



Alamosa Trees *by Marilyn Loser*

Visiting "Big Tree" is worth a road trip

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The sign at the trailhead just south of Beaver Creek Reservoir states, "Biggest tree on the Rio Grande National Forest." At the end of a 1/3 mile hike you're rewarded with a view of a huge Douglas-Fir with a 66-inch diameter. It's the second largest Douglas-Fir in Colorado according to the Colorado Tree Coalition Champion Tree list. It towers to 111 feet and has a crown spread of 40 feet.

It's closely surrounded on the hillside by other Douglas-Firs and Aspens so it's a bit hard to see the top. It has magnificent, thick, gnarled bark and the soft-needled branches start about 30 feet up.

The name is typically hyphenated, indicating it is not a true fir (abies). Its botanical name is *pseudotsuga* and the ones in our area are the Rocky Mountain Douglas-Fir (RMDF) (*pseudotsuga menziesii glauca*). These tend to be smaller and slower growing than their northwest US coastal relatives. Douglas-Fir is the second-tallest conifer in the world; only the coast redwood soars higher. If you've ever purchased a Christmas tree grown on a tree farm, chances are it was a Douglas-Fir from the west coast.

It is not uncommon for a Douglas-Fir to live for 600 to 800 years. One reason for the longevity is its thick bark, which helps protect the tree from fire as well as from attack by insects and fungus that may cause the tree to rot. Douglas-Fir bark grows on the outside of the cambium layer, pushing older bark out. The tree keeps growing bark for years, much longer than other trees, so ends up with a layer up to 14 inches thick.

We're lucky to have this old tree. During the construction of the railroad from the San Luis Valley to Durango in the early 1880's, many Douglas-Firs in the area were cut down, floated to South Fork on the south fork of the Rio Grande, cut into ties, and loaded on the railroad.

How old is this grand master? I really wonder. It's not as straight forward as it might seem. Unless you core a tree, count and cross date tree rings, you can only estimate the age.

Cross dating is the most accurate tree dating method and is the basic principle of dendrochronology (the science of dating things using tree rings). A small-diameter cylindrical sample is removed from a tree; all the way from the trunk to its center. Cores are compared to other cores from trees in the area. If a tree core is from a live specimen, the annual tree rings are counted from the outside (most recent) in.

Tree rings widths vary, with narrower rings indicating low moisture years and wider ones higher moisture years. Douglas-Fir as well as Ponderosa Pine and Pinon Pine are very moisture sensitive, so tree-ring size correlates well with environmental moisture levels. A well-watered yard tree will produce a consistent series of similar tree rings while a tree growing in the wild will reflect climate variations.

To estimate a tree's age, one website suggests using a tree's diameter in inches and multiplying it by a "multiplier" which is 5 for Douglas-Firs. Using this formula, our tree would be 330 years old. However, tree expert Dean Swift says, "I imagine it's this old, at least. Beaver Creek is not a particularly moist area, so I expect that this tree has grown slower than trees in areas that receive more precipitation."

The oldest, accurately-dated inland Douglas-Fir in the United States is in northern New Mexico and is listed as 1275 years old. This longevity is uncommon. However, it grows on a relatively barren lava field; tree enthusiasts suggest this has protected it from fire, animals, and humans.

Dr. Connie Woodhouse and fellow researchers from the University of Arizona have cross dated three old RMDFs in Colorado that range in age from 845 to 870 years old. I was unable to find out exactly where these trees are located or their height and circumference.

My guess is that "Big Tree" is between 450 and 850 years old. For photos of "Big Tree" visit AlamosaTrees.net.

To visit "Big Tree", head west on US 160, travel through South Fork, turn south (left) 1.4 miles at Beaver Creek Rd. (Forest Rd. 20), go 6.4 miles. The trail head is just past Cross Creek Campground, on the left (east).

State Forester Adam Moore sent me the link to Colorado's champion tree registry if you're interested in other large Colorado trees. <http://www.coloradotrees.org/champions/registry.htm>

"Climb the mountains and get their good tidings. Nature's peace will flow into you as sunshine flows into trees. The winds will blow their own freshness into you, and the storms their energy, while cares will drop off like autumn leaves." John Muir