**JULY 1926** 



L BULLETIN 39

University of Minnesota Agricultural Experiment Station

## Tables for Determining Contents of Standing Timber in Minnesota, Michigan, and Wisconsin

Compiled by Cloquet Forest Experiment Station Division of Forestru

Lake States Forest Experiment Station, Forest Service, U.S. Department of Agriculture



UNIVERSITY FARM, ST. PAUL

## INDEX TO VOLUME TABLES

September   Sept	Species and Unit of Measure	Table No.	Page
Beard measure		NEW COLUMN	
Scribner Decimal C			
Do.	Seribner Decimal C	1	
Total volume.   3   9	Do	2	8
Total volume	Cords—	9	0
Peeled volume   4		3	3
Board measure—Seribner Decimal C.		4	10
Board measure—Sribner Decimal C.   5   11	Ash white (Frarinus americana):		
Scribner Decimal C	Roard measure—		
Do			
Total volume			12
Total volume	Cords—	7	13
Peeled volume.			-
Do	Peeled volume	8	
Board measure	Do	9	15
Board measure	Aspen (Papulus tremuloides):		100
Scribner Decimal C.   11	Donal management	10	10
Cords-	International 1/2-inch kerf	11	
Merchantable volume			1
Cubic feet—	Morehantable volume	12	18
Total volume	Cubic feet—		1
Merchantable volume   14   20			19
Board measure—   15   21   27   23   25   25   26   26   27   27   28   27   28   28   29   29   29   29   29   29	Merchantable volume	14	20
Scribner   15   21			
Cords-	Board measure—	15	21
Cords			22
Total volume			
Total volume.	Total volume		23
Do.	Cubic feet—	10	0.
Merchantable volume	Total volume	18	
Basswood (Tilia plabra):   Board measure—   Scribner Decimal C   22   28     Cords—   23   20     Total and merchantable volume   23   20     Total and merchantable volume   24   30     Beech (Fagus grandifolia):   Board measure—   25   31     Cords—   Scribner Decimal C   25   31     Total and merchantable volume   26   32     Total and merchantable volume   27   33     Birch, paper (Betula papyrifera):   27   33     Birch, paper (Betula papyrifera):   28   34     Cords—   Total volume   28   34     Total volume   29   35     Birch, yellow (Betula lutae):   30   31     Birch, yellow (Betula lutae):   Board measure—   Scribner Decimal C   31   37     Cords—   Total volume   32   33   33     Total volume   32   33     Total volume   32   33     Total volume   32   33     Total volume   32   33     Total volume   33   34     Total volume   34     Total volume   35     Total volume   36     Tot	Do		
Basswood (Tilia glabra):         22         28           Board measure—         Scribner Decimal C         22         28           Cords—         Total and merchantable volume         23         20           Cubic feet—         Total and merchantable volume         24         30           Beech (Fagus grandifolia):         25         31           Board measure—         25         31           Scribner Decimal C         25         31           Cords—         26         32           Total and merchantable volume         26         32           Birch, paper (Betula papyrifera):         27         33           Cords—         28         34           Merchantable volume         28         34           Cubic feet—         29         33           Merchantable volume         29         33           Birch, yellow (Betula lutea):         30         30           Birch, yellow (Betula lutea):         30         31         3           Board measure—         8         34         34           Cords—         37         31         32           Total volume         32         33           Total volume         32		21	27
Board measure— Seribner Decimal C   22   22   22   22   22   22   25			
Scribner Decimal C   22   28	Roard measure—		-
Total and merchantable volume	Scribner Decimal C		28
Cubic feet—         24         30           Beech (Fagus grandifolia):         25         31           Board measure—         Scribner Decimal C         25         31           Cords—         Total and merchantable volume         26         33           Cubic feet—         Total and merchantable volume         27         33           Birch, paper (Betula papprifera):         20         33           Cords—         28         36           Cubic feet—         29         33           Merchantable volume         29         33           Birch, yellow (Betula lutea):         30         30           Birch, yellow (Betula lutea):         30         31           Board measure—         Scribner Decimal C         31         3           Cords—         32         33           Total volume         32         3	Cords—	00	000
Total and merchantable volume   24   36			29
Beech (Fagus grandifolia):         25         31           Roard measure—         26         32           Scribner Decimal C_         26         32           Cords—         26         32           Total and merchantable volume.         27         33           Birch, paper (Betula papyrifera):         27         33           Merchantable volume.         28         34           Cubic feet—         29         33           Total volume.         29         33           Birch, yellow (Betula lutea):         30         30           Board measure—         Scribner Decimal C.         31         3           Cords—         Total volume.         32         3           Cubic feet—         32         3	Cubic feet—	94	30
Board measure— Seribner Decimal C	Roseh (Fame grandifolia):		00
Scriber Decimal C			
Total and merchantable volume   26   33	Scribner Decimal C	25	31
Cubic feet—         27         33           Total and merchantable volume.         27         33           Birch, paper [Betula papyrifera]:         28         36           Cords—         28         36           Merchantable volume.         29         33           Merchantable volume.         30         36           Birch, yellow (Betula lutea):         30         31           Board measure—         Scribner Decimal C.         31         36           Cords—         7         7         7         7         7         7         7         7         32         33         33         33         33         34		00	1 00
Total and merchantable volume   27   33		26	32
Birch, paper (Betula papyrifera):   Cords	Total and merchantable volume	27	33
Cords		21	-
Cubic feet—         29         3.           Total volume	Cords—		
Total volume.   29   33   36   36   37   39   39   39   39   39   39   39	Merchantable volume	28	34
Merchantable volume   30   30   30   30   30   30   30   3			
Birch, yellow (Betula lutea):   Board measure—   Sirbner Decimal C.   31   31   31   31   31   31   31   3			
Scribner Decimal C_   31   31   31   31   31   31   31   3		30	30
Scribner Decimal C_   31   31   31   31   31   31   31   3	Board measure.		THE .
Cords	Scribner Decimal C	31	37
Total volume 32 31 Cubic feet—			
	Total volume	32	38
Total volume 33   3		33	39

## INDEX TO VOLUME TABLES-Continued

Species and Unit of Measure	Table No.	Page
Pine, Jack (Pinus banksiana):		
Daniel managemen		
International 1/8-inch kerf	61	67
Scribner Decimal C.	0.0	68
Do	63	69
Condo		
Merchantable volume	64	70
Cubic feet—		
Total volume	65	71
Merchantable volume		72
Ties		73
Pine, red (Pinus resinosa):		101
Board measure—		
Scribner Decimal C	68	74
Do		75
Cubic feet—		
Peeled volume	70	76
Total, exclusive of stump	71	77
Total, exclusive of soump		1
Pine, white (Pinus strobus):		
Board measure— Scribner	72	78
Scribner Decimal C	73	79
		80
Do		00
Cords—	75	81
Merchantable volume		01
Cubic feet—	76	82
Total volume	/0	02
Spruce, black (Picea mariana):		
Cords—	-77	83
Merchantable volume		00
Cubic feet—	1 =0	84
Total volume		
Do		85
Merchantable volume		86
Do.	81	87
Spruce, white (Picea glauca):		
Cords—		
Merchantable volume	82	88
Cubic feet—	22	-
Total volume	83	89
Do		90
Do		91
Do		92
Merchantable volume		93
Do		94
Do		95
Tamarack (Larix laricina):		1
Board measure—		
Scribner Decimal C	90	96
Do		97
Cubic feet—	41	
Peeled volume	92	98
Ties.	0.0	99
1108		00

## INTRODUCTION

A knowledge of the contents of standing trees, whether in board measure, cubic feet, cords, ties, or other forest products is basic to any woods operation. Tables showing the contents of average trees of given sizes according to some unit of measure are known as volume tables. Such tables are used in estimating the amount of standing timber for purposes of purchase or sale and for logging operations; and to determine the stand and growth of timber for the purpose of appraisal of fire damage, trespass, and forest valuation, and management in general; and also for all kinds of scientific studies involving volume, growth, and yield. The need of volume tables is therefore apparent.

The purpose of this bulletin is to bring together in a handy and readily available form the volume tables for the forest trees of the Lake States—Michigan, Wisconsin, and Minnesota. Some 93 volume tables, covering 25 species, have been included. Of these, 31 tables have not been published hitherto and for 15 tables the actual field data were collected and the computations made by the Cloquet and Lake States Forest Experiment Stations.

Very few or no volume tables for the Lake States region are as yet available for such species as balsam; white cedar; cottonwood; elm; hickories; red maple; black, bur, red, scarlet, and white oaks; second-growth red and white pines; and black spruce. As these are important commerical species in the Lake States, it was thought advisable, at least for the present, to include for these species volume tables prepared in other regions, as the Northeast. These tables may be too high or too low for local conditions in the Lake States. They are, however, the best that are available at present, and if used with occasional checks, may prove serviceable.

The volume tables in this bulletin are not equally reliable. Some are not based on a sufficiently large number of trees to be fully representative of all conditions. Others were not compiled with the same thoroness or by the same methods and therefore are not truly comparable. On each table, the number of trees upon which it is based, the locality in which the data were collected, the name of the person who collected the field data, and the compilor of the table, if it were not done by the same person, are indicated. Other information is given that may prove helpful in an intelligent application of the tables.

All volume tables have limitations and their use requires judgment and knowledge of conditions under which they are to be applied.

Volume tables are based on measurements taken on a large number of felled trees. The values given are therefore average values. It can not be expected that a single tree taken at random will have the exact contents given in the table. It is only by applying the average values to a large number of trees that a fairly reliable estimate of the contents of standing timber can be secured.