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Extension Circular 393 April 1968

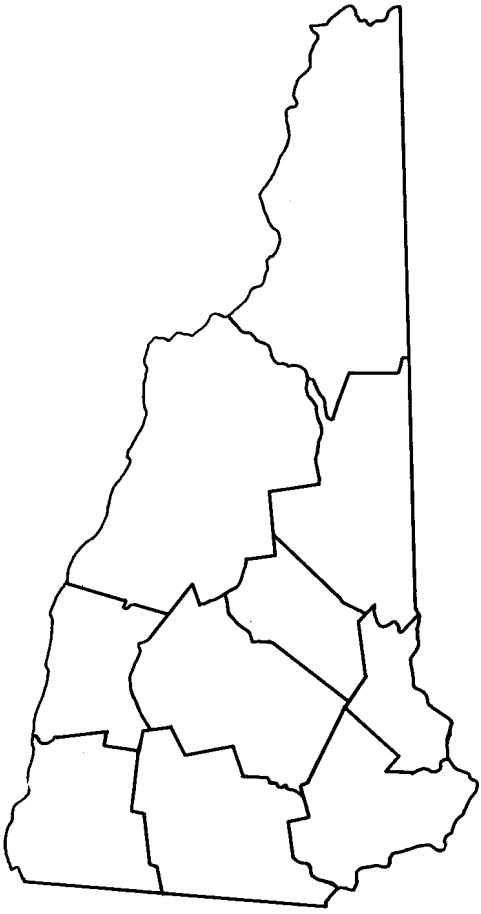
NEW HAMPSHIRE FOREST MARKET REPORT 1968

High Quality Hardwood Squares for the Furniture Industry being Air Dried.

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, specifications, names and addresses was gathered by the New Hampshire County Foresters and the bulletin was prepared by Roger P. Sloan, Extension Forester, and Nicolas Engalichev, Forest Products Utilization and Marketing Specialist.

County Foresters

County	Name	Address
Belknap	Kinder, Richard G.	County Extension Office Laconia 524-7011 Ext. 731
Carroll	Dodge, Arthur G., Jr.	County Extension Office Conway 447-5922
Cheshire	Ferguson, John R., Jr.	County Extension Office Keene 352-4550
Coos	Sargent, John E.	County Extension Office Lancaster 788-4961
Grafton	Sargent, Leslie B., Jr.	County Extension Office Woodsville 747-2377
Hillsboro	Breck, Robert W.	County Extension Office Milford 673-2510
Merrimack	Thompson, Wilbur E.	County Extension Office Concord 225-5505
Rockingham	Knowles, Stanley W. *Baker, David A	County Extension Office County Building Exeter 772-4711 Ext. 37
Strafford	Leighton, Roger S.	County Extension Office Rochester 332-5808
Sullivan	Szymujko, Joseph A.	County Extension Office Claremont 543-3181

* Assistant County Forester

FOREST MARKET REPORT FOR 1967

THE NATIONAL MARKET SITUATION FOR FOREST PRODUCTS

Economic Activity

During the summer and early fall of 1967, activity in most sectors of the Nation's economy that are important markets for timber products was moving upward — a reversal of the declining trends of the first part of the year. The index of industrial production in August was 157.8 (seasonally adjusted, 1957–59 = 100) — 1.5 percent above the June 1967 low. The index of production in the manufacturing industries followed the same general pattern — edging upward in the late summer months. Production of containers — an important indicator of demand for board (container board, bending board, etc.), container veneer, and some lumber items — was also showing small increases. Production of furniture and fixtures, a major determinant of the demand for hardwood lumber, plywood, and veneer, was at an index level of 167.0 in August, somewhat above earlier months. Rising residential construction should lead to further increases in the demand for furniture in later months of the year and in 1968.

Total expenditures for new construction, the Nation's largest market for timber products, in July were at a seasonally adjusted annual rate of $75.9 billion. This is significantly above the $72.0 billion spent in April — the low month in 1967. Most of the increase in construction expenditures in 1967 reflects a rise in home-building. Spending on private residential construction in July was at a seasonally adjusted annual rate of $23.7 billion — some 20 percent above the rates that prevailed in late 1966 and early 1967.

All Timber Products — Production and Consumption

Timber production from domestic forests in 1967 is estimated at 11.6 billion cubic feet. This is about the same as in 1966 but 9 percent above average annual output in the 1956-65 decade.

There has not been a well-defined trend in stumpage prices for most species of timber sold from the national forests since the third quarter of 1966. Prior to that quarter, however, prices have been moving up rapidly for several years.

Log prices have been following the same trends as stumpage prices — with no well defined movement in recent months and a general price level that is substantially above that of the 1950's and early 1960's. The upward shift in price was especially large for hardwoods. For example, yellow birch sawlogs woods run in 1960-61 was $25.00 per 1000 board foot on the stump; on grade prices were $90-110 per 1000 board foot at the mill yard. In 1967-68 the average was $40.00 per 1000 bd. ft. on the stump; delivered logs to the mill yard were $110 to $145 per 1000 board foot.

Yellow birch veneer logs, select grade at the mill yard in 1962 were $170 per 1000 bd. ft. In 1968 the price had increased to $205.00.

Trade statistics for the third half of 1967 indicates that total net imports of processed timber products: i.e., lumber, plywood, veneer, wood pulp and paper and board will be about 1.5 billion cubic feet roundwood equivalent. This is about 8 percent below the 1966 figure.

Log exports in 1967 are estimated at 1.7 billion board feet — about 25 percent above 1966. About 95 percent of the logs exported are softwoods.

Consumption of industrial roundwood, i.e., sawlogs, veneer logs, pulpwood and all other products except fuelwood, is expected to total about 11.7 billion cubic feet in 1967. This is about one percent below the amount used in 1966

Lumber

Lumber production in 1967 is estimated at 35.9 billion board feet. This is half a billion board feet below output in 1966 but 1.3 billion higher than the average for the last decade.

Hardwood lumber production in 1967 is estimated at 7.4 billion board feet. This is about 0.2 billion board feet under 1966 but 0.7 billion board feet higher than the annual average in the 1957-1966 decade.

Pulpwood

Domestic pulpwood production in 1967 is estimated at 56 million cords. This is a 2.7 percent above 1966 cut — an increase that is substantially below the average annual increase of 5 percent which prevailed in the 1962-66 period.

There were general increases in pulpwood prices in the latter part of 1965 and in 1966.

Softwood Plywood

Softwood plywood production is expected to be about 12.8 billion square feet (3/8 inch basis) in 1967 some 1.2 percent above output in 1966 and 3 percent higher than in 1965.

Hardwood Plywood

Hardwood plywood production in 1967 is estimated at 2.1 billion square feet — slightly below the 2.2 billion square feet production in 1966 but 1.4 times output a decade ago.

Veneer Logs

Softwood veneer log production in 1967 is estimated at 5.6 billion board feet. This exceeds the 1966 cut by 1 percent and is some 2.2 times the output of 10 years ago.

Hardwood veneer log production in 1967 is estimated at 745 million board feet — some 5 percent under the 1966 cut. The latest data available indicate that veneer log prices are rising — a continuation of trend that has been upward for several years. By far the largest price increases have been for hardwood veneer logs, especially walnut logs. For example, the price of walnut veneer logs sold in Illinois increased from a range of $200 - $400 in 1961 to $400 - $800 in the winter of 1966-67.

OUTLOOK FOR THE FOREST PRODUCTS INDUSTRIES IN NEW HAMPSHIRE

All indicators are encouraging with regard to demand for all wood products in New Hampshire in 1968.

Softwood Lumber

Continued favorable demand for softwood lumber is expected as housing starts continue to rise in spite of the tightness of money. George A. Christie, chief economist of the F. W. Dodge Corporation commenting on record value of residential contracts awarded at the end of 1967 said: "It proves that where there is great need, people will borrow to finance housing at very high costs." Demand for furniture grade pine continues strong and orders for box lumber are increasing to keep up with the expanding demand due to stepped up military shipments to Vietnam. This expanded demand for lumber has resulted in firmer prices that will remain with us throughout 1968.

Hardwood Lumber

The hardwood demand situation continues to improve. Low furniture inventories and stepped up residential housing starts point to increased demand for hardwood lumber and firmer prices. Quality hardwoods always take care of themselves while lower grades find increasing market in the pallet and box industry. The log supply situation is favorable as the use of rubber tired skidders on integrated logging operations generates greater quantity of logs than under previous logging systems.

Pulp and Paper Industry

The pulp paper industry is proceeding with a major expansion of plant capacity resulting in an overall increase in demand for pulpwood. Hardwood pulpwood, as well as pulp chips from sawmill residue and roundwood are in good demand. Increased productivity of logging operation has more than kept up pace with the demand, thus prices have stabilized and no price changes are likely.

Summary and General Outlook

As last year, 1968 promises to be a good year for the forest related industries in New Hampshire. All indicators point to a favorable demand for wood products. Considerable mechanization, both in the logging and sawmill operations, is helping to overcome the tight labor situation. Efficiencies achieved through mechanization permit better utilization of all products of the forest. The economic advantage of the availability of the New Hampshire timber resource near the rapidly growing markets of the eastern megalopolis is not being ignored. Substantial interest and study are in progress on plant feasibilities for the production of hardboard, particleboard and structural softwood plywood.

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 the 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 THE 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, 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. Under the provisions of the Agricultural Conservation Program, the Federal Government shares the cost of woodland improvement and tree planting with woodland owners. Your County Forester can provide you with the information about the cost-sharing programs.

1967 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 prices can be obtained by contacting the County Forester, Consulting Foresters, or industry representatives. Read carefully the Recommendations for Selling on page 7 before disposing of stumpage, logs, and other forest products.

Belknap County

Species	Quality	Stumpage	Roadside	Delivered
White Pine	Low	$ 8–10	$26–30	$38–40
	Medium	10–15	30–32	40–45
	High	15–20	32–36	42–48
Hemlock and Spruce	All grades	10–16	26–32	38–45
Red Oak	Low	10–12	26–32	40–42
	Medium	12–16	30–36	45
	High	16–20+	36+	55–120
White Birch and	Low	10–12	26–32	38–42
Yellow Birch	Medium	12–20	32–40	45–65
	High	20+	40+	75–125
Rock Maple	Low	10–12	26–32	38–42
	Medium	12–20	32–40	50–75
	High	20+	36+	75–100
Beech	Medium to High	8–12	26–32	40–60
White Ash	Low	10–12	26–32	40–42
	Medium	12–20	30–40	45–55
	High	20+	40+	65–75
Mixed Hardwoods		6–12	26–32	36–42

Carroll County

Species	Quality	Stumpage	Roadside	Delivered
White Pine	Low	$10–15		$25–30
	Medium	14–20	$35–38	40–48
	High	20–25	40	
Hemlock	Medium	12–18	30–35	42
	High	20–22		45
Spruce	Low	15		
	Medium	20	35	45
	High	22		50
Ash	Medium	15		60
	High	26		110
Basswood		8		35–70
Beech	Low	7		
	Medium	10		43
	High	12		50
Beech-Boltwood				20–32/cord
Red Maple	Low to High	7– 9		50
Sugar Maple	Low	12		50
	Medium	17		
	High	26		100
Sugar Maple Boltwood				20–32/cord
Paper Birch	Medium to High	20–26		60–100
Paper Birch Boltwood		10–14/cord		34–40/cord

Carroll County *(Continued)*

Species	Quality	Stumpage	Roadside	Delivered
Yellow Birch	Low	12		60
	Medium	38		
	High	44		110
Up to one half veneer (Yellow Birch)		55		
Oak Veneer	Low	26		80
	Medium	33		100
	High			120
Oak Boltwood		10–12/cord		32/cord

Cheshire County[1]

Species	Quality	Stumpage	Roadside	Delivered
White Pine	Low to Medium	$10–15	$24–35	$32–45
	Medium to High	15–22	35–42	45–50
Hemlock	Low to Medium	8–15	26–35	36–45
	Medium to High	15–18	35–40	45–50
Spruce	Low to Medium	8–15	32–35	40–45
	Medium to High	15–20	35–40	45
Red Oak[2]	Low to Medium	10–15	28–40	35–45
	Medium to High	15–28	40–55	45–70
Yellow (Silver) Birch	Low to Medium	10–15	30–35	45–50
	Medium to High	15–30	35–40	50–70
Paper (White)[3] Birch	Low to Medium	10–15	30–35	40–55
	Medium to High	15–30	35–45	55–90
Sugar (Rock) Maple	Low to Medium	10–15	30–35	45–50
	Medium to High	15–25	35–40	50–65
Red (Soft) Maple	Low to Medium	8–15	28–35	35–45
	Medium to High	15–20	35–40	45–50
Beech	Medium to High	8–15	25–30	35–45
White Ash[2]	Low to Medium	(Not purchased		40–45
	Medium to High	separately except as logs)		45–110

[1] Prices for Brattleboro-Vernon Vermont areas are also included.
[2] Special markets in southeastern Vermont.
[3] Special market in Cheshire County, N. H.

Coos County

Species	Quality	Stumpage	Roadside	Delivered
SAWLOGS				
White Pine	Low	$15		$40–50
	Medium	15	$40	45
	High	15–25		50–60
White Spruce	Low	15	40	50–55
	Medium	15	40	60
	High	15–25	40	65–70
Red Spruce	Low	15	40	50–55
	Medium	15	40	60
	High	15	40	65–70

Coos County *(Continued)*

Species	Quality	Stumpage	Roadside	Delivered
Hemlock	Low	15		
	Medium	15		
	High	15		40
Balsam Fir	Low	15	40	50–65
	Medium	15	40	60–66
	High	15–25	40	67–70
Hard Maple	Low			40
	Medium			70
	High			70–105
Soft Maple	Low			
	Medium			50
	High			80
White Birch	Low			60
	Medium			
	High			100
Yellow Birch	Low			60–80
	Medium			115
	High			120–150
White Ash	Low			40–90
	Medium			115
	High			100–150
White Cedar (over 6" DBH)				
6' to 10' lengths		10	32	40
12' to 16' lengths		10	34–39	42–47
6' logs by the cord			27	33
VENEER				
Yellow Birch	Low	15		70–135
	Medium			
	High	50		275–300
White Birch	Low	10		70–135
	Medium			
	High	40		200–235
Red Oak	Low	10		70
	Medium			
	High	30		120
Elm	Low			75
	High			120
Core Logs	Low	5		70
	High	10		70

Grafton County

Species	Quality	Stumpage	Roadside	Delivered
White Pine	Low	No Market		
	Medium	$12–16	$34–40	$ 40–50
	High	15–25	38–45	45–55
Hemlock		10–16	26–35	36–45
Spruce		10–20	35–45	45–55
Yellow Birch	Sawlog	15–25	35	50–125
	Veneer	25+	45+	120–300
Sugar or Hard Maple	Sawlog	12–25	35–45	50–90
	Veneer	20+	45+	100–140
White Birch	Sawlog	12–25	35–45	50–100
	Veneer	20+	45+	100–210
Soft (Red) Maple	Sawlog	8–12	30+	32–60

Grafton County *(Continued)*

Species	Quality	Stumpage	Roadside	Delivered
Red Oak	Sawlog	10–16	30–40	40–60
	Veneer	20+		60–120
Beech	Sawlog	8–15	30–40	38–60
	Veneer	15+		60–85
White Ash		10+		65–90
Basswood	Sawlog	10–15	30–40	40–50
	Veneer	20+		60–120

Hillsboro County

Species	Quality	Stumpage	Roadside	Delivered
White Pine	Low	$ 9	$28	$30
	Medium	15	35	40
	High	25	40	50
Hemlock	Low	8	25	30
	Medium	14	30	35
	High	17	34	40
Red Oak and	Low	6	25	30
White Birch	Medium	15	35	40
	High	20	40	45
Other Hardwoods	Low	5	25	31
	Medium	12	30	37
	High	18	35	42

Merrimack County

Species	Quality	Stumpage	Roadside	Delivered
White Pine	Low	$12	$25–30	$30–35
	Medium	12–15	30–35	40–45
	High	15+	35+	45+
Hemlock	Low	12	25–30	30–35
	Medium	12–14	30–35	35–40
	High	14+	35+	40+
White Birch	Medium			45–50
	High	25		75
	Bolt (cord)			35
Hard Maple	Medium	25		45–50
	High	30		75
	Bolt (cord)			32
Yellow Birch	Medium	25		45–50
	High	30		75
	Bolt (cord)			35
Red Oak	Medium	12–15	35–40	45–50
	High	15+	40+	50+
Mixed Hardwood	Logs	8–12	28–30	35–40
(Pallet Stock)	Bolt (cord)	2	14–15	18

Rockingham County

Species	Quality	Stumpage	Roadside	Delivered
White Pine	Low	$ 8–10	$26–28	$35–37
	Medium	11–15	29–33	39–41
	High	16–23	34–41	42–50
Hemlock	Medium	11–15	29–33	39–41
Oak	Low	8–10	28–30	38–40
	Medium	11–15	31–35	41–45
	High	16–30	36–50	46–60
Other Hardwoods[1]	Low	8–10	28–30	38–40
	Medium	11–15	31–35	41–45
	High	16–20	36–40	46–50

[1] High prices are paid for white birch, yellow birch, sugar maple, and white ash when the grades are suitable for specialty items such as boltwood and veneer logs.

Strafford County[3]

Species	Quality	Stumpage	Roadside	Delivered
White Pine[2]	Low	$10–12	$28–32	$32–36
	Medium	12–18	32–38	38–40
	High	20–27	40–45	45–50
Hemlock and Spruce	Low	10	28	35
	Medium	12	32	38
	High	18	35	40
Yellow Birch[1]				
White Birch[1]				
Sugar Maple[1]				
Soft Maple	Low	8	32	38
Red Oak[1]	Medium	12	34	40
White Oak	High	18	36	42
Beech				
White Ash[1]				
Basswood[1]				

[1] Higher prices are paid for these species when the grades are suitable for specialty items such as boltwood and veneer logs.
[2] Occasionally higher prices paid for select logs.
[3] Prices based on either International rule or sawmill tally of square edge lumber.

Sullivan County

Species	Quality	Stumpage	Roadside	Delivered
White Pine	Low	$ 8–10	$28–30	$35–40
	Medium	12–15	30–32	40–45
	High	15–18	32–38	45–60
Hemlock	Medium	6–12	26–30	35–40
	High	10–15	30–37	40–45
Spruce	Medium	10–15	30–35	40–48
	High	15–20	35–40	45–50
Yellow Birch	Medium	15–30	35–45	50–80
	High	24–60	45–80	70–120
White Birch	Medium	10–20	30–36	45–60
	High	20–30	36–47	60–75

Sullivan County *(Continued)*

Species	Quality	Stumpage	Roadside	Delivered
Sugar Maple	Medium	15–30	35–45	45–80
	High	24–50	45–70	70–120
Red Oak	Medium	10–20	30–40	45–60
	High	15–25	35–55	60–80
White Ash	Medium	15–20	25–50	45–70
	High	20–30	40–70	70–110
Beech	Medium	15	30–35	40–45
	High	15–20	35–40	45–50
Black Cherry				60–80
Butternut				60–80
Hickory				60–80
Basswood				50–80
Mixed Hardwoods		8–10	25–30	35–40

Table II. Prices Pulpwood Per Cord — Northern New Hampshire

Species	Stumpage	Roadside	Mileage Zone	Mill Yard	C.W.T.[1]
Spruce and Fir					
Rough	$4.00–6.50	$14.50–16.50	0–20	$21.00–21.25	
			21–40	22.00–22.25	
			41+[2]	23.25	
Peeled			Approx.	$7.00/cd. more	
White Pine	1.50–2.50		0–40	17.50	
			41+	18.00	
Hemlock	1.50–2.00		0–20	18.50	
			20–40	20.00	
			41+	21.00	
Tamarack	1.50–3.00		0–20	18.50	
Red, Pitch, Scotch Pine			21–40	20.00	
			41+	21.00	
All Hardwood	1.50–2.00	0–20	17		.3025
		21+	18		.3225
Poplar (if scaled)	.50–1.50			14.00	

[1] When buying hardwood by weight, 5,600 pounds equals one cord.
[2] Contact individual buyers for exact mileage allowance.

Prices of Pulpwood Per Cord — Southern New Hampshire

Species	Stumpage	Roadside	Delivered at Mill
Hardwood			
Rough	$1.50–2.00	$11.00–14.00	
Peeled		17.00–19.00	$24.25–27.75[1]

[1] Price varies depending on distance from mill.

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)	4.50–5.50[2]

[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 Per Cord[1]

	Delivered to Pulp Mill[2]
Pine and Hemlock	$20.00–26.00
Spruce and Fir	22.00–26.00
Hardwood (mixed)	20.00–25.00

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

Table IV. Price Range of Excelsior Wood, Boltwood, Poles, and Posts[1] and Railroad Cross Ties

Species	Stumpage	Roadside	Delivered at Mill
	Excelsior Wood Per Cord		
Poplar Peeled			$22.00– 28.00
Rough			18.00
	Boltwood Per Cord[2]		
White Birch	$8.00–14.00	$20.00–30.00	$29.00– 43.00 per cord
			60.00–105.00 per Mbf.
Beech			20.00– 38.00 per cord
			45.00– 60.00 per Mbf.
Sugar Maple			20.00– 38.00 per cord
			60.00–100.00 per Mbf.
Yellow Birch	8.00–12.00		28.00– 38.00 per cord
			60.00–105.00 per Mbf.
Mixed Hardwood (pallet)	2.00– 5.00	10.00–15.00	18.00– 25.00 per cord

[1] Before cutting any posts and poles or piling, woodland owners should inquire of buyers concerning current specifications and purchasing program.
[2] Price per bolt varies according to diameter and length of bolt. Some mills prefer to buy by the Mbf.

Poles[1, 2]

Length	Class	Minimum Circumference 6 feet from butt (inches)	Minimum Top Diameter (under bark)	Price Roadside per pc.	Price Delivered Merrimack N. H., per pc.
26′	6½″ top	No. spec.		$ 3.00	$ 4.00
30′	6½″ top	No. spec.		4.00	5.00
35′	3	36.5 to 40	8″	9.00	12.10
35′	4	34.0	7″	7.70	10.25
35′	5	31.5	7″	6.60	8.80
35′	6	29.0	6″	5.40	7.20
40′	3	38.5 to 42	8″	11.05	14.70
40′	4	36.0	7″	9.35	12.50
45′	3	40.5 to 45	8″	13.20	17.60
45′	4	37.5	7″	11.30	14.00
50′	3	43.0 to 45	7″	15.00	19.00

[1] Before cutting any posts and poles or piling, woodland owners should inquire of buyers concerning current specifications and purchasing program.
[2] Species: Red (Norway) pine.

Posts[1]

Species	Length	Top Diameter	Roadside Price (Per Post)	Delivered at Mill (Price Per Post)
Red (Norway) Pine and Pitch Pine Specifications	7′	3½″– 5½″		$ .25
	7′	6½″– 8½″	$ .45	.70–.75
	7′	8½″–10½″	.90	1.35
	8′	3½″– 4½″		.30
	8′	4½″– 6″		.40

[1] Before cutting any posts and poles, woodland owners should inquire of buyers concerning current specifications and purchasing program.

Railroad Cross Ties

Grade	Size	Rail Bearing Face	Prices Paid for Green Mixed Oak and Hardwood[1] Ties at Rail Siding (MAINE CENTRAL)		Delivered at Mill	
				MBF		MBF
No. 1	(6″x7″x8′6″)	6″	$1.45	$48.86	$1.55	$52.23
No. 2	(6″x7″x8′6″)	7″	2.00	67.40	2.10	70.77
No. 3	(6″x8″x8′6″)	8″	2.25	66.15	2.35	68.40
No. 4	(7″x8″x8′6″)	8″	2.90	73.21	3.00	75.72
No. 5	(7″x9″x8′6″)	9″	3.25	72.84	3.35	75.08

[1] Beech, Birch, Maple, Cherry.

Table V. Price Range of Fuelwood Per Cord

Species	Stumpage	Roadside	Delivered Buyers Premises
Hardwood[1]			
4′ wood	$1.00–3.00	$12.00–16.00	$20.00–30.00
12″, 14″, 16″ Lengths		18.00–22.00	20.00–32.00
Slabs		5.00–10.00	16.00–20.00

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%).

[1] $3.00–8.00 asked for sawing 4′ wood into stove length.

Table VI. Price Range of Sawdust and Shavings

	Per Cord Green at Sawmill	Per Bale Air Dry
Sawdust	$1.00–5.00 or $.02 to .04 per cubic foot	
Shavings	$2.00–5.00 or $.02 to .04 per cubic foot	.65–1.00

Table VII. Operating Costs (Contract Prices)

	Felling and Bucking per Mbf	Yarding per Mbf	Trucking[3, 4] per Mbf
Logs			
Softwood[1]	$ 6.00–13.00	$ 6.00–15.00	$ 5.00–15.00
Softwood[2]	8.00–10.00	8.00–10.00	8.00–15.00
Hardwood[1]	6.50–13.00	7.00–18.00	6.00–25.00
Hardwood[2]	9.00–12.00	8.00–12.00	9.00–24.00
Pulpwood	per cord	per cord	per cord
Softwood[1]	$ 7.00– 9.00	$ 2.00– 4.50	$ 3.00– 7.00
Hardwood[1]	6.50– 8.50	2.50– 6.00	4.00– 8.00
Hardwood[2]	6.50– 9.00	4.00– 6.00	5.00–11.00
Fuelwood	6.00– 9.00	4.00– 6.00	
Horse Rental	$ 1.00 per cord if the jobber feeds the animal.		
	$ 1.50–2.00 per cord if the chopper feeds the animal.		
Twitching Stump to Roadside	8.00– 9.00 per cord, horse furnished.		
Chain Saw Rental	0.50– 2.00 per hour		
Man with Chain Saw	2.50– 5.00 per hour		
Stump to Stick	45.00–70.00 square edge softwood lumber per Mbf.		
	30.00–50.00 round edge softwood lumber per Mbf.		
	52.00–82.00 square edge hardwood lumber per Mbf.		

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

	Felling and Bucking per Mbf	Yarding per Mbf	Trucking[3,4] per Mbf
Stickings	4.00– 5.00 square edge hardwood lumber per Mbf.		
	3.00– 4.00 round edge softwood lumber per Mbf.		
Custom Sawing	20.00–35.00 per Mbf for softwoods or $15–20 per hour.		
	2.00– 5.00 more per Mbf for hardwoods.		
Planing	10.00–15.00 per Mbf $6.00–16.00 per hour.		
Portable Planer	10.00 per Mbf one face.		
	15.00 per Mbf two faces.		

[1] For Northern New Hampshire.
[2] For Southern New Hampshire.
[3] Intra-state and inter-state rates are sometimes used.
[4] There 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:

Logs	0– 30 miles	$10.00 per Mbf
	35– 50 miles	15.00 per Mbf
	50– 85 miles	20.00 per Mbf
	85–100 miles	25.00 per Mbf
Pulpwood	0– 15 miles	$ 3.00 per cord
	15– 30 miles	4.00 per cord
	30– 40 miles	5.00 per cord
	40– 60 miles	6.00 per cord

Table VIII. Wholesale Rough Air Dried Price for Graded Eastern White Pine[1]

D. Select and Btr.		No. 1 and No. 2 Common	No. 3 Common	No. 4 Common
1x3	$160	$140	$ 90	$70
1x4	160	155	110	70
1x5	160	155	110	70
1x6	210	155	110	75
1x7	210	155	110	80
1x8	220	155	110	80
1x9	220	155	110	80
1x10	250	155	110	80
1x11	250	155	110	80
1x12	290	180	120	80
1x13	290	165	120	80
5/4 to 8/4 — No. 2 and No. 3 and D Select			Add $5 per M	

Rough Air Dried Native Hemlock

Boards			Dimensions 6′	8′	10′	12′	14′	16′
1x4 & 1x5	$80–85	2x3 & 2x4	$50	75	75	75	75	75
1x6 & 1x7	87	2x6 & 2x8	50	75	75	75	75	75
1x8 & up	90	2x10	50	75	75	75	75	75

Spruce — add $5 per Mbf.

[1] Prices may vary somewhat from those quoted depending on market and quantities.

Table IX. Wholesale Price List for White Pine Lumber per MBF at a New Hampshire Lumber Yard

Dressed 1, 2, or 4 sides, Matched or Novelty Siding

Grades	D Select and Better (Clear)	No. 1 and No. 2 Common	No. 3 Common	No. 4 Common
1x4	$185	$170	$125	$80 (Retail Prices
1x6	225	170	125	85 $35–50
1x10	265	170	125	90 more than
1x12	305	195	135	90 wholesale)

Single Clapboard siding — 1x5 only — add $4 per M.
Double Clapboard siding — 1x8 — No. 3c — add $4 per M
— No. 4c — add $7 per M
V Joint, Knotty Pine, No. 2 and No. 3 — add $4 per M.
Pickwick Pattern — No. 3 Knotty Pine — $140.

Eastern Hemlock

Boards			Dimensions					
			6′	8′	10′	12′	14′	16′
1x2 & 1x3	$85	2x3	$60	90	90	90	90	90
1x4	85	2x4	60	90	90	90	90	90
1x5	85	2x6	60	90	90	90	90	90
1x6 & 1x7	87	2x8	60	90	90	90	90	90
1x8 & up	90	2x10	60	90	90	90	90	90

Table X. Price Range of Christmas Trees and Boughs[1]

	Stumpage		Roadside	
	Single	Bundle (2 or more)	Single	Bundle
Pasture Run				
Balsam Fir	$ .35– .65	$ .75–1.25	$ .75–1.50	$2.50–4.00
Spruce	.25– .50	.50–1.00	.50–1.25	1.25–3.00
Improved Trees				
Balsam Fir	.75–1.25	2.50–4.00	1.25–2.75	3.00–5.00
Spruce	.50– .75	2.00–3.00	.75–1.50	2.75–3.50
Plantation Grown Trees[2]. Balsam fir and Spruce	1.00–3.50 or .50 per linear foot.			
Boughs	Per Bundle Roadside		Per Ton Roadside	
Balsam Fir	$ .50–1.75		$40.00–75.00	
Spruce	.50–1.00		40.00–64.00	

[1] Producers should contact buyers well in advance of cutting and arrange for deposits and specific prices, and use a written contract.
[2] Applies to Southern New Hampshire for buyers selected trees.

Companies and Individuals Buying Standing Timber and Logs and Doing Custom Sawing

Listed by County and Town

Names of buyers listed in this bulletin are those who have indicated to the County Foresters that they are in the market now or at a later date to purchase one or more of the following: stumpage, logs, pulpwood, bolts, excelsior wood, piling, posts, and other forest products. Many buyers and operators will give a preference to owners in the purchase of forest products who are interested in harvesting forest products from their holdings in accordance with cutting practices recommended by a County Forester or a private forester. Owners can well consider giving options for further cuts to operators who will make partial cuttings in stands operated according to good forest management.

The following abbreviations are used:

SW	— Softwood	HW	— Hardwood	Stump	— Stumpage
Road	— Roadside	Cus.	— Custom Sawing	Del.	— Delivered at mill
P	— Portable	S	— Stationary	B	— Buyer only
				L	— Logger

Names of forest products, buyers, and other persons listed are offered without recommendations or preference. Omission is not a reflection on the integrity of any person. A list of registered sawmills and of secondary processors is available from the Department of Resources and Economic Development of Resource Development, Concord, New Hampshire.

Belknap County

Town & Operator	Type of Sawmill	Kind of Logs	Stump.	Road.	Del.	Cus.
Belmont						
Contigiani Lumber Co. LaPlante, Albert L. Tilton, N. H.	S	SW & HW	X	X	X	X
N. H. Lbr. Prod., Inc. Dickerson, Gene RFD 1, Laconia	S	SW & HW	X	X	X	X
Gilmanton						
Clairmont, Jos. Gilmanton Corner	S	SW & HW	X	X	X	X
Dawson, Robert RFD 1, Barnstead	S	SW & HW	X	X	X	X
Potter, Robert RFD 1, Barnstead	S & L	SW & HW	X	X	X	X
Gilford						
Gardner, Walter Governors Island RFD, Laconia	B	SW & HW Veneer	X			

Belknap County *(Continued)*

Town & Operator	Type of Sawmill	Kind of Logs	Stump.	Road.	Del.	Cus.
Laconia						
Allen-Rogers Corp. Water St., Laconia	B	HW– -Boltwood	X		X	
Banfill, Ernest 500 Union Avenue Laconia	B & L	SW & HW	X			
Dow, Harry R.F.D. 3 Laconia	S	SW & HW	X			
Tilton						
Daniels, Thomas RFD, Tilton	S & L	SW & HW	X	X	X	X

Carroll County

Bartlett						
Kearsarge Peg Co., W. F. Hodgins and S. E. Davidson, Jr.	S	Birch Bol Bolts	X		X	
Conway						
Conway Supply Co., Inc.	S	SW & HW	X	X	X	X
Cummings, C. B. & Sons c/o Howard Young, Sr.	S	Birch Bolts	X	X	X	
Heath Brothers Center Conway Geo. W. and Noyes K. Heath	B & L	SW & HW	X			
Morrill, Brewster Oak St., N. Conway	B & L	SW & HW	X			
North Conway Lumber Co. North Conway	S	SW & HW	X		X	
Rodrigue, Roland Box 463	B & L	SW & HW	X			
Smith, Wilmer Fryeburg, Me.	B & L	SW & HW	X			
Valladares, Ricardo Box 188 Conway	B & L	SW & HW	X			
Eaton Center						
DeWitt, Sidney	B & L	SW & HW	X			
Jackson						
Dundee Mgmt. Corp. Box 101, Jackson	B & L	SW & HW	X			

Carroll County *(Continued)*

Town & Operator	Type of Sawmill	Kind of Logs	Stump.	Road.	Del.	Cus.
Madison						
Shackford, Jesse, Jr. Silver Lake	B & L	SW & HW	X			
Ossipee						
Claytona, Cotton R.F.D., Center Ossipee	B & L	SW & HW	X			
Portland Dowel Co., Inc. Center Ossipee Fred P. Greenwood	S	HW Bolts	X	X	X	
New England Lumber Co., Inc. Box 126 West Ossipee	S	SW & HW			X	
Welch, Austin E. West Ossipee	B & L	SW & HW	X			
Sanbornville						
Hill, Wallace F. Phone 522-3308	B & L	SW & HW	X			
Rouleau, Samuel Phone 522-3667	B & L	SW & HW	X			
Sandwich						
Bellingham Lumber Co. North Sandwich and Lake Street Bellingham, Mass.	X	SW & HW	X	X	X	X
Bourroughs, Lester, Jr. & Plummer, James Center Sandwich	B & L	SW & HW	X			
Elliot, Sidney Bennett St. North Sandwich	B & L	SW & HW	X			
Tamworth						
Ames, Ronald South Tamworth	B & L	SW & HW	X			
Bickford, Fred M., Jr. South Tamworth	B & L	SW & HW	X			
Hammond, Roy Tamworth		SW & HW	X			
Saunders Brothers c/o Elton Perkins South Tamworth	B & L	Birch Bolts & HW	X	X	X	
Thomas, Bruce Silver Lake	B & L	SW & HW	X			

Carroll County *(Continued)*

Town & Operator	Type of Sawmill	Kind of Logs	Stump.	Road.	Del.	Cus.
Wolfeboro						
Bullis, Russell R.F.D. 1 Wolfeboro	B & L	SW & HW	X			

Cheshire County

Alstead						
Blanchflower Lbr. Corp. P.O. Box 235	S	SW & HW	X		X	
Chesterfield						
Stone, D. S. Lumber Co. Route L, Keene	S	SW & HW	X	X	X	X
Welcome, Paul E.	S	SW & HW	X		X	X
Fitzwilliam						
Damon, Clayton	S	SW & HW	X	X	X	X
Tommila Bros.	S	SW & HW	X			
Gilsum						
Lackey, Frank RFD, Keene	B & L	SW & HW	X			
Duffy, Arthur Gilsum	B & L	SW & HW	X			
Prevost, David, Jr. Box 183, Gilsum	B & L	SW & HW	X			
Keene						
Rivers, Paul E.	B & L	SW & HW	X			
Bardwell, Walter L. Lower Winchester Road Keene	P	SW & HW	X			
Marlboro						
Beauregard, Chas & Sons, Inc. P.O. Box 395	S	SW & HW	X	X	X	X
Cummings, F. T., Inc. Box 185, Troy	S	SW & HW	X		X	X
Miner, Theodore Roxbury Road Marlboro	B & L	SW & HW	X			
Swanzey						
Lane, C. L. Company East Swanzey	S	SW	X		X	

Cheshire County *(Continued)*

Town & Operator	Type of Sawmill	Kind of Logs	Stump.	Road.	Del.	Cus.
Frazier Furniture Co. West Swanzey	S	HW			X	X
Savard, Winfred	B & L	SW & HW	X			
Troy						
Starkey, Eugene	P	SW & HW	X			
Walpole						
Kingsbury, Albert	S	SW & HW	X			
Damaziak, K. Felix	S	HW	X	X	X	X
Winchester						
New England Lbr., Co. Box 124	S	SW & HW	X		X	
Prouty, Leonard Old Chesterfield Road	B & L	SW & HW	X			

Coos County

Berlin						
White Mt. Lbr. Co., Inc. East Milan Road	S	SW			X	
White Mountain Woodcraft Boucher, George, Buyer E. Milan Road	S	HW			X	
Colebrook						
Weir, Harlie	B	HW			X	
Dalton						
Saunders Bros. Clifford Wentworth, Buyer RFD, Whitefield	S	HW		X	X	
Errol						
Lemire, George	S	HW			X	
Groveton						
Crawford, Wilson	S	HW	X		X	
C. B. Cummings & Son, Co.	S	HW			X	

Coos County *(Continued)*

Town & Operator	Type of Sawmill	Kind of Logs	Stump.	Road.	Del.	Cus.
Lancaster						
Alden, Clayton M. RFD No. 1	S	SW & HW	X	X	X	X
Alden, Harold B. RFD No. 1	S	SW	X	X	X	X
Placey, George RFD No. 1	S	SW			X	X
North Stratford						
Plywood Products, Div. of Brown Company	S	HW	X		X	
Washburn Lumber Co. Reuben Washburn, Buyer	S	SW & HW	X		X	
Shelburne						
Poretta Lumber Co.	S	SW			X	
Whitefield						
Savage, Roswell	S	SW			X	X
Bent Bros. Mfg.	S	HW			X	

Grafton County

Ashland						
Gallup Lumber Co. c/o B. Avery, Mgr. Ashland	S	SW	X	X	X	X
Simpson, Delma G.	B	SW & HW	X			
Benton						
Page Hill Farms Pike, N. H.	S	SW			X	X
Bristol						
Williams, R. P. & Son	S	SW & HW	X	X	X	
Campton						
Draper Corp. Beebe River	S	SW & HW	X	X	X	
Mardin, Robert RFD, Plymouth	S	SW & HW	X	X	X	X
Canaan						
Roberts Lbr. Co.	S	SW & HW	X	X	X	X
Morris Lumber Co.	S	SW & HW	X	X	X	X

Grafton County *(Continued)*

Town & Operator	Type of Sawmill	Kind of Logs	Stump.	Road.	Del.	Cus.
Grafton						
Braley, Maurice F.	S	SW & HW	X	X	X	
Hanover						
Lacoss, Niles	S	SW	X	X	X	X
Haverhill						
Heberbrand, Arthur D. (N. Haverhill)	S	SW & HW		X	X	X
Newman Lbr. Co. & Transit Milling Co. Woodsville	S	SW	X	X	X	
Northeast Hardwoods, Inc. N. Haverhill	S	HW	X	X	X	X
Landaff						
Davis, Jack RFD, Lisbon	S	SW & HW				X
Lebanon						
Laro, Leonard	S	SW & HW	X	X	X	X
Goodwin, Edmond RFD, W. Lebanon	B	SW & HW	X			
Lisbon						
Profile Lumber Co.	S	SW & HW	X	X	X	
Littleton						
Poulsen Lumber Co.	S	SW & HW	X	X	X	
Schoff, Arthur	S	SW & HW	X	X	X	
Timber Products Laurence Bean	S	HW			X	
Lyme						
Wagner Woodlands	B & L	SW & HW	X			
Orange						
Hammond, F. C. & Sons	S	SW & HW	X	X	X	
Plymouth						
Ireland Lumber Co.	S	SW & HW	X	X	X	X
United Shank & Finding Division	S	HW	X	X	X	

Grafton County *(Continued)*

Town & Operator	Type of Sawmill	Kind of Logs	Stump.	Road.	Del.	Cus.
Rumney						
Forest Lands, Inc. c/o Roger A. Sanborn, Buyer RFD, Rumney	B & L	SW & HW	X			
Keniston, Raymond	S	SW & HW	X	X	X	
Sanborn, Richard	S	SW	X	X	X	
Tarr, Bert	S	HW	X	X	X	X
Thornton						
Benton, Bert RFD, Campton	S	SW				X
Warren						
Whitcher, Kenneth	S	SW & HW	X	X	X	X
Wentworth						
Allen Rogers, Corp.	S	HW	X	X	X	
King, John M.	B & L	SW & HW	X			

Hillsboro County

Amherst						
Converse & Peaslee c/o Max Sherburne Tyngsboro, Mass.	S	SW & HW	X			X
Bennington						
Berwick & Ford Lbr. Co., Inc. 6 Grover Street Concord	S	SW & HW	X			
Durgin, John D. RFD 1, Newport	P	SW & HW	X	X	X	
Low, Forest	S	SW				X
Brookline						
Tapply, Wm. Lunenburg, Mass.	S	SW & HW	X	X	X	
Goffstown						
Upton, Gerald	S	SW & HW	X	X	X	
Hebert, Lucien Route 4, Box 208 Hooksett	P	SW & HW	X			

Hillsboro County *(Continued)*

Town & Operator	Type of Sawmill	Kind of Logs	Stump.	Road.	Del.	Cus.
Hancock						
Upton, Karl G.	B	SW & HW	X			
Hollis						
Glover, Milton RFD 2, Milford	S	SW				X
Stateline Lbr. Co.	S	SW & HW	X	X	X	
Hudson						
Esty, Ralph Upstock Road Georgetown, Mass.	P	SW & HW	X			
Lyndeboro						
Ballou, C. Co. Douglas Street Uxbridge, Mass.	S	SW	X	X	X	
Manchester						
Bailey, Arthur D. 48 N. Adams Street	B	SW	X			
Plant, Marshall 248 Villa Street	P	SW	X			
Merrimack						
Heath, A. C. So. Merrimack	B	SW & HW	X			
Milford						
Lorden Lbr. Co.	S	SW & HW	X		X	
Matson, Theodore	P	SW & HW	X	X	X	
Whitten, Chester	S	SW	X	X	X	
Wilkins, Harold, Jr. Amherst, N. H.	S	SW	X	X	X	X
New Ipswich						
Dudar, John Box 56, R.F.D. No. 1	S	SW				X
Kurth, Walter	S	SW	X			X
Weare						
Colburn, Robert	S	SW				X

Merrimack County

Town & Operator	Type of Sawmill	Kind of Logs	Stump.	Road.	Del.	Cus.
Andover						
Dalphond Bros., Inc. RFD No. 1	S	SW & HW	X		X	X
Boscawen						
Colby Lumber Co. River Rd., Penacook	S	SW & HW	X	X	X	
Durant, Herbert B. 164 N. Main St. Penacook	S	SW & HW				X
Merrimack Mf. Co.	B	SW	X		X	
Steenbeke & Sons, Inc.	S	SW	X		X	
Chichester						
Reed, Edgar	P	SW	X			
Concord						
Concord Lumber Co. Commercial Street	S	SW	X	X	X	X
Henniker						
Goss Lumber Co.	S	SW	X	X		
Henniker Lumber Co., Inc.	S	SW & HW	X	X	X	
Patenaude, Barry Rush Road	S	SW & HW	X	X	X	
Thelvicki Corp. Henniker, N. H. Thomas Johnson, Buyer	B	HW	X	X	X	
Henniker Hardwood Pallet Co., Inc. Richard French, Mgr.	S	HW	X	X	X	
Hooksett						
Smalley, John R.F.D. No. L, Manchester	S	SW				
Loudon						
Page Lumber Co. RFD No. 8, Concord	S	SW & HW	X	X	X	X
Sanborn, Albin J. RFD No. 2, Pittsfield	S	SW	X			X
Pittsfield						
Barton Bros.	P	SW	X			
Pittsfield Box & Lumber Co.	P	SW	X			

Merrimack County *(Continued)*

Town & Operator	Type of Sawmill	Kind of Logs	Stump.	Road.	Del.	Cus.
Warner						
Hill Box Co., Inc.	B	SW	X			
Nichols, L. Earl	S	SW	X		X	
Sawyer, Clifford A.	B	SW & HW	X			
Webster						
Jones, Paul S. RFD Contoocook	S	SW & HW	X	X	X	X

Rockingham County

Atkinson						
Feuer, Martin M. Main Street	S	SW & HW	X	X	X	X
Brentwood						
Lyford, Lawrence E. RFD No. 2, Exeter	L & B	SW & HW	X			
Candia						
Perkins, Fletcher East Candia	S	SW & HW	X			
Deerfield						
Mathes, Roger V.	P	SW	X			
Derry						
Lumbertown New Derry Road Hudson		SW	X	X	X	
True & Noyes East Derry	S	SW & HW	X		X	
East Kingston						
Sargent Lumber Co.	S	SW & HW	X		X	
Epping						
Johnson Lumber Co., Inc. 875 Elm Street Manchester, N. H.	P & S	SW	X	X	X	
Fremont						
Spaulding & Frost Co. Division of Johnson Lbr., Co., Inc. Edward Jewett, Mgr.	S	SW	X	X	X	
Hampstead						
Collette, Alfred	S	SW	X			

Rockingham County *(Continued)*

Town & Operator	Type of Sawmill	Kind of Logs	Stump.	Road.	Del.	Cus.
Kensington						
Brown, Everett W. RFD, East Kingston	L & B	SW & HW	X			
Cole, George RFD, East Kingston	S	SW				X
Kingston						
Cheney, R. W. & Son RFD, East Kingston	S	SW & HW	X	X	X	
Nottingham						
Fernald, Frederick	P	SW & HW	X		X	X
Raymond						
Campbell, Avery	S	SW & HW	X	X	X	X
Rye						
Rand Lbr. Co., Inc. 511 Wallis Road	S	SW & HW	X	X	X	

Strafford County

Barrington						
Clark, Melvin East Barrington	B	SW	X			
Green, George East Barrington	P	SW	X			
Dover						
Mathes, Valentine	B	SW	X			
Durham						
Woodward, William	S	SW	X	X	X	X
Farmington						
Cutter, Frank M. Spring St., Franklin	S	SW & HW				X
Middleton						
Diprizio, Charles & Sons, Inc. (Middleton) RFD No. 1, Union	S	SW & HW	X	X	X	X
Milton						
Tibbetts Lbr. Co. Farmington	S	SW	X	X	X	X

Strafford County *(Continued)*

Town & Operator	Type of Sawmill	Kind of Logs	Stump.	Road.	Del.	Cus.
Rochester						
Collins, Raymond 16 First Street	P	SW & HW	X	X	X	X
Leroy E. Allen Co. 153 Wakefield Street	P	SW	X			
Tremblay Bros. RFD No. 1, Pickering Rd. Gonic, N. H.	B	HW Bolts	X	X		
Hussey, Robert Flagg Road RFD, Gonic	S	SW & HW	X	X	X	X

Sullivan County

Claremont						
Atkinson-Davis Corp. Box 704	B & L	SW & HW Veneer	X			
Davis & Symonds Lbr. Co. Box 56	S	SW & HW	X		X	
Freeman & Hawkins Winter St. Ext.	S	SW & HW				X
Red Water Lbr. Co. RFD No. 1	S	SW & HW	X	X	X	X
Grantham						
Cote & Reney Lbr. Co.	S	SW & HW	X		X	X
Langdon						
Porter, George RFD Alstead	S	SW & HW			X	
Newport						
Rowe Lumber Co. Box 383	S	SW & HW	X		X	
Wilcox, Sawmill Goshen Rd. Newport	S	SW & HW	X		X	
Plainfield						
Demers, Warren	P					X
Sunapee						
Trow, W. W. & Sons	S	SW & HW			X	X

Out-of-State Stumpage, Log, and Specialty Buyers Who Buy in New Hampshire

	Kind of Logs	Stump.	Road.	Del.	Cus.
Maine					
Andover Wood Products, Inc. Andover, Tel. 34	Y. Birch H. Maple			X	
Crouse, Harry G. N. Fryeburg	SW & HW	X	X	X	
Cummings, C. B. & Sons c/o Norman H. Gray Fish St., Fryeburg	HW (Birch)	X	X	X	
Currier, Owen G. East Fryeburg	SW & HW	X			
Diamond National Corp. McGowan, Neil W., Forester Fryeburg	SW	X		X	
Gerry, E. C. Lovell	SW	X	X	X	
Graves, Aubrey M. Lovell	SW & HW	X			
Gray, Norman Fish Street Fryeburg	SW & HW	X			
Hall & Smith Fryeburg	HW	X	X	X	
Hammond & Son, Thomas E. Hiram	SW	X	X	X Logs by grades	
Hanover Dowel Mill Bethel	HW			X	
Hurd, Irl & George E. Lebanon	SW & HW	X	X	X	X
Kendall Dowel Mill W. Bethel					
LaValley, Albert Sanford	SW (White pine roundwood for chipping)	X	X	X	
Mann, Lewis & Son Bryant Pond	SW	X	X	X	X
Maine Woods Corporation Gunter, Steward W., Buyer Steep Falls	HW			X	
Newton Tebetts, Inc. W. Bethel	HW			X	
Paris Mfg. Co. Box 259 South Paris	HW			X	
Parsons Lumber Co. York	SW	X (over ½ million bd. ft. lots)			

Out-of-State Stumpage, Log, and Specialty Buyers Who Buy in New Hampshire *(Continued)*

	Kind of Logs	Stump.	Road.	Del.	Cus.
Saunders Bros. Westbrook	HW	X		X	
Sewell Lumber Co. Lebanon	SW	X			
Spang, Phillip RFD, Kennebunk	SW & HW	X	(pulpwood)		
Stowel, Silk Spool Co. Bryant Pond					
Massachusetts					
Bartlett, Edmund 240 Main Street Salisbury	SW & HW Tree Length		X	X	
Blair Logging 385 West Street Winchendon, Mass.	Pine		X	X	X
Brown Package Co., Inc. Winchendon	W. Pine	X		X	
Esty, Ralph A. & Sons, Inc. Main St. Groveland	SW & HW	X	X	X	X
Freys Lumber Co. Cross St. Bernardston	SW & HW	X			
Haskell, C. M. & Sons 400 Canal St. Bernardston	SW	X	X	X	X
Johnson Lumber Co., Inc. 340 Main St. Salisbury	SW & HW	X	X	X	
Kelleher, John C., Jr.	HW (cordwood)			X	
Vermont					
Adams, Geo. F. Co., Inc. Lester Adams, Buyer Moscow	Birch			X	
Batchelder, Earl Windham, Vt.	HW		X	X	X
Bradford Veneer & Panel Co.	HW (Veneer)	X	X	X	
Brown, P. K. & Sons, Corp. Claremont, N. H. (Mill in Proctorville, Vt.)	HW	X	X	X	

Out-of-State Stumpage, Log, and Specialty Buyers Who Buy in New Hampshire *(Continued)*

	Kind of Logs	Stump.	Road.	Del.	Cus.
Carroll Snelling E. Thetford	SW & HW		X	X	
Cersosimo Lbr. Co., Inc. RFD No. 3 Brattleboro	SW & HW	X			
Clark Ash Mill V. L. Morse, Buyer Brattleboro	White Ash			X	
Clark, C. E. & Sons c/o Francis Clark 29 Western Ave. Brattleboro	SW & HW	X	X	X	
Colby Brothers Lunenburg	SW			X	X
Eaton Lbr. Co. Rochester	HW	X	X	X	
Fournier, Arthur Chester (for Newport, N. H. mill)	SW	X	X	X	X
Green Mt. Box & Lbr. Corp. White River Junction	SW & HW	X	X	X	
Haniflin, Thomas E. Bellows Falls	SW & HW	X	X	X	
Indian Head Plywood Newport	HW (Veneer)			X	
Malmquist-Wood Products Co. Post Mills	SW & HW			X	
Miles Pond Wood Products, Inc. Miles Pond	HW			X	
National Lbr. Co. Chester	SW & HW	X	X	X	
Peck Lbr. Co. Vernon Howard Mason, Buyer	SW & HW	X	X	X	
River Basket Corp. Putney	Pine, ash, oak logs 8′, 10′, 12′			X	
Sevigny Lbr. Co. North Thetford (Box 389, Labanon, N. H.)	SW & HW	X	X	X	X
Smeal Lumber Co. Vernon	SW & HW	X	X	X	X
Tri-State Timberland Corp. Hartland, Vermont	SW & HW	X		X	
Tenney's Lbr. Mill Saxton's River Claude Tenney, Buyer	SW & HW	X	X	X	

Out-of-State Stumpage and Log and Specialty Buyers Who Buy in New Hampshire *(Continued)*

	Kind of Logs	Stump.	Road.	Del.	Cus.
True Temper Corp. Wallingford and St. Johnsbury	HW		X	X	
Vermont Log Bldg., Inc. Hartland	W. Pine			X	
Weyerhaeuser Co. North Troy & Hancock	HW (Veneer)		X	X	
<u>Quebec — Canada</u>					
Garneau, Jack, Inc. Sawyerville	HW	X	X	X	
LaBranch & Son St. Isadore					
LaLiberte Coaticook					
Louzon & Son East Hereford	SW			X	
Vallee, Paul St. Isadore	HW			X	
Remillard, George A. 24 St. Joseph Blvd. St. Jean — Tel. 348-2535	Ash Logs	X	X	X	

Portable Pulpwood Debarkers

Benjamin, Mariner	40 East Main St., Merrimack, Mass.
Bullis, Russell	Wolfeboro
Flagg, Ira	Lyons Hill Road, Athol, Massachusetts
Gregoire, Albert	RFD No. 2, Wells, Me.
Lapierre, Victor	Chestnut Hill Rd., Farmington
Lee, John E.	49 Logging Hill Rd., Concord
Littlefield, Richard T.	Kennebunk, Me.
Randall, Ralph T.	RFD No. 1, Newmarket
Thelvicki, Inc.	Henniker
Tremblay, Bros.	RFD No. 1, Pickering Rd., Gonic

Planing Mills (Custom)

Astles Lumber Co.	Contoocook
Chase, Benjamin Co.	Derry
Cheney, Roland & Son	Kingston
Cole, George	RFD, East Kingston
Concord Lumber Co.	Commercial St., Concord
Contigiani Lumber Co.	Belmont
Currier, P. L. Lumber Co.	RFD, Milford
Davis, Jack	RFD, Lisbon
Demers, Warren (Portable)	Plainfield
Green Lumber Co.	1253 Hooksett Rd., Manchester
Littlefield Box Co.	Farmington
N. H. Lumber Products, Inc.	Belmont
Rand Lumber Co.	511 Wallis Rd., Rye
Steenbeke & Sons Inc.	Boscawen
State Line Lumber Co.	Box 35, Nashua
Transit Milling Co.	Woodsville
Trow, W. W. & Sons	Sunapee
Woodward, William	Durham

Shingle Mill Operators

Dodge, James	Route 3, East Tilton
Littlefield Box Shop	Farmington

Wood Chipping Plants in New Hampshire

Company	Location	Type
Bent Bros. Mfg. Company	Whitefield	2
Cloutier Lumber Co.	Northumberland	3
Connecticut Valley Chipping Co., Inc.	Woodsville	1 & 1a
Connecticut Valley Chipping Co., Inc. (Littleton Division)	Littleton	1
Davis and Symonds Lbr. Co.	Claremont	2
Draper Corp.	Beebe River	2
Johnson Lumber Co.	Fremont	2
Lakes Region Chipping Corp.	Ashland	1
Lemire Lumber Co.	Errol	2
Lorden Lumber Co.	Milford	2
New England Lbr. Co., Inc.	Winchester	2
Ossipee Lumber Co.	Center Ossipee	1
Washburn Lumber Co.	North Stratford	2 & 2a
Whitcher, Kenneth E., Inc.	Warren	2
White Mountain Lumber Co.	Berlin	2
White Mountain Woodcraft	Berlin	2

Chipping Plant Types

1. Central Chipping Plant (Stationary)
1a. Facilities available for roundwood debarking & chipping
2. Chipper at sawmill (Stationary)
2a. Facilities available for roundwood debarking & chipping
3. Roundwood Debarking & Chipping Plant (Mobile)

Pulpwood Buyers

Company and Individual Buyers	Kinds of Wood Purchased
Benjamin, Mariner 40 East Main St., Merrimack, Mass.	Hardwood
Brown Company, Berlin Hamlin, Mark, Berlin Laurence Dyer, Colbrook Mountain, Claude, 15-2nd St., Cascade Ellis, George, Gorham Pitman, Harold, Conway Monahan, Thomas, N. Stratford Schwartz, Charles, Wilder, Vt. Bullis, Russell H., Wolfeboro	Spruce, fir, hemlock, tamarack, pine, beech, birch, maple, oak, elm, ash, veneer, yellow birch, basswood, poplar, and green hardwood.
Farwell, Thomas, Wells River, Vt.	Spruce, fir, hemlock, pine, hardwood and poplar
Flagg, Ira, Lyons Hill Road, Athol, Massachusetts	Hardwood

Pulpwood Buyers *(Continued)*

Company and Individual Buyers	Kinds of Wood Purchased
Franconia Paper Corp., Lincoln Henry C. Waldo, Lincoln Elwin Macomber, RFD 1, Plymouth Glenn Stevens, Lincoln Philip Comeau, Star Route, Rumney	Spruce and fir; limited amount of hemlock, pine and peeled or rossed hardwood.
Gregoire, Albert, RFD No. 2, Wells, Maine	Hardwood
Groveton Paper Co., Groveton Mountain, Harold, Groveton Johnson, Kenneth, Groveton	Spruce, fir, dry hemlock, and dry hardwood.
International Paper Co. Sawyer, Rhodes, N. Stratford	Spruce, fir (inquire direct) wood
Lapierre, Ulderic, Middleton	Softwood & hardwood
Lapierre, Victor, Farmington	Softwood & hardwood
Lee, John E., 49 Logging Hill Rd., Concord	Hardwood
Littlefield, Richard T. Kennebunk, Maine	Hardwood
Moore, George, Lebanon	Spruce, fir, hemlock, pine, peeled hardwood and rough or peeled poplar.
Oxford Paper Co., Rumford, Maine and Lawrence, Mass. Hartranft, John L., Manager, Wood Dept., Rumford, Maine MacKay, Claude, Asst. Manager, Wood Procurement, Rumford, Maine Ashton, R. V., 158 School St., Concord	Spruce, fir, hemlock, and northern hardwood.
Poulin, Marc, 12 Sunset Drive St. Johnsbury, Vt.	Hardwood
Prevost, David, Jr. Box 183, Gilsum	Hardwood
Randall, Ralph T. R.F.D. No. 1, Newmarket	Hardwood
Ryegate Paper Co., Ryegate, Vt.	Softwood
Thelvicki Corp., Thomas Johnson, Pres. Henniker	Hardwood
Tremblay Bros. RFD No. 1, Pickering Rd., Gonic	Hardwood
Warren, S. D., Co., Westbrook, Me. Robert True	Spruce, white pine and hardwood.

Pulpwood Buyers *(Continued)*

Company and Individual Buyers	Kinds of Wood Purchased
Excelsior Buyers*	
American Excelsior Corp., Lebanon James L. Logan, Manager	Peeled and rough poplar and basswood.
Berry, O. P. Co., Wolfeboro F. Berry, Manager	Peeled poplar and basswood.
Poles, Piling, and Post Buyers	
Hill, Wallace F. Sanbornville, Tel. 522-3308	
Koppers Co., Inc., Wood Preserving Div., Nashua	Norway (Red) pine posts
Merrill, Brewster Oak Street, North Conway	
New England Pole and Wood Treating Corp., Box 36, Merrimack c/o William Footer	Norway and pitch pine, spruce, hardwood, oak, maple, hickory
Miner, Theodore Roxbury Road, Marlboro	Norway (red) Pine
Railroad Tie Buyers	
Koppers Co., Inc., Wood Preserving Division, Nashua Mr. Roland Hoar, Agent	Oak, Birch, Beech, Maple, Cherry

* Excelsior companies prefer peeled wood. The sticks must be 48 inches long and 4 inches minimum diameter at the small end.

Town and Operator	Species and Specifications

Adams, Geo. F. & Co., Moscow, Vt. — white and yellow birch bolts delivered to mill. Write for prices and specifications.

Allen-Rogers Corp., Laconia, N. H., Andover Division, E. Andover, N. H. — buying white birch, hard maple and yellow birch bolts and logs. For prices and specifications contact mill manager, Maurice Call, East Andover, N. H. or David McKay, Allen-Rogers Corp., Laconia.

Allen-Rogers Corp., Laconia, N. H., Wentworth Division, Wentworth, N. H. — buying white birch, hard maple, yellow birch and limited quantities of beech. Logs only. For prices and specifications contact mill manager, Bruce Bumford, Wentworth, or David McKay at Laconia.

Ames, Fred, Warren — Bobin, wood, maple, 10" min. diam.

Bartlett, Edmund, Salisbury, Mass. — oak boat keel stock.

Bixby, Ivan Rumney — red oak, 10" min., diam.

Bradford Veneer & Panel Co., Bradford, Vt. — B. E. Farr, Buyer — Y birch and other veneer logs. Write for specifications.

Brock, Zack & Son, Inc., Bridgewater — white ash and oak, 4' lumber 1¼" thick, 90% clear. Write for prices and specifications.

Concord Woodworking Co., Inc., Lyndonville, Vt. — white cedar posts, poles and logs. Write for specifications.

Cummings, C. B. & Sons, Conway and Groveton — white and yellow birch, stumpage, bolts, roadside and delivered.

Crawford, Wilson, Groveton — white and yellow birch bolts and logs.

Draper Corp., Beebe River — yellow birch, sugar maple, hemlock, pine and spruce logs.

Foote, Thomas, Marlow — 49" hardwood stumpage and bolts all species, 6"–24" in diameter.

Frye, E. B. & Son, Wilton — birch, beech and pine logs 12" min. diameter 6" veneer quality preferable.

Heberbrand, Arthur D., North Haverhill, N. H. — yellow birch, hard maple, basswood. white ash, cherry, oak, beech, soft maple on grade. Write for specifications and prices.

Hopkins John, Jr., Milford — pine bolts — boxes.

Kearsage Peg Co., Bartlett — straight grained white and yellow birch in 4' lengths, 6" top diam. Red heart not over ⅓ diam. of stick. Comparatively free from knots and burls.

Klondike Box Co., Weare — white pine bolts 40" and 48" min. 5" diam.

Labree, Clifton, Wilson Hill Rd., New Boston, N. H. — 50" hardwood bolts, all species, 6" to 20" diam.

LeBlanc, Gerard, 150 River St., Franklin — softwood bolts. Contact for specifications. (Mail RFD No. 1, Hill).

Mooney, G. F. & Son, Farmington, N. H. — write for specifications.

Morse, V. L., Brattleboro, Vt. — white ash logs.

Northeast Hardwoods, Inc., N. Haverhill — buys hardwoods in log and bolt form. Write for specifications.

Northeast Wood Products, Inc., Plainfield, N. H. — white ash, No. 1 logs, handle quality, 5½′, 11′ and 16′ lengths, 6″ min. diam.

Plywood Products, Brown Company, North Stratford, N. H. — Veneer logs; write for specifications.

Portland, Dowell Co., Center Ossipee, Fred Greenwood, Mgr. — hardwood stumpage, birch, beech, maple within 25 miles radius of mill and boltwood delivered to mill.

Saunders Bros., Westbrook, Me. — Concentration Yards at S. Tamworth, N. H., Dalton, N. H., Warren, N. H.; contact Mr. Elton Perkins, Box 34, S. Tamworth, N. H., or Mr. Hugh Hastings, Fryeburg, Me. — birch logs 39″, 48″, 59″, lengths; min. 3″ white wood around red heart, also beech, maple and elm.

Smead Basket Shop, West Swanzey — white ash logs.

Thelvicki Corp., Thomas Johnson, Mgr., Henniker, N. H. — mixed hardwood bolts, log and pallet stock.

United Shank and Findings Div., Plymouth — white birch, length 10′ to 24′ min. top diam. 8″. No more than 2 small knots per 4′ section. Sound, no cracks or crooks.

Vermont Log Bldg. Inc., Hartland, Vt. — white and red pine, 8″-10″ diam., 8′-16′ length.

West River Basket Corp., Putney, Vt. — ash, oak and pine logs 8′, 10′, 12′ 14′ custom sawing.

White Mountain Lumber Co., Arthur Napert, Buyer, Berlin — No. 3 common hardwood lumber for pallets and skids.

Winham, Harold, Alstead — white birch logs.

The United States Situation
Christmas Tree Consumption

Consumption of Christmas trees from domestic forests and plantations in 1968 is expected to be between 35 and 36 million. Annual imports from Canada will remain in the 10 to 12 million range.

The ratio of plantation grown trees to forest grown trees will increase as large scale plantings of the 1950's are reaching harvesting size. Also the average quality of trees reaching the markets is expected to be higher.

CHRISTMAS TREE PRODUCTION IN NEW HAMPSHIRE 1967

The 1967 Christmas Tree Market was very good. All trees were sold early and the prices held up very well. Both these facts can be attributed to one factor, a heavy snowfall in November which made it impossible to cut trees. This early snow is also the reason for the lowest production in many years in New Hampshire.

Producers should watch the market next year, as often after a year such as 1967 early orders are placed in large quantity and the markets become "flooded" with many producers left with cut trees and no money. Ask for and receive a substantial down payment and use a written contract. Your County Forester has a good Christmas Tree Sales Agreement.

Prices for improved trees seem to rise slightly each year. Prices in 1967 for single trees, roadside, were about 20 cents higher than 1966. This trend appeared well before the snow storms so can only be attributed to improved quality and better salesmanship by the producer. "Vexar", a plastic netting, appears to be the coming thing in Christmas Tree packaging. It costs around 20 cents per tree for a 6 to 8-foot tree which compares favorably to hand tied trees.

Christmas Tree Dealers and Producers

(c) Christmas Trees (b) Boughs

Adair, Milton, RFD 2, N. Stratford (c)
Anderson, Henry A., State Line (c)
Arsenault, Oliver, RFD 1, N. Stratford
Bacon, Claude, Beecher Falls, Vt. (c & b)
Bacon, Sam, RFD 1, Dalton, P.O. RFD 1, Littleton (c)
Ball, Harold, N. Stratford (c)
Ball, D. T., RFD, Colebrook (c & b)
Barbin, Romeo, 175 Park Street, Berlin (c)
Batchelder, Stewart, Clarksville (P.O. Pittsburgh) (c & b)
Beloin, Alcide, Hall Street, Pittsburgh (P.O. Beecher Falls, Vt.) (c)
Beloin, Germain, RFD, Colebrook (c)
Benoit, Hector, West Stewartstown (c)
Bessett, Alex, RFD 2, N. Stratford
Biron, Roland, West Stewartstown
Boothman, John, Randolph
Bradley, Walter (Mrs.), Whitefield, RFD (c)
Brissett, Alex, RFD, Colebrook (c & b)
Brockleman, Curtis, Franconia (c)
Brooks, Darwin, Stewartstown (P.O. RFD No. 1), Colebrook, (c)
Brooks, Douglas, N. Haverhill (c)
Brown, Peter, RFD 1, Bristol (c)
Bryant, Walter, South Hill Road, Colebrook (c)
Bunnell, Holman, RFD 3, Colebrook (c)
Carney, Howard, RFD, Colebrook
Chaplick, Adolph, 131 Lowell Road, Hudson, N. H.
Chappell, Colon, Pittsburg
Chappell, Fay, Pittsburgbh (c & b)
Chappell, Fonroe, Pittsburg (c)
Conway, Raymond, RFD 1, Jefferson
Cook, Roland, West Stewartstown (c)
Couture, J. P., Colebrook
Couture, Wilfred, P.O. RFD No. 1, Jefferson (c & b)
Cree, Leighton, Colebrook (c)
Danforth, Benjamin, Colebrook
Day, M. Eva, West Stewartstown (c & b)
Day, Louis, West Stewartstown (b)
Dearborn, Richard, Buckland Avenue, Plymouth (c & b)
Dubois, Paul, RFD No. 1, Colebrook (c & b)
Ducret, Durward, RFD 1, Colebrook
Dunn, Red, Laconia (c)
Emerson, Stephen, RFD No. 1, Lancaster (c & b)
Ferguson, W. W., Colebrook (c)
Fuller, Albert, RFD No. 1, Lancaster
Gagnon, Conrad, Beecher Falls, Vt. (c)
Geller, Frederick F., 26 Hanover St., Keene (c)
Giguere, Paul, RFD 3, Colebrook
Girouz, Yvon, RFD 3, Colebrook
Goodwin, Clyde, RFD 1, Colebrook (c)
Goodrum, Hazen, RFD 1, Colebrook (c & b)
Goodrum, Monty, Colebrook
Gorman, Redmon, RFD, Colebrook (c)
Gray, Tabor, Pittsburg (P.O. Beecher Falls, Vt.) (c)
Grondin, Claude, Stewartstown (P.O. RFD No. 3, Colebrook) (c)
Guay, Alex, West Stewartstown (c)
Haynes, Moody, Bishop Brook (P.O. Beecher Falls, Vt.) (c)
Haynes, Orville, RFD No. 1, Colebrook (c)
Hayward, Robert, Sugar Hill (c & b)
Henson, Everett, N. Haverhill, N. H. (c)
Hibbard, Ellis, Stewartstown (P.O. RFD, Colebrook) (c)
Hollingsworth, Schuyler, RFD 2, Peterborough (c)

Hughes, Thomas and Wendall, RFD, North Stratford (c & b)
Huggins, Harry, Pittsburgh
Hyde, John L., 6 Columbus Avenue, Concord (c)
Jackson, Charles, Colebrook (c)
Jackson, Frank, 59 Prospect Street, Lebanon (c & b)
Jacques, Nelson, Plymouth (c)
Jeffers, Clark, RFD 1, Colebrook
Johnson, Arthur, Hampton (c)
Keach, Douglas, RFD, Colebrook (c)
Keller, John, Bethlehem (c)
Ladd, Wayne, RFD 2, Colebrook
Lakin, Calvin, RFD, Colebrook (c)
Lamoureau, Peter F., Colebrook (c)
Lang, Harry, RFD 1, Colebrook (c)
LaPerle, Roland, Colebrook
Larcomb, Charles, Meadows
LaRochelle, Albert, Groveton, Box 513
Leigh, Robert, RFD 1, Colebrook
Lewis, Darwin, Colebrook
Lord, Henry, Pittsburg (c)
Lynch, F. Robert, RFD 3, Colebrook (c)
Lyons, Albion J., RFD 1, Colebrook (c)
MacLean, Joseph, Colebrook (c)
Mallery, Bayard, c/o John Keller, Bethlehem (c)
Marchessault, Lorrainey, RFD, Colebrook (c)
Marquis, Leon, Pittsburg (P.O. Beecher Falls, Vt.) (c)
Maurais, Adrien, RFD, Colebrook (c)
McAllaster, Roger & Shirley, Stewartstown (P.O. RFD No. 3, Colebrook) (c)
McKinnon, Frank C., South Hill Road, Colebrook (c)
McMann, Harlan, RFD 1, Stratford (c)
Merle Young & Son, Colebrook
Merrill, Lee, RFD 1, Whitefield (c & b)
Morrison, Scott, RFD, Colebrook
Nottingham, Evelene, RFD, East Rindge (c)
Noyes, Chester, RFD 1, Colebrook (c & b)
Noyes, David R., Box 143, Northwood (c)
Olsen, Morris, N. Haverhill (c)
Oleson, Norman, RFD 1, Jefferson (c)
Olimette, Edgar, Colebrook
Parker, B. W., Colebrook (c & b)
Parker, George, Clarksville (c)
Paul Crane Corporation, Lancaster
Paquette, Aldege, RFD, Colebrook (c)
Paquette, Antonio, Pittsburg (P.O. Beecher Falls, Vt.) (c)
Paquette, Emile, Beecher Falls, Vt. (c)
Paquette, Marcel, Twin Mountain (c)
Paquette, Maurice, Colebrook
Perry, Glenn, RFD 1, Colebrook
Philbrick, Walter, 99 Fair Street, Laconia (c)
Placey, Burleigh R., RFD, Colebrook (c & b)
Placey, Claude, RFD No. 1, Lancaster (c & b)
Putnam, Cortland, Winchester (c)
Rainville Brothers Tree Company, Colebrook
Rainville, Robert, Colebrook (c)
Rancloes, Frank, RFD 3, Colebrook (c)
Reed, Kenneth, RFD 1, Jefferson (c)
Reynolds, William N., Stratford (c)
Ricard, James, Canaan (c)
Robertson, Phil, Prime Tree Co., Franconia (c)
Robinson, Claude, Colebrook (c)
Robitaille, Gerald, RFD, Colebrook (c & b)
Rogers, Lawrence R., RFD 1, Whitefield (c)
Russell, Lee, Farmington (c)
Savage, Chester, RFD 1, Lancaster (c & b)
Sawyer, Alfred, Jaffrey (c)
Schander, John, Newmarket (c)

Schwarz, George, Orford (c & b)
Society for the Protection of New Hampshire Forests, State House, Concord
Stiles, Ernest, Milan (c)
Struhsacker, Philip, Flintlock Lodge, Franconia (c)
Tatham, Donald A., Orford (c & b)
Thibeault, Joseph, Hall Stream (P.O. Beecher Falls, Vt.) (c)
Thibeault, Raymond, Beecher Falls, Vt.
Underhill, Oliver R., (see John C. Keller, Bethlehem, N. H.) c/o Standard Vacuum Oil Co., 6 Church Lane, Calcutta, India (c)
Vaitl, Matthew, Jefferson
Wagner Woodlands, Lyme (c & b)
Wallace, Lew, RFD No. 1, Colebrook
Warren, Richard, Barrington (c)
Watson, Gail, Laconia (c)
Watson, Lyle, Belmont (c)
Webber, Carl, Dublin (c)
Weir, Harlie, Colebrook (c)
Wheeler, Claude, Hall Stream (P.O. Beecher Falls, Vt.) (c)
Wheeler, Leonard, Beecher Falls, Vt. (Bishop Brook Road, N. H.) (c)
Wheeler, Raymond, Pittsburg (P.O. Beecher Falls, Vt.) (c)
Yale, William, Sandown, RFD 2, Chester (c)
Yost, Karl, Gilmanton (c)
Young, Merle & Son, Colebrook (c & b)
Zalbielski, Joseph, Winchester (c)

Partial List of Consulting Foresters Practicing in New Hampshire

The services rendered by the Consulting Foresters are indicated by the numbers following their name. The service rendered is keyed to the numbers as follows:

1. Forest Management plan
2. Timber & timber land appraisal
3. Income tax assistance (timber depletion)
4. Timber sales & supervision
5. Timber marking
6. Timber stand improvement work (weeding, thinning, pruning)
7. Tree planting
8. Approved vendor for ACP Forestry practices
9. Forest Land survey
10. Title and boundary search
11. Recreational development
12. Laying out and supervision of woods road construction
13. Owners or operators representative in trespass cases
14. Licensed real estate brokers

Attridge, J. Milton, Antrim — 1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12, 13.

Berti, Robert J., RFD 1, Rumney — 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13.

Boomer, Stephen J., Wt. Mountain Highway, Center Ossipee — 2, 9, 10.

Breckenridge, Walter F., Spruce Street, Newport — 2, 9, 10, 13.

Brown, J. Wilcox, R.F.D. No. 2, Concord — 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 14.

Calhoun, John C., Jr., Gilsum — 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 14.

Catheron Allison G. II, Box 197, Franconia — 1, 2, 4, 5, 6, 7, 9, 10.

Coville, Stanley, Tamworth — 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 13.

Dearborn, Richard, Plymouth (contact directly for services rendered)

Dickenson, Howard, Eaton Center — 1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12.

Dundee Management Corp., P.O. Box 101, Jackson — 1, 2, 4, 5, 6, 7, 8, 9, 10, 12.

Dwyer, Walter W., Jr., Briar Hill Road, Hopkinton Village — 4, 9, 14.

Feuer, Martin M., Main Street, Atkinson — 2, 5, 12, 13.

Hambrook, Francis G., R.F.D., Center Harbor — 1, 2, 4, 5, 6, 8, 9, 10, 12, 13.

House, William P., R.F.D., Marlboro — 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14.

Hyde, Gerald R., 73 South River Road, Bedford — 2, 9, 10, 11, 12, 13.

Johnston, Richard B., R.F.D., Center Harbor (Sandwich) — 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 14.

Keller, John, Bethlehem — 1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 13.

Knickerbocker, Gerald C., Lake Spofford Realty, Spofford Lake, N. H. — 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14.

LaBree, Clifton, New Boston, N. H. — 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14.

Lane, William, Crown Point Road, Rochester — 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 14.

Marshall, Raymond H., Mann's Hill Road, Littleton — 2, 4, 5, 6, 7, 8, 9, 10, 13.

Morse, John H., P.O. Box 65, Wilmot, N. H. — 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13.

Noyes, David R., Box 143, Northwood — 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14.

Poppema, Donald, R.F.D. No. 1, Center Barnstead, N. H. — 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13.

Rastallis, Stanley J., R.F.D. No. 1, Box 227, Newport — 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13.

Thorne, Thaddeus, Center Conway, N. H. — 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14.

Woodward, Howard, 234 Main Street, Berlin, N. H. — 1, 2, 3, 4, 9, 10, 12, 13, 14.

Partial List of Industrial and Municipal Foresters Employed in New Hampshire

Allen Rogers Corp., Laconia
McKay, David

Andora Forest, Stoddard
William Dussault

Brown Company, Berlin

C. S. Kerr	J. D. Bates	G. L. MacIntosh
K. S. Scott	K. S. Norcott	C. W. Rand
M. E. Hamlin	C. Schwartz	D. Dyer

Dartmouth College, Hanover
Robert S. Monahan

Draper Corp., Beebe River
John French — Richard Dearborn

Franconia Paper Corp., Lincoln
Henry C. Waldo — Elwin Macomber

Groveton Paper Company, Groveton

Harold S. Mountain	Louis Ruch	Kenneth Johnson
Laverne Ingersoll	James Bryan	

International Paper Co., N. Stratford
Rhodes F. Sawyer

Manchester Water Works, Manchester
Aldis J. Christie

Davis & Symonds Lumber Co., Claremont
Blynn Merrill

Oxford Paper Co., School Street, Concord
Richard Ashton

St. Regis Paper Co., West Stewartstown

George D. Gates	Frederick W. Cowan
David B. Strathdee	David K. Patrick

Wagner Woodlands, Lyme
Robert Berti

Partial List of Timber Stand Improvement Contractors

These men offer the following forestry services; weeding, thinning, pruning, tree planting.

Bennett, Harry J., RFD No. 3, Winchester, N. H.

Carlson, Walter Jr., Timberland Improvement Co., Wolfeboro, N. H.

Day, Lewis C., High Street, West Stewartstown, N. H.

Dundee Management Corp., Box 101, Jackson, N. H.

Garneau, Leo, Box 148, Lowell, Mass.

Page, Otto, P.O. Box 151, Laconia, N. H.

Philbrick, Walter, 99 Fair Street, Laconia, N. H.

Russell, Lee, Farmington, N. H.

Tatham, Donal, Orford, N. H.

Timberland Improvement Co.; Carlson, Walter, Jr., Mgr., Wolfeboro

Wagner Woodlands, Lyme, N. H.

WHITE PINE TRIAL LOG GRADES AND RELATIONSHIP TO LUMBER GRADE YIELDS

The steady rise in production costs and increased market competition over the years has brought about the need for evaluating the quality of logs coming into the sawmill. Since log quality is directly related to the quality of the lumber that may be produced, bucking logs according to prescribed techniques has become highly desirable.

The practices which were established in the past, in disregarding certain qualitative considerations of raw material, have no place in present day operations. Knowing the profit potential of a log, before it enters the mill, should be a very important consideration to sawmill operators. Good bucking practices, coupled with good supervision of the woods operation, will go a long way toward providing for a profitable operation.

The information presented hereafter is an interpretation of research conducted by the Northeastern Forest Experiment Station, U. S. Forest Service, at numerous sawmills throughout the northeast including New Hampshire and Maine.

Definition of Terms and Instructions for Using the Trial Eastern White Pine Log Grade Specifications

READ CAREFULLY BEFORE USING SPECIFICATIONS IN LOG GRADING

1. These trial white pine log grade specifications are the result of a series of research based log quality studies conducted by the Northern Softwood Log and Tree Grade Project of the U. S. Forest Service for the purpose of developing cut log grade specifications for Eastern white pine. Testing of these specifications has been completed throughout the range of the species and, although minor modifications may be found necessary before final approval, the specifications appear to perform adequately for the species throughout its range. Grade yields (Performance Table) based on a total of 1,366 logs processed at nine sawmills in the Northeast are presented.

2. Weevil Injury: Evidence of weevil injury can be recognized by moderate to severe crook at point of injury. Limbs at point of injury are usually large and acute angled. Crook is more severe in small logs and less evident in large logs. Logs showing none of these characteristics will be considered free of weevil injury.

3. Sweep: Is the greatest deviation of the longitudinal log axis from a straight line connecting centers of each end of log. It should be measured to the nearest whole inch, and is analogous to the middle ordinate of an arc. Expressed as percent it is: =

$$\frac{\text{Total sweep in inches} - 2}{D} \text{ for 16' logs and}$$

$$\frac{\text{Total sweep in inches} - 1}{D} \text{ for 8' logs.}$$

Crook: Differs from sweep in that it is a sudden curve or bend (deviation) from a straight line. (axis of log). The percent loss due to crook is determined by the formula:

$$\text{Crook percent} = \frac{\text{deviation in inches}}{\text{Log diameter inches}} \times \frac{\text{Length of log affected (feet)}}{\text{Total length of log (feet)}}$$

4. All deductions: This item includes sweep and crook deduction and that for scalable defect (rot, shake, etc.). Deductions for the latter are made according to Standard Forest Service practice.

5. Face: A face is quarter-cylindrical, running full length of the log. A *good* face is one that is free of log knots of any type over ½" DOB, overgrowths indicating larger knots, and conks or punk knots. A half face is one that runs for one half the length of the length of the log. *Good* half faces can be in either half of a full face. Half faces in 10 foot logs must be at least 6 feet long.

6. Log knots: a. *Definition* — Log knots are defined as branches, branch stubs, flush branch cross sections and branch sockets. They are visible and identifiable as such. Outside of weevil damage signs, these features are the only ones used in evaluating log surface character. They may be live (or recently alive) or dead. Sometimes, in either state, they have rotten centers surrounded by sound wood.

Sound red knots — Are any visible branches, stubs or sockets which result from living branches or branches that have been dead but a short time.

Dead or black knots — Are visible branches, stubs or sockets not conforming to definition of sound red (live) knots.

b. Size — Average diameter of knots should be measured at point where limb would normally be trimmed. Size to be considered is that portion of a knot that would drop out if it were loose; e.g., in live red knots only the red heart wood portion would be considered in determining knot size. In dead (black) knots the entire limb is considered. Disregard all knots less than ½" in diameter in all grades.

c. *Position effect* — Dead log knots are often interspersed with live ones. In this case, (generally, where they are found above the first whorl of live log knots) *they are classed as live.*

7. Overgrown log knots: (Overgrowths). This is a disturbance in the bark that has a definite and distinctive pattern. Size of underlying branch stub can be estimated by observing adjacent visible log knots. Are considered the same as black knots in grading.

8. Conks and punk log knots: A conk is the fruiting body of a wood rotting fungus (generally *Trametes pini*). A punk log knot is one that is completely rotten and in which the brown mycelial mass of the rot fungus is visible.

9. Log end defects: *Red rot* — (Incipient and advanced stages of *Fomes pini*) are commonly associated with over-mature or badly weeviled white pine trees. It can usually be recognized by its reddish brown to pink color. Do not confuse with brown cubical rot usually confined to butt of trees.
Ring shake — A separation of wood fibers along an annual ring. This condition is also usually associated with older trees.
The heart center — of a log will be defined as the central core of a log having a radius equal to ⅕ the diameter of the log.

10. Bark distortion: When a limbstub or other bark surface characteristic becomes deeply buried, the definition pattern of bark disturbance is lost. This type of noticeable bark break is called a bark distortion.

White Pine Log Grades
TRIAL SPECIFICATIONS (Revised)

Grading Factor		Log Grade No. 1	Log Grade No. 2	Log Grade No. 3	Log Grade No. 4
Minimum log scaling diameter (inches)		12" or 14"	6"	6"	Includes all logs not qualifying for Grades 1, 2, and 3 that are at least 6" in diameter, 8 feet long and judged to have at least one-third of their gross scale volume in sound wood suitable for manufacture into standard lumber.
Minimum log length* (feet)		With 4 good faces 8'+ all others – 10'+	8	8	
Maximum weevil injury[2]		None permissible	None permissible	One (1) only in 8' logs; Two (2) only in 10'+ logs	
Maximum sweep or crook allowance[3]		20%	30%	40%	
Maximum total scaling deduction[4]		50%	50%	50%	
Minimum face requirements[5]	12" & 13" diameter logs	Four (4) full length good faces	6" to 11" diameter logs meeting face requirements of Grade 1 logs	Not applicable	
	14" plus diameter logs	Two (2) full length or four (4) 50% length good faces			
Maximum diameter of sound red log knots on 3 best faces[6]		Or: If sum of the diameters of sound red log knots plus 2 times the sum of the diameters of dead black knots is equal to or less than the diameter of the log in inches	Or: Not to exceed 1/6 scaling diameter and no greater than 3 inches	Not to exceed 1/3 scaling diameter and no greater than 5 inches	
Maximum diameter of dead or black log knots and overgrown limbs over 1/2" diameter on 3 best faces[6] [8]			*Butt logs* — not to exceed 1/12 scaling diameter and 1 1/2" *Upper logs* — not to exceed 1/10 scaling diameter and 1 1/2"	Not to exceed 1/6 scaling diameter and no greater than 2 1/2 inches	

Conks and punk knots of any size[8]	Degrade one grade if present on one face. Degrade two grades if present on two faces. Degrade three grades if present on three or more faces. (In no case degrade below No. 4 unless log is judged to be less than ⅓ sound).		
Log end defects (red rot and ring shake) outside heart center of log[9]	Degrade one grade if present in 2 quarters of log ends. Degrade two grades if present in 3 or 4 quarters of log ends and degrade three grades if present in 5 or more quarters. (In no case degrade below No. 4 unless log is judged to be less than ⅓ sound).		
Bark distortion[10]	Ignore	Ignore	Ignore

* Plus Trim

References are made to definitions and instructions that follow:

GENERAL GRADING PROCEDURES

Scaling

Scaling logs is the first step in grading. This not only gives estimate of contents, but gives some of the data needed for applying grade specifications. Scaling should be carefully done, according to standard practice, which practice should conform to that used in developing the rules. This is:

Diameter measurement: Average small end, inside bark.
Length measurement: Longest included full foot.
Deduction for sweep calculated as follows (Rule 3):

(a) Determine actual sweep in inches and subtract 2.

(b) Divide by log diameter; answer is percent deduction for 16′ log. For 8′ logs subtract 1 from actual sweep determination and divide by diameter.
For intermediate log lengths subtract proportionate amount.

Deductions for cull:

(a) Interior cull.

1. Deduction may be made by using the squaring system as follows:

$$\frac{(\text{Width}'' + 1'') \times (\text{height}'' + 1'') \times \text{length}'}{15}$$

This gives deduction for Scribner Rule; for other rules modify deduction as follows:

		International	*Doyle*
Logs	8″ – 14″ multiply by	1.2	0.7
	15″ – 20″ multiply by	1.1	0.9
	21 + multiply by	1.0	1.0

2. It may be made by using the revised scaling practice developed by Grosenbaugh of the Southern Forest Experiment Station. This system works as follows (Rule 5):
   (1) Enclosed defect in circle or ellipse (say, 7″ x 9″ on a 20″ log).
   (2) Measure short and long axis of this in inches and add 1″ each measurement (8″ x 10″).
   (3) Determine for each augmented length, the percent this is of log diameter in inches — minus 1, rounding off to nearest 10% (8/19 = 50%; 10/19 = 50%).
   (4) Determine length of defect as % of log length (say, ¼ or 25%).
   (5) Multiply long axis %, short axis %, and length % together; resulting answer is percent cull (50x50x25 = 6%).

(b) Other cull.
Procedures given in the National Forest Scaling Manual should be used for making these deductions. Grosenbaugh's rules 1, 2, and 4 cover these.

Relation of Cull to Log Defects

In general, it should be understood that making a cull deduction from the scale of a log up to the limits indicated in the grading rules does not up-grade the log, even though in some cases it may appear that eliminating a rotten heart center (culling) would raise the average grade of usable lumber produced. The culled portion itself, may or may not affect the average value of the merchantable lumber in the log. When it does it is a grade defect.

PREDICTING LUMBER GRADE YIELDS

Northeastern Conditions

Assuming that the Log Grading System is applied properly, logs in each log grade have a distinct and predictable lumber grade yield.

Any one particular log, within the grades described above, will not necessarily yield the predicted percentages of lumber grades but *the average yield of a number of logs,* in any one grade, will approximate the predicted values within a 5 percent accuracy.

Predicted Lumber Grade Yields (in percent)
For White Pine Log Grades

		Lumber Grade Yield					Basis		
Log Grade	Log Diameter Class	D & Btr.	1 & 2C	3C	4C	5C	No. Logs	Lumber Volume	Overrun[1]
	Inches			*Percent*				*Bd. Ft.*	*Percent*
No. 1	12–13	39	30	29	2	0	7	718	+2.6
	14–15	45	26	21	8	0	12	1,653	−2.2
	16+	51	13	22	13	1	19	4,221	+1.0
	Aver.	48	18	22	11	1	38	6,592	+0.4
No. 2	6–11	13	33	41	13	[2]	98	4,621	+1.4
	12–13	17	26	41	15	1	32	2,898	+0.4
	14–15	16	11	42	29	1	15	2,111	−1.4
	16+	18	9	36	36	2	28	5,323	−2.7
	Aver.	16	20	39	24	1	173	14,953	−0.8
No. 3	6–11	1	9	51	38	1	488	14,999	+4.1
	12–13	3	3	40	52	2	120	9,203	−1.4
	14–15	4	3	37	55	1	70	7,969	+0.4
	16+	6	2	26	64	2	73	12,844	−1.7
	Aver.	3	4	39	53	1	751	45,015	+0.5
No. 4	6–11	1	1	20	74	4	245	6,898	+5.3
	12–13	1	[2]	14	78	7	52	3,214	+3.3
	14–15	2	1	11	75	11	48	4,799	−1.1
	16+	4	[2]	7	74	18	59	9,707	−2.0
	Aver.	2	[2]	12	74	12	404	24,612	−0.3

[1] Based on International ¼" Log Rule.

Overrun by Diameter		
+4.1%	Logs	6"-11"
−1.4%		12"-13"
−0.5%		14"-15"
−1.5%		16+

[2] Less than one percent.

FOREST SERVICE HARDWOOD LOG GRADES

Historically, log quality has been evaluated by log grading systems based on judgment and experience. The hardwood log grades for standard lumber, as developed by the Forest Products Laboratory, are based on an analysis of the relationship between log characteristics and end product yield.

This system enables foresters, timber sellers, and timber buyers to separate, from woods-run hardwood logs, those logs suitable for manufacture into factory grade lumber and to rank the logs into categories of high-, medium-, and low-quality yields.

HARDWOOD LOG GRADES FOR STANDARD LUMBER

Three grades are considered sufficient for commercial evaluation of factory lumber logs. Analysis of the basic data made it possible to establish specifications so that each log grade attracts to itself logs having similar standard lumber grade yields and values. Each of the three log grades — high, medium, and low — has corresponding lumber grade yields with high, medium, and low average values.

The log grade specifications are correlated closely with the specifications for standard hardwood lumber grades. A board is graded on the basis of clear-faced or sound cuttings of a minimum size to comprise a certain fraction of the area of the board; logs are similarly graded on the clear cuttings of a definite minimum size comprising a specified fraction of the area of one-quarter of the circumference of the log.

The log grade specifications are listed on page 56.

HOW TO USE THE LOG GRADES

The grading of logs is not as difficult as it may first appear. The basic requirements are a knowledge of surface indicators of interior defect, and a knowledge of the log grade specifications. Knowledge of surface indicators can be gained by a careful study of Agriculture Handbook No. 244, "Grade Defects in Hardwood Timber and Logs"[1] and observation in a sawmill. Knowledge of the log grade specifications and their interpretation can be gained by studying "A Guide to Hardwood Log Grading"[2] and by experience.

With experience, log grade can be determined in most cases in the process of scaling the log. Even in the logs where grade is not immediately apparent, it is seldom necessary to lay out the actual cuttings. Usually measurements to see whether the cuttings conform to the minimum size will be enough to determine the grade.

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[1] Lockard, C. R., Putnam, J. A., and Carpenter, R. D. Grade defects in hardwood timber and logs. U. S. Dept. Agr., Agr. Handb. 244, 39 pp. 1963.

[2] Northeastern Forest Experiment Station. A guide to hardwood log grading. U. S. Forest Serv., Northeastern Forest Exp. Sta., Upper Darby, Pa. Revised 1965.

Faces

After taking into account the size and soundness of the log, the first step in grading is to visually divide the surface of the log (full length) into four equal faces, so oriented as to give the greatest possible number of good faces. The influence of a given defect should be confined to one grading face wherever possible instead of permitting it to extend over two faces.

Clear Cuttings

The next step is to establish the grade of the best three faces on the basis of the clear cutting requirements. Only when two of these faces grade higher than the third is it necessary to examine the fourth face to be sure that the best faces have been selected. The grade of the log is that of the lowest of the faces chosen as the three grading faces.

The clear cuttings are taken as the portions of the length of the face that lie between defects or between the ends of the logs and defects and extend over the full width of the face. (Refer to Table 2 for the classification of defects.)

Knots, overgrown knots, grub holes, etc., either projecting or recessed, are excluded from clear cuttings.

Sound end defects, such as medium-to-heavy mineral stain in hard maple and yellow-poplar and slight dote in yellow birch on the small end of the log, shall not exceed one-half the log diameter for Grade 1 logs and for Grade 2 logs under 16 inches, and not exceed three-fifths the log diameter on Grade 2 logs 16 inches and larger. Excess will lower the log one grade. When the defect is not concentrated in one spot, its extent is taken as the sum of the individual occurrences.

Slight stain is not a defect.

Full-length unsound end defect outside the heart zone (taken as one-fifth of the diameter from the pith), when extending more than one-half the distance between the heart zone and the bark, prevents taking clear cuttings on the face surface overlying it. When it extends less than the full log length, cuttings can be taken over a third of its estimated length from the end tapering out.

Forest Service Standard Specifications For Hardwood Factory Lumber Logs

Grading Factors		Log Grades							
		F1			F2				F3
Position in tree		Butts only	Butts & uppers		Butts & uppers				Butts &
Diameter, scaling, inches		[1]13–15	16–19	20+	[2]11			12+	8+
Length without trim, feet			10+		10+	8–9	10–11	12+	8+
Clear cuttings[3] on each 3 best faces	Length, min., feet	7	5	3	3	3	3	3	2
	Number, maximum	2	2	2	2	2	2	3	No limit
	Fraction of log length required in clear cutting[4]	5/6	5/6	5/6	2/3	3/4	2/3	2/3	1/2
Sweep and crook allowance (maximum) in percent gross volume	For logs with less than 1/4 of end in sound defects		15%			30%			50%
	For logs with more than 1/4 of end in sound defects		10%			20%			35%
Total scaling deduction including sweep and crook			[5]40%			[6]50%			50%
End defects:		See instructions page 51.							

[1] Ash and basswood butts can be 12 inches if otherwise meeting requirements for small No. 1's.
[2] Ten-inch logs of all species can be No. 2 if otherwise meeting requirements for small No. 1's.
[3] A clear cutting is a portion of a face free of defects, extending the width of the face.
[4] See table 1.
[5] Otherwise No. 1 logs with 41–60% deductions can be No. 2.
[6] Otherwise No. 2 logs with 51–60%deductions can be No. 3.

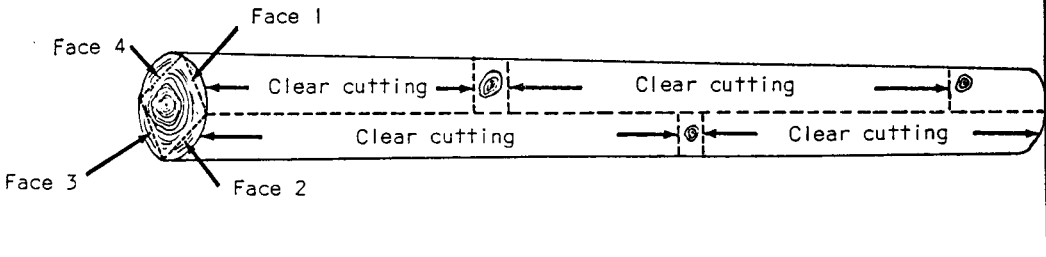

Table 1. Clear Cutting Requirements

Nominal log length	*Fraction of log length required in clear cutting*			
Ft.	5/6 Ft.-In.	3/4 Ft.-In.	2/3 Ft.-In.	1/2 Ft.-In.
8	—	6–0	—	4–0
9	—	6–6	—	4–6
10	8–4	—	6–8	5–0
11	9–2	—	7–3	5–6
12	10–0	—	8–0	6–0
13	10–10	—	8–8	6–6
14	11–8	—	9–4	7–0
15	12–6	—	10–0	7–6
16	13–4	—	10–8	8–0

Table 2. Classification of Log Surface Abnormalities In Grading Factory Logs

Abnormalities	
Bulges:	
Butt	(1)
Stem	(1)
Bumps:	
High	Defect
Low	(3)
Burl	Defect
Butt scar	(1, 4)
Butt swell	No defect
Canker	(1)
Conk	Defect
Epicormic and adventitious bud clusters	(2, 4)
Flanges	No defect
Flutes	(4)
Fork	(1)
Gum lesions	(3)
Holes:	
Large	Defect
Medium	
Bark, scarred, fresh	No defect
Bark, scarred, old	Defect
Birds, light	No defect
Birds, heavy	Defect
Grub	Defect
Increment borer	Defect
Tap	Defect
Small	(4)
Log knots:	
Sound	Defect
Unsound	Defect
Limbs	
Overgrowths:	
Knots and bark pockets	Defect
Insects	Defect
Bird peck	Defect
Bark distortions	Defect

Table 2. Classification of Log Surface Abnormalities In Grading Factory Logs *(Continued)*

Abnormalities	
Seams	(4)
Splits	(4)
Surface rise	No defect
Wounds:	
New	No defect
Old	(4)
Dote	(6)
Double pith	(1)
Grease spots	(7)
Grub channels	(7)
Gum spots	(3)
Loose heart	(6)
Mineral streak and stain	(7)
Pin worm holes	Defect
Rot	(6)
Shake:	
Ring	(6)
Wind	(6)
Short worm holes	Defect
Soak	(7)
Spider heart	(6)
Spot or flag worm holes	Defect

Key to Class

1. Defect if not cut off.
2. Defect if large.
3. Defect if certain species involved.
4. Defect if not superficial.
5. Defect if large and deep.
6. Defect if not confined to heart center.
7. Defect if concentrated.

End defects, such as bird peck, worm holes, spot wormhole stain, mineral spots or streaks, and such unsound defects as grub holes and bark pockets are considered when outside the heart zone, the heart zone being taken as extending one-fifth the diameter of the log from the pith. When these defects affect one-half the radial distance between the heart zone and the bark under three faces of the log at one end, or two faces at both ends, a log of Grade 1 or 2 shall be dropped one grade. When there is less than 3 inches either between the heart zone and the defect, or between defects, the portion will be included with the defect.

For seams, frost cracks, and fire or other scars whose depth exceeds one-fifth the diameter but not extending the full length of the log, clear cuttings can be taken over one-third of its length from the end tapering out.

Bird pecks are considered defects in cuttings of Grade 1 and Grade 2 logs when the area contains more than four bird pecks per square foot. Also when the depth of the bird peck on the end of the log is less than one-tenth of the log diameter, it is not considered a defect.

Sweep, Crook, and Cull Deductions

Logs that involve deductions in scale in excess of percentages allowed for each grade are dropped one grade. All deductions that are made by enclosing the defect in a rectangle are computed according to the

National Forest Scaling Handbook[3] by multiplying width, height, and length of defect together and dividing by 15. The maximum percentage deduction for this type of cull as provided for in log grade specifications will apply to Scribner Decimal C. Doyle, or International rules. However, the percentage deduction arrived at when Doyle or International scale is used in grading should be multiplied by the following factors to give the approximate percentage deduction for grading:

International Rule

(Inches)	*(Factors)*
Logs 8 to 14	1.2
Logs 15 to 19	1.1
Logs 20 to 36	1.05
Logs 37 and up	None

Doyle Rule

(Inches)	*(Factors)*
Logs 8 to 11	0.6
Logs 12 to 13	.8
Logs 14 to 20	.9
Logs 21 to 31	None
Logs 32 to 40	1.1

For sweep, the rule-of-thumb given in the Handbook is replaced by the provision that the percentage deduction is taken as the maximum sweep minus 2, divided by log diameter.

Measurement of Log Diameter and Length

Average diameter inside the bark on the small end of log is used in scaling and grading. The length for figuring the necessary clear cuttings is dropped to the full foot, but the cuttings are allowed to include the overlength.

LUMBER GRADE YIELDS

Detailed lumber grade yields by species, log grade, and diameter are given in "Hardwood Log Grades for Standard Lumber.[4]"

Table 3 shows average lumber grade yields and respective lumber values obtainable per MBF of logs of different grades for three common hardwood species.

[3] U. S. Forest Service. National Forest scaling handbook. U. S. Dept. Agr. Forest Serv. Handb. 2443. 71. 1964.

[4] Vaughn, C. L., Wollin, A. C., McDonald, K. A., Bulgrin, E. H. Hardwood Log Grades for Standard Lumber. U. S. Forest Service Research Paper FPL 63. 1966.

Table 3. Average Lumber Grade Yields for Logs of Selected Species, In Percent

Log Grade	Lumber Grade					Lumber Value Feb. 11, 1967* (average)
	FAS	SEL	1C	2C	3C	
			Yellow Birch			
1	36	7	27	11	19	$218
2	8	5	30	21	33	146
3	1	1	12	19	67	91
			Hard Maple			
1	25	13	30	12	20	$157
2	6	6	29	21	38	116
3	—	1	14	25	60	85
			Beech			
1	25	5	37	13	20	$117
2	8	4	35	20	33	99
3	1	1	17	26	55	78

* The Commercial Bulletin, Boston — Northeastern Hardwoods

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 a 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 $4\frac{1}{2}$ 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 Diameter 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)	*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	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

Number of Four-Foot Bolts Contained in a Standard Cord by Bolt Diameter[1]

Bolt Diameter in inches	*Rough Wood*	*Peeled Wood*
4	244	270
5	156	175
6	109	120
7	79	88
8	61	68
9	48	54
10	39	43
11	32	36
12	27	30
13	23	26
14	20	22
15	17	19
16	15	17

[1]Average figures which will vary somewhat with the method of piling and the characteristics of the material.

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	
1 Standard cord of pulpwood, peeled	= 85 cubic feet of solid wood (softwood)
1 Standard cord of pulpwood, rough	= 95 cubic feet of solid wood (softwood)
1 Standard cord of pulpwood, peeled	= 85 cubic feet of solid wood (hardwood)
1 Standard cord of boltwood	= 95 cubic feet of solid wood (hardwood)
	= 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)

Number of Cords of Round Wood Required for 1 M Bd. Ft. of Lumber

Bolt Diameter inches	*Number of cords*
5	2.20
6	2.18
7	2.10
8	2.07
9	2.01
10	1.94
11	1.87
12	1.81

Number of Bd. Ft. of Lumber per Cord of Round Wood

Bolt Diameter inches	*Number of Bd. Ft.*
5	454
6	459
7	476
8	483
9	498
10	515
11	535
12	552

Comparative Volume Table[1] for Log Rules Commonly Used in the Northeast

Name of Rule	*Volume in board feet*												
	Diameter in inches												
	6	8	10	12	14	16	18	20	22	24	28	32	36
International (¼")	20	40	65	95	135	180	230	290	355	425	585	770	980
Scribner Decimal "C"	20	30	60	80	110	160	210	280	330	400	580	740	920
Scribner				79	114	159	213	280	334	404	582	736	923
Doyle or Ontario	4	16	36	64	100	144	196	256	324	400	576	784	1024
Bangor	23	41	69	100	137	182	238	300	369	444	609	792	
Holland or Maine	20	44	68	105	142	179	232	302	363	439	614	795	1026
Vermont	24	43	66	96	130	170	217	267	320	384			
New Hampshire or Blodgett Caliper	35	54	78	106	139	176	217	262	313	367	489	628	785

[1] The values given are for 16' logs.

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

AVAILABLE HEAT FROM WOOD

The heat value of a substance is determined by the amount of heat, expressed in Btu (British thermal units) produced in burning it to total ash. Since different woods are fundamentally alike in the chemical composition of the wood substance, at the same moisture content, the heat value obtained from unit weights of all woods, regardless of species, is about the same. Exceptions are woods containing resins, oils and gums.

Heat Available from 1 Lb. of Moist Wood

Moisture content of wood, %	
Ovendry basis	*Available heat, Btu*
0	7098
5	6701
10	6341
15	6011
20	5710
25	5432
30	5176
40	4718
50	4322
75	3529
100	2934
150	2101
200	1546
250	1149

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, million Btu*	*Equivalent in coal tons*
	Air-dry	*Air-dry*	*Air-dry*
Ash	3,440	20.0	0.91
Aspen	2,160	12.5	0.57
Beech, American	3,760	21.8	0.99
Birch, yellow	3,680	21.3	0.97
Douglas-fir	2,400	18.0	0.82
Elm, American	2,900	17.2	0.78
Hickory, shagbark	4,240	24.6	1.12
Maple, red	3,200	18.6	0.85
Maple, sugar	3,680	21.3	0.97
Oak, red	3,680	21.3	0.97
Oak, white	3,920	22.7	1.04
Pine, eastern white	2,080	13.3	0.60
Pine, southern yellow	2,600	20.5	0.93