

New Hampshire Forest Market Report 1996-1997



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UNH Cooperative Extension's Forestry Program in New Hampshire

The UNH Cooperative Extension Forestry Program is conducted by county Extension educators in forest resources and by Extension specialists based at the University of New Hampshire in 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 forest resources 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.

The Forest Industry specialist 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, lumber drying, and lumber grading.

This is a cooperative program between the University of New Hampshire Cooperative Extension, the NH Division of Forests and Lands of the Department of Resources and Economic Development, NH Fish and Game, 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 county Cooperative Extension offices listed on the next page.

"Helping You Put Knowledge and Research To Work"

The University of New Hampshire is an equal opportunity educator and employer.
University of New Hampshire, U.S. Department of Agriculture and N.H. counties cooperating. 4/97

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Timber Sale Guidelines

The term "timber sale" is used to refer to any significant harvest of wood products involving an exchange of money. Timber sales may involve the sale of trees used to make lumber (sawtimber), veneer, fuelwood, whole tree chips, pulp, or any combination of these products.

A decision to harvest timber is a critical one and should be handled as a business transaction. Timber sales often culminate 50 or more years of investment by a landowner in the form of taxes and management costs. A timber sale may have both immediate and long-lasting effects on a forest. It is important to have as much information prior to the harvest as possible. Proper harvesting can provide multiple benefits, income, improved wildlife habitat, recreational access, views, and healthy and vigorous forests. Uncontrolled, exploitive cutting can reduce such values, leading to environmental degradation, public resentment and legal entanglements. Your decision to sell timber should be based on good information with a foundation in good stewardship.

Why Do You Want To Harvest?

The first step in a well ordered timber sale project is to consider what your management goals are and to begin to develop priorities based on those objectives.

Consider what you hope to accomplish by having a timber sale. Keep in mind compromises are likely if objectives conflict. Your objectives might include any combination of or all of the following:

- forest improvement
- access and recreational improvement
- wildlife habitat improvement
- land conversion for other uses
- maximum income
- tax considerations
- increased earning power and future value growth

Before You Decide to Sell Timber

The following questions should be considered BEFORE selling timber. If you can't answer these questions or if you respond negatively to them, you will benefit a great deal by seeking professional assistance before initiating a timber sale.

- Have you identified your long-term management objectives such as income, wildlife habitat, recreation, and aesthetics?
- Have you developed a plan to achieve your objectives?
- Have you identified your objectives for this sale?
- What harvest method is best suited to meet your objectives?
- What affect will a harvest of this type have on your forest and its related resources?
- Do you know what your forest will look like following a harvest?
- Will the harvest leave an improved stand for increased value growth?

- Have you consulted with all parties having legal interest in your land (co-owners, mortgagees, banks, etc.)?
- What laws relate to timber harvesting on your land?
- What products are saleable from your land (whole tree chips, fuelwood, pulpwood, mortgagees, banks, etc.)?
- What is the anticipated volume to be harvested?
- What is your timber worth by species, product and quality?
- How will you be paid?
- Do you know how stumpage values are determined?
- Are your boundaries clearly identified?
- Have you identified sensitive areas on your land?
- Who is a reliable logging contractor?
- Are you familiar with timber harvesting insurance regulations and your liability?
- Are you familiar with preparation of a timber sale agreement?
- Who is responsible for payment of the NH Yield Tax?
- Will there be adequate supervision of the harvest?
- Do you have the information you need regarding federal tax treatment of timber income?

Who Can Help?

Assistance is available to landowners from both the public and private sector. UNH Cooperative Extension educators in each county are available at no cost to help with a preliminary assessment of the forest land and provide information and educational assistance to help guide landowners through the timber sale process. This may include helping to identify landowner harvest objectives and motives, and perhaps examining the property. This will help match individual harvest objectives with the resource needs and capabilities. Since their role is educational, Extension educators have limitations on the time and effort that can be expended. The Extension educators can also provide a directory of NH licensed professional foresters, and NH Professional Logger Program timber harvesters.

Selling Timber

Stumpage Sale

Most timber marketed in New Hampshire is sold through a stumpage sale in which the value of the trees is given as they exist in the woods or "on the stump." Stumpage value is the value associated with standing timber. Stumpage values offered for a specific timber sale at a given time depend upon market conditions, the total timber sale volume, the species and quality of the stumpage being sold, and accessibility.

Payment for stumpage is usually made in one of two methods. Each has advantages. The timber is usually paid for by unit of volume (per thousand board feet, per cord or per ton). Most sawtimber is sold per thousand board feet (MBF). Cordwood and pulpwood are sold per cord or ton. Timber sold in this way is paid for as it is removed and the scale (measurement of the product) delivered to the mill is accepted as the standard for payment. Records of delivery are kept on mill scale slips. Landowners conducting their own timber sale should request copies of mill scale slips, particularly if they don't have a preharvest estimate of the volume of timber being harvested. Scale slips are the only concrete evidence of the actual volume of timber removed.

Timber may also be sold by what is referred to as a "lump sum" sale. Payment in this method is based on an agreed upon estimate of the total stumpage value. This timber sale method is best applied when an accurate preharvest volume estimate is made. Lump sum payments may be made prior to the start of a harvest or by installment payments made at agreed upon intervals during the course of the harvest. Since the total amount of money is fixed in a lump sum sale, it's very important landowners know the value of their standing timber before entering into a lump sum sale agreement. There are also different federal tax laws that apply to lump-sum sales.

Roadside Sale

Roadside sale is a term used when a landowner either harvests the timber or contracts to have the logging done and sells the timber at a location accessible to a truck. Payment and measurement is most often made on the basis of mill scale though it can also be done where the timber is picked up.

Delivered

Landowners are paid a delivered price when, at their expense, they are responsible for the harvesting and transportation to the mill. Mill scale would be the basis for payment. This is commonly termed "contract logging." If you are selling high value timber, this method of sale often yields more income.

Note: Each method of sale has different implications concerning landowner liability, worker's compensation insurance, etc. It's important to understand them before proceeding.

Belknap County

1996-97 Price Range for Forest Products

Price Range Standing Timber (Stumpage) and Sawlogs Per Thousand Board Feet (MBF)

Species	Quality	Stumpage	Delivered
White Pine	Sawlog		
	high	\$140/MBF	\$ 325/MBF
	medium	100	200
	low	75	95
Hemlock		30-50	115-200
Spruce-fir		60-100	200-260
Red Pine		30-50	115-150
Red Oak	high	425	850
	medium	350	475
	low	200	300
Sugar Maple	high	190	800
	medium	150	450
	low	80	175
Red Maple		40-70	80-350
White Ash		100-200	150-650
Yellow Birch		75-100	150-500
White Birch		75-90	120-200
Beech		30-60	100-250
Aspen		-	-
Basswood		-	-
Pallet		20-40	80-120

Prices quoted are an average range for the county. Prices will vary depending on quantity, quality, diameter, length, access, and market conditions. More specific prices can be obtained by contacting Consulting Foresters or Sawmills. A listing of sawmills can be obtained from:

UNH Cooperative Extension Publications
 120 Forest Park,
 Durham, NH 03824
 Tel. 603-862-2346

Sources for data include: Consulting Foresters, UNH Cooperative Extension, the NH Division of Forests & Lands, the NH Timberland Owners Association, "Quarterly Market Report" (Dec. '96) and *The Sawlog Bulletin*.

Carroll County

1996-97 Price Range for Forest Products

Price Range Standing Timber (Stumpage) and Sawlogs Per Thousand Board Feet (MBF)

Species	Quality	Stumpage	Delivered
White Pine	Sawlog	\$110-170/MBF	\$350/MBF
	high		
	medium		
	low	75-110	220
		30-75	125
Hemlock		30-50	115-130
Spruce-fir		60-100	200-260
Red Pine		25-60	115-150
Red Oak	high	600	750
	medium	400	500
	low	200	325
Sugar Maple	high	150-250	700
	medium	100-150	500
	low	75-100	200
Red Maple		45-75	150-300
White Ash		100-200	150-550
Yellow Birch		75-100	150-200
White Birch		75-150	80-200
Beech		30-80	100-250
Aspen		20-45	100-175
Basswood		25-60	100-145
Pallet		20-40	80-120

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Cheshire County

1996-97 Price Range for Forest Products

Price Range Standing Timber (Stumpage) and Sawlogs Per Thousand Board Feet (MBF)

Species	Quality	Stumpage	Delivered
White Pine	Sawlog		
	high	\$130/MBF	\$250/MBF
	medium	85	200
	low	50	135
Hemlock		30-50	120-150
Spruce-fir		-	-
Red Pine		40-60	120-140
Red Oak	high	500	750
	medium	250	500
	low	100	300
Sugar Maple	high	200	900
	medium	150	500
	low	100	175
Red Maple		40-60	100-350
White Ash		80-200	150-550
Yellow Birch		50-100	100-200
White Birch		40-80	100-200
Beech		30-60	150-250
Aspen		-	-
Basswood		-	-
Pallet		20-40	80-120

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Coos County

1996-97 Price Range for Forest Products

Price Range Standing Timber (Stumpage) and Sawlogs Per Thousand Board Feet (MBF)

Species	Quality	Stumpage	Delivered
White Pine	Sawlog		
	high	\$100-150/MBF	\$350/MBF
	medium	80-100	250
	low	60-801	100
Hemlock		30-45	100-125
Spruce-fir		100-130	250-300
Red Pine		35-60	120-140
Red Oak	high	300-500	800
	medium	150-300	450
	low	100-150	220
Sugar Maple	high	150-250	850
	medium	115-150	600
	low	75-115	350
Red Maple		25-45	150-250
White Ash		75-250	200-500
Yellow Birch		100-250	175-550
White Birch		60-100	150-500
Beech		25-45	100-250
Aspen		25-45	100-200
Basswood		30-50	125-250
Pallet		25-40	80-120

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Grafton County

1996-97 Price Range for Forest Products

Price Range Standing Timber (Stumpage) and Sawlogs Per Thousand Board Feet (MBF)

Species	Quality	Stumpage	Delivered
White Pine	Sawlog		
	high	\$100-125/MBF	\$350/MBF
	medium	80-100	260
	low	35-60	200
Hemlock		20-45	100-150
Spruce-fir		80-110	200-300
Red Pine		30-50	120-140
Red Oak	high	310-600	800
	medium	160-300	450
	low	100-150	220
Sugar Maple	high	150-300	850
	medium	100-140	550
	low	60-90	350
Red Maple		20-45	150-300
White Ash		90-150	200-500
Yellow Birch		80-170	50-550
White Birch		80-120	150-500
Beech		30-45	100-250
Aspen		30-45	130-170
Basswood		-	100-250
Pallet		20-45	80-120

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Hillsborough County

1996-97 Price Range for Forest Products

Price Range Standing Timber (Stumpage) and Sawlogs Per Thousand Board Feet (MBF)

Species	Quality	Stumpage	Delivered
White Pine	Sawlog		
	high	\$120/MBF	\$300/MBF
	medium	90	220
	low	60	125
Hemlock		25-50	110-200
Spruce-fir		50-80	150-200
Red Pine		40-80	110-130
Red Oak	high	600	800
	medium	350	550
	low	100	300
Sugar Maple	high	200	700
	medium	180	500
	low	75	175
Red Maple		25-60	125-300
White Ash		80-150	150-450
Yellow Birch		40-70	150-450
White Birch		60-90	100-180
Beech		40-60	100-250
Aspen		30-50	95-150
Basswood		-	-
Pallet		20-30	80-120

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Merrimack County

1996-97 Price Range for Forest Products

Price Range Standing Timber (Stumpage) and Sawlogs Per Thousand Board Feet (MBF)

Species	Quality	Stumpage	Delivered
White Pine	Sawlog		
	high	\$110-140/MBF	\$325/MBF
	medium	80-100	220
	low	50-80	100
Hemlock		25-50	110-200
Spruce-fir		40-60	150-200
Red Pine		40-60	110-130
Red Oak	high	300-500	750
	medium	175-300	400
	low	60-150	200
Sugar Maple	high	110-250	750
	medium	70-100	450
	low	40-60	175
Red Maple		30-60	125-300
White Ash		70-200	150-400
Yellow Birch		50-80	150-450
White Birch		40-80	100-180
Beech		30-50	100-250
Aspen		30-50	95-150
Basswood		-	-
Pallet		30-50	80-120

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Rockingham County

1996-97 Price Range for Forest Products

Price Range Standing Timber (Stumpage) and Sawlogs Per Thousand Board Feet (MBF)

Species	Quality	Stumpage	Delivered
White Pine	Sawlog		
	high	\$150/MBF	\$350/MBF
	medium	100	200
	low	50	125
Hemlock		30-50	110-200
Spruce-fir		-	-
Red Pine		30-50	120-240
Red Oak	high	450	750
	medium	250	400
	low	100	300
Sugar Maple	high	-	-
	medium	-	-
	low	-	-
Red Maple		30-50	125-300
White Ash		30-50	150-400
Yellow Birch		-	-
White Birch		-	-
Beech		-	-
Aspen		-	-
Basswood		-	-
Pallet		20-30	80-120

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Strafford County

1996-97 Price Range for Forest Products

Price Range Standing Timber (Stumpage) and Sawlogs Per Thousand Board Feet (MBF)

Species	Quality	Stumpage	Delivered
White Pine	Sawlog	high	\$14/MBF
	\$350/MBF	medium	120 200
		low	100 125
Hemlock		30-50	110-200
Spruce-fir		50-75	120-240
Red Oak	high	500	800
	medium	250	450
	low	100	300
Sugar Maple	high	-	-
	medium	-	-
	low	-	-
Red Maple		25-40	125-300
White Ash		30-50	150-400
Yellow Birch		-	-
White Birch		-	-
Beech		30-50	-
Aspen		-	-
Basswood		-	-
Pallet		20-40	80-120

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Sullivan County

1996-97 Price Range for Forest Products

Price Range Standing Timber (Stumpage) and Sawlogs Per Thousand Board Feet (MBF)

Species	Quality	Stumpage	Delivered
White Pine	Sawlog	\$ 50-80/MBF\$	350/MBF
	high	90-100	220
	medium	95-120	125
	low		
Hemlock		30-60	110-200
Spruce-fir		70-75	170-280
Red Pine		40-60	120-140
Red Oak	high	300-350	850
	medium	150-200	500
	low	60-120	150
Sugar Maple	high	125-200	750
	medium		450
	low		150
Red Maple		40-60	120-350
White Ash		150-180	150-550
Yellow Birch		50-80	150-500
White Birch		60-75	100-180
Beech		30-40	120-250
Aspen		-	-
Basswood		-	-
Pallet		20-40	80-120

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Price Range: White Birch Boltwood (per cord delivered)

\$120 - 180/cd.

(Price per cord varies according to diameter and length of bolt. Some mills prefer to buy the MBF.)

Veneer Grade Logs (per thousand board feet, MBF)

High quality veneer has strict requirements for size (diameter and length), straightness, lack of defects, color & heart size (in some species). Curly and birdseye figuring can command even higher prices. It is important to understand specifications for the market before cutting the trees.

Red Oak	\$800 - 1300/MBF
Yellow Birch	600 - 1200/MB
White Ash	800 - 1300/MBF
Hard Maple	900 - 1500/MBF

Pulpwood Prices - Northern New Hampshire

Species	Stumpage	Delivered	
		Per Ton	Per Cord
Spruce and Fir	\$6.00 - 12.00 /ton	\$25.00-30.00	\$55.00-66.00
Hemlock	3:00 - 5.00 /ton	23.00-30.00	58.00-62.00
White Pine	2.00 - 5.00 /ton	20.00-25.00	44.00-55.00
Hardwood	6.00 - 10.00 /ton	20.00-25.00	52.00-65.00

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

Pulpwood Prices - Central/Southern New Hampshire

Species	Stumpage	Delivered	
		Per Ton	Per Cord
Spruce and Fir	5.00 - 10.00 /ton	30 - 36	66-79
Hemlock	3.00 - 5.00 /ton	20 - 25	50-62
White Pine	0.00 - 3.00 /ton	10 - 18	22-40
Hardwood	.50 - 6.00 /ton	16 - 20	42-52

Price of Debarked , Chipped & Screened Roundwood Per Green Ton

Species	Delivered
Softwood (mixed)	\$ 35 - 40 /ton
Hardwood (mixed)	35 - 40 /ton

Price of Pulp Chips

Delivered To Pulp Mill (Clean, Screened, Bark Free)

Species	Per Green Ton
Pine, Hemlock	\$ 24 - 27/ton
Spruce, Fir	30 - 40
Hardwood (mixed)	18 - 22

Average Price of Wood Fuel, Fuel Chips, and Biomass

Species	Stumpage	Delivered
Biomass Fuel: Mixed Species	\$ 0 - 2.00 /ton	\$12 - 10 /ton
Sawdust		8 - 13
Sawdust and Bark Combination		12 - 15
Bark Fuel		12 - 16

Price Range of Hardwood Fuelwood Per Cord

Species	Stumpage	Delivered to Buyer
Hardwood	\$ 5.00 - 15.00 /cd.	
12" - 24" unsplit		\$60.00 - 90.00 /cd
12" - 24" split		80.00 - 120.00
Slabs (Hardwood or Softwood)	15.00 - 40.00 (picked up)	25.00 - 55.00
Kiln Dried Fuelwood		175.00+
Tree length Fuelwood		
Southern N.H.	5.00 - 15.00	50.00 - 65.00
Northern N.H.	7.00 - 15.00	50.00 - 65.00

Cordwood as defined by NH State law (RSA 438:20):

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 cords, or the cubic meter.

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

Price Range of Sawdust, Shavings and Bark (Not Fuel)

Quantities are expressed by how product is most commonly sold.

Sawdust (retail, green)	\$2.00 - 3.00 / yd. unloaded	\$ 3.00 - 5.00 / yd. loaded
Shavings (retail, air dry)	3.00 - 5.00 / yd. unloaded	
Shavings (bagged dry, retail)	2.50 - 4.00 / bag	
Bark mulch (wholesale, loaded)	5.00 -12.00 / yd unprocessed	9.00 -15.00 / yd. processed*
Bark mulch (retail)	12.00 -14.00 / yd. unprocessed	20.00 -26.00 / yd. processed
Hemlock	25.00- 35.00 / ton unprocessed	38.00 -42.00 / ton processed

*mixed softwood

Representative Operating Costs (Contract Prices) N.H. per Thousand Board Feet (MBF)

Sawlogs: Felling, Yarding, and Bucking Softwood	Spruce/Fir	\$60-125 /MBF
	Pine/Hemlock	60-125 /MBF
	Hardwood	65-130 /MBF
	Veneer	80-300 /MBF
Pulpwood and Cordwood: (with machine) stump to landing random length		25- 40 per cord
	Biomass	8- 10 per ton
Contract Chipping-roadside	8 -12 per ton	
Sawlogs:		
Local deliveries	\$25.00-65.00	per MBF
Distant deliveries	25.00-65.00	per MBF for the first 10 miles and \$0.25 to 0.50 for each additional mile per MBF or \$45.00 to 60.00 per hour
Cordwood and Pulpwood:	20.00-50.00	per cord
Chips:	6.00	per loaded mile

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

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

Custom Sawing		
Softwood	\$125+	per MBF or 130 - 200 per hour
Hardwood	200+	per MBF or 150 - 200 per hour
Planing	45 - 65	per MBF, 2 sides; 75+ per MBF 4 sides; (patterns \$20 extra)
Resawing	40 - 55	per MBF

Representative Custom Kiln Drying Costs per MBF

4/4 Pine	12-14% MC	\$ 75.00 - 100.00/MBF
4/4 Pine	6 - 8% MC	90.00 - 125.00/MBF
4/4 Oak	6 - 8% MC	150.00 - 200.00/MBF
4/4 Maple	6 - 8% MC	100.00 - 150.00/MBF
8/4 Oak	6 - 8% MC	375.00 - 425.00/MBF

New Hampshire Christmas Tree Situation 1996-1997

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 Fraser 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 to assure expected returns.

Wholesale Price Range of Christmas Trees and Boughs

Roadside 6' - 8' Trees

	Premium	Grade 1(a)	Grade 2
Balsam Fir	\$16-20.00	\$10.00-14.00	\$ 6.00-9.00
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	16-20.00	14.00-16.00	12.00-16.00
Delivered Trees	mostly \$12.00-25.00 ea. depending on species, quality and quantity.		
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.-400./ton
Pine	50 lb. bundle	5.50-7.50	220.-300./ton
Wreaths Size 129" to 149"(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.

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: 1996-97 Market Report

The 1996 crop of New Hampshire maple syrup produced is estimated at 89,000 gallons. This is up from the 64,000 gallons produced in 1995, and more than the five-year average of 69,000 gallons. Favorable weather conditions and more taps account for this increase.

This year the world maple industry experienced a leveling of prices with a more balanced supply, with worldwide demand at 70 million pounds. The huge Canadian maple surplus has been eliminated through the efforts of the Regroupment for the Commercial Development of Maple Products of Quebec, poised to purchase syrup, if necessary, to stabilize prices. Canadian producers realizing a stronger market have, and continue to expand, the number of taps and have made substantial investments in sap handling and processing equipment. Weather and the RCPQ response are key elements influencing the 1997 maple market situation.

Average Maple Sap Prices at Sugar Houses in New Hampshire

% sugar	cent per gal.	% sugar	cent per 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.

Prices for Table Grade Maple Syrup and Products

Volume	Maple Syrup Retail	Wholesale
1 gallon	\$ 33.90	\$ 28.00
1/2 gallon	19.05	15.00
quart	11.10	8.80
pint	6.50	4.95
1/2 pint	3.95	3.10
3.4 oz./ 100 ml.	2.15	1.45

Bulk Wholesale (per lb.)

Grade A	Light Amber	\$1.90
	Medium Amber	1.80
	Dark Amber	1.70
Grade B		1.65

Maple Products

Retail	Sugar 1 lb.	\$8.40
	Cream 1 lb.	8.85
Wholesale	Sugar 1 lb.	\$6.95
	Cream 1 lb.	5.75

Rent Price Per Tap Hole

Tap hole rentals: 25 to 50 cents with the average being 30 cents. Sugar maples in the woods, which are not easy to get to, average 25 cents per tap, while easily accessible trees and roadside trees average 40 to 50 cents per tap, respectively.

1996-1997

Seedling Price List from State Nursery

Department of Resources and Economic Development
 Division of Forests & Lands
 P.O. Box 1856, Concord, NH 03302-1856
 Tel. 603-271-3456

Species	Age	Avg. Size	Price Per 25	Price Per 100	Price Per 500	Price Per 1000
White Pine	2-0	4 - 6"	\$	\$ 15	\$ 50	\$ 95
White Pine	3-0	8-12"		15	50	95
Red Pine	3-0	10-16"		15	50	95
Norway Spruce	2-0	8-12"		25	75	120
White Spruce	2-0	8-12"		25	120	
Blue Spruce	2-0	8-12"		25	75	120
Norway Spruce	3-0	10-16"	15	30	100	150
White Spruce	3-0	10-16"	15	30	100	150
Blue Spruce	3-0 (B)	10-16"	15	15	100	150
Douglas Fir	2-0 (B)	6- 8"	15	30		
Scotch Pine	2-0 (A) (C)	6-10"		30	100	150
Fraser Fir	3-0	6- 8"		45	150	225
Fraser Fir	4-0	10-14"	20	45	150	225
Balsam Fir	3-0 (D)	6- 9"		45	150	225
Balsam Fir	4-0 (D)	10-14"	20	45	150	
Balsam Fir	2-3 (D)	14-20"	25	100		
N. White Cedar	2-0	4- 6"	15	30		
European Larch	2-0	8-16"	15	30		
Red Oak (A)		6-12"	15	45	150	
Black Walnut (A)		6-10"	15		45	
Aspen		10-20"	15			
Autumn Olive		12-18"	15			
Japanese Barberry (A)		10-14"	15			
European Barberry (A)		8-12"	15			
Silky Dogwood (A)		10-20"	15			
Rugose Rose		10-15"	15			
Bittersweet		10-20"	15			
Crabapple (A)		10-20"	15			
Cranberry (A)		10-20"	15			
Euonymous (A)		10-20"	15			
American MTN Ash		10-20"	15			
Songbird Package - \$15 per package						
Wildlife Package - \$15 per package						

(A) Root Pruned (B) Apache Nat. Forest, Az, source (C) Augerngne, Belgium, or Boonville, NY (D) Balsalm Fir seed orchard, Boscawen, NH source

Age: The first number after species (white pine 2-0) is the number of years in the seed-bed. The second number is the number of years in the transplant bed. Total age is the sum of both. Flowering Shrubs and trees will flower best and produce fruit most abundantly when planted in full sunlight.

Metric Equivalents - Lumber and Pulpwood

(Source: Anthony Binek, 1973)

Lumber

1 MBF = 2.36 m³ = 83.33 cu. ft.

1 m³ = 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 International Rule, 1/4 kerf, is the most commonly accepted log rule.

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 4' 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 (Bd. Ft.)

D.B.H. Inches	Number of 16 foot logs-to 6" top						
	1	1 1/2	2	2 1/2	3	3 1/2	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 Scale

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 (Board foot, BF)		1/4—inch Saw Kerf						
Diameter (Small end inside bark)		Length of Log in Feet						
Inches	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 (Pulpwood)

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)

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. Green	Weight, lb. per cu.ft. Air Dry	Available Heat, Million BTU ¹ Air Dry	Equivalent in Gallons of Fuel Oil ²
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

Tree Diameter at 4 1/2 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		
	Shaken	Percent	Percent	Light	Shaken	Packed	Light	Shaken	Packed
Light Oven Green -dry Basis	7.7	9.7	13.2	11.0	13.9	16.8	8.9	12.2	
5 4.8	8.1	10.2	13.7	11.5	14.6	17.3	9.3	12.8	
10 9.1	8.5	10.7	14.0	12.1	15.3	17.7	9.8	13.4	
15 13.0	8.8	11.1	14.5	12.6	16.0	18.3	10.2	14.0	
20 16.6	9.2	11.6	14.9	13.2	16.7	18.9	10.7	14.6	
25 20.0	9.6	12.1	15.2	13.7	17.4	19.5	11.1	15.2	
30 23.1	10.0	12.6	15.5	14.3	18.1	20.0	11.6	15.9	
50 33.3	11.5	14.5	17.3	16.5	20.8	22.8	13.3	18.3	
75 42.8	13.5	17.0	19.5	19.2	24.3	26.2	15.6	21.3	
100 50.0	15.4	19.4	22.0	22.0	27.8	31.0	17.8	24.4	
125 55.5	17.3	21.8	25.0	24.7	31.3	36.0	20.0	27.4	
140 58.3	18.5	23.3	27.1	26.4	33.3	40.0	21.4	29.3	

¹ Weights by each compaction class are mean values calculated to be within + 1/2 pound of the true mean value at the 95 percent confidence level.

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

Board Foot Measure Contained in Lumber

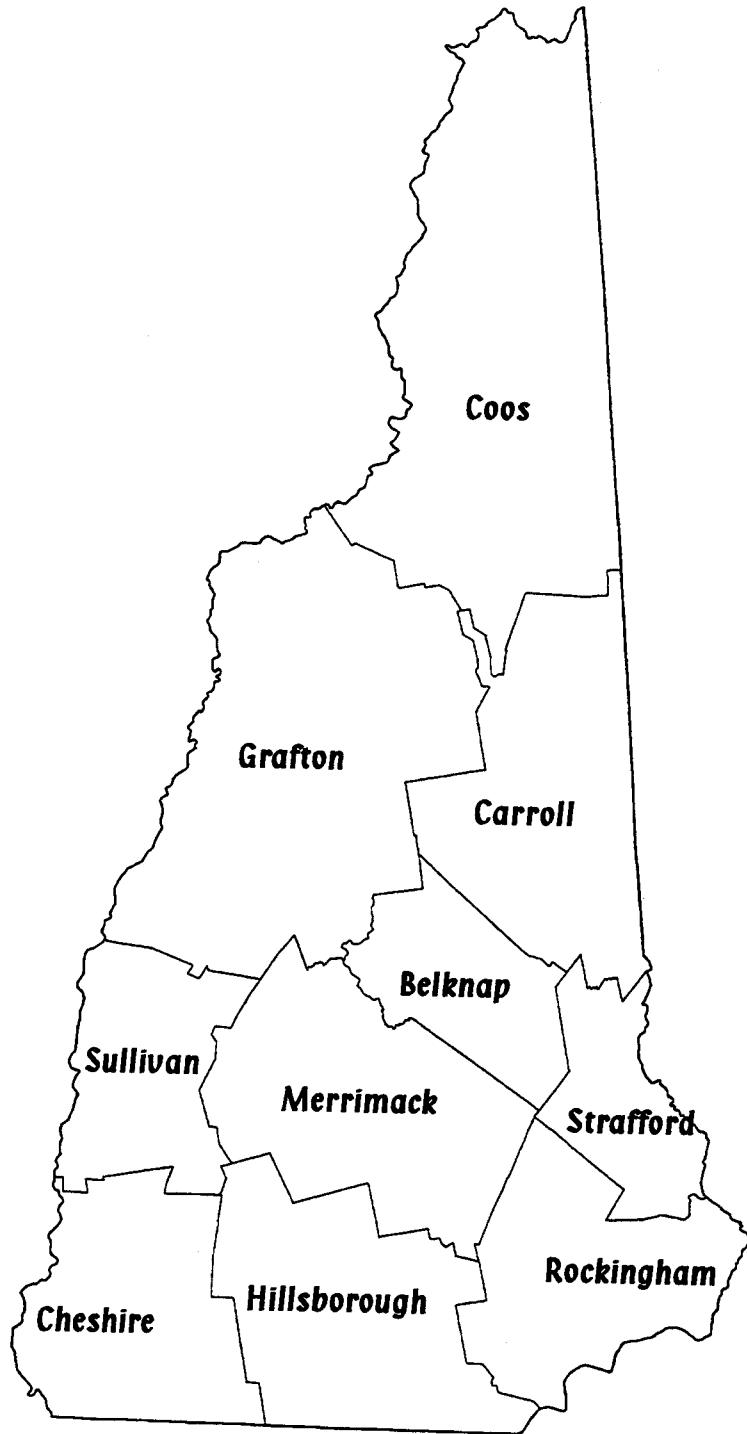
Thickness and Width Inches (rough)	Board foot content Board Length in feet					
	6	8	10	12	14	16
1 x 2	1	1 1/3	12/3	2	2 1/3	2 2/3
1 x 3	1 1/2	2	2 1/2	3	3 1/2	4
1 x 4	2	2 1/2	3 1/2	4	4 2/3	5 1/3
1 x 5	2 1/2	3 1/3	4 1/6	5	5 5/6	5 2/3
1 x 6	3	4	5	6	7	8
1 x 7	3 1/2	4 2/3	5 5/6	7	8 1/6	9 1/3
1 x 8	4	5 2/3	6 2/3	8	9 1/3	10 2/3
1 x 10	5	6 2/3	8 1/3	10	11 2/3	13 1/3
1 x 12	6	8	10	12	14	16
1 1/4 x 4	2 1/2	3 1/3	4 1/6	5	5 5/6	6 2/3
1 1/4 x 6	3	5	6 1/4	7 1/2	8 3/4	10
1 1/4 x 8	5	6 2/3	8 1/3	10	11 2/3	13 1/3
1 1/2 x 4	3	4	5	6	7	8
1 1/4 x 6	4 1/2	6	7 1/2	9	10 1/2	12
1 1/2 x 8	6	8	10	12	14	16
2 x 4	4	5 1/3	6 2/3	8	9 1/3	10 2/3
2 x 6	6	8	10	12	14	16
2 x 8	8	10 2/3	11 1/3	16	18 2/3	21 1/3
2 x 10	10	13 1/3	16 2/3	20	23 1/3	26 2/3
2 x 12	12	16	20	24	28	32
2 1/2 x 12	15	20	25	30	35	40
3 x 6	9	12	15	18	21	24
3 x 8	12	16	20	24	28	32
3 x 10	15	20	25	30	35	40
3 x 12	18	24	30	36	42	48
4 x 4	8	10 2/3	13 1/3	16	18 2/3	21 1/2
6 x 6	18	24	30	36	42	48

Lineal Footage (or Running Foot)

Lineal Foot x Factor = Board Feet

Board Foot ÷ Factor = Lineal Feet

1x2	.16667	5/4x3	.3125	2x3	.50	4x4	1.3334
1x3'	.25	5/4x4	.41667	2x4	.6667	4x6	2.000
1x4	.3334	5/4x5	.52083	2x6	1.000	4x8	2.6667
1x5	.41667	5/4x6	.625	2x8	1.33334	4x10	3.3334
1x6	.5	5/4x7	.7283	2x10	1.66667	4x12	4.000
1x7	.58334	5/4x8	.83334	2x12	2.000	6x6	3.000
1x8	.66667	5/4x10	1.042	3x4	1.000	6x8	4.000
1x9	.75	5/4x12	1.250	3x6	1.500	6x10	5.000
1x10	.83334			3x8	2.000	8x8	5.3334
1x12	1.000			3x12	3.000	8x10	6.6667



Coos

Grafton

Carroll

Belknap

Sullivan

Merrimack

Strafford

Cheshire

Hillsborough

Rockingham