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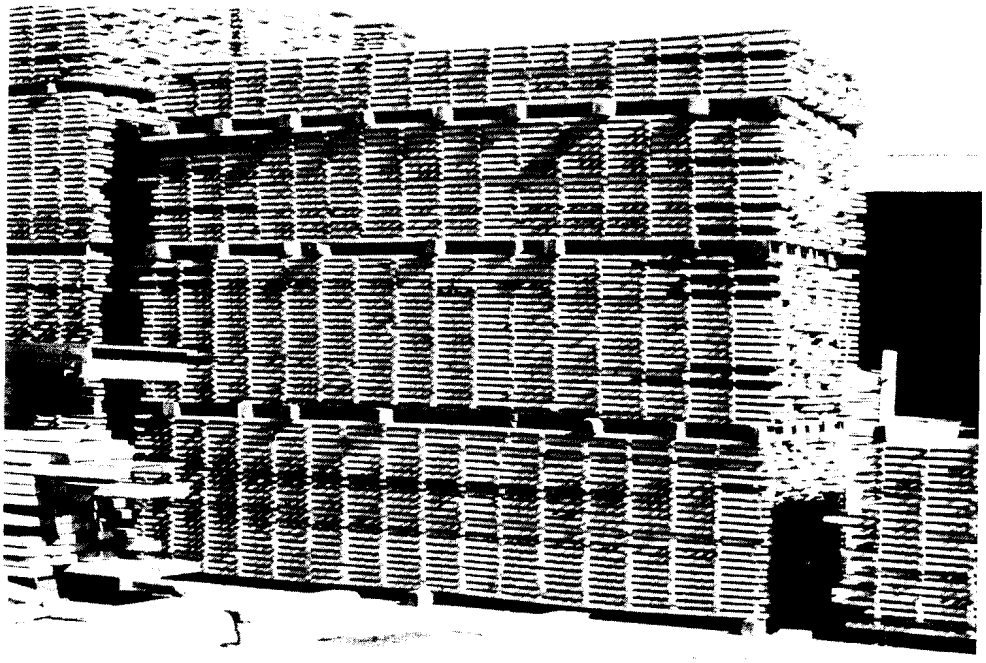
NEW HAMPSHIRE FOREST MARKET REPORT

1986



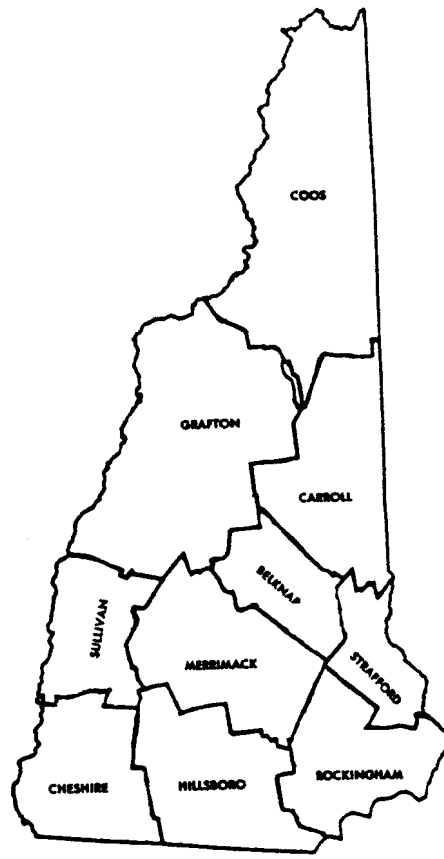
COOPERATIVE EXTENSION SERVICE
UNIVERSITY OF NEW HAMPSHIRE

with the

NEW HAMPSHIRE DEPARTMENT OF RESOURCES
AND ECONOMIC DEVELOPMENT COOPERATING

MAP OF NEW HAMPSHIRE

(Showing Counties)



By

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Forest Products Marketing and Utilization

Cooperative Extension Service

University of New Hampshire

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N.H. Forest Market Report, 1986

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MARKET SITUATION — 1986

Activity in the major United States timber products markets showed mixed trends through the first half of 1985. However, in the third quarter, continued improvement in the rate of overall economic growth, relatively lower interest rates, declines in the dollar exchange rates, and trends in several of the major economic indicators suggest that growth in most domestic markets and exports are likely to improve in the last quarter of the year and continue moderately higher in early 1986.

Trends in new construction, the most important domestic wood products market, vary with the type of construction. New housing units, which typically account for more than a third of total United States annual consumption of softwood lumber and plywood and for substantial volumes of other softwood and hardwood products, were started at an annual rate of over 1.8 million units through the early spring of 1985. Over the next five months, starts fluctuated month to month but averaged only 1.67 million, and dropped to a low for the year in September, before rebounding in October. The October annual rate, 1.76 million units, was more than 10.8 percent above that for September and represented the largest monthly increase since March. According to Bureau of the Census estimates, actual housing starts during the first ten months of 1985 totaled 1,497,000 units, only 2 percent fewer than were started during the first 10 months of 1984.

Although new housing construction in 1985 was slightly below year-earlier levels through October, additions and alterations to residential structures, another important wood products market, has been particularly strong. Through the first nine months of 1985, expenditures for this type of construction averaged $16.5 billion (seasonally adjusted annual rate, 1977 dollars), nearly 19 percent above expenditures during all of 1984. Most observers expect continued gains in late 1985 and 1986.

In contrast to new housing, new nonresidential construction activity grew fairly rapidly through the first five months of 1985, dropped sharply in June and July, and has since continued to rise, but at a slower pace than earlier in the year. Much of the decline and subsequent increase was for nonresidential buildings, the major wood-using segment of the nonresidential market. The seasonally adjusted annual rate of expenditures for all nonresidential construction in September was 124.9 billion (1977 dollars), up 2 percent from August and almost 15 percent above the total for all of 1984.

The index of manufacturing production—an important indicator of the demand for pallet lumber, container board, and some grades of paper—rose to a seasonally adjusted value of 128.1 (1977=100) in August, but has remained virtually unchanged since that time. The October index, 127.9, was about 2 percent above the January index, and only 3 percent above the average for all of 1984. The indexes of the major wood using industries—furniture and fixtures and paper and products—have shown somewhat different trends. The index for furniture and fixtures in September was 144.5, slightly below the July index, but 6 percent above the average for 1984. On the other hand, the index for paper and products has increased since July to 129.3; however, this represents a gain of only 2 percent from the 1984 average. Despite the relatively flat trends, most economists feel that production in most industries should slowly continue up in the last quarter if economic actitvity continues to increase as expected.

In summation, trends in the major domestic markets for most timber products has been mixed over the first three quarters of 1985. However, many of the important indicators seem to point to slightly higher levels of consumption in the last quarter of the year and in 1986.

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 1984 was 12.2 billion, about 3.8 percent of the value of all U.S. imports.

The United States is also a major timber products exporter. In 1984, the total value of timber products exports was $7.2 billion—about 3.4 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. Recently, China has also become an important and growing market for softwood logs.

Timber Products Consumption, Trade, and Production

Softwood Lumber

In response to the increased year-to-year activity in nearly all its important markets, except housing, softwood lumber consumption through the first three quarters of 1985 was about 1 percent above that of the same period in 1984. Currently available information on trends in housing and the other markets in the last weeks of the year suggests that consumption will likely continue slightly above year-earlier levels. Thus, consumption for all of 1985 is estimated at about 43.6 billion board feet, some 0.7 billion board feet above the record 42.9 billion consumed in 1984.

Imports of softwood lumber, chiefly from Canada, have increased rapidly over the past 10 years, rising from 5.7 billion board feet and 18 percent of our apparent consumption in 1975 to 13.3 billion and 31 percent in 1984. This trend has continued in 1985. Through September, total imports of softwood lumber were almost 1.2 billion board feet above year-earlier volumes and accounted for more than a third of estimated U.S. softwood lumber consumption. About 95 percent of the increased volume was imported from Canada. A continuation of current trends would push total imports for 1985 to a record 14.7 billion board feet. Exports are likely to decline about 5 percent to 1.5 billion board feet.

Hardwood Lumber

Actvity in most of its major markets has also caused increases in hardwood lumber consumption in 1985. Through the first nine months of the year, consumption was about 10 percent ahead of the same period in 1984. Although available data indicate that use may be moderating in the fourth quarter, apparent consumption for the year is likely to reach 6.5 billion board feet, about 8 percent above total use in 1984.

Production of hardwood lumber in 1985, based on these estimates of consumption and trade, would increase about 6 percent to 6.5 billion board feet. Anticipated slow growth in the major domestic markets and increased demands for exports, though possibly small, suggest some additional increase in consumption, imports, exports, and production in 1986.

Pulpwood

Through September, paper and paperboard production, and as a result, wood pulp consumption and production, were about 3 percent below year-earlier levels. If overall economic activity continues up in the last quarter, some improvement in demand is possible. However, with these trends, pulpwood consumption (roundwood and chips) in 1985 is expected to total about 89.2 million cords, down about 2.5 percent from the record volume consumed in 1984.

Given the above estimates, production of pulpwood in 1985 is expected to drop to about 90.4 million cords, 1.4 percent less than was produced in 1984. Prospective continued improvement in economic activity suggests that the upward trend in consumption and production will likely resume in 1986, though at a somewhat slower pace than in the 1982-84 period.

1986 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 from those quoted depending on market conditions. More specific prices can be obtained by contacting the County Forester, Consulting Foresters, or industry representatives.

Belknap County

Species	Quality	Stumpage	Roadside (1) (2)	Delivered
White Pine	All grades	$60-95	$125-140	$150-170
Red Pine	All grades	20-35	85-90	100-110
Hemlock	All grades	30-35	85-90	85-110
Red Oak	All grades	140-200	250-275	300-350
White Birch	Sawlogs	60-75	120-135	140-170
Sugar Maple	Sawlogs	50-85		130-180
Beech	All grades	25-60		90-120
White Ash	All grades	130-160	200-250	260-300
Pallet (Mixed Hardwood)	All grades	20-35	80-90	100-120
Firewood (Hardwood)	per cord	$5.00-$12.00	30-35	50-55
Hardwood pulp	per cord	$4.00-$7.00		
Softwood pulp	per cord	$0.00-$2.00		
Biomass	per ton	$0.80		

(1) Trucking charges per MBF are approximately $18 for the first 10 miles + 40¢ for additional miles.
(2) Logging costs for softwoods are $35 to $55 per MBF and $45 to $65 per MBF for hardwoods.

Carroll County

Species	Quality	Stumpage	Roadside	Delivered
White Pine	Low	$40	$80-90	$100-120
	Medium	70-85	90-140	120-150
	High	80-110	140-170	150-240
Red Pine	Medium	20-35	70-85	90-110
	High	35-50	85-95	110-130
Hemlock	Medium	20-35	50-80	90-110
	High	35-45	80-100	110-130
Spruce	Medium	30-60	85-100	110-120
	High	60-75	100-120	120-150
Ash	Medium	40-70	90-150	135-200
	High	70-110	150-230	250-375
Basswood	Medium	25-50	50-80	85-160
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	70-90	110-130	150-220

Carroll County *(Continued)*

Species	Quality	Stumpage	Roadside	Delivered
Sugar Maple Boltwood				$60/cord
Paper Birch	Low	$60	$85	120-140
	Medium	75	120	140-170
	High	90	140	170-190
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	30-80	60-120	90-130
	Medium	80-150	120-200	130-300
	High	150-250	200-300	300-650

Cheshire County

Species	Quality	Stumpage	Roadside	Delivered
White Pine	Sawlog	$50-85	$100-125	$110-150
Red Pine	Sawlog	30-45	85-100	100-150
Hemlock	Sawlog	30-45	60-90	90-120
Spruce	Sawlog	35-45	67-85	90-115
Beech	Sawlog	30-45	50-85	90-125
Poplar	Sawlog	30-45	65-85	90-110
Red Maple	Sawlog	30-45	60-85	90-135
Red Oak	Sawlog	160-250+	200-300	210-450+
Sugar Maple	Sawlog	60-100	90-160	110-200
White Ash	Sawlog	80-160	95-200	125-300
White Oak	Sawlog	60-120	100-170	120-200+
White Birch	Sawlog	50-80	100-160	125-175
	Boltwood	20-30/cord	40-60/cord	60-80/cord
Yellow & Black Birch	Sawlog	50-100	90-160	100-120+
	Boltwood	20-30/cord	40-60/cord	60-80/cord
Mixed Hardwood	Pallet	25-40	50-70	90-120
	Tie Log	30-45	50-70	95-120

Coos County

Species	Quality	Stumpage	Roadside	Delivered
White Pine	Sawlog	$55-80	$110-130	$160-180
Spruce-Fir	Sawlog	40-55	110-125	155-175
Hemlock	Sawlog	20-30	70-85	120-130
Hard Maple	Sawlog	45-75	115-170	150-210
Cherry	Sawlog	70-100	170-190	220-250

Coos County *(Continued)*

Species	Quality	Stumpage	Roadside	Delivered
Soft (Red) Maple	Sawlog	$20-40	$60-90	$120-140
Poplar	Sawlog	20-30	70-90	120-125
White Birch	Sawlog	60-90	110-170	180-250
	Boltwood	30-40/cord	65-85	100-115
Beech	Sawlog	20-30	70-90	120-125
Yellow Birch	Sawlog	70-100	125-180	180-250
	Boltwood	20-30/cord	50-70	100-160
White Ash	Sawlog	70-115	125-200	240-400
Red Oak	Sawlog	80-140	140-240	190-300
Basswood	Sawlog	30-50	85-110	120-160
Mixed Hardwood (Pallet & Tie Stock)	Sawlogs	20-30	70-90	120-125

Note: Veneer grade and high quality sawlogs have significantly higher values.

Grafton County

Species	Quality	Stumpage	Roadside	Delivered
White Pine	Sawlog	$60-95	$120-150	$135-220
Hemlock	Sawlog	25-40	70-100	85-140
Spruce-Fir	Sawlog	30-50	80-130	100-155
Yellow Birch	Sawlog	60-110	125-200	140-250
Sugar Maple	Sawlog	55-100	110-150	125-210
White Birch	Sawlog	60-85	120-150	135-225
Red Maple	Sawlog	25-50	90-110	120-160
White Ash	Sawlog	100-190	175-250	170-350+
Beech	Sawlog	20-40	90-100	100-130
Red Oak	Sawlog	140-250	200-300	200-600
Red Pine	Sawlog	30-50	80-90	85-135
Poplar	Sawlog	20-30	80-90	90-120
Pallet Mxd.	Sawlog	20-35	80-90	80-115

Hillsborough County

Species	Quality	Stumpage	Roadside	Delivered
White Pine	Low	$50-60	$80-90	$110-120
	Medium	60-70	100-110	130-140
	High	75-90	115-120	150-175
Hemlock	Low	30-35	70-75	80-90
	High	40-45	85-90	100-110
Red Oak and W. Ash	Low	70-90	90-100	140-180
	Medium	100-140	140-160	200-275
	High	175-225	200-250	300-400
Other Hardwoods				
Birch, Maple	Low	35-45	70-90	100-130
Mixed Hardwood	High	85-100	150-200	200+
Pallet Stock	Logs	30-40	—	90-130

Merrimack County

Species	Quality	Stumpage	Roadside	Delivered
White Pine	Low	$40-50	$80-90	$90-110
	Medium	60-70	100-110	120-140
	High	80-110	140-160	165-200
Hemlock	Low	20-25	60-65	80-85
	High	25-40	65-75	85-95
White Birch	Medium	40-50	90-100	100-140
	High	50-60	120-130	160-170
Hard Maple	Medium	50-60	90-100	105-115
	High	60-70	100-110	115-125
White Ash	Medium	60-90	100-130	115-150
	High	90-125	130-165	165-275
Red Oak	Medium	125-150	225-250	275-325
	High	175-225	250-325	350-450
Pallet Stock	Logs	25-40	75-85	95-125
Mixed Hardwood				
Pulp Logs				$12-18/ton
Hemlock Logs				16-18/ton
Spruce Pulp				18-29/ton

Rockingham County

Species	Quality	Stumpage	Roadside	Delivered
White Pine	Low	$45	$90	$110
	Medium	60	110	130
	High	85+	120+	150+
Hemlock	Low	30	80	90
	High	50	90	115
Red & White Oak	Medium	90	150	180
	High	225	310	400
Pallet	Log	20-40	—	85-110

Strafford County

Species	Quality	Stumpage	Roadside	Delivered
White Pine	Low to Medium	$50-65	$90-110	$130-150
	High	60-95	110-125	140-160
Hemlock	Low to Medium	25-40	60-75	110-120
	High	40-45	75-85	115-130
Red Oak	Low to Medium	100-200	140-240	190-280
	High	200-400	240-440	300-400
Other Hardwoods	Low to Medium	40-70	95-115	125-145
	High	100-125	145-160	180-195

Sullivan County

Species	Quality	Stumpage	Roadside	Delivered
White Pine	Low	$30	$75	$100
	Medium	70-75	115-120	150-155
	High	80-90	140-145	170-175
Hemlock	Medium	20-25	70-75	100-105
	High	35-40	85-90	120-125
Spruce	Medium	20-25	70-75	100-105
	High	35-46	85-90	120-125
Yellow Birch & Black Birch				
White Birch				
Sugar Maple	Medium	50-60	115-125	150-160
	High	80-90	150-166	180-190
Red Oak	Medium	150-200	200-225	250-300
	High	200-210	250-280	300-360
White Ash	Medium	100-110	170-180	200-220
	High	110-150	180-225	220-250
Red Maple				
Pallet				
Other Hardwoods		15-30	65-80	90-105

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

Species	Stumpage	Roadside	Mill Yard
Spruce and Fir	$7.00-11.00	$22.00-39.00	$47.00-49.50
Hemlock	3.00-5.00	24.00-30.00	40.00-43.00
Tamarack, Red Pine, White Pine	2.00-5.00	24.00-30.00	40.00-43.00
Hardwood	5.00-9.00	20.00-30.00	45.00-47.50
Fuelwood (residential)	8.00-10.00		

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

Prices of Pulpwood Per Cord — Central New Hampshire[2]

Species	Stumpage		Delivered
Softwood Pulp Random Length			
Pine	$0.50-6.00	$14.35-17.50/Ton or	$31.00-35.00/cord
Hemlock	0.50-8.00	14.77-16.36/Ton or	36.00/cord
Spruce and Fir	2.00-8.00	16.63-20.00/Ton or	45.00-47.00/cord
Hardwood Pulp Random Length			
Mixed Hardwood	2.00-6.00	16.00-19.50/Ton or	43.00-44.00/cord
Poplar	4.00-8.00		

Prices of Pulpwood Per Cord — Southern New Hampshire[2]

Species	Stumpage	Roadside	Delivered at Mill
Softwood Pulp	$0.75-1.50/Ton	$12.00-26.00/Ton	$17.00-31.00/Ton
	2.25-4.00/Cord	20.00-55.00/Cord	48.00-70.00/Cord
Random Length Softwood	3.00-5.00		10.00-16.50/Ton
8′ Long Pulpwood - Softwood			19.00/Ton

Table III. Price of Debarked Slabs and Edgings Per Green Ton Strapped

	Delivered to Chipping Plant
Softwood[1] (mixed)	$6.50-7.00
Hardwood (mixed)	6.00-7.00

[1]Special prices are paid for slabs and edgings sorted by species (spruce and fir).
[2]Contact buyers for exact prices and mileage allowances.

Price of Pulp Chips[1,2]

	Produced from Slabs and Edgings		
	F.O.B. Sawmill Per Green Ton	Delivered to Pulp Mill Per Green Ton	Average
Pine and Hemlock	$12.50	$19.00-27.00	$22.00-23.00
Spruce and Fir	12.00-14.50	23.00-30.00	26.00-27.00
Hardwood (mixed)	10.50-13.50	18.50-25.00	22.00-23.00

[1]Chips are bought by weight or by volume.
[2]Contact buyers for exact prices and mileage allowances.

Average Price of Total Tree Chips and Fuel Chips

	Spout Prices (including stumpage)	Delivered	Stumpage
Pulp quality: Hardwood	$16.00-21.00	Depending	$2.00-2.30/Ton
Softwood	13.00-15.00	on distance	1.50-2.00/Ton
Fuel quality: Mixed Species (Biomass)	$10.00-14.00	$18.00-25.00 New England markets	0.75-2.00/Ton

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

Species	Stumpage	Roadside	Delivered at Mill
	Boltwood Per Cord[1]		
White Birch	$30.00-40.00	$65.00-85.00	$110.00-115.00 per cord
Beech	20.00-25.00	40.00-45.00	70.00-90.00 per cord
Sugar Maple and Ash	25.00-30.00		80.00-100.00 per cord
Yellow Birch	25.00-30.00	50.00-70.00	80.00-100.00 per cord

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

Guardrail Posts

Species	Min. Small End Diameter	Max. Large End Diameter	Length	Delivered
Red Pine Pitch Pine White Pine Spruce	5″	10″	7′ or Multiples	$1.00-1.35 ea.

Railroad Crossties

Grade	Size	Green Mixed Hardwood Ties[1] F.O.B. Mill
		per MBF
3	(6″ × 8″ × 8′6″)	$240 - 250
4	(7″ × 8″ × 8′6″)	240 - 250
5	(7″ × 9″ × 8′6″)	240 - 250

Switch Ties (mixed hardwood)[1]

(7″ × 9″)	9′-12′ long	$240 per MBF +
(7″ × 9″)	13′-16′ long	260 per MBF +

[1]Oak, Beech, Birch, Maple, Cherry, Ash, Hickory

Table V. Price Range of Hardwood Fuelwood Per Cord

Species	Stumpage	Roadside	Delivered Buyers Premises
Hardwood			
4′ Wood	$6.00-15.00	$40.00-65.00	$60.00-85.00+
12″, 14″, 16″ Lengths		60.00-80.00	75.00-120.00
Slabs (Hardwood or Softwood)		15.00-40.00	25.00-55.00
Dry fuelwood, 16 inches			100.00-130.00
Tree length loads of cordwood			
Southern N.H.	5.00-15.00	35.00-40.00	50.00-60.00
Northern N.H.	6.00-10.00	30.00-35.00	45.00-60.00

Table VI. Price Range of Sawdust and Shavings and Bark

	Per-Cord Green at Sawmill	Per Bag - Dry
Sawdust	$10.00-18.00 or 7.50-18.00 per Ton	
Shavings	10.00-40.00	$2.00-2.50
Bagged Dry Shavings		2.00-2.50
Bark	6.00-12.00 per yard (loaded) or 12.00 to 14.50 per Ton	

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

Sawlogs: Felling and Limbing	$15 and up per MBF
Yarding and Bucking (softwood)	30-35 per MBF
(hardwood)	35-40 per MBF
Felling, Yarding and Bucking (softwood)	40-50 per MBF
(hardwood)	55-75 per MBF
Pulpwood and Cordwood: (with machine) stump to roadside	
Random length	17-30 per Cord
Biomass	6-8 per Ton
Contract Chipping — roadside	3.50-4.00 per Ton

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

Sawlogs: Felling and Limbing	$10-15 per MBF
Yarding and Bucking (softwood)	30-35 per MBF
(hardwood)	35-40 per MBF
Felling, Yarding and Bucking (softwood)	45-55 per MBF
(hardwood)	45-65 per MBF
Pulpwood and Cordwood: (with machine) stump to roadside	
Random length	25-35 per cord
4′ length	35 per cord

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

Custom Sawing —	
Softwood	$120.00-125.00 per MBF or 120.00-175.00 per hour
Hardwood	150.00-225.00 per MBF or 120.00-175.00 per hour
Planing	50.00-70.00 per MBF, 2 sides; 50.00 per MBF 4 sides; patterns extra.
Resawing	30.00-40.00 per MBF

Table VIID. Representative Kiln Drying Costs (Custom)

4/4 Pine (Yard)	12-14% MC	$70.00-75.00
4/4 Pine - Furniture	6-8% MC	80.00-90.00
4/4 Oak - Furniture	6-8% MC	140.00-150.00
4/4 Maple - Furniture	6-8% MC	90.00-95.00

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

Sawlogs: Local deliveries	$18.00-25.00 per MBF
Distant deliveries	18.00-22.00 for the first 10 miles and 40¢ to 50¢ for each additional mile.
	OR
	35.00 to 50.00 per hour
Cordwood and Pulpwood:	100.00 per load.
Lumber and Chips:	1.40-2.00 per loaded mile.

*For short hauls or partial loads minimum charges may apply

CHRISTMAS TREE SITUATION

Growers generally had a successful season in 1985 in the wholesale market. Christmas trees available for sale were moved, although orders from retailers tended to be received later in season than during past years.

Volumes marketed increased somewhat; prices would appear to be stabilizing. Growers should consider this when making Christmas tree plantation management decisions. Growers also need to think about cost control, as tree prices are not likely to continue accelerating, even for quality trees.

All growers selling retail on the "cut your own" basis report an excellent year with demand exeeding supply at some plantations close to metropolitan areas.

Table VIII. Wholesale Price Range[1] of Christmas Trees and Boughs[2]

	Stumpage	Roadside	
	Single	Single	Bundle
Pasture Run (unimproved)			
Balsam Fir	$1.50-4.00	$3.25-4.25	$5.25-8.00
Spruce	2.00-3.00	3.00-3.75	4.00-7.00
Improved (but not sheared)			
Balsam	4.50-7.00	6.00-9.00	
Spruce	4.00-6.00	5.00-8.00	
Sheared			
Balsam	7.50-11.00	10.00-17.00	
Spruce	6.00-8.00	8.00-12.00	
Scotch Pine	7.00-9.00	10.00-14.00	
		Roadside	
Boughs (baled or tied)	Per Bundle[3]	Per Ton	
Balsam Fir	$3.50-6.00	$135.00-250.00	
Spruce	2.75-5.00	110.00-200.00	
Pine	3.00-5.00	120.00-200.00	
Wreaths - Size 12" to 14"			
Balsam Fir - single face	$2.25-2.75		
double face	2.75-3.50		

[1]Prices vary according to size of order, quality, grade and tree size.

[2]Buyers should contact producers prior to September and arrange for deposits and specific prices, and use a written contract.

[3]Price based on 50 lb. bundle. Prices vary with quality and quantity.

Table IX. Retail Price Range of Single Christmas Trees

	(Select and cut your own)
Scotch Pine Balsam Fir White Spruce Douglas Fir Norway Spruce Blue Spruce	$10.00-20.00 or $2.00-3.00 per lineal foot

MAPLE PRODUCTS SITUATION

The maple products industry is entering the 1986 production season with inventories down, both in New England and Canada. Very little carry over is available. Because a similar situation occurred at the beginning of 1985, there was a 30-cent per pound increase in bulk syrup prices. The outcome of this coming season will determine what future prices will be.

The industry seems to be expanding annually at about 10% for the number of trees tapped while equipment sales have increased over 10%. Experienced producers are upgrading and modernizing their operations because of favorable market conditions for their products. Equipment prices have increased by approximately five percent with small hobby-size evaporators in great demand.

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

% Sugar	¢/gal.	% sugar	¢/gal.
0-1.1	0.5	3.4	25.6
1.2	2.0	3.5	26.4
1.3	3.5	3.6	27.2
1.4	5.0	3.7	28.0
1.5	6.5	3.8	28.8
1.6	8.0	3.9	29.6
1.7	9.5	4.0	30.4
1.8	11.0	4.1	31.2
1.9	12.5	4.2	32.0
2.0	14.0	4.3	32.8
2.1	14.7	4.4	33.6
2.2	15.4	4.5	34.4
2.3	16.1	4.6	35.2
2.4	17.8	4.7	40.1
2.5	18.5	4.8	40.8
2.6	19.2	4.9	41.6
2.7	20.0	5.0	42.4
2.8	20.8	5.1	43.2
2.9	21.6	5.2	44.0
3.0	22.4	5.3	44.8
3.1	23.2	5.4	45.6
3.2	24.0	5.5	46.4
3.3	24.8		

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

Maple Syrup Retail at Farm		Maple Syrup Retail at Store	Maple Products Retail		
1 gallon	$20.00-26.00	$22.00-28.00	Sugar	1 lb.	$6.00-7.00
½ gallon	11.50-14.00	15.50-16.00	Creme	½ lb.	3.00-4.00
1 quart	7.00-8.50	8.00-9.00	Candy	½ lb.	5.00-6.00
1 pint	4.50-6.00	5.00-6.00			
½ pint	2.75-3.50	3.00-4.00			

Rent Price Per Tap Hole

Tap hole rentals: 10-30 cents per tap with avrage being 20 cents. Sugar Maples in the woods and not too easy to get to average 15 cents per tap; while easily accessible trees and roadside trees average 20 cents per tap.

FOREST PRODUCTS LABORATORY PUBLICATION LISTS

LISTS OF PUBLICATIONS dealing with research projects of the U.S. Forest Products Laboratory or realting 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, ¼" 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

Tree Scale — International Rule

D.B.H.	Number of 16 foot logs — to 6" top						
Inches	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

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′x4′x8′)	=	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

Wood fuel is generally sold by the standard cord which is a pile of wood 8 feet long, 4 feet high and 4 feet wide containing a gross volume of 128 cubic feet.

A standard cord of fuelwood consisting of round 4 foot sticks fitting into a 4′×4′×8′ space, when cut into 16 inch lengths, split and piled, will generally stack to occupy 100 to 105 cubic feet. A "thrown in" cord of 16" cut and split wood will generally occupy a volume of 150 to 160 cubic feet.

Approximate Stacked Volume of a Cord of Wood, Cut and Split

Length	Approximate Cu. Ft.	Approximate Percent Shrinkage from 128 Cu. Ft.
48″	128	0
24″	110-113	12
16″	103-107	16
12″	100-103	20

Approximate Weight and Heating Value Per Cord (80 cu. ft.) of Different Woods, Green and Air Dry (Approximately 20% Moisture Content)

Woods	Weight, lb. per cu. ft. Green	Weight, lb. Air Dry	Available Heat, Million BTU[1] Air Dry	Equivalent in Gallons of Fuel Oil[2]
Ash	48	3,440	20.0	204
Aspen	43	2,160	12.5	128
Beech, American	54	3,760	21.8	222
Birch, yellow	57	3,680	21.3	217
Elm, American	54	2,900	17.2	176
Hickory, shagbark	63	4,240	24.6	251
Maple, red	50	3,200	18.6	190
Maple, sugar	56	3,680	21.3	217
Oak, red	64	3,680	21.3	217
Oak, white	63	3,920	22.7	232
Pine, eastern white	36	2,080	12.0	123

[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 Contents.[1]

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 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:

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

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
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

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	1-9/16
				3	2-1/2	1-9/16
				4	3-1/2	3-9/16
				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	1-9/32	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
Dimension	2	1-1/2	1-9/16	2	1-1/2	1-9/16
	2-1/2	2	2-1/16	3	2-1/2	2-9/16
	3	2-1/2	2-9/16	4	3-1/2	3-9/16
	3-1/2	3	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	4	3-1/2	3-9/16	2	1-1/2	1-9/16
	4-1/2	4	4-1/16	3	2-1/2	2-9/16
				4	3-1/2	3-9/16
				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		13-1/2
				16		15-1/2
Timbers	5 & Thicker		1/2 Off	5 & Wider		1/2 Off

*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	10×10	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		