

# Red Rock Canyon

## NATURAL WORLD

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### The Natural World

Red Rock Canyon's spectacular sandstone escarpment, the desert tortoise at the visitor center, and the thickets of Joshua trees herald the natural world of geology, animals and plants to be experienced in the nearly 200,000-acre national conservation area. Spend some time here and you'll see plants that put on spectacular flowering shows in the springtime and provide lasting sources of water, food and shelter to the birds, reptiles and mammals that make the southern Mojave Desert their home. This guide will also introduce you to the cultural and historic uses of Red Rock Canyon before its special designation as a Bureau of Land Management National Conservation Area.

### Geology of Red Rock

The passage of millions of years is written on the sandstone cliffs and limestone outcrops of Red Rock Canyon. The geological record reveals an area that was at the bottom of an ocean basin and its emergence from the sea when dinosaurs roamed the earth.

#### Limestone Outcrops

More than 500 million years ago, this area was underwater and for more than 250 million years limestone sediment accumulated which contained the fossils of sea life that flourished during that time. Early- to mid-Paleozoic Era limestone is exposed on the escarpment on the west and north sides of the national conservation area. Later Paleozoic Era Permian limestone outcrops can be seen on the east side; especially on Blue Diamond Hill and its extension to the north, Fossil Ridge.



Photo: Red Rock Escarpment  
by Mark Rekshynskyj

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Photo: Up a Hill  
by Jeff Yost

#### Aztec Sandstone Escarpment

About 250 million years ago, during the Mesozoic Era of geological time – the Triassic Age of Reptiles and the Jurassic Age of Dinosaurs – Southern Nevada emerged from the sea and millions of years of continental deposition began, culminating in the formation of the Jurassic period Aztec sandstone. The great sandstone cliffs at Red Rock, thousands of feet high, are made up of Aztec sandstone. This formation, about 180 million years old, represents lithified sand dunes that formed in a vast desert that covered a large part of the southwestern United States during Jurassic time. The sand slowly changed into sandstone as subsurface water percolated through the sediments and deposited cements of iron oxide and calcium carbonate in the pore spaces between the grains. These sandstone rocks were slowly uplifted thousands of feet to their present elevation, and exposed to weathering and erosion.













Photo: Phainopepla by Jimmy Linares

## Birds

Nearly 200 different species of birds can be found in Red Rock Canyon. These birds range from the tiny hummingbirds to the large majestic eagles. The birds are found in many different habitats throughout the national conservation area.

### Best Places to Bird Watch

Birds can be seen pretty much anywhere throughout Red Rock Canyon, but areas where there is water usually provide a greater variety of sightings. Red Spring, White Rock Spring, Pine Creek Canyon, Lost Creek, Willow Springs and Wheeler Camp Spring have year-round sources of water. Sandstone Quarry, Ice Box Canyon, Oak Creek Canyon and First Creek Canyon have seasonal water sources and are most active in spring.

### Red-tailed hawk

One of the area's larger birds, the hawk's name comes from the broad reddish band across the base of its tail. Red-tailed hawks commonly nest on cliffs, power lines and tall trees. The Red-tailed hawk can be seen year round throughout Red Rock Canyon.



Photo: Red-tailed Hawk by Katie Kleinick

### Say's phoebe

This small member of the flycatcher family has an orange-brown belly and is light gray on the throat and breast. This year-round resident is commonly seen perched on the tops of trees and shrubs, waiting for an insect to fly by.

### Greater Roadrunner

The greater roadrunner is a member of the cuckoo family, and is found only in the southwestern United States and Mexico. It is easily identified by its long tail and a crest on its head that can be raised and lowered. It pants to keep cool when it is hot and exposes a black patch of skin on its back to absorb the sun's warm rays when it is cold.

### Western scrub-jay

This beautiful blue and gray bird was given its name because of its preference to dwell in low scrub-brush and is found in the higher elevations in Red Rock Canyon. Scrub-jays, like many other birds in the Corvid family, gather and cache (store) food. They feed on insects and fruits in the spring and summer and seeds in the fall and winter.

### Phainopepla

This oddly named bird is the only member of the silky flycatcher family found in the United States. The male phainopepla is dark black and the female is gray. Both males and females have red eyes and a distinct crest on their head. Its foraging behavior helps create its own habitat—the bird eats mistletoe (a parasitic plant) berries found on mesquite and acacia, digests the soft fruit and passes it onto a branch, where the seed takes root and grows more mistletoe.

### Cactus wren

This year-round resident is identified by its downturned bill and heavily streaked body. The downturned bill, characteristic of most wrens, helps in the capture of prey (insects.) It builds its bulky nests in the Mojave yucca so the sharp, sword-like leaves protect the nest.



Photo: Cactus wren by Phil Foil

### Common Raven

The common raven is highly intelligent and social bird. These shiny black birds have a long, heavy bill, with a wedge-shaped tail. This bird is omnivorous, meaning it eats both plants and animals and can be seen throughout the area including the visitor center. Ravens are a major predator of juvenile tortoises.

For a comprehensive list of birds found in Red Rock Canyon Conservation Area, visit our website at [www.nv.blm.gov/redrockcanyon](http://www.nv.blm.gov/redrockcanyon)



Photo: Creosote  
by Kate Sorom

## Plants

A variety of plant species thrive at Red Rock Canyon because of the variations in soil types, alkalinity, soil depth, elevation, exposure, temperature and precipitation. Vegetation in the area is divided into eight major plant communities: creosote bush, blackbrush, chaparral, juniper-pinyon, ponderosa pine-white fir, desert wash, cliff community and riparian community.

### Creosote bush

The creosote bush community is prominent on the lower, drier and hotter areas extending up gentle slopes of a mountain. It bears small yellow flowers and is very efficient at absorbing water; so much so that few things grow around it, even a creosote seedling trying to take hold too close to an established bush.

### Joshua tree

The Joshua tree is an iconic symbol of Red Rock Canyon. The tree is related to the lily family, along with the Mojave yucca, banana yucca and the agave.



Photo: Joshua tree  
by Kate Sorom

### Indian paintbrush

This wildflower is commonly seen during the spring blooms. Native Americans used the plant to treat rheumatism, as a hair brightener and as a food.

### Cactus

Cacti are common plants in the area, including the beavertail cactus, hedgehog cactus and prickly pear. They have thick skins that allow them to retain water. Another feature of the cactus family is their spines and fuzzy glochids at the base of their spines. The spines are actually leaves, and they drop just like other plants shed their leaves. Desert tortoises eat the flowers, fruit and pads.

### Beavertail cactus

The beavertail cactus can be identified by its blue-gray flattened and fleshy pads, which are covered with clusters of hair-like spines or glochids. Be careful not to touch the small, fine glochids; they detach easily and are troublesome to pull out of skin. In spring, the bright pink flowers add a splash of color to the desert.

### Wildflowers

Among the wildflowers at Red Rock Canyon, the yellow bi-colored penstemon is very important to the area. This white and yellow flower is known to grow only in the Las Vegas Valley and surrounding areas. It is a rare plant, and its presence is thought to be declining.

### Mojave aster

With abundant growth in the Mojave Desert, the Mojave aster puts on a show of purple and yellow flowers in the spring. It's typically found growing near creosote bushes. After blooming, the plants die back.

## Insects

Insects and spiders play important ecological roles in the Red Rock Canyon ecosystem, providing food sources and plant pollination.

### Mojave yucca moth

This moth is one of the most important insects in the area. The Mojave yucca plant depends on the Mojave yucca moth for pollination. The moth collects pollen from the yucca flowers and carries it on to other flowers, pollinating them for reproduction. Moths lay their eggs in the flowers after fertilizing them, and the larvae then feed on the developing yucca seeds.

### Assassin bug

Assassin bugs are a family of insects and are cunning and swift predators that eat other insects. Ranging in color from green to black, they can grow to an inch and a half in length. This family of insects has a tube-like beak used like a dagger that it drives into its victim's body. They inject lethal saliva that dissolves the victim's tissue, and then they suck their victims dry. Assassin bugs can inflict a very painful bite to humans if handled carelessly, and can cause a severe reaction in some people. They can defend themselves by squirting venom at an attacker's eyes. The venom can cause temporary blindness in humans.



Photo: Assassin bug  
by Jim Cribbs

### Arachnids

Scorpions and tarantulas both are arachnids, a class that includes spiders, scorpions, ticks and mites. They have two body segments and eight legs.

### Tarantula

The tarantula is a large spider, and may seem harmful, but will bite only when provoked, and is not deadly to humans. It lives mostly underground, in a burrow that it lines with webbing. From this burrow, it spreads a fine web of trip lines that it monitors from the opening of its burrow. When an unsuspecting victim trips one of its lines, the tarantula leaps out and overpowers the prey with a venomous bite. It then drags the prey back into its home and eats it. The most likely time to see a tarantula around Red Rock Canyon is in late September to mid-October, when the males are in search of a mate.

### Scorpion

Scorpions are closely related to spiders, but do not spin webbing. Scorpions are nocturnal carnivores living under rocks and other desert debris during the day, and come out at night to look for prey. They have pincers and distinctively long tails tipped with a stinger. The native giant desert hairy scorpion can grow up to 6-inches long, but is not deadly to humans.







Photo: Jackrabbit  
by Jimmy Linares

## Kangaroo rat

The kangaroo rat is named for its method of movement because it hops rather than walks like most small mammals. Scientists say that kangaroo rats are not a rat at all, but more closely related to mice. It is a nocturnal animal, meaning it is active at night. Kangaroo rats spend their days underground where the temperature is up to 30 degrees cooler and the humidity is much higher. The kangaroo rat gets some of its water from drinking morning dew or eat succulent plants, but has another unique adaptation to get water. Air passes through their nasal passages and cools. As the air cools, water in the air condenses and concentrates on the mucous membranes, where it is eventually absorbed.

## Blacktail jackrabbit

The blacktail jackrabbit, contrary to its name, is a hare. Hares differ from rabbits in that a hare's young are born with fur and sight, whereas a rabbit is born hairless and blind. The blacktail jackrabbit escapes heat by sitting in shallow depressions near the base of plants, where soil and air temperatures are cooler. Its enormous ears also provide a large surface over which heat loss can occur.

## Desert cottontail

The desert cottontail, a true rabbit, prefers areas with more vegetation than the jack rabbit, including rocky canyons, floors of dry washes and river beds, and mesquite and catclaw thickets. It is crepuscular, meaning more active at dusk and dawn, so the chances of seeing one during the daylight hours are low.

## Wild Horses and Burros

The wild horses and burros at Red Rock Canyon originated from horses and burros that escaped or were abandoned by settlers, ranchers, prospectors and Native American tribes. These are primarily palominos, white, black and buckskin horses and wild burros that are well adapted to the local environment. They know where to forage and where the springs are located. They move throughout Red Rock Canyon, following new growth vegetation and temporary water catchments. These animals graze on native grasses and shrubs. As summer progresses, the animals stay closer to the perennial spring sources. Several of the watering holes date back to the area's ranching days, and recent improvements provide water storage at some of these sources, ensuring that the wild horses and burros have adequate water even in the hot season.

## Herd Management

The habitat at Red Rock Canyon can support small numbers of wild horses and wild burros. BLM monitors the bands of wild horses to ensure their numbers stay within a population range of 16 to 27 animals. About 29 to 49 wild burros can live in the area. Those are the numbers supportable with the amount of water and forage for wild horses, burros and other wildlife.



Photo: Wild horse  
by Tara Kilpatrick

## Where to See Wild Horses and Wild Burros

The wild horses are primarily south of State Route 160. Wild burros can be found north of State Route 160. One of the best places to look for burros is between Spring Mountain Ranch State Park and Blue Diamond on State Route 159, where they frequently drink at the springs and graze by the road.



Photo: Burros  
by Ihla Crowley

A fence was installed along both sides of the highway that runs through Red Rock Canyon to keep the wild horses and burros off the road. You may see them on the wrong side of the fence, but do not be alarmed, they know how to get back to the other side.

Please do not feed, harass, or pet the wild horses or burros. Any interaction with these wild animals causes them to lose their normal, wild instincts and encourages them to hang around the highway. This creates a safety hazard for the animals and for people traveling the highway. Remember these are wild animals and can be unpredictable.

It is illegal to feed, pet, or otherwise harass a wild horse or burro, individuals will be cited and could be arrested for those activities. If you see one of these Living Legends, take photos and enjoy watching them from a safe distance.

When the BLM removes excess numbers of wild horses from herd areas, they become available for adoption. For information on the BLM's Wild Horse and Burro Adoption Program, call 866-4MUSTANG (866-468-7826) or go to [www.blm.gov](http://www.blm.gov) and click on any of the wild horse and burro links.





### Red Rock Canyon Contact Information

[www.nv.blm.gov/redrockcanyon](http://www.nv.blm.gov/redrockcanyon)

Emergency or Fire  
[702] 293-8932 or 911

BLM Southern Nevada District Office  
[702] 515-5000

Red Rock/Sloan Field Office  
[702] 515-5350

Climbing Permits  
[702] 515-5050

Gift & Book Store  
[702] 515-5379

Friends of Red Rock Canyon  
[702] 515-5360

Red Rock Canyon Interpretive Association  
Organized Hikes  
[702] 515-5367

This publication was made available through a partnership with Bureau of Land Management, Friends of Red Rock Canyon and Red Rock Canyon Interpretive Association.

BLM/NV/LV/GI/11-15+1800

Photo: Antelope Ground squirrel and Desert Tortoise (Luice)  
by Sue & Roger Kolar

## Insectivores – the insect eaters

### Bats

Bats are mammals, but are separated from other mammals in that they possess the power of flight. Bats are commonly found roosting in caves, overhangs, deep crevices in rock faces, under the bark of trees or wrapped in leaves. They are normally active only at night. Bats can see, but they rely on echolocation to find prey and avoid obstacles while flying around in the dark. Bats echolocate by making a series of clicks and chirps which reflect off nearby objects and guide the bat to moving insects or around fixed objects. Their hearing is so sensitive they can tell what kind of insect they are chasing.

The Western pipistrelle, is the most common to Red Rock Canyon, and is one of the smallest bats in the United States. The adult male's body averages 2.5 inches long. They are found throughout the desert southwest, will typically hibernate in caves or abandoned mines during winter months, and live an average of 10-13 years.

### Reptiles

The reptiles, snakes, tortoises and lizards, are land dwellers, have protective scales and are adapted to life in the desert. Within Red Rock Canyon, there are 20 species of lizards, 25 species of snakes and one species of tortoise. Many reptiles are nocturnal and stay secluded in rock crevices, burrows or bushes during the day to avoid the intense summer heat.

### Desert tortoise

The desert tortoise is brown with a high-domed shell and stocky, scaly limbs. It's found throughout the Mojave Desert below 4,200 feet in elevation, but a wild sighting at Red Rock Canyon is rare. One tortoise easy to see from April to October is Mojave Max. He lives in an outside pen, adjacent to another pen that houses eight female tortoises behind the Red Rock Canyon Visitor Center. From November to March, the tortoises typically are in a type of hibernation called brumation and aren't seen much. The desert tortoise is on the endangered species list and is considered a threatened species. There are laws that protect these tortoises. Please do not touch, harass, collect, kill, feed or move desert tortoises unless they are in imminent danger (i.e. about to get hit by a vehicle).



Photo: Mojave Max Desert Tortoise Mascot

### Snakes

Keep an eye out for snakes and give them room to evade you. Please don't harm the snakes at Red Rock Canyon.



Photo: Mojave Rattlesnake by Kate Sorom

### Northern Mojave rattlesnake

The Northern Mojave rattlesnake, is about three to four feet long and is also known as Mojave green because of its green hue. It has a potent neurotoxic and hemotoxic venom. Its preferred habitat at Red Rock Canyon are the areas of scrub brush, low areas of sparse vegetation, among the Joshua trees and open, arid areas. Mojave greens are most active from April to September.

### Desert speckled rattlesnake

The venomous desert speckled rattlesnake is active from about April to October. As the days get hotter, the rattlesnake becomes active during dawn and dusk. It prefers Red Rock Canyon's rocky areas, steep hillsides and other areas offering rocky cover.

### Great Basin gopher snake

The Great Basin gopher snake is a non-venomous constrictor. Constrictors are snakes that squeeze their prey to death. It is often confused for a rattlesnake based on its appearance, but the gopher snake has no rattle at the tip of its tail. It is a commonly found snake, seen on roads and trails, and is considered harmless to humans.

### Common kingsnake

The common kingsnake is typically brown and yellow or black with white rings around its body. An adult can grow from three to six feet long. It's not venomous, but is exceptionally adaptable and can live in a variety of habitats. The kingsnake will prey on just about anything it can overpower with its constricting coils, including rattlesnakes. Kingsnakes get their names from being able to eat venomous snakes.

### Lizards

At least 20 species of lizards are found around the area. The most commonly seen include side-blotched lizard, horned lizard, Great Basin fence lizard, desert spiny lizard, Desert banded gecko and collared lizard.

### Common chuckwalla

One of the most familiar reptiles at Red Rock Canyon is the common chuckwalla, which grows to about 15 inches in length. They have stocky, wide bodies and thick tails that taper to a blunt tip. Often seen scurrying over rocks, they will flee for protection in crevices. To protect themselves from predators, they hide in crevasses and swallow air to inflate themselves. Once inflated, it is difficult for a predator to pull them out of the crevasse. Active both day and night, the chuckwalla mostly feeds on leaves and flowers but will feast on insects too, when they're available. Chuckwallas typically hibernate during the colder months, and can live for 25 years or more.



Photo: Chuckwalla by Susanne Rowe