118	118	118	
11	Cal-Tex Lum		Nacogdoches	241	241	260	278	278	278				Specialty or Unknown							
12	Clemtsa Lum	Hampton Affiliates	Pollok	186	201	203	203	203	203	37	Almond Bros Lum	Coushatta	53	52	52	59	64	64	64	
20	CLW		Cleveland	47	47	47	47	47	47	1	Conner Ind	Stilwell	15	15	15	15	42	42	42	
21	CLW		Livingston	47	47	47	47	47	47	29	Conway Guiteau Lum	Amite	8	8	8	8	8	8	8	
23	CLW	Duke City Lum	Splendora	47	47	47	47	47	47	14	G D Edgar Lum	Hemphill	13	13	13	13	13	13	13	
63	Curt Bean Lum		Amity	201	201	201	201	201	201	50	Hixson Lum Sales	Pine Bluff	7	7	7	7	7	7	7	
56	Deltic Tim		Ola	248	271	271	271	283	283	60	Lewis Lum & Mfg	Cove	71	71	71	71	71	71	71	
45	Deltic Tim		Waldo	330	366	401	401	401	401	59	Mid-South Wood Prod	Mena	7	7	7	7	7	7	7	
17	GeorgiaPacificKoch	Int Pap	Camden	382	382	408	408	408	408	8	Ross Lum	Timpson	17	17	17	17	17	17	17	
46	GeorgiaPacificKoch	Int Pap	Gurdon	295	401	415	415	415	415	30	Ryan For Prod	Covington	5	5	5	5	5	5	5	
						415	415			2	Wood Lum	Idabel	54	54	54	54	54	54	54	
Softwood lumber (1,000 m³)				2004	2005	2006	2007	2008	2009					2004	2005	2006	2007	2008	2009	2009
Estimated capacity				14357	14951	15131	15032	15015	13742	Number of sawmills				71	71	68	68	68	61	61
Reported output (U.S. Census)				13275	13997	14280	11857	9926		Number employed ('000)				7.5	7.5	7.4	7.4	6.3	6.3	6.3
Implied capacity utilization				92%	94%	94%	79%	66%		Output per employee (m³)				1770	1870	1930	1610	1570	1570	1570

British Columbia - Coast

Softwood Sawmill Capacity

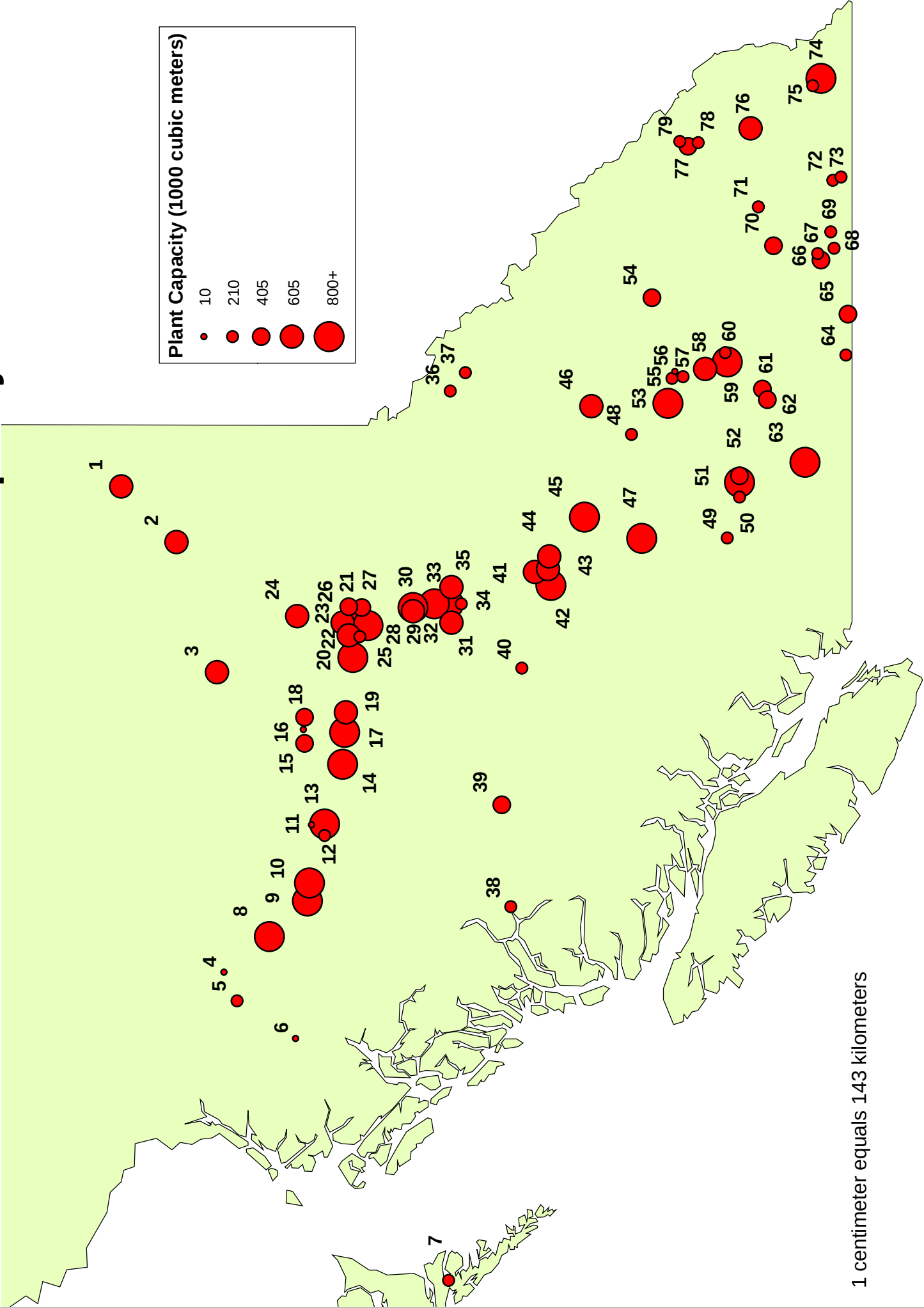


British Columbia - Coast

Mill I.D.	Name	Former name or DBA	Location	Capacity / Production (1,000 m³)					Capacity / Production (1,000 m³)										
				2004	2005	2006	2007	2008	2009	2004	2005	2006	2007	2008	2009				
Closed Mills														Cedar Mills					
	Howe Sound InterFor Prod	West Coast Cellulfbre Primex(Field mill)	Vancouver Courtenay	142															
	A J For Prod		Brackendale	330															
	Western For Prod Inc	Doman	Vancouver/Silvertree	23	23														
	Brascan	Weyerhaeuser Can	Nanaimo/Isi Phoenix	250	283														
	Western FP Inc	Cascadia For Prod	New Westminster	142	142														
	InterFor Prod (Queens)	Western Whitewood	N Westminster/Queer	319	319	319	24												
	Fraser Pulp Chips, Ltd		Surrey	189	189	342	425												
	TimberWest For	FletchChall/CFI	Campbell R/Eik Falls	47	47	47	47												
				401	401	425	425	142											
						Timber Mills													
8	Cowichan Lake Timber		Youbou	9	9	9	9	9	9										
26	Mill & Tim Prod		Surrey	132	132	132	132	132	132										
23	Slag Timber	Teal Cedar Prod	Surrey	153	153	153	153	153	153										
Dimension Mills														Specialty or Unknown					
27	J S Jones Timber		Surrey	354	354	354	354	354	354										
15	Western FP Inc	Cowichan Bay/Div	Duncan	356	382	413	413	413	413										
12	Western FP Inc	Duke Pt Div	Nanaimo	271	415	413	413	413	413										
13	Western FP Inc	Chemainus Div	Chemainus	307	271	271	307	307	307										
11	Western FP Inc	Saltair Div	Ladysmith	290	242	0	472	507	507										
4	Western FP Inc	Ladysmith Div	Ladysmith	238	260	260	260	65	0										
14	Western FP Inc	APD Div	Pt Alberni	406	413	425	425	425	425										
Softwood lumber (1,000 m³)				2004	2005	2006	2007	2008	2009										
Estimated capacity				7802	7624	7114	7381	6407	6201										
Production (Stats Can)				6288	5899	5503	3915	3180											
Implied capacity utilization				81%	77%	77%	53%	50%											
Number of sawmills														Cedar Mills					
Number of sawmills				20					20					20					
Output per employee ('000)				4.7					4.5					4.2					
Output per employee (m³)				1340					1310					1320					

British Columbia - Interior

Softwood Sawmill Capacity

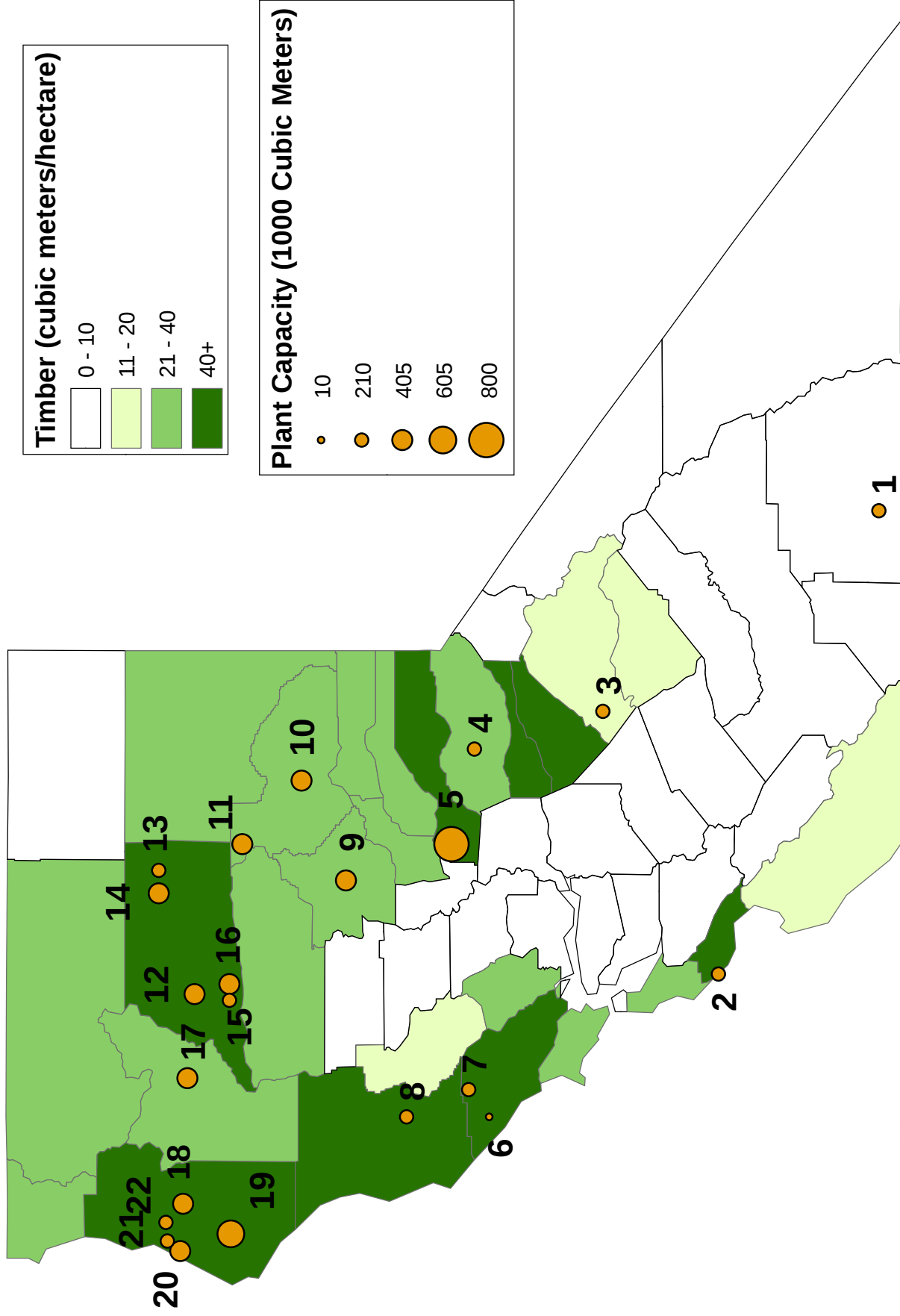


British Columbia - Interior

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Northern California

Softwood Roundwood Inventory & Softwood Sawmill Capacity



1 centimeter equals 70 kilometers

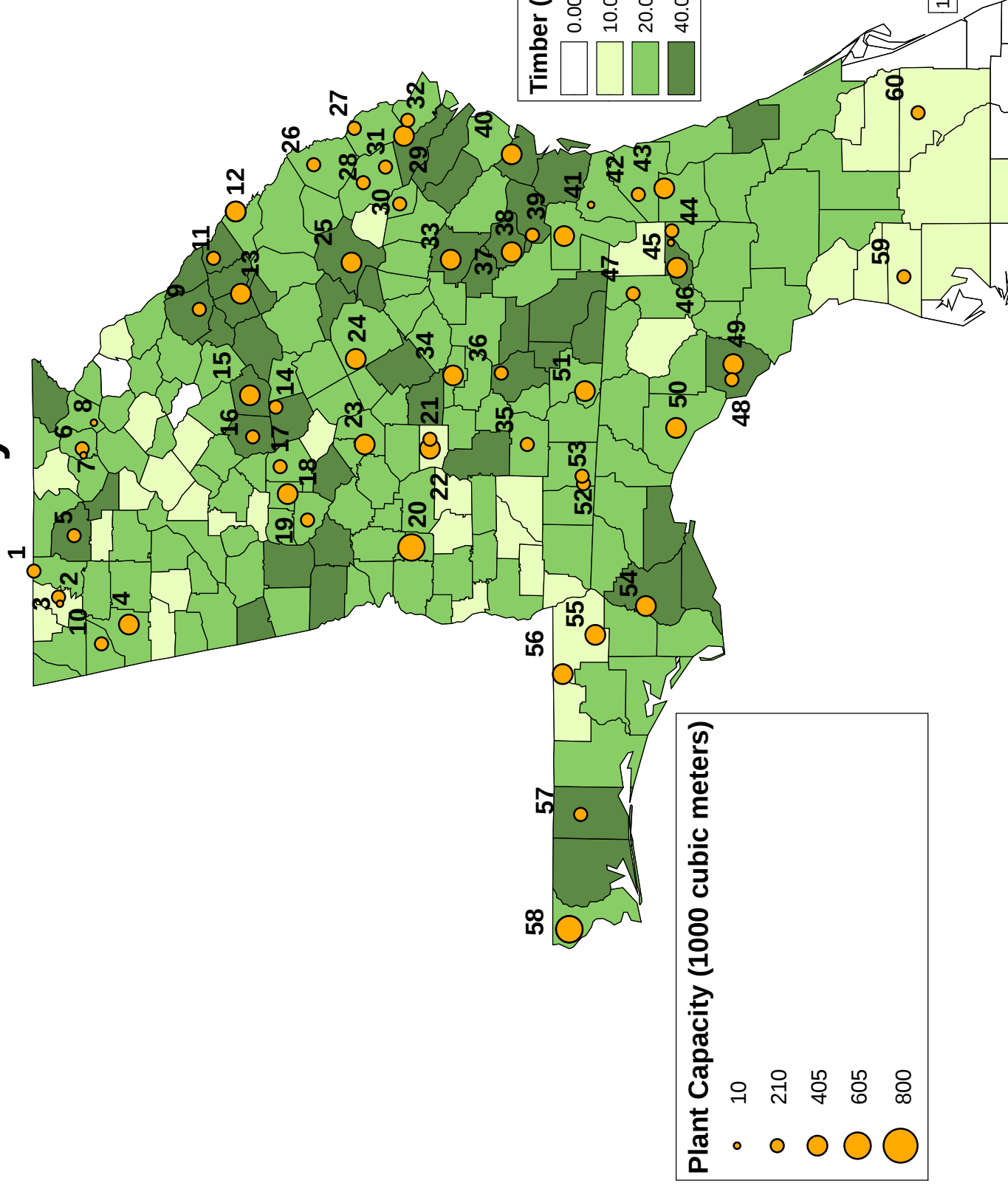
California

Mill I.D.	Name	Former name or DBA	Location	Capacity / Production (1,000 m³)					
				2004	2005	2006	2007	2008	2009
	Pacific Lum	Louisiana-Pacific	Carlotta	12	Closed Mills				
	Sierra Pacific Ind		Susanville	59					
	Eel River Lum Prod		Fortuna	177	47				
	Pacific Lum		Fortuna	315	157	212	212	212	
	Britt Lum Co		Arcata	94	94	94	94	94	
	Sierra Cedar Products	Michigan-Cal	Maynsville	94	94	94	94	94	
	Harwood Prod		Branscomb	307	354	354	354	354	
	Sierra Pacific Ind		Standard/Sonc	248	236	229	231	231	118
4	Sierra Pacific Ind		Camino	283	283	283	283	283	142
22	California Redwood		Arcata/Orick	94	94	94	94	94	71
	Berry's Sawmill	Gr Diamond Timb	Timber Mills						
6	Sierra Pacific Ind		Cazadero	7	7	7	7	7	7
21			Arcata	219	227	227	189	189	189
			Anderson	52	52	52	52	52	52
15	Sound Stud								
	Big Creek Lum	Gr Diamond Timb	Davenport	52	54	59	59	59	59
18	California Redwood		Korbel	557	583	583	583	583	342
	Softwood lumber (1,000 m³)			2004	2005	2006	2007	2008	2009
	Estimated capacity			6940	7186	6910	6898	6186	5423
	Production (WWPA)			6521	6344	6112	5449	4956	
	Implied capacity utilization			94%	88%	88%	79%	80%	

Mill I.D.	Name	Former name or DBA	Location	Capacity / Production (1,000 m³)					
				2004	2005	2006	2007	2008	2009
8	Humboldt Redwood	Mendocino Rdwd	Ukiah	189	189	189	189	149	153
7	Redwood Empire	Pacific States Ind	Cloverdale	224	224	224	224	201	201
20	Schmidbauer Lum		Eureka	236	241	260	260	260	260
				Fencing mills					
3	Sierra Pacific Ind		Chinese Camp	244	244	179	177	177	177
				Dimension Mills					
11	Collins Pine		Chester	236	283	283	283	283	283
19	Humboldt Redwood	Pacific Lum Co	Scottia	177	590	590	590	590	590
1	Sierra For Prod		Terra Bella	153	153	153	153	165	165
16	Sierra Pacific Ind		Anderson	413	413	413	401	401	401
14	Sierra Pacific Ind		Burney	396	404	378	401	401	401
5	Sierra Pacific Ind		Lincoln	607	614	614	625	637	637
10	Sierra Pacific Ind		Quincy	548	550	552	555	555	307
12	Sierra Pacific Ind		Shasta Lake	250	255	255	255	255	255
17	Trinity River Lum		Weaverville	312	337	330	319	307	307
				Cedar Mills					
9	Sierra Pacific Ind		Oroville	172	194	201	212	212	212
13	Shasta Green Inc	Big Valley Lum Co	Burney	94	94	94	94	94	94
				2004	2005	2006	2007	2008	2009
	Number of sawmills			28	29	30	28	26	26
	Number employed ('000)			4.4	3.9	3.8	3.7	3.3	
	Output per employee (m³)			1500	1610	1620	1470	1500	

Florida & Georgia

Softwood Roundwood Inventory & Softwood Sawmill Capacity



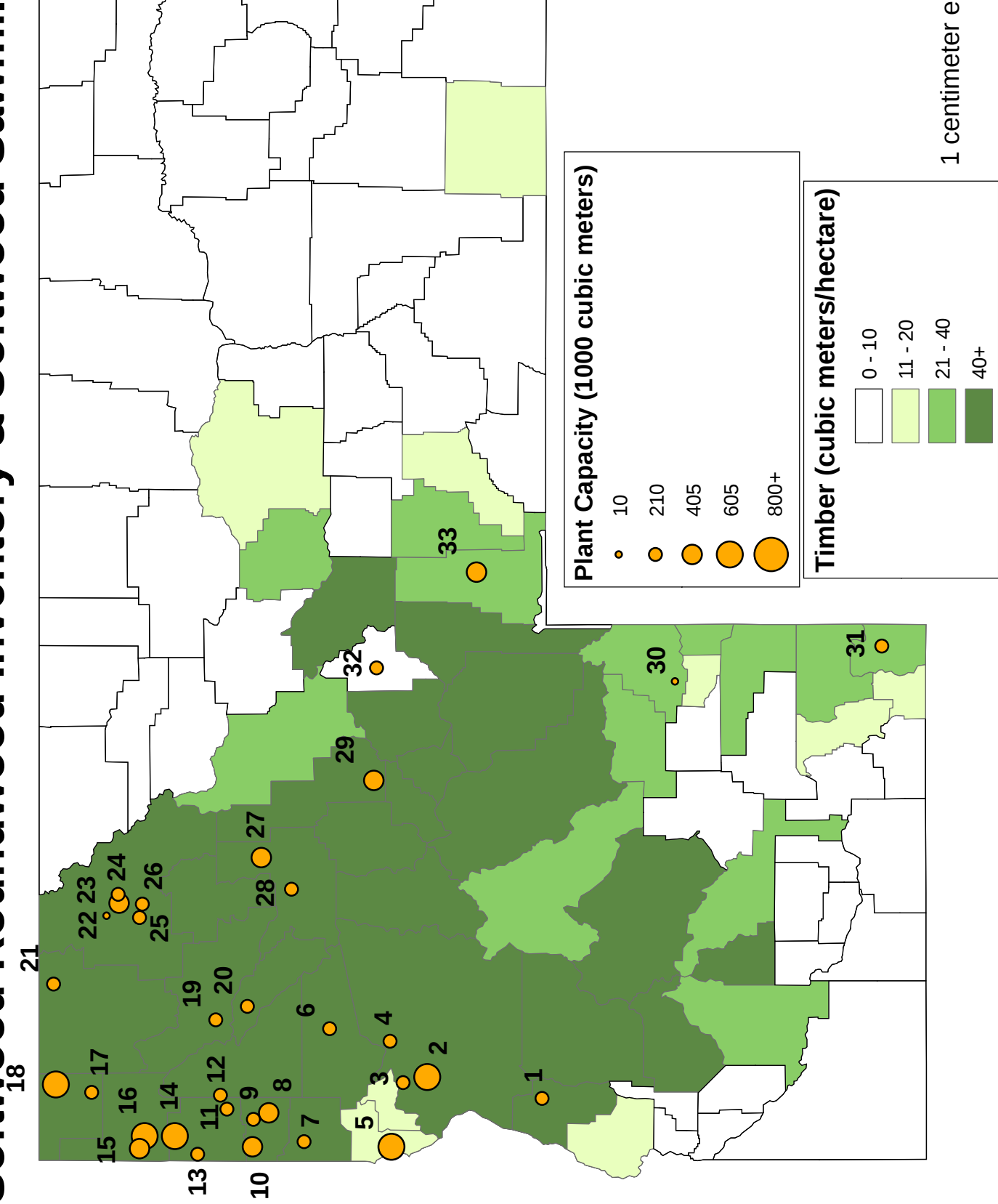
Florida, Georgia

Mill I.D.	Name	Former name or DBA	Location	Capacity / Production (1,000 m³)				
				2004	2005	2006	2007	2008
				Closed Mills				
	Eddy Planing Mill		Darien	9	9			
	S L Miller & Sons Lum		Armuchee	30	30			
17	Vaughn Lum		Forsyth	21	21			
	Little Suwannee Lbr		Homerville	20	20	20		
26	Evans Lum		Sylvania	15	15	15		
	Sherrad Lum		Greenville	30	30	30	30	
6	Mount Yonah Lum		Cleveland	19	19	19	19	
	GeorgiaPacificKoch	ITT Rayonier	Palatka	184	184	184	184	
				Timber Mills				
9	Burt Lum		Washington	59	59	59	59	59
10	Hogan&Storey Wood Prod		Armuchee	18	18	18	18	18
45	Pride of Florida		Raiford	9	10	10	10	10
44	Tatum Bros Lum		Lawley	33	33	31	31	31
2	W D Cline & Sons Lum		Dalton	12	12	12	12	12
				Stud Mills				
16	GeorgiaPacificKoch		Monticello	177	177	177	177	177
55	Grayson Lum		Marianna/Cypr	236	236	255	255	255
29	W M Sheppard Lum	Louisiana-Pacific	Brooklet	123	123	123	118	118
				Dimension Mills				
53	Balfour Lbr		Thomasville	142	142	149	163	151
35	Beadles Lum		Moultrie	130	130	137	142	151
28	Claude Howard Lum		Statesboro	165	165	149	151	165
57	Fleming Lum		Crestview	27	27	27	27	27
49	GeorgiaPacificKoch		Cross City	236	245	245	245	245
40	GeorgiaPacificKoch		Brunswick/Ste	167	250	250	250	250
30	GeorgiaPacificKoch		Claxton	201	201	201	201	201
13	GeorgiaPacificKoch		Warrenton	201	201	271	271	271
46	Gilman Building Prod		Lake Butler	224	236	236	236	236
24	Gilman Building Prod		Dudley	243	255	255	255	255
37	Gilman Building Prod		Blackshear	227	236	255	255	255
43	Gilman Building Prod		Maxville	212	224	224	224	224
34	Gilman Building Prod		Fitzgerald	241	248	248	248	248
50	Gilman Building Prod		Perry	198	201	224	224	224
47	Great South Tim & Lum		Lake City	54	54	59	59	59
21	Griffin Lum	Daniels Lum	Cordele	111	111	125	135	135
7	Hogan Lum		Cleveland	9	9	9	9	9
Softwood lumber (1,000 m³)				2004	2005	2006	2007	2008
Estimated capacity				9228	9845	10110	10137	10055
Reported output (U.S. Census)				8777	9072	8227	7127	6405
Implied capacity utilization				95%	92%	81%	70%	64%

Mill I.D.	Name	Former name or DBA	Location	Capacity / Production (1,000 m³)				
				2004	2005	2006	2007	2008
52	Hood Industries	Meitcaif Lbr	Meitcaif	177	177	177	177	212
18	Jordan Lum & Sup	Weyerhaeuser	Barnesville	236	295	378	378	378
19	Keadle Lbr Enterpr		Thomasston	153	160	180	184	184
51	Langdale For Prod		Valdosta	331	342	342	342	342
54	North Florida Lum		Bristol	248	248	248	248	248
11	Pollard Lum		Appling	130	130	130	130	118
15	Rayonier	Louisiana-Pacific	Eatonton	189	189	212	212	212
33	Rayonier		Baxley	389	389	425	425	378
25	Rayonier	Champion	Swainsboro	283	283	283	297	297
56	Rex Lum LLC	U.S. For Ind	Graceville	248	269	269	283	283
31	Simpson Tim	International Pap	Meldrim	307	307	319	319	319
48	Suwannee Lum Mfg		Cross City	142	142	142	142	142
4	Temple-Inland	Inland ntainer	Rome	319	319	319	319	319
20	Tolleson Lum	Container Inc	Preston	271	519	532	522	507
23	Tolleson Lum		Perry	307	378	354	354	354
22	US Timber	SE For Prod	Cordele	236	236	236	236	236
38	Varn Wood Prod		Hoboken	94	130	130	130	118
12	West Fraser Tim	Int Pap	Augusta	307	314	323	323	323
58	West Fraser Tim	Int Pap	McDavid	463	472	472	472	472
58	West Fraser Tim	Int Pap	Augusta	307	307	307	314	323
58	West Fraser Tim	Int Pap	McDavid	366	413	463	472	472
42	West Fraser Tim	Int Pap	Whitehouse	210	210	210	210	210
39	West Fraser Tim	Int Pap	Folkston	189	212	212	212	217
3	Baldridge Bros		Dalton	5	5	5	5	5
59	Crossroads Sawmill		Land O'Lake:	12	12	12	12	12
41	Franklin Lum		Hilliard	6	6	6	6	6
14	Hallman Wood Prod		Eatonton	16	16	16	16	16
36	Hubert Moore Lum		Alapaha	59	59	59	59	59
8	Irvin Lum		Cornelia	7	7	7	7	7
27	JW Exley Lum		Clyo	12	12	12	12	12
60	Kempfer Sawmill Inc		St Cloud	14	14	14	14	14
6	Mount Yonah Lum		Cleveland	19	19	19	19	19
32	Shearouse Lum		Pooler	28	40	40	40	40
5	Sparks Lum		Elijah	11	11	11	11	11
1	Sutton Lum		Tennga	14	14	14	14	14
Number of sawmills				2004	2005	2006	2007	2008
Number employed ('000)				65	65	63	62	60
Output per employee (m³)				5.4	5.4	5.5	5.5	4.9
				1640	1690	1500	1300	1320

Idaho & Montana

Softwood Roundwood Inventory & Softwood Sawmill Capacity



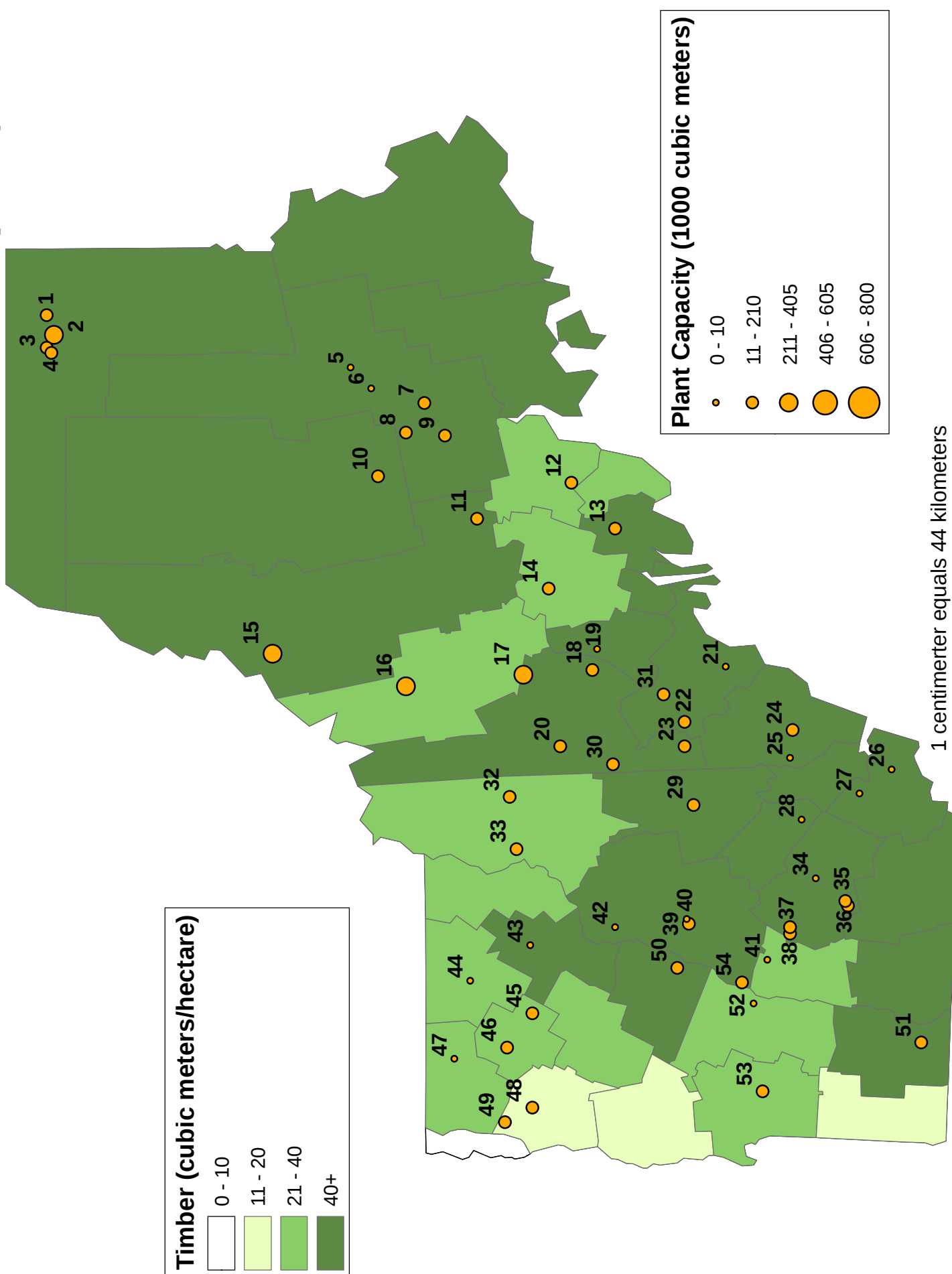
Idaho/Montana

Mill I.D.	Name	Former name or DBA	Location	Capacity / Production (1,000 m³)					
				2004	2005	2006	2007	2008	2009
	Cascade Tim		Laurel	30	0	Closed Mills			
	Bennett For Ind	Shearer Lum Prod	Elk City	153	102				
	Stimson Lum	Idaho For Ind Inc	Coeur d'Alen	94	83				
	Owens and Hurst		Eureka	189	94				
	Blackfoot River Lum		Victor	30	30				
	D & G Lum		Three Forks	59	59				
	Stillwater For Prod		Kalispell	94	94				
	North End Tim Prod		Olney	59	59				
	Stimson Lum	Idaho For Ind	Coeur d'Alen	321	321	321	321	134	
	Idaho Forest Group	JD Lumbr	Priest River	319	319	319	319	239	
	Three Rivers Tim		Kamiah	137	137	165	212	212	
	Stimson Lum		Bonner	142	142	142	142	71	
	Plum Creek Tim		Fortine	234	248	248	248	248	
	Plum Creek Tim		Pablo	212	230	177	177	177	59
25	Klinger Lum		Kalispell	21	21	21	21	21	87
28	Eagle Stud Mill		Missoula	54	54	54	54	54	54
18	Idaho Forest Group	Riley Creek Lum	Moyle Spring	484	389	453	453	453	453
13	Idaho Veneer	Ceda-Pine Veneer	Post Falls	59	59	59	59	59	59
26	Plum Creek Tim		Kalispell/Eve	248	271	208	264	182	182
32	R Y Tim		Townsend	189	189	189	177	177	177
33	R Y Tim		Livingston	212	212	212	212	212	212
10	Stimson Lum	Plummer FP	Plummer	224	224	224	224	224	224
15	Stimson Lum	Merritt Bros	Priest River	319	319	319	319	319	319
9	Stimson Lum	Regulus Stud Mill	St Maries	177	177	177	177	177	177
Softwood lumber (1,000 m³)				2004	2005	2006	2007	2008	2009
Estimated capacity				7975	7811	7755	7808	7353	6426
Reported output (WWPA)				6960	7144	6521	5230	3696	
Implied capacity utilization				87%	91%	84%	67%	50%	

Mill I.D.	Name	Former name or DBA	Location	Capacity / Production (1,000 m³)					
				2004	2005	2006	2007	2008	2009
29	Sun Mountain Lum	Louisiana-Pacific	Deer Lodge	319	319	260	260	201	201
				Dimension Mills					
20	Tricon Timber		Saint Regis	165	165	150	159	165	165
4	Clearwater For Ind		Kooskia	201	201	189	142	142	142
5	Clearwater Lum	Potlatch rp	Lewiston	413	425	472	496	484	484
3	Empire Lum	Kamiah Mills	Kamiah	118	118	118	118	118	118
24	F H Stoltze Land&Lu		Columbia Falls	142	142	165	170	177	177
16	Idaho Forest Group	Riley Creek Lum	Laclede	543	566	590	590	590	590
14	Idaho Forest Group	Riley Creek Lum	Chlico (Athol)	566	566	566	566	566	566
21	Lone Pine Tim Ind		Eureka	90	90	90	90	90	90
8	Potlatch rp		St Maries	271	271	283	295	295	295
1	Tamarack Mill LLC	Evergreen For Prod	New Meadows	123	123	123	123	142	142
19	Thompson River Lum		Thompson Falls	94	94	94	94	94	94
				Board Mills					
2	Idaho Forest Group	Riley Creek Lum	Grangeville			307	425	472	472
7	Idaho Forest Group	Bennett Lum	Princeton	224	224	236	203	205	205
12	Malloy Lum		Kingston	59	59	59	21	21	21
23	Plum Creek Tim		Columbia Falls	189	212	217	217	212	212
27	Pyramid Mountain Lu		Seely Lake	177	177	177	177	212	212
6	Tri Pro	Konkolville Lum	Orofino	68	71	71	71	71	71
				Specialty or Unknown					
31	Jensen Lum		Ovid	19	19	19	19	19	19
22	RBM Lum		Columbia Falls	4	4	5	5	5	5
17	Wei Lum		Naples	106	106	106	106	106	106
11	Whiteman Lum		Cataldo	14	14	14	14	12	12
30	Willmore Lum	Stoddard Lum	St Anthony	12	12	5	3	3	3
				2004	2005	2006	2007	2008	2009
Number of sawmills				45	45	41	40	39	35
Number employed ('000)				4.2	4.1	3.9	3.8	3.0	
Output per employee (m³)				1660	1760	1690	1370	1230	

Maine, New Hampshire, Vermont

Softwood Roundwood & Softwood Sawmill Capacity



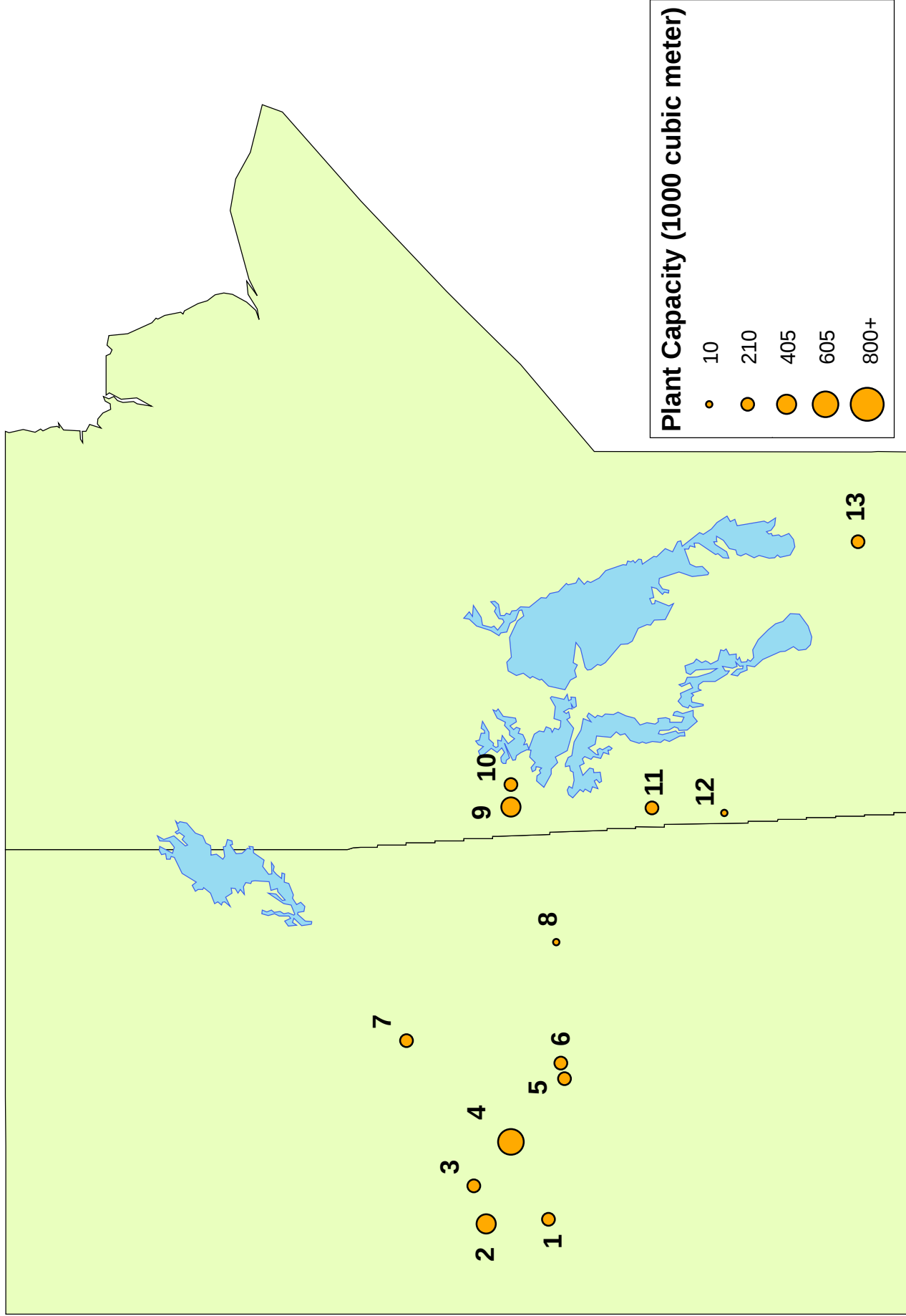
New England (Maine, New Hampshire, Vermont)

Mill			Capacity / Production (1,000 m³)							Former name or DBA			Capacity / Production (1,000 m³)						
I.D.	Name	Location	2004	2005	2006	2007	2008	2009	Mill I.D.	Name	Location	2004	2005	2006	2007	2008	2009		
			Closed Mills																
	Cherokee Lum	Newport	7	7					36	Granite State For Prod	Henniker	31	31	31	31	31	31		
	Crestwoods Inc	Winchester	24	24					43	Greenwood Mill	Lyndonville	8	9	9	9	9	9		
	Pleasant River Lum	West Enfield	24	28	14				46	H G Wood Prod	Bath	24	24	24	24	24	24		
	Chocoma Valley Lum	South Tamworth	18	18	3	4			14	Hammond Lum	Belgrade	13	13	13	13	13	13		
	J D Irving	Ashland	153	153	153	153	92		20	Hancock Lum	Bethel	61	68	85	89	89	89		
			Timber Mills								11	Hancock Lum	Pittsfield	41	41	55	58	58	
25	Great Brook Lum	Lebanon	6	6	6	6	6		31	Hancock Lum	Casco	40	40	49	50	50	50		
8	Parker Lum	Bradford	24	24	24	24	24		5	Haskel Lum	Lincoln	9	12	9	9	9	9		
35	Perras Lum	Groveton	17	17	14	14	14		42	Heath Lum	North Hyde Park	5	5	5	5	5	5		
7	Stillwater Lum	Stillwater	12	12	12	12	12		21	Hillside Lum	Westbrook	9	8	8	8	8	8		
			Stud Mills								17	J D Irving	Dixfield	236	236	236	236	236	
3	Fraser Tim Ltd	Ashland	165	153	153	153	153		39	King For Ind	Wentworth	59	59	59	59	59	59		
6	Pleasant River Lum *	W Enfield							48	Lamell Lum rp	Essex Junction	21	21	21	21	21	21		
			Dimension Mills								24	Lavalley Lum	Sanford	35	35	35	35	35	
1	Beaulieu Bros Lum	Chapman	17	17	17	17	17		22	Limington Lum	East Baldwin	28	31	33	35	38	38		
2	Fraser Tim Ltd	Masardis	295	271	307	307	307		30	Lovell Lum	Lovell	12	12	12	12	12	12		
15	Moose River Lum	Moose River	215	215	215	215	215		37	Lussier's Sawmill	Enosburg Falls	7	7	7	7	7	7		
10	Pleasant River Lum	Dover-Foxcroft	189	201	201	201	201		44	M Plette & Sons	Irasburg	6	6	6	6	6	6		
16	Stratton Lum	Fontaine, Inc	130	165	307	307	307		29	Madison Lum Mill	West Ossipee	111	111	111	111	111	111		
32	Vallee Lum	Milan	28	24	71	71	71		37	Middleton Bldg Sup	Middleton	35	35	40	40	40	40		
			Board Mills								53	Mill River Lum	N. Clarendon	35	35	35	35	35	
28	Barton Lum	Barnstead	7	7	7	7	7		19	Moose Creek Lum	Tuner	9	9	9	9	9	9		
50	Britton Lum	Fairlee	24	24	24	24	24		13	N C Hunt	Jefferson	30	30	19	24	24	24		
51	Cersosimo Lum	Brattleboro	62	62	62	62	62		9	Old Town Lum	Kenduskeag	35	35	35	35	35	35		
54	Cersosimo Lum	W Lebanon	12	12	12	12	12		45	Patenaude Lum	Henniker	12	12	12	12	12	12		
34	Coby Lum	Boscawen	9	9	9	9	9		33	Precision Lum	Wentworth	28	28	35	35	35	35		
41	Cote & Reney Lum	Grantham	12	12	9	9	9		40	P&R Lum	Wolcott	5	5	5	5	5	5		
49	Cyr Lum	Milton	12	12	12	12	12		18	R E Lowell Lum	Burkfield	12	12	12	12	12	12		
38	Durgin-Crowell Lum	New London	66	66	78	78	78		12	Robbins Lum	Searsmont	64	70	70	70	70	70		
27	Fernald Lum	Nottingham	8	8	8	8	8		26	Sea ast Mills	Brentwood	7	7	9	9	9	9		
4	Fraser Tim Ltd	Ashland	24	24	24	24	24		23	T. Hammond & Son	East Hiram	14	14	14	14	14	14		
	Softwood lumber (1,000 m³)		2004	2005	2006	2007	2008	2009	52	Vermont Log Buildings	Hartland	9	9	9	9	9	9		
	Estimated capacity		2609	2638	2853	2855	2793	2701		Number of sawmills		58	58	56	55	54	53		
	Reported output (U.S. Census)		2554	2589	2643	2688	2247			Output per employee ('000)		2.6	2.6	2.6	2.4	2.4			
	Implied capacity utilization		98%	98%	93%	94%	80%			Output per employee (m³)		980	980	1030	1100	920			

* **Note: New mill planned**

Manitoba & Saskatchewan

Softwood Sawmill Capacity



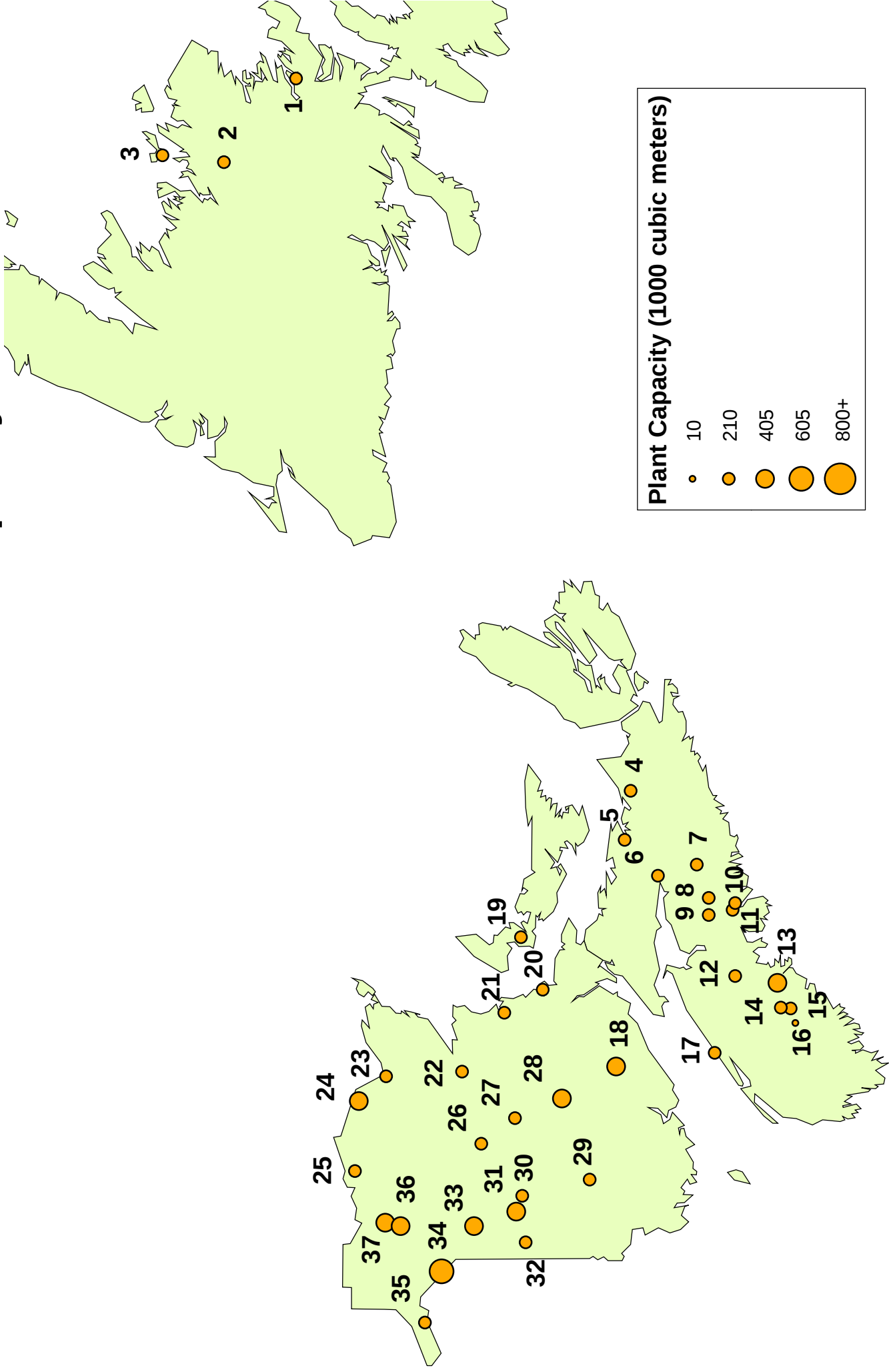
1 centimeter equals 99 kilometers

Saskatchewan/Manitoba

Mill I.D.	Name	Former name or DBA	Location	Capacity / Production (1,000 m³)					
				2004	2005	2006	2007	2008	2009
8	Weyerhaeuser Can					Stud Mills			
3	Green Lake Metis		Carrot River, SAS	189	189	189	0	0	0
1	L&M Prod		Green Lake, SAS	47	47	47	47	47	47
			Glaslyn , SAS	19	24	24	24	24	24
2	Norsask For Prod					Dimension Mills			
6	Carrier Lum Ltd		Meadow Lake, SAS	271	271	271	271	271	271
5	Wapawekka Lum Ltd		Prince Albert, SAS	14	14	14	14	99	99
4	Domtar	Provincial For Prod Domtar	Buckland, SAS	170	170	85	85	85	177
7	Zelensky-LaRonge	Weyerhaeuser Can	Big River, SAS	507	578	578	543	145	578
9	Tolko		LaRonge, SAS	48	48	48	48	48	48
12	Roblin For Prod		The Pas, MAN	437	437	437	448	472	319
13	South East For Prod		Roblin	8	8	8	8	8	8
11	Spruce Prod Ltd		Blumenort, MAN	47	47	53	53	53	53
10	Waugh's Woods Ltd		Swan River, MAN	78	83	90	90	90	90
			The Pas, MAN	14	14	14	14	14	14
						Specialty or Unknown			
Softwood lumber (1,000 m³)				2004	2005	2006	2007	2008	2009
Estimated capacity				1858	1835	1545	1728	978	931
Production (Stats Can)				1765	1450	1006	867	566	
Implied capacity utilization				95%	79%	65%	50%	58%	
Number of sawmills				13	13	13	13	13	12
Number employed ('000)				1.0	1.0	0.9	0.8	0.4	
Output per employee (m³)				1860	1480	1100	1140	1300	

Maritime Provinces & Newfoundland

Softwood Sawmill Capacity



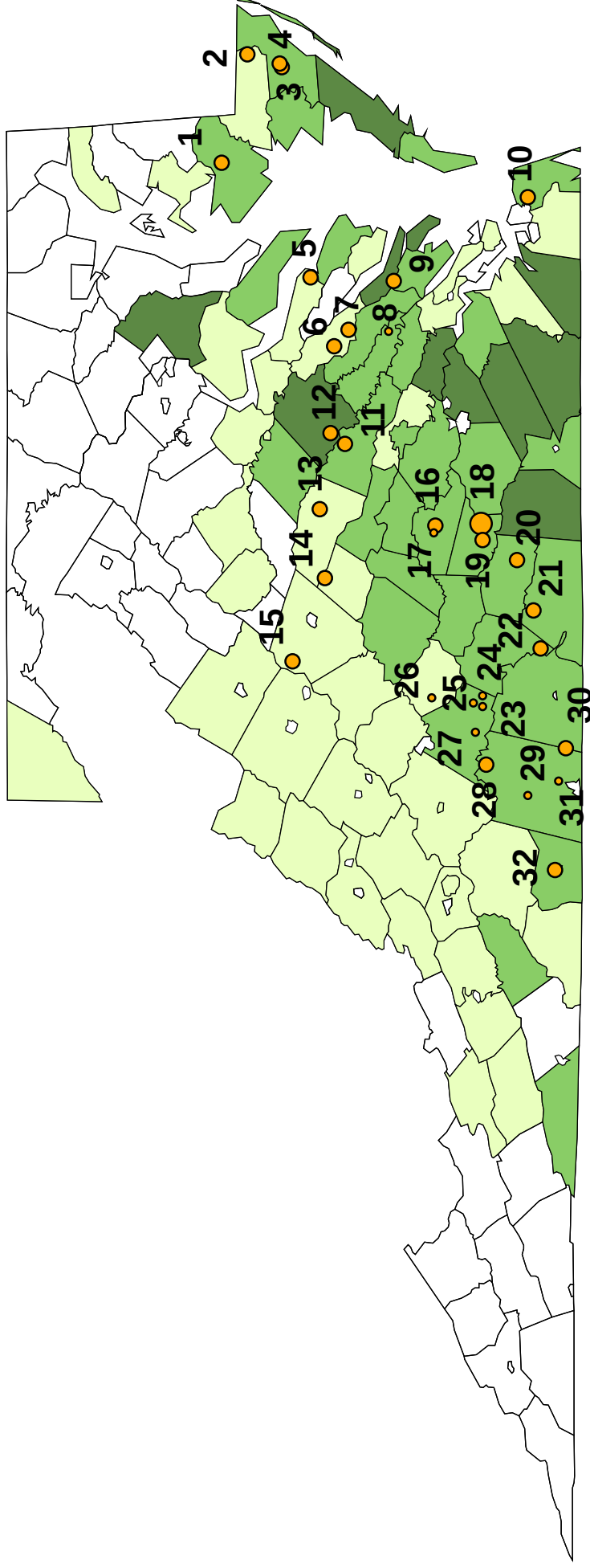
New Brunswick/Newfoundland/Nova Scotia/Pr. Edward Island

Mill I.D.	Name	Former name or DBA	Location	Capacity / Production (1,000 m³)					
				2004	2005	2006	2007	2008	2009
				Closed Mills					
	C F Dickson For Prod		Westville	28	28				
	Hugh Park & Son		Thorburn	9	9				
	Kingston Lum&Bldg Sup		Kingston	12	12				
	Lakeburn Lum		Moncton	35	35				
	J D Irving	Lewis Sawmill	Weymouth	133	89				
	Julimar Lum		Brookfield	70	70	47			
	Blackville Lum	UPM Kymmene	Blackville	70	70	70	70		
	H A Fawcett&Son Ltd		Petitcodiac	210	210	210	210		
	Enligna	McTara Ltd	Upp.Musquodoboit	396	396	280	280		
	J D Irving	Georgetown Tim	Georgetown	175	175	175	175		
	Jamestown Lum Ltd		Lethbridge	22	22	28	28		
	T P Downey & Sons		Hillsborough	35	35	35	30		
	Canada Bay Lum	Holson For Prod	Roddickton	29	29	29	29	14	
	Adrien Arsenault Sawmi		Balmoral	58	58	58	58	58	
	Russel White Lum		Kennetcook	35	35	35	35	35	
	M L Wilkins&Son Ltd		Fredericton	105	105	100	100	100	
	Comeau Lum		Meteghan	26	26	61	61	35	
22	Newcastle Lum Co		Newcastle	54	66	66	66	66	28
				Timber Mills					
32	H J Crabbe & Sons Ltd		Bristol	47	47	47	47	47	47
				Stud Mills					
23	Bathurst Lumber	UPM Kymmene	Bathurst	117	117	117	117	117	117
24	Chaleur Sawmill Assoc	Scleries Chaleur	Belledune	245	256	256	256	256	256
21	Delco For Prod		W.Branch	51	51	51	51	51	51
29	Devon Lum		Fredericton	58	58	47	47	47	47
15	Harry Freeman & Son		Greenfield	163	163	163	163	163	163
11	Heffer For Prod Ltd		Lower Sackville	23	23	23	23	23	23
37	J D Irving	Deniso Label	Kedgwick	256	256	256	256	256	256
34	J D Irving		St. Leonard	457	457	457	457	457	457
	Softwood lumber (1,000 m³)			2004	2005	2006	2007	2008	2009
	Estimated capacity			6117	6231	5904	5852	5041	4758
	Production (Stats Can)			5563	5191	4964	4430	3122	
	Implied capacity utilization			91%	83%	84%	76%	62%	

Mill I.D.	Name	Former name or DBA	Location	Capacity / Production (1,000 m³)					
				2004	2005	2006	2007	2008	2009
18	J D Irving	Bayshore Lum	Sussex	291	291	291	291	291	291
8	Ledwidge Lum		Enfield	156	175	175	175	175	175
5	Ligni Bel Ltd	Deniso Label	Scotsburn	163	256	175	175	175	175
1	Sexton Lumber	Bloomfield Lum Ltd	Bloomfield	52	52	106	106	106	106
				Dimension Mills					
2	A L Stuckless & Sons	N Atlantic Lum	Glenwood	28	28	28	28	28	28
13	AbitibiBowater		Bridgewater	307	319	323	323	356	356
14	Barrett Lum		Lower Sackville	12	12	12	12	12	12
3	Cottle's Isl Lum		Summerford	24	24	24	24	24	24
9	Elmsdale Lum		Elmsdale	52	52	59	59	59	59
31	Fraser Timber Ltd	Juniper Lum Ltd	Juniper	378	354	307	307	307	307
33	Fraser Timber Ltd	Nexfor	Plaster Rock	274	283	307	307	307	307
28	J D Irving	Grand Lake Tim	Chipman	295	295	295	295	295	295
30	J D Irving		Deersd/Juniper	153	153	153	153	153	153
35	J D Irving	Bowater	Baker Brook	156	156	156	156	156	156
6	J D Irving	Sproule Lum Ltd	Truro/Valley	189	189	189	189	189	189
26	Miramichi Lum Prod	Newcastle Lum	Boiestown	24	47	47	47	47	47
36	N American For Prod	Belanger	St.Arthur	118	118	118	118	118	118
25	N American For Prod		St. Quentin	236	236	236	236	236	236
				Board Mills					
20	Goguen Lumber		Cocagne R	14	14	14	14	14	14
16	Holdwright Lum Prod		Caledonia	9	9	9	9	9	9
27	J D Irving		Doaktown	83	83	83	83	83	83
10	N F Douglas Lumber		Caldonia	19	19	19	19	19	19
7	Taylor Lum		Mid. Musquodoboit	15	15	15	15	15	15
				Specialty or Unknown					
19	Arseanult Sawmill Ltd		Richmond	59	59	59	59	59	59
17	Hoeg Bros Lum		Southampton	24	24	24	24	24	24
12	Murray Reeves		New Ross	11	11	12	12	12	12
4	Williams Bros Ltd		Barney's River	15	15	19	19	19	19
				2004	2005	2006	2007	2008	2009
	Number of sawmills			54	54	49	48	42	37
	Number employed ('000)			4.0	3.9	3.7	3.4	3.1	
	Output per employee (m³)			1380	1320	1330	1320	1000	

Maryland & Virginia

Softwood Roundwood Inventory & Softwood Sawmill Capacity



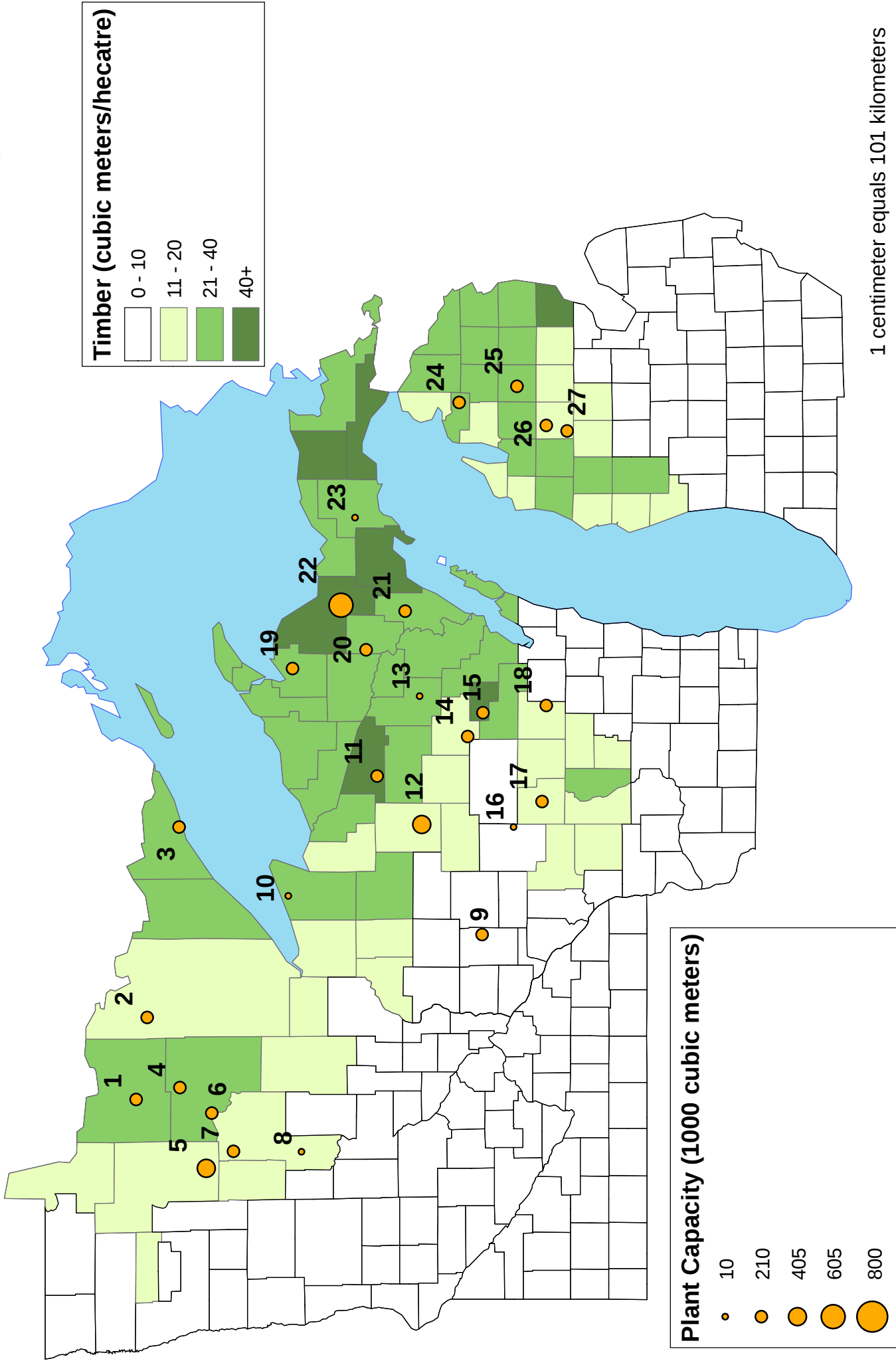
1 centimeter equals 37 kilometers

Maryland, Virginia

Mill I.D.	Name	Former name or DBA	Location	Capacity / Production (1,000 m³)						Former name or DBA	Location	Capacity / Production (1,000 m³)					
				2004	2005	2006	2007	2008	2009			2004	2005	2006	2007	2008	2009
	Rappahannock Lum		Saluda	7			Closed Mills				Blairs	5	5	5	5	9	
	Nottoway Lum		Blackstone	24							Red Oak	61	61	61	64	71	
	St Laurent Papbd		Chesapeake Bldg P	64	64						Kinsale	165	189	189	189	189	
	Dominion For Prod		Martinsville	5	5						Crozet	79	79	79	79	79	
	J V Wells Lum		Sharptown	83	83	60					Chatham	5	5	5	5	5	
	Earl W. Withers Inc		Callao	14	19	19					West Point	9	9	9	9	9	
	J Franklin Jones Lum		Acomac	21	21	2											
	Gibson Lum		Gretna	17	17	17	17										
	Kirk Lum		Suffolk	5	5	5	5										
	International Pap		Franklin	314	314	314	314	307	105								
							Timber Mills										
18	ArborTech		Blackstone	194	215	222	231	231	231								
14	Chips		Troy	85	85	85	85	109	113								
3	Millville Lum	J. Milton Laws	Snow Hill	28	28	28	28	24	24								
28	Robertson Lum		Hurt	12	12	12	12	12	12								
							Dimension Mills				The Burruss Co						
17	Amelia Lum		Amelia	28	28	28	28	28	28		Gladys	9	5	6	6	6	
11	Fippo Lum		Doswell	80	80	80	85	85	85		Spout Spring	6	6	6	6	6	
32	Pine Prod Inc		Martinsville	99	99	99	99	99	99		Ruther Glen	14	14	14	14	14	
6	Tidewater Lum		Tappannahock	35	35	35	35	35	35		Virginia Beach	12	12	12	12	12	
											Snow Hill	24	24	24	24	24	
											Chase City	21	21	21	21	21	
											Blackstone	17	17	17	17	17	
											Brookneal	6	6	6	6	6	
20	Barnes Manufacturing		Kenbridge	24	24	24	24	24	24		Mineral	24	24	24	24	24	
9	Carlton & Edwards		Saluda	12	12	12	12	12	12		Brookneal	6	6	6	6	6	
	Softwood lumber (1,000 m³)			2004	2005	2006	2007	2008	2009			2004	2005	2006	2007	2008	2009
	Estimated capacity			1734	1753	1650	1581	1581	1386		Number of sawmills	42	40	38	35	34	33
	Production (U.S. Census)			1815	1869	1775	1638	1366		Number employed ('000)		1.6	1.5	1.3	1.2	1.2	
	Implied capacity utilization			105%	107%	108%	104%	86%		Output per employee (m³)		1160	1250	1400	1370	1190	

Michigan, Minnesota, Wisconsin

Softwood Roundwood Inventory & Softwood Sawmill Capacity

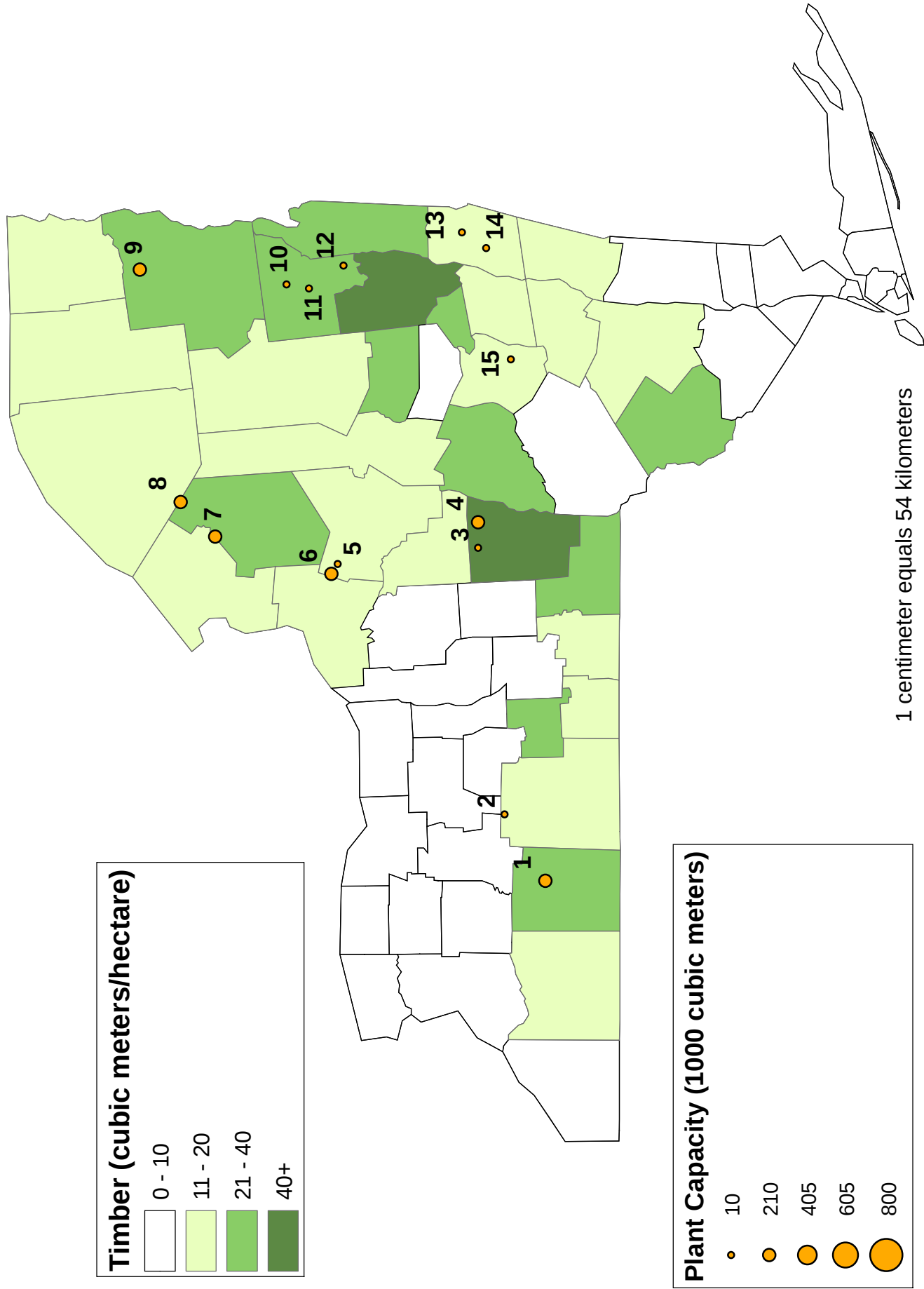


Michigan, Minnesota, Wisconsin

Mill		Former name or DBA		Capacity / Production (1,000 m³)						
I.D.	Name	Location		2004	2005	2006	2007	2008	2009	
2	Nagel Lum	Land O'Lakes Roosevelt		94	94	94	94	94		
1	Roosevelt Lum			5	5	5	5	5		
21	Cedar River Lum			Closed Mills						
1	Page & Hill For Prod			42	42	35	24	24	24	
26	Pine Tech			14	14	14	14	14	14	
16	Wolf Sawmill	Powers Big Falls Lake City Spencer		125	137	142	142	142	142	
				8	8	8	8	8	8	
5	Potlatch			Timber Mills						
22	Potlatch			Stud Mills						
6	Rajala Tim			260	260	260	260	260	260	
		437	413	413	413	413	413	413		
		42	28	28	28	28	28	28		
7	Cass For Prod	Louisiana-Pacific		24	24	24	24	24	24	
3	Hedstrom Lum			47	47	47	47	47	47	
27	John A Biewer Lum			118	130	130	158	165	165	
12	John A Biewer Lum			130	130	172	212	212	212	
11	Pukall Lum			31	31	31	31	31	31	
17	Ralph Hamel For Prod	47	47	47	47	24	24	24		
		Dimension Mills								
25	AJD For Prod	Grayling Sagola Herbster		52	52	52	52	52	52	
20	Aspen Lum			21	21	21	21	21	21	
10	Isaksson Lum			6	6	6	6	6	6	
15	Menominee Tribal Ent			33	33	33	33	33	33	
13	Nicolet Lum			5	5	5	5	5	5	
4	Rajala Tim	Board Mills		24	24	24	24	24	24	
9	Woods Run Forest Products			17	17	17	17	17	17	
8	Christensen For Prod			Specialty or Unknown						
19	Erickson Lum			5	5	5	5	5	5	
14	Kretz Lum			15	15	15	15	15	15	
23	Manistique Saw & Planing	Pine River L'Anse Antigo Manistique Boyne Falls New London		24	24	24	24	24	24	
24	Matelski Lum			7	7	7	7	7	7	
18	Ort Lum			14	14	14	14	14	14	
				28	28	28	28	28	28	
2	Wilderness Wood Prod			14	14	14	14	14	14	
		N Lights Tim & Lum Orr		14	14	14	14	14	14	
Softwood lumber (1,000 m³)				2004	2005	2006	2007	2008	2009	
Estimated capacity				1688	1674	1714	1770	1754	1654	
Production (Census)				1567	1869	1706	1676	1595		
Implied capacity utilization				93%	112%	100%	95%	91%		
Number of sawmills				29	29	29	29	29	27	
Number employed ('000)				1.6	1.5	1.3	1.3	1.3		
Output per employee (m³)				980	1240	1280	1260	1220		

New York

Softwood Roundwood Inventory & Softwood Sawmill Capacity

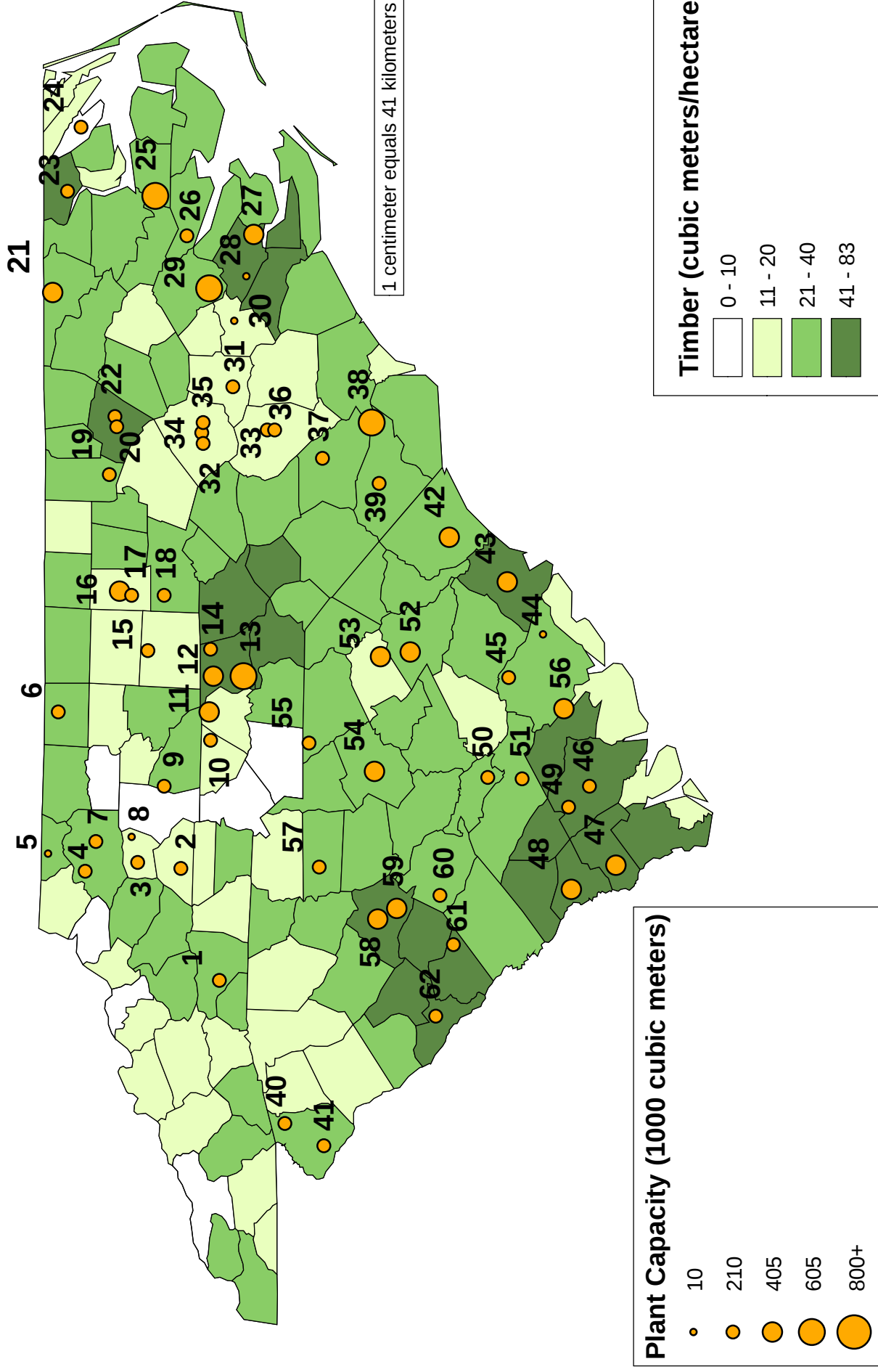


New York

Mill I.D.	Name	Former name or DBA	Location	Capacity / Production (1,000 m³)						
				2004	2005	2006	2007	2008	2009	
	Brothers Lum		Norwood	7	7	Closed Mills				
	Brown & Son Lum Co		Chestertown	7	7					
	Cornwright Lum Corp		Lewis	11	11					
	Cote Wood Prod		Groton	7	12					
	Drake Lum Corp		Schroon Lake	9	9					
	Wood Prod Inc		Ausable Forks	9	9					
						Timber Mills				
1	Angelica For Prod		Angelica	19	19	31	31	31	31	
4	Lok-N-Logs		Sherburne	12	12	12	12	12	12	
9	Ward Lum Co		Jay	33	33	29	21	21	21	
						Dimension Mills				
3	Edmonds Lum		Smyrna	7	7	1	1	1	1	
2	Fleischman Farms		Atlanta	7	7	5	5	5	5	
6	G W Platt & Sons		Westdale	18	18	18	18	18	18	
14	L J Valente, Inc		Averill Park	5	5	6	6	6	6	
13	Rynard G Gundrum Lum		Grafton	7	7	7	7	7	7	
5	Spink Lum		Camden	7	7	7	7	7	7	
15	Urrey Lum		Middleburgh	7	7	5	5	5	5	
						Board Mills				
10	Cooper Lum Inc		Chestertown	7	7	7	7	7	7	
8	HDK Wood Products		Harrisville			12	33	33	33	
7	Johnson Lum Co	Bestway Enterprises	Carthage	31	31	28	28	28	28	
12	Mead Lum		Queensbury	7	7	9	9	9	9	
11	Richard Baker & Sons		Warrensburg	7	7	7	7	7	7	
	Softwood lumber (1,000 m³)			2004	2005	2006	2007	2008	2009	
	Estimated capacity			224	229	184	197	197	197	
	Production (U.S. Census)			165	172	186	208	203	203	
	Implied capacity utilization			74%	75%	102%	105%	103%	103%	
	Number of sawmills			20	20	15	15	15	15	
	Number employed ('000)			0.2	0.2	0.3	0.3	0.3	0.3	
	Output per employee (m³)			760	790	680	760	740	740	

North Carolina & South Carolina

Softwood Roundwood Inventory & Softwood Sawmill Capacity

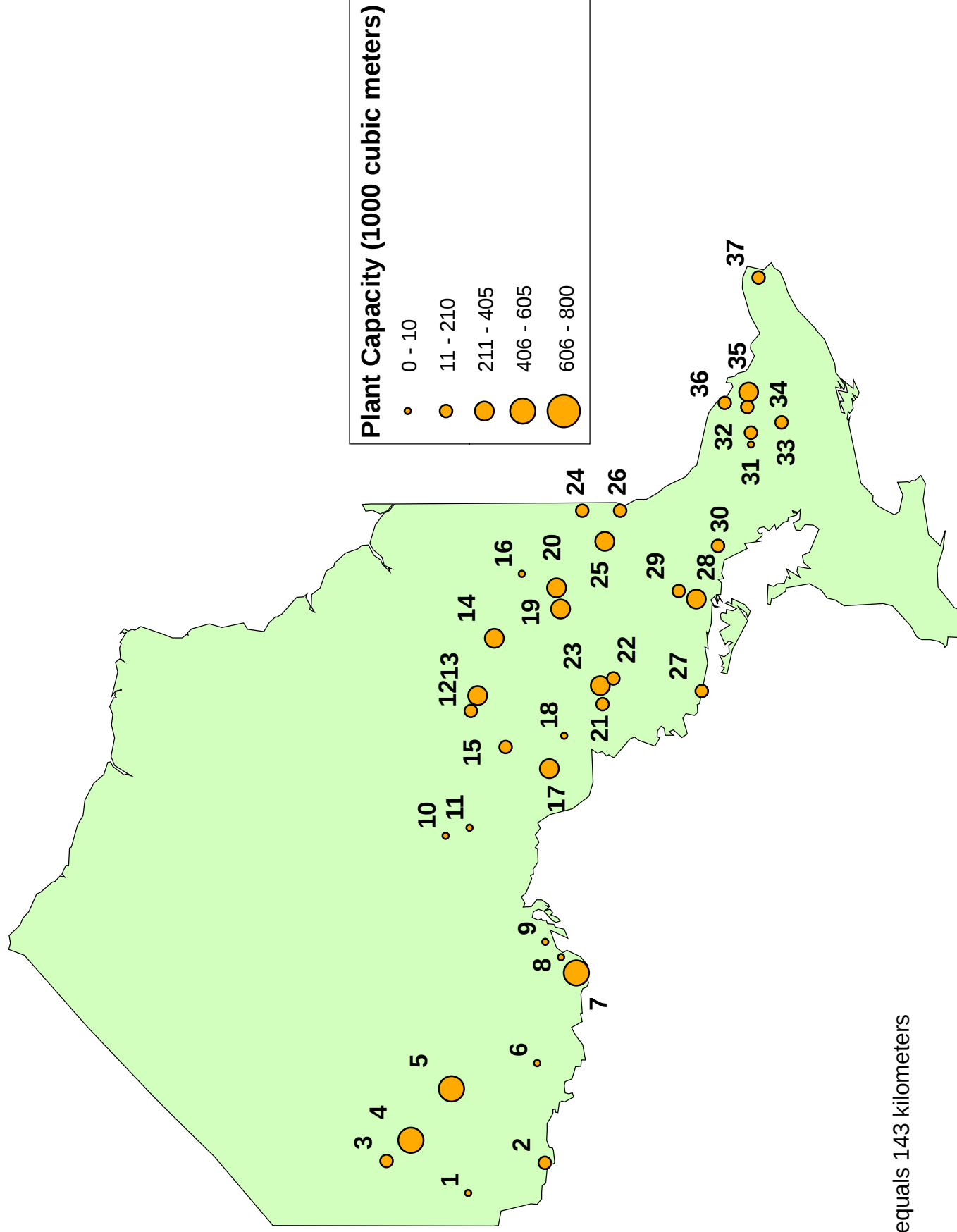


North, South Carolina

Mill I.D.	Name	Former name or DBA	Location	Capacity / Production (1,000 m³)					Former name or DBA	Mill I.D.	Name	Capacity / Production (1,000 m³)					
				2004	2005	2006	2007	2008				2009	2004	2005	2006	2007	2008
	Mebane Lum		Mebane	8						43	Simpson Tim	260	260	260	283	283	2009
	Umphlett Lum		Moncks Corner	57						61	Simpson Tim	106	106	106	106	106	2009
	Hillsville Lum		Trinity	8						12	Troy Lum	170	170	196	196	224	236
	Younce & Ralph Lum		Pantego	19						38	West Fraser Tim	500	500	507	507	507	507
	Waters Lum		Bostic	19						21	West Fraser Tim	224	224	224	241	260	260
	King Lum		Seagrove	24						25	Weyerhaeuser	590	590	590	590	590	590
	G & G Lum		Union Grove	42	24					29	Weyerhaeuser	590	590	590	590	590	590
	Evans Lum	Albemarle For Prod	Edenton	24	24					44	Charleston Heartpine	6	6	6	6	6	6
	Evans Lum		Lewiston	71	71					36	F L Turlington Lbr	13	13	13	13	13	13
	American Pallet Leasing	Cherokee Wd Prod	Blacksburg	28	28					24	J W Jones Lum	64	66	67	67	67	67
	Troy Lum Sales		Norman	25	25					33	Jerry G Williams & Sons	24	24	24	24	24	24
	A & M Lum	Eck Wood Prod	Hodges	24	24					32	Keener Lum	59	66	66	66	77	77
	M L rley&Sons Sawmill		Lexington	59	59					35	Keener Lum	42	42	42	42	47	47
	Hoffer & Sons Lum		Sunbury	24	24	24				34	Lampe&Malphrus Lum	97	109	109	109	109	109
	GeorgiaPacificKoch		Ahoskie	184	184	184	138			1	Parton	94	94	94	94	94	94
	Brittain Lum		Statesville	9	9	12	12			15	Randleman Lum	12	12	12	12	12	12
	F B Davis Sawmill		Richland	11	11	11	11			7	Sale Lum	11	11	11	12	12	12
										37	Ward Lum	8	8	8	8	7	7
57	Chester Wood Prod	Weyerhaeuser	Chester	118	118	130	142	142		28	Warnack Lum	26	26	21	21	21	21
45	GeorgiaPacificKoch		Russellville	170	170	165	165	165		49	Warren & Griffin	54	54	54	54	59	59
58	West Fraser Tim	Int Pap	Newberry	330	330	330	330	330		6	Bill Hanks Lum	11	11	11	11	11	11
27	Weyerhaeuser		New Bern	271	260	260	260	260		23	Ashton Lewis Lum	57	57	57	57	57	57
										55	C M Tucker Lum	28	28	31	31	33	33
17	Braxton Sawmill		Graham	24	24	24	24	24		3	F S Childers&Sons Lbr	44	44	44	44	44	44
42	Canfor	New South	Conway	307	354	354	366	366		8	Forther Lum	6	6	2	2	2	2
53	Canfor	New South	Camden	378	378	401	401	401		2	Gregory Wood Products	5	83	83	94	113	113
54	Canfor	Chesterfield Lum	Darlington	201	201	236	236	236		5	L F Delp Lum	4	4	4	4	4	4
16	Canfor	New South	Graham	231	236	253	319	319		14	McIntosh Lum	12	12	12	12	12	12
52	Charles Ingram Lum		Effingham	184	205	205	243	248		10	Piedmont Hardwd Lbr	21	21	21	21	21	21
46	Coastal Lum		Walterboro	47	47	47	47	47		20	Pruit Lum	35	35	35	35	35	35
48	Collums Lum Prod		Allendale	330	354	354	340	342		4	Randy Miller Lum	26	26	26	26	26	26
47	Elliott Sawmilling		Estill	271	271	354	354	354		60	Ridge Lum	14	14	14	14	14	14
39	GeorgiaPacificKoch	Champion	Whiteville	94	94	94	94	94		30	Roger Carter	5	5	5	5	5	5
19	GeorgiaPacificKoch		Creedmoor	168	168	168	177	177		9	Shaver Wood Prod	21	21	21	21	21	21
59	GeorgiaPacificKoch		Prosperity	212	212	212	212	212		41	Thrift Brothers Lum	18	18	24	24	24	24
31	GeorgiaPacificKoch		Dudley	198	198	198	198	198		22	Toney Lum	54	54	54	57	54	54
62	GeorgiaPacificKoch		McCormick	118	118	118	118	118		51	V P Kiser Lum	21	21	21	21	21	21
11	H W Culp Lum		New London	189	219	219	219	219		40	Winchester Brothers	23	23	23	23	23	23
13	Jordan Lum & Sup		Mount Gilead	472	519	531	531	531		18	Wrenn Bros	23	23	23	23	23	23
56	KapStone Paper & Pckg	Mead Westvaco	Summerville	221	221	221	221	221									
26	Mason Lum		Washington	38	28	28	28	28									
	Softwood lumber (1,000 m³)			2004	2005	2006	2007	2008	2009			2004	2005	2006	2007	2008	2009
	Estimated capacity			8611	8710	8706	8701	8709	8723				79	73	67	65	62
	Production (U.S. Census)			8005	8052	7934	7179	0					6.1	5.7	5.3	5.2	4.8
	Implied capacity utilization			93%	92%	91%	83%	0%					1320	1410	1490	1380	

Ontario

Softwood Sawmill Capacity



Ontario

Mill I.D.	Name	Former name or DBA	Location	Capacity / Production (1,000 m³)					
				2004	2005	2006	2007	2008	2009
	Tembec	Malette	Kirkland Lake	125		Closed Mills			
	Domtar	E B EDDY/JE Martell	Chapleau	101	25				
	Tembec	Excel For prod	Opasatika	196	53				
	Devlin Tim	Tri Lake Tim inc	Kenora	19	19				
	Portelance Lum Cap		Hanmer	47	47	47			
	Trilake Tim		Keewatin	24	24	24			
	Isidore Roy		Sturgeon Falls	25	25	25			
	Gouldard Lum (1971)			106	106	106			
	Bowater	Ignace Saw	Ignace	45	165	184			
						Timber Mills			
			Eganville	35	35	42	42	47	47
26	L Heidemann & Son					Stud Mills			
7	AbitibiBowater	Bowater	Thunder Bay	330	448	496	496	491	531
5	Buchanan Lum *	McKenzie Forest Prodi	Hudson/Sioux Lo	507	507	531	531	531	0
29	Domtar	Gogama For Prod Ltd	Levack	165	165	153	153	153	153
4	Domtar Inc	Domtar	Ear Falls	304	354	378	472	448	448
1	Kenora For Prod ***	Prendiville Industries	Kenora	189	189	178	178	117	0
14	Tembec	Spruce Falls Inc	Kapuskasing	293	293	293	293	248	248
16	Tembec ***	Malette/Normick P	Cochrane	330	330	330	330	0	0
						Dimension Mills			
9	Buchanan Lum *	Northern Sawmills	Thunder Bay	378	378	378	378	378	0
10	Buchanan Lum *	Nakina For Prod	Nakina	283	283	283	283	283	0
11	Buchanan Lum *	Long Lake For Prod	Longlac	283	283	283	283	283	0
18	Buchanan Lum *	Dubreuil For Prod Ltd	Dubreuilville	283	283	283	283	283	0
6	Buchanan Lum *	Atikokan For Prod Ltd	Atikokan/Sapawe	307	307	307	307	307	0
Softwood lumber (1,000 m³)				2004	2005	2006	2007	2008	2009
Estimated capacity				8060	8167	8137	7754	7200	4302
Production (Stats Can)				8340	8572	8622	7301	5187	
Implied capacity utilization				103%	105%	106%	94%	72%	

* Company in receivership, long term status uncertain

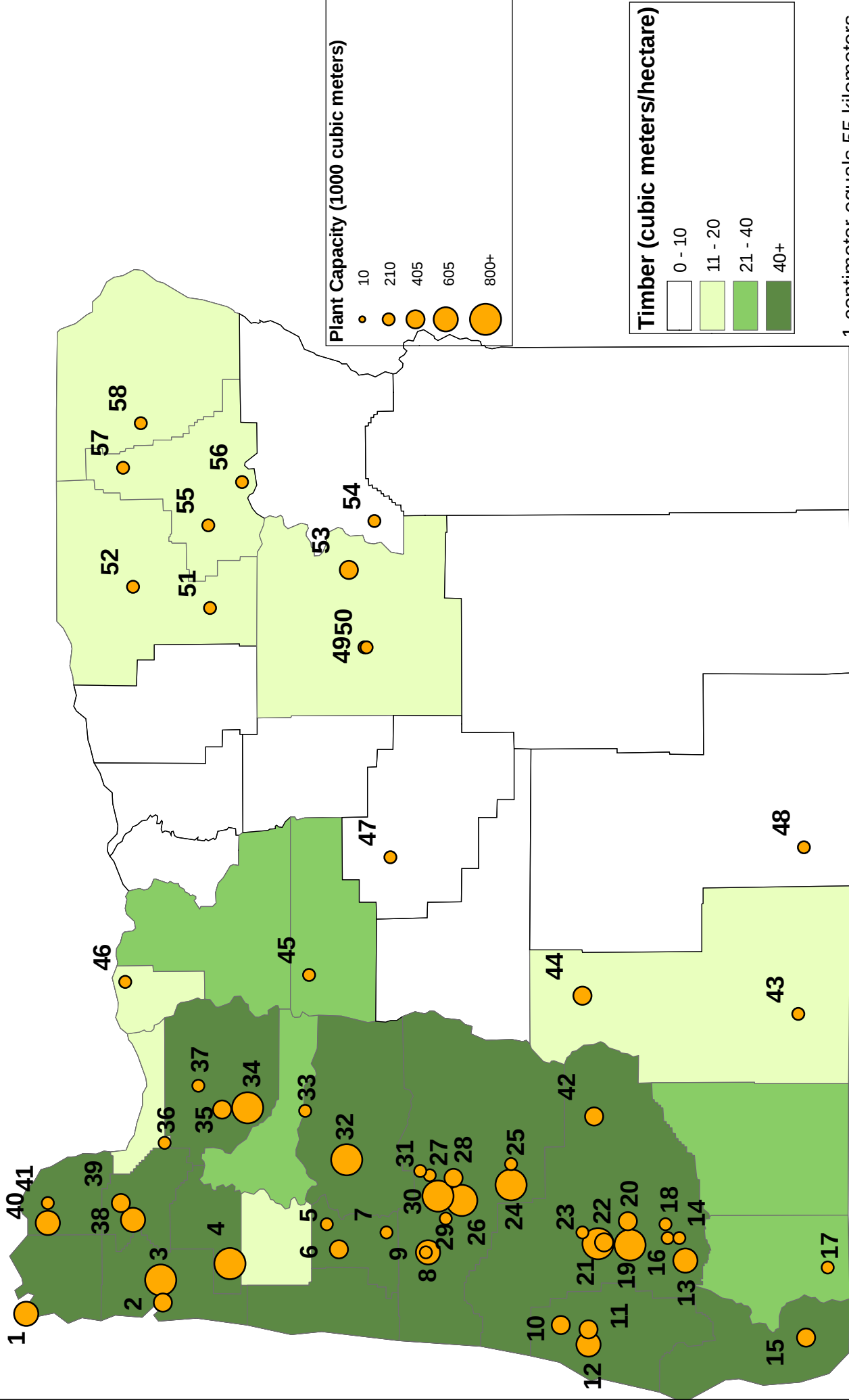
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Mill I.D.	Name	Former name or DBA	Location	Capacity / Production (1,000 m³)					
				2004	2005	2006	2007	2008	2009
8	Buchanan Lum *	(Great West Tim Ltd	Thunder Bay	519	519	472	472	472	0
28	Domtar		Nairn Center	413	378	354	354	354	307
25	Domtar	Elk Lake Planing Mills	EK Lake	236	293	328	342	293	293
17	Domtar		Timmins	283	295	330	330	330	330
19	Domtar		White River	295	295	260	260	260	0
35	Lecours Lum		Calstock	260	260	260	260	260	260
12	Liskeard Lum		New Liskeard	71	71	71	71	71	71
15	Olav Haavaldsrud Tim		Hornepayne	153	153	153	153	153	153
21	Pineal Lake Lum		Chapleau	83	83	83	83	83	83
20	Tembec	Malette	Timmins	342	342	342	236	236	236
13	Tembec	Malette	Hearst	283	366	366	366	366	366
23	Tembec	Weyerhaeuser	Chapleau	283	330	354	354	319	319
						Cedar Mills			
22	Niska North		Chapleau						24
						Board Mills			
34	Ben Hokum & Son		Killaloe	94	94	94	94	94	94
36	Herb Shaw & Son		Petawawa	21	21	21	21	21	21
2	Manitou For Prod		Emo	12	12	14	14	14	14
27	Midway Lum Mills		Thessalon	42	42	42	42	42	42
32	Murray Brothers Lum		Madawaska	83	83	83	83	83	83
						Specialty or Unknown			
37	C A Spencer		Lochiel	24	24	24	24	24	24
24	Cheminis Lum		Larder Lake	26	26	26	26	26	26
33	Freymond Lum		Bancroft	12	12	12	12	12	12
30	H&R Chartrand		Noelville	59	59	59	59	59	59
3	LKGH Contracting		Red Lake	59	59	59	59	59	59
31	McRae Mills **		Whitney	31	31	9	9	0	0
Number of sawmills				2004	2005	2006	2007	2008	2009
Number employed ('000)				45	44	41	36	36	37
Output per employee (m³)				5.1	4.9	4.8	4.5	3.1	
				1630	1740	1780	1640	1700	

** Mostly hardwoods

Oregon

Softwood Roundwood Inventory & Softwood Sawmill Capacity



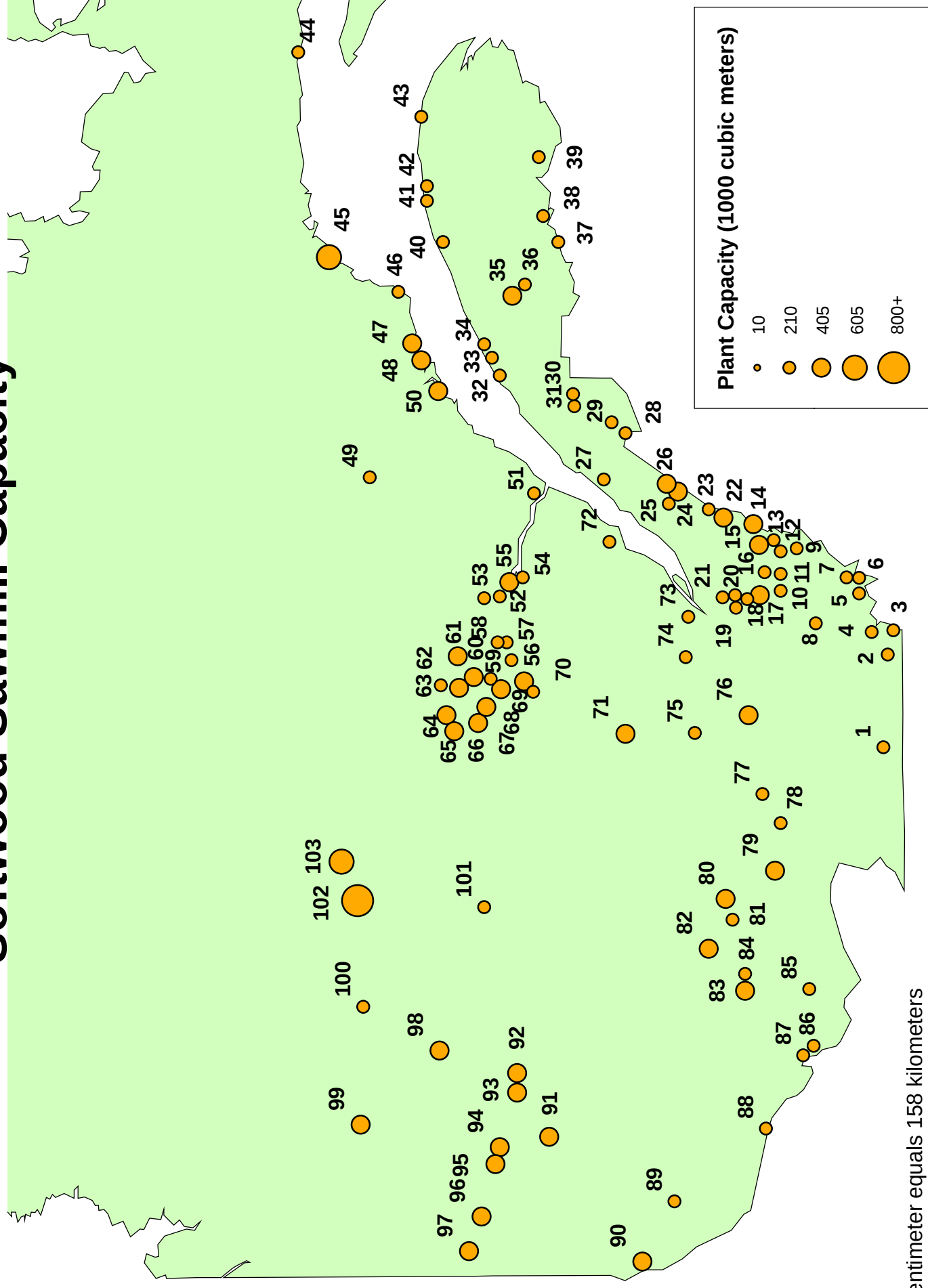
Oregon

Mill I.D.	Name	Former name or DBA	Location	Capacity / Production (1,000 m³)				
				2004	2005	2006	2007	2008
				Closed Mills				
	Davidson Ind	Floragon	Mapleton	6				
	Interfor Pacific Inc	Fort Hill Lum	Molalla	177				
	Hampton Affiliates		Grand Ronde	55				
	Allen For Prod		Hillsboro	57	57			
	Weyerhaeuser	Willamette Ind	Lebanon	165	165	110		
	Stimson Lum	Friesen Lum	St. Helens	286	286	286		
	Triple T Studs		Sweet Home/Ca	94	94	94		
	Weyerhaeuser	Bauman	Lebanon	260	260	260	54	
	Boise Cascade		Medford/White C	94	94	94	94	24
	Arrowhead Tim		Carver	53	53	53	53	53
	U S Timber		Baker City	118	118	118	118	118
	Stimson Lum		Forest Grove	201	201	201	201	201
	Weyerhaeuser	Willamette Ind	Dallas	590	590	590	590	148
				Timber Mills				
54	Burnt River Lum	Great Wood Prod	Unity	14	14	14	14	14
7	Hull-Oakes Lum		Monroe	127	127	59	59	59
41	Stimson Lum		Clatskanie	148	148	148	148	148
29	Zip-O-Log Mills		Eugene	59	59	59	59	59
				Stud Mills				
57	Boise Cascade		Elgin	165	165	165	177	177
22	Douglas unity FP		Winchester	519	708	708	708	708
53	DR Johnson Lum	Prairie Wood Prod	Prairie City	264	264	264	264	264
20	DR Johnson Lum	Umpqua Lum	Dillard	236	236	260	283	295
58	DR Johnson Lum	Wallowa FP	Wallowa	142	153	153	153	153
56	DR Johnson Lum	North Powder L C	North Powder	137	137	137	137	137
35	Interfor Pacific Inc	Floragon	Molalla	366	366	366	378	378
28	Rosboro LLC	Mill "B"	Springfield	425	519	358	321	321
19	Roseburg	Dillard stud	Dillard	779	932	944	944	1062
15	South ast Lum		Brookings	165	295	255	274	274
10	Southport FP LLC	Southport Lum	North Bend			142	190	236
38	Stimson Lum		Forest Grove	496	507	507	507	507
2	Stimson Lum	Trask Riv Lum	Tillamook	321	321	340	337	337
21	Superior Studs LLC	Sun Studs LLC	Roseburg	342	366	378	401	401
42	Superior Studs LLC	Glide Lum Prod	Glide	342	342	342	342	342
32	Weyerhaeuser		Lebanon				Dimension Mills	
36	Alder Creek Lum		Portland	87	87	87	87	87
39	Banks Lum		Banks	295	295	295	295	253
	Softwood lumber (1,000 m³)			2004	2005	2006	2007	2008
	Estimated capacity			18240	18827	18698	18193	18675
	Reported output (WWPA)			16817	17542	16598	14575	11149
	Implied capacity utilization			92%	93%	89%	80%	60%

Mill I.D.	Name	Former name or DBA	Location	Capacity / Production (1,000 m³)				
				2004	2005	2006	2007	2008
52	Blue Mountain Lum Prod	Umpqua Lum	Pendleton	57	57	57	57	59
16	DR Johnson Lum		Riddle	182	182	182	182	189
33	Frank Lum		Mill City	177	177	179	189	189
12	GeorgiaPacificKoch rp		Coos Bay	472	472	472	472	472
6	GeorgiaPacificKoch rp	Diamond-B	Philomath	396	396	396	396	396
3	Hampton Lumber Mills	Tillamook Lum	Tillamook	630	630	630	630	637
4	Hampton Lumber Mills	Willamina Lum	Willamina	1180	1180	1204	1204	1204
51	Boise Cascade	Kinzua Resources	Pilot Rock	153	153	153	153	153
5	May's River Lum		Corvallis/Phil	83	83	78	78	78
46	Mt Hood For Products	QVL/Hanel	Hood River	0	142	142	142	142
27	Rosboro LLC	Mill "A"	Springfield	196	207	207	207	182
34	RSG FP Inc		Molalla	807	807	755	814	755
40	RSG FP Inc	Olympic For Prod	Mist	543	543	543	566	543
37	RSG FP Inc	Estacada Lum	Estacada	189	189	201	201	201
30	Seneca Sawmill		Eugene	767	767	767	802	802
11	Southport FP LLC		Coos Bay	99	99	142	190	236
31	Sundance		Springfield	118	118	118	118	118
13	Superior Lum LLC	Swanson Group	Glendale	484	496	496	496	496
9	Swanson-Superior LLC	Swanson Group	Noti	519	531	543	543	543
8	Swanson Bros		Noti	54	54	76	76	76
45	Warm Springs FP		Warm Springs	170	170	170	170	170
1	Weyerhaeuser	Willamette Ind	Warrenton	448	472	472	472	472
24	Weyerhaeuser		Cottage Grove	850	850	850	850	961
26	Weyerhaeuser	Willamette Ind	Eugene/Coburg	755	802	826	826	826
				Cedar Mills				
23	Keller Lum		Roseburg	52	52	52	52	52
				Board Mills				
55	Boise Cascade		LaGrande	189	189	189	201	201
47	Consolidated Pine		Prineville	47	47	47	47	47
50	DR Johnson Lum	Malheur Lum	John Day	118	118	83	83	83
44	Interfor Pacific	Crown Pacific	Gilchrist	425	389	378	366	366
17	Rough & Ready Lum		Cave Junction	83	83	83	76	76
43	Thomas Lumber	Jeld-Wen	Klamath Falls	94	94	94	94	94
				Specialty or Unknown				
18	C and D Lum		Riddle	165	165	165	165	165
48	Collins Pine	Fremont Sawmill	Lakeview	153	153	153	142	142
14	Herbert Lum		Riddle	45	45	45	45	78
49	Ocho Lum	Malheur Lum	John Day	76	76	78	83	83
25	Starfire Lum		Cottage Grove	83	83	78	78	78
				2004	2005	2006	2007	2008
	Number of sawmills			65	63	63	60	60
	Number employed ('000)			7.4	7.3	7.0	6.6	5.4
	Output per employee (m³)			2290	2410	2360	2220	2050

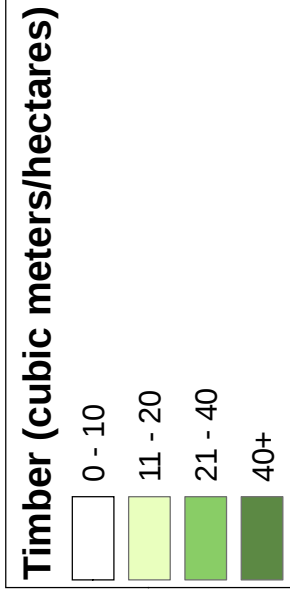
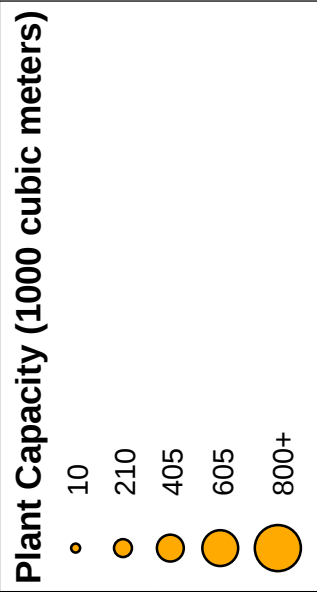
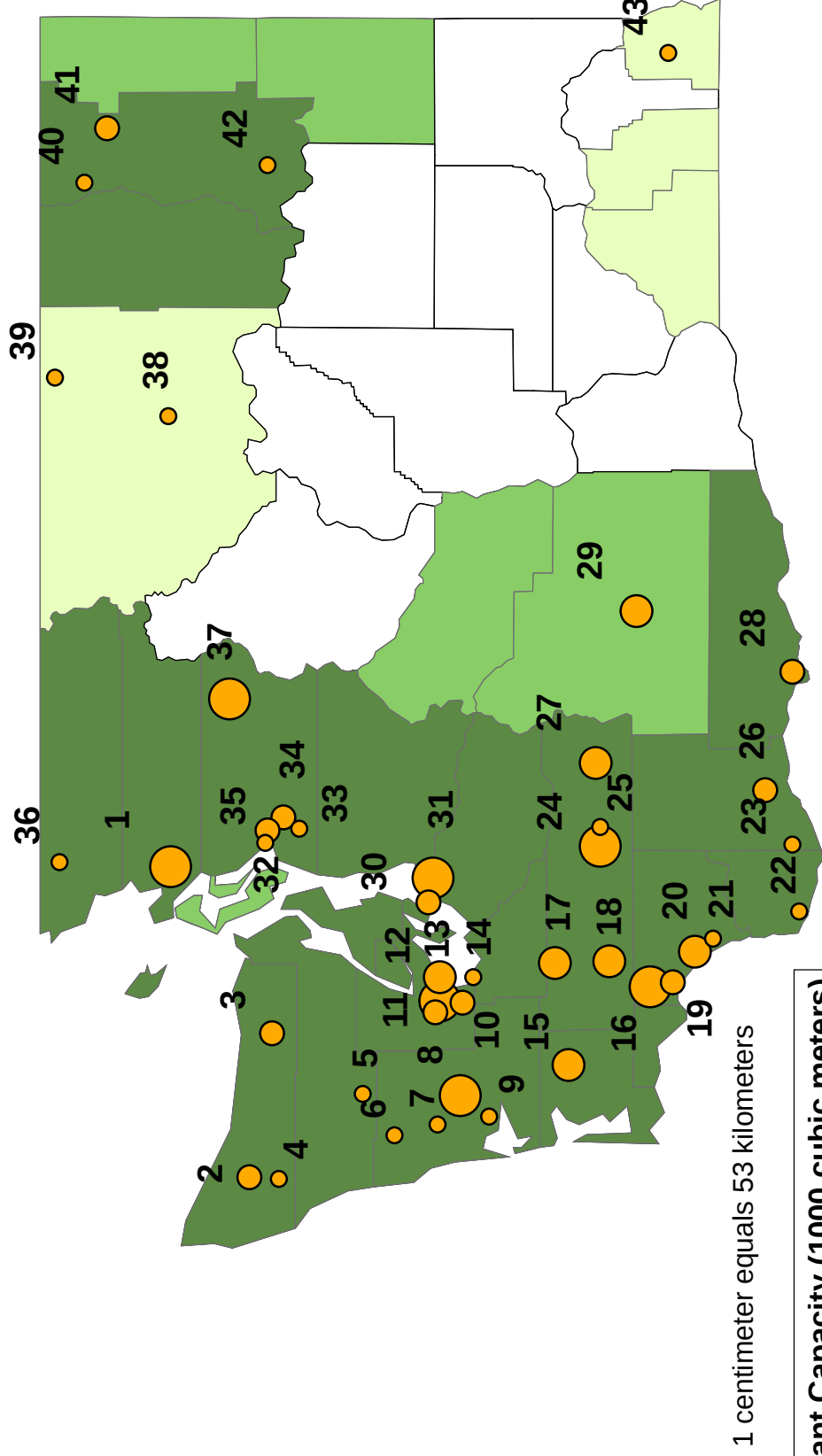
Quebec

Softwood Sawmill Capacity



Washington

Softwood Roundwood Inventory & Softwood Sawmill Capacity



Washington

Mill I.D.	Name	Former name or DBA	Location	Capacity / Production (1,000 m³)				
				2004	2005	2006	2007	2008
				Closed Mills				
	Frontier	Boise Cascade	Yakima	212	44			
	Caffal Bros		Longview	260	195			
	Weyerhaeuser Co		Aberdeen	307	307			
	TreeSource	Tumwater Lum co	Tumwater	236	260			
	Inter For Prod	Crown Pacific	Marysville	71	71			
	Layman Lum Co		Naches	80	80	41		
	Hampton Affiliates	Longview Fibre	Leavenworth	236	236	224		
	Pony Lum LLC	Louisiana-Pacific Corp	Tacoma	189	236	177		
	Welco Lum Co		Marysville	189	189	75	64	
	Portac		Tacoma	236	236	236	236	
	Oakville For Prod		Oakville	59	71	165	165	47
	Weyerhaeuser Co		Aberdeen	413	425	472	425	425
	Weyerhaeuser Co		Longview/Gr.Mt	708	802	802	802	295
	Stimson Lum Co	Plum Creek Mfg	Colville/Arden	176	176	203	203	212
				Timber Mills				
34	Buse Timber & Sales		Everett	202	210	208	208	212
35	Canyon Lum Co Inc		Everett	52	52	52	52	52
23	Hambleton Lum Co		Washougal	42	42	42	42	42
42	Springdale Lum Co		Springdale	35	35	35	35	35
				Stud Mills				
4	Allen Logging Co		Forks	71	71	71	71	71
24	Hampton Affiliates	Pac Lum&Ship	Randle	604	649	649	708	708
27	Hampton Affiliates	Pac Lum&Ship	Morton	437	448	453	472	505
3	Interfor Pacific	Crown Pacific	Port Angeles	295	295	295	330	363
18	Lewis County FP		Winlock	319	472	472	472	472
5	Mary's River Lum Co		Montesano	104	104	104	104	104
10	Mason County For Prod	Olympic Wood Prod	Shelton	177	354	354	354	354
28	SDS Lum		Bingen	177	189	189	189	212
17	Sierra Pacific Ind	Centralia Sawmill Co	Centralia		83	319	330	590
13	Simpson Tim Co	Mill #5	Dayton	472	472	484	484	472
19	Simpson Tim Co	Caffal Bros	Longview	42	566	566	401	401
				Dimension Mills				
	Softwood lumber (1,000 m³)			2004	2005	2006	2007	2008
	Estimated capacity			13533	14146	14283	14598	13977
	Reported output (WWPA)			12874	13520	12107	11241	9169
	Implied capacity utilization			95%	96%	85%	77%	

Mill I.D.	Name	Former name or DBA	Location	Capacity / Production (1,000 m³)				
				2004	2005	2006	2007	2008
43	Bennett Lum Co	Idaho Forest Group	Clarkston	177	177	177	177	177
37	Hampton Affiliates	Summit Tim Co	Darrington	500	501	567	649	649
26	High Cascades	Wilkins Kaiser Ols	Carson	307	307	307	314	283
2	Interfor Pacific	Portac	Beaver	333	333	333	333	389
30	Manke Lum		Tacoma	369	369	248	236	236
11	Mason County For Pr		Shelton			177	354	354
20	RSG For Prod		Kalama	543	543	590	590	590
33	Seattle-Snohomish		Snohomish	401	401	401	389	389
1	Sierra Pacific Ind		Mt. Vernon			401	401	472
8	Sierra Pacific Ind		Aberdeen	708	732	802	826	826
12	Simpson Tim Co	Mill #3	Shelton	649	708	795	682	649
31	Simpson Tim Co	Commencement B	Tacoma	1062	1062	850	850	850
41	Vaagen Bros		Colville	319	319	319	354	401
15	Weyerhaeuser Co		Raymond	425	496	496	496	472
16	Weyerhaeuser Co		Longview			295	1062	
39	Zosel Lum Co		Oroville	42	52	52	52	52
				Cedar Mills				
6	Crane Creek Cedar C		Amanda Park	26	26	26	26	26
7	Premier For Prod		Humptulips	24	24	24	24	24
21	RSG For Prod	Gram Lum Co	Kalama	94	94	177	177	177
25	TMI For Prod	Tubator Mill	Morton	245	286	319	153	153
14	Welco-Skookum	Delson Lum Sales	Shelton	71	71	87	94	94
				Board Mills				
40	Boise Cascade		Kettle Falls (2)	177	177	177	177	177
38	Colville Precision Pini		Omak	196	196	196	196	196
29	Yakama For Prod		White Swan	448	448	448	448	448
				Specialty or Unknown				
22	Columbia Vista Corp		Vancouver/Cama	118	118	138	138	138
9	Dahlistrom	Little River, Inc	Hoquiam	24	24	24	24	42
32	Fritch FP Inc		Snohomish	17	17	17	17	19
36	Great Western		Everson	78	83	85	85	83
				Number of sawmills				
				51	53	50	48	47
				Number employed ('000)				
				6.2	6.0	6.0	5.6	5.1
				Output per employee (m³)				
				2080	2240	2030	2000	1810