Extension Publication 11 April 1987

NEW HAMPSHIRE FOREST MARKET REPORT 1987

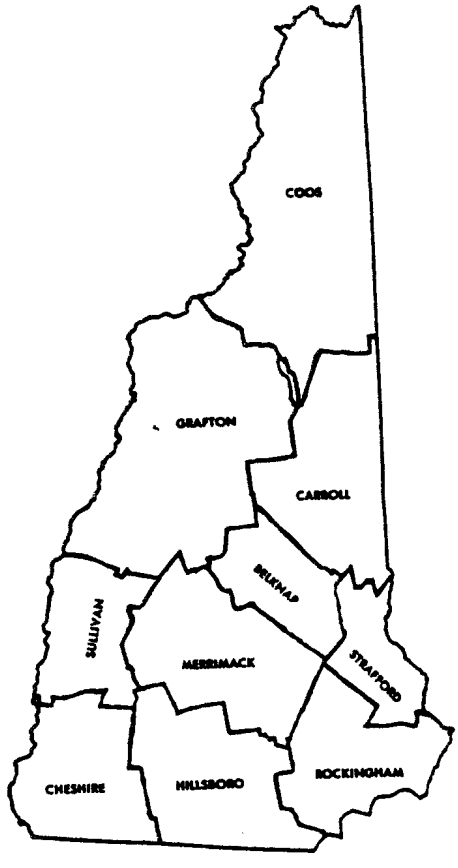
COOPERATIVE EXTENSION SERVICE
UNIVERSITY OF NEW HAMPSHIRE

with the

NEW HAMPSHIRE DEPARTMENT OF RESOURCES
AND ECONOMIC DEVELOPMENT COOPERATING

MAP OF NEW HAMPSHIRE

(Showing Counties)



By

Nicolas Engalichev, *Extension Specialist*

Forest Products Marketing and Utilization

Cooperative Extension Service

University of New Hampshire

Published and distributed by the University of New Hampshire, Durham, N.H., Peter J. Horne, Director of the Cooperative Extension Service, in furtherance of the purposes provided for in the Acts of Congress of May 8 and June 30, 1914, the United States Department of Agriculture cooperating.

Notice

N.H. Forest Market Report, 1987

We are required to recover the printing and mailing costs of this publication.

Please detach this page and mail with $1.50 to:

Information Services and Publications
Cooperative Extension Service
Taylor Hall, University of New Hampshire
Durham, N.H 03824

Please make checks payable to: Cooperative Extension Service, UNH. Thank you.

INDEX

NEW HAMPSHIRE'S FORESTRY EXTENSION PROGRAM

The Cooperative Forestry Extension Program is conducted by County Cooperative Extension Service Foresters 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 foresters and other 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 foresters 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 New Hampshire Cooperative Extension Service, the University of New Hampshire, the Division of Forests and Lands of the Department of Resources and Economic Development, State of New Hampshire, and the 10 New Hampshire counties.

For additional information or assistance, call the Cooperative Extension Service in Durham or the County Cooperative Extension Services 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:

Nicolas Engalichev
Extension Specialist, Forest Products
Marketing and Utilization
862-1029 or 862-1096

COUNTY EXTENSION FORESTERS' OFFICES

Belknap County
Sumner Dole III
Extension Office
Beacon St. East, Box 368
Laconia, N.H. 03246
524-1737

Carroll County
Peter W. Pohl
Extension Office
Main St., Box 367
Conway, N.H. 03818
447-5922

Cheshire County
Marshall Patmos, Jr.
Stephen A. Wood
P.O. Box 798, 800 Park Ave.
Keene, N.H. 03431
352-4550

Coos County
Paul B. Crosby
Extension Office
148 Main St.
Lancaster, N.H. 03584
788-4961

Grafton County
Robert E. Burke
Northam D. Parr
Box 191, Woodsville, N.H. 03785
787-6944

Arthur G. Dodge, Jr., Program Leader
Pettee Hall, University of New Hampshire
Durham, N.H. 03824 862-1029 or 862-1056
or
Division of Forests and Lands
State House Annex, Box 856
Concord, N.H. 03301 271-2214

Hillsboro County
John Ferguson, Jr.
Karen P. Bennett
Extension Office
Chappell Professional Center
Route 13, South
Milford, N.H. 03055
673-2510

Merrimack County
John A. Conde
Robert E. Pearson
Extension Service Center
RFD #7, Box 9
Penacook, N.H. 03303
225-5505 or 796-2151

Rockingham County
Philip A. Auger
Extension Service Center
Brentwood, N.H.
P.O. Box 200, Epping, N.H. 03042
679-5616

Strafford County
Donald C. Black
Extension Office
Administration and Justice Building
County Farm Rd., Dover, N.H. 03820
749-4445

Sullivan County
Joseph A. Szymujko
Stephen A. Wood
45 Crescent St.
Claremont, N.H. 03743
543-3181

Robert L. Edmonds
Extension Specialist, Harvesting and Sawmilling
862-1028 or 862-1069

Stanley W. Knowles
Extension Specialist, Forestry
862-1029 or 862-1359

Charles A. Bridges
Extension Specialist, Wildlife Management
862-1028 or 862-1066

MARKET SITUATION—1986

OUTLOOK 1987

The gross national product, a measure of the Nation's total output of goods and services, and the most comprehensive indicator of total economic activity, rose at an estimated rate of 2.6 percent above the average for 1985. Economists and the U.S. Department of Commerce expect the current upturn to continue into 1987 and attain an average growth rate of 3 percent.

Housing, the single most important domestic wood products market, has been strong throughout the year, attaining a level of 1,830,000 units in 1986, which is 5.5 percent above the number of units started in 1985 and the largest volume since 1978. Projections for 1987 are less optimistic with new starts forecast at about the 1,700,000 unit level. Single family units are expected to account for 65 percent of total starts.

In contrast to new housing construction, improvements (additions, alterations and major replacements) to existing residential structure have been relatively weak in 1986 and some 10-12 percent below 1985 expenditures. Many observers feel that a return to a higher level of spending is likely in 1987 and is expected to approach $40 billion.

The value of new non-residential construction in 1986 did not surpass that of 1985. A weak first half of 1986 was helped by a stronger year-end when builders attempted to finish projects before the new tax laws became effective in 1987.

Exports of U.S. forest products fared well in 1986. According to data presented at the October meeting of the Timber Committee of the Economic Commission for Europe, economic growth in most of our major European markets has been rising in 1986 with continued increases expected in 1987. Although some countries reported new construction at relatively low levels, increased renovation and maintenance of dwelling units was moving briskly. As a result of these trends and, most importantly, continued decline of the dollar, exports to these markets were sharply up from 1985 and are expected to be strong in 1987. Exports to Japan were also ahead of year-earlier levels; however, exports to China declined. In general, the outlook is for continued strength in the export markets in 1987.

Softwood Lumber

In response to the increased year-end activity in some of its principal markets, and especially in new housing construction, the U.S. softwood lumber consumption for all of 1986 is estimated at about 46.5 billion board feet. This is 7 percent above the 1985 figure and a record volume, exceeding by almost 6 percent the 44 billion feet consumed during the housing boom year 1978.

Imports of softwood lumber, chiefly from Canada, have increased rapidly over the past 10 years, using from 18 percent of our apparent consumption to 33 percent in 1985. The 1986 total imports are up nearly 3 percent over 1985 to a record volume of 15 billion board feet.

Exports of softwood lumber were up in 1986 to an estimated 1.8 billion board feet.

Present expectation about housing and other important markets indicates that a decline in consumption is likely in 1987, which is likely to result in a lower level of imports.

Although consumption reached record levels in 1986, the price of domestically-produced softwood lumber has remained relatively low, but about 6 percent above 1985 levels. Prices in 1987 are expected to be firmer in the light of the recent accord on softwood lumber with Canada. Canada agrees to impose a 15 percent export tax on softwood lumber.

Hardwood Lumber

The major industrial markets for hardwood lumber kept pace with the economy in 1986. Hardwood lumber consumption is estimated at 5.8 billion board feet, about 3 percent below the 1985 total. Hardwood lumber imports were below those of 1985 and amounted to 0.3 billion board feet, down by about 0.1 billion. Exports of hardwood lumber were up and are estimated to have reached 0.5 billion board feet, an increase of 0.1 billion over 1985 totals.

Production of hardwood lumber in 1986, based on the above estimates, is estimated at 6 billion board feet, about the same output as in 1985.

Anticipated growth in the major domestic hardwood markets and increased demand for exports, suggest some additional increase in consumption, imports, exports, and production in 1987.

Pulpwood

With favorable market trends in the paper and paperboard industry, pulpwood consumption (roundwood and chip) in 1986 is estimated at 92.2 million cords, up 5 percent from 1985 and below the record 91.4 million consumed in 1984.

Imports of pulpwood and chips from Canada have declined slightly in 1986 to a level of 0.6 million cords. Exports have also slipped to 1.8 million cords, about 4 percent below 1985 shipments.

Summary

Given the trends in consumption, trade, and production for various products in 1986, total U.S. consumption of all industrial roundwood products (i.e., all roundwood products except fuel) is estimated to be about 6 percent above the volume consumed in 1985 and has topped 15 billion cubic feet for the first time. Production, imports and exports have also exceeded 1985 levels.

Consumption, imports, and production should all decline slightly in 1987 if major market trends follow the forecasts. However, exports are likely to continue up.

1987 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 the County Forester, Consulting Foresters, or industry representatives.

Belknap County

Species	Quality	Stumpage	Roadside (1) (2)	Delivered
White Pine	Sawlogs	$60-100	$125-155	$150-190
Red Pine	Sawlogs	20-35	70-90	95-115
Hemlock	Sawlogs	30-35	80-85	85-110
Red Oak	Sawlogs	80-200	155-275	270-350+
White Birch	Sawlogs	65-80	120-135	140-200
Sugar Maple	Sawlogs	50-85	105-140	130-200
Beech	Sawlogs	25-60	80-110	90-130
White Ash	Sawlogs	80-120	140-180	215-325
Pallet (Mixed Hardwood)	Sawlogs	20-35	70-85	100-125
Firewood (Hardwood)	per cord	$7.00-$10.00	30-35	50-55
Hardwood pulp	per cord	$4.00-$6.00		
Softwood pulp	per cord	$0.00-$2.50		
Biomass	per ton	$0.00-1.00		

(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	80-125	140-185	150-300
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	35-60	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	$80	110-140
	Medium	75	120	140-170
	High	90	165	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	90-150
	Medium	80-200	120-250	150-300
	High	200-350	250-400	300-650
Mixed Hardwood	Pallet	20-40	70-95	110-130

Cheshire County

Species	Quality	Stumpage	Roadside	Delivered
White Pine	Sawlog	$50-90	$100-135	$110-165
Red Pine	Sawlog	30-45	85-100	100-150
Hemlock	Sawlog	30-45	65-95	95-130
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	60-90	90-135
Red Oak	Low	170-200	210-260	260-275
	Medium	200-250	260-300	275-375
	High	250-300+	310-350+	375-500+
Sugar Maple	Sawlog	60-100	90-160	130-200+
White Ash	Sawlog	100-200+	175-300+	200-350+
White Oak	Sawlog	75-140	125-200	150-275+
White Birch	Sawlog	45-70	90-130	125-165
	Boltwood	20-30/cord	40-60/cord	60-80/cord
Yellow & Black Birch	Sawlog	50-100	100-160	120-200
	Boltwood	20-30/cord	40-60/cord	60-80/cord
Mixed Hardwood	Pallet	25-40	55-80	90-120
	Tie Log	30-45	60-95	95-130

Coos County

Species	Quality	Stumpage	Roadside	Delivered
White Pine	Sawlog	$60-80	$110-130	$160-190
Spruce-Fir	Sawlog	40-55	110-125	150-190
Hemlock	Sawlog	20-30	70-85	120-130
Hard Maple	Sawlog	45-75	115-170	150-250
Cherry	Sawlog	70-100	170-190	220-250
Soft (Red) Maple	Sawlog	20-35	60-90	120-140
Poplar	Sawlog	20-30	70-90	120-125
White Birch	Sawlog	60-90	110-170	180-240
	Boltwood	30-40/cord	65-85	85-115
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	70-130	125-200	240-400
Red Oak	Sawlog	80-140	140-240	190-325
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	$65-110	$120-150	$140-240
Hemlock	Sawlog	20-30	60-90	85-120
Spruce-Fir	Sawlog	35-60	90-130	100-155
Yellow Birch	Sawlog	50-90	100-150	130-200
Sugar Maple	Sawlog	70-90	100-150	130-275
White Birch	Sawlog	60-90	120-150	140-225
Red Maple	Sawlog	25-40	90-110	120-140
White Ash	Sawlog	100-170	175-200	170-350+
Beech	Sawlog	20-25	60-70	90-120
Red Oak	Sawlog	140-250	200-300	200-600
Red Pine	Sawlog	30-50	80-90	85-135
Poplar	Sawlog	20-25	60-90	90-120
Pallet Mxd.	Sawlog	20-30	60-90	80-115

Hillsborough County

Species	Quality	Stumpage	Roadside	Delivered
White Pine	Low	$55-65	$80-90	$110-120
	Medium	65-75	100-110	130-140
	High	80-95	115-130	150-175
Hemlock	Low	30-35	70-75	80-90
	High	40-45	85-90	100-110
Red Oak and W. Ash	Low	85-100	90-100	140-180
	Medium	125-175	140-160	200-275
	High	200-350	200-250	300-400
	Veneer			425-650
Other Hardwoods				
Birch, Maple	Low	40-50	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	65-80	120-165	120-140
	High	85-110	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	125-175	225-250	275-325
	High	225-325	275-375	400-500
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	95+	125+	150+
Hemlock	Low	No market		
	High	40	85	95
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	$65	$110	$145
	Medium	80-85	120-130	155-170
	High	95-108	140-150	170-185
Hemlock	Medium	25-30	70-75	100-105
	High	40-45	85-100	110-130
Spruce	Medium	30-35	75-90	105-110
	High	40-50	95-100	115-130
Yellow Birch and Black Birch and White Birch	Medium	50-65	110-125	140-175
	High	70-80	130-140	180-210
Sugar Maple	Medium	50-70	110-140	140-210
	High	80-150	140-225	175-235
Red Oak	Medium	150-275	200-310	225-345
	High	250-350	310-385	345-420
White Ash	Medium	100-150	160-210	185-220
	High	150-200	200-235	220-270
Red Maple				
Pallet				
Other Hardwoods		20-40	75-95	100-120

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	$47.00-52.00
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	5.00-8.50	20.00-30.00	46.00-48.00
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	$2.00-5.00	$14.35-17.50/Ton or	$31.00-35.00/cord
Hemlock	2.00-5.00	14.77-16.36/Ton or	36.00/cord
Spruce and Fir	3.00-10.00	16.63-20.00/Ton or	45.00-47.00/cord
Hardwood Pulp Random Length			
Mixed Hardwood	6.00-10.00	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:	OSB stock		19.00/Ton
8′ Long Pulpwood-Poplar-Aspen			22.50/Ton

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

	Delivered to Chipping Plant
Softwood[1] (mixed)	$8.00
Hardwood (mixed)	8.00

[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	$19.00-28.50	$23.00-24.00
Spruce and Fir	12.00-14.50	24.00-32.00	27.00-28.00
Hardwood (mixed)	10.50-13.50	19.00-27.00	23.00-24.00

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

Average Price of Total Tree and Fuel Chips

	Spout Prices (including stumpage)	Delivered	Stumpage
Pulp quality: Hardwood	$16.00-21.00/Ton	Depending	$1.00-2.30/Ton
Softwood	13.00-15.00/Ton	on distance	1.50-2.00/Ton
Fuel quality: Mixed Species (Biomass)	$10.00-14.00/Ton	$18.00-25.00/Ton New England markets	0.75-2.00/Ton
Sawdust		$8:00-13.00/Ton	
Sawdust and Bark Combination		8:00-15.00/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	$85.00-115.00 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	$1.75

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	$45.00-65.00	$60.00-90.00
12″, 14″, 16″ Lengths		60.00-80.00	85.00-130.00
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.	6.00-15.00	30.00-40.00	40.00-60.00
Northern N.H.	6.00-9.00	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)	40-45 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	130.00-150.00
4/4 Maple—Furniture	6-8% MC	90.00-95.00

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

Sawlogs: Local deliveries	$18.00-30.00 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

The New Hampshire Christmas Tree industry remains healthy and stable. The added production in the Northeast and Eastern Canadian provinces had no negative impact on the 1986 Marketing Season. New England harvests 13 to 15 percent of all trees marketed annually in the country. While nationally, Scotch pines, Douglas firs, and Balsams are the top choices of the consumers, buyers in the Northeast favor Balsam first, sheared White spruces, White pines, and Scotch pines. Blue spruces and Fraser firs have been in good demand. Demand for unimproved pasture-run trees continues to dwindle with the majority of the trees being improved or sheared.

Cut-your-own retail Christmas trees operators continue to experience success in the market place with demand exceeding supply in many areas of the state. Knowing when to close down is important so that customers do not start to harvest next year's crop prematurely. The cut-your-own market should remain strong for a number of years with the price stabilizing as more trees come to the market from first-time plantations.

Table VIII. Wholesale Price Range of Christmas Trees and Boughs

	Roadside 6-7′ Trees	
	Grade 1[a]	Grade 2[b]
Balsam Fir[b]	$13.00-18.00	$9.00-13.00
White Spruce	10.00-12.00	6.00-8.00
Scotch Pine	10.00-14.00	6.00-8.00
Blue Spruce	15.00-20.00	
White Pine	10.00-1.00	
Fraser Fir	15.00-19.00	
BOUGHS (baled or tied)		
Balsam Fir 50 lb. bundle	$5.50-9.00	$240-350/ton
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.

Table IX. Retail Price Range of Single Christmas Trees

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

MAPLE PRODUCTS SITUATION 1986-1987

At the end of 1987, very little maple syrup was available due to a poor production season in 1986, and hardly any carry-over inventory from the previous year.

Bulk syrup prices ranged from $1.40/lb. for non-table grades to $2.30/lb. for light amber. Anticipating a better production year in 1987, bulk dealers are offering pre-season prices somewhat below 1986 levels.

Producers must constantly be striving for more efficiency in production coupled with innovative marketing approaches to obtain a satisfactory profit margin.

Planning for profit should be an integrated effort including:

1. Reduce cost by improving production and packaging methods.
2. Plan sales throughout the year; prices trend up toward the end of the year.
3. Consider new packaging including novelty containers, etc.
4. Consider processing into maple products or maple flavored products.
5. Develop new channels of distribution from on farm retail sales to bulk sales and from grocery store to supermarkets and restaurant chains.
6. Use a pricing schedule that covers all costs and leaves a margin for profit.

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

% 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 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	$28.00-31.00	$28.50-35.00	Sugar	1 lb.	$9.00-9.50
½ gallon	15.00-17.00	15.75-20.00	Creme	½ lb.	4.60-5.50
1 quart	8.00-9.50	9.00-12.75	Candy	½ lb.	5.25-7.00
1 pint	4.50-5.50	5.75-9.25			
½ pint	2.75-3.00	3.50-5.75			

Rent Price Per Tap Hole

Tap hole rentals: 20-30 cents per tap with average being 25 cents. Sugar Maples in the woods and 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 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.	Weight, lb.	Available Heat, Million BTU[1]	Equivalent in Gallons of Fuel Oil[2]
	Green	Air Dry	Air Dry	
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
				3	2-1/2	2-9/16
				4	3-1/2	3-9/16
	2-1/2	2	2-1/16	5	4-1/2	4-5/8
	3	2-1/2	2-9/16	6	5-1/2	5-5/8
				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	11-1/2
				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
				3	2-1/2	2-9/16
				4	3-1/2	3-9/16
				5	4-1/2	4-5/8
	4-1/2	4	4-1/16	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		