

JOSHUA TREE *journal*

Fall 1993—Winter 1994

Activities Information Regulations

Free

Welcome

to Joshua Tree National Monument, a most special place in the California desert. The beauty and unusual diversity make it a special part of Southern California. This area was made a national monument in 1936 to conserve a representative and scenic portion of the Mojave and Colorado deserts for the benefit and enjoyment of present and future generations.

We need your help to limit the impact of over a million visitors a year. Please recycle your cans and bottles and pick up litter. Watch wildlife from a distance without feeding them. If you observe historic or prehistoric artifacts, please only look and enjoy. Do not touch, move, or collect these items. They are not only for your enjoyment, but also for that of future generations. Tour the park safely and with sensitivity for other visitors and for the plants and animals for whom this park may be their only home.

When you visit Joshua Tree National Monument this season, we hope you will attend one or more of our interpretive programs. We think they will help you to better understand and enjoy the desert. Look for scheduled programs, hikes, and special events posted on bulletin boards throughout the park.

Whatever your reason for coming, we hope you are rewarded by what you see, hear, touch, or smell.

We are in the process of completing our General Management Plan and would like to hear your ideas for improving Joshua Tree National Monument. Please drop a note to: Superintendent, Joshua Tree National Monument, 74485 National Monument Drive, Twentynine Palms, CA 92277.

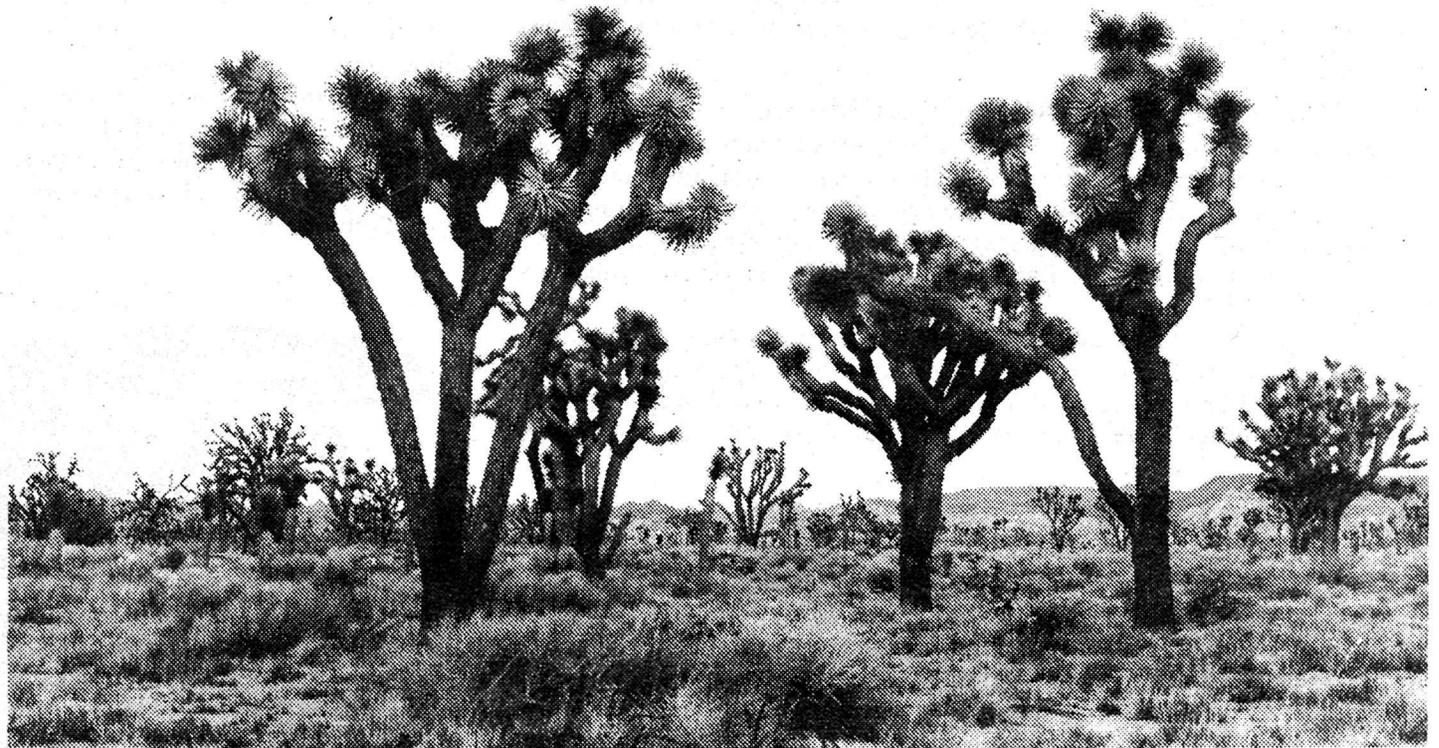
Dave Moore,
Superintendent

In This Issue

■ Astronomy	6
■ Backcountry Information	5
■ Birding	7
■ Campgrounds	3
■ Emergency Numbers	2
■ Entrance Fees	8
■ Hiking	3,4
■ Mountain Biking	8
■ Park Regulations	2
■ Safety	6
■ What to See and Do	2

For Our International Visitors

Park information in Dutch (Nederlands), French (français), German (Deutsch), Japanese (日本語), and Spanish (español) is available at visitor centers and entrance stations.



The Joshua Tree

"... the most repulsive tree in the vegetable kingdom"

John C. Fremont, an early California explorer, made the first known written reference to the Joshua tree, for many the plant most symbolic of the Mojave Desert. On his first trip across the Mojave in 1844 he wrote that "their stiff and ungraceful forms make them to the traveller the most repulsive tree in the vegetable kingdom."

What repulses one person can attract another. According to legend, early Mormon travellers named this yucca. During hot trips crossing the desert from Utah to California, the travellers thought the tree's limbs resembled the arms of the prophet Joshua leading them westward.

The Joshua tree (*Yucca brevifolia*) is an indicator plant for the Mojave Desert, but it is not confined to this desert alone. It ranges slightly beyond the Mojave's boundaries in all directions. You may find it growing next to a saguaro cactus in the Sonoran desert of western Arizona or mixed with pines in the San Bernardino Mountains.

Like other yuccas, the Joshua tree is in the lily family. It has a fibrous trunk and branches. The Mohave yucca, a close relative, can be identified by its longer, wider leaves and curling threads along its leaf margins.

The Joshua tree grows slowly—at most only two to four inches a year. Growth is dependent on rainfall. Growth rings occur, but they are not indicative of annual growth as they are in many other trees. Age estimates are based on assuming an average growth rate. This is difficult since the plant is long-living and rainfall totals have changed considerably over the years. The tallest tree in the monument is visible north of the main

park road through Queen Valley. It is over thirty feet high and is estimated to be nine hundred years old!

Spring sometimes brings clusters of creamy white flowers on long stalks at the tips of branches. A tree does not flower annually, usually every two to five years or even less often. Flowering depends on both rainfall and temperatures. It is thought that below-freezing winter temperatures are needed. These colder temperatures may damage a branch's growing tip. This damage is suspected to be necessary for flowering to occur.

The Joshua tree takes on interesting shapes, often looking like a Dr. Suess creation. In this area it only branches after flowering. It then forks into two or more limbs just below the old bud. Directions of branching are random, creating unpredictable forms.

Many birds, mammals, reptiles, and insects depend on the Joshua tree for food and shelter. Watch for the yellow and black Scott's oriole and its nest. The wood rat chews off the sharp-tipped leaves for shelter-building material. A desert night lizard may spend most of its life under a fallen Joshua tree, feeding on insects.

The most specialized and mutual dependence is that of the Joshua tree and the yucca moth. The female moth lays her eggs inside the soon-to-develop ovaries of the plant's flowers. Collecting sticky pollen as moths fly from flower to flower ensures pollination. Growing seeds inside the developing ovaries provide food for young moth larvae. However, many seeds survive to grow and provide for future generations of moths. Over time this has become such a specialized relationship

that the Joshua tree can only be pollinated by a specific species of yucca moth.

Native Americans developed many uses for Joshua trees. Flower buds were eaten raw or roasted, and later in the season seeds also provided nourishment. The leaves' coarse fibers were woven into rope, sandals, mats, and cloth. Large roots were ground to make soap or were taken internally as a laxative. The smallest roots provided red strands used for making basket patterns.

European settlers used Joshua tree limbs and trunks for constructing corrals and fences. Other trees were burned to provide fuel, especially for the steam engines used in mining.

Most Joshua trees and their remains will outlast human lifespans. The dry desert environment makes dead wood resistant to decay. Even in death the Joshua tree is a source of life. Termites live in stumps, returning nutrients to the soil. Downed trees also provide homes and protection for other insects, lizards, wood rats, and squirrels.

See how many interesting Joshua tree shapes you can find as you travel through the park. Watch for the rare trees that have never flowered and admire their long, undivided trunks. "... the most repulsive tree in the vegetable kingdom." What do you think?

What to See and Do

For the first-time visitor the desert may appear bleak and drab. On closer examination the desert is actually full of fascinating and unique living systems interwoven together. A rich cultural history and surreal geologic features add allure to the desert. The monument offers the visitor endless opportunities for exploration and discovery. Depending on the number of hours you want to spend and your interest, here are some ideas to help you plan your visit.

IF YOU HAVE FOUR HOURS OR LESS, begin your visit at a park visitor center. The Oasis Visitor Center in Twentynine Palms is open 8:00 a.m. to 4:30 p.m. daily except Christmas. The Black Rock Canyon and Cottonwood visitor centers are open daily 8:00 a.m. to 3:30 p.m. except for Christmas and occasional closures due to staff shortages. Park brochures and newspapers, cultural and natural history exhibits, and specific information are available at the visitor centers.

With limited time you may want to confine your sightseeing to the main park roads. Many pullouts with wayside exhibits dot the park roads. Another article on page 4 lists nature trails and short walks located throughout the monument. Consider experiencing at least one of these walks during a short park visit.

IF YOUR PLAN TO SPEND AN ENTIRE DAY, be sure to include several nature trails in your schedule. If you are in the park mid-October to mid-December or mid-February through May, plan to participate in ranger-led programs Fridays through Sundays. Check at the visitor centers and the bulletin boards in the campgrounds for program listings. These presentations will add enjoyment and understanding to your visit.

If solitude is what you are after, plan an all-day hike. Obtain hiking maps and trail information from the visitor centers. The desert, fascinating as it is, can be life-threatening for those unfamiliar with its potential dangers. Be sure to review "Desert Safety Check List" on page 6 before you go hiking. Remember, dogs are not allowed more than 100 yards (90 meters) from any road, campground, or picnic area.

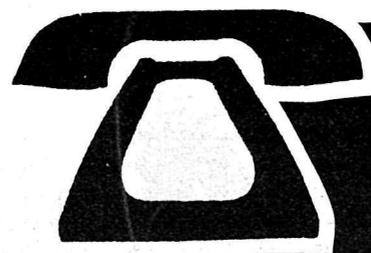
Some visitors like to experience the desert from the seat of a mountain bike. Bicycles are considered vehicles and are not allowed anywhere off roads. They are not allowed on trails, service roads, or any other roads closed to vehicle traffic. Refer to mountain biking article on page 8 for more information.

Joshua Tree National Monument has gained international attention as a superb rock-climbing area. Many visitors flock to the park to climb or to watch the rock climbers in action.

WITH MORE THAN ONE DAY IN THE PARK, more options are available. There are nine campgrounds and backcountry camping is permitted. You will find information concerning camping and backcountry use on page 3 and 5 respectively.

Books and topographic maps available at park sales areas give information needed for longer hikes. For "peak baggers," the monument has ten mountains over 5,000 feet (1,524 meters) in elevation. Or make it your goal to hike to all the park oases. Other trails lead you to remnants of the gold mining era, a colorful part of the monument's cultural history.

Whatever your choice of activity, your time at Joshua Tree will be well spent. The desert holds much more than what is readily apparent to the casual observer.



IN CASE OF EMERGENCY,

contact any park ranger, dial 911, or call collect to the 24-hour Dispatch Center—(909)383-5651. These numbers are **FOR EMERGENCY ONLY**. Pay phones are located at the visitor centers in Twentynine Palms and Black Rock Canyon. You can also find pay phones in the town of Joshua Tree, at the Indian Cove Market, and at Chiriaco Summit (12 miles southeast of Cottonwood Spring).

Some Park Regulations and Why

National parks and monuments are protected.

Plants and animals removed from their unique environments soon perish. Removal, disturbance, destruction, and disfigurement of anything is prohibited. This will permit those who come in the future to enjoy this park as you have.

Feeding of wildlife is prohibited.

Feeding coyotes, ground squirrels, and other animals weans them from their natural food supplies, causes over-population problems, and turns them into dangerous creatures as they lose their fear of humans. Keep the wildlife wild.

State and federal vehicle laws apply in the monument.

Park roads are narrow and winding. Some areas are congested. The vehicle laws and speed limits are there for your own safety and well being.

Pets must be on a leash at all times. They are prohibited on trails and beyond 100 yards (90 meters) from any road, campground, and picnic area.

The sight of your pet, the noises it makes, and the scents and waste products it leaves behind can disrupt the natural wildlife community and reduce the survival of some of its inhabitants. Some pets are considered delicacies by local predators. Your pet may also be an annoyance to other visitors.

Prospecting, including the use of metal detectors, is prohibited.

These practices remove formations other visitors would enjoy seeing, disturb plants and animals, and scar the landscape.

Dispose of all your trash properly.

The dry desert climate cannot quickly decompose paper, aluminum, glass, and other litter.

All vehicles, including bicycles, are prohibited off established roads.

The desert ecosystem is fragile. Vehicle tires destroy vegetation. Off-road driving or riding creates ruts, upsetting the delicate drainage patterns, compacting the soil, and leaving visual scars for years. Plants are crushed and uprooted. Wildlife homes and shelters are destroyed, and their food and water supplies are altered or obliterated.

Collecting any vegetation, living or dead, is prohibited. Fires are limited to campground and picnic area fireplaces.

Gathering native vegetation or building fires outside designated fireplaces creates fire hazards and radically alters the appearance and life cycle of the desert. Desert vegetation grows slowly and depends on recycling decomposed organic material for survival. Ashes remaining from a fire take

years to disappear, meanwhile spoiling the sight other visitors may have traveled a thousand miles to enjoy.

Archeological sites and remains may not be disturbed in any way.

Certain areas within the monument are designated as restricted or day use only.

Entering restricted areas is prohibited. Some areas are privately owned; others protect wildlife or historical sites. Day use areas are set aside to protect sensitive populations of wildlife. They are closed from dusk to dawn.

Firearms, fireworks, traps, bows and arrows, BB guns, and slingshots are not allowed.

 Campgrounds	Elevation	Number of Sites Individual/Family	Number of Sites Group (Reservation required)	Fee/night Per group site=g Per individual/family site=i	Water	Chemical Toilets	Flush Toilets	Tables	Fireplaces	Dump Station	Horses Permitted	Remarks
	Belle	3,800' 1,158 m	17			•	•	•				
Black Rock Canyon	4,000' 1,219 m	100		\$10/i	•	•	•	•	•	•		Campsite No.61 is wheelchair accessible ♿
Cottonwood	3,000' 914 m	62	3	\$8/i \$15/g	•	•	•	•	•			Group site No.2 is wheelchair accessible ♿
Hidden Valley	4,200' 1,280 m	39			•	•	•					
Indian Cove	3,200' 975 m	107	13	See remarks	•	•	•					Group sites 1,2 \$30/night Group sites 3-13 \$15/night
Jumbo Rocks	4,400' 1,341 m	125			•	•	•					Campsite No.11 is wheelchair accessible ♿
Ryan	4,300' 1,310 m	29			•	•	•		•			
Sheep Pass	4,500' 1,371 m		6	\$10/g	•	•	•					
White Tank	3,800' 1,158 m	15			•	•	•					

- Showers are not available. There are no hookups for recreational vehicles.
- Bring your own water. If you run out of water, it is available at the Oasis Visitor Center in Twentynine Palms, Indian Cove Ranger Station, and Black Rock Canyon and Cottonwood campgrounds.
- Bring your own firewood and kindling. All vegetation in the monument is protected.
- Campfires are allowed in designated firepits only.
- Two cars and up to six people are allowed at each individual/family campsite. Group site capacity ranges from ten to seventy people.
- Quiet hours are from 8 p.m. to 7 a.m. This includes generators and motors.
- Obtain reservations for individual/family sites at Black Rock Canyon and all group sites by calling 1-800-365-2267. All other campgrounds are first come, first served—it is wise to arrive as early as possible.
- There is a 14-day camping limit from September through May and a 30-day limit from June through August.
- Belle and Ryan campgrounds are usually closed during the summer when the park is less crowded.
- When in doubt, ask a ranger.

Be an inspiration to the others. Leave your campsite as clean or cleaner than when you found it.

HIKING TRAILS IN JOSHUA TREE NATIONAL MONUMENT FOR INFORMATION ON OTHER HIKES IN THE PARK PLEASE REFER TO PUBLICATIONS AVAILABLE AT PARK SALES AREAS				
Trail	Round-trip Mileage	Time	Starting Point	Trail Description/Rating
Boy Scout	16 miles (25.8 km)	1-2 days	Indian Cove backcountry board or Keys West backcountry board 0.5 mile (0.8 km) east of Quail Springs picnic area.	Scenic Trail through the westernmost edge of the Wonderland of Rocks. See backcountry article on page 5 for information on overnight use. Moderate.
49 Palms Oasis	3 miles (4.8 km)	2-3 hours	Parking area at end of Canyon Road, 4 miles (6.4 km) west of Twentynine Palms off Highway 62.	Several stands of fan palms, evidence of past fires, and pools of water are found at the oasis. Moderately strenuous.
Lost Horse Mine/Mountain	4 miles (6.4 km)	3-4 hours	Parking area 1.2 miles (1.9 km) east of Keys View Road.	Site of ten-stamp mill and foundations. Summit elevation, 5278 feet (1,583 meters). Moderately strenuous.
Lost Palms Oasis	7.5 miles (11.2 km)	4-6 hours	Cottonwood Springs Oasis or Campground.	A canyon with numerous palm stands. A side trip to Victory Palms and Munsen Canyon involves boulder scrambling. Moderate to oasis overlook, then strenuous.
Mastodon Peak	3 miles (4.8 km)	2 hours	Cottonwood Springs Oasis or Campground.	Excellent views of the Eagle Mountains and Salton Sea. Summit elevation, 3,371 feet (1,011 meters). Moderate.
Ryan Mountain	3 miles (4.8 km)	2-3 hours	Ryan Mountain parking area or Sheep Pass Campground.	Excellent views of Lost Horse, Queen, and Pleasant valleys. Summit elevation, 5461 feet (1,638 meters). Strenuous.

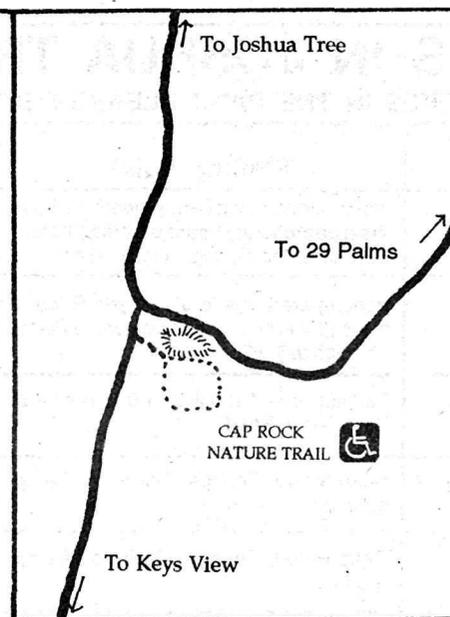
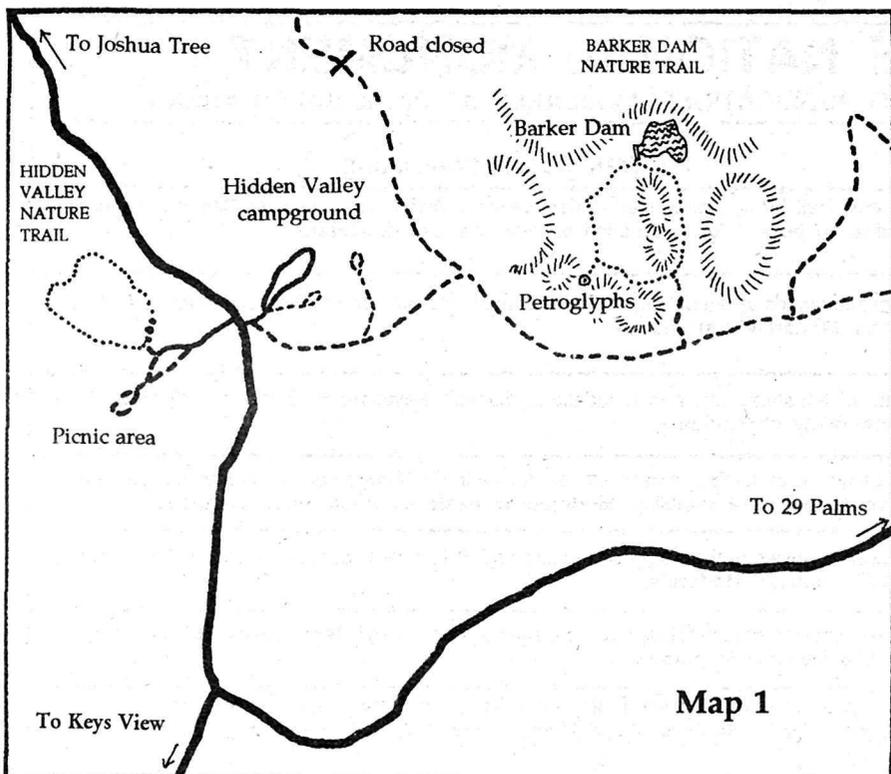
Thirty-five miles of the California Riding and Hiking Trail pass through the monument. Access to the trail is at its junction with Covington Flats, Keys View, and Squaw Tank (Geology Tour) roads; at Ryan Campground; south of Belle Campground; and near the north entrance to the monument. This allows for shorter hikes of 4, 6.7, or 11 miles (6.4, 10.7, or 17.6 km). Two to three days are required to hike the entire length of the trail.



NATURE TRAILS

Short walks, most with informational signing
Watch for sign shown at left

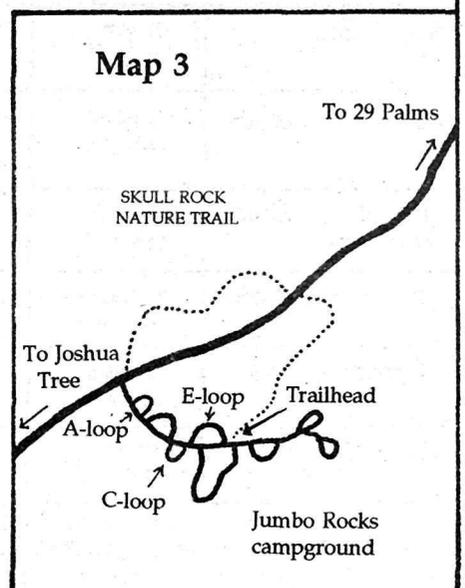
Trail	Mileage	Starting Point	Trail Highlights
Arch Rock	0.3-mile (0.5-km) loop	White Tank Campground, opposite site 9	Signs along the trail interpret the geology of the area and the natural creation of an arch.
Barker Dam (See map 1 below)	1.1-mile (1.8-km) loop Caution: Some rock scrambling near dam	Enter the Hidden Valley Campground and follow the dirt road that goes off to the right. Follow the signs to the parking area.	The loop trail brings you to Barker Dam, built to collect water for the cattle of early ranchers. The trail back to the parking lot takes you past Native American petroglyphs. These authentic carvings were unfortunately painted over by a film crew in an attempt to make them more visible.
Cap Rock (See map 2 below) 	0.4-mile (0.6-km) loop	Cap Rock parking area, southeast of Hidden Valley Campground at the junction with Keys View Road.	The paved trail leads you past fascinating rock formations, with signs interpreting the geology and plants of the Mojave Desert.
Cholla Cactus Garden	.25-mile (0.4-km) loop	Point of interest 9 on the park brochure map. On the main park road, 20 miles (32.0 km) north of the Cottonwood Visitor Center.	The trail travels through an unusually dense concentration of Bigelow cholla. A brochure, available at the start of the trail, helps you pick out the well-camouflaged homes of pack rats inhabiting the garden, as well as other wildlife and vegetation characterizing the Colorado Desert.
Cottonwood Springs	1-mile (1.6-km)	Cottonwood Campground, sites 13A and 13B (north end) or Oasis parking lot (south end).	Signs interpret the plants and animals of the Colorado Desert as the trail travels through rolling hills on its way to the Cottonwood Springs Oasis.
Hidden Valley (See map 1 below)	1-mile (1.6-km) loop	Hidden Valley picnic area, point of interest 3 on the park brochure map.	The trail, which involves some easy boulder scrambling, takes you into a rock-enclosed valley rumored to have been used as a hideout for cattle and horse rustlers in the late 1800's.
High View	1.3-mile (2.1-km) loop	South Park parking area, to the northwest of Black Rock Canyon Campground.	The view from the top, near Summit Peak (elevation 4,500 feet or 1,372 meters), makes this hike well worth its moderately steep, 300-foot (90-meter) elevation gain. A brochure, describing the flora and scenery along the trail, is available at the Black Rock Canyon Visitor Center.
Indian Cove	0.6-mile (1.0-km) loop	West end of Indian Cove Campground.	This easy trail follows a wash for most of the walk. Watch for desert tortoises, as Indian Cove is a favorite habitat area. If you do spot one, please observe it quietly from a distance. Tortoises are protected by state and federal law.
Keys View	0.25-mile (0.4-km) loop	Keys View, point of interest 6 on park brochure map.	This outstanding scenic point gives a superb sweeping view of the valley, mountains, and desert from its elevation of 5195 feet (1,558 meters).
Oasis of Mara 	0.5-mile (0.8-km) loop	Oasis Visitor Center, Twentynine Palms.	The Oasis was once a popular gathering place for several tribes of Native Americans, including the Serrano, Cahuilla and Chemehuevi. This easy, paved trail is a good introduction to the monument.
Skull Rock (See map 3 below)	1.7-mile (2.7-km) loop	Jumbo Rocks Campground, beyond Loop E entrance.	Interpretive signs guide you through boulder piles, desert washes, and a rocky alleyway. The trail crosses the road and loops back to the campground entrance.

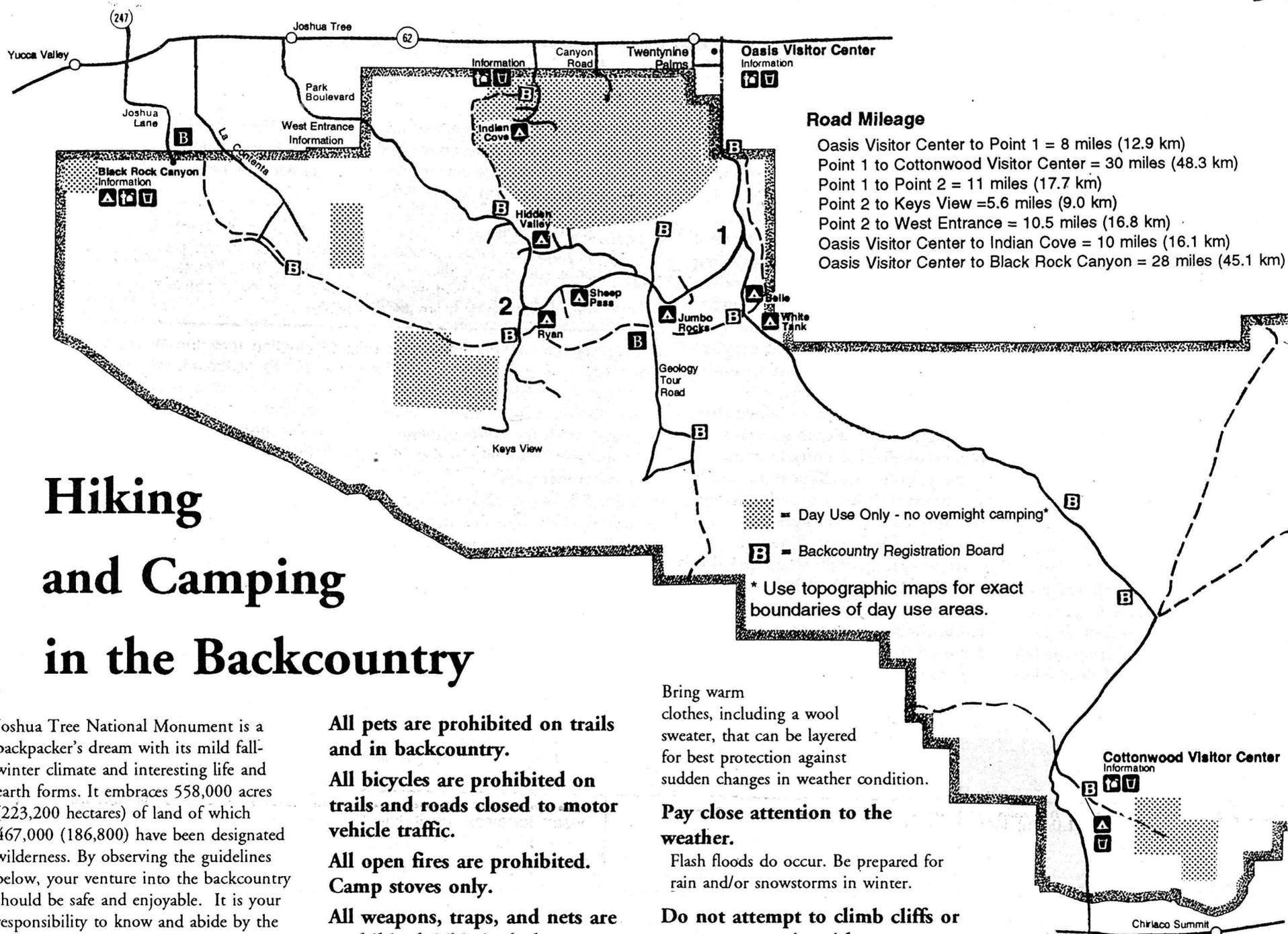


NATURE TRAILS

- Paved road
- - - Dirt road
- Hiking trail

* Maps not drawn to scale





Hiking and Camping in the Backcountry

Joshua Tree National Monument is a backpacker's dream with its mild fall-winter climate and interesting life and earth forms. It embraces 558,000 acres (223,200 hectares) of land of which 467,000 (186,800) have been designated wilderness. By observing the guidelines below, your venture into the backcountry should be safe and enjoyable. It is your responsibility to know and abide by the park regulations. If you have any questions, ask a ranger.

All overnight users must register at a backcountry board before entering the backcountry.

The map on this page indicates the location of the twelve backcountry boards. Follow the instructions for self-registration. Unregistered vehicles or vehicles left overnight anywhere other than at a backcountry board are subject to citation and/or towing.

All wilderness camping must be at least one mile (1.6 km) from any road and 500 feet (150 meters) from trails. Camping is prohibited in day-use areas and at any natural or man-made water source, including springs, seeps, dams, and tanks.

Campsites must be 1/4 mile (400 meters) from water sources.

The same map shows the general location of each day-use area. It is your responsibility to know the exact day-use area boundaries. Contact a ranger if in doubt. Camping in washes is not recommended because of potential flash flood dangers.

All pets are prohibited on trails and in backcountry.

All bicycles are prohibited on trails and roads closed to motor vehicle traffic.

All open fires are prohibited. Camp stoves only.

All weapons, traps, and nets are prohibited. This includes possessing, using, discharging, or carrying.

Pack out all garbage.

Buried trash will be dug up by animals and scattered by the wind creating an unappetizing sight. Bury human waste in holes at least six inches (15 cm) deep and pack out toilet papers in a zip-lock bag.

Carry a minimum of one gallon (3.8 liters) of water per person per day

Carry two gallons (7.6 liters) per person in hot weather or if planning a strenuous trip. Carry additional water for cooking and personal hygiene.

Carry a topographic map and compass. Know how to use them.

Include in your gear plastic garbage bags or raincoat, flashlight, mirror, whistle, first-aid kit, pencil and paper, pocket knife, and extra food. Do not use freeze-dried food unless you plan to carry extra water to use for cooking.

Dress for the weather.

Temperature drops of 40°F (22°C) in a 24-hour period are common in the desert. Wear a hat, sunglasses, and sturdy boots. Use sunblocking lotion liberally.

Bring warm clothes, including a wool sweater, that can be layered for best protection against sudden changes in weather condition.

Pay close attention to the weather.

Flash floods do occur. Be prepared for rain and/or snowstorms in winter.

Do not attempt to climb cliffs or any steep terrain without adequate equipment and training. Accidents can be fatal.

The following is prohibited:

Possessing, destroying, disturbing, injuring, defacing, removing, and digging from its natural state

- a. Living or dead wildlife.
- b. Plant or plant parts, both living and dead.
- c. Non-fossilized or fossilized specimens.
- d. Mineral resources such as stones, sand, rock formations, and mineral elements.
- e. Any archaeological or historic site or structure, including mines and mining areas.

All stock animals are subject to the following restrictions for resource preservation and the enjoyment of others:

- a. No overnight backcountry camping without special permit.
- b. No grazing permitted.
- c. No stock animals within 1/4 mile (400 meters) of any natural or man-made water sources, including springs, seeps, dams, or tanks.

- d. All stock animals must stay on marked trails and washes to minimize vegetation damage, and soil erosion, compacting, and rutting.
- e. Only Ryan and Black Rock campgrounds are equipped with facilities for overnight camping with stock animals.
- f. All stock animals are restricted to pellet form of feed in the backcountry.
- g. No horses on the Hidden Valley, Barker Dam, or Ryan Mountain trails.
- h. No riding in the open desert, except in washes.



5.0 to 5.14, Joshua Tree Has It All

Debbie Brenchley
Park Ranger

By stretching to full extension, she could just reach the small flake. Calloused fingers were set gingerly on the minuscule edge as she delicately transferred her weight first from her right then from her left foot, smearing shoe rubber against the rock to maintain her balance. Tired fingers and pumped-up forearms desperately struggled to maintain the hold.

Then suddenly she was falling. Just as suddenly the rope attached to her body harness went tight, and she snapped to a halt. Her ears filled with the sound of her pounding heart as she dangled a few feet below her last piece of protection. Sighing, she started the sequence of moves that lead back up the same route.

To many people Joshua Tree National Monument means climbing. There are a multitude of climbs here, over 4,500 known routes. Climbers from all over the world flock to the monument, especially during the fall and spring. Sunshine and clear skies

draw them here from areas like Yosemite, the Rocky Mountains, and Idyllwild, where colder, less predictable weather prevails during the winter.

On any day of the week, you can find climbers out on the rocks testing their skills. During busy weekends, climbers seem to outnumber lizards on the rocks. Many visitors like to watch as climbers overcome gravity to ascend the rocks—the best appearing to dance up the rockface.

Climbing was once explained to me in simple terms: "Reach up to the highest available handhold, then move your feet up. Repeat this until you reach the top." Of course, it never seems that easy or straight forward when you are the one climbing.

Another frequently asked question is, "Why do they climb?" For an answer you'll have to track down and ask a climber, since everyone seems to have a different reason.

If you talk with a climber for any

length of time, you may hear some numbers thrown in to describe climbs. Most climbs are rated according to difficulty. The climbs at Joshua Tree are rated, under the Yosemite Decimal System, from 5.0 to 5.14.

Mountaineering: The Freedom Of The Hills, published by the Mountaineers, has a tongue-in-cheek description of the ratings, so that a beginner or non-climber can have a better understanding.

5.0 to 5.4 There are two handholds and two footholds for every move; the holds become progressively smaller as the number increases.

5.5 to 5.6 The two handholds and two footholds are there, obvious to the experienced, but not necessarily to the beginner.

5.7 The move is missing one hand- or foothold.

5.8 The move is missing two holds of the four, or missing only one but is very strenuous.

5.9 This move has only one reasonable hold which may be for either a foot or a hand.

5.10 No handholds or footholds. The choices are to pretend a hold is there, pray a lot, or go home.

5.11 After thorough inspection you conclude this move is obviously impossible; however, occasionally someone actually accomplishes it. Since there is nothing for a handhold, grab it with both hands.

5.12 The surface is as smooth as glass and vertical. No one has really ever made this move, although a few claim they have.

5.13 This climb is identical to 5.12 except it is located under overhanging rock.

Since this was written, 5.14 has been added to the scale. Good luck at figuring out how they climb something that hard!

Enough reading about climbing. It is time to get out and enjoy it, either as a participant or a spectator.



Astronomical Delights at Joshua Tree

Roger A. Howell
Volunteer

This fall and winter, there will be many astronomical delights for you to gaze at while visiting Joshua Tree National Monument. The planets Venus and Saturn will be visible along with a couple of meteor showers. The constellations the Great Northern Triangle, Pegasus the Winged Horse, and Cygnus the Swan will be easy to spot if you tilt your head upward as you sit around the campfire. A constellation is a group of stars that can be connected as in a dot-to-dot diagram to form familiar objects like swans, horses, or great hunters.

Saturn is the second largest planet in our solar system of nine planets. It is easy to tell a planet from a star. Planets shine with a steady light whereas stars twinkle.

In 1610, Galileo gazed at Saturn with his telescope and discovered that the planet appeared to have "ears." Of course, the ears were the stunning rings of Saturn that you may view through a small telescope thanks to the clear skies at Joshua Tree.

This year the rings will be tilted thirteen degrees from edgewise—an

angle that won't be exceeded until 1998—so don't miss it! You will find Saturn in the constellation Capricornus above the southern horizon just after sunset.

The Earth's sister planet, Venus, can be seen at dawn this fall in the eastern sky. Venus is called our sister planet because it is about the same size as Earth and it is our next door neighbor in space. However, don't plan a vacation to Venus; the air temperature is nine hundred degrees fahrenheit (338 degrees centigrade).

As you might expect, the best views of "fuzzy" objects like galaxies, meteors, and nebulae come from dark sky areas like Joshua Tree National Monument. The Milky Way, the galaxy we live in, is spectacular when viewed from the desert and can be found by drawing a line from the constellation Cassiopeia the Queen through Cygnus the Swan. The Milky Way is spiral shaped like a pin-wheel and contains millions of stars.

In the late fall, you will be able to spot the Great Orion Nebula in the east just after sunset. It is the middle

star in the sword of the Mighty Hunter Orion. A nebula is a large cloud of hydrogen gas that is in the process of collapsing. As it collapses, it forms new baby stars—sort of a stellar nursery. Meteors, also called "shooting stars," are dusty particles that burn up in our atmosphere. They are what is left of comets like Halley's Comet. A comet is a giant, dirty, frozen snowball. When a comet gets close to the sun it melts, leaving a fuzzy trail of debris known as the comet's tail.

Meteors are pieces of comet debris which enter our atmosphere. When large numbers of meteors are visible together, they are said to be a meteor shower. These meteor showers are named after the constellation from which they appear.

We are lucky to have a place like Joshua Tree just a few hours from the city where we can escape to "dark skies" and gaze at the astronomical delights of the universe. We must tread lightly while visiting this fragile environment so that our children will experience the same delights that we so enjoy.

SAFETY ✓ LIST

- ✓ Tell someone where you are going and when you expect to return. This is especially important if you travel or hike alone. However, hiking or traveling alone is not recommended.
- ✓ Carry plenty of water, at least 1 gallon (3.8 liters) per person per day; 2 gallons (7.6 liters) when it is hot or you are performing strenuous activity. Drink the water and do not economize. When the water is half gone, it is time to turn back.
- ✓ Wear sturdy shoes, sunglasses, and a wide-brimmed hat. Apply sun screen. Wear layered clothing. Desert temperatures can reach over 90°F (32°C) and drop below 50°F (10°C) in one day, depending on the weather and where you are going.
- ✓ Learn how to use a topographic map and a compass before you hike cross-country or on trails that are not well defined. It is easy to become disoriented in the desert where many landmarks and rock formations look similar.
- ✓ DO NOT ENTER mine shafts or associated buildings. They are extremely hazardous.
- ✓ Keep your vehicle well-maintained. Carry extra water and non-protein food, shovel, tools, flares, and blankets. Check road conditions and beware of flash floods.
- ✓ If you are stranded, stay with your vehicle. It is much easier to spot a vehicle than a wandering person.



Fall and Winter Birding

Brian Prescott
Volunteer

Bird activity slows in late summer and fall, as summer residents leave for their winter homes. Bright orioles and several types of flycatchers, swallows, and sparrows head south for Mexico and Central America.

The resident nesting species have finished raising their young, and, if the young birds haven't left the territory yet, the apron strings are being cut. For the young birds it's time to go out on their own. The new territory could be down the wash a mile, or it could be on the other side of the mountain.

It's also the time of year that most songbirds molt their feathers. They fall out a few at a time and are replaced by new ones. Time and the rigors of nesting have taken their toll on the old feathers. The fresh feathers will keep the birds warm during the approaching winter.

About fifty species are resident in the monument all year. Some, like black-throated sparrows and common ravens, are hard to miss. Others, like pinyon jays and LeConte's thrashers, require some luck and guidance to find. If you have a day or two to visit several different habitats, you could find the majority of the residents.

Black Rock Canyon Campground—Here you might see Gambel's quail, mourning doves, greater roadrunners, great horned owls, Anna's hummingbirds, northern flickers, scrub jays, cactus wrens, northern mockingbirds, California thrashers, loggerhead shrikes, black-throated sparrows, and house finches.

Indian Cove Campground—Watch for Gambel's quail, mourning doves, Costa's hummingbirds, Say's phoebes, common ravens, canyon wrens, Bewick's wrens, LeConte's thrashers, black-tailed gnatcatchers, phainopeplas, black-throated sparrows, and house finches.

Oasis Visitor Center—Look for Cooper's hawks, American kestrels, greater roadrunners, Costa's and Anna's hummingbirds, northern flickers, verdins, northern mockingbirds, phainopeplas, starlings, and house finches.

Hidden Valley Campground, Barker Dam, and Lost Horse Valley areas—Watch for red-tailed hawks; golden eagles; American kestrels; Gambel's quail; mourning doves; white-throated swifts; ladder-backed woodpeckers; northern flickers; Say's and black phoebes; scrub and pinyon jays; plain titmouses; bushtits; Bewick's, cactus, canyon, and rock wrens; blue-gray and black-tailed gnatcatchers; California thrashers; and rufous-sided towhees.

Cottonwood Spring—Look for Cooper's and red-tailed hawks, Gambel's quail, Costa's and Anna's hummingbirds, common ravens, verdins, cactus and rock wrens, northern mockingbirds; black-tailed gnatcatchers, phainopeplas; loggerhead shrikes; and lesser goldfinches. The various habitats of Joshua Tree provide winter homes for these birds. Last spring's conditions have an effect on the number of species and the number of birds that will stay in the monument for the winter. Since there was good rainfall with corresponding plant growth, the plants produced a good seed crop. This will attract seed-eaters, such as sparrows and finches.

Along with these seed-eaters come hawks and owls. This winter influx of

birds will also add to some of the resident species. These birds leave the cold north country to be close to food sources. Some possibilities are burrowing and long-eared owls, northern flickers, horned larks, blue-gray gnatcatchers, Anna's hummingbirds, and loggerhead shrikes.

Some of the most common winter visitors, such as white-crowned sparrows, come from as far away as Alaska. Some species move only a few miles. This is called vertical migration, because these birds move down from the local mountains to a lower elevation. Birds of this type are western and mountain bluebirds, American robins, mountain chickadees, house wrens, hermit thrushes, ruby-crowned kinglets, and chipping sparrows.

Since 1966 a Christmas bird count, sponsored by the National Audubon Society, has been held at Joshua Tree National Monument. Over the years more than 130 species have been recorded.

Take a walk in the monument for an hour or for the day. You are bound to see a few birds. For help with identification contact a park naturalist. Check the current listing of weekend ranger-led programs to see if a bird walk is scheduled during your visit.

Desert Word Search

Deserts
Mojave
Colorado
Joshua Tree
Coyotes
Bighorn
Jackrabbit
Lizards
Snake
Tortoises
Packrats

RED-TAILED Hawk
Ravens
BILL Keys
Ranch
Pottery
Petroglyph
Olla
Arrowhead
Rock
PINTO Gneiss
Monzogranite

Creosote
Pinyon PINE
Mesquite
Cholla
Yucca
Climbing
Camp
Hike
NPS
Water
Hot

Circle the above words in the puzzle. The remaining uncircled letters, if read from top to bottom and left to right, will spell the answer to the following question:

Which former U.S. President signed a proclamation creating Joshua Tree National Monument?



Answer: Franklin D. Roosevelt

Backcountry Roads

for mountain bikes and four-wheel drives

Mountain bikes and four-wheel drive vehicles are welcome in Joshua Tree National Monument. For your own safety and for the protection of the natural features of the monument please keep the following in mind:

- Bikes and all other vehicles must stay on established roads. Tire tracks on the open desert can last for years and will spoil the wilderness experience of future hikers.
- Paved roads in the monument are narrow without paved shoulders. Curves, boulder piles, and Joshua trees often restrict the vision of bikers and motorists.
- Helmets are highly recommended.

The unpaved roads in the monument are safer for bikes and offer many opportunities to explore the area. The following dirt roads are open to mountain bikes and four-wheel drive vehicles:

Pinkham Canyon Road—This challenging 20-mile (32.4-km) road begins at Cottonwood Visitor Center, travels along Smoke Tree Wash, and then cuts down Pinkham Canyon. Sections of the road run through soft sand and rocky flood plains. The road ends at a service road next to Interstate 10.

Black Eagle Mine Road—Beginning 6.5 miles (10.5 km) north of Cottonwood Visitor Center, this dead-end dirt road runs along the edge of Pinto Basin, crosses several dry washes, and then winds up through canyons in the Eagle Mountains. The first 6 miles (9.7 km) of the road are within the monument boundary. Beyond that point is Bureau of Land Management land and a number of side roads. Several old mines are located near these roads but may be dangerous to approach.

Old Dale Road—This 23-mile (37.3-km) road starts at the same point

as the Black Eagle Road. For the first 11 miles (17.8 km), the road runs across Pinto Basin, a flat, sandy dry lake bed. Shortly after leaving the basin, the road climbs up a steep hill, then crosses the monument boundary. Near that point a number of side roads veer off toward old mines and private residences. If you stay on the main road you will come out on Highway 62, 15 miles (24.3 km) east of Twentynine Palms.

Queen Valley Roads—A network of roads, totaling 13.4 miles (21.7 km), crisscross this valley of boulder piles and Joshua trees. A bike trip can begin at Hidden Valley Campground or at the dirt road opposite the Geology Tour Road. Several bike racks have been placed in this area so that visitors can lock their bikes and go hiking.

Geology Tour Road—The road turns south from the paved road 2 miles (3.2 km) west of Jumbo Rocks. The distance from the junction to Squaw Tank is 5.4 miles (8.8 km). This section is mostly downhill but bumpy and sandy. Starting at Squaw Tank, a 6-mile (9.7-km) circular route can be taken that explores Pleasant Valley. A guide to the road is available at the beginning of the road.

Covington Flats—The dirt roads in Covington Flats offer access to some of the monument's largest Joshua trees, as well as to junipers, pinon pines, and some of the lushest vegetation in the high desert. A nice trip is from the Covington Flats picnic area to Eureka Peak, 3.8 miles (6.2 km) one way. The dirt road is steep near the end, but the top offers views of Palm Springs, the surrounding mountains, and the Morongo Basin. Your trip will be 6.5 miles (10.5 km) longer round-trip if you ride or drive over to the backcountry board, where some excellent hiking is available.

Entrance Fees

General	\$5.00 per car for 7 days
Bus, Walk-in, Motorcycle	3.00 per person
Joshua Tree Pass	15.00 per calendar year
Golden Eagle (all NPS sites)	25.00 for 12 months
Golden Age (62 years of age and U.S. citizen)	10.00 one-time fee

Visitor Activities

Ranger-led programs are offered on the weekends from mid-October through mid-December and from mid-February through May. Check at visitor centers, at entrance stations, and on campground bulletin boards for the current schedule.

JOIN THE JOSHUA TREE NATURAL HISTORY ASSOCIATION

The Joshua Tree Natural History Association, a non-profit support group, was established in 1960 to provide much needed financial and volunteer support to Joshua Tree National Monument. The association assists the National Park Service in the area of visitor assistance, environmental education programs for children, and outdoor classes and tours. The membership fees and the proceeds from sales of maps and publications enable the association to purchase equipment and supplies for the park interpretive programs. As an association member you will receive:

- A membership card
- A 10% discount on all publications sold by the association

To join the association, fill out and mail this form with a check or money order for \$8.00 or a \$5.00 renewal fee to:

JOSHUA TREE NATURAL HISTORY ASSOCIATION
74485 National Monument Drive
Twentynine Palms, CA 92277-3597

Name _____

Address _____

City _____

State _____ Zip _____

BOOKS FOR SALE

All profits go to support interpretive programs
at Joshua Tree National Monument

	Price
<input type="checkbox"/> Joshua Tree National Monument, A Visitor's Guide	\$5.50
<input type="checkbox"/> Trails Illustrated Topo Map	\$7.95
<input type="checkbox"/> Joshua Tree: Desert Reflections	\$3.00
<input type="checkbox"/> On Foot in Joshua Tree	\$5.00
<input type="checkbox"/> Desert Survival Handbook	\$4.50

Prices subject to change

Association members receive a 10% discount

Check the books you wish to order and mail with a check or money order to:

JOSHUA TREE NATURAL HISTORY ASSOCIATION
74485 National Monument Drive
Twentynine Palms, CA 92277-3597

Make checks payable to Joshua Tree Natural History Association. Shipping and handling: \$4.00 for the first selection, \$1.00 for each additional selection. California residents include 7.75% sales tax.

Joshua Tree Journal

Produced by the employees and the volunteers of Joshua Tree National Monument and Joshua Tree Natural History Association.

Published by Joshua Tree Natural History Association.

Printed by Hi-Desert Publishing Company on recycled paper.