

Sequoia and Kings Canyon

Sequoia and Kings Canyon
National Parks
California

National Park Service
U.S. Department of the Interior

Official Map and Guide

From atop Moro Rock you can grasp the multiple superlatives that brought Sequoia—and eventually Kings Canyon—into the National Park System so early that Sequoia is now our second oldest national park. To the north lies the Giant Forest plateau where sequoias rise above their forest neighbors. In cathedral-like

Giant Forest stands the 275-foot-tall General Sherman giant sequoia tree, whose trunk weighs an estimated 1,385 tons and whose circumference at the ground is nearly 103 feet. To the west, in contrast to these gargantuan conifers, are the dry foothills with their oak trees and chaparral vegetation descending toward the

San Joaquin Valley. To the south, and down, down more than 5,000 vertical feet, the Middle Fork of the Kaweah River threads its rugged canyon. To the east, snowcapped peaks of the Great Western Divide and the Kaweah Peaks top out on Mt. Kaweah at 13,802 feet. Just out of sight beyond the divide, the highest moun-

tain in the contiguous 48 states, Mount Whitney, reaches 14,494 feet of elevation. Big trees, high peaks, and deep canyons in North America's longest single continuous mountain range: superlatives abound amidst glorious scenery. Pioneering conservationist John Muir explored and named the Giant Forest. "When I entered

this sublime wilderness the day was nearly done," he observed, "the trees with rosy, glowing countenances seemed to be hushed and thoughtful, as if waiting in conscious religious dependence on the sun, and one naturally walked softly and awestricken among them." May you follow in Muir's footsteps.

Earth's Largest Living Thing

In volume of total wood, the giant sequoia stands alone as the largest living thing on Earth. Its nearly conical trunk—like a club, not a walking stick—shows why. At least one tree species lives longer, one has a greater diameter, three grow taller, but none is larger. In all the world, sequoias grow naturally only on the west slope of the Sierra Nevada, most often between 5,000 and 7,000 feet. There are some 75 groves in all. The General Sherman tree is between 2,300 and 2,700 years old. Its largest branch is almost seven feet in diameter. Each year the General Sherman adds enough wood growth to make a 60-foot-tall tree of usual proportions.

"Most of the Sierra trees die of disease, fungi, etc.," John Muir wrote, "but nothing hurts the Big Tree. Barring accidents, it seems to be immortal." Muir was partially right. Chemicals in the wood and bark provide resistance to insects and fungi. The main cause of death for sequoias is toppling. Sequoias have a shallow root system with no tap root. Soil moisture, root damage, and strong winds can also lead to toppling.



Loggers pose on a fallen monarch. Cavalry troops (below) protected the park in its early years.



1990 Centennial for Sequoia, America's Second Oldest National Park
San Joaquin Valley residents and others pressed Congress to protect Sierra tracts against logging in the 1880s. Some park proponents sought to protect water supplies for irrigation; others, the Big Trees. Preserving land for scenic and recreational values was an infant idea then.

Sequoia National Park was created on September 25, 1890. A week later Congress tripled its size and created General Grant National Park to protect Grant Grove. In 1893 a Sierra Forest Reserve protected more lands, and in 1926 Kern Canyon was added to Sequoia. In 1940 General Grant was merged into the newly-created Kings Canyon National Park. In 1976 Mineral King was added to Sequoia. Since 1943 Sequoia and Kings Canyon have been managed jointly.



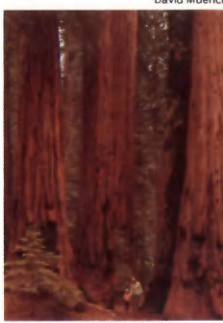
The Bancroft Library

John Muir
Conservationist and author John Muir's response to the logging of giant sequoias was: "As well sell the rain clouds and the snow and the rivers to be cut up and carried away, if that were possible."

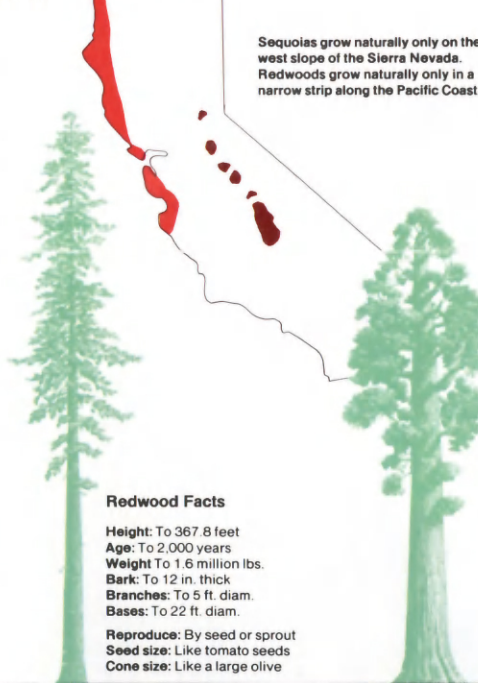
Muir explored and named the Giant Forest, where stand 4 of the world's 5 largest trees, and pioneered Mt. Whitney's steep east face. He would prove the geologic role of Sierran glaciers, a new theory disputed by California's state geologist, Josiah D. Whitney.

Sequoia and Redwood Compared

The giant sequoia has a column-like trunk, huge stout branches, and cinnamon-colored bark. Also called "Sierra redwood" and "Big Tree," its scientific name is *Sequoiadendron giganteum*. The taller and more slender coast redwood, *Sequoia sempervirens*, is more conifer-like in profile.



The Senate Group



Sequoias grow naturally only on the west slope of the Sierra Nevada. Redwoods grow naturally only in a narrow strip along the Pacific Coast.

Redwood Facts

Height: To 367.6 feet
Age: To 2,000 years
Weight: To 1.6 million lbs.
Bark: To 12 in. thick
Branches: To 9 ft. diam.
Bases: To 22 ft. diam.

Reproduce: By seed or sprout
Seed size: Like tomato seeds
Cone size: Like a large olive

Sequoia Facts

Height: To 311 ft.
Age: To 3,200 years
Weight: To 2.7 million lbs.
Bark: To 31 in. thick
Branches: To 8 ft. diam.
Bases: To 40 ft. diam.

Reproduce: By seed only
Seed size: Like oat flakes
Cone size: Like chickens' eggs

Deep Canyons and High Peaks

Steep and barren, the parks' canyon areas seem skeletal and cut to their geologic quicks. Kings Canyon reaches a depth outside the park of some 8,200 feet from river level up to Spanish Mountain's peak. There, just downstream from the confluence of the Middle and South Forks of the Kings River, the canyon is without peer in North America—deeper than the Snake River's Hells Canyon in Idaho, or the Grand Canyon in Arizona. Kern Canyon in southern Sequoia National Park is 6,000 feet deep, and several other canyons exceed 4,000 feet in depth. Sierran canyons show both stream-cut, V-shaped profiles and U-shaped profiles characteristic of glacial gouging. Both Generals Highway and Kings Canyon Highway thread through canyons. At Roads End on Kings Canyon Highway (closed from about November 1 to May 1), you can stand on a flat, glacial valley and stare up at canyon walls rising nearly a mile above the river's level.



Upper Dusy Basin in Kings Canyon National Park

Pat O'Hara

The Snowy, Sawtoothed Mountain Range
More than 400 miles long and 60 to 80 miles wide, the Sierra Nevada exceeds the whole Alps area—French, Swiss, and Italian. Palisade Crest in Kings Canyon National Park and the Mt. Whitney group in Sequoia each boast six peaks over 14,000 feet in elevation.

No roads cross the range here; intimate appreciations of the mountains' scale and grandeur are hard-won afoot or with packstock. Panoramic vistas can be seen from atop Moro Rock; from roadside pullouts along the Generals Highway; from Panoramic Point near Grant Grove; and from roadside pullouts before Kings Canyon Highway descends into the canyon. Mineral King Valley provides superlative hiking access to meadows, alpine lakes, and Sierra peaks.

Because park roads top out at 7,800 feet of elevation, most people who visit the parks do not experience the alpine country. Above 9,000 feet the harsh climate cannot support tall trees or dense forests. Above about 11,000 feet, no trees grow. Here are mostly boulders, rocks, and gravel punctuated with small alpine lakes, meadows, and low-growing shrubs. Summer flourishes but briefly. Preparing for winter, the marmot stores body fat; the pika stores small piles of hay. Mountain lakes dot Sierran highcountry, many set in small bowls—called cirques—carved by glaciers.



Kearsarge Lake

David Muench

Crescent Meadow

David Muench

The General Sherman tree, world's largest living thing, is in Giant Forest, Sequoia National Park. The General Grant, the Nation's Christmas Tree, is in Grant Grove, Kings Canyon National Park.

The world's first, second, third, and sixth tallest trees grow within a mile of each other on Redwood Creek along the northern California coast in Redwood National Park.

Sierran Wildlife

Mule deer are the prime prey sought by elusive mountain lions. Pine martens, fishers, and Wolverines pursue squirrels and other smaller animals. Black bears may take fawns or eat carrion but subsist mostly on vegetation. Marmots and pikas inhabit the mountains. Coyotes, gray fox, bobcats, raccoons, and ring-tails patrol the foothills. Decades of fish plantings introduced non-native

brown, brook, golden, and cutthroat trout, but rainbow trout and Little Kern golden trout, native to the Sierra's west slope streams, are being restored.



Brook trout

Rainbow trout

Mule deer

Visiting the Parks

How to Get Here Vehicle access is by Highway 180 into Kings Canyon, or Highway 198 into Sequoia. The Generals Highway connects the two, making loop trips possible. There is no road access from Highway 395 on the parks' east side. (See Highway Access map.) Public transportation to the parks is limited to small tour companies outside the parks. Air, bus, Amtrak, and rental cars are available in Fresno and Visalia. See maps for detailed road access within the parks.

The Sequoia Bark, a free newspaper, gives current park information, schedules of naturalist programs, and lists of facilities and services. Information brochures are available in German, Spanish, French, and Japanese at visitor centers and entrance stations. For park information call (209) 565-3134. For 24-hour recorded road and weather information, updated 9 a.m. daily, call (209) 565-3351.

Camping

The park's campgrounds range from foothills (2,100') to mixed-conifer forests (7,500'). Lodgepole, Atwell Mill, and Grant Grove campgrounds are near sequoia groves. Some camping is available year-round. Campgrounds are first-come, first-served, except Lodgepole. In summer, reservations can be made by calling MISTIX: 1-800-365-2267. Address: P.O. Box 95705, San Diego, CA 92186-5705. Group campsite reservations, available in summer only, are made by writing to the parks.

Trails

Short or long day-hikes are available in all areas. Trail maps should be used for extended day-hikes and backpacking. Backcountry permits are required for all overnight trips. Reservations may be made by mail only, postmarked no earlier than March 1, at least 14 days in advance. A limited number of permits is available on day of departure on a first-come, first-served basis. Horses, burros, and llamas are allowed, but there are specific regulations for some trails and forage areas. Ask for details at visitor centers. Permits are required. For wilderness information, call (209) 565-3306.

Bears

Black bears are attracted by human food and cause trail damage. Do not use property damage trying to get at it. When they succeed, they may become aggressive. Property must be destroyed. Prevent this by storing food properly. Keep all food and anything with a strong odor in the lockers provided. Keep a clean camp, depositing all garbage in bear-proof containers. If a bear approaches, scare it away by making loud noises and throwing stones, but keep a safe distance and use good judgment. Black bears are the only species of bear in these parks.



Black bear illustration by George Founds

Mountain Hazards

The Generals Highway and Highway 180 are steep, narrow, and curvy. Access to the parks for trailers and large vehicles is easier via Highway 180 from Fresno. Downshifting prevents a burned-out transmission when going uphill, and burned-out brakes on the downgrade. Pull over into a safe turnout to look at scenery. Slow-moving vehicles should pull over to let others pass. Seat belts save lives. Please use them! Motorcyclists should avoid the oil buildup in the center of the uphill lane. No motorbikes or mountain bikes are permitted on any park trails.

Rivers, streams, and waterfalls can be treacherous at all times, but especially when water levels are high in spring and early summer. Be cautious and alert for undermined banks and slippery rocks. Fast currents and cold water are a deadly combination. Do not swim above waterfalls or in swift water. Keep children in sight. *Giardia lamblia* is a protozoan in the natural waters of the parks. If you choose to drink surface water, boil it for 3 minutes. All piped water is treated and safe to drink.

You could encounter a rattlesnake almost anywhere in the parks. Always be sure you can

see where you are stepping or reaching.

If you camp or hike in the foothills, check clothes frequently for ticks. If you are uncertain about proper removal, go to the nearest visitor center for help. Ticks can carry Lyme disease; if you have been bitten, ask for information at any visitor center.

When a thunderstorm threatens, get inside a large building or vehicle. Do not stand under a natural lightning rod such as an isolated tree; avoid open meadows and high places such as Moro Rock; stay away from bodies of water. If you

should feel your hair stand on end during a thunderstorm, drop to your knees and bend forward, putting your hands on your knees. Do not lie flat on the ground.

Please do not feed any park animals. All animals should be allowed to live in natural conditions—for their protection and yours. Rodents in the parks can have fleas that carry plague. Do not try to touch or feed ground squirrels or other animals.

Winter
Entry roads are kept open to Grant Grove and to Giant Forest-Lodgepole, but may be closed temporarily for plowing. Tire

chains may be required at any time. The Generals Highway between Lodgepole and Grant Grove is kept open as conditions permit; it is usually closed during heavy storms. Visitor centers are open at Ash Mountain, Lodgepole, and Grant Grove. Naturalist programs are given on weekends and holidays. Concession facilities are available at Giant Forest and Grant Grove. Activities include cross-country and downhill skiing and snowshoeing. Ask about dangers of hypothermia, carbon monoxide poisoning, snowplow, and winter driving.

Pets must be leashed at all times and are prohibited on all park trails.

Visitor centers are equipped for first aid, and many rangers are trained to help with injuries. In an emergency, call 911 from any park phone; no coins needed. The parks make every effort to inform you of dangerous situations, but ultimately you are responsible for your safety.

Concession Facilities
Lodging, food, gasoline, and souvenirs are available in each major park area. Call (209) 561-3314 for reservations.

For more information, write: Superintendent, Sequoia and Kings Canyon National Parks, Three Rivers, CA 93271.

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Profile of the Sierra

Phenomenal changes in topographic relief that characterize these parks are illustrated in this geological cross section through the Sierra Nevada from the North Fork of the Kaweah River, straight east through the Giant Forest to Mt. Whitney, the parks' highest point.

Foothills Chaparral

Dry, hot summers in the Sierra's western foothills give rise to chaparral, a drought-resistant shrub community adapted to withstand periodic fire.

Winter rains bring wildflower bursts in spring before grasslands and chaparral go brown for summer and fall.

The Giant Sequoia Belt

The world's 75 giant sequoia groves grow on moist, unglaciated ridges on the Sierra's west slope, between 5,000 and 7,000 feet of elevation. Only 8 groves lie north of Kings River—scattered over nearly 200 miles. The rest occur south of the river at intervals of 4.5 miles or less in a 60-mile-long belt. This Big Tree's range had shrunk to this area by about 2.5 million years ago when climates became drier. Some 60 million years ago its ancestral species ranged more widely. Visually dominant in their groves, sequoias are part of the mixed-conifer forest that includes white fir, sugar pine, yellow pine, and incense cedar. The largest remaining sequoia groves are at Redwood Mountain in Kings Canyon National Park and at Giant Forest in Sequoia Na-

tional Park. Redwood Mountain grove covers 3,100 acres and has 15,800 sequoia trees more than one foot in diameter at their bases. Giant Forest is 1,800 acres and has 8,400 such trees. About 36,500 acres of sequoia groves remain in the Sierra, mostly under federal or state protection. The groves are labeled and shown in dark green in the diagram below.

Elevation and Precipitation
The Sierra Nevada forces moist, eastbound air upwards. As it rises the air is cooled and forced to release its moisture as precipitation. Drought-resistant chaparral covers lower west slope elevations.

Gargantuan sequoia/mixed-conifer forests cover middle elevations. Air masses crest the mountains mostly depleted of moisture. East of the Sierra Nevada, in its rain-shadow, lies the semi-arid Great Basin. Generally speaking, on the Sierra's west slope, precipitation increases

until it reaches a maximum between 5,000 and 8,000 feet in elevation. This zone of maximum precipitation includes the sequoia belt and its luxuriant forest development. Above these elevations precipitation tends to decrease.

Mt. Whitney
Mt. Whitney crowns the Sierra Nevada—highest point in the contiguous United States. Named for California State Geologist Josiah Dwight Whitney in 1864, it is visible from the west only from remote backcountry. Visitors to the Owens Valley east of the park see it from Highway 395 near Lone Pine.



Moving from west to east in this cross section, the distance from the North Fork of the Kaweah River to Mount Whitney is approximately 34 miles.

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