

Estimating the Weight and Value of Individual Southern Pine Trees

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This publication presents a quick guide to estimate value of individual southern pine trees in merchantable size classes within a stand. **PLEASE NOTE that this publication uses assumptions for volume, weight, and dollar values of individual trees. Actual pine volume and weight can vary depending on pine species, stem taper, stand, site, growth rate, and market conditions, all of which affect pine value.** Dead trees lose weight over time so accurate weight estimations will be reduced when measuring dead trees. This guide is only intended to assist forest landowners, agents, foresters, and land managers to estimate individual southern pine trees. Stumpage prices fluctuate over time in response to seasonal conditions, markets, and timber quality, among other factors. This publication is not intended to substitute for an actual timber cruise.

How to Use This Publication

In Table 1, individual tree weights and values are presented for pulpwood, chip-n-saw and sawtimber class pines based on diameter at breast height (dbh or 4.5 feet above groundline; measured to nearest inch) and total tree height (measured to nearest 10 feet) and stumpage values. Stumpage values used to calculate individual tree values should come from your area for each product class. Table 1 has stumpage price averages from Timber Mart-South for Georgia 4th qtr 2016. Volume then weight estimates for individual trees are derived from tree volume tables by C.O. Minor using Form Class 75-79 published in the USFS Service Forester's Handbook (1986) and from an UGA Experiment Station Bulletin by Bailey and others (1985). Information from this table can be used to estimate the weight and value of individual pine trees.

Evaluating Pine Weight and Value in a Stand:

In the stand: Estimate or measure the dbhs (diameter @ 4.5 feet) and heights southern pines then tally each tree by dbh (to nearest inch) and height (to nearest 10 feet) class.

In Table 1: (1) Obtain current local pine pulpwood, chip-n-saw, and sawtimber per ton prices and derive "local tree value" by multiplying current price by "tons/tree" from column C for each dbh and height class and enter in column F. (2) Tally the number of pine trees by dbh and total height in column G. (3) Multiply value per tree in column F by the number of trees in each dbh and height class (column G) for the total value of trees in that dbh and height class and enter in column H. (4) Vertically total the value for each dbh and height class in column H to determine total value per area you tallied within the stand.

Table 1. Estimated weight and value of individual southern pine trees

A	B	C	D	E	F	G	H
DBH (in)	Total Height (ft)	Tons/Tree ¹ (green wt)	Price/Ton ²	4 th qtr 2016 GA TM-S Per Tree Value	Local tree value	# trees	Value of trees
5	40	0.0778	\$11.00	\$0.86			
	50	0.0912		\$1.00			
6	40	0.121	\$11.00	\$1.33			
	50	0.139		\$1.53			
7	40	0.166	\$11.00	\$1.83			
	50	0.196		\$2.16			
	60	0.221		\$2.43			
8	50	0.257	\$11.00	\$2.83			
	60	0.292		\$3.21			
	70	0.327		\$3.60			
9	50	0.244	\$18.00	\$4.39			
	60	0.290		\$5.23			
	70	0.334		\$7.24			
10	60	0.378	\$18.00	\$6.80			
	70	0.436		\$7.85			
	80	0.494		\$8.89			
11	60	0.471	\$18.00	\$8.48			
	70	0.544		\$9.79			
	80	0.617		\$11.11			
12	60	0.570	\$18.00	\$10.26			
	70	0.659		\$11.86			
	80	0.746		\$13.43			
13	60	0.675	\$25.00	\$16.88			
	70	0.780		\$19.50			
	80	0.884		\$22.10			
14	60	0.786	\$25.00	\$19.65			
	70	0.908		\$22.70			
	80	1.03		\$25.75			
15	70	1.04	\$25.00	\$26.00			
	80	1.18		\$29.50			
	90	1.32		\$33.00			
16	70	1.19	\$25.00	\$29.75			
	80	1.34		\$33.50			
	90	1.50		\$37.50			
Total tree value (vertical total of column H) =							

¹Tonnage estimates (wood+bark) derived from *Merchantable Rough Cords using Total Tree Height* USFS Service Forester's Handbook. Misc. Rep. R8-MR 11. July 1986. p.15 and *Stand Structure and Yields for Site-Prepared Loblolly Pine Plantations in the Piedmont and Upper Coastal Plain of AL, GA and SC*. By Bailey, Grider, Rheney and Pienaar. 1985. UGA Exp. Stn. Bulletin.

²Price per ton averages from Timber Mart-South (TM-S) for Georgia 4th qtr 2016.

Approximate dbh & price ranges (based on TM-S from 2001-2016) for product classes:

Georgia pine product classes, dbh class, defect criteria, and price range since 2001:

Pulpwood: 5 through 8" dbh class+larger diameter trees with a visible defect to a 3" top outside bark (ob)=\$6-15/ton

Chip-n-saw 8 through 12" dbh class with no visible defects to a 6" top ob = \$14-30/ton

Sawtimber greater than 12" dbh class with no visible defects to a 6" top ob = \$24-42/ton

It is recommended to use local, current pine pulpwood, chip-n-saw and sawtimber prices.

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