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Firewood Selection

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Selection of firewood species is important if you are to be satisfied with the performance of your fireplace or stove. People's preferences differ widely in the use of wood burning within the home. For example, if you live in northern Idaho and would like to have an aesthetic fire that starts easily and burns rapidly, you might select a mixture of grand fir and white pine. If you are concerned with maximum heat output, Douglas-fir or western larch are good choices. A mixture of rapid burning wood such as white pine and a slower burning wood such as larch provides a good average fire.

The tables in this publication show the types of wood available by geographic regions within Idaho and some of the characteristics of various woods. The wood species are listed in alphabetical order, not preferential order.

Firewood supplies are best in forests located furthest from cities. Closer to large population areas, the demand for wood outstrips the availability of the preferred species. Generally, dead trees are the most desirable because they can be split and burned immediately without needing a seasoning period. Dead trees are the only type available from the U.S. Forest Service and the State of Idaho when used for home use.

Wood Amounts Required

The amount of wood you will need depends on the species (heat value) and the amount of fireplace or

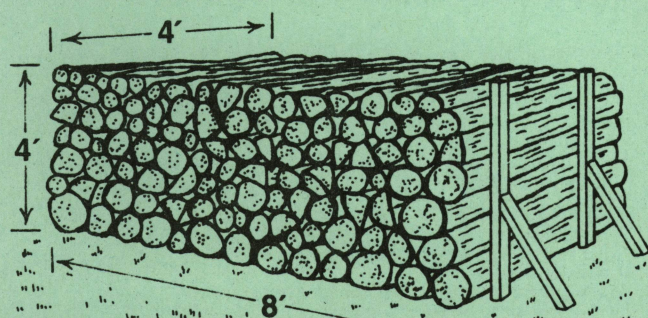
stove use per day. Generally, if you burn a fire in a traditional fireplace (low efficiency) 3 to 4 nights a week, you will probably require about 2 cords per winter. However, if you have a fire going all day everyday, you could burn up to 10 cords. The more efficient, slow-combustion stoves on the market today will reduce this by more than one-half. Table 5 shows the average number of cords that can be obtained per tree by tree diameter for medium height trees of several Idaho softwood species.

If you purchase firewood, only buy wood that is stacked into cords or multiples of this basic unit. A cord is defined as a stack (not a rounded pile) of split wood containing 128 cubic foot volume (including air spaces between the pieces of wood). A standard cord is 4 feet high, 8 feet wide and 4 feet deep. However, any stack of wood which has a volume of 128 cubic feet contains a cord of wood. Generally, this traditional unit contains 80 cubic feet of solid wood.

To calculate the number of cords in a stack of wood, multiply the pile's height by its length and then by stick length (all in feet). Then divide by 128.

Table 1. Types of wood available by county, northern Idaho.

	Boundary	Bonner	Kootenai	Benewah	Shoshone	Latah	Clearwater	Nez Perce	Lewis	Idaho
Aspen	X	X	X	X	X	X	X	X	X	X
Cottonwood	X	X	X	X	X	X	X	X	X	X
Douglas-fir (red fir)	X	X	X	X	X	X	X	X	X	X
Engelmann spruce	X	X	X	X	X	X	X			X
Grand fir (white fir)	X	X	X	X	X	X	X	X		X
Hemlock	X	X	X	X	X	X	X			
Juniper	X	X								
Lodgepole pine	X	X	X	X	X	X				X
Paper birch	X	X	X	X	X	X	X	X	X	X
Ponderosa pine	X	X	X	X	X	X	X	X	X	X
Red Alder	X	X	X			X				X
Subalpine fir	X	X	X	X	X	X				X
Larch (tamarack)	X	X	X	X	X	X	X	X	X	X
Western white pine	X	X	X	X	X	X				X
Willow						X		X	X	X



Tables 1-4. Adapted from Johnson, R. 1978. Idaho

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Table 2. Types of wood available by county, central Idaho.

	Lemhi	Custer	Butte	Camas	Blaine	Gooding	Lincoln	Minidoka	Jerome	Twin Falls	Cassia
Aspen	X	X	X	X	X						X
Cottonwood	X	X			X					X	
Douglas-fir (red fir)	X	X	X	X	X						X
Engelmann spruce	X	X	X	X	X						X
Grand fir (white fir)	X										
Juniper	X	X	X			X			X	X	X
Lodgepole pine	X	X	X	X	X						X
Ponderosa pine	X	X									
Subalpine fir	X	X			X						
Willow	X	X	X	X	X	X	X	X	X	X	X

Table 4. Types of wood available by county, eastern Idaho.

	Clark	Fremont	Jefferson	Madison	Teton	Bingham	Bonneville	Power	Bannock	Caribou	Oneida	Franklin	Bear Lake
Aspen	X	X		X	X		X	X	X	X	X	X	X
Cottonwood				X									
Douglas-fir (red fir)	X	X		X	X	X	X	X	X	X	X	X	X
Engelmann spruce	X	X		X		X	X	X	X	X	X	X	X
Juniper	X	X	X	X		X	X	X	X	X	X	X	X
Limber pine	X	X		X		X	X	X	X				X
Lodgepole pine	X	X		X		X		X	X	X	X	X	X
Subalpine fir	X	X					X	X	X	X	X	X	X
Willow	X	X	X	X	X	X	X	X	X	X	X	X	X

Table 3. Types of wood available by county, southwestern Idaho.

	Adams	Valley	Washington	Payette	Gem	Boise	Canyon	Ada	Elmore	Owyhee
Aspen	X	X	X		X	X			X	X
Cottonwood	X	X	X	X	X	X	X	X	X	X
Douglas-fir (red fir)	X	X	X		X	X			X	X
Engelmann spruce	X	X	X		X	X			X	
Grand fir (white fir)	X	X			X					
Juniper			X						X	X
Limber pine	X									X
Lodgepole pine	X	X	X			X			X	
Ponderosa pine	X	X	X			X			X	
Subalpine fir	X	X	X		X	X			X	
Larch (tamarack)	X	X			X					
Willow	X	X	X	X	X	X	X	X	X	X

Table 5. Table for estimated cords-per-tree.*

DBH** (inches)	Cords per tree	Number trees to make a cord
4	0.01	67
6	0.04	23
8	0.09	10.5
10	0.17	5.8
12	0.28	3.5
14	0.41	2.4
16	0.58	1.7
18	0.7	1.3
20	1.0	1.00
22	1.2	0.82
24	1.5	0.67
26	1.8	0.54
28	2.2	0.46
30	2.5	0.40

*Source: Burlison, V. H., and Everett Ellis. 1955. Fuel values of Idaho woods. Univ. of Idaho Agr. Ext. Serv. Bul. 228.

**Diameter outside bark at 4½ feet above ground level.

Table 6. Fuelwood characteristics.¹

Species	Heat ²	Weight ³	Ease of splitting	Ease of starting	Coaling qualities	Sparks	Fragrance
Alder	M-L	2540	easy	fair	good	moderate	slight
Apple	VH	4400	difficult	difficult	excellent	few	excellent
Ash	H	3440	easy-mod.	fair-diff.	good-exc.	few	slight
Aspen	L	2160	easy	easy	good	few	slight
Birch	M	3040	easy	easy	good	moderate	slight
Boxelder	M-H	3200	moderate	fair-diff.	excellent	many	fair
Cedar	M-L	2060	easy	easy	poor	many	slight
Cottonwood	L	2160	easy	easy	good	moderate	slight
Douglas-fir (red fir)	M	2970	easy	easy	fair	moderate	slight
Elm	M	2260	very difficult	fair	good	very few	fair
Grand/subalpine (white fir)	L	2160	moderate	easy	poor	moderate	good
Hemlock	M-L	2700	easy	easy	poor	many	good
Juniper	M	3150	difficult	fair	good	many	good
Larch (tamarack)	M	3330	easy-mod.	easy	fair	many	slight
Locust	VH	3840	very difficult	difficult	excellent	very few	slight
Lodgepole pine	M-L	2610	easy	easy	fair	moderate	good
Ponderosa pine	M-L	2240	moderate	fair	fair	moderate	good
Poplar	L	2080	easy	easy	fair	moderate	bitter
Spruce	L	2070	easy	easy	poor	few	slight
White pine	M-L	2250	easy	easy	poor	moderate	good
Willow	L	2540	easy	fair	poor	moderate	slight

¹Modified from Hansen, H. J. 1977. Fuelwood facts. Western Reg. Agr. Eng. Serv. Publ. 70, Oregon State Univ., Corvallis.

²VH — very high; H — high; M — medium; L — low.

³Approximate weight, lb/cord, for air-seasoned (20% moisture content) wood.

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