



Joshua Tree Guide

A planning guide for visitors
to Joshua Tree National Park

Summer 2006

Photo by Sandra Kaye

Planning Your Summer Visit

The park entrance fee has increased from \$10 to \$15 per vehicle. It is still good for seven days. The cost of a Joshua Tree annual pass also increased by \$5, to \$30. If you plan to visit several parks during the next 12 months, the National Parks Pass, at \$50, is a good bargain.

The park is happy to announce the opening of a new visitor center on Park Boulevard in the village of Joshua Tree. The Joshua Tree Visitor Center will be open every day from 8 a.m. to 5 p.m. to accommodate those visitors entering the park through the West Entrance.

Summer temperatures can be hot, over 100°F (38°C) during the day and not cooling much below 75°F (24°C) until the early hours of the morning, so come prepared with a hat, sunscreen, and lots of water to drink. We recommend at least one gallon per person, per day, more if you will be hiking or biking. For advice about summer hiking, see page 3.

Joshua Tree's five fan palm oases offer shade and cooler temperatures on those hot, sunny afternoons of summer. Oases are also good places to view wildlife, especially birds. For more information about Joshua Tree's palm oases, see the article on page 8.

Snakes and other reptiles are most often seen during mornings and evenings when the sun isn't too intense. Visitors have reported a number of encounters with snakes this year, so you will want to be aware of where you put your hands, your feet, and your seat. If you encounter a snake, stop then slowly back away. If your party includes small children or a pet, watch them closely.



The new Joshua Tree Visitor Center



Silver cholla blooms

IN THIS ISSUE

Information	2
Summer Hiking	3
Cholla Cactus	3
Campgrounds	4
What To See And Do	4
Backcountry Roads	4
Backcountry Camping, Hiking, and Horseback Riding	5
Black Rock Canyon	5
Park Map	6
Nature Trails	7
Hiking Trails	7
Desert Fan Palm Oases	8
Cottonwood Spring	8
Weather	9
Star Gazing	9
Rock Formations	9
Joshua Trees	10
Matt Riley's Fatal Mistake	10
Publications	11
Lizard Life Styles	12

VISITOR CENTER HOURS

Oasis	8 a.m. – 5 p.m.
Joshua Tree	8 a.m. – 5 p.m.
Cottonwood	9 a.m. – 3 p.m.
Black Rock	October - May
Daily (except Fridays)	8 a.m. – 4 p.m.
Fridays	Noon – 8 p.m.

EMERGENCIES

Call 909-383-5651 or dial 911 or contact a park ranger.



JOSHUA TREE NATIONAL PARK
74485 NATIONAL PARK DRIVE
TWENTYNINE PALMS, CA 92277

Important information

accessibility

The nature trails at Bajada, Cap Rock, and the Oasis of Mara are accessible. Assisted listening systems and sign-language interpreters are available for some programs with prior notice.

all terrain vehicles

ATVs may not be used in the park.

bicycling

Bicycling is permitted on public roads, both paved and dirt. There are no bicycle paths and many roads are narrow, so ride cautiously. Bikes are prohibited on backcountry and nature trails.

campfires

Campfires are permitted in campgrounds and in picnic areas where fire grates are provided. Campfires are not allowed in the backcountry. Collecting vegetation, living or dead, is prohibited, so bring firewood.

climate

Days are typically clear with less than 25 percent humidity. Temperatures are most comfortable in the spring and fall, with an average high/low of 85°F and 50°F respectively. Winter brings cooler days, around 60°F, and freezing nights. It occasionally snows at higher elevations. Summers are hot, over—sometimes well over—100°F during the day and not cooling much below 75°F until the early hours of the morning.

commercial filming

When filming or photography involves advertising a product or service, the use of models, sets, props, or the use of a restricted site, a film permit is required.

day-use and restricted areas

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

dehydration

It is easy to become dehydrated in arid desert environments. Even if you only plan to drive through the park, you should have some water with you. If you are going to camp, we recommend one gallon of water per person per day. If you are going to be hiking or biking, you will want to take along two gallons per person. Drink the water and do not economize. When the water is half gone, it is time to turn back.

emergency phones

In an emergency call San Bernardino Dispatch at 909-383-5651. Call collect. A pay phone is located at the visitor center in Twentynine Palms. You can find pay phones in the towns of Yucca Valley and Joshua Tree and at Chiriaco Summit (12 miles southeast of Cottonwood). Emergency-only phones are located at the ranger station in

Indian Cove and at Intersection Rock parking area.

environment

Two deserts, two large ecosystems whose characteristics are determined primarily by elevation, come together at Joshua Tree National Park. Below 3,000 feet, the Colorado Desert encompasses the eastern part of the park and features natural gardens of ocotillo and cholla cactus. The higher, moister, and slightly cooler Mojave Desert is the special habitat of the Joshua tree. Joshua tree forests occur in the western half of the park, which also includes some of the most interesting geologic displays found in California's deserts. In addition, five fan palm oases dot the park, indicating those few areas where water occurs naturally and where wildlife abounds.

entrance fees

Admission to the park is \$10 per vehicle (\$15 beginning March 1) and is good for seven consecutive days. A Joshua Tree Pass may be purchased for \$25 (\$30 beginning March 1) and a National Parks Pass, which is good for all National Park Service sites, costs \$50. Both are good for 12 months. A Golden Age Pass may be purchased by any U.S. citizen 62 or older for \$10, and it is good for life.

firearms and weapons

Firearms, including fireworks, traps, bows, BB guns, paint-ball guns, and slingshots are not allowed in the park.

food, lodging, services

There are no concessions within the park. However, surrounding communities can fulfill most visitor needs. Contact local chambers of commerce for information. Their telephone numbers and web addresses are listed on page six of this publication.

food storage

Store food in hard-sided containers or in your vehicle to prevent ravens, coyotes, and other wildlife from eating it.

getting to the park

The park is located about 140 miles east of Los Angeles via I-10. Entrances to the park are located off CA HWY 62 (Twentynine Palms Highway), at the towns of Joshua Tree and Twentynine Palms. A third entrance is located about 25 miles east of Indio off I-10.

horses

Horseback riding is a popular way to experience the park. Because of the special requirements for stock in desert areas, you will want to request the publication on horse use before you come.

international visitors

Park information is available at visitor centers and entrance stations in Dutch, French, German, Italian, Japanese, and Spanish.

keep wildlife wild

Feeding coyotes, squirrels, and other animals weans them from their natural food supplies, causes overpopulation, and turns them into aggressive creatures as they lose their fear of humans.

leave no trace

During your visit please pick up trash around campgrounds and trails. Your actions will inspire other park visitors.

lost & found

Report lost, and turn in found, items at any visitor center or ranger station. Lost articles will be returned if found.

off-road driving

Vehicles, including bicycles, are prohibited off established roads. The desert ecosystem is fragile. Off-road driving and riding creates ruts, upsets delicate drainage patterns, compacts the soil, and leaves visual scars for years. Plants are crushed and uprooted. Wildlife shelters are destroyed, and food and water supplies are altered or obliterated.

parking

Park roads, even the paved roads, are narrow, winding, and have soft, sandy shoulders. Accidents occur when visitors stop along the road to admire a view or make a picture. There are many pullouts and parking lots, so wait until you get to one before stopping.

pets

While pets are allowed in the park, their activities are restricted. They must be on a leash at all times and cannot be more than 100 feet from a road, picnic area, or campground; they are prohibited from trails, and they must never be left unattended—not even in a vehicle.

potable water

Water is available at the visitor center in Twentynine Palms, at Black Rock and Cottonwood campgrounds, at the entrance station south of Joshua Tree, and at the Indian Cove ranger station.

rock climbing

Climbers may replace existing unsafe bolts, and new bolts may be placed in non-wilderness areas using the bolting checklist. Bolting in wilderness requires a permit. Bolting checklists and permit applications are available at entrance stations and visitor centers.

stay out and stay alive

Mining was an important activity in this area and numerous mining sites can be found within the park. If you choose to visit them, use extreme caution and do not enter old mine workings.

take only pictures

Over 1.25 million people visit Joshua Tree National Park each year. If each visitor took only one rock or one branch from a bush, the park, our national heritage, would soon be gone.

Removal, disturbance, destruction, or disfigurement of anything in the park is unlawful.

trash

Our dry desert climate cannot quickly decompose such things as orange peels, apple cores, egg shells, and other picnic remains. Loose paper blows into bushes creating an unsightly mess, and plastic six-pack rings can strangle wildlife. Dispose of your trash in a responsible manner and recycle whatever you can.

vehicle laws

Park roads are narrow and winding. Some areas are congested. Speed limits are there for your safety and well-being. State and federal vehicle laws apply within the park.

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 a current schedule.

visitor centers

The park's main visitor center is located at the Oasis of Mara in Twentynine Palms. It is open 8 a.m. to 5 p.m. The Cottonwood Visitor Center is open from 8 a.m. to 4 p.m. Books, videos, maps, and related items are available, as well as cultural and natural history exhibits, and park rangers to answer your questions.

wildflowers

Spring blooming periods vary with elevation, temperature, and the amount of moisture in the soil. You can get current information by calling the park.

wildlife viewing

It is a thrill to see wild animals in the park, but remember: this is their home and they should not be disturbed. This includes the use of artificial light for viewing them.

world wide web

If you are "connected," check out the National Park Service publications on the web at www.nps.gov. We are adding more information all the time. For information about other desert attractions in California, surf over to www.californiadesert.gov.

you are responsible

You are responsible for knowing and obeying park rules. Check at visitor centers, at entrance stations, and on bulletin boards to find out what they are. When in doubt, ask a ranger.

Summer Desert Hiking

Joshua Tree National Park offers hiking opportunities even in summer's hottest months. The key to a pleasant experience is anticipating your body's requirements during a hike and being prepared before you set out.

On average, we perspire up to a quart of liquid an hour when exercising in a hot environment. Low humidity promotes rapid evaporation of perspiration, which adds to our comfort but also makes it easy to overlook how much fluid we are losing.

When our bodies are hard at work eliminating the excess heat that is being generated through exercise, we may not realize that we are thirsty until we have begun to dehydrate. Early stages of dehydration are characterized by dizziness and an increasingly severe headache and can progress to heat exhaustion, which is characterized by nausea, vomiting, and diarrhea.

Hikers who are not drinking enough are invariably not eating either. Not eating denies the body the energy it needs to effectively eliminate excess heat and to continue exercising.

Hike Smart

Just as desert residents, both human and animal, are most active in the mornings and evenings, plan your hike to start early so that you will be off the trail before the hottest hours of the day. Or, wait until the sun sets to enjoy an early evening hike.

Wear a hat and apply sunscreen prior to and during your hike. A sunburn can hinder your body's efforts to manage and eliminate heat.

Bring Food and Water

Most people need at least a quart of water an hour while hiking in heat. Some "sports" drinks replace a small percentage of the electrolytes that are lost during perspiration and provide sugars and calories, but they often don't taste good when warm so don't rely exclusively on them. Avoid anything that will increase dehydration, such as alcohol and caffeine.

When exercising in a hot environment, food requirements increase significantly. A rule of thumb is to carry double the amount of food that you would normally eat.

Bring easily digestible foods such as fruits and vegetables. Avoid high fat foods such as cheese and sausages, which are difficult to digest.

Pay attention to your body

You need to know how your body reacts to exercise and heat normally so

that you can recognize what your body is telling you while you are hiking. Generally you should not wait until you are thirsty before drinking liquids, but you also don't want to drink excessively.

Watch your urine output. A typical hiker should be urinating every 1½ to 2 hours. If you are not, then either increase or decrease your fluid intake.

Make it a point to eat a small snack several times during your hike. If you feel weak, dizzy, or nauseous, stop hiking and find a shady place to rest. Eat and drink until your condition improves.

Prepare in advance

The terrain in Joshua Tree is rugged—deceptively so. Visitors typically underestimate the time required to complete a hike. Plan on your desert hike taking twice as long as a hike of similar distance and elevation gain in a cooler environment. For example, if you normally take an hour to hike a mile and a half, plan on spending two hours for that distance when hiking in summer's heat.

It is best to hike with others, but if you choose to go alone, be sure to discuss your plans with someone beforehand. Let them know where you will be hiking and what time you will return. And be sure to check in with them when you come out.

It is assumed that you will be outfitted appropriately with clothes and gear, as well as the "ten essentials." (If you are not familiar with the "ten essentials" then you need to consult a basic hiking guide.)

The trail, its features and major landmarks, should be familiar to each member of your party. Designate a meeting place and time in case you get separated. If you do get separated from your party, return to the meeting place and stay there, rather than searching for the rest of your group.

Last but not least

After returning from your hike, continue to monitor your food and water intake and your urine output. Staying hydrated will reduce some of the muscle soreness and cramping the following day.

Meeting the challenges of a summer desert hike will be a rewarding experience, if you are willing to exercise your intelligence as well as your body.

by Joshua Tree Protection Rangers

Cholla is pronounced "Choy-a"

OUCH! is often the greeting given by a visitor upon first encountering a cholla cactus plant. Cholla are shrubby cacti of the genus *Cylindropuntia*. They possess cylindrical stems composed of segmented joints that store water, carry on photosynthesis, and produce flowers.

Like most cacti, cholla have small, wart-like projections on their stems, called tubercles, from which sharp spines grow. The spines are actually modified leaves, more used to shade the stems than for protection. Papery sheaths that are often bright and shiny cover the spines and contribute to the cactus' overall appearance.

Cholla require the coarse, well-drained soil of dry, rocky flats or slopes. Four species are widely distributed in Joshua Tree.

Teddy-Bear Cholla

The teddy-bear cholla (*Cylindropuntia bigelovii*) has rightly earned the reputation of being the most formidable. Not only do its long, thin spines readily penetrate clothing, shoes, and flesh, but the tip of each spine is additionally armed with tiny curved barbs that assure it remains anchored.

This species is sometimes called the "jumping cholla" because the joints appear to jump off the plant even if they are barely touched. The detached joints readily generate new plants by rooting and branching. Since the fruits rarely contain viable seeds, this species reproduces almost entirely by this asexual process, and dense stands of cloned cholla can form large gardens, such as the popular Cholla Cactus Garden.

The segments are usually tightly clustered near the top of the plant and the trunk is dark brown or black. It rarely grows above 3,000 feet in elevation.

Pencil Cholla

The pencil cholla (*Cylindropuntia ramosissima*) has stems that are only slightly larger in diameter than a pencil—hence its name. These slender joints are usually marked with diamond or heart shaped figures which give rise to the long yellow-sheathed spines, which are single instead of in clusters as in the teddy-bear cholla. Thus the plant does not appear nearly as spiny. Pencil

chollas can be found up to 4,500 feet in elevation, and can be seen here and there in the Cholla Cactus Garden.

Silver Cholla

The silver cholla (*Cylindropuntia echinocarpa*) can be found on the slopes of our highest peaks, and is probably the most widespread species in the park. When back-lit by the sun, the spiny clusters take on a silvery or golden glow.

Buckhorn Cholla

The buckhorn cholla (*Cylindropuntia acanthocarpa*) is most common in the eastern half of the park. It is a much-branched, long-stemmed cactus. The tubercles bear eight to 25 spines, each less than an inch long.

Cholla flowers are mostly yellow or green, with reddish tinges in



Blooming teddy-bear cholla

some species. Some have fleshy fruits, others have dry capsule-like fruits.

Chollas provide shelter for numerous animals. Wood rats, also known as packrats (*Neotoma spp.*), use cholla segments to build their nests, which provide good protection from coyotes and bobcats, but not from snakes. Rattlesnakes sometimes take up residence in such nests, usually after eating or evicting the rats. Cactus wrens prefer to build their nests among the stems of teddy bear or silver cholla.

The flower buds of some chollas were eaten by native desert tribes. After rolling the buds on a rock with sticks to remove the spines, they would pit-roast them for a day. Afterwards the buds could be eaten immediately or dried and pickled for later consumption.

Dead, but still very potent, cholla segments are common along many park trails—another reason for not wearing sandals when hiking in the desert. Being impaled by a cholla leaves a lasting impression. The easiest way to remove a cholla joint is to place a comb between it and your skin and quickly jerk it away. Because of the barbs it may take considerable force to dislodge it and the joint may fly several feet. Make sure none of your companions are in the line of fire!

by Dr. Harold De Lisle, park volunteer

Campgrounds	Elevation	Sites	Group Fee	Group Sites	Horse Camp	Water	Flush Toilets	Chemical Toilets	Tables	Fire Grates	Dump Station
Belle	3800'	18	\$5					*	*	*	
Black Rock	4000'	100	\$10		\$10	*	*		*	*	*
Cottonwood	3000'	62	\$10	3	\$25	*	*		*	*	*
Hidden Valley	4200'	45	\$5					*	*	*	
Indian Cove	3200'	101	\$10	13	\$20/35			*	*	*	
Jumbo Rocks	4400'	125	\$5					*	*	*	
Ryan	4300'	31	\$5		\$5			*	*	*	
Sheep Pass	4500'			6	\$20/35			*	*	*	
White Tank	3800'	15	\$5					*	*	*	

Campsites are limited to six people, three tents, and two cars. Group sites accommodate ten to 60 people.

Obtain reservations for sites at Black Rock, Indian Cove, and all group sites by calling 1-800-365-2267. Other campgrounds are first-come, first-served. Camp only in designated campsites.

There are no hookups for recreational vehicles. At Hidden Valley and group sites, recreational vehicles may not exceed 25 feet in length. At White Tank, the 25-foot limit includes the towing vehicle.

Water is available at Oasis Visitor Center, Indian Cove Ranger Station, West Entrance, and Black Rock and Cottonwood campgrounds. Showers are not available.

Store food in containers capable of preventing access by wildlife or in your vehicle. Any scented or odorous items must be similarly stored.

All vegetation in the park is protected. If you want to make a campfire, bring your own firewood.

Quiet hours are from 10 p.m. to 6 a.m. Generator use is limited to six hours a day: 7 to 9 a.m., noon to 2 p.m., and 5 to 7 p.m.

There is a 30-day camping limit each year. However, only 14 nights total may occur from October through May.

Be an inspiration to others; leave your campsite cleaner than you found it.

What To See And Do

Viewed from the road the desert may appear bleak and drab. Closer examination reveals a fascinating variety of plants and animals and surreal geologic features. Joshua Tree National Park offers visitors endless opportunities for exploration and discovery. Depending on the number of hours you have to spend, your interests and energy, here are some ideas to consider:

IF YOU HAVE FOUR HOURS OR LESS, begin your tour at a park visitor center. Park staff will be happy to provide you with current information about conditions in the park as well as answers to your questions.

With limited time you may want to confine your sightseeing to the main park roads. Many pullouts with wayside exhibits dot these roads. A list of nature trails and short walks appears in this publication. Consider experiencing at least one of these walks during a short park visit.

On clear days the vista from Keys View extends beyond Salton Sea to Mexico and is well worth the additional 20-minute drive.

IF YOU PLAN TO SPEND AN ENTIRE DAY, there will be time to walk several nature trails or take a longer hike; several are listed on page 7 of this publication. A ranger-led program will add enjoyment and understanding to your visit. Check at visitor centers and on campground bulletin boards for listings. Or, call ahead and reserve a spot on the popular Keys Ranch guided walking tour.

Some visitors like to experience the desert from the seat of a mountain bike. The park offers an extensive network of dirt roads that make for less crowded and safer cycling than the paved main roads. A selection of road trips is included in the article titled Backcountry Roads in this publication.

Joshua Tree has gained international attention as a superb rock-climbing area. Many visitors enjoy watching the rock climbers in action.

WITH MORE THAN ONE DAY IN THE PARK, your options increase. There are nine campgrounds and backcountry camping is permitted. You will find information concerning camping and backcountry use elsewhere in this publication.

Books and topographic maps give information needed for longer hikes. For "peak baggers," the park has ten mountains over 5,000 feet (1,524 m) 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 park's cultural history.

Whatever you choose, your time will be rewarding. The desert holds much more than what is readily apparent to the casual observer. A NOTE OF CAUTION: The desert, fascinating as it is, can be life-threatening for those unfamiliar with its potential dangers. It is essential that you carry water with you—even if you are only driving through. Cars break down; keys get locked inside; accidents happen.

Backcountry Roads

for mountain bikes and 4-wheel drive vehicles

Mountain bikes and 4-wheel drive vehicles are welcome in the park. For your own safety and for the protection of natural features, 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 park are narrow with soft shoulders. Curves, boulder piles, and Joshua trees restrict the vision of bikers and motorists. The unpaved roads in the park are safer for bikes and offer many opportunities to explore the area. Here is a sampling:

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 connects to a service road next to I-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 winds through canyons in the Eagle Mountains. The first nine miles (14.5 km) are within the park boundary. Beyond that point is Bureau of Land Management land and a number of side roads. Several old mines are located near these roads. Use extreme caution when exploring old mines.

Old Dale Road

This 23-mile (37.3 km) road starts at the same point as Black Eagle Mine Road. The first 11 miles (17.8 km), cross Pinto Basin, a flat, sandy dry lake bed. Leaving the basin, the road climbs a steep

hill, then crosses the park boundary. A number of side roads veer off toward old mines and residences. The main road leads to CA HWY 62, 15 miles (24.3 km) east of Twentynine Palms.

Queen Valley Roads

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

Geology Tour Road

An 18-mile motor tour leads through one of the park's most fascinating landscapes. The road turns south from the paved road two miles (3.2 km) west of Jumbo Rocks Campground. There are 16 stops and it takes approximately two hours to make the round trip. 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 explores Pleasant Valley. A descriptive brochure that highlights each stop is available at the beginning of the road.

Covington Flats

The dirt roads in Covington Flats offer access to some of the park's largest Joshua trees, junipers, and pinyon pines. From Covington Flats picnic area to Eureka Peak is 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 if you ride or drive over to the backcountry board, a starting point for excellent hiking.

BACKCOUNTRY CAMPING, HIKING, and HORSEBACK RIDING

Joshua Tree National Park is a back-packer's dream with its mild winter climate and interesting rock formations, plants, and wildlife. It embraces 794,000 acres, of which 585,040 acres have been designated wilderness. By observing the guidelines below, your venture into the backcountry should be safe and enjoyable. If you have questions, ask a ranger. It is your responsibility to know and abide by park regulations.

Registering

If you will be out overnight, register at a backcountry board. The map in this publication indicates the location of the twelve backcountry boards. An unregistered vehicle or a vehicle left overnight somewhere other than at a backcountry board is a cause for concern about the safety of the vehicle's occupants. It is also subject to citation and towing.

Hiking

It is easy to get disoriented in the desert: washes and animal trails crisscross the terrain obscuring trails, boulder piles are confusingly similar, and there are not many prominent features by which to guide yourself. Do get yourself a topographic map and compass or GPS unit and learn how to use them before you head out. Cell phones are often not usable inside the park.

Know your limitations and don't take risks. You should not attempt to climb steep terrain without adequate equipment, conditioning, and training. Accidents can be fatal.

Carry a minimum of one gallon of water per person per day just for drinking, two gallons in hot weather or if you are planning a strenuous trip. You will need additional water for cooking and hygiene. And don't forget the other essentials: rain protection, a flashlight, a mirror and whistle, a first-aid kit, pencil and paper, a pocket knife, and extra food.

Locating your camp

Your wilderness camp must be located one mile from the road and 500 feet from any trail. Make yourself aware of any day-use areas in the vicinity (they are indicated on the maps at the backcountry boards) and make certain to camp outside their boundaries.

Black Rock Canyon Offers Good Hiking and More

Located in the northwest corner of the park, the road to Black Rock Canyon dead-ends at the campground. Campsites are located on a hillside at the mouth of the canyon surrounded by Joshua trees, junipers, cholla cacti, and a variety of desert shrubs. Spring blooms usually begin with the Joshua trees in late February followed by shrubs and annuals through May.

This quiet, family campground is a good introduction for first-time campers. Each campsite has a picnic table and fire ring with rest rooms and water nearby. If you forget to bring your firewood, shopping facilities are only five miles away in the town of Yucca Valley. Campsites vary in size and can accommodate both tents and RVs. A day-use picnic area and a dump station are also available. For horse owners, a separate area is provided for camping or for staging a ride.

Campers register and pay camping fees at the nature center located in the middle of the campground. The staff at this small visitor center can help you plan a hike or other activity. Maps, books, nature guides, and children's activity books may be purchased there.

The hills behind the campground offer a variety of hiking

Washes may seem like inviting places to sleep because they are relatively level, but it is important to realize that they got that way because flash floods "bulldozed" the rocks and vegetation out of the way.

Domestic issues

Water sources in the park are not potable and are reserved for wildlife, so you will have to carry in an adequate supply for drinking, cooking, and hygiene. You will want to give some thought to the trade-off between the water required to hydrate dried foods and the heftier weight of canned and fresh foods. If you want to heat something you will need to pack in a stove and fuel as open fires are prohibited in the backcountry.

Bring plastic bags to hold your garbage and pack it out. Buried trash gets dug up by animals and scattered by the wind; it is not a pretty sight. Do bury human waste in "cat" holes six inches deep. Don't bury your toilet paper; put it in plastic (zip-locks work nicely) and pack it out. Leave no trace, as they say.

Coping with the weather

That old desert sun can damage eyes as well as skin. Wear a hat and sunglasses and use sun-blocking lotion liberally.

Temperature changes of 40 degrees within 24 hours are common. Bring a variety of clothes so you can layer on and off as conditions change.

Although rain is relatively rare in the desert, when it does come it can really pour down. Even when it isn't raining where you are, rain in the mountains can run off so fast as to cause flash floods. Stay alert.

Horseback riding

Horseback riding is a popular way to experience the backcountry and there are 253 miles of equestrian trails that traverse open lands, canyon bottoms, and dry washes. Because of the special requirements for horses, care should be taken in planning your trip. You may call 760-367-5500 and request that additional information be mailed to you.

trails including the Hi-View Nature Trail. The interpretive guide for this trail, available at the nature center, identifies the vegetation along this scenic 1.3-mile walk. For those looking for longer trails, Eureka Peak, Panorama Loop, and Warren Peak take hikers to ridge lines overlooking the often snowy peaks of San Jacinto and San Gorgonio. The trailhead for a 35-mile section of the California Riding and Hiking Trail is located at Black Rock. Backpackers can register at the backcountry board here for overnight wilderness trips.

But you don't have to hike to enjoy the Black Rock Canyon area. Wildlife sightings are frequent in the campground. Visitors often encounter ground squirrels, jackrabbits, and cottontails. Frequent bird sightings include cactus wrens, Gambel's quail, great horned owls, scrub-jays, and roadrunners. A lucky birder might be rewarded with a glimpse of a Scott's oriole, pinyon jay, or LeConte's thrasher. More elusive species such as bobcat, bighorn sheep, mountain lions, desert tortoises, and mule deer have all been seen in the area. As the sun sets, listen for the "singing" of coyotes living on the outskirts of the campground.

Please do not feed wild animals in Joshua Tree National Park. People food is unhealthy for them and they could become aggressive and harm you.



National Park Service
U.S. Department of the Interior

Joshua Tree National Park

Designations

National Park – 1994
Biosphere Reserve – 1984
National Monument – 1936

Size

794,000 acres

Superintendent

Curt Sauer

Park Information

760-367-5500

Web Site

www.nps.gov/jotr/

Mailing Address

74485 National Park Drive
Twentynine Palms, CA 92277

E-mail

jotr_info@nps.gov

Fax Number

760-367-6392

The National Park Service cares for the special places saved by the American people so that all may experience our heritage.

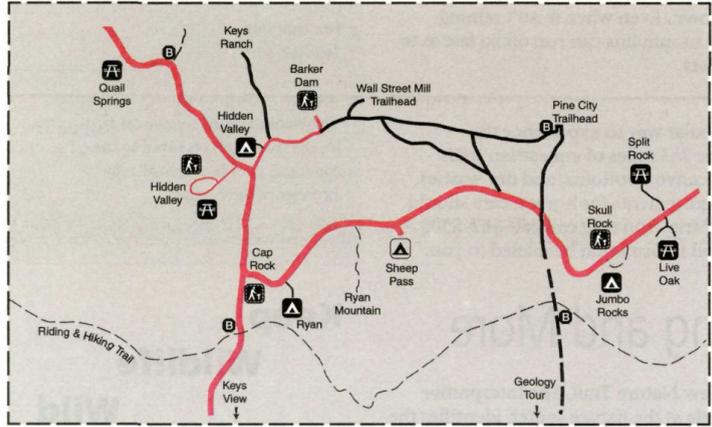
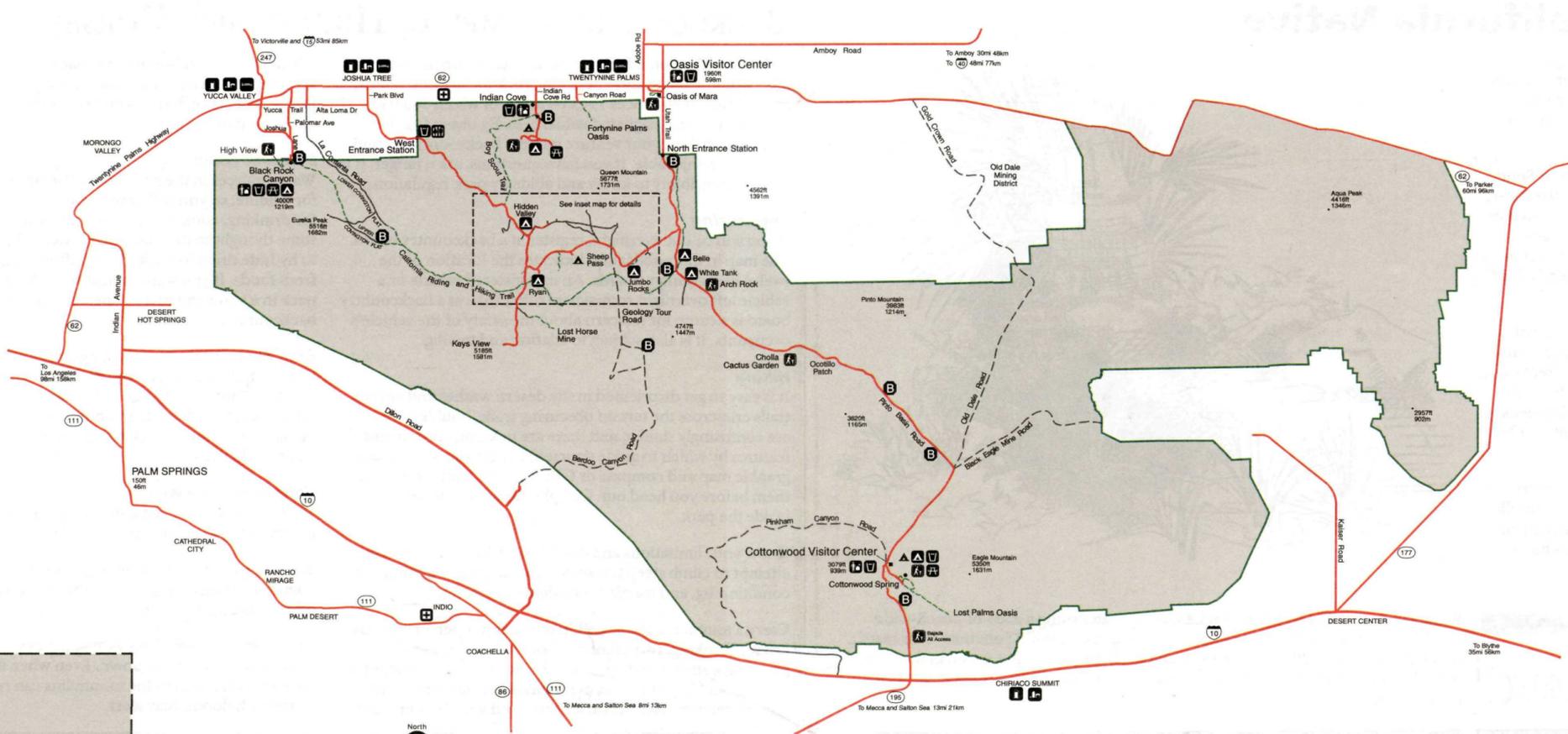
Keep Wildlife Wild



Don't feed coyotes!
People food is not healthy for them. It makes them into beggars, and they might bite you. Also, it is against the law, and a ranger will give you a ticket, then you will have to pay a big fine!

by Junior Ranger Sarah

How Far Is It?	Oasis of Mara	Cottonwood Spring	West Entrance
Belle Campground	9	28	23
Black Rock Canyon	28	73	12
Cap Rock	19	40	11
Cholla Cactus Garden	18	20	31
Cottonwood Spring	38	0	46
Hidden Valley	20	42	9
Indian Cove	10	48	18
Interstate 10	45	7	35
Jumbo Rocks Campground	11	33	18
Keys Ranch Tour	22	44	11
Keys View	24	45	16
Oasis of Mara	0	38	29
Ryan Campground	18	39	11
Sheep Pass Campground	16	37	14
West Entrance	34	51	0
White Tank Campground	11	27	24



North

0 5 Kilometers
0 5 Miles

- Unpaved road
- 4-wheel-drive road
- Hiking trail
- Ranger station
- Picnic area
- Medical facility
- Interpretive trail
- Campground
- Group campground (reservations required)
- Restrooms
- Backcountry board
- Drinking water

Area Information

For information about accommodations and attractions in surrounding communities, you may contact the following chambers of commerce:

Indio
82-921 Indio Blvd.
Indio, CA 92201
760-347-0676
indiochamber@aol.com
www.indiochamber.org

760-325-1577
PSChamber@worldnet.att.net
www.pschamber.org

Twentynine Palms
6455 Mesquite Ave. Unit A
Twentynine Palms, CA 92277
760-367-3445
www.29chamber.com

Joshua Tree
P.O. Box 600
Joshua Tree, CA 92252
760-366-3723
www.joshuatreechamber.org

Yucca Valley
56300 29 Palms Hwy.
Yucca Valley, CA 92284
760-365-6323
chamber@yuccavalley.org
www.yuccavalley.org

Palm Springs
190 W. Amado Rd.
Palm Springs, CA 92262

NATURE TRAILS



Trail	Mileage	Starting Point
Arch Rock	.3-mile loop (.5-km)	White Tank Campground, opposite site 9
Bajada All-Access	.25-mile loop (.4-km)	South of Cottonwood, one-half mile from the southern entrance to the park
Barker Dam	1.1-mile loop (1.8-km)	Barker Dam parking area
Cap Rock	.4-mile loop (.6-km)	Cap Rock parking area, at the junction of Park Blvd. and Keys View Road
Cholla Cactus Garden	.25-mile loop (.4-km)	20 miles north of Cottonwood Visitor Center
Cottonwood Spring	1-mile (1.6-km)	Cottonwood Spring parking area
Hidden Valley	1-mile loop (1.6-km)	Hidden Valley picnic area
Hi-View	1.3-mile loop (2.1-km)	Northwest of Black Rock Campground
Indian Cove	.6-mile loop (1-km)	West end of Indian Cove Campground
Keys View	.25-mile loop (.4-km)	Keys View
Oasis of Mara	.5-mile loop (.8-km)	Oasis Visitor Center, Twentynine Palms
Skull Rock	.25-mile (.4-km)	Jumbo Rocks Campground

The Joshua Tree Guide is produced by the employees and volunteers of Joshua Tree National Park and Joshua Tree National Park Association and is published by Joshua Tree National Park Association.



HIKING TRAILS

Trail	Round-trip Mileage	Time	Starting Point	Trail Description
Boy Scout Trail	16 miles 25.8km	1-2 days	Indian Cove backcountry board or Keys West backcountry board 0.5 mile (0.8km) east of Quail Springs Picnic area	Scenic trail through the western most edge of the Wonderland of Rocks. See backcountry board 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 Hwy 62	Several stands of fan palms, evidence of past fires, and pools of water are found at the oasis. The plants in this area are especially fragile, so walk lightly. Moderately strenuous.
Lost Horse Mine/Mt.	4 miles (6.4 km)	3-4 hour	Parking area 1.2 miles (1.9 km) east of Keys View Road	Site of ten-stamp mill and foundations. Summit elevation: 5278 feet (1609 m). Moderately strenuous.
Lost Palms Oasis	7.2 miles (11.6 km)	4-6 hours	Cottonwood Spring or Cottonwood 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)	2-3 hours	Cottonwood Spring or Cottonwood Campground	Excellent views of the Eagle Mountains and Salton Sea. Summit elevation: 3371 feet (1027 m). 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 (1664 m). Moderately strenuous.

Thirty-five miles of the California Riding and Hiking Trail pass through the park. 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 park. 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.

The Desert Fan Palm: A California Native

In an otherwise hot and sparse environment, palm oases are a luxuriant gift of shade and solace. The verdant display requires a constant supply of water so oases often occur along fault lines, where uplifted layers of hard impermeable rock forces underground water to the surface. There are only 158 desert fan palm oases in North America. Five are located in Joshua Tree National Park.

The desert fan palm, *Washingtonia filifera*, is native to the low hot deserts of Southern California where it can live for 80 to 90 years. Towering up to 75 feet, the desert fan palm is among the tallest of North American palms. It is definitely the heaviest: a mature desert fan palm can weigh as much as three tons. Its distinctive leaves are shaped like a fan and folded like an accordion. They measure up to six feet in length and are nearly as wide. Looking much like "petticoats," the fan palm's dead leaves remain attached to its trunk until removed by fire, wind, or flood.

Fire is beneficial for palms and rarely kills an adult. In palms the vascular bundles, those tubes that transport water and nutrients, are scattered throughout the trunk. This arrangement provides insulation from the heat of a fire. In contrast, trees such as oaks have all their vascular tissue in a ring just beneath the bark. Fire does kill young palms, but it also removes competitors and opens up space for palm seeds to germinate. In fact, desert fan palms increase seed production immediately after fires. A healthy palm can produce as many as 350,000 seeds.

People have been attracted to palm oases since prehistoric times. Native Americans ate the palm fruit and used the fronds to build waterproof dwellings. The Cahuillas (pronounced: Ka-wee-yahs) periodically set fire to oases in order to increase fruit production and to remove the sharp-edged palm fronds littering the oasis floor. The Cahuillas also planted palm seeds in promising locations.



Water is a necessity. Desert fan palms suck up water using a mass of pencil-wide rootlets so dense that the roots of other plant species cannot penetrate. This mass may extend as far as 20 feet from the trunk in all directions. But water, in the form of flash floods, is also the most common cause of death for desert fan palms living in narrow canyons.

Water also draws animals such as bighorn sheep, Gambel's quail, and coyotes to palm oases. Coyotes help spread palms by eating palm fruit at one location and depositing the undigested seeds at another. The cool shade of an oasis provides habitat for animals that live nowhere else. After dark, a rush of air may be caused by the passing of a western yellow bat—they only roost in palms. During the day, a flash of yellow-orange might be a hooded oriole preparing to build its woven sack-like nest under the large green leaves of a desert fan palm. The dime-sized holes seen in the trunks of palms are exit holes of the two-inch, blue-black, giant palm-boring beetle, *Dinapate wrightii*, who lives exclusively in palm oases.

The larvae of the *Dinapate* beetle spend about five years chewing tunnels within the trunks of desert fan palms. The chewing is so loud that woodpeckers use the noise to locate the larvae. Successful larva pupate within the trunk then chew their way out. Because their rear end is wider than their front end, they exit going backwards to avoid getting stuck. Emerging in June, males and females mate and then die within a few weeks. Eventually these beetles can kill a palm, but they only inhabit older trees. Giant palm-boring beetles keep the palm population young and vibrant. The presence of these beetles is actually a sign of a healthy oasis.

Palms stand straight and tall, looking proud and invincible. But they aren't. Any place can be overly loved. As you explore these oases of wonder, take care. Use existing paths. Watch out for young palms—seedlings look like thick blades of grass. We do not want the presence of people to be a sign of a declining oasis.

WHERE IN THE PARK IS COTTONWOOD SPRING?

Cottonwood Spring Oasis, one of the best kept secrets in Joshua Tree National Park, is just seven miles from the southern entrance to the park. The spring, the result of earthquake activity, was used for centuries by the Cahuilla Indians, who left bedrock mortars and clay pots, or ollas, in the area.

Cottonwood Spring was an important water stop for prospectors, miners, and teamsters traveling from Mecca to mines in the north. Water was necessary for gold processing, so a number of gold mills were located here. The remains of an arrastra, a primitive type of gold mill, can be found near the spring, and concrete ruins mark the sites of two later gold mills in the area.

Cottonwood Spring was first mentioned in a gold mine claim filed in 1875, indicating that the trees are native. Fan palms first appear around 1920, perhaps growing from seeds deposited by a bird or coyote.

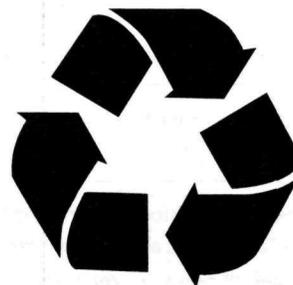
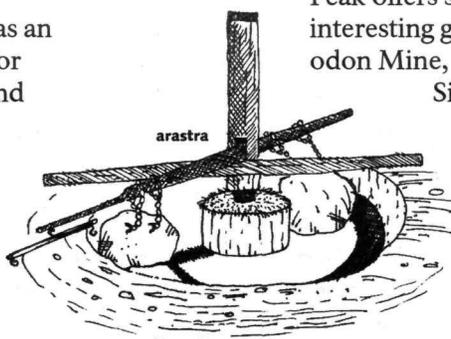
A number of hikes begin at Cottonwood Spring. A short, easy walk down Cottonwood Wash leads past a second oasis to a dry falls. In wet years, the falls can become a scene of rushing water and red-spotted toads. Bighorn sheep

often come up the wash for water in the early hours. An old teamster road drops down past the falls to the lower wash. A short hike leads through palo verde and desert willow trees to the remains of Moorten's Mill.

The three-mile loop trail to Mastodon Peak offers spectacular views, interesting geology, the Mastodon Mine, and the Winona Mill Site. And, for those looking for a longer hike—eight miles round trip—and the largest stand of fan palms in the park, the Lost Palms Oasis trail is a sure winner.

But you don't have to hike to enjoy Cottonwood Spring. This is one of the best birding spots in the park, so bring your binoculars and sit a spell.

The campground, which has water and rest rooms, is located one-half mile from Cottonwood Spring via a signed trail; there are also shaded picnic tables in the campground. To learn more about the plants, animals, and history of this fascinating place, join a ranger-led hike, walk, or campfire program, offered most weekends.



Think Globally, Act Locally

Bring your aluminum and metal cans, glass, and plastic to a campground recycling center.

Share or recycle this Joshua Tree Guide when you have finished reading it.

Participate in recycling in your community.

CAMPGROUND ASTRONOMY

Camping away from city lights gives many of us city dwellers a chance to see the sky as we have never seen it. A great way to introduce someone to the "dark sky" is to tour the Milky Way with binoculars. First just lie back on the ground and gaze at the band of light. Notice how it is brighter in places, with clumps of light and dark streaks where stars seem to be absent. Realize that the glow of light is from stars so far away that we can't quite make them out. The dark lanes are actually interstellar dust that blocks our view. The clumps of light are clouds of stars.

Find one of those star clouds and, without taking your gaze away from it, raise your binoculars to your eyes. The cloud will resolve into hundreds of stars, with perhaps smaller clumps and hazy patches in the field of view.

Notice how the Milky Way seems to be very bright and dense to the south near the horizon? You are looking toward the center of our galaxy, where the stars are richest. The constellations Sagittarius and Scorpio lie in this direction.

Just west of Sagittarius is Scorpio, one of the few constellations that looks like its name. Scorpio is distinguished by the bright red star Antares, located in the scorpion's neck. Look at Antares with binoculars. See the large fuzzy ball of light next to it? That is a large globular cluster.

Turn your attention northward, above and to the left of the stars of Sagittarius. You will see a large cloud of stars. This is the Scutum star cloud. With binoculars you should easily see a hazy patch of light. This is a beautiful open star cluster.

As we move farther north, higher in the sky, we see the star clouds in the constellation Cygnus, the swan. This constellation also looks like its name. We can see the neck pointing south, and the wings stretched east and west. The bright star behind the wings is Deneb, the "tail" of Cygnus.

To help identify the many objects you will find with binoculars, you will want a star chart. A circular "star finder," also known as a "planisphere," will show the location of many celestial objects.

Rockpiles

The geologic landscape of Joshua Tree has long fascinated visitors to this desert. How did the rocks take on such fantastic shapes? What forces sculpted them?

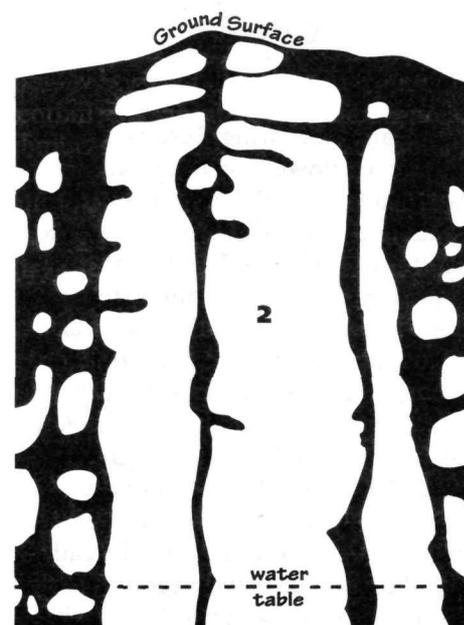
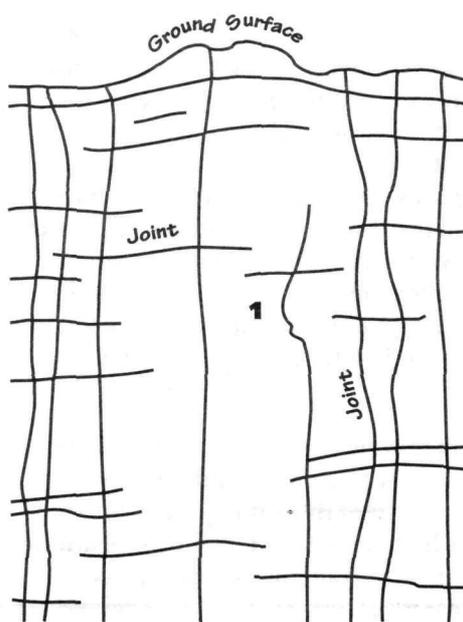
Geologists believe the face of our modern landscape was born more than 100 million years ago. Molten liquid, heated by the continuous movement of Earth's crust, oozed upward and cooled while still below the surface of the overlying rock. These plutonic intrusions are a granitic rock called monzogranite.

The monzogranite developed a system of rectangular joints. One set, oriented roughly horizontally, resulted from the removal, by erosion, of the miles of overlying rock, called gneiss (pronounced "nice"). Another set of joints is oriented vertically, roughly paralleling the contact of the monzogranite with its surrounding rocks. The third set is also vertical, but cuts the second set at high angles. The resulting system of joints tended to develop rectangular blocks. (figure 1) Good examples of the joint system may be seen at Jumbo Rocks, Wonderland of Rocks, and Split Rock.

As ground water percolated down through the monzogranite's joint fractures, it began to transform some hard mineral grains along its path into soft

clay, while it loosened and freed grains resistant to solution. Rectangular stones slowly weathered to spheres of hard rock surrounded by soft clay containing loose mineral grains. Imagine holding an ice cube under the faucet. The cube rounds away at the corners first, because that is the part most exposed to the force of the water. A similar thing happened here, but over millions of years, on a grand scale, and during a much wetter climate. (figure 2)

After the arrival of the arid climate of recent times, flash floods began washing away the protective ground surface. As they were exposed, the huge eroded

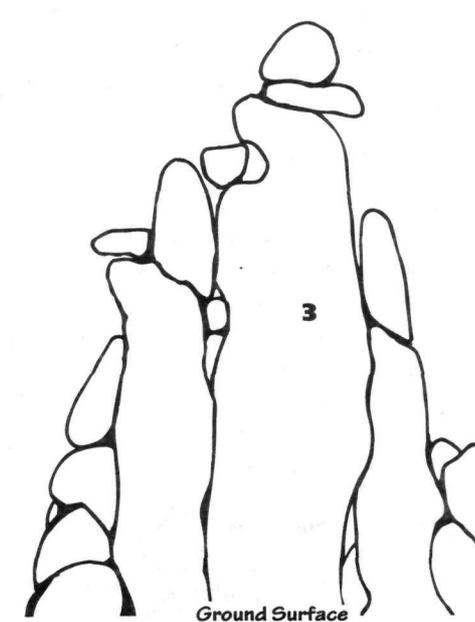


boulders settled one on top of another, creating those impressive rock piles we see today. (figure 3)

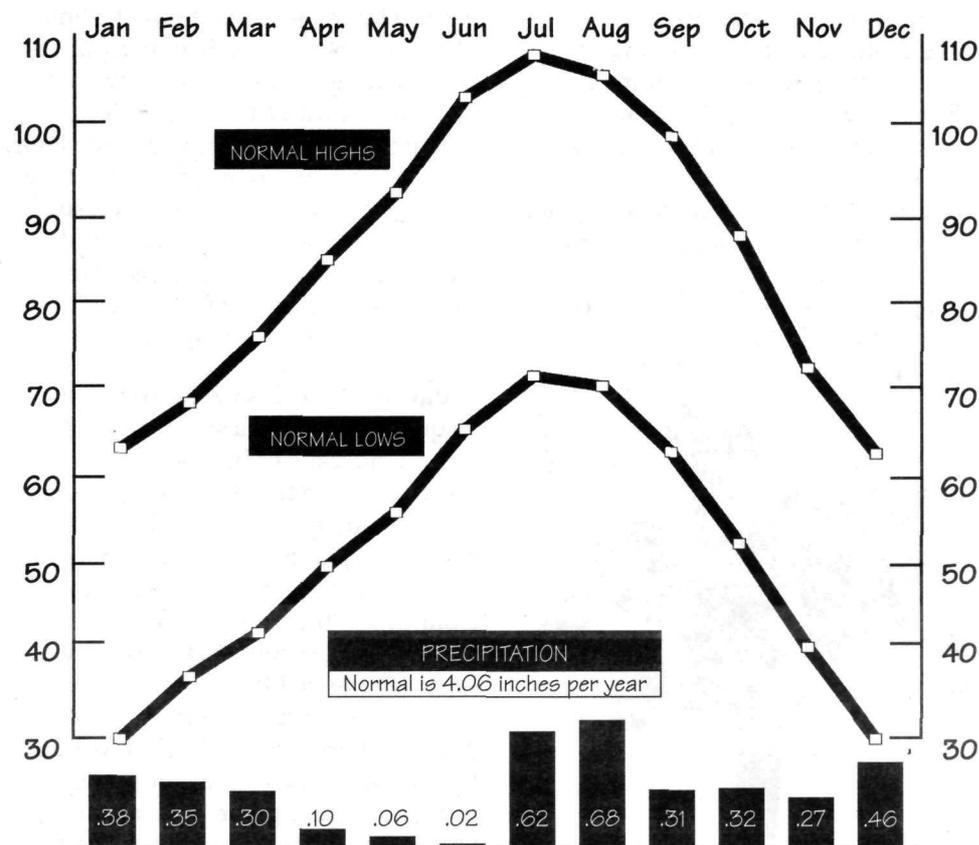
Visitors also wonder about the "broken terrace walls" laced throughout the boulders. These are naturally occurring formations called dikes. Younger than the surrounding monzogranite, dikes were formed when molten rock was pushed into existing joint fractures. Light-colored dikes formed as a mixture of quartz and potassium minerals cooled in these tight spaces. Suggesting the work of a stonemason, they broke into uniform blocks when they were exposed to the surface.

Of the dynamic processes that erode rock material, water, even in arid environments, is the most important. Wind action is also important, but less so than the action of water.

The processes operating in the arid conditions of the present are only partially responsible for the sculpturing of the rocks. The present landscape is essentially a collection of relic features inherited from earlier times of higher rainfall and lower temperatures.



The Weather



Measurements were taken at 1,960 feet. You can expect seven to 12 degrees cooler temperatures and 3.5 inches more precipitation at higher elevations.

"I Speak for the Trees" Dr. Seuss, The Lorax

Surrounded by twisted, spiky trees straight out of a Dr. Seuss book, you might begin to question your map. Where are we anyway? In wonder, the traveler pulls over for a snapshot of this prickly oddity; the naturalist reaches for a botanical guide to explain this vegetative spectacle; and the rock climber shouts "Yowch!" when poked by dagger-like spines on the way to the 5.10 climbing route.



a Joshua tree

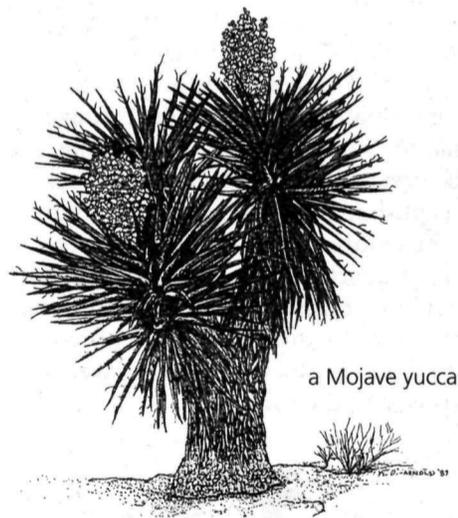
Known as the park namesake, the Joshua tree, *Yucca brevifolia*, is a giant member of the lily family. Like the California fan palm, *Washingtonia filifera*, the Joshua tree is a monocot, in the subgroup of flowering plants that also includes grasses and orchids. Don't confuse the Joshua tree with the Mojave yucca, *Yucca schidigera*. This close relative can be distinguished by its longer, wider leaves and fibrous threads curling along leaf margins. Both types of yuccas can be seen growing together in the park. The Joshua tree provides a good indicator that you are in the Mojave Desert, but you may also find it growing next to a saguaro cactus in the Sonoran Desert in western Arizona or mixed with pines in the San Bernardino Mountains.

Years ago the Joshua tree was recognized by American Indians for its useful properties: tough leaves were worked into baskets and sandals, and flower buds and raw or roasted seeds made a healthy addition to the diet. The local Cahuilla have long referred to the tree as "hunuvat chiy'a" or "humwichawa"; both names are used by a few elders fluent in the language.

By the mid-19th century, Mormon immigrants had made their way across the Colorado River. Legend has it that these pioneers named the tree after the

biblical figure, Joshua, seeing the limbs of the tree as outstretched in supplication, guiding the travelers westward. Concurrent with Mormon settlers, ranchers and miners arrived in the high desert with high hopes of raising cattle and digging for gold. These homesteaders used the Joshua tree's limbs and trunks for fencing and corrals. Miners found a source of fuel for the steam engines used in processing ore.

Today we enjoy this yucca for its grotesque appearance, a surprising sight in the landscape of biological interest. The Joshua tree's life cycle begins with the rare germination of a seed, its survival dependent upon well-timed rains. Look for sprouts growing up from within the protective branches of a shrub. Young sprouts may grow several inches in the first five years, and then slow down, averaging one-half inch per year thereafter. The tallest Joshua tree in the park looms a whopping forty feet high, a grand presence in the Queen Valley forest; it is estimated to be about 300 years old! These "trees" do not have growth rings like you would find in an oak or pine. This makes aging difficult, but you can divide the height of a Joshua tree by the average annual growth of one-half inch to get a rough estimate.



a Mojave yucca

Spring rains may bring clusters of white-green flowers on long stalks at branch tips. Like all desert blooms, Joshua trees depend on just the perfect conditions: well-timed rains, and for the Joshua tree, a crisp winter freeze. Researchers believe that below freezing temperatures may damage the growing end of a branch and stimulate flowering, followed by branching. You may notice some Joshua trees grow like straight stalks; these trees have never bloomed—which is why they are branchless! In addition to ideal weather, the pollination of flowers requires a visit from the yucca moth. The moth

Matt Riley's Fatal Mistake

It was 114 degrees (46° C) in the shade and the distance to the nearest spring was 25 miles (40 km) when Matt Riley and Henry Kitto set off on foot from the OK Mine at 9 a.m. They had one canteen of water 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.

Kitto became ill 12 miles (19 km) out. He gave the canteen to Riley and turned back. Kitto 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 road to Mecca.

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.

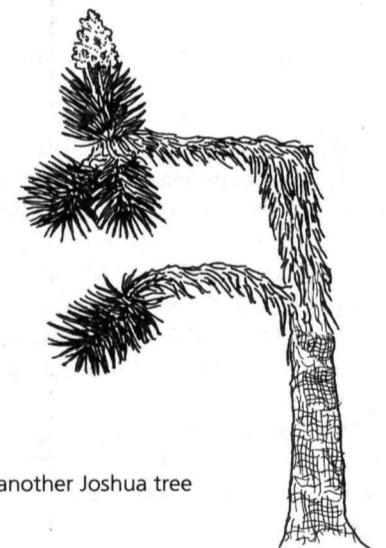
Riley and Kitto had set off with only one small canteen. There was no way they could have survived a 25-mile (40-km) trek in plus 100 degree heat with that small amount of water. Kitto's decision to turn back saved his life. When Riley decided to continue on, he doomed himself.

Matt Riley died 87 years ago, but his mistake is repeated by desert visitors every year. For a safe visit, be sure to carry adequate water with you when you venture into the park. Drink your water supply rather than trying to conserve it. When it is half gone, it is time to turn back.

collects pollen while laying her eggs inside the flower ovary. As seeds develop and mature, the eggs hatch into larvae, which feed on the seeds. The tree relies on the moth for pollination and the moth relies on the tree for a few seeds for her young—a happy symbiosis. The Joshua tree is also capable of sprouting from roots and branches. Being able to reproduce vegetatively allows a much quicker recovery after damaging floods or fires, which may kill the main tree.

Many birds, mammals, reptiles, and insects depend on the Joshua tree for food and shelter. Keep your eyes open for the yellow and black flash of a Scott's oriole busy making a nest in a yucca's branches. At the base of rocks you may find a wood rat nest built with spiny yucca leaves for protection. As evening falls, the desert night lizard begins poking around under the log of a fallen Joshua tree in search of tasty insects.

You may be at ease with pine or hardwood, or find shade under the domesticated trees in your city park, but in the high desert, Joshua is our tree. It is an important part of the Mojave Desert ecosystem, providing habitat for



another Joshua tree

numerous birds, mammals, insects, and lizards. Joshua tree forests tell a story of survival, resilience, and beauty borne through perseverance. They are the silhouette that reminds those of us who live here that we are home. Like the Lorax we speak for the trees, but often the trees speak to us.

By Vegetation Specialist Jane Rodgers

Publications to help you plan a visit to Joshua Tree National Park

The following publications have been selected for their value in planning your trip to Joshua Tree National Park. These items and many more may be ordered by mail, telephone, fax, or on the web at www.joshuatree.org.

Getting to Know Joshua Tree National Park

Road Guide to Joshua Tree National Park, Decker. Guides visitors on a driving tour through the land where the Mojave and Colorado Deserts meet. 48 pages PB \$5.95

On Foot in Joshua Tree, Furbush. A comprehensive hiking guide featuring 90 park hikes, 40 photos and illustrations, and 26 maps and reference charts. 173 pages PB \$14.95

Joshua Tree National Park A Visitor's Guide, Cates. A delightful, informative guide blending human and natural history. Enjoyable by desert rats and first-time visitors. 100 pages PB \$6.95

Hiking California's Desert Parks, Cunningham. Presents 111 hikes and backcountry trips in Anza Borrego, Joshua Tree, Death Valley, and Mojave. 373 pages PB \$16.95

Joshua Tree Desert Reflections, Trimble. Dazzling photos and lyrical narrative make this book both the perfect introduction to the park and a treasured memento. 40 pages PB \$9.95

Joshua Tree Video. Excellent introduction to Joshua Tree National Park. 30 minutes VHS \$13.95; PAL \$15.95

Recreation Map of Joshua Tree, Harrison. Colorful map of Joshua Tree National Park highlighting points of interest, campgrounds, picnic areas, topographic features, and backcountry roads and trails. \$8.95

Trails Illustrated Topographic Map of Joshua Tree National Park. Includes elevations, backcountry camping, hikes, routes, and safety. Waterproof and tearproof. \$9.95

Joshua Tree, The Story Behind the Scenery, Vuncannon. Full of color photos and fascinating text, the perfect introduction to the park. 48 pages PB \$9.95; \$10.95 for French or German.

Joshua Tree National Park Geology. Trent and Hazlett. Explores the geology and evolution of the Joshua Tree landscape. Includes sections on plate tectonics, regional geology, and seismic activity. PB \$9.95

50 Best Short Hikes, Krist. Covers Joshua Tree, Death Valley and Mojave. Hikes range from easy nature trails to more challenging routes suitable for a full day of hiking. 204 pages PB \$12.95

On the Road in California

California Deserts, Schad. Takes you on a journey through the hottest, driest, lowest, and loveliest places in North America. 103 pages PB \$14.95

National Audubon Society Field Guide to California, Alden, Health. A complete overview of California's natural history including an extensive sampling of the state's parks, preserves, beaches, forests, islands, and wildlife sanctuaries. 450 pages \$19.95

The Living Desert, exploring national parks and monuments through natural sounds. Tape \$10.95, CD \$15.95.

The Complete Guide to America's National Parks, Fodor's. Up-to-date guide to all 384 National Park Service sites. 448 pages PB \$19.00

California Road & Recreation Atlas. Detailed maps include landscape, recreation guides, GPS grids, and freeway exit numbers. 143 pages PB \$24.95

Life in the Desert

Desert Survival Tips, Tricks, & Skills, Nester. Explains how to deal with emergencies that might arise in a desert environment. Filled with examples, narratives, and illustrations to aid understanding. 70 pages PB \$10.95

How Indians Used Desert Plants, Cornett. An informative account of the ways early natives used a variety of desert plants for food, tools, building materials, and as an integral part of their daily lives. 62 pages PB \$9.95

Geology Underfoot in Southern California, Sharp and Glazner. An inside view of the southland's often active, sometimes enigmatic, and always interesting landscape. 224 pages PB \$14.00

Desert Solitaire, Abbey. The author's recollection of summers spent as a ranger in the canyon and rim country of southern Utah, including observations of the natural world. 269 pages PB \$14.00

The Joshua Tree, Cornett. Up-to-date information about this symbol of the Mojave Desert and namesake of our national park. 32 pages PB \$6.95

Wildflowers of Joshua Tree National Park. Fifty-eight color photos of blooming wildflowers, shrubs, and cacti taken by park staff provide a handy reference for visitors. \$2.50

The Lizard-Watching Guide, Sanborn. More than a typical field guide, Sanborn details seventeen common lizards found in the Mojave and Colorado deserts. 36 pages PB \$8.95

Desert Palm Oasis, Cornett. An exploration of the lush, water-loving fan palms that are such a wonderful surprise in arid desert environments. 47 pages PB \$10.95

The Sibley Field Guide to Birds of Western North America, Sibley. An indispensable resource for birders seeking an authoritative and portable guide to the birds of the west. 474 pages PB \$19.95

100 Desert Wildflowers, Bowers. Color photos and easy-to-read text highlight some of the most common wildflowers of the deserts in the southwest corner of America. 56 pages PB \$7.95

Shrubs and Trees of the Southwest Desert, Bowers. An easy-to-use guide full of descriptions and line drawings of over 100 desert shrubs and trees. 140 pages PB \$12.95

70 Common Cacti, Fischer. Colorful photographs and easy-to-read descriptions demonstrate the unique beauty of the common cacti of the Southwest. 70 pages PB \$7.95

Mojave Desert Wildflowers, Stewart. Presents a condensed view of the nearly 2,000 species of plants known to occur throughout the Mojave Desert region. 210 pages PB \$14.95

Poisonous Dwellers of the Desert, Dodge. This classic provides accurate, useful information and debunks superstitions about poisonous desert critters. 40 pages PB \$6.95

Education to enhance your visit to Joshua Tree National Park

THE DESERT INSTITUTE AT JOSHUA TREE NATIONAL PARK, the education program of the Joshua Tree National Park Association, sponsors one, two, and three day field classes on weekends from September to May. Each class examines a natural or cultural feature of the Mojave Desert and is geared to teachers, volunteer interpreters, park visitors, and others interested in learning about the park and the Mojave Desert. College credit is available through University of California Riverside Extension.

MEMBERS OF THE JOSHUA TREE NATIONAL PARK ASSOCIATION are automatically enrolled in Partners in Nature Education (PINE), which qualifies them to receive a \$10 discount on each Desert Institute class, as well as discounts on University of California Riverside Extension outdoor study courses. For information on becoming a Joshua Tree National Park Association member, call 760-367-5535.

A CATALOGUE OF DESERT INSTITUTE CLASSES is available at park visitor centers, or you may call 760-367-5535 and request one by mail. An on-line class catalogue is available on our website: www.joshuatree.org.

Ordering Information

Telephone orders are encouraged to ensure that you are ordering the publications best suited to your needs or order from our website at www.joshuatree.org.

By mail, enclose check or credit card number and expiration date. CA residents include 7.75% sales tax. Prices are subject to change without notice.

Postage & Handling Rates

U.S. & Canada: \$7.00 for first item, each add'l. item \$0.50.
Foreign airmail: actual cost plus handling.



74485 National Park Drive
Twentynine Palms, CA 92277
voice: (760) 367-5525
fax: (760) 367-5583
www.joshuatree.org

Lizard Lifestyles

Viewing wildlife is often a priority for visitors to national parks. Arguably the most conspicuous critters abroad in the daytime in Joshua Tree National Park are the lizards. Wherever you go in the park, spring, summer, or fall, you are likely to see lizards. In spring, they are especially abundant.

There are 18 species of lizards in Joshua Tree. Some are very common; others are rare. Lizards are such a visible part of the desert environment because reptiles are pre-adapted for making a living in the desert. Two things required by all animals, food and water, are scarce in the desert. Lizards require much less food than a bird or mammal of the same size because of their low metabolism. And during winter, when food is often scarce, most lizards hibernate and require no food. Lizards need less water than birds or mammals because they excrete their metabolic wastes as a solid (uric acid) instead of dissolved in water (urine).



Banded gecko

In reality, the various species of desert lizards differ markedly in their times and places of activity. Some are early risers, up at sunrise, but others do not get up until late morning. The desert banded gecko is active only at night. Certain species climb around in the rocks, others spend most of their lives underground or under cover; still others live on the ground surface or among the branches of desert plants. Such spatial and temporal differences enable different species to live in close proximity without competing for the same food resources.

In the desert, there are two general communities of lizards. One lives on the desert flats, the other in rocky areas. There are often two different, but similar species playing the same ecological role in their respective community. Each community has a top predator lizard, one with a big tyrannosaur-type head, long teeth, and powerful jaws. On the desert flats this role is occupied by the long-nosed leopard lizard; in rocky areas the role is played by the Mojave collared lizard.

Each community has a large herbivorous lizard. On the desert flats it is the desert iguana, in the rocky areas it is the chuckwalla. This finely tuned division

of resources is common in communities with many species. Even though the lizard communities of North American deserts are simple compared with those of Australia and South Africa, this complex partitioning of resources among finely adapted species is apparent here.

When active, most desert lizards maintain a body temperature that is favorable for metabolism by basking in the sun until they reach about 95° F. It is this practice of basking that makes lizards a conspicuous part of the desert scene. Most desert lizards feed on insects, but our two largest—the chuckwalla and desert iguana—eat mainly flowers and leaves.

Many of the smaller species of lizards have special “break points” in the tail bones. The tail beyond these points can be discarded in an emergency, such as being seized by a predator. They are then able to grow a new tail over the following weeks, although the regenerated tail is usually smaller and plainer than the original.

There are two lizards commonly seen around campgrounds by visitors. The small, 4-inch, California side-blotched lizard is brown in color. It is usually seen on top of small boulders. The side-blotched is common in all parts of the park. The other lizard most often seen is the Great Basin fence lizard. This is a larger species, five to seven inches. It is usually very dark in color: gray, black, or even bluish in spring. It is limited to the higher elevation part of the park where it basks on large rock outcrops, often high above ground level.

For the opportunity to see the largest of our lizards, the western chuckwalla, drive along Pinto Basin Road, slowing where it passes through areas with rocky outcrops. Although they are much less numerous than they were 40 years ago, you might just catch a glimpse of a large (12 inch), heavy-bodied lizard sitting near the very top of an outcrop.

Park chuckwallas are very wary, and can seldom be approached closely. Please don't disturb them. They need to bask in the sun in order to absorb the heat necessary to digest the plants they have consumed.

by Dr. Harold De Lisle, herpetologist



Western chuckwalla basking on a rock outcrop.



Desert iguana searching for edible plants on the desert flats.



Long-nosed leopard lizard

Although often seen on top of small boulders, this side-blotched lizard is basking on an old piece of cholla stem.



When a female collared lizard is carrying eggs, her white collar patches turn a bright orange, as in the picture above.

Great Basin fence lizard

