

# The Giant Sequoias

Last week I was on vacation with my wife, Jamie and her daughter, Kirsten. Each year Jamie takes me from my work off on an adventure to places that are full of beautiful trees, rivers, lakes, forest animals, and of course fabulous terrain. In the past we have visited southern Oregon, Crater Lake, Zion and Bryce Canyons, Yosemite, and this year we spent a week in Sequoia and Kings Canyon National Parks. As usual, I was left speechless by the sights, sounds, and smells of these wondrous parks. Some say I could never be left speechless.

Seeing the trees in their natural environment soothes my soul. At Sequoia National Park I was able to learn quite a bit about the wondrous Sequoia trees. For those of you who have not had the opportunity to see these fabulous trees, I thought I'd tell you a little about the trees that grow in the giant forests of Sequoia.

The General Sherman Tree is known as the largest tree on earth. Scientist estimates it's age at approximately 2,200 years old. Each year the General Sherman tree grows new wood which is equal to growing a similar 60 foot tall tree that is one foot in diameter. General Sherman Tree is about 275 feet tall, 103 feet in circumference, and its largest branch is about 7 feet in diameter. This tree has survived fires, draughts, possible lightning strikes, and many other environmental factors.

Naturally, sequoias only grow on the western slopes of the Sierras primarily between 5,000 and 7,000 feet elevations. Each year mature trees produce cones about the size of an egg, which contain about 400,000 seeds that are about the size of an oat flake. These cones can remain on the trees for up to 20 years. A small number of seeds are disbursed by squirrels and borers. Typically the seeds do not fall until after a fire. Fires, which the sequoias are able to withstand due to their thick, fire retardant bark, helps clear and sterilize the forest floor, and let sufficient light in for optimum growing conditions. Only about one in a billion seeds ever makes it to a mature tree. How do you like those odds? The seeds are unable to germinate and sprout in ground that is heavily covered by forest debris. Another good location for seeds to germinate and sprout is in soil behind the rootball of a tree that has fallen over.

This brings me to the point of how do sequoias die. They do not die of old age. Falling over is the number one killer of sequoias. This is fairly understandable considering their roots usually are no deeper than 5 feet. Their root system, however, spreads out a distance that is equal to the height of the tree. And, when the sequoias fall it is predominately uphill.

People wonder why the sequoias seem to be impervious to damage by insects and fire. The bark of the sequoia is about 31 inches thick and is primarily full of water as opposed to saps that burn easily. As the sequoia matures it looses its lower limbs so they are not susceptible to burning in a fire. Also, tannin is in the trees which insects and animals do not like. Not only does the tannin protect the trees, it means that when they fall over they lie on the forest floor for hundreds of years with very little decay.

Once a sequoia has been burned in a fire it will, over time, slowly grow bark that will close over any burns. The center of a sequoia is actually dead wood. Only the outer bark transfers nutrients from the upper foliage down to the roots and from the roots up to the leaves.

Curiously, young sequoias grow as tall as possible in their first years. Then they spend the rest of their lives adding additional bark as they become fatter and fatter (reminds me of people – grow tall, spread out).

There are approximately 75 Sequoia groves in the Sequoia and Kings Canyon National Park. Other trees, which can be found in these groves, are Sugar Pine, White Fir, and Incense-Cedar. Depending on the altitude you are at in the park, you will also find Pacific Dogwood, Black Oak, Western Azalea, and Bush Chinquapin.

Sequoia and Kings Canyon National Park is working hard to return the park to its natural state. Many structures have been removed which were located in the heart of many of the sequoia groves. Continuous impact by man in these areas was causing great damage to the trees. Also, fires that are started due to weather or the like are allowed to burn now. And, some controlled burns are being used to clear the forest floor of thick debris.

If you haven't had a chance to visit this park, I hope you are able to soon. You won't be disappointed. Beyond the trees, there is fishing, camping, lots of wild animals to see, wonderful hiking trails, caves to explore, meadows, huge granite mountains, rivers, lakes, and much more to behold.

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