

Pinnacles

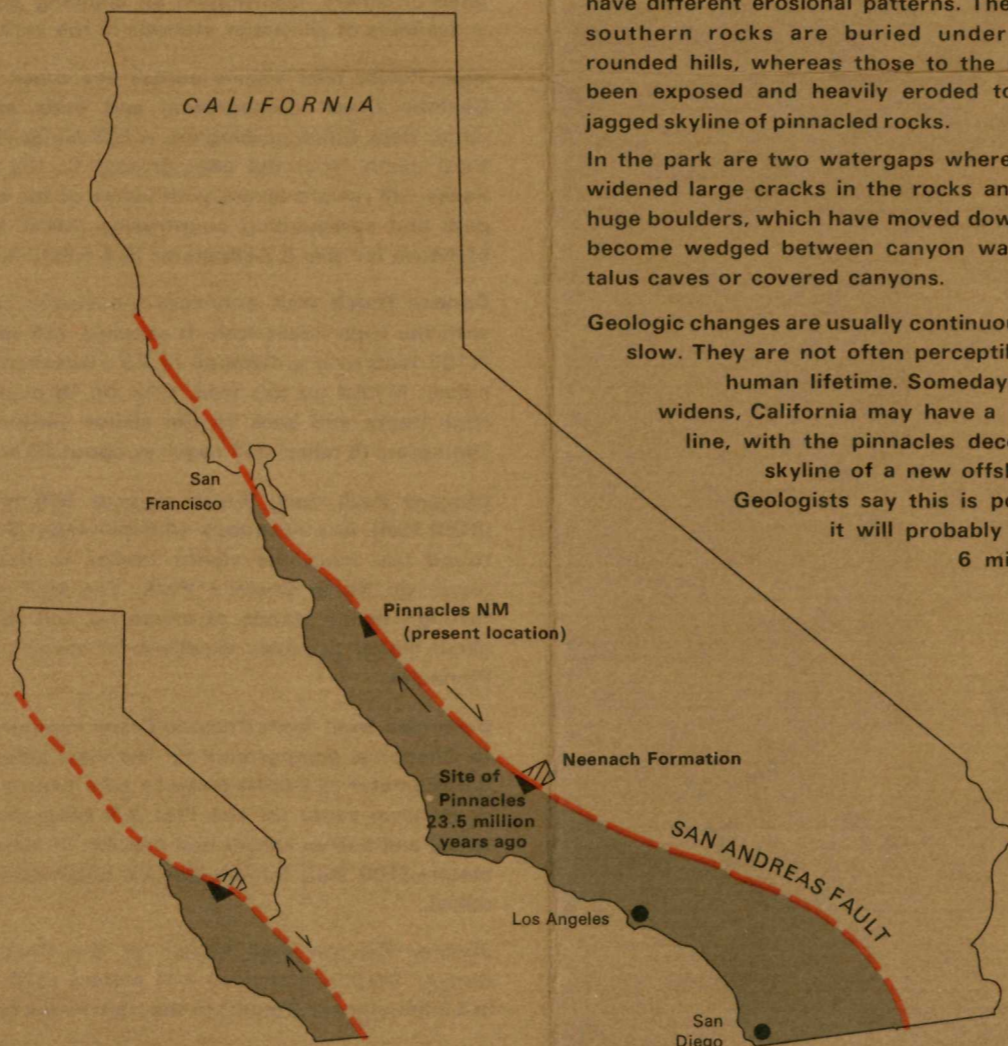
NATIONAL MONUMENT • CALIFORNIA

The last remnants of an ancient volcano, carved into jagged pinnacles and spires by rain, wind, heat, and frost, rise against the sky here. These starkly angular rocks contrast strikingly with the smoothly rolling hills surrounding them.

The dense brush cover that mantles the rugged slopes is chaparral which thrives on the long, hot, dry summers and cool rainy winters normal to this part of California. It is the only complete example of Coast Range chaparral in the National Park System and is the habitat for an interesting plant and animal association.

Hike the many trails to get a closer look at the vegetation, caves, canyons, and the pinnacles. The park can be enjoyed at any season, but one of the most pleasant times is spring, when the hills are covered with new vegetation and a multitude of colorful wildflowers. In summer, grassy slopes turn golden brown under daytime temperatures that reach 38° C (100° F) or more.

The small map shows the position of the California coast and the Pinnacles area about 150 million years ago. The large map shows their present positions, revealing a northward movement along the San Andreas Fault (red line) of 314 kilometers (195 miles).



THE GEOLOGIC STORY

Some 23½ million years ago, increasing strains within the earth caused cracks in its crust near the western edge of the North American continent. A volcano spewed tons of shattered rock and fiery lava through these fissures and covered the countryside. Volcanic activity gradually ceased, but more geologic changes were yet to come.

For untold centuries, tectonic plates—large pieces of the earth's crust—have shifted and altered the face of the earth. On them rest the continents, whose granitic rocks are lighter than these basaltic plates. About the time volcanism ceased, two moving plates glanced off each other. One, known as the Pacific Plate, thrust itself under the western edge of the continent alongside the North American Plate. A long narrow sliver was wrenched from the continent, much like a chisel breaking and lifting a piece of wood. This action formed a 966-kilometer (600-mile) rift, now called the San Andreas Fault, which ran through the volcanic rocks. As the Pacific Plate slid to the north, the pinnacles rock section on top of it also moved northward. It is now 314 kilometers (195 miles) north of its original location and is still moving at an average rate of about 3.8 centimeters (1½ inches) per year. The volcanic rocks east of the fault remain where they were formed and may be found along Calif. 138 between Gorman and Lancaster. Because of different geographic locations, these rocks of common origin have different erosional patterns. The stationary southern rocks are buried under smoothly rounded hills, whereas those to the north have been exposed and heavily eroded to form the jagged skyline of pinnacled rocks.

In the park are two watergaps where water has widened large cracks in the rocks and loosened huge boulders, which have moved downslope and become wedged between canyon walls to form talus caves or covered canyons.

Geologic changes are usually continuous, but very slow. They are not often perceptible during a human lifetime. Someday, as the rift widens, California may have a new shoreline, with the pinnacles decorating the skyline of a new offshore island. Geologists say this is possible, but it will probably take about 6 million years.

THE CHAPARRAL COMMUNITY

Chaparral is a shrub community specially adapted to an average annual rainfall of about 40.6 centimeters (16 inches), mostly during winter and early spring, followed by a long, hot, dry summer and autumn. These shrubs have many of the water-saving characteristics of desert vegetation and often grow to a large size, simulating trees in shape and form. Thus, chaparral is sometimes referred to as a pygmy forest. At Pinnacles it is composed chiefly of greasewood (*chamise*), mixed with smaller amounts of manzanita, buckbrush (*ceanothus*), hollyleaf cherry, and toyon.

Wildfire, an important factor in the control of this vegetation, has repeatedly swept the area for thousands of years. Because chaparral plants have adapted to this frequent burning, they have been able to survive. Some sprout from a deep root crown after fire has destroyed the rest of the plant. Others produce seeds that are stimulated to germinate by the heat of the fire that kills the parent plant.

Suppression of natural wildfire by humans in this century has created an old and dense growth of chaparral that yearly becomes more inadequate as browse and cover for animals adapted to the chaparral habitat.



Chaparral holds the soil on steep hillsides and the foliage provides vital food and shelter for wildlife. Many animals make their homes in this plant community. They are often small and dull-colored, matching the dwarf forest. Much in evidence during the breeding season, animals become more retiring as the vegetation dries in late summer.

Black-tailed deer and raccoons are seen often, whereas the gray fox and bobcat, also quite common, are nocturnal and secretive. Rabbits and rodents are common and provide food for some of the larger predators. Several species of bats patrol evening skies in search of insects. The more frequently seen birds include the acorn woodpecker, brown towhee, California quail, and turkey vulture.



These pinnacled rocks along the High Peaks Trail are very slowly being chiseled into new shapes by the forces of weathering and erosion.

Bobcats thrive along streams, in the chaparral, and throughout the dry Pinnacles area. They eat mammals, birds, fish, and other aquatic life.

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WE'RE JOINING THE METRIC WORLD

The National Park Service is introducing metric measurements in its publications to help Americans become acquainted with the metric system and to make interpretation more meaningful for park visitors from other nations.

ADMINISTRATION

Pinnacles National Monument, established on January 16, 1908, is administered by the National Park Service, U.S. Department of the Interior. A superintendent, whose address is Paicines, CA 95043, is in immediate charge.

As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure that their development is in the best interests of all our people. The Department also has a major responsibility for American Indian reservation communities and for people who live in Island Territories under U.S. administration.

National Park Service
U.S. DEPARTMENT OF THE INTERIOR

SAFETY

For your safety we wish to remind you that there are hazards in the country that usually don't exist in the city. We recommend you stay on the regular designated trails since these are the safest places to hike. Rock faces off the trails are unstable and likely to flake off beneath you.

Poison oak abounds and is often hard to recognize. All trails and developed areas are kept reasonably free of this plant. Any time you leave these areas you risk brushing against poison oak.

Rattlesnakes are seen from early spring through late fall, except on hot summer days. They may be on the trails in the spring and fall. In the summer they prefer the shelter of rock ledges, dense brush, and other places where they are able to escape the heat. Watch where you are going, and if for any reason you have to leave the trail, be careful. These snakes are not aggressive, but if

you see one give it a wide berth and walk on. DO NOT MOLEST THEM. If they are in a developed area, get a ranger to take care of them.

Because some areas may not have another person pass through for many weeks, you should always travel with at least one companion. If you go alone, be sure someone responsible knows where you are going and when you expect to return.

Water is not always as pure as it seems, so drink only from hydrants and fountains on the park's water supply. Some stream water here has had bacterial contamination a thousand times greater than the level considered safe by the public health service and we have experienced water borne epidemics among our wildlife within the last few years.

Be alert. Use common sense and caution. That way you can enjoy your outdoor experience and return home with no problems, grief, or pain.

PINNACLES NATIONAL MONUMENT

GABILAN RANGE

Restroom (Pit Toilet)

Ranger Station

Handicap Restroom

Campground

Picnic Area

Amphitheater

Fire Lookout

Road

Trail

0 1 KILOMETER
0 1 MILE

METRIC MEASUREMENTS

Altitudes are in meters, and distances are in kilometers.
One meter is 3.28 feet, 1 kilometer is 0.62 miles.

KILOMETERS	1	2	3	4	5	6	7	8	9
0	0.6	1.2	1.9	2.5	3.1	3.7	4.3	5.0	5.6
10	6.2	6.8	7.5	8.1	8.7	9.3	9.9	10.6	11.2
20	12.4	13	13.7	14.3	14.9	15.5	16.2	16.8	17.4
30	18.6	19.3	19.9	20.5	21.1	21.7	22.4	23	23.6
40	24.9	25.5	26.1	26.7	27.3	28	28.6	29.2	29.8
50	31.1	31.7	32.3	32.9	33.6	34.2	34.8	35.4	36
60	37.3	37.9	38.5	39.1	39.8	40.4	41	41.6	42.3
70	43.5	44.1	44.7	45.4	46	46.6	47.2	47.8	48.5
80	49.7	50.3	51	51.6	52.2	52.8	53.4	54.1	54.7
90	55.9	56.5	57.2	57.8	58.4	59	59.7	60.3	61
100	62.1	62.7	63.3	63.9	64.5	65.1	65.7	66.3	67
500	310.7	311.3	311.9	312.5	313.1	313.7	314.3	314.9	315.5

USE THIS TABLE TO CONVERT KILOMETERS TO MILES
READ ACROSS AND DOWN. FOR EXAMPLE, 24 KILOMETERS EQUALS 14.9 MILES.



TO SEE THE PARK, TAKE A HIKE

Hiking and climbing are the most popular kinds of physical recreation in this park, for you must walk to really see the area.

Some trails are steep. You should allow plenty of time since some trails may take more time than you expect, especially if you are not in top physical condition. Be sure to wear stout comfortable shoes, loose fitting clothing, and in the summer, a hat. Your summer shoes should have thick soles because thin soles heat quickly and can cause blisters on the bottoms of your feet.

Motor vehicles, horses, and pets are not allowed on any of the trails. Drinking water is not available except at developed areas with water hydrants and fountains.

Only experienced climbers and persons under competent leadership should attempt rock climbs in the park. Specialized equipment is necessary and the unstable rock surfaces make climbing extremely hazardous. Climbing registration is not required, but those planning to attempt difficult climbs in remote areas are encouraged to check with a ranger before and after their climb. After you climb, be sure to remove all slings and excess climbing material before you leave, especially when within view of an established trail. The sight of rocks draped with slings and other gear is an unsightly intrusion on the outdoor experience of others. Information on climbing policies is available at all ranger stations in the park.

High Peaks trail begins across the creek from Chalone Creek Campground and ends at the upper Bear Gulch parking lot. A 503-meter (1650-foot) climb from the campground to the High Peaks will reward hikers with vistas of the entire park and surrounding countryside. Allow about 5½ hours for this 8.7-kilometer (5.4-mile) hike.

Condor Gulch trail connects the visitor center with the High Peaks trail. It ascends 335 meters (1100 feet) over a distance of 2.7 kilometers (1.7 miles). A hike up this trail, then on through the High Peaks and back to the visitor center is 8 kilometers (5 miles) and requires about 3½ hours.

Chalone Peak trail, which ascends 655 meters (2150 feet), is a strenuous 14.5-kilometer (9-mile) round trip from the visitor center to the fire tower on North Chalone Peak. The trail winds through dense stands of chaparral and as you climb higher provides excellent far views of the Pinnacles.

Balconies trail, from Chalone Creek campground to Chaparral campground on the west side, is a 5.2-kilometer (3.2-mile) one-way hike over a relatively level route for the first 3.2 kilometers (2 miles) and has an ascent and descent of about 30 meters (100 feet) for the last 1.9 kilometers (1.2 miles).

Juniper Canyon trail begins at the Chaparral Ranger Station and rises 204 meters (670 feet) in 2 kilometers (1.2 miles) to the High Peaks trail.

Self-guiding trails are at four locations: the upper end of Bear Gulch where the Moses Spring trail

THINGS YOU SHOULD KNOW

The park, about 55 kilometers (34 miles) south of Hollister and 8 kilometers (5 miles) off Calif. 25, can be reached from the south through King City. The entrance to the west side of the park, from U.S. 101 at Soledad, is not a through road. This road is unsafe for trailers or campers. There is no connecting road between the two sides.

Naturalist Services. Your first stop should be at the visitor center, which is about 3 kilometers (2 miles) from the east entrance. It contains a small museum and has post cards, color slides, and nature checklists. A park naturalist is on duty to interpret geological and other natural features. Evening talks are presented on spring and fall weekends.

Picnicking and Camping. Campsites for trailer and tent camping are available, but there are no utility connections. Water and comfort stations are accessible, and each campsite is provided with a fireplace and a table. Camping and fires are permitted only in campgrounds. Bring your own fuel, as cutting or gathering firewood is not allowed. Use extreme care with smokes and matches.

Organized groups must make advance camping arrangements.

The store and service station nearest to the park is in Paicines, 37 kilometers (23 miles) to the north.

Pets. Pets are permitted if they are kept under direct physical control at all times. They must not be taken on trails, into buildings, or into areas where people customarily gather.

Help Us Protect This Park. All objects—rocks, wildflowers, trees, and animals—must be left in place and undisturbed so that others, too, may enjoy them. Gathering specimens or collecting souvenirs is prohibited. This protection is a matter of law and of good citizenship and consideration for others.

Park rangers are here to assist you and to enforce regulations.

begins; across from the visitor center where the Geology Hike begins; across the creek from Chalone Creek campground where the Bear Gulch trail begins; and on the west side of the park where a section of the Balconies trail is self-guiding.

Moses Spring trail is staked and numbered, and leaflets are available at the trailhead. The trail leads you over the Bear Gulch Caves, down into their upper end, and up the stairs to the top of the dam, a distance of 1.1 kilometers (.7 miles). No flashlight is needed to go through the upper end of the caves, but one is needed if you go all the way through the caves.

The Geology Hike takes you up the Condor Gulch trail to the High Peaks trail which then leads down to the campground. This 6.1-kilometer (3.8-mile) hike takes about 2½ hours. Booklets for the hike are sold at the visitor center.

Bear Gulch trail is staked and numbered. Leaflets are available at the junction of the Bear Gulch and High Peaks trails directly across the creek from the campground. This 2.7-kilometer (1.7-mile) trail takes a little over 1 hour to walk to the visitor center, a little less if you walk it downhill to the campground.

The self-guiding portion of the **Balconies trail** is staked and numbered. Leaflets are available at the trailhead near the Chaparral ranger station. From the trailhead to just beyond the Balconies Caves, this trail is 1.6 kilometers (1 mile) long.