Welcome to Joshua Tree National Monument, a unit of the National Park System and home to many unique and interesting plant and animal species. The magnificence of this desert environment combined with its rich cultural, historical and biological components prompted President Roosevelt in 1936 to proclaim this area a national monument. Today, over a million visitors a year travel through the monument, each person satisfying a personal need while at the same time fulfilling a common desire to be close with nature.

Summer visitors will find temperatures to be very hot and dry with exception of those infrequent times when we are fortunate to experience a thunderstorm. Summer evenings are made memorable by the vastness of the night sky and solitude of the area. It is important to note that desert environments can be unforgiving to those who are not prepared. A visit to a Visitor Information Center is a good place to start your Joshua Tree National Monument experience.

Whatever your reason for visiting, we hope your stay is pleasant, rewarding, and safe. If you feel inclined to write about your experience or to offer ideas for improving visitor services at your monument, please send me a note.

Ernest Quintana, Superintendent

Joshua Tree National Monument
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Coyotes’ Adaptive Nature—Advantage or Threat?

Coyotes are an integral part of the ecosystem here. And they live successfully in the natural world, reaching for a moment of their adaptability, particularly when it comes to food.

Coyotes are by nature omnivores and scavengers, which means they eat anything they can find—dead or alive. Rodents comprise sixty percent of their natural diet. But they also eat berries, bean pods, fruits, lizards, fish, rabbits, and birds. With such a varied diet, coyotes rarely go hungry.

Coyotes are wary, if not shy. You may have seen one at Joshua Tree, furtively crossing a road or standing silently along a ridge. Frequently confused with wolves or even domestic dogs, coyotes may be golden, gray, or brown. Their tails are quite bushy and their snouts are tapered and pointed. Coyotes stand about two feet at the shoulder and weigh about 35 pounds.

When left alone, coyotes remain within their natural ecosystem, playing an important role that contributes to its overall balance and stability.

The Threat

The very adaptability that helps coyotes live successfully in the natural world can get them in trouble when their world meets ours.

You may have seen a coyote strolling through the developed areas of Joshua Tree, looking very much at home. If so, you saw an individual who has adapted to being around humans and to eating human foods. Coyotes are intelligent, clever, and, at least in one way, similar to us. They will learn to follow the path of least resistance.

So when we feed a coyote directly or leave food scraps near a campsite or car, the coyote learns to associate humans with food. This begins a pattern of least resistance that is difficult to break and frequently leads to the coyote’s premature and unnatural death.

This can happen in several ways.

First, if coyotes adapt to accepting human food, they may stop hunting for their natural diet. Then, when the tourist season ends in the summer, they may starve.

Second, extra food provided by humans also creates an artificial abundance for the coyote triggering the birth of more pups than natural summer food supplies can support.

Third, some coyotes learn that cars mean food, so they sit or lie on the roads, unaware that they can be struck and killed by these same vehicles.

Finally, though coyotes adapt to being fed by humans, they still retain their basic tendencies: they will bite if they feel threatened.

Because rabies and bubonic plague exist in the desert, we at Joshua Tree National Monument must consider visitor safety if a coyote bites a human or domestic pet. That means we must either relocate or shoot the coyote. Unfortunately, coyotes are often too smart to get caught in relocation traps, so they usually have to be killed if they become a nuisance.

Don’t Feed Coyotes

It’s a simple solution—and an effective one. If we don’t encourage coyotes to adapt to humans and human food, they’ll be much less likely to get hit by cars, starve during the summer, or be shot for visitor safety.

Coyotes can find plenty of natural food in the desert. Please don’t endanger their lives—or yours—by feeding them. With your cooperation, coyotes can use their adaptability to remain a wild and natural part of Joshua Tree for years to come.

Greg and Suzanne work at Death Valley National Monument. This article, which appeared in Death Valley’s Visitor Guide, was adapted and reprinted with the authors’ permission.

For International Visitors

Park information is available at visitor centers and entrance stations in:

Dutch—Nederlands
French—francais
German—Deutsch
Italian—italiano
Japanese—日本語
Spanish—español

Greg Fontaine and Suzanne Whyte
Park Rangers
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 Twenty-nine 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. 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 Twenty-nine 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 weakens 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.
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.

<table>
<thead>
<tr>
<th>Trail</th>
<th>Round-trip Mileage</th>
<th>Time</th>
<th>Starting Point</th>
<th>Trail Description/Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boy Scout</td>
<td>16 miles (25.8 km)</td>
<td>1-2 days</td>
<td>Indian Cove backcountry board or Keys West backcountry board 0.5 mile (0.8 km) east of Quail Springs picnic area.</td>
<td>Scenic Trail through the westernmost edge of the Wonderland of Rocks. See backcountry article on page 5 for information on overnight use. Moderate.</td>
</tr>
<tr>
<td>49 Palms Oasis</td>
<td>3 miles (4.8 km)</td>
<td>2-3 hours</td>
<td>Parking area at end of Canyon Road, 4 miles (6.4 km) west of Twentynine Palms off Highway 62.</td>
<td>Several stands of fan palms, evidence of past fires, and pools of water are found at the oasis. Moderately strenuous.</td>
</tr>
<tr>
<td>Lost Horse Mine/ Mountain</td>
<td>4 miles (6.4 km)</td>
<td>3-4 hours</td>
<td>Parking area 1.2 miles (1.9 km) east of Keys View Road.</td>
<td>Site of ten-stamp mill and foundations. Summit elevation, 5276 feet (1,583 meters). Moderately strenuous.</td>
</tr>
<tr>
<td>Lost Palms Oasis</td>
<td>7.5 miles (11.2 km)</td>
<td>4-6 hours</td>
<td>Cottonwood Springs Oasis or Campground.</td>
<td>A canyon with numerous palm stands. A side trip to Victory Palms and Munsen Canyon involves boulder scrambling. Moderate to oasis overlook, then strenuous.</td>
</tr>
<tr>
<td>Mastodon Peak</td>
<td>3 miles (4.8 km)</td>
<td>2 hours</td>
<td>Cottonwood Springs Oasis or Campground.</td>
<td>Excellent views of the Eagle Mountains and Salton Sea. Summit elevation, 3,371 feet (1,011 meters). Moderate.</td>
</tr>
<tr>
<td>Ryan Mountain</td>
<td>3 miles (4.8 km)</td>
<td>2-3 hours</td>
<td>Ryan Mountain parking area or Sheep Pass Campground.</td>
<td>Excellent views of Lost Horse, Queen, and Pleasant valleys. Summit elevation, 5461 feet (1,666 meters). Strenuous.</td>
</tr>
</tbody>
</table>

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 Highlights
- Signs along the trail interpret the geology of the area and the natural creation of an arch.
- 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.
- The paved trail leads you past fascinating rock formations, with signs interpreting the geology and plants of the Mojave Desert.
- 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.
- 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.
- 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.
- 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.
- 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.
- This outstanding scenic point gives a superb sweeping view of the valley, mountains, and desert from its elevation of 5195 feet (1,558 meters).
- 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.
- 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.

#### Trail Table

<table>
<thead>
<tr>
<th>Trail</th>
<th>Mileage</th>
<th>Starting Point</th>
<th>Trail Highlights</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arch Rock</td>
<td>0.3-mile (0.5-km) loop</td>
<td>White Tank Campground, opposite site 9</td>
<td>Signs along the trail interpret the geology of the area and the natural creation of an arch.</td>
</tr>
<tr>
<td>Barker Dam</td>
<td>1.1-mile (1.8-km) loop</td>
<td>Enter the Hidden Valley Campground and follow the dirt road that goes off to the right. Follow the signs to the parking area.</td>
<td>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.</td>
</tr>
<tr>
<td>Cap Rock</td>
<td>0.4-mile (0.6-km) loop</td>
<td>Cap Rock parking area, southeast of Hidden Valley Campground at the junction with Keys View Road.</td>
<td>The paved trail leads you past fascinating rock formations, with signs interpreting the geology and plants of the Mojave Desert.</td>
</tr>
<tr>
<td>Cholla Cactus Garden</td>
<td>.25-mile (0.4-km) loop</td>
<td>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.</td>
<td>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.</td>
</tr>
<tr>
<td>Cottonwood Springs</td>
<td>1-mile (1.6-km) loop</td>
<td>Cottonwood Campground, sites 13A and 13B (north end) or Oasis parking lot (south end).</td>
<td>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.</td>
</tr>
<tr>
<td>Hidden Valley</td>
<td>1-mile (1.6-km) loop</td>
<td>Hidden Valley picnic area, point of interest 3 on the park brochure map.</td>
<td>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.</td>
</tr>
<tr>
<td>High View</td>
<td>1.3-mile (2.1-km) loop</td>
<td>South Park parking area, to the northwest of Black Rock Canyon Campground.</td>
<td>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.</td>
</tr>
<tr>
<td>Indian Cove</td>
<td>0.6-mile (1.0-km) loop</td>
<td>West end of Indian Cove Campground.</td>
<td>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.</td>
</tr>
<tr>
<td>Keys View</td>
<td>0.25-mile (0.4-km) loop</td>
<td>Keys View, point of interest 6 on park brochure map.</td>
<td>This outstanding scenic point gives a superb sweeping view of the valley, mountains, and desert from its elevation of 5195 feet (1,558 meters).</td>
</tr>
<tr>
<td>Oasis of Mara</td>
<td>0.5-mile (0.8-km) loop</td>
<td>Oasis Visitor Center, Twenty nine Palms.</td>
<td>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.</td>
</tr>
<tr>
<td>Skull Rock</td>
<td>1.7-mile (2.7-km) loop</td>
<td>Jumbo Rocks Campground, beyond Loop E entrance.</td>
<td>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.</td>
</tr>
</tbody>
</table>

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![Map1](https://via.placeholder.com/150)

![Map2](https://via.placeholder.com/150)

![Map3](https://via.placeholder.com/150)
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.

All stock animals must stay on marked trails and washes to minimize vegetation damage, and soil erosion, compaction, and rutting.

d. 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. No horses on the Hidden Valley, Barker Dam, or Ryan Mountain trails.

h. No riding in the open desert, except in washes.

Road Mileage

Oasis Visitor Center to Point 1 = 8 miles (12.9 km)
Point 1 to Cottonwood Visitor Center = 30 miles (48.3 km)
Point 1 to Point 2 = 11 miles (17.7 km)
Point 2 to Keys View = 5.6 miles (9.0 km)
Point 2 to West Entrance = 10.5 miles (16.8 km)
Oasis Visitor Center to Indian Cove = 10 miles (16.1 km)
Oasis Visitor Center to Black Rock Canyon = 28 miles (45.1 km)

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 restricted to the following:

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.

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.

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.

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.
Matt Riley’s Fatal Mistake
Rick McIntyre, Park Ranger

It was 114°F (46°C) in the shade. The distance to the nearest spring was 25 miles (40 kilometers). When Matt Riley and Henry Kitto set off on foot at 9 a.m. from the OK Mine to Cottonwood Spring, they had one canteen between them. Their plan was to refill the canteen at Cottonwood Spring, then continue on to Mecca to celebrate the 4th of July. Neither man knew much about the route or spring locations.

Kitto became ill 12 miles (19 kilometers) out. He gave the canteen to Riley and turned back. He survived the walk back to the mine.

Riley pressed on, trying to get to Cottonwood before he ran out of water. He never made it. His body was found under a bush next to the spring. He never made it. His body was hot. It was 114°F (46°C) in the shade.

The tracks Riley left behind indicated he had passed within 200 yards (180 meters) of Cottonwood Spring before turning back and circling aimlessly— a sign of disorientation which is a common side effect of extreme dehydration.

Matt Riley’s fatal mistake was to walk across the desert without enough water. To hike all day in the midsummer desert sun, a person needs to drink at least two gallons (7.6 liters) of water. Riley and Kitto had set off with only one small canteen. There was no way they could have survived a 25-mile (40-kilometer) trek in 114°F (46°C) heat with that little water.

Kitto’s decision to turn back saved his life. When Riley decided to continue on, he doomed himself.

Matt Riley died 87 years ago, but his mistake is repeated by desert visitors every day. For a safe visit at Joshua Tree National Monument, abide by the Safety Check List located on this page.

Coyote Quiz

1. An average coyote weighs . . .
   a 20 lbs.
   b 35 lbs.
   c 50 lbs.

2. Their average territory is . . .
   a 1 square mile
   b 10 square miles
   c 100 square miles

3. Who runs fastest . . .
   a coyote
   b jackrabbit
   c roadrunner

4. Who is the slow poke . . .
   a coyote
   b jackrabbit
   c roadrunner

5. The word for coyote in the
   Cahuilla peoples language is “easik.” It also means . . .
   a a lazy person
   b one who doesn’t learn
   c an anthropologist
   d all of the above

6. In the last century, coyote range in North America has . . .
   a increased
   b decreased
   c stayed the same

7. Coyotes can interbreed with dogs and wolves.
   a true
   b false

8. If a coyote ate only jackrabbits, how many jackrabbits would a coyote eat in a year?
   a 50
   b 75
   c 150

9. Do coyotes form packs?
   a yes
   b no
   c sometimes

10. In roadrunner cartoons, coyote’s first name is . . .
       a Cary
       b Carlos
       c Wiley

11. The natural diet of a coyote includes . . .
       a berries and bean pods
       b oreos and tennis shoes
       c rodents and lizards
       d a and c above

12. Coyotes are larger than wolves.
       a true
       b false

13. Coyote ears are . . .
       a rounded and short
       b long and pointed
       c coyotes don’t have ears

14. Coyotes sing or howl to . . .
       a arrange meetings
       b communicate between packs
       c summon pups
       d all of the above

15. Coyotes are able to survive because they are . . .
       a intelligent
       b clever
       c adaptable
       d all of the above

More than a National Treasure
Bill Truesdell
Retired Chief Naturalist

As part of the National Park System, Joshua Tree National Monument is considered to be a “national treasure.” But Joshua Tree also has the distinction of being part of an international biosphere reserve.

The biosphere is defined as the thin layer of the Earth’s crust, waters, and atmosphere that supports life. Biosphere reserve is an international designation used by the United Nations Educational, Scientific, and Cultural Organization (UNESCO). This classification is given to unique land areas, representing and conserving differing examples of natural systems around the world. Areas such as deserts, tropical rainforests, seashores, river systems, and mountains are included.

In 1971 UNESCO launched its Man and the Biosphere Program (MAB) and gathered nominations for reserve sites. Now there are three hundred reserves in 75 countries, including 47 in the United States.

Joshua Tree National Monument, Death Valley National Monument, Anza Borrego Desert State Park, and the Santa Rosa Mountains Deep Canyon Research Center make up the core of the designated Colorado and Mojave Desert Biosphere Reserve. Within these areas human impact is kept to a minimum, natural and cultural resources are protected, environmental quality is monitored, and research and education are supported.

Surrounding these core areas is the bulk of the Colorado and Mojave deserts, totaling over 25 million acres (10.1 million hectares). In the surrounding areas a multiple use zone is recognized; human occupancy occurs and sustainable development is permitted. Educational efforts are carried out to encourage practices which lessen human impacts on the region.

Human beings are altering the environment more than any other species. In biosphere reserves, scientists, park managers, and area residents cooperate in developing programs for managing land and water resources to meet human needs, while conserving biological resources and sustaining natural processes. At Joshua Tree National Monument interpretive programs are offered explaining biological processes and how to reduce impacts. Through the park’s Center for Arid Lands Restoration we also offer advice and assistance in landscaping to lessen water consumption.

We encourage visitors to the Colorado and Mojave Desert Biosphere Reserve to think of ways of lessening impacts—walking more than driving, slowing down to conserve fuel, planting desert-tolerant plants, and restricting off-road driving to designated areas.

The Man and the Biosphere Program was initiated because human beings are rapidly altering the environments on which all life depends. There is a need for harmony between man and the Earth’s biosphere.

SAFETY ✓ LIST

- Tell someone where you are going and when you expect to return. 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 very active. 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.
- 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. They are extremely hazardous.
- Keep your vehicle well-maintained. Carry extra water and non-protein food, a 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 person on foot.

Answers to Quiz

1. a 6. a 11. d
2. a 7. a 12. b
3. b 8. b 13. b
4. c 9. c 14. d
5. d 10. c 15. d
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. 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 straightforward when you are the one climbing. 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.

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.

Burrowing Snakes
Arthur C. Webster III
Park Ranger

A day hike in the monument will reveal only a few of the many and varied animals that live in the desert. To avoid drying winds and high daytime temperatures, most desert animals spend the day out of sight in cool, humid rock crevices or burrows. With no shoulders, arms, or legs to get in the way, snakes find it easy to move around underground.

Most snakes rely on their mammalian prey to excavate burrows. Would you like to dig a burrow with your nose? Some of the most interesting but little known snakes in the monument specialize in excavating their own burrows.

Blind snakes can also recognize a termite’s pheromone trail and follow it back to the nest.

Black-headed Snakes
A flattened head reduces resistance so California black-headed snakes, Tantilla planiceps, can slither through loose soil, leaf litter, and dust. Black-headed snakes use their enlarged and grooved teeth at the rear of the upper jaw to inject venom into their prey. To become envenomated you would have to let the snake chew on your finger long enough to break the skin and allow the venom to trickle down the grooved teeth and into the wound. Should you worry about this snake? Only if you are an insect, centipede, spider, or earthworm.

Blind Snakes
Growing 9 to 16 inches long, western blind snakes, Leptotyphlops humulis, hold the record for being the smallest snakes in the monument. Blind snakes really are blind. Living in darkness, they do not need eyes.

Do you have a termite problem? Blind snakes to the rescue! Their smooth scales and slender form enable them to enter termite nests where they are adept at sucking the contents from the termites’ abdomens. To keep from being attacked, blind snakes secrete a chemical substance called a pheromone which misleads the termites into accepting the snakes as nestmates.

Glossy Snakes
Glossy snakes, Arizona elegans, have an inset lower jaw, wedge-shaped snout, and smooth scales that aid them with burrowing. They kill lizards, snakes, and small mammals by constriction. This is a process where the snake grasps its prey in its mouth then quickly loops its body around the victim. With each exhalation the grip gets tighter till the prey suffocates.

Snakes have not figured out a good way to slice their meal so they must swallow it whole. This can be dangerous. One glossy was observed killed in an attempt to swallow a horned lizard. The lizard’s head spines pierced the snake’s neck.

Long-nosed Snakes
As the name implies, long-nosed snakes, Rhinocelis lecontei, have long, pointed snouts. They also have an inset lower jaw and smooth scales. The inset lower jaw helps to keep dirt out of the mouth while the slender head and smooth scales lessen the resistance of burrowing through soil.

Female long-nosed snakes have an unusual way of defending themselves. When alarmed, a female may vibrate her tail, twist and turn the hind part of her body, and void blood and feces—body language meaning “Back off!”

Leaf-nosed Snakes
Most of the range of spotted leaf-nosed snakes, Phyllohyphus decoratus, corresponds with creosote bush and banded geckos. They have a modified rostral scale at the tip of the snout that must have reminded someone of a leaf. Next time you see a spotted leaf-nosed snake let a ranger know what this enlarged rostral scale reminds you of. The snake uses the free edges of this scale like a tool to scoop soil when digging up lizard eggs or burrowing.

Shovel-nosed snakes
A discussion of burrowing snakes would not be complete without mentioning western shovel-nosed snakes, Chionactis pallorastris. They prefer dry sand habitats such as sand hummocks, washes, dunes, and sandy flats.

Smooth scales, an inset lower jaw, nasal valves, and an angular abdomen enable shovel-snosed snakes to excel in “sand swimming.” This is a form of locomotion where the snake wriggles underground through the sand instead of tunneling in it. They like to feast on scorpions, centipedes, spiders, and insects.

How to find them
The best way to see these snakes is by slowly driving along roads after sundown. Stop for anything that looks like a snake or a stick. Another good way to find them is by carrying a flashlight or a lantern on night hikes. Please remember that monument regulations prohibit the collection or harassment of snakes. For close looks, use binoculars.

Complete descriptions and illustrations of snakes can be found in Robert C. Stebbins’ A Field Guide to Western Reptiles and Amphibians. Happy herping!
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.