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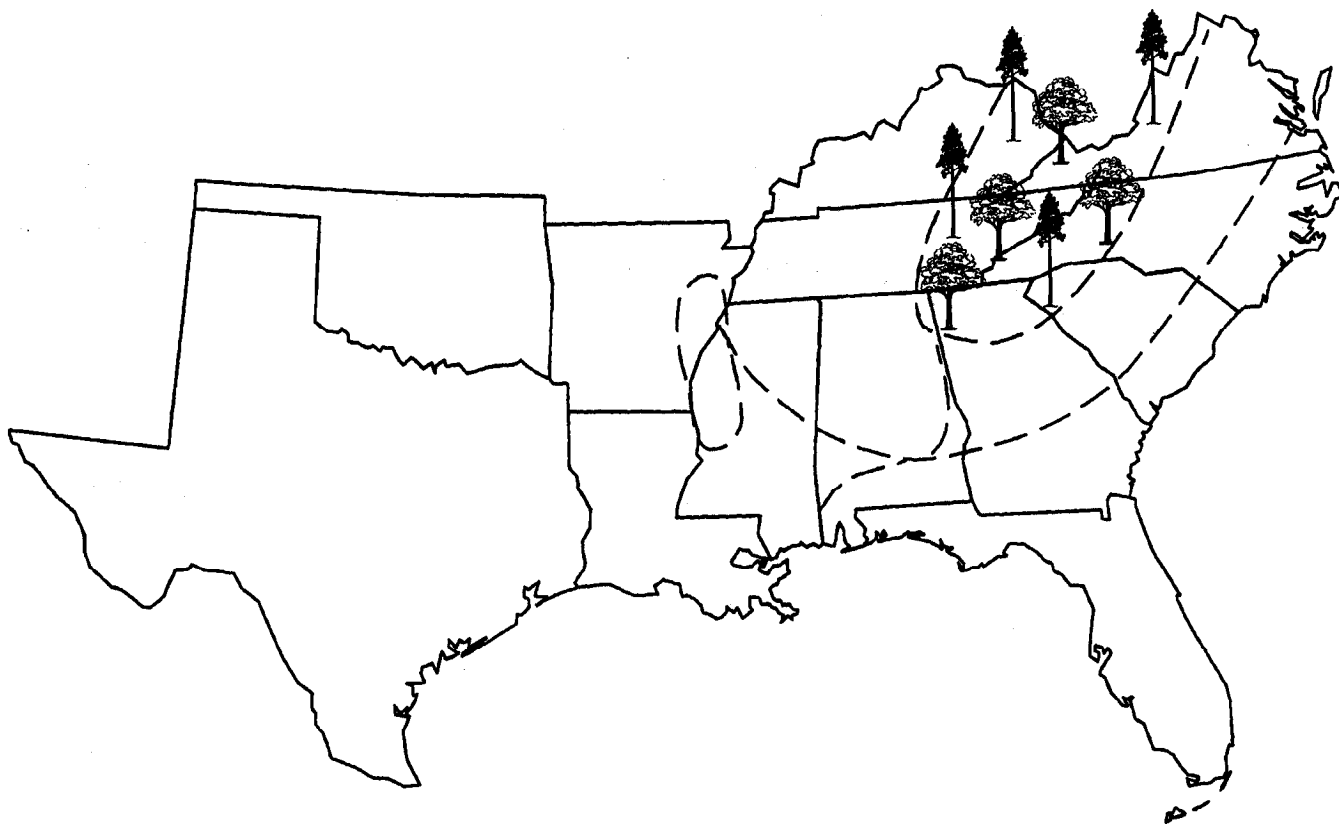


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Stem Cubic-Foot Volume Tables for Tree Species in the Appalachian Area

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Contents

	Page
Introduction	iv
Purpose and Scope	
Development of Equations	
Literature Cited	ix
How To Use Volume Tables ,	1
Content and Organization	
Finding Volume Estimates	
Index of Volume Tables	3
Volume Estimate Tables	4
List of Figures and Tables ,	116

Abstract

Stemwood cubic-foot volume inside bark tables are presented for 20 species and 6 species groups based on equations used to estimate timber sale volumes on national forests in the Appalachian Area. Tables are based on form class measurement data for 2,670 trees sampled in the Appalachian Area and taper data collected across the South. A series of tables is presented for each species based on diameter at breast height (d.b.h.) in combination with total height and height to a 4-inch diameter outside bark (d.o.b.) top. Volume tables are also presented based on d.b.h. in combination with height to a 7-inch d.o.b. top for softwoods and height to a 9-inch d.o.b. top for hardwoods. Sawtimber tables display saw-log stem volume by log (16-foot) and half-log (8-foot) intervals and also show stemwood volume to a 7-inch d.o.b. top for softwoods, to a 9-inch d.o.b. top for hardwoods, and to a 4-inch d.o.b. top for all species. Pulpwood tables show stemwood volume to a 4-inch d.o.b. top in 5-foot height intervals.

Keywords: Saw-log volume, pulpwood volume, form class.

Introduction

Purpose and Scope

Starting in 1995, the standard unit of measure for Federal timber inventories and sales will be the cubic foot rather than the board foot. This change is necessary to provide uniform inventory, accounting, and statistical reporting for all **national forests. To accommodate this change in** the Southern Region of the USDA Forest Service, Clark and others (1991) developed new equations for converting height and diameter measurements into cubic-foot volume estimates. Because they reflect variations in tree form and taper, the new equations are awkward to solve without a computer. For those who lack the time to solve the equations manually and the equipment expertise for electronic processing, conversion tables have been developed to provide volume

estimates for 20 individual species and for 8 species groups that have similar stem form. The tables are based on form class measurement data collected on trees sampled in the Appalachian Area and taper **data** collected on trees sampled across the South.

The Southern Region consists of seven geographic areas (fig. i) based on physiographic region, species form and distribution, and Forest Service administrative units (table i). Table ii lists the species and geographic areas for which volume tables are available, and Table iii summarizes measurement characteristics of the trees sampled.

A separate set of volume tables is available for many of the species and species groups in other geographic areas of the Southern Region (Clark and Souter **1996a, 1996b, 1996c, 1996d, 1996e, 1996f**). When a species volume table for a species measured in the Appalachian Area is not available the Southwide tables should be used (Clark and Souter 1994).

Development of Equations

The volume tables in this paper are based on profile equations developed from taper data collected on 13,469 trees sampled in natural stands across the South. Most of the trees measured were on national forests. All were growing in fully stocked stands. The taper data used to develop and verify the profile equations were collected on 11,472 trees by contractors working for the Southern Region and on 1,997 trees by employees of the Forest Service, Southeastern Forest Experiment Station,¹ SE-4701, Utilization of Southern Timber.

¹ Now called the Southern Research Station.

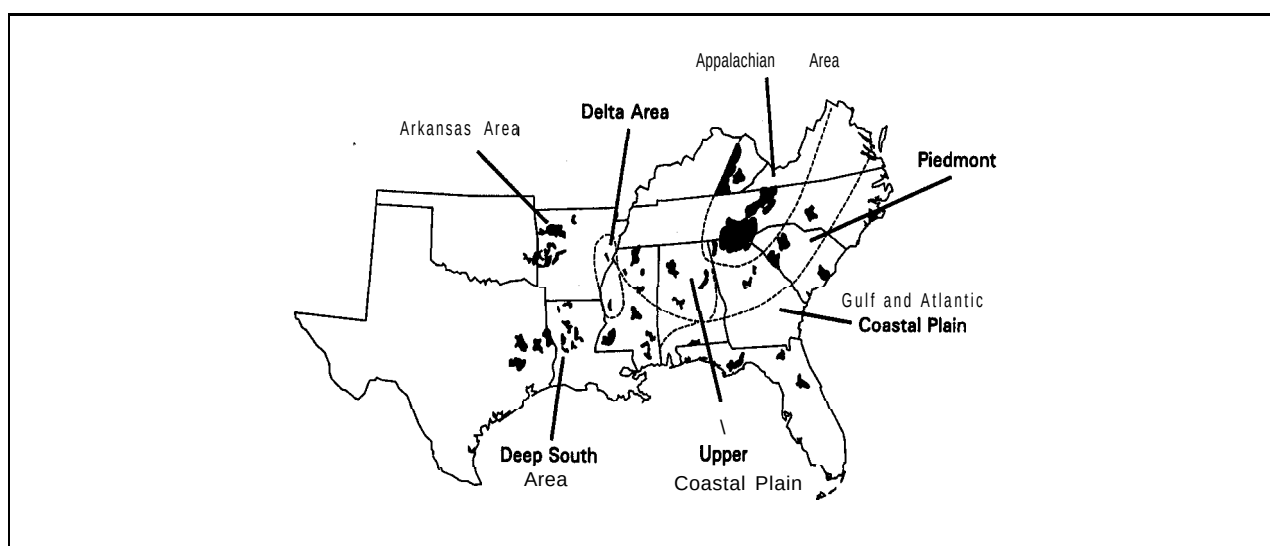


Figure i--Seven geographic areas on which trees were sampled for equation development and verification.

Table i--Geographic areas in the Southern Region with a listing of National Forest System units in each'

Gulf and Atlantic Coastal Plain	Piedmont	Appalachian Area	Upper Coastal Plain	Deep South Area	Arkansas Area	Delta Area
Croatan	Uwharrie	George Washington	Talladega	DeSoto	Ozark	Delta
Francis Marion	Sumter ¹	Jefferson	William B. Bankhead	Bienville	Ouachita	St. Francis
Osceola	Oconee	Cherokee	Holly Springs	Kisatchie		
Ocala		Nantahala	Tuskegee	Angelina		
Apalachicola		Chattahoochee	Tombigbee	Davy Crockett		
Conecuh		Sumter ³		Sam Houston		
Savannah River Site		Daniel Boone		Homochitto		
		Pisgah		Sabine		

¹ All units except the Savannah River Forest Station on the Savannah River Site are public-access national forests.

² All districts except Andrew **Pickens**.

³ Andrew **Pickens** District.

Table ii--Species and geographic areas for which volume tables are available

Species/group	Code	Geographic area						
		Gulf and Atlantic Coastal Plain	Piedmont	Appalachian	Upper Coastal Plain	Deep South	Arkansas	Delta
Ash, green	544					Y		Y
White	541			Y				
Baldcypress	221	Y						
Basswood	950			Y				
Beech	531					Y		
Birch	370			Y				
Blackgum, lowland	694	Y						
Upland	693			Y		Y	Y	
Buckeye	330			Y				
Cypress, all	12	Y						
Elm	970		Y			Y		Y
Hackberry	460							Y
Hardwoods, hard	500	Y	Y	Y	Y	Y	Y	Y
Soft	300	Y	Y	Y	Y	Y		Y
All	80	Y	Y	Y	Y	Y	Y	Y
Hemlock	261			Y				
Hickory	400		Y	Y	Y	Y	Y	Y
Locust, black	901			Y				
Magnolia	652					Y		
Maple, red	316			Y		Y		
Oak, all	800	Y	Y	Y	Y	Y	Y	Y
All red	83	Y	Y	Y	Y	Y	Y	Y
All white	82		Y	Y	Y	Y	Y	Y
Black	837		Y	Y			Y	Y
Cherrybark	813					Y		
Chestnut	832		Y	Y	Y			
Northern red	833			Y			Y	
Nuttall	828							Y
Overcup	822							Y
Post	835		Y		Y	Y	Y	Y
Scarlet	806		Y	Y	Y			
Southern red	812		Y	Y	Y	Y	Y	Y
Water	827	Y	Y			Y		
White	802	Y	Y	Y	Y	Y	Y	Y
Willow	831	Y						
Pecan	404							Y
Pine, all	100	Y	Y	Y	Y	Y	Y	
Eastern white	129			Y				
Loblolly	131	Y	Y		Y	Y	Y	
Longleaf	121	Y	Y			Y		
All major	11	Y	Y		Y	Y		
All others	13	Y		Y				
Pitch	126			Y				
Pond	128	Y						
Sand	107	Y						
Shortleaf	110		Y	Y	Y	Y	Y	
Slash	111	Y				Y		
Spruce	115					Y		
Virginia	132		Y	Y	Y			
Pondcypress	222	Y						
Sweetbay	653	Y				Y		
Sweetgum	611	Y	Y		Y	Y		Y
Sycamore	731		Y		Y	Y		
Yellow-poplar	621	Y	Y	Y	Y	Y		Y

Table iii--Trees measured for development of Appalachian Area volume tables by species and species groups

All trees								Sawtimber trees						
Species or species group	Sample trees	D.b.h.		Total height		Height to 4-inch d.o.b. top		Sample trees	D.b.h.		Height to 7- or 9-inch d.o.b. top		Girard Form Class Mean	
		Mean	Range	Mean	Range	Mean	Range		Mean	Range	Mean	Range		
	Number ^a	-----Inches-----		----Feet----		----Feet----		Number ^b	-----Inches-----		-----Feet-----		%	
All pines	732	13.4	5.0-30.6	74	33-150	60	13-136	610	14.7	9.0-30.6	53	21-125	80	
Shortleaf pine	190	13.2	5.8-22.9	73	36-107	61	20- 99	164	14.2	9.1-22.9	54	24- 93	82	
Pitch pine	116	13.3	5.0-22.2	68	33- 91	55	13- 77	96	14.6	9.0-22.2	49	21 - 73	77	
Virginia pine	192	11.6	5.2-21.1	70	35-100	55	19- 82	145	13.0	9.0-21.1	48	22- 72	82	
All-other'pines	542	13.5	5.0-30.6	75	33-150	60	13-136	446	14.9	9.0-30.6	53	21-125	79	
Eastern white ,pine	225	15.3	5.1-30.6	83	37-150	67	19-136	196	16.5	9.1-30.6	59	22-125	79	
Hemlock	161	14.6	5.8-30.4	80	36-135	62	21-118	125	16.7	9.1-30.4	57	19-114	79	
All soft hardwoods	555	14.8	5.0-31.3	86	38-135	66	19-118	407	17.1	11.0-31.3	53	20-101	80	
Red maple	110	13.7	5.1-24.4	77	48-103	55	18- 81	70	16.7	11.4-24.4	43	20- 70	80	
Buckeye	71	14.0	6.2-23.5	75	39-109	55	19- 89	49	16.2	11.3-23.5	44	22- 71	80	
Yellow-poplar	163	16.7	6.9-31.3	101	58-135	80	39-118	140	18.0	11.1-31.3	61	23-101	81	
Blackgum (upland)	51	15.7	5.8-28.2	76	38-131	59	21-104	37	18.4	11.5-28.2	52	23- 91	75	
Basswood	120	14.2	5.0-23.8	88	51-116	68	17-101	89	16.5	11.0-23.8	55	26- 85	83	
All hard hardwoods	1,222	14.7	5.0-30.9	81	36-120	61	15-103	908	16.8	11.0-30.9	48	17- 85	79	
Birch	93	12.1	5.5-21.0	80	45-106	55	20- 83	59	14.0	11.0-21.0	38	18- 57	81	
Hickory	151	14.5	5.1-27.5	83	48-120	62	19-101	111	16.8	11.0-27.5	51	17- 83	79	
White ash	46	11.3	5.0-21.2	79	44-119	57	15-103	22	15.1	11.0-21.2	47	25- 82	79	
White oak	151	14.7	5.6-26.8	81	47-109	62	26- 92	118	16.4	11.0-26.8	47	19- 76	80	
Chestnut oak	193	15.5	6.3-29.7	81	50-116	63	26- 95	146	17.7	11.2-29.7	50	19- 75	78	
All white oaks	344	15.2	5.6-29.7	81	47-116	62	26- 95	264	17.1	11.0-29.7	48	19- 76	79	
Scarlet oak	37	15.8	11.6-20.6	79	65- 91	60	44- 71	37	15.8	11.6-20.6	44	24- 61	80	
Southern red oak	32	15.1	8.3-20.5	77	64- 93	59	41- 80		15.7	12.3-20.5	46	31- 67	77	
Northern red oak	178	16.2	5.5-28.2	85	49-118	65	23-102	123	18.1	11.3-28.2	51	26- 85	80	
Black oak	154	15.6	6.6-28.7	81	49-116	63	27- 95	128	17.0	11.0-28.7	49	19- 81	79	
All red oaks	501	15.4	5.3-30.9	81	36-118	62	16-102	395	17.3	11.0-30.9	49	19- 85	80	
All oaks	845	15.3	5.3-30.9	81	36-118	62	16-102	659	17.2	11.0-30.9	49	19- 85	80	
Black locust	75	13.1	6.0-20.5	84	53-110	63	28- 91	50	15.2	11.0-20.5	45	19- 69	76	
All hardwoods	1,777	14.7	5.1-31.3	83	36-135	63	15-118	1,315	16.9	11.0-31.3	50	17-101	80	

^a ^b Number of sample trees do not add to species group totals because some species are included in the total but were not sampled sufficiently to develop individual species equations.

Sample trees were felled and their diameter at breast height (d.b.h.) and total height recorded. The contractors measured diameter outside bark (d.o.b.) and bark thickness at stump height and at 1-inch taper intervals from the stump to the tip of the tree. Diameters were measured with a diameter tape and bark thickness determined at two points with a bark gauge at each measurement height. Trees sampled by the Southeastern Station were measured at groundline, 1 and 2 feet, breast height, and at intervals of approximately 4 feet above breast height. Bark

thickness was determined from cross-sectional disks cut from the boles.

Clark and others (1991) compared available segmented-profile polynomial models (Max and Burkhardt 1976; Cao and others 1980; Schlaegel 1983) as potential volume estimators for southern tree species. Because no one model was best for estimating stem volume from the diameter and height of standing trees, they developed a form-class segmented-profile model that uses d.b.h., diameter at 17.3 feet, and total height as independent variables and that combines the

better attributes of Schlaegel's form-class model and Max and Burkhart's segmented-profile model. The new model divides the stem into four segments—butt (groundline up to 4.5 feet), lower stem (4.5 up to 17.3 feet), middle stem (17.3 to 40 up to 70 percent of total height), and upper stem (40 to 70 percent of total height up to stem tip)—and uses different equation form to estimate diameter, height, and volume for each segment. The segment equations are conditioned so that the joins between segments are continuous. Separate profile equations incorporate height to a 4-inch d.o.b. top for all species, and height to a 7-inch d.o.b. top for softwoods or height to a 9-inch d.o.b. top for hardwoods.

The form-class segmented-profile model can be used to predict diameter at a known height, height to a known diameter, and volume between any two heights. The equation forms and coefficients for estimating diameters, heights, and volumes are presented in Clark and others (1991).

The profile equations account for differences in stem taper by including a measure of diameter inside bark (d.i.b.) at 17.3 feet or Girard Form Class² in each volume estimate, thus, allowing a single form-class segmented-profile equation to serve for a species across the South. However, analysis of the form-class data showed geographic differences in the form class of sawtimber trees with the same d.b.h. and height. Thus, linear equations for estimating d.i.b. at 17.3 feet were developed for each species and species group by geographic region. Equations were developed to estimate d.i.b. at 17.3 feet from d.b.h. and total height, from d.b.h. and height to a 4-inch d.o.b. top, and from d.b.h. and height to a 7-inch or 9-inch d.o.b. top. Because few short pulpwood trees were sampled, an average form class by species group and d.b.h. and height class was used when predicting stemwood volume of pulpwood trees ≤ 45 feet in total height or ≤ 30 feet in height to a 4-inch d.o.b. top.

Although the profile equations based on total height can be applied to any trees having both d.b.h. ≤ 5.0 inches and total height > 17.3 feet, the total height tables in this book start at 30 feet. The profile model based on d.b.h. and height to a 4-inch d.o.b. top can be applied to any tree with d.b.h. ≥ 5.0 inches and height to a 4-inch d.o.b. top > 17.3 feet, but the tables based on height to a 4-inch d.o.b. top start at 20 feet.

The softwood profile equation based on d.b.h. and height to a 7-inch d.o.b. top is only useful if the trees have a d.b.h. ≥ 9.0 inches, and their height to a 7-inch d.o.b. top is > 17.3 feet. The hardwood equation based on d.b.h. and height to a 9-inch d.o.b. top can only be applied to trees with d.b.h. ≥ 11.0 inches, whose height to a 9-inch d.o.b. top is > 17.3 feet. However, the softwood and hardwood tables based on height to a 7-inch or 9-inch d.o.b. top respectively, start at 20 feet.

The form-class segmented-profile equation based on height to a 7-inch or 9-inch d.o.b. top can only estimate diameters, heights, or volumes from the groundline to these top heights. Therefore, Clark and others (1991) developed nonlinear ratio equations for estimating volume between the 7-inch or 9-inch d.o.b. top and the 4-inch d.o.b. top. They developed topwood ratio equations for each commercially important species by geographic area and for each species Southwide.³

² Girard Form Class is the ratio of d.i.b. at 17.3 feet to d.b.h.

³ ASCII data files containing the coefficients used to generate the volume tables presented are available on floppy disk from the Utilization of Southern Timber RWU, Southern Research Station, Forestry Science Laboratory, 320 Green Street, Athens, GA 30602-2044.

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How To Use Volume Tables

Content and Organization

For each species or species group, this book presents **stemwood** volume in a series of five tables based on varying combinations of d.b.h. and height. The first shows volume for sawtimber trees based on d.b.h. and total height. The second shows volume for sawtimber trees based on d.b.h. and height to a 4-inch d.o.b. top. The third shows volume for sawtimber trees based on d.b.h. and height to a 7-inch d.o.b. top for softwoods or height to a **9-inch** d.o.b. top for hardwoods. The fourth shows volume for pulpwood trees based on d.b.h. and total height. The fifth shows pulpwood volume based on d.b.h. and height to a 4-inch d.o.b. top. Each sawtimber table displays volume for softwoods (10-inches to 24-inches d.b.h.) and hardwoods (**12-inches** to 26-inches **d.b.h.**) in **16-foot** log or in **8-foot half-log** intervals in 2-inch d.b.h. classes. The **saw-log** volume tables also show average form class and volume to a 4-inch d.o.b. top, and to a 7-inch d.o.b. top for softwoods, or to a **9-inch** d.o.b. top for hardwoods. The pulpwood tables show volume to a 4-inch d.o.b. top for trees 5-inches to **16-inches** d.b.h in 5-foot height intervals and in 1-inch d.b.h. classes.

Finding Volume Estimates

To use these tables you must know the species or species group, d.b.h., and an expression of height. You can look up stem volume based on total height or height to a 4-inch d.o.b. top for pulpwood; based on total height, or height to a **4-inch** d.o.b. top for sawtimber; or based on height to a **7-inch** d.o.b. top for softwood sawtimber or height to a **9-inch d.o.b.** top for hardwood sawtimber. For sawtimber trees, you must also know the height to the saw-log merchantable⁴ top in logs and in half logs. For example, to determine the saw-log and **topwood** volume for

an 18-inch, 3-log northern red oak with a height to a **9-inch d.o.b.** top of 60 feet, refer to the Index of Volume Tables (page 3) for the table number of the northern red oak volume table based on d.b.h. and height to a **9-inch** d.o.b. top (table 113). In table 113 locate the volume data for an **18-inch** d.b.h. tree with a height to **9-inch** top of 60 feet. If you look across this row you will find the saw-log volume under a 3-log merchantable stem (51.8 cubic feet). This same row also shows stem volume to a **9-inch** and a 4-inch d.o.b. top and the estimated Girard Form Class of the tree. To estimate the volume of **topwood** between the saw-log merchantable top and 4-inch d.o.b. top, subtract the saw-log volume (51.8 cubic feet) from the volume to a 4-inch d.o.b. top (60.7 cubic feet) for a result of 8.9 cubic feet.

If you do not know the height to a given top (total height, height to a 4-inch top, or height to a 7-inch or **9-inch** top) for a sawtimber tree, you can use the total height tables for a rough estimate of volume, but only if you know the d.b.h. and saw-log merchantable height and have an estimate of Girard Form Class. Form class can be the species average for the geographic area from table iii or the species average for the area in which the tree is growing. For example, to determine the saw-log volume of a **16-inch** white oak with a saw-log merchantable height of 2.5 logs, refer to the Index of Volume Tables to find the table number for white oak based on **d.b.h.** and total height (table 86).

⁴ Saw-log merchantable height is (1) the height to local minimum d.o.b. top, or (2) the height where a whorl of three or more branches-whose diameters are equal to or greater than the diameter of the stem-occurs within a 1-foot stem section if there is not a minimum of 8 feet of clear stem above the whorl.

Assume the average form class for white oak in the area the tree was growing is 79 (table iii). In table 86, locate the volume data for merchantable stem and find the tree's saw-log merchantable volume for a **16-inch** d.b.h. tree with a form class of 79. Look across the row for the saw-log volume under a merchantable 2.5-log stem (33.6 cubic feet).

To determine the stem pulpwood volume of an **8-inch** d.b.h. yellow-poplar with a height to a 4-inch d.o.b. top of 50 feet, refer to the Index of Volume Tables for the table number based on **d.b.h.** and height to a 4-inch top (table **55**). In table 55, locate the volume data for an 8-inch d.b.h. tree with a height to a **4-inch** top of 50 feet and find the tree's volume (8.5 cubic feet).

Index of Volume Tables

Tables available for estimating **stemwood** cubic-foot volume of sawtimber and pulpwood trees in the Appalachian Area by species and tree dimensions measured.

		Tree dimensions measured				
Species/group	Code	D.b.h. and total height		D.b.h. and height to 4-inch d.o.b. top		D.b.h. and height to 7- or 9-inch d.o.b. top
		Saw-timber	Pulp-wood	Saw-timber	Pulp-wood	Sawtimber
.....Table number.....						
Ash, white	541	61	64	62	65	83
Basswood	950	61	64	62	65	63
Birch	370	71	74	72	75	73
Blackgum, upland	693	56	59	57	60	56
Buckeye	330	46	49	47	50	48
Hardwoods, hard	500	66	69	67	70	66
soft	300	36	39	37	40	36
All	90	136	139	137	140	138
Hemlock	261	31	34	32	35	33
Hickory	400	76	79	77	80	78
Locust, black	901	131	134	132	135	133
Maple, red	316	41	44	42	45	43
Oak, all	600	126	129	127	130	126
All red	83	121	124	122	125	123
All white	82	96	99	97	100	98
Black	637	116	119	117	120	116
Chestnut	832	91	94	92	95	93
Northern red	833	111	114	112	115	113
Scarlet	606	101	104	102	105	103
Southern red	612	106	109	107	110	106
White	802	66	89	67	90	66
Pine, all	100	1	4	2	5	3
Eastern white	129	26	29	27	30	28
All others	13	21	24	22	25	23
Pitch	126	11	14	12	15	13
Shortleaf	110	6	9	7	10	8
Virginia	132	16	19	17	20	18
Yellow-poplar	621	51	54	52	55	53

Table I--Predicted **stemwood** volume to a saw-log merchantable top, and to 1-inch and 4-inch d.o.b. tops based on d.b.h., total-tree height and height to a saw-log top for all pine species combined (species 100) in the Appalachian Area:

D.b.h. class	Total tree height	Volume to											Girerd Form Class	
		Saw-log merchantable height (16-foot togs)										1-inch d.o.b. top		4-inch d.o.b. top
		1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0				
<u>Inches</u>	<u>Feet</u>	<u>Cubic feet</u>											<u>Percent</u>	
10	40	5.8										7.3	8.8	72
	50	6.2	8.5									9.1	10.9	76
	60	6.4	8.9									10.7	12.9	78
	70	6.5	9.1	11.4								12.2	14.9	80
	80	6.6	9.3	11.7	13.7							13.7	16.8	80
	90	6.7	9.4	11.9	14.1							15.1	18.6	81
12	40	8.4	11.2									11.8	12.7	72
	50	8.9	12.2	14.6								14.7	15.9	76
	60	9.2	12.8	15.7								17.4	18.8	78
	70	9.4	13.2	16.4	18.9							19.9	21.7	80
	80	9.5	13.4	16.8	19.7	22.0						22.4	24.4	80
	90	9.6	13.6	17.1	20.3	22.9						24.8	27.1	81
14	100	9.7	13.7	17.4	20.7	23.5	25.9					27.2	29.8	81
	40	11.4	15.3									16.8	17.4	72
	50	12.2	16.7	19.9								20.9	21.8	76
	60	12.6	17.5	21.4	24.2							24.7	25.8	78
	70	12.8	18.0	22.3	25.8	28.2						28.4	29.7	80
	80	13.0	18.3	22.9	26.9	30.0						32.0	33.4	80
16	90	13.1	18.5	23.4	27.6	31.2	34.0					35.4	37.1	81
	100	13.2	18.7	23.7	28.2	32.1	35.3	37.9				38.9	40.8	81
	50	16.0	21.8	26.1								27.9	28.6	76
	60	16.5	22.8	28.0	31.7							33.0	33.8	78
	70	16.8	23.5	29.2	33.7	36.9						37.9	38.9	80
	80	17.0	23.9	30.0	35.1	39.2	42.0					42.6	43.8	80
18	90	17.2	24.2	30.6	36.1	40.8	44.4	47.0				47.3	48.7	81
	100	17.3	24.4	31.0	36.8	41.9	46.2	49.5	51.8			51.9	53.5	81
	110	17.4	24.6	31.3	37.4	42.8	47.5	51.4	54.5			56.4	58.2	82
	50	20.2	27.6	33.0								35.6	36.2	76
	60	20.9	28.9	35.5	40.1							42.2	42.9	78
	70	21.3	29.8	37.0	42.7	46.8						48.4	49.4	80
20	80	21.6	30.3	38.0	44.5	49.6	53.2					54.5	55.6	80
	90	21.8	30.7	38.7	45.7	51.6	56.3	59.5				60.5	61.8	81
	100	21.9	31.0	39.3	46.7	53.1	58.5	62.7	65.6			66.4	67.9	81
	110	22.0	31.2	39.7	47.4	54.2	60.2	65.1	69.0	71.7		72.3	73.9	82
	60	25.9	35.8	43.8	49.5							52.4	53.1	78
	70	26.4	36.8	45.7	52.8	57.8						60.2	61.1	80
22	80	26.7	37.5	47.0	55.0	61.3	65.7					67.8	68.8	80
	90	27.0	37.9	47.8	56.5	63.8	69.5	73.5				75.3	76.4	81
	100	27.1	38.3	48.5	57.7	65.6	72.2	77.4	81.1			82.6	83.9	81
	110	27.3	38.6	49.0	58.5	67.0	74.3	80.5	85.2	88.6		89.9	91.4	82
	60	31.3	43.3	53.1	60.0	63.6						63.7	64.3	78
	70	32.0	44.6	55.3	63.9	70.0	73.2					73.2	74.0	80
24	80	32.4	45.4	56.9	66.6	74.2	79.6	82.5				82.5	83.4	80
	90	32.7	45.9	57.9	68.4	77.2	84.1	88.9				91.5	92.6	81
	100	32.9	46.4	58.7	69.8	79.4	87.5	93.7	98.1			100.5	101.7	81
	110	33.0	46.7	59.3	70.9	81.1	90.0	97.4	103.2	107.2		109.4	110.7	82
	60	37.3	51.6	63.2	71.4	75.7						76.1	76.7	78
	70	38.1	53.1	65.9	76.1	83.3	87.1					87.4	88.1	80
26	80	38.6	54.0	67.7	79.3	88.4	94.7	98.2				98.5	99.3	80
	90	38.9	54.7	69.0	81.5	91.9	100.2	105.9	109.1			109.3	110.3	81
	100	39.2	55.2	69.9	83.1	94.6	104.1	111.6	116.8	119.8		120.0	121.1	81
	110	39.4	55.6	70.7	84.4	96.6	107.2	116.0	122.8	127.6		130.7	131.9	82

^a Includes 1 .0-foot stump allowance.

Table 2--Predicted **stemwood** volume to a saw-log merchantable top, and to 7-inch and **4-inch** d.o.b. tops based on d.b.h., height to a **4-inch** d.o.b. top and height to a saw-log top for all pine species combined (species 100) in the Appalachian Area/

D.b.h. class	Height to 4-inch d.o.b. top	Volume to											Girard Form Class
		1.0	Saw-Log merchantable 1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	T-inch d.o.b. top	4-inch d.o.b. top	
Inches	Feet	Cubic feet											Percent
10	30	5.9									7.2	8.4	74
	40	6.3	8.6								9.2	11.0	78
	50	6.5	9.0	11.0							11.0	13.5	79
	60	6.6	9.2	11.4							12.8	15.9	80
	70	6.6	9.3	11.7	13.8						14.5	18.3	81
	80	6.7	9.4	11.9	14.1	16.0					16.1	20.7	81
	90	6.7	9.5	12.0	14.3	16.4					17.8	23.0	81
12	30	8.5	11.2								11.2	11.9	74
	40	9.1	12.4								14.5	15.6	78
	50	9.3	12.9	15.8							17.5	19.1	79
	60	9.5	13.2	16.4	19.0						20.4	22.4	80
	70	9.6	13.4	16.8	19.7	22.1					23.3	25.7	81
	80	9.6	13.6	17.1	20.2	22.9	25.1				26.1	28.9	81
	90	9.7	13.7	17.3	20.5	23.4	26.0	28.1			28.9	32.1	81
14	40	12.4	16.8	19.8							20.3	21.0	78
	50	12.7	17.6	21.4	24.1						24.6	25.6	79
	60	12.9	18.0	22.3	25.7	28.2					28.7	30.0	80
	70	13.1	18.3	22.9	26.7	29.9	32.2				32.8	34.4	81
	80	13.2	18.5	23.2	27.4	31.0	33.9	36.2			36.8	38.7	81
	90	13.2	18.6	23.5	27.9	31.8	35.1	37.9	40.2		40.8	42.9	81
	100	13.3	18.7	23.7	28.3	32.4	36.0	39.2	41.9	44.1	44.7	47.2	81
16	40	16.2	22.0	25.8							26.7	27.3	78
	50	16.7	23.0	27.9	31.3						32.4	33.2	79
	60	16.9	23.6	29.1	33.5	36.6					37.9	38.9	80
	70	17.1	23.9	29.8	34.8	38.8	41.9				43.3	44.4	81
	80	17.2	24.2	30.4	35.7	40.3	44.1	47.0			48.6	49.9	81
	90	17.3	24.3	30.7	36.4	41.4	45.7	49.3	52.1		53.8	55.4	81
	100	17.4	24.5	31.0	36.9	42.2	46.9	51.0	54.4	57.2	59.1	60.8	81
18	40	20.5	27.9	32.6							34.0	34.4	78
	50	21.1	29.1	35.3	39.5						41.2	41.7	79
	60	21.5	29.9	36.8	42.3	46.2					48.1	48.9	80
	70	21.7	30.3	37.8	44.0	49.0	52.8				55.0	55.8	81
	80	21.8	30.6	38.4	45.2	51.0	55.7	59.2	61.7		61.7	62.7	81
	90	21.9	30.8	38.9	46.1	52.4	57.7	62.2	65.6	68.1	68.4	69.6	81
	100	22.0	31.0	39.2	46.7	53.4	59.3	64.4	68.6	72.0	75.0	76.3	81
20	50	26.1	36.0	43.6	48.7						50.9	51.3	79
	60	26.5	36.9	45.5	52.2	56.9					59.5	60.0	80
	70	26.8	37.5	46.6	54.3	60.5	65.0	67.8			67.9	68.6	81
	80	27.0	37.8	47.4	55.8	62.8	68.6	72.9	75.8		76.2	77.0	81
	90	27.1	38.1	48.0	56.9	64.6	71.2	76.6	80.8	83.7	84.5	85.4	81
	100	27.2	38.3	48.5	57.7	65.9	73.1	79.3	84.5	88.6	92.7	93.7	81
22	50	31.6	43.6	52.7	58.9						61.6	61.9	79
	60	32.2	44.7	55.0	63.1	68.8	72.0				72.0	72.4	80
	70	32.5	45.4	56.4	65.7	73.1	78.5	81.8			82.1	82.7	81
	80	32.7	45.8	57.4	67.5	76.0	82.9	88.0	91.4		92.2	92.8	81
	90	32.9	46.2	58.1	68.8	78.1	86.0	92.5	97.5	101.0	102.1	102.9	81
	100	33.0	46.4	58.7	69.8	79.7	88.4	95.8	102.0	106.9	112.0	112.9	81
24	50	37.7	51.9	62.7	70.0						73.3	73.6	79
	60	38.3	53.2	65.5	75.0	81.8	85.5				85.6	86.0	80
	70	38.7	54.0	67.2	78.2	86.9	93.3	97.1			97.7	98.1	81
	80	39.0	54.6	68.4	80.3	90.4	98.5	104.6	108.6		109.6	110.1	81
	90	39.1	55.0	69.2	81.9	92.9	102.3	109.9	115.8	119.9	121.4	122.0	81
	100	39.3	55.3	69.8	83.0	94.8	105.1	113.9	121.3	127.0	133.2	133.9	81

• Includes 1.0-foot stump allowance.

Table 3--Predicted stemwood volume to a saw-log merchantable top, and to 1-inch and 4-inch d.o.b. tops based on d.b.h., height to a 7-inch d.o.b. top and height to a saw-log top for all pine species combined (species 100) in the Appalachian Area.*

D.b.h. class	Height to T-inch d.o.b. top	Volume to											1-inch		4-inch	Gi rard Form Class
		Sew-Log merchantable height (16-foot logs)										d.o.b. top	d.o.b. top			
Inches	Feet	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0					Percent	
10	20	5.6										6.4	8.7	72		
	30	6.3	8.7									9.9	12.4	78		
	40	6.5	9.1	11.4								13.1	16.0	79		
	50	6.6	9.3	11.8	14.1	16.0						16.3	19.5	80		
	60	6.7	9.5	12.1	14.5	16.7	18.7					19.3	23.1	81		
	70	6.8	9.5	12.2	14.7	17.1	19.2	21.2				22.4	26.6	81		
12	20	8.1										9.1	10.6	72		
	30	9.0	12.3									13.7	15.3	78		
	40	9.4	13.0	16.0								17.9	19.8	79		
	50	9.5	13.4	16.7	19.5	21.8						22.0	24.2	80		
	60	9.6	13.6	17.1	20.3	23.0	25.3					26.0	28.4	81		
	70	9.7	13.7	17.4	20.7	23.8	26.5	28.8				30.0	32.7	81		
14	80	9.7	13.8	17.5	21.0	24.3	27.2	29.9	32.2			33.9	36.9	81		
	40	12.7	17.6	21.4								23.6	25.0	79		
	50	13.0	18.1	22.5	26.0	28.6						28.8	30.4	80		
	60	13.1	18.4	23.1	27.2	30.6	33.2					33.9	35.7	81		
	70	13.2	18.6	23.5	27.9	31.7	35.0	37.7				39.0	40.9	81		
	80	13.3	18.7	23.7	28.3	32.5	36.2	39.5	42.1			44.0	46.1	81		
16	90	13.3	18.8	23.9	28.7	33.1	37.1	40.7	43.9	46.6		49.0	51.3	81		
	100	13.3	18.9	24.1	28.9	33.5	37.7	41.6	45.1	48.3		54.0	56.5	81		
	40	16.7	23.0	27.7								30.2	31.3	79		
	50	17.0	23.6	29.2	33.5	36.4						36.7	37.9	80		
	60	17.1	24.0	30.0	35.1	39.2	42.3					43.1	44.4	81		
	70	17.3	24.2	30.5	36.1	40.9	44.9	48.0				49.4	50.9	81		
18	80	17.3	24.4	30.9	36.8	42.0	46.6	50.5	53.6			55.6	57.3	81		
	90	17.4	24.5	31.2	37.3	42.8	47.8	52.3	56.1	59.2		61.9	63.6	81		
	100	17.4	24.6	31.3	37.6	43.4	48.8	53.6	57.9	61.7		68.1	70.0	81		
	40	21.1	29.1	34.8								37.7	38.5	79		
	50	21.5	29.9	36.8	42.0	45.4						45.6	46.6	80		
	60	21.7	30.4	37.9	44.2	49.1	52.6					53.4	54.5	81		
20	70	21.9	30.7	38.6	45.5	51.3	56.1	59.7				61.1	62.3	81		
	80	22.0	30.9	39.0	46.4	52.8	58.4	63.1	66.7			68.8	70.1	81		
	90	22.0	31.0	39.4	47.0	53.9	60.1	65.4	70.0	73.6		76.4	77.9	81		
	100	22.1	31.2	39.6	47.5	54.7	61.3	67.2	72.4	76.8		84.1	85.6	81		
	50	26.6	36.9	45.3	51.6	55.4						55.6	56.4	80		
	60	26.8	37.5	46.7	54.3	60.2	64.1					65.0	65.9	81		
22	70	27.0	37.9	47.5	55.9	63.0	68.7	72.7				74.3	75.3	81		
	80	27.1	38.1	48.1	57.1	64.9	71.6	77.1	81.2			83.6	84.6	81		
	90	27.2	38.3	48.6	57.9	66.3	73.7	80.1	85.5	89.7		92.8	93.9	81		
	100	27.3	38.5	48.9	58.5	67.3	75.3	82.4	88.6	93.8		101.9	103.2	81		
	50	32.2	44.7	54.7	62.1	66.4						66.7	67.3	80		
	60	32.5	45.4	56.4	65.4	72.4	76.9					77.8	78.6	81		
24	70	32.7	45.9	57.5	67.5	75.9	82.5	87.2				88.9	89.7	81		
	80	32.9	46.2	58.2	68.9	78.3	86.2	92.6	97.3			99.9	100.8	81		
	90	33.0	46.4	58.7	69.9	80.0	88.8	96.4	102.6	107.4		110.8	111.8	81		
	100	33.0	46.6	59.1	70.7	81.2	90.8	99.2	106.5	112.6		121.7	122.7	81		
	50	38.3	53.2	65.0	73.6	78.5						78.8	79.3	80		
	60	38.7	54.0	67.1	77.7	85.7	90.9					91.9	92.5	81		
26	70	39.0	54.6	68.4	80.2	90.0	97.7	103.0				104.9	105.6	81		
	80	39.1	55.0	69.2	81.9	92.9	102.2	109.6	115.0			117.8	118.5	81		
	90	39.3	55.2	69.9	83.1	95.0	105.3	114.2	121.4	126.9		130.6	131.4	81		
	100	39.4	55.4	70.3	84.0	96.5	107.7	117.6	126.1	133.2		143.4	144.2	81		

* Includes 1.0-foot stump allowance.

Table 4--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and total-tree height for all pine species combined (species 100) in the Appalachian Area.*

D.b.h. class	Total-tree height (feet)																									
	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110									
<u>Inches</u>	<u>Cubic feet</u>																									
5																										
6	0.8	0.9	1.1	1.2	2.0	2.2																				
7	1.4	2.2	2.5	2.7	3.6	3.9	4.2	4.5																		
8	2.6	3.3	3.7	4.0	5.2	5.7	6.1	6.6	7.0	7.5																
9																										
10	4.6	3.6	4.5	5.8	6.5	5.0	5.5	7.1	9.0	7.0	9.8	7.6	10.6	8.3	11.4	8.9	12.2	9.5	10.1	12.9	10.6	13.7	11.2	14.4	15.2	15.9
11	5.8	7.3	8.1	8.9	11.2	12.2	13.2	14.2	15.2	16.1	17.1	18.0	18.9	19.8	20.7	21.6										
12				9.9	10.9	13.7	14.9	16.1	17.3	18.5	19.6	20.8	21.9	23.0	24.1	25.3	26.4	27.5								
13				11.9	13.0	16.3	17.8	19.3	20.7	22.1	23.5	24.8	26.2	27.5	28.9	30.2	31.5	32.8								
14				14.0	15.3	19.2	21.0	22.7	24.4	26.0	27.7	29.3	30.9	32.4	34.0	35.6	37.1	38.7								
15						22.4	24.4	26.4	28.3	30.3	32.2	34.0	35.9	37.7	39.6	41.4	43.2	45.0								
16						25.7	28.1	30.4	32.6	34.8	37.0	39.1	41.3	43.4	45.5	47.6	49.7	51.8								
17						29.3	32.0	34.6	37.2	39.7	42.2	44.6	47.1	49.5	51.9	54.3	56.6	59.0								

* Includes 0.5-foot stump allowance.

Table 5--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and height to a 4-inch d.o.b. top for all pine species combined (species 100) in the Appalachian Area:

D.b.h. class	Tree height to 4-inch d.o.b. top (feet)																
	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
<u>Inches</u>	<u>Cubic feet</u>																
5																	
6	1.6	2.1	2.7	3.0	3.4	3.9											
7	2.2	2.8	3.4	4.0	4.6	5.1	5.7	6.2									
	2.6	3.5	4.3	5.2	5.9	6.6	7.3	8.0	8.7	9.3							
	3.6	4.5	5.3	6.6	7.5	8.4	9.2	10.1	10.9	11.7	12.5	13.3					
8	4.3	5.6	6.6	8.2	9.3	10.4	11.4	12.4	13.4	14.4	15.4	16.4	17.4	18.3			
10	5.2	6.9	8.1	10.1	11.4	12.6	13.8	15.1	16.3	17.4	18.6	19.8	21.0	22.1	23.3	24.5	
11			9.7	12.1	13.6	15.1	16.5	18.0	19.4	20.8	22.2	23.6	25.0	26.3	27.7	29.1	30.5
12			11.5	14.2	16.0	17.8	19.5	21.2	22.8	24.5	26.1	27.7	29.3	31.0	32.6	34.2	35.8
13			13.4	16.6	18.7	20.7	22.7	24.7	26.6	28.5	30.4	32.2	34.1	36.0	37.8	39.7	41.5
14					21.6	23.9	26.2	28.4	30.6	32.8	35.0	37.1	39.3	41.4	43.5	45.6	47.8
15					24.7	27.4	29.9	32.5	35.0	37.5	39.9	42.4	44.8	47.2	49.6	52.1	54.5
16					28.0	31.0	33.9	36.8	39.6	42.4	45.2	48.0	50.7	53.5	56.2	58.9	61.6

* Includes 0.5-foot stump allowance.

Table 6--Predicted **stemwood** volume to a saw-log merchantable top, and to **7-inch** and **4-inch** d.o.b. tops based on d.b.h., total-tree height and height to a saw-log top for shortleaf pine (species **110**) in the Appalachian **Area.**^a

D.b.h. class	Total tree height	Volume to											Girard Form Class
		Saw-log merchantable height (16-foot Logs)											
		1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	7-inch d.o.b. top	4-inch d.o.b. top	
<u>Inches</u>	<u>Feet</u>	<u>Cubic feet</u>											<u>Percent</u>
10	40	5.2									6.1	7.9	66
	50	5.9	8.1								9.0	10.7	74
	60	6.3	8.8	10.9							11.4	13.4	79
	70	6.5	9.2	11.7	13.7						13.7	15.9	82
	80	6.6	9.5	12.2	14.4						15.8	18.4	83
	90	6.7	9.7	12.5	15.0	17.1					17.9	20.7	85
12	40	7.6	10.0								10.5	11.5	66
	50	8.6	11.8	14.2							14.6	15.7	74
	60	9.1	12.8	15.9	18.2						18.3	19.6	79
	70	9.5	13.4	16.9	19.8						21.8	23.2	82
	80	9.7	13.9	17.6	20.9	23.6					25.1	26.8	83
	90	9.8	14.2	18.1	21.7	24.7	27.2				28.3	30.2	85
	100	9.9	14.4	18.5	22.3	25.6	28.4	30.7			31.5	33.6	85
14	40	10.5	13.8								15.1	15.9	66
	50	11.8	16.2	19.5							20.8	21.6	74
	60	12.6	17.6	21.8	24.8						25.9	26.9	79
	70	13.0	18.4	23.2	27.1	29.9					30.8	31.9	82
	80	13.3	19.0	24.2	28.6	32.2	34.8				35.5	36.7	83
	90	13.5	19.4	24.8	29.7	33.8	37.1	39.6			40.0	41.4	85
	100	13.6	19.7	25.3	30.5	35.0	38.8	42.0	44.2		44.5	46.0	85
16	50	15.6	21.3	25.6							27.8	28.4	74
	60	16.5	23.1	28.5	32.6						34.6	35.3	79
	70	17.1	24.2	30.4	35.5	39.2					41.0	41.9	82
	80	17.5	25.0	31.7	37.5	42.2	45.6				47.2	48.2	83
	90	17.8	25.5	32.6	38.9	44.3	48.6	51.8			53.2	54.4	85
	100	17.9	25.9	33.2	39.9	45.8	50.9	54.9	57.9		59.1	60.4	85
	110	18.1	26.2	33.7	40.7	47.0	52.6	57.3	61.1	63.9	64.9	66.4	86
18	50	19.8	27.0	32.5							35.6	36.1	74
	60	21.1	29.3	36.2	41.4						44.2	44.9	79
	70	21.8	30.8	38.6	45.1	49.8					52.4	53.2	82
	80	22.3	31.7	40.2	47.6	53.5	57.9				60.3	61.2	83
	90	22.6	32.4	41.4	49.4	56.2	61.7	65.8			68.0	69.1	85
	100	22.9	32.9	42.2	50.7	58.2	64.5	69.7	73.5		75.6	76.7	85
	110	23.0	33.2	42.8	51.7	59.6	66.7	72.7	77.5	81.0	83.0	84.3	86
20	60	26.1	36.4	44.9	51.2	54.8					55.0	55.6	79
	70	27.0	38.1	47.8	55.8	61.6	65.0				65.2	65.9	82
	80	27.6	39.3	49.8	58.9	66.2	71.6	74.8			75.0	75.8	83
	90	28.1	40.1	51.2	61.1	69.5	76.3	81.3	84.3		84.5	85.5	85
	100	28.4	40.7	52.2	62.7	71.9	79.8	86.2	90.8	93.7	93.9	94.9	85
	110	28.6	41.2	53.0	63.9	73.8	82.5	89.9	95.8	100.2	103.1	104.3	86
22	60	31.7	44.1	54.4	62.1	66.4					66.9	67.4	79
	70	32.9	46.3	58.0	67.6	74.7	78.7				79.3	79.9	82
	80	33.6	47.7	60.4	71.4	80.3	86.8	90.6			91.2	91.9	83
	90	34.1	48.7	62.1	74.0	84.2	92.5	98.5	102.1		102.8	103.6	85
	100	34.5	49.4	63.3	76.0	87.2	96.7	104.4	110.0	113.5	114.1	115.1	85
	110	34.7	50.0	64.3	77.5	89.4	99.9	108.9	116.1	121.4	125.3	126.4	86
24	60	37.9	52.6	64.9	74.0	79.2					79.9	80.4	79
	70	39.2	55.2	69.2	80.6	89.0	93.8				94.7	95.3	82
	80	40.1	56.9	72.0	85.1	95.7	103.4	107.9			108.9	109.6	83
	90	40.7	58.1	74.1	88.2	100.4	110.2	117.4	121.7		122.7	123.5	85
	100	41.1	59.0	75.5	90.6	103.9	115.2	124.4	131.1	135.2	136.3	137.2	85
	110	41.5	59.6	76.7	92.4	106.6	119.1	129.7	138.3	144.6	149.6	150.6	86

^a Includes 1.0-foot stump allowance.

Table 7--Predicted **stemwood** volume to a saw-log merchantable top, and to **7-inch** and 4-inch d.o.b. tops based on d.b.h., height to a 4-inch d.o.b. top and height to a saw-log top for shortleaf pine (species 1 **10**) in the Appalachian Area.*

D.b.h. class	Height to 4-inch d.o.b. top	Volume to										7-inch d.o.b. top	4-inch d.o.b. top	Girard Form Class
		1.0	sew-log 1.5	merchantable 2.0	2.5	height 3.0	3.5	(16-foot 4.0	Logs) 4.5	5.0				
Inches	Feet	Cubic feet										Percent		
10	30	5.5									6.7	7.9	71	
	40	6.1	8.5								9.4	11.1	78	
	50	6.4	9.0	11.2							11.9	14.0	81	
	60	6.5	9.3	11.7	13.8						14.2	16.8	82	
	70	6.6	9.5	12.1	14.4	16.3					16.4	19.5	83	
	80	6.7	9.6	12.3	14.8	16.9					18.6	22.2	84	
	90	6.7	9.7	12.5	15.1	17.4	19.4				20.8	24.8	84	
12	30	8.0	10.6								10.7	11.3	71	
	40	8.9	12.3	14.6							14.8	15.7	78	
	50	9.3	13.1	16.1	18.4						18.6	19.8	81	
	60	9.5	13.5	17.0	19.8	22.0					22.2	23.7	82	
	70	9.7	13.8	17.5	20.7	23.4	25.5				25.7	27.5	83	
	80	9.8	14.0	17.9	21.3	24.3	26.9	28.9			29.2	31.3	84	
	90	9.8	14.1	18.1	21.7	25.0	27.8	30.3	32.3		32.6	35.0	84	
14	40	12.2	16.8	19.9							20.7	21.3	78	
	50	12.8	17.9	22.0	25.0						26.0	26.7	81	
	60	13.1	18.6	23.2	27.0	29.8					31.0	32.0	82	
	70	13.3	19.0	23.9	28.2	31.8	34.5				35.9	37.0	83	
	80	13.4	19.2	24.4	29.0	33.1	36.4	39.1			40.7	42.0	84	
	90	13.5	19.4	24.8	29.7	34.0	37.8	41.1	43.7		45.4	47.0	84	
	100	13.6	19.5	25.0	30.1	34.7	38.9	42.5	45.6	48.2	50.1	51.8	85	
16	40	16.1	22.0	26.1							27.3	27.8	78	
	50	16.9	23.5	28.8	32.6						34.2	34.8	81	
	60	17.3	24.4	30.4	35.2	38.9					40.8	41.5	82	
	70	17.5	24.9	31.4	36.9	41.5	45.0				47.2	48.0	83	
	80	17.7	25.2	32.0	38.0	43.2	47.5	50.9	53.3		53.5	54.5	84	
	90	17.8	25.5	32.5	38.8	44.4	49.4	53.5	56.8	59.3	59.7	60.8	84	
	100	17.9	25.6	32.8	39.4	45.4	50.7	55.4	59.4	62.7	65.9	67.1	85	
18	40	20.5	28.0	33.0							34.8	35.1	78	
	50	21.5	29.9	36.6	41.3						43.5	43.9	81	
	60	22.0	31.0	38.5	44.6	49.2					51.8	52.3	82	
	70	22.3	31.6	39.8	46.8	52.5	56.8	59.7			59.9	60.5	83	
	80	22.5	32.1	40.6	48.2	54.7	60.1	64.3	67.3		67.9	68.6	84	
	90	22.7	32.4	41.2	49.2	56.3	62.5	67.6	71.8	74.8	75.8	76.6	84	
	100	22.8	32.6	41.7	50.0	57.5	64.2	70.1	75.1	79.1	83.6	84.5	85	
20	50	26.6	37.0	45.2	51.0						53.8	54.1	81	
	60	27.3	38.4	47.7	55.2	60.7	63.9				64.0	64.4	82	
	70	27.7	39.2	49.2	57.8	64.8	70.1	73.5			74.0	74.5	83	
	80	28.0	39.7	50.3	59.6	67.6	74.2	79.3	82.9		83.8	84.4	84	
	90	28.1	40.1	51.0	60.8	69.6	77.1	83.4	88.5	92.1	93.5	94.2	84	
	100	28.3	40.4	51.6	61.8	71.1	79.3	86.5	92.6	97.5	103.2	103.8	85	
	22	50	32.4	44.9	54.8	61.7						65.1	65.4	81
60		33.2	46.5	57.8	66.8	73.4	77.3				77.5	77.8	82	
70		33.6	47.5	59.7	70.0	78.4	84.8	88.8			89.6	89.9	83	
80		34.0	48.2	60.9	72.2	81.8	89.8	95.9	100.1		101.4	101.8	84	
90		34.2	48.7	61.9	73.7	84.2	93.3	100.9	106.9	111.2	113.1	113.6	84	
100		34.4	49.0	62.5	74.9	86.1	96.0	104.6	112.0	117.9	124.8	125.3	85	
24		50	38.6	53.6	65.3	73.5						77.6	77.7	81
	60	39.6	55.5	68.9	79.6	87.4	91.9				92.3	92.5	82	
	70	40.2	56.7	71.1	83.4	93.4	100.9	105.6			106.6	106.9	83	
	80	40.6	57.5	72.7	86.0	97.4	106.8	114.1	119.0		120.7	121.0	84	
	90	40.8	58.1	73.7	87.8	100.3	111.1	120.1	127.2	132.2	134.6	135.0	84	
	100	41.0	58.5	74.5	89.2	102.5	114.3	124.5	133.2	140.1	148.4	148.8	85	

* Includes 1.0-foot stump allowance.

Table d--Predicted **stemwood** volume to a saw-log merchantable top, and to **7-inch** and **4-inch d.o.b.** tops based on **d.b.h.**, height to a 7-inch d.o.b. top and height to a saw-log top for shortleaf pine (species **110**) in the Appalachian Area.'

D.b.h. class	Height to 7-inch d.o.b. top	Volume to										Girrrd Form Class	
		Seu-log	merchantable	height	(16-foot	logs)	5.0	7-inch	4-inch				
		1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	d.o.b. top	d.o.b. top	
<u>Inches</u>	<u>Feet</u>	<u>Cubic feet</u>											<u>Percent</u>
10	20	5.2									5.9	8.7	69
	30	6.1	8.5								9.8	12.0	78
	40	6.4	9.1	11.6							13.3	15.7	81
	50	6.6	9.4	12.1	14.4	16.5					16.7	19.2	83
	60	6.6	9.6	12.4	14.9	17.3	19.4				20.0	22.8	83
	70	6.7	9.7	12.5	15.2	17.7	20.1	22.2			23.3	26.3	84
12	20	7.6									8.5	10.2	69
	30	8.9	12.2								13.7	15.1	78
	40	9.3	13.2	16.3							18.4	19.8	81
	50	9.6	13.6	17.2	20.3	22.7					22.9	24.4	83
	60	9.7	13.9	17.7	21.1	24.1	26.6				27.3	29.0	83
	70	9.8	14.0	18.0	21.7	25.0	27.9	30.4			31.6	33.5	84
14	80	9.8	14.2	18.2	22.0	25.6	28.8	31.7	34.2		36.0	37.9	84
	40	12.8	18.0	22.0							24.4	25.4	81
	50	13.1	18.6	23.4	27.2	30.0					30.2	31.3	83
	60	13.3	19.0	24.1	28.5	32.2	35.1				35.9	37.0	83
	70	13.4	19.2	24.5	29.3	33.6	37.2	40.1			41.5	42.7	84
	80	13.5	19.4	24.8	29.9	34.4	38.5	42.1	45.1		47.0	48.3	84
16	90	13.6	19.5	25.1	30.3	35.1	39.5	43.5	47.0	50.0	52.6	54.0	84
	100	13.6	19.6	25.2	30.5	35.5	40.2	44.5	48.4	51.8	58.1	59.6	85
	40	16.9	23.6	28.6							31.4	32.1	81
	50	17.3	24.4	30.4	35.2	38.4					38.7	39.4	83
	60	17.5	24.9	31.4	37.0	41.6	45.0				45.8	46.6	83
	70	17.7	25.2	32.1	38.2	43.5	47.9	51.4			52.8	53.7	84
18	80	17.8	25.4	32.5	38.9	44.7	49.8	54.2	57.7		59.8	60.8	84
	90	17.8	25.6	32.8	39.5	45.6	51.2	56.1	60.4	63.9	66.8	67.8	84
	100	17.9	25.7	33.0	39.9	46.3	52.2	57.5	62.3	66.6	73.7	74.8	85
	40	21.5	29.9	36.1							39.3	39.8	81
	50	22.0	31.0	38.5	44.3	48.0					48.3	48.9	83
	60	22.3	31.6	39.8	46.7	52.3	56.2				57.1	57.7	83
20	70	22.5	32.0	40.6	48.2	54.7	60.1	64.1			65.8	66.4	84
	80	22.6	32.3	41.2	49.2	56.4	62.6	67.9	72.0		74.4	75.1	84
	90	22.7	32.5	41.6	49.9	57.6	64.4	70.5	75.6	79.7	82.9	83.7	84
	100	22.8	32.6	41.9	50.5	58.4	65.7	72.3	78.2	83.3	91.4	92.2	85
	50	27.3	38.4	47.5	54.5	58.8					59.1	59.5	83
	60	27.7	39.2	49.2	57.6	64.2	68.7				69.7	70.2	83
22	70	27.9	39.7	50.2	59.5	67.3	73.7	78.4			80.2	80.7	84
	80	28.1	40.0	50.9	60.7	69.4	77.0	83.2	88.0		90.6	91.2	84
	90	28.2	40.2	51.4	61.6	70.9	79.3	86.5	92.6	97.4	100.9	101.5	84
	100	28.3	40.4	51.8	62.3	72.1	80.9	88.9	96.0	102.0	111.2	111.9	85
	50	33.2	46.6	57.5	65.7	70.7					71.0	71.3	83
	60	33.6	47.5	59.5	69.6	77.4	82.6				83.7	84.1	83
24	70	33.9	48.1	60.8	71.9	81.3	88.8	94.2			96.2	96.6	84
	80	34.1	48.5	61.7	73.5	83.9	92.8	100.2	105.7		108.6	109.0	84
	90	34.3	48.8	62.3	74.6	85.7	95.7	104.3	111.4	117.0	120.9	121.4	84
	100	34.4	49.0	62.7	75.4	87.1	97.8	107.3	115.6	122.6	133.2	133.7	85
	50	39.6	55.5	68.4	78.1	83.7					84.0	84.3	83
	60	40.2	56.7	70.9	82.7	91.8	97.8				99.0	99.3	83
26	70	40.5	57.4	72.4	85.5	96.6	105.4	111.5			113.7	114.0	84
	80	40.7	57.9	73.5	87.4	99.7	110.2	118.8	125.1		128.3	128.6	84
	90	40.9	58.2	74.2	88.8	102.0	113.6	123.7	132.1	138.5	142.8	143.2	84
	100	41.0	58.5	74.7	89.8	103.6	116.2	127.4	137.1	145.3	157.2	157.6	85

* Includes 1.0-foot stump allowance.

Table g--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and total-tree height for shortleaf pine (species 110) in the Appalachian Area.'

D.b.h. class	Total-tree height (feet)																	
	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	
Inches	Cubic feet																	
5																		
6	0.6	1.7	0.9	2.2	2.4	1.1	2.7	1.3	2.0	3.5	2.3	3.9	4.4	4.8				
7	2.5	3.2	3.7	4.0	5.0	5.7	6.3	6.9	7.5	8.1								
8	3.5	4.5	4.4	5.7	6.5	5.0	5.5	7.1	6.8	8.8	9.9	7.7	11.0	8.5	12.0	9.3	10.1	
10	5.7	7.2	8.1	8.9	11.0	12.4	13.7	15.0	16.2	17.4	18.6	19.8	21.0	22.2	23.3	24.5		
11			9.9	10.9	13.5	15.1	16.7	18.2	19.8	21.3	22.7	24.2	25.6	27.0	28.4	29.8	31.2	
12			11.9	13.1	16.1	18.1	20.0	21.8	23.7	25.4	27.2	28.9	30.6	32.3	34.0	35.7	37.3	
13			14.1	15.5	19.0	21.3	23.6	25.8	27.9	30.0	32.1	34.1	36.1	38.1	40.1	42.0	44.0	
14																		
15					22.2	25.5	24.8	28.6	31.6	27.5	30.0	34.5	32.5	37.4	34.9	37.3	39.7	
											40.2	42.9	45.7	48.4	51.0	53.7	56.3	
16					29.1	32.7	36.1	39.4	42.6	45.8	49.0	52.1	55.1	58.2	61.2	64.2	67.2	

* Includes 0.5-foot stump allowance.

Table IO--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and height to a 4-inch d.o.b. top for shortleaf pine (species 110) in the Appalachian Area.'

D.b.h. class	Tree height to 4-inch d.o.b. top (feet)																	
	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	
Inches	Cubic feet																	
5																		
6	2.0	1.5	2.0	2.6	3.2	2.5	2.7	3.7	3.2	4.4	5.6	6.2						
7	2.5	3.3	4.2	5.0	5.8	6.6	7.4	8.1	8.9	9.6								
8	3.5	4.1	4.3	5.4	5.1	6.4	6.4	8.0	7.4	9.3	10.5	8.4	11.7	9.4	10.3	12.8	11.3	
10	5.0	6.7	7.9	9.8	11.3	12.8	14.2	15.6	17.0	18.4	19.8	21.1	22.5	23.8	25.1	26.4		
11			9.5	11.8	13.6	15.4	17.1	18.8	20.4	22.0	23.7	25.3	26.9	28.4	30.0	31.6	33.1	
12			11.3	14.0	16.2	18.2	20.2	22.2	24.1	26.0	27.9	29.8	31.7	33.5	35.4	37.2	39.1	
13			13.3	16.4	18.9	21.3	23.6	25.9	28.2	30.4	32.6	34.8	36.9	39.1	41.2	43.4	45.5	
14					21.9	24.6	27.3	29.9	32.5	35.1	37.6	40.1	42.6	45.1	47.5	50.0	52.4	
15					25.1	28.2	31.3	34.3	37.2	40.1	43.0	45.9	48.7	51.5	54.3	57.1	59.9	
16					28.5	32.1	35.5	38.9	42.2	45.5	48.8	52.0	55.2	58.4	61.6	64.7	67.9	

* Includes 0.5-foot stump allowance.

Table 1 I--Predicted **stemwood** volume to a saw-log merchantable top, and to 7-inch and 4-inch d.o.b. tops based on d.b.h., total-tree height and height to a saw-log top for pitch pine (species 126) in the Appalachian Area:

D.b.h. class	Total tree height	Volume to											Girard Form Class
		Saw-Log merchantable height (16-foot logs)											
		1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	7-inch d.o.b. top	4-inch d.o.b. top	
<u>Inches</u>	<u>Feet</u>	<u>Cubic feet</u>											<u>Percent</u>
10	40										6.0	7.6	64
	50	5.2	...								8.3	10.0	71
	60	5.7	8.3	10.2							10.3	12.2	75
	70	6.1	8.6	10.8							12.2	14.3	78
	80	6.2	8.8	11.2	13.2						13.9	16.4	79
	90	6.3	9.0	11.5	13.7	15.5					15.6	18.4	80
12	40	7.6	9.8								10.1	11.1	64
	50	8.3	11.2	13.4							13.5	14.6	71
	60	8.7	12.0	14.7							16.6	17.8	75
	70	8.9	12.5	15.6	18.1						19.5	20.9	78
	80	9.0	12.8	16.2	19.1	21.4					22.2	23.9	79
	90	9.1	13.1	16.6	19.8	22.4	24.5				25.0	26.8	80
14	100	9.2	13.2	16.9	20.3	23.2	25.6	27.6			27.6	29.7	81
	40	10.4	13.5								14.6	15.2	64
	50	11.4	15.3	18.3							19.2	20.0	71
	60	11.9	16.4	20.2	22.9						23.5	24.5	75
	70	12.2	17.1	21.4	24.8	27.2					27.6	28.7	78
	80	12.4	17.6	22.2	26.1	29.2	31.4				31.5	32.8	79
16	90	12.6	17.9	22.7	27.0	30.6	33.5				35.4	36.8	80
	100	12.7	18.1	23.1	27.7	31.7	35.0	37.6			39.1	40.8	81
	50	14.9	20.1	24.0							25.7	26.3	71
	60	15.6	21.6	26.4	30.0						31.4	32.1	75
	70	16.1	22.5	28.0	32.5	35.6					36.8	37.7	78
	80	16.3	23.1	29.1	34.2	38.2	41.1				42.0	43.1	79
18	90	16.5	23.5	29.8	35.4	40.1	43.8	46.5			47.1	48.3	80
	100	16.6	23.8	30.3	36.3	41.5	45.8	49.3	51.7		52.1	53.5	81
	110	16.7	24.0	30.7	36.9	42.5	47.3	51.4	54.6	56.8	57.1	58.6	82
	50	19.0	25.6	30.5							32.9	33.4	71
	60	19.9	27.4	33.6	38.0						40.1	40.8	75
	70	20.4	28.5	35.6	41.2	45.2					47.1	47.9	78
20	80	20.8	29.3	36.9	43.3	48.5	52.2				53.7	54.7	79
	90	21.0	29.8	37.8	44.9	50.8	55.6	58.9			60.3	61.4	80
	100	21.2	30.2	38.5	46.0	52.6	58.1	62.4	65.5		66.7	67.9	81
	110	21.3	30.5	39.0	46.9	53.9	60.0	65.1	69.2	72.0	73.0	74.4	82
	60	24.7	33.9	41.6	47.1						49.9	50.6	75
	70	25.3	35.3	44.0	51.0	55.9					58.5	59.3	78
22	80	25.8	36.3	45.6	53.6	60.0	64.5				66.9	67.7	79
	90	26.0	36.9	46.8	55.5	62.9	68.7	72.8			75.0	76.0	80
	100	26.2	37.4	47.7	56.9	65.0	71.8	77.2	81.0		83.0	84.1	81
	110	26.4	37.7	48.3	58.0	66.6	74.2	80.5	85.5	89.0	90.8	92.1	82
	60	30.0	41.2	50.4	57.0	60.6					60.8	61.3	75
	70	30.8	42.9	53.4	61.8	67.8	71.0				71.2	71.9	78
24	80	31.3	44.0	55.3	65.0	72.7	78.2	81.1			81.3	82.1	79
	90	31.6	44.8	56.7	67.3	76.2	83.3	88.3	91.0		91.2	92.1	80
	100	31.9	45.3	57.8	69.0	78.8	87.0	93.5	98.1	100.8	100.9	101.9	81
	110	32.1	45.8	58.6	70.3	80.8	89.9	97.6	103.6	107.9	110.5	111.6	82
	60	35.8	49.1	60.1	68.0	72.2					72.6	73.1	75
	70	36.7	51.1	63.6	73.6	80.8	84.6				85.1	85.7	78
26	80	37.3	52.5	64.0	77.5	86.6	93.1	96.7			97.1	97.9	79
	90	37.7	53.4	67.6	80.2	90.8	99.2	105.1	108.5		108.9	109.8	80
	100	38.0	54.1	68.9	82.2	93.9	103.7	111.4	116.9	120.0	120.5	121.5	81
	110	38.3	54.6	69.8	83.7	96.2	107.1	116.2	123.4	128.5	132.0	133.0	82

* Includes 1 .0-foot stump allowance.

Table 12--Predicted **stemwood** volume to a saw-log merchantable top, and to 7-inch and 4-inch d.o.b. tops based on d.b.h., height to a 4-inch d.o.b. top and height to a saw-log top for pitch pine (species 126) in the Appalachian Area:

D.b.h. class	Height to 4-inch d.o.b. top	Volume to										Girard Form Class	
		Saw-Log		merchantable		height		(16-foot Logs)		T-inch		4-inch	
		1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	d.o.b. top	d.o.b. top	
Inches	Feet	Cubic feet										Percent	
10	30	5.4									6.4	7.6	68
	40	5.8	7.9								8.6	10.3	74
	50	6.0	8.4	10.3							10.7	12.9	77
	60	6.1	8.7	10.8	12.6						12.7	15.3	78
	70	6.2	8.8	11.1	13.1						14.6	17.8	79
	80	6.2	8.9	11.3	13.5	15.4					16.5	20.2	80
	90	6.3	9.0	11.5	13.8	15.8	17.6				18.3	22.5	80
12	30	7.8									10.1	10.8	68
	40	8.5	11.5								13.6	14.6	74
	50	8.8	12.2	14.9							16.9	18.2	77
	60	8.9	12.5	15.6	18.1						20.0	21.6	78
	70	9.0	12.8	16.1	18.9	21.3					23.0	25.0	79
	80	9.1	12.9	16.4	19.4	22.1	24.4				26.0	28.3	80
	90	9.1	13.0	16.6	19.8	22.7	25.2	27.4			29.0	31.6	80
14	40	11.6	15.7	18.5							19.1	19.7	74
	50	12.0	16.6	20.3	22.9						23.6	24.5	77
	60	12.3	17.1	21.3	24.6	27.1					28.0	29.0	78
	70	12.4	17.5	21.9	25.7	28.9	31.3				32.2	33.5	79
	80	12.5	17.7	22.3	26.5	30.0	33.0	35.4			36.4	37.9	80
	90	12.5	17.8	22.6	27.0	30.9	34.2	37.1	39.4		40.6	42.3	80
	100	12.6	17.9	22.9	27.4	31.5	35.2	38.4	41.1	43.4	44.7	46.6	80
16	40	15.3	20.6	24.2							25.2	25.7	74
	50	15.8	21.8	26.5	29.9						31.2	31.8	77
	60	16.1	22.5	27.8	32.2	35.4					36.9	37.6	78
	70	16.3	22.9	28.7	33.6	37.6	40.7				42.5	43.4	79
	80	16.4	23.2	29.2	34.6	39.2	43.0	46.0			48.0	49.1	80
	90	16.5	23.4	29.6	35.3	40.3	44.6	48.3	51.2	53.3	53.5	54.7	80
	100	16.5	23.5	29.9	35.8	41.1	45.9	50.0	53.5	56.4	58.9	60.3	80
18	40	19.5	26.2	30.6							32.1	32.4	74
	50	20.1	27.7	33.6	37.8						39.6	40.0	77
	60	20.5	28.6	35.3	40.7	44.7					46.8	47.4	78
	70	20.7	29.1	36.4	42.6	47.6	51.4	53.9			53.9	54.6	79
	80	20.9	29.4	37.1	43.8	49.6	54.3	58.0	60.6		60.9	61.7	80
	90	21.0	29.7	37.6	44.7	51.0	56.4	61.0	64.6	67.2	67.8	68.7	80
	100	21.0	29.9	38.0	45.4	52.1	58.0	63.2	67.6	71.1	74.7	75.7	80
20	50	25.0	34.3	41.6	46.6						49.0	49.3	77
	60	25.4	35.4	43.7	50.3	55.1					57.9	58.3	78
	70	25.7	36.0	45.0	52.6	58.7	63.4	66.3			66.6	67.2	79
	80	25.9	36.4	45.9	54.1	61.2	67.0	71.5	74.5		75.2	75.9	80
	90	26.0	36.7	46.5	55.3	63.0	69.6	75.2	79.5	82.7	83.8	84.5	80
	100	26.1	37.0	47.0	56.1	64.3	71.6	77.9	83.3	87.5	92.2	93.0	80
22	50	30.3	41.6	50.4	56.4						59.3	59.6	77
	60	30.9	42.9	52.9	60.9	66.6	69.9				70.1	70.4	78
	70	31.2	43.7	54.5	63.7	71.1	76.6	80.1			80.6	81.0	79
	80	31.4	44.2	55.6	65.6	74.1	81.0	86.4	90.0		91.0	91.5	80
	90	31.6	44.6	56.4	66.9	76.2	84.2	90.9	96.1	99.8	101.3	101.9	80
	100	31.7	44.8	56.9	67.9	77.9	86.6	94.2	100.6	105.7	111.5	112.1	80
24	50	36.2	49.6	60.0	67.2						70.6	70.8	77
	60	36.9	51.1	63.0	72.5	79.3	83.1				83.4	83.7	78
	70	37.3	52.1	65.0	75.8	84.6	91.1	95.2			95.9	96.3	79
	80	37.5	52.7	66.3	78.1	88.2	96.4	102.7	107.0		108.3	108.7	80
	90	37.7	53.2	67.2	79.7	90.8	100.2	108.1	114.3	118.6	120.5	120.9	80
	100	37.8	53.5	67.9	80.9	92.7	103.1	112.1	119.7	125.7	132.6	133.1	80

* Includes 1 .0-foot stump allowance.

Table 13--Predicted stemwood volume to a saw-log merchantable top, and to 7-inch and 4-inch d.o.b. tops based on d.b.h., height to a 7-inch d.o.b. top and height to a saw-log top for pitch pine (species 126) in the Appalachian Area.^a

D.b.h. class	Height to 7-inch d.o.b. top	Volume to										7-inch d.o.b. top	4-inch d.o.b. top	Girard Form Class
		Sew-log 1.0	merchantable 1.5 2.0 2.5	height 3.0 3.5	(16-foot logs) 4.0 4.5 5.0									
Inches	Feet	Cubic feet												Percent
10	20											5.9	8.5	67
	30	5.3	8.6									9.3	11.4	74
	40	5.9	8.6	10.8								12.4	14.6	77
	50	6.2	8.8	11.2	13.3	15.2						15.4	17.9	78
	60	6.3	8.9	11.4	13.7	15.8	17.7					18.4	21.1	79
	70	6.3	9.0	11.5	13.9	16.2	18.3	20.3				21.3	24.3	79
12	20	7.6										8.5	10.0	67
	30	8.5	11.6									13.0	14.3	74
	40	8.9	12.3	15.2								17.1	18.4	77
	50	9.0	12.7	15.9	18.6	20.8						21.0	22.5	78
	60	9.1	12.8	16.3	19.3	22.0	24.2						26.5	79
	70	9.1	12.9	16.5	19.8	22.8	25.4	27.6					30.6	79
14	80	9.1	13.0	16.7	20.1	23.2	26.1	28.7	31.0			32.7	34.6	80
	40	12.1	16.8	20.4								22.6	23.5	77
	50	12.3	17.3	21.5	24.9	27.4						27.7	28.7	78
	60	12.4	17.5	22.1	26.0	29.4	32.0					32.7	33.8	79
	70	12.5	17.7	22.4	26.7	30.5	33.8	36.4				37.6	38.8	79
	80	12.5	17.8	22.7	27.2	31.3	34.9	38.1	40.8			42.6	43.9	80
16	90	12.5	17.9	22.8	27.5	31.8	35.7	39.3	42.4	45.1		47.5	48.9	80
	100	12.6	17.9	23.0	27.7	32.2	36.3	40.2	43.7	46.8		52.4	53.9	80
	40	15.9	21.9	26.5								29.0	29.6	77
	50	16.2	22.6	28.0	32.2	35.1						35.4	36.1	78
	60	16.3	22.9	28.8	33.8	37.9	40.9					41.6	42.4	79
	70	16.4	23.1	29.3	34.7	39.5	43.4	46.5				47.9	48.7	79
18	80	16.4	23.3	29.6	35.4	40.5	45.1	49.0	52.1			54.1	55.0	80
	90	16.5	23.4	29.8	35.8	41.3	46.2	50.6	54.5	57.6		60.2	61.2	80
	100	16.5	23.5	30.0	36.1	41.8	47.1	51.9	56.2	60.0		66.4	67.4	80
	40	20.2	27.8	33.4								36.2	36.7	77
	50	20.6	28.6	35.3	40.5	43.9						44.1	44.6	78
	60	20.7	29.1	36.4	42.6	47.5	51.0					51.8	52.4	79
20	70	20.8	29.4	37.0	43.8	49.6	54.4	58.0				59.5	60.1	79
	80	20.9	29.6	37.5	44.7	51.1	56.6	61.3	64.9			67.1	67.8	80
	90	21.0	29.7	37.8	45.3	52.1	58.2	63.5	68.1	71.8		74.6	75.4	80
	100	21.0	29.8	38.0	45.7	52.8	59.3	65.2	70.4	74.9		82.2	83.0	80
	50	25.5	35.4	43.6	49.8	53.6						53.9	54.3	78
	60	25.7	36.0	44.9	52.4	58.3	62.3					63.2	63.7	79
22	70	25.8	36.3	45.7	54.0	61.0	66.7	70.9				72.5	73.0	79
	80	25.9	36.6	46.3	55.1	62.8	69.5	75.1	79.3			81.7	82.2	80
	90	26.0	36.7	46.7	55.8	64.1	71.5	78.0	83.4	87.6		90.8	91.4	80
	100	26.0	36.9	47.0	56.4	65.1	73.0	80.1	86.3	91.6		99.9	100.5	80
	50	30.9	42.9	52.7	60.1	64.5						64.7	65.1	78
	60	31.2	43.6	54.4	63.3	70.2	74.9					75.8	76.2	79
24	70	31.4	44.1	55.4	65.3	73.6	80.3	85.1				86.8	87.2	79
	80	31.5	44.3	56.1	66.6	75.9	83.8	90.3	95.2			97.8		80
	90	31.6	44.6	56.6	67.5	77.5	86.3	93.9	100.2	105.2		108.6	109.1	80
	100	31.6	44.7	56.9	68.3	78.7	88.1	96.5	103.9	110.2		119.5	120.0	80
	50	36.9	51.2	62.7	71.3	76.3						76.6	76.9	78
	60	37.3	52.0	64.7	75.2	83.3	88.6					89.7	90.0	79
26	70	37.4	52.5	66.0	77.6	87.4	95.2	100.7				102.6	102.9	79
	80	37.6	52.9	66.8	79.2	90.2	99.5	107.0	112.6			115.4	115.8	80
	90	37.7	53.1	67.4	80.4	92.1	102.5	111.4	118.7	124.4		128.2	128.6	80
	100	37.7	53.3	67.8	81.2	93.5	104.7	114.6	123.2	130.4		141.0	141.4	80

^a Includes 1 .0-foot stump allowance.

Table 14--Predicted **stemwood** volume to a **4-inch d.o.b. top** in pulpwood trees based on d.b.h. and total-tree height for pitch pine (species 126) in the Appalachian Area.^a

D.b.h. class	Total-tree height (feet)																
	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110
Inches	Cubic feet																
5	0.8	1.3	1.6	1.6	1.9	2.2											
6	1.9	2.3	2.6	2.8	3.3	3.6	4.0	4.4									
7	2.7	3.4	3.7	4.1	4.7	5.3	5.8	6.3	6.8	7.3							
8	3.6	4.5	5.0	5.5	6.4	7.1	7.8	8.4	9.1	9.7	10.4	11.0					
9	4.7	5.8	6.5	7.1	8.2	9.1	10.0	10.9	11.7	12.5	13.4	14.2	15.0	15.8			
10	5.9	7.3	8.1	8.8	10.2	11.4	12.5	13.5	14.6	15.6	16.6	17.7	18.7	19.7	20.6	21.6	
11		9.9	10.8	12.5	13.9	15.2	16.5	17.8	19.0	20.3	21.5	22.7	24.0	25.2	26.3	27.5	
12		11.9	12.9	14.9	16.6	18.2	19.7	21.3	22.8	24.3	25.8	27.2	28.7	30.1	31.5	32.9	
13		14.0	15.3	17.6	19.6	21.4	23.3	25.1	26.9	28.6	30.4	32.1	33.8	35.5	37.1	38.8	
14					20.5	22.8	25.0	27.1	29.2	31.3	33.3	35.3	37.3	39.3	41.3	43.2	45.2
15					23.6	26.2	28.7	31.2	33.6	36.0	38.3	40.7	43.0	45.2	47.5	49.7	52.0
16					27.0	29.9	32.8	35.6	38.3	41.1	43.7	46.4	49.0	51.6	54.2	56.7	59.3

^a Includes **0.5-foot** stump allowance.

Table 15--Predicted **stemwood** volume to a **4-inch d.o.b. top** in pulpwood trees based on d.b.h. and height to a **4-inch d.o.b. top** for pitch pine (species 126) in the Appalachian Area:

D.b.h. class	Tree height to 4-inch d.o.b. top (feet)																
	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Inches	Cubic feet																
5																	
6	2.1	1.6	2.1	2.7	3.3	2.6	3.6	2.7	3.2	4.2	3.6	4.0	5.3	5.9			
7	2.6	3.4	4.3	4.8	5.5	6.2	6.9	7.6	8.3	8.9							
8																	
9	3.6	4.3	4.4	5.6	6.5	5.2	6.1	7.5	8.7	7.0	7.8	9.7	10.8	8.7	11.8	9.6	10.4
10	5.3	6.8	8.0	9.2	10.6	11.9	13.1	14.4	15.6	16.8	18.0	19.2	20.4	21.6	22.8	24.0	
11		9.6	11.1	12.7	14.2	15.7	17.2	18.6	20.1	21.5	22.9	24.3	25.8	27.2	28.6	30.0	
12		11.4	13.1	15.0	16.8	18.5	20.3	22.0	23.7	25.3	27.0	28.7	30.3	31.9	33.6	35.2	
13		13.4	15.4	17.5	19.6	21.6	23.6	25.6	27.6	29.5	31.4	33.4	35.3	37.2	39.1	40.9	
14					20.2	22.6	25.0	27.3	29.5	31.8	34.0	36.2	38.4	40.6	42.8	45.0	47.1
15					23.2	25.9	28.6	31.2	33.8	36.3	38.9	41.4	43.9	46.4	48.9	51.3	53.8
16					26.3	29.4	32.4	35.4	38.3	41.2	44.1	46.9	49.7	52.5	55.3	58.1	60.9

^a Includes **0.5foot** stump allowance.

Table 16--Predicted **stemwood** volume to a saw-log merchantable top, and to **7-inch** and **4-inch** d.o.b. tops based on d.b.h., total-tree height and height to a saw-log top for Virginia pine (species 132) in the Appalachian Area.^a

D.b.h. class	Total tree height	Volume to										7-inch d.o.b. top	4-inch d.o.b. top	Girard Form Class
		Sau-log 1.0	1.5	merchantable 2.0	2.5	height 3.0	(16-foot 3.5	Logs) 4.0	4.5	5.0				
<u>Inches</u>	<u>Feet</u>	<u>Cubic feet</u>										<u>Percent</u>		
10	40	6.5									8.6	9.9	78	
	50	6.7	9.3								10.2	12.0	80	
	60		6.9	9.6							11.7	13.9	81	
	70	6.9	9.7	12.2							13.1	15.8	82	
	80	7.0	9.9	12.4							14.5	17.7	83	
	90	7.0	9.9	12.6	14.9						15.8	19.5	83	
12	40	9.3	12.6								13.6	14.4	78	
	50	9.7	13.4	16.1							16.2	17.4	80	
	60	9.9	13.8	17.0							18.8	20.3	81	
	70	10.0	14.0	17.5	20.3						21.2	23.0	82	
	80	10.1	14.2	17.9	21.0	23.4					23.6	25.8	83	
	90	10.1	14.3	18.1	21.5	24.3					26.0	28.5	83	
14	100	10.2	14.4	18.3	21.8	24.9	27.4				28.4	31.1	83	
	40	12.7	17.2								19.1	19.7	78	
	50	13.2	18.2	21.9							23.0	23.9	80	
	60	13.5	18.8	23.1	26.2						26.6	27.8	81	
	70	13.6	19.1	23.9	27.6						30.2	31.6	82	
	80	13.8	19.4	24.4	28.6	31.9					33.7	35.3	83	
16	90	13.8	19.5	24.7	29.3	33.0	36.0				37.1	39.0	83	
	100	13.9	19.6	25.0	29.7	33.9	37.3	39.9			40.5	42.7	83	
	50	17.3	23.9	28.6							30.5	31.3	80	
	60	17.6	24.6	30.3	34.2						35.4	36.4	81	
	70	17.9	25.0	31.2	36.1	39.5					40.2	41.4	82	
	80	18.0	25.3	31.9	37.4	41.7	44.6				44.9	46.3	83	
18	90	18.1	25.5	32.3	38.2	43.2	47.0				49.5	51.1	83	
	100	18.2	25.7	32.6	38.9	44.3	48.8	52.2			54.1	56.0	83	
	110	18.2	25.8	32.9	39.3	45.1	50.1	54.1	57.2		58.6	60.7	84	
	50	21.9	30.2	36.3							39.0	39.7	80	
	60	22.3	31.1	38.3	43.3						45.3	46.2	81	
	70	22.6	31.7	39.5	45.8	50.0					51.4	52.5	82	
20	80	22.8	32.1	40.3	47.3	52.8	56.5				57.5	58.8	83	
	90	22.9	32.3	40.9	48.4	54.7	59.5	62.7			63.4	64.9	83	
	100	23.0	32.5	41.3	49.2	56.1	61.7	66.1	68.9		69.3	71.0	83	
	110	23.1	32.7	41.6	49.8	57.1	63.4	68.6	72.5	75.1	75.2	77.1	84	
	60	27.6	38.5	47.3	53.5						56.3	57.1	81	
	70	28.0	39.2	48.8	56.5	61.8					64.0	65.0	82	
22	80	28.2	39.6	49.8	58.5	65.2	69.7				71.5	72.7	83	
	90	28.3	40.0	50.5	59.8	67.5	73.5	77.5			78.9	80.3	83	
	100	28.4	40.2	51.0	60.8	69.2	76.2	81.6	85.2		86.3	87.8	83	
	110	28.5	40.4	51.4	61.5	70.5	78.3	84.7	89.5	92.7	93.6	95.3	84	
	60	33.4	46.6	57.3	64.8						68.5	69.2	81	
	70	33.8	47.4	59.1	68.4	74.8					77.8	78.7	82	
24	80	34.1	48.0	60.3	70.8	78.9	84.4				87.0	88.0	83	
	90	34.3	48.4	61.2	72.4	81.8	89.0	93.8			96.0	97.2	83	
	100	34.5	48.7	61.8	73.6	83.8	92.3	98.8	103.1		105.0	106.4	83	
	110	34.6	48.9	62.3	74.5	85.4	94.8	102.5	108.3	112.2	113.9	115.5	84	
	60	39.8	55.5	68.2	77.1	81.5					81.7	82.4	81	
	70	40.3	56.5	70.4	81.5	89.0	92.8				92.9	93.7	82	
26	80	40.6	57.1	71.8	84.2	93.9	100.5	103.8			103.9	104.8	83	
	90	40.9	57.6	72.8	86.2	97.3	105.9	111.7	114.7		114.7	115.8	83	
	100	41.0	58.0	73.6	87.6	99.8	109.9	117.6	122.7		125.5	126.7	83	
	110	41.2	58.2	74.1	88.7	101.6	112.8	122.0	129.0	133.6	136.1	137.6	84	

^a Includes 1 .0-foot stump allowance.

Table 17--Predicted stemwood volume to a saw-log merchantable top, and to '1-inch and 4-inch d.o.b. tops based on d.b.h., height to a 4-inch d.o.b. top and height to a saw-log top for Virginia pine (species 132) in the Appalachian Area:

D.b.h. class	Height to 4-inch d.o.b. top	Volume to										1-inch d.o.b. top	4-inch d.o.b. top	Girard Fore Class
		Sew-Log	merchantable	height (16-foot logs)										
		1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0				
<u>Inches</u>	<u>Feet</u>	<u>Cubic feet</u>											<u>Percent</u>	
10	30	6.5									8.2	9.4	79	
	40	6.8	9.3								10.2	12.2	81	
	50	6.9	9.6	11.9							12.0	14.8	82	
	60	7.0	9.8	12.2							13.9	17.4	82	
	70	7.0	9.9	12.4	14.7						15.6	19.9	83	
	80	7.1	9.9	12.6	15.0	17.1					17.4	22.4	83	
12	90	7.1	10.0	12.7	15.2	17.4					19.1	25.0	83	
	30	9.4	12.5								12.7	13.4	79	
	40	9.8	13.4	16.0							16.1	17.2	81	
	50	10.0	13.9	17.0							19.2	20.8	82	
	60	10.1	14.1	17.5	20.4						22.3	24.4	82	
	70	10.1	14.2	17.9	21.0	23.7					25.4	27.9	83	
14	80	10.2	14.3	18.1	21.5	24.4	26.9				28.4	31.4	83	
	90	10.2	14.4	18.3	21.8	24.9	27.7	30.1			31.4	34.9	83	
	40	13.3	18.3	21.7							22.4	23.2	81	
	50	13.6	18.9	23.1	26.1						26.9	28.0	82	
	60	13.7	19.2	23.8	27.6	30.5					31.3	32.7	82	
	70	13.8	19.4	24.3	28.5	32.0	34.8				35.7	37.4	83	
16	80	13.9	19.5	24.6	29.2	33.1	36.4	39.0			40.0	42.0	83	
	90	13.9	19.6	24.9	29.6	33.8	37.5	40.7	43.3		44.3	46.6	83	
	100	14.0	19.7	25.0	29.9	34.4	38.4	41.9	45.0	47.5	48.6	51.1	83	
	40	17.5	23.9	28.2							29.5	30.1	81	
	50	17.8	24.7	30.1	34.0						35.5	36.2	82	
	60	18.0	25.1	31.1	36.0	39.6					41.3	42.3	82	
18	70	18.1	25.4	31.7	37.2	41.7	45.2				47.1	48.2	83	
	80	18.2	25.5	32.2	38.0	43.1	47.3	50.7			52.8	54.2	83	
	90	18.2	25.7	32.5	38.6	44.1	48.8	52.9	56.1		58.5	60.1	83	
	100	18.3	25.8	32.7	39.1	44.8	50.0	54.5	58.4	61.5	64.1	65.9	83	
	40	22.1	30.2	35.7							37.5	37.9	81	
	50	22.6	31.2	38.1	42.9						45.0	45.6	82	
20	60	22.8	31.8	39.4	45.5	50.0					52.4	53.1	82	
	70	22.9	32.1	40.2	47.0	52.6	56.9	59.7			59.8	60.6	83	
	80	23.0	32.4	40.7	48.1	54.4	59.7	63.8	66.7		67.0	68.0	83	
	90	23.1	32.5	41.1	48.8	55.7	61.6	66.7	70.7	73.6	74.2	75.4	83	
	100	23.2	32.6	41.4	49.4	56.6	63.1	68.8	73.6	77.5	81.4	82.7	83	
	50	27.9	38.6	47.0	52.9						55.6	56.0	82	
22	60	28.2	39.2	48.6	56.0	61.5					64.8	65.3	82	
	70	28.4	39.7	49.6	58.0	64.9	70.1	73.4			73.8	74.4	83	
	80	28.5	40.0	50.3	59.3	67.1	73.5	78.5	82.0		82.7	83.5	83	
	90	28.6	40.2	50.7	60.3	68.7	76.0	82.1	86.9	90.4	91.6	92.5	83	
	100	28.6	40.3	51.1	61.0	69.9	77.8	84.7	90.6	95.3	100.4	101.5	83	
	50	33.8	46.7	56.8	63.9						67.3	67.6	82	
24	60	34.1	47.5	58.8	67.8	74.3	78.1				78.3	78.7	82	
	70	34.3	48.0	60.0	70.1	78.4	84.6	88.6			89.2	89.7	83	
	80	34.5	48.4	60.8	71.7	81.1	88.8	94.8	98.9		100.0	100.6	83	
	90	34.6	48.6	61.4	72.9	83.0	91.8	99.1	104.9	109.1	110.7	111.4	83	
	100	34.7	48.8	61.9	73.8	84.5	94.0	102.3	109.4	115.0	121.4	122.2	83	
	50	40.2	55.6	67.6	75.9						80.0	80.3	82	
26	60	40.6	56.6	69.9	80.6	88.3	92.8				93.1	93.4	82	
	70	40.9	57.2	71.4	83.4	93.2	100.5	105.2			106.0	106.4	83	
	80	41.1	57.6	72.4	85.4	96.4	105.6	112.6	117.4		118.8	119.3	83	
	90	41.2	57.9	73.1	86.7	98.8	109.1	117.8	124.6	129.5	131.6	132.1	83	
	100	41.3	58.1	73.6	87.8	100.5	111.8	121.7	129.9	136.6	144.3	144.9	83	

* Includes 1.0-foot stump allowance.

Table 18--Predicted stemwood volume to a saw-log merchantable top, and to 7-inch and 4-inch d.o.b. tops based on d.b.h., height to a 7-inch d.o.b. top and height to a saw-log top for Virginia pine (species 132) in the Appalachian Area:

D.b.h. class	Height to 7-inch d.o.b. top	Volume to											Gi rard Form Class
		Saw-log	merchantable height (16-foot Logs)								7-inch	4-inch	
		1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	d.o.b. top	d.o.b. top	
Inches	Feet	Cubic feet											Percent
10	20	6.4									7.4	9.4	79
	30	6.8	9.5								10.9	13.5	81
	40	6.9	9.8	12.3							14.2	17.6	82
	50	7.0	9.9	12.6	15.0	17.2					17.5	21.6	83
	60	7.0	10.0	12.7	15.3	17.8	20.0				20.8	25.6	83
	70	7.1	10.0	12.8	15.5	18.1	20.5	22.7			24.0	29.6	83
12	20	9.3									10.5	11.5	79
	30	9.8	12.5								15.1	16.4	81
	40	10.0	14.0	17.2							19.4	21.1	82
	50	10.1	14.2	17.8	20.9	23.5					23.7	25.7	83
	60	10.2	14.3	18.1	21.6	24.6	27.1				27.9	30.3	83
	70	10.2	14.4	18.3	21.9	25.2	28.2	30.8			32.2	34.8	83
14	80	10.2	14.4	18.4	22.2	25.7	28.9	31.8	34.4		36.4	39.4	83
	40	13.6	18.9	23.1							25.6	26.6	82
	50	13.8	19.3	24.0	27.9	30.8					31.1	32.2	83
	60	13.8	19.5	24.5	28.9	32.6	35.6				36.5	37.8	83
	70	13.9	19.6	24.8	29.5	33.7	37.3	40.3			41.8	43.3	83
	80	13.9	19.6	25.0	29.9	34.4	38.5	42.0	45.1		47.2	48.9	83
16	90	14.0	19.7	25.1	30.2	34.9	39.2	43.2	46.7	49.7	52.5	54.4	83
	100	14.0	19.7	25.2	30.4	35.3	39.8	44.0	47.9	51.4	57.8	59.9	83
	40	17.8	24.7	29.9							32.8	33.4	82
	50	18.0	25.1	31.2	36.0	39.3					39.6	40.3	83
	60	18.1	25.4	31.8	37.4	41.9	45.4				46.3	47.1	83
	70	18.2	25.6	32.3	38.2	43.5	47.9	51.4			53.0	53.9	83
18	80	18.2	25.7	32.5	38.8	44.5	49.5	53.8	57.3		59.6	60.7	83
	90	18.3	25.7	32.7	39.2	45.2	50.6	55.5	59.7	63.3	66.2	67.4	83
	100	18.3	25.8	32.9	39.5	45.7	51.5	56.7	61.4	65.6	72.9	74.2	83
	40	22.6	31.2	37.6							40.9	41.3	82
	50	22.8	31.8	39.3	45.1	48.9					49.2	49.6	83
	60	23.0	32.1	40.2	47.0	52.5	56.4				57.4	57.9	83
20	70	23.0	32.3	40.7	48.2	54.6	59.9	63.9			65.6	66.2	83
	80	23.1	32.5	41.1	48.9	55.9	62.0	67.2	71.3		73.7	74.4	83
	90	23.1	32.6	41.4	49.5	56.9	63.6	69.4	74.5	78.6	81.8	82.6	83
	100	23.2	32.7	41.6	49.9	57.6	64.7	71.1	76.8	81.8	90.0	90.8	83
	50	28.2	39.3	48.4	55.3	59.6					59.9	60.3	83
	60	28.4	39.7	49.5	57.8	64.3	68.8				69.9	70.2	83
22	70	28.5	39.9	50.2	59.3	67.0	73.2	77.9			79.7	80.1	83
	80	28.5	40.1	50.7	60.2	68.7	76.0	82.1	86.8		89.5	90.0	83
	90	28.6	40.2	51.0	61.0	70.0	78.0	85.0	91.0	95.7	99.3	99.8	83
	100	28.6	40.3	51.3	61.5	70.9	79.5	87.2	94.0	99.8	109.1	109.7	83
	50	34.2	47.5	58.4	66.6	71.5					71.8	72.1	83
	60	34.4	48.0	59.8	69.7	77.3	82.5				83.6	83.9	83
24	70	34.5	48.3	60.7	71.5	80.7	88.0	93.3			95.3	95.6	83
	80	34.6	48.6	61.3	72.8	82.9	91.5	98.6	104.0		107.0	107.3	83
	90	34.6	48.7	61.7	73.6	84.4	94.0	102.3	109.2	114.7	118.6	119.0	83
	100	34.7	48.8	62.1	74.3	85.6	95.8	105.0	113.0	119.8	130.2	130.6	83
	50	40.7	56.5	69.4	78.9	84.6					84.9	85.1	83
	60	40.9	57.1	71.1	82.7	91.6	97.5				98.7	98.9	83
26	70	41.1	57.5	72.2	84.9	95.7	104.2	110.2			112.4	112.6	83
	80	41.2	57.8	72.9	86.5	98.3	108.5	116.7	122.9		126.1	126.3	83
	90	41.2	58.0	73.4	87.5	100.2	111.5	121.2	129.2	135.4	139.7	140.0	83
	100	41.3	58.1	73.8	88.3	101.7	113.7	124.4	133.8	141.7	153.3	153.6	83

* Includes 1.0-foot stump allowance.

Table 1 g--Predicted **stemwood** volume to a **4-inch d.o.b. top** in pulpwood trees based on d.b.h. and total-tree height for Virainia pine (species 132) in the Appalachian Area.^a

D.b.h. class	Total-tree height (feet)																
	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110
Inches	Cubic feet																
5																	
6	0.8	1.4	2.4	4.0	6.6	11.1	23.3	42.4	4.5	4.8							
7	2.7	3.4	3.8	4.1	5.7	6.2	6.6	7.0	7.4	7.9							
8																	
9	3.7	4.8	6.6	6.7	5.2	5.6	7.3	9.8	7.7	10.6	8.3	11.4	8.9	12.2	9.5	10.0	12.9
10	6.0	7.5	8.4	9.1	12.3	13.2	14.2	15.2	16.1	17.0	18.0	18.9	19.8	20.7	21.6	22.5	
11																	
12																	
13																	
14																	
15																	
16																	

^a Includes 0.5-foot stump allowance.

Table PO--Predicted **stemwood** volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and height to a 4-inch d.o.b. top for Virginia pine (species 132) in the Appalachian Area:

D.b.h. class	Tree height to 4-inch d.o.b. top (feet)																
	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Inches	Cubic feet																
5																	
6	2.2	1.8	2.2	2.9	3.5	2.8	3.2	4.4	3.7	5.0	4.2	5.6	6.1	6.7			
7	2.8	3.7	4.5	5.7	6.5	7.2	8.0	8.7	9.4	10.1							
8																	
9	3.8	4.5	4.7	5.9	5.6	6.9	9.1	7.3	10.2	8.3	11.4	9.2	10.1	12.4	11.0	13.5	11.8
10	5.5	7.2	8.5	11.1	12.5	13.8	15.1	16.4	17.7	19.0	20.2	21.5	22.7	24.0	25.3	26.5	
11																	
12																	
13																	
14																	
15																	
16																	

^a Includes 0.5-foot stump allowance.

Table 21--Predicted stemwood volume to a saw-log merchantable top, and to 7-inch and 4-inch d.o.b. tops based on d.b.h., total-tree height and height to a saw-log top for all pines except major pines (species 13) in the Appalachian Area:

D.b.h. class	Total tree height	Volume to											Girerd Form Class				
		Sew-Log				merchantable				height (16-foot logs)				1-inch		4-inch	
		1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	d.o.b.	top		d.o.b.	top		
Inches	Feet	Cubic feet											Percent				
10	40	5.6										6.3	8.0	68			
	50	6.1	8.3									8.5	10.4	75			
	60	6.4	8.9									10.4	12.6	78			
	70	6.6	9.3	11.5								12.2	14.7	81			
	80	6.7	9.5	11.9								13.8	16.7	82			
	90	6.8	9.7	12.3	14.5							15.4	18.6	83			
12	40	8.1	10.5									10.6	11.7	68			
	50	8.8	12.0									13.9	15.1	75			
	60	9.3	12.8	15.6								16.9	18.3	78			
	70	9.5	13.4	16.6	19.1							19.7	21.4	81			
	80	9.7	13.7	17.2	20.1	22.3						22.3	24.3	82			
	90	9.8	14.0	17.7	20.8	23.4						24.9	27.1	83			
100	9.9	14.1	18.0	21.4	24.3	26.6					27.4	29.9	84				
14	40	11.0	14.3									15.2	16.0	68			
	50	12.1	16.3	19.3								19.8	20.7	75			
	60	12.6	17.5	21.3	23.9							24.0	25.1	78			
	70	13.0	18.2	22.6	26.0							27.9	29.3	81			
	80	13.2	18.7	23.4	27.4	30.4						31.7	33.3	82			
	90	13.4	19.0	24.1	28.4	31.9	34.6					35.4	37.2	83			
100	13.5	19.3	24.5	29.1	33.1	36.3	38.6				39.0	41.0	84				
16	50	15.8	21.4	25.2								26.4	27.2	75			
	60	16.5	22.9	27.9	31.2							32.0	33.0	78			
	70	17.0	23.8	29.5	33.9	36.8						37.2	38.4	81			
	80	17.3	24.4	30.6	35.8	39.7	42.2					42.3	43.7	82			
	90	17.5	24.9	31.4	37.1	41.7	45.2					47.2	48.8	83			
	100	17.6	25.2	32.0	38.1	43.2	47.4	50.5				52.1	53.8	84			
110	17.7	25.4	32.5	38.8	44.4	49.1	52.9	55.7			56.8	58.8	84				
18	50	20.0	27.0	32.0								33.8	34.5	75			
	60	20.9	29.0	35.3	39.5							41.0	41.8	78			
	70	21.5	30.2	37.4	43.0	46.6						47.7	48.7	81			
	80	21.9	30.9	38.8	45.3	50.2	53.4					54.2	55.4	82			
	90	22.1	31.5	39.8	47.0	52.8	57.2	60.0				60.5	61.9	83			
	100	22.3	31.9	40.5	48.2	54.7	60.0	63.9	66.5			66.7	68.3	84			
110	22.5	32.2	41.1	49.1	56.2	62.1	66.9	70.5	72.8		72.8	74.6	84				
20	60	25.9	35.8	43.6	48.8							50.9	51.7	78			
	70	26.6	37.3	46.2	53.1	57.6						59.3	60.3	81			
	80	27.1	38.2	47.9	55.9	62.0	66.0					67.4	68.5	82			
	90	27.4	38.9	49.2	58.0	65.2	70.6	74.1				75.3	76.6	83			
	100	27.6	39.4	50.1	59.5	67.6	74.1	79.0	82.1			83.0	84.5	84			
	110	27.7	39.8	50.8	60.7	69.4	76.7	82.7	87.1	89.9		90.7	92.3	84			
22	60	31.3	43.3	52.8	59.1							61.9	62.7	78			
	70	32.2	45.1	55.9	64.2	69.7						72.2	73.0	81			
	80	32.8	46.3	58.0	67.7	75.1	79.9					82.0	83.0	82			
	90	33.1	47.1	59.5	70.2	78.9	85.5	89.7				91.6	92.7	83			
	100	33.4	47.7	60.6	72.0	81.8	89.7	95.6	99.4			101.0	102.3	84			
	110	33.6	48.1	61.5	73.5	84.0	92.9	100.1	105.4	108.9		110.3	111.8	84			
24	60	37.3	51.6	62.8	70.4	73.9						74.0	74.6	78			
	70	38.4	53.7	66.6	76.5	83.0	86.2					86.2	87.0	81			
	80	39.0	55.1	69.1	80.6	89.4	95.1					97.9	98.9	82			
	90	39.5	56.1	70.9	83.6	94.0	101.8	106.8				109.4	110.5	83			
	100	39.8	56.8	72.2	85.8	97.3	106.7	113.7	118.3			120.7	121.9	84			
	110	40.0	57.3	73.2	87.4	100.0	110.6	119.1	125.4	129.6		131.8	133.1	84			

* Includes 1.0-foot stump allowance.

Table 22--Predicted stemwood volume to a saw-log merchantable top, and to 7-inch and 4-inch d.o.b. tops based on d.b.h., height to a 4-inch d.o.b. top and height to a saw-log top for all pines except major pines (species 13) in the Appalachian Area/

D.b.h. class	Height to 4-inch d.o.b. top	Volume to													Gi Form Class
		1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	1-inch d.o.b. top	4-inch d.o.b. top			
Inches	Feet	Cubic feet													Percent
10	30	6.0									7.3	8.5	75		
	40	6.3	8.6								9.0	11.0	77		
	50	6.4	8.9								10.5	13.3	79		
	60	6.5	9.1	11.2							12.0	15.5	79		
	70	6.6	9.2	11.5	13.4						13.4	17.7	80		
	80	6.6	9.3	11.6	13.7						14.9	19.9	80		
	90	6.6	9.3	11.8	14.0	15.9					16.3	22.1	80		
12	30	8.7									11.3	12.1	75		
	40	9.1	12.4								14.2	15.4	77		
	50	9.3	12.8	15.5							16.8	18.6	79		
	60	9.4	13.1	16.1	18.5						19.4	21.7	79		
	70	9.5	13.2	16.5	19.2	21.4					22.0	24.7	80		
	80	9.5	13.3	16.7	19.7	22.2	24.3				24.5	27.8	80		
	90	9.6	13.4	16.9	20.0	22.7	25.1				27.0	30.8	80		
14	40	12.4	16.8	19.6							19.8	20.7	77		
	50	12.7	17.4	21.1	23.5						23.7	24.9	79		
	60	12.8	17.8	21.9	25.1	27.4					27.4	29.0	79		
	70	12.9	18.0	22.4	26.0	28.9					31.1	33.0	80		
	80	13.0	18.2	22.7	26.7	30.0	32.7				34.7	37.0	80		
	90	13.0	18.3	23.0	27.1	30.8	33.9	36.5			38.3	41.0	80		
	100	13.1	18.3	23.2	27.5	31.4	34.8	37.7	40.2		41.9	44.9	80		
16	40	16.2	21.9	25.5							26.2	26.9	77		
	50	16.6	22.8	27.4	30.6						31.3	32.2	79		
	60	16.8	23.2	28.5	32.6	35.5					36.3	37.5	79		
	70	16.9	23.5	29.2	33.9	37.6	40.3				41.2	42.6	80		
	80	17.0	23.7	29.7	34.8	39.0	42.5	45.1			46.0	47.7	80		
	90	17.0	23.9	30.0	35.4	40.1	44.1	47.3	49.9		50.8	52.8	80		
	100	17.1	24.0	30.2	35.9	40.9	45.3	49.0	52.1	54.6	55.6	57.8	80		
18	40	20.5	27.7	32.2							33.3	33.8	77		
	50	21.0	28.8	34.7	38.6						39.8	40.5	79		
	60	21.2	29.4	36.1	41.2	44.7					46.1	47.0	79		
	70	21.4	29.8	36.9	42.8	47.4	50.8				52.4	53.5	80		
	80	21.5	30.0	37.5	43.9	49.3	53.6	56.8			58.5	59.8	80		
	90	21.6	30.2	37.9	44.8	50.6	55.6	59.6	62.7		64.6	66.1	80		
	100	21.6	30.4	38.3	45.4	51.7	57.1	61.8	65.6	68.7	70.7	72.4	80		
20	50	25.9	35.6	42.8	47.5						49.2	49.8	79		
	60	26.2	36.3	44.5	50.7	55.1					57.0	57.8	79		
	70	26.4	36.8	45.6	52.8	58.4	62.5				64.7	65.6	80		
	80	26.6	37.1	46.3	54.2	60.8	66.0	69.8			72.3	73.4	80		
	90	26.6	37.3	46.8	55.2	62.4	68.5	73.4	77.1	79.7	79.9	81.1	80		
	100	26.6	37.5	47.2	56.0	63.7	70.4	76.1	80.8	84.4	87.4	88.8	80		
22	50	31.4	43.1	51.7	57.4						59.6	60.0	79		
	60	31.8	44.0	53.8	61.3	66.5					69.0	69.6	79		
	70	32.0	44.5	55.1	63.8	70.6	75.4	78.3			78.3	79.0	80		
	80	32.2	44.9	56.0	65.5	73.4	79.7	84.3	87.2		87.5	88.3	80		
	90	32.3	45.2	56.7	66.8	75.5	82.8	88.6	93.0	96.0	96.6	97.6	80		
	100	32.4	45.4	57.2	67.7	77.0	85.1	91.9	97.5	101.8	105.7	106.8	80		
24	50	37.4	51.3	61.5	68.2						70.9	71.2	79		
	60	37.9	52.3	64.0	72.9	79.0					82.1	82.6	79		
	70	38.1	53.0	65.6	75.9	83.9	89.6	92.9			93.1	93.7	80		
	80	38.3	53.5	66.7	78.0	87.3	94.7	100.1	103.4		104.0	104.8	80		
	90	38.5	53.8	67.5	79.5	89.8	98.4	105.3	110.5	113.9	114.9	115.7	80		
	100	38.5	54.0	68.0	80.6	91.6	101.2	109.2	115.8	120.8	125.7	126.6	80		

* Includes 1 .0-foot stump allowance.

Table 23--Predicted stemwood volume to a saw-log merchantable top, and to 7-inch and 4-inch d.o.b. tops based on d.b.h., height to a 7-inch d.o.b. top and height to a saw-log top for all pines except major pines (species 13) in the Appalachian Area.

D.b.h. class	Height to 1-inch d.o.b. top	Volume to										T-inch d.o.b. top	4-inch d.o.b. top	Girard Form Class
		Saw-log 1.0 1.5	merchantable 2.0 2.5	height 3.0 3.5	(16-foot logs) 4.0 4.5	5.0								
Inches	Feet	Cubic feet										Percent		
10	20											6.6	8.8	73
	30	5.8										9.9	12.4	77
	40	6.3	9.0	11.3								13.0	15.9	79
	50	6.6	9.2	11.6	13.8	15.8						16.0	19.3	79
	60	6.6	9.3	11.8	14.2	16.4	18.3					19.0	22.7	80
	70	6.6	9.4	12.0	14.4	16.7	18.8	20.8				22.0	26.1	80
12	20	8.3										9.3	10.8	73
	30	9.0	12.2									13.6	15.3	77
	40	9.3	12.9	15.8								17.7	19.6	79
	50	9.4	13.2	16.4	19.2	21.3						21.6	23.8	79
	60	9.5	13.3	16.8	19.8	22.5	24.7					25.4	27.9	80
	70	9.6	13.4	17.0	20.2	23.2	25.8	28.0				29.2	31.9	80
14	80	9.6	13.5	17.1	20.5	23.7	26.5	29.1	31.3			33.0	36.0	80
	40	12.7	17.4	21.1								23.2	24.6	79
	50	12.8	17.9	22.1	25.4	27.9						28.1	29.7	79
	60	12.9	18.1	22.6	26.5	29.7	32.2					33.0	34.8	80
	70	13.0	18.2	23.0	27.2	30.8	34.0	36.5				37.8	39.8	80
	80	13.1	18.3	23.2	27.6	31.6	35.1	38.2	40.8			42.6	44.7	80
16	90	13.1	18.4	23.4	28.0	32.2	36.0	39.4	42.4	45.0		47.3	49.7	80
	100	13.1	18.5	23.5	28.2	32.6	36.6	40.3	43.6	46.6		52.1	54.6	80
	40	16.5	22.7	27.2								29.6	30.7	79
	50	16.8	23.3	28.6	32.7	35.4						35.7	36.9	79
	60	16.9	23.6	29.4	34.2	38.1	40.9					41.7	43.1	80
	70	17.0	23.8	29.9	35.2	39.7	43.4	46.3				47.6	49.2	80
18	80	17.1	23.9	30.2	35.8	40.8	45.1	48.7	51.7			53.6	55.2	80
	90	17.1	24.0	30.4	36.3	41.6	46.3	50.5	54.0	57.0		59.5	61.3	80
	100	17.1	24.1	30.6	36.6	42.2	47.2	51.8	55.8	59.3		65.4	67.3	80
	40	20.9	28.7	34.1								36.8	37.7	79
	50	21.2	29.4	36.0	40.9	44.0						44.2	45.3	79
	60	21.4	29.8	37.0	43.0	47.6	50.8					51.6	52.7	80
20	70	21.5	30.1	37.7	44.2	49.7	54.2	57.4				58.8	60.1	80
	80	21.6	30.3	38.1	45.1	51.2	56.4	60.7	64.0			66.1	67.4	80
	90	21.7	30.4	38.4	45.7	52.3	58.0	63.0	67.2	70.6		73.2	74.7	80
	100	21.7	30.5	38.7	46.2	53.1	59.3	64.8	69.6	73.7		80.4	82.0	80
	50	26.2	36.3	44.3	50.1	53.6						53.8	54.7	79
	60	26.5	36.8	45.6	52.7	58.2	61.8					62.6	63.6	80
22	70	26.6	37.2	46.4	54.4	61.0	66.2	69.9				71.3	72.4	80
	80	26.7	37.4	47.0	55.5	62.9	69.1	74.1	77.8			80.0	81.1	80
	90	26.8	37.5	47.4	56.3	64.2	71.2	77.1	82.0	85.8		88.6	89.9	80
	100	26.8	37.7	47.7	56.9	65.2	72.7	79.3	85.0	89.8		97.3	98.6	80
	50	31.8	43.9	53.4	60.3	64.2						64.4	65.1	79
	60	32.0	44.6	55.1	63.6	69.9	74.0					74.9	75.7	80
24	70	32.2	45.0	56.1	65.6	73.4	79.4	83.6				85.2	86.1	80
	80	32.3	45.2	56.8	67.0	75.7	83.0	88.9	93.1			95.4	96.4	80
	90	32.4	45.4	57.3	68.0	77.4	85.7	92.6	98.3	102.6		105.7	106.7	80
	100	32.5	45.6	57.7	68.7	78.7	87.6	95.4	102.1	107.7		115.9	117.0	80
	50	37.8	52.2	63.5	71.4	75.8						76.0	76.7	79
	60	38.2	53.0	65.5	75.4	82.7	87.3					88.3	88.9	80
26	70	38.3	53.5	66.7	77.9	87.0	93.9	98.7				100.3	101.1	80
	80	38.5	53.8	67.5	79.6	89.8	98.4	105.1	109.9			112.4	113.2	80
	90	38.6	54.1	68.2	80.8	91.9	101.5	109.6	116.1	121.0		124.3	125.2	80
	100	38.7	54.3	68.6	81.7	93.5	103.9	113.1	120.8	127.2		136.3	137.2	80

* Includes 1.0-foot stump allowance.

Table 24--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and total-tree height for all pines except major pines (species 13) in the Appalachian Area.*

D.b.h. class	Total-tree height (feet)																
	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110
<u>Inches</u>	<u>Cubic feet</u>																
5	0.8	0.9	1.0	1.1	1.8	2.1											
6	1.4	2.2	2.4	2.6	3.4	3.7	4.1	4.4									
7	2.6	3.3	3.7	3.9	4.9	5.5	6.0	6.4	6.9	7.4							
	3.6	4.5	5.0	5.4	6.7	7.4	8.0	8.7	9.3	9.9	10.5	11.2					
8	4.7	5.8	6.4	7.0	8.6	9.5	10.3	11.2	12.0	12.8	13.6	14.4	15.1	15.9			
10	5.8	7.2	8.0	8.7	10.7	11.8	12.9	13.9	14.9	15.9	16.9	17.9	18.9	19.8	20.8	21.7	
11			9.8	10.6	13.0	14.4	15.7	17.0	18.2	19.4	20.6	21.8	23.0	24.2	25.4	26.5	27.7
12			11.7	12.7	15.5	17.2	18.8	20.3	21.8	23.2	24.7	26.1	27.5	29.0	30.3	31.7	33.1
13			13.8	15.0	18.3	20.2	22.1	23.9	25.7	27.4	29.1	30.8	32.5	34.1	35.8	37.4	39.0
14																	
15																	
16																	

* Includes 0.5-foot stump allowance.

Table 25-Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and height to a 4-inch d.o.b. top for all pines except major pines (species 13) in the Appalachian Area.*

D.b.h. class	Tree height to 4-inch d.o.b. top (feet)																															
	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100															
<u>Inches</u>	<u>Cubic feet</u>																															
5																																
6	2.2	1.7	2.2	2.8	3.4	2.7	3.0	4.0	3.4	4.6	3.9	5.1	5.6	6.1																		
7	2.7	3.6	4.4	5.2	5.9	6.6	7.2	7.9	8.5	9.1																						
8	3.7	4.5	5.3	6.7	7.5	8.3	9.1	9.9	10.7	11.4	12.2	13.0																				
9	4.4	5.7	6.6	8.3	9.3	10.2	11.2	12.1	13.1	14.0	14.9	15.9	16.8	17.7																		
10	5.4	6.9	8.1	10.0	11.2	12.4	13.5	14.7	15.8	16.9	18.0	19.1	20.2	21.3	22.4	23.5																
11			9.7	12.0	13.4	14.8	16.2	17.5	18.8	20.1	21.4	22.7	24.0	25.3	26.6	27.9	29.2															
12																																
13			13.4	11.5	16.6	14.2	18.5	15.8	20.3	17.4	22.1	19.0	20.6	23.9	22.1	25.7	23.6	27.5	25.2	29.2	26.7	31.0	32.7	28.2	34.4	29.7	31.2	36.2	32.7	37.9	34.2	39.6
14						21.3	23.4	25.5	27.5	29.6	31.6	33.6	35.6	37.6	39.6	41.5	43.5	45.5														
15						24.3	26.7	29.1	31.4	33.7	36.0	38.3	40.6	42.8	45.1	47.3	49.6	51.8														
16						27.6	30.3	33.0	35.6	38.2	40.8	43.3	45.9	48.4	51.0	53.5	56.0	58.5														

* Includes 0.5-foot stump allowance.

Table 26--Predicted stemwood volume to a saw-log merchantable top, and to 1-inch and 4-inch d.o.b. tops based on d.b.h., total-tree height and height to a saw-log top for eastern white pine (species 129) in the Appalachian Area:

D.b.h. class	Total tree height	Volume to											Girard Form Class	
		Saw-Log merchantable height (16-foot Logs)										7-inch		0-inch
		1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	d.o.b. top	d.o.b. top		
<u>Inches</u>	<u>Feet</u>	<u>Cubic feet</u>											<u>Percent</u>	
10	40	5.5									6.5	8.0	70	
	50	5.9									8.0	9.9	74	
	60	6.1	8.4								9.3	11.7	76	
	70	6.2	8.7								10.5	13.4	78	
	80										11.6	15.0	78	
	90	6.3	8.8	11.0							12.7	16.6	79	
12		6.4	9.0	11.2										
	40	8.0	10.5								10.7	11.7	70	
	50	8.5	11.6								13.2	14.5	74	
	60	8.9	12.2	14.7							15.5	17.1	76	
	70	9.0	12.5	15.4	17.6						17.6	19.6	78	
	80	9.2	12.8	15.9	18.4						19.6	21.9	78	
14	90	9.3	13.0	16.2	18.9	21.2					21.6	24.3	79	
	100	9.3	13.1	16.4	19.4	21.8					23.6	26.6	79	
	40	10.9	14.4								15.4	16.1	70	
	50	11.7	15.8	18.6							19.0	20.0	74	
	60	12.1	16.6	20.1							22.3	23.5	76	
	70	12.4	17.1	21.0	24.0						25.4	26.9	78	
16	80	12.5	17.5	21.7	25.1	27.6					28.4	30.1	78	
	90	12.7	17.7	22.1	25.8	28.9	31.1				31.3	33.3	79	
	100	12.8	17.9	22.4	26.4	29.8	32.5				34.2	36.5	79	
	50	15.3	20.7	24.4							25.4	26.2	74	
	60	15.9	21.8	26.3	29.3						29.8	30.9	76	
	70	16.2	22.4	27.5	31.4	33.9					34.1	35.3	78	
18	80	16.4	22.9	28.3	32.8	36.2					38.1	39.6	78	
	90	16.6	23.2	28.9	33.8	37.8	40.7				42.1	43.8	79	
	100	16.7	23.4	29.4	34.6	39.0	42.5	45.1			46.0	47.9	79	
	110	16.8	23.6	29.7	35.2	39.9	43.9	47.1	49.5		49.9	52.0	80	
	50	19.4	26.3	30.9							32.6	33.3	74	
	60	20.1	27.6	33.3	37.2						38.3	39.2	76	
20	70	20.6	28.4	34.9	39.8	43.0					43.7	44.8	78	
	80	20.9	29.0	35.9	41.6	45.8	48.6				49.0	50.3	78	
	90	21.1	29.4	36.7	42.9	47.8	51.6	54.1			54.1	55.6	79	
	100	21.2	29.7	37.2	43.8	49.4	53.8	57.2			59.2	60.9	79	
	110	21.3	29.9	37.7	44.6	50.6	55.6	59.6	62.7		64.2	66.1	80	
	60	24.9	34.1	41.2	45.9						47.7	48.5	76	
22	70	25.5	35.2	43.1	49.2	53.1					54.5	55.5	78	
	80	25.8	35.9	44.4	51.4	56.6	60.1				61.1	62.2	78	
	90	26.1	36.4	45.3	53.0	59.1	63.8	66.8			67.5	68.8	79	
	100	26.2	36.7	46.0	54.2	61.0	66.5	70.7	73.4		73.8	75.3	79	
	110	26.4	37.0	46.6	55.1	62.5	68.7	73.7	77.4	79.9	80.1	81.8	80	
	60	30.2	41.3	49.9	55.6						58.1	58.8	76	
24	70	30.9	42.6	52.2	59.5	64.4					66.3	67.2	78	
	80	31.3	43.4	53.8	62.2	68.6	72.7				74.4	75.4	78	
	90	31.6	44.0	54.9	64.1	71.6	77.2	80.9			82.2	83.4	79	
	100	31.8	44.5	55.8	65.6	73.9	80.6	85.6	88.9		89.9	91.3	79	
	110	32.0	44.8	56.4	66.7	75.6	83.2	89.2	93.7	96.7	97.6	99.1	80	
	60	36.0	49.3	59.4	66.2						69.4	70.1	76	
26	70	36.8	50.8	62.2	70.9	76.7					79.3	80.1	78	
	80	37.3	51.8	64.1	74.1	81.7	86.6				88.9	89.9	78	
	90	37.7	52.5	65.4	76.4	85.3	91.9	96.3			98.3	99.4	79	
	100	37.9	53.0	66.4	78.1	88.0	95.9	101.9	105.8		107.6	108.8	79	
	110	38.1	53.4	67.2	79.4	90.1	99.0	106.2	111.6	115.2	116.7	118.1	80	

* Includes 1.0-foot stump allowance.

Table 27--Predicted stemwood volume to a saw-log merchantable top, and to 1-inch and 4-inch d.o.b. tops based on d.b.h., height to a 4-inch d.o.b. top and height to a saw-log top for eastern white pine (species 129) in the Appalachian Area:

D.b.h. class	Height to 4-inch d.o.b. top	Volume to										T-inch d.o.b. top	4-inch d.o.b. top	Gi rard Form Class
		Saw-log 1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	Logs)			
Inches	Feet	Cubic feet												Percent
10	30	5.7										6.9	8.1	74
	40	6.1	8.3									8.4	10.5	76
	50	6.2	8.6									9.9	12.7	78
	60	6.3	8.8	10.9								11.3	14.9	78
	70	6.4	8.9	11.1								12.6	17.1	79
	80	6.4	9.0	11.3	13.3							13.9	19.2	79
	90	6.4	9.1	11.4	13.6							15.2	21.3	79
12	30	8.3										10.7	11.5	74
	40	8.8	11.9									13.4	14.8	76
	50	9.0	12.4	15.0								16.0	17.9	78
	60	9.1	12.7	15.6	17.9							18.4	20.9	78
	70	9.2	12.9	16.0	18.6	20.7						20.8	23.8	79
	80	9.3	13.0	16.3	19.1	21.5						23.2	26.7	79
	90	9.3	13.1	16.5	19.5	22.1	24.3					25.5	29.6	79
14	40	12.0	16.2	18.8								18.9	19.9	76
	50	12.3	16.9	20.4								22.6	24.0	78
	60	12.5	17.3	21.2	24.2							26.1	27.9	78
	70	12.6	17.6	21.8	25.2	28.0						29.6	31.7	79
	80	12.7	17.7	22.2	25.9	29.1	31.6					33.0	35.6	79
	90	12.8	17.9	22.4	26.4	29.9	32.8	35.2				36.4	39.3	79
	100	12.8	18.0	22.6	26.8	30.5	33.7	36.5	38.8			39.8	43.1	79
16	40	15.7	21.2	24.5								25.0	25.8	76
	50	16.1	22.1	26.6	29.5							29.9	31.0	78
	60	16.4	22.7	27.7	31.6	34.2						34.7	36.0	78
	70	16.5	23.0	28.4	32.9	36.4	38.9					39.3	40.9	79
	80	16.7	23.2	29.0	33.8	37.9	41.1	43.4				43.9	45.8	79
	90	16.7	23.4	29.3	34.5	38.9	42.7	45.7	48.0			48.4	50.6	79
	100	16.8	23.5	29.6	35.0	39.8	43.9	47.4	50.3	52.5		52.9	55.4	79
18	40	19.9	26.8	31.0								31.8	32.4	76
	50	20.5	28.0	33.6	37.2							38.1	38.9	78
	60	20.8	28.7	35.1	39.9	43.1						44.1	45.2	78
	70	21.0	29.2	36.0	41.6	45.9	48.9					50.0	51.3	79
	80	21.1	29.4	36.7	42.8	47.8	51.8	54.7				55.9	57.4	79
	90	21.2	29.7	37.1	43.6	49.2	53.9	57.6	60.4			61.7	63.4	79
	100	21.3	29.8	37.5	44.3	50.3	55.4	59.8	63.3	66.0		67.4	69.4	79
20	50	25.3	34.7	41.5	45.8							47.2	47.8	78
	60	25.7	35.5	43.3	49.2	53.1						54.6	55.5	78
	70	26.0	36.0	44.5	51.3	56.5	60.2					61.9	63.0	79
	80	26.2	36.4	45.3	52.8	58.9	63.8	67.3				69.2	70.4	79
	90	26.3	36.7	45.9	53.9	60.7	66.4	70.9	74.2			76.3	77.7	79
	100	26.4	36.9	46.3	54.7	62.0	68.3	73.6	77.9	81.2		83.4	85.1	79
22	50	30.7	42.0	50.2	55.3							57.1	57.7	78
	60	31.2	43.0	52.4	59.4	64.1						66.2	66.9	78
	70	31.5	43.7	53.8	62.1	68.3	72.7					75.0	75.9	79
	80	31.7	44.1	54.8	63.9	71.3	77.0	81.2				83.7	84.8	79
	90	31.9	44.4	55.5	65.2	73.4	80.2	85.6	89.5	92.2		92.4	93.6	79
	100	32.0	44.7	56.1	66.2	75.0	82.6	88.9	94.0	97.9		101.0	102.3	79
24	50	36.6	50.0	59.7	65.8							68.0	68.5	78
	60	37.1	51.2	62.4	70.7	76.2						78.7	79.4	78
	70	37.5	52.0	64.1	73.8	81.2	86.4					89.3	90.0	79
	80	37.8	52.5	65.3	76.0	84.7	91.5	96.4	99.4			99.6	100.5	79
	90	38.0	52.9	66.1	77.6	87.3	95.3	101.7	106.3	109.4		109.9	110.9	79
	100	38.1	53.2	66.8	78.8	89.3	98.2	105.7	111.7	116.2		120.1	121.3	79

• Includes 1 .0-foot stump allowance.

Table 28--Predicted **stemwood** volume to a saw-log merchantable top, and to **7-inch** and **4-inch** d.o.b. tops based on d.b.h., height to a 7-inch d.o.b. top and height to a saw-log top for eastern white pine (species **129**) in the Appalachian Area.*

D.b.h. class	Height to 7-inch d.o.b. top	Volume to											7-inch d.o.b. top	4-inch d.o.b. top	Girard Form Class
		Saw-log merchantable height (16-foot logs)													
Inches	Feet	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0					Percent
10	20	5.4											6.1	8.2	71
	30	6.0	8.3										9.5	12.2	76
	40	6.2	8.7	10.9									12.6	16.2	78
	50	6.3	8.9	11.3	13.4	15.4							15.6	20.3	78
	60	6.4	9.0	11.5	13.8	15.9	17.9						18.6	24.4	79
	70	6.4	9.1	11.6	14.0	16.3	18.4	20.3					21.5	28.6	79
12	20	7.7											8.7	10.0	71
	30	8.6	11.7										13.1	14.7	76
	40	9.0	12.4	15.2									17.1	19.2	78
	50	9.2	12.8	15.9	18.6	20.7							20.9	23.7	78
	60	9.3	13.0	16.3	19.3	21.8	24.0						24.7	28.1	79
	70	9.3	13.1	16.6	19.7	22.6	25.1	27.3					28.4	32.5	79
14	80	9.4	13.2	16.8	20.0	23.1	25.8	28.3	30.5				32.2	37.0	79
	40	12.3	16.9	20.3									22.4	23.8	78
	50	12.5	17.4	21.4	24.6	27.0							27.2	29.1	78
	60	12.6	17.7	22.0	25.8	28.8	31.2						32.0	34.2	79
	70	12.7	17.9	22.4	26.5	30.0	33.0	35.4					36.7	39.4	79
	80	12.8	18.0	22.7	27.0	30.8	34.2	37.1	39.6				41.3	44.5	79
16	90	12.9	18.1	22.9	27.3	31.4	35.1	38.3	41.2	43.7			46.0	49.6	79
	100	12.9	18.1	23.0	27.6	31.8	35.7	39.3	42.5	45.3			50.6	54.8	80
	40	16.1	22.0	26.2									28.5	29.6	78
	50	16.4	22.7	27.8	31.7	34.3							34.5	35.8	78
	60	16.6	23.1	28.7	33.3	36.9	39.6						40.4	42.0	79
	70	16.7	23.3	29.2	34.3	38.6	42.2	44.9					46.2	48.1	79
18	80	16.8	23.5	29.6	35.0	39.8	43.9	47.3	50.1				51.9	54.2	79
	90	16.8	23.6	29.9	35.5	40.6	45.1	49.1	52.5	55.2			57.7	60.3	79
	100	16.9	23.7	30.1	35.9	41.2	46.1	50.4	54.3	57.6			63.4	66.3	80
	40	20.4	27.8	32.9									35.4	36.3	78
	50	20.8	28.7	35.0	39.6	42.5							42.8	43.8	78
	60	21.0	29.2	36.1	41.8	46.1	49.1						49.9	51.1	79
20	70	21.2	29.5	36.9	43.2	48.4	52.5	55.6					57.0	58.4	79
	80	21.3	29.8	37.4	44.1	49.9	54.9	58.9	62.0				63.9	65.6	79
	90	21.4	29.9	37.7	44.8	51.1	56.6	61.3	65.2	68.4			70.9	72.9	79
	100	21.4	30.1	38.0	45.3	51.9	57.8	63.1	67.6	71.5			77.8	80.1	80
	50	25.7	35.4	43.1	48.5	51.8							52.0	52.8	78
	60	26.0	36.1	44.5	51.3	56.4	59.8						60.6	61.5	79
22	70	26.2	36.5	45.5	53.1	59.3	64.2	67.6					69.0	70.2	79
	80	26.3	36.8	46.1	54.3	61.3	67.1	71.8	75.3				77.4	78.7	79
	90	26.4	37.0	46.6	55.1	62.7	69.3	74.9	79.5	83.0			85.7	87.2	79
	100	26.5	37.1	46.9	55.8	63.8	71.0	77.2	82.6	87.1			94.0	95.8	80
	50	31.1	42.9	52.0	58.4	62.0							62.2	62.9	78
	60	31.5	43.7	53.8	61.8	67.8	71.5						72.4	73.1	79
24	70	31.8	44.2	55.0	64.0	71.4	77.0	80.9					82.3	83.3	79
	80	31.9	44.5	55.7	65.5	73.9	80.7	86.1	90.1				92.3	93.3	79
	90	32.0	44.8	56.3	66.6	75.7	83.4	90.0	95.2	99.2			102.1	103.3	79
	100	32.1	45.0	56.8	67.4	77.0	85.5	92.9	99.2	104.3			111.9	113.3	80
	50	37.1	51.1	61.8	69.2	73.2							73.4	73.9	78
	60	37.6	52.0	64.0	73.4	80.2	84.4						85.3	85.9	79
26	70	37.9	52.6	65.4	76.0	84.6	91.1	95.4					97.0	97.7	79
	80	38.0	53.1	66.3	77.8	87.6	95.6	101.8	106.2				108.5	109.4	79
	90	38.2	53.4	67.0	79.2	89.8	98.9	106.5	112.5	117.0			120.1	121.1	79
	100	38.3	53.6	67.5	80.2	91.5	101.4	110.0	117.3	123.2			131.5	132.7	80

* Includes 1.0-foot stump allowance.

Table 29--Predicted **stemwood** volume to a **4-inch d.o.b. top** in pulpwood trees based on d.b.h. and total-tree height for eastern white pine (species 129) in the Appalachian Area.^a

D.b.h. class	Total-tree height (feet)																
	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110
Inches	Cubic feet																
5																	
6	0.6	1.2	0.8	2.1	0.9	2.3	2.4	1.0	3.1	1.7	3.4	1.8	3.6	3.9			
7	2.4	3.1	3.4	3.7	4.6	5.0	5.4	5.8	6.2	6.5							
	3.3	4.2	4.7	5.1	6.3	6.9	7.4	7.9	8.4	8.9	9.4	9.9					
8	4.4	5.5	6.1	6.7	8.2	8.9	9.6	10.2	10.9	11.6	12.2	12.8	13.4	14.1			
10	5.5	6.9	7.7	8.4	10.2	11.1	12.0	12.8	13.6	14.5	15.3	16.1	16.8	17.6	18.4	19.2	
11			9.4	10.2	12.5	13.6	14.6	15.7	16.7	17.7	18.6	19.6	20.6	21.5	22.5	23.4	24.4
12			11.2	12.3	14.9	16.3	17.5	18.8	20.0	21.2	22.3	23.5	24.7	25.8	27.0	28.1	29.2
13			13.3	14.5	17.6	19.2	20.7	22.1	23.6	25.0	26.4	27.7	29.1	30.5	31.8	33.2	34.5
14					20.5	22.3	24.1	25.8	27.4	29.1	30.7	32.3	33.9	35.5	37.0	38.6	40.2
15					23.6	25.7	27.7	29.7	31.6	33.5	35.3	37.2	39.0	40.8	42.7	44.5	46.3
16					26.9	29.3	31.6	33.8	36.0	38.2	40.3	42.4	44.5	46.6	48.7	50.7	52.8

^a Includes 0.5-foot stump allowance.

Table 30--Predicted **stemwood** volume to a **4-inch d.o.b. top** in pulpwood trees based on d.b.h. and height to a **4-inch d.o.b. top** for eastern white pine (species 129) in the Appalachian Area:

D.b.h. class	Tree height to 4-inch d.o.b. top (feet)																
	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Inches	Cubic feet																
5	1.6	2.1	2.6	2.9	3.3	3.7											
6	2.1	2.7	3.3	3.8	4.4	4.9	5.4	5.9									
7	2.6	3.4	4.2	5.0	5.7	6.3	7.0	7.6	8.2	8.8							
a	3.5	4.3	5.1	6.4	7.2	8.0	8.7	9.5	10.3	11.0	11.8	12.5					
1 X	4.1	5.1	6.7	5.4	6.4	7.8	9.6	7.9	10.8	8.9	11.9	9.8	10.8	13.0	11.7	14.1	12.6
11			9.3	11.5	12.9	14.2	15.5	16.8	18.1	19.4	20.6	21.9	23.1	24.3	25.6	26.8	28.0
12			11.0	13.6	15.2	16.8	18.3	19.8	21.3	22.7	24.2	25.6	27.1	28.5	30.0	31.4	32.8
13			12.9	15.9	17.7	19.5	21.3	23.0	24.7	26.4	28.1	29.8	31.4	33.1	34.7	36.4	38.0
14					20.4	22.5	24.5	26.5	28.4	30.4	32.3	34.2	36.1	38.0	39.9	41.8	43.7
15					23.4	25.7	28.0	30.2	32.4	34.6	36.8	39.0	41.1	43.3	45.4	47.6	49.7
16					26.5	29.1	31.7	34.2	36.7	39.2	41.7	44.1	46.5	48.9	51.4	53.8	56.2

^a Includes 0.5-foot stump allowance.

Table 31--Predicted stemwood volume to a saw-log merchantable top, and to 7-inch and 4-inch d.o.b. tops based on d.b.h., total-tree height and height to a saw-log top for hemlock (species 261) in the Appalachian Area.*

D.b.h. class	Total tree height	Volume to											Gi rard Form Class
		Saw-log merchantable height (16-foot logs)									7-inch	4-inch	
		1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	d.o.b. top	d.o.b. top	
Inches	Feet	Cubic feet											Percent
10	40	5.9									6.9	8.3	71
	50	6.3									8.3	10.1	75
	60	6.5	8.8								9.6	11.8	77
	70	6.6	9.0								10.7	13.4	78
	80	6.7	9.2	11.3							11.8	14.9	79
	90	6.8	9.3	11.5							12.8	16.4	79
12	40	8.5	11.0								11.1	12.1	71
	50	9.0	12.0								13.5	14.8	75
	60	9.3	12.6	15.1							15.7	17.2	77
	70	9.5	13.0	15.8							17.7	19.6	78
	80	9.7	13.3	16.2	18.6						19.6	21.8	79
	90	9.7	13.4	16.6	19.2	21.3					21.5	24.0	79
14	100	9.8	13.6	16.9	19.6	22.0					23.4	26.2	80
	40	11.5	15.0								15.8	16.6	71
	50	12.3	16.4	19.0							19.3	20.2	75
	60	12.7	17.2	20.5							22.4	23.6	77
	70	13.0	17.7	21.5	24.2						25.4	26.8	78
	80	13.2	18.1	22.1	25.3	27.7					28.2	29.9	79
16	90	13.3	18.3	22.6	26.1	28.9	31.0				31.0	32.9	79
	100	13.4	18.5	22.9	26.8	29.9	32.4				33.8	35.9	80
	50	16.0	21.4	24.9							25.7	26.5	75
	60	16.6	22.5	26.8	29.6						30.0	30.9	77
	70	16.9	23.1	28.0	31.6						34.0	35.2	78
	80	17.2	23.6	28.9	33.1	36.2					37.8	39.2	79
18	90	17.4	23.9	29.5	34.1	37.8	40.5				41.6	43.2	79
	100	17.5	24.2	30.0	34.9	39.1	42.3	44.7			45.3	47.2	80
	110	17.6	24.3	30.3	35.6	40.0	43.7	46.7	48.8		49.0	51.0	80
	50	20.3	27.1	31.5							32.9	33.6	75
	60	21.0	28.4	33.9	37.4						38.4	39.3	77
	70	21.5	29.3	35.5	40.1	43.0					43.5	44.6	78
20	80	21.8	29.9	36.6	41.9	45.8	48.3				48.5	49.8	79
	90	22.0	30.3	37.4	43.2	47.9	51.3				53.4	54.9	79
	100	22.1	30.6	37.9	44.2	49.4	53.6	56.6			58.2	59.9	80
	110	22.3	30.8	38.4	45.0	50.7	55.4	59.1	61.8		63.0	64.8	80
	60	26.0	35.1	41.9	46.2						47.7	48.5	77
	70	26.5	36.2	43.8	49.5	53.1					54.2	55.2	78
22	80	26.9	36.9	45.2	51.7	56.6	59.7				60.4	61.6	79
	90	27.1	37.4	46.1	53.4	59.1	63.3	66.0			66.5	67.8	79
	100	27.3	37.8	46.9	54.6	61.1	66.1	69.9	72.3		72.5	74.0	80
	110	27.5	38.0	47.4	55.6	62.6	68.4	72.9	76.3	78.5		80.1	80
	60	31.4	42.5	50.7	55.9						58.1	58.8	77
	70	32.1	43.8	53.0	59.9	64.3					65.9	66.8	78
24	80	32.5	44.6	54.7	62.6	68.4	72.2				73.5	74.6	79
	90	32.8	45.2	55.8	64.6	71.5	76.6	79.9			81.0	82.2	79
	100	33.1	45.7	56.7	66.1	73.9	80.0	84.6	87.5		88.3	89.7	80
	110	33.3	46.0	57.4	67.3	75.7	82.7	88.2	92.3	95.0	95.6	97.1	80
	60	37.4	50.6	60.3	66.6						69.4	70.0	77
	70	38.2	52.1	63.1	71.3	76.5					78.8	79.6	78
26	80	38.7	53.1	65.1	74.5	81.5	85.9				87.9	88.8	79
	90	39.1	53.9	66.4	76.9	85.1	91.2	95.1			96.8	97.9	79
	100	39.4	54.4	67.5	78.7	87.9	95.3	100.7	104.1		105.6	106.8	80
	110	39.6	54.8	68.3	80.1	90.1	98.5	105.0	109.9	113.0	114.3	115.7	80

* Includes 1 .0-foot stump allowance.

Table 32--Predicted stemwood volume to a saw-log merchantable top, and to 7-inch and 4-inch d.o.b. tops based on d.b.h., height to a 4-inch d.o.b. top and height to a saw-log top for hemlock (species 261) in the Appalachian Area.'

D.b.h. class	Height to 4-inch d.o.b. top	Volume to											Girard Form Class
		1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	7-inch d.o.b. top	4-inch d.o.b. top	
Inches	Feet	Cubic feet											Percent
ID	30	6.0									7.1	8.3	74
	40	6.4	8.6								8.8	10.8	77
	50	6.6	9.0								10.3	13.0	78
	60	6.7	9.2	11.3							11.7	15.2	79
	70	6.8	9.4	11.5							13.1	17.3	79
	80	6.8	11.7	13.7							14.4	19.5	79
	90	6.9	9.5	11.9	14.0						15.8	21.6	80
12	30	8.6									11.0	11.8	74
	40	9.2	12.3								13.8	15.1	77
	50	9.5	12.9	15.4							16.4	18.2	78
	60	9.6	13.2	16.1	18.3						18.9	21.2	79
	70	9.7	13.4	16.5	19.1	21.1					21.3	24.1	79
	80	9.8	13.6	16.8	19.6	22.0					23.7	27.0	79
	90	9.9	13.7	17.0	20.0	22.6	24.8				26.1	29.9	80
14	40	12.5	16.7	19.3							19.3	20.3	77
	50	12.9	17.5	20.9							23.1	24.3	78
	60	13.1	18.0	21.8	24.8						26.6	28.3	79
	70	13.3	18.2	22.4	25.8	28.5					30.1	32.1	79
	80	13.4	18.4	22.8	26.6	29.7	32.1				33.5	35.9	79
	90	13.4	18.6	23.1	27.1	30.5	33.4	35.7			36.9	39.7	80
	100	13.5	18.7	23.4	27.5	31.2	34.4	37.0	39.2		40.3	43.4	80
16	40	16.3	21.8	25.1							25.5	26.2	77
	50	16.8	22.9	27.2	30.0						30.5	31.4	78
	60	17.1	23.4	28.5	32.2	34.8					35.2	36.4	79
	70	17.3	23.8	29.3	33.6	37.0	39.4				39.8	41.4	79
	80	17.5	24.1	29.8	34.6	38.6	41.7	44.0			44.4	46.2	79
	90	17.6	24.3	30.2	35.3	39.7	43.4	46.3	48.5		48.9	51.0	80
	100	17.6	24.4	30.5	35.9	40.6	44.7	48.1	50.8	53.0	53.4	55.7	80
18	40	20.7	27.6	31.6							32.4	33.0	77
	50	21.3	28.9	34.4	37.8						38.7	39.5	78
	60	21.7	29.7	36.0	40.6	43.8					44.7	45.7	79
	70	21.9	30.1	37.0	42.5	46.6	49.6				50.6	51.8	79
	80	22.1	30.5	37.7	43.7	48.7	52.5	55.3			56.4	57.8	79
	90	22.2	30.7	38.2	44.7	50.2	54.7	58.3	60.9		62.2	63.8	80
	100	22.3	30.9	38.6	45.4	51.3	56.3	60.6	64.0	66.5	67.9	69.7	80
20	50	26.3	35.7	42.4	46.5						47.8	48.4	78
	60	26.8	36.4	44.4	50.1	53.8					55.3	56.1	79
	70	27.1	37.2	45.6	52.3	57.4	60.9				62.6	63.5	79
	80	27.3	37.6	46.5	53.9	59.9	64.6	67.9			69.7	70.9	79
	90	27.4	37.9	47.1	55.1	61.8	67.3	71.7	74.9		76.8	78.1	80
	100	27.6	38.1	47.6	56.0	63.2	69.4	74.5	78.6	81.7	83.9	85.4	80
	22	50	31.9	43.2	51.2	56.2						57.9	58.4
60		32.4	44.3	53.6	60.5	64.9					66.9	67.5	79
70		32.8	45.0	55.2	63.2	69.3	73.5				75.7	76.5	79
80		33.0	45.5	56.2	65.2	72.4	78.0	81.9	84.3		84.3	85.3	79
90		33.2	45.9	57.0	66.6	74.7	81.3	86.5	90.2	92.7	92.9	94.0	80
100		33.4	46.2	57.6	67.7	76.4	83.8	90.0	94.8	98.5	101.4	102.7	80
24		50	37.9	51.4	60.9	66.7						68.8	69.2
	60	38.6	52.7	63.8	71.9	77.1					79.5	80.1	79
	70	39.0	53.6	65.6	75.2	82.4	87.3	89.9			90.0	90.6	79
	80	39.3	54.2	66.9	77.5	86.1	92.6	97.2	100.0		100.2	101.0	79
	90	39.5	54.6	67.8	79.2	88.8	96.6	102.7	107.1	109.9	110.4	111.4	80
	100	39.7	54.9	68.5	80.5	90.8	99.6	106.9	112.6	116.9	120.6	121.6	80

• Includes I.O-foot stump allowance.

Table 33--Predicted stemwood volume to a saw-log merchantable top, and to 7-inch and 4-inch d.o.b. tops based on d.b.h., height to a 7-inch d.o.b. top and height to a saw-log top for hemlock (species 261) in the Appalachian Area!

D.b.h. class	Height to 7-inch d.o.b. top	Volume to										T-inch d.o.b. top	4-inch d.o.b. top	Girard Form Class
		Sew-log 1.0	merchantable 1.5	2.0	2.5	height 3.0	(16-foot 3.5	Logs) 4.0	4.5	5.0				
Inches	Feet	Cubic feet										Percent		
10	20	5.9										6.7	9.3	75
	30	6.4	8.8									10.0	12.5	78
	40	6.6	9.2	11.4								13.0	15.7	79
	50	6.7	9.4	11.7	13.8	15.7						15.9	18.7	79
	60	6.8	9.5	11.9	14.2	16.3	18.2					18.8	21.7	79
	70	6.9	9.5	12.1	14.4	16.6	18.7	20.6				21.7	24.7	79
12	20	8.5										9.5	11.6	75
	30	9.2	12.4									13.7	15.7	78
	40	9.5	13.0	15.8								17.6	19.7	79
	50	9.7	13.3	16.5	19.1	21.1						21.3	23.5	79
	60	9.8	13.5	16.9	19.8	22.3	24.4					25.0	27.3	79
	70	9.9	13.7	17.1	20.2	23.0	25.4	27.5				28.7	31.0	79
14	80	9.9	13.7	17.3	20.5	23.5	26.2	28.6	30.7			32.3	34.7	79
	40	12.9	17.6	21.1								23.0	24.8	79
	50	13.2	18.1	22.1	25.3	27.5						27.8	29.5	79
	60	13.3	18.3	22.7	26.4	29.4	31.7					32.4	34.2	79
	70	13.4	18.5	23.1	27.1	30.5	33.4	35.8				37.0	38.9	79
	80	13.5	18.6	23.3	27.6	31.3	34.6	37.5	39.8			41.5	43.5	79
16	90	13.5	18.7	23.5	27.9	31.9	35.5	38.7	41.5	43.8		46.0	48.1	79
	100	13.6	18.8	23.7	28.2	32.4	36.2	39.6	42.7	45.5		50.6	52.6	80
	40	16.9	22.9	27.1								29.3	30.8	79
	50	17.2	23.5	28.6	32.4	34.9						35.2	36.7	79
	60	17.4	23.9	29.4	34.0	37.6	40.1					40.9	42.4	79
	70	17.5	24.1	30.0	35.0	39.2	42.7	45.3				46.5	48.1	79
18	80	17.6	24.3	30.3	35.7	40.4	44.4	47.7	50.4			52.1	53.8	79
	90	17.6	24.4	30.6	36.2	41.2	45.6	49.5	52.7	55.4		57.7	59.4	79
	100	17.7	24.5	30.8	36.6	41.9	46.6	50.8	54.5	57.7		63.3	65.0	80
	40	21.4	28.9	34.0								36.5	37.8	79
	50	21.7	29.7	36.0	40.5	43.3						43.5	44.9	79
	60	22.0	30.2	37.1	42.6	46.9	49.7					50.5	51.9	79
20	70	22.1	30.5	37.8	44.0	49.1	53.1	56.0				57.3	58.8	79
	80	22.2	30.7	38.3	44.9	50.6	55.4	59.3	62.3			64.1	65.6	79
	90	22.3	30.9	38.6	45.6	51.8	57.1	61.7	65.5	68.5		70.9	72.4	79
	100	22.4	31.0	38.9	46.1	52.6	58.4	63.5	67.9	71.6		77.7	79.2	80
	50	26.8	36.7	44.2	49.6	52.7						52.9	54.1	79
	60	27.1	37.2	45.6	52.3	57.2	60.5					61.2	62.5	79
22	70	27.3	37.6	46.5	54.0	60.1	64.8	68.1				69.4	70.7	79
	80	27.4	37.9	47.2	55.2	62.1	67.8	72.3	75.6			77.6	78.9	79
	90	27.5	38.1	47.6	56.1	63.5	70.0	75.4	79.8	83.1		85.7	87.1	79
	100	27.6	38.2	48.0	56.8	64.6	71.6	77.7	82.9	87.2		93.8	95.2	80
	50	32.5	44.3	53.4	59.6	63.0						63.3	64.4	79
	60	32.8	45.0	55.1	63.0	68.7	72.3					73.1	74.2	79
24	70	33.0	45.5	56.2	65.1	72.3	77.7	81.4				82.8	84.0	79
	80	33.2	45.8	57.0	66.6	74.8	81.5	86.6	90.4			92.4	93.6	79
	90	33.3	46.1	57.5	67.7	76.6	84.2	90.5	95.5	99.3		102.0	103.3	79
	100	33.4	46.3	57.9	68.5	77.9	86.2	93.4	99.4	104.4		111.6	112.8	80
	50	38.6	52.7	63.3	70.6	74.4						74.6	75.6	79
	60	39.0	53.6	65.5	74.7	81.3	85.3					86.1	87.2	79
26	70	39.3	54.1	66.8	77.3	85.7	91.9	96.0				97.5	98.5	79
	80	39.5	54.5	67.7	79.1	88.7	96.4	102.4	106.5			108.7	109.8	79
	90	39.7	54.8	68.4	80.4	90.8	99.7	107.0	112.8	117.0		119.9	121.0	79
	100	39.8	55.0	68.9	81.4	92.5	102.2	110.6	117.6	123.2		131.1	132.2	80

* Includes 1.0-foot stump allowance.

Table 34--Predicted **stemwood** volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and total-tree height for hemlock (species 261) in the Appalachian Area:

D.b.h. class	Total-tree height (feet)																
	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110
Inches	Cubic feet																
5																	
6	0.7	1.3	0.9	2.2	2.4	1.0	2.5	1.1	3.3	1.8	3.5	1.9	3.7	4.0			
7	2.6	3.2	3.6	3.9	4.8	5.2	5.5	5.9	6.2	6.6							
8																	
9	3.5	4.6	4.4	5.7	4.9	6.3	5.3	6.9	6.5	8.4	9.1	7.0	7.5	9.7	10.4	8.0	11.0
10	5.7	7.1	7.9	8.6	10.5	11.3	12.1	12.9	13.7	14.5	15.3	16.0	16.8	17.5	18.2	19.0	
11			9.6	10.5	12.7	13.8	14.8	15.8	16.7	17.7	18.6	19.5	20.5	21.4	22.3	23.2	24.1
12			11.5	12.5	15.2	16.5	17.7	18.9	20.0	21.2	22.3	23.4	24.5	25.6	26.7	27.8	28.8
13			13.6	14.7	17.9	19.4	20.8	22.2	23.6	24.9	26.3	27.6	28.9	30.2	31.4	32.7	34.0
14																	
15					20.9	24.0	22.6	26.0	24.2	27.9	25.9	29.8	31.6	27.5	33.4	29.0	30.6
16					27.3	29.6	31.8	33.9	36.0	38.1	40.1	42.1	44.1	46.1	48.0	50.0	51.9

* Includes 0.5-foot stump allowance.

Table 35--Predicted **stemwood** volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and height to a 4-inch d.o.b. top for hemlock (species 261) in the Appalachian Area.'

D.b.h. class	Tree height to 4-inch d.o.b. top (feet)																
	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Inches	Cubic feet																
5																	
6	2.2	1.7	2.2	2.8	3.4	2.7	4.0	3.4	4.5	3.9	5.1	5.6	6.1				
7	2.7	3.6	4.4	5.2	5.9	6.5	7.2	7.8	8.4	9.1							
8																	
9	3.7	4.3	4.5	5.7	6.6	5.4	6.6	8.1	9.1	7.4	10.1	8.2	11.0	9.0	12.0	9.8	10.5
10	5.3	6.9	8.1	9.9	11.1	12.2	13.3	14.5	15.5	16.6	17.7	18.7	19.8	20.9	21.9	22.9	
11			9.7	11.8	13.2	14.6	15.9	17.2	18.5	19.7	21.0	22.2	23.5	24.7	25.9	27.2	28.4
12			11.4	13.9	15.6	17.1	18.7	20.2	21.7	23.1	24.6	26.0	27.5	28.9	30.3	31.8	33.2
13			13.3	16.3	18.1	19.9	21.7	23.4	25.2	26.8	28.5	30.2	31.8	33.5	35.1	36.8	38.4
14					20.9	23.0	25.0	27.0	28.9	30.9	32.8	34.7	36.6	38.4	40.3	42.2	44.1
15					23.9	26.2	28.5	30.8	33.0	35.2	37.3	39.5	41.6	43.8	45.9	48.0	50.1
16					27.0	29.7	32.3	34.8	37.3	39.8	42.2	44.6	47.0	49.4	51.8	54.2	56.6

* Includes 0.5-foot stump allowance.

Table 36--Predicted **stemwood** volume to a saw-log merchantable top, and to **9-inch** and **4-inch d.o.b.** tops based on d.b.h., total-tree height and height to a saw-log top for ail soft hardwoods combined (species **300**) in the Appalachian Area:

D.b.h. class	Total tree height	Volume to										Girard Form Class	
		Saw-Log		merchantable		height		(16-foot logs)		9-inch	4-inch		
		1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	d.o.b. top	d.o.b. top	
<u>Inches</u>	<u>Feet</u>	<u>Cubic feet</u>											<u>Percent</u>
12	40										5.2	10.4	63
	50	8.7									9.8	13.7	71
	60	9.2									12.3	16.7	75
	70	9.6	13.1								14.4	19.4	77
	80										16.4	22.0	79
	90	10.0	9.8	13.8	13.5	17.1					18.2	24.5	80
	100	10.1	14.0	17.5							19.9	27.0	81
14	40	10.5									11.8	14.3	63
	50	11.8	15.5								16.1	18.8	71
	60	12.6	16.9								19.7	22.9	75
	70	13.1	17.8	21.6							23.0	26.6	77
	80	13.4	18.4	22.6	25.9						26.0	30.2	79
	90	13.6	18.8	23.3	27.1						28.9	33.6	80
	100	13.7	19.1	23.8	27.9	31.2					31.7	37.0	81
16	50	15.4	20.3								22.6	24.7	71
	60	16.4	22.1	26.4							27.4	30.0	75
	70	17.1	23.3	28.3	31.8						31.9	34.9	77
	80	17.5	24.0	29.6	33.9						36.1	39.6	79
	90	17.8	24.6	30.5	35.4	39.1					40.1	44.2	80
	100	18.0	25.0	31.2	36.5	40.8					44.0	48.6	81
	110	18.1	25.3	31.7	37.3	42.1	46.0				47.8	52.9	82
18	50	19.5	25.7								29.5	31.3	71
	60	20.8	28.0	33.4							35.8	38.1	75
	70	21.6	29.5	35.8	40.3						41.6	44.3	77
	80	22.1	30.4	37.4	42.9	46.7					47.1	50.3	79
	90	22.5	31.1	38.6	44.8	49.6					52.4	56.1	80
	100	22.8	31.6	39.5	46.2	51.7	55.8				57.6	61.7	81
	110	23.0	32.0	40.1	47.3	53.3	58.2	61.9			62.6	67.2	82
20	50	24.1	31.8	36.6							37.1	38.8	71
	60	25.7	34.6	41.2							45.1	47.1	75
	70	26.7	36.4	44.2	49.8						52.4	54.9	77
	80	27.4	37.6	46.2	53.0	57.7					59.4	62.2	79
	90	27.8	38.5	47.7	55.3	61.2	65.3				66.1	69.3	80
	100	28.1	39.1	48.0	57.1	63.9	69.0	72.5			72.6	76.3	81
	110	28.4	39.5	49.6	58.4	65.9	71.9	76.4			79.0	83.1	82
22	60	31.2	41.9	49.9	54.7						55.2	57.1	75
	70	32.4	44.1	53.5	60.3						64.2	66.5	77
	80	33.1	45.5	56.0	64.2	69.9					72.8	75.4	79
	90	33.7	46.6	57.7	67.0	74.1	79.0				81.0	84.0	80
	100	34.1	47.3	59.0	69.1	77.3	83.5	87.8			89.1	92.5	81
	110	34.4	47.9	60.0	70.7	79.7	87.0	92.5	96.3		97.0	100.7	82
24	60	37.1	49.9	59.4	65.1						66.3	68.0	75
	70	38.5	52.5	63.7	71.8	76.5					77.1	79.2	77
	80	39.5	54.2	66.6	76.4	83.2	87.3				87.4	89.8	79
	90	40.1	55.4	68.7	79.8	88.2	94.0				97.4	100.1	80
	100	40.6	56.3	70.3	82.2	92.0	99.4	104.5			107.0	110.1	81
	110	40.9	57.0	71.5	84.2	94.9	103.6	110.1	114.6		116.5	120.0	82
26	60	43.6	58.6	69.8	76.5						78.3	79.9	75
	70	45.3	61.6	74.8	84.3	89.8					91.1	93.0	77
	80	46.3	63.7	78.2	89.7	97.7	102.4				103.3	105.5	79
	90	47.1	65.1	80.7	93.6	103.6	110.4	114.6			115.0	117.6	80
	100	47.7	66.1	82.5	96.6	108.0	116.7	122.6	126.4		126.5	129.4	81
	110	48.1	66.9	83.9	98.8	111.4	121.6	129.2	134.6		137.7	140.9	82

* Includes 1 .0-foot stump allowance.

Table 37--Predicted stemwood volume to a saw-log merchantable top, and to 0-inch and 4-inch d.o.b. tops based on d.b.h., height to a 4-inch d.o.b. top and height to a saw-log top for all soft hardwoods combined (species 300) in the Appalachian Area:

D.b.h. class	Height to 4-inch d.o.b. top	Volume to										9-inch d.o.b. top	4-inch d.o.b. top	Girard Form Class
		Seu-log 1.0	1.5	merchantable 2.0	2.5	height 3.0	(M-foot 3.5	togs) 4.0	5.0	4.5				
Inches	Feet	Cubic feet										Percent		
12	30	8.4										9.0	11.4	71
	40	9.2										11.4	15.1	76
	50	9.6	13.0									13.6	18.5	78
	60	9.8	13.5									15.6	21.7	79
	70	10.0	13.8	17.0								17.4	24.8	80
	80	10.1	13.9	17.3								19.2	27.9	81
	90	10.1	14.1	17.6	20.7							21.0	31.0	81
14	40	12.5	16.7									17.7	20.2	76
	50	13.1	17.7	21.2								21.3	24.7	78
	60	13.4	18.3	22.3								24.7	29.0	79
	70	13.6	18.7	23.1	26.6							27.9	33.2	80
	80	13.7	19.0	23.6	27.5	30.7						31.1	37.2	81
	90	13.8	19.2	23.9	28.1	31.7						34.2	41.2	81
	100	13.9	19.3	24.2	28.6	32.4	35.7					37.3	45.2	81
16	40	16.4	21.8									24.3	26.2	76
	50	17.1	23.2	27.6								29.4	32.0	78
	60	17.5	24.0	29.1	33.0							34.2	37.5	79
	70	17.8	24.5	30.1	34.7	38.2						38.9	42.8	80
	80	17.9	24.8	30.7	35.8	39.9	43.2					43.4	48.0	81
	90	18.0	25.0	31.2	36.6	41.2	45.1					47.9	53.1	81
	100	18.1	25.2	31.6	37.2	42.2	46.5	50.1				52.3	58.2	81
18	40	20.8	27.6									31.5	33.0	76
	50	21.7	29.3	34.9								38.2	40.2	78
	60	22.2	30.3	36.8	41.7							44.5	47.0	79
	70	22.5	31.0	38.1	43.8	48.2						50.6	53.7	80
	80	22.7	31.4	38.9	45.2	50.4	54.5					56.6	60.2	81
	90	22.9	31.7	39.5	46.3	52.1	56.9	60.7				62.5	66.6	81
	100	23.0	31.9	40.0	47.1	53.3	58.7	63.2	66.8			68.4	73.0	81
20	40	25.7	34.1	39.0								39.4	40.6	76
	50	26.8	36.2	43.1	47.4							47.8	49.4	78
	60	27.4	37.5	45.5	51.4	55.4						55.7	57.7	79
	70	27.8	38.2	47.0	54.0	59.4	63.1					63.4	65.9	80
	80	28.1	38.8	48.0	55.8	62.2	67.1	70.7				71.0	73.8	81
	90	28.3	39.2	48.8	57.1	64.2	70.1	74.7	78.1			78.4	81.7	81
	100	28.4	39.4	49.3	58.1	65.8	72.3	77.8	82.2	85.6		85.8	89.4	81
22	50	32.4	43.8	52.1	57.2							58.2	59.5	78
	60	33.2	45.4	55.0	62.1	66.9						67.9	69.6	79
	70	33.7	46.3	56.8	65.3	71.7	76.2					77.3	79.3	80
	80	34.0	46.9	58.1	67.5	75.1	81.0	85.3				86.6	88.9	81
	90	34.2	47.4	59.0	69.1	77.6	84.7	90.2	94.3			95.6	98.3	81
	100	34.4	47.7	59.7	70.3	79.5	87.4	94.0	99.2	103.2		104.6	107.7	81
	24	50	38.6	52.2	62.0	68.0							69.6	70.7
60		39.5	54.0	65.4	73.9	79.4						81.2	82.6	79
70		40.1	55.1	67.6	77.7	85.3	90.5					92.4	94.1	80
80		40.5	55.9	69.2	80.3	89.3	96.3	101.3				103.5	105.4	81
90		40.8	56.4	70.2	82.2	92.3	100.6	107.2	111.9			114.3	116.6	81
100		41.0	56.8	71.1	83.7	94.6	103.9	111.7	117.9	122.5		125.1	127.6	81
26		50	45.3	61.3	72.7	79.8							81.8	82.8
	60	46.4	63.4	76.8	86.7	93.1						95.5	96.7	79
	70	47.1	64.7	79.4	91.1	100.0	106.0					108.7	110.1	80
	80	47.6	65.6	81.2	94.2	104.8	112.9	118.7				121.7	123.3	81
	90	47.9	66.3	82.5	96.5	108.3	118.0	125.6	131.2			134.5	136.4	81
	100	48.1	66.7	83.4	98.2	111.0	121.9	130.9	138.1	143.5		147.2	149.3	81

• Includes 1.0-foot stump allowance.

Table 38--Predicted stemwood volume to a saw-log merchantable top, and to O-inch and 4-inch d.o.b. tops based on d.b.h., height to a 9-inch d.o.b. top and height to a saw-log top for all soft hardwoods combined (species 300) in the Appalachian Area:

D.b.h. class	Height to 9-inch d.o.b. top	Volume to										Girard Form Class	
		1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	9-inch d.o.b. top		4-inch d.o.b. top
Inches	Feet	Cubic feet										Percent	
12	20	9.1									10.3	15.5	76
	30	9.6	13.2								15.1	20.6	79
	40	9.8	13.7	17.1							19.8	25.8	80
	50	10.0	13.9	17.6	21.0	24.0					24.4	30.9	81
	60	10.0	14.1	17.8	21.4	24.8	27.8				28.9	35.9	81
	70	10.1	14.1	18.0	21.7	25.2	28.5	31.6			33.4	40.9	81
	80	10.1	14.2	18.1	21.9	25.5	29.0	32.2	35.3		37.9	45.8	81
14	40	13.4	18.5	22.7							25.7	30.2	80
	50	13.6	18.9	23.6	27.6	31.0					31.3	36.3	81
	60	13.7	19.1	24.0	28.5	32.4	35.8				36.9	42.2	81
	70	13.8	19.2	24.3	29.0	33.3	37.1	40.6			42.4	48.1	81
	80	13.8	19.3	24.5	29.3	33.9	38.0	41.9	45.3		48.0	54.0	81
	90	13.9	19.4	24.6	29.6	34.3	38.7	42.8	46.6	50.0	53.5	59.8	81
	100	13.9	19.4	24.7	29.8	34.6	39.2	43.5	47.5	51.3	58.9	65.7	81
16	40	17.5	24.1	29.2							32.4	36.1	80
	50	17.8	24.6	30.4	35.3	39.0					39.3	43.3	81
	60	17.9	24.9	31.1	36.6	41.2	45.0				46.1	50.4	81
	70	18.0	25.1	31.5	37.4	42.6	47.1	50.9			52.9	57.5	81
	80	18.1	25.2	31.8	37.9	43.5	48.5	53.0	56.8		59.6	64.5	81
	90	18.1	25.3	32.0	38.3	44.2	49.5	54.4	58.8	62.7	66.3	71.4	81
	100	18.2	25.4	32.2	38.6	44.7	50.3	55.5	60.3	64.6	73.0	78.4	81
18	40	22.2	30.4	36.6							40.1	43.2	80
	50	22.5	31.1	38.3	44.0	48.0					48.4	51.8	81
	60	22.7	31.5	39.2	45.8	51.2	55.4				56.6	60.2	81
	70	22.8	31.7	39.8	46.9	53.2	58.4	62.7			64.7	68.6	81
	80	22.9	31.9	40.2	47.7	54.4	60.4	65.6	69.9		72.8	76.9	81
	90	23.0	32.0	40.5	48.2	55.4	61.8	67.6	72.7	77.0	80.8	85.1	81
	100	23.0	32.1	40.7	48.7	56.1	62.9	69.2	74.8	79.8	88.9	93.4	81
20	40	27.5	37.5	44.8							48.7	51.4	80
	50	27.8	38.3	47.0	53.7	58.2					58.6	61.5	81
	60	28.1	38.8	48.2	56.1	62.4	67.1				68.3	71.4	81
	70	28.2	39.2	49.0	57.6	65.0	71.1	75.8			77.9	81.3	81
	80	28.3	39.4	49.5	58.6	66.7	73.7	79.7	84.4		87.5	91.0	81
	90	28.4	39.6	49.9	59.3	67.9	75.6	82.4	88.2	93.0	97.1	100.8	81
	100	28.5	39.7	50.1	59.9	68.8	77.0	84.4	91.0	96.8	106.6	110.5	81
22	50	33.7	46.4	56.6	64.4	69.4					69.8	72.4	81
	60	34.0	47.0	58.2	67.5	74.8	79.9				81.2	84.0	81
	70	34.2	47.4	59.1	69.4	78.0	85.1	90.3			92.6	95.5	81
	80	34.3	47.7	59.8	70.6	80.2	88.4	95.2	100.6		103.8	106.9	81
	90	34.4	47.9	60.3	71.6	81.8	90.8	98.7	105.4	110.8	115.1	118.3	81
	100	34.5	48.0	60.6	72.3	82.9	92.6	101.3	109.0	115.5	126.3	129.7	81
24	50	40.1	55.1	67.2	76.2	81.7					82.1	84.4	81
	60	40.5	55.9	69.1	79.9	88.3	94.1				95.4	97.9	81
	70	40.7	56.4	70.3	82.3	92.3	100.4	106.2			108.6	111.2	81
	80	40.9	56.7	71.1	83.8	95.0	104.5	112.3	118.2		121.7	124.5	81
	90	41.0	57.0	71.6	85.0	96.9	107.5	116.6	124.2	130.2	134.8	137.7	81
	100	41.1	57.2	72.1	85.8	98.4	109.7	119.8	128.6	136.1	147.8	150.8	81
26	50	47.2	64.7	78.7	89.0	95.0					95.5	97.5	81
	60	47.6	65.6	81.0	93.5	103.1	109.4				110.8	113.0	81
	70	47.8	66.2	82.4	96.3	107.9	117.0	123.5			126.0	128.4	81
	80	48.0	66.6	83.3	98.2	111.1	122.0	130.9	137.4		141.1	143.6	81
	90	48.2	66.9	84.0	99.6	113.4	125.6	136.1	144.6	151.3	156.2	158.8	81
	100	48.3	67.1	84.6	100.6	115.2	128.3	139.9	150.0	158.4	171.2	173.9	81

* Includes 1 .0-foot stump allowance.

Table 39--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and total-tree height for all soft hardwoods combined (species 300) in the Appalachian Area:

D.b.h. class	Total-tree height (feet)																
	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110
Inches	Cubic feet																
5	0.9	0.9	1.0	1.2	1.8	2.0											
6	1.5	2.1	2.4	2.7	3.1	3.5	3.8	4.1									
7	2.8	3.1	3.6	4.0	4.5	5.0	5.5	5.9	6.3	6.7							
8	3.7	4.2	4.8	5.4	6.1	6.7	7.3	7.9	8.5	9.0	9.6	10.1					
10	4.8	5.4	6.2	6.9	7.8	8.7	9.4	10.2	10.9	11.7	12.4	13.0	13.7	14.4			
11	6.0	6.7	7.7	8.6	9.8	10.8	11.8	12.7	13.7	14.6	15.4	16.3	17.1	18.0	18.8	19.6	
12			9.3	10.5	11.9	13.2	14.4	15.5	16.7	17.8	18.8	19.9	20.9	21.9	23.0	24.0	25.0
13			11.2	12.6	14.3	15.8	17.2	18.6	19.9	21.3	22.5	23.8	25.1	26.3	27.5	28.7	29.9
14			13.2	14.8	16.8	18.6	20.3	21.9	23.5	25.0	26.6	28.1	29.5	31.0	32.4	33.8	35.3
15					19.5	21.6	23.6	25.5	27.3	29.1	30.9	32.7	34.4	36.1	37.7	39.4	41.0
16					22.5	24.9	27.1	29.3	31.5	33.5	35.6	37.6	39.6	41.5	43.4	45.3	47.2
17					25.6	28.3	30.9	33.4	35.9	38.2	40.6	42.8	45.1	47.3	49.5	51.7	53.9

• Includes 0.5-foot stump allowance.

Table 40--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and height to a 4-inch d.o.b. top for all soft hardwoods combined (species 300) in the Appalachian Area.¹

D.b.h. class	Tree height to 4-inch d.o.b. top (feet)																
	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Inches	Cubic feet																
5																	
6	2.3	2.9	3.5	2.7	3.0	4.0	3.4	4.5	3.9	5.1	5.6	6.2					
7	2.9	3.5	4.2	5.1	5.9	6.6	7.2	7.9	8.6	9.2							
8																	
9	3.6	4.6	4.3	5.4	6.6	5.3	6.5	8.0	9.1	7.4	10.2	8.2	11.2	9.9	10.7	13.1	11.5
10	5.6	6.6	8.1	9.8	11.1	12.3	13.5	14.7	15.9	17.0	18.2	19.3	20.4	21.5	22.6	23.7	
11			9.7	11.7	13.2	14.7	16.1	17.5	18.9	20.3	21.6	22.9	24.2	25.5	26.9	28.2	29.4
12			11.4	13.8	15.6	17.3	19.0	20.6	22.2	23.8	25.4	26.9	28.4	30.0	31.5	33.0	34.5
13			13.3	16.1	18.2	20.2	22.1	24.0	25.8	27.6	29.4	31.2	33.0	34.8	36.5	38.3	40.0
14					21.0	23.2	25.5	27.6	29.7	31.8	33.9	35.9	37.9	40.0	42.0	44.0	46.0
15					24.0	26.5	29.1	31.5	33.9	36.3	38.6	40.9	43.2	45.5	47.8	50.1	52.3
16					27.2	30.1	32.9	35.7	38.4	41.1	43.7	46.3	48.9	51.5	54.1	56.6	59.2

• Includes 0.5-foot stump allowance.

Table 41--Predicted stemwood volume to a saw-log merchantable top, and to 0-inch and 4-inch d.o.b. tops based on d.b.h., total-tree height and height to a saw-log top for red maple (species 3161 in the Appalachian Area.^a

D.b.h. class	Total tree height	Volume to													Form Class	
		Saw-log merchantable height (16-foot Logs)										9-inch		4-inch		
		1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	d.o.b.	too	d.o.b.	too		
<u>Inches</u>	<u>Feet</u>	<u>Cubic feet</u>													<u>Percent</u>	
12	40												5.7	10.0	61	
	50	8.8											9.3	13.3	70	
	60	9.4											11.8	16.1	75	
	70	9.8	13.3										13.8	18.8	78	
	80	10.0	13.8										15.6	21.3	80	
	90	10.2	14.1										17.3	23.7	82	
	100	10.3	14.3	17.8									18.8	26.0	83	
14	40	10.6											11.2	13.8	61	
	50	12.0											15.4	18.2	70	
	60	12.8	17.1										18.7	22.1	75	
	70	13.3	18.1	21.7									21.7	25.8	78	
	80	13.6	18.7	22.8									24.5	29.2	80	
	90	13.8	19.2	23.7	27.1								27.1	32.5	82	
	100	14.0	19.5	24.3	28.1								29.7	35.8	83	
16	50	15.7	20.4										21.5	23.9	70	
	60	16.8	22.4										26.1	29.1	75	
	70	17.4	23.7	28.3									30.3	33.9	78	
	80	17.8	24.5	29.9	33.7								34.2	38.4	80	
	90	18.1	25.1	31.0	35.4								38.0	42.7	82	
	100	18.3	25.5	31.8	36.7	40.6							41.6	47.0	83	
	110	18.5	25.9	32.4	37.8	42.1							45.2	51.1	83	
18	50	19.9	25.8										28.2	30.4	70	
	60	21.2	28.4	33.2									34.3	37.0	75	
	70	22.1	30.0	35.9	39.8								39.8	43.0	78	
	80	22.6	31.1	37.8	42.7								45.0	48.8	80	
	90	23.0	31.8	39.2	44.9	48.9							50.1	54.3	82	
	100	23.2	32.4	40.2	46.5	51.4	54.9						54.9	59.7	83	
	110	23.4	32.8	41.0	47.9	53.3	57.5						59.7	65.0	83	
20	50	24.6	31.9										35.7	37.7	70	
	60	26.3	35.1	41.0									43.3	45.8	75	
	70	27.3	37.1	44.4	49.1								50.4	53.3	78	
	80	27.9	38.4	46.7	52.7	56.7							57.0	60.4	80	
	90	28.4	39.3	48.4	55.4	60.5							63.4	67.2	82	
	100	28.7	40.0	49.7	57.5	63.5	67.8						69.6	73.9	83	
	110	29.0	40.5	50.7	59.1	65.9	71.0	74.8					75.6	80.4	83	
22	60	31.8	42.5	49.6									53.3	55.5	75	
	70	33.0	44.9	53.7	59.5								61.9	64.6	78	
	80	33.8	46.5	56.6	63.8	68.6							70.1	73.2	80	
	90	34.4	47.6	58.7	67.1	73.2	77.3						78.0	81.5	82	
	100	34.8	48.4	60.2	69.6	76.8	82.1						85.6	89.6	83	
	110	35.1	49.1	61.4	71.6	79.7	86.0	90.6					93.1	97.5	83	
24	60	37.9	50.6	59.1	63.8								64.1	66.1	75	
	70	39.4	53.5	64.0	70.8								74.5	76.9	78	
	80	40.3	55.4	67.4	76.0	81.7							84.4	87.2	80	
	90	41.0	56.7	69.9	79.9	87.2	92.1						93.9	97.1	82	
	100	41.4	57.7	71.7	82.9	91.5	97.7	102.0					103.1	106.7	83	
	110	41.8	58.4	73.1	85.3	94.9	102.4	107.9	111.7				112.2	116.2	83	
26	60	44.5	59.4	69.4	74.9								75.8	77.7	75	
	70	46.2	62.8	75.1	83.2	87.8							88.2	90.4	78	
	80	47.3	65.0	79.1	89.2	95.9							99.9	102.5	80	
	90	48.1	66.6	82.0	93.8	102.3	108.1						111.1	114.1	82	
	100	48.7	67.8	84.2	97.3	107.4	114.7	119.8					122.1	125.4	83	
	110	49.1	68.6	85.8	100.1	111.5	120.2	126.6	131.2				132.8	136.5	83	

^a Includes 1 .0-foot stump allowance.

Table 42--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., height to a 4-inch d.o.b. top and height to a saw-log top for red maple (species 316) in the Appalachian Area.*

D.b.h. class	Height to 4-inch d.o.b. top	Volume to													Girard Form Class
		Saw-log	merchantable	height	(16-foot	Logs)	5.0	9-inch	4-inch						
		1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5		d.o.b. top	d.o.b. top			
<u>Inches</u>	<u>Feet</u>	<u>Cubic feet</u>													<u>Percent</u>
12	30	8.6									9.0	11.4	72		
	40	9.2									11.3	15.0	77		
	50	9.6	13.1								13.2	18.3	79		
	60	9.9	13.6								14.9	21.4	81		
	70	10.0	13.9								16.6	24.4	81		
	80	10.1	14.1	17.4							18.2	27.4	82		
	90	10.2	14.2	17.7							19.7	30.3	82		
14	40	12.6	16.8								17.3	20.1	77		
	50	13.1	17.8								20.6	24.4	79		
	60	13.4	18.5	22.4							23.7	28.5	81		
	70	13.6	18.8	23.1	26.5						26.7	32.5	81		
	80	13.8	19.1	23.7	27.4						29.5	36.3	82		
	90	13.9	19.3	24.0	28.1	31.5					32.4	40.2	82		
	100	13.9	19.4	24.3	28.6	32.3					35.1	44.0	82		
16	40	16.5	21.9								23.8	26.0	77		
	50	17.2	23.3	27.6							28.6	31.5	79		
	60	17.6	24.1	29.2	32.8						33.0	36.7	81		
	70	17.8	24.6	30.2	34.5						37.3	41.8	81		
	80	18.0	25.0	30.9	35.7	39.6					41.4	46.7	82		
	90	18.1	25.2	31.4	36.6	41.0	44.6				45.5	51.6	82		
	100	18.2	25.4	31.8	37.3	42.1	46.1	49.4			49.6	56.5	82		
18	40	20.9	27.7								30.9	32.7	77		
	50	21.8	29.5	34.9							37.2	39.5	79		
	60	22.3	30.5	36.9	41.4						43.0	46.0	81		
	70	22.6	31.2	38.1	43.6	47.6					48.7	52.3	81		
	80	22.8	31.6	39.0	45.1	50.0	53.7				54.2	58.5	82		
	90	23.0	31.9	39.7	46.3	51.8	56.2	59.6			59.7	64.6	82		
	100	23.1	32.2	40.2	47.2	53.1	58.1	62.2			65.1	70.7	82		
20	40	25.8	34.2								38.7	40.1	77		
	50	26.9	36.4	43.0							46.6	48.5	79		
	60	27.5	37.7	45.5	51.0						54.0	56.5	81		
	70	27.9	38.5	47.1	53.7	58.6					61.2	64.2	81		
	80	28.2	39.0	48.2	55.7	61.6	66.0				68.2	71.7	82		
	90	28.4	39.4	49.0	57.1	63.8	69.2	73.3			75.1	79.1	82		
	100	28.5	39.7	49.6	58.2	65.5	71.6	76.6	80.5		81.9	86.5	82		
22	50	32.6	44.1	52.0	56.6						56.8	58.5	79		
	60	33.3	45.6	55.0	61.6	65.8					65.9	68.0	81		
	70	33.8	46.6	56.9	65.0	70.8	74.6				74.7	77.2	81		
	80	34.1	47.3	58.3	67.3	74.4	79.7				83.3	86.3	82		
	90	34.4	47.7	59.3	69.0	77.1	83.5	88.4			91.8	95.2	82		
	100	34.6	48.1	60.0	70.4	79.2	86.5	92.5	97.1		100.1	104.0	82		
24	50	38.8	52.5	61.8	67.2						68.0	69.4	79		
	60	39.7	54.3	65.4	73.3	78.1					78.9	80.6	81		
	70	40.3	55.5	67.8	77.3	84.2	88.6				89.4	91.5	81		
	80	40.7	56.3	69.4	80.1	88.5	94.7	98.9			99.7	102.2	82		
	90	41.0	56.9	70.6	82.1	91.7	99.3	105.0	109.1		109.8	112.8	82		
	100	41.2	57.3	71.4	83.7	94.2	102.9	109.9	115.2	119.1	119.9	123.2	82		
26	50	45.5	61.6	72.5	78.8						80.0	81.2	79		
	60	46.6	63.8	76.8	85.9	91.5					92.8	94.4	81		
	70	47.3	65.1	79.5	90.6	98.7	103.8				105.2	107.1	81		
	80	47.8	66.1	81.4	94.0	103.8	111.0	115.9			117.4	119.6	82		
	90	48.1	66.8	82.8	96.4	107.5	116.4	123.1	127.7		129.3	131.9	82		
	100	48.4	67.3	83.9	98.2	110.5	120.6	128.8	135.0	139.5	141.2	144.1	82		

* Includes 1 .0-foot stump allowance.

Table 43--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., height to a 9-inch d.o.b. top and height to a saw-log top for red maple (species 316) in the Appalachian Area:

D.b.h. class	Height to 9-inch d.o.b. top	Volume to										9-inch d.o.b. top	4-inch d.o.b. top	Girard Form Class
		Saw-log 1.0	merchantable 1.5	height 2.0	(16-foot logs) 2.5	3.0	3.5	4.0	4.5	5.0				
Inches	Feet	Cubic feet												Percent
12	20	9.3										10.6	16.1	76
	30	10.0	13.7									15.7	21.0	80
	40	10.2	14.2	17.8								20.6	25.9	81
	50	10.3	14.4	18.2	21.7	24.9						25.3	30.9	82
	60	10.4	14.5	18.4	22.1	25.6	28.8					30.0	35.7	82
	70	10.4	14.6	18.6	22.4	26.0	29.5	32.7				34.6	40.6	82
14	80	10.5	14.6	18.7	22.6	26.3	29.9	33.3	36.6			39.3	45.5	82
	40	13.9	19.1	23.5								26.6	30.9	81
	50	14.0	19.4	24.3	28.5	32.0						32.4	36.9	82
	60	14.1	19.6	24.7	29.3	33.4	37.0					38.2	42.8	82
	70	14.1	19.7	25.0	29.8	34.3	38.3	41.9				43.9	48.7	82
	80	14.2	19.8	25.1	30.2	34.9	39.2	43.2	46.8			49.6	54.6	82
16	90	14.2	19.9	25.3	30.4	35.3	39.8	44.1	48.1	51.7		55.3	60.5	82
	100	14.2	19.9	25.4	30.6	35.6	40.3	44.8	49.0	52.9		61.0	66.3	82
	40	18.1	24.8	30.1								33.5	37.2	81
	50	18.2	25.3	31.3	36.4	40.3						40.6	44.4	82
	60	18.4	25.5	32.0	37.6	42.5	46.5					47.7	51.6	82
	70	18.4	25.7	32.3	38.4	43.8	48.6	52.6				54.7	58.7	82
18	80	18.5	25.8	32.6	38.9	44.7	50.0	54.7	58.7			61.6	65.8	82
	90	18.5	25.9	32.8	39.3	45.4	51.0	56.1	60.7	64.8		68.6	72.9	82
	100	18.5	25.9	33.0	39.6	45.9	51.7	57.2	62.2	66.7		75.5	79.9	82
	40	22.8	31.2	37.7								41.4	44.6	81
	50	23.1	31.9	39.3	45.3	49.6						50.0	53.3	82
	60	23.2	32.2	40.2	47.1	52.8	57.2					58.5	61.8	82
20	70	23.3	32.4	40.7	48.2	54.7	60.2	64.7				66.9	70.4	82
	80	23.4	32.6	41.1	48.9	55.9	62.2	67.6	72.1			75.2	78.9	82
	90	23.4	32.7	41.4	49.4	56.8	63.6	69.7	75.0	79.6		83.6	87.3	82
	100	23.4	32.8	41.6	49.8	57.5	64.6	71.2	77.1	82.4		91.9	95.8	82
	40	28.2	38.5	46.1								50.3	53.1	81
	50	28.5	39.3	48.3	55.3	60.0						60.4	63.4	82
22	60	28.7	39.7	49.4	57.6	64.3	69.2					70.5	73.5	82
	70	28.8	40.0	50.1	59.1	66.8	73.2	78.2				80.5	83.6	82
	80	28.8	40.2	50.6	60.1	68.5	75.9	82.1	87.2			90.5	93.7	82
	90	28.9	40.3	51.0	60.8	69.7	77.7	84.8	91.0	96.1		100.4	103.7	82
	100	28.9	40.4	51.2	61.3	70.6	79.1	86.9	93.8	99.8		110.3	113.7	82
	50	34.5	47.5	58.2	66.3	71.6						72.0	74.7	82
24	60	34.7	48.0	59.6	69.3	77.0	82.5					83.9	86.6	82
	70	34.8	48.4	60.5	71.1	80.2	87.6	93.2				95.6	98.4	82
	80	34.9	48.6	61.1	72.4	82.4	91.0	98.2	103.8			107.3	110.2	82
	90	35.0	48.8	61.6	73.3	83.9	93.4	101.6	108.7	114.4		119.0	122.0	82
	100	35.0	48.9	61.9	73.9	85.0	95.1	104.2	112.3	119.2		130.6	133.7	82
	50	41.1	56.5	69.0	78.4	84.3						84.7	87.1	82
26	60	41.3	57.2	70.8	82.1	91.0	97.0					98.5	101.0	82
	70	41.5	57.6	71.9	84.4	94.9	103.4	109.6				112.1	114.7	82
	80	41.6	57.9	72.7	85.9	97.5	107.5	115.8	122.1			125.8	128.4	82
	90	41.6	58.1	73.2	87.0	99.4	110.5	120.0	128.1	134.5		139.3	142.1	82
	100	41.7	58.2	73.6	87.8	100.8	112.7	123.2	132.5	140.4		152.9	155.7	82
	50	48.2	66.3	80.8	91.6	98.1						98.5	100.7	82
28	60	48.5	67.1	83.0	96.0	106.1	112.9					114.4	116.7	82
	70	48.7	67.6	84.3	98.8	110.9	120.5	127.4				130.1	132.5	82
	80	48.8	67.9	85.2	100.6	114.1	125.5	134.9	141.9			145.8	148.3	82
	90	48.9	68.1	85.8	101.9	116.4	129.1	140.1	149.2	156.3		161.5	164.0	82
	100	49.0	68.3	86.3	102.9	118.1	131.7	143.9	154.5	163.4		177.1	179.7	82

• Includes 1 .0-foot stump allowance.

Table 44--Predicted **stemwood** volume to a **4-inch d.o.b.** top in pulpwood trees based on d.b.h. and total-tree height for red maple (species 316) in the Appalachian Area.*

D.b.h. class	Total-tree height (feet)																
	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110
<u>Inches</u>	<u>Cubic feet</u>																
5																	
6	0.9	1.6	2.0	1.0	2.3	11	2.6	13	3.0	15	3.3	18	3.6	3.8			
7	2.7	3.0	3.5	3.8	4.3	4.7	5.2	5.6	6.0	6.4							
	3.7	4.1	4.7	5.2	5.8	6.4	7.0	7.6	8.1	8.6	9.1	9.6					
8	4.7	5.3	6.0	6.7	7.5	8.3	9.0	9.8	10.5	11.2	11.8	12.5	13.1	13.8			
10	5.9	6.6	7.5	8.4	9.4	10.4	11.3	12.2	13.1	14.0	14.8	15.7	16.5	17.3	18.1	18.8	
11			9.2	10.2	11.5	12.7	13.8	15.0	16.0	17.1	18.1	19.1	20.1	21.1	22.1	23.0	24.0
12			11.0	12.3	13.7	15.2	16.6	17.9	19.2	20.5	21.7	22.9	24.1	25.3	26.5	27.6	28.8
13			13.0	14.5	16.2	17.9	19.6	21.2	22.7	24.2	25.6	27.1	28.5	29.9	31.3	32.6	34.0
14					18.9	20.9	22.8	24.6	26.4	28.2	29.9	31.5	33.2	34.8	36.4	38.0	39.6
15					21.7	24.0	26.2	28.4	30.4	32.4	34.4	36.3	38.2	40.1	41.9	43.8	45.6
16					24.8	27.4	29.9	32.4	34.7	37.0	39.2	41.4	43.6	45.7	47.8	49.9	52.0

* Includes 0.5-foot stump allowance.

Table 45--Predicted **stemwood** volume to a **4-inch d.o.b.** top in pulpwood trees based on d.b.h. and height to a 4-inch d.o.b. top for red maple (species 316) in the Appalachian Area:

D.b.h. class	Tree height to 4-inch d.o.b. top (feet)																
	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
<u>Inches</u>	<u>Cubic feet</u>																
5	1.8	2.3	2.7	3.1	3.6	4.1											
6	2.2	2.8	3.5	4.1	4.7	5.2	5.8	6.3									
7	2.8	3.5	4.2	5.2	5.9	6.6	7.3	8.0	8.6	9.3							
	3.5	4.2	5.3	6.5	7.4	8.3	9.1	9.9	10.7	11.5	12.3	13.1					
8	4.4	5.2	6.5	8.0	9.1	10.1	11.1	12.1	13.1	14.0	14.9	15.9	16.8	17.7			
10	5.4	6.4	7.9	9.8	11.0	12.2	13.4	14.6	15.7	16.8	17.9	19.0	20.1	21.2	22.3	23.3	
11			9.4	11.6	13.1	14.6	16.0	17.3	18.6	19.9	21.2	22.5	23.8	25.1	26.3	27.6	28.8
12			11.1	13.7	15.5	17.1	18.7	20.3	21.9	23.4	24.9	26.4	27.8	29.3	30.8	32.2	33.7
13			12.9	16.0	18.0	19.9	21.8	23.6	25.3	27.1	28.8	30.5	32.2	33.9	35.6	37.3	39.0
14					20.7	22.9	25.0	27.1	29.1	31.1	33.1	35.1	37.0	38.9	40.8	42.8	44.7
15					23.6	26.1	28.5	30.9	33.2	35.5	37.7	39.9	42.1	44.3	46.5	48.6	50.8
16					26.8	29.6	32.3	34.9	37.5	40.1	42.6	45.1	47.6	50.0	52.5	54.9	57.3

• Includes 0.5-foot stump allowance.

Table 46--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., total-tree height and height to a saw-log top for buckeye [species 330] in the Appalachian Area:

D.b.h. class	Total tree height	Volume to										Girard Form Class
		Saw-log merchantable height (16-foot logs)								O-inch d.o.b. top	4-inch d.o.b. top	
Inches	Feet	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0		Percent
12	40									6.0	9.9	56
	50									8.6	13.4	68
	60	9.5								11.6	16.6	74
	70	9.9	13.3							14.1	19.6	78
	80	10.1	13.9							16.4	22.4	80
	90	10.3	14.2	17.6						18.4	25.1	82
	100	10.4	14.5	18.1						20.4	27.8	83
14	40									10.2	13.7	56
	50	12.2								15.2	18.5	68
	60	13.0	17.2							19.3	22.9	74
	70	13.5	18.3	22.0						23.0	26.9	78
	80	13.9	19.0	23.2						26.4	30.8	80
	90	14.1	19.5	24.1	27.9					29.6	34.6	82
	100	14.3	19.8	24.7	28.9	32.3				32.7	38.2	83
16	50	16.0	20.5							21.9	24.3	68
	60	17.1	22.6	26.6						27.3	30.1	74
	70	17.8	24.0	28.9						32.2	35.4	78
	80	18.2	24.9	30.4	34.8					36.9	40.5	80
	90	18.5	25.5	31.6	36.5	40.3				41.3	45.5	82
	100	18.7	26.0	32.4	37.8	42.3				45.6	50.3	83
	110	18.9	26.4	33.0	38.9	43.8	47.7			49.8	55.0	84
18	50	20.4	26.0							28.9	31.0	68
	60	21.8	28.7	33.8						35.8	38.2	74
	70	22.6	30.4	36.6	41.1					42.2	45.0	78
	80	23.1	31.6	38.6	44.1	47.9				48.3	51.5	80
	90	23.5	32.4	40.0	46.3	51.1				54.1	57.8	82
	100	23.8	33.0	41.1	48.0	53.6	57.8			59.7	63.9	83
	110	24.0	33.5	41.9	49.3	55.5	60.5	64.3		65.2	69.8	84
20	50	25.3	32.2	36.5						36.6	38.4	68
	60	27.0	35.5	41.8						45.2	47.4	74
	70	28.0	37.6	45.3	50.8					53.2	55.8	78
	80	28.7	39.1	47.7	54.5	59.3				60.8	63.8	80
	90	29.1	40.1	49.5	57.3	63.2	67.4			68.2	71.5	82
	100	29.5	40.8	50.8	59.3	66.2	71.5	75.2		75.3	79.1	83
	110	29.7	41.4	51.8	60.9	68.6	74.8	79.5		82.3	86.5	84
22	60	32.7	43.0	50.6	55.2					55.5	57.5	74
	70	34.0	45.6	54.9	61.5					65.3	67.7	78
	80	34.8	47.4	57.9	66.1	71.8				74.7	77.4	80
	90	35.3	48.6	60.0	69.4	76.6	81.6			83.7	86.7	82
	100	35.7	49.5	61.6	71.9	80.2	86.6	91.0		92.4	95.9	83
	110	36.0	50.2	62.8	73.8	83.1	90.6	96.3	100.2	101.0	104.8	84
24	60	39.0	51.3	60.3	65.8					66.7	68.5	74
	70	40.5	54.4	65.4	73.3	78.0				78.5	80.7	78
	80	41.5	56.5	68.9	78.7	85.5	89.6			89.8	92.2	80
	90	42.1	57.9	71.5	82.6	91.2	97.2			100.6	103.4	82
	100	42.6	59.0	73.4	85.6	95.6	103.2	108.4		111.1	114.3	83
	110	43.0	59.8	74.8	87.9	99.0	107.9	114.7	119.4	121.5	124.9	84
26	60	45.8	60.3	70.9	77.3					78.9	80.6	74
	70	47.6	63.9	76.9	86.1	91.6				92.8	94.8	78
	80	48.8	66.4	81.0	92.4	100.5	105.3			106.1	108.4	80
	90	49.5	68.1	84.0	97.1	107.2	114.1	118.4		118.9	121.5	82
	100	50.1	69.3	86.2	100.6	112.3	121.2	127.3	131.2	131.4	134.3	83
	110	50.5	70.3	87.9	103.3	116.3	126.7	134.6	140.2	143.6	146.8	84

* Includes 1.0-foot stump allowance.

Table 47-Predicted **stemwood** volume to a saw-log merchantable top, and to 0-inch and **4-inch d.o.b.** tops based on d.b.h., height to a **4-inch d.o.b.** top and height to a saw-log top for buckeye (species **330**) in the Appalachian Area:

D.b.h. class	Height to 4-inch d.o.b. top	Volume to													Girrrd Form Class
		Saw-Log	merchantable	height	(16-foot	Logs)	9-inch	4-inch							
Inches	Feet	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	d.o.b. top	d.o.b. top	Percent		
12	30	8.8									9.1	11.8	70		
	40	9.6									11.6	15.5	76		
	50	9.9	13.4								13.9	19.0	78		
	60	10.1	13.8								15.9	22.3	80		
	70	10.2	14.0	17.3							17.8	25.5	81		
	80	10.3	14.2	17.7							19.7	28.7	81		
14	90	10.3	14.3	17.9	21.1						21.6	31.8	82		
	40	13.1	17.3								18.3	21.0	76		
	50	13.6	18.3	21.8							22.0	25.5	78		
	60	13.8	18.8	22.9							25.5	29.9	80		
	70	14.0	19.2	23.6	27.3						28.9		81		
	80	14.1	19.4	24.1	28.1	31.5					32.2	36.4	81		
16	90	14.1	19.6	24.5	28.7	32.5					35.4	42.6	82		
	100	14.2	19.7	24.7	29.2	33.2	36.7				38.7	46.7	82		
	40	17.2	22.6								25.3	27.2	76		
	50	17.8	24.0	28.5							30.5	33.1	78		
	60	18.2	24.7	30.0	34.0						35.5	38.7	80		
	70	18.4	25.2	30.9	35.6	39.4					40.3	44.2	81		
18	80	18.5	25.5	31.6	36.8	41.1	44.5				45.0	49.6	81		
	90	18.6	25.7	32.0	37.6	42.4	46.4	49.6			49.7	55.0	82		
	100	18.6	25.8	32.4	38.2	43.3	47.8	51.6			54.3	60.3	82		
	40	21.9	28.7								32.8	34.3	76		
	50	22.7	30.4	36.1							39.7	41.7	78		
	60	23.1	31.3	38.0	43.1						46.2	48.7	80		
20	70	23.3	31.9	39.2	45.1	49.7					52.6	55.6	81		
	80	23.5	32.3	40.0	46.5	52.0	56.2				58.8	62.3	81		
	90	23.6	32.6	40.6	47.6	53.6	58.6	62.7			65.0	69.0	82		
	100	23.7	32.8	41.0	48.4	54.8	60.4	65.1	69.0		71.1	75.6	82		
	40	27.1	35.5	40.6							41.1	42.3	76		
	50	28.1	37.6	44.6	49.2						49.7	51.3	78		
22	60	28.6	38.8	47.0	53.1	57.3					57.9	59.9	80		
	70	28.9	39.5	48.4	55.7	61.3	65.3				65.9	68.3	81		
	80	29.1	40.0	49.4	57.5	64.1	69.3	73.1			73.8	76.5	81		
	90	29.2	40.3	50.2	58.8	66.1	72.3	77.2	80.9		81.5	84.7	82		
	100	29.3	40.6	50.7	59.7	67.7	74.5	80.3	85.0	88.6	89.2	92.8	82		
	24	50	34.0	45.6	54.0	59.4						60.6	61.9	78	
60		34.7	47.0	56.9	64.3	69.3					70.7	72.3	80		
70		35.0	47.9	58.7	67.4	74.2	78.9				80.4	82.4	81		
80		35.3	48.5	59.9	69.6	77.5	83.8	88.3			90.0	92.3	81		
90		35.5	48.9	60.8	71.1	80.0	87.4	93.3	97.7		99.5	102.1	82		
100		35.6	49.2	61.4	72.3	81.9	90.1	97.1	102.6	106.9	108.9	111.8	82		
26	50	40.6	54.3	64.3	70.7						72.5	73.6	78		
	60	41.3	56.0	67.7	76.5	82.4					84.5	85.8	80		
	70	41.8	57.0	69.9	80.3	88.2	93.8				96.2	97.8	81		
	80	42.1	57.7	71.3	82.8	92.3	99.7	105.0			107.6	109.5	81		
	90	42.3	58.2	72.4	84.7	95.2	104.0	110.9	116.0		119.0	121.1	82		
	100	42.5	58.6	73.2	86.1	97.5	107.2	115.4	122.0	127.0	130.2	132.6	82		
28	50	47.7	63.8	75.5	83.0						85.3	86.2	78		
	60	48.6	65.8	79.5	89.8	96.7					99.4	100.6	80		
	70	49.1	67.0	82.0	94.2	103.5	110.0				113.2	114.5	81		
	80	49.5	67.9	83.8	97.2	108.3	116.9	123.1			126.7	128.2	81		
	90	49.7	68.4	85.0	99.5	111.8	122.0	130.0	136.0	139.9	140.0	141.8	82		
	100	49.9	68.9	85.9	101.1	114.4	125.8	135.4	143.0	148.9	153.2	155.2	82		

* Includes 1.0-foot stump allowance.

Table 48--Predicted **stemwood** volume to a saw-log merchantable top, and to 0-inch and **4-inch** d.o.b. tops based on d.b.h., height to a 0-inch d.o.b. top and height to a saw-log top for buckeye (species **330**) in the Appalachian Area.*

D.b.h. class	Height to 9-inch d.o.b. top	Volume to										9-inch d.o.b. top	4-inch d.o.b. top	Girrrd Form Class
		Saw-log	merchantable	height (16-foot Logs)										
Inches	Feet	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0			Percent	
12	20										10.2		73	
	30	9.0	12.7								15.3	17.1	78	
	40	19.8	13.9	17.4							20.1	26.6	80	
	50	10.2	14.1	17.8	21.3	24.4					24.7	31.8	81	
	60	10.2	14.3	18.1	21.7	25.1	28.2				29.3	37.0	81	
	70	10.3	14.4	18.3	22.0	25.6	28.9	32.1			33.9	42.2	81	
	80	10.3	14.4	18.4	22.2	25.9	29.4	32.7	35.9		38.5	47.3	82	
14	40	13.8	18.9	23.2							26.1	30.3	80	
	50	14.0	19.3	24.0	28.1	31.5					31.9	36.4	81	
	60	14.1	19.5	24.5	29.0	33.0	36.4				37.5	42.5	81	
	70	14.1	19.6	24.8	29.5	33.9	37.8	41.3			43.2	48.5	81	
	80	14.2	19.7	25.0	29.9	34.5	38.7	42.6	46.1		48.8	54.4	82	
	90	14.2	19.8	25.1	30.2	34.9	39.4	43.5	47.4	50.9	54.4	60.4	82	
	100	14.2	19.8	25.2	30.4	35.2	39.9	44.2	48.3	52.1	60.0	66.4	82	
16	40	18.2	24.7	29.8							33.1	36.1	80	
	50	18.4	25.2	31.1	36.0	39.7					40.1	43.3	81	
	60	18.5	25.5	31.8	37.3	42.0	45.8				47.0	50.4	81	
	70	18.6	25.7	32.3	38.2	43.4	48.0	51.9			53.9	57.6	81	
	80	18.6	25.9	32.6	38.7	44.4	49.5	54.0	57.9		60.7	64.7	82	
	90	18.7	25.9	32.8	39.1	45.1	50.5	55.4	59.9	63.8	67.5	71.7	82	
	100	18.7	26.0	32.9	39.4	45.6	51.3	56.6	61.4	65.8	74.3	78.7	82	
18	40	23.1	31.2	37.4							41.0	43.2	80	
	50	23.4	32.0	39.2	44.9	49.0					49.4	51.8	81	
	60	23.5	32.4	40.1	46.8	52.3	56.5				57.7	60.3	81	
	70	23.6	32.6	40.7	48.0	54.3	59.6	63.9			66.0	68.7	81	
	80	23.7	32.8	41.2	48.8	55.6	61.6	66.9	71.2		74.2	77.1	82	
	90	23.8	32.9	41.4	49.3	56.6	63.1	69.0	74.1	78.5	82.3	85.5	82	
	100	23.8	33.0	41.7	49.8	57.3	64.2	70.5	76.3	81.3	90.5	93.8	82	
20	40	28.6	38.6	45.9							49.8	51.5	80	
	50	29.0	39.5	48.2	54.9	59.4					59.8	61.7	81	
	60	29.2	40.0	49.4	57.4	63.8	68.4				69.7	71.7	81	
	70	29.3	40.3	50.2	58.9	66.4	72.5	77.3			79.5	81.6	81	
	80	29.4	40.6	50.8	60.0	68.2	75.3	81.3	86.1		89.2	91.5	82	
	90	29.4	40.7	51.2	60.7	69.4	77.2	84.1	90.0	94.8	99.0	101.4	82	
	100	29.5	40.8	51.4	61.3	70.4	78.7	86.2	92.8	98.7	108.6	111.2	82	
22	50	35.1	47.8	58.1	65.9	71.0					71.3	72.8	81	
	60	35.4	48.5	59.7	69.1	76.5	81.7				83.0	84.6	81	
	70	35.5	48.9	60.7	71.1	79.8	86.9	92.2			94.5	96.2	81	
	80	35.6	49.2	61.4	72.4	82.0	90.3	97.2	102.6		105.9	107.7	82	
	90	35.7	49.3	61.9	73.3	83.7	92.8	100.8	107.5	113.0	117.3	119.3	82	
	100	35.8	49.5	62.3	74.1	84.9	94.7	103.5	111.2	117.8	128.7	130.7	82	
24	50	41.9	57.0	69.1	78.0	83.6					84.0	85.2	81	
	60	42.2	57.7	71.0	81.9	90.4	96.1				97.5	98.8	81	
	70	42.4	58.2	72.2	84.3	94.5	102.6	108.5			110.9	112.3	81	
	80	42.5	58.6	73.1	86.0	97.3	106.9	114.7	120.7		124.2	125.7	82	
	90	42.6	58.8	73.7	87.1	99.2	109.9	119.1	126.8	132.8	137.4	139.0	82	
	100	42.7	59.0	74.1	88.0	100.7	112.2	122.4	131.3	138.8	150.7	152.3	82	
26	50	49.3	66.9	81.0	91.2	97.3					97.7	98.7	81	
	60	49.6	67.8	83.3	95.9	105.5	111.9				113.3	114.4	81	
	70	49.8	68.4	84.7	98.8	110.5	119.6	126.2			128.7	129.9	81	
	80	50.0	68.8	85.7	100.7	113.8	124.8	133.7	140.3		144.0	145.3	82	
	90	50.1	69.1	86.4	102.2	116.2	128.5	139.0	147.7	154.4	159.3	160.6	82	
	100	50.2	69.3	87.0	103.2	118.0	131.3	143.0	153.1	161.6	174.5	175.9	82	

* Includes 1.0-foot stump allowance.

Table 49--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and total-tree height for buckeye (species 330) in the Appalachian Area.^a

D.b.h. class	Total-tree height (feet)																													
	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110													
<u>Inches</u>	<u>Cubic feet</u>																													
5																														
6 ^b	0.8	1.6	0.9	1.9	2.2	1.0	2.5	1.2	2.6	1.3	3.0	1.5	3.4	3.7																
7	2.7	3.1	3.5	3.9	4.1	4.6	5.1	5.6	6.1	6.5																				
8	3.8	4.3	4.8	5.4	5.7	6.4	7.1	7.7	8.3	8.9	9.5	10.1																		
9	5.0	5.6	6.3	7.0	7.5	8.4	9.2	10.0	10.8	11.6	12.4	13.1	13.9	14.6																
10	6.3	7.0	8.0	8.8	9.4	10.5	11.6	12.6	13.6	14.6	15.6	16.5	17.4	18.3	19.2	20.1														
11			9.8	10.8	11.5	12.9	14.2	15.5	16.7	17.9	19.1	20.2	21.3	22.5	23.6	24.7	25.7													
12			11.7	13.0	13.9	15.5	17.1	18.6	20.0	21.5	22.9	24.3	25.6	26.9	28.3	29.6	30.9													
13			13.9	15.4	16.4	18.3	20.2	22.0	23.7	25.4	27.0	28.6	30.2	31.8	33.4	34.9	36.5													
14																														
15					22.1	19.2	21.4	24.7	23.5	27.1	25.6	29.5	31.8	27.6	29.6	34.1	31.5	36.3	33.4	38.5	35.2	40.6	37.1	42.7	38.9	44.8	40.7	46.9	42.5	48.9
16					25.2	28.2	31.0	33.7	36.3	38.9	41.4	43.9	46.3	48.8	51.1	53.5	55.9													

^a Includes 0.5-foot stump allowance.

^b Cylindrical volume assumed below breast height.

Table 50--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and height to a 4-inch d.o.b. top for buckeye (species 330) in the Appalachian Area:

D.b.h. class	Tree height to 4-inch d.o.b. top (feet)																													
	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100													
Inches	Cubic feet																													
5																														
6^b	2.1	1.7	2.1	2.7	3.4	2.5	3.8	2.8	3.2	4.4	3.7	4.9	5.5	6.0																
7	2.8	3.5	4.2	5.0	5.8	6.5	7.2	7.8	8.5	9.2																				
8	3.7	4.4	5.4	6.5	7.4	8.2	9.1	9.9	10.7	11.6	12.4	13.2																		
9	4.7	5.6	6.8	8.1	9.2	10.3	11.3	12.3	13.3	14.3	15.3	16.2	17.2	18.2																
10	5.8	6.9	8.4	9.9	11.3	12.5	13.8	15.0	16.2	17.3	18.5	19.7	20.8	22.0	23.1	24.2														
11			10.1	12.0	13.5	15.0	16.5	17.9	19.3	20.7	22.1	23.4	24.8	26.2	27.5	28.9	30.2													
12			12.0	14.2	16.0	17.8	19.5	21.1	22.8	24.4	26.0	27.6	29.2	30.8	32.3	33.9	35.5													
13			14.1	16.6	18.7	20.7	22.7	24.6	26.5	28.4	30.3	32.1	33.9	35.8	37.6	39.4	41.2													
14																														
15					21.6	24.8	23.9	27.4	30.0	26.2	28.4	32.5	30.6	35.0	32.7	37.4	34.9	39.8	37.0	42.2	39.1	44.6	41.2	47.0	43.3	49.3	45.3	51.7	47.4	54.1
16					28.1	31.1	34.0	36.8	39.6	42.4	45.1	47.8	50.5	53.2	55.9	58.5	61.2													

^a Includes 0.5-foot stump allowance.

^b Cylindrical volume assumed below breast height.

Table 5 1 --Predicted **stemwood** volume to a saw-log merchantable top, and to **9-inch** and **4-inch** d.o.b. tops based on d.b.h., total-tree height and height to a saw-log top for yellow-poplar (species 621) in the Appalachian **Area.**^{a,b}

D.b.h. class	Total tree height	Volume to										Girard Fore Class	
		Saw-log merchantable height (16-foot Logs)								9-inch	4-inch		
		1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	d.o.b. top	d.o.b. top	
Inches	Feet	Cubic feet											Percent
12	40										4.0	8.5	55
	50										6.5	12.0	66
	60	8.4									10.4	15.2	72
	70	8.9	12.2								12.9	18.1	75
	80	9.2	12.7								15.1	20.8	77
	90	9.4	13.1	16.3							17.1	23.5	79
	100	9.6	13.4	16.8							19.0	26.0	80
14	40										7.0	11.7	55
	50	10.5									13.5	16.5	66
	60	11.5	15.5								17.5	20.9	72
	70	12.1	16.6	20.2							21.1	24.8	75
	80	12.6	17.4	21.4							24.4	28.6	77
	90	12.9	17.9	22.3	25.9						27.5	32.2	79
	100	13.1	18.3	22.9	26.9	30.1				30.4	35.7	80	
16	50	13.7	18.0								19.4	21.7	66
	60	15.1	20.2	24.1							24.7	27.4	72
	70	15.9	21.7	26.4							29.5	32.6	75
	80	16.4	22.7	28.0	32.1						34.0	37.6	77
	90	16.8	23.4	29.1	33.8	37.5					38.3	42.3	79
	100	17.1	23.9	30.0	35.1	39.4					42.4	46.9	80
	110	17.3	24.3	30.6	36.1	40.8	44.6			46.3	51.4	81	
18	50	17.4	22.8								25.6	27.6	66
	60	19.1	25.7	30.5							32.5	34.8	72
	70	20.1	27.5	33.4	37.7						38.7	41.4	75
	80	20.8	28.8	35.4	40.7	44.3					44.5	47.7	77
	90	21.3	29.7	36.9	42.9	47.5					50.1	53.7	79
	100	21.7	30.3	38.0	44.5	49.8	53.9				55.5	59.5	80
	110	21.9	30.8	38.8	45.8	51.7	56.5	60.0		60.7	65.2	81	
20	50	21.5	28.1	32.3							32.4	34.1	66
	60	23.6	31.7	37.7							40.9	43.1	72
	70	24.9	34.0	41.3	46.6						48.8	51.3	75
	80	25.8	35.6	43.8	50.3	54.8					56.2	59.0	77
	90	26.4	36.7	45.6	53.0	58.6	62.5				63.2	66.5	79
	100	26.8	37.5	46.9	55.0	61.6	66.6	70.0			70.0	73.7	80
	110	27.1	38.1	47.9	56.5	63.9	69.8	74.2		76.7	80.7	81	
22	60	28.6	38.4	45.7	50.0						50.3	52.2	72
	70	30.2	41.2	50.0	56.4						59.9	62.1	75
	80	31.2	43.1	53.0	60.9	66.3					68.9	71.5	77
	90	31.9	44.4	55.2	64.1	71.0	75.7				77.6	80.6	79
	100	32.4	45.4	56.8	66.6	74.5	80.6	84.7			85.9	89.3	80
	110	32.8	46.1	58.0	68.5	77.3	84.4	89.8	93.5		94.1	97.8	81
24	60	34.1	45.7	54.4	59.6						60.4	62.2	72
	70	35.9	49.0	59.6	67.1	71.5					72.0	74.1	75
	80	37.2	51.3	63.1	72.5	78.9	82.8				82.8	85.2	77
	90	38.0	52.9	65.7	76.3	84.5	90.1				93.2	96.0	79
	100	38.6	54.0	67.6	79.3	88.8	95.9	100.9			103.3	106.4	80
	110	39.1	54.9	69.1	81.5	92.0	100.5	106.9	111.3		113.2	116.6	81
26	60	40.0	53.7	63.9	70.0						71.4	73.1	72
	70	42.2	57.6	69.9	78.8	84.0					85.1	87.0	75
	80	43.7	60.2	74.1	85.1	92.7	97.2				97.9	100.1	77
	90	44.7	62.1	77.2	89.6	99.2	105.8	109.9			110.2	112.7	79
	100	45.4	63.4	79.4	93.1	104.2	112.6	118.4	122.1		122.1	125.0	80
	110	45.9	64.4	81.1	95.7	108.1	118.0	125.5	130.7		133.8	136.9	81

Table 52--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., height to a 4-inch d.o.b. top and height to a saw-log top for yellow-poplar (species 621) in the Appalachian Area.^{a,b}

D.b.h. class	Height to 4-inch d.o.b. top	Volume to										Girard Form Class	
		Saw-Log 1.0	1.5	merchantable 2.0	2.5	height 3.0	(11-foot 3.5	Logs) 4.0	4.5	5.0	0-inch d.o.b. top		4-inch d.o.b. top
Inches	Feet	Cubic feet										Percent	
12	30	8.0									8.7	11.0	71
	40	8.7									10.7	14.3	75
	50	9.0	12.3								12.5	17.5	77
	60	9.2	12.7								14.2	20.5	78
	70	9.3	12.9								15.8	23.4	78
	80	9.4	13.1	16.3							17.3	26.2	79
14	90	9.5	13.2	16.5							18.8	29.1	79
	40	11.8	15.9								16.7	19.3	75
	50	12.3	16.8								19.9	23.4	77
	60	12.6	17.3	21.1							22.9	27.3	78
	70	12.8	17.6	21.7	25.0						25.7	31.2	78
	80	12.9	17.9	22.2	25.8						28.6	34.9	79
16	90	13.0	18.0	22.5	26.4	29.7					31.3	38.7	79
	100	13.0	18.1	22.7	26.8	30.4	33.5				34.0	42.4	79
	40	15.5	20.7								23.0	25.0	75
	50	16.1	21.9	26.1							27.6	30.2	77
	60	16.5	22.6	27.5	31.1						31.9	35.3	78
	70	16.7	23.0	28.3	32.6	35.9					36.1	40.2	78
18	80	16.9	23.3	28.9	33.7	37.5					40.2	45.0	79
	90	17.0	23.6	29.4	34.4	38.7	42.3				44.2	49.8	79
	100	17.1	23.7	29.7	35.0	39.6	43.6	47.0			48.2	54.5	79
	40	19.6	26.2								29.9	31.4	75
	50	20.4	27.8	33.1							35.9	38.0	77
	60	20.9	28.6	34.8	39.3						41.6	44.3	78
20	70	21.2	29.2	35.9	41.2	45.3					47.2	50.4	78
	80	21.4	29.6	36.6	42.6	47.4	51.2				52.6	56.4	79
	90	21.5	29.9	37.2	43.5	48.9	53.4	56.9			58.0	62.4	79
	100	21.7	30.1	37.6	44.3	50.1	55.1	59.2	62.6		63.3	68.3	79
	40	24.3	32.4	37.1							37.4	38.6	75
	50	25.2	34.3	40.8	44.8						45.0	46.7	77
22	60	25.8	35.4	42.9	48.5	52.2					52.2	54.4	78
	70	26.2	36.1	44.3	50.9	55.9					59.2	61.8	78
	80	26.4	36.5	45.2	52.5	58.4	63.0				66.1	69.2	79
	90	26.6	36.9	45.9	53.7	60.3	65.8	70.0			72.9	76.4	79
	100	26.8	37.2	46.4	54.7	61.8	67.9	72.9	77.0		79.6	83.6	79
	50	30.6	41.5	49.3	54.1						54.9	56.3	77
24	60	31.3	42.8	51.9	58.6	63.0					63.7	65.5	78
	70	31.7	43.7	53.6	61.5	67.5	71.6				72.3	74.5	78
	80	32.0	44.3	54.7	63.5	70.6	76.1	80.0			80.8	83.3	79
	90	32.3	44.7	55.6	65.0	72.9	79.5	84.6	88.3		89.1	92.0	79
	100	32.4	45.0	56.2	66.1	74.7	82.0	88.1	92.9	96.5	97.3	100.6	79
	50	36.4	49.4	58.7	64.4						65.6	66.8	77
26	60	37.3	51.0	61.8	69.7	74.8					76.2	77.7	78
	70	37.8	52.0	63.8	73.2	80.2	85.0				86.5	88.3	78
	80	38.2	52.7	65.2	75.6	84.0	90.4	95.0			96.6	98.8	79
	90	38.4	53.2	66.2	77.3	86.8	94.5	100.5	104.8		106.6	109.0	79
	100	38.6	53.6	66.9	78.7	88.9	97.5	104.7	110.4	114.6	116.5	119.2	79
	50	42.8	58.0	68.9	75.5						77.2	78.2	77
28	60	43.8	59.9	72.5	81.8	87.7					89.7	91.0	78
	70	44.4	61.1	74.9	85.8	94.1	99.6				101.9	103.4	78
	80	44.8	61.9	76.5	88.7	98.5	106.0	111.3			113.7	115.6	79
	90	45.2	62.5	77.7	90.8	101.8	110.8	117.8	122.8		125.5	127.6	79
	100	45.4	62.9	78.6	92.3	104.3	114.4	122.7	129.3	134.2	137.1	139.5	79

^a Includes 1 .0-foot stump allowance.

^b Based on South-wide yellow-poplar form class.

Table 53--Predicted stemwood volume to a saw-log merchantable top, and to O-inch and 4-inch d.o.b. tops based on d.b.h., height to a O-inch d.o.b. top and height to a saw-log top for yellow-poplar (species 621) in the Appalachian Area.^{a,b}

D.b.h. class	Height to 9-inch d.o.b. top	Volume to										9-inch d.o.b. top	4-inch d.o.b. top	Girard Form Class
		Saw-log merchantable height (li-foot logs)												
		1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0				
Inches	Feet	Cubic feet											Percent	
12	20	8.1										9.2	17.7	72
	30	9.0	12.4									14.3	21.6	77
	40	9.3	13.1	16.4								19.0	26.2	79
	50	9.5	13.4	16.9	20.2	23.2						23.5	30.9	80
	60	9.6	13.5	17.2	20.7	23.9	26.9					28.0	35.6	80
	70	9.7	13.7	17.4	21.0	24.4	27.6	30.6				32.4	40.2	80
	80	9.7	13.7	17.6	21.3	24.8	28.1	31.3	34.3			36.8	44.8	80
14	40	12.7	17.6	21.7								24.5	30.0	79
	50	13.0	18.1	22.6	26.5	29.8						30.1	35.7	80
	60	13.1	18.4	23.2	27.5	31.3	34.5					35.6	41.3	80
	70	13.2	18.5	23.5	28.1	32.2	35.9	39.2				41.1	46.9	80
	80	13.3	18.7	23.7	28.5	32.8	36.9	40.6	43.9			46.5	52.5	80
	90	13.3	18.8	23.9	28.7	33.3	37.6	41.5	45.2	48.5		51.8	58.0	81
	100	13.4	18.8	24.0	29.0	33.7	38.1	42.3	46.2	49.8		57.2	63.6	81
16	40	16.6	22.9	27.9								30.9	35.3	79
	50	16.9	23.6	29.2	33.9	37.4						37.7	42.2	80
	60	17.1	24.0	30.0	35.3	39.7	43.3					44.4	49.0	80
	70	17.3	24.2	30.5	36.2	41.2	45.5	49.2				51.0	55.7	80
	80	17.4	24.4	30.8	36.8	42.2	47.0	51.3	54.9			57.6	62.4	80
	90	17.4	24.5	31.1	37.2	42.9	48.1	52.8	57.0	60.7		64.2	69.1	81
	100	17.5	24.6	31.3	37.5	43.4	48.9	53.9	58.5	62.7		70.7	75.7	81
18	40	21.0	28.9	34.8								38.2	41.8	79
	50	21.5	29.8	36.7	42.2	46.0						46.4	50.1	80
	60	21.7	30.3	37.8	44.1	49.3	53.3					54.4	58.2	80
	70	21.9	30.6	38.4	45.4	51.4	56.4	60.4				62.4	66.3	80
	80	22.0	30.8	38.9	46.2	52.7	58.5	63.4	67.5			70.3	74.3	80
	90	22.1	31.0	39.2	46.8	53.7	60.0	65.5	70.4	74.5		78.1	82.2	81
	100	22.2	31.1	39.5	47.3	54.5	61.1	67.1	72.5	77.3		86.0	90.2	81
20	40	26.0	35.7	42.6								46.3	49.5	79
	50	26.5	36.8	45.1	51.5	55.7						56.1	59.3	80
	60	26.9	37.4	46.4	54.0	60.1	64.5					65.6	68.9	80
	70	27.1	37.8	47.3	55.6	62.7	68.6	73.0				75.1	78.4	80
	80	27.2	38.1	47.9	56.7	64.5	71.3	77.0	81.5			84.4	87.9	80
	90	27.3	38.3	48.3	57.5	65.9	73.3	79.8	85.3	89.9		93.7	97.3	81
	100	27.4	38.4	48.6	58.1	66.8	74.8	81.9	88.2	93.7		103.0	106.6	81
22	50	32.2	44.4	54.3	61.7	66.4						66.8	69.6	80
	60	32.5	45.2	56.0	65.0	71.9	76.8					78.0	80.9	80
	70	32.8	45.7	57.1	67.0	75.3	82.0	86.9				89.1	92.0	80
	80	33.0	46.0	57.9	68.4	77.6	85.5	92.0	97.0			100.1	103.1	80
	90	33.1	46.3	58.4	69.4	79.3	88.0	95.5	101.9	106.9		111.0	114.1	81
	100	33.2	46.5	58.8	70.2	80.5	89.9	98.2	105.5	111.7		121.9	125.1	81
	24	50	38.3	52.9	64.5	73.0	78.1						78.5	81.0
60		38.8	53.8	66.6	77.0	84.9	90.3					91.6	94.1	80
70		39.1	54.4	67.9	79.5	89.1	96.7	102.2				104.4	107.1	80
80		39.3	54.8	68.8	81.2	91.9	101.0	108.4	114.0			117.2	119.9	80
90		39.4	55.1	69.4	82.4	94.0	104.1	112.8	120.0	125.6		129.9	132.7	81
100		39.5	55.3	69.9	83.3	95.5	106.4	116.1	124.5	131.5		142.6	145.4	81
26		50	45.0	62.0	75.5	85.2	90.9						91.3	93.5
	60	45.5	63.1	78.0	90.0	99.1	105.0					106.3	108.6	80
	70	45.9	63.9	79.6	93.0	104.1	112.7	118.8				121.1	123.5	80
	80	46.1	64.3	80.7	95.1	107.5	117.9	126.3	132.4			135.9	138.3	80
	90	46.3	64.7	81.4	96.5	109.9	121.6	131.6	139.7	145.9		150.5	153.0	81
	100	46.4	65.0	82.0	97.7	111.8	124.4	135.6	145.1	153.1		165.1	167.6	81

^a Includes 1.0-foot stump allowance.

^b Based on South-wide yellow-poplar form class.

Table 54--Predicted **stemwood** volume to a **4-inch** d.o.b. top in pulpwood trees based on d.b.h. and total-tree height for yellow-poplar (species 621) in the Appalachian Area.^{a,b}

D.b.h. class	Total-tree height (feet)																							
	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110							
Inches	<u>Cubic feet</u>																							
5																								
6	0.7	1.3	0.8	1.9	2.3	0.9	2.6	1.1	2.6	1.1	3.0	1.5	3.3	3.7										
7	2.5	2.9	3.3	3.8	3.9	4.4	4.9	5.4	5.8	6.3														
	3.4	3.9	4.5	5.1	5.3	6.0	6.6	7.2	7.9	8.4	9.0	9.6												
8	4.4	5.0	5.8	6.6	6.8	7.7	8.5	9.4	10.1	10.9	11.6	12.4	13.1	13.8										
10	5.5	6.3	7.2	8.2	8.5	9.6	10.7	11.7	12.7	13.6	14.6	15.5	16.4	17.2	18.1	19.0								
11			8.8	10.0	10.4	11.8	13.1	14.3	15.5	16.6	17.8	18.9	20.0	21.0	22.1	23.1	24.2							
12			10.6	12.0	12.5	14.1	15.6	17.1	18.6	19.9	21.3	22.6	23.9	25.2	26.5	27.7	29.0							
13			12.5	14.1	14.7	16.6	18.4	20.2	21.9	23.5	25.1	26.7	28.2	29.7	31.2	32.7	34.2							
14																								
15						17.1	19.7	22.3	19.3	24.7	21.5	23.5	27.1	25.5	29.3	31.5	27.4	29.2	31.1	32.8	34.6	36.3	38.1	39.8
												33.7	35.7	37.8	39.8	41.8	43.8	45.8						
16						22.5	25.4	28.2	30.9	33.4	35.9	38.4	40.8	43.1	45.4	47.7	50.0	52.2						

^a Includes **0.5-foot** stump allowance.

^b Based on South-wide yellow-poplar form class.

Table 55--Predicted **stemwood** volume to a **4-inch** d.o.b. top in pulpwood trees based on d.b.h. and height to a **4-inch** d.o.b. top for yellow-poplar (species 621) in the Appalachian Area.^{a,b}

D.b.h. class	Tree height to 4-inch d.o.b. top (feet)																	
	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	
Inches-	<u>Cubic feet</u>																	
5																		
6	2.1	1.7	2.6	2.1	3.3	2.5	3.7	2.8	3.2	4.3	3.6	4.8	5.3	5.8				
7	2.6	3.3	4.0	4.8	5.5	6.2	6.8	7.4	8.1	8.7								
8	3.3	4.0	5.1	6.2	7.0	7.8	8.6	9.3	10.1	10.8	11.6	12.3						
9	4.2	5.0	6.3	7.6	8.6	9.6	10.5	11.5	12.4	13.3	14.2	15.1	15.9	16.8				
10	5.2	6.2	7.7	9.3	10.5	11.6	12.8	13.9	14.9	16.0	17.1	18.1	19.2	20.2	21.2	22.3		
11			9.2	11.1	12.5	13.9	15.2	16.5	17.8	19.0	20.3	21.5	22.8	24.0	25.2	26.4	27.6	
12			10.9	13.1	14.8	16.4	17.9	19.4	20.9	22.4	23.8	25.3	26.7	28.1	29.5	30.9	32.3	
13			12.7	15.3	17.2	19.1	20.8	22.6	24.3	26.0	27.6	29.3	31.0	32.6	34.2	35.8	37.5	
14																		
15						22.7	19.9	22.0	25.1	24.0	27.4	26.0	29.7	31.9	27.9	34.1	29.9	31.8
16						25.7	28.4	31.0	33.6	36.1	38.6	41.0	43.4	45.8	48.2	50.6	53.0	55.3

^a Includes **0.5-foot** stump allowance.

^b Based on South-wide yellow-poplar form class.

Table 56--Predicted **stemwood** volume to a saw-log merchantable top, and to **9-inch** and 4-inch d.o.b. tops based on d.b.h., total-tree height and height to a saw-log top for **blackgum** (upland) (species 693) in the Appalachian Area.^a

D. b. h. class	Total tree height	Volume to										Girard Form Class		
		Sew-log		merchantable		height		(li-foot Logs)		9-inch			4-inch	
		1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	d.o.b. top		d.o.b. top	
<u>Inches</u>	<u>Feet</u>	<u>Cubic feet</u>										<u>Percent</u>		
12	40	7.5									8.0	10.9	66	
	50	8.2									10.4	13.7	71	
	60	8.5	11.7								12.4	16.2	73	
	70	8.8	12.1								14.2	18.6	74	
	80	8.9	12.4	15.3							15.9	20.9	75	
	90	9.1	12.6	15.7							17.5	23.2	76	
	100	9.1	12.7	15.9	18.8						19.0	25.4	77	
14	40	10.2									13.1	14.8	66	
	50	11.1	14.9								16.5	18.6	71	
	60	11.6	15.8	19.1							19.6	22.1	73	
	70	11.9	16.4	20.1							22.4	25.4	74	
	80	12.1	16.8	20.8	24.1						25.1	28.6	75	
	90	12.3	17.0	21.3	24.9						27.7	31.7	76	
	100	12.4	17.2	21.6	25.5	28.8					30.2	34.7	77	
16	50	14.4	19.4								22.7	24.4	71	
	60	15.1	20.6	25.0							26.9	29.0	73	
	70	15.5	21.4	26.3	30.0						30.8	33.3	74	
	80	15.8	21.8	27.1	31.5						34.5	37.5	75	
	90	16.0	22.2	27.8	32.5	36.3					38.2	41.5	76	
	100	16.1	22.5	28.2	33.3	37.6	40.9				41.7	45.5	77	
	110	16.3	22.7	28.6	33.9	38.5	42.3				45.2	49.5	77	
18	50	18.2	24.6	28.9							29.5	30.9	71	
	60	19.1	26.1	31.6							34.9	36.7	73	
	70	19.6	27.0	33.2	37.9						40.0	42.2	74	
	80	20.0	27.6	34.3	39.8	43.7					44.9	47.5	75	
	90	20.2	28.1	35.1	41.1	45.9	49.3				49.7	52.7	76	
	100	20.4	28.4	35.7	42.1	47.5	51.7				54.3	57.7	77	
	110	20.6	28.7	36.1	42.9	48.7	53.6	57.2			58.9	62.7	77	
20	50	22.5	30.3	35.7							36.9		71	
	60	23.5	32.2	39.0	43.2						43.7	47.4	73	
	70	24.2	33.3	41.0	46.7						50.2	52.2	74	
	80	24.6	34.1	42.4	49.1	54.0					56.4	58.7	75	
	90	24.9	34.6	43.3	50.8	56.7	60.8				62.4	65.1	76	
	100	25.2	35.0	44.0	52.0	58.6	63.8	67.4			68.3	71.4	77	
	110	25.4	35.4	44.6	52.9	60.1	66.1	70.7	73.9		74.1	77.5	77	
22	60	28.4	38.9	47.1	52.3						53.4	54.9	73	
	70	29.2	40.3	49.6	56.6	60.8					61.3	63.2	74	
	80	29.8	41.2	51.2	59.4	65.3	68.8				68.9	71.1	75	
	90	30.2	41.9	52.4	61.4	68.6	73.6				76.4	78.8	76	
	100	30.4	42.4	53.3	62.9	70.9	77.2	81.6			83.6	86.4	77	
	110	30.7	42.8	53.9	64.0	72.7	80.0	85.5	89.4		90.8	93.9	77	
24	60	33.8	46.3	56.1	62.2						64.0	65.4	73	
	70	34.8	47.9	59.0	67.3	72.3					73.5	75.2	74	
	80	35.4	49.1	61.0	70.7	77.7	81.9				82.7	84.7	75	
	90	35.9	49.9	62.4	73.1	81.6	87.6	91.2			91.6	93.9	76	
	100	36.2	50.4	63.4	74.8	84.4	91.9	97.1			100.3	102.9	77	
	110	36.5	50.9	64.2	76.2	86.6	95.1	101.7	106.3		109.0	111.8	77	
26	60	39.7	54.3	65.8	73.0						75.5	76.8	73	
	70	40.8	56.3	69.2	79.0	84.9					86.8	88.3	74	
	80	41.6	57.6	71.6	83.0	91.2	96.1				97.6	99.4	75	
	90	42.1	58.5	73.2	85.8	95.7	102.8	107.1			108.1	110.2	76	
	100	42.5	59.2	74.4	87.8	99.1	107.8	113.9	117.8		118.5	120.8	77	
	110	42.8	59.7	75.3	89.4	101.6	111.7	119.4	124.8	128.3	128.7	131.3	77	

^a Includes 1.0-foot stump allowance.

Table 57--Predicted **stemwood** volume to a saw-log merchantable top, and to 0-inch and 4-inch d.o.b. tops based on d.b.h., height to a **4-inch** d.o.b. top and height to a saw-log top for **blackgum** (upland) (species **693**) in the Appalachian Area.*

D.b.h. class	Height to 4-inch d.o.b. top	Volume to										0-inch d.o.b. top	4-inch d.o.b. top	Girard Form Class
		Saw-Log	merchantable	height	(16-foot	logs)								
Inches	Feet	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0				Percent
12	30	7.8										8.7	10.9	69
	40	8.5										11.0	14.3	73
	50	8.8	12.0									13.0	17.5	74
	60	9.0	12.3									14.9	20.5	75
	70	9.1	12.5	15.5								16.7	23.5	76
	80	9.2	12.7	15.8								18.4	26.4	76
14	90	9.3	12.8	16.0	18.9							20.2	29.3	77
	40	11.5	15.4									17.1	19.2	73
	50	11.9	16.3	19.6								20.5	23.4	74
	60	12.2	16.7	20.5	23.6							23.8	27.4	75
	70	12.4	17.0	21.1	24.5							27.0	31.4	76
	80	12.5	17.2	21.5	25.2	28.4						30.1	35.3	76
16	90	12.6	17.4	21.7	25.7	29.1	32.1					33.2	39.1	77
	100	12.6	17.5	22.0	26.0	29.7	33.0	35.8				36.3	42.9	77
	40	15.0	20.1									23.4	24.8	73
	50	15.6	21.2	25.6								28.3	30.3	74
	60	15.9	21.8	26.7	30.6							33.0	35.5	75
	70	16.1	22.2	27.5	31.9	35.5						37.5	40.5	76
18	80	16.3	22.5	28.0	32.8	36.9	40.3					42.0	45.5	76
	90	16.4	22.7	28.3	33.4	37.9	41.7	44.9				46.4	50.4	77
	100	16.5	22.8	28.6	33.9	38.7	42.9	46.5	49.6			50.7	55.3	77
	40	18.9	25.4	29.7								30.2	31.3	73
	50	19.7	26.8	32.3	36.1							36.6	38.0	74
	60	20.1	27.6	33.8	38.7	42.2						42.7	44.5	75
20	70	20.4	28.1	34.7	40.3	44.8	48.1					48.7	50.9	76
	80	20.6	28.4	35.4	41.4	46.6	50.8	54.0				54.5	57.1	76
	90	20.7	28.7	35.8	42.2	47.8	52.7	56.6	59.8			60.3	63.3	77
	100	20.8	28.8	36.2	42.8	48.8	54.1	58.6	62.5	65.5		66.1	69.4	77
	40	23.4	31.4	36.5								37.6	38.4	73
	50	24.3	33.0	39.8	44.4							45.7	46.7	74
22	60	24.8	34.0	41.6	47.6	51.9						53.3	54.7	75
	70	25.2	34.6	42.8	49.7	55.2	59.2					60.8	62.5	76
	80	25.4	35.1	43.6	51.1	57.4	62.5	66.4				68.1	70.1	76
	90	25.6	35.4	44.2	52.1	59.0	64.9	69.7	73.5			75.4	77.7	77
	100	25.7	35.6	44.6	52.8	60.2	66.6	72.2	76.9	80.6		82.6	85.2	77
	50	29.4	40.0	48.1	53.6							55.5	56.4	74
24	60	30.0	41.1	50.3	57.5	62.7						64.9	65.9	75
	70	30.4	41.9	51.8	60.0	66.6	71.5					74.0	75.3	76
	80	30.7	42.4	52.7	61.7	69.3	75.5	80.1				82.9	84.4	76
	90	30.9	42.8	53.4	63.0	71.3	78.4	84.2	88.7			91.8	93.5	77
	100	31.1	43.0	54.0	63.9	72.7	80.5	87.2	92.8	97.2		100.6	102.5	77
	50	35.0	47.6	57.2	63.7							66.2	66.9	74
26	60	35.7	49.0	59.9	68.4	74.5						77.4	78.2	75
	70	36.2	49.8	61.6	71.4	79.2	84.9					88.3	89.3	76
	80	36.6	50.4	62.7	73.4	82.4	89.7	95.2	98.8			99.0	100.2	76
	90	36.8	50.9	63.6	74.9	84.7	93.1	100.0	105.3	109.0		109.5	110.9	77
	100	37.0	51.2	64.2	76.0	86.5	95.7	103.6	110.2	115.4		120.0	121.6	77
	50	41.0	55.8	67.1	74.7							77.8	78.3	74
28	60	41.9	57.4	70.2	80.2	87.3						90.9	91.6	75
	70	42.5	58.5	72.2	83.7	92.8	99.5	103.5				103.7	104.5	76
	80	42.9	59.2	73.6	86.1	96.6	105.1	111.5	115.7			116.3	117.3	76
	90	43.2	59.7	74.6	87.8	99.4	109.2	117.2	123.4	127.6		128.7	129.8	77
	100	43.4	60.1	75.4	89.1	101.5	112.3	121.5	129.2	135.2		141.0	142.3	77

* Includes 1.0-foot stump allowance.

Table 58--Predicted **stemwood** volume to a saw-log merchantable top, and to S-inch and **4-inch d.o.b.** tops based on d.b.h., height to a S-inch **d.o.b.** top and height to a saw-log top for **blackgum** (upland) (species **693**) in the Appalachian Area:

D.b.h. class	Height to 9-inch d.o.b. top	Volume to										9-inch d.o.b. top	4-inch d.o.b. top	Girard Form Class
		Saw-Log	merchantable	height	(16-foot	logs)	5.0							
Inches	Feet	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0				Percent
12	20	7.8										8.9	13.7	70
	30	8.6	11.9									13.4	17.4	74
	40	9.0	12.4	15.6								18.0	21.4	75
	50	9.2	12.7	16.0	19.1	21.9						22.3	25.4	76
	60	9.3	12.9	16.3	19.5	22.6	25.5					26.5	29.5	76
	70	9.3	13.0	16.5	19.8	23.0	26.1	28.9				30.6	33.5	77
	80	9.4	13.0	16.6	20.0	23.3	26.5	29.5	32.4			34.7	37.5	77
14	40	12.2	16.7	20.6								23.3	26.4	75
	50	12.4	17.1	21.4	25.1	28.2						28.6	31.4	76
	60	12.5	17.4	21.8	25.9	29.6	32.7					33.8	36.5	76
	70	12.6	17.5	22.1	26.4	30.3	33.9	37.1				38.9	41.5	77
	80	12.7	17.6	22.3	26.7	30.9	34.7	38.3	41.5			44.0	46.5	77
	90	12.7	17.7	22.4	27.0	31.2	35.3	39.1	42.6	45.8		49.1	51.5	77
	100	12.8	17.8	22.5	27.1	31.5	35.7	39.7	43.4	46.9		54.1	56.6	77
16	40	15.8	21.7	26.4								29.4	32.3	75
	50	16.1	22.3	27.6	32.1	35.5						35.9	38.5	76
	60	16.3	22.6	28.2	33.2	37.6	41.1					42.2	44.7	76
	70	16.4	22.8	28.6	34.0	38.8	43.0	46.6				48.5	50.9	77
	80	16.5	22.9	28.9	34.5	39.6	44.3	48.4	52.1			54.7	57.0	77
	90	16.6	23.0	29.1	34.8	40.2	45.2	49.7	53.8	57.5		60.9	63.2	77
	100	16.6	23.1	29.3	35.1	40.6	45.8	50.7	55.1	59.2		67.1	69.3	77
18	40	20.0	27.3	33.0								36.3	39.0	75
	50	20.4	28.1	34.6	39.9	43.8						44.1	46.6	76
	60	20.6	28.5	35.5	41.6	46.7	50.7					51.8	54.2	76
	70	20.8	28.8	36.1	42.6	48.4	53.4	57.4				59.3	61.6	77
	80	20.9	29.0	36.4	43.3	49.5	55.1	60.0	64.0			66.8	69.0	77
	90	21.0	29.1	36.7	43.8	50.4	56.4	61.8	66.6	70.7		74.3	76.5	77
	100	21.0	29.2	36.9	44.2	51.0	57.3	63.1	68.4	73.1		81.7	83.9	77
20	40	24.7	33.6	40.4								44.1	46.7	75
	50	25.2	34.6	42.5	48.7	53.0						53.4	55.8	76
	60	25.4	35.1	43.6	50.9	56.9	61.3					62.5	64.8	76
	70	25.6	35.5	44.3	52.3	59.1	64.9	69.4				71.5	73.7	77
	80	25.8	35.7	44.8	53.2	60.7	67.2	72.9	77.4			80.4	82.5	77
	90	25.9	35.9	45.2	53.8	61.7	68.9	75.3	80.8	85.4		89.3	91.4	77
	100	25.9	36.0	45.5	54.3	62.5	70.1	77.0	83.2	88.7		98.1	100.2	77
22	50	30.4	41.8	51.2	58.5	63.2						63.6	65.9	76
	60	30.8	42.4	52.6	61.2	68.1	73.1					74.3	76.5	76
	70	31.0	42.9	53.5	62.9	71.0	77.7	82.7				84.9	87.0	77
	80	31.2	43.1	54.1	64.1	72.9	80.6	87.1	92.3			95.4	97.5	77
	90	31.3	43.4	54.6	64.9	74.3	82.7	90.2	96.5	101.7		105.9	107.9	77
	100	31.4	43.5	54.9	65.5	75.3	84.3	92.4	99.6	105.9		116.3	118.2	77
24	50	36.2	49.7	60.7	69.1	74.4						74.8	77.1	76
	60	36.6	50.5	62.5	72.5	80.5	86.0					87.3	89.4	76
	70	36.9	51.0	63.6	74.6	84.0	91.7	97.3				99.6	101.7	77
	80	37.1	51.3	64.3	76.0	86.4	95.3	102.7	108.5			111.8	113.8	77
	90	37.2	51.6	64.9	77.0	88.1	97.9	106.5	113.8	119.6		124.0	126.0	77
	100	37.3	51.8	65.3	77.8	89.3	99.9	109.3	117.6	124.8		136.2	138.0	77
26	50	42.5	58.2	71.1	80.7	86.6						87.0	89.2	76
	60	43.0	59.2	73.2	84.8	93.9	100.0					101.4	103.5	76
	70	43.3	59.8	74.5	87.3	98.2	106.9	113.2				115.6	117.6	77
	80	43.5	60.2	75.4	89.0	101.0	111.3	139.7	126.1			129.7	131.7	77
	90	43.7	60.5	76.0	90.2	103.0	114.4	124.3	132.5	139.0		143.8	145.6	77
	100	43.8	60.7	76.5	91.2	104.6	116.8	127.6	137.2	145.3		157.8	159.6	77

• Includes 1.0-foot stump allowance.

Table 59--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and total-tree height for blackgum (upland) (species 693) in the Appalachian Area:

D.b.h. class	Total-tree height (feet)																
	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110
Inches	Cubic feet																
5																	
6	2.0	1.0	2.2	1.1	2.6	1.2	3.0	1.5	3.4	2.1	3.7	2.3	4.0	4.2			
7	2.8	3.2	3.7	4.2	4.7	5.2	5.6	5.9	6.3	6.7							
8																	
9	3.7	4.6	4.2	5.3	4.8	6.1	6.9	5.5	6.2	7.9	8.6	6.8	9.3	7.3	10.0	7.8	10.6
10	5.7	6.5	7.5	8.6	9.8	10.7	11.5	12.4	13.2	14.0	14.8	15.5	16.3	17.1	17.8	18.6	
11																	
12			10.9	9.1	10.4	12.3	11.9	14.1	15.4	12.9	14.0	16.7	17.9	15.0	16.0	19.1	20.3
13			12.8	14.5	16.6	18.1	19.6	21.0	22.4	23.8	25.2	26.5	27.8	29.1	30.4	31.7	33.0
14							19.3	21.0	22.8	24.4	26.1	27.7	29.2	30.8	32.3	33.9	35.4
15							22.1	24.2	26.1	28.1	29.9	31.8	33.6	35.4	37.2	38.9	40.7
16							25.2	27.5	29.8	32.0	34.1	36.2	38.3	40.3	42.3	44.3	46.3

* Includes 0.5foot stump allowance.

Table 60--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and height to a 4-inch d.o.b. top for blackgum (upland) (species 693) in the Appalachian Area:

D.b.h. class	Tree height to 4-inch d.o.b. top (feet)																
	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Inches	Cubic feet																
5																	
6	2.2	1.8	2.3	2.8	3.5	2.7	3.8	2.9	3.3	4.4	3.8	4.9	5.4	5.9			
7	2.7	3.4	4.1	4.9	5.6	6.2	6.9	7.5	8.1	8.7							
8																	
9	3.4	4.1	5.2	6.2	7.0	7.8	8.6	9.4	10.1	10.9	11.6	12.3					
10	4.3	5.1	6.5	7.6	8.7	9.6	10.6	11.5	12.4	13.3	14.2	15.1	16.0	16.9			
11	5.2	6.3	7.8	9.3	10.5	11.7	12.8	13.9	15.0	16.1	17.2	18.2	19.3	20.3	21.4	22.4	
12			9.4	11.1	12.5	13.9	15.2	16.6	17.9	19.1	20.4	21.7	22.9	24.2	25.4	26.6	27.9
13			11.1	13.1	14.8	16.4	17.9	19.5	21.0	22.5	24.0	25.4	26.9	28.4	29.8	31.2	32.7
14			12.9	15.2	17.2	19.0	20.9	22.6	24.4	26.1	27.8	29.5	31.2	32.9	34.6	36.3	37.9
15							19.8	21.9	24.0	26.1	28.1	30.1	32.0	34.0	35.9	37.9	39.8
16							22.6	25.1	27.4	29.8	32.0	34.3	36.5	38.8	41.0	43.2	45.3
17							25.6	28.4	31.1	33.7	36.3	38.8	41.4	43.9	46.3	48.8	51.3

* Includes 0.5-foot stump allowance.

Table 61--Predicted stemwood volume to a saw-log merchantable top, and to Q-inch and 4-inch d.o.b. tops based on d.b.h., total-tree height and height to a saw-log top for basswood (species 950) in the Appalachian Area.*

D.b.h. class	Total tree height	Volume to										Girard Form Class	
		Saw-log merchantable height (16-foot logs)											
		1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	9-inch d.o.b. top		4-inch d.o.b. top
<u>Inches</u>	<u>Feet</u>	<u>Cubic feet</u>										<u>Percent</u>	
12	40	8.8									10.3	13.0	75
	50	9.3									12.4	15.9	78
	60	9.6	13.3								14.3	18.5	80
	70	9.8	13.6								16.0	21.1	81
	80	9.9	13.9	17.2							17.7	23.5	82
	90	10.0	14.1	17.6							19.2	26.0	82
14	100	10.1	14.2	17.8							20.8	28.4	83
	40	12.1									16.0	17.9	75
	50	12.8	17.4								19.4	21.8	78
	60	13.2	18.2	22.0							22.4	25.4	80
	70	13.4	18.7	22.9							25.3	28.9	81
	80	13.6	19.0	23.6	27.3						28.1	32.4	82
16	90	13.8	19.4	23.6	27.3						30.8	35.7	82
	100	13.8	19.4	24.0	28.1	32.3					33.5	39.0	83
	50	16.8	22.8								26.7	28.6	78
	60	17.3	23.8	28.8							31.0	33.4	80
	70	17.7	24.5	30.0	34.2						35.1	38.0	81
	80	17.9	24.9	30.9	35.7						39.1	42.5	82
18	90	18.0	25.2	31.5	36.8	41.0					42.9	46.9	82
	100	18.2	25.5	31.9	37.6	42.3	46.0				46.7	51.2	83
	110	18.3	25.6	32.3	38.2	43.3	47.5				50.5	55.5	83
	50	21.0	28.9	34.0							34.7	36.4	78
	60	22.0	30.0	36.0							40.4	42.5	80
	70	22.4	31.1	38.1	43.3						45.7	48.3	81
20	80	22.7	31.6	39.2	45.3	49.7					51.0	54.0	82
	90	22.9	32.0	39.9	46.6	51.9	55.7				56.1	59.6	82
	100	22.9	32.0	39.9	46.6	51.9	55.7				61.1	65.1	83
	110	23.1	32.3	40.5	47.7	53.6	58.3	64.4			66.1	70.6	83
	50	26.4	35.8	42.0							43.5	45.0	78
	60	27.2	37.4	45.1	50.1						50.7	52.6	80
22	70	27.8	38.4	47.1	53.6						57.5	59.8	81
	80	28.1	39.1	48.4	56.0	61.4					64.1	66.9	82
	90	28.4	39.6	49.4	57.7	64.2	68.9				70.6	73.8	82
	100	28.6	40.0	50.1	58.9	66.3	72.0	76.1			77.0	80.6	83
	110	20.7	40.3	50.7	59.9	67.9	74.4	79.6	83.2		83.3	87.3	83
	24	60	33.0	45.3	54.7	60.6						62.0	63.7
70		34.1	46.4	56.1	62.8	69.4	78.5				70.4	72.5	81
80		34.1	46.4	56.1	62.8	69.4	78.5				78.5	81.1	82
90		34.1	46.4	56.1	62.8	69.4	78.5				86.5	89.4	82
100		34.4	48.5	59.9	69.8	80.3	83.5	92.2			94.4	97.7	83
110		34.9	48.8	61.4	72.6	82.2	90.2	96.4	100.7		102.2	105.9	83
26	60	39.4	53.5	68.0	72.3	83.1					74.4	76.0	80
	70	40.7	56.5	69.9	80.8	88.6	93.5				84.5	86.4	81
	80	40.7	56.5	69.9	80.8	88.6	93.5				94.3	96.6	82
	90	41.4	57.2	72.3	83.0	93.6	109.4	109.8			103.9	106.6	82
	100	41.6	58.2	73.2	86.5	97.9	107.4	114.8	120.0		113.4	116.4	83
	110	41.6	58.2	73.2	86.5	97.9	107.4	114.8	120.0		122.8	126.2	83
28	60	46.3	63.5	76.6	84.9						87.8	89.3	80
	70	47.0	66.4	82.9	94.8	104.1	109.0				99.7	101.6	81
	80	47.0	66.4	82.9	94.8	104.1	109.0				111.4	113.5	82
	90	40.3	67.2	83.8	97.7	108.8	116.8	121.7			122.8	125.2	82
	100	40.3	67.2	83.8	97.7	108.8	116.8	121.7			134.0	136.8	83
	110	48.6	68.3	85.9	109.9	113.0	128.0	139.0	144.9		145.1	148.3	83

* Includes 1.0-foot stump allowance.

Table 62--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., height to a 4-inch d.o.b. top and height to a saw-log top for basswood (species 950) in the Appalachian Area.*

D.b.h. class	Height to 4-inch d.o.b. top	Volume to												Girard Form Class
		Saw-Log merchantable height (16-foot Logs)										9-inch		
		1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	d.o.b. top	d.o.b. top		
<u>Feet</u>		<u>Cubic feet</u>												<u>Percent</u>
12	30	9.2									10.9	12.9	79	
	40	9.6									12.9	16.2	81	
	50	9.8	13.6								14.8	19.5	82	
	60	9.9	13.8								16.6	22.6	82	
	70	10.0	14.0	17.4							18.4	25.7	82	
	80	10.1	14.1	17.7							20.1	28.8	82	
	90	10.1	14.2	17.9	21.1						21.8	31.9	83	
14	40	13.1	17.9								19.6	21.9	81	
	50	13.4	18.5	22.3							22.9	26.2	82	
	60	13.6	18.9	23.2							26.2	30.4	82	
	70	13.7	19.1	23.7	27.5						29.3	34.5	82	
	80	13.8	19.3	24.1	28.2	31.7					32.5	38.6	82	
	90	13.9	19.4	24.4	28.8	32.5					35.6	42.7	83	
	100	13.9	19.5	24.6	29.2	33.2	36.7				38.7	46.7	83	
16	40	17.2	23.4								26.8	28.5	81	
	50	17.6	24.2	29.2							31.6	34.0	82	
	60	17.8	24.7	30.3	34.6						36.2	39.4	82	
	70	18.0	25.1	31.0	35.9	39.7					40.8	44.7	82	
	80	18.1	25.3	31.5	36.9	41.3	44.8				45.3	49.9	82	
	90	18.2	25.5	31.9	37.6	42.5	46.5	49.8			49.8	55.1	83	
	100	18.3	25.6	32.2	38.1	43.3	47.8	51.7			54.3	60.3	83	
18	40	21.9	29.7	34.3							34.6	35.9	81	
	50	22.4	30.8	36.9	40.9						40.9	42.8	82	
	60	22.7	31.4	38.4	43.7						47.1	49.6	82	
	70	22.9	31.8	39.3	45.5	50.2					53.2	56.2	82	
	80	23.0	32.1	40.0	46.7	52.2	56.6				59.2	62.7	82	
	90	23.1	32.3	40.5	47.6	53.7	58.8	62.9			65.2	69.2	83	
	100	23.2	32.5	40.8	48.3	54.8	60.5	65.2	69.1		71.1	75.7	83	
20	40	27.1	36.7	42.4							43.2	44.3	81	
	50	27.7	38.0	45.6	50.5						51.2	52.7	82	
	60	28.1	38.8	47.4	53.9	58.3					59.0	60.9	82	
	70	28.3	39.3	48.6	56.1	61.9	66.0				66.7	69.0	82	
	80	28.5	39.7	49.4	57.7	64.5	69.8	73.7			74.2	77.1	82	
	90	28.7	40.0	50.0	58.8	66.3	72.5	77.5	81.2		81.8	85.0	83	
	100	28.8	40.2	50.5	59.6	67.7	74.6	80.4	85.1	88.7	89.3	92.9	83	
22	50	33.6	46.1	55.2	61.0						62.4	63.6	82	
	60	34.0	47.0	57.4	65.3	70.5					71.9	73.5	82	
	70	34.4	47.7	58.9	67.9	74.9	79.8				81.3	83.3	82	
	80	34.6	48.1	59.9	69.8	78.0	84.3	89.0			90.6	92.9	82	
	90	34.8	48.5	60.6	71.2	80.2	87.7	93.6	98.1		99.8	102.5	83	
	100	34.9	48.7	61.1	72.2	81.9	90.2	97.2	102.9	107.1	109.0	112.0	83	
24	50	40.0	54.9	65.7	72.6						74.6	75.6	82	
	60	40.6	56.1	68.4	77.7	83.8					86.0	87.3	82	
	70	41.0	56.8	70.1	80.9	89.1	94.8				97.2	98.9	82	
	80	41.3	57.4	71.3	83.1	92.8	100.3	105.7			108.4	110.3	82	
	90	41.5	57.7	72.2	84.7	95.4	104.3	111.3	116.5		119.4	121.6	83	
	100	41.6	58.0	72.8	86.0	97.5	107.4	115.6	122.3	127.3	130.4	132.9	83	
26	50	47.0	64.5	77.2	85.2						87.8	88.6	82	
	60	47.7	65.9	80.3	91.1	98.3					101.2	102.3	82	
	70	48.2	66.8	82.3	94.9	104.6	111.2				114.4	115.8	82	
	80	48.5	67.4	83.7	97.6	108.9	117.7	124.0			127.5	129.1	82	
	90	48.7	67.8	84.8	99.5	112.0	122.4	130.6	136.6	140.5	140.5	142.4	83	
	100	48.9	68.2	85.5	100.9	114.4	126.0	135.6	143.4	149.2	153.5	155.6	83	

* Includes 1.0-foot stump allowance.

Table 63--Predicted **stemwood** volume to a saw-log merchantable top, and to O-inch and 4-inch d.o.b. tops based on d.b.h., height to a O-inch d.o.b. top and height to a saw-log top for basswood (species 950) in the Appalachian Area.*

D.b.h. class	Height to 9-inch d.o.b. top	Volume to											Girard Form Class
		Saw-log merchantable height (16-foot logs)											
		1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	9-inch d.o.b. top	4-inch d.o.b. top	
<u>Inches</u>	<u>Feet</u>	<u>Cubic feet</u>											<u>Percent</u>
12	20	9.8									11.3	19.7	85
	30	9.8	13.9								15.9	22.8	83
	40	9.9	14.0	17.7							20.5	26.7	83
	50	10.0	14.1	18.0	21.6	24.7					25.1	30.7	82
	60	10.1	14.2	18.2	21.9	25.4	28.6				29.7	34.9	82
	70	10.1	14.3	18.3	22.1	25.7	29.1	32.4			34.2	39.2	82
	80	10.1	14.3	18.3	22.2	26.0	29.5	32.9	36.1		38.8	43.6	82
14	40	13.6	19.1	23.6							26.7	31.7	83
	50	13.7	19.3	24.2	28.5	32.0					32.4	37.0	82
	60	13.8	19.4	24.5	29.2	33.3	36.9				38.0	42.3	82
	70	13.8	19.5	24.7	29.6	34.1	38.2	41.7			43.7	47.7	82
	80	13.9	19.5	24.9	29.9	34.6	39.0	43.0	46.6		49.3	53.2	82
	90	13.9	19.6	25.0	30.1	35.0	39.5	43.8	47.7	51.4	54.9	58.7	82
	100	13.9	19.6	25.0	30.3	35.2	39.9	44.4	48.6	52.5	60.5	64.2	82
16	40	17.9	24.9	30.5							33.9	38.1	83
	50	18.0	25.2	31.4	36.5	40.4					40.8	44.7	82
	60	18.1	25.4	31.9	37.6	42.6	46.5				47.7	51.4	82
	70	18.2	25.5	32.2	38.3	43.8	48.5	52.6			54.6	58.1	82
	80	18.2	25.6	32.4	38.7	44.6	49.8	54.5	58.6		61.5	64.8	82
	90	18.3	25.6	32.6	39.1	45.1	50.7	55.9	60.5	64.6	68.3	71.5	82
	100	18.3	25.7	32.7	39.3	45.6	51.4	56.9	61.9	66.4	75.2	78.3	82
18	40	22.7	31.5	38.2							42.0	45.7	83
	50	22.9	31.9	39.5	45.6	50.0					50.4	53.8	82
	60	23.0	32.1	40.2	47.2	53.0	57.5				58.7	61.9	82
	70	23.1	32.3	40.7	48.2	54.7	60.3	64.9			67.0	70.0	82
	80	23.2	32.4	41.0	48.8	55.9	62.2	67.6	72.2		75.3	78.2	82
	90	23.3	32.5	41.2	49.3	56.7	63.5	69.6	74.9	79.5	83.6	86.3	82
	100	23.3	32.6	41.4	49.6	57.3	64.4	71.0	76.9	82.2	91.8	94.5	82
20	40	28.1	38.9	46.9							51.1	54.4	83
	50	28.3	39.4	48.6	55.8	60.7					61.1	64.1	82
	60	28.5	39.7	49.5	57.9	64.7	69.7				71.0	73.8	82
	70	28.6	39.9	50.1	59.2	67.0	73.5	78.6			80.9	83.6	82
	80	28.7	40.1	50.5	60.0	68.5	76.0	82.3	87.4		90.7	93.3	82
	90	28.8	40.2	50.8	60.6	69.6	77.7	84.9	91.1	96.3	100.6	103.0	82
	100	28.9	40.3	51.1	61.1	70.4	79.0	86.8	93.8	99.9	110.4	112.8	82
22	50	34.4	47.7	58.7	67.1	72.5					72.9	75.7	82
	60	34.6	48.1	59.9	69.7	77.6	83.2				84.6	87.2	82
	70	34.7	48.4	60.6	71.4	80.6	88.1	93.8			96.2	98.6	82
	80	34.8	48.6	61.1	72.5	82.5	91.2	98.5	104.3		107.8	110.1	82
	90	34.9	48.7	61.5	73.2	83.9	93.5	101.8	109.0	114.8	119.4	121.6	82
	100	35.0	48.9	61.8	73.8	85.0	95.1	104.3	112.4	119.4	130.9	133.1	82
	24	50	41.0	56.8	69.7	79.4	85.5					85.9	88.4
60		41.2	57.3	71.2	82.7	91.8	98.0				99.5	101.8	82
70		41.4	57.6	72.1	84.7	95.4	104.1	110.4			113.0	115.2	82
80		41.6	57.9	72.7	86.1	97.8	108.0	116.3	122.8		126.5	128.6	82
90		41.7	58.1	73.2	87.0	99.6	110.7	120.4	128.5	135.0	140.0	142.0	82
100		41.8	58.2	73.6	87.8	100.9	112.7	123.4	132.7	140.7	153.4	155.4	82
26		50	48.2	66.7	81.7	92.8	99.5					100.0	102.3
	60	48.5	67.3	83.5	96.8	107.2	114.1				115.6	117.9	82
	70	48.7	67.7	84.6	99.2	111.6	121.4	128.5			131.3	133.3	82
	80	48.9	68.0	85.3	100.9	114.5	126.1	135.7	142.8		146.8	148.8	82
	90	49.0	68.2	85.9	102.0	116.6	129.4	140.6	149.8	157.1	162.4	164.3	82
	100	49.1	68.4	86.3	102.9	118.1	131.9	144.2	154.9	164.0	177.9	179.7	82

* Includes 1 .0-foot stump allowance.

Table 64--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and total-tree height for basswood (species 950) in the Appalachian Area:

D.b.h. class	Total-tree height (feet)																
	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110
Inches	Cubic feet																
5																	
6 ^a	0.7	1.5	0.8	1.9	0.9	2.2	2.5	1.1	3.5	2.1	3.8	2.2					
7							4.0	4.3									
8	2.6	2.9	3.4	3.8	5.1	5.5	5.9	6.3	6.7	7.1							
9	3.6	4.6	4.8	5.3	4.7	6.1	5.3	6.8	6.9	8.9	9.6	7.5	10.3	8.0	8.5	9.1	9.6
10	5.8	6.6	7.6	8.6	11.1	12.1	13.0	13.8	14.7	15.5	16.4	17.2	18.0	18.9	19.7	20.5	
11			9.3	10.5	13.6	14.7	15.8	16.9	18.0	19.0	20.0	21.0	22.1	23.1	24.1	25.0	26.0
12			11.2	12.6	16.3	17.7	19.0	20.3	21.5	22.8	24.0	25.2	26.4	27.6	28.8	30.0	31.2
13			13.2	14.9	19.2	20.8	22.4	23.9	25.4	26.9	28.3	29.8	31.2	32.6	34.0	35.5	36.9
14																	
15					22.4	25.8	24.3	27.9	30.0	26.1	32.1	27.8	29.6	31.3	33.0	34.7	36.3
16					29.4	31.9	34.3	36.6	34.1	39.9	36.1	38.0	39.9	41.9	43.8	45.7	47.6
											41.1	43.4	45.6	47.8	49.9	52.1	54.3

^a Includes 0.5-foot stump allowance.

^b Cylindrical volume assumed below breast height.

Table 65--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and height to a 4-inch d.o.b. top for basswood (species 950) in the Appalachian Area:

D.b.h. class	Tree height to 4-inch d.o.b. top (feet)																
	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Inches	Cubic feet																
5																	
6 ^a	2.0	1.6	2.1	2.6	3.3	2.4	4.0	2.9	3.4	4.6	3.8	5.1	5.6	6.1			
7	2.6	3.3	4.0	5.3	6.0	6.7	7.3	7.9	8.6	9.2							
8	3.4	4.3	4.1	5.2	6.4	5.1	6.9	8.6	9.6	7.7	10.6	8.5	11.5	9.3	12.5	10.1	13.5
10	5.3	6.4	7.9	10.5	11.7	12.9	14.1	15.2	16.4	17.5	18.6	19.7	20.9	22.0	23.1	24.2	
11			9.5	12.7	14.1	15.5	16.9	18.2	19.6	20.9	22.2	23.6	24.9	26.2	27.5	28.8	30.1
12			11.2	15.0	16.7	18.3	19.9	21.5	23.1	24.6	26.2	27.7	29.3	30.8	32.4	33.9	35.4
13			13.2	17.5	19.5	21.4	23.2	25.1	26.9	28.7	30.5	32.3	34.1	35.9	37.6	39.4	41.2
14																	
15					22.5	25.8	28.3	24.7	30.7	26.8	33.1	28.9	31.0	35.5	33.1	37.8	40.2
16					29.3	32.1	34.8	37.5	40.2	42.9	45.5	48.2	50.8	53.4	56.0	58.6	61.2

^a Includes 0.5-foot stump allowance.

^b Cylindrical volume assumed below breast height.

Table 66--Predicted stemwood volume to a saw-log merchantable top, and to 0-inch and 4-inch d.o.b. tops based on d.b.h., total-tree height and height to a saw-log top for all hard hardwoods combined (species 500) in the Appalachian Area:

D.b.h. class	Total tree height	Volume to										Girard Form Class	
		Saw-Log merchantable height					(16-foot Logs)						
		1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	0-inch d.o.b. top	4-inch d.o.b. top	
Inches	Feet	Cubic feet										Percent	
12	40	7.8									7.9	10.8	67
	50	8.6									10.5	13.7	73
	60	9.0	12.3								12.5	16.4	76
	70	9.3	12.8								14.3	18.8	78
	80	9.5	13.2								15.9	21.1	79
	90	9.7	13.4	16.7							17.5	23.4	80
	100	9.8	13.6	17.0						19.0	25.6	80	
14	40	10.7									13.0	14.9	67
	50	11.8	15.7								16.5	18.9	73
	60	12.4	16.9								19.5	22.5	76
	70	12.8	17.6	21.4							22.3	25.9	78
	80	13.1	18.1	22.2							24.8	29.1	79
	90	13.3	18.4	22.9	26.4						27.3	32.2	80
	100	13.4	18.7	23.3	27.2					29.7	35.3	80	
16	50	15.5	20.6								22.8	24.9	73
	60	16.3	22.1	26.3							27.0	29.6	76
	70	16.8	23.1	28.0							30.8	34.1	78
	80	17.2	23.7	29.2	33.2						34.5	38.3	79
	90	17.4	24.2	30.0	34.6	38.0					38.1	42.4	80
	100	17.6	24.5	30.6	35.7	39.7					41.5	46.4	80
	110	17.7	24.7	31.0	36.5	40.9	44.4			44.9	50.4	81	
18	50	19.7	26.2								29.8	31.7	73
	60	20.7	28.1	33.4							35.3	37.7	76
	70	21.4	29.3	35.5	39.7						40.4	43.3	78
	80	21.8	30.1	37.0	42.2						45.3	48.7	79
	90	22.2	30.7	38.0	43.9	48.2					50.0	53.9	80
	100	22.4	31.1	38.8	45.3	50.3	54.0				54.6	59.1	80
	110	22.6	31.4	39.4	46.3	51.9	56.3			59.1	64.1	81	
20	50	24.3	32.4	37.2							37.5	39.2	73
	60	25.7	34.8	41.3							44.5	46.7	76
	70	26.5	36.3	44.0	49.1						51.1	53.7	78
	80	27.1	37.3	45.8	52.1	56.4					57.3	60.4	79
	90	27.5	38.0	47.1	54.3	59.7	63.2				63.3	66.8	80
	100	27.7	38.5	48.0	56.0	62.2	66.7				69.1	73.1	80
	110	28.0	38.9	48.7	57.2	64.2	69.6	73.5		74.9	79.4	81	
22	60	31.2	42.2	50.1	54.5						54.7	56.7	76
	70	32.2	44.0	53.3	59.6						62.7	65.1	78
	80	32.8	45.2	55.5	63.2	68.3					70.4	73.2	79
	90	33.3	46.0	57.0	65.9	72.3	76.6				77.8	81.1	80
	100	33.7	46.7	58.2	67.8	75.4	80.8	84.6			85.0	88.7	80
	110	33.9	47.1	59.0	69.3	77.8	84.3	89.1			92.2	96.3	81
24	60	37.2	50.3	59.7	64.9						65.7	67.6	76
	70	38.4	52.4	63.5	71.0	75.3					75.4	77.7	78
	80	39.2	53.9	66.1	75.3	81.4					84.7	87.3	79
	90	39.8	54.9	68.0	78.5	86.1	91.3				93.6	96.6	80
	100	40.2	55.6	69.3	80.8	89.8	96.3	100.8			102.4	105.8	80
	110	40.5	56.2	70.4	82.6	92.7	100.4	106.1	110.1		111.0	114.8	81
26	60	43.7	59.1	70.1	76.3						77.7	79.4	76
	70	45.1	61.6	74.6	83.4	88.4					89.2	91.3	78
	80	46.1	63.3	77.7	88.5	105.6	107.2	999			100.2	102.6	79
	90	46.7	64.5	79.9	92.2						110.8	113.6	80
	100	47.2	65.4	81.5	95.0	105.5	113.1	118.4			121.2	124.3	80
	110	47.6	66.1	82.7	97.1	108.8	117.9	124.6	129.3		131.4	134.9	81

* Includes 1.0-foot stump allowance.

Table 67--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., height to a 4-inch d.o.b. top and height to a saw-log top for all hard hardwoods combined (species 500) in the Appalachian Area.*

D.b.h. class	Height to 4-inch d.o.b. top	Volume to													Girard Form Class
		Saw-log merchantable height (16-foot logs)										0-inch		4-inch	
		1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	d.o.b. top	d.o.b. top			
Inches	Feet	Cubic feet													Percent
12	30	8.1									8.9	11.1	71		
	40	8.9									11.1	14.6	76		
	50	9.3	12.6								13.1	17.9	78		
	60	9.5	13.1								14.9	21.0	79		
	70	9.6	13.3	16.5							16.6	24.0	79		
	80	9.7	13.5	16.8							18.3	26.9	80		
14	90	9.8	13.6	17.1							19.9	29.8	80		
	40	12.2	16.3								17.2	19.7	76		
	50	12.7	17.3								20.5	24.0	78		
	60	13.0	17.9	21.7							23.7	28.1	79		
	70	13.2	18.2	22.4	25.8						26.7	32.0	79		
	80	13.3	18.5	22.9	26.7						29.6	35.9	80		
16	90	13.4	18.7	23.3	27.3	30.7					32.5	39.8	80		
	100	13.5	18.8	23.5	27.8	31.5	34.6				35.4	43.6	80		
	40	16.0	21.3								23.6	25.6	76		
	50	16.7	22.6	26.9							28.4	31.1	78		
	60	17.1	23.4	28.4	32.1						32.9	36.3	79		
	70	17.3	23.9	29.3	33.7	37.1					37.3	41.4	79		
18	80	17.5	24.2	30.0	34.8	38.8					41.5	46.4	80		
	90	17.7	24.5	30.5	35.7	40.1	43.7				45.7	51.3	80		
	100	17.8	24.7	30.8	36.3	41.1	45.1	48.6			49.9	56.2	80		
	40	20.3	27.0								30.7	32.2	76		
	50	21.2	28.7	34.1							37.0	39.1	78		
	60	21.7	29.7	36.0	40.6						43.0	45.6	79		
20	70	22.1	30.3	37.2	42.7	46.9					48.7	52.0	79		
	80	22.3	30.8	38.0	44.1	49.1	52.9				54.3	58.2	80		
	90	22.5	31.1	38.6	45.2	50.7	55.2	58.8			59.9	64.3	80		
	100	22.6	31.3	39.1	46.0	51.9	57.0	61.3	64.7		65.4	70.4	80		
	40	25.1	33.4	38.2							38.4	39.7	76		
	50	26.2	35.5	42.1	46.2						46.4	48.1	78		
22	60	26.9	36.7	44.5	50.1	53.9					53.9	56.1	79		
	70	27.3	37.5	46.0	52.7	57.8					61.2	63.8	79		
	80	27.6	38.1	47.0	54.5	60.5	65.2				68.3	71.4	80		
	90	27.8	38.4	47.8	55.8	62.6	68.1	72.5			75.3	78.9	80		
	100	28.0	38.7	48.3	56.8	64.1	70.4	75.5	79.6		82.2	86.3	80		
	50	31.8	43.0	51.0	55.9						56.6	58.0	78		
24	60	32.6	44.5	53.8	60.7	65.1					65.8	67.6	79		
	70	33.1	45.5	55.7	63.8	69.9	74.0				74.7	76.9	79		
	80	33.5	46.1	56.9	66.0	73.2	78.8	82.7			86.0	86.0	80		
	90	33.8	46.6	57.9	67.5	75.7	82.4	87.6	91.3		95.0	95.0	80		
	100	34.0	47.0	58.6	68.8	77.6	85.1	91.3	96.2	99.8	100.5	103.9	80		
	50	37.9	51.3	60.7	66.5						67.7	68.9	78		
26	60	38.9	53.1	64.1	72.2	77.4					78.7	80.3	79		
	70	39.5	54.2	66.3	75.9	83.1	88.0				89.4	91.3	79		
	80	40.0	55.0	67.8	78.5	87.1	93.7	98.3			99.9	102.1	80		
	90	40.3	55.6	68.9	80.4	90.1	98.0	104.1	108.5		110.2	112.7	80		
	100	40.5	56.0	69.8	81.9	92.4	101.2	108.5	114.3	118.6	120.4	123.3	80		
	50	44.6	60.2	71.3	78.0						79.7	80.8	78		
28	60	45.8	62.3	75.3	84.7	90.8					92.7	94.0	79		
	70	46.5	63.7	77.9	89.1	97.5	103.1				105.3	106.9	79		
	80	47.0	64.6	79.7	92.2	102.2	109.9	115.2			117.6	119.5	80		
	90	47.4	65.3	81.0	94.4	105.7	114.9	122.0	127.2		129.8	131.9	80		
	100	47.7	65.8	82.0	96.1	108.4	118.8	127.3	134.0	139.0	141.8	144.2	80		

* includes 1 .0-foot stump allowance.

Table 68--Predicted stemwood volume to a saw-log merchantable top, and to S-inch and 4-inch d.o.b. tops based on d.b.h., height to a S-inch d.o.b. top and height to a saw-log top for all hard hardwoods combined (species 500) in the Appalachian Area:

D. b. h. class	Height to 9-inch d.o.b. top	Volume to										9-inch d.o.b. top	4-inch d.o.b. tap	Gi rrrd Form Class
		1.0	Saw-log 1.5	merchantable 2.0	height 2.5	(16-foot 3.0	Logs) 3.5	5.0	4.0	4.5	5.0			
<u>Inches</u>	<u>Feet</u>	<u>Cubic feet</u>												<u>Percent</u>
12	20	8.6										9.8	15.6	76
	30	9.2	12.8									14.7	19.5	78
	40	9.4	13.2	16.6								19.3	23.7	79
	50	9.6	13.5	17.1	20.4	23.5						23.8	28.0	80
	60	9.7	13.6	17.3	20.9	24.2	27.2					28.3	32.3	80
	70	9.7	13.7	17.5	21.1	24.6	27.8	30.9				32.7	36.6	80
	80	9.8	13.8	17.6	21.3	24.9	28.3	31.5	34.6			37.1	41.0	80
14	40	13.0	18.0	22.2								25.1	29.1	79
	50	13.2	18.4	23.0	27.0	30.3						30.7	34.5	80
	60	13.3	18.6	23.4	27.8	31.7	35.1					36.2	39.9	80
	70	13.4	18.7	23.7	28.3	32.6	36.4	39.8				41.7	45.2	80
	80	13.5	18.8	23.9	28.7	33.1	37.2	41.0	44.5			47.1	50.6	80
	90	13.5	18.9	24.0	28.9	33.5	37.9	41.9	45.7	49.1		52.5	56.0	80
	100	13.6	19.0	24.1	29.1	33.8	38.3	42.6	46.6	50.3		58.0	61.3	80
16	40	17.1	23.5	28.6								31.8	35.6	79
	50	17.3	24.0	29.8	34.6	38.3						38.6	42.2	80
	60	17.5	24.3	30.5	35.8	40.5	44.2					45.4	48.8	80
	70	17.6	24.5	30.9	36.6	41.8	46.3	50.1				52.0	55.4	80
	80	17.7	24.7	31.2	37.2	42.7	47.6	52.0	55.9			58.6	61.9	80
	90	17.8	24.8	31.4	37.5	43.3	48.6	53.4	57.8	61.6		65.3	68.4	80
	100	17.9	24.9	31.5	37.8	43.8	49.3	54.5	59.2	63.5		71.8	75.0	80
18	40	21.7	29.7	35.9								39.4	43.1	79
	50	22.1	30.4	37.5	43.2	47.3						47.6	51.1	80
	60	22.3	30.9	38.4	45.0	50.4	54.5					55.7	59.0	80
	70	22.5	31.1	39.0	46.1	52.2	57.5	61.7				63.7	66.9	80
	80	22.6	31.3	39.4	46.8	53.5	59.4	64.5	68.8			71.7	74.8	80
	90	22.7	31.5	39.7	47.3	54.4	60.8	66.5	71.5	75.8		79.7	82.7	80
	100	22.7	31.6	39.9	47.8	55.0	61.8	68.0	73.5	78.5		87.6	90.6	80
20	40	26.9	36.7	44.0								47.9	51.4	79
	50	27.4	37.6	46.2	52.8	57.3						57.7	61.0	80
	60	27.6	38.2	47.4	55.2	61.4	66.1					67.3	70.5	80
	70	27.8	38.5	48.1	56.6	63.9	70.0	74.7				76.9	79.9	80
	80	28.0	38.8	48.6	57.6	65.6	72.5	78.5	83.2			86.3	89.3	80
	90	28.1	39.0	49.0	58.3	66.8	74.4	81.1	86.9	91.7		95.8	98.7	80
	100	28.2	39.1	49.3	58.8	67.7	75.7	83.0	89.6	95.3		105.2	108.0	80
22	50	33.2	45.6	55.7	63.5	68.4						68.8	72.1	80
	60	33.6	46.3	57.2	66.4	73.7	78.9					80.2	83.3	80
	70	33.8	46.7	58.2	68.3	76.8	83.8	89.1				91.4	94.4	80
	80	34.0	47.0	58.9	69.5	78.9	87.1	93.9	99.2			102.5	105.4	80
	90	34.1	47.2	59.3	70.4	80.5	89.4	97.2	103.9	109.3		113.6	116.4	80
	100	34.2	47.4	59.7	71.1	81.6	91.2	99.7	107.3	113.8		124.6	127.4	80
24	50	39.6	54.3	66.2	75.1	80.6						81.0	84.2	80
	60	40.0	55.1	68.1	78.8	87.1	92.9					94.2	97.2	80
	70	40.3	55.6	69.2	81.1	91.0	99.0	104.9				107.3	110.2	80
	80	40.5	56.0	70.0	82.6	93.6	103.0	110.8	116.7			120.2	123.0	80
	90	40.7	56.3	70.6	83.7	95.5	105.9	114.9	122.5	128.5		133.1	135.9	80
	100	40.8	56.5	71.1	84.5	96.9	108.1	118.0	126.7	134.2		145.9	148.7	80
26	50	46.6	63.8	77.6	87.8	93.9						94.3	97.4	80
	60	47.1	64.8	79.8	92.2	101.7	108.1					109.5	112.5	80
	70	47.4	65.4	81.2	95.0	106.4	115.5	122.0				124.5	127.4	80
	80	47.7	65.8	82.2	96.8	109.6	120.4	129.2	135.8			139.5	142.2	80
	90	47.9	66.2	82.9	98.2	111.8	123.8	134.2	142.7	149.4		154.3	157.0	80
	100	48.0	66.4	83.5	99.2	113.5	126.4	137.9	147.9	156.3		169.1	171.8	80

* Includes 1.0-foot stump allowance.

Table 69--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and total-tree height for all hard hardwoods combined (species 500) in the Appalachian Area.'

D.b.h. class	Total-tree height (feet)																
	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110
Inches	Cubic feet																
5																	
6	0.6	1.7	0.8	2.1	2.4	1.4	2.6	1.5	3.0	1.7	3.3	1.9	3.5	3.8			
7	2.6	3.1	3.5	3.8	4.4	4.8	5.2	5.5	5.9	6.3							
8	3.5	4.3	4.7	5.2	5.9	6.5	7.0	7.6	8.1	8.5	9.0	9.5					
9	4.5	5.5	6.1	6.8	7.7	8.4	9.1	9.8	10.5	11.1	11.7	12.3	12.9	13.5			
10	5.7	6.9	7.7	8.5	9.7	10.6	11.5	12.3	13.1	13.9	14.7	15.5	16.3	17.0	17.8	18.5	
11			9.4	10.4	11.9	13.0	14.1	15.1	16.1	17.1	18.0	19.0	19.9	20.9	21.8	22.7	23.6
12			11.3	12.5	14.2	15.6	16.9	18.1	19.3	20.5	21.7	22.8	23.9	25.0	26.1	27.2	28.3
13			13.4	14.8	16.8	18.4	19.9	21.4	22.8	24.2	25.6	26.9	28.3	29.6	30.9	32.2	33.5
14					22.6	19.6	21.5	24.7	23.2	26.8	24.9	28.8	26.7	32.6	28.2	34.4	29.8
15					25.8	28.3	30.6	32.8	35.0	37.2	39.3	41.3	43.4	45.4	47.4	49.4	51.3

* Includes 0.5-foot stump allowance.

Table 70--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and height to a 4-inch d.o.b. top for all hard hardwoods combined (species 500) in the Appalachian Area.'

D.b.h. class	Tree height to 4-inch d.o.b. top (feet)																
	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Inches	Cubic feet																
5																	
6	2.1	1.5	2.7	1.9	3.2	2.4	3.7	2.7	3.1	4.2	3.6	4.8	5.3	5.8			
7	2.6	3.3	4.0	4.9	5.5	6.2	6.9	7.5	8.2	8.8							
8	3.5	4.3	5.2	6.2	7.1	7.9	8.7	9.5	10.3	11.0	11.8	12.5					
9	4.4	5.4	6.5	7.7	8.8	9.8	10.7	11.7	12.6	13.6	14.5	15.4	16.3	17.2			
10	5.4	6.7	7.9	9.4	10.7	11.9	13.0	14.2	15.3	16.4	17.5	18.6	19.6	20.7	21.8	22.8	
11			9.6	11.3	12.8	14.2	15.6	16.9	18.2	19.5	20.8	22.1	23.4	24.6	25.9	27.1	28.4
12			11.3	13.4	15.1	16.8	18.4	19.9	21.5	23.0	24.5	26.0	27.4	28.9	30.4	31.8	33.3
13			13.3	15.7	17.7	19.6	21.4	23.2	25.0	26.7	28.5	30.2	31.9	33.6	35.2	36.9	38.6
14					20.4	22.6	24.7	26.8	28.8	30.8	32.8	34.7	36.7	38.6	40.5	42.4	44.3
15					23.3	25.8	28.2	30.6	32.9	35.1	37.4	39.6	41.8	44.0	46.2	48.3	50.5
16					26.5	29.3	32.0	34.7	37.3	39.8	42.3	44.8	47.3	49.8	52.2	54.7	57.1

* Includes 0.5-foot stump allowance.

Table 71--Predicted stemwood volume to a saw-log merchantable top, and to Q-inch and 4-inch d.o.b. tops based on d.b.h., total-tree height and height to a saw-log top for birch (species 370) in the Appalachian Area:

D.b.h. class	Total tree height	Volume to											Girard Form Class
		Saw-log merchantable height (16-foot logs)											
		1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	9-inch d.o.b. top	4-inch d.o.b. top	
<u>Inches</u>	<u>Feet</u>	<u>Cubic feet</u>											<u>Percent</u>
12	40	9.3									11.3	13.5	79
	50	9.6									12.5	15.6	79
	60	9.8	13.4								13.6	17.6	80
	70	9.9	13.6								14.6	19.6	80
	80	10.0	13.8								15.6	21.5	80
	90	10.1	13.9								16.6	23.4	80
14	100	10.2	14.0	17.4							17.6	25.4	80
	40	12.7									16.6	18.4	79
	50	13.0	17.7								18.7	21.3	79
	60	13.2	18.2								20.8	24.1	80
	70	13.4	18.5	22.4							22.7	26.8	80
	80	13.6	18.7	22.9							24.6	29.5	80
16	90	13.7	18.9	23.4							26.5	32.2	80
	100	13.8	19.1	23.7	27.4						28.4	34.8	80
	50	16.9	23.1								25.7	27.9	79
	60	17.2	23.7	28.1							28.7	31.6	80
	70	17.5	24.1	29.2							31.6	35.2	80
	80	17.7	24.4	29.9	33.9						34.5	38.7	80
18	90	17.9	24.7	30.4	34.9						37.3	42.2	80
	100	18.0	24.8	30.9	35.7	39.5					40.1	45.7	80
	110	18.1	25.0	31.2	36.4	40.5					42.9	49.2	80
	50	21.4	29.1								33.4	35.3	79
	60	21.8	29.9	35.5							37.5	40.0	80
	70	22.1	30.5	36.9	41.0						41.4	44.6	80
20	80	22.3	30.8	37.8	42.8						45.4	49.1	80
	90	22.5	31.2	38.5	44.1	48.2					49.3	53.6	80
	100	22.7	31.4	39.0	45.2	49.9					53.1	58.0	80
	110	22.9	31.6	39.4	46.0	51.2	55.3				56.9	62.4	80
	50	26.3	35.9	41.3							41.9	43.6	79
	60	26.8	36.9	43.8							47.1	49.4	80
22	70	27.2	37.5	45.4	50.6						52.3	55.1	80
	80	27.5	38.0	46.6	52.8	56.9					57.4	60.7	80
	90	27.8	38.4	47.4	54.4	59.5					62.4	66.2	80
	100	28.0	38.7	48.1	55.7	61.5	65.8				67.3	71.7	80
	110	28.2	38.9	48.6	56.7	63.2	68.2	71.9			72.3	77.2	80
	60	32.4	44.6	52.9	57.5						57.8	59.8	80
24	70	32.9	45.4	54.9	61.2						64.2	66.7	80
	80	33.3	46.0	56.3	63.8	68.8					70.5	73.5	80
	90	33.6	46.4	57.4	65.8	71.9	76.0				76.7	80.2	80
	100	33.8	46.8	58.1	67.4	74.4	79.6				82.9	86.9	80
	110	34.0	47.1	58.7	68.6	76.4	82.4	86.9			89.0	93.5	80
	60	38.5	53.0	62.9	68.4						69.3	71.2	80
26	70			65.3	72.7						77.1	79.4	80
	80			67.0	75.9	77.0					84.7	87.5	80
	90	39.1	55.2	68.2	78.3	81.8	90.4				92.3	95.5	80
	100	39.5	55.6	69.1	80.1	88.5	94.6	98.8			99.8	103.4	80
	110	40.4	55.9	69.8	81.5	90.9	98.0	103.3	107.1		107.2	111.3	80
	60	45.2	62.2	73.8	80.3						81.8	83.6	80
28	70	45.8	63.3	76.6	85.3	90.3					91.1	93.2	80
	80	46.3	64.1	78.6	89.0	95.9	100.1				100.2	102.7	80
	90	46.7	64.7	80.0	91.8	100.3	106.1				109.2	112.1	80
	100	47.1	65.2	81.0	93.9	103.8	111.0	115.9			118.1	121.4	80
	110	47.4	65.6	81.9	95.6	106.6	115.0	121.2	125.6		126.9	130.7	80

* Includes 1.0-foot stump allowance.

Table 72--Predicted stemwood volume to a saw-log merchantable top, and to Q-inch and 4-inch d.o.b. tops based on d.b.h., height to a 4-inch d.o.b. top and height to a saw-log top for birch (species 370) in the Appalachian Area.*

D.b.h. class	Height to 4-inch d.o.b. top	Volume to										9-inch d.o.b. top	4-inch d.o.b. top	Girard Form Class
		Seu-Log 1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	Logs			
Inches	Feet	Cubic feet										Percent		
12	30	9.0										10.1	12.5	76
	40	9.5										12.0	15.9	78
	50	9.8	13.4									13.6	19.1	79
	60	10.0	13.7									15.2	22.3	80
	70	10.2	13.9									16.7	25.3	80
	80	10.3	14.1	17.5								18.2	28.4	80
	90	10.3	14.2	17.7								19.6	31.4	80
14	40	12.9	17.4									18.7	21.3	78
	50	13.3	18.1	21.8								21.9	25.6	79
	60	13.6	18.6	22.7								24.9	29.7	80
	70	13.8	18.9	23.3	26.9							27.9	33.8	80
	80	13.9	19.1	23.7	27.6							30.8	37.8	80
	90	14.0	19.3	24.0	28.1	31.7						33.7	41.7	80
	100	14.1	19.4	24.2	28.5	32.4	35.8					36.6	45.6	80
16	40	16.9	22.6									25.6	27.5	78
	50	17.4	23.6	28.3								30.3	33.0	79
	60	17.7	24.2	29.5	33.5							34.8	38.3	80
	70	17.9	24.6	30.3	34.9	38.6						39.2	43.5	80
	80	18.1	24.9	30.8	35.9	40.1	43.5					43.5	48.6	80
	90	18.2	25.1	31.2	36.6	41.2	45.2					47.8	53.6	80
	100	18.3	25.2	31.5	37.1	42.1	46.4	50.1				52.1	58.7	80
18	40	21.3	28.6	33.0								33.1	34.6	78
	50	21.9	29.8	35.7								39.4	41.4	79
	60	22.3	30.6	37.2	42.3							45.4	48.0	80
	70	22.6	31.1	38.2	44.0	48.6						51.2	54.5	80
	80	22.9	31.4	38.9	45.3	50.6	54.8					57.0	60.8	80
	90	23.0	31.7	39.4	46.2	52.0	56.9	60.8				62.7	67.1	80
	100	23.1	31.9	39.8	46.9	53.1	58.5	63.1	66.8			68.4	73.4	80
20	40	26.2	35.2	40.6								41.3	42.5	78
	50	27.0	36.8	43.9	48.6							49.2	50.8	79
	60	27.5	37.7	45.8	52.0	56.2						56.8	58.9	80
	70	27.9	38.3	47.1	54.2	59.8	63.7					64.2	66.7	80
	80	28.1	38.7	47.9	55.8	62.2	67.3	71.1				71.5	74.5	80
	90	28.3	39.0	48.6	56.9	64.0	70.0	74.8	78.4			78.7	82.2	80
	100	28.5	39.3	49.0	57.7	65.4	72.0	77.6	82.1	85.7		85.9	89.9	80
22	50	32.6	44.4	53.1	58.6							59.9	61.2	79
	60	33.3	45.5	55.4	62.8	67.8						69.2	70.8	80
	70	33.7	46.3	56.9	65.5	72.1	76.8					78.2	80.3	80
	80	34.0	46.8	57.9	67.3	75.1	81.2	85.7				87.2	89.6	80
	90	34.2	47.2	58.7	68.7	77.3	84.5	90.2	94.5			96.1	98.9	80
	100	34.4	47.5	59.3	69.8	79.0	86.9	93.6	99.0	103.2		104.9	108.1	80
	24	50	38.8	52.8	63.0	69.6							71.4	72.5
60		39.5	54.1	65.8	74.6	80.5						82.6	84.0	80
70		40.0	55.0	67.6	77.8	85.7	91.2					93.4	95.1	80
80		40.4	55.6	68.8	80.0	89.2	96.5	101.7				104.2	106.2	80
90		40.7	56.1	69.7	81.7	91.8	100.3	107.1	112.1			114.8	117.1	80
100		40.9	56.4	70.4	82.9	93.8	103.3	111.2	117.6	122.4		125.3	128.0	80
26		50	45.5	61.9	73.9	81.5							84.0	84.9
	60	46.3	63.4	77.1	87.4	94.3						97.0	98.2	80
	70	46.9	64.5	79.2	91.2	100.4	106.8					109.9	111.3	80
	80	47.4	65.2	80.7	93.8	104.6	113.0	119.1				122.5	124.2	80
	90	47.7	65.7	81.8	95.7	107.6	117.5	125.4	131.2			135.0	136.9	80
	100	48.0	66.2	82.6	97.2	110.0	121.0	130.2	137.7	143.3		147.4	149.6	80

* Includes 1.0-foot stump allowance.

Table 73--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., height to a 9-inch d.o.b. top and height to a saw-log top for birch (species 370) in the Appalachian Area.

D.b.h. class	Height to Q-inch d.o.b. top	Volume to													Girard Form Class	
		Saw-log				merchantable	height	(16-foot logs)			9-inch			4-inch		
		1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	d.o.b.	top	d.o.b.	top		
Inches	Feet	Cubic feet													Percent	
12	20															82
	30	9.7										11.1		16.2		81
	40	19.9	13.4	17.6								15.8				80
	50		10.2	14.1	17.8	21.3	24.5					20.4		24.9		80
	60		10.3	14.2	18.0	21.6	25.0	28.3				24.9		31.8		80
	70		10.4	14.3	18.1	21.8	25.3	28.7	32.0			29.4		36.7		80
	80		10.4	14.4	18.2	21.9	25.5	29.0	32.4	35.6		33.9		41.5		80
14	40	13.7	18.9	23.2								26.3		30.7		80
	50	13.9	19.1	23.8	28.0	31.5						31.9		36.6		80
	60		14.0	19.3	24.1	28.6	32.6	36.2				37.4		42.3		80
	70		14.1	19.4	24.4	29.0	33.3	37.3	40.9			42.9		48.0		80
	80		14.1	19.5	24.5	29.3	33.8	38.0	41.9	45.5		48.3		53.7		80
	90		14.2	19.5	24.6	29.5	34.1	38.5	42.7	46.5	50.1	53.8		59.4		80
	100		14.2	19.6	24.7	29.6	34.4	38.9	43.2	47.3	51.1	59.2		65.0		80
16	40	17.8	24.5	29.7								33.1		36.4		80
	50	18.1	24.8	30.7	35.6	39.5						39.9		43.4		80
	60	18.2	25.0	31.2	36.7	41.4	45.3					46.6		50.2		80
	70	18.3	25.2	31.5	37.3	42.6	47.2	51.1				53.2		57.0		80
	80	18.4	25.3	31.8	37.8	43.3	48.4	52.9	56.9			59.8		63.8		80
	90	18.5	25.4	32.0	38.1	43.9	49.2	54.1	58.6	62.6		66.4		70.5		80
	100	18.5	25.5	32.1	38.4	44.3	49.8	55.0	59.9	64.3		73.0		77.3		80
18	40	22.5	30.8	37.1								40.9		43.4		80
	50	22.8	31.3	38.5	44.3	48.5						48.9		51.7		80
	60	23.0	31.6	39.2	45.8	51.3	55.7					57.0		59.8		80
	70	23.2	31.8	39.7	46.7	53.0	58.3	62.7				64.9		67.9		80
	80	23.3	32.0	40.0	47.4	54.1	60.1	65.3	69.7			72.8		75.9		80
	90	23.4	32.1	40.2	47.9	54.9	61.3	67.1	72.2	76.7		80.7		83.9		80
	100	23.4	32.2	40.4	48.2	55.5	62.2	68.4	74.1	79.2		88.6		91.9		80
20	40	27.8	37.9	45.4								49.5		51.6		80
	50	28.1	38.5	47.2	54.0	58.7						59.1		61.3		80
	60	28.4	38.9	48.1	56.0	62.4	67.2					68.6		70.9		80
	70	28.5	39.2	48.8	57.3	64.6	70.8	75.7				78.0		80.4		80
	80	28.7	39.4	49.2	58.1	66.1	73.2	79.2	84.1			87.4		89.9		80
	90	28.8	39.5	49.5	58.7	67.2	74.8	81.6	87.5	92.4		96.7		99.3		80
	100	28.9	39.6	49.8	59.2	68.0	76.0	83.4	90.0	95.8		106.1		108.7		80
22	50	34.0	46.5	56.8	64.6	69.8						70.3		72.1		80
	60	34.3	47.0	58.0	67.3	74.7	80.0					81.4		83.3		80
	70	34.5	47.3	58.8	68.9	77.5	84.6	90.0				92.4		94.4		80
	80	34.6	47.5	59.3	70.0	79.4	87.6	94.5	100.0			103.4		105.5		80
	90	34.8	47.7	59.7	70.8	80.8	89.7	97.6	104.3	109.9		114.4		116.5		80
	100	34.9	47.9	60.1	71.4	81.8	91.3	99.9	107.5	114.2		125.3		127.5		80
24	50	40.4	55.2	67.3	76.3	82.1						82.5		84.1		80
	60	40.7	55.8	68.8	79.6	88.1	94.0					95.4		97.0		80
	70	41.0	56.2	69.8	81.6	91.6	99.7	105.7				108.2		109.9		80
	80	41.2	56.5	70.4	82.9	93.9	103.4	111.3	117.3			121.0		122.7		80
	90	41.3	56.7	70.9	83.9	95.6	106.1	115.1	122.8	128.9		133.7		135.5		80
	100	41.4	56.9	71.3	84.7	96.9	108.0	118.0	126.8	134.3		146.4		148.3		80
26	50	47.3	64.7	78.7	89.1	95.4						95.8		97.1		80
	60	47.7	65.4	80.5	93.0	102.6	109.2					110.7		112.1		80
	70	48.0	65.9	81.7	95.4	106.9	116.1	122.8				125.4		126.9		80
	80	48.3	66.2	82.5	97.0	109.8	120.6	129.5	136.2			140.1		141.6		80
	90	48.4	66.5	83.1	98.2	111.8	123.8	134.2	142.8	149.6		154.7		156.3		80
	100	48.6	66.7	83.6	99.1	113.3	126.2	137.7	147.6	156.1		169.3		170.9		80

* Includes 1.0-foot stump allowance.

Table 74--Predicted **stemwood** volume to a **4-inch** d.o.b. top in pulpwood trees based on d.b.h. and total-tree height for birch (species **370**) in the Appalachian Area:

D.b.h. class	Total-tree height (feet)																	
	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	
<u>Inches</u>	<u>Cubic feet</u>																	
5	0.7	0.8	0.9	0.9	1.9	1.9												
6	1.2	1.9	2.3	2.6	3.5	3.6	3.8	4.0										
7	2.6	3.2	3.6	3.9	5.1	5.4	5.6	5.9	6.2	6.4								
8	3.6	4.4	4.8	5.3	6.9	7.3	7.7	8.1	8.4	8.8	9.2	9.6						
9	4.6	5.6	6.3	6.9	8.8	9.4	9.9	10.4	11.0	11.5	12.0	12.5	13.0	13.5				
10	5.8	7.1	7.8	8.6	11.0	11.7	12.4	13.1	13.8	14.4	15.1	15.7	16.4	17.0	17.6	18.3		
11			9.5	10.5	13.5	14.3	15.1	16.0	16.8	17.6	18.4	19.2	20.0	20.8	21.6	22.4	23.2	
12			11.4	12.6	16.1	17.1	18.1	19.1	20.1	21.1	22.1	23.0	24.0	25.0	25.9	26.9	27.8	
13			13.4	14.9	18.9	20.1	21.3	22.5	23.7	24.9	26.0	27.2	28.3	29.5	30.6	31.7	32.9	
14					22.0	23.4	24.8	26.2	27.6	28.9	30.3	31.6	33.0	34.3	35.6	36.9	38.3	
15					25.3	26.9	28.5	30.1	31.7	33.3	34.9	36.4	37.9	39.5	41.0	42.5	44.0	
16					28.8	30.7	32.5	34.3	36.1	37.9	39.7	41.5	43.2	45.0	46.7	48.5	50.2	

* Includes **0.5-foot stump** allowance.

Table 75--Predicted **stemwood** volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and height to a **4-inch** d.o.b. top for birch (species **370**) in the Appalachian Area.†

D.b.h. class	Tree height to 4-inch d.o.b. top (feet)																	
	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	
<u>Inches</u>	<u>Cubic feet</u>																	
5																		
6	2.3	1.7	2.1	2.9	3.5	2.7	3.1	4.2	4.8	3.6	4.0	5.3	5.8	6.4				
7	2.9	3.6	4.4	5.5	6.2	6.9	7.5	8.2	8.8	9.5								
8																		
9	4.7	3.7	4.7	5.8	6.9	5.6	8.6	7.0	10.7	8.6	11.6	9.5	12.6	10.3	11.0	13.6	14.5	
10	5.7	7.1	8.4	10.5	11.7	12.9	14.1	15.2	16.4	17.5	18.6	19.7	20.8	21.9	23.0	24.1		
11																		
12			11.9	10.1	12.5	14.7	16.4	14.0	15.4	18.1	16.8	19.7	21.3	18.1	22.8	19.4	24.4	
													20.8	22.1	23.4	24.7	26.0	
													25.9	27.4	28.9	30.5	32.0	
13			13.8	17.2	19.1	21.0	22.9	24.7	26.5	28.3	30.1	31.8	33.6	35.3	37.0	38.7	40.5	
14																		
15																		
16																		
																	</	

* Includes **0.5-foot stump** allowance.

Table 76--Predicted stemwood volume to a saw-log merchantable top, and to 0-inch and 4-inch d.o.b. tops based on d.b.h., total-tree height and height to a saw-log top for hickory (species 400) in the Appalachian Area:

D.b.h. class	Total tree height	Volume to												Girard Form Class	
		Sew-Log merchantable height (16-foot logs)										9-inch d.o.b. top	4-inch d.o.b. top		
		1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0					
<u>Inches</u>	<u>Feet</u>	<u>Cubic feet</u>												<u>Percent</u>	
12	40											4.6	9.8	64	
	50	8.0										9.8	13.0	71	
	60	8.6	11.8									12.3	15.9	75	
	70	9.0	12.5									14.3	18.6	77	
	80	9.2	12.9	16.0								16.2	21.1	79	
	90	9.4	13.2	16.6								18.0	23.6	80	
	100	9.5	13.4	17.0								19.7	26.0	80	
14	40	9.6										11.6	13.5	64	
	50	11.0	14.8									15.6	18.0	71	
	60	11.8	16.2									19.0	21.9	75	
	70	12.3	17.1	20.9								22.1	25.6	77	
	80	12.7	17.7	22.0								25.0	29.1	79	
	90	12.9	18.1	22.7	26.4							27.7	32.5	80	
	100	13.1	18.4	23.2	27.3						30.4	35.8	80		
16	50	14.5	19.4									21.6	23.7	71	
	60	15.5	21.3	25.5								26.3	28.9	75	
	70	16.2	22.4	27.4								30.6	33.7	77	
	80	16.6	23.2	28.8	33.0							34.6	38.3	79	
	90	17.0	23.8	29.7	34.6	38.1						38.5	42.7	80	
	100	17.2	24.2	30.4	35.7	39.9						42.3	47.0	80	
	110	17.4	24.5	30.9	36.6	41.3	44.9				46.0	51.3	81		
18	50	18.4	24.7									28.2	30.1	71	
	60	19.7	27.0	32.3								34.4	36.7	75	
	70	20.6	28.5	34.8	39.2							40.0	42.9	77	
	80	21.2	29.5	36.5	41.9							45.4	48.7	79	
	90	21.6	30.2	37.7	43.9	48.4						50.5	54.3	80	
	100	21.9	30.7	38.6	45.3	50.6	54.5					55.5	59.8	80	
	110	22.1	31.1	39.3	46.5	52.4	56.9	60.3			60.4	65.2	81		
20	50	22.8	30.6	35.3								35.6	37.3	71	
	60	24.5	33.4	40.0								43.4	45.5	75	
	70	25.5	35.3	43.1	48.4							50.6	53.1	77	
	80	26.2	36.5	45.2	51.8	56.2						57.3	60.4	79	
	90	26.8	37.4	46.7	54.3	59.8	63.6					63.9	67.3	80	
	100	27.1	38.0	47.8	56.1	62.6	67.4					70.2	74.1	80	
	110	27.4	38.5	48.6	57.5	64.8	70.4	74.6			76.4	80.8	81		
22	60	29.7	40.6	48.5	53.0							53.3	55.2	75	
	70	31.0	42.8	52.3	58.7							62.1	64.5	77	
	80	31.9	44.3	54.8	62.8	68.1						70.5	73.2	79	
	90	32.5	45.3	56.6	65.8	72.5	77.0					78.5	81.7	80	
	100	33.0	46.1	57.9	68.0	75.9	81.6	85.6				86.3	89.9	80	
	110	33.3	46.7	58.9	69.7	78.5	85.3	90.4	93.9			94.0	98.0	81	
24	60	35.4	48.4	57.9	63.2							64.1	65.9	75	
	70	37.0	51.0	62.3	70.0	74.4						74.7	76.9	77	
	80	38.0	52.8	65.3	74.8	81.2						84.8	87.3	79	
	90	38.8			78.4	86.4	91.8					94.5	97.4	80	
	100	39.3			81.0	90.4	97.2	102.0				103.9	107.2	80	
	110	39.8	54.1	70.3	83.0	93.5	101.7	107.7	111.9			113.1	116.8	81	
26	60	41.7	56.9	68.0	74.3							75.8	77.5	75	
	70	43.5	60.0	73.2	82.2	87.4						88.4	90.4	77	
	80	44.7	62.1	76.8	87.9	95.4	99.8					100.3	102.6	79	
	90	45.6	63.6	79.3	92.1	101.5	107.8	111.7				111.8	114.5	80	
	100	46.3	64.7	81.2	95.2	106.2	114.2	119.8				122.9	126.0	80	
	110	46.8	65.5	82.6	97.6	109.9	119.4	126.5	131.4			133.9	137.3	81	

includes 1.0-foot stump allowance.

Table 77-Predicted **stemwood** volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., height to a 4-inch d.o.b. top and height to a saw-log top for hickory (species 400) in the Appalachian Area:

D.b.h. class	Height to 4-inch d.o.b. top	Volume to													Girard Form Class
		Sau-Log merchantable height (li-foot logs)													
		1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	9-inch d.o.b. top		4-inch d.o.b. top		
Inches	Feet	Cubic feet													Percent
12	30	7.7										8.5	10.7	70	
	40	8.6										11.1	14.5	75	
	50	9.0	12.4									13.4	18.0	78	
	60	9.3	12.9									15.6	21.3	79	
	70	9.4	13.2	16.4								17.6	24.5	80	
	80	9.6	13.4	16.8								19.5	27.6	80	
14	90	9.6	13.5	17.1	20.2							21.5	30.7	81	
	40	11.7	15.9									17.2	19.5	75	
	50	12.3	17.0	20.5								21.0	24.2	78	
	60	12.7	17.6	21.7								24.5	28.6	79	
	70	12.9	18.0	22.4	26.0							28.0	32.8	80	
	80	13.1	18.3	22.9	26.9	30.2						31.3	37.0	80	
16	90	13.2	18.5	23.3	27.5	31.1	34.2					34.6	41.1	81	
	100	13.3	18.7	23.6	28.0	31.9	35.3					37.8	45.2	81	
	40	15.4	20.8									23.6	25.4	75	
	50	16.2	22.3	26.8								29.0	31.4	78	
	60	16.7	23.1	28.3	32.3							34.0	37.0	79	
	70	17.0	23.7	29.3	34.0	37.6						38.9	42.5	80	
18	80	17.2	24.0	30.0	35.1	39.4	42.8					43.4	47.8	80	
	90	17.4	24.3	30.5	36.0	40.7	44.6	47.9				48.3	53.1	81	
	100	17.5	24.5	30.9	36.6	41.6	46.0	49.8	52.9			52.9	58.4	81	
	40	19.6	26.4	30.6								30.7	32.0	75	
	50	20.6	28.2	33.9								37.7	39.5	78	
	60	21.2	29.3	35.9	40.9							44.3	46.6	79	
20	70	21.6	30.0	37.2	43.0	47.6						50.6	53.4	80	
	80	21.9	30.5	38.1	44.5	49.8	54.1					56.9	60.1	80	
	90	22.1	30.9	38.7	45.6	51.5	56.4	60.4				63.0	66.8	81	
	100	22.3	31.1	39.2	46.4	52.7	58.2	62.9	66.7			69.0	73.3	81	
	40	24.3	32.06	37.97	46.5							38.4	39.5	75	
	50	25.3	33.1	39.1	47.6							47.2	48.6	78	
22	60	26.3	36.3	44.4	50.5	54.7						55.5	57.3	79	
	70	26.8	37.2	46.0	53.1	58.7	62.7					63.5	65.7	80	
	80	27.2	37.8	47.1	55.0	61.5	66.7	70.5				71.3	73.9	80	
	90	27.4	38.26	47.59	56.3	65.1	69.8	74.5	78.2	85.8		79.0	82.0	81	
	100	27.6	38.6	47.9	56.6	65.4	70.1	74.8	79.5	84.2		86.6	90.0	81	
	50	31.0	42.4	50.8	56.2							57.5	58.7	78	
24	60	31.9	44.0	53.8	61.2	66.2						67.6	69.2	79	
	70	32.6	45.1	55.7	64.4	71.0	75.8					77.4	79.3	80	
	80	33.0	45.8	57.0	66.6	74.4	80.6	85.2				87.0	89.1	80	
	90	33.3	46.4	58.0	68.2	76.9	84.2	90.1	94.4			96.4	98.9	81	
	100	33.6	46.8	58.7	69.4	78.8	86.9	93.8	99.3	103.6		105.7	108.5	81	
	50	38.0	50.5	60.5	68.8	78.7						68.8	69.8	78	
26	60	38.9	53.8	66.4	76.6	84.5	90.1					80.9	82.2	79	
	70	39.4	54.7	68.0	79.3	88.6	95.9	101.3				92.6	94.1	80	
	80	39.8	55.3	69.1	81.2	91.6	100.2	107.1	112.2			104.0	105.8	80	
	90	40.1	55.8	70.0	82.7	93.8	103.5	111.6	118.1	123.1		115.3	117.3	81	
	100	40.1	55.8	70.0	82.7	93.8	103.5	111.6	118.1	123.1		126.4	128.8	81	
	50	43.5	59.4	71.1	78.5							81.0	81.8	78	
28	60	44.8	63.27	78.8	88.8	99.2	105.7					95.2	96.3	79	
	70	46.3	64.3	79.9	93.1	104.0	112.6	118.8				109.0	110.3	80	
	80	46.3	64.3	79.9	93.1	104.0	112.6	118.8				122.5	124.0	80	
	90	46.3	64.3	79.9	93.1	104.0	112.6	118.8				135.7	137.4	81	
	100	46.3	64.3	79.9	93.1	104.0	112.6	118.8				148.8	150.8	81	

* Includes 1 .0-foot stump allowance.

Table 78--Predicted **stemwood** volume to a saw-log merchantable top, and to **9-inch** and **4-inch** d.o.b. tops based on d.b.h., height to a 0-inch d.o.b. top and height to a saw-log top for hickory (species **400**) in the Appalachian Area.*

D.b.h. class	Height to 9-inch d.o.b. top	Volume to										Girard Form	
		Saw-log	merchantable	height	(16-foot	Logs)	5.0	0-inch	4-inch			Class	
Inches	Feet	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	d.o.b. top	d.o.b. top	Percent
	20	7.8										13.7	72
	30	8.8	12.3								131.2	18.9	77
	40	9.2	13.0	16.4							19.1	24.2	79
12	50	9.4	13.3	17.0	20.4	23.5					23.8	29.4	80
	60	9.6	13.5	17.3	20.9	24.3	27.4				28.4	34.5	81
	70	9.6	13.7	17.5	21.3	24.8	28.1	31.2			33.0	39.6	81
	80	9.7	13.8	17.7	21.5	25.1	28.6	31.9	35.0		37.6	44.7	81
	40	12.6	17.7	22.0							24.9	28.5	79
	50	12.9	18.2	22.9	27.1	30.5					30.8	34.7	80
	60	13.1	18.5	23.5	28.0	32.0	35.5				36.6	40.9	81
14	70	13.3	18.7	23.8	28.6	33.0	37.0	40.5			42.4	47.0	81
	80	13.4	18.8	24.0	29.0	33.6	37.9	41.8	45.4		48.1	53.0	81
	90	13.4	18.9	24.2	29.3	34.0	38.5	42.8	46.7	50.2	53.7	59.0	81
	100	13.5	19.0	24.3	29.5	34.4	39.0	43.5	47.6	51.5	59.4	65.0	81
	40	16.6	23.1	28.3							31.7	34.3	79
	50	17.0	23.8	29.8	34.8	38.6					39.0	41.9	80
	60	17.3	24.2	30.5	36.2	41.0	45.0				46.1	49.3	81
16	70	17.5	24.5	31.0	37.0	42.4	47.2	51.2			53.2	56.6	81
	80	17.6	24.7	31.4	37.6	43.4	48.6	53.3	57.3		60.2	63.9	81
	90	17.7	24.8	31.6	38.0	44.0	49.6	54.7	59.3	63.4	67.2	71.1	81
	100	17.7	24.9	31.8	38.4	44.6	50.4	55.8	60.8	65.4	74.1	78.3	81
	40	21.1	29.2	35.6							39.3	41.4	79
	50	21.7	30.2	37.5	43.5	47.8					48.2	50.5	80
	60	22.0	30.7	38.6	45.4	51.2	55.7				56.9	59.4	81
18	70	22.2	31.1	39.3	46.6	53.2	58.8	63.3			65.4	68.2	81
	80	22.4	31.4	39.7	47.4	54.5	60.8	66.3	70.9		73.9	76.8	81
	90	22.5	31.5	40.1	48.0	55.4	62.2	68.3	73.7	78.4	82.4	85.5	81
	100	22.6	31.7	40.3	48.5	56.1	63.2	69.8	75.8	81.1	90.8	94.1	81
	40	26.2	36.1	43.7							47.9	49.6	79
	50	26.9	37.3	46.2	53.3	58.1					58.5	60.4	80
	60	27.3	38.0	47.6	55.8	62.6	67.6				68.9	71.0	81
20	70	27.6	38.5	48.5	57.4	65.2	71.7	76.9			79.2	81.4	81
	80	27.8	38.8	49.1	58.4	66.9	74.4	80.8	86.0		89.3	91.7	81
	90	27.9	39.1	49.5	59.2	68.1	76.2	83.5	89.8	95.1	99.4	101.9	81
	100	28.0	39.2	49.8	59.8	69.1	77.6	85.5	92.5	98.8	109.5	112.1	81
	50	32.6	45.2	55.8	64.1	69.6					70.0	71.5	80
	60	33.1	46.1	57.5	67.3	75.2	80.9				82.2	83.9	81
	70	33.5	46.7	58.6	69.3	78.5	86.1	91.9			94.3	96.2	81
22	80	33.7	47.1	59.4	70.6	80.6	89.4	96.9	102.8		106.3	108.3	81
	90	33.9	47.4	59.9	71.6	82.2	91.8	100.3	107.6	113.6	118.2	120.3	81
	100	34.0	47.6	60.4	72.3	83.4	93.6	102.8	111.1	118.3	130.1	132.3	81
	50	38.9	53.9	66.4	76.0	82.1					82.5	83.8	80
	60	39.5	55.0	68.5	79.9	89.0	95.4				96.8	98.3	81
	70	40.0	55.7	69.8	82.3	93.0	101.8	108.4			111.0	112.5	81
24	80	40.2	56.1	70.7	83.9	95.7	105.9	114.5	121.1		125.0	126.6	81
	90	40.5	56.5	71.4	85.1	97.6	108.8	118.7	127.1	133.8	138.9	140.7	81
	100	40.6	56.8	71.9	86.0	99.1	111.0	121.8	131.4	139.6	152.7	154.6	81
	50	46.5	64.6	80.3	93.6	104.0	111.2				96.1	97.3	80
	60	47.0	65.4	81.9	96.5	108.9	118.9	126.3			112.7	114.0	81
	70	47.4	66.0	83.0	98.4	112.1	123.9	133.7	141.1		129.1	130.4	81
26	80	47.6	66.4	83.8	99.9	114.4	127.4	138.7	148.3	155.8	145.3	146.7	81
	90	47.8	66.7	84.4	100.9	116.1	130.0	142.5	153.4	162.8	161.3	162.9	81
	100										177.3	179.0	81

* Includes 1.0-foot stump allowance.

Table 79--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and total-tree height for hickory (species 400) in the Appalachian Area.^a

D.b.h. class	Total-tree height (feet)																
	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110
Inches	Cubic feet																
5	0.6	0.9	1.4	1.5	1.7	1.9											
6	1.7	2.1	2.4	2.6	2.9	3.2	3.5	3.8									
7	2.5	3.1	3.4	3.8	4.2	4.6	5.1	5.5	5.9	6.3							
8									7.4	8.0	8.5	9.1	9.6				
9	3.3	4.3	4.1	5.3	4.6	6.0	6.6	5.1	5.7	7.3	6.3	8.1	6.9	8.9	9.4	10.4	11.1
10	5.4	6.7	7.5	8.3	9.2	10.2	11.2	12.1	13.0	13.9	14.7	15.6	16.4	17.2	18.0	18.8	
11			9.1	10.2	11.3	12.5	13.7	14.8	15.9	17.0	18.0	19.1	20.1	21.1	22.1	23.0	24.0
12			11.0	12.2	13.5	15.0	16.4	17.8	19.1	20.4	21.6	22.9	24.1	25.3	26.5	27.6	28.8
13			13.0	14.5	16.0	17.7	19.4	21.0	22.5	24.1	25.6	27.0	28.4	29.9	31.3	32.7	34.0
14																	
15					21.5	18.6	20.7	23.8	22.6	26.0	24.5	28.2	30.3	26.3	32.3	28.1	34.3
16					24.5	27.2	29.7	32.2	34.6	36.9	39.2	41.4	43.6	45.8	47.9	50.1	52.2

^a Includes 0.5-foot stump allowance.

Table 80--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and height to a 4-inch d.o.b. top for hickory (species 400) in the Appalachian Area:

D.b.h. class	Tree height to 4-inch d.o.b. top (feet)																
	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Inches	Cubic feet																
5	1.5	1.9	2.4	2.7	3.1	3.6											
6	2.1	2.6	3.2	3.6	4.2	4.8	5.3	5.8									
7	2.6	3.3	4.0	4.7	5.5	6.2	6.9	7.5	8.2	8.9							
8	3.3	4.2	5.1	6.1	7.0	7.8	8.7	9.5	10.3	11.1	11.9	12.7					
9	4.2	5.3	6.4	7.5	8.7	9.7	10.7	11.8	12.7	13.7	14.7	15.6	16.6	17.5			
10	5.2	6.5	7.8	9.2	10.5	11.8	13.1	14.3	15.5	16.6	17.8	18.9	20.1	21.2	22.3	23.4	
11			9.4	11.1	12.7	14.2	15.6	17.1	18.5	19.9	21.2	22.6	23.9	25.3	26.6	27.9	29.2
12			11.1	13.1	15.0	16.7	18.5	20.1	21.8	23.4	25.0	26.6	28.1	29.7	31.3	32.8	34.3
13			13.0	15.3	17.5	19.5	21.5	23.5	25.4	27.2	29.1	30.9	32.7	34.5	36.3	38.1	39.9
14																	
15					20.2	23.1	22.6	25.8	24.8	28.4	30.9	27.1	29.2	33.4	31.4	35.9	33.5
16					26.3	29.3	32.2	35.1	37.9	40.7	43.4	46.1	48.8	51.4	54.1	56.7	59.3

^a Includes 0.5-foot stump allowance.

Table al--Predicted **stemwood** volume to a saw-log merchantable top, and to **9-inch** and **4-inch** d.o.b. tops based on d.b.h., total-tree height and height to a saw-log top for white ash (species 541) in the Appalachian Area:

D.b.h. class	Total tree height	Volume to										Girard Form Class	
		Saw-log					merchantable height						(16-foot logs)
		1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	9-inch d.o.b. top		
<u>Inches</u>	<u>Feet</u>	<u>Cubic feet</u>										<u>Percent</u>	
12	40										6.0	10.2	61
	50	8.5									9.6	13.3	69
	60	9.0									12.0	16.1	73
	70	9.3	12.6								14.1	18.8	76
	80	9.5	13.0								16.0	21.3	78
	90	9.6	13.3	16.5							17.7	23.7	79
	100	9.7	13.5	16.9							19.4	26.1	80
14	40	10.4									11.6	14.0	61
	50	11.6	15.2								15.7	18.3	69
	60	12.3	16.5								19.2	22.2	73
	70	12.7	17.3	21.0							22.3	25.8	76
	80	13.0	17.8	21.9	25.1						25.3	29.3	78
	90	13.2	18.2	22.6	26.2						28.1	32.6	79
	100	13.3	18.5	23.1	27.0	30.3				30.8	35.9	80	
16	50	15.2	19.9								22.0	24.1	69
	60	16.1	21.6	25.7							26.7	29.2	73
	70	16.7	22.7	27.5	30.9						31.0	33.9	76
	80	17.1	23.4	28.7	32.9						35.1	38.5	78
	90	17.3	23.9	29.6	34.4	38.0					39.0	42.9	79
	100	17.5	24.2	30.3	35.4	39.6					42.8	47.1	80
	110	17.6	24.5	30.7	36.2	40.9	44.6			46.5	51.4	80	
18	50	19.4	25.3								28.9	30.6	69
	60	20.5	27.4	32.6							34.9	37.1	73
	70	21.2	28.8	34.9	39.3						40.5	43.1	76
	80	21.7	29.7	36.4	41.8	45.5					45.8	48.9	78
	90	22.0	30.3	37.6	43.6	48.2					51.0	54.5	79
	100	22.2	30.8	38.4	44.9	50.3	54.3				56.0	59.9	80
	110	22.4	31.1	39.0	45.9	51.8	56.6	60.1		60.9	65.3	80	
20	50	25.4	24.0	33.9	31.3	40.3	35.9				36.3	37.9	69
	60										44.0	46.0	73
	70										51.0	53.4	76
	80	26.3	26.9	35.6	36.7	43.2	45.1	48.6	51.7	56.2	57.8	60.6	78
	90	27.3	37.5	46.5	53.9	59.6	63.5				64.3	67.5	79
	100	27.6	38.1	47.5	55.6	62.1	67.1	70.5			70.6	74.2	80
	110	27.8	38.5	48.3	56.8	64.1	69.9	74.3		76.8	80.8	80	
22	60	30.9	41.2	48.9	53.5						53.9	55.8	73
	70	31.9	43.2	52.3	58.8						62.6	64.8	76
	80	32.6	44.6	54.7	62.6	68.1					70.9	73.5	78
	90	33.1	45.5	56.3	65.3	72.2	76.9				78.9	81.8	79
	100	33.4	46.2	57.6	67.3	75.3	81.3	85.4			86.7	90.0	80
	110	33.7	46.7	58.5	68.9	77.7	84.7	90.0	93.7		94.3	98.0	80
24	60	36.8	49.1	58.2	63.7						64.8	66.5	73
	70	38.1	51.5	62.4	70.1	74.7					75.3	77.3	76
	80	38.9	53.1	65.1	74.6	81.2	85.1				85.2	87.6	78
	90	39.5	54.3	67.1	77.8	86.0	91.7				94.8	97.5	79
	100	39.9	55.1	68.6	80.2	89.7	96.8	101.8			104.2	107.3	80
	110	40.2	55.7	69.7	82.1	92.5	100.9	107.2	111.6		113.4	116.8	80
26	60	43.3	57.7	68.5	74.9						76.6	78.2	73
	70	44.8	60.5	71.3	82.4	87.8					89.0	90.8	76
	80	45.8	62.4	76.6	87.7	95.4	100.0				100.7	102.9	78
	90	46.4	63.8	78.9	91.4	101.1	107.7	111.7			112.1	114.6	79
	100	46.9	64.8	80.6	94.3	105.4	113.8	119.6	123.2		123.2	126.1	80
	110	47.3	65.5	81.9	96.4	108.7	118.6	125.9	131.1		134.1	137.3	80

Includes 1.0-foot stump allowance.

Table 82--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., height to a 4-inch d.o.b. top and height to a saw-log top for white ash (species 541) in the Appalachian Area:

D.b.h. class	Height to 4-inch d.o.b. top	Volume to										Girard Form C1888	
		Saw-log	merchantable	height	(16-foot	logs)	5.0	9-inch	4-inch				
Inches	Feet	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	d.o.b. top	d.o.b. top	Percent
		Cubic feet											
12	30	8.3									9.0	11.2	69
	40	9.0									11.4	14.8	74
	50	9.4	12.7								13.5	18.1	77
	60	9.5	13.1								15.5	21.2	78
	70	9.6	13.3	16.5							17.3	24.2	79
	80	9.7	13.5	16.8							19.2	27.2	79
14	90	9.8	13.6	17.0	20.0						20.9	30.2	80
	40	12.4	16.4								17.6	19.9	74
	50	12.8	17.3	20.7							21.1	24.3	77
	60	13.1	17.9	21.8							24.4	28.4	78
	70	13.2	18.2	22.4	25.9						27.7	32.5	79
	80	13.3	18.4	22.9	26.7	29.9					30.8	36.5	79
16	90	13.4	18.6	23.2	27.3	30.8	33.8				33.9	40.4	80
	100	13.4	18.7	23.4	27.7	31.5	34.8				37.0	44.3	80
	40	16.2	21.5								24.2	25.9	74
	50	16.8	22.7	27.1							29.2	31.5	77
	60	17.1	23.4	28.5	32.4						33.9	36.9	78
	70	17.3	23.8	29.3	33.9	37.4					38.5	42.1	79
18	80	17.5	24.1	29.9	34.9	39.0	42.3				43.0	47.2	79
	90	17.6	24.3	30.3	35.6	40.2	44.1	47.2			47.4	52.2	80
	100	17.6	24.5	30.7	36.2	41.1	45.4	49.0			51.8	57.3	80
	40	20.6	27.2	31.3							31.4	32.7	74
	50	21.4	28.8	34.3							37.9	39.7	77
	60	21.8	29.7	36.1	40.9						44.1	46.4	78
20	70	22.0	30.2	37.2	42.9	47.3					50.1	52.9	79
	80	22.2	30.6	37.9	44.2	49.4	53.5				56.0	59.3	79
	90	22.3	30.9	38.5	45.1	50.9	55.7	59.6			61.9	65.6	80
	100	22.4	31.1	38.9	45.9	52.0	57.4	61.9	65.6		67.7	71.9	80
	40	25.5	33.7	38.6							39.2	40.3	74
	50	26.5	35.6	42.4	46.8						47.4	48.9	77
22	60	27.0	36.7	44.6	50.6	54.6					55.3	57.1	78
	70	27.3	37.4	46.0	52.9	58.3	62.2				62.8	65.0	79
	80	27.5	37.9	46.9	54.6	60.9	65.9	69.6			70.3	72.9	79
	90	27.7	38.2	47.6	55.8	62.8	68.7	73.4	77.0		77.7	80.6	80
	100	27.8	38.4	48.1	56.7	64.3	70.8	76.3	80.8	84.3	85.0	88.3	80
	50	32.1	43.2	51.4	56.6						57.9	59.0	77
24	60	32.8	44.5	54.0	61.2	66.0					67.4	68.9	78
	70	33.1	45.4	55.7	64.1	70.6	75.2				76.7	78.5	79
	80	33.4	45.9	56.8	66.1	73.7	79.7	84.1			85.8	87.9	79
	90	33.6	46.3	57.6	67.5	76.0	83.1	88.7	93.0		94.8	97.2	80
	100	33.7	46.6	58.3	68.6	77.8	85.7	92.3	97.6	101.7	103.7	106.4	80
	50	38.3	51.5	61.2	67.4						69.2	70.2	77
26	60	39.1	53.1	64.4	72.8	78.5					80.6	81.8	78
	70	39.5	54.1	66.4	76.3	84.0	89.4				91.7	93.2	79
	80	39.9	54.8	67.7	78.7	87.8	94.9	100.0			102.6	104.4	79
	90	40.1	55.2	68.7	80.4	90.5	98.9	105.5	110.5		113.4	115.4	80
	100	40.2	55.6	69.4	81.8	92.6	101.9	109.8	116.1	120.9	124.1	126.3	80
	50	45.1	60.5	71.9	79.1						81.5	82.3	77
28	60	46.0	62.4	75.6	85.5	92.2					94.9	95.9	78
	70	46.5	63.6	77.9	89.6	98.6	104.8				108.0	109.2	79
	80	46.9	64.4	79.5	92.4	103.0	111.3	117.3			120.8	122.2	79
	90	47.1	64.9	80.7	94.5	106.3	116.0	123.8	129.6	133.3	133.5	135.1	80
	100	47.3	65.3	81.6	96.0	108.7	119.6	128.8	136.2	141.8	146.0	147.9	80

* Includes 1.0-foot stump allowance.

Table 83--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., height to a 9-inch d.o.b. top and height to a saw-log top for white ash (species 541) in the Appalachian Area.*

D.b.h. class	Height to 9-inch d.o.b. top	Volume to										0-inch d.o.b. ton	4-inch d.o.b. ton	Girard Form Class
		Saw-log	merchantable	height	(li-foot	Logs)	5.0	6.0	7.0	8.0	9.0			
Inches	Feet	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	6.0	7.0	8.0	Percent
12	20	9.0										10.2	18.0	74
	30	9.6	13.1									15.0	20.7	77
	40	9.8	13.5	16.9								19.5	24.4	79
	50	9.9	13.7	17.3	20.6	23.5						23.9	28.3	79
	60	10.0	13.8	17.5	21.0	24.2	27.2					28.2	32.4	79
	70	10.0	13.9	17.7	21.3	24.7	27.9	30.9				32.6	36.5	80
	80	10.0	14.0	17.8	21.4	24.9	28.3	31.5	34.5			36.9	40.7	80
14	40	13.3	18.2	22.4								25.3	29.9	79
	50	13.4	18.6	23.1	27.1	30.4						30.7	34.9	79
	60	13.5	18.7	23.5	27.9	31.8	35.1					36.2	40.1	79
	70	13.6	18.8	23.8	28.4	32.6	36.4	39.8				41.6	45.3	80
	80	13.6	18.9	23.9	28.7	33.1	37.2	41.0	44.4			47.0	50.5	80
	90	13.6	19.0	24.1	28.9	33.5	37.8	41.9	45.6	49.0		52.3	55.7	80
	100	13.6	19.0	24.1	29.1	33.8	38.3	42.5	46.5	50.2		57.7	61.0	80
16	40	17.4	23.7	28.8								32.0	36.5	79
	50	17.5	24.2	29.9	34.7	38.4						38.7	42.8	79
	60	17.6	24.4	30.5	35.9	40.5	44.2					45.4	49.1	79
	70	17.7	24.5	30.8	36.6	41.8	46.3	50.1				52.0	55.5	80
	80	17.7	24.6	31.1	37.1	42.6	47.6	52.0	55.8			58.6	62.0	80
	90	17.8	24.7	31.3	37.4	43.2	48.5	53.4	57.7	61.6		65.1	68.4	80
	100	17.8	24.8	31.4	37.7	43.6	49.2	54.4	59.1	63.4		71.7	74.9	80
18	40	22.0	30.0	36.1								39.6	44.0	79
	50	22.2	30.5	37.6	43.3	47.4						47.8	51.7	79
	60	22.3	30.8	38.4	45.0	50.4	54.6					55.8	59.5	79
	70	22.4	31.0	38.9	46.0	52.2	57.5	61.8				63.8	67.3	80
	80	22.5	31.2	39.2	46.6	53.3	59.3	64.5	68.8			71.7	75.1	80
	90	22.5	31.3	39.5	47.1	54.2	60.6	66.4	71.5	75.9		79.7	82.9	80
	100	22.5	31.3	39.7	47.5	54.8	61.6	67.8	73.5	78.5		87.6	90.7	80
20	40	27.2	37.0	44.3								48.2	52.6	79
	50	27.5	37.7	46.2	53.0	57.5						57.9	61.8	79
	60	27.6	38.1	47.3	55.1	61.5	66.2					67.5	71.1	79
	70	27.7	38.3	47.9	56.5	63.9	70.0	74.9				77.0	80.4	80
	80	27.8	38.5	48.4			72.5	78.5	83.4			86.5	89.8	80
	90	27.8	38.6	48.7	58.0	66.5	74.2	81.0	87.0	91.9		95.9	99.1	80
	100	27.9	38.7	48.9	58.5	67.3	75.5	82.9	89.6	95.4		105.4	108.4	80
22	50	33.3	45.6	55.8	63.6	68.7						69.1	73.0	79
	60	33.5	46.1	57.1	66.4	73.8	79.1					80.4	84.0	79
	70	33.6	46.4	57.9	68.1	76.8	83.9	89.3				91.6	95.0	80
	80	33.7	46.6	58.5	69.2	78.7	87.0	94.0	99.5			102.8	106.0	80
	90	33.7	46.8	58.9	70.0	80.1	89.2	97.2	104.0	109.6		113.9	117.1	80
	100	33.8	46.9	59.2	70.6	81.2	90.9	99.6	107.3	114.1		125.1	128.1	80
24	50	39.7	54.3	66.3	75.3	81.0						81.4	85.3	79
	60	39.9	54.9	67.9	78.7	87.3	93.2					94.6	98.2	79
	70	40.0	55.3	68.9	80.8	91.0	99.2	105.2				107.7	111.1	80
	80	40.1	55.5	69.6	82.2	93.4	103.0	111.0	117.1			120.7	123.9	80
	90	40.2	55.7	70.0	83.2	95.1	105.7	115.0	122.8	129.0		133.7	136.8	80
	100	40.2	55.8	70.4	83.9	96.4	107.7	117.9	126.9	134.5		146.6	149.6	80
26	50	46.6	63.7	77.7	88.1	94.4						94.8	98.7	79
	60	46.9	64.5	79.6	92.2	102.0	108.6					110.0	113.6	79
	70	47.1	64.9	80.8	94.7	106.4	115.8	122.5				125.1	128.5	80
	80	47.2	65.2	81.6	96.3	109.3	120.4	129.5	136.3			140.1	143.4	80
	90	47.2	65.4	82.2	97.5	111.4	123.6	134.3	143.1	150.1		155.1	158.2	80
	100	47.3	65.6	82.6	98.4	112.9	126.1	137.8	148.1	156.8		170.1	173.1	80

* Includes 1.0-foot stump allowance.

Table 84--Predicted **stemwood** volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and total-tree height for white ash (species 541) in the Appalachian Area.*

D.b.h. class	Total-tree height (feet)																
	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110
Inches	Cubic feet																
5	1.0	1.6	1.7	1.8	1.9	2.1											
6	2.0	2.5	2.7	2.9	3.1	3.4	3.7	4.0									
7	2.9	3.5	3.8	4.2	4.4	4.8	5.3	5.7	6.1	6.5							
	3.8	4.6	5.1	5.6	5.9	6.5	7.1	7.6	8.2	8.7	9.2	9.7					
8	4.9	5.9	6.5	7.1	7.5	8.3	9.1	9.8	10.5	11.2	11.9	12.6	13.2	13.9			
10	6.1	7.3	8.1	8.9	9.4	10.4	11.4	12.3	13.2	14.0	14.9	15.7	16.5	17.4	18.2	19.0	
11			9.9	10.9	11.5	12.7	13.9	15.0	16.1	17.1	18.2	19.2	20.2	21.2	22.2	23.2	24.1
12			11.8	13.0	13.8	15.2	16.6	18.0	19.3	20.5	21.8	23.0	24.2	25.4	26.6	27.7	28.9
13			13.9	15.4	16.3	18.0	19.6	21.2	22.7	24.2	25.7	27.1	28.6	30.0	31.4	32.7	34.1
14					19.0	20.9	22.8	24.7	26.5	28.2	29.9	31.6	33.3	34.9	36.5	38.1	39.7
15					21.8	24.1	26.3	28.4	30.5	32.5	34.5	36.4	38.3	40.2	42.1	43.9	45.8
16					24.9	27.5	30.0	32.4	34.8	37.1	39.3	41.5	43.7	45.9	48.0	50.1	52.2

* Includes 0.5-foot stump allowance.

Table 85--Predicted **stemwood** volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and height to a 4-inch d.o.b. top for white ash (species 541) in the Appalachian Area:

D.b.h. class	Tree height to 4-inch d.o.b. top (feet)																
	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Inches	Cubic feet																
5																	
6	2.3	1.8	2.9	2.2	3.4	2.6	3.8	2.9	4.3	3.3	4.9	3.7	5.4	5.9			
7	2.9	3.6	4.3	4.9	5.6	6.3	6.9	7.6	8.2	8.8							
8	3.7	4.7	4.6	5.7	5.4	6.8	6.3	7.8	7.1	8.8	9.8	7.9	10.8	8.7	11.8	9.5	10.3
10	5.8	7.0	8.3	9.5	10.8	12.0	13.1	14.3	15.4	16.5	17.6	18.7	19.8	20.9	21.9	23.0	
11			10.0	11.4	12.9	14.3	15.7	17.1	18.4	19.7	21.0	22.3	23.6	24.8	26.1	27.4	28.6
12			11.8	13.5	15.3	16.9	18.5	20.1	21.7	23.2	24.7	26.2	27.7	29.2	30.7	32.2	33.6
13			13.8	15.8	17.8	19.7	21.6	23.4	25.2	27.0	28.8	30.5	32.2	34.0	35.7	37.4	39.1
14					20.6	22.8	24.9	27.0	29.1	31.1	33.2	35.2	37.1	39.1	41.1	43.0	45.0
15					23.6	26.1	28.5	30.9	33.3	35.6	37.9	40.1	42.4	44.6	46.9	49.1	51.3
16					26.8	29.6	32.4	35.1	37.7	40.3	42.9	45.5	48.0	50.6	53.1	55.6	58.1

* Includes 0.5-foot stump allowance.

Table 86--Predicted stemwood volume to a saw-log merchantable top, and to O-inch and 4-inch d.o.b. tops based on d.b.h., total-tree height and height to a saw-log top for white oak (species 8021 in the Appalachian Area:

D.b.h. class	Total tree height	Volume to										Girard Form Class	
		Saw-log merchantable height (16-foot logs)											
		1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	9-inch d.o.b. top		4-inch d.o.b. top
Inches	Feet	Cubic feet										Percent	
12	40	8.2									9.2	11.7	71
	50	8.8									11.3	14.4	74
	60	9.2	12.6								13.1	16.9	76
	70	9.5	13.0								14.7	19.2	78
	80	9.6	13.3								16.2	21.5	79
	90	9.8	13.5	16.9							17.6	23.7	79
	100	9.9	13.7	17.2						19.0	25.8	79	
14	40	11.2									14.3	16.0	71
	50	12.1	16.3								17.4	19.8	74
	60	12.6	17.2								20.1	23.2	76
	70	13.0	17.8	21.7							22.7	26.4	78
	80	13.2	18.2	22.5							25.1	29.5	79
	90	13.4	18.5	23.0	26.7						27.5	32.6	79
	100	13.5	18.7	23.4	27.4					29.8	35.5	79	
16	50	15.9	21.4								23.9	26.0	74
	60	16.6	22.6	27.0							27.8	30.5	76
	70	17.0	23.4	28.5							31.4	34.8	78
	80	17.3	23.9	29.5	33.6						34.9	38.8	79
	90	17.6	24.3	30.2	34.9						38.3	42.8	79
	100	17.7	24.5	30.7	35.9	39.9					41.6	46.7	79
	110	17.9	24.8	31.1	36.6	41.1	44.5			44.9	50.6	80	
18	50	20.1	27.1								31.2	33.1	74
	60	21.0	28.7	34.2							36.3	38.8	76
	70	21.6	29.6	36.1	40.5						41.2	44.2	78
	80	22.0	30.3	37.4	42.7						45.9	49.4	79
	90	22.3	30.8	38.3	44.3	48.6					50.4	54.4	79
	100	22.5	31.2	38.9	45.5	50.6	54.3				54.8	59.4	79
	110	22.7	31.4	39.4	46.4	52.1	56.5			59.2	64.3	80	
20	50	24.9	33.6	38.8							39.2	41.0	74
	60	26.0	35.5	42.4							45.8	48.0	76
	70	26.8	36.7	44.7	50.0						52.0	54.7	78
	80	27.3	37.5	46.2	52.8	57.1					58.0	61.2	79
	90	27.6	38.1	47.3	54.8	60.2					63.8	67.4	79
	100	27.9	38.6	48.1	56.2	62.5	67.1				69.4	73.6	79
	110	28.1	38.9	48.7	57.3	64.4	69.8	73.8		75.0	79.7	80	
22	60	31.6	43.0	51.3	56.0						56.2	58.3	76
	70	32.5	44.5	54.1	60.6						63.9	66.4	78
	80	33.1	45.5	56.0	63.9	69.2					71.3	74.2	79
	90	33.5	46.2	57.4	66.3	72.9	77.3				78.4	81.8	79
	100	33.9	46.7	58.3	68.1	75.7	81.3	85.1			85.5	89.3	79
	110	34.1	47.2	59.1	69.5	78.0	84.5	89.4			92.4	96.6	80
24	60	37.7	51.3	61.2	66.7						67.6	69.5	76
	70	38.7	53.0	64.5	72.2	76.7					76.9	79.2	78
	80	39.5	54.2	66.8	76.2	82.4					85.8	88.5	79
	90	40.0	55.1	68.4	79.1	86.8	92.1				94.4	97.5	79
	100	40.4	55.7	69.5	81.2	90.2	96.9	101.4			102.9	106.4	79
	110	40.7	56.2	70.4	82.8	92.9	100.7	106.5	110.5		111.3	115.2	80
26	60	44.3	60.3	71.9	78.4						80.0	81.7	76
	70	45.5	62.3	75.8	84.9	90.1					90.9	93.1	78
	80	46.4	63.7	78.5	89.5	96.8	101.2				101.5	104.0	79
	90	47.0	64.7	80.3	92.9	102.0	108.2				111.8	114.6	79
	100	47.5	65.5	81.7	95.4	106.0	113.8	119.1			121.8	125.1	79
	110	47.9	66.1	82.7	97.3	109.1	118.3	125.1	129.8		131.8	135.4	80

* Includes 1 .0-foot stump allowance.

Table 87--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., height to a 4-inch d.o.b. top and height to a saw-log top for white oak (species 802) in the Appalachian Area.

D.b.h. Class	Height to 4-inch d.o.b. top	Volume to										Girard Fore Class	
		1.0	Saw-log 1.5	merchantable 2.0	2.5	height 3.0	(16-foot logs) 3.5	4.0	4.5	5.0	9-inch d.o.b. top		4-inch d.o.b. top
Inches	Feet	Cubic feet										Percent	
12	30	8.4									9.2	11.5	72
	40	9.0									11.4	15.0	76
	50	9.4	12.8								13.3	18.3	78
	60	9.6	13.2								15.1	21.4	79
	70	9.8	13.5	16.6							16.8	24.4	79
	80	9.9	13.7	17.0							18.5	27.4	79
	90	10.0	13.8	17.2							20.1	30.4	80
14	40	12.4	16.6								17.7	20.2	76
	50	12.9	17.5	21.0							21.1	24.6	78
	60	13.2	18.0	22.0							24.2	28.7	79
	70	13.4	18.4	22.6	26.2						27.3	32.7	79
	80	13.5	18.6	23.1	26.9	30.1					30.3	36.7	79
	90	13.6	18.8	23.4	27.5	31.0					33.3	40.6	80
	100	13.7	18.9	23.7	27.9	31.7	35.0				36.2	44.5	80
16	40	16.2	21.7								24.4	26.3	76
	50	16.9	22.9	27.4							29.2	31.8	78
	60	17.3	23.6	28.7	32.6						33.8	37.1	79
	70	17.6	24.1	29.6	34.1	37.7					38.3	42.3	79
	80	17.8	24.4	30.2	35.2	39.3	42.6				42.6	47.4	79
	90	17.9	24.6	30.7	35.9	40.5	44.3				46.9	52.4	80
	100	18.0	24.8	31.0	36.5	41.4	45.6	49.2			51.2	57.4	80
18	40	20.6	27.5								31.6	33.1	76
	50	21.5	29.1	34.7							38.0	40.1	78
	60	22.0	30.0	36.4	41.3						44.1	46.7	79
	70	22.3	30.6	37.5	43.2	47.6					50.0	53.2	79
	80	22.6	31.0	38.3	44.5	49.7	53.8				55.8	59.5	79
	90	22.7	31.3	38.9	45.5	51.2	56.0	59.8			61.5	65.8	80
	100	22.9	31.5	39.3	46.2	52.4	57.7	62.1	65.8		67.2	72.0	80
20	40	25.5	34.0	39.1							39.6	40.8	76
	50	26.6	35.9	42.8	47.2						47.7	49.3	78
	60	27.2	37.1	45.0	51.0	55.0					55.4	57.5	79
	70	27.6	37.8	46.4	53.3	58.7	62.5				62.8	65.4	79
	80	27.9	38.3	47.3	55.0	61.3	66.3	69.9			70.2	73.1	79
	90	28.2	38.7	48.0	56.2	63.2	69.0	73.7	77.2		77.4	80.8	80
	100	28.3	39.0	48.6	57.1	64.7	71.1	76.6	81.0	84.4	84.5	88.4	80
22	50	32.2	43.6	51.9	57.1						58.2	59.5	78
	60	33.0	44.9	54.5	61.7	66.5					67.6	69.3	79
	70	33.5	45.8	56.2	64.6	71.0	75.5				76.8	78.8	79
	80	33.9	46.5	57.3	66.6	74.2	80.1	84.4			85.7	88.2	79
	90	34.2	46.9	58.2	68.1	76.5	83.5	89.1	93.2		94.6	97.4	80
	100	34.4	47.3	58.9	69.2	78.2	86.0	92.6	97.9	101.9	103.3	106.5	80
24	50	38.4	51.9	61.7	68.0						69.6	70.8	78
	60	39.4	53.6	64.9	73.4	79.1					80.9	82.3	79
	70	40.0	54.6	66.9	76.9	84.5	89.8				91.9	93.6	79
	80	40.4	55.4	68.3	79.3	88.3	95.3	100.4			102.6	104.6	79
	90	40.8	55.9	69.3	81.1	91.0	99.3	105.9	110.8		113.2	115.5	80
	100	41.0	56.3	70.1	82.4	93.1	102.4	110.1	116.3	121.1	123.7	126.4	80
26	50	45.2	61.0	72.5	79.8						82.0	82.9	78
	60	46.3	62.9	76.2	86.2	92.8					95.3	96.5	79
	70	47.0	64.2	78.6	90.3	99.2	105.3				108.2	109.6	79
	80	47.6	65.1	80.3	93.1	103.6	111.8	117.7			120.8	122.6	79
	90	47.9	65.7	81.5	95.2	106.9	116.5	124.2	129.9		133.3	135.3	80
	100	48.2	66.2	82.4	96.8	109.4	120.2	129.2	136.4	141.9	145.7	147.9	80

. Includes 1 .0-foot stump allowance.

Table 88--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., height to a 9-inch d.o.b. top and height to a saw-log top for white oak (species 802) in the Appalachian Area:

D.b.h. class	Height to 9-inch d.o.b. top	Volume to										9-inch d.o.b. top	4-inch d.o.b. top	Girard Form Class
		Sew-log	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0			
Inches	Feet	Cubic feet										Percent		
12	20											10.1	17.0	77
	30	8.9										15.0	20.2	79
	40	9.4	13.1	17.0								19.7	24.2	79
	50	9.9	13.8	17.4	20.8	23.9						24.3	28.3	79
	60	10.0	13.9	17.7	21.2	24.6	27.7					28.8	32.5	79
	70	10.1	14.0	17.8	21.5	25.0	28.3	31.4				33.3	36.7	79
	80	10.2	14.1	17.9	21.6	25.2	28.7	32.0	35.1			37.7	41.0	79
14	40	13.2	18.3	22.6								25.7	29.7	79
	50	13.5	18.6	23.3	27.5	31.0						31.4	35.0	79
	60	13.6	18.9	23.7	28.2	32.3	35.9					37.0	40.3	79
	70	13.7	19.0	24.0	28.7	33.1	37.1	40.6				42.6	45.7	79
	80	13.8	19.1	24.2	29.0	33.6	37.8	41.8	45.4			48.1	51.1	79
	90	13.9	19.2	24.3	29.2	33.9	38.4	42.6	46.5	50.1		53.7	56.5	80
	100	13.9	19.3	24.4	29.4	34.2	38.8	43.1	47.3	51.2		59.2	61.9	80
16	40	17.3	23.8	29.1								32.6	36.3	79
	50	17.6	24.3	30.2	35.3	39.2						39.6	43.0	79
	60	17.8	24.6	30.8	36.4	41.3	45.3					46.5	49.6	79
	70	17.9	24.8	31.2	37.1	42.4	47.2	51.3				53.4	56.3	79
	80	18.0	24.9	31.4	37.5	43.2	48.4	53.1	57.2			60.2	62.9	79
	90	18.1	25.0	31.6	37.9	43.8	49.3	54.4	59.0	63.1		67.0	69.6	80
	100	18.2	25.1	31.8	38.1	44.2	49.9	55.3	60.3	64.9		73.8	76.3	80
18	40	21.9	30.0	36.5								40.4	44.0	79
	50	22.3	30.7	38.0	44.1	48.5						48.9	52.1	79
	60	22.6	31.1	38.8	45.6	51.5	56.0					57.3	60.3	79
	70	22.7	31.4	39.3	46.6	53.1	58.8	63.4				65.6	68.4	79
	80	22.9	31.6	39.7	47.3	54.2	60.5	66.0	70.7			73.9	76.5	79
	90	23.0	31.7	40.0	47.7	55.0	61.7	67.8	73.2	77.9		82.1	84.6	80
	100	23.1	31.8	40.2	48.1	55.5	62.5	69.1	75.0	80.4		90.3	92.7	80
20	40	27.1	37.1	44.8								49.2	52.6	79
	50	27.6	37.9	46.8	53.9	59.0						59.4	62.4	79
	60	27.9	38.4	47.8	56.0	62.9	68.0					69.4	72.2	79
	70	28.1	38.8	48.5	57.3	65.0	71.7	77.0				79.3	82.0	79
	80	28.3	39.0	49.0	58.1	66.5	74.0	80.4	85.8			89.2	91.7	79
	90	28.4	39.2	49.3	58.7	67.5	75.5	82.8	89.1	94.5		99.0	101.4	80
	100	28.5	39.3	49.5	59.2	68.3	76.7	84.5	91.5	97.8		108.8	111.1	80
22	50	33.4	45.9	56.4	64.8	70.5						70.9	73.9	79
	60	33.8	46.5	57.8	67.5	75.5	81.3					82.8	85.5	79
	70	34.1	46.9	58.6	69.1	78.3	86.0	91.9				94.5	97.0	79
	80	34.3	47.2	59.2	70.2	80.1	88.9	96.4	102.4			106.1	108.5	79
	90	34.4	47.4	59.6	71.0	81.4	90.9	99.4	106.7	112.8		117.7	120.0	80
	100	34.6	47.6	59.9	71.5	82.4	92.4	101.6	109.8	117.1		129.3	131.5	80
24	50	39.9	54.6	67.1	76.8	83.2						83.6	86.5	79
	60	40.3	55.4	68.7	80.1	89.3	95.9					97.4	100.1	79
	70	40.7	55.9	69.7	82.0	92.7	101.6	108.4				111.1	113.6	79
	80	40.9	56.2	70.4	83.4	95.0	105.2	113.9	120.7			124.7	127.0	79
	90	41.1	56.5	70.9	84.3	96.6	107.7	117.6	126.0	132.9		138.2	140.5	80
	100	41.2	56.7	71.3	85.1	97.8	109.6	120.3	129.8	138.2		151.7	153.9	80
26	50	46.9	64.1	78.6	89.8	97.0						97.4	100.2	79
	60	47.4	65.0	80.6	93.8	104.3	111.8					113.4	116.0	79
	70	47.8	65.6	81.8	96.1	108.5	118.7	126.3				129.2	131.6	79
	80	48.1	66.1	82.7	97.7	111.2	123.0	132.9	140.6			144.9	147.2	79
	90	48.3	66.4	83.3	98.9	113.2	126.0	137.4	147.0	154.8		160.5	162.7	80
	100	48.4	66.6	83.7	99.8	114.6	128.3	140.6	151.6	161.1		176.1	178.2	80

. Includes 1.0-foot stump allowance.

Table 89--Predicted **stemwood** volume to a 4-inch **d.o.b.** top in pulpwood trees based on d.b.h. and total-tree height for white oak (species 802) in the Appalachian Area.^a

D.b.h. class	Total-tree height (feet)																
	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110
Inches	Cubic feet																
5																	
6	0.8 1.8	2.3 1.0	2.6 1.3	2.8 1.7	3.4 2.1	3.6 2.3	3.9	4.1									
7	2.7	3.3	3.6	4.0	4.8	5.1	5.5	5.9	6.2	6.6							
8																	
9	3.5 4.6	4.4 5.6	4.9 6.3	5.4 6.9	6.4 8.2	6.9 8.9	7.4 9.5	10.2 7.9	10.8 8.4	11.4 8.8	12.0 9.3	12.6 9.8	13.2	13.8			
10	5.7	7.0	7.8	8.7	10.2	11.1	11.9	12.7	13.5	14.3	15.0	15.8	16.5	17.3	18.0	18.7	
11			9.5	10.6	12.5	13.5	14.5	15.5	16.5	17.5	18.4	19.3	20.2	21.1	22.0	22.9	23.8
12			11.4	12.7	14.9	16.2	17.4	18.6	19.8	20.9	22.0	23.1	24.2	25.3	26.4	27.5	28.5
13			13.5	15.0	17.6	19.1	20.6	22.0	23.3	24.7	26.0	27.3	28.6	29.9	31.2	32.4	33.7
14					20.5	22.3	24.0	25.6	27.2	28.8	30.3	31.8	33.3	34.8	36.3	37.8	39.2
15					23.6	25.6	27.6	29.5	31.3	33.1	34.9	36.7	38.4	40.1	41.8	43.5	45.2
16					27.0	29.3	31.5	33.6	35.7	37.8	39.8	41.8	43.8	45.8	47.7	49.7	51.6

^a Includes 0.5-foot stump allowance.

Table 90--Predicted **stemwood** volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and height to a 4-inch d.o.b. top for white oak (species 802) in the Appalachian Area:

D.b.h. class	Tree height to 4-inch d.o.b. top (feet)																
	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Inches	Cubic feet																
5																	
6	2.2 1.7	2.1 2.8	3.4 2.6	3.0 3.9	3.4 4.5	3.9 5.0	5.6	6.1									
7	2.7	3.5	4.2	5.1	5.8	6.5	7.1	7.8	8.4	9.0							
8																	
9																	
10																	
11			9.8	11.7	13.2	14.6	16.0	17.3	18.7	20.0	21.3	22.6	23.8	25.1	26.4	27.6	28.9
12			11.5	13.8	15.6	17.2	18.8	20.4	22.0	23.5	25.0	26.5	28.0	29.5	31.0	32.4	33.9
13			13.5	16.1	18.1	20.1	21.9	23.8	25.6	27.3	29.1	30.8	32.6	34.3	36.0	37.7	39.4
14					21.0	23.2	25.3	27.4	29.5	31.5	33.5	35.5	37.5	39.4	41.4	43.3	45.3
15					24.0	26.5	28.9	31.3	33.6	36.0	38.2	40.5	42.7	45.0	47.2	49.4	51.6
16					27.2	30.0	32.8	35.5	38.1	40.7	43.3	45.9	48.4	50.9	53.4	55.9	58.4

^a Includes 0.5foot stump allowance.

Table 91--Predicted stemwood volume to a saw-log merchantable top, and to S-inch and 4-inch d.o.b. tops based on d.b.h., total-tree height and height to a saw-log top for chestnut oak (species 832) in the Appalachian Area!

D.b.h. class	Total tree height	Volume to										Girard Form Class			
		San-log		merchantable		height		(16-foot Logs)		5.0			9-inch	4-inch	
		1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	d.o.b.	top	d.o.b.	top	
<u>Inches</u>	<u>Feet</u>	<u>Cubic feet</u>													<u>Percent</u>
12	40	8.0										9.4	11.5		71
	50	8.5										11.2	14.0		74
	60	8.8	12.0									12.8	16.3		76
	70	8.9	12.4									14.3	18.5		77
	80	9.1	12.6	15.6								15.7	20.6		77
	90	9.1	12.8	15.9								17.1	22.7		78
	100	9.2	12.9	16.2								18.4	24.7		78
14	40	10.9										14.3	15.8		71
	50	11.6	15.7									17.1	19.3		74
	60	12.0	16.5									19.7	22.4		76
	70	12.2	16.9	20.7								22.1	25.4		77
	80	12.4	17.2	21.3								24.4	28.3		77
	90	12.5	17.5	21.8	25.3							26.7	31.2		78
	100	12.6	17.6	22.1	25.9	28.9						28.9	34.0		78
16	50	15.2	20.6									23.4	25.3		74
	60	15.7	21.6	25.9								27.1	29.5		76
	70	16.1	22.2	27.1								30.5	33.4		77
	80	16.3	22.6	27.9	32.0							33.8	37.2		77
	90	16.5	22.9	28.5	33.1	36.5						37.0	41.0		78
	100	16.6	23.1	28.9	33.9	37.9						40.2	44.7		78
	110	16.7	23.3	29.3	34.5	38.9	42.3					43.3	48.3		78
18	50	19.4	26.2	30.4								30.5	32.2		74
	60	20.0	27.4	32.9								35.3	37.4		76
	70	20.4	28.2	34.4	38.7							39.8	42.5		77
	80	20.7	28.7	35.5	40.6	44.1						44.2	47.3		77
	90	20.9	29.1	36.2	42.0	46.3						48.5	52.1		78
	100	21.1	29.4	36.7	43.0	48.0	51.7					52.8	56.8		78
	110	21.2	29.6	37.1	43.8	49.3	53.6	56.8				56.9	61.4		78
20	50	24.0	32.4	37.6								38.3	39.9		74
	60			40.7								44.4	46.4		76
	70			42.6	47.9							50.2	52.6		77
	80	24.8	35.5	43.9	50.3	54.6						55.8	58.6		77
	90	25.3	36.9	44.8	52.0	57.3	60.9					61.3	64.5		78
	100	26.1	36.3	45.4	53.2	59.4	63.9					66.7	70.3		78
	110	26.3	36.6	46.0	54.1	61.0	66.3	70.3				72.0	76.1		78
22	60	30.1	41.1	49.3	53.9							54.5	56.3		76
	70	30.7	42.3	51.6	58.0							61.6	63.8		77
	80	31.2	43.1	53.2	60.9	66.1						68.5	71.1		77
	90	31.5	43.7	54.3	63.0	69.4	73.8					75.3			78
	100	31.7	44.1	55.1	64.5	71.9	77.4	81.2				81.9	84.5		78
	110	31.9	44.4	55.7	65.6	73.9	80.3	85.1	88.5			88.5	92.3		78
24	60	35.9	49.1	58.7	64.3							65.5	67.1		76
	70	36.7	50.4	61.5	69.2	73.6						74.1	76.1		77
	80	37.2	51.4	63.4	72.6	78.8						82.4	84.8		77
	90	37.5	52.1	64.7	75.0	82.7	87.9					90.6	93.3		78
	100	37.8	52.5	65.7	76.8	85.7	92.2	96.7				98.6	101.7		78
	110	38.0	52.9	66.4	78.2	88.0	95.7	101.4	105.4			106.6	110.0		78
26	60											77.3	78.9		76
	70											87.6	89.4		77
	80	43.7	60.4	74.5	85.3	92.5	96.9					97.5	99.7		77
	90	44.2	61.2	76.0	88.2	97.2	103.3	107.0				107.1	109.7		78
	100	44.5	61.8	77.2	90.3	100.7	108.4	113.6				116.7	119.5		78
	110	44.8	62.2	78.0	91.9	103.4	112.4	119.1	123.8			126.1	129.3		78

* Includes 1.0-foot stump allowance.

Table 92--Predicted **stemwood** volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., height to a 4-inch d.o.b. top and height to a saw-log top for chestnut oak (species 832) in the Appalachian Area:

D.b.h. class	Height to 4-inch d.o.b. top	Volume to											Girard Form Class	
		sau-log	merchantable	height	(16-foot logs)						9-inch	4-inch		
		1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	d.o.b. top	d.o.b. top		
<u>Inches</u>	<u>Feet</u>	<u>Cubic feet</u>												<u>Percent</u>
12	30	8.3									9.4	11.3	73	
	40	8.8									11.3	14.4	75	
	50	9.0	12.3								13.0	17.3	77	
	60	9.1	12.6								14.6	20.1	77	
	70	9.2	12.7	15.7							16.1	22.9	78	
	80	9.2	12.9	16.0							17.6	25.6	78	
	90	9.3	12.9	16.2	19.1						19.1	28.3	78	
14	40	12.0	16.1								17.2	19.5	75	
	50	12.3	16.8	20.1							20.2	23.3	77	
	60	12.5	17.2	20.9							23.0	27.0	77	
	70	12.6	17.4	21.5	24.7						25.8	30.7	78	
	80	12.7	17.6	21.8	25.4	28.4					28.5	34.3	78	
	90	12.7	17.7	22.1	26.0	29.2					31.1	37.8	78	
	100	12.8	17.8	22.3	26.3	29.9	32.9				33.8	41.4	78	
16	40	15.8	21.1								23.6	25.3	75	
	50	16.2	22.0	26.2							27.8	30.2	77	
	60	16.4	22.5	27.4	31.0						31.9	35.0	77	
	70	16.6	22.9	28.1	32.3	35.6					35.9	39.7	78	
	80	16.7	23.1	28.6	33.2	37.1					39.8	44.3	78	
	90	16.8	23.2	29.0	33.9	38.2	41.6				43.7	48.8	78	
	100	16.8	23.4	29.2	34.4	39.0	42.9	46.2			47.6	53.4	78	
18	40	20.1	26.8								30.6	31.9	75	
	50	20.6	27.9	33.2							36.2	38.1	77	
	60	20.9	28.6	34.7	39.2						41.6	44.0	77	
	70	21.1	29.0	35.6	40.9	44.9					46.9	49.9	78	
	80	21.2	29.3	36.3	42.1	46.9	50.6				52.1	55.6	78	
	90	21.3	29.5	36.7	43.0	48.3	52.6	56.1			57.3	61.3	78	
	100	21.4	29.7	37.1	43.6	49.3	54.2	58.3	61.5		62.4	67.0	78	
20	40	24.9	33.1	37.9							38.3	39.3	75	
	50	25.5	34.6	41.1	45.1						45.4	46.9	77	
	60	25.9	35.4	42.9	48.4	52.0					52.2	54.2	77	
	70	26.1	35.9	44.0	50.5	55.5	58.8				58.9	61.3	78	
	80	26.3	36.3	44.8	52.0	57.8	62.3				65.5	68.3	78	
	90	26.4	36.5	45.4	53.1	59.6	64.9	69.1			72.0	75.3	78	
	100	26.5	36.7	45.9	53.9	60.9	66.9	71.9	75.8		78.5	82.2	78	
22	50	31.0	41.9	49.7	54.5						55.4	56.6	77	
	60	31.4	42.9	52.0	58.6	62.9					63.7	65.3	77	
	70	31.7	43.6	53.4	61.2	67.1	71.1				71.9	73.9	78	
	80	31.9	44.0	54.3	63.0	70.0	75.4	79.2			80.0	82.3	78	
	90	32.1	44.3	55.1	64.3	72.1	78.5	83.5	87.2		88.0	90.7	78	
	100	32.2	44.5	55.6	65.3	73.8	80.9	86.9	91.6	95.1	96.0	99.0	78	
24	50	37.0	50.0	59.2	64.9						66.2	67.3	77	
	60	37.5	51.2	61.9	69.8	74.8					76.3	77.6	77	
	70	37.9	51.9	63.6	72.9	79.8	84.5				86.1	87.7	78	
	80	38.1	52.5	64.8	75.0	83.3	89.7	94.1			95.8	97.7	78	
	90	38.3	52.8	65.6	76.6	85.9	93.4	99.3	103.6		105.4	107.6	78	
	100	38.4	53.1	66.2	77.8	87.8	96.3	103.3	108.9	113.0	114.9	117.5	78	
26	50	43.5	58.7	69.6	76.2						78.0	78.9	77	
	60	44.1	60.2	72.7	81.9	87.8					89.8	91.0	77	
	70	44.5	61.1	74.7	85.6	93.7	99.2				101.4	102.8	78	
	80	44.8	61.7	76.1	88.1	97.8	105.2	110.4			112.8	114.5	78	
	90	45.0	62.1	77.1	90.0	100.8	109.6	116.5	121.5		124.1	126.0	78	
	100	45.2	62.4	77.8	91.4	103.1	113.1	121.2	127.7	132.5	135.3	137.5	78	

* Includes 1.0-foot stump allowance.

Table 93--Predicted stemwood volume to a saw-log merchantable top, and to S-inch and 4-inch d.o.b. tops based on d.b.h., height to a S-inch d.o.b. top and height to a saw-log top for chestnut oak (species 832) in the Appalachian Area.^a

D.b.h. class	Height to 9-inch d.o.b. top	Volume to										9-inch d.o.b. top	4-inch d.o.b. top	Girard Form Class
		Saw-log merchantable height (16-foot Logs)												
		1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0				
<u>Inches</u>	<u>Feet</u>	<u>Cubic feet</u>										<u>Percent</u>		
12	20	8.5									9.7	17.2	76	
	30	9.0	12.4								14.2	20.9	77	
	40	9.2	12.8	16.0							18.5	24.8	78	
	50	9.3	13.0	16.4	19.6	22.4					22.7	28.9	78	
	60	9.3	13.1	16.6	19.9	23.1	25.9				26.9	32.9	78	
	70	9.4	13.1	16.7	20.2	23.4	26.5	29.4			31.1	37.0	78	
	80	9.4	13.2	16.8	20.3	23.7	26.9	30.0	32.8		35.2	41.1	78	
14	40	12.5	17.3	21.3							24.1	29.8	78	
	50	12.7	17.6	22.0	25.8	29.0					29.3	34.8	78	
	60	12.7	17.8	22.4	26.5	30.2	33.4				34.4	39.9	78	
	70	12.8	17.9	22.6	27.0	31.0	34.6	37.8			39.6	45.0	78	
	80	12.8	17.9	22.7	27.3	31.5	35.4	39.0	42.2		44.7	50.0	78	
	90	12.9	18.0	22.9	27.5	31.8	35.9	39.8	43.3	46.6	49.8	55.1	78	
	100	12.9	18.0	22.9	27.6	32.1	36.4	40.4	44.2	47.7	54.9	60.2	78	
16	40	16.4	22.6	27.5							30.5	35.9	78	
	50	16.6	23.0	28.5	33.0	36.5					36.9	42.1	78	
	60	16.7	23.2	29.0	34.1	38.5	42.1				43.1	48.2	78	
	70	16.8	23.3	29.4	34.8	39.7	44.0	47.6			49.4	54.4	78	
	80	16.8	23.4	29.6	35.3	40.5	45.2	49.4	53.0		55.6	60.6	78	
	90	16.9	23.5	29.8	35.6	41.1	46.1	50.7	54.8	58.4	61.8	66.8	78	
	100	16.9	23.6	29.9	35.9	41.5	46.8	51.6	56.1	60.2	68.0	73.0	78	
18	40	20.8	28.5	34.4							37.8	42.9	78	
	50	21.1	29.1	35.8	41.2	45.1					45.5	50.4	78	
	60	21.2	29.4	36.6	42.8	48.0	51.9				53.0	57.9	78	
	70	21.3	29.6	37.1	43.8	49.6	54.6	58.6			60.6	65.4	78	
	80	21.4	29.7	37.4	44.4	50.7	56.4	61.2	65.3		68.1	72.8	78	
	90	21.4	29.8	37.6	44.9	51.5	57.6	63.1	67.9	71.9	75.5	80.3	78	
	100	21.5	29.9	37.8	45.2	52.1	58.6	64.4	69.7	74.5	83.0	87.7	78	
20	40	25.8	35.2	42.2							45.9	50.9	78	
	50	26.1	35.9	44.1	50.4	54.7					55.1	59.9	78	
	60	26.3	36.3	45.1	52.5	58.5	62.9				64.1	68.8	78	
	70	26.4	36.5	45.7	53.8	60.7	66.5	71.0			73.1	77.7	78	
	80	26.5	36.7	46.1	54.6	62.2	68.9	74.5	79.0		82.0	86.5	78	
	90	26.5	36.8	46.4	55.2	63.3	70.5	76.9	82.5	87.0	90.9	95.4	78	
	100	26.6	36.9	46.6	55.7	64.1	71.8	78.7	84.9	90.4	99.7	104.3	78	
22	50	31.6	43.5	53.2	60.6	65.4					65.7	70.4	78	
	60	31.9	44.0	54.4	63.2	70.2	75.1				76.3	80.9	78	
	70	32.0	44.3	55.2	64.8	73.0	79.7	84.7			86.9	91.4	78	
	80	32.1	44.5	55.8	65.9	74.9	82.7	89.2	94.3		97.4	101.8	78	
	90	32.2	44.6	56.1	66.7	76.3	84.8	92.3	98.6	103.7	107.8	112.2	78	
	100	32.2	44.8	56.4	67.3	77.3	86.4	94.6	101.8	108.0	118.3	122.7	78	
	24	50	37.7	51.8	63.2	71.7	77.0					77.4	82.0	78
60		38.0	52.4	64.7	75.0	83.0	88.5				89.8	94.2	78	
70		38.2	52.7	65.7	77.0	86.5	94.2	99.8			102.0	106.4	78	
80		38.3	53.0	66.4	78.3	88.8	97.8	105.3	110.9		114.2	118.6	78	
90		38.4	53.2	66.8	79.3	90.5	100.4	109.1	116.3	122.0	126.4	130.7	78	
100		38.5	53.3	67.2	80.0	91.7	102.4	111.9	120.2	127.3	138.6	142.9	78	
26		50	44.4	60.8	74.1	83.9	89.7					90.1	94.6	78
	60	44.7	61.5	75.9	87.8	96.9	103.0				104.4	108.8	78	
	70	44.9	62.0	77.1	90.2	101.2	109.9	116.1			118.5	122.8	78	
	80	45.0	62.3	77.9	91.8	104.0	114.3	122.7	129.1		132.6	136.9	78	
	90	45.2	62.5	78.4	92.9	106.0	117.5	127.4	135.6	142.0	146.6	150.9	78	
	100	45.2	62.7	78.9	93.8	107.5	119.8	130.8	140.3	148.4	160.6	164.8	78	

^a Includes 1.0-foot stump allowance.

Table 94--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and total-tree height for chestnut oak (species 832) in the Appalachian Area.*

D.b.h. class	Total-tree height (feet)																
	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110
<u>Inches</u>	<u>Cubic feet</u>																
5																	
6																	
7	16	11	11	12	12	14	15	15	15	17	17	46	21	15	51	22	3.7 5.3 4.0 5.6 6.0 6.3
8																	
9	3.5	4.4	4.3	5.5	4.7	6.1	5.2	6.8	6.2	7.9	6.6	8.5	7.1	9.2	9.8	7.6	10.3 8.0 10.9 8.5 11.5 8.9 12.0 9.3 12.6 13.2
10	5.5	6.8	7.6	8.4	9.9	10.7	11.4	12.2	12.9	13.7	14.4	15.1	15.8	16.5	17.2	17.8	
11			9.3	10.3	12.1	13.0	14.0	14.9	15.8	16.7	17.6	18.4	19.3	20.1	21.0	21.8	22.7
12			11.1	12.4	14.4	15.6	16.7	17.8	18.9	20.0	21.0	22.1	23.1	24.1	25.2	26.2	27.2
13			13.1	14.6	17.0	18.4	19.7	21.0	22.3	23.6	24.8	26.1	27.3	28.5	29.7	30.9	32.1
14					19.8	21.4	23.0	24.5	26.0	27.5	28.9	30.4	31.8	33.2	34.6	36.0	37.4
15					22.9	24.7	26.5	28.2	30.0	31.6	33.3	35.0	36.6	38.2	39.8	41.5	43.1
16					26.1	28.2	30.2	32.2	34.2	36.1	38.0	39.9	41.8	43.6	45.5	47.3	49.1

* Includes 0.5-foot stump allowance.

Table 95--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and height to a 4-inch d.o.b. top for chestnut oak (species 832) in the Appalachian Area:

D.b.h. class	Tree height to i-inch d.o.b. top (feet)																
	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
<u>Inches</u>	<u>Cubic feet</u>																
5																	
6	2.1	1.6	2.0	2.7	3.2	2.5	3.7	2.8	3.2	4.2	3.5	4.7	5.2	5.6			
7	2.7	3.4	4.0	4.8	5.5	6.1	6.6	7.2	7.8	8.4							
8	3.5	4.3	5.2	6.2	6.9	7.7	8.4	9.1	9.8	10.5	11.2	11.9					
10	4.4	5.4	6.5	7.7	8.6	9.5	10.4	11.2	12.1	12.9	13.8	14.6	15.4	16.3			
11	5.5	6.7	7.9	9.4	10.5	11.5	12.6	13.6	14.6	15.6	16.6	17.6	18.6	19.6	20.6	21.6	
12			9.5	11.3	12.6	13.8	15.1	16.3	17.5	18.7	19.8	21.0	22.2	23.3	24.5	25.7	26.8
13			11.3	13.3	14.9	16.3	17.8	19.2	20.6	22.0	23.3	24.7	26.1	27.4	28.8	30.1	31.5
14			13.2	15.6	17.4	19.1	20.7	22.3	24.0	25.6	27.1	28.7	30.3	31.9	33.4	35.0	36.5
15					20.1	23.0	22.0	25.2	23.9	27.3	25.8	29.5	31.6	27.6	33.6	29.5	31.3
16					26.1	28.6	31.0	33.4	35.8	38.1	40.4	42.7	45.0	47.3	49.6	51.9	54.2

* Includes 0.5-foot stump allowance.

Table 96--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., total-tree height and height to a saw-log top for all white oaks combined (species 82) in the Appalachian Area:

D.b.h. class	Total tree height	Volume to										Girard Form Clrs	
		Saw-log		merchantable		height		(16-foot		Logs)			
		1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	0-inch d.o.b. to 9		4-inch d.o.b. top
<u>Inches</u>	<u>Feet</u>	<u>Cubic feet</u>										<u>Percent</u>	
12	40	7.9									8.5	11.1	69
	50	8.4									10.7	13.8	73
	60	9.0	12.3								12.5	16.3	76
	70	9.2	12.7								14.2	18.7	77
	80	9.4	13.1								15.7	20.9	78
	90	9.6	13.3	16.5							17.1	23.1	79
	100	9.7	13.4	16.8							18.5	25.2	80
14	40	10.7									13.4	15.2	69
	50										16.6	19.0	73
	60	11.7	12.3	15.7	16.7						19.4	22.4	76
	70	12.6	17.4	21.1							22.0	25.6	77
	80	12.9	17.8	21.9							24.5	28.7	78
	90	13.0	18.1	22.5	26.0						26.8	31.7	79
	100	13.2	18.3	22.9	26.7						29.1	34.7	80
16	50	15.3	20.6								22.9	25.0	73
	60	16.1	21.9	26.1							26.8	29.5	76
	70	16.5	22.7	27.6							30.5	33.7	77
	80	16.8	23.3	28.7	32.7						34.0	37.7	78
	90	17.1	23.7	29.4	34.0						37.3	41.7	79
	100	17.3	24.0	30.0	35.0	38.9					40.6	45.5	80
	110	17.4	24.2	30.4	35.7	40.1	43.4				43.9	49.3	80
18	50	19.4	26.1								29.8	31.7	73
	60	20.4	27.8	33.1							35.0	37.4	76
	70	21.0	28.8	35.0	39.2						39.9	42.8	77
	80	21.4	29.5	36.3	41.5						44.6	47.9	78
	90	21.7	30.1	37.3	43.1	47.3					49.1	53.0	79
	100	21.9	30.4	38.0	44.3	49.3	52.9				53.5	57.9	80
	110	22.1	30.7	38.5	45.3	50.8	55.0				57.8	62.7	80
20	50	24.0	32.3	37.2							37.6	39.3	73
	60	25.2	34.3	40.9							44.2	46.3	76
	70	25.9	35.6	43.3	48.5						50.4	53.0	77
	80	26.5	36.5	44.9	51.2	55.4					56.3	59.4	78
	90	26.8	37.2	46.1	53.3	58.5					62.0	65.6	79
	100	27.1	37.6	47.0	54.8	60.9	65.4				67.6	71.6	80
	110	27.3	38.0	47.6	55.9	62.8	68.0	71.9			73.2	77.6	80
22	60	30.6	41.6	49.5	54.0						54.2	56.2	76
	70	31.5	43.2	52.5	58.7						61.9	64.2	77
	80	32.1	44.3	54.4	62.1	67.1					69.2	72.0	78
	90	32.5	45.0	55.8	64.5	70.9	75.1				76.3	79.5	79
	100	32.9	45.6	56.9	66.4	73.7	79.1	82.9			83.2	86.9	80
	110	33.1	46.1	57.7	67.8	76.0	82.4	87.1			90.1	94.1	80
24	60	36.4	49.6	59.0	64.3						65.2	67.0	76
	70	37.5	51.5	62.5	69.9	74.2					74.4	76.6	77
	80	38.2	52.8	64.8	73.9	80.0					83.2	85.8	78
	90	38.8	53.7	66.5	76.9	84.4	89.5				91.8	94.8	79
	100	39.2	54.4	67.8	79.0	87.8	94.3	98.7			100.2	103.5	80
	110	39.5	54.9	68.7	80.7	90.5	98.1	103.7	107.6		108.4	112.2	80
26	60	42.8	58.2	69.3	75.5						77.0	78.7	76
	70	44.1	60.5	73.4	82.1	87.1					88.0	90.0	77
	80	44.9	62.0	76.2	86.8	93.9	98.1				98.4	100.8	78
	90	45.6	63.1	78.1	90.3	99.1	105.1				108.6	111.4	79
	100	46.0	63.9	79.6	92.8	103.1	110.7	115.9			118.6	121.7	80
	110	46.4	64.5	80.7	94.8	106.3	115.2	121.8	126.4		128.4	131.8	80

* includes 1.0-foot stump allowance.

Table 97--Predicted **stemwood** volume to a saw-log merchantable top, and to O-inch and 4-inch d.o.b. tops based on d.b.h., height to a 4-inch d.o.b. top and height to a saw-log top for all white oaks combined (species 82) in the Appalachian Area:

D.b.h. class	Height to 4-inch d.o.b. tap	Volume to										Girrrrd Form Class
		Saw-Log	merchantable height (16-foot logs)							9-inch d.o.b. top	4-inch d.o.b. top	
Inches	Feet	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0		Percent
12	30	a.2									9.2	73
	40	8.8									11.1	76
	50	9.2	12.5								12.8	77
	60	9.4	12.8								14.4	78
	70	9.5	13.1								15.9	78
	80	9.6	13.2	16.4							17.4	79
	90	9.7	13.4	16.7							18.9	79
14	40	12.0	16.1							17.0	19.5	76
	50	12.5	17.0							20.1	23.5	77
	60	12.8	17.5	21.2						22.9	27.3	78
	70	12.9	17.8	21.9	25.2					25.7	31.1	78
	80	13.1	18.0	22.3	25.9					28.4	34.8	79
	90	13.2	18.2	22.7	26.5	29.8				31.1	38.4	79
	100	13.2	18.3	22.9	26.9	30.5	33.5			33.7	42.0	79
16	40	15.8	21.1							23.4	25.3	76
	50	16.3	22.2	26.4						27.7	30.4	77
	60	16.7	22.9	27.7	31.3					31.9	35.3	78
	70	16.9	23.3	28.6	32.8					35.9	40.1	78
	80	17.1	23.6	29.2	33.8	37.6				39.9	44.8	79
	90	17.2	23.8	29.6	34.6	38.8	42.3			43.8	49.4	79
	100	17.3	24.0	29.9	35.2	39.7	43.6	46.9		47.7	54.1	79
18	40	20.0	26.7							30.3	31.8	76
	50	20.7	28.1	33.4						36.1	38.2	77
	60	21.2	29.0	35.1	39.6					41.6	44.3	78
	70	21.5	29.5	36.2	41.5	45.5				47.0	50.3	78
	80	21.7	29.9	36.9	42.8	47.5	51.2			52.3	56.2	79
	90	21.9	30.2	37.5	43.7	49.0	53.4	56.8		57.5	62.0	79
	100	22.0	30.4	37.9	44.5	50.2	55.1	59.1	62.4	62.6	67.7	79
20	40	24.7	33.0	37.7						37.9	39.1	76
	50	25.6	34.8	41.2	45.2					45.2	47.0	77
	60	26.2	35.8	43.3	48.8					52.2	54.5	78
	70	26.6	36.5	44.7	51.2	56.0				59.0	61.7	78
	80	26.9	37.0	45.6	52.8	58.6	63.0			65.7	68.9	79
	90	27.1	37.3	46.3	54.0	60.5	65.8	69.9		72.3	76.0	79
	100	27.2	37.6	46.8	54.9	62.0	67.9	72.8	76.7	78.9	83.0	79
22	50	31.1	42.1	49.9	54.6					55.2	56.7	77
	60	31.8	43.4	52.4	59.0	63.3				63.8	65.7	78
	70	32.2	44.2	54.1	61.9	67.7	71.7			72.1	74.4	78
	80	32.6	44.8	55.2	63.9	70.0	76.2	79.9		80.3	83.0	79
	90	32.8	45.2	56.0	65.3	73.2	79.5	84.5	88.0	88.4	91.5	79
	100	33.0	45.5	56.7	66.5	74.9	82.1	88.0	92.6	96.5	99.9	79
24	50	37.0	50.1	59.4	65.0					66.0	67.3	77
	60	37.9	51.7	62.4	70.2	75.2				76.3	77.9	78
	70	38.4	52.7	64.4	73.6	80.5	85.1			86.4	88.3	78
	80	38.8	53.3	65.7	76.0	84.3	90.5	94.9		96.2	98.5	79
	90	39.1	53.8	66.7	77.8	87.0	94.6	100.4	104.6	105.9	108.5	79
	100	39.3	54.2	67.5	79.1	89.2	97.6	104.6	110.1	115.5	118.5	79
26	50	43.5	58.9	69.7	76.2					77.8	78.8	77
	60	44.5	60.7	73.3	82.4	88.2				89.9	91.3	78
	70	45.2	61.9	75.6	86.4	94.5	99.8			101.7	103.4	78
	80	45.6	62.7	77.2	89.2	98.9	106.2	111.2		113.3	115.2	79
	90	46.0	63.3	78.4	91.3	102.1	110.9	117.7	122.5	124.7	127.0	79
	100	46.2	63.7	79.3	92.9	104.6	114.6	122.7	129.0	136.1	138.6	79

* Includes 1.0-foot stump allowance.

Table 98--Predicted stemwood volume to a saw-log merchantable top, and to O-inch and 4-inch d.o.b. tops based on d.b.h., height to a O-inch d.o.b. top and height to a saw-log top for all white oaks combined (species 82) in the Appalachian Area.*

D.b.h. class	Height to 9-inch d.o.b. top	Volume to										9-inch d.o.b. top	4-inch d.o.b. top	Girard Form Class
		1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0				
Inches	Feet	Cubic feet												Percent
12	20	8.7										9.9	15.4	77
	30	9.1	12.7									14.6	19.4	78
	40	9.4	13.1	16.5								19.1	23.6	78
	50	9.6	13.4	16.9	20.2	23.2						23.5	27.8	78
	60	9.7	13.5	17.1	20.6	23.8	26.8					27.9	32.1	79
	70	9.8	13.6	17.3	20.8	24.2	27.4	30.4				32.2	36.3	79
	80	9.9	13.7	17.4	21.0	24.4	27.8	31.0	34.0			36.5	40.5	79
14	40	12.8	17.7	21.8								24.7	28.7	78
	50	13.0	18.0	22.5	26.4	29.7						30.1	33.9	78
	60	13.2	18.2	22.9	27.2	31.0	34.4					35.5	39.2	79
	70	13.3	18.4	23.2	27.7	31.8	35.6	38.9				40.8	44.4	79
	80	13.3	18.5	23.4	28.0	32.3	36.3	40.1	43.4			46.1	49.6	79
	90	13.4	18.6	23.5	28.2	32.7	36.9	40.9	44.5	47.9		51.3	54.8	79
	100	13.4	18.6	23.6	28.4	33.0	37.3	41.5	45.4	49.0		56.6	60.0	79
16	40	16.7	22.9	27.9								31.1	34.8	78
	50	17.0	23.4	29.0	33.7	37.3						37.7	41.2	78
	60	17.1	23.7	29.7	34.9	39.4	43.1					44.2	47.6	79
	70	17.3	23.9	30.1	35.6	40.6	45.0	48.7				50.7	54.0	79
	80	17.4	24.1	30.3	36.1	41.4	46.3	50.6	54.3			57.1	60.4	79
	90	17.5	24.2	30.5	36.5	42.0	47.2	51.9	56.1	59.9		63.5	66.7	79
	100	17.5	24.3	30.7	36.8	42.5	47.9	52.8	57.4	61.7		69.9	73.0	79
18	40	21.1	28.9	34.9								38.4	41.9	78
	50	21.5	29.6	36.4	42.0	46.0						46.3	49.7	78
	60	21.7	30.0	37.3	43.6	48.9	53.0					54.2	57.4	79
	70	21.9	30.2	37.9	44.7	50.6	55.7	59.9				61.9	65.0	79
	80	22.0	30.4	38.2	45.4	51.8	57.5	62.5	66.7			69.6	72.7	79
	90	22.1	30.6	38.5	45.9	52.7	58.8	64.4	69.3	73.5		77.3	80.3	79
	100	22.2	30.7	38.7	46.3	53.3	59.8	65.8	71.2	76.0		84.9	87.9	79
20	40	26.1	35.6	42.7								46.6	49.9	78
	50	26.5	36.5	44.8	51.2	55.6						56.0	59.2	78
	60	26.8	37.0	45.9	53.4	59.5	64.1					65.3	68.4	79
	70	27.0	37.3	46.6	54.8	61.9	67.7	72.4				74.5	77.5	79
	80	27.2	37.6	47.1	55.7	63.4	70.2	75.9	80.6			83.6	86.5	79
	90	27.3	37.7	47.4	56.4	64.5	71.9	78.4	84.0	88.7		92.7	95.6	79
	100	27.4	37.9	47.7	56.9	65.4	73.2	80.2	86.6	92.1		101.8	104.6	79
22	50	32.1	44.1	53.9	61.4	66.3						66.7	69.8	78
	60	32.5	44.7	55.4	64.2	71.3	76.3					77.6	80.6	79
	70	32.7	45.2	56.3	66.0	74.3	81.0	86.2				88.4	91.3	79
	80	32.9	45.5	56.9			84.1	90.7	95.9			99.1	101.9	79
	90	33.1	45.7	57.3	68.0	77.7	86.3	93.9	100.3	105.5		109.8	112.5	79
	100	33.2	45.8	57.7	68.7	78.8	88.0	96.2	103.6	109.9		120.4	123.1	79
	24	50	38.2	52.5	64.0	72.7	78.1						78.5	81.4
60		38.7	53.2	65.7	76.1	84.2	89.8					91.1	94.0	79
70		39.0	53.7	66.9	78.2	87.9	95.6	101.3				103.7	106.4	79
80		39.2	54.1	67.6	79.7	90.3	99.4	106.9	112.7			116.1	118.8	79
90		39.4	54.4	68.2	80.8	92.1	102.1	110.9	118.2	124.0		128.5	131.2	79
100		39.5	54.6	68.6	81.6	93.4	104.2	113.8	122.2	129.4		140.9	143.5	79
26		50	44.9	61.6	75.0	84.9	90.8						91.2	94.1
	60	45.4	62.5	77.1	89.0	98.2	104.4					105.8	108.6	79
	70	45.8	63.1	78.4	91.6	102.7	111.5	117.8				120.2	122.9	79
	80	46.1	63.5	79.3	93.4	105.6	116.1	124.6	131.0			134.6	137.2	79
	90	46.3	63.8	80.0	94.6	107.8	119.4	129.3	137.6	144.1		148.9	151.4	79
	100	46.4	64.1	80.5	95.6	109.4	121.8	132.9	142.5	150.6		163.1	165.6	79

* Includes 1.0-foot stump allowance.

Table 99--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and total-tree height for all white oaks combined (species 82) in the Appalachian Area.*

D.b.h. class	Total-tree height (feet)																	
	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	
<u>Inches</u>	<u>Cubic feet</u>																	
5	0.8	1.0	1.5	1.7	2.1	2.2												
6	1.8	2.3	2.5	2.8	3.3	3.6	3.8	4.1										
7	2.6	3.2	3.6	4.0	4.6	5.0	5.4	5.7	6.1	6.4								
8	3.5	4.3	4.8	5.3	6.1	6.7	7.2	7.7	8.2	8.6	9.1	9.6						
9	4.5	5.5	6.1	6.8	7.9	8.6	9.2	9.9	10.5	11.1	11.7	12.3	12.9	13.5				
10	5.6	6.9	7.7	8.5	9.8	10.7	11.5	12.3	13.1	13.9	14.7	15.4	16.1	16.9	17.6	18.3		
11			9.3	10.4	12.0	13.0	14.1	15.1	16.0	17.0	17.9	18.8	19.7	20.6	21.5	22.4	23.2	
12			11.2	12.4	14.3	15.6	16.8	18.0	19.2	20.3	21.4	22.5	23.6	24.7	25.7	26.8	27.8	
13			13.2	14.6	16.9	18.4	19.9	21.3	22.6	24.0	25.3	26.6	27.9	29.1	30.4	31.6	32.9	
14					19.7	21.4	23.1	24.7	26.3	27.9	29.4	30.9	32.4	33.9	35.4	36.8	38.3	
15					22.7	24.7	26.6	28.5	30.3	32.1	33.9	35.6	37.3	39.0	40.7	42.4	44.1	
16					25.8	28.1	30.3	32.5	34.6	36.6	38.6	40.6	42.6	44.5	46.5	48.4	50.3	

* includes 0.5-foot stump allowance.

Table 100--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and height to a 4-inch d.o.b. top for all white oaks combined (species 82) in the Appalachian Area?

D.b.h. class	Tree height to 4-inch d.o.b. top (feet)															
	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	100
Inches	Cubic feet															
5																
6	2.2	1.7	2.2	2.8	3.4	2.7	3.0	3.9	3.5	4.5	5.5	6.0				
7	2.7	3.5	4.2	5.1	5.7	6.4	7.0	7.6	8.2	8.8						
8																
9	3.5	4.4	4.4	5.5	5.3	6.5	6.4	7.8	8.8	7.2	9.8	7.9	10.7	8.7	11.6	9.5
10	5.4	6.7	7.9	9.5	10.7	11.8	12.9	14.0	15.0	16.1	17.1	18.1	19.2	20.2	21.2	22.2
11			9.5	11.4	12.7	14.1	15.4	16.6	17.9	19.1	20.3	21.5	22.7	23.9	25.1	26.3
12			11.2	13.4	15.0	16.6	18.1	19.5	21.0	22.4	23.8	25.2	26.6	28.0	29.4	30.8
13			13.1	15.6	17.5	19.3	21.0	22.7	24.4	26.0	27.6	29.3	30.9	32.5	34.1	35.6
14					20.2	22.2	24.2	26.1	28.0	29.9	31.8	33.6	35.5	37.3	39.1	40.9
15					23.1	25.4	27.6	29.8	32.0	34.1	36.2	38.3	40.4	42.5	44.6	46.6
16					26.1	28.8	31.3	33.8	36.2	38.6	41.0	43.4	45.7	48.1	50.4	52.7

* Includes 0.5-foot stump allowance.

Table 101 --Predicted **stemwood** volume to a saw-log merchantable top, and to O-inch and 4-inch d.o.b. tops based on d.b.h., total-tree height and height to a saw-log top for scarlet oak (species 808) in the Appalachian Area:

D.b.h. class	Total tree height	Volume to										Girard Form Class		
		Saw-log					merchantable height (16-foot Logs)						9-inch	4-inch
		1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	d.o.b. top			
<u>Inches</u>	<u>Feet</u>	<u>Cubic feet</u>												<u>Percent</u>
12	40											4.8	10.0	64
	50	8.4										10.0	13.5	72
	60	9.0	12.4									12.6	16.6	77
	70	9.5	13.2									14.9	19.5	80
	80	9.7	13.7									17.0	22.2	81
	90	9.9	14.0	17.6								18.9	24.8	83
	100	10.1	14.3	18.0								20.7	27.4	83
14	40	9.9										11.6	13.8	64
	50	11.5	15.4									16.0	18.6	72
	60	12.4	17.0									19.7	22.9	77
	70	12.9	18.0	22.0								23.1	26.8	80
	80	13.3	18.7	23.2								26.2	30.6	81
	90	13.6	19.3	24.0	27.9							29.1	34.2	83
	100	13.8	19.5	24.6	28.9							32.0	37.7	83
16	50	15.0	20.2									22.2	24.5	72
	60	16.2	22.3									27.3	30.1	77
	70	17.0	23.6	26.6								31.9	35.3	80
	80	17.5	24.5	28.8	34.7							36.3	40.2	81
	90	17.9	25.1	31.4	36.5	40.1						40.5	44.9	83
	100	18.1	25.6	32.2	37.8	42.1						44.5	49.5	83
	110	18.3	25.9	32.8	38.8	43.7	47.4					48.5	54.0	84
18	50	19.1	25.6									29.1	31.1	72
	60	20.6	28.2	33.7								35.7	38.2	77
	70	21.6	29.9	36.5	41.0							41.8	44.8	80
	80	22.2	31.1	38.5	44.0							47.6	51.1	81
	90	22.7	31.9	39.8	46.2	50.9						53.1	57.1	83
	100	23.0	32.5	40.9	47.9	53.4	57.4					58.5	62.9	83
	110	23.3	32.9	41.6	49.2	55.4	60.1	63.6				63.7	68.7	84
20	50	23.7	31.7	36.5								36.7	38.5	72
	60	25.5	34.9	41.7								45.1	47.3	77
	70	26.7	37.0	45.2	50.7							52.8	55.5	80
	80	27.5	38.4	47.6	54.4	59.0						60.1	63.2	81
	90	28.1	39.4	49.3	57.2	62.9	66.8					67.1	70.7	83
	100	28.5	40.2	50.5	59.2	66.0	70.9					73.9	77.9	83
	110	28.9	40.7	51.5	60.8	68.4	74.3	78.6				80.5	85.0	84
22	60	31.0	42.4	50.6	55.2							55.4	57.4	77
	70	32.4	44.9	54.8	61.4							64.8	67.3	80
	80	33.4	46.6	57.6	65.9	71.4						73.8	76.7	81
	90	34.1	47.8	59.7	69.3	76.2	80.9					82.4	85.7	83
	100	34.6	48.7	61.2	71.8	79.9	85.9	90.0				90.8	94.5	83
	110	35.0	49.4	62.4	73.7	82.9	90.0	95.2	98.9			99.0	103.1	84
	24	60	36.9	50.5	60.2	65.7							66.6	68.5
70		38.6	53.5	65.3	73.1	77.7						78.0	80.3	80
80		39.8	55.5	68.7	78.5	85.1						88.8	91.4	81
90		40.6	57.0	71.1	82.5	90.8	96.4					99.1	102.2	83
100		41.3	58.0	73.0	85.5	95.2	102.3	107.2				109.2	112.7	83
110		41.7	58.9	74.3	87.8	98.7	107.2	113.4	117.8			119.1	122.9	84
26		60	43.4	59.3	70.8	77.2							78.7	80.5
	70	45.4	62.8	76.7	85.9	91.3						92.2	94.3	80
	80	46.8	65.2	80.7	92.3	99.9	104.5					105.0	107.4	81
	90	47.8	66.9	83.6	96.9	106.6	113.2	117.2				117.3	120.1	83
	100	48.5	68.2	85.7	100.4	111.8	120.2	126.0				129.2	132.4	83
	110	49.1	69.2	87.3	103.1	116.0	125.9	133.2	138.3			140.9	144.4	84

• Includes 1 .0-foot stump allowance.

Table 102--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., height to a 4-inch d.o.b. top and height to a saw-log top for scarlet oak (species 806) in the Appalachian Area:

D.b.h. class	Height to 4-inch d.o.b. top	Volume to											Girard Form Class
		Saw-log	2.0	2.5	3.0	3.5	4.0	4.5	5.0	0-inch d.o.b. top	4-inch d.o.b. top		
Inches	Feet	Cubic feet											Percent
12	30	8.1								8.7	11.2	71	
	40	9.1								11.6	15.2	77	
	50	9.6	13.2							14.1	18.9	80	
	60	9.9	13.7							16.4	22.5	81	
	70	10.0	14.0	17.5						18.6	25.9	82	
	80	10.2	14.3	17.9						20.7	29.2	83	
	90	10.3	14.4	18.2	21.5					22.7	32.5	83	
14	40	12.4	16.7							17.9	20.5	77	
	50	13.1	18.0	21.6						22.0	25.4	80	
	60	13.5	18.7	22.9						25.8	30.1	81	
	70	13.7	19.1	23.7	27.5					29.4	34.6	82	
	80	13.9	19.4	24.3	28.5	32.0				33.0	39.0	83	
	90	14.0	19.7	24.7	29.2	33.0	36.3			36.4	43.4	83	
	100	14.1	19.8	25.0	29.7	33.8	37.4			39.9	47.7	84	
16	40	16.3	21.9							24.7	26.6	77	
	50	17.1	23.5	28.2						30.4	32.9	80	
	60	17.6	24.4	29.9	34.1					35.7	38.9	81	
	70	18.0	25.0	31.0	35.9	39.7				40.8	44.7	82	
	80	18.2	25.4	31.8	37.2	41.6	45.2			45.8	50.4	83	
	90	18.4	25.7	32.3	38.1	43.0	47.2	50.6		50.8	56.0	83	
	100	18.5	26.0	32.7	38.8	44.1	48.7	52.6		55.6	61.5	84	
18	40	20.7	27.8							32.0	33.5	77	
	50	21.8	29.8	35.7						39.5	41.5	80	
	60	22.4	31.0	37.9	43.1					46.4	48.9	81	
	70	22.8	31.7	39.3	45.4	50.2				53.2	56.2	82	
	80	23.1	32.3	40.2	47.0	52.6	57.0			59.7	63.5	83	
	90	23.3	32.6	40.9	48.2	54.4	59.6	63.8		66.2	70.3	83	
	100	23.5	32.9	41.4	49.1	55.8	61.6	66.4	70.4	72.6	77.2	84	
20	40	25.6	34.3	39.5						40.1	41.3	77	
	50	26.9	36.8	44.1	48.8					49.4	51.0	80	
	60	27.7	38.3	46.8	53.2	57.5				58.2	60.2	81	
	70	28.2	39.3	48.5	56.1	61.9	66.0			66.6	69.0	82	
	80	28.6	39.9	49.7	58.1	64.9	70.3	74.2		74.9	77.7	83	
	90	28.8	40.4	50.6	59.5	67.1	73.5	78.6	82.3	83.0	86.3	83	
	100	29.0	40.7	51.2	60.6	68.8	75.9	81.9	86.7	90.4	91.0	84	
22	50	32.7	44.6	53.4	59.0					60.2	61.5	80	
	60	33.6	46.4	56.7	64.4	69.5				70.9	72.6	81	
	70	34.2	47.6	58.8	67.8	74.8	79.7			81.2	83.2	82	
	80	34.7	48.3	60.2	70.3	78.5	85.0	89.6		91.3	93.7	83	
	90	35.0	48.9	61.2	72.0	81.2	88.8	94.9	99.4	101.3	103.9	83	
	100	35.2	49.3	62.0	73.4	83.3	91.8	98.9	104.7	109.1	111.1	84	
	24	50	38.9	53.2	63.6	70.2					72.0	73.1	80
60		40.1	55.3	67.5	76.6	82.7				84.8	86.2	81	
70		40.8	56.7	70.0	80.8	89.0	94.7			97.1	98.8	82	
80		41.3	57.6	71.7	83.6	93.4	101.0	106.5		109.2	111.1	83	
90		41.7	58.3	73.0	85.7	96.6	105.7	112.8	118.1	121.1	123.3	83	
100		42.0	58.8	73.9	87.3	99.1	109.2	117.7	124.5	129.6	132.8	84	
26		50	45.8	62.5	74.7	82.3					84.7	85.7	80
	60	47.1	65.0	79.2	89.9	97.0				99.8	100.9	81	
	70	48.0	66.6	82.2	94.8	104.4	111.1			114.3	115.7	82	
	80	48.6	67.7	84.2	98.2	109.6	118.5	124.9		128.5	130.1	83	
	90	49.0	68.5	85.7	100.7	113.4	124.0	132.3	138.5	142.4	142.5	83	
	100	49.4	69.1	86.8	102.5	116.3	128.1	138.0	145.9	151.9	156.3	84	

* Includes 1 .0-foot stump allowance.

Table 103--Predicted stemwood volume to a saw-log merchantable top, and to 0-inch and 4-inch d.o.b. tops based on d.b.h., height to a 0-inch d.o.b. top and height to a saw-log top for scarlet oak (species 806) in the Appalachian Area:

D.b.h. to class	Height to 9-inch d.o.b. top	Volume to										9-inch d.o.b. top	4-inch d.o.b. top	Girard Form Class
		Saw-log merchantable height (16-foot Logs)												
Inches	Feet	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0			Percent	
12	20	8.8										10.0	15.1	77
	30	9.6	13.4									15.4	20.0	80
	40	10.0	14.0	17.7								20.4	24.9	82
	50	10.2	14.3	18.2	21.8	25.0						25.4	29.7	82
	60	10.3	14.5	18.5	22.3	25.8	29.1					30.2	34.5	83
	70	10.4	14.6	18.7	22.6	26.3	29.8	33.1				35.0	39.3	83
	80	10.5	14.7	18.8	22.8	26.6	30.3	33.8	37.1			39.7	44.1	83
14	40	13.5	18.9	23.4								26.6	30.4	82
	50	13.8	19.3	24.3	28.7	32.3						32.7	36.5	82
	60	14.0	19.6	24.8	29.6	33.9	37.5					38.7	42.5	83
	70	14.1	19.8	25.2	30.2	34.8	39.0	42.7				44.7	48.4	83
	80	14.2	19.9	25.4	30.6	35.4	39.9	44.1	47.8			50.6	54.4	83
	90	14.2	20.0	25.5	30.8	35.8	40.6	45.0	49.1	52.9		56.5	60.3	83
	100	14.3	20.1	25.7	31.0	36.2	41.1	45.7	50.1	54.1		62.4	66.2	83
16	40	17.7	24.6	30.1								33.7	37.1	82
	50	18.0	25.2	31.5	36.7	40.8						41.2	44.6	82
	60	18.2	25.5	32.2	38.1	43.2	47.4					48.6	52.0	83
	70	18.4	25.8	32.7	38.9	44.6	49.6	53.8				55.9	59.3	83
	80	18.5	25.9	33.0	39.5	45.6	51.1	56.0	60.2			63.2	66.6	83
	90	18.5	26.1	33.2	39.9	46.2	52.1	57.4	62.3	66.5		70.5	73.9	83
	100	18.6	26.2	33.4	40.2	46.7	52.8	58.5	63.8	68.6		77.7	81.1	83
18	40	22.4	31.0	37.8								41.7	44.9	82
	50	22.8	31.8	39.6	45.9	50.5						50.9	54.0	82
	60	23.1	32.3	40.5	47.8	53.8	58.5					59.8	62.9	83
	70	23.2	32.6	41.2	48.9	55.8	61.7	66.5				68.7	71.8	83
	80	23.4	32.8	41.6	49.7	57.1	63.7	69.5	74.3			77.5	80.6	83
	90	23.5	33.0	41.9	50.3	58.0	65.1	71.5	77.2	82.1		86.3	89.4	83
	100	23.5	33.1	42.1	50.7	58.7	66.2	73.0	79.3	84.9		95.1	98.2	83
20	40	27.6	38.2	46.3								50.7	53.7	82
	50	28.2	39.3	48.6	56.1	61.3						61.7	64.6	82
	60	28.5	39.8	49.9	58.6	65.7	71.0					72.4	75.3	83
	70	28.7	40.2	50.7	60.1	68.3	75.2	80.6				83.0	85.9	83
	80	28.9	40.5	51.2	61.1	70.0	77.8	84.6	90.1			93.5	96.4	83
	90	29.0	40.7	51.6	61.8	71.2	79.7	87.3	93.9	99.5		104.0	106.9	83
	100	29.1	40.8	51.9	62.4	72.1	81.1	89.3	96.7	103.3		114.5	117.4	83
22	50	34.1	47.5	58.7	67.4	77.2						73.6	76.4	82
	60	34.5	48.2	60.3	70.5	78.9	84.8					86.3	89.0	83
	70	34.8	48.7	61.3	72.4	82.1	90.1	96.2				98.8	101.5	83
	80	35.0	49.0	61.9	73.7	84.3	93.5	101.3	107.5			111.3	114.0	83
	90	35.1	49.3	62.4	74.6	85.8	95.9	104.8	112.4	118.7		123.6	126.4	83
	100	35.2	49.4	62.8	75.3	86.9	97.6	107.3	116.0	123.5		136.0	138.7	83
24	50	40.7	56.5	69.7	79.8	86.3						86.7	89.4	82
	60	41.1	57.4	71.6	83.7	93.3	100.0					101.5	104.1	83
	70	41.4	58.0	72.8	86.0	97.3	106.5	113.4				116.2	118.7	83
	80	41.7	58.4	73.7	87.5	99.9	110.7	119.7	126.6			130.7	133.3	83
	90	41.8	58.6	74.3	88.7	101.8	113.6	123.9	132.7	139.8		145.1	147.7	83
	100	42.0	58.9	74.7	89.5	103.2	115.7	127.1	137.1	145.7		159.5	162.1	83
26	50	47.8	66.3	81.7	93.3	100.6						101.0	103.5	82
	60	48.3	67.4	84.0	97.9	108.9	116.5					118.1	120.6	83
	70	48.7	68.1	85.4	100.7	113.8	124.3	132.1				135.0	137.5	83
	80	49.0	68.5	86.4	102.6	116.9	129.3	139.6	147.4			151.8	154.3	83
	90	49.2	68.9	87.1	103.9	119.2	132.8	144.7	154.8	162.7		168.5	171.0	83
	100	49.3	69.1	87.7	105.0	120.9	135.4	148.5	160.0	169.9		185.1	187.6	83

• Includes 1.0-foot stump allowance.

Table 104--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and total-tree height for scarlet oak (species 806) in the Appalachian Area:

D.b.h. class	Total-tree height (feet)																
	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110
Inches	Cubic feet																
5	0.6	0.8	1.0	1.5	1.7	2.0											
6	1.7	2.1	2.4	2.6	3.0	3.4	3.7	4.0									
7	2.5	3.1	3.4	3.8	4.4	4.9	5.3	5.8	6.2	6.7							
8	3.4	4.2	4.7	5.2	5.9	6.6	7.2	7.8	8.4	9.0	9.6	10.1					
9	4.4	5.4	6.0	6.7	7.6	8.5	9.3	10.1	10.9	11.7	12.4	13.1	13.8	14.5			
10	5.5	6.7	7.5	8.4	9.5	10.6	11.7	12.7	13.7	14.6	15.5	16.4	17.3	18.2	19.1	19.9	
11			9.2	10.3	11.7	13.0	14.3	15.5	16.7	17.8	19.0	20.1	21.2	22.2	23.3	24.3	25.4
12			11.1	12.3	14.0	15.6	17.1	18.6	20.0	21.6	22.8	24.1	25.4	26.7	27.9	29.2	30.4
13			13.1	14.5	16.5	18.4	20.2	21.9	23.6	25.3	26.9	28.4	30.0	31.5	33.0	34.5	35.9
14					19.3	21.5	23.6	25.6	27.5	29.4	31.3	33.1	34.9	36.7	38.4	40.1	41.9
15					22.2	24.7	27.1	29.5	31.7	33.9	36.0	38.1	40.2	42.2	44.3	46.2	48.2
16					25.3	28.2	31.0	33.6	36.2	38.7	41.1	43.5	45.9	48.2	50.5	52.8	55.0

* Includes 0.5-foot stump allowance.

Table 105--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and height to a 4-inch d.o.b. top for scarlet oak (species 806) in the Appalachian Area:

D.b.h. class	Tree height to 4-inch d.o.b. top (feet)																
	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Inches	Cubic feet																
5																	
6	2.2	1.7	2.8	2.1	3.4	2.6	4.0	3.0	3.5	4.6	4.0	5.1	5.8	6.4			
7	2.7	3.5	4.2	5.1	5.9	6.7	7.4	8.1	8.9	9.6							
8	3.5	4.4	4.4	5.5	6.6	5.3	6.5	8.0	9.2	7.4	10.3	8.4	11.4	9.3	10.2	12.5	11.1
10	5.5	6.8	8.1	9.7	11.2	12.5	13.9	15.1	16.4	17.7	18.9	20.1	21.3	22.5	23.7	24.9	
11																	
12			11.5	9.7	11.7	13.8	15.7	13.3	17.6	15.8	19.5	16.5	21.3	18.1	23.0	19.5	21.0
13			13.4	16.1	18.4	20.6	22.7	24.7	26.8	28.7	30.7	32.6	34.6	36.5	38.4	40.3	42.2
14					21.2	23.7	26.1	28.5	30.8	33.1	35.3	37.6	39.8	42.0	44.1	46.3	48.5
15					24.2	27.1	29.9	32.5	35.2	37.8	40.3	42.9	45.4	47.8	50.3	52.8	55.2
16					27.5	30.7	33.8	36.9	39.9	42.8	45.7	48.5	51.3	54.1	56.9	59.7	62.5

* Includes 0.5foot stump allowance.

Table 106--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., total-tree height and height to a saw-log top for southern red oak (species 812) in the Appalachian Area.*

D.b.h. class	Total tree height	Volume to										Gfrard Form Class	
		Sew-log merchantable height (16-foot Logs)											
		1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	9-inch d.o.b. top		4-inch d.o.b. top
<u>Inches</u>	<u>Feet</u>	<u>Cubic feet</u>										<u>Percent</u>	
12	40										4.3	9.0	58
	50	7.7									8.6	12.3	67
	60	8.4									11.3	15.2	72
	70	8.8	12.1								13.5	18.0	75
	80	9.1	12.6								15.5	20.5	77
	90	9.3	13.0	16.2							17.4	23.0	78
	100	9.5	13.2	16.6							19.1	25.4	79
14	40	9.1									9.9	12.4	58
	50	10.6	14.0								14.4	16.9	67
	60	11.5	15.6								18.0	21.0	72
	70	12.1	16.6	20.2							21.2	24.7	75
	80	12.5	17.3	21.3							24.2	28.3	77
	90	12.8	17.7	22.1	25.7						27.0	31.7	78
	100	13.0	18.1	22.7	26.6	29.7					29.7	35.0	79
16	50	13.9	18.4								20.1	22.3	67
	60	15.1	20.4	24.4							25.0	27.6	72
	70	15.9	21.7	26.5							29.4	32.5	75
	80	16.4	22.6	27.9	32.0						33.6	37.2	77
	90	16.8	23.3	29.0	33.6	37.1					37.5	41.6	78
	100	17.0	23.7	29.7	34.9	38.9					41.3	46.0	79
	110	17.2	24.1	30.3	35.8	40.4	43.9				45.0	50.2	80
18	50	17.7	23.4								26.4	28.3	67
	60	19.2	26.0	30.9							32.7	35.1	72
	70	20.2	27.6	33.6	37.8						38.5	41.3	75
	80	20.9	28.7	35.5	40.6						44.0	47.2	77
	90	21.3	29.5	36.8	42.7	47.1					49.2	52.9	78
	100	21.7	30.1	37.7	44.2	49.4	53.2				54.3	58.4	79
	110	21.9	30.6	38.5	45.4	51.2	55.7	59.0			59.2	63.8	80
20	50	22.0	29.0	33.3							33.4	35.1	67
	60	23.8	32.1	38.3							41.3	43.5	72
	70	25.0	34.2	41.6	46.7						48.7	51.2	75
	80	25.9	35.6	43.9	50.2	54.5					55.6	58.5	77
	90	26.4	36.6	45.5	52.8	58.2	61.9				62.2	65.6	78
	100	26.8	37.3	46.7	54.7	61.1	65.7				68.6	72.4	79
	110	27.2	37.8	47.6	56.1	63.3	68.8	73.0			74.8	79.1	80
22	60	28.9	39.0	46.4	50.7						50.8	52.8	72
	70	30.4	41.5	50.4	56.6						59.8	62.1	75
	80	31.4	43.1	53.2	60.9	66.0					68.3	71.0	77
	90	32.1	44.3	55.1	64.0	70.5	75.0				76.4	79.5	78
	100	32.6	45.2	56.6	66.3	74.0	79.7	83.6			84.3	87.8	79
	110	33.0	45.9	57.7	68.0	76.7	83.4	88.4	91.9		92.0	95.9	80
24	60	34.5	46.5	55.3	60.4						61.1	62.9	72
	70	36.3	49.4	60.1	67.5	71.7					71.9	74.1	75
	80	37.4	51.4	63.4	72.5	78.7					82.2	84.7	77
	90	38.3	52.9	65.7	76.2	84.0	89.3				91.9	94.8	78
	100	38.9	53.9	67.4	79.0	88.2	94.9	99.5			101.4	104.7	79
	110	39.4	54.7	68.7	81.1	91.4	99.4	105.3	109.4		110.7	114.3	80
26	60	40.6	54.6	65.0	71.0						72.3	74.0	72
	70	42.7	58.1	70.6	79.3	84.3					85.1	87.1	75
	80	44.0	60.5	74.5	85.2	92.5	96.8				97.2	99.5	77
	90	45.0	62.1	77.2	89.6	98.7	104.9	108.8			108.8	111.4	78
	100	45.7	63.4	79.2	92.8	103.6	111.5	116.9			120.0	123.0	79
	110	46.3	64.3	80.8	95.2	107.3	116.7	123.7	128.6		131.0	134.3	80

* Includes 1 .0-foot stump allowance.

Table 107--Predicted stemwood volume to a saw-log merchantable top, and to O-inch and 4-inch d.o.b. tops based on d.b.h., height to a 4-inch d.o.b. top and height to a saw-log top for southern red oak (species 812) in the Appalachian Area.*

D.b.h. class	Height to 4-inch d.o.b. top	Volume to											Girard Form Class
		1.0	Saw-log 1.5	merchantable 2.0	2.5	3.0	3.5	4.0	4.5	5.0	9-inch d.o.b. top	4-inch d.o.b. top	
Inches	Feet	Cubic feet											Percent
12	30	7.4									7.6	10.1	66
	40	8.4									10.3	13.9	72
	50	8.9	12.0								12.6	17.3	75
	60	9.1	12.5								14.6	20.6	76
	70	9.3	12.9	15.9							16.5	23.7	77
	80	9.5	13.1	16.3							18.4	26.8	78
	90	9.5	13.2	16.6	19.5						20.2	29.8	78
14	40	11.5	15.3								16.2	18.7	72
	50	12.1	16.4	19.7							19.9	23.3	75
	60	12.5	17.1	20.9							23.3	27.6	76
	70	12.8	17.6	21.7	25.1						26.6	31.7	77
	80	12.9	17.9	22.2	25.9	29.1					29.8	35.7	78
	90	13.1	18.1	22.6	26.4	30.0					32.9	39.7	78
	100	13.2	18.2	22.9	27.0	30.7	34.0				36.0	43.7	79
16	40	15.0	20.0								22.4	24.3	72
	50	15.9	21.5	25.8							27.6	30.1	75
	60	16.4	22.4	27.3	31.1						32.5	35.6	76
	70	16.8	23.0	28.3	32.8	36.2					37.2	41.0	77
	80	17.0	23.4	29.0	33.9	37.9	41.2				41.7	46.1	78
	90	17.2	23.7	29.5	34.7	39.2	43.0	46.1			46.2	51.2	78
	100	17.3	23.9	29.9	35.3	40.1	44.3	47.9			50.6	56.3	79
18	40	19.1	25.4								29.2	30.6	72
	50	20.2	27.3	32.6							36.0	38.0	75
	60	20.9	28.5	34.6	39.4						42.4	44.8	76
	70	21.3	29.2	35.9	41.5	45.8					48.5	51.5	77
	80	21.6	29.7	36.8	42.9	48.0	52.0				54.5	57.9	78
	90	21.8	30.1	37.5	44.0	49.6	54.3	58.1			60.4	64.3	78
	100	22.0	30.3	37.9	44.7	50.8	56.0	60.5	64.1		66.2	70.6	79
20	40	23.7	31.4	36.1							36.6	37.7	72
	50	25.1	33.8	40.3	44.6						45.1	46.7	75
	60	25.9	35.2	42.8	48.6	52.6					53.2	55.1	76
	70	26.4	36.1	44.4	51.2	56.5	60.3				60.9	63.2	77
	80	26.8	36.8	45.5	53.0	59.2	64.1	67.8			68.4	71.1	78
	90	27.0	37.2	46.3	54.3	61.2	67.0	71.6	75.2		75.8	78.9	78
	100	27.2	37.6	46.9	55.3	62.7	69.1	74.6	79.0	82.5	83.1	86.6	79
22	50	30.4	41.0	48.8	53.9						55.1	56.3	75
	60	31.4	42.7	51.8	58.8	63.6					64.9	66.5	76
	70	32.0	43.8	53.8	62.0	68.3	72.8				74.3	76.2	77
	80	32.5	44.6	55.1	64.2	71.6	77.5	81.9			83.5	85.7	78
	90	32.8	45.1	56.1	65.7	74.0	81.0	86.5	90.8		92.5	95.1	78
	100	33.0	45.5	56.8	67.0	75.9	83.6	90.1	95.4	99.5	101.5	104.4	79
24	50	36.3	48.8	58.1	64.2						65.9	66.9	75
	60	37.5	50.9	61.8	70.0	75.6					77.6	78.9	76
	70	38.2	52.2	64.1	73.8	81.3	86.6				88.9	90.5	77
	80	38.8	53.1	65.7	76.4	85.2	92.2	97.3			99.9	101.7	78
	90	39.1	53.8	66.9	78.3	88.1	96.3	102.9	107.8		110.7	112.8	78
	100	39.4	54.3	67.7	79.7	90.3	99.5	107.2	113.4	118.3	121.4	123.8	79
26	50	42.7	57.4	68.3	75.3						77.6	78.5	75
	60	44.1	59.8	72.5	82.2	88.7					91.4	92.5	76
	70	45.0	61.4	75.3	86.6	95.4	101.5				104.6	106.0	77
	80	45.6	62.5	77.2	89.7	100.0	108.2	114.1			117.6	119.1	78
	90	46.0	63.2	78.5	91.9	103.4	113.0	120.7	126.4	130.2	130.3	132.1	78
	100	46.4	63.8	79.6	93.6	106.0	116.7	125.7	133.0	138.6	142.9	144.9	79

* Includes 1 .0-foot stump allowance.

Table 108—Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., height to a 9-inch d.o.b. top and height to a saw-log top for southern red oak (species 8121 in the Appalachian Area:

D.b.h. class	Height to 9-inch d.o.b. top	Volume to										9-inch d.o.b. top	4-inch d.o.b. top	Girard Form Class
		Saw-Log	merchantable	height	(16-foot	logs)	5.0							
Inches	Feet	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0				Percent
12	20	7.4										8.4	13.6	66
	30	8.7	12.9									13.8	17.3	74
	40	9.2	12.8	16.1								18.7	21.4	77
	50	9.5	13.2	16.7	20.0	23.0						23.3	25.6	78
	60	9.6	13.4	17.1	20.5	23.8	26.8					27.9	29.8	79
	70	9.7	13.6	17.3	20.9	24.3	27.5	30.6				32.4	34.1	79
	80	9.8	13.7	17.5	21.1	24.7	28.0	31.3	34.3			36.8	38.4	79
14	40	12.5	17.3	21.4								24.2	27.3	77
	50	12.9	17.9	22.4	26.4	29.7						30.0	32.6	78
	60	13.1	18.2	23.0	27.3	31.2	34.6					35.7	37.9	79
	70	13.3	18.5	23.4	28.0	32.2	36.0	39.4				41.3	43.3	79
	80	13.4	18.6	23.6	28.4	32.8	37.0	40.8	44.2			46.9	48.6	79
	90	13.4	18.7	23.8	28.7	33.3	37.6	41.7	45.5	48.9		52.4	54.0	80
	100	13.5	18.8	24.0	28.9	33.6	38.1	42.4	46.4	50.2		57.9	59.3	80
16	40	16.4	22.5	27.5								30.7	34.2	77
	50	16.9	23.4	29.0	33.8	37.5						37.8	40.7	78
	60	17.2	23.8	29.9	35.2	39.9	43.7					44.8	47.3	79
	70	17.4	24.1	30.4	36.1	41.3	45.8	49.7				51.7	53.9	79
	80	17.5	24.3	30.8	36.7	42.3	47.3	51.8	55.7			58.5	60.4	79
	90	17.6	24.5	31.0	37.2	42.9	48.3	53.2	57.6	61.6		65.2	67.0	80
	100	17.7	24.6	31.2	37.5	43.5	49.0	54.3	59.1	63.5		71.9	73.6	80
18	40	20.9	28.5	34.5								38.0	42.0	77
	50	21.5	29.6	36.5	42.2	46.3						46.7	50.0	78
	60	21.8	30.2	37.6	44.2	49.6	53.9					55.1	57.9	79
	70	22.0	30.6	38.4	45.4	51.6	57.0	61.3				63.4	65.9	79
	80	22.2	30.8	38.9	46.2	53.0	59.0	64.2	68.6			71.6	73.8	79
	90	22.3	31.0	39.2	46.9	53.9	60.4	66.3	71.4	75.9		79.8	81.8	80
	100	22.4	31.2	39.5	47.3	54.6	61.5	67.8	73.5	78.6		87.9	89.7	80
20	50	25.8	35.2	42.3								46.2	50.7	77
	60	26.6	37.0	44.9	46.4	54.2	51.6					56.6	60.2	78
	70						60.6	65.4				66.7	69.8	79
	80	27.3	37.8	47.3	55.8	63.2	69.5	74.3				76.6	79.3	79
		27.5	38.1	47.9	56.9	65.0	72.1	78.2	83.2			86.4	88.8	79
	90	27.6	38.4	48.4	57.7	66.2	74.0	80.9	86.9	91.9		96.1	98.3	80
	100	27.7	38.6	48.7	58.3	67.2	75.4	82.8	89.6	95.5		105.8	107.8	80
22	50	32.2	44.2	54.2	62.0	67.2						67.5	71.6	78
	60	32.8	45.2	56.0	65.3	72.7	78.1					79.4	82.9	79
	70	33.1	45.8	57.2	67.3	76.0	83.2	88.8				91.1	94.1	79
	80	33.3	46.2	58.0	68.7	78.2	86.6	93.6	99.2			102.7	105.4	79
	90	33.5	46.5	58.5	69.7	79.8	89.0	97.0	104.0	109.6		114.1	116.6	80
	100	33.7	46.7	59.0	70.4	81.0	90.7	99.6	107.4	114.2		125.5	127.8	80
24	50	38.4	52.6	64.4	73.4	79.2						79.6	84.0	78
	60	39.1	53.8	66.6	77.4	86.0	92.0					93.4	97.2	79
	70	39.5	54.5	68.0	79.9	90.1	98.4	104.5				107.0	110.4	79
	80	39.8	55.0	69.0	81.6	92.8	102.5	110.6	116.9			120.5	123.5	79
	90	40.0	55.4	69.7	82.8	94.7	105.4	114.8	122.7	129.0		133.9	136.6	80
	100	40.1	55.7	70.2	83.7	96.2	107.6	117.9	126.9	134.7		147.2	149.7	80
26	50	15.2	61.8	75.5	85.8	92.2						92.6	97.5	78
	60	45.9	63.2	78.1	90.6	100.5	107.2					108.7	112.8	79
	70	46.4	64.1	79.8	93.6	105.4	114.8	121.7				124.4	128.0	79
	80	46.8	64.6	81.0	95.6	108.6	119.8	129.0	136.0			139.9	143.2	79
	90	47.0	65.1	81.8	97.1	111.0	123.3	134.0	143.1	150.2		155.4	158.4	80
	100	47.2	65.4	82.4	98.2	112.7	125.9	137.8	148.2	157.0		170.7	173.5	80

* Includes 1 .0-foot stump allowance.

Table 109--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and total-tree height for southern red oak (species 812) in the Appalachian Area:

D.b.h. class	Total-tree height (feet)																	
	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	
Inches	Cubic feet																	
5																		
6	0.7	1.8	2.2	1.4	2.4	1.5	2.7	1.7	3.1	1.8	3.4	3.7						
7	2.5	3.1	3.5	3.9	4.0	4.4	4.9	5.3	5.7	6.2								
8	3.4	4.4	4.2	5.4	4.7	6.1	6.8	5.2	6.9	5.4	6.0	7.8	8.6	6.6	9.3	7.2	10.0	
10	5.5	6.8	7.6	8.5	8.7	9.7	10.7	11.7	12.6	13.5	14.4	15.2	16.0	16.9	17.7	18.5		
11																		
12	0.1 0.1 1.3 0.4 0.4 0.7 0.6 0.8 0.1 0.3 0.3 0.3 0.1 0.7 0.6 0.1 0.3 0.1 0.8 0.4 0.5 0.4 0.5 0.3 0.1 0.3 0.5 0.1 0.3 0.1 0.6 0.1 0.7 0.1 0.1 0.4 0.3 0.3																	
13																		
14																		
15	20.3 17.6 22.7 19.7 21.7 25.0 27.2 23.6 25.4 29.3 31.4 27.2 33.4 29.0 30.7 35.4 32.4 37.3 34.0 39.2 35.7 41.1 37.3 43.0 44.9 38.9																	
16	23.1 25.9 28.5 31.0 33.4 35.8 38.1 40.4 42.6 44.8 46.9 49.1 51.2																	

* Includes 0.5-foot stump allowance.

Table 110--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and height to a 4-inch d.o.b. top for southern red oak (species 812) in the Appalachian Area:

D.b.h. class	Tree height to 4-inch d.o.b. top (feet)																													
	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100													
Inches	Cubic feet																													
5																														
6	2.1	1.6	2.0	2.7	3.3	2.5	3.6	2.7	3.2	4.2	5.3	5.8																		
7	2.6	3.4	4.1	4.6	5.4	6.1	6.8	7.4	8.1	8.7																				
	3.4	4.3	5.2	5.9	6.8	7.7	8.5	9.3	10.1	10.9	11.7	12.5																		
8	4.3	5.4	6.5	7.3	8.4	9.5	10.5	11.5	12.4	13.4	14.3	15.3	16.2	17.1																
10	5.4	6.7	8.0	8.9	10.2	11.5	12.7	13.9	15.0	16.2	17.3	18.4	19.6	20.7	21.7	22.8														
11				9.6	10.6	12.2	13.7	15.2	16.6	17.9	19.3	20.6	21.9	23.2	24.5	25.8	27.1	28.4												
12				11.4	12.6	14.4	16.2	17.9	19.5	21.1	22.7	24.2	25.8	27.3	28.8	30.3	31.8	33.3												
13				13.3	14.7	16.8	18.9	20.8	22.7	24.6	26.4	28.2	30.0	31.7	33.5	35.2	36.9	38.6												
14																														
15																														
16					22.2	19.4	21.8	24.9	24.0	27.4	29.9	26.2	32.3	28.3	30.4	34.7	32.4	37.0	34.5	39.3	36.5	41.6	38.5	43.9	46.2	40.5	48.4	42.5	44.4	50.6
					25.2	28.2	31.1	33.9	36.6	39.3	41.9	44.5	47.1	49.7	52.2	54.8	57.3													

* Includes 0.5-foot stump allowance.

Table 111--Predicted **stemwood** volume to a saw-log merchantable top, and to O-inch and 4-inch d.o.b. tops based on d.b.h., total-tree height and height to a saw-log top for northern red oak (species 833) in the Appalachian **Area.**^a

D.b.h. class	Total tree height	Volume to										Girard Form Class	
		Saw-log merchantable height (16-foot logs)					9-inch		4-inch				
		1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	d.o.b. top	d.o.b. top	
<u>Inches</u>	<u>Feet</u>	<u>Cubic feet</u>											<u>Percent</u>
12	40										5.1	10.2	63
	50	8.4									9.8	13.6	71
	60	9.0	12.3								12.4	16.6	75
	70	9.4	12.9								14.6	19.5	78
	80	9.6	13.4	16.6							16.6	22.1	79
	90	9.8	13.7	17.1							18.5	24.7	80
	100	9.9	13.9	17.5							20.3	27.2	81
14	40	10.1									11.8	14.1	63
	50	11.5	15.4								16.1	18.8	71
	60	12.3	16.8								19.8	22.9	75
	70	12.8	17.7	21.7							23.1	26.8	78
	80	13.2	18.3	22.7	26.1						26.2	30.5	79
	90	13.4	18.7	23.4	27.3						29.1	34.0	80
	100	13.6	19.0	23.9	28.2	31.6				31.9	37.5	81	
16	50	15.1	20.2								22.5	24.7	71
	60	16.2	22.0	26.5							27.5	30.2	75
	70	16.9	23.2	28.4							32.0	35.2	78
	80	17.3	24.0	29.7	34.3						36.3	40.1	79
	90	17.7	24.6	30.7	35.8	39.7					40.4	44.7	80
	100	17.9	25.0	31.4	36.9	41.4					44.4	49.3	81
	110	18.1	25.3	31.9	37.8	42.8	46.7			48.3	53.7	82	
18	50	19.3	25.6								29.5	31.4	71
	60	20.6	28.0	33.6							35.9	38.4	75
	70	21.5	29.5	36.1	40.7						41.9	44.8	78
	80	22.1	30.5	37.8	43.5	47.4					47.5	51.0	79
	90	22.5	31.2	39.0	45.4	50.3					53.0	56.9	80
	100	22.8	31.7	39.8	46.9	52.5	56.8				58.2	62.7	81
	110	23.0	32.1	40.5	47.9	54.2	59.2	63.0		63.4	68.3	82	
20	50	23.9	31.8	36.8							37.2	39.0	71
	60	25.6	34.7	41.6							45.3	47.6	75
	70	26.6	36.5	44.6	50.4						52.9	55.5	78
	80	27.3	37.8	46.7	53.8	58.6					60.0	63.1	79
	90	27.8	38.6	48.2	56.2	62.2	66.3				66.9	70.5	80
	100	28.2	39.3	49.3	58.0	65.0	70.2				73.6	77.6	81
	110	28.5	39.8	50.1	59.3	67.1	77.8			80.2	84.6	82	
22	60	31.0	42.0	50.4	55.3						55.7	57.7	75
	70	32.3	44.3	54.1	61.1						64.9	67.4	78
	80	33.2	45.8	56.7	65.2	71.0					73.7	76.6	79
	90	33.8	46.9	58.4	68.1	75.4	80.4				82.2	85.5	80
	100	34.3	47.7	59.8	70.2	78.7	85.1	89.4			90.5	94.1	81
	110	34.6	48.3	60.8	71.9	81.3	88.8	94.3	98.2		98.6	102.6	82
24	60	37.0	50.1	60.1	65.9						67.0	68.8	75
	70	38.6	52.8	64.5	72.8	77.6					78.1	80.4	78
	80	39.6	54.6	67.5	77.7	84.6					88.7	91.3	79
	90	40.3	55.9	69.7	81.2	89.9	95.8				98.9	101.9	80
	100	40.9	56.8	71.3	83.7	93.8	101.3	106.5			108.9	112.2	81
	110	41.3	57.6	72.5	85.7	96.9	105.8	112.3	117.0		118.6	122.4	82
26	60	43.6	58.9	70.6	77.4						79.2	80.9	75
	70	45.4	62.1	75.8	85.6	91.2					92.4	94.5	78
	80	46.6	64.2	79.4	91.3	99.4	104.2				104.9	107.4	79
	90	47.5	65.7	81.9	95.4	105.6	112.5	116.8			117.0	119.8	80
	100	48.1	66.8	83.7	98.4	110.2	119.0	125.1			128.8	131.9	81
	110	48.6	67.7	85.2	100.7	113.8	124.2	132.0	137.4		140.3	143.8	82

^a Includes 1 .O-foot stump allowance.

Table 112--Predicted stemwood volume to a saw-log merchantable top, and to S-inch and 4-inch d.o.b. tops based on d.b.h., height to a 4-inch d.o.b. top and height to a saw-log top for northern red oak (species 833) in the Appalachian Area.'

D.b.h. class	Height to 4-inch d.o.b. top	Volume to											Girard Form Class	
		Saw-log		merchantable		height		(11-foot logs)		5.0		9-inch		4-inch
Inches	Feet	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	d.o.b. top	d.o.b. top	d.o.b. top	Percent
12	30	8.0									8.4	10.9	70	
	40	8.9									11.0	14.8	75	
	50	9.4	12.8								13.3	18.3	78	
	60	9.6	13.3								15.4	21.7	79	
	70	9.8	13.6	16.8							17.3	24.9	80	
	80	9.9	13.8	17.2							19.2	28.1	81	
	90	10.0	14.0	17.5	20.6						21.0	31.2	81	
14	40	12.2	16.3								17.3	20.0	75	
	50	12.8	17.5	21.0							21.1	24.6	78	
	60	13.2	18.2	22.2							24.6	29.0	79	
	70	13.4	18.6	23.0	26.6						27.9	33.3	80	
	80	13.6	18.9	23.5	27.5	30.8					31.2	37.5	81	
	90	13.7	19.1	23.9	28.1	31.8					34.4	41.7	81	
	100	13.8	19.2	24.2	28.6	32.5	35.9				37.5	45.8	82	
16	40	16.0	21.4								23.9	25.9	75	
	50	16.9	22.9	27.4							29.2	31.9	78	
	60	17.3	23.8	29.0	33.0						34.2	37.4	79	
	70	17.6	24.4	30.0	34.7	38.3					39.0	43.1	80	
	80	17.8	24.7	30.7	35.9	40.1	43.5				43.7	48.5	81	
	90	18.0	25.0	31.3	36.7	41.4	45.4				48.3	53.8	81	
	100	18.1	25.2	31.6	37.4	42.4	46.8	50.5			52.8	59.0	82	
18	40	20.4	27.2								31.1	32.7	75	
	50	21.4	29.1	34.7							38.1	40.2	78	
	60	22.0	30.2	36.8	41.8						44.6	47.3	79	
	70	22.4	30.9	38.1	43.9	48.4					51.0	54.1	80	
	80	22.7	31.4	39.0	45.4	50.7	54.9				57.1	60.9	81	
	90	22.9	31.8	39.6	46.5	52.4	57.4	61.3			63.2	67.5	81	
	100	23.0	32.0	40.1	47.4	53.7	59.2	63.8	67.6		69.2	74.0	82	
20	40	25.2	33.6	38.6							39.0	40.3	75	
	50	26.5	36.0	42.9	47.4						47.8	49.5	78	
	60	27.3	37.4	45.5	51.5	55.6					56.0	58.1	79	
	70	27.8	38.3	47.1	54.2	59.8	63.6				64.0	66.5	80	
	80	28.1	38.9	48.2	56.1	62.6	67.7	71.4			71.7	74.7	81	
	90	28.4	39.3	49.0	57.5	64.7	70.7	75.5	79.1		79.4	82.8	81	
	100	28.5	39.6	49.6	58.5	66.3	73.0	78.7	83.2	86.7	87.0	90.9	82	
22	50	32.2	43.6	52.0	57.3						58.3	59.7	78	
	60	33.1	45.3	55.1	62.4	67.3					68.4	70.1	79	
	70	33.7	46.4	57.0	65.7	72.3	76.9				78.1	80.2	80	
	80	34.1	47.1	58.4	67.9	75.8	81.9	86.3			87.6	90.1	81	
	90	34.4	47.7	59.4	69.6	78.3	85.6	91.3	95.6		97.0	99.8	81	
	100	34.6	48.1	60.1	70.9	80.3	88.4	95.1	100.6	104.7	106.3	109.5	82	
24	50	38.4	52.0	61.9	68.2						69.8	70.9	78	
	60	39.5	54.0	65.6	74.2	80.0					81.8	83.3	79	
	70	40.2	55.3	68.0	78.2	86.0	91.4				93.5	95.3	80	
	80	40.7	56.2	69.6	80.9	90.2	97.4	102.6			104.9	106.9	81	
	90	41.1	56.8	70.8	82.9	93.2	101.8	108.6	113.6		116.1	118.5	81	
	100	41.3	57.3	71.7	84.4	95.6	105.1	113.1	119.6	124.4	127.2	129.9	82	
26	50	45.2	61.1	72.7	80.0						82.2	83.2	78	
	60	46.5	63.5	77.1	87.2	93.9					96.4	97.6	79	
	70	47.3	65.0	79.8	91.8	100.9	107.2				110.1	111.6	80	
	80	47.9	66.1	81.8	95.0	105.8	114.3	120.3			123.5	125.2	81	
	90	48.3	66.8	83.1	97.4	109.5	119.4	127.3	133.1		136.7	138.7	81	
	100	48.6	67.4	84.2	99.1	112.2	123.4	132.7	140.2	145.9	149.8	152.0	82	

. Includes 1 .0-foot stump allowance.

Table 113--Predicted stemwood volume to a saw-log merchantable top, and to Q-inch and 4-inch d.o.b. tops based on d.b.h., height to a Q-inch d.o.b. top and height to a saw-log top for northern red oak (species 833) in the Appalachian Area:

D.b.h. class	Height to 9-inch d.o.b. top	Volume to										9-inch d.o.b. top	4-inch d.o.b. top	Girder Form Class
		Saw-log	merchantable	height	(16-foot	togs)	4.0	4.5	5.0					
Inches	Feet	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0				Percent
12	20	8.4	13.5									9.6	15.7	74
	30	9.3	13.5									14.8	20.3	78
	40			17.0								19.7	25.1	80
	50	9.9	13.8	17.5	21.0	24.1						24.5	29.9	80
	60	10.0	14.0	17.8	21.4	24.9	28.0					29.1	34.6	81
	70	10.1	14.1	18.0	21.7	25.3	28.7	31.9				33.7	39.3	81
	80	10.1	14.2	18.1	22.0	25.6	29.1	32.5	35.7			38.3	43.9	81
14	40	13.2	18.3	22.6								25.6	29.9	80
	50	13.4	18.7	23.5	27.7	31.1						31.5	35.8	80
	60	13.6	19.0	24.0	28.5	32.6	36.1					37.3	41.7	81
	70	13.7	19.2	24.3	29.1	33.5	37.5	41.1				43.0	47.4	81
	80	13.8	19.3	24.5	29.4	34.1	38.4	42.3	45.9			48.7	53.2	81
	90	13.9	19.4	24.7	29.7	34.5	39.0	43.2	47.2	50.8		54.4	58.9	81
	100	13.9	19.5	24.8	29.9	34.8	39.5	43.9	48.1	52.0		60.0	64.6	81
16	40	17.2	23.8	29.1								32.4	36.1	80
	50	17.6	24.4	30.4	35.4	39.3						39.7	43.3	80
	60	17.8	24.8	31.1	36.7	41.6	45.5					46.7	50.4	81
	70	18.0	25.1	31.6	37.6	42.9	47.7	51.7				53.7	57.5	81
	80	18.1	25.2	31.9	38.1	43.9	49.1	53.7	57.8			60.7	64.5	81
	90	18.2	25.4	32.2	38.5	44.5	50.0	55.1	59.7	63.8		67.6	71.4	81
	100	18.3	25.5	32.3	38.8	45.0	50.8	56.2	61.2	65.7		74.5	78.4	81
18	40	21.9	30.1	36.5								40.2	43.4	80
	50	22.4	30.9	38.3	44.2	48.5						48.9	52.1	80
	60	22.7	31.4	39.3	46.1	51.8	56.2					57.5	60.7	81
	70	22.9	31.8	39.9	47.2	53.7	59.2	63.7				65.9	69.2	81
	80	23.0	32.0	40.3	48.0	55.0	61.2	66.6	71.2			74.3	77.6	81
	90	23.1	32.1	40.6	48.6	55.9	62.6	68.6	74.0	78.6		82.6	86.0	81
	100	23.2	32.3	40.9	49.0	56.6	63.6	70.1	76.0	81.3		90.9	94.3	81
20	40	27.1	37.1	44.7								48.9	51.7	80
	50	27.7	38.2	47.1	54.1	58.9						59.3	62.1	80
	60	28.0	38.8	48.3	56.5	63.2	68.2					69.5	72.3	81
	70	28.3	39.2	49.2	58.0	65.7	72.2	77.2				79.5	82.4	81
	80	28.5	39.5	49.7	59.0	67.4	74.8	81.1	86.2			89.5	92.4	81
	90	28.6	39.7	50.1	59.8	68.6	76.6	83.7	89.9	95.1		99.5	102.4	81
	100	28.7	39.9	50.4	60.3	69.5	78.0	85.7	92.7	98.8		109.4	112.3	81
22	50	33.6	46.3	56.8	65.0	70.3						70.8	73.3	80
	60	34.0	47.0	58.4	68.1	75.8	81.4					82.8	85.3	81
	70	34.3	47.5	59.4	70.0	79.0	86.5	92.2				94.6	97.2	81
	80	34.5	47.9	60.1	71.2	81.2	89.8	97.1	102.8			106.4	109.0	81
	90	34.7	48.1	60.7	72.2	82.7	92.1	100.5	107.6	113.4		118.1	120.7	81
	100	34.8	48.3	61.0	72.9	83.8	93.9	103.0	111.0	118.1		129.7	132.4	81
24	50	40.1	55.1	67.5	76.9	82.9						83.3	85.7	80
	60	40.6	56.0	69.5	80.7	89.6	95.9					97.3	99.7	81
	70	40.9	56.6	70.7	83.1	93.6	102.2	108.5				111.1	113.5	81
	80	41.2	57.1	71.6	84.6	96.2	106.3	114.6	121.1			124.8	127.2	81
	90	41.4	57.4	72.2	85.8	98.1	109.1	118.8	126.9	133.5		138.5	140.9	81
	100	41.5	57.6	72.7	86.7	99.5	111.3	121.9	131.2	139.2		152.0	154.5	81
26	50	47.1	64.7	79.1	89.9	96.6						97.0	99.2	80
	60	47.7	65.8	81.5	94.5	104.7	111.6					113.2	115.4	81
	70	48.1	66.5	83.0	97.3	109.5	119.2	126.4				129.1	131.3	81
	80	48.4	67.0	84.0	99.2	112.6	124.2	133.7	140.9			144.9	147.1	81
	90	48.7	67.4	84.7	100.6	114.9	127.7	138.7	148.0	155.3		160.6	162.9	81
	100	48.8	67.7	85.3	101.6	116.6	130.2	142.4	153.1	162.2		176.3	178.6	81

* Includes 1.0-foot stump allowance.

Table 114--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and total-tree height for northern red oak (species 833) in the Appalachian Area.'

D.b.h. class	Total-tree height (feet)																
	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110
Inches	Cubic feet																
5	0.6	0.9	1.2	1.5	1.7	1.9											
6	1.7	2.2	2.4	2.7	3.0	3.3	3.6	3.9									
7	2.6	3.2	3.5	3.9	4.4	4.8	5.3	5.7	6.2	6.6							
8																	
9	3.5	4.5	4.3	5.6	6.2	4.8	6.9	5.3	5.9	7.6	8.5	6.6	9.3	7.2	10.1	7.8	10.8
10	5.7	7.0	7.8	8.7	9.6	10.7	11.7	12.6	13.6	14.5	15.4	16.3	17.2	18.0	18.9	19.7	
11			9.5	10.6	11.8	13.1	14.3	15.5	16.6	17.8	18.9	20.0	21.0	22.1	23.1	24.2	25.2
12			11.5	12.7	14.1	15.7	17.2	18.6	20.0	21.3	22.6	23.9	25.2	26.5	27.7	29.0	30.2
13			13.5	15.1	16.7	18.5	20.3	21.9	23.6	25.2	26.7	28.3	29.8	31.3	32.8	34.2	35.7
14																	
15					22.4	19.4	21.6	24.9	23.6	27.2	25.6	29.5	31.7	27.5	33.8	29.4	31.2
16					25.6	28.4	31.1	33.7	36.2	38.6	41.0	43.4	45.7	48.0	50.2	52.5	54.7

• Includes 0.5-foot stump allowance.

Table 115--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and height to a 4-inch d.o.b. top for northern red oak (species 833) in the Appalachian Area:

D.b.h. class	Tree height to 4-inch d.o.b. top (feet)																
	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Inches	Cubic feet																
5																	
6	2.2	1.6	2.0	2.7	3.3	2.5	2.8	3.8	3.3	4.4	3.7	4.9	5.5	6.1			
7	2.7	3.4	4.1	4.9	5.7	6.4	7.1	7.8	8.4	9.1							
8																	
9	3.5	4.4	4.4	5.5	5.3	6.6	6.2	7.8	8.9	7.2	10.0	8.1	11.0	8.9	12.0	9.8	10.6
10	5.5	6.8	8.1	9.5	10.8	12.1	13.4	14.6	15.8	17.0	18.1	19.3	20.4	21.6	22.7	23.9	
11																	
12			11.5	9.7	11.3	13.4	13.0	15.3	14.5	17.1	16.0	18.8	20.5	17.4	18.8	22.2	20.2
13			13.4	15.7	17.9	19.9	21.9	23.9	25.8	27.7	29.6	31.4	33.2	35.0	36.8	38.6	40.4
14																	
15					20.6	23.0	25.3	27.6	29.7	31.9	34.0	36.1	38.2	40.3	42.4	44.4	46.5
16					23.6	26.3	28.9	31.5	34.0	36.4	38.9	41.2	43.6	46.0	48.3	50.7	53.0
17					26.8	29.9	32.8	35.7	38.5	41.3	44.0	46.7	49.4	52.1	54.7	57.3	60.0

• Includes 0.5-foot stump allowance.

Table 1 16--Predicted **stemwood** volume to a saw-log merchantable top, and to O-inch and **4-inch** d.o.b. tops based on d.b.h., total-tree height and height to a saw-log top for black oak (species 837) in the Appalachian Area!

D.b.h. class	Total tree height	Volume to											Girard Form Class
		Saw-log merchantable height (16-foot logs)											
		1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	9-inch d.o.b. top	4-inch d.o.b. top	
Inches	Feet	Cubic feet											Percent
12	40	7.6									8.3	10.9	68
	50	8.4									10.9	13.8	73
	60	8.8	12.2								13.1	16.5	76
	70	9.1	12.7								15.0	19.0	77
	80	9.3	13.0	16.2							16.7	21.5	79
	90	9.5	13.3	16.6							18.4	23.8	79
14	100	9.6	13.4	16.9	19.9						20.0	26.1	80
	40	10.4									13.3	15.0	68
	50	11.5	15.6								16.8	19.1	73
	60	12.1	16.7								20.0	22.8	76
	70	12.5	17.4	21.3							22.8	26.2	77
	80	12.8	17.9	22.2	25.5						25.6	29.6	79
16	90	13.0	18.2	22.8	26.5						28.2	32.8	79
	100	13.2	18.4	23.2	27.3	30.5					30.8	35.9	80
	50	15.2	20.5								23.1	25.1	73
	60	16.0	21.9	26.3							27.5	30.0	76
	70	16.5	22.8	28.0							31.5	34.5	77
	80	16.9	23.5	29.1	33.4						35.4	38.9	79
18	90	17.1	23.9	29.9	34.8	38.4					39.1	43.2	79
	100	17.3	24.2	30.5	35.8	40.0					42.7	47.3	80
	110	17.5	24.5	30.9	36.5	41.3	44.9				46.2	51.4	80
	50	19.3	26.0								30.2	32.0	73
	60	20.4	27.9	33.5							35.9	38.2	76
	70	21.1	29.0	35.6	40.1						41.2	44.0	77
20	80	21.5	29.8	37.0	42.5	46.1					46.3	49.5	79
	90	21.9	30.4	38.0	44.2	48.8					51.2	54.9	79
	100	22.1	30.8	38.7	45.4	50.8	54.7				56.0	60.2	80
	110	22.3	31.1	39.3	46.4	52.4	57.0	60.4			60.7	65.4	80
	50	24.0	32.3	37.4							38.0	39.6	73
	60	25.3	34.5	41.5							45.2	47.3	76
22	70	26.1	36.0	44.1	49.6						52.0	54.5	77
	80	26.7	37.0	45.8	52.6	57.1					58.4	61.4	79
	90	27.1	37.7	47.0	54.7	60.4	64.2				64.7	68.1	79
	100	27.4	38.2	47.9	56.3	62.9	67.7				70.8	74.6	80
	110	27.7	38.6	48.6	57.4	64.8	70.5	74.8			76.8	81.0	80
	60	30.7	41.9	50.3	55.1						55.5	57.4	76
24	70	31.8	43.7	53.4	60.1						63.9	66.1	77
	80	32.5	44.9	55.6	63.7	69.2					71.8	74.5	79
	90	33.0	45.7	57.0	66.3	73.2	77.8				79.5	82.6	79
	100	33.4	46.4	58.1	68.2	76.2	82.1	86.1			87.0	90.5	80
	110	33.7	46.9	59.0	69.7	78.6	85.5	90.6	94.2		94.4	98.3	80
	60	36.7	50.0	60.0	65.7						66.8	68.5	76
26	70	37.9	52.1	63.7	71.7	76.3					76.8	78.9	77
	80	38.8	53.6	66.3	76.0	82.5					86.4	88.9	79
	90	39.4	54.6	68.0	79.1	87.3	92.8				95.7	98.5	79
	100	39.9	55.4	69.4	81.4	90.9	97.8	102.7			104.7	108.0	80
	110	40.2	55.9	70.4	83.1	93.7	101.9	108.0	112.3		113.7	117.3	80
	60	43.2	58.9	70.5	77.2						79.0	80.6	76
28	70	44.7	61.3	75.0	84.3	89.7					90.8	92.8	77
	80	45.7	63.0	77.9	89.3	97.0	101.6				102.2	104.5	79
	90	46.4	64.2	80.0	93.0	102.6	109.0	113.0			113.2	115.8	79
	100	46.9	65.1	81.6	95.6	106.8	115.0	120.6			123.9	126.9	80
	110	47.3	65.8	82.7	97.6	110.1	119.8	126.9	131.9		134.5	137.9	80

* Includes 1.0-foot stump allowance.

Table 117--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., height to a 4-inch d.o.b. top and height to a saw-log top for black oak (species 8371 in the Appalachian Area.)

D.b.h. class	Height to 4-inch d.o.b. top	Volume to										Girard Form Class	
		Saw-log		merchantable		height		(16-foot	Logs)	5.0	9-inch		4-inch
Inches	Feet	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	d.o.b. top	d.o.b. top	Percent
12	30	7.7									8.3	10.5	69
	40	8.5									11.0	14.3	75
	50	9.0	12.4								13.3	17.7	77
	60	9.3	12.8								15.4	21.0	78
	70	9.4	13.1	16.3							17.4	24.1	79
	80	9.5	13.3	16.7							19.3	27.2	80
14	90	9.6	13.5	16.9	20.0						21.2	30.3	80
	40	11.7	15.8								16.9	19.3	75
	50	12.4	16.9	20.3							20.7	23.9	77
	60	12.7	17.6	21.5							24.2	28.2	78
	70	13.0	18.0	22.3	25.8						27.6	32.4	79
	80	13.1	18.3	22.8	26.7	29.9					30.8	36.5	80
16	90	13.3	18.5	23.2	27.3	30.9	33.9				34.0	40.5	80
	100	13.3	18.7	23.5	27.8	31.6	34.9				37.2	44.5	80
	40	15.5	20.7								23.4	25.1	75
	50	16.3	22.2	26.6							28.6	31.0	77
	60	16.8	23.1	28.2	32.1						33.6	36.6	78
	70	17.1	23.7	29.2	33.8	37.3					38.3	41.9	79
18	80	17.3	24.0	29.9	34.9	39.1	42.4				43.0	47.2	80
	90	17.5	24.3	30.4	35.8	40.4	44.2	47.3			47.5	52.4	80
	100	17.6	24.5	30.8	36.4	41.3	45.6	49.2			52.0	57.5	80
	40	19.7	26.3	30.3							30.4	31.7	75
	50	20.8	28.2	33.8							37.2	39.1	77
	60	21.4	29.4	35.8	40.6						43.7	46.1	78
20	70	21.8	30.1	37.1	42.8	47.2					50.0	52.8	79
	80	22.1	30.6	38.0	44.3	49.5	53.6				56.0	59.4	80
	90	22.3	30.9	38.6	45.3	51.1	55.9	59.8			62.0	65.8	80
	100	22.4	31.2	39.1	46.2	52.4	57.7	62.3	65.9		68.0	72.3	80
	40	24.4	32.6	37.5							38.0	39.1	75
	50	25.8	35.0	41.8	46.1						46.7	48.2	77
22	60	26.5	36.4	44.3	50.2	54.2					54.8	56.7	78
	70	27.0	37.3	45.9	52.9	58.3	62.1				62.7	64.9	79
	80	27.4	37.9	47.0	54.7	61.1	66.1	69.7			70.3	73.0	80
	90	27.7	38.3	47.8	56.1	63.2	69.0	73.7	77.3		77.9	80.9	80
	100	27.8	38.7	48.4	57.1	64.7	71.3	76.8	81.3	84.7	85.3	88.7	80
	50	31.3	42.5	50.6	55.8						57.0	58.2	77
24	60	32.3	44.2	53.7	60.8	65.6					66.9	68.5	78
	70	32.9	45.2	55.6	64.1	70.5	75.1				76.5	78.4	79
	80	33.3	46.0	57.0	66.3	74.0	80.0	84.3			85.9	88.0	80
	90	33.6	46.5	58.0	68.0	76.5	83.6	89.2	93.4		95.1	97.6	80
	100	33.9	46.9	58.7	69.2	78.4	86.3	92.9	98.3	102.3	104.2	107.0	80
	50	37.4	50.7	60.3	66.5						68.2	69.2	77
26	60	38.5	52.7	64.0	72.5	78.1					80.1	81.3	78
	70	39.3	54.0	66.3	76.3	84.0	89.3				91.5	93.1	79
	80	39.8	54.9	68.0	79.0	88.1	95.2	100.3			102.7	104.5	80
	90	40.2	55.5	69.1	81.0	91.1	99.5	106.1	111.0		113.7	115.8	80
	100	40.5	56.0	70.0	82.5	93.4	102.8	110.6	116.9	121.7	124.6	127.0	80
	50	44.0	59.6	70.9	78.1						80.3	81.2	77
28	60	45.4	62.0	75.2	85.1	91.7					94.3	95.4	78
	70	46.2	63.5	78.0	89.7	98.6	104.8				107.8	109.1	79
	80	46.9	64.6	79.9	92.9	103.5	111.7	117.6			121.0	122.5	80
	90	47.3	65.3	81.3	95.2	107.0	116.8	124.5	130.2	133.9	133.9	135.7	80
	100	47.6	65.9	82.3	96.9	109.7	120.7	129.8	137.1	142.7	146.8	148.7	80

• Includes 1 .0-foot stump allowance.

Table 118--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., height to a 9-inch d.o.b. top and height to a saw-log top for black oak (species 837) in the Appalachian Area:

D.b.h. class	Height to 9-inch d.o.b. top	Volume to										Girard Form Class	
		Saw-Log	merchantable	height (16-foot logs)						9-inch	4-inch		
		1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	d.o.b. top	d.o.b. top	
Inches	Feet	Cubic feet											Percent
12	20	8.3									9.5	14.7	75
	30	8.9	12.5								14.3	18.3	78
	40	9.2	13.0	16.4							19.0	22.4	79
	50	9.4	13.3	16.9	20.2	23.1					23.5	26.6	79
	60	9.5	13.4	17.1	20.6	23.9	26.9				27.9	30.8	80
	70	9.6	13.5	17.3	20.9	24.3	27.6	30.6			32.3	35.0	80
	80	9.7	13.6	17.4	21.1	24.6	28.0	31.2	34.2		36.7	39.3	80
14	40	12.7	17.7	21.9							24.8	28.1	79
	50	13.0	18.1	22.7	26.7	30.1					30.4	33.4	79
	60	13.1	18.3	23.2	27.6	31.5	34.9				35.9	38.7	80
	70	13.2	18.5	23.5	28.1	32.3	36.2	39.6			41.4	44.0	80
	80	13.3	18.6	23.7	28.4	32.9	37.1	40.9	44.3		46.9	49.3	80
	90	13.4	18.7	23.8	28.7	33.3	37.7	41.7	45.5	48.9	52.3	54.7	80
	100	13.4	18.8	23.9	28.9	33.6	38.1	42.4	45.4	50.1	57.7	60.0	80
16	40	16.7	23.1	28.3							31.5	34.7	79
	50	17.1	23.7	29.5	34.4	38.1					38.4	41.3	79
	60	17.3	24.0	30.2	35.6	40.3	44.1				45.2	47.9	80
	70	17.4	24.3	30.6	36.4	41.6	46.2	50.0			52.0	54.5	80
	80	17.5	24.4	30.9	36.9	42.5	47.5	52.0	55.9		58.7	61.1	80
	90	17.6	24.6	31.1	37.3	43.1	48.5	53.4	57.8	61.7	65.3	67.6	80
	100	17.7	24.6	31.3	37.6	43.6	49.2	54.4	59.2	63.6	72.0	74.2	80
18	40	21.3	29.3	35.5							39.1	42.3	79
	50	21.7	30.1	37.2	43.0	47.2					47.6	50.4	79
	60	22.0	30.5	38.1	44.8	50.3	54.6				55.8	58.4	80
	70	22.2	30.8	38.7	45.9	52.2	57.5	61.9			64.0	66.4	80
	80	22.3	31.0	39.1	46.6	53.4	59.4	64.7	69.1		72.1	74.4	80
	90	22.4	31.2	39.4	47.1	54.2	60.8	66.6	71.8	76.3	80.1	82.4	80
	100	22.5	31.3	39.7	47.5	54.9	61.7	68.1	73.8	78.9	88.2	90.3	80
20	40	26.4	36.2	43.7							47.7	50.9	79
	50	27.0	37.2	45.9	52.7	57.4					57.8	60.6	79
	60	27.3	37.8	47.1	55.0	61.5	66.4				67.6	70.3	80
	70	27.5	38.2	47.8	56.5	64.0	70.3	75.2			77.4	79.8	80
	80	27.7	38.5	48.4	57.4	65.6	72.8	78.9	83.9		87.0	89.4	80
	90	27.8	38.7	48.7	58.1	66.7	74.5	81.5	87.5	92.5	96.7	98.9	80
	100	27.9	38.8	49.0	58.6	67.6	75.8	83.3	90.1	96.1	106.3	108.4	80
22	50	32.8	45.1	55.4	63.4	68.7					69.1	71.9	79
	60	33.2	45.8	56.9	66.4	74.0	79.4				80.7	83.3	80
	70	33.5	46.3	57.9	68.2	77.0	84.3	89.9			92.2	94.7	80
	80	33.7	46.7	58.6	69.4	79.1	87.5	94.6	100.2		103.6	105.9	80
	90	33.9	46.9	59.1	70.3	80.5	89.7	97.9	104.8	110.5	115.0	117.2	80
	100	34.0	47.1	59.4	70.9	81.6	91.4	100.3	108.1	115.0	126.3	128.4	80
	24	50	39.1	53.8	65.9	75.2	81.1					81.5	84.3
60		39.6	54.7	67.8	78.8	87.6	93.7				95.1	97.7	80
70		40.0	55.3	69.0	81.0	91.3	99.8	106.0			108.5	110.9	80
80		40.3	55.7	69.8	82.5	93.8	103.7	111.8	118.2		121.8	124.1	80
90		40.4	56.0	70.4	83.6	95.6	106.4	115.8	123.8	130.2	135.1	137.3	80
100		40.6	56.2	70.8	84.4	97.0	108.5	118.8	127.9	135.8	148.3	150.4	80
26		50	46.1	63.2	77.3	88.0	94.5					95.0	97.8
	60	46.7	64.3	79.6	92.4	102.4	109.2				110.7	113.3	80
	70	47.1	65.0	81.0	95.0	106.9	116.5	123.5			126.2	128.6	80
	80	47.4	65.5	82.0	96.8	109.9	121.2	130.6	137.6		141.6	143.9	80
	90	47.6	65.8	82.7	98.1	112.1	124.6	135.4	144.5	151.7	156.9	159.1	80
	100	47.8	66.1	83.2	99.1	113.7	127.0	139.0	149.4	158.4	172.1	174.2	80

* Includes 1.0-foot stump allowance.

Table 11 9--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and total-tree height for black oak (species 837) in the Appalachian Area.'

D. b. h. class	Total-tree height (feet)																
	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110
<u>Inches</u>	<u>Cubic feet</u>																
5																	
6	0.7	1.7	2.2	1.4	2.4	1.5	2.7	1.7	3.1	2.0	3.4	2.2	3.7	4.0			
7	2.5	3.1	3.5	3.9	4.5	4.9	5.3	5.7	6.1	6.5							
	3.4	4.2	4.7	5.2	6.0	6.6	7.2	7.7	8.2	8.7	9.2	9.7					
8	4.4	5.4	6.1	6.8	7.8	8.5	9.2	9.9	10.6	11.3	11.9	12.6	13.2	13.8			
10	5.5	6.8	7.6	8.5	9.7	10.7	11.6	12.5	13.3	14.1	15.0	15.8	16.6	17.3	18.1	18.9	
11			9.3	10.4	11.9	13.1	14.2	15.2	16.3	17.3	18.3	19.3	20.3	21.2	22.2	23.1	24.1
12			11.2	12.5	14.3	15.7	17.0	18.3	19.5	20.8	22.0	23.2	24.3	25.5	26.6	27.8	28.9
13			13.2	14.7	16.9	18.5	20.1	21.6	23.1	24.5	26.0	27.4	28.7	30.1	31.5	32.8	34.1
14																	
15																	
16																	

^a Includes, 0.5-foot stump allowance.

Table 120--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and height to a 4-inch d.o.b. top for black oak (species 837) in the Appalachian Area.'

D. b. h. class	Tree heiaht to 4-inch d.o.b. top (feet)																													
	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100													
<u>Inches</u>	<u>Cubic feet</u>																													
5																														
6	2.0	1.5	2.6	1.9	3.2	2.4	3.5	2.6	3.1	4.1	3.5	4.7	5.2	5.7																
7	2.5	3.2	3.9	4.7	5.4	6.1	6.7	7.4	8.1	8.7																				
8	3.3	4.2	5.1	5.9	6.8	7.7	8.5	9.4	10.2	11.0	11.7	12.5																		
10	4.2	5.3	6.5	5.3	6.4	7.8	9.1	7.4	10.4	8.5	11.7	9.6	10.6	12.9	11.6	14.1	15.2	12.6	13.5	16.4	14.5	17.5	15.4	18.7	16.3	19.8	20.9	17.3	22.0	23.1
11			9.4	10.9	12.5	14.0	15.4	16.8	18.2	19.6	20.9	22.2	23.6	24.9	26.2	27.5	28.8													
12			11.2	12.9	14.8	16.5	18.2	19.9	21.5	23.1	24.6	26.2	27.7	29.3	30.8	32.3	33.8													
13			13.1	15.1	17.3	19.3	21.3	23.2	25.0	26.9	28.7	30.5	32.3	34.0	35.8	37.6	39.3													
14					20.0	22.3	24.6	26.7	28.9	31.0	33.1	35.1	37.2	39.2	41.2	43.2	45.2													
15					22.9	25.5	28.1	30.6	33.0	35.4	37.8	40.2	42.5	44.8	47.1	49.4	51.6													
16					26.0	29.0	31.9	34.7	37.5	40.2	42.9	45.5	48.1	50.7	53.3	55.9	58.5													

^a Includes 0.5-foot stump allowance.

Table 121 --Predicted **stemwood** volume to a saw-log merchantable top, and to Q-inch and 4-inch d.o.b. tops based on d.b.h., total-tree height and height to a saw-log top for all red oaks combined (species 83) in the Appalachian Area.*

D.b.h. class	Total tree height	Volume to										Girard Form Class	
		Saw-Log					merchantable height (16-foot Logs)						9-inch
		1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	d.o.b. top	d.o.b. top	Class
<u>Inches</u>	<u>Feet</u>	<u>Cubic feet</u>										<u>Percent</u>	
12	40										5.8	10.5	66
	50	8.5									10.4	13.6	72
	60	9.1	12.4								12.6	16.4	76
	70	9.4	13.0								14.5	19.0	78
	80	9.6	13.4								16.3	21.4	79
	90	9.8	13.6	17.0							17.9	23.8	80
14	100	9.9	13.8	17.4							19.5	26.1	81
	40	10.5									12.6	14.6	66
	50	11.8	15.7								16.4	18.8	72
	60	12.5	17.0								19.6	22.6	76
	70	12.9	17.8	21.6							22.5	26.2	78
	80	13.3	18.3	22.6							25.2	29.5	79
16	90	13.5	18.7	23.3	26.9						27.8	32.8	80
	100	13.6	19.0	23.8	27.8						30.4	36.0	81
	50	15.5	20.6								22.6	24.8	72
	60	16.5	22.3	26.5							27.1	29.8	76
	70	17.1	23.4	28.4							31.2	34.5	78
	80	17.5	24.1	29.7	33.8						35.1	38.9	79
18	90	17.7	24.6	30.6	35.3	38.8					38.8	43.2	80
	100	17.9	25.0	31.2	36.5	40.5					42.4	47.4	81
	110	18.1	25.3	31.7	37.3	41.9	45.4				45.9	51.5	82
	50	19.7	26.2								29.7	31.6	72
	60	21.0	28.4	33.7							35.5	38.0	76
	70	21.7	29.8	36.1	40.3						40.9	43.9	78
20	80	22.2	30.7	37.7	42.9						46.1	49.5	79
	90	22.6	31.3	38.8	44.9	49.2					51.0	55.0	80
	100	22.9	31.8	39.7	46.3	51.4	55.1				55.8	60.3	81
	110	23.1	32.1	40.3	47.4	53.1	57.6				60.5	65.5	82
	50	24.5	32.5	37.2							37.4	39.2	72
	60	26.0	35.2	41.7							44.9	47.1	76
22	70	27.0	36.9	44.7	49.9						51.7	54.4	78
	80	27.6	38.0	46.7	53.1	57.4					58.2	61.4	79
	90	28.0	38.8	48.1	55.5	60.9					64.5	68.1	80
	100	28.4	39.4	49.1	57.3	63.6	68.2				70.6	74.7	81
	110	28.6	39.8	49.9	58.7	65.8	71.2	75.2			76.6	81.2	82
	24	60	31.6	42.7	50.6	55.0						55.1	57.2
70		32.7	44.7	54.2	60.5						63.6	66.1	78
80		33.5	46.1	56.6	64.4	69.6					71.6	74.5	79
90		34.1	47.1	58.3	67.3	73.8	78.2				79.4	82.7	80
100		34.5	47.8	59.6	69.5	77.1	82.7	86.5			86.9	90.7	81
110		34.8	48.3	60.6	71.1	79.7	86.3	91.2			94.3	98.5	82
26	60	37.7	50.9	60.3	65.6						66.3	68.2	76
	70	39.1	53.4	64.6	72.1	76.4					76.5	78.8	78
	80	40.0	55.0	67.5	76.8	82.9					86.2	88.9	79
	90	40.7	56.2	69.6	80.2	88.0	93.2				95.6	98.6	80
	100	41.2	57.0	71.1	82.8	91.9	98.5	103.1			104.7	108.1	81
	110	41.5	57.6	72.2	84.8	95.0	102.9	108.7	112.7		113.6	117.5	82
28	60	44.4	59.9	70.9	77.1						78.5	80.2	76
	70	46.0	62.7	75.9	84.7	89.8					90.5	92.7	78
	80	47.1	64.7	79.4	90.2	97.5	101.8				102.0	104.5	79
	90	47.9	66.0	81.8	94.3	103.4	109.5				113.1	115.9	80
	100	48.4	67.0	83.5	97.3	108.0	115.8	121.1			123.9	127.1	81
	110	48.9	67.8	84.9	99.7	111.6	120.9	127.7	132.4		134.5	138.1	82

* Includes 1 .0-foot stump allowance.

Table 1 **22--Predicted stemwood** volume to a saw-log merchantable top, and to **9-inch** and **4-inch** d.o.b. tops based on d.b.h., height to a **4-inch** d.o.b. top and height to a saw-log top for all red oaks combined (species 83) in the Appalachian Area:

D.b.h. class	Height to 4-inch d.o.b. top	Volume to										9-inch d.o.b. top	4-inch d.o.b. top	Gi rard Form Class
		Saw-log merchantable height (16-foot logs)												
Inches	Feet	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0				
		Cubic feet												Percent
12	30	7.9									8.4	10.8	69	
	40	8.9									11.0	14.5	75	
	50	9.3	12.7								13.2	18.0	78	
	60	9.6	13.2								15.2	21.2	80	
	70	9.8	13.5	16.7							17.1	24.3	80	
	80	9.9	13.8	17.1							18.9	27.4	81	
	90	10.0	13.9	17.4	20.5						20.6	30.4	81	
14	40	12.2	16.3								17.0	19.6	75	
	50	12.8	17.5								20.7	24.2	78	
	60	13.2	18.1	22.1							24.0	28.4	80	
	70	13.5	18.6	22.9	26.3						27.3	32.6	80	
	80	13.6	18.9	23.4	27.3						30.4	36.6	81	
	90	13.7	19.1	23.8	27.9	31.5					33.4	40.6	81	
	100	13.8	19.3	24.1	28.5	32.2	35.5				36.5	44.6	82	
16	40	16.1	21.3								23.5	25.5	75	
	50	16.9	22.9	27.2							28.7	31.3	78	
	60	17.4	23.8	28.9	32.7						33.4	36.8	80	
	70	17.7	24.4	30.0	34.4	37.8					38.0	42.1	80	
	80	17.9	24.8	30.7	35.7	39.7					42.5	47.3	81	
	90	18.1	25.1	31.3	36.6	41.1	44.8				46.9	52.4	81	
	100	18.2	25.3	31.7	37.3	42.1	46.3	49.8			51.2	57.5	82	
18	40	20.5	27.1								30.6	32.2	75	
	50	21.5	29.1	34.5							37.3	39.5	78	
	60	22.2	30.3	36.7	41.4						43.6	46.4	80	
	70	22.6	31.0	38.0	43.6	47.9					49.7	53.0	80	
	80	22.9	31.5	39.0	45.2	50.3	54.1				55.6	59.4	81	
	90	23.1	31.9	39.7	46.4	52.0	56.7	60.3			61.4	65.8	81	
	100	23.2	32.2	40.2	47.3	53.4	58.6	62.9	66.4		67.1	72.1	82	
20	40	25.4	33.6	38.2							38.4	39.7	75	
	50	26.7	36.1	42.7	46.8						46.9	48.6	78	
	60	27.5	37.5	45.4	51.1						54.8	57.0	80	
	70	28.0	38.4	47.1	53.9	59.1					62.4	65.1	80	
	80	28.4	39.1	48.2	55.9	62.0	66.8				69.9	73.0	81	
	90	28.6	39.5	49.1	57.3	64.3	69.9	74.3			77.2	80.8	81	
	100	28.8	39.9	49.7	58.4	65.9	72.3	77.6	81.8		84.4	88.5	82	
22	50	32.5	43.7	51.7	56.6						57.2	58.7	78	
	60	33.4	45.5	55.0	61.8	66.3					66.9	68.8	80	
	70	34.0	46.6	57.0	65.3	71.4	75.6				76.3	78.5	80	
	80	34.5	47.4	58.5	67.7	75.1	80.7	84.7			85.4	88.0	81	
	90	34.8	48.0	59.5	69.5	77.8	84.6	89.8	93.6		94.3	97.3	81	
	100	35.0	48.4	60.3	70.8	79.8	87.5	93.8	98.8	102.5	103.2	106.6	82	
24	50	38.7	52.2	61.6	67.4						68.5	69.8	78	
	60	39.9	54.3	65.5	73.6	78.9					80.1	81.7	80	
	70	40.6	55.6	68.0	77.8	85.0	89.9				91.3	93.2	80	
	80	41.1	56.6	69.7	80.6	89.1	96.0	100.7			102.2	104.4	81	
	90	41.5	57.2	71.0	82.7	92.6	100.6	106.8	111.3		112.9	115.5	81	
	100	41.8	57.7	71.9	84.3	95.1	104.2	111.6	117.4	121.8	123.5	126.4	82	
26	50	45.6	61.3	72.4	79.1						80.7	81.8	78	
	60	47.0	63.8	77.0	86.5	92.5					94.4	95.7	80	
	70	47.8	65.4	79.9	91.3	99.8	105.5				107.6	109.2	80	
	80	48.4	66.5	81.9	94.7	104.9	112.7	118.1			120.4	122.3	81	
	90	48.9	67.3	83.4	97.2	108.7	118.1	125.3	130.5		133.0	135.2	81	
	100	49.2	67.9	84.5	99.1	111.6	122.3	130.9	137.7	142.7	145.5	148.0	82	

* Includes 1 .0-foot stump allowance.

Table 123--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., height to a 0-inch d.o.b. top and height to a saw-log top for all red oaks combined (species 83) in the Appalachian Area.*

D.b.h. class	Height to 9-inch d.o.b. top	Volume to										Girard Form Class	
		Saw-Log 1.0	1.5	merchantable 2.0	2.5	height 3.0	(16-foot logs) 3.5	4.0	4.5	5.0	9-inch d.o.b. top		4-inch d.o.b. top
Inches	Feet	Cubic feet										Percent	
12	20	8.4									9.6	14.5	74
	30	9.1	12.7								14.6	18.9	78
	40	9.4	13.3	16.7							19.4	23.4	80
	50	9.6	13.6	17.2	20.6	23.6					24.0	28.0	80
	60	9.7	13.7	17.5	21.1	24.4	27.5				28.6	32.5	81
	70	9.8	13.8	17.7	21.4	24.9	28.2	31.3			33.1	37.0	81
	80	9.8	13.9	17.8	21.6	25.2	28.6	31.9	35.0		37.6	41.5	81
14	40	13.1	18.2	22.4							25.3	29.1	80
	50	13.4	18.6	23.3	27.3	30.7					31.0	34.7	80
	60	13.5	18.9	23.8	28.2	32.2	35.6				36.7	40.3	81
	70	13.6	19.0	24.1	28.8	33.1	37.0	40.4			42.3	45.8	81
	80	13.7	19.1	24.3	29.2	33.7	37.9	41.7	45.2		47.8	51.4	81
	90	13.7	19.2	24.5	29.4	34.1	38.5	42.7	46.4	49.9	53.3	56.9	81
	100	13.7	19.3	24.6	29.7	34.5	39.0	43.4	47.4	51.2	58.9	62.4	81
16	40	17.3	23.8	29.0							32.2	35.7	80
	50	17.7	24.5	30.3	35.1	38.8					39.2	42.6	80
	60	17.9	24.8	31.0	36.5	41.1	44.9				46.0	49.4	81
	70	18.0	25.0	31.5	37.4	42.6	47.1	50.9			52.9	56.2	81
	80	18.1	25.2	31.8	37.9	43.5	48.5	53.0	56.8		59.6	63.0	81
	90	18.1	25.3	32.1	38.4	44.2	49.6	54.5	58.9	62.7	66.4	69.7	81
	100	18.2	25.4	32.2	38.7	44.7	50.4	55.6	60.4	64.7	73.1	76.4	81
18	40	22.1	30.3	36.4							39.9	43.4	80
	50	22.6	31.1	38.2	43.9	48.0					48.4	51.7	80
	60	22.8	31.6	39.3	45.9	51.3	55.5				56.7	59.9	81
	70	23.0	31.9	39.9	47.1	53.3	58.6	62.8			64.9	68.1	81
	80	23.1	32.1	40.3	47.9	54.6	60.6	65.8	70.1		73.0	76.2	81
	90	23.2	32.2	40.7	48.5	55.6	62.1	67.9	73.0	77.3	81.1	84.3	81
	100	23.2	32.3	40.9	48.9	56.3	63.2	69.5	75.1	80.1	89.2	92.4	81
20	40	27.5	37.4	44.7							48.6	51.9	80
	50	28.0	38.5	47.1	53.8	58.3					58.7	61.9	80
	60	28.4	39.1	48.5	56.3	62.7	67.3				68.6	71.7	81
	70	28.6	39.5	49.3	57.9	65.3	71.4	76.2			78.3	81.4	81
	80	28.7	39.8	49.9	59.0	67.1	74.1	80.1	84.9		88.0	91.1	81
	90	28.8	40.0	50.3	59.8	68.4	76.1	82.9	88.7	93.6	97.6	100.7	81
	100	28.9	40.1	50.6	60.3	69.3	77.5	85.0	91.6	97.3	107.2	110.3	81
22	50	34.1	46.7	57.0	64.7	69.7					70.1	73.2	80
	60	34.5	47.5	58.6	67.9	75.3	80.4				81.7	84.8	81
	70	34.7	47.9	59.7	69.9	78.6	85.6	90.9			93.2	96.2	81
	80	34.9	48.3	60.4	71.3	80.9	89.1	95.9	101.3		104.6	107.5	81
	90	35.1	48.5	60.9	72.2	82.5	91.6	99.5	106.2	111.6	115.9	118.8	81
	100	35.2	48.7	61.3	73.0	83.7	93.4	102.1	109.8	116.4	127.2	130.1	81
	24	50	40.7	55.7	67.7	76.7	82.2					82.6	85.6
60		41.2	56.6	69.8	80.6	89.0	94.8				96.1	99.1	81
70		41.5	57.2	71.1	83.1	93.2	101.2	107.1			109.4	112.4	81
80		41.7	57.6	71.9	84.7	95.9	105.5	113.3	119.2		122.7	125.6	81
90		41.9	57.9	72.6	85.9	97.9	108.5	117.7	125.3	131.3	135.9	138.8	81
100		42.0	58.1	73.1	86.8	99.4	110.8	120.9	129.7	137.2	149.0	151.9	81
26		50	48.0	65.5	79.4	89.7	95.8					96.2	99.2
	60	48.5	66.5	81.9	94.4	104.0	110.4				111.8	114.7	81
	70	48.9	67.3	83.4	97.4	109.0	118.1	124.6			127.2	130.0	81
	80	49.2	67.7	84.5	99.4	112.3	123.3	132.1	138.7		142.4	145.3	81
	90	49.3	68.1	85.3	100.8	114.7	126.9	137.4	146.0	152.7	157.6	160.4	81
	100	49.5	68.4	85.8	101.9	116.5	129.7	141.4	151.4	159.9	172.7	175.6	81

* Includes 1.0-foot stump allowance.

Table 124--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and total-tree height for all red oaks combined (species 83) in the Appalachian Area.^a

D.b.h. class	Total-tree height (feet)																
	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110
Inches	Cubic feet																
5^a																	
6^a	0.6	1.6	0.8	2.1	2.3	1.4	2.5	1.5	2.9	1.7	3.2	1.9	3.4	3.7			
7	2.4	3.0	3.4	3.7	4.2	4.6	5.1	5.4	5.8	6.2							
8	3.4	4.2	4.6	5.1	5.8	6.4	6.9	7.5	8.0	8.5	9.0	9.5					
IX	4.4	5.6	6.9	5.4	6.0	7.6	6.7	8.5	9.6	7.6	10.5	8.3	11.5	9.1	12.3	9.8	10.5
													12.4	13.1	13.7		
													15.7	16.5	17.2	18.0	18.8
12			9.4	10.4	11.8	12.9	14.1	15.2	16.2	17.2	18.2	19.2	20.2	21.2	22.1	23.1	24.0
13			13.4	11.3	14.8	12.5	16.8	14.2	15.6	18.4	20.0	16.9	21.6	18.2	23.1	19.5	24.5
													20.7	26.0	21.9	23.1	27.4
													24.3	28.7	25.5	26.6	27.7
															30.1	31.5	32.8
14					19.6	21.5	23.4	25.2	26.9	28.6	30.3	31.9	33.5	35.1	36.7	38.3	39.8
15					22.6	24.8	27.0	29.0	31.1	33.0	34.9	36.8	38.7	40.5	42.4	44.2	46.0
16					25.8	28.4	30.8	33.2	35.5	37.7	39.9	42.1	44.2	46.3	48.4	50.4	52.5

^a Includes 0.5-foot stump allowance.

^b Cylindrical volume assumed below breast height.

Table 1 25--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and height to a 4-inch d.o.b. top for all red oaks combined (species 83) in the Appalachian Area:

D.b.h. class	Tree height to 4-inch d.o.b. top (feet)																
	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Inches	Cubic feet																
5^a																	
6^a	2.0	1.5	2.5	1.9	3.1	2.3	3.5	2.6	4.1	3.0	3.5	4.6	5.2	5.7			
7	2.6	3.2	3.9	4.6	5.4	6.1	6.7	7.4	8.1	8.7							
8																	
9	3.4	4.4	4.2	5.4	6.4	5.1	6.0	7.5	8.6	6.9	9.7	7.8	10.7	8.6	11.7	9.4	12.7
10	5.4	6.7	7.9	9.2	10.6	11.8	13.0	14.2	15.4	16.5	17.7	18.8	19.9	21.0	22.1	23.2	
11			9.6	11.1	12.7	14.2	15.6	17.0	18.4	19.7	21.1	22.4	23.7	25.0	26.3	27.6	28.9
12			11.4	13.2	15.0	16.8	18.5	20.1	21.7	23.3	24.8	26.4	27.9	29.4	30.9	32.4	33.9
13			13.3	15.5	17.6	19.6	21.6	23.4	25.3	27.1	28.9	30.7	32.4	34.2	35.9	37.7	39.4
14					20.4	22.7	24.9	27.1	29.2	31.3	33.3	35.4	37.4	39.4	41.4	43.3	45.3
15					23.3	26.0	28.5	30.9	33.4	35.7	38.1	40.4	42.7	44.9	47.2	49.4	51.7
16					26.5	29.5	32.3	35.1	37.8	40.5	43.1	45.7	48.3	50.9	53.4	55.9	58.5

^a Includes 0.5-foot stump allowance.

^b Cylindrical volume assumed below breast height.

Table 126--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., total-tree height and height to a saw-log top for all oaks combined (species 800) in the Appalachian Area:

D.b.h. class	Total tree height	Volume to										9-inch d.o.b. top	4-inch d.o.b. top	Girard Form Class
		Sau-Log merchantable				height (11-foot logs)								
		1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0				
Inches	Feet	Cubic feet												Percent
12	40	7.7									7.9	10.8	67	
	50	8.5									10.5	13.7	73	
	60	9.0	12.3								12.5	16.3	76	
	70	9.3	12.8								14.3	18.8	78	
	80	9.5	13.2								16.0	21.1	79	
	90	9.7	13.5	16.7							17.5	23.4	80	
	100	9.8	13.6	17.1							19.0	25.6	80	
14	40	10.6									12.9	14.8	67	
	50	11.7	15.7								16.4	18.9	73	
	60	12.4	16.9								19.5	22.5	76	
	70	12.8	17.6	21.4							22.2	25.9	78	
	80	13.1	18.1	22.3							24.8	29.1	79	
	90	13.3	18.4	22.9	26.5						27.3	32.3	80	
	100	13.4	18.7	23.4	27.3						29.7	35.3	80	
16	50	15.4	20.6								22.7	24.8	73	
	60	16.3	22.1	26.3							26.9	29.6	76	
	70	16.8	23.1	28.0							30.8	34.1	78	
	80	17.2	23.7	29.2	33.3						34.5	38.3	79	
	90	17.4	24.2	30.0	34.7						38.1	42.5	80	
	100	17.6	24.5	30.6	35.8	39.7					41.5	46.5	80	
	110	17.8	24.8	31.1	36.6	41.0	44.4				44.9	50.4	81	
18	50	19.6	26.1								29.7	31.6	73	
	60	20.7	28.1	33.4							35.3	37.7	76	
	70	21.4	29.3	35.6	39.8						40.4	43.3	78	
	80	21.9	30.1	37.1	42.2						45.3	48.8	79	
	90	22.2	30.7	38.1	44.0	48.3					50.0	54.0	80	
	100	22.4	31.2	38.9	45.4	50.4	54.1				54.6	59.1	80	
	110	22.6	31.5	39.5	46.4	52.0	56.4				59.2	64.2	81	
20	50	24.3	32.4	37.1							37.4	39.2	73	
	60	25.7	34.8	41.3							44.5	46.7	76	
	70	26.5	36.3	44.0	49.2						51.0	53.7	78	
	80	27.1	37.3	45.9	52.2	56.4					57.3	60.4	79	
	90	27.5	38.0	47.2	54.5	59.7					63.3	66.9	80	
	100	27.8	38.6	48.1	56.1	62.3	66.8				69.2	73.2	80	
	110	28.0	39.0	48.9	57.4	64.3	69.7	73.7			74.9	79.5	81	
22	60	31.1	42.2	50.1	54.5						54.6	56.7	76	
	70	32.2	44.0	53.4	59.6						62.7	65.2	78	
	80	32.9	45.3	55.6	63.3	68.4					70.4	73.3	79	
	90	33.4	46.1	57.2	66.0	72.4	76.7				77.9	81.1	80	
	100	33.8	46.8	58.3	68.0	75.5	81.0	84.8			85.1	88.8	80	
	110	34.0	47.3	59.2	69.6	78.0	84.4	89.2			92.3	96.4	81	
24	60	37.1	50.3	59.7	64.9						65.1	67.6	76	
	70	38.4	52.5	63.6	71.0	75.3					75.1	77.7	78	
	80	39.2	54.0	66.3	75.4	81.5					84.7	87.4	79	
	90	39.8	55.0	68.1	78.6	86.3	91.4				93.7	96.8	80	
	100	40.3	55.8	69.5	81.1	90.0	96.5	101.0			102.5	105.9	80	
	110	40.6	56.4	70.6	82.9	92.9	100.6	106.3	110.3		111.1	114.9	81	
26	60	43.7	59.1	70.1	76.3						77.7	79.4	76	
	70	45.2	61.7	74.7	83.5	88.5					89.3	91.4	78	
	80	46.2	63.4	77.9	88.6	95.8	100.0				100.3	102.7	79	
	90	46.9	64.7	80.1	92.4	101.4	107.4				110.9	113.7	80	
	100	47.4	65.6	81.7	95.2	105.7	113.4	118.6			121.3	124.5	80	
	110	47.8	66.3	83.0	97.4	109.1	118.2	124.9	129.6		131.6	135.1	81	

Includes 1.0-foot stump allowance.

Table 127--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., height to a 4-inch d.o.b. top and height to a saw-log top for all oaks combined (species 800) in the Appalachian Area:

D.b.h. class	Height to 4-inch d.o.b. top	Volume to										Girard Form Class	
		1.0	Saw-log 1.5	merchantable 2.0	2.5	height 3.0	(16-foot logs) 3.5	4.0	4.5	5.0	9-inch d.o.b. top		4-inch d.o.b. top
<u>Inches</u>	<u>Feet</u>	-	-	-	-	-	-	-	-	-	-	-	<u>Percent</u>
12	30	8.1									8.7	11.0	71
	40	8.9									11.0	14.6	75
	50	9.3	12.6								13.1	17.8	78
	60	9.5	13.1								14.9	20.9	79
	70	9.7	13.4	16.5							16.6	23.9	80
	80	9.8	13.6	16.8							18.3	26.9	80
14	90	9.8	13.7	17.1							20.0	29.8	80
	40	12.1	16.2								17.0	19.6	75
	50	12.7	17.3								20.4	23.9	78
	60	13.0	17.9	21.8							23.6	28.0	79
	70	13.3	18.3	22.5	25.9						26.7	32.0	80
	80	13.4	18.5	23.0	26.8						29.6	35.9	80
16	90	13.5	18.7	23.4	27.4	30.8					32.5	39.8	80
	100	13.6	18.9	23.6	27.9	31.6	34.7				35.4	43.6	81
	40	16.0	21.3								23.5	25.4	75
	50	16.7	22.6	26.9							28.3	31.0	78
	60	17.1	23.5	28.4	32.2						32.9	36.3	79
	70	17.4	24.0	29.4	33.8	37.1					37.2	41.4	80
18	80	17.6	24.3	30.1	35.0	38.9					41.5	46.4	80
	90	17.7	24.6	30.6	35.8	40.2	43.8				45.7	51.3	80
	100	17.9	24.8	31.0	36.4	41.2	45.3	48.7			49.8	56.2	81
	40	20.3	27.0								30.5	32.1	75
	50	21.2	28.7	34.1							36.9	39.0	78
	60	21.8	29.8	36.1	40.7						42.9	45.6	79
20	70	22.2	30.4	37.3	42.8	46.9					48.7	52.0	80
	80	22.4	30.9	38.2	44.3	49.2	53.0				54.3	58.2	80
	90	22.6	31.2	38.8	45.3	50.9	55.4	58.9			59.9	64.3	80
	100	22.7	31.5	39.3	46.2	52.1	57.2	61.4	64.8		65.4	70.4	81
	40	25.1	33.4	38.0							38.2	39.5	75
	50	26.3	35.6	42.1	46.2						46.2	48.0	78
22	60	27.0	36.9	44.6	50.2						53.8	56.0	79
	70	27.5	37.7	46.1	52.8	57.9					61.1	63.8	80
	80	27.8	38.2	47.2	54.7	60.7	65.3				68.3	71.4	80
	90	28.0	38.6	48.0	56.0	62.8	68.3	72.6			75.3	78.9	80
	100	28.2	39.0	48.6	57.0	64.4	70.6	75.7	79.8		82.2	86.4	81
	24	50	31.9	43.1	51.0	55.9						56.5	57.9
60		32.8	44.7	54.0	60.7	65.1					65.7	67.6	79
70		33.3	45.7	55.9	64.0	70.0	74.1				74.7	76.9	80
80		33.7	46.4	57.2	66.2	73.4	79.0	82.8			83.4	86.1	80
90		34.0	46.9	58.1	67.8	76.0	82.6	87.7	91.5		92.0	95.1	80
100		34.2	47.2	58.9	69.1	77.9	85.4	91.5	96.4	100.0	100.6	104.0	81
26	50	38.1	51.4	60.8	66.4						67.6	68.8	78
	60	39.1	53.3	64.3	72.3	77.4					78.7	80.3	79
	70	39.8	54.5	66.6	76.1	83.3	88.1				89.4	91.3	80
	80	40.2	55.3	68.1	78.8	87.4	93.9	98.4			99.9	102.1	80
	90	40.5	55.9	69.3	80.8	90.4	98.2	104.3	108.7		110.2	112.8	80
	100	40.8	56.3	70.1	82.3	92.7	101.6	108.8	114.6	118.8	120.4	123.4	81
28	50	44.8	60.4	71.4	78.0						79.6	80.7	78
	60	46.0	62.6	75.5	84.9	90.8					92.7	94.0	79
	70	46.8	64.0	78.2	89.4	97.7	103.3				105.3	106.9	80
	80	47.3	65.0	80.0	92.5	102.6	110.1	115.4			117.6	119.6	80
	90	47.7	65.7	81.4	94.9	106.1	115.3	122.3	127.4		129.8	132.0	80
	100	48.0	66.2	82.4	96.6	108.9	119.2	127.7	134.3	139.2	141.8	144.4	81

Includes 1.0-foot stump allowance.

Table 128--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., height to a O-inch d.o.b. top and height to a saw-log top for all oaks combined (species 800) in the Appalachian Area:

D.b.h. class	Height to 9-inch d.o.b. top	Volume to											Girrrd Form Class
		Saw-log merchantable height (16-foot Logs)											
		1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.15	5.0	9-inch d.o.b. top	1-inch d.o.b. top	
Inches	Feet	Cubic feet											Percent
12	20	8.5									9.8	15.1	75
	30	9.2	12.7								14.6	19.1	78
	40	9.4	13.2	16.6							19.3	23.4	79
	50	9.6	13.5	17.1	20.4	23.5					23.8	27.8	80
	60	9.7	13.6	17.3	20.8	24.1	27.2				28.3	32.1	80
	70	9.8	13.7	17.5	21.1	24.6	27.8	30.9			32.7	36.4	80
	80	9.8	13.8	17.6	21.3	24.9	28.3	31.5	34.6		37.1	40.8	80
14	40	13.0	18.0	22.2							25.1	28.9	79
	50	13.2	18.4	23.0	27.0	30.3					30.7	34.3	80
	60	13.3	18.6	23.4	27.8	31.7	35.1				36.2	39.7	80
	70	13.4	18.8	23.7	28.3	32.6	36.4	39.8			41.7	45.1	80
	80	13.5	18.9	23.9	28.7	33.1	37.3	41.0	44.5		47.1	50.4	80
	90	13.5	18.9	24.1	28.9	33.5	37.9	41.9	45.7	49.1	52.5	55.8	80
	100	13.6	19.0	24.2	29.1	33.9	38.3	42.6	46.6	50.3	57.9	61.2	80
16	40	17.1	23.5	28.6							31.8	35.4	79
	50	17.4	24.1	29.8	34.6	38.2					38.6	42.1	80
	60	17.6	24.4	30.5	35.9	40.4	44.2				45.3	48.6	80
	70	17.7	24.6	30.9	36.7	41.8	46.3	50.0			52.0	55.2	80
	80	17.8	24.7	31.2	37.2	42.7	47.6	52.0	55.8		58.6	61.8	80
	90	17.8	24.8	31.4	37.6	43.3	48.6	53.4	57.8	61.6	65.2	68.3	80
	100	17.9	24.9	31.6	37.9	43.8	49.3	54.5	59.2	63.5	71.8	74.8	80
18	40	21.8	29.8	35.8							39.4	42.9	79
	50	22.1	30.5	37.5	43.2	47.2					47.6	50.9	80
	60	22.4	30.9	38.5	45.0	50.4	54.5				55.7	58.9	80
	70	22.5	31.2	39.1	46.1	52.2	57.5	61.7			63.7	66.8	80
	80	22.6	31.4	39.5	46.9	53.5	59.4	64.5	68.7		71.7	74.7	80
	90	22.7	31.6	39.8	47.4	54.4	60.8	66.5	71.5	75.8	79.6	82.5	80
	100	22.8	31.7	40.0	47.8	55.1	61.8	68.0	73.5	78.5	87.5	90.4	80
20	40	27.0	36.8	44.0							47.9	51.3	79
	50	27.4	37.7	46.2	52.8	57.3					57.7	60.9	80
	60	27.7	38.3	47.4	55.2	61.4	66.1				67.3	70.4	80
	70	27.9	38.6	48.2	56.7	63.9	70.0	74.7			76.8	79.8	80
	80	28.1	38.9	48.7	57.7	65.6	72.6	78.4	83.2		86.3	89.2	80
	90	28.2	39.1	49.1	58.4	66.8	74.4	81.1	86.9	91.6	95.7	98.5	80
	100	28.3	39.2	49.4	58.9	67.7	75.8	83.1	89.6	95.3	105.1	107.9	80
22	50	33.3	45.7	55.8	63.5	68.4					68.8	72.0	80
	60	33.7	46.4	57.3	66.5	73.7	78.8				80.1	83.1	80
	70	33.9	46.8	58.3	68.4	76.9	83.8	89.0			91.3	94.2	80
	80	34.1	47.1	59.0	69.6	79.0	87.1	93.9	99.1		102.4	105.3	80
	90	34.2	47.4	59.5	70.6	80.6	89.5	97.3	103.8	109.2	113.5	116.3	80
	100	34.4	47.5	59.9	71.2	81.7	91.2	99.8	107.3	113.8	124.5	127.2	80
24	50	39.8	54.4	66.3	75.1	80.6					81.0	84.1	80
	60	40.2	55.3	68.2	78.9	87.2	92.8				94.2	97.1	80
	70	40.5	55.8	69.4	81.2	91.1	99.0	104.8			107.2	110.1	80
	80	40.7	56.2	70.2	82.7	93.7	103.1	110.8	116.6		120.1	122.9	80
	90	40.9	56.5	70.8	83.9	95.6	106.0	115.0	122.5	128.4	133.0	135.7	80
	100	41.0	56.7	71.3	84.7	97.0	108.2	118.1	126.7	134.1	145.8	148.5	80
26	50	46.8	64.0	77.7	87.8	93.9					94.3	97.3	80
	60	47.3	65.0	80.0	92.3	101.8	108.0				109.4	112.4	80
	70	47.7	65.6	81.4	95.1	106.5	115.5	121.9			124.4	127.3	80
	80	47.9	66.1	82.4	97.0	109.7	120.4	129.1	135.7		139.3	142.1	80
	90	48.1	66.4	83.2	98.4	112.0	123.9	134.2	142.7	149.3	154.2	156.9	80
	100	48.3	66.6	83.7	99.4	113.7	126.6	138.0	147.9	156.2	168.9	171.6	80

* Includes 1 .0-foot stump allowance.

Table 129--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and total-tree height for all oaks combined (species 800) in the Appalachian Area.*

D.b.h. class	Total-tree height (feet)																														
	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110														
<u>Inches</u>	<u>Cubic feet</u>																														
5	0.6	0.9	1.4	1.5	1.8	1.9																									
6	1.7	2.1	2.4	2.6	3.0	3.3	3.5	3.8																							
7	2.5	3.1	3.5	3.8	4.4	4.8	5.2	5.5	5.9	6.3																					
8	3.4	4.2	4.7	5.2	5.9	6.5	7.0	7.5	8.1	8.5	9.0	9.5																			
9	4.5	5.5	6.1	6.8	7.7	8.4	9.1	9.8	10.5	11.1	11.7	12.3	12.9	13.6																	
10	5.6	6.9	7.7	8.5	9.7	10.6	11.5	12.3	13.1	13.9	14.7	15.5	16.3	17.0	17.8	18.5															
12			9.4	10.4	11.8	13.0	14.0	15.1	16.1	17.1	18.0	19.0	19.9	20.9	21.8	22.7	23.6														
13		13.3	11.3	12.5	14.8	14.2	16.8	15.6	18.4	19.9	16.9	21.4	18.1	22.8	19.3	20.5	24.2	21.7	25.6	22.8	27.0	28.3	23.9	25.1	29.6	30.9	26.2	32.2	27.3	33.5	28.4
14					19.6	21.4	23.2	24.9	26.6	28.3	29.9	31.4	33.0	34.5	36.1	37.6	39.1														
15					22.6	24.7	26.8	28.8	30.7	32.6	34.4	36.2	38.0	39.8	41.6	43.3	45.0														
16					25.8	28.2	30.6	32.8	35.0	37.2	39.3	41.4	43.4	45.4	47.4	49.4	51.4														

* Includes 0.5foot stump allowance.

Table 130--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and height to a 4-inch d.o.b. top for all oaks combined (species 800) in the Appalachian Area:

D.b.h. class	Tree height to 4-inch d.o.b. top (feet)																													
	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100													
<u>Inches</u>	<u>Cubic feet</u>																													
5	1.5	1.9	2.4	2.7	3.1	3.6																								
6	2.1	2.7	3.2	3.7	4.2	4.8	5.3	5.8																						
7	2.6	3.3	4.0	4.8	5.5	6.2	6.9	7.5	8.1	8.8																				
8	3.5	4.3	5.2	6.2	7.0	7.9	8.7	9.5	10.2	11.0	11.8	12.5																		
9	4.4	5.4	6.5	7.7	8.7	9.7	10.7	11.7	12.6	13.5	14.5	15.4	16.3	17.2																
10	5.4	6.7	7.9	9.4	10.6	11.8	13.0	14.2	15.3	16.4	17.5	18.6	19.6	20.7	21.8	22.8														
11			9.6	11.3	12.7	14.2	15.5	16.9	18.2	19.5	20.8	22.1	23.4	24.6	25.9	27.1	28.4													
12			11.3	13.3	15.1	16.7	18.3	19.9	21.4	23.0	24.5	26.0	27.4	28.9	30.4	31.8	33.3													
13			13.3	15.6	17.6	19.5	21.4	23.2	25.0	26.7	28.5	30.2	31.9	33.6	35.2	36.9	38.6													
14																														
15					20.3	23.2	22.5	25.8	24.7	28.2	26.7	30.5	28.8	32.9	30.8	35.1	32.8	37.4	34.7	39.6	36.7	41.8	38.6	44.0	40.5	46.2	42.4	48.4	44.3	50.5
16					26.4	29.2	32.0	34.6	37.2	39.8	42.3	44.8	47.3	49.8	52.3	54.7	57.2													

* Includes 0.5-foot stump allowance.

Table 13 1 --Predicted **stemwood** volume to a saw-log merchantable top, and to S-inch and **4-inch** d.o.b. tops based on d.b.h., total-tree height and height to a saw-log top for black locust (species 901) in the Appalachian Area.*

D.b.h. class	Total tree height	Volume to											Girard Form Class		
		Saw-log					merchantable					height (16-foot logs)		9-inch	4-inch
		1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	d.o.b. top				
<u>Inches</u>	<u>Feet</u>	<u>Cubic feet</u>											<u>ercent</u>		
12	40												5.2	9.0	59
	50	7.6											8.3	11.8	67
	60	8.0											10.3	14.2	71
	70	8.3	11.4										12.0	16.5	73
	80	8.5	11.8										13.6	18.7	75
	90	8.6	12.1	15.0									15.0	20.8	76
	100	8.7	12.3	15.3									16.4	22.8	77
14	40	9.2											10.2	12.4	59
	50	10.4	13.6										13.7	16.2	67
	60	11.0	14.8										16.6	19.6	71
	70	11.4	15.6	18.9									19.3	22.7	73
	80	11.7	16.1	19.8									21.7	25.7	75
	90	11.8	16.5	20.4	23.6								24.0	28.6	76
	100	12.0	16.8	20.9	24.4								26.3	31.5	77
16	50	13.6	17.9										19.3	21.3	67
	60	14.4	19.5	23.0									23.2	25.8	71
	70	15.0	20.5	24.7									26.9	29.9	73
	80	15.3	21.1	25.9	29.5								30.3	33.9	75
	90	15.5	21.6	26.8	30.9								33.6	37.7	76
	100	15.7	22.0	27.4	31.9	35.4							36.8	41.4	77
	110	15.8	22.2	27.9	32.7	36.7	39.7						40.0	45.1	78
18	50	17.3	22.7										25.3	27.1	67
	60	18.3	24.7	29.2									30.5	32.8	71
	70	19.0	26.0	31.4	35.0								35.3	38.0	73
	80	19.4	26.8	32.9	37.4								39.9	43.1	75
	90	19.7	27.4	33.9	39.1	42.9							44.3	47.9	76
	100	19.9	27.9	34.8	40.5	44.9	48.2						48.6	52.6	77
	110	20.1	28.2	35.4	41.5	46.5	50.4						52.8	57.3	78
20	50	21.4	28.1										31.9	33.6	67
	60	22.7	30.6	36.1									38.6	40.6	71
	70	23.5	32.1	38.8	43.2								44.7	47.1	73
	80	24.1	33.2	40.6	46.2	49.9							50.5	53.3	75
	90	24.4	33.9	42.0	48.4	53.0							56.1	59.3	76
	100	24.7	34.5	43.0	50.0	55.5	59.5						61.5	65.2	77
	110	24.9	34.9	43.7	51.3	57.5	62.2	65.8					66.9	70.9	78
22	60	27.6	37.0	43.7									47.4	49.3	71
	70	28.5	39.0	47.0	52.4								54.9	57.2	73
	80	29.2	40.2	49.2	56.0	60.4							62.1	64.7	75
	90	29.6	41.1	50.9	58.6	64.3	68.1						69.0	72.0	76
	100	30.0	41.8	52.1	60.6	67.3	72.1	75.5					75.7	79.1	77
	110	30.2	42.3	53.0	62.2	69.6	75.4	79.7					82.3	86.0	78
24	60	32.9	44.2	52.1	56.5								57.0	58.7	71
	70	34.0	46.4	56.0	62.4	66.1							66.1	68.2	73
	80	34.8	48.0	58.7	66.7	72.0							74.7	77.1	75
	90	35.3	49.0	60.6	69.8	76.5	81.1						83.1	85.8	76
	100	35.7	49.8	62.1	72.2	80.1	85.9	89.9					91.2	94.2	77
	110	36.0	50.4	63.2	74.0	82.9	89.8	94.9	98.4				99.1	102.6	78
26	60	38.6	51.9	61.2	66.4								67.5	69.1	71
	70	40.0	54.6	65.8	73.3	77.6							78.2	80.1	73
	80	40.9	56.4	68.9	78.3	84.5	88.3						88.4	90.6	75
	90	41.6	57.6	71.2	82.0	89.9	95.2						98.3	100.8	76
	100	42.0	58.6	72.9	84.8	94.1	100.9	105.6					107.9	110.8	77
	110	42.4	59.3	74.2	87.0	97.4	105.5	111.4	115.6				117.4	120.5	78

* Includes 1 .0-foot stump allowance.

Table 132--Predicted stemwood volume to a saw-log merchantable top, and to 0-inch and 4-inch d.o.b. tops based on d.b.h., height to a 4-inch d.o.b. top and height to a saw-log top for black locust (species 901) in the Appalachian Area.'

D.b.h. class	Height to 4-inch d.o.b. top	Volume to											Girard Form Class
		saw-log	merchantable	height (16-foot logs)							9-inch	4-inch	
		1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	d.o.b. top	d.o.b. top	
<u>Inches</u>	<u>Feet</u>	<u>Cubic feet</u>											<u>Percent</u>
12	30	7.5									8.1	10.2	68
	40	8.1									10.0	13.3	73
	50	8.4	11.5								11.7	16.1	75
	60	8.5	11.8								13.2	18.8	76
	70	8.6	12.0								14.7	21.5	76
	80	8.7	12.2	15.2							16.1	24.1	77
	90	8.8	12.3	15.4							17.5	26.7	77
14	40	11.1	14.8								15.4	17.8	73
	50	11.5	15.6								18.3	21.6	75
	60	11.7	16.1	19.6							21.0	25.2	76
	70	11.8	16.4	20.2	23.3						23.6	28.7	76
	80	11.9	16.6	20.6	24.0						26.2	32.1	77
	90	12.0	16.8	21.0	24.6	27.6					28.7	35.5	77
	100	12.0	16.9	21.2	25.0	28.3	31.1				31.2	38.9	77
16	40	14.5	19.4								21.3	23.1	73
	50	15.0	20.5	24.3							25.4	27.9	75
	60	15.3	21.1	25.6	28.9						29.3	32.5	76
	70	15.5	21.5	26.4	30.3						33.1	37.0	76
	80	15.6	21.8	27.0	31.3	34.9					36.8	41.4	77
	90	15.7	22.0	27.4	32.1	36.0	39.2				40.4	45.7	77
	100	15.8	22.1	27.7	32.7	36.9	40.5	43.5			44.1	50.1	77
18	40	18.4	24.6								27.6	29.1	73
	50	19.1	26.0	30.8							33.1	35.1	75
	60	19.5	26.8	32.4	36.5						38.2	40.8	76
	70	19.7	27.3	33.5	38.4	42.0					43.3	46.4	76
	80	19.9	27.6	34.2	39.7	44.0	47.4				48.2	51.9	77
	90	20.0	27.9	34.7	40.6	45.5	49.5	52.6			53.0	57.3	77
	100	20.1	28.1	35.1	41.3	46.7	51.2	54.9	57.8		57.9	62.7	77
20	40	22.8	30.4	34.5							34.6	35.8	73
	50	23.6	32.1	38.0							41.5	43.1	75
	60	24.1	33.1	40.0	45.1						48.0	50.1	76
	70	24.4	33.7	41.4	47.4	51.8					54.3	56.9	76
	80	24.6	34.2	42.3	49.0	54.3	58.3				60.6	63.6	77
	90	24.8	34.5	42.9	50.1	56.2	61.0	64.8			66.7	70.2	77
	100	24.9	34.7	43.4	51.1	57.6	63.1	67.6	71.1		72.8	76.8	77
22	50	28.7	38.9	46.0	50.2						50.6	52.0	75
	60	29.2	40.1	48.5	54.5	58.3					58.6	60.4	76
	70	29.6	40.9	50.1	57.3	62.6	66.1				66.4	68.6	76
	80	29.9	41.4	51.2	59.3	65.7	70.5	73.8			74.0	76.6	77
	90	30.0	41.8	52.0	60.7	67.9	73.8	78.2	81.4		81.6	84.5	77
	100	30.2	42.1	52.6	61.8	69.7	76.3	81.7	85.9	89.0	89.1	92.4	77
24	50	34.2	46.3	54.8	59.7						60.6	61.7	75
	60	34.9	47.8	57.7	64.8	69.3					70.1	71.7	76
	70	35.3	48.7	59.6	68.2	74.4	78.6				79.5	81.3	76
	80	35.6	49.3	61.0	70.5	78.1	83.8	87.7			88.6	90.8	77
	90	35.8	49.8	61.9	72.3	80.8	87.7	93.0	96.7		97.7	100.2	77
	100	36.0	50.1	62.7	73.6	82.9	90.7	97.1	102.0	105.6	106.6	109.5	77
26	50	40.2	54.4	64.3	70.0						71.3	72.3	75
	60	41.0	56.2	67.8	76.1	81.2					82.6	83.9	76
	70	41.5	57.2	70.0	80.0	87.3	92.1				93.6	95.2	76
	80	41.9	58.0	71.6	82.8	91.6	98.2	102.7			104.4	106.3	77
	90	42.1	58.5	72.7	84.8	94.8	102.9	109.0	113.3		115.0	117.2	77
	100	42.3	58.9	73.6	86.4	97.3	106.4	113.8	119.6	123.7	125.6	128.1	77

* Includes 1 .0-foot stump allowance.

Table 133--Predicted stemwood volume to a saw-log merchantable top, and to O-inch and 4-inch d.o.b. tops based on d.b.h., height to a 9-inch d.o.b. top and height to a saw-log top for black locust (species 901) in the Appalachian Area.^a

D.b.h. class	Height to 9-inch d.o.b. top	Volume to										O-inch d.o.b. top	4-inch d.o.b. top	Girard Form Class
		Ssu-Log	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	Logs			
Inches	Feet	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	Cubic feet	Percent		
12	20										9.5	16.3	77	
	30	8.3									13.7	19.1	76	
	40	8.5	12.1	15.3							17.7	22.4	76	
	50	8.7	12.2	15.5	18.6	21.4					21.7	26.0	76	
	60	8.8	12.3	15.7	18.9	21.9	24.7				25.7	29.7	76	
	70	8.8	12.4	15.8	19.1	22.2	25.2	28.0			29.6	33.5	76	
	80	8.8	12.4	15.9	19.2	22.4	25.5	28.4	31.2		33.6	37.2	76	
14	40	11.8	16.4	20.2							22.9	27.5	76	
	50	11.9	16.6	20.8	24.4	27.4					27.7	31.9	76	
	60	11.9	16.7	21.1	25.0	28.5	31.6				32.6	36.5	76	
	70	12.0	16.8	21.3	25.4	29.2	32.7	35.7			37.4	41.1	76	
	80	12.0	16.9	21.4	25.7	29.7	33.4	36.8	39.8		42.2	45.8	76	
	90	12.1	16.9	21.5	25.9	30.0	33.9	37.5	40.8	43.9	47.1	50.5	76	
	100	12.1	16.9	21.6	26.0	30.3	34.3	38.0	41.6	44.9	51.9	55.2	76	
16	40	15.4	21.3	26.0							28.8	33.4	76	
	50	15.6	21.6	26.8	31.1	34.4					34.7	38.9	76	
	60	15.6	21.8	27.3	32.1	36.2	39.6				40.6	44.5	76	
	70	15.7	21.9	27.6	32.8	37.3	41.3	44.7			46.4	50.1	76	
	80	15.8	22.0	27.8	33.2	38.1	42.5	46.4	49.8		52.3	55.7	76	
	90	15.8	22.1	28.0	33.5	38.6	43.3	47.6	51.4	54.8	58.1	61.4	76	
	100	15.8	22.1	28.1	33.7	39.0	43.9	48.5	52.7	56.5	63.9	67.1	76	
18	40	19.6	27.0	32.5							35.6	40.2	76	
	50	19.7	27.4	33.7	38.7	42.4					42.7	46.8	76	
	60	19.9	27.6	34.4	40.2	45.0	48.6				49.7	53.5	76	
	70	19.9	27.8	34.8	41.1	46.5	51.1	54.8			56.7	60.3	76	
	80	20.0	27.9	35.1	41.7	47.6	52.8	57.3	61.0		63.6	67.1	76	
	90	20.0	28.0	35.3	42.1	48.4	54.0	59.0	63.4	67.2	70.6	73.9	76	
	100	20.1	28.0	35.5	42.5	48.9	54.9	60.3	65.2	69.5	77.5	80.7	76	
20	40	24.2	33.3	39.8							43.2	47.8	76	
	50	24.4	33.8	41.4	47.3	51.2					51.6	55.7	76	
	60	24.6	34.1	42.3	49.2	54.7	58.8				59.9	63.7	76	
	70	24.7	34.3	42.9	50.4	56.8	62.1	66.2			68.1	71.8	76	
	80	24.7	34.5	43.3	51.2	58.2	64.3	69.5	73.6		76.4	79.8	76	
	90	24.8	34.6	43.6	51.8	59.3	65.9	71.8	76.8	81.0	84.6	87.9	76	
	100	24.8	34.6	43.8	52.3	60.0	67.1	73.5	79.2	84.2	92.8	96.0	76	
22	50	29.6	40.9	50.0	56.7	61.1					61.4	65.6	76	
	60	29.8	41.3	51.1	59.2	65.5	70.0				71.1	75.0	76	
	70	29.9	41.5	51.8	60.7	68.2	74.3	78.8			80.8	84.5	76	
	80	30.0	41.7	52.3	61.8	70.0	77.1	83.0	87.6		90.4	93.9	76	
	90	30.1	41.9	52.7	62.5	71.3	79.2	85.9	91.7	96.3	100.1	103.4	76	
	100	30.1	42.0	52.9	63.1	72.3	80.7	88.2	94.7	100.3	109.7	112.9	76	
	24	50	35.3	48.7	59.3	67.1	71.8					72.2	76.5	76
60		35.5	49.1	60.7	70.1	77.4	82.3				83.5	87.4	76	
70		35.6	49.5	61.6	72.0	80.7	87.6	92.6			94.7	98.4	76	
80		35.8	49.7	62.2	73.3	83.0	91.1	97.8	102.8		105.9	109.4	76	
90		35.8	49.8	62.6	74.2	84.6	93.7	101.5	107.9	113.0	117.0	120.4	76	
100		35.9	50.0	63.0	74.9	85.8	95.6	104.2	111.7	118.1	128.1	131.4	76	
26		50	41.5	57.1	69.5	78.3	83.6					83.9	88.2	76
	60	41.7	57.7	71.2	82.0	90.2	95.6				96.9	100.9	76	
	70	41.9	58.1	72.2	84.3	94.3	102.1	107.6			109.8	113.5	76	
	80	42.0	58.3	73.0	85.9	97.0	106.4	113.9	119.4		122.6	126.2	76	
	90	42.1	58.5	73.5	87.0	99.0	109.4	118.3	125.6	131.2	135.4	138.9	76	
	100	42.2	58.7	73.9	87.8	100.4	111.7	121.6	130.2	137.3	148.2	151.5	76	

^a Includes 1.0-foot stump allowance.

Table 134--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and total-tree height for black locust (species 901) in the Appalachian Area.^a

D.b.h. class	Total-tree height (feet)																
	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110
Inches	Cubic feet																
5																	
6	0.6	1.6	0.9	2.1	2.3	1.2	2.5	1.4	2.5	1.2	2.7	1.4	3.0	3.2			
7	2.5	3.0	3.3	3.7	3.7	4.1	4.4	4.8	5.1	5.5							
8		3.3	4.1	4.5	5.0	5.0	5.6	6.1	6.5	7.0	7.5	7.9	8.3				
10	4.3	5.3	5.8	6.4	6.5	7.2	7.9	8.5	9.1	9.7	10.3	10.9	11.4	12.0			
	5.4	6.6	7.3	8.1	8.2	9.1	9.9	10.7	11.5	12.2	13.0	13.7	14.4	15.1	15.8	16.5	
11			8.9	9.9	10.1	11.1	12.2	13.1	14.1	15.0	15.9	16.8	17.6	18.5	19.3	20.2	21.0
12			10.7	11.9	12.1	13.4	14.6	15.8	16.9	18.0	19.1	20.1	21.2	22.2	23.2	24.2	25.3
13			12.7	14.0	14.3	15.8	17.2	18.6	20.0	21.3	22.5	23.8	25.0	26.2	27.5	28.7	29.8
14					16.7	18.4	20.1	21.7	23.3	24.8	26.3	27.7	29.2	30.6	32.0	33.4	34.8
15					19.3	21.3	23.2	25.0	26.8	28.6	30.3	32.0	33.6	35.3	36.9	38.5	40.1
16					22.0	24.3	26.5	28.6	30.6	32.6	34.6	36.5	38.4	40.2	42.1	43.9	45.8

^a Includes 0.5-foot stump allowance.

Table 1 35--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and height to a 4-inch d.o.b. top for black locust (species 901) in the Appalachian Area:

D.b.h. class	Tree height to 4-inch d.o.b. top (feet)																
	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Inches	Cubic feet																
5																	
6	2.0	1.5	2.6	1.9	3.1	2.3	3.4	2.5	3.9	2.9	3.3	4.4	4.9	5.3			
7	2.5	3.2	3.9	4.4	5.1	5.7	6.3	6.8	7.4	8.0							
8																	
9	3.3	4.2	4.1	5.2	5.0	6.2	5.6	7.0	6.4	7.9	8.8	7.1	7.9	9.7	10.5	8.6	11.4
10	5.2	6.4	7.6	8.6	9.6	10.7	11.7	12.7	13.7	14.7	15.7	16.7	17.6	18.6	19.5	20.5	
11			9.1	10.2	11.5	12.8	14.0	15.2	16.3	17.5	18.6	19.8	20.9	22.0	23.1	24.3	25.4
12			10.8	12.1	13.6	15.1	16.5	17.9	19.2	20.6	21.9	23.2	24.5	25.8	27.1	28.4	29.7
13			12.6	14.1	15.9	17.6	19.2	20.8	22.3	23.9	25.4	26.9	28.4	29.9	31.4	32.9	34.4
14																	
15					21.0	18.3	20.2	23.1	22.1	25.2	23.9	27.3	25.7	29.3	31.3	27.5	33.3
16					23.8	26.2	28.6	30.9	33.2	35.4	37.7	39.9	42.1	44.3	46.4	48.6	50.8

^a Includes 0.5-foot stump allowance.

Table 136--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., total-tree height and height to a saw-log top for soft and hard hardwoods combined (species 90) in the Appalachian Area.^a

D.b.h. class	Total tree height	Volume to												Girard Form Class
		Saw-log		merchantable		height		(16-foot logs)		9-inch		1-inch		
		1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	d.o.b.	top	d.o.b.	
<u>Inches</u>	<u>Feet</u>	<u>Cubic feet</u>												<u>Percent</u>
12	40											5.5	10.4	64
	50	8.6										10.0	13.5	71
	60	9.1										12.3	16.3	75
	70	9.4	12.9									14.2	18.8	77
	80	9.6	13.3									15.9	21.3	79
	90	9.8	13.6	16.9								17.6	23.6	80
	100	9.9	13.8	17.2								19.1	25.9	81
14	40	10.5										12.3	14.4	64
	50	11.8	15.6									16.1	18.6	71
	60	12.5	16.8									19.3	22.4	75
	70	12.9	17.7	21.4								22.2	25.9	77
	80	13.2	18.2	22.4								25.0	29.2	79
	90	13.4	18.6	23.0	26.6							27.6	32.5	80
	100	13.6	18.9	23.5	27.5							30.1	35.6	81
16	50	15.4	20.4									22.3	24.5	71
	60	16.4	22.1	26.2								26.8	29.5	75
	70	16.9	23.1	28.0								30.8	34.1	77
	80	17.3	23.9	29.3	33.4							34.7	38.5	79
	90	17.6	24.4	30.2	34.9	38.3						38.4	42.7	80
	100	17.8	24.7	30.8	36.0	40.0						41.9	46.8	81
	110	17.9	25.0	31.3	36.8	41.3	44.8					45.4	50.9	81
18	50	19.6	25.9									29.2	31.1	71
	60	20.8	28.0	33.2								35.0	37.5	75
	70	21.5	29.4	35.5	39.7							40.4	43.3	77
	80	22.0	30.3	37.1	42.3							45.5	48.9	79
	90	22.4	30.9	38.3	44.2	48.5						50.4	54.3	80
	100	22.6	31.4	39.1	45.6	50.7	54.4					55.1	59.5	81
	110	22.8	31.7	39.7	46.7	52.4	56.8					59.8	64.7	81
20	50	24.3	32.0	36.6								36.8	38.6	71
	60	25.7	34.7	41.1								44.2	46.4	75
	70	26.7	36.3	44.0	49.1							51.0	53.6	77
	80	27.3	37.4	45.9	52.3	56.6						57.5	60.5	79
	90	27.7	38.2	47.3	54.6	60.0	63.6					63.7	67.2	80
	100			48.4	56.4	62.7	67.2					69.7	73.7	81
	110	28.0	38.8	49.1	57.7	64.7	70.2	74.2				75.7	80.1	81
22	60	28.2	39.2											
	70	31.2	42.0	49.8	54.1							54.3	56.3	75
	80	32.3	44.0	53.3	59.5							62.6	65.1	77
	90	33.1	45.4	55.7	63.4	68.5						70.6	73.4	79
	100	33.6	46.3	57.3	66.2	72.7	77.0					78.3	81.5	80
	110	33.9	47.0	58.6	68.3	75.9	81.4	85.3				85.8	89.4	81
	110	34.2	47.6	59.5	69.9	78.4	85.0	89.9				93.1	97.2	81
24	60	37.2	50.1	59.3	64.5							65.2	67.1	75
	70	38.6	52.5	63.5	70.9	75.2						75.3	77.6	77
	80	39.4	54.1	66.3	75.5	81.6						84.9	87.5	79
	90	40.0	55.2	68.3	78.9	86.6	91.8					94.2	97.2	80
	100	40.5	56.1	69.8	81.4	90.4	97.0	101.6				103.2	106.6	81
	110	40.8	56.7	70.9	83.3	93.4	101.2	107.0	111.1			112.1	115.8	81
	110	40.8	56.7	70.9	83.3	93.4	101.2	107.0	111.1			112.1	115.8	81
26	60	43.8	58.8	69.7	75.8							77.1	78.8	75
	70	45.3	61.7	74.6	83.3	88.3						89.1	91.2	77
	80	46.3	63.6	77.9	88.7	95.9	100.1					100.5	102.9	79
	90	47.1	64.9	80.3	92.6	101.7	107.8					111.4	114.2	80
	100	47.6	65.9	82.0	95.6	106.2	113.9	119.3				122.1	125.2	81
	110	48.0	66.6	83.3	97.8	109.7	118.9	125.7	130.5			132.6	136.1	81
	110	48.0	66.6	83.3	97.8	109.7	118.9	125.7	130.5			132.6	136.1	81

^a Includes 1 .0-foot stump allowance.

Table 137--Predicted stemwood volume to a saw-log merchantable top, and to O-inch and 4-inch d.o.b. tops based on d.b.h., height to a 4-inch d.o.b. top and height to a saw-log top for soft and hard hardwoods combined (species 90) in the Appalachian Area:

D.b.h. class	Height to 4-inch d.o.b. top	Volume to										Girard Form Class	
		1.0	Sew-log 1.5	merchantable 2.0	2.5	height 3.0	(16-foot 3.5	Logs) 4.0	4.5	5.0	O-inch d.o.b. top		4-inch d.o.b. top
<u>Inches</u>	<u>Feet</u>	<u>Cubic feet</u>										<u>Percent</u>	
12	30	8.3									9.0	11.2	71
	40	9.0									11.2	14.8	76
	50	9.4	12.8								13.2	18.0	78
	60	9.6	13.2								15.0	21.1	79
	70	9.8	13.5	16.6							16.8	24.1	80
	80	9.9	13.7	17.0							18.4	27.1	80
	90	9.9	13.8	17.2							20.1	30.0	81
14	40	12.4	16.5							17.3	19.9	76	
	50	12.9	17.5							20.7	24.2	78	
	60	13.2	18.1	21.9						23.8	28.2	79	
	70	13.4	18.4	22.6	26.1					26.9	32.2	80	
	80	13.5	18.7	23.1	26.9					29.8	36.1	80	
	90	13.6	18.9	23.5	27.5	31.0				32.7	40.0	81	
	100	13.7	19.0	23.8	28.0	31.7	34.9			35.6	43.8	81	
16	40	16.2	21.6							23.8	25.8	76	
	50	16.9	22.9	27.2						28.6	31.3	78	
	60	17.3	23.6	28.7	32.4					33.1	36.5	79	
	70	17.5	24.1	29.6	34.0	37.3				37.5	41.6	80	
	80	17.7	24.5	30.3	35.1	39.1				41.7	46.6	80	
	90	17.8	24.7	30.7	35.9	40.4	44.0			45.9	51.5	81	
	100	17.9	24.9	31.1	36.6	41.4	45.4	48.8		50.1	56.4	81	
18	40	20.6	27.3							30.9	32.5	76	
	50	21.5	29.0	34.4						37.2	39.3	78	
	60	22.0	30.0	36.3	40.9					43.2	45.9	79	
	70	22.3	30.6	37.5	43.0	47.2				48.9	52.2	80	
	80	22.5	31.0	38.3	44.4	49.4	53.2			54.6	58.4	80	
	90	22.7	31.3	38.9	45.5	51.0	55.6	59.1		60.2	64.6	81	
	100	22.8	31.6	39.4	46.3	52.3	57.4	61.6	65.0	65.7	70.7	81	
20	40	25.5	33.8	38.5						38.7	40.0	76	
	50	26.6	35.9	42.5	46.6					46.6	48.4	78	
	60	27.2	37.1	44.8	50.5					54.2	56.4	79	
	70	27.6	37.9	46.3	53.1	58.1				61.4	64.1	80	
	80	27.9	38.4	47.4	54.9	60.9	65.6			68.6	71.7	80	
	90	28.1	38.8	48.1	56.2	63.0	68.5	72.8		75.6	79.2	81	
	100	28.2	39.0	48.7	57.2	64.5	70.8	75.9	80.0	82.5	86.6	81	
22	50	32.2	43.5	51.4	56.3					56.9	58.4	78	
	60	33.0	44.9	54.3	61.1	65.5				66.1	67.9	79	
	70	33.5	45.9	56.1	64.2	70.3	74.4			75.0	77.2	80	
	80	33.8	46.5	57.4	66.4	73.7	79.2	83.1		83.8	86.4	80	
	90	34.0	47.0	58.3	68.0	76.2	82.8	88.0	91.7	92.4	95.4	81	
	100	34.2	47.3	59.0	69.2	78.1	85.6	91.7	96.6	100.2	100.9	104.3	81
24	50	38.4	51.8	61.2	66.9					68.1	69.3	78	
	60	39.3	53.5	64.6	72.7	77.8				79.1	80.6	79	
	70	39.9	54.7	66.8	76.4	83.6	88.4			89.8	91.6	80	
	80	40.3	55.4	68.3	79.0	87.6	94.2	98.7		100.2	102.4	80	
	90	40.6	56.0	69.4	81.0	90.6	98.5	104.6	108.9	110.5	113.1	81	
	100	40.8	56.4	70.2	82.4	92.9	101.8	109.1	114.8	119.0	120.7	123.6	81
26	50	45.1	60.8	71.9	78.5					80.1	81.2	78	
	60	46.2	62.9	75.9	85.3	91.3				93.1	94.5	79	
	70	46.9	64.2	78.5	89.7	98.0	103.6			105.7	107.3	80	
	80	47.4	65.1	80.2	92.8	102.8	110.4	115.7		118.0	119.9	80	
	90	47.7	65.8	81.5	95.0	106.4	115.5	122.6	127.7	130.2	132.3	81	
	100	48.0	66.2	82.5	96.8	109.1	119.4	127.9	134.6	139.5	142.2	144.7	81

* Includes 1 .0-foot stump allowance.

Table 138--Predicted stemwood volume to a saw-log merchantable top, and to 0-inch and 4-inch d.o.b. tops based on d.b.h., height to a 9-inch d.o.b. top and height to a saw-log top for soft and hard hardwoods combined (species 90) in the Appalachian Area.'

D.b.h. class	Height to 9-inch d.o.b. top	Volume to										Girard Fore Class	
		Saw-log	merchantable	height	(16-foot	Logs)	9-inch	4-inch					
		1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	d.o.b. top	d.o.b. top	
Inches	Feet	Cubic feet										Percent	
12	20	8.8									10.0	15.7	76
	30	9.4	12.9								14.9	19.9	78
	40	9.6	13.4	16.8							19.5	24.3	79
	50	9.7	13.6	17.3	20.6	23.6					24.0	20.8	80
	60	9.8	13.8	17.5	21.0	24.3	27.4				28.5	33.3	80
	70	9.9	13.9	17.7	21.3	24.8	28.0	31.1			32.9	37.7	80
	80	9.9	13.9	17.8	21.5	25.1	28.5	31.7	34.8		37.3	42.1	80
14	40	13.2	18.2	22.4							25.3	29.5	79
	50	13.4	18.6	23.2	27.2	30.5					30.9	35.1	80
	60	13.5	18.8	23.6	28.0	31.9	35.3				36.4	40.5	80
	70	13.6	18.9	23.9	28.5	32.8	36.6	40.0			41.9	46.0	80
	80	13.6	19.0	24.1	28.9	33.3	37.5	41.3	44.7		47.3	51.5	80
	90	13.7	19.1	24.2	29.1	33.8	38.1	42.2	45.9	49.3	52.8	56.9	81
	100	13.7	19.1	24.3	29.3	34.1	38.6	42.8	46.8	50.5	58.2	62.3	81
16	40	17.3	23.8	28.9							32.0	35.9	79
	50	17.6	24.3	30.1	34.8	38.5					38.8	42.6	80
	60	17.7	24.6	30.7	36.1	40.7	44.4				45.6	49.3	80
	70	17.8	24.8	31.1	36.9	42.0	46.5	50.3			52.2	55.9	80
	80	17.9	24.9	31.4	37.4	42.9	47.9	52.3	56.1		58.8	62.6	80
	90	18.0	25.0	31.6	37.8	43.6	48.9	53.7	58.0	61.8	65.4	69.2	81
	100	18.0	25.1	31.8	38.1	44.1	49.6	54.7	59.5	63.8	72.0	75.8	81
18	40	22.0	30.1	36.2							39.7	43.2	79
	50	22.3	30.8	37.8	43.5	47.5					47.9	51.3	80
	60	22.5	31.2	38.7	45.3	50.6	54.8				55.9	59.4	80
	70	22.7	31.4	39.3	46.4	52.5	57.7	61.9			63.9	67.4	80
	80	22.8	31.6	39.7	47.1	53.8	59.7	64.8	69.0		71.9	75.3	80
	90	22.0	31.7	40.0	47.7	54.7	61.1	66.0	71.8	76.0	79.8	83.2	81
	100	22.9	31.8	40.2	48.1	55.4	62.1	68.3	73.0	78.0	87.8	91.2	81
20	40	27.3	37.1	44.3							48.2	51.5	79
	50	27.7	30.0	46.5	53.1	57.6					58.0	61.2	80
	60	27.9	38.5	47.7	55.5	61.7	66.3				67.6	70.8	80
	70	28.1	30.8	48.5	57.0	64.2	70.3	74.9			77.1	80.2	80
	80	28.2	39.1	49.0	57.9	65.9	72.9	78.7	83.4		86.5	89.7	80
	90	28.3	39.2	49.4	58.7	67.1	74.7	81.4	87.2	91.9	95.9	99.1	81
	100	28.4	39.4	49.6	59.2	60.0	76.1	83.4	89.9	95.6	105.3	108.5	81
22	50	33.6	46.0	56.1	63.0	68.7					69.1	72.2	80
	60	33.9	46.6	57.6	66.8	74.0	79.1				80.4	83.4	80
	70	34.1	47.0	58.6	68.7	77.2	84.1	89.3			91.6	94.6	80
	80	34.2	47.3	59.2	69.9	79.3	87.4	94.2	99.4		102.7	105.7	80
	90	34.3	47.5	59.7	70.8	80.9	89.8	97.6	104.2	109.5	113.7	116.7	81
	100	34.4	47.7	60.1	71.5	82.0	91.6	100.1	107.6	114.1	124.8	127.8	81
24	50	40.0	54.8	66.7	75.5	80.9					81.3	84.3	80
	60	40.4	55.6	68.5	79.2	87.5	93.1				94.5	97.4	80
	70	40.6	56.1	69.7	81.5	91.4	99.3	105.1			107.5	110.3	80
	80	40.8	56.4	70.5	83.0	94.0	103.4	111.1	116.9		120.4	123.2	80
	90	40.9	56.6	71.1	84.2	95.9	106.3	115.3	122.8	128.7	133.2	136.1	81
	100	41.0	56.8	71.5	85.0	97.4	108.5	118.4	127.1	134.4	146.0	148.9	81
26	50	47.1	64.3	78.1	88.2	94.2					94.6	97.5	80
	60	47.5	65.3	80.4	92.7	102.1	108.4				109.8	112.5	80
	70	47.0	65.8	81.8	95.5	106.9	115.9	122.2			124.7	127.5	80
	80	48.0	66.3	82.7	97.3	110.0	120.8	129.5	136.0		139.6	142.3	80
	90	48.1	66.5	83.4	98.7	112.3	124.3	134.6	143.0	149.6	154.4	157.2	81
	100	48.3	66.8	83.9	99.7	114.0	126.9	138.4	148.3	156.5	169.2	171.9	81

* Includes 1.0-foot stump allowance.

Table 139--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and total-tree height for soft and hard hardwoods combined (species 90) in the Appalachian Area.'

D.b.h. class	Total-tree height (feet)																
	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110
Inches	Cubic feet																
5	0.6	0.8	1.1	1.5	1.7	1.9											
6	1.8	2.2	2.4	2.7	3.0	3.3	3.5	3.8									
7	2.6	3.2	3.5	3.9	4.3	4.8	5.2	5.6	5.9	6.3							
8	3.6	4.4	4.8	5.3	5.9	6.5	7.0	7.6	8.1	8.6	9.1	9.6					
9	4.6	5.6	6.2	6.9	7.6	8.4	9.1	9.8	10.5	11.2	11.8	12.4	13.1	13.7			
10	5.8	7.1	7.8	8.6	9.6	10.5	11.4	12.3	13.2	14.0	14.8	15.6	16.4	17.2	18.0	18.7	
11		9.6	10.6	11.7	12.9	14.0	15.1	16.1	17.1	18.1	19.1	20.1	21.0	22.0	22.9	23.9	
12		11.5	12.7	14.0	15.4	16.8	18.1	19.3	20.6	21.8	22.9	24.1	25.3	26.4	27.5	28.6	
13		13.6	15.0	16.6	18.2	19.8	21.4	22.8	24.3	25.7	27.1	28.5	29.8	31.2	32.5	33.8	
14					19.3	21.3	23.1	24.9	26.6	28.3	30.0	31.6	33.2	34.8	36.3	37.9	39.4
15					22.3	24.5	26.6	28.7	30.7	32.6	34.5	36.4	38.2	40.1	41.9	43.7	45.4
16					25.4	28.0	30.4	32.7	35.0	37.2	39.4	41.5	43.6	45.7	47.8	49.8	51.9

^a Includes 0.5-foot stump allowance.

Table 140--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and height to a 4-inch d.o.b. top for soft and hard hardwoods combined (species 90) in the Appalachian Area.'

D.b.h. class	Tree height to 0-inch d.o.b. top (feet)																
	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Inches	Cubic feet																
5	1.6	2.0	2.5	2.8	3.2	3.7											
6	2.2	2.7	3.3	3.8	4.3	4.9	5.4	5.9									
7	2.8	3.5	4.1	4.9	5.6	6.3	7.0	7.6	8.3	8.9							
8	3.6	4.5	5.3	6.3	7.2	8.0	8.8	9.6	10.4	11.1	11.9	12.6					
9	4.6	5.6	6.6	7.8	8.9	9.9	10.9	11.8	12.7	13.7	14.6	15.5	16.4	17.3			
10	5.7	6.9	8.1	9.6	10.8	12.0	13.2	14.3	15.4	16.5	17.6	18.7	19.8	20.8	21.9	23.0	
11		9.7	11.5	12.9	14.4	15.7	17.1	18.4	19.7	21.0	22.2	23.5	24.8	26.0	27.3	28.5	
12		11.5	13.6	15.3	16.9	18.5	20.1	21.6	23.1	24.6	26.1	27.6	29.1	30.5	32.0	33.4	
13		13.5	15.8	17.8	19.7	21.6	23.4	25.2	26.9	28.6	30.3	32.0	33.7	35.4	37.1	38.7	
14					20.6	22.8	24.9	26.9	29.0	31.0	32.9	34.9	36.8	38.8	40.7	42.6	44.5
15					23.5	26.0	28.4	30.8	33.1	35.3	37.6	39.8	42.0	44.2	46.4	48.5	50.7
16					26.7	29.5	32.2	34.9	37.5	40.0	42.5	45.0	47.5	50.0	52.4	54.9	57.3

^a Includes 0.5-foot stump allowance.

List of Figures and Tables

	<u>Page</u>
Figure i--Seven geographical areas on which trees were sampled for equation development and verification.	v
Table i--Geographic areas in the Southern Region (USDA Forest Service) with a listing of National Forest System units in each.	v
Table ii--Species and geographic areas for which volume tables are available.	vi
Table iii--Trees measured for development of Appalachian Area volume tables by species and species groups.	vii
Table 1--Predicted stemwood volume to a saw-log merchantable top, and to 7-inch and 4-inch d.o.b. tops based on d.b.h., total-tree height and height to a saw-log top for all pine species combined (species 100) in the Appalachian Area.	4
Table 2--Predicted stemwood volume to a saw-log merchantable top, and to 7-inch and 4-inch d.o.b. tops based on d.b.h., height to a 4-inch d.o.b. top and height to a saw-log top for all pine species combined (species 100) in the Appalachian Area.	5
Table 3--Predicted stemwood volume to a saw-log merchantable top, and to 7-inch and 4-inch d.o.b. tops based on d.b.h. , height to a 7-inch d.o.b. top and height to a saw-log top for all pine species combined (species 100) in the Appalachian Area.	6
Table 4--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and total-tree height for all pine species combined (species 100) in the Appalachian Area.	7
Table 5--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and height to a 4-inch d.o.b. top for all pine species combined (species 100) in the Appalachian Area.	7
Table &--Predicted stemwood volume to a saw-log merchantable top, and to 7-inch and 4-inch d.o.b. tops based on d.b.h. , total-tree height and height to a saw-log top for shortleaf pine (species 1 IO) in the Appalachian Area.	8
Table 7--Predicted stemwood volume to a saw-log merchantable top, and to 7-inch and 4-inch d.o.b. tops based on d.b.h. , height to a 4-inch d.o.b. top and height to a saw-log top for shortleaf pine (species 1 IO) in the Appalachian Area.	9
Table 8--Predicted stemwood volume to a saw-log merchantable top, and to 7-inch and 4-inch d.o.b. tops based on d.b.h., height to a 7-inch d.o.b. top and height to a saw-log top for shortleaf pine (species 1 IO) in the Appalachian Area.	10
Table 9--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and total-tree height for shortleaf pine (species 1 IO) in the Appalachian Area.	11

Table 10--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and height to a 4-inch d.o.b. top for shortleaf pine (species 110) in the Appalachian Area.	11
Table 11 --Predicted stemwood volume to a saw-log merchantable top, and to 7-inch and 4-inch d.o.b. tops based on d.b.h., total-tree height and height to a saw-log top for pitch pine (species 126) in the Appalachian Area.	12
Table 12--Predicted stemwood volume to a saw-log merchantable top, and to 7-inch and 4-inch d.o.b. tops based on d.b.h., height to a 4-inch d.o.b. top and height to a saw-log top for pitch pine (species 126) in the Appalachian Area.	13
Table 13--Predicted stemwood volume to a saw-log merchantable top, and to 7-inch and 4-inch d.o.b. tops based on d.b.h., height to a 7-inch d.o.b. top and height to a saw-log top for pitch pine (species 126) in the Appalachian Area.	14
Table 14--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and total-tree height for pitch pine (species 126) in the Appalachian Area.	15
Table 15--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and height to a 4-inch d.o.b. top for pitch pine (species 126) in the Appalachian Area.	15
Table 16--Predicted stemwood volume to a saw-log merchantable top, and to 7-inch and 4-inch d.o.b. tops based on d.b.h., total-tree height and height to a saw-log top for Virginia pine (species 132) in the Appalachian Area.	16
Table 17--Predicted stemwood volume to a saw-log merchantable top, and to 7-inch and 4-inch d.o.b. tops based on d.b.h., height to a 4-inch d.o.b. top and height to a saw-log top for Virginia pine (species 132) in the Appalachian Area.	17
Table 18--Predicted stemwood volume to a saw-log merchantable top, and to 7-inch and 4-inch d.o.b. tops based on d.b.h., height to a 7-inch d.o.b. top and height to a saw-log top for Virginia pine (species 132) in the Appalachian Area.	18
Table 19--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and total-tree height for Virginia pine (species 132) in the Appalachian Area.	19
Table 20--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and height to a 4-inch d.o.b. top for Virginia pine (species 132) in the Appalachian Area.	19
Table 21--Predicted stemwood volume to a saw-log merchantable top, and to 7-inch and 4-inch d.o.b. tops based on d.b.h., total-tree height and height to a saw-log top for all pines except major pines (species 13) in the Appalachian Area.	20

Table 22--Predicted stemwood volume to a saw-log merchantable top, and to 7-inch and 4-inch d.o.b. tops based on d.b.h., height to a 4-inch d.o.b. top and height to a saw-log top for all pines except major pines (species 13) in the Appalachian Area.	21
Table 23--Predicted stemwood volume to a saw-log merchantable top, and to 7-inch and 4-inch d.o.b. tops based on d.b.h., height to a 7-inch d.o.b. top and height to a saw-log top for all pines except major pines (species 13) in the Appalachian Area.	22
Table 24--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and total-tree height for all pines except major pines (species 13) in the Appalachian Area.	23
Table 25--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and height to a 4-inch d.o.b. top for all pines except major pines (species 13) in the Appalachian Area.	23
Table 26--Predicted stemwood volume to a saw-log merchantable top, and to 7-inch and 4-inch d.o.b. tops based on d.b.h., total-tree height and height to a saw-log top for eastern white pine (species 129) in the Appalachian Area.	24
Table 27--Predicted stemwood volume to a saw-log merchantable top, and to 7-inch and 4-inch d.o.b. tops based on d.b.h., height to a 4-inch d.o.b. top and height to a saw-log top for eastern white pine (species 129) in the Appalachian Area.	25
Table 28--Predicted stemwood volume to a saw-log merchantable top, and to 7-inch and 4-inch d.o.b. tops based on d.b.h., height to a 7-inch d.o.b. top and height to a saw-log top for eastern white pine (species 129) in the Appalachian Area.	26
Table 29--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and total-tree height for eastern white pine (species 129) in the Appalachian Area.	27
Table 30--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and height to a 4-inch d.o.b. top for eastern white pine (species 129) in the Appalachian Area.	27
Table 31--Predicted stemwood volume to a saw-log merchantable top, and to 7-inch and 4-inch d.o.b. tops based on d.b.h., total-tree height and height to a saw-log top for hemlock (species 261) in the Appalachian Area.	28
Table 32--Predicted stemwood volume to a saw-log merchantable top, and to 7-inch and 4-inch d.o.b. tops based on d.b.h., height to a 4-inch d.o.b. top and height to a saw-log top for hemlock (species 261) in the Appalachian Area.	29
Table 33--Predicted stemwood volume to a saw-log merchantable top, and to 7-inch and 4-inch d.o.b. tops based on d.b.h., height to a 7-inch d.o.b. top and height to a saw-log top for hemlock (species 261) in the Appalachian Area.	30

Table 46--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., total-tree height and height to a saw-log top for buckeye (species 330) in the Appalachian Area. ,	40
Table 47--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., height to a 4-inch d.o.b. top and height to a saw-log top for buckeye (species 330) in the Appalachian Area. . . , . . . , . . . , . . . , . . .	41
Table 48--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., height to a 9-inch d.o.b. top and height to a saw-log top for buckeye (species 330) in the Appalachian Area. . ,	42
Table 49--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and total-tree height for buckeye (species 330) in the Appalachian Area.	43
Table 50--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and height to a 4-inch d.o.b. top for buckeye (species 330) in the Appalachian Area.	43
Table 51 --Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., total-tree height and height to a saw-log top for yellow-poplar (species 621) in the Appalachian Area.	44
Table 52--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., height to a 4-inch d.o.b. top and height to a saw-log top for yellow-poplar (species 621) in the Appalachian Area.	45
Table 53--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., height to a 9-inch d.o.b. top and height to a saw-log top for yellow-poplar (species 621) in the Appalachian Area.	46
Table 54--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and total-tree height for yellow-poplar (species 621) in the Appalachian Area.	47
Table 55--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and height to a 4-inch d.o.b. top for yellow-poplar (species 621) in the Appalachian Area.	47
Table 56--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., total-tree height and height to a saw-log top for blackgum (upland) (species 693) in the Appalachian Area.	48
Table 57--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., height to a 4-inch d.o.b. top and height to a saw-log top for blackgum (upland) (species 693) in the Appalachian Area.	49

Table 58--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., height to a 9-inch d.o.b. top and height to a saw-log top for blackgum (upland) (species 693) in the Appalachian Area.	50
Table 59--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and total-tree height for blackgum (upland) (species 693) in the Appalachian Area.	51
Table 60--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and height to a 4-inch d.o.b. top for blackgum (upland) (species 693) in the Appalachian Area.	51
Table 61--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., total-tree height and height to a saw-log top for basswood (species 950) in the Appalachian Area.	52
Table 62--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., height to a 4-inch d.o.b. top and height to a saw-log top for basswood (species 950) in the Appalachian Area,	53
Table 63--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., height to a 9-inch d.o.b. top and height to a saw-log top for basswood (species 950) in the Appalachian Area.	54
Table 64--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and total-tree height for basswood (species 950) in the Appalachian Area.	55
Table 65--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and height to a 4-inch d.o.b. top for basswood (species 950) in the Appalachian Area.	55
Table 66--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., total-tree height and height to a saw-log top for all hard hardwoods combined (species 500) in the Appalachian Area.	56
Table 67--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., height to a 4-inch d.o.b. top and height to a saw-log top for all hard hardwoods combined (species 500) in the Appalachian Area.	57
Table 68--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., height to a 9-inch d.o.b. top and height to a saw-log top for all hard hardwoods combined (species 500) in the Appalachian Area.	58
Table 69--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and total-tree height for all hard hardwoods combined (species 500) in the Appalachian Area.	59

Table 70--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and height to a 4-inch d.o.b. top for all hard hardwoods combined (species 500) in the Appalachian Area.	59
Table 71--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h. , total-tree height and height to a saw-log top for birch (species 370) in the Appalachian Area.	60
Table 72--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h. , height to a 4-inch d.o.b. top and height to a saw-log top for birch (species 370) in the Appalachian Area.	61
Table 73--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h. , height to a 9-inch d.o.b. top and height to a saw-log top for birch (species 370) in the Appalachian Area.	62
Table 74--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and total-tree height for birch (species 370) in the Appalachian Area.	63
Table 75--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and height to a 4-inch d.o.b. top for birch (species 370) in the Appalachian Area.	63
Table 76--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h. , total-tree height and height to a saw-log top for hickory (species 400) in the Appalachian Area.	64
Table 77--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h. , height to a 4-inch d.o.b. top and height to a saw-log top for hickory (species 400) in the Appalachian Area.	65
Table 78--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h. , height to a 9-inch d.o.b. top and height to a saw-log top for hickory (species 400) in the Appalachian Area.	66
Table 79--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and total-tree height for hickory (species 400) in the Appalachian Area.	67
Table 80--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and height to a 4-inch d.o.b. top for hickory (species 400) in the Appalachian Area.	67
Table 81--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h. , total-tree height and height to a saw-log top for white ash (species 541) in the Appalachian Area.	68
Table 82--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h. , height to a 4-inch d.o.b. top and height to a saw-log top for white ash (species 541) in the Appalachian Area.	69

Table 83--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., height to a 9-inch d.o.b. top and height to a saw-log top for white ash (species 541) in the Appalachian Area.	70
Table 84--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and total-tree height for white ash (species 541) in the Appalachian Area.	71
Table 85--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and height to a 4-inch d.o.b. top for white ash (species 541) in the Appalachian Area.	71
Table 86--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., total-tree height and height to a saw-log top for white oak (species 802) in the Appalachian Area.	72
Table 87--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., height to a 4-inch d.o.b. top and height to a saw-log top for white oak (species 802) in the Appalachian Area.	73
Table 88--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., height to a 9-inch d.o.b. top and height to a saw-log top for white oak (species 802) in the Appalachian Area.	74
Table 89--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and total-tree height for white oak (species 802) in the Appalachian Area.	75
Table 90--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and height to a 4-inch d.o.b. top for white oak (species 802) in the Appalachian Area.	75
Table 91--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., total-tree height and height to a saw-log top for chestnut oak (species 832) in the Appalachian Area.	76
Table 92--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., height to a 4-inch d.o.b. top and height to a saw-log top for chestnut oak (species 832) in the Appalachian Area.	77
Table 93--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., height to a 9-inch d.o.b. top and height to a saw-log top for chestnut oak (species 832) in the Appalachian Area.	78
Table 94--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and total-tree height for chestnut oak (species 832) in the Appalachian Area.	79
Table 95--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and height to a 4-inch d.o.b. top for chestnut oak (species 832) in the Appalachian Area.	79

Table 96--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., total-tree height and height to a saw-log top for all white oaks combined (species 82) in the Appalachian Area.	80
Table 97--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., height to a 4-inch d.o.b. top and height to a saw-log top for all white oaks combined (species 82) in the Appalachian Area.	81
Table 98--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., height to a 9-inch d.o.b. top and height to a saw-log top for all white oaks combined (species 82) in the Appalachian Area.	82
Table 99--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and total-tree height for all white oaks combined (species 82) in the Appalachian Area.	83
Table 100--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and height to a 4-inch d.o.b. top for all white oaks combined (species 82) in the Appalachian Area. , ,	83
Table 101 --Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., total-tree height and height to a saw-log top for scarlet oak (species 806) in the Appalachian Area.	84
Table 102--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., height to a 4-inch d.o.b. top and height to a saw-log top for scarlet oak (species 806) in the Appalachian Area.	85
Table 103--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., height to a 9-inch d.o.b. top and height to a saw-log top for scarlet oak (species 806) in the Appalachian Area.	86
Table 104--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and total-tree height for scarlet oak (species 806) in the Appalachian Area.	87
Table 105--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and height to a 4-inch d.o.b. top for scarlet oak (species 806) in the Appalachian Area.	87
Table 106--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., total-tree height and height to a saw-log top for southern red oak (species 812) in the Appalachian Area.	88
Table 107--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., height to a 4-inch d.o.b. top and height to a saw-log top for southern red oak (species 812) in the Appalachian Area.	89

Table 108--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., height to a 9-inch d.o.b. top and height to a saw-log top for southern red oak (species 812) in the Appalachian Area.	90
Table 109--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and total-tree height for southern red oak (species 812) in the Appalachian Area. . .	91
Table 110--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and height to a 4-inch d.o.b. top for southern red oak (species 812) in the Appalachian Area.	91
Table 111--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., total-tree height and height to a saw-log top for northern red oak (species 833) in the Appalachian Area.	92
Table 112--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., height to a 4-inch d.o.b. top and height to a saw-log top for northern red oak (species 833) in the Appalachian Area.	93
Table 113--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., height to a 9-inch d.o.b. top and height to a saw-log top for northern red oak (species 833) in the Appalachian Area.	94
Table 114--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and total-tree height for northern red oak (species 833) in the Appalachian Area. . .	95
Table 115--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and height to a 4-inch d.o.b. top for northern red oak (species 833) in the Appalachian Area.	95
Table 116--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., total-tree height and height to a saw-log top for black oak (species 837) in the Appalachian Area.	96
Table 117--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., height to a 4-inch d.o.b. top and height to a saw-log top for black oak (species 837) in the Appalachian Area.	97
Table 118--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., height to a 9-inch d.o.b. top and height to a saw-log top for black oak (species 837) in the Appalachian Area.	98
Table 119--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and total-tree height for black oak (species 837) in the Appalachian Area.	99
Table 120--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and height to a 4-inch d.o.b. top for black oak (species 837) in the Appalachian Area.	99

Table 133--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., height to a 9-inch d.o.b. top and height to a saw-log top for black locust (species 901) in the Appalachian Area.	110
Table 134--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and total-tree height for black locust (species 901) in the Appalachian Area.	111
Table 135--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and height to a 4-inch d.o.b. top for black locust (species 901) in the Appalachian Area.	111
Table 136--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., total-tree height and height to a saw-log top for soft and hard hardwoods combined (species 90) in the Appalachian Area. ,	112
Table 137--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., height to a 4-inch d.o.b. top and height to a saw-log top for soft and hard hardwoods combined (species 90) in the Appalachian Area.	113
Table 138--Predicted stemwood volume to a saw-log merchantable top, and to 9-inch and 4-inch d.o.b. tops based on d.b.h., height to a 9-inch d.o.b. top and height to a saw-log top for soft and hard hardwoods combined (species 90) in the Appalachian Area.	114
Table 139--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and total-tree height for soft and hard hardwoods combined (species 90) in the Appalachian Area ,	115
Table 140--Predicted stemwood volume to a 4-inch d.o.b. top in pulpwood trees based on d.b.h. and height to a 4-inch d.o.b. top for soft and hard hardwoods combined (species 90) in the Appalachian Area.	115

Clark, Alexander III; Souter, Ray A. 1996. Stem cubic-foot volume tables for tree species in the Appalachian Area. Res. Pap. SE-292. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southern Research Station. 127 p.

Stemwood cubic-foot volume inside bark tables are presented for 20 species and 8 species groups based on equations used to estimate timber sale volumes on national forests in the Appalachian Area. Tables are based on form class measurement data for 2,870 trees sampled in the Appalachian Area and taper data collected across the South. A series of tables is presented for each species based on diameter at breast height (d.b.h.) in combination with total height and height to a Cinch diameter outside bark (d.o.b.) top. Volume tables are also presented based on d.b.h. in combination with height to a 7-inch d.o.b. top for softwoods and height to a 9-inch d.o.b. top for hardwoods. Sawtimber tables display saw-log stem volume by log (16-foot) and half-log (8-foot) intervals and also show **stemwood** volume to a 7-inch d.o.b. top for softwoods, to a 9-inch d.o.b. top for hardwoods, and to a 4-inch d.o.b. top for all species. Pulpwood tables show **stemwood** volume to a 4-inch d.o.b. top in 5-foot height intervals.

Keywords: Saw-log volume, pulpwood volume, form class.

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Keywords: Saw-log volume, pulpwood volume, form class.



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