

NEW HAMPSHIRE FOREST MARKET REPORT

1976



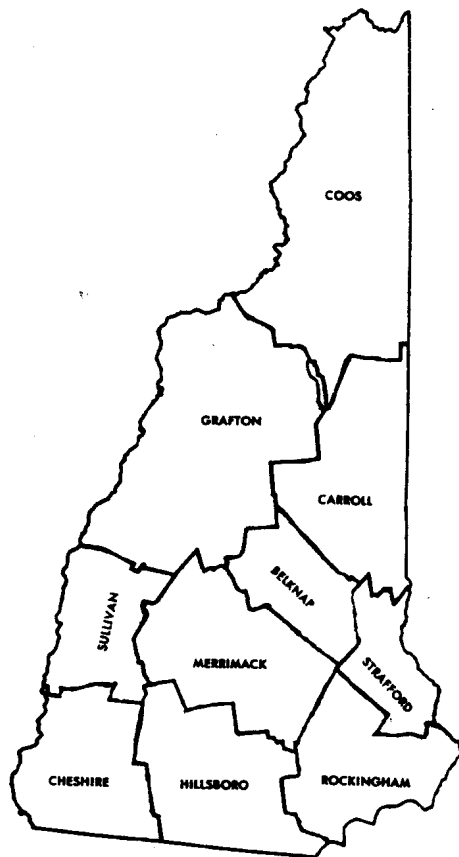
COOPERATIVE EXTENSION SERVICE
UNIVERSITY OF NEW HAMPSHIRE

with the

NEW HAMPSHIRE DEPARTMENT OF RESOURCES
AND ECONOMIC DEVELOPMENT COOPERATING

MAP OF NEW HAMPSHIRE

(Showing Counties)



by

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

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COUNTY FORESTERS

County	Name	Address
Belknap	Scott, Donald H.	County Extension Office Laconia 524-1737
Carroll	Pohl, Peter W. Conway 447-5922	County Extension Office
Cheshire	Ferguson, John R., Jr.	County Extension Office Keene 352-4550
Coos	Patmos, Marshall	County Extension Office Lancaster 788-4961
Grafton	Sargent, Leslie B., Jr. James B. Cullen (Assoc.)	County Extension Office Woodsville 787-6944
Hillsboro	Breck, Robert W. Buxton, David (Watershed)	County Extension Office Milford 673-2510
Merrimack	Conde, John A.	County Extension Office Concord 225-5505
Rockingham	Knowles, Stanley W.	County Extension Office Extension Service Center Epping 679-5616
Strafford	Black, Donald C.	County Extension Office Rochester 749-4445
Sullivan	Szymujko, Joseph A. Wood, Stephen A. (Watershed)	County Extension Office Claremont 543-3181
Supervisor:	Leighton, Roger S.	Pettee Hall, UNH Durham 862-1029 or Division of Forests and Lands State House Annex, Concord 271-2214

Assistant Utilization and Marketing Specialists

Harvesting: Richard G. Kinder 862-1028

Sawmilling: Harold W. Cook 862-1028

North Country RC&D Forester

Arthur G. Dodge

NEW HAMPSHIRE FOREST INVENTORY

By Arthur G. Dodge, North Country RC&D Forester

New Hampshire forests have been inventoried three times by the U.S. Forest Service, Forest Survey. Each inventory provides a dated reliable estimate of forest resource conditions and indicate changes that may have occurred. The latest survey, 1973, has been completed. A detailed report is being prepared by the U.S. Forest Service. Currently, we have *preliminary* information related to forest cover and species, ownership, stand size, growth and removal. The 1973 inventory shows a pattern similar to previous surveys, but also indicates some dramatic changes.

Forests dominate New Hampshire, in fact, 86 percent of the land supports tree growth. There has been very little change in total forested acreage since 1948. 81 percent of this forest is capable of growing wood products. This "commercial forest" encompasses 4,692,000 acres and has remained stable since 1948.

There have, however, been important changes in location and type of forests within the state. Forested area decreased in southern New Hampshire. This change is a result of intensive urbanization. Here, pavement, new homes, industries and shopping centers have replaced the forest. Carroll, Coos and Grafton counties have increased forest acreage and offset the loss to the south. Forests gained at the expense of declining agricultural activity in the north. A slower pace of commercial development also helped the commercial forest "hold its own" since the 1960 inventory. The 1973 inventory revealed important shifts in major forest types. The acreage of spruce-fir and oak forest types declined. During this same period the elm-ash-red maple type increased considerably.

Size distribution has also changed. Sawtimber and seedling-sapling stands have increased while poletimber acreage has decreased. Currently sawtimber area encompasses about 1.9 million acres, poletimber - 1.5 million and seedling sapling - 1.1 million.

These shifts have implications for consideration later in this discussion.

Forest Ownership

Latest survey data identify 87,490 private New Hampshire forest landowners owning 86 percent of the total forest. 1,150 of these owners are corporations holding about 30 percent of the commercial forest. More than one-half (55,700) reported owning parcels of 9 acres or less. Most of these ownerships are located in southern New Hampshire. The analysis of all owners points out that less than one in five has harvested timber from his or her land.

Growth is Good

The 1973 inventory shows New Hampshire has experienced dramatic increases in growing stock and sawtimber volume. Average total volume/acre has increased nearly 50 percent during the past fifteen years. Sawtimber alone

increased 39 percent since 1960. Hardwood sawtimber is up 45 percent while softwood sawtimber gained by 34 percent. It is interesting to note that overall sawtimber increase was greater in southern sections of the state. Neal Kingsley, University of New Hampshire graduate, currently employed by the Forest Survey suggests that lower industrial demand plus the small ownership pattern in southern New Hampshire probably accounted for the higher average of sawtimber volume in this area.

Preliminary statistics state that total growing stock volume averages over 1,400 cubic feet/acre. This is nearly 18 cords. The increase of volume over and above sawtimber is in pole size trees suitable for pulpwood, boltwood and other specialty products.

White Pine Still Number 1

Commercial species did not equally increase in growing stock volume. White pine maintained its position as the most common species. Hemlock is now the second most prevalent softwood. Red maple, red oak and sugar maple, in that order, are the common hardwoods: even though the true red oak forest type lost acreage, the tree itself gained in position as an individual specie found growing within other types such as elm-ash-red maple, oak-white pine, and aspen-birch. Yellow birch is the only specie to lose ground due to excessive harvesting. The following table indicates the relative positions in 1948 and 1973. These ten trees had the largest cubic-foot volumes in both surveys.

Species	1948	1973
White Pine	1	1
Yellow Birch	2	8
Spruce	3	5
Red Maple	4	2
Hemlock	5	4
Paper Birch	6	9
Sugar Maple	7	7
Balsam Fir	8	6
Beech	9	10
Red Oak	10	3

Quality and Net Growth

Even though we have witnessed a surge in sawtimber growth, the quality of sawlogs has declined. Volumes of white pine in the top two log grades dropped by 2 percent from 1948 to 1973 (17 percent to 15 percent). Hardwoods dropped by 7 percent (36 percent to 29 percent).

Net volume growth has been good. During the last thirteen years, approximately one-third of average annual cubic foot growth has been removed through mortality and harvesting. Sawtimber also had a positive growth-removal relationship but more softwood logs were harvested than hardwood. Approx-

imately 6 percent of the removal can be attributed to mortality. Forest tree diseases and weather are the two prime killers with disease leading by about four to one.

What Does It All Mean?

The 1973 Forest Survey indicates that our New Hampshire forest resource is basically in good shape. First and foremost, we are dealing with a renewable resource. The preceding facts confirm this. The forest has changed since 1948 but did generally maintain itself. In many cases this was in spite of man's interference. However, it must be emphasized that forest management efforts intensified on both private and public forest land throughout the state during the survey time period.

Currently, we have enough wood. In 1972, forest industries harvested 182 million board feet of sawlogs plus 311 thousand cords of pulpwood and specialty products. Perspective is gained on these statistics when one realizes:

This timber harvest was only one-third of the average annual net growth. Forest industries employ seven percent of the New Hampshire work force and account for 386.9 million dollars of product shipments. Based on available annual wood supply, the industry could easily expand to twice its current size. Harvest data indicates that industry expansion should be in the direction of increased hardwood utilization.

Additional harvesting is justified to upgrade timberstand quality and create a better balance of stand sizes. We currently have approximately 40 percent more acreage of sawtimber than seedling-sapling stands. Removing poor quality trees by well planned individual or group selection cutting will improve overall stand quality and create openings for new seedlings to germinate. Small clearcut areas can also make room for a new and better quality forest. Areas of seedling-sapling stands provide needed available food for wildlife.

New Hampshire forests have long been used for many purposes. The forest survey deals basically with wood supply and condition. One could interpret survey information to signify that much more forest could be preserved without detriment to other uses. This concept should be used with caution. Preserved forests usually mean old slow growing forests. Old forests harbor more disease and insects. They are generally less healthy than young and middle-age fast growing stands.

Survey Indicates Planning Needs

Several facts in the survey point to a need for planning as we gear for activity in the Twenty-First Century. With the exception of white pine, we are losing our traditional high value species. During the past twenty-five years yellow birch dropped from second to eighth place. Spruce went from third to fifth and paper birch from sixth to ninth. Less valuable species such as hemlock, red maple and balsam fir gained prominence. Either we plan our forest management to encourage the better species or technology will be developed to utilize whatever exists in the New Hampshire forest of 2050. Technological developments may well be more expensive to the future consumer than costs of intensifying forest management.

Individual owners control more than 60 percent of New Hampshire forests. The average size woodlot is currently 43 acres. The 25-year trend has been averaging down. As wooded tracts become smaller they become more costly to harvest. Many are taken out of production because of owner objectives which do not include growing or harvesting wood. Small private forest ownerships must produce more wood and amenities as demands increase and large ownerships begin to reach productivity capacity.

Plans have to be laid now to meet future demands. Owners joining together to manage small forest units, reliable incentives for timberstand improvement, more intensive marketing and standardized current-use assessment administration will be a necessity. Landowners and foresters must communicate and plan. Harvesting forest products will become an ever more important phase of small woodlot management.*

Forestry must become an integral part of community planning. We have many important facts about New Hampshire forests. This information needs to be translated into useable data related to community living. As the state population grows, this seemingly vast renewable forest resource will become ever more important.

RECOMMENDATIONS TO PERSONS SELLING TIMBER

New Hampshire woodland owners who plan to sell stumpage, logs, pulpwood, and other forest products are urged to consider the following recommendations before selling:

1. If you are in doubt as to whether you have enough of the right sort of timber to attract a buyer and are interested in the sort of selective cutting operation that would benefit the remaining stand, contact the County Forester or a Consulting Forester.

2. Consider the possibility of retaining the services of a qualified forester to act as your agent in handling a timber sale in your behalf when you are not in the position to look after the details of a sale, such as marking the trees for cutting, negotiating a fair price for the marked trees, looking after the cutting operations, and making sure the terms of the contract or agreement are being followed. The names and addresses of Consulting Foresters that practice in New Hampshire are listed in this report.

3. Assuming you have enough timber to have selectively cut, find out what sort of operation would be involved — whether a thinning, or an improvement, or re-production, or harvest cut, or a combination of two or more of these.

4. Arrange to have the trees that are to be cut to be marked with paint or a blaze. If not in a position to do this yourself with help from the County Forester, hire a Consulting Forester for this purpose.

5. Find out from buyers of stumpage, logs, pulpwood, and other forest products the prices they offer in order that you may take advantage of the best market. Compare the local prices with those quoted from other sections of the state.

6. Thoroughly investigate all timber markets and prices since in many cases outside markets pay better prices than local markets because of special demands.

7. Before selling, consult your neighbors who have recently sold timber and use their experience as a guide. Ask your County Forester. In many instances, failure to do this has resulted in the woodland owner not getting full value of the product.

8. Advertise and secure competition among outside purchasers. The expense will be small and outside buyers will thus learn of chances to bid on timber in competition with local buyers.

9. Secure bids whenever possible, both by the lump sum sale based on closely estimated volume and by log scale measure. A choice is thus offered and a more profitable form of bid can be accepted.

10. Consider the responsibility of the prospective purchaser before making the sale in order to avoid slow payment, costly collections and losses.

11. When there is quality timber to market, these trees are worth more than average or poor quality trees. Be sure the buyer takes the factor of tree quality into consideration when offering you a price for stumpage.

12. Remember that standing timber usually increases in values and generally can be sold at any time. The owner, therefore, is not obliged to place his produce on the market, if the price offered is not satisfactory. Sell only trees that should be cut. These trees should be marked by the owner or his agent with the help and advice of a qualified forester. Reliable operators will make partial cuttings by taking only the market trees, if the owner insists..

13. A written timber sale agreement between buyer and seller is more important before cutting starts on a lot. Sample sale agreement forms to fit different kinds of operations can be obtained from your County Forester.

ASSISTANCE RENDERED BY COUNTY FORESTER

The County Forester helps woodland owners to help themselves. Your County Forester will assist you in the examination of your woodlands and make recommendations for managing them. He will help you or your agent in marking trees for cutting in limited amounts, as an educational demonstration and advise you in the marketing of forest products.

There are thousands of acres of young growing trees, such as pine, spruce, fir, and desirable hardwood that can be converted into desirable stands of trees if the overtopping weed and cull trees are cut or killed. It is profitable to prune young, fast-growing, well-formed trees, especially white pine, with the purpose of growing quality logs that will yield clear lumber. Your County Forester can assist you in getting a forest improvement program started in your woodlands. Your County Forester can provide you with the information about the cost-sharing programs.

FOREST PRODUCTS LABORATORY PUBLICATION LISTS

LISTS OF PUBLICATIONS dealing with investigative projects of the U.S. Forest Products Laboratory or relating to special interest groups are available from the Director, Forest Products Laboratory, 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.

CHRISTMAS TREE SITUATION

Despite a continued economic slump and rising costs for material, labor and transportation, the 1975 Christmas Tree season seems to have produced a bumper crop of trees.

Weather conditions during cutting time were similar to those of 1973, with a lack of snow cover and unseasonably warm temperatures. As a result, it seemed that an increased number of producers were harvesting trees this year.

There were fears that the market would be flooded with trees but as it turned out demand exceeded supply for the 4th year in a row and most producers are pleased with the 1975 season.

Coos County, which accounts for 2/3 of New Hampshire's estimated annual harvest of 300,000 trees, experienced minor insect damage and some premature drying due to an unseasonably warm, dry fall but apparently our Canadian neighbors had more problems than New Hampshire which may account for an increased demand for trees in our State.

As more and more quality sheared trees find their way to the consumer, demand for them continues to increase. The efforts of the growers through fertilization, weed control, shearing and pruning during the 8-12 years it takes to produce a tree from a seedling, are paying off.

Demand for the unimproved, pasture run tree continues to dwindle with most of trees sold being improved and sheared.

Balsam fir remains the number one seller, although sheared spruce and pine are quite popular also.

The "choose and cut" method of marketing trees, which is more prevalent in the southern part of the State, remains a success and continues to provide a true family experience for those who enjoy selecting their tree while it's still on the stump.

The N.H.-Vt. Christmas Vendor, a periodically revised list of Christmas producers and their products, continue to be a tremendous marketing aid for the \$2 million industry in the State. The Vendor is a joint marketing effort between the N.H.-Vt. Christmas Tree Association and the N.H. and Vt. Cooperative Extension Services.

The outlook for the 1976 season is good and increased numbers of high quality trees continue to attain marketable size.

1976 PRICE RANGE FOR FOREST PRODUCTS

Table I. Price Range Standing Timber (Stumpage) and Sawlogs Per MBF

Prices quoted are an average range for the county. Prices will vary from those quoted depending on market conditions. More specific process can be obtained by contacting the County Forester, Consulting Foresters, or industry representatives. Read carefully the recommendations for selling on page 4 before disposing of stumpage, logs, and other forest products.

Belknap County

Species	Quality	Stumpage	Roadside	Delivered
White Pine	Low	\$20-25	\$30-35	\$55-60
	Medium	25-35	35-45	60-65
	High	35-55	45-55	65-70
Hemlock	All grades	15-25	25-30	35-40
Red Oak	Low	35	40-45	45-50
	Medium	35-40	45-50	50-55
	High	40+	50+	90-130
White Birch and Yellow Birch	Low	20-25	31-36	42-48
	Medium	25-30	37-45	50-70
	High	30+	45+	80-130
Rock Maple	Low	20-25	31-37	45-50
	Medium	25-30	37-42	55-75
	High	30+	40+	75-100
Beech	Medium to High	15-20	26-32	40-60
White Ash	Low	15-20	31-37	45-50
	Medium	20-25	40-45	50-60
	High	25+	45+	70-80
Mixed Hardwoods		15-25	30-35	45-55

Carroll County

Species	Quality	Stumpage	Roadside	Delivered
White Pine	Low	\$25	\$55	\$75
	Medium	35-45	65	90
	High	60-70	85	110
Hemlock	Medium	15-25	40-50	60-70
	High	30-40	60-65	70-80
Spruce	Medium	20-40	60-70	80
	High	40-50	85	110
Ash	Medium	30-40	60-70	125
	High	40-60	90	145
Basswood		20-35	50-60	85-120
Beech	Low	15	45	60
	Medium	20	50	65
	High	30	60	85
Beech-Boltwood	High	20	30-35	25-32/cord
Red Maple	Low to High	30	70	65-80
Sugar Maple	Low	20	70	90
	Medium	30	80	130
	High	45	90	145

Carroll County (Continued)

Species	Quality	Stumpage	Roadside	Delivered
Sugar Maple Boltwood				60/cord
Paper Birch	Low	30	60	75
	Medium	40	70	80-90
	High	50	90	100-140
Paper Birch Boltwood	Low	30/cord	40-50/cord	70-85/cord
Yellow Birch	Medium	40	60	80-90
	High	50	90	100-130
Oak	Medium	25-35	50-60	75-90
	High	40-60	65-80	90-110

Cheshire County

Species	Quality	Stumpage	Roadside	Delivered
White Pine	Low	\$25-30	\$50-55	\$70-75
Medium	Medium	35-40	55-65	75-80
	High	40-50	65-75	80-90
Hemlock	Low	20-25	40-45	55-60
	Medium	25-30	45-50	60-65
	High	30-35	50-55	65-70
Spruce	Low	20-25	40-45	55-60
	Medium	25-30	45-50	60-65
	High	30-35	50-55	65-75
Red Oak	Low	30-40	50-60	70-75
	Medium	40-50	65-75	75-85
	High	55-65	75-85	90-115
White Birch	Low	30-40	50-60	70-75
	Medium	45-55	65-75	80-85
	High	55-65	75-85	90-115
Sugar Maple	Low	30-40	50-60	70-80
	Medium	45-55	65-75	85-90
	High	55-65	75-85	90-125
Soft Maple	Medium	25-30	45-50	60-70
	High	30-35	50-55	70-80
Beech	Medium	25-30	45-50	60-70
	High	30-35	50-55	70-80
White Ash	Low	(not purchased separately)		80-90
	Medium	(except as logs)		100-150
	High			150-200

Coos County

Species	Quality	Stumpage	Roadside	Delivered
White Pine	Sawlog	\$25-45	\$70-90	\$90-120
Spruce-Fir	Sawlog	25-40	65-85	90-105
Hemlock	Sawlog	12-20	35-45	55-75

Coos County (Continued)

Species	Quality	Stumpage	Roadside	Delivered
Hard Maple	Sawlog	35-60	80-100	100-150
	Veneer	50-90		150-250
Soft (Red) Maple	Sawlog	15-25	50-65	70-90
Poplar	Sawlog	10-20	35-45	50-60
White Birch	Sawlog	25-50	90-110	110-180
	Veneer	70-120		150-250
Beech	Sawlog	13-22	45-50	70-95
Yellow Birch	Sawlog	40-80	110-150	150-190
	Veneer	80-120		125-325
White Ash	Sawlog	45-100	85-160	125-200
Red Oak	Sawlog	20-30		100-105
	Veneer	40-70		150-250
Basswood	Veneer	35-50		140-180
White Cedar (over 6" DBH)				
		6' logs/cord*	40	35-45
		8' logs/cord	55	60

*6' cord = 700-75- bd. ft.
8' cord = 1000 bd. ft. (approx.)

Grafton County

Species	Quality	Stumpage	Roadside	Delivered
White Pine	Average	\$15-50	\$40-90	\$70-115
Hemlock	Average	15-30	30-85	60-100
Spruce & Fir	Average	15-45	35-90	60-110
Yellow Birch	Sawlog	20-95	45-170	75-190
	Veneer	100-150	150-200	125-325
Sugar or Rock Maple	Sawlog	20-75	45-190	60-220
	Veneer	60-75	95-190	150-250
White Birch	Sawlogs	25-80	55-170	70-190
	Veneer	80+	125-175	175-250
Soft (Red) Maple	Sawlogs	15-25	50-70	80
White Ash	Sawlogs	20-80	50-150	75-190
Beech	Sawlogs	10-25	30-70	70-85
Red Oak	Sawlog	20-75	45-160	60-190
	Veneer	65+	90-150	140-225
Pallet Logs	Mixed Hardwood	10-15	30-40	60
Tie Logs	Mixed Hardwood	15-25	40-60	60-80
Basswood	Sawlogs	10-20	30-45	60-75
	Veneer			140-200
Poplar	Sawlogs	10		75
Cherry	Sawlogs	35-50	65-95	110-150
	Veneer			170-285

Hillsboro County

Species	Quality	Stumpage	Roadside	Delivered
White Pine	Low	25	50	60
	Medium	40	65	70
	High	50	75	85
Hemlock	Low	20	40	50
	Medium	25	50	60
	High	35	60	75
Red Oak	Low	30	50	60
	Medium	50	65	75
	High	70	80	90+
Other Hardwoods Birch, Maple, Ash Mixed Hardwood (Pallet Stock)	Low	20	40	50
	Medium	35	55	65
	High	50	70	75
	Logs			45-60

Merrimack

Species	Quality	Stumpage	Roadside	Delivered
White Pine	Low	\$25-30	\$50-55	\$60-65
	Medium	30-35	50-55	65-70
	High	35-45	60-65	80-90
Hemlock	Low	15-20	35-40	45-50
	Medium	20-25	40-45	50-55
	High	25+	45-50	55-60
White Birch	Medium	20-30	40-50	65-80
	High	30-40	50-70	90-100
Hard Maple	Medium	25-35	45-55	70+
	High	35-45	55-65	90+
Red Oak	Medium	25-35	45-55	65-75
	High	35-50	55-65	75-85
Pallet Stock	Logs	20-25	45-50	55

Rockingham County

Species	Quality	Stumpage	Roadside	Delivered
White Pine	Low	\$16-20	\$41-45	\$56-60
	Medium	24-30	49-55	64-70
	High	30-40	55-65	70-80
Hemlock	Low	13-19	38-44	53-59
	Medium	20-26	45-51	60-66
	High	27-31	52-56	67-71
Red Oak	Low	16-20	41-45	56-60
	Medium	21-31	46-56	61-71
	High	32-40	57-65	72-80
*Other Hardwoods	Low	10-18	35-43	50-58
	Medium	20-26	45-51	60-66
	High	27-31	52-56	67-71

*Check the prices in other counties for white birch, yellow birch, sugar maple, and white ash, when grades are suitable for specialty items such as boltwood and veneer.

Strafford County

Species	Quality	Stumpage	Roadside	Delivered
White Pine	Low	\$20	\$40	\$55
	Medium	25	45	60
	High	40	60	75
Hemlock and Spruce	Low	15	35	50
	Medium	20	40	55
	High	25	45	60
Red Oak		30	50	
Other Hardwoods	Low	15-20	40	55
	Medium	20-25	45	60
	High	25-30	45-50	60-65

Sullivan County

Species	Quality	Stumpage	Roadside	Delivered
White Pine	Low	\$18-25	\$40-55	\$50-60
	Medium	25-35	50-70	60-85
	High	35-45	60-75	80-90
Hemlock	Medium	15-20	35-40	50-60
	High	20-30	40-55	65-70
Spruce	Medium	20	45-50	60-75
	High	25-30	55=65	65-80
Yellow Birch	Medium	25-40	55-70	75-120
	High	45-60	70-110	120-140
White Birch	Medium	30-50	50-65	70-120
	High	30-60	65-80	85-140
Sugar Maple	Medium	35-40	60-80	80-120
	High	45-60	75-100	110-140
Red Oak	Medium	25-40	62-80	75-100
	High	40-70	75-120	95-140
White Ash	Medium	25-35	60-80	80-120
	High	45-70	70-120	110-140
Red Maple	Medium	18-30	45-60	65-80
	High	25-35	55	80-100
Other Hardwoods	Medium	18-25	45-60	65-75
	High	30-40	60	75-80
Pallet		5-10		60

Table II. Prices Pulpwood Per Cord – Northern New Hampshire¹

Species	Stumpage	Roadside	Mill Yard
Spruce and Fir	\$5.00-8.00	\$16.00-28.00	\$29.00-34.00
White Pine	2.00-2.50	14.00-18.00	28.00-30.00
Hemlock			
Tamarack	2.00-4.00	15.00-21.00	30.00-33.50
Red Pine			
All Hardwood	2.50-4.50	18.00-22.00	29.00-34.25

¹Pulpwood is purchased by weight at the mill with cord equivalents ranging from 4400 lbs. to 5400 lbs. depending on species.

Prices of Pulpwood Per Cord – Southern New Hampshire¹

Species	Stumpage	Roadside	Delivered at Mill
Softwood			
Rough			\$6.00/Ton
Hardwood			
Rough	\$2.00-3.00		7.00/Ton

¹When buying pulpwood by weight: 5600 lbs. equals one cord in hardwoods and 4800 lbs. equals one cord in softwoods.

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

	Delivered to Chipping Plant
Softwood ¹ (mixed)	\$5.25-7.00
Hardwood (mixed)	5.00-6.50 ²

¹Special prices are paid for slabs and edgings sorted by species (spruce and fir).

²Contact buyers for exact prices and mileage allowances.

Price of Pulp Chips Per Cord¹

	Scheduled Deliveries of Chips Produced from Roundwood ²	Produced from Slabs and Edgings Delivered to Pulp Mill ²
Pine and Hemlock		\$24.00-30.00
Spruce and Fir	\$25.00-28.00	24.00-32.00
Hardwood (mixed)	27.00-31.00	26.50-32.00

¹Chips are bought by weight or by volume.

²Contact buyers for exact prices and mileage allowances.

**Table IV. Price Range of Excelsior Wood, Boltwood, Posts
and Railroad Cross Ties**

Species	Stumpage	Roadside	Delivered at Mill
Excelsior Wood Per Cord			
Poplar Peeled Rough			\$22.00- 28.00 18.00
Boltwood Per Cord ¹			
White Birch	\$20.00-30.00	\$30.00-40.00	50.00- 70.00 per cord 70.00-120.00 per Mbf.
Beech	10.00-15.00		37.00- 50.00 per cord 75.00-105.00 per Mbf.
Sugar Maple and Ash	15.00-20.00		45.00- 58.00 per cord 75.00-120.00 per Mbf.
Yellow Birch	15.00-25.00		48.00- 65.00 per cord 75.00-120.00 per Mbf.
Mixed Hardwood (pallet)	4.00- 7.00	15.00-25.00	37.00- 53.00 per cord

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

Posts

Species	Length	Top Diameter	Stumpage	Roadside Price
Red (Norway Pine) and Pitch Pine	7'	8"	\$.40	\$1.00
		6"	.15	.50
		3-6"	.02	.35
Cedar	8'	6"		.46
		5"		.41
		4"		.21

Railroad Crossties

Grade	Size	Rail- bearing Face	Prices paid for Green Mixed Hardwood ¹ Ties			
			Loaded on R.R. Cars		Delivered by Truck to Nashua	
			each	per MBF	each	per MBF
2	(6" x 7" x 8'6")	7"	\$3.85	\$133	\$4.20	\$142
3	(6" x 8" x 8'6")	8"	4.90	144	5.25	154
4	(7" x 8" x 8'6")	9"	5.70	144	6.05	152
5	(7" x 9" x 8'6")	10"	6.50	146	6.85	153
Industrial Ties			2.00		2.35	

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

Table V. Price Range of Fuelwood Per Cord

Species	Stumpage	Roadside	Delivered Buyers Premises
Hardwood ¹			
4' Wood	\$1.00-5.00	\$12.00-40.00	\$30.00-50.00
12", 14", 16" Lengths		18.00-45.00	30.00-70.00
Slabs (Hardwood or Softwood)		2.00-25.00	16.00-25.00

Fireplace white birch will be slightly higher than above when bought in bundles.

Prices range up to \$60.00+ per cord.

Formula for determining cords of fuelwood, pulpwood and boltwood in 4' lengths.

Average height in inches times length of pile in feet divided by 384 equals the number of cords:

$$\text{EXAMPLE: } \frac{48'' \times 8'}{384} = 1 \text{ Cord}$$

If wood is longer or shorter than standard length, which is 48", divide by standard bolt length to get current percentage. (EXAMPLE: 39" divided by 48" equals 81%).

¹3.00-8.00 asked for sawing 4' wood into stove length.

Table VI. Price Range of Sawdust and Shavings and Bark

	Per-Cord Green at Sawmill	Per Bale Air Dry
Sawdust	\$3.00-7.50 or \$.02 to .06 per cubic foot	
Shavings	\$2.00-5.00 or \$.02 to .045 per cubic foot	\$1.00
Bagged Dry Shavings		\$.90 to \$1.35
Bark	\$.02 to \$.08 per cubic foot (loaded) \$1.00-6.00 per yard (loaded) (\$3.00) \$.50-6.00 per cord \$1.50 per yard, load your own	per 3 cu. ft. bag

Table VII. Operating Costs (Contract Prices)

	Felling and Bucking per Mbf	Yarding per Mbf	Trucking ^{3/4} per Mbf
Logs			
Softwood ¹	\$7.00-16.00	\$ 8.00-23.00	\$10.00-27.00
Softwood ²	7.00-10.00	6.00-18.00	8.00-18.00
Hardwood ¹	7.00-20.00	10.00-38.00	10.00-30.00
Hardwood ²	8.00-16.00	8.00-22.00	9.00-25.00
Pulpwood	per cord	per cord	per cord
Softwood ¹	\$8.00-9.50	\$ 3.00-5.00	\$ 5.00-12.00
Hardwood ¹	7.00-9.00	3.00-6.00	5.00-13.00
Hardwood ²	6.50-9.00	4.00-6.00	4.00-11.00
Fuelwood	6.00-9.00	4.00-6.00	
Lopping Tops (for aesthetics)		\$ 1.50-2.50/Mbf.	
Horse Rental	\$2.00-2.50 per cord if the jobber feeds the animal. \$2.00-3.00 per cord if the chopper feeds the animal.		
Yarding Stump to Roadside -			
Skidder	\$12.00-14.00/cord or \$14.00-18.00/Mbf.		
Crawler	\$10.00-14.00/cord or \$15.00-20.00/Mbf.		
Horse	\$10.00-14.00/cord or \$15.00-20.00/Mbf.		
Average Stump to Roadside -			
Softwood	\$28.00/Mbf		
Hardwood	\$32.00/Mbf		

Table VII. Operating Costs (Contract Prices) (Continued)

Chain Saw Rental	\$ 1.00-2.00 per hour
Man with Chain Saw	4.00-6.00 per hour
Stickings	4.00-5.00 square edge hardwood lumber per Mbf. 3.00-4.00 round edge softwood lumber per Mbf.
Custom Sawing	45.00-75.00 per Mbf. for softwoods or \$15.00-50.00 per hour. 10.00-15.00 more per Mbf. for hardwoods or \$25.00-35.00 per hour.
Planing	15.00-20.00 per Mbf. one face or \$6.00-25.00 per hour. 15.00-20.00 per Mbf. two faces or \$6.00-15.00 per hour.
Resawing	6.00-8.00 per Mbf. per cut.
Stump to stick	100.00-115.00 per Mbf. for softwoods. 120.00-135.00 per Mbf. for hardwoods.

³Intra-state and inter-state rates are sometimes used.

⁴There are no established I.C.C. rates for trucking sawlogs and pulpwood. Rates are determined between the trucker and the party wanting the logs hauled on the basis of mileage involved. Average hauling prices are as follows:

⁵\$25.00 for the first 10 miles and \$.20 to \$.25 per mile after.

Trucking Costs

		Truck	Truck with Loader
Logs	0- 30 miles	\$ 9.00-15.00 per Mbf.	\$18.00
	30- 50 miles	13.00-25.00 per Mbf.	20.00
	50- 85 miles	18.00-35.00 per Mbf.	25.00
	85-100 miles	35.00+ per Mbf.	30.00
Pulpwood	0- 15 miles	5.50 per cord	\$ 2.50
	15- 30 miles	5.50- 6.50 per cord	per cord
	30- 40 miles	6.50- 7.50 per cord	additional
	40- 60 miles	7.50- 8.50+ per cord or \$0.11 per loaded mile per cord plus \$1.01 for standby, delay and unload.	
Chips		5.00-8.00 per cord.	

Table VIII. Wholesale Price Range¹ of Christmas Trees and Boughs²

	Stumpage		Roadside	
	Single	Bundle	Single	Bundle
Pasture Run (unimproved).				
Balsam Fir	\$1.25-2.00		\$2.00-2.75	\$4.00-7.00
Spruce	1.00-1.50		1.50-2.00	3.00-5.50
Improved (but not sheared)				
Balsam Fir	1.50-2.50	\$2.50-4.50	2.75-5.00	5.50-8.25
Spruce	1.25-1.75	1.75-3.25	2.25-4.00	4.00-6.00
Sheared				
Balsam Fir	2.25-3.75		3.75-6.50	
Spruce	2.00-3.25		3.00-5.75	
Pine	2.00-3.00		3.75-5.00	
Boughs				
		Per Bundle ³	Roadside	Per Ton
Balsam Fir (tied)		\$2.25-3.50		\$90.00-140.00
Balsam Fir (baled)		2.50-4.00		100.00-160.00
Spruce (tied)		2.00-2.50		80.00-100.00
Spruce (baled)		2.25-2.75		90.00-110.00
Pine		2.25-2.75		90.00-110.00
Wreaths				
Balsam Fir — double face				
size 12"-14"	\$1.40-1.60	each		

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

²Producers should contact buyers well in advance of cutting and arrange for deposits and specific prices, and use a written contract.

³Price 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	\$3.50-7.50 or \$.75-1.50 per lineal foot
Douglas Fir	
Norway Spruce	
Blue Spruce	

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

	% Sugar	Price/Gal.	% Sugar	Price/Gal.
			3.6	.210
			3.7	.218
	1.0	.022	3.8	.226
	1.1	.027	3.9	.234
	1.2	.032	4.0	.242
	1.3	.038	4.1	.250
	1.4	.044	4.2	.258
	1.5	.050	4.3	.266
	1.6	.056	4.4	.274
	1.7	.062	4.5	.282
	1.8	.068	4.6	.290
	1.9	.075	4.7	.298
Normal Range	2.0	.082	4.8	.306
	2.1	.090	4.9	.314
	2.2	.098	5.0	.322
	2.3	.106	5.1	.330
	2.4	.114	5.2	.338
	2.5	.122	5.3	.346
	2.6	.130	5.4	.354
	2.7	.138	5.5	.362
	2.8	.146		
	2.9	.154		
	3.0	.162		
	3.1	.170		
	3.2	.178		
	3.3	.186		
	3.4	.194		
3.5	.202			

Maple Syrup Price Ranges for 1976
in Metal Containers for Grades: Fancy, and A

1 Gallon	\$11.00-\$14.00	Mostly \$12.00-\$12.50
½ Gallon	6.75- 7.25	Mostly 7.00
1 Quart	4.00- 4.25	Mostly 4.00- 4.25
1 Pint	2.75- 3.50	Mostly 3.00- 3.25
½ Pint	1.75- 2.50	

Rent Price Per Tap Hole

12-15 cents for sugar maples in the woods and not too easy to get to;
up to 30 cents for easily accessible trees and trees along roadsides.

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, $\frac{1}{4}$ " kerf, is most commonly accepted.

The volume of a standing tree or log is determined using tree and log rules. These rules simply give the approximate number of board feet of sawed lumber that may be manufactured after allowing 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. Inches	Number of 16 foot logs – to 6" top						
	1	1½	2	2½	3	3½	4
6	10	15					
8	20	35	50				
10	40	55	70	85	95		
12	60	75	95	110	125	145	165
14	85	110	135	150	165	190	215
16	110	150	190	215	240	260	285
18	140	195	245	285	320	345	370
20	180	245	310	355	400	435	465
22	220	300	380	445	505	545	585
24	270	365	460	540	615	670	730
26	320	435	550	645	735	805	875
28	370	515	655	760	870	950	1035
30	430	595	760	885	1010	1110	1205

Log Rule

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

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

The International Log Rule

¼-inch Saw Kerf

Diameter (Small end inside bark) Inches	Length of Log in Feet						
	8	10	12	14	16	18	20
4		5	5	5	5	5	10
5	5	5	10	10	10	15	15
6	10	10	15	15	20	25	25
7	10	15	20	25	30	35	40
8	15	20	25	35	40	45	50
9	20	30	35	45	50	60	70
10	30	35	45	55	65	75	85
11	35	45	55	70	80	95	105
12	45	55	70	85	95	110	125
13	55	70	85	100	115	135	150
14	65	80	100	115	135	155	175
15	75	95	115	135	160	180	205
16	85	110	130	155	180	205	235
17	95	125	150	180	205	235	265
18	110	140	170	200	230	265	300
19	125	155	190	225	260	300	335
20	135	175	210	250	290	330	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 Standard cord of boltwood	= 500 board feet

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

5600 – 5700 pounds = 1 cord (hardwood)

4600 – 4700 pounds = 1 cord (softwood)

Cordwood

Wood fuel is generally sold by the standard cord or by the “short cord” also called “face cord” which is a pile of wood 8 feet long, 4 feet high and the length of the stick is less than 4 feet and is generally 12, 16, or 24 inches for stove and fireplace use.

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	Board foot content Board length in feet					
	6	8	10	12	14	16
1 x 2	1	1-1/3	1-2/3	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	2-2/3	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	5-1/3	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	3-3/4	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 1/2 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

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*				2	1-1/2	1-9/16	
				3	2-1/2	1-9/16	
				4	3-1/2	3-9/16	
				5	4-1/2	4-5/8	
		1	3/4	25/32	6	5-1/2	5-5/8
					7	6-1/2	6-5/8
		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
				3	2-1/2	2-9/16	
				4	3-1/2	3-9/16	
				5	4-1/2	4-5/8	
		2	1-1/2	1-9/16	6	5-1/2	5-5/8
		2-1/2	2	2-1/16	8	7-1/4	7-1/2
		3	2-1/2	2-9/16	10	9-1/4	9-1/2
		3-1/2	3	3-1/16	12	11-1/4	11-1/2
					14	13-1/4	13-1/2
					16	15-1/4	15-1/2
Dimension				2	1-1/2	1-9/16	
				3	2-1/2	2-9/16	
				4	3-1/2	3-9/16	
				5	4-1/2	4-5/8	
		4	3-1/2	3-9/16	6	5-1/2	5-5/8
		4-1/2	4	4-1/16	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
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.

Railroad Tie Volume Table

Grade	Dimensions	Bd. ft. volume per tie	No. of Pcs. per MBF
1	6"x7"x8'6"	29.7	33.7
2	6"x7"x8'6"	29.7	33.7
3	6"x8"x8'6"	34.0	29.4
4	7"x8"x8'6"	39.6	25.2
5	7"x8"x8'6"	44.6	22.4

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

Woods	Weight, lb.	Available Heat,	Equivalent in Gallons of Fuel Oil
	Air Dry	Million BTU Air Dry	
Ash	3,440	20.0	145
Aspen	2,160	12.5	91
Beech, American	3,760	21.8	158
Birch, yellow	3,680	21.3	154
Elm, American	2,900	17.2	125
Hickory, shagbark	4,240	24.6	178
Maple, red	3,200	18.6	135
Maple, sugar	3,680	21.3	154
Oak, red	3,680	21.3	154
Oak, white	3,920	22.7	165
Pine, eastern white	2,080	13.3	96

Variation of Heating Values of Wood Due to Moisture

— Per Cent of Moisture—	— Per Cent of Usable Heat —
0 (oven dry)	103.4%
4	102.7
10	101.6
20 Air-dried Hardwood	100.0 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
6"	25
7"	16
8"	12
9"	10
10"	8
11"	6
12"	5
14"	3
16"	2.5
18"	2
22"	1

METRIC EQUIVALENTS
(Based on National Bureau of Standards)

Length

Mm.	= 0.0393 in.		In.	= 25.4 mm.
Cm.	= 0.3937 in.		In.	= 2.5400 cm.
Meter	= 39.37 in.		Ft.	= 304.8 mm.
Meter	= 3.2808 ft.		Ft.	= 30.48 cm.
Meter	= 1.0936 yd.		Ft.	= 0.3048 m.
Km.	= 3,280.8 ft.		Yd.	= 0.3048
Km.	= 0.6214 mile		Yd.	= 0.9144 cm.
			Mile	= 1.609.34 m.
			Mile	= 1.6093 km.

Area

Sq. cm.	= 0.1550 sq. in.		Sq. in.	= 6.4516 sq. cm.
Sq. m.	= 10.7639 sq. ft.		Sq. ft.	= 929.03 sq. cm.
Sq. m.	= 1.1960 sq. yd.		Sq. ft.	= 0.0929 sq. m.
Hectare	= 2.4710 acres		Sq. yd.	= 0.8361 sq. m.
Sq. km.	= 247.105 acres		Acre	= 0.046.87 sq. m.
Sq. km.	= 0.3861 sq. mile		Acre	= 0.404 hectare
			sq. mile	= 2.5900 sq. km.

Volume

Cu. M.	= 2.8877 bd. ft.		Bd. ft.	= 0.0025 cu. m.
Cu. cm.	= 0.0610 cu. in.		Cu. in.	= 16.3872 cu. cm.
Cu. m.	= 35.3145 cu. ft.		Cu. ft.	= 0.0283 cu. m.
Cu. m.	= 1.3079 cu. yd.		Cu. yd.	= 0.7646 cu. m.

Capacity

Liter	= 0.0353 cu. ft.		Cu. ft.	= 28.3162 liters
Liter	= 0.2642 gal (U.S.)		Gal.	= 3.7853 liters
Liter	= 61.0250 cu. in.		Cu. in.	= 0.0164 liter
Liter	= 2.2046 lb. of pure water at 4 deg. C.			

Weight

Gram	= 15.4324 gr.		Grain	= 0.0648 g.
Gram	= 0.0353 oz.		Oz.	= 28.3495 g.
Kg.	= 2.2046 lb.		Lb.	= 0.4536 kg.
Kg.	= 0.0011 ton		Ton (sht)	= 907.1848 kg.
	(sht)		Ton (sht)	= 0.9072 ton
Ton (met.)	= 1.1023 ton			(met.)
	(sht)		Ton (lg)	= 1.0160 ton
Ton (met.)	= 0.9842 ton			(met.)
	(lg)			

Pressure

1 kg. per sq. cm.	= 14.223 lbs. per sq. in.
1 lb. per sq. in.	= 0.0703 kg. per sq. cm.
1 kg. per sq. in.	= 0.2048 lb. per sq. ft.
1 lb. per sq. ft.	= 4.8824 kg. per sq. m.
1 kg. per sq. cm.	= 0.9678 normal atmosphere