

April 1995

NEW HAMPSHIRE FOREST MARKET REPORT 1995



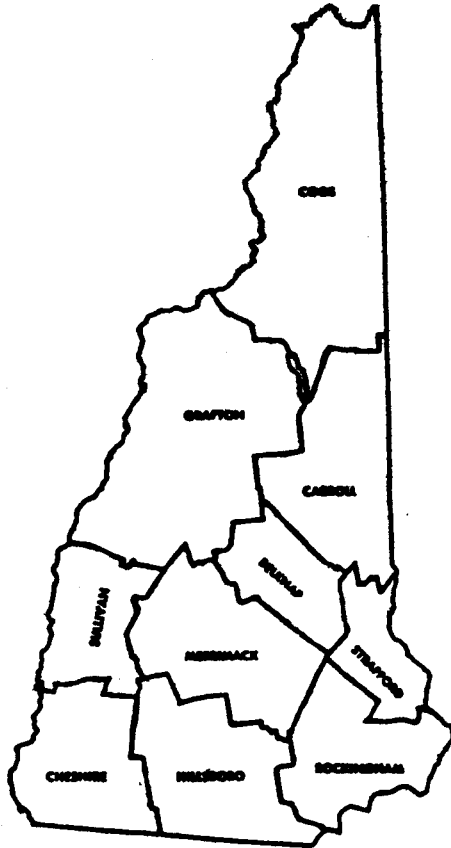
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STATE OF NEW HAMPSHIRE
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P.O. BOX 1856
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MAP OF NEW HAMPSHIRE
(Showing Counties)



By
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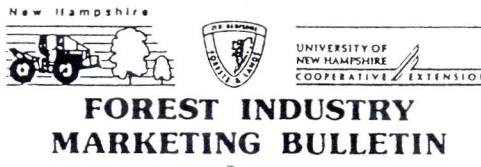
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INDEX

New Hampshire's Extension Forestry Program	2
List of UNH Extension Offices	3
Economic Outlook 1995	4
World Timber Supply - Where will trees come from.....	5
Selling Timber	6
 Table I. 1995 Price Range Standing Timber (Stumpage) and Sawlogs Per MBF	7
Belknap County	7
Carroll County	7
Cheshire County	8
Coos County	8
Grafton County	9
Hillsborough County	10
Merrimack County	10
Rockingham County	10
Strafford County	11
Sullivan County	11
 Table II. Prices of Pulpwood Per Cord—Northern New Hampshire	11
Prices of Pulpwood Per Cord—Central New Hampshire	12
Prices of Pulpwood Per Cord—Southern New Hampshire	12
 Table III. Prices of Debarked and Chipped Stemwood Per Green Ton	12
Price of Pulp Chips	12
Average Price of Total Tree and Fuel Chips	12
 Table IV. Price Range Boltwood, Posts, Poles, Piling, Cross Ties, and Switch Ties	13
Table V. Price Range of Hardwood Fuelwood Per Cord	13
Table VI. Price Range of Sawdust and Shavings and Bark	14
Table VIIA. Representative Operating Costs (Contract Prices) Northern N.H.	14
Table VIIB. Representative Operating Costs (Contract Prices) Southern N.H.	14
Table VIIC. Representative Processing Costs (Contract Prices) Average for N.H.	14
Table VIID. Representative Kiln Drying Costs (Custom)	14
Table VIIE. Representative Trucking Costs (Trucks with Loaders)	15
New Hampshire Christmas Tree Situation—1994-1995	15
Table VIII. Wholesale Price Range of Christmas Trees and Boughs	15
Table IX. Retail Price Range of Single Christmas Trees	16
Maple Products Situation — 1995	16
Table X. Average Maple Sap Prices at Sugar House in New Hampshire	16
Table XI. Prices for Table Grade Maple Syrup and Products at Producers	17
Rent Price Per Tap Hole	17
 Forest Products Laboratory Publication Lists	17
 Metric Equivalents—Lumber and Pulpwood	17
 Conversion Factors and Units of Measurement For Products	19
Tree Scale	19
Log Rule	20
Pulpwood	20
Solid Wood Content of a Cord of Pulpwood	21
Cordwood— <i>New Law</i>	21

Volume of a Cord of Cut and Split Wood (New Law) 22

Approximate Weight and Heating Value Per Cord of Different Woods 22

Variation of Heating Values of Wood Due to Moisture 22

Approximate Number of Trees Per Cord for Peeled Pulpwood and Cordwood 23

Calculated Sawdust Weights in Pounds Per Cubic Foot 23

Railroad Tie Volume Table 23

Lumber (Square Edge) 24

Lumber Size Table 25

Computing of Lumber Volume in Board Feet 26

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, foresters, 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 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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ECONOMIC OUTLOOK 1995

The Economic Up-Cycle Will Continue Through 1995. General economic indicators have been positive in recent months, and the good news is likely to continue well into 1995.

Mixed Signals for the Housing Industry. Low unemployment and high capacity utilization has given rise to inflation concerns. An inflation-sensitive Federal Reserve Board has raised short-term rates as the economy has heated up and, many believe, is likely to do so again unless the pace of the GDP growth slows below 3 percent.

Lumber Prices Have Been Trending Up. Lumber prices continue to be volatile and have been a major concern of home builders. The Random Lengths Framing Lumber composite averaged \$416 per MBF through November, 1994 an 80% increase since 1990. Prices spiked to an all-time high of \$519 per MBF in early 1994.

Wood Consumption is Changing. All of the traditional indicators of lumber and wood products demand are trending upward, but the supply/demand balances in the marketplace have undergone significant changes.

U.S. Wood Exports Are Mixed. Based on statistics through September, total U.S. lumber and wood exports should finish 1994 at approximately \$7.0 billion, a decline of 4 percent compared with 1993, but some product categories moved up.

Timber Supply - The Critical Issue

A Sea Change in the Timber Supply/Demand Balance. Over the past few years, environmental regulation and litigation have had a dramatic impact on the ability to manage America's forest land, both public and private.

The Unexpected Conceals the Extent of Federal Restrictions. At this time last year, we anticipated that both western lumber production and softwood lumber imports from Canada would decline. Western lumber production has remained particularly resilient in the face of reduced timber sales and harvests from federal lands.

Timber Shortages Take Their Toll. As western timber supply has declined, numerous mills have closed. According to Paul Ehinger & Associates, 208 mills have closed in the western region since 1990, partly as a consequence of federal timber reductions. Of that number, 26 mills have closed since the beginning of this year.

The Timber Supply Saga Continues. The controversy surrounding the management of public lands generally, and those in the Pacific Northwest specifically, has not abated despite the time, energy and resources the Clinton Administration has directed at the problem.

Science Indicates the Need for Active Management

A number of policy decisions may even work against their original conservation goals because domestic shortages will eventually lead to harvesting of environmentally sensitive areas in countries not as inclined to abide by modern silvicultural practices, and there is an emerging realization that preservation is not a solution for maintaining healthy ecosystems.

Forest Health Condition Going Critical. Forest fires in 1994 scorched over 3.3 million acres, making for one of the worst fire seasons in recent memory. Over a dozen fore-fighters were killed. Some of the burned timber could be salvaged, but a number of obstacles must be overcome.

New Congress and New Initiatives

Forest Health Concerns Could Spur Action. The 103rd Congress adjourned without acting on several important pieces of environmental legislation including reauthorization of the Endangered Species Act and Clean Water Act (wetlands). The only major environmental legislation to come out of this congress was the California Desert Protection Act creating three new national parks and protecting 6 million acres of California desert.

With the Republican takeover of both houses of Congress, the political dynamic has changed, but how much attention the 104th Congress will give to natural resources issues remains to be seen.

* Source: American Forest and Paper Association "The 1995 Outlook for the Forest Products Industry"

WORLD TIMBER SUPPLY

Where Will the Trees Come From?

On September 5, 1994, the International Conference on Population and Development was convened in Cairo under the auspices of the United Nations. At issue was the phenomenal growth in global population, estimated at over 100 million per year. Currently, the world's population is some 5.7 billion; by 2020 this figure could reach eight billion, a massive increase of 2.3 billion in 25 years! Unless all nations coordinate their efforts to curb this explosion, the world's resources of essential food and raw materials, including wood fibre, will be stretched to the breaking point.

According to forecasts by the UN Food and Agriculture Organization (FAO), wood demand will outstrip available supply in the period ahead. Based on population growth, FAO's forecast reveals that wood consumption will increase at an annual rate of 77 million cubic metres (15.4 billion board feet), equivalent to the yearly harvest of British Columbia.

North America

The continent of North America is in a favorable position, at least for the short-term: it has several major wood products-producing regions that have demonstrated the capability to increase production in times of rising demand. In 1994, despite a five-year high in lumber and panelboard consumption, production increases have kept pace with demand. Most North American supply regions, however, are nearing the limits of their capacities; more and more, future increases in consumption will have to be satisfied by offshore imports, principally from South America and Oceania.

Western Europe

Western Europe is less fortunate: most of its industrial countries already rely on imports to augment their domestic production. In 1994, Scandinavian production has been increased significantly to satisfy the rising demand fueled by the economic recovery in this region and new Baltic States suppliers are emerging to fill the void left by the collapse of the Soviet Union. Until Russian production has been restored to its former pre-eminence, however, European supplies of wood products will continue to be constrained.

Japan

Japan, the most vulnerable of all the major industrialized countries, must rely very heavily on imported products to fulfill its growing demands. Its domestic forests supply only 25% of its needs and sharp harvest reductions in its former principal supply region -- the Southseas -- are forcing Japan to increase imports of finished products from North America and Africa.

Fortunately, engineered wood products are helping to bridge the gap in traditional supply; non-wood substitutes are also playing a larger role. The challenge ahead for the wood products industry will be to satisfy the increased demand being driven by population growth and world economic expansion.

SELLING TIMBER

When preparing to sell timber it is important to understand that the prices quoted in Table I reflect an average range of stumpage and mill prices for each county. Prices are quoted per thousand board feet (MBF). Stumpage prices are influenced by accessibility, volume, quality, market conditions, written contractual constraints, and competition among potential buyers. Despite some historically high stumpage prices, most woodlots do not have an abundance of high quality and high value timber.

Sellers of standing timber are advised to contact foresters and/or industry representatives for specific information and prices. Fact sheets on selling timber and timber sale agreements are available from county Extension offices.

1995 PRICE RANGE FOR FOREST PRODUCTS

**Table I. Price Range Standing Timber (Stumpage) and Sawlogs
Per 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 Consulting Foresters or industry representatives.

Belknap County

Species	Quality	Stumpage	Roadside	Delivered
White Pine	Sawlog	\$70-160	Subject to stumpage and operating cost variables	\$95-325
Red Pine	Sawlog	35-50		115-160
Hemlock	Sawlog	35-55		95-200
Red Oak	Veneer-Sawlog	175-650		250-1400
White Ash	Sawlog	90-400		125-640
White Birch	Sawlog	60-100		150-300
Sugar Maple	Sawlog	60-625		150-1000
Red Maple	Sawlog	30-80		125-350
Beech	Sawlog	30-60		80-250 +
Pallet		30-45		75-140
Fuelwood (per cord)	Long	7-10		
Hardwood Pulp (per cord)	Long	5-7		
Pine Pulp (per cord)		5.00 or \$1.00/ton		
Hemlock Pulp (per cord)		6.00-8.00 or \$3.00/ton		
Biomass Fuel Chips (per ton)		0-1.50		15-18
Tie Log	Sawlog	30-45		75-140
Spruce/Fir	Sawlog	75-120		150-170

Carroll County

Species	Quality	Stumpage	Roadside	Delivered
White Pine	Low	\$15-20	\$70-90	\$100-130
	Medium	70-100	120-150	150-190
	High	100-210	150-190	190-375
Red Pine	Medium	20-35	80-100	100-120
	High	35-100	100-130	110-150
Hemlock	Low	20-30		
	Medium	30-50	65-80	90-110
	High	50-60	80-100	110-170
Spruce	Low	30-60		
	Medium	60-90	85-100	110-150
	High	50-150	135-215	150-240
Ash	Low	40-70	90-150	135-200
	Medium	70-150	210-300	250-400
	High	140-300	300-400	400-500
Beech	Low	20	45	60
	Medium	25-30	50-80	65-80
	High	35-60	80-135	130-250
Beech Boltwood	High	20	30-35	70-90
Red Maple	Low to High	20-100	70-150	90-180
Sugar Maple	Low	25-40	60	90-130
	Medium	40-100	90-150	130-200
	High	100-200	200-300	300-400

Carroll County (Continued)

Species	Quality	Stumpage	Roadside	Delivered
Paper Birch	Low	\$60	\$80	\$110-140
	Medium	75	120	140-170
	High	90-110	165-180	170-250
Paper Birch Boltwood	Medium	30/cord	40-50/cord	70-100/cord
Yellow Birch	Medium	60-80	70-80	120-160
	High	80-200	140-250	160-400
Oak	Low	30-100	60-120	90-150
	Medium	100-400	400-600	400-750
	High	250-900	700-1000	750-1000
Mixed Hardwood	Pallet	25-45	70-95	110-120
Hardwood Pulp	per cord	6-10	30-35	47-50
Softwood Pulp	per cord	3-15	19-20	45-60
Fuelwood Chips		0-1.00/ton		

Cheshire County

Species	Quality	Stumpage	Roadside	Delivered
White Pine	Sawlog	\$60-130	\$120-215 +	\$170-250+
Red Pine	Sawlog	50-95	85-120	100-200
Hemlock	Sawlog	30-55	80-100	110-150
Spruce	Sawlog	50-85	90-170	115-200
Beech	Sawlog	30-50	85-110	110-165
Poplar	Sawlog	30-45	65-85	95-135
Red Maple	Sawlog	30-50	65-110	120-175 +
Red Oak	Low	150-250	210-275 +	235-300 +
	Medium	250-350	260-375 +	275-400 +
	High	350-550 +	325-550	400-700 +
Sugar Maple	Sawlog	60-200	90-200 +	175-400 +
White Ash	Sawlog	150-250+	175-300 +	200-400 +
White Oak	Sawlog	100-200+	125-225 +	200-300 +
White Birch	Sawlog	45-80	90-130	120-160 +
	Boltwood	20-30/cord	40-60/cord	60-80/cord
Yellow & Black Birch	Sawlog	45-90	100-160	125-240
	Boltwood	20-30/cord	40-60/cord	60-80/cord
Mixed Hardwood	Pallet	30-45	70-100	80-120
	Tie Log	30-45	65-100	95-130

Coos County

Species	Quality	Stumpage	Delivered
White Pine	Low	\$80-100	\$135-200
	High	100-140	200-400
Red Pine	Sawlog	35-45	140-160
Spruce-Fir	Sawlog	85-150	240-310
Hemlock	Sawlog	30-45	130-150
Hard Maple	Sawlog (low)	80-100	200-315
	Sawlog (high)	120-170	400-900
Soft (Red) Maple (Tie Logs)	Sawlog	30-45	120-225
White Birch	Sawlog	70-100	190-400
	Boltwood	35-40	95-200

Coos County (Continued)

Species	Quality	Stumpage	Delivered
Cherry	Sawlog	\$100	\$400
Beech	Sawlog	30-45	120-170
Yellow Birch	Sawlog	100	200-400
	Boltwood	35-40/cord	140-170
Red Oak	Sawlog Low	100	250-350
Red Oak	Sawlog High	200-250	400-700
White Ash	Sawlog	80-110	150-400
Basswood	Sawlog	30-45	140-240
Mixed Hardwood (Pallet & Tie Stock)	Sawlogs	30-45	120-160
White Birch	Veneer	250	750
Yellow Birch	Veneer	300-350	800-1200
Sugar Maple	Veneer	250	800-1200
White Ash	Veneer	250	500
Red Oak	Veneer	350-400	800-1200

Grafton County

Species	Quality	Stumpage	Delivered
White Pine	Low and 8'-10'	\$25-60	\$75-150
	Medium	80-100	160-250
	High	100-150	240-450
Hemlock	Sawlog	20-45	110-200
Spruce-Fir	Sawlog	75-140	115-310
Red Pine	Sawlog	30-55	115-175+
Yellow Birch	Sawlog	80-150	175-350
Sugar Maple	Low	75-85	140-200
	Medium	120-150	225-400
	High	150-400	300-600
White Birch	Sawlog	80-110	175-260
Red Maple	Sawlog	20-50	125-350
White Ash	Sawlog	100-150	200-550
Beech	Sawlog	30-60	135-250
Red Oak	Low	100-200	140-200
	Medium	200-300	300-500
	High	300-600	500-1125
Poplar	Sawlog	25-45	90-170
Pallet Mxd. & Tie Logs	Sawlog	25-45	75-140
White Birch	Veneer	200-350+	300-650+
Yellow Birch	Veneer	200-350+	350-800+
Sugar Maple	Veneer	200-550+	500-900+
White Ash	Veneer	200-350+	500-700
Red Oak	Veneer	300-800	600-1450

• Basswood, Butternut, and Black Cherry: Call Grafton County Forester for referral to specialty markets.

Hillsborough County

Species	Quality	Stumpage	Roadside	Delivered
White Pine	Low	\$60-70	\$85-100	\$120-130
	Medium	80-95	100-115	150-200
	High	100-130	120-150	220-275
Hemlock	Low	30-35	70-75	90-110
	High	40-45	85-90	100-120
Red Oak and W. Ash	Low	85-150	140-185	175-250
	Medium	200-300	230-300	250-500
	High	350-450	350-500	600-900
Other Hardwoods				
Birch, Maple	Low	40-50	70-90	100-150
Mixed Hardwood	High	90-130	150-200	200-300
Pallet Stock	Logs	30-45	60-75	90-130

Merrimack County

Species	Quality	Stumpage	Roadside	Delivered
White Pine	Low	\$50-65	\$80-115	\$90-120
	Medium	70-90	100-110	120-160
	High	100-143	140-160	165-250+
Hemlock	All	25-35	70-90	80-150
White Birch	Medium	30-50	80-110	100-160
	High	60-90	100-140	200 +
Hard Maple	Medium	40-90	100-110	100-140
	High	90-150	110-200	175-300 +
White Ash	Medium	50-175	140-200	100-250
	High	175-200	200-350	250-400 +
Red Oak	Medium	150-300	200-300	225-400
	High	300-450	350-500	350-600 +
Pallet Stock	Logs	25-40	75-100	80-125
White Pine	Tie Logs	20-30	70-90	100-110

Rockingham County

Species	Quality	Stumpage	Roadside	Delivered
White Pine	Low	\$60	\$110	\$90-110
	Medium	100	120-150	140-185
	High	200	150-200	200-275
Hemlock	Sawlogs	30-45	85	100-120
Red Oak	Medium	200-300	200-275	200-425
	High	500	310-350	450-1000+
White Ash	Medium	170	200	250
	High	300	350	400

Strafford County

Species	Quality	Stumpage	Roadside	Delivered
White Pine	Low to Medium	\$35-100	\$80-150	\$90-185
	High	100-145	140-200	185-300
Hemlock	Low to Medium	20-30	60-75	85-120
	High	35-40	75-85	100-120
Red Oak	Low to Medium	100-200+	175-275	200-425
	High	200-450+	275-600	450-1000 +
Other Hardwoods	Low to Medium	40-70	90-120	115-155
	High	100-125	150-175	205-230
Birch—Yellow, White, Black	High	100-120	150-200	200-350
White Ash	High	100-150	150-200	200-350
Biomass		1.00-1.25/ton		

Sullivan County

Species	Quality	Stumpage	Roadside	Delivered
White Pine	Low	\$60-90	\$85-120	\$120-175
	Medium	85-110	120-140	160-220
	High	100-140	150-220	220-260
Hemlock	Sawlog	35-50	85-110	110-150
Spruce	Sawlog	40-75	100-140	120-220
Yellow Birch and Black Birch White Birch	Sawlog	55-100	120-170	150-225
Sugar Maple				
Red Oak				
	Veneer	300 +	750-1000	600+
White Ash	Sawlog	100-250	250-350	300-450
Red Maple	Sawlog	30-75	80-110	140-200
Pallet		40-75	80-100	135-200
Other Hardwoods		25-35	75-130	120-130

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

Species	Stumpage	Roadside	Delivered	
			Per ton	Per cord
Spruce and Fir	\$10.00-18.00		\$20.00-30.00	\$43.00-66.00
Hemlock	5.00		20.00-25.00	51.00-63.00
Tamarack, Red Pine	2.00-5.00		20.00-25.00	44.00-55.00
White Pine				
Hardwood	6.00-10.00		20.00-28.00	52.00-72.00

*Pulpwood is weight scaled at the mills in green ton equivalents. Converting factors to cords vary according to species.

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

Species	Stumpage	Delivered	
		Per ton	Per cord
Mixed Softwood Pulp	\$5.00-10.00	\$14.00-20.00	\$35.00-44.00
Pine	2.00-5.00	14.00-17.00	33.00-51.00
Hemlock	5.00-10.00	15.00-34.00	80.00-85.00
Spruce and Fir	5.00-10.00	14.00-26.00	40.00-66.00
Mixed Hardwood	5.00-8.00	15.00-22.00	45.00-55.00
Random Length Hardwood	—	15.00-20.00	44.00-50.00
Mixed Hardwood including Poplar	—	15.00-22.00	40.00-45.00

Prices of Pulpwood Per Cord—Southern New Hampshire

Species	Stumpage	Roadside	Delivered
Softwood Pulp:	\$0.00-1.50/ton	\$12.00-26.00/ton	\$15.00-31.00/ton
Pine Hemlock	2.00-5.00/cord 3.00-8.00/cord	20.00-35.00/cord	40.00-55.00/cord 50.00-70.00/cord
Random Length			
Mixed Softwood	2.00-5.00	15.00-30.00/cord	14.00-16.50/ton
Mixed Hardwood	6.00-10.00		14.00-20.00/ton
Biomass (mixed)	0.00-1.25/ton		12.00-18.00/ton

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

	Delivered
Pine, Hemlock, Tamarack	\$35.00-40.00/ton
Hardwood (mixed)	35.00-40.00/ton

Price of Pulp Chips (Paid in New Hampshire)

	Produced from Slabs and Edgings (Clean, Screened, Bark free) F.O.B. Sawmill Per Green Ton	Delivered to Pulp Mill Per Green Ton
Pine and Hemlock	\$12.00-16.00	\$26.00
Spruce and Fir	14.00-18.00	26.00-40.00
Hardwood (mixed)	12.00-15.00	22.00-27.00

Average Price of Total Tree and Fuel Chips

	Spout Prices (including stumpage)	Delivered	Stumpage
Biomass Fuel: Mixed Species	\$12.00-15.00/ton	\$13.50-19.25/ton	\$0.00-2.00/ton
Sawdust	\$100.00 a load	\$10.00-13.00/ton	Tops for Biomass
Sawdust and Bark Combination	\$0.15-0.18/cu. ft.	15.00/ton	\$0.00-1.50/ton
Bark Fuel		5.00/ton	

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

Species	Stumpage	Delivered at Mill
	Boltwood Per Cord ¹	
White Birch	\$35.00-40.00	\$170.00 per cord

1. Price 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	5"	10"	7' or Multiples	\$1.75 ea.
Pitch Pine				
White Pine				
Spruce				
Poles and Piling				
Red Pine	7"	17"	40'	\$0.80-1.00/lin. ft.
Pitch Pine				

*specialty prices vary with demand;call your County Extension Office for prices.

Railroad Crossties and Switch Ties

Product	Size	Oak Ties Per MBF	Mixed Hardwood Ties ¹ Per MBF
Ties	(7"×9"×8'6")	\$395.00-450.00	\$355.00-390.00
Ties	(7"×9") (Oak only)—12'-16' long		

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

Table V. Price Range of Hardwood Fuelwood Per Cord

Species	Stumpage	Roadside	Delivered Buyers Premises
Hardwood	} \$5.00-15.00	\$15.00-40.00	\$80.00-125.00 80.00-120.00 25.00-55.00 100.00-175.00 175.00+
4' Wood			
12", 14", 16" Lengths			
Slabs (Hardwood or Softwood)			
Dry Fuelwood, 16 inches	5.00-15.00	25.00-45.00	50.00-65.00
Kiln Dried Fuelwook			
Tree length loads of Cordwood			
Southern N.H.	7.00-15.00	25.00-50.00	50.00-65.00
Northern N.H.			

Table VI. Price Range of Sawdust and Shavings and Bark

Sawdust	\$ 9.00-25.00 per cord green at sawmill or 12.00-15.00 per ton	\$6.00-10.00/cord 15.00 + /cord (farm bedding)
Shavings	10.00-20.00 per cord green at sawmill or	12¢ per cu. ft.
Bagged Dry Shavings		2.00-2.50 per bag
Bark (mulch)	8.00-15.00 per yard (loaded) or 12.00-18.00 per ton	9.00-15.00/yard (processed) 12.00-20.00 per ton (processed)
Hemlock Bark	16-20 per ton	20.00 per ton (processed)

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

Sawlogs: Felling, Yarding, and Bucking	Softwood	{	Spruce/Fir	\$60.-110. per MBF
	Hardwood		Pine/Hemlock	55.-110. per MBF
	Veneer			60.-125. per MBF
				80.-200. + per MBF
Pulpwood and Cordwood: (with machine) stump to landing				
Random length				20.-30. per cord
Biomass				7.-8. per ton
Contract Chipping—roadside				8.-10. per ton
Trucking				6. per ton

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

Sawlogs: Felling and Limbing		\$20.-25. per MBF
Yarding and Bucking (softwood)		40. per MBF
(hardwood)		50. per MBF
Felling, Yarding, and Bucking (softwood)		55.-80. per MBF
(hardwood)		75.-85. per MBF
Pulpwood and Cordwood: (with machine) stump to landing		
Random length	Softwood	20.-25. per cord
	Hardwood	25.-30. per cord

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

Custom Sawing—		
Softwood	\$125.+ per MBF or 125.-180. per hour	
Hardwood	200. per MBF or 150.-200. per hour	
Planing	45.-50. per MBF, 2 sides; 75. + per MBF 4 sides; (patterns \$20. extra).	
Resawing	40.-50. per MBF	

Table VIID. Representative Kiln Drying Costs (Custom)

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	150.00-175.00
4/4 Maple—Furniture	6-8% MC	100.00-125.00
8/4 Oak	6-8% MC	375.00-400.00

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

Sawlogs: Local deliveries	\$25.00-55.00 per MBF
Distant deliveries	25.00-50.00 per MBF for the first 10 miles and 25¢ to 50¢ for each additional mile per MBF OR 45.00 to 55.00 per hour
Cordwood and Pulpwood:	10.00-45.00/cord
Chips:	6.00 per loaded mile

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

NEW HAMPSHIRE CHRISTMAS TREE SITUATION —1994-1995

A continuing national and regional surplus of natural trees, and with artificial trees taking a bigger share of the market, growers have experienced steady, but in some cases, sluggish markets.

A strong marketing strategy continues to be important in this market place. New wholesale customers have entered the market looking primarily for lower priced trees. Oversupply of trees in neighboring production regions and aggressive marketing have impacted the market. In spite of these pressures, prices have generally held up for preferred species such as Balsam fir and Frazier fir. Quality remains important to most customers and continues to be the pivotal factor determining success in the industry. Some isolated “dumping” of underpriced, low quality trees has caused some minor, hopefully temporary, impasses with wholesale customers.

Choose and cut sales were reasonably strong this year with good weather, and imaginative advertising and marketing strategies emphasizing the family experience of cutting your own fresh tree. Supply of trees in the coming years is projected to be ample. Consequently, any future investment in plantations must be analyzed carefully in order to assure expected returns.

Table VIII. Wholesale Price Range of Christmas Trees and Boughs

		Roadside 6-8' Trees		Delivered
Premium		Grade 1 ^(a)	Grade 2	
Balsam Fir	16-20	\$10.00-14.00	\$6.00-9.00	Trees mostly \$12.00-25.00 ea. depending on species, quality, and quantity.
White Spruce		6.00-12.00		
Scotch Pine		6.00-12.00	5.00 +	
Blue Spruce		14.00-18.00	10.00 +	
White Pine		10.00-12.00	5.00	
Fraser Fir	16-20	14.00-16.00	12.00-16.00	
				Trucking
				\$1.00-2.00/tree or \$2.50 per loaded mile
BOUGHS (baled or tied)				
Balsam Fir	50 lb. bundle	\$7.00-9.00	\$280.-360./ton	
Pine	50 lb. bundle	5.50-7.50	220.-300./ton	
Wreaths—Size 12" to 14"		(Ring Size)		
Balsam Fir—single faced		\$2.75-4.00 ea.		
double faced		4.50-7.00 ea.		

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

Table IX. Retail Price Range of Single Christmas Trees

	(Select and cut your own)
White Pine	
Scotch Pine	\$10.00-40.00 per tree or
Balsam Fir	\$2.00-5.00 per lineal foot
White Spruce	
Douglas Fir	
Norway Spruce	
Blue Spruce	
Fraser Fir	

MAPLE SITUATION: 1995 MARKET REPORT

In 1994, New Hampshire maple production totaled 73,000, up ten percent from the previous year. Throughout New England maple production was up 33 percent over the previous year. Canadian production levels caused a slight reduction in the wholesale prices. Due to the unusually warm winter sap may start running earlier than usual. Prolonged cold weather in March, with frosty nights and warm days, could result in a good production year.

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

% sugar	¢/gal.	% sugar	¢/gal.
1.5	8.6	3.6	37.4
1.6	11.3	3.7	38.7
1.7	13.0	3.8	40.0
1.8	14.5	3.9	41.2
1.9	15.9	4.0	42.5
2.0	17.3	4.1	43.7
2.1	18.5	4.2	45.0
2.2	19.8	4.3	46.3
2.3	21.1	4.4	47.5
2.4	22.3	4.5	48.8
2.5	23.6	4.6	50.0
2.6	24.8	4.7	51.3
2.7	26.1	4.8	52.6
2.8	27.4	4.9	53.8
2.9	28.6	5.0	55.1
3.0	29.9	5.1	56.3
3.1	31.1	5.2	57.6
3.2	32.4	5.3	58.9
3.3	33.7	5.4	60.1
3.4	34.9	5.5	61.4
3.5	36.2		

*Prices paid by some buyers for sap with sugar content of 1.1%, 1.2%, and 1.4% are \$0.01, \$0.04, \$0.06 and 7.8% per gallon, respectively.

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

Volume	Maple Syrup Retail	Wholesale	Bulk Wholesale
1 gallon	\$32.75	\$21.75	Grade "A" per 1 lb.
½ gallon	18.63	11.35	light amber \$1.22
1 quart	11.25	6.10	medium amber \$1.17
1 pint	6.38	3.50	dark amber \$1.10
½ pint	4.13	2.30	Grade "B" \$1.00
			Grade "C" \$0.90
Maple Products—Retail	Sugar 1 lb.	\$7.25	<u>Wholesale</u> Sugar 1 lb \$5.75
	Cream 1 lb.	7.00	Cream 1 lb 3.25

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.

METRIC EQUIVALENTS—LUMBER AND PULPWOOD

(Source: Anthony Binek, 1973)

Lumber

1 MBF	=	2.36 m ³	=	83.33 cu. ft.
1 m ³	=	423 bd. ft.	=	35.31 cu. ft.

Pulpwood

1 m³ = 35.31 cu. ft. Solid wood content of a cord may vary between 75 and 90 cubic feet or 2.12 m³ and 2.55 m³.
(Example: 1 cord = 85 cu. ft. = 2.40 m³)

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, edging 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

Tree Scale—International Rule

D.B.H. Inches	Number of 16 foot logs—to 6" top						
	1	1½	2	2½	3	3½	4
6	10	15					
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

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

¼-inch Saw Kerf

Diameter (Small end inside bark) Inches	Length of Log in Feet						
	8	10	12	14	16	18	20
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	590
26	240	305	370	435	500	570	640
27	260	330	400	470	540	615	690
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' × 4' × 8')	=	128 cubic feet of wood, bark, and air spaces
1 standard cord of pulpwood, rough	=	85 cubic feet of solid wood (softwood)
1 standard cord of pulpwood, peeled	=	95 cubic feet of solid wood (softwood)
1 standard cord of pulpwood, rough	=	85 cubic feet of solid wood (hardwood)
1 standard cord of pulpwood, peeled	=	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.

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

Length	Approximate Cu. Ft.
48"	128
24"	128
16"	128
12"	128

**Approximate Weight and Heating Value Per Cord (128 cut. 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

1. 50 to 60% efficiency of burning unit.

2. 70% 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.

Approximate Number of Trees per Cord
for Peeled Pulpwood and Cordwood

Tree Diameter at 4½ Feet	Number of Trees
5"	50
6"	25
7"	16
8"	12
9"	10
10"	8
11"	6
12"	5
14"	3
16"	2.5
18"	2
22"	1

Calculated Sawdust Weights in Pounds Per Cubic Foot
at Selected Moisture Contents¹

Moisture Content Level		Species and Compaction Classes							
		White Pine			Red Oak			Red Maple	
Percent	Percent	Light	Shaken	Packed	Light	Shaken	Packed	Light	Shaken
Oven-dry	Green 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

1. Weights by each compaction class are mean values calculated to be within ± ½ pound of the true mean value at the 95 percent confidence level.

Railroad Tie Volume Table

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

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 is 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:

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

Board Foot Measure Contained in Lumber

Thickness and Width Inches	Board foot content Board Length in feet					
	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
1 1/4 × 4	2 1/2	3 1/3	4 1/6	5	5 5/6	6 2/3
1 1/4 × 6	3 3/4	5	6 1/4	7 1/2	8 3/4	10
1 1/4 × 8	5	6 2/3	8 1/3	10	11 2/3	13 1/3
1 1/2 × 4	3	4	5	6	7	8
1 1/2 × 6	4 1/2	6	7 1/2	9	10 1/2	12
1 1/2 × 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
2 1/2 × 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

LUMBER SIZE TABLE

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

(All Figures in Inches)

ITEM	THICKNESS			FACE WIDTHS		
	Nominal	Minimum	Dressed	Nominal	Minimum	Dressed
		Dry	Green		Dry	Green
Boards*	1	3/4	25/32	2	1 1/2	1 1/16
				3	2 1/2	2 1/16
				4	3 1/2	3 1/16
				5	4 1/2	4 5/8
				6	5 1/2	5 5/8
				7	6 1/2	6 5/8
	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 1/32	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
Dimension				2	1 1/2	1 1/16
				3	2 1/2	2 1/16
				4	3 1/2	3 1/16
				5	4 1/2	4 5/8
				6	5 1/2	5 5/8
				8	7 1/4	7 1/2
				10	9 1/4	9 1/2
				12	11 1/4	11 1/2
				14	13 1/4	13 1/2
				16	15 1/4	15 1/2
Dimension				2	1 1/2	1 1/16
				3	2 1/2	2 1/16
				4	3 1/2	3 1/16
				5	4 1/2	4 5/8
	4	3 1/2	3 9/16	6	5 1/2	5 5/8
				8	7 1/4	7 1/2
	4 1/2	4	4 1/16	10	9 1/4	9 1/2
				12	11 1/4	11 1/2
				14		13 1/2
				16		15 1/2
Timbers	5 and Thicker		1/2 Off	5 and Wider		1/2 Off

*Boards less than the minimum thickness for 1 inch nominal but 3/8 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	$\frac{1}{12}$	4×4	$1\frac{1}{3}$
1×2	$\frac{1}{6}$	4×5	$1\frac{2}{3}$
1×3	$\frac{1}{4}$	4×6	2
1×4	$\frac{1}{3}$	4×7	$2\frac{1}{3}$
1×6	$\frac{1}{2}$	4×8	$2\frac{2}{3}$
1×8	$\frac{2}{3}$	4×9	3
1×10	$\frac{5}{6}$	4×10	$3\frac{1}{3}$
1×12	1	4×12	4
2×2	$\frac{1}{3}$	5×5	$2\frac{1}{12}$
2×3	$\frac{1}{2}$	6×6	3
2×4	$\frac{2}{3}$	7×7	$4\frac{1}{12}$
2×5	$\frac{5}{6}$	8×8	$5\frac{1}{3}$
2×6	1	9×9	$6\frac{3}{4}$
2×7	$1\frac{1}{6}$	10×10	$8\frac{1}{3}$
2×8	$1\frac{1}{3}$	11×11	$10\frac{1}{12}$
2×9	$1\frac{1}{2}$	12×12	12
2×10	$1\frac{2}{3}$	14×14	$16\frac{1}{3}$
2×11	$1\frac{5}{6}$	15×15	$18\frac{3}{4}$
2×12	2	16×16	$21\frac{1}{3}$
2×13	$2\frac{1}{6}$	17×17	$24\frac{1}{12}$
2×14	$2\frac{1}{3}$	18×18	27
2×15	$2\frac{1}{2}$	19×19	30
2×16	$2\frac{2}{3}$	20×20	$33\frac{1}{3}$
3×3	$\frac{3}{4}$	22×22	$40\frac{1}{3}$
3×4	1	22×24	44
3×5	$1\frac{1}{4}$	24×24	48
3×6	$1\frac{1}{2}$	26×26	$56\frac{1}{3}$
3×7	$1\frac{3}{4}$	28×28	$65\frac{1}{3}$
3×8	2	30×30	75
3×9	$2\frac{1}{4}$	32×32	$85\frac{1}{3}$
3×10	$2\frac{1}{2}$	34×34	$96\frac{1}{3}$
3×11	$2\frac{3}{4}$	36×36	108
3×12	3		