NEW HAMPSHIRE FOREST MARKET REPORT 1991





Helping You Put Knowledge And Research To Work

MAP OF NEW HAMPSHIRE

(Showing Counties)



By Nicolas Engalichev

Extension Specialist, Forest Products Marketing and Utilization



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NEW HAMPSHIRE'S EXTENSION FORESTRY PROGRAM

The UNH Cooperative Extension Forestry Program is conducted by County Extension educators in forestry and by Extension Specialists based at the University of New Hampshire at Durham. These educators provide technical information to woodland owners, woods workers, community officials, and processors of primary and secondary forest products.

County Extension educators in forestry and forestry specialists can provide on-site recommendations about the alternatives of managing forest stands. This includes advice about planting or naturally regenerating forest land, pruning, pre-commercial weeding and thinning, wildlife habitat improvement, recreational uses, commercial harvesting of sawlogs, pulpwood, biomass or firewood, and marketing of a wide variety of forest products.

Utilization and marketing specialists can provide business management and technical information to timber harvesters, sawmills and other wood industry businesses. This includes recommendations on production control and yield studies, taxes and insurances, personnel, safety, wood processing, and lumber drying.

This is a cooperative program between the University of New Hampshire Cooperative Extension, the Division of Forests and Lands and Fish and Game of the Department of Resources and Economic Development, the U.S. Department of Agriculture, and the U.S. Fish and Wildlife Service.

For additional information or assistance, call UNH Cooperative Extension in Durham or the County Cooperative Extension offices listed on page 3.

The information in this bulletin covering prices and specifications was gathered by the New Hampshire County Extension Foresters and the Utilization and Marketing Specialists. The bulletin was prepared by:

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OUTLOOK FOR TIMBER PRODUCTS – 1990–1991

This article will review trends in the economy and in the major timber products markets through the third quarter of 1990 and present consensus estimates of their prospective growth in the last quarter of this year and in 1991.

General Economic Trends

Despite the relatively big third-quarter rise, which was based primarily on unexpectedly large increases in consumer expenditures and business investment, the economy has been generally slowing since late in 1987.

Most forecasters were surprised by the economy's unexpected show of strength in the third quarter. Available data showed that many measures of economic expansion were trending down late in the summer and analysts felt that the Middle East crisis and rising price of oil would place increasing pressures on an already slowing economy.

Manufacturing shipments and new orders for durable goods declined as did housing sales, while the number of jobs outside the farm sector dropped. Reflecting these trends, manufacturing production and industrial utilization rates were slowing. Retail sales also appeared to be weakening.

These continuing downward trends, along with the probability that the full adverse effects of increasing oil prices will begin to show up in the fourth quarter, have led most analysts to forecast substantially lower economic growth for the months ahead. Currently, many economists foresee negative rates of growth over the next two to three quarters, though most expect a relatively mild downturn. A decline of 1.2 percent in the fourth quarter would mean an average GNP for all of 1990 of about \$4,147 billion (1982 dollars), 0.7 percent above the average for 1989. Continued declines in the first half of 1991, followed by a recovery of about the same magnitude in the second half of the year would indicate about the same average GNP for 1991.

Major Timber Product Market Trends

Construction of new housing units, which generally accounts for more than a third of United States' annual consumption of softwood lumber and plywood and for substantial volumes of other softwood and hardwood products, has been trending downwards since early in the year. Recent estimates of housing starts for 1990 range from about 1.1 to 1.3 million units, with the current consensus at about 1.2 million units — down 12.8 percent from the volume started in 1989. Analysts' forecasts for 1991 naturally have a somewhat wider range; however, most estimates available early in the last quarter show a small improvement in the second half, offsetting a weak first half, and starts for the year again at about the 1.2 million level.

As a result of the relatively smaller decline in single-family starts, they are expected to account for about 76 percent of total starts in 1990, up from 73 percent in 1989. A very small increase in the relative proportion of single-family units is likely in 1991. Shipments of mobile homes, down about 5 percent from year-earlier levels through September, are likely to total about 190,000 units in 1990 and 1991.

Repair and remodeling of residential structures, another major wood products market, apparently has grown in 1990 after slowing somewhat in 1989.

Expenditures rose at an annual rate of almost 12 percent between 1982 and 1988 — analysts surmise that both repair and remodeling could have been adversely impacted by interest rate increases early in the year and the unsettled economic situation in more recent months. Most agree that this segment of the construction market will continue to grow in the years ahead; however, short term increases are likely to be constrained by the same factors currently impacting all of the construction sector of the economy.

A number of factors are apparently responsible for the crop in non-residential construction, including, for example, the slowdown in economic growth, effects of declining housing construction, interest rate increases in early 1990, and continued high office building vacancy rates in some major urban areas. Most economists expect only a slight rise in nonresidential construction expenditures for all of 1991, followed by a small decline in 1990.

Despite the lack of sustained growth during the year, average monthly manufacturing production through October was about 1 percent above the average for the first 10 months of 1989. Furniture and fixtures manufacture in January–October was also up 1 percent over the same period in 1989. Most economists currently feel that total manufacturing output and production in many industries will decline somewhat in the months ahead if economic growth weakens as discussed earlier.

In summary, U.S. economic activity in general and many of the principal U.S. timber products markets have shown declines or somewhat lower rates of growth than in 1989. In addition, prospective trends in several of the important indicators point to continued slow growth or declines in early 1991. The depth and duration of any downturn is still a matter of conjecture; however, most analysts currently foresee some improvement in the second half of 1991. A turn-around in the construction markets would be a particularly positive influence on the consumption of many timber products.

International Markets

The United States is the world's leading importer of timber products — chiefly softwood lumber, wood pulp, and paper and board from Canada, and veneer and plywood from southeast Asia. The total value of these imports in 1989 was \$17.5 billion, about 3.7 percent of the value of all U.S. imports. In terms of roundwood equivalents, more than a fifth of our apparent consumption of timber products in recent years has been imported.

The United States is also a major timber products exporter, the values of which are second only to Canadian shipments in world markets. In 1989, the value of our timber products exports was \$14.6 billion—about 4.2 percent of our export total. Although we ship a wide variety of timber products to many different countries, our principal export markets are Japan for softwood logs and lumber, pulp chips, wood pulp, and paper and board products, and western Europe for lumber, plywood, wood pulp, and paper and board. In recent years, China has also become an important market for softwood logs.

According to data presented at the October meeting of the Timber Committee of the Economic Commission for Europe, economic growth in some of our major European export markets has remained relatively strong in 1990, while in others the economic and political situation has caused somewhat lowered demands for timber products imports. As in the U.S., many countries remain uncertain of the possible effects of the Persian Gulf crisis and increased oil prices on their economies. In addition, in Europe there is additional uncertainty surrounding the unification of Germany and shifts of some countries to market oriented economies. Exports of logs and lumber to Japan in 1990 are both down from shipments in 1989. In addition, there has been a large decline in logs to China.

Looking forward to 1991, the likelihood is for some slowing in the exports of most products. Our major western European trading partners expect a leveling off or some easing back in their purchases as a result of the uncertainties mentioned earlier. Industry analysts expect that shipments to our major Pacific Rim markets also will be smaller than they were this year. Imports, particularly of those products used in housing construction, should show some increase in the last half of the year.

Timber Products Production, Trade, and Consumption

Softwood Lumber

Consumption for all of 1990 (based on data from the U.S. Bureau of the Census) is estimated at 43.9 billion board feet, 5 percent below consumption in 1989 and down 11.5 percent from the record 49.7 billion board feet consumed in 1987. Imports, nearly all from Canada, have declined somewhat for 1990 and are expected to drop to 12.4 billion board feet, down about 9 percent from the volume imported in 1989.

Exports for the year are likely to total about 3.0 billion board feet. This would be about 11 percent less than the record level reached in 1989. According to information from the Western Wood Products Association, U.S. production for all of 1990 should amount to about 34.5 billion board feet, 4.3 percent below production in 1989. Present expectations about housing and the other important markets discussed earlier indicate declines in production, imports, and consumption are likely in 1991.

After increasing slightly in the first quarter of the year, the price of domestically produced softwood lumber has declined fairly sharply in recent months. With the prospective slowdown in consumption in late 1990 discussed earlier, prices likely will not rise markedly until usage picks up after mid-year 1991.

Hardwood Lumber

Data published by the National Forest Products Association show hardwood lumber consumption down sharply from the similar period in 1989. If manufacturing markets continue at the current slow pace, consumption, based on Bureau of the Census data, is likely to drop to 6.6 billion board feet, about 5.5 percent below the 1989 total.

Hardwood lumber imports were below those in 1989 and for the year are estimated at 0.2 billion board feet. Total exports for the year are expected to be 0.8 billion board feet, down from 0.9 billion in 1989.

Hardwood lumber production in 1990, based on data from the Bureau of the Census and the above estimates of consumption and trade, is projected at 7.2 billion board feet, down about 5 percent from output in 1989. Anticipated slowing in the important hardwood markets suggests that small declines in production and consumption are likely in 1991. Imports and exports also are expected to show small decreases.

Softwood Plywood

As noted earlier, new housing construction, traditionally the most important softwood plywood market, has remained below year-earlier levels. However, some of the other construction markets in which softwood plywood is widely used, such as residential maintenance and repairs and nonbuilding construction, have been relatively stronger. As a result, softwood plywood consumption apparently has increased in 1990. Total consumption in 1990 is expected to rise to about 20.3 billion square feet (3%-inch basis), 2 percent more than was used in 1989.

Data for 1990 show softwood plywood exports above shipments during 1989, with significantly larger shipments to nearly all of our major offshore markets. This upward trend is likely to slow somewhat late in the year and the total for 1990 is expected to be about 1.7 billion square feet. Imports are expected to amount to about 0.1 billion square feet.

With these levels of consumption and trade, softwood plywood production for 1990 is projected to increase to 21.9 billion square feet (%-inch basis), 2.3 percent above output in 1989.

For 1991, with the prospective trends in new housing construction, and the relatively slow growth in other markets, total consumption is expected to increase marginally to about 20.4 billion square feet. Exports also should show a small rise but imports likely will remain about the same volume. As a consequence, production should increase a little less than 1 percent.

Softwood plywood prices, as indicated by the producer price index, have declined and will likely stay relatively soft until the construction markets turn around.

Hardwood Plywood

Consumption of hardwood plywood in 1990 is expected to be near 2.4 billion square feet (%-inch basis), about 14 percent below total use in 1989. Trade data indicate that imports are likely to decline about 17 percent to 1.6 billion square feet. Exports are expected to increase to about 0.2 billion feet, up fairly sharply from shipments in 1989. With these trends in consumption and trade, production for 1990 will total 0.9 billion square feet, about the same volume as in 1989.

Much of the hardwood plywood consumed each year is used in residential construction as well as in the manufacturing sector. As a consequence, only a very small increase in consumption and imports is likely in 1991. Exports are expected to remain close to 0.2 billion square feet.

Hardwood plywood prices, as indicated by the producer price index, have been increasing very slowly over the past few years, only 3.7 percent above the average for 1982.

Particleboard and Medium Density Fiberboard

Activity in the major manufacturing markets and shipments data from the National Particleboard Associate suggest that combined consumption of particleboard and medium density fiberboard in 1990 will be close to 4.7 billion square feet (¾-inch basis), about 1 percent below that used in 1989. Roughly a fifth of total combined consumption is expected to be medium density fiberboard.

Data from the Bureau of the Census and the National Particleboard Association indicate that exports will rise to about 0.4 billion square feet and imports remain at 0.2 billion square feet. With these estimates, production would amount to 4.9 billion square feet, about the same volume as in 1989.

Trends in the major markets, discussed earlier, suggest that very small increases in production and consumption are likely in 1991.

Hardboard and Insulation Board

Based on industry shipments, hardboard production in 1990 is estimated at 1.8 million short tons, up about 6 percent from production in 1989. Data from the Bureau of the Census indicate that imports are likely to drop from 0.3 to about 0.2 million short tons, with exports remaining at 0.2 million short tons. Consumption with these estimates of production and trade would amount to 1.8 million short tons, the same as the volume consumed in 1989.

Markets in 1990 indicate that insulation board consumption for the year will be near 1.0 million short tons — about the same volume as was used in 1989. Imports are expected to be close to 0.1 million short tons, down fairly sharply from imports in 1989. Exports are likely to drop below 50,000 tons. Consequently, production is estimated at 0.9 million short tons, about the same as output in 1989.

With the prospective trends in housing and the major manufacturing markets discussed earlier, consumption and production of hardboard and insulation board are likely to show small declines in 1991. Imports and exports for both products will probably remain about the same as in 1990.

Pulpwood

Paper and paperboard production and consumption, though following a relatively flat trend, has continued at record and near-record levels. As a result, pulpwood consumption was at record levels according to data from the American Pulpwood Association. On the basis of these trends, pulpwood consumption (roundwood and chips) in 1990 is expected to total 101.5 million cords, up about 1.1 percent from the previous high of 100.4 million cords recorded in 1989.

Imports of pulpwood, mostly pulpwood chips from Canada, have declined from year-earlier levels. As a result, imports for the year are expected to total 0.6 million cords. Exports are estimated at 3.6 million cords, about 4 percent above exports in 1989.

Pulpwood production in 1990 is expected to rise to about 104.5 million cords, 1.3 percent more than in 1989, and also a new record. The prospective trends in overall economic activity suggest that the upward trend will continue in 1991, though at a much slower pace than in the past few years.

Softwood Log Trade

Softwood log exports were down to most of our major offshore markets including Japan, China, and the European Economic Community. Exports for all of 1990 have been estimated at 3.7 billion board feet, 19 percent below shipments in 1989. Industry sources indicate that the outlook for 1991 is for a continued decline to about 3.3 billion board feet. Softwood log imports were down sharply through late summer and are likely to total about 15 million board feet, roughly two-thirds of the volume imported in 1989.

Hardwood Log Trade

Hardwood log exports for 1990 are estimated at 0.2 billion board feet. Although the volume is relatively small, most of the logs exported in 1990 and in recent years have been high quality oak, walnut, and other species prized for their use in the manufacture of fine furniture and cabinetry. As a consequence, they constitute one of our most valuable timber products exports on a per unit basis.

Hardwood log imports in 1990 are expected to be close to 15 million board feet.

Industrial Roundwood Summary

Given the trends in consumption, trade, and production in 1990, total consumption of all industrial roundwood products (i.e., all roundwood products except fuelwood) is expected to be about 15.9 billion cubic feet, 2.5 percent below use in 1989 and 4 percent less than the record volume consumed in 1987. Production, imports, and exports likely will also be below year-earlier levels. Consumption, imports, exports, and production will likely continue to decline in 1991 if the major markets follow the trends discussed earlier.

1990 PRICE RANGE FOR FOREST PRODUCTS

Table I. Price Range Standing Timber (Stumpage) and SawlogsPer Thousand Board Feet (MBF)

Prices quoted are an average range for the county. Prices will vary depending on quantity, quality, access, and market conditions. More specific prices can be obtained by contacting the County Forester, Consulting Foresters, or industry representatives.

Species	Quality	Stumpage	Roadside	Delivered
White Pine	Low	\$20-60	\$75-100	\$95-125
	Medium	65-85	120-155	150-215
	High	80-110	150-200	190-225
Red Pine	0	30-40	80-135	120-150
Hemlock		25-35	85-110	110-150
Red Oak	Medium	150-300	330-400	200-450 +
	High	300-500	350-600	400-700 +
White Ash	Medium	75-150	125-200	190-250
	High	150-200	200-270	300-400 +
White Birch	Medium to High	50-110	100-185	150-230
Sugar Maple	Medium	55-65	100-12	150-175
0	High	65-85	120-150	200-250
Red Maple	Sawlog	25-35	70-90	120-160
Beech	Sawlog	20-40	70-100	110-160
Pallet	0	20-30	100	90-130
Fuelwood (per cord)	Long	6-10	35	
Hardwood Pulp (per cord)	Long	5-8	29-34	47-50
Softwood Pulp (per cord)	8 ft.	3-14	24-30	47-50
Biomass Fuel Chips		.35-1.00		17.50
Oak Veneer	Veneer	400-750	500-850	700-1000 +

Belknap County

Carroll County

Species	Quality	Stumpage	Roadside	Delivered
White Pine	Low	\$60	\$90-120	\$120-150
	Medium	70-100	120-150	150-190
	High	100-150	150-190	190-230
Red Pine	Medium	20-35	80-100	100-120
	High	35-50	100-130	110-150
Hemlock	Medium	20-35	65-80	90-110
	High	35-50	80-100	110-130
Spruce	Medium	30-60	85-100	110-150
	High	60-75	100-120	120-150
Ash	Low	40-70	90-150	135-200
	Medium	70-150	210-300	250 - 400
	High	140-230	300-400	400-500
Beech	Low	20	45	60
	Medium	25-30	50-80	65-80
	High	35-60	80-135	130-150
Beech Boltwood	High	20	30-35	70-90
Red Maple	Low to High	20-40	70-90	90-180
Sugar Maple	Low	25	60	90-130
~ -	Medium	40	90	130-150
	High	70-100	110-175	175-300

Species	Quality	Stumpage	Roadside	Delivered
Paper Birch	Low	\$60	\$80	\$110-140
	Medium	75	120	140-170
	High	90-100	165	170-200
Paper Birch Boltwood	Medium	30/cord	40-50/cord	70-100/cord
Yellow Birch	Medium	60-80	70-80	120-160
	High	80-100	140-190	160-225
Oak	Low	30-100	60-120	90-150
	Medium	100-250	120-350	150-400
	High	250-500	250-400	400-700
Mixed Hardwood	Pallet	25-45	70-95	110-120
Hardwood Pulp	per cord	6-10	30-35	47-50
Softwood Pulp	per cord	3-10	19-36	45-52
Fuelwood Chips	-	0-1.00/ton		

Carroll County (Continued)

Cheshire County

Species	Quality	Stumpage	Roadside	Delivered
White Pine	Sawlog	\$40-80	\$90-150	\$95-180
Red Pine	Sawlog	30-50	85-120	100-150
Hemlock	Sawlog	20-40	65-90	90-110
Spruce	Sawlog	35-45	65-100	90-115
Beech	Sawlog	20-40	50-85	90-110
Poplar	Sawlog	20-35	65-85	90-110
Red Maple	Sawlog	25-35	60-90	90-125
Red Oak	Low	125-200	210-260	200-250
	Medium	200-250	260-300	275-375
	High	250-300 +	325-450 +	375-550 +
Sugar Maple	Sawlog	55-90	90-160	130-200 +
White Ash	Sawlog	100-200 +	175 - 250 +	200-300 +
White Oak	Sawlog	100-150	125-200	150-225 +
White Birch	Sawlog	40-60	90-130	120-160
	Boltwood	20-30/cord	40-60/cord	60-80/cord
Yellow & Black Birch	Sawlog	45-80	100-160	120-240
	Boltwood	20-30/cord	40-60/cord	60-80/cord
Mixed Hardwood	Pallet	20-35	70-100	80-120
	Tie Log	25-40	65-100	95-130

Species	Quality	Stumpage	Delivered
White Pine	Sawlog	\$60-95	\$160-250
Red Pine	Sawlog	50-60	130-160
Spruce-Fir	Sawlog & Cabin	55-85	180-210
Hemlock	Sawlog	20-30	120-150
Hard Maple	Sawlog	70-100	150-275
Soft (Red) Maple (Tie Logs)	Sawlog	25-40	125-170
Poplar	Sawlog	20-30	115-130
White Birch	Sawlog	60-80	180-270
	Boltwood	30-45	90-110
Beech	Sawlog	25-30	120-130
Yellow Birch	Sawlog	80-100	140-290
	Boltwood	30-40/cord	70-85
Red Oak	Sawlog	150-300	300-600
White Ash	Sawlog	100-300	190-325
Basswood	Sawlog	30-50	130-140
Mixed Hardwood (Pallet & Tie Stock)	Sawlogs	25-30	120-175
Poplar-Veneer			135-150
Tamarack	Sawlogs	25-30 —	135-150

Coos County

Grafton County

Species	Quality	Stumpage	Delivered
White Pine	Low (8'-10')	\$10-60	\$90-120
	Medium	75-90	150-180
	High	90-100	195-300
Hemlock	Sawlog	25-55	100-130
Spruce-Fir	Sawlog	40-85	110-200
Yellow Birch	Sawlog	80-110	170-275
Sugar Maple	Sawlog	80-110	165-300
White Birch	Sawlog	70-110	170-250
Red Maple	Sawlog	25-35	110-130
White Ash	Sawlog	80-150	150-240
Beech	Sawlog	20-40	110-125
Red Oak	Sawlog	150-250	275-550
Red Pine	Sawlog	25-50	130-180
Poplar	Sawlog	20-100	100-150
Pallet Mxd. & Tie Logs	Sawlog	20-40	90-140
White Birch	Veneer	80-150	235 +
Yellow Birch	Veneer	90-150	270-300 -
Sugar Maple	Veneer	100-150	325-370
White Ash	Veneer	150-220 +	400-650 -
RedOak	Veneer	350-550	750-950

Hillsborough County

Species	Quality	Stumpage	Roadside	Delivered
White Pine	Low	\$60-65	\$85-100	\$120-130
	Medium	70-85	100-115	130-165
	High	85-95	120-140	180-200
Hemlock	Low	30-35	70-75	90-110
	High	40-45	85-90	100-110
Red Oak and W. Ash	Low	85-100	120-140	175-230
	Medium	125-175	170-240	250-400
	High	200-300	275-325	500-600
	Veneer			600-850 +
Other Hardwoods				
Birch, Maple	Low	40-50	70-90	100-130
Mixed Hardwood	High	85-120	150-200	200-300
Pallet Stock	Logs	30-40		90-130

Merrimack County

Species	Quality	Stumpage	Roadside	Delivered
White Pine	Low	\$50-65	\$80-100	\$90-120
	Medium	70-90	100-110	120-140
	High	70-120	140-160	165-225
Hemlock	All	25-45	70-90	80-125
White Birch	Medium	40-50	90-100	110-160
	High	60-100	100-140	200 +
Hard Maple	Medium	40-60	100-110	120-140
L	High	60-130	110-140	175-300
White Ash	Medium	40-175	140-200	120-265
	High	175-300	200-350	350-500
Red Oak	Medium	150-300	200-350	225-400
	High	300-400	275-500	350-500
Pallet Stock	Logs	25-40	75-85	80-120

Rockingham County

Species	Quality	Stumpage	Roadside	Delivered
White Pine	Low	\$60	\$110	\$110-120
	Medium	80	120	130-140
	High	110	140	150-180
Hemlock	Sawlogs	30-50	85	100-120
Red & White Oak	Medium	120-150	160-185	200 +
	High	300 +	310-350	400-525
Other Hardwoods	Medium	70	120	150
	High	100 +	150	200

Strafford County

Species	Quality	Stumpage	Roadside	Delivered
White Pine	Low to Medium	\$60-80	\$120-150	\$145-185
	High	80-110	140-170	165-205
Hemlock	Low to Medium	25-40	60-75	85-110
	High	40-45	75-85	100-120
Red Oak	Low to Medium	100-200	175-275	200-310
	High	200-400	275 - 475	375-575
Other Hardwoods	Low to Medium	40-70	90-120	115-155
	High	100-125	150-175	205-230
Birch-Yellow, White, Black	High	100-150	150-200	200-350
White Ash	High	100-150	150-200	200-350

Sullivan County

Species	Quality	Stumpage	Roadside	Delivered
White Pine	Low	\$15-65	\$90-110	\$90-150
	Medium	65-85	100-150	160-185
	High	85-105	140-180	180-250
Hemlock	Sawlog	20-50	75-120	110-140
Spruce	Sawlog	30-80	85-185	125-200
Yellow Birch and	0			
Black Birch	Sawlog	50-100	100-140	<u></u>
White Birch 🌙				130-280
Sugar Maple	Sawlog	55-150	130-300	200-350
Red Oak	Sawlog	175-350	300-450	300-700
	Veneer	350 +	500 +	700 +
White Ash	Sawlog	125-200	215-315	250-525
	Veneer	300 +	500 +	600 +
Red Maple	Sawlog	20-35	80-110	100-200
Pallet	Ũ	20-35	70-90	100-150
Other Hardwoods		20-40	95-110	125-140

Table II. Prices Pulpwood Per Cord*-Northern New Hampshire

ocios	Stumpaga Pondaida	Pondeido	Delivered	
	Sumpage Roadside		Per ton	Per cord
ruce and Fir	\$10.00-18.00		\$25.00-28.00	\$53.50-80.00
mlock	5.00-7.00		20.00-23.00	45.00-55.00
narack, Red Pine }	5.00-7.00		20.00-23.00	45.00-55.00
rdwood	6.00-10.00		18.00-21.00	47.00-54.50
rdwood *Pulpwood is weigh according to specie	6.00-10.00 t scaled at the mills in s.	green ton equivale	18.00-21.00 ents. Converting factor	47 rs to co

Table II. (Cont'd.)Prices Pulpwood Per Cord–Central New Hampshire

	<u>.</u>	Delivered	
Species	Stumpage	Per ton	Per cord
Mixed Softwood Pulp	\$5.00-10.00	\$16.00-20.00	\$35.00-44.00
Pine	3.00-10.00	16.50 - 22.00	35.00-50.00
Hemlock	5.00-14.00	16.50-22.00	35.00-72.00
Spruce and Fir	5.00-10.00	17.50-26.00	40.00-55.00
Mixed Hardwood	6.00-10.00	18.00-20.00	45.00-55.00
Random Length Hardwood	5.00-10.00	18.00-20.00	44.00-50.00
Mixed Hardwood including Poplar	4.00-8.00	16.00-20.00	40.00-45.00

Prices of Pulpwood Per Cord–Southern New Hampshire

Species	Stumpage	Roadside	Delivered
Softwood Pulp	\$0.50-1.50/ton	\$12.00-26.00/ton	\$15.00-31.00/ton
	2.25-4.00/cord	20.00-35.00/cord	40.00-55.00/cord
Random Length			
Mixed Softwood	3.00-5.00	15.00-30.00/cord	14.00-16.50/ton
Mixed Hardwood	6.00-10.00		14.00-20.00/ton
Biomass (mixed)	0.00-1.00/ton		15.00-18.00/ton

Table III. Price of Debarked and Chipped Stemwood Per Green Ton

	Stumpage	Delivered	
Softwood (mixed)	\$0.50-2.50	\$35.00-40.00/ton	
Hardwood (mixed)	0.50-2.50	35.00-40.00/ton	

Price of Pulp Chips (Paid in New Hampshire)

	Produced from Slabs and E	Edgings (Clean, Screened, Bark free)
	F.O.B. Sawmill	Delivered to Pulp Mill
	Per Green Ton	Per Green Ton
Pine and Hemlock	\$12.00-18.00	\$22.00-28.00
Spruce and Fir	14.00-22.00	32.00-36.00
Hardwood (mixed)	12.00-16.00	20.00-26.00

Average Price of Total Tree and Fuel Chips

	Spout Prices (including stumpage)	Delivered	Stumpage
Biomass Fuel: Mixed Species	\$12.00-16.00/ton	\$16.00-19.25/ton	\$0.35-1.60/ton
Sawdust Sawdust and Bark Combination Bark Fuel (Processed)	\$0.15-0.18/cu. ft.	\$10.00-13.00/ton 15.00-19.00/ton 12.00-14.00/ton	Tops for Biomass \$0.50/ton

Species	Stumpage	Roadside	Delivered at Mill
	Boltwood	Per Cord ¹	
White Birch	\$45.00-75,00	\$65.00-85.00	\$180.00-220.00 per cord
Yellow Birch	25.00-30.00	50.00-70.00	150.00-160.00 per cord

Table IV. Price Range Boltwood, Posts, Poles, Piling, Cross Ties, and Switch Ties

¹Price per cord varies according to diameter and length of bolt. Some mills prefer to buy by the Mbf.

Guardrail Posts, Utility Poles and Piling

Species	Min. Small End Diameter	Max. Large End Diameter	Length	Delivered
Posts Red Pine Pitch Pine White Pine Spruce	5″	10"	7' or Multiples	\$1.75 ea.
Poles and Pilin Red Pine Pitch Pine	ng 7"	17″	40'	\$0.80-1.00/lin. ft.

Railroad Crossties

Grade	Size	O ak T ies F.O.B, Mill		Mixed Hardwood Ties ¹ F.O.B. Mill	
		Each	Per MBF	Each	Per MBF
3	(6'' imes 8'' imes 8'6'')	\$ 8.65	\$254.00	\$ 8.15	\$240.00
4	(7'' imes 8'' imes 8'6'')	11.50	290.00	10.50	265.00
5	$(7'' \times 9'' \times 8'6'')$	12.50	280.00	11.50	258.00

¹Beech, Birch, Maple, Cherry, Ash, Hickory

Switch Ties (Oak only)

(7'' imes 9'')	12'-16' long	\$330.00-375.00 per MBF +

Species	Stumpage	Roadside	Delivered Buyers Premises
Hardwood 4' Wood 12", 14", 16" Lengths Slabs (Hardwood or Softwood) Dry Fuelwood, 16 inches	\$5.00-15.00	\$35.00-60.00 60.00-80.00 15.00-40.00	60.00-90.00 + 85.00-130.00 + 25.00-55.00 + 120.00-150.00 + 120.00-150.00 + 120.00 + 150.00 + 120.00 + 150.00 + 120.00 + 150.00 + 120.00 + 150.00
Tree length loads of Cordwood Southern N.H. Northern N.H.	5.00-15.00 6.00-10.00	25.00-55.00 25.00-40.00	40.00-60.00 40.00-60.00

Table V. Price Range of Hardwood Fuelwood Per Cord

Table VI. Price Range of Sawdust and Shavings and Bark

Sawdust Shavings	\$10.00-25.00 per cord green at sawmill or 12.00-15.00 per ton 9.00-20.00 per cord green at sawmill	\$22.00 + /ton (dry) 15.00 + /cord (farm bedding)
Bagged Dry Shavings Bark (mulch)	6.00-12.00 per yard (loaded) or 12.00-18.00 per ton	2.00-2.50 per bag 15.00 + yard (processed) 18.00-27.00 per ton (processed)

Table VIIA. Representative Operating Costs (Contract Prices) Northern N.H.

Sawlogs: Felling and Limbing	\$15-20 per MBF
Yarding and Bucking (softwood)	35-45 per MBF
(hardwood)	35-65 per MBF
Felling, Yarding, and Bucking (softwood)	55-75 per MBF
(hardwood)	60-100 per MBF
(veneer)	100-150 per MBF
Pulpwood and Cordwood: (with machine) stump to roadside	*
Random length	17-30 per cord
Biomass	4-10 per ton
Contract Chipping – roadside	4.00-10.00 per ton

Table VIIB. Representative Operating Costs (Contract Prices) Southern N.H.

Sawlogs: Felling and Limbing	\$10-16 per MBF
Yarding and Bucking (softwood)	32-50 per MBF
(hardwood)	40-66 per MBF
Felling, Yarding, and Bucking (softwood)	50-75 per MBF
(hardwood)	$60-125\mathrm{per}\mathrm{MBF}$
Pulpwood and Cordwood: (with machine) stump to roadside	_
Random length	$25\text{-}35\mathrm{percord}$
4' length	$35\mathrm{percord}$

Table VIIC. Representative Processing Costs (Contract Prices) Average for N.H.

Custom Sawing —	
Softwood	\$125.00-150.00 per MBF or 120.00-175.00 per hour
Hardwood	150.00-225.00 per MBF or 120.00-175.00 per hour
Planing	40.00-50.00 per MBF, 2 sides; 50.00 + per MBF 4 sides; (patterns extra).
Resawing	40.00-50.00 per MBF

4/4 Pine (Yard)	12-14% MC	\$75.00-85.00
4/4 Pine-Furniture	6-8% MC	90.00-100.00
4/4 Oak-Furniture	6-8% MC	140.00-160.00
4/4 Maple-Furniture	6-8% MC	90.00-100.00
8/4 Oak	6-8% MC	375.00-390.00

Table VIID. Representative Kiln Drying Costs (Custom)

Table VIIE. Representative Trucking Costs* (Trucks with Loaders)

Sawlogs: Local deliveries Distant deliveries	\$25.00-50.00 per MBF 22.00-30.00 for the first 10 miles and 40¢ to 75¢ for each additional mile per MBF OR 35.00 to 50.00 per hour
Cordwood and Pulpwood:	11.00-29.00/cord
Lumber and Chips:	2.00-2.50 per loaded mile

*For short hauls or partial loads minimum charges may apply.

CHRISTMAS TREE SITUATION – 1991

Despite a national surplus and a number of unsold trees on retail Christmas tree stands in the northeast, New Hampshire Christmas tree growers had a successful 1990 season.

Continued caution and late ordering by wholesale buyers again produced anxiety among many of the large New Hampshire producers but reports are that few New Hampshire cut trees went unsold.

Targeting in-state wholesale markets in response to the knowledge that over 80% of retail trees are imported seems to be effective with some import tree displacement occurring. Continued information exchange between and amongst growers and buyers will help ensure markets for in-state trees.

While imported trees will always be needed to meet demand, excellent opportunities exist for the increased number of New Hampshire trees that are finding their way to the marketplace from first rotation plantations.

While cut-your-own operations are enjoying success, there were numbers of trees left uncut to be sold another year. Some consumer caution, but more than likely unusual weather a couple of weekends during the selling season, contributed to some weaker than usual activity.

Nineteen ninety-one should see prices remain stable and perhaps even drop slightly as more trees reach marketable size. The 8 to 10 year management period needed to produce a quality tree continues to be a long term risk that can be minimized through a sound marketing strategy.

Prospects for New Hampshire Christmas trees remain good and should continue so for the hundreds of individuals involved in the industry.

Balsam fir provide the backbone of New Hampshire's industry, with white spruce, scotch pine, fraser fir, douglas fir, blue spruce, and white pine filling out the market.

Table VIII. Wholesale Price Range of Christmas Trees and Boughs

······································	······	Roadside	6-8' Trees	Delivered
		Grade 1 ^(a)	Grade 2 ^(b)	Denvereu
Balsam Fir ^(b)		\$13.00-20.00	\$9.00-13.00	Trees mostly
White Spruce		7.00-14.00		\$12.00-25.00 ea.
Scotch Pine		8.00-15.00	8.00-10.00	depending on
Blue Spruce		10.00-15.00		species, quality,
White Pine		5.00 - 15.00		and quantity.
Fraser Fir		16.00-24.00	14.00-18.00	\$1.00-2.00/tree or
BOUGHS (baled o	r tied)			\$2.50 per
Balsam Fir	50 lb. bundle	\$6.50-9.00	\$225-350/ton	loaded mile
Pine	50 lb. bundle	5.00-7.00	200-280/ton	
Wreaths–Size 12" to 14"		(Ring Size)		
Balsam Fir–single faced		\$2.75-3.50 ea.		
double faced		3.50-5.00 ea.		-

^(a)No uniform grading system is in use statewide. Grades based on foliage density and symmetry.

^(b)Consult county forester for local market information for pasture run balsam fir Christmas trees.

White Pine	(Select and cut your own)	
Scotch Pine	\$15.00-35.00 per tree or	
Balsam Fir White Spruce	\$3.00-5.00 per lineal foot	
Norway Spruce		
Blue Spruce		
Fraser Fir		

MAPLE PRODUCTS SITUATION-1991

The 1990 crop of maple syrup increased from 56,000 gallons to 63,000 gallons, for a 12.5% increase in production over 1989. However, the average price received for maple syrup for retail, wholesale, and bulk sales dropped by 10% as compared to 1989.

The Canadian maple producers have had excellent crops in the past few years. One contributing factor is vacuum systems, with about 65% of the producers utilizing this technology to improve sap yields, as compared to only 20% of U.S. producers. As a result, there is a surplus of Canadian syrup in the market. The Canadian government has started a program to buy syrup and store it in order to keep prices up. Since New Hampshire consumed nearly four times the amount of maple syrup than was produced in the state, there appears to be an excellent opportunity for expansion of N.H. syrup production and retail marketing.

%sugar	¢/gal.	% sugar	¢/gal.
0-1.1	1.1	3.4	38.8
1.2	4.4	3.5	40.2
1.3	6.6	3.6	41.6
1.4	8.7	3.7	43.0
1.5	10.7	3.8	44.4
1.6	12.6	3.9	45.8
1.7	14.4	4.0	47.2
1.8	16.1	4.1	48.6
1.9	17.7	4.2	50.0
2.0	19.2	4.3	51.4
2.1	20.6	4.4	52.8
2.2	22.0	4.5	54.2
2.3	23.4	4.6	55.6
2.4	24.8	4.7	57.0
2.5	26.2	4.8	58.4
2.6	27.6	4.9	59.8
2.7	29.0	5.0	61.2
2.8	30.4	5.1	62.6
2.9	31.8	5.2	64.0
3.0	33.2	5.3	65.4
3.1	34.6	5.4	66.8
3.2	36.0	5.5	68.2
3.3	37.4		

Table X. Average Maple Sap Prices at Sugar House in New Hampshire

Maple Syrup Retail at Farm		Maple Syrup Retail at Store	Wholesale	Bulk Wholesale
1 gallon	\$32.50-38.00	\$34.00-40.00	\$28.50	Grade A
1/2 gallon	18.50-20.00	16.00-22.00	16.00	\$1.20-1.85/lb.
1 quart	10.10-12.00	8.25-12.00	8.95	
1 pint	6.25-7.00	5.00-6.50	5.75	Grades B and C
½ pint	3.50-4.00	3.00-4.00	2.75	\$0.90/16.
Maple Pro	ducts — Retail	Sugar 1 lb. Cream ½ lb.	\$8.50-9.50 Cane 4.00-5.00	dy ½ lb. \$4.50-7.00

Table XI. Prices for Table Grade Maple Syrup and Products at Producers

Rent Price Per Tap Hole

Tap hole rentals: 20 to 30 cents per tap with average being 25 cents. Sugar Maples in the woods, which are not too easy to get to, average 20 cents per tap; while easily accessible trees and roadside trees average 30 cents per tap.

FOREST PRODUCTS LABORATORY PUBLICATION LISTS

LISTS OF PUBLICATIONS dealing with research projects of the U.S. Forest Products Laboratory or relating to special interest groups are available from the Director, Forest Products Laboratory, P.O. Box 5130, Madison, Wis. 53705. Separate lists have been compiled for each of the following subjects: Box, Crate, and Packaging Data; Drying of Wood; Fire Protection; Glue and Plywood; Growth, Structure, and Identification of Wood; Furniture Manufacture; Logging, Milling, and Utilization of Timber Products; Mechanical Properties of Timber; Structural Sandwich; Plastic Laminates and Wood-Base Components; Thermal Properties of Wood; Wood Finishing Subjects; Wood Preservation; Architects, Builders, and Engineers.

CONVERSION FACTORS AND UNITS OF MEASUREMENT FOR FOREST PRODUCTS

A knowledge of the common units of measure for the various forest products is of importance to persons involved in the marketing process. These units of measure form a basis for common understanding between buyer and seller. Familiarity with these units can mean a greater financial return and a reduction of the chances of misunderstanding of the terms of forest products sale agreements.

The Blodgett rule is the official standard in New Hampshire. Several other rules are also in use by mutual agreement between buyer and seller. However, the International Rule, ¹/₄" kerf, is most commonly accepted.

The volume of a standing tree or log is determined using tree and log rules. These rules simply give the approximate number of board feet of sawed lumber that may be manufactured after allowed for milling losses in slabs, edgings and sawdust.

Tree Scale (Tree Volume Measurement)

To determine the board foot content of standing trees, tally the trees by:

- 1) D.B.H. (Diameter Breast Height = measurement of diameter of tree 4½ ft. above ground)
- 2) Estimate the number of 16 foot logs to 6 inch top diameter
- 3) Apply the scale given in Table below

D.B.H.		Nu	umber of 1	6 foot logs	- to 6" top		
Inches	1	11/2	2	$2^{1/_{2}}$	3	31⁄2	4
6	10	15		<u></u>	<u> </u>	· · · · · · · · · · · · · · · · · · ·	
8	20	35	50				
10	40	55	70	85	95		
12	60	75	95	110	125	145	165
14	85	110	135	150	165	190	215
16	110	150	190	215	240	260	285
18	140	195	245	285	320	345	370
20	180	245	310	355	400	435	465
22	220	300	380	445	505	545	585
24	270	365	460	540	615	670	730
26	320	435	550	645	735	805	875
28	370	515	655	760	870	950	1035
30	430	595	760	885	1010	1110	1205

Tree Scale – International Rule

Log Rule

To determine the board foot content of sawlogs, tally the logs by:

- 1) Average Diameters at the small end and inside the bark and by lengths
- 2) Apply volumes from the table given in Table below and total

The International Log Rule

¹/₄-inch Saw Kerf

Diameter	· · · · · ·	· · ·		<u>. tii</u>			,
(Small end			Length o	f Log in Feet			
inside bark)	8	10	12	14	16	18	20
Inches							
4		5	5	5	5	5	10
5	5	5	10	10	10	15	15
6	10	10	15	15	20	25	25
7	10	15	20	25	30	35	40
8	15	20	25	35	40	45	50
9	20	30	35	45	50	60	70
10	30	35	45	55	65	75	85
11	35	45	55	70	80	95	105
12	45	55	70	85	95	110	125
13	55	70	85	100	115	135	150
14	65	80	100	115	135	155	175
15	75	95	115	135	160	180	205
16	85	110	130	155	180	205	235
17	95	125	150	180	205	235	265
18	110	140	170	200	230	265	300
19	125	155	190	225	260	300	335
20	135	175	210	250	290	300	370
21	155	195	235	285	320	365	410
22	170	215	260	305	355	405	455
23	185	235	285	335	390	445	495
24	205	255	310	370	425	485	545
25	220	280	340	400	460	525	59 0
26	240	305	370	435	500	570	640
27	260	330	400	470	540	615	69 0
28	280	355	430	510	585	665	745
29	305	385	465	545	630	715	800
30	325	410	495	585	675	765	860

Pulpwood

Pulpwood is generally sold by the cord or on the weight basis.

The Cord: A standard cord is generally accepted as equivalent to a pile of closely stacked wood 4 feet high, 4 feet deep and 8 feet long containing a gross volume of 128 cu. ft.

Solid Wood Content of a Cord of Pulpwood

The solid wood content of a cord of pulpwood is dependent on many factors such as:

- 1) The average diameter of the bolts
- 2) Tightness of piling
- 3) Limbing practice and knottiness
- 4) Taper and straightness of individual bolts
- 5) Amount of bark rubbed off prior to scaling
- 6) Period of time between piling and scaling (shrinkage and compaction during transportation)

The volume given in the table below are *averages* and are commonly used as conversion factors.

Solid Wood Content of a Standard Cord

1 standard cord $(4' \times 4' \times 8')$ 1 standard cord of pulpwood, rough 1 standard cord of pulpwood, peeled 1 standard cord of pulpwood, rough 1 standard cord of pulpwood, peeled 1 7 to 2 0 cord	=	128 cubic feet of wood, bark, and air spaces 85 cubic feet of solid wood (softwood) 95 cubic feet of solid wood (softwood) 85 cubic feet of solid wood (hardwood) 95 cubic feet of solid wood (hardwood)
1.7 to 2.0 cord	=	1000 board feet

When green rough pulpwood is purchased by weight, the following weight-volume equivalents are generally accepted:

5600 - 5700 pounds = 1 cord (hardwood)

4300 - 4700 pounds = 1 cord (softwood)

Cordwood New Law – State of New Hampshire

The change in RSA 438:20 is: "All nomenclature, procedure, and methods of sale of commodities in this state shall comply with the National Institute of Standards and Technology Handbook 130 and all amendments to such handbook, unless otherwise provided in this chapter."

A Cord is 128 cubic feet "ranked and well stowed"—Pieces of wood are placed in a line or row, with individual pieces touching and parallel to each other, and stacked in a compact manner.

Except for small packages less than 4 cubic feet and logs, firewood shall be advertised, offered for sale, and sold only by measure, using the term "cord" and fractional parts of a cord, or the cubic meter.

Except as noted above, firewood shall be sold by the cord and a cord is 128 cubic feet.

Length	Approximate Cu. Ft.	
48″	128	<u></u>
24″	128	
16″	128	
12″	128	

Stacked Volume of a Cord of Wood, Cut and Split (New Law 1989)

Approximate Weight and Heating Value Per Cord (128 cu. ft.) of Cordwood of Different Woods, Green and Air Dry (Approximately 20% Moisture Content)

Woods	Weight, lb. per cu. ft.	Weight, lb.	Available Heat, Million BTU ¹	Equivalent in Gallons of Fuel Oil ²
	Green	Air Dry	Air Dry	
Ash	48	4,300	25.0	255
Aspen	43	2,700	15.6	160
Beech, American	54	4,700	27.2	277
Birch, yellow	57	4,600	26.1	271
Elm, American	54	3,625	21.5	220
Hickory, shagbark	63	5,300	30.7	314
Maple, red	50	4,000	23.2	238
Maple, sugar	56	4,600	26.6	271
Oak, red	64	4,600	26.6	271
Oak, white	63	4,900	28.4	290
Pine, eastern white	36	2,600	15.0	154

¹50 to 60% efficiency of burning unit.

²70% efficiency of furnace.

Variation of Heating Values of Wood Due to Moisture

- Percent of Moisture -	– Percent of Usable Heat –
0 (oven dry)	103.4
4	102.7
20 Air-dried Hardwood	100.00 7,250 BTU*
40	96.5
80	89.7
100 (Green Hardwood)	85.0

*BTU is the quantity of heat required to raise the temperature of one pound of water one degree Fahrenheit.

Tree Diameter at 4½ Feet	Number of Tre	ees
E11	 	
5	50	
6″	25	ang barang sa
7″	16	
8″	12	÷.,
9″	10	
10″	8	
11″	6	
12″	5	
14″	3	
16″	2.5	
18″	2	
22″	1	

Approximate Number of Trees per Cord for Peeled Pulpwood and Cordwood

Calculated Sawdust Weights in Pounds Per Cubic Foot at Selected Moisture Contents.¹

Moisture Content Level				Species	and Co	npaction C	lasses		
			White Pine	!		Red Oak		Red	Maple
Percent	Percent	Light	Shaken	Packed	Light	Shaken	Packed	Light	Shaken
Oven-	Green								
dry	Basis	7.7	9.7	13.2	11.0	13.9	16.8	8.9	12.2
5	4.8	8.1	10.2	13.7	11.5	14.6	17.3	9.3	12.8
10	9.1	8.5	10.7	14.0	12.1	15.3	17.7	9.8	13.4
15	13.0	8.8	11.1	14.5	12.6	16.0	18.3	10.2	14.0
20	16.6	9.2	11.6	14.9	13.2	16.7	18.9	10.7	14.6
25	20.0	9.6	12.1	15.2	13.7	17.4	19.5	11.1	15.2
30	23.1	10.0	12.6	15.5	14.3	18.1	20.0	11.6	15.9
50	33.3	11.5	14.5	17.3	16.5	20.8	22.8	13.3	18.3
75	42.8	13.5	17.0	19.5	19.2	24.3	26.2	15.6	21.3
100	50.0	15.4	19.4	22.0	22.0	27.8	31.0	17.8	24.4
125	55.5	17.3	21.8	25.0	24.7	31.3	36.0	20.0	27.4
140	58.3	18.5	23.3	27.1	26.4	33.3	40.0	21.4	29.3

 1Weights by each compaction class are mean values calculated to be within \pm $^{1\!/_2}$ pound of the true mean value at the 95 percent confidence level.

Grade	Dimensions	Bd. ft. volume per tie	No. of Pcs. per MBF
1	6″×7″×8′6″	29.7	33.7
2	6"×7"×8′6″	29.7	33.7
3	6"×8"×8′6″	34.0	29.4
4	7"×8"×8′6″	39.6	25.2
5	7"×9"×8′6″	44.6	22.4

Railroad Tie Volume Table

Lumber (Square Edge)

The standard unit of measure for lumber is the board foot. It is equivalent to 1/12 of a cubic foot such as a board 12 inches by 12 inches and 1 inch thick.

Board foot measurements refer to rough lumber. Surfaced lumber if tallied on the basis of width and thickness before surfacing.

To calculate the board footage of lumber, for each piece multiply the width in inches by the thickness by the length in feet and divide by 12.

Example:

 $\frac{6'' \text{ wide} \times 2'' \text{ thick} \times 16' \text{ long}}{12} = 16 \text{ board feet}$

Thickness and Width	Board foot content Board Length in feet								
Inches	6	8	10	12	14	16			
1 × 2	1	1-1/3	1-2/3	2	2-1/3	2-2/3			
1×3	1-1/2	2	2-1/2	3	3-1/2	4			
1 × 4	2	2-2/3	3-1/2	4	4-2/3	5-1/3			
1 × 5	2 - 1/2	3-1/3	4-1/6	5	5-5/6	5-2/3			
1×6	3	4	5	6	7	8			
^{~~} 1×7	3-1/2	4-2/3	5-5/6	7	8-1/6	9-1/3			
1 × 8	4	5-1/3	6-2/3	8	9-1/3	10-2/3			
1 × 10	5	6-2/3	8-1/3	10	11-2/3	13-1/3			
1×12	6	8	10	12	14	16			
1¼ × 4	2 - 1/2	3-1/3	4-1/6	5	5-5/6	6-2/3			
1¼×6	3-3/4	5	6-1/4	7-1/2	8-3/4	10			
1¼×8	5	6-2/3	8-1/3	10	11-2/3	13-1/3			
1½ × 4	3	4	5	6	7	8			
1½×6	4-1/2	6	7-1/2	9	10-1/2	12			
1½×8	6	8	10	12	14	16			
2×4	4	5-1/3	6-2/3	8	9-1/3	10-2/3			
2×6	6	8	10	12	14	16			
2×8	8	10/2-3	11-1/3	16	18-2/3	21-1/3			
2×10	10	13-1/3	16-2/3	20	23-1/3	26-2/3			
2×12	12	16	20	24	28	32			
2½ × 12	15	20	25	30	35	40			
3×6	9	12	15	18	21	24			
3×8	12	16	20	24	28	32			
3×10	15	20	25	30	35	40			
3×12	18	24	30	36	42	48			
4 × 4	8	10-2/3	13-1/3	16	18-2/3	21-1/2			
6 × 6	18	24	30	36	42	48			

Board Foot Measure Contained in Lumber

LUMBER SIZE TABLE

Nominal and Minimum-dressed Sizes of Boards, Dimensions and Timbers

	TI	HICKNES	s		FACE WIDTHS			
ITEM	Nominal	Minimu	m Dressed		Nominal	Minimu	m Dressed	
		Dry	Green	· .		Dry	Green	
					2	1-1/2	1-9/16	
					3	2 - 1/2	1-9/16	
					4	3 - 1/2	3-9/16	
					5	4 - 1/2	4-5/8	
	1	3/4	25/32		6	5 - 1/2	5-5/8	
					7	6-1/2	6-5/8	
Boards*	1-1/4	1	1 - 1/32		8	7-1/4	7-1/2	
					9	8-1/4	8-1/2	
	1-1/2	1-1/4	1-9/32		10	9-1/4	9-1/2	
					11	10-1/4	10-1/2	
					12	11-1/4	11-1/2	
					14	12 - 1/4	13-1/2	
					16	15-1/4	15-1/2	
					2	1-1/2	1-9/16	
					3	2 - 1/2	2-9/16	
					4	3 - 1/2	3-9/16	
	2	1 - 1/2	1-9/16		5	4 - 1/2	4-5/8	
Dimension	2 - 1/2	2	2-1/16		6	5 - 1/2	5-5/8	
	3	2 - 1/2	2-9/16		8	7-1/4	7-1/2	
	3-1/2	3	3-1/16		10	9-1/4	9-1/2	
					12	11-1/4	$11 \cdot 1/2$	
					14	13-1/4	13-1/2	
					16	15-1/4	15-1/2	
					2	1-1/2	1-9/16	
					3	$\frac{11}{2}$	2.9/16	
					4	3-1/2	3-9/16	
					5	4.1/2	4.5/8	
Dimension	4	3 - 1/2	3-9/16		6	$\frac{1}{2}$	5-5/8	
	$\frac{1}{4-1/2}$	4	4-1/16		8	$\frac{0}{7} \frac{1}{4}$	0-0/0 7-1/9	
	/ -	•	11/10		10	$Q_{-1}/4$	0-1/2 0-1/9	
					19	11.1 //	11.1/9	
					14	11-1/4	19-1/2	
					14		15-1/2 15-1/2	
Timbers	5 &		1/2 Off		5 &			
	Thicker				Wider		1/2 Off	

(All Figures In Inches)

*Boards less than the minimum thickness for 1 inch nominal but 5/8 inch or greater thickness dry (11/16 inch green) may be regarded as American Standard Lumber, but such boards shall be marked to show the size and condition of seasoning at the time of dressing. They shall also be distinguished from 1-inch boards on invoices and certificates.

Dry Sizes apply to lumber which has been seasoned or dried to a moisture content of 19 percent or less.

Green Sizes apply to lumber having a moisture content in excess of 19 percent.

Computing of Lumber Volume in Board Feet

Take the Lineal Feet and Multiply by the Contents of One Lineal Foot.

Size of Piece	Part of Foot per Lin. Ft.	Size of Piece	Part of Foot per Lin. Ft.
1×1	1/12	4×4	1-1/3
1×2	1/6	4×5	1-2/3
1×3	1/4	4×6	2
1×4	1/3	4×7	2-1/3
1×6	1/2	4×8	2-2/3
1×8	2/3	4×9	3
1×10	5/6	4×10	3-1/3
1×12	1	4×12	4
2×2	1/3	5×5	2-1/12
2×3	1/2	6×6	3
2×4	2/3	7×7	4-1/12
2×5	5/6	8×8	5-1/3
2×6	1	9×9	6-3/4
2×7	1-1/6		8-1/3
2×8	1-1/3	11×11	10-1/12
2×9	1-1/2	12×12	12
2×10	1-2/3	14×14	16-1/3
2×11	1-5/6	15×15	18-3/4
2×12	2	16×16	21-1/3
2×13	2-1/6	17×17	24-1/12
2×14	2-1/3	18×18	27
2×15	2-1/2	19×19	30
2×16	2-2/3	20×20	33-1/3
3×3	3/4	22×22	40-1/3
3×4	1	22×24	44
3×5	1-1/4	24×24	48
3×6	1-1/2	26×26	56-1/3
3×7	1-3/4	28×28	65-1/3
3×8	2	30×30	75
3×9	2-1/4	32×32	85-1/3
3×10	2-1/2	34×34	96-1/3
3×11	2-3/4	36×36	108
3×12	3		