

# JOSHUA TREE



## JOSHUA TREE NATIONAL MONUMENT

### CALIFORNIA



*Located in beautiful high desert country, Joshua Tree National Monument preserves a typical California desert where plants and animals have acquired specialized habits in order to survive; where the sand may suddenly be covered with wildflowers; where the oases shelter a varied bird population; and where grow colorful cactuses, the spidery ocotillo, and the picturesque Joshua-tree.*

Altitude ranges from 1,000 feet in the eastern end to nearly 6,000 feet in the Little San Bernardino Mountains. The weather is pleasant most of the year and particularly on winter days. In summer, while it is hot at lower elevations, it is relatively cool at higher altitudes. The average annual rainfall is less than 5 inches, but there are wide departures from this average.

### DESERT PLANTS

Joshua Tree National Monument is preserved primarily because of the notable variety and richness of its desert vegetation. One reason for this diversity is the location of the monument—on the border between the Mojave and Colorado Deserts.

Adaptation is the key to survival on the desert. Plants must be able to go for long periods without water and to make the most of brief but often violent showers. Some, such as the creosotebush, spread their roots close to the

surface to catch the moisture before it evaporates. The roots of some other plants penetrate deep into the earth, enabling them to tap underground water supplies. Mesquite roots often reach depths of 50 to 60 feet.

Many ways of preventing water loss have been developed in desert plants. Creosotebush has leaves covered with a heavy waxy coating. Ocotillo loses its leaves during each period of dryness only to produce new ones after each good rain. Cactuses have no leaves at all; their green stems have taken over the function of food production.

Although it is seldom that careful observation will not reveal something in bloom, the desert is at its best in the spring following a wet winter. Then, even the rocky hillsides may be covered with brilliant patches of color. Wildflower displays are best observed during April and May, although flowering starts in March at lower elevations and continues through June at higher altitudes.

### JOSHUA-TREES

One of the most spectacular botanical features of our southwestern deserts is the Joshua-tree. It attains heights to 40 feet and bears cream-white blossoms in clusters 8 to 14 inches long at the ends of heavy, angular, erratic branches. The best displays come in March and April, but blooming does not occur every year. It is believed that the Mormons gave this giant yucca the name "Joshua-tree," or "praying plant," because of the up-stretched "arms."

Found mostly above 3,000 feet, in the higher central part of the monument, the Joshua-tree is often confused with the Mohave yucca, another large member of the lily family. While they can be found growing together, the Mohave yucca is more common at lower elevations. You can tell the difference by the leaves. Those of the Joshua-tree are about 10 inches long with very fine teeth along their margins. The much longer leaves of the Mohave yucca are easily distinguished by the abundance of light-colored fibers along their edges.

### PALMS AND OASES

In sharp contrast to the surrounding desert, an oasis containing native California fan palms provides a shady haven for man as well as for wildlife. Even more important, the palms indicate that water was once near the surface of the ground but is not always available now. When Col. Henry Washington, who conducted a Government survey party in 1885, first came upon the oasis at Twentynine Palms, he found evidence that Indians had lived there. In the years that followed, the flowing spring in the oasis was the main water source for miners and cattlemen.

Of the other oases in the monument, the largest is in Lost Palms Canyon. Containing more than 100 palms, it is 4 miles by trail from the oasis at Cottonwood Spring. The splendid group at Fortynine Palms Canyon, just inside the northern boundary, is reached by a 1½-mile trail.

### WILDLIFE

The many kinds of wildlife and the means by which they survive in this desert area are a surprise to many visitors. Most of the monument's mammals are nocturnal, coming out at night or in the twilight hours. However, you may see a little antelope ground squirrel scurrying over the sands, with his white tail over his back, even during the heat of the hottest days. Often, in the evening, a coyote may be seen at the outskirts of the campgrounds.

The kangaroo rat and some of the other rodents have become so well adapted to life on the desert that they can go through their entire lives without ever taking a drink; their own bodies manufacture water out of the elements found in their staple food—dry seeds. Easily recognized by their long, tufted tails, much like an artist's paintbrush, kangaroo rats are often observed at night around the campfires.

The largest animals in the monument are the desert big-horn. Shy and elusive, they avoid roads and other areas of high visitor concentration. They are impressive looking—especially the rams with their massive, curled horns.

The animal most commonly observed is the side-blotched lizard (little brown uta), one of the many lizards in the monument. This small reptile is seen darting about the desert all year except on the coldest winter days. The chuckwalla, one of the largest lizards of the area, basks on the rocks when the sun is not too hot.

Many of the 250 species of birds that have been sighted in the monument are migrants. However, a number are familiar residents, especially around the oases where food and water are comparatively plentiful.

### GEOLOGY

The topography of Joshua Tree National Monument consists mainly of a series of mountains of moderate relief separated by nearly flat valleys, the results of shifting of the earth's crust along great fractures called faults. Weathering and erosion have combined to wear down the mountains and fill the intervening valleys.

Rocks of several geological eras are found, but two types predominate—Pinto gneiss, a metamorphosed rock, and quartz monzonite, a type of granitic rock. The dark Pinto gneiss makes up the bulk of the mountains in the monument. More than 500 million years old, the gneiss was formed under great pressures and high temperatures which altered the pre-existing rocks into their present form. Pinto gneiss is readily identified by thin bands of contrasting color exhibited in most exposures.

Scattered over a large part of the monument, particularly in the higher central part, are hundreds of outcrops of massive, light-gray or pinkish quartz monzonite. These rocks solidified, possibly 150 million years ago, when molten rock, called magma, intruded into the older Pinto gneiss. The magma cooled and crystallized well below the



surface. Later, molten rock of a slightly different composition was forced into some of the fractured and weaker zones, cooled, and formed dikes of contrasting color.

Subsequent gradual uplift speeded up weathering and erosion of the rocks. Gradually the quartz monzonite was exposed as the overlying Pinto gneiss was carried away and deposited in the valleys between the mountains. The contact between the two kinds of rock can best be seen on the mountains east of White Tank Campground or on the west side of Ryan Mountain.

### EARLY HUMAN HABITATION

The presence of a large number of campsites along an ancient river terrace in the Pinto Basin provides evidence that this region was once inhabited by primitive man. Crudely fashioned stone weapon points, distinctive in shape, were discovered, with other stone artifacts, lying along the banks of the old streambed.

After the last ice age, the stream that flowed through the Pinto Basin dwindled as the climate became drier, possibly leaving the basin as it is now, without surface water to attract or sustain a primitive culture.

More recent Indians lived in the monument area, mainly around waterholes and springs, until it became settled in the early 1900's. When the explorers first came, he found two groups of Indians living in the region—the Serrano and the Chemehuevi. Both spoke Shoshone dialects and wandered about in small bands in search of food. They had mastered the difficult art of survival in the desert. Their campsites, with grinding holes, metates, manos, pottery and other artifacts, have been found throughout the monument.

Pioneers, who arrived before the turn of the century, were gold prospectors. Old mine shafts and mill sites, in evidence on many hillsides, attest to their activity. They were followed by cattlemen, who came looking for grass. Small dams made by cattlemen to catch rainwater for their herds are occasionally found among the boulders. These "tanks" are the sources of place names such as White Tank, Squaw Tank, and Ivanpah Tank.

### HOW TO REACH THE MONUMENT

The monument is 140 miles east of Los Angeles. From the west it is approached on U.S. 60 (Int. 10) to a point 15 miles east of Banning, thence to the towns of Joshua Tree or Twentynine Palms and the north entrances.

It may be reached from U.S. 66 by turning south at Amboy and following the paved road 50 miles to Twentynine Palms. The south (Cottonwood Spring) entrance is 25 miles east of Indio, Calif., via U.S. 60 (Int. 10).

Most of the main monument roads have oiled surfaces. Water is scarce and should be carried, especially in summer.

**POINTS OF INTEREST** See map for location.

1. The VISITOR CENTER, at monument headquarters, offers museum exhibits, botanical displays, and a self-guiding nature trail through historic Twentynine Palms Oasis.
2. FORTYNINE PALMS OASIS. Take the 1½-mile trail to this oasis, where water-loving plants thrive.
3. RATTLESNAKE CANYON is at the east end of Indian Cove. Notice the potholes worn in the rocks one-half mile up the canyon. The water sometimes standing in them is not fit to drink.
4. HIDDEN VALLEY. A trail system winding between massive boulders leads you through this legendary cattle rustlers' hideout.

5. CAP ROCK NATURE TRAIL. You will be able to observe and learn about many of the plants and animals of the Joshua-tree forest and some of the geologic features of the monument.
6. SALTON VIEW. This outstanding scenic point in the monument gives a superb sweep of valley, mountain, and desert from its elevation of 5,185 feet. The panorama of the Coachella Valley from the Salton Sea, 241 feet below sea level, to the summits of San Jacinto and San Geronio, more than 10,000 feet high, is magnificent. Both a motor and a foot trail lead off the main road.
7. RYAN MOUNTAIN. The 2-mile trail to the summit has several lookout points with fine views of Queen, Lost Horse, Hidden, and Pleasant Valleys.

8. SQUAW TANK was built by cattlemen to collect water for their stock. Notice the grinding stones in the rocks, indicating previous Indian campsites. Squaw Tank Road is a self-guiding motor nature trail.
9. WHITE TANK NATURE TRAIL. A short hike takes you to Arch Rock. White and Grand Tanks are hidden among the huge boulders.
10. CHOLLA CACTUS GARDEN, a self-guiding nature trail, has some of the plants and animals of the Colorado Desert.
11. COTTONWOOD SPRING. Noted for its birdlife, this palm oasis is easily accessible by road. A small visitor center is near the campground.
12. LOST PALMS OASIS. A 4-mile trail leads you to the largest group of palms in the monument.

**TIPS FOR A TROUBLE-FREE VISIT**

Park regulations are designed for your safety as well as for the protection of natural features. Complete regulations may be seen at the office of the superintendent. *Vehicles must not be driven off established roads and parking areas. Maximum speed is 45 m.p.h.* *Preserving monument features.* No plant or animal life, rocks, deadwood, artifacts, or other natural or historic objects may be gathered, defaced, disturbed, or removed from the monument. *Hunting or shooting* is not permitted. *Pets* must be under physical control at all times. They are not allowed on trails or in public buildings. *Camping and picnicking* are allowed only in designated areas. Bring your own firewood, because all vegetation—even that which is dead and down—is protected. Campfires in campgrounds must be confined to established fire sites. Permission to build fires outside designated areas must be obtained from the superintendent. When in doubt about what you may do, consult a park ranger. He is here to assist you. *Be careful with fire!*

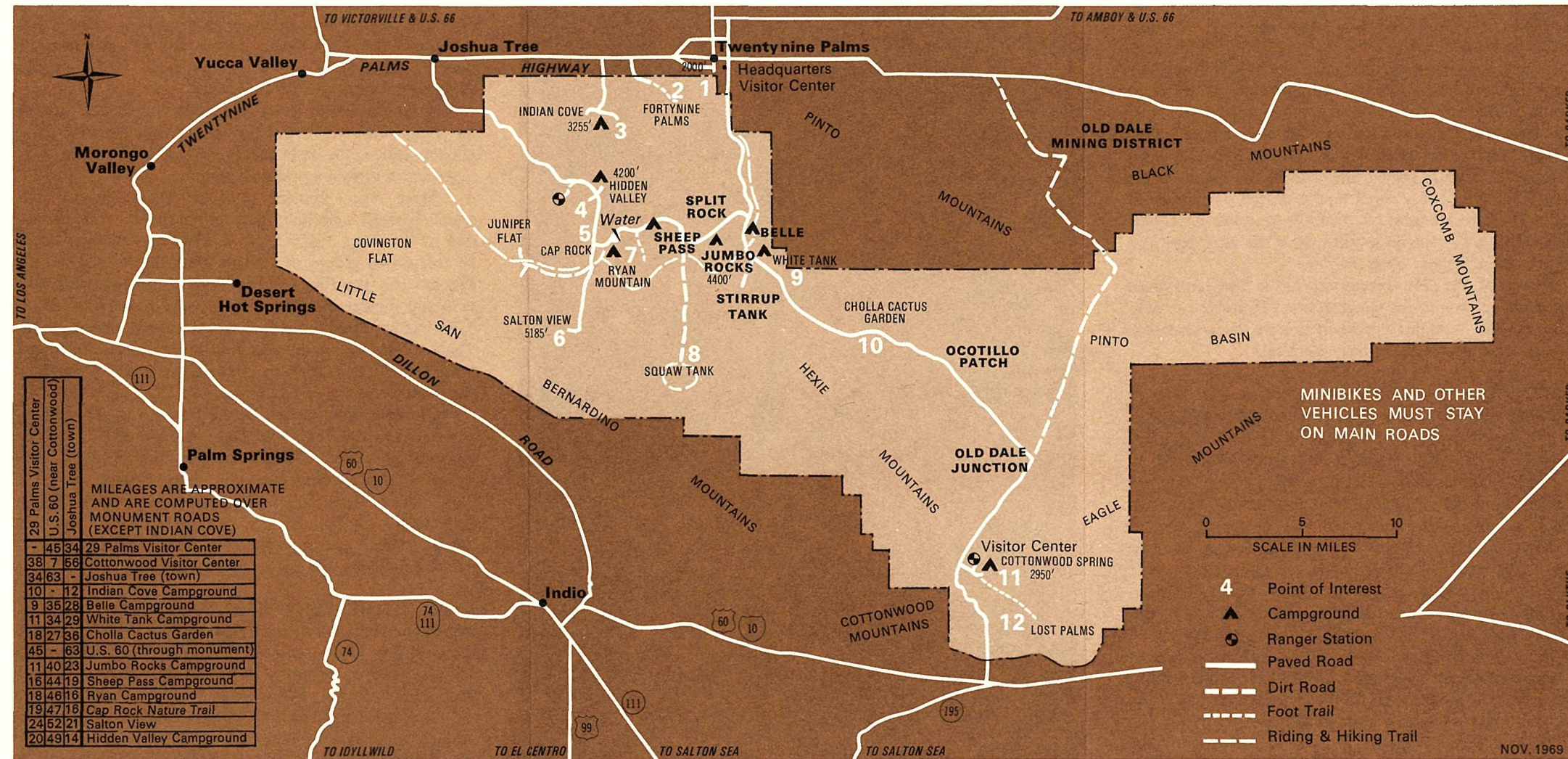
**ACCOMMODATIONS AND SERVICES**

*Eight campgrounds*, with tables, fireplaces, and toilets, have been developed. Campers must bring their own water and firewood and should be prepared for wide fluctuations in temperature. *Motels, restaurants, and stores* are in nearby towns. *Conducted walks, trips, and campfire talks* are scheduled principally in winter; information is posted on campground bulletin boards and at ranger stations.

**ADMINISTRATION**

Joshua Tree National Monument, established on August 10, 1936, and containing about 870 square miles, is administered by the National Park Service, U.S. Department of the Interior. A superintendent, whose address is Twentynine Palms, CA 92277, is in immediate charge. As the Nation's principal conservation agency, the Department of the Interior has basic responsibilities for water, fish, wildlife, mineral, land, park, and recreational resources. Indian and Territorial affairs are other major concerns of America's "Department of Natural Resources." The Department works to assure the wisest choice in managing all our resources so each will make its full contribution to a better United States—now and in the future.

U.S. DEPARTMENT of the INTERIOR  
NATIONAL PARK SERVICE



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