

Redwood

National and State Parks

Official Map and Guide



Redwoods and rhododendrons

World's tallest living tree—monarch of the North Coast—living link to the Age of Dinosaurs. A redwood grows from a seed the size of a tomato seed, yet it may weigh 500 tons and stand taller than the Statue of Liberty. With its foot-thick armor of bark, this tree seems nearly impervious to the effects of fire and insects. Botanical credit for the coast redwood's discovery is generally

From Exploration to Preservation

When Archibald Menzies saw the redwood forests in 1794, they probably covered almost two million acres. As gold fever subsided here redwood fever replaced it. The trees at first seemed endless but quickly fell to determined logging. The State of California preserved a number of key groves during the 1920s. When modern logging methods raised the possibility that *all* the rest might be cut, Congress created Redwood National Park in 1968. The park was expanded in 1978 to protect the world's tallest trees along Redwood Creek. Redwood National and State Parks include just fewer than 40,000 acres of ancient forest, nearly half of all that remain.

Jedediah Strong Smith
Lacking good deep harbors, the redwood coast drew little attention until fur trapper Jed Smith arrived overland in 1828. Smith explored the redwood coast for a better route between the Rockies and Pacific. Gold miners opened the area to settlement in the 1850s.



Klamath State Historical Society



Early logging centered on small trees. Later, redwoods could be logged. Gold mining (below) began after the 1848 strikes on the Trinity River.



Treasures of Nature and Culture

From sea level to 3,200 feet in elevation in the Coast Range, a mild, moist climate assures the parks an abundant diversity of wildlife. Elusive to visitors, many mammals, birds, amphibians, and insects live in the mature redwood forest. They depend on it for food and for shelter. Prairies form natural islands of grasslands, where wildlife abounds.



Prairies and Waterways
Prairies and rivers reflect the changing of seasons far better than redwood groves do. *Prairies:* In springtime, prairie wildflowers burst with color that gives way in the dry summer to the grasslands' amber glow. Prairies are the realm of raptors, the predatory red-tailed hawk, kestrel, and great horned owl, and their prey of gophers and meadow mice. Mountain lions, bobcats, coyotes, foxes, elk, and black-tailed deer frequent prairies, which once were kept free of trees by fire and grazing elk. Acorn-bearing Oregon white oaks edge prairies at higher elevations. Oaks provided protein-rich food for Indians, who cleared the understory with fire. Prairies make good birding spots. There

Roosevelt elk favor prairie and other open lands but seek forests for cover and shade. The parks' largest land mammals, these elk may exceed 1,000 pounds. Their much larger antlers distinguish them from black-tailed deer. One of the best places to see Roosevelt elk is at Elk Prairie campground. At Gold Bluffs Beach elk can be found along the beach and nearby trails. Look for them along the Bald Hills and Davison roads, too. Always be alert for elk crossing the highways.

Life Along the Seacoast

Even apart from the Coast Range and its lofty forests, the coastline here would justify national and state park status. Rugged and largely unaltered by humans, it features stretches of steep, rocky cliffs broken by rolling slopes. Generally rocky, its tidal zone can be difficult to traverse. One exception is Gold Bluffs Beach, a seven-mile stretch of dunes and sandy beach. Visitors to the North Coast may discover a rich mix of forms of life that occupy the distinct habitats illustrated below.

Many of the parks' animal species thrive along the coast. Brown pelicans are summer visitors, cormorants take to lagoon or river and shore waters, and willets and sanderlings work the beach. Offshore may be Pacific gray whales in migration, seals, sea lions, dolphins, porpoises, and orca (killer) whales. In the intertidal areas the cycles of rising and falling tides have produced tightly zoned layers of life. To help protect these animals, the national park boundary extends one-quarter mile offshore.

Offshore
Between shore and the deep ocean here an average surface acre is as productive as a surface acre of fertilized agricultural land. The basic wealth lies in phytoplankton, single-celled plants. Sea lions feed beyond the surf and haul out on shore or on sea stacks. Harbor seals swim in the surf and haul out in sheltered coves. Sea birds of several types nest on offshore rocks. The California Current flows south. It works with offshore winds to draw nutrients up from deep waters. This provides food for many coastal creatures. Moisture-laden air off the California Current condenses as low clouds over cold water near shore.

Intertidal Zone
Tides rise and fall twice daily on a 25-hour lunar cycle. In the zone between high and low tide, life forms arrange themselves vertically. Just where depends on their tolerance for exposure to air and/or water and to heat and wave shock. Other biological limits apply, too: predators and competition for food and living space. A **splash** zone above the high tide is home for periwinkle snails and beach hoppers that can withstand episodic



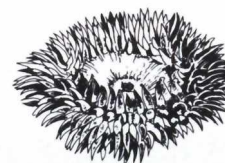
Periwinkle snail

wetting and the powerful shock of pounding waves. Inhabitants of the splash zone are transitional but are more attuned to life on land than in the sea. Mussels cling to rocks in the **high-tide** zone. They are covered by water only at high tide. Their shells enable them to tolerate temporary exposure to air and direct sunlight. Often called seaweeds, various algae that have chlorophyll frequent the **mid- and low-tide** zones. They can't endure being deprived of water very long. Seaweeds provide oxygen, food, and shelter for inhabitants of the intertidal zone. Larger kelp have built-in floats and are anchored in deeper water. Some kelp rival the height of redwood trees.



Sea star

Tidepools that form in rocky beach outcroppings shelter life in these environments. Tidepool dwellers cope with great changes in water temperature, salinity, and oxygen content. Here are barnacles, limpets, nudibranchs, sea urchins, sea stars, and erect sea palms. Sea palms are anchored by root-like hold-fasts. Their flexible, stem-like structure lets them withstand the full force of breaking waves.



Giant green anemone

Redwood National Park Del Norte Coast Redwoods State Park Jedediah Smith Redwoods State Park Prairie Creek Redwoods State Park California



Rough-skinned newt

expansion in 1978. The national park boundary encircled the three existing state redwoods parks and gave increased protection for the superlative, ancient redwood forests growing along the northern California coast. The parks form a World Heritage Site and are part of the California Coast Ranges Biosphere Reserve. These designations reflect worldwide recognition that



Giant Sequoia Facts
Height: To 311 ft.
Age: To 3,200 years
Bark: To 31 in. thick
Base: To 40 ft. diameter
Reproduce: By seed only
Seed size: Like an oat flake
Cone size: Like a chicken egg



Coast redwoods grow in a narrow strip along the Pacific Coast of California and southwestern Oregon. Giant sequoias grow only on the Sierra Nevada's western slope.

Coast Redwood Facts
Height: To nearly 370 ft.
Age: To 2,000 years
Bark: To 12 in. thick
Base: To 22 ft. diam.
Reproduce: By seed or sprout
Seed size: Like a tomato seed
Cone size: Like a large olive

Watershed Protection
Congress expanded the national park in 1978 and directed the National Park Service to rehabilitate logged-over lands. Bulldozers recontoured hill-sides and stream channels to restore conditions



Where vegetation might be slow, native trees are planted to redevelop forests similar to those cut.

Beaches
Life on sandy beaches also observes wet and dry zones because of tides and waves. The lower beach is often wetted while upper beaches are like desert between the sea and lush coastal forest. Clams and mole crabs burrow into wet lower beaches. Sanderlings follow retreating wave lines to forage on the washed-up organisms.



Brown pelican

Sea Cliffs
Northern park beaches tend to be rocky and backed by sea cliffs. Southern beaches tend to be backed by bluffs. More than half of the parks' birds are marine species. Some of them nest—often as crowds—in the sea cliffs: murrelets, cormorants, puffins, auklets, gulls, and pigeon guillemots.



Double-crested cormorant



National Park Service U.S. Department of the Interior Department of Parks and Recreation State of California



Lady Bird Johnson Grove Trail

these resources are irreplaceable treasures. In watching over the trees, Congress and the State of California have saved miles of Pacific shore, rivers, streams, estuaries, meadows, and prairies. Here, the diversity of life is protected for you and for future generations. Help us safeguard this special place by treating it with care and respect.

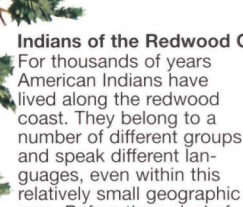
From Seed and Sprout
In the Age of Dinosaurs redwood-like trees grew over much of the Northern Hemisphere. Subsequent climate change reduced redwood habitat to this narrow, fog-bound coastal corridor. (See "Role of Fog" at lower right.) Coast redwoods reproduce by



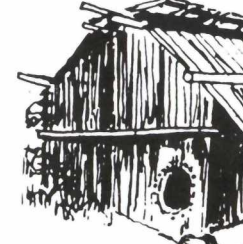
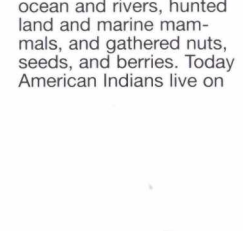
seed and by stump and basal sprouting. Seeds slightly larger than a pinhead are released from mature cones that ripen in August and September. If a redwood is felled or is badly burned, a ring of new trees often sprouts from burls around the trunk's base. These so-called family groups are common. Saplings use the parent tree's root system. Redwoods have no taproot; their roots penetrate only 10-13 feet deep but spread out 60-80 feet.



Tree illustrations by John Davison



Indians of the Redwood Coast
For thousands of years American Indians have lived along the redwood coast. They belong to a number of different groups and speak different languages, even within this relatively small geographic area. Before the arrival of non-Indian people in the 18th century, Indian villages, with their fine split-plank structures, dotted the coast and lined the major rivers. People traveled in redwood dugout canoes along the waterways and by foot along an elaborate system of trails. Their foods varied with the seasons. They fished the ocean and rivers, hunted land and marine mammals, and gathered nuts, seeds, and berries. Today American Indians live on



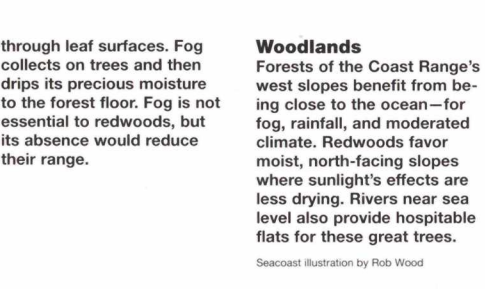
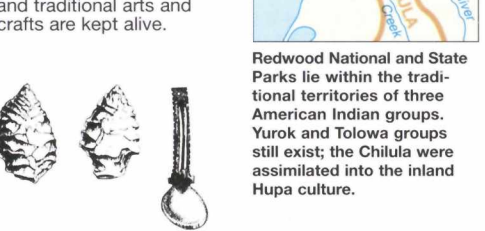
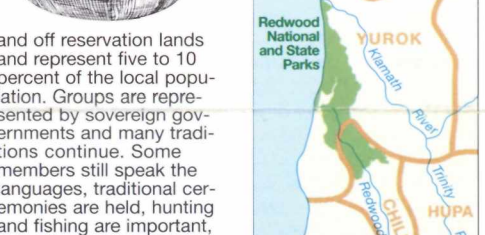
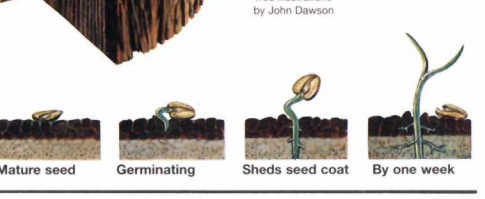
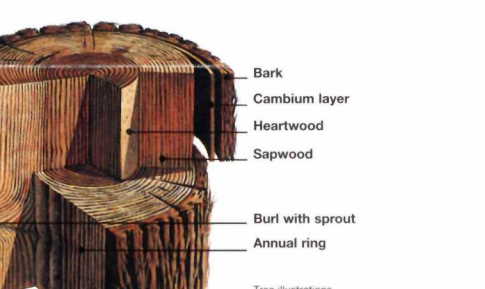
and off reservation lands and represent five to 10 percent of the local population. Groups are represented by sovereign governments and many traditions continue. Some members still speak the languages, traditional ceremonies are held, hunting and fishing are important, and traditional arts and crafts are kept alive.

The Role of Fog
As air warmed by inland heat passes over cold, near-shore waters, fog forms—almost daily in summer. Fog helps approximate the mild, moist climate that prevailed in the Age of Dinosaurs, when redwood-like species grew over much of North America. Fog also brings redwood forests relief from the dry summer. It reduces the loss of water



Seacoast illustration by Rob Wood

Woodlands
Forests of the Coast Range's west slopes benefit from being close to the ocean—for fog, rainfall, and moderated climate. Redwoods favor moist, north-facing slopes where sunlight's effects are less drying. Rivers near sea level also provide hospitable flats for these great trees.



Seacoast illustration by Rob Wood



A park interpreter shares natural lore of the rocky tidepools with visitors to the park's Pacific shore.

