



# Using a Biltmore Stick



Maine Forest Service  
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A Biltmore stick is a simple tool used for measuring diameter, height, and volume of standing trees and logs. There are multiple sides and scales to the stick – it is critical that you are using the correct side!

If you are measuring a TREE that is standing, use the side that says “TREE SCALE”:



If you are measuring a LOG, usually on the ground, use the side that says”LOG SCALE”:

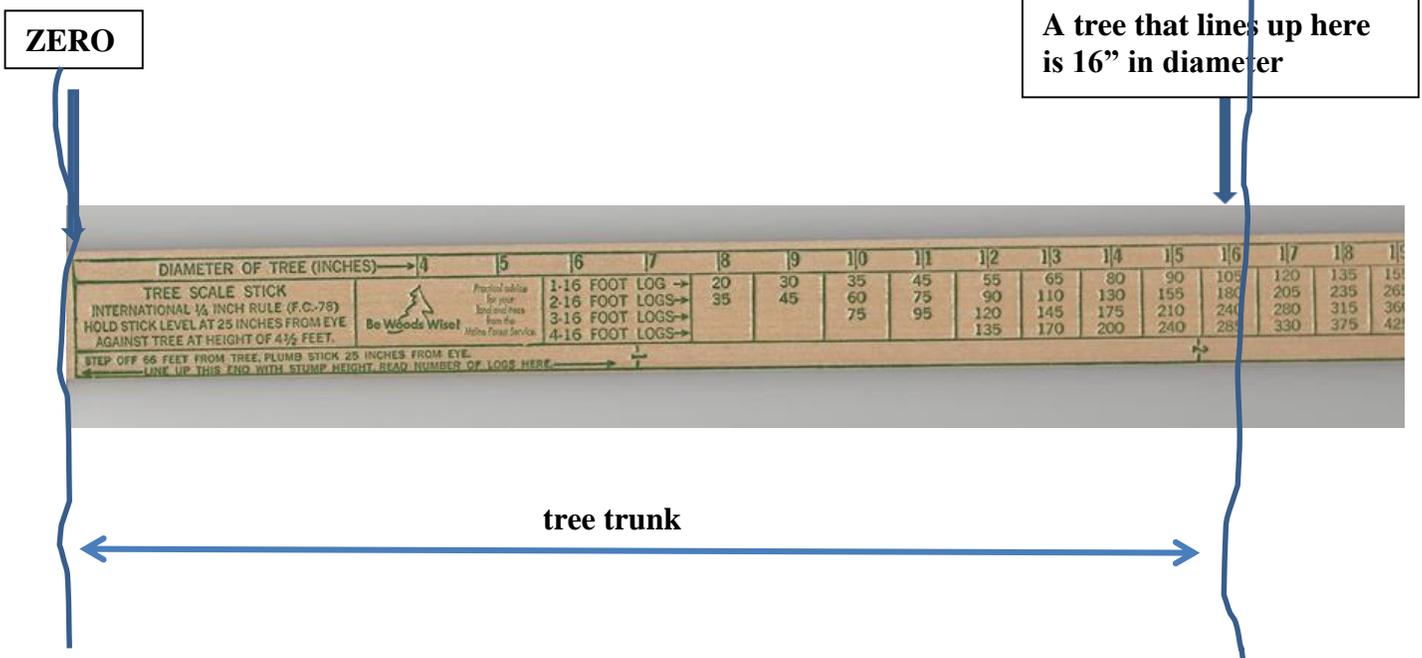


## Measuring trees:

Using a Biltmore stick to measure DIAMETER of a STANDING TREE:

NOTE: the directions are written on the stick!!!

1. Find the correct height at which to measure – measure 4.5 feet about the ground on the high side of the tree.
2. Hold the stick against the tree and 25” from your dominant eye.
3. Hold the stick level (or at a right angle to the lean of the tree).
4. Adjust the stick so the ZERO end is lined up with one side of the tree trunk.
5. Without moving your head or the stick, shift your eyes and sight over the stick to the other edge of the tree.
6. Read off the diameter to the nearest inch directly in line with the edge of the tree.



Using the VOLUME table for a STANDING TREE:

1. Estimate the number of 16-foot logs in the standing tree.
2. Read off the volume for the number of logs in a tree of a given diameter.
  - a. E.g. a tree that is 16 inches in diameter, and has 2 16-foot logs in it has an estimated volume of 180 board feet.

DIAMETER OF TREE (INCHES)	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1-16 FOOT LOGS →			20	30	35	45	55	65	80	90	105	120	135	155	165	
2-16 FOOT LOGS →			35	45	60	75	95	110	135	155	180	205	235	265		
3-16 FOOT LOGS →					75	95	120	145	175	210	240	285	330	375	425	
4-16 FOOT LOGS →							135	170	200	240	285	330	375	425		

## Measuring logs:

Using a Biltmore stick to measure DIAMETER of a LOG:

NOTE: the directions are written on the stick!!!

1. Measure the log
  - a. at the small end,
  - b. inside the bark (measure the wood only).
2. If the log is not round, measure in two directions and take the average.

Using the VOLUME table of a LOG:

1. Measure the diameter of the log at the small end, inside the bark.
2. Measure the length of the log.
3. Use the table to estimate the volume of the log.
  - a. E.g. a log with a 12-inch top diameter inside the bark, that is 14 feet long, has an estimated volume of 85 board feet

DIAMETER OF LOG AT SMALL END (INCHES)	4	5	6	7	8	9	10	11	12	13
8 FOOT LOGS →		5	10	10	15	20	30	35	45	55
10 FOOT LOGS →		5	10	15	20	30	35	45	55	70
12 FOOT LOGS →		10	15	20	25	35	45	55	70	85
14 FOOT LOGS →		10	15	25	35	45	55	70	85	100
16 FOOT LOGS →		10	20	30	40	50	65	80	95	115

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