



## Redwoods: California's Unique Heritage Under Threat

There are three types of redwood: the dawn redwood found in China; the giant sequoia redwood of California's Sierra Nevada; and the coast redwood of Northern California and Oregon.

Coast redwoods are the tallest trees in the world. They are also the fastest growing, adding as much as a foot per year.

Less than 5 percent of California's original old-growth coast redwoods remain today. The trees were logged aggressively for most of the 20<sup>th</sup> century, beginning with efforts to rebuild San Francisco after the 1906 earthquake and fire.

Nearly a fifth of all remaining old-growth redwoods grow on unprotected land.



Adapted to survive in Northern California fog, coast redwoods draw a third of their water from it. Redwoods provide water for surrounding vegetation by catching fog on their horizontal branches.

Because redwoods are uniquely calibrated to California's seasonal moisture patterns, they are especially vulnerable to climate change.

High in tannins, redwoods are exceptionally resistant to fungus and insect infestations.

Redwoods' thick, fibrous bark allows them to withstand wildfire. A surprising number of redwoods are blackened near the bottom, evidence that they have survived a fire.

Second-growth redwoods are also important. Many clear-cut forests now support trees that are several hundred years old. In some cases, experts can't tell the difference between a virgin-growth redwood and an old second-growth tree.

To preserve a stand of old-growth redwoods, ecologists say a buffer of untouched forest should be established around it. Connections between old-growth stands are also essential for wildlife and for the tree's long-term survival.

Second-growth stands may benefit from management efforts to foster old-growth characteristics, including a greater variety of surrounding vegetation, greater differentiation in age and size among the trees and the presence of important structural characteristics, such as snags.

Recent scientific studies suggest that selective timber harvesting is a valuable tool in helping second-growth redwood forests develop old-growth characteristics. The additional sunlight created by removal of carefully selected trees allows the dominant trees to grow taller faster. Larger trees provide the most desirable habitat for insects, amphibians, mammals and birds, including the threatened marbled murrelet.

**Sources:** Save the Redwoods League, including research by William Russell, Christopher Keyes and Andrew Chittick; Joel K. Bourne, Jr. "Redwoods: Super Trees," and Mike Fay, "Big Trees Teach a Broad Lesson," *National Geographic*, October 2009.