



Estimating the Volume of Firewood in a Tree

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Firewood is an important resource. Cutting firewood improves our woodlands by releasing and retaining the more valuable trees for other owner objectives such as timber or wildlife mast production. Use this table to estimate the amount of firewood available in a tree of a certain diameter. Tree diameter is measured at 4.5 ft above ground and defined as “diameter at breast height” or DBH. Estimates from this chart assume that you utilize the main stem and all limb wood until limb diameter reaches 4 inches. Some owners will utilize limbs smaller than 4 inches. For example, a 10” DBH tree will yield approximately 0.15 full cords and a 14” DBH tree will yield approximately 0.33 full cords. Flag trees you plan to cut, tally their diameter and estimated cordwood volume, and determine if you have enough firewood for the year. Plan ahead with your harvest to allow 12 months for seasoning of the wood after it has been cut, split and stacked under cover. Use a safe chainsaw, appropriate personal protective equipment, and directional felling techniques to fell trees. Cord volume estimates are based on computer software computations available in the “NED-2” package through the US Forest Service. <http://nrs.fs.fed.us/tools/ned/>

DBH (inches)	Average Cords per Tree	# Trees Per Cord
6	0.03	33.3
8	0.08	12.5
10	0.15	6.7
12	0.23	4.3
14	0.33	3.0
16	0.45	2.2
18	0.58	1.7
20	0.73	1.4
22	1	1.0

Definitions:

Cord, full or standard = a stack of wood measuring 128 cubic feet, including air and wood. Traditionally thought of as 4 ft tall x 8 ft long x 4 ft deep. A full cord weighs approximately 5,000 pounds.

Cord, face = a stack of wood that is 4 ft x 8 ft on the face (32 sq. ft.) and of some specified depth or stick length.

DBH = Diameter at Breast Height, measured at 4.5 ft above ground

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Adapted from:

<http://mb-soft.com/juca/print/firewood.html>

http://www.thelograck.com/firewood_rating_chart.html

Species	Easy to Split	Heavy Smoke?	Throw Sparks?	Aroma	Weight of Seasoned Cord (lbs)	Heat Produced per Cord (M Btu)
Hickory	No	No	No/Mod	Good	4,327	27.7
Eastern Hornbeam	.	.	.	.	4,267	27.3
Blue Beech	Yes	No	No/Few	Minim	3,890	26.8
Black Birch	Yes	No	No/Mod	Minim	3,890	26.8
Black Locust	.	.	None	Minim	3,890	26.8
Apple	.	.	Few	Excel	4,140	26.5
White Oak	Yes	No	No	.	4,012	25.7
Sugar or Hard Maple	Yes	No	No	.	.	24 - 29
Red Oak	Yes	No	No/Few	Fair	3,757	24
Beech	Yes	No	No/Few	Minim	3,757	24
White Ash	Yes	No	No/Few	Minim	3,689	23.6
Yellow Birch	Yes	No	No/Mod	Minim	3,689	23.6
Hackberry	.	.	.	.	3,247	20.8
Walnut	Yes	No	No	.	.	20.3
Grey Birch	Yes	No	No/Mod	Minim	3,179	20.3
Paper Birch	Yes	No	No/Mod	Minim	3,179	20.3
Cherry	Yes	No	No/Few	Excel	3,120	20
Black Cherry	Yes	No	No/Few	Excel	2,880	19.9
American Elm	No !	Med	No/None	Fair	3,052	19.5
Black Ash	Yes	No	No/Few	Minim	2,992	19.1
Red or Soft Maple	Medium	No	No	.	2,924	18.7
Sycamore	No	Med	No	.	.	18.5
Boxelder	.	.	.	.	2,797	17.9
Aspen	Yes	Med	No	.	2,295	14.7
Butternut	.	.	.	.	2,100	14.5
Willow	.	.	.	.	2,100	14.5
Basswood	Yes	Med	No	.	2,108	13.5
Cottonwood	Yes	Med	No	.	2,108	13.5
Conifer average		Med	Some	Fair	2555	16.5