

# Redwood

National Park  
California

National Park Service  
U.S. Department of the Interior

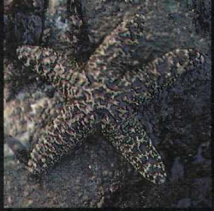
## Campaign for a Park

Almost from their discovery, coast redwoods inspired people to seek their preservation. Success first came in 1902 with creation of Big Basin Redwoods State Park in a campaign led by the Sempervirens Club. National protection for redwoods was won in 1908 when President Theodore Roosevelt set aside Muir Woods National Monument under the Antiquities Act of 1906. Those lands were bought by Congressman William Kent for donation to the Federal Government for their preservation.

The Save-the-Redwoods League was organized in 1918. Deeply concerned by the rapidly diminishing old growth redwoods, the group pressed the preservation cause. Within two years it purchased four pieces of redwoods land. The League sought and won formation of the California State Park System and its State Park Commission. Equally important, it secured a state system of matching private parkland acquisition funds with state bond issues. The League and countless concerned citizens helped

establish more than 280 memorial groves, a public-spirited practice which continues to the present time.

Nearly 90 years of spirited advocacy finally bore fruit in 1968 when Congress created Redwood National Park. Its boundaries include three state parks: Jedediah Smith, Del Norte Coast, and Prairie Creek. The national park was enlarged in 1978 to its present 42,900 hectares (106,000 acres), about 70 percent Federal land.



These narrow, coastal parklands provide homes for both sea and land creatures, from left: sea star, rosebay rhododendron, and Roosevelt elk.



## Redwood National Park

California boasts more people than any other state, but you wouldn't guess that by its rugged North Coast. Nature drives hard bargains in this region, which has been historically isolated by harsh weather and precipitous shorelines. The terrain here is so rough it is no wonder that it took Jedediah Smith, the first European to trek here overland, ten days just to cover the last few kilometers to the coast in 1828. This forbidding character helped protect magnificent coast redwood groves until gold fever 20 years later brought eventual settlement. By 1850 red (wood) "gold" lured loggers away from depleted eastern forests. Logging remains the major industry today. Although many giant trees have been cut, some are under the protection of Redwood National Park, which stretches for 80 kilometers (50 miles) in northern California almost to Oregon.

Winds off the vast Pacific, still bearing its fragrance, become landbound here. They drive the surf that pummels beach and sea-

cliffs. They bear rains, too. Near here 442 centimeters (174 inches) of rain were recorded over one winter; 117 centimeters (46 inches) in one month. The rain can transform rivers into raging torrents. In 1964 the Klamath River, normally 0.6 meters (2 feet) deep in summer, raged to 27 meters (90 feet) in December and completely destroyed the town of Klamath.

The rains support an astounding richness in the park's myriad habitats. The Pacific Flyway brings birds during spring and fall migrations; the park boasts 300 species, about half associated with water. Off shore, marine mammals migrate, particularly gray whales. You can also watch for other whales, porpoises, seals, and sea lions. Roosevelt elk are the most commonly seen mammals, and mountain lions, the most elusive of predators, stalk blacktail deer. Rare and endangered species include gray whales, bald eagles, peregrine falcons, brown pelicans, and the Aleutian Canada goose. Richness?

The intertidal zone alone boasts 168 invertebrate species. River otters, mink, and beaver frequent freshwater habitats. Fifteen of western North America's 22 salamander species are found here—but just one poisonous snake. The Northern Pacific rattlesnake is rare and occurs only inland.

Many votes for most popular creatures go to five game fish. Sport and commercial fishermen ply freshwater and saltwater for silver and king salmon, and rainbow, coast cutthroat, and steelhead trout. There is far more to Redwood National Park than its spectacular trees.

## Planning Your Visit

Redwood National Park stretches along California's North Coast from north of Eureka to just south of the Oregon border. U.S. 101 runs north and south through the park, providing a scenic drive along the coast. From the east, approach the park's north end on U.S. 199 from Grants Pass, Oregon, through Six Rivers National Forest.

Park Headquarters is located in Crescent City. For information write: Redwood National Park, 1111 2nd St., Crescent City, CA 95531. For 24-hour telephone information call (707) 464-6101.

The inland part of the park is warmer in sum-

mer than the coast: July temperatures here run about 20° to 40° C (70s-90s F), making swimming in the Smith River and Redwood Creek pleasant. On the coast July temperatures usually run about 10° to 15° C (50s-60s F).

The national park encompasses three state parks: Jedediah Smith, Del Norte Coast, and Prairie Creek. The state parks operate all formal camping facilities in the park. California is on a centralized system for camping reservations, which are usually necessary in summer. Write to Ticketron, P. O. Box 26430, San Francisco, CA 94126. Public campgrounds are also found in other nearby

state parks and national forests. Backcountry camping is available on the Redwood Creek Trail. Motel accommodations can be found all along U.S. 101.

Plan to spend some time in the park, because if you just drive right through you will miss many worlds that lie behind the scenery. You can watch whales offshore at the Crescent Beach Overlook. See Roosevelt elk at Gold Bluffs Beach and Boyes Prairie. Take a guided tidepool walk at Enderts Beach or just enjoy the beach itself. Take the scenic—and partially unpaved—Coastal Drive around the mouth of the Klamath River. Or fish the Smith or Klamath



river's famous salmon and trout waters. Note: A California license is required for both fresh and saltwater fishing for those 15 or over. In summer, enjoy one of the many interpretive activities the National Park Service and Redwood State Parks offer, such as guided tidepool walks or a shuttlebus tour to within 1.6 kilometers (1 mile) of the Tall Trees Grove. Hiking is rewarding in Redwood National Park because there are so many diverse environments. You can beachcomb the shores, or take established trails for a hike of a few minutes or several hours.

# The Coast Redwood

The coast redwood (*Sequoia sempervirens*) towers over all other trees in the world. At 112.1 meters (367.8 feet) the coast redwood discovered on the banks of Redwood Creek by the National Geographic Society in 1963 is the tallest known tree. Redwoods develop the greatest reported volume of living matter per land surface on Earth. The giant sequoias, cousins to the coast redwoods, grow larger in diameter and bulk, but not as tall. Coast redwoods survive to be about 2,000 years old—perhaps half the age of giant sequoias—and average probably 500-700 years. The living tree has no known killing diseases, and the insects associated with it

cause no significant damage. Fire is the worst natural foe, but usually to young trees which lack the thick bark protection. As with most conifers, redwoods lack a taproot, and their broad shallow root system sometimes provides inadequate support for the massive trunk. Wind topples many mature trees.

The first record of the redwood was written by Fray Juan Crespi in 1769. Its botanical discoverer was Archibald Menzies, whose collections are dated 1794. The name "redwood" comes from the first, Spanish, description of the huge trees, Palo Colorado, meaning "red trees."



## Range

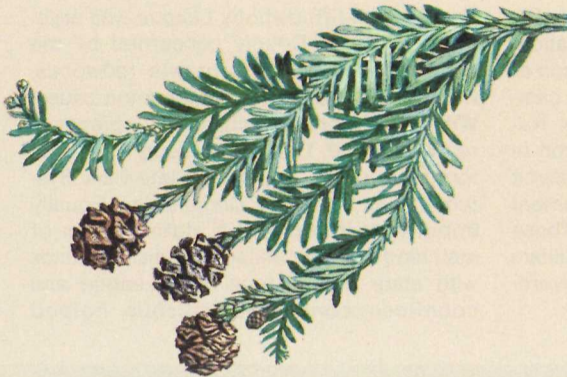
Coast redwoods grow only along the Pacific coast from Curry County in southern Oregon to south of Monterey, California. They grow within 48 kilometers (30 miles) of the coast and at elevations below 914 meters (3,000 feet). They grow tallest on flood plains of streams and rivers, and are best developed on cool, moist sites.

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## Prolific Producers

Cones form on the tips of upper branches. Mature cones are reddish brown, woody, and slightly oval. Seeds are about three times the size of a pinhead; 125,000 form one pound. Sprouts bear cones at 20 years because they draw on the parent root system. Seedlings take longer

to bear cones. Cones mature in one year and ripen in August and September to release seeds. Only 1 out of 10 seeds will germinate.



## The Role of Fog

In the Age of Dinosaurs, redwood species were dominant over much of the Northern Hemisphere, including what is now the Arctic. The climate was then humid and mild over a much larger region than today. Over millenia, climate change reduced redwood habitat.

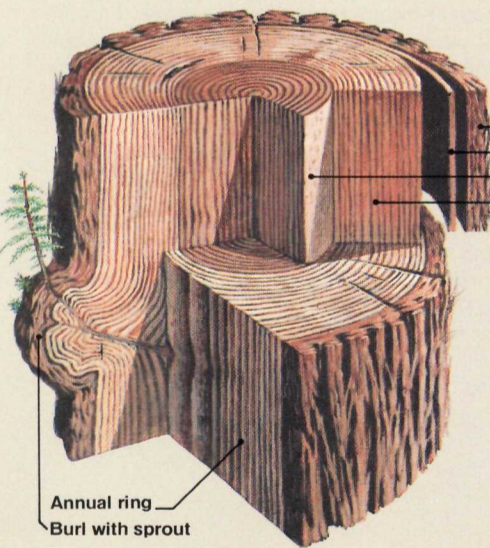
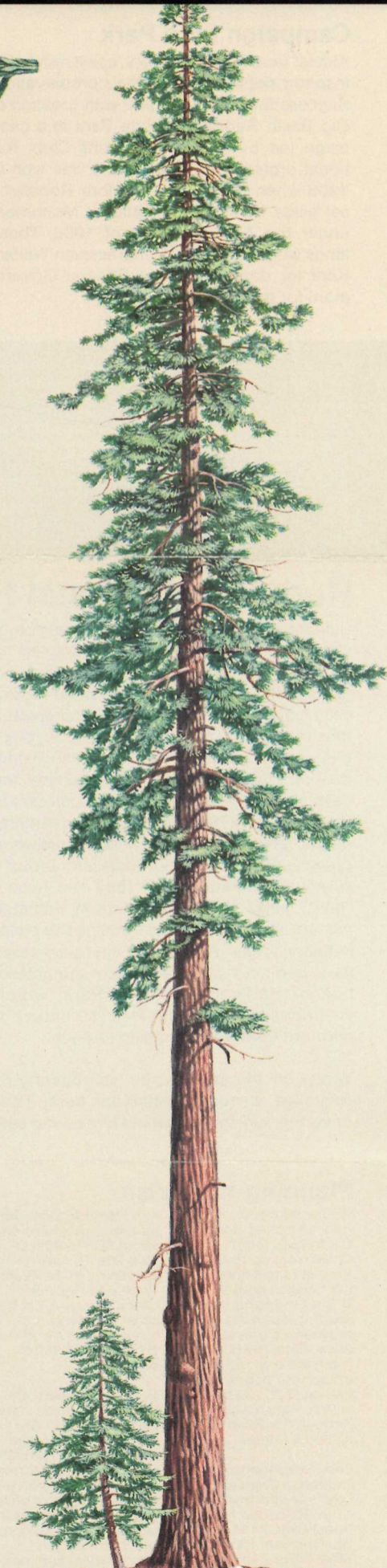
The abundant moisture and moderate temperatures of coastal northern California and extreme southern Oregon allow the redwood to flourish. This ocean-moderated climate is very humid; average yearly rainfall measures between 63 and 310 centimeters (25 to 122 inches). But

annual precipitation seems less important than the frequent summer fog.

The passage of warm, moist marine air over the cold surface waters of the Pacific creates fog here almost daily in summer. It frequently lasts until afternoon, when it burns off.

Another fog bank may move in before sunset.

The fog decreases the trees' loss of water through evaporation and transpiration and adds moisture to the soil. So the coast redwood is generally restricted to this coastal fog belt.



**Bark**  
**Cambium layer**  
**Heartwood**  
**Sapwood**

## Thick Bark

Redwood bark, soft and stringy-fibrous, varies in color from red-brown to grayish. On mature trees it grows to 30 centimeters (1 foot) in thickness. The thick bark protects the tree from fire damage. Repeated hot fires can

burn through the bark, and the tree's core may then rot out. These hollowed-out trees are called "goose pens" because early settlers kept poultry in them.

Annual ring  
Burl with sprout

## Growing New Trees



Mature seed



Moist seed sprouts



Sprout sheds seed coating



Seed leaves, or cotyledons, appear

Air-borne on narrow, lateral wings, a redwood seed only 3 millimeters long (1/8 inch) drops to the ground from a ripe cone. It will fall within 60-120 meters (200 to 400 feet) of the parent tree. Within a month, warm, moist soils may stimulate it to germinate. If

it is on suitable, fresh, mineral soil it will root itself. After its first leaves appear it begins to manufacture its own food. Under optimum conditions the seedling may grow 5 to 7.5 centimeters (2-3 inches) the first year.

Coast redwoods also

reproduce by stump sprouting. This gives them a great reproductive advantage over species that reproduce only by seeds. If a redwood is felled or badly burned, a ring of new trees sprouts from burls around the base of the trunk. Burls develop from buds which do not

elongate into shoots. These dormant buds grow into a wart-like mass which may sprout if the tree is damaged. If they sprout, the parent tree's roots are used by the saplings.

## Shallow Roots

Roots penetrate only 3-4 meters (10-13 feet) deep and spread out only 20-25 meters (60-80 feet).