Coastal Redwood Community

What are redwoods and where are they found?

Renowned as the world's tallest tree (over 380 feet), the Coastal Redwood (Sequoia sempervirens) once inhabited vast regions of the earth. Redwoods are now found only in small isolated groves along a narrow belt about 500 miles long and not more than 35 miles wide from southwestern Oregon to northern California. Intolerant of salt spray, redwoods are typically found inland from the ocean shore. Occuring only in areas influenced by sea fog, the redwood's fire resistant bark and its ability to re-seed and grow from stump sprouts has allowed this ancient relic to survive.

Found in the wettest climate in the state with 38-120 inches of rain annually, the redwood community requires cool, moist and foggy conditions. The relationship between redwoods and fog creates a unique microclimate. The fog accumulates on the leaves, condenses and then falls to the forest floor where it benefits redwoods and other plants and animals alike.

What plants and animals live in the redwoods?

Sam Stewart, BonTerra Consulting 2005

Redwood forests tend to be very dark and quiet places. The thick canopy of overlapping branches reduces the amount of sunlight that reaches the forest floor. Shade tolerant plants, such as ferns, redwood sorrel and wild ginger, thrive. Some fruit bearing plants such as huckleberry can be found on the sunnier forest edge, but there is not enough sunlight to support a great diversity of plants. Because of this, there is not enough food to support a wide variety of wildlife.

Some of the more common animals that do live in the redwoods are Douglas squirrels, chipmunks, Anna's Hummingbird, Wilson's Warbler and banana slugs. Rivers and streams in redwood communities support a variety of aquatic organisms including steelhead trout. The streams provide water for the trees while the trees stabilize the banks with their roots and provide shade that keeps the streams cool to support trout and other organisms.

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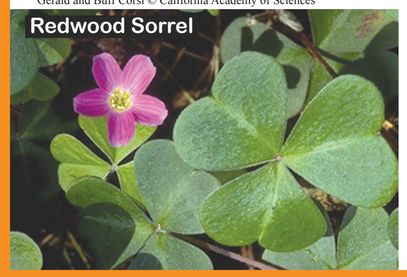

A few large animals such as black-tailed deer, black bear and elk can be seen on occasion wandering through more remote regions of the redwoods. There are also a few elusive animals that live in the old growth forests of redwoods including the endangered spotted owl and the marbled murrelet.

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Why are redwoods unique?

In addition to being the world's tallest trees, coastal redwoods can atttain a diameter of up to 16 feet and can live up to 2,000 years! Genetically speaking, many redwoods are older than realized because of their ability to regenerate from buds around the base, roots and burls.

In older groves of redwoods there are often rings of trees known as "fairy rings" or "fire rings." Fairy rings of redwood trees are formed when the parent tree dies, burns or is cut down. The buds around the burls or base of the tree sprout, containing the same genetic material as the original tree.

The ability to sprout new roots not only helps redwoods survive fire, but also helps the trees to survive floods. The deposition of silt from floods tends to smother and kill most trees, but redwoods are adapted to the accumulation of silt and humus around the base.

Jo-Ann Ordano © California Academy of Sciences

Redwoods are also resistant to fire, insects and disease due to the thick, fibrous bark and the high tannin content. Tannins are compounds found in redwoods and other plants that cause the bark to appear red and have insecticidal and fungicidal properties. This not only protects the trees, but makes them extremely resistant to decay.

Valuing the wood's strength, Native Americans built homes out of fallen planks of redwood. The redwood planks were believed to be the body of a spirit being and were revered for their beauty and tenacity.

What is old growth forest and why should it be protected?

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Old growth forests once covered nearly 2 million acres along the coasts of California and Oregon. Unfortunately, decades of abuse and unsustainable timber harvest and forest clearing have impaired or altered most of the old growth forest. After the devastating San Francisco earthquake and fire in 1906, redwood forests were depleted to rebuild the city. Today, less than 5% of this once vast forest remains intact.

Old growth forests are characterized by having a multi-layered structure, large old trees, dead trees and interdependent communities of plants and animals. The multi-layered structure consists of an herbaceous layer of shade tolerant plants and humus, an understory of small to medium trees such as maples and bays, and a canopy of large, old trees including redwoods, douglas firs, incense cedars and sitka spruce. These large trees have an important role in carbon, nutrient, and water cycling. Each large tree requires 200-500 gallons of water per day!

Dead trees also serve an important role. While still standing, dead trees provide homes for woodpeckers, owls and small mammals. Once fallen, dead trees provide shelter and food for a variety of insects and amphibians and act as nursery logs for seedlings. Old growth forests are essential for certain endangered species as well, providing nesting sites for marbled murrelets and a home for spotted owls.

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