



Fall/Winter 2017-18

Cosmos

An Awe-Inspiring Beauty

by Carolyn Hunt

FOR GENERATIONS OUR ANCESTORS looked to the heavens and saw a sky full of stars. If you have never seen such a sight, it is something to behold! Imagine the inky black of night painted with a delicate misty glow; this is the Milky Way. The Milky Way is joined by bright stars twinkling—flashing red, blue, green, white. They seem to dance in the sky. This view has been described as numinous, evoking feelings of mystery, holiness, and spirituality. Some cultures even had myth, legend, and religion entwined with the stars.

Today, the stars often play a diminished role in our lives. Most people live in cities where even the night is bright, living in light 24 hours a day. We often have to travel great distances to see what is directly overhead. The tapestry of the heavens is hidden by a veil of human-made light. Consider the picture (right). Can you pick out where you are from? Places like Chicago, Los Angeles, Portland, Washington, D.C., and the entire outline of Florida are emblazoned on the earth. You can see that cities are in stark contrast to the nearby, uninhabited water bodies of the Pacific and Atlantic Oceans, the Great Lakes, and the Gulf of Mexico.

This human-caused lighting of the night was noticed by some people, particularly astronomers. Astronomers often have a keen interest in light pollution, as they look to the stars to seek answers and make predictions. This is because visible-light observations cannot be made with a large amount of light pollution. Light can travel hundreds of miles to disrupt astronomical observations. Some cities saw this was occurring and decided to decrease the amount of light they put into the sky. Two such cities are Tucson and Sedona, Arizona. They have less light pollution when compared to other cities their size. Tucson has a number of astronomical observatories outside its city limits, which have benefited from their choice to reduce light pollution.

There are many ways in which residents of Sedona, Tucson—and other people concerned with reducing their light pollution—decrease light pollution going skyward. If one is to have a night-sky-friendly light you will get a “goldilocks” light. The light is just right, not too much, not too little.

*Though my soul may set in darkness,
it will rise in perfect light;
I have loved the stars too fondly to
be fearful of the night.*

—Sarah Williams



The United States at night. Photo by NASA Earth Observatory/NOAA NGDC.

To get a light that is “just right” follow these handy tips.:

1. WHERE: Use light where you need it. Choose locations of lights carefully and only install a light where it is truly needed.
2. SHIELD: Pick lighting fixtures that shield the light. A fixture which directs light to the ground is essential. Shielded light fixtures direct light at the ground, not the sky.

3. BRIGHTNESS: Consider the brightness of the light. The brightness of a light is called lumens; the amount of light. A 25 or 40 watt incandescent bulb, or a 9 watt compact fluorescent, is usually enough to light a porch or driveway.

4. WHEN: Consider when light is needed. Installing sensors can allow the light to come on when people are present and using the light. Sensors then turn the light off when it is not needed.

5. COLOR: The color of the light is important as well. “Warmer” colors, such as am-

bers, are useful for a few reasons. They decrease sky brightness, are easier on the eyes, and are less susceptible to insects.

Efforts like those listed above have contributed to Sedona, Arizona’s status as a “Dark Sky Community,” recognized by the International Dark Sky Association.

Astronomers are not the only ones who benefit from darkness. Animals also need night. ...continued on page 3

Greetings

WELCOME TO CARLSBAD CAVERNS AND Guadalupe Mountains National Parks. Carlsbad Caverns National Park, a World Heritage Site since 1995, features a spectacular cave system of highly decorated chambers. Guadalupe Mountains National Park protects one of the world’s best examples of a fossil reef. Both parks are located within the Chihuahuan Desert, a fascinating place to explore desert life.

Our park staff are here to help make your visit a truly memorable event and will be happy to help you plan your visit to areas within and without the designated wilderness. Guided tours at Carlsbad Caverns can enrich your park experience. These tours offer a variety of caving experiences, from easy lantern tours to challenging trips involving crawling and squeezing through tight passages.

Guadalupe Mountains National Park has over 80 miles of hiking trails to explore, ranging from wheelchair accessible paths to strenuous mountain hikes, including an 8.4 mile roundtrip hike to Texas’ highest mountain, Guadalupe Peak (8751', 2667m).

As you travel and spend time in the area please remember to keep safety in mind. Deer and other wildlife are plentiful—enjoy watching wildlife, but remember they often move across roads, especially in the evenings; be vigilant while driving during twilight hours. Hikers should be prepared for rapidly changing weather conditions. Hikers can become dehydrated in our dry climate, so carry plenty of water (one gallon per person per day is recommended). Always check trail conditions and weather forecasts with a ranger before venturing into the backcountry.

We are wholeheartedly committed to our mission of preserving and providing for the enjoyment of our nation’s most outstanding treasures. We wish you a rewarding experience in every way.

Sincerely,

Douglas S. Neighbor



Douglas S. Neighbor
Superintendent
Carlsbad Caverns
National Park



Eric Brunnemann

Eric Brunnemann
Superintendent
Guadalupe Mountains
National Park

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Students Help Survey



NPS Photo/Michael Medrano

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Cave Tours



NPS Photo/Peter Jones

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NPS Photo/Dave Bieri

Telephone and Web Directory

Official National Park Service sites include .gov in their web address.

Carlsbad Caverns National Park

3225 National Parks Highway
Carlsbad, NM 88220

Visitor Center

727 Carlsbad Caverns Highway

Carlsbad, NM 88220

575-785-2232

www.nps.gov/cave

[www.facebook.com/Carlsbad Caverns National Park](https://www.facebook.com/Carlsbad-Caverns-National-Park)

Check us out on Twitter:

@CavernsNPS

Guadalupe Mountains National Park

400 Pine Canyon Drive

Salt Flat, TX 79847

915-828-3251 ext. 2124

www.nps.gov/gumo

www.facebook.com/Guadalupe.Mountains

Check us out on Twitter:

@GuadalupeMtnsNP

www.meetup.com/Guadalupe-Mountains-National-Park-Meetup-Group/

Food, Lodging, and Camping

Carlsbad Chamber of Commerce

575-887-6516

www.carlsbadchamber.com

Van Horn Texas Visitors Bureau

432-283-2682

Weather Conditions

Carlsbad Weather Watch

575-885-1848

www.weather.gov

Road Conditions

New Mexico: 800-432-4269

www.nmroads.com

Texas: 800-452-9292

drivetexas.org

Emergency: Call 911

GPS Coordinates

Carlsbad Caverns National Park

Visitor Center (Nature Trail)

Coordinate System: Lat/Long

Datum: WGS 1984

Latitude: 32.174212° N

Longitude: 104.445855° W

Guadalupe Mountains NP

Visitor Center (Nature Trail)

Coordinate System: Lat/Long

Datum: WGS 1984

Latitude: 31.89370° N

Longitude: 104.82214° W

Western National Parks Association

As a nonprofit education partner of the National Park Service, WNPA supports 71 national park partners across the West, developing products, services, and programs that enrich the visitor experience.

In partnership with the National Park Service since 1938, WNPA advances education, interpretation, research, and community engagement to ensure national parks are increasingly valued by all.

What Time is It?



Both parks are in the Mountain Time Zone.

Because Guadalupe Mountains National Park is close to the Central Time Zone, your phone will display the wrong time unless you set it to Mountain Time.



Traveling with a Pet?

On a warm day the temperature inside a car can kill a pet. Do not leave your pets unattended.

AT CARLSBAD CAVERNS NATIONAL PARK, PETS ARE ALLOWED on all paved roads, pullouts, and parking areas, along Walnut Canyon Desert Drive (Loop Road), on the paved Nature trail, and at Rattlesnake Springs picnic area. Pets must be kept on a leash at all times. Pets are not permitted in the cave or at the bat flight programs. However, service animals are allowed. During the day, your pet may be cared for at the concessions kennel for a \$10 fee. Call 575-785-2281 for details. A citation will be issued if animals are left in vehicles when ambient air temperatures will reach 70° Fahrenheit (21° Celcius) or higher.

At Guadalupe Mountains National Park, pets are allowed only on the Pinery Trail, while on leash, but are not allowed on other trails, in the backcountry, in buildings, or at evening programs. Service animals are allowed. Both pets and service animals are permitted in the Pine Springs and Dog Canyon campgrounds. In any national park, your pet must be physically restrained at all times.

Volunteerism Makes a Difference

WE WOULD LIKE TO EXTEND OUR SINCERE GRATITUDE TO the dedicated effort and talent that volunteers have brought to Carlsbad Caverns and Guadalupe Mountains National Parks. Volunteers play a vital role in fulfilling our mission of preserving our natural and cultural heritage and sharing that heritage with the visiting public. Volunteers do everything from staffing the information desk, roving interpretation, patrolling surface and cave trails, to trail maintenance, research, cave restoration, and more.

To become a Volunteer-In-Park (VIP) visit www.volunteer.gov or contact:

Carlsbad Caverns National Park

Maggi Daly, Volunteer-In-Park Coordinator

575-234-1353

Guadalupe Mountains National Park

Brian Schwieger, Volunteer-In-Park Coordinator

915-828-3251 ext. 2311

Junior and Senior Ranger Programs



MANY NATIONAL PARKS ACROSS AMERICA OFFER A JUNIOR Ranger program for children to encourage interest in their national parks and to promote a sense of stewardship and ownership for these special places that they come to visit. This self-paced educational program allows children to earn a patch and/or badge and/or certificate upon completion of required activities that teach them about park resources. Age appropriate activities are included in the Junior Ranger booklet, typically for pre-kindergarten through upper elementary-aged children.

At Carlsbad Caverns, the Junior Ranger program offers activities that teach children about the resources both above ground and below the surface (including plant and animal life of the desert, cave features, and history of the park). Younger children have opportunities to color and draw, find objects on a visual scavenger hunt, use their senses to experience their surroundings, and complete games. Older children will sequence events, complete word searches, and write stories and poems. Each activity in the booklet is an optional activity depending on interest and age-level. The Junior Ranger booklet is available at the visitor center information desk. Children of all ages may participate and earn a badge. The program is free.



At Guadalupe Mountains, children work through a separate activity booklet and visit points of interest within the park. The booklet accommodates families of varying travel plans. Many of the activities can be completed at the Pine Springs Visitor Center or Dog Canyon Contact Station. Children who complete four activities earn a badge and certificate, while those who do six, earn a patch, in addition to the badge and certificate. There is no charge for participation in the program. Junior Paleontologist, Wilderness Explorer, and Night Sky Explorer Activity Books are also available. Participants will earn a badge (Jr. Paleontologist) or patch (Wilderness Explorer, Night Sky Explorer) upon completion.

Senior Ranger programs are a new development, currently available at limited locations, aimed at an audience who enjoys a challenge and wants to use an activity book to learn about the park and help plan their visit. Senior Ranger books are available at the Pine Springs Visitor Center, Dog Canyon Contact Station, and the Carlsbad Caverns Visitor Center for anyone 13 years and older. Activities include visiting sites, learning about the park's history, geology, flora, and fauna. Upon completion, participants earn a patch and certificate.

The National Park Service also offers an online WebRanger program for those who are unable to visit a national park, featuring activities about sites found across the nation. The activities illustrate principles in natural science and American history in new ways. To learn more, visit www.nps.gov/webangers.

...continued from page 1

Almost half of all species on earth are nocturnal! Nocturnal species are active at night and even depend on night. One such species at Carlsbad Caverns is the famous Brazilian Free-tailed bat (*Tadarida Braziliensis*). This bat is able to hunt the night skies for prey. While Brazilian Free-tailed bats can see, they do not rely on sight to hunt, instead they use echolocation. This allows the bats to “see” prey by bouncing sound off of objects. Since the Brazilian Free-tailed bat is active at night they avoid being eaten by diurnal (day active) predators. Bats are not the only animals that need night; people also benefit from night. Our circadian rhythms are attuned to light levels. Studies have shown the importance of night and the effects of light pollution on human health.

You, too, can experience the majesty of the cosmos! Both Guadalupe Mountains and Carlsbad Caverns National Parks have an expansive view of the night. There are a number of ways to share unique experiences with your families and friends. A ranger-guided tour is one of them. Ask about night sky programs at both parks. You can also take a self-guided tour of the stars by finding a good place to look up into the sky. Below you can check to see which dates are best for viewing the stars (new moon and last quarter) or night hiking (full moon and first quarter). For more information go to <https://www.nps.gov/subjects/nightskies/index.htm>

Moon Phases & Meteor Showers

September	Full Moon (9/6), Last Quarter (9/13), New Moon (9/19), Autumnal Equinox (9/22), First Quarter (9/27)
October	Full Moon (10/5), First Quarter (10/12), New Moon (10/19), Orionid Shower (10/21), First Quarter (10/27)
November	Full Moon (11/3), Last Quarter (11/10), Leonid Shower (11/17), New Moon (11/18), First Quarter (11/26)
December	Full Moon (12/3), Last Quarter (12/10), Geminid Shower (12/13), New Moon (12/17), Winter Solstice (12/21), Ursid Shower (12/22), First Quarter (12/26)
January	Full Moon (1/1), Quadrantid Shower (1/3), Last Quarter (1/8), New Moon (1/16), First Quarter (1/24), Full Moon (1/31)
February	Last Quarter (2/7), Partial Solar Eclipse 92/15, New Moon (2/15), First Quarter (2/23)



Newly Created Guadalupe Ridge Trail, A Partnership Between Community and Government Agencies

The Guadalupe Ridge Trail stretches from White's City, NM to the highest point in Texas, Guadalupe Peak. Above is a view from the Lincoln National Forest looking into Guadalupe Mountains National Park.

By Michael Medrano

In May 2017, a partnership consisting of federal land agencies and local community organizations in Carlsbad, NM celebrated the designation of the Guadalupe Ridge Trail (GRT). Organizations involved in the effort include: the National Park Service (NPS), the U.S. Forest Service (USFS), the Bureau of Land Management (BLM), the Carlsbad Early College High School (CECHS), and the Carlsbad Chamber of Commerce. The GRT runs from White's City, through Carlsbad Caverns National Park, BLM land, the Lincoln National Forest, and Guadalupe Mountains National Park terminating at Guadalupe Peak. At approximately 100 miles long, the trail is being touted as an extreme challenge even for experienced backpackers.

In February, after meeting with Principal Eric Spencer, Carlsbad Caverns National Park, and the Lincoln National Forest, Guadalupe Mountains National Park staff turned to the CECHS for help with the GRT's marketing and field mapping. In turn, CECHS students learned real-world advertising, marketing, and land management principles. Students from Gavin

Mack's Social Studies class produced marketing logos and business plans for startup businesses that could be affiliated with the new trail. These students developed businesses that could accommodate the needs of hikers, providing such necessities as shuttle services, outfitting, food and water delivery, clothing accessories, and even pet services. For the class mapping project, Hannah Vanscotter's science students were responsible for documenting trail and resource conditions on three segments of the GRT with Global Positioning System units (GPS). The students searched for plant and animal species of concern (rare/threatened species as well as invasive species), infrastructure (trail intersections, signage, water bars, stairs), archaeological resources, water sources, human impacts (graffiti) and hazardous or potentially hazardous trail conditions (erosion). The tasks were designed to strengthen not only the students' GPS, field documentation, and observation skills, but also to expose the students to the challenges facing land managers who manage trails and facilities for the American public. The students spent a combined total of over 1100 hours working on GRT issues and resources.

The students very quickly gained a new appreciation for resource conservation, visitor management, and business development. The spatial data and attributes generated by the students were assembled into a map suitable for public presentation utilizing geographic mapping software called ArcGIS. Attribute data was made available to the respective land management agencies for planning purposes, and the same data helped the social studies students with their proposed business models. The students presented the results of their work to representatives of the federal agencies as well as the general public at the dedication of the GRT. All the students did a fantastic job of presenting their findings and interacting with visitors and dignitaries in a professional manner.

The students of the Early College High School are a group of highly motivated and intelligent young people. Hopefully some of those students, engaged by their experience on the GRT, will turn their career pursuits to entrepreneurial business and land management, or even careers with public lands such as the National Park Service, U.S. Forest Service, and BLM.

Deadly Disease Continues to Kill Bats

by Dale Pate

BATS ARE IMPORTANT FOR ECOSYSTEMS ACROSS the country and the world. They are excellent pollinators and eat millions of tons of insects nightly. Some of these insects are pests of food crops. A study completed in the 1990's on the Brazilian (Mexican) Free-tailed bats from Carlsbad Cavern shows that 40 percent of the insects devoured by these bats are crop pests taken along the farmlands of the nearby Pecos River. Bats are important.

Unfortunately, beginning in the winter of 2006-2007 in caves near Albany, New York, a new and very deadly disease began to decimate bats that hibernate. Bat deaths were immediately associated with a white fungus growing around noses, ears, and on wing membranes. This condition was later named “White-nose Syndrome” (WNS). Since 2006, over five million bats have been killed by this disease and as of this summer, WNS has been detected in nine species of bats that hibernate. Death rates

of various colonies have been from 90 percent to 100 percent of all bats in that particular colony. An additional concern is that WNS is spreading rapidly. It is now found in caves and mines in 31 states.

There are lots of unknowns concerning WNS. At this time, it does not appear to be affecting summer bat colonies such as Brazilian Free-tailed bats for which Carlsbad Cavern is famous. We must all be vigilant.

While it is known that transmission of the fungus is mostly from bat-to-bat, it may also be possible for humans to transport fungus spores on clothing, gear, shoes, or skin.

In an effort to slow down the spread of fungus and give bat scientists more time to look for a solution to this serious problem, Carlsbad Caverns National Park is asking visitors to caves in the park or the area to be aware of this problem and to help minimize the potential spread of this deadly disease.

Everyone can help in the following ways:

If you have been in a cave or mine that is known to harbor WNS, or if you have been in a cave or mine within a state known to have WNS, please do not bring any of the potentially contaminated items (clothing, gear, shoes) used during that visit into Carlsbad Cavern or other caves.

States known to have WNS include:

AL, AR, CT, DE, GA, IA, IL, IN, KY, MA, ME, MD, MI, MN, MO, NE, NH, NJ, NY, NC, OH, OK, PA, RI, SC, TN, VA, VT, WA, WI, and WV. Provinces in Canada known to have WNS include New Brunswick, Nova Scotia, Ontario, Prince Edward Island, and Quebec.

If you are taking one of the ranger-guided off-trail trips offered by Carlsbad Caverns National Park, please use the gear furnished by the park on those tours. Also, clean your shoes and other clothing before entering the cave.

Carlsbad Caverns National Park will be increasing efforts to inform the public about this devastating disease. Check when arriving at the park for any updates on WNS and what you can do to help prevent its continued spread to other areas and other bat species.

Hiker Safety & Wildlife

Mountain Lions

With their large size and very long tails, mountain lions are unmistakable. Adult males may be more than 8 feet in length and weigh an average of 150 pounds. Adult females may be up to 7 feet long and weigh an average of 90 pounds. Their tracks show 4 toes with 3 distinct lobes present at the base of the pad, which is generally greater than 1.5 inches wide. Claw marks are usually not visible since their claws are retractable.

Mountain lions take their prey, usually deer, by ambush. After spotting prey, a lion stalks using available cover, then attacks with a rush, often from behind. They usually kill with a powerful bite below the base of the skull, breaking the neck, then drag the carcass to a sheltered spot beneath a tree or overhang to feed on it. Often they cover the carcass with dirt or leaves and may return to feed on it over the course of a few days.

Although no one has had a physical encounter with a mountain lion at Guadalupe Mountains National Park, sightings have become more frequent in the last few years. Lions have increasingly shown more curiosity about people and less fear. Even with this increased lion activity, your chance of seeing one of these elusive creatures is extremely low. A few simple precautions may reduce the risk of a dangerous encounter.

If a lion is sighted, there are several things to remember:

- Do not approach a lion, especially one that is feeding or with kittens. Most mountain lions will try to avoid confrontation. Give them a way to escape.
- Stay calm; speak calmly yet firmly. Move slowly. Avoid prolonged direct eye contact.
- Face the lion and stand upright. Do all you can to appear larger. Raise your arms, or open your jacket.
- Protect small children by picking them up so they won't panic and run.
- Back away slowly, if you can do it safely. Do not run! Running may stimulate a lion's instinct to chase and attack.
- If the lion behaves aggressively, throw stones, branches or whatever you can get your hands on without crouching down or turning your back. Wave your arms slowly and speak firmly. What you want to do is convince the lion that you are not prey and that you may in fact be a danger to the lion.
- Fight back if a lion attacks you. People have fought back successfully with rocks, sticks, jackets, and their bare hands. Protect your head and neck with your arms. Remain standing or try to get back up.
- Please report all mountain lion sightings to a park ranger.

When you hike in mountain lion country:

Travel in groups. Lions may key in on easy prey, like small children. Make sure children are close to you and within your sight at all times—do not let children run ahead of adults! Talk with children about lions and teach them what to do if they meet one.



Rattlesnakes



Rattlesnakes are protected in National Parks; it is illegal to harm them.

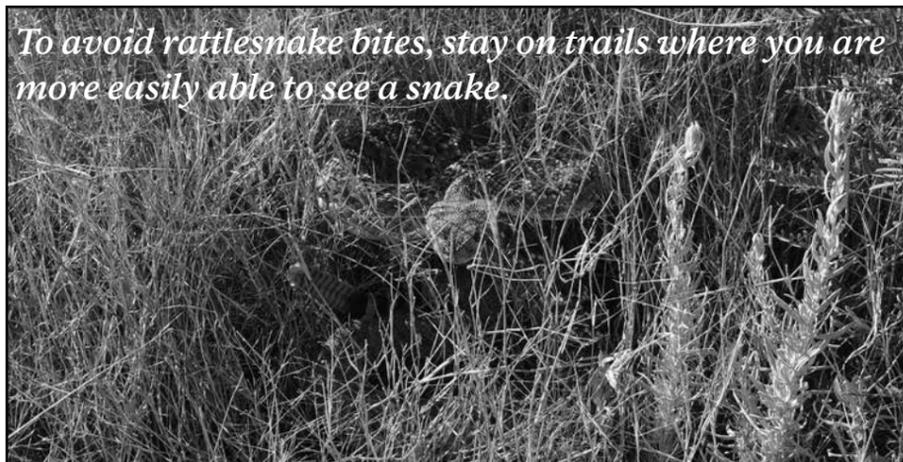
First aid for a snakebite:

- Get the victim away from the snake. Rattlesnakes strike across a distance equal to half their body length and can bite more than once. Do not attempt to capture or kill the snake.
- Remove constrictive jewelry such as rings and watches.
- Suction with a venom extractor is only minimally effective and must be started within two to three minutes. Do not attempt oral suction or incising the skin.
- Use a sling or a splint to immobilize the limb loosely; keep it below the level of the heart.
- Look for signs of envenomation: severe burning pain at the bite site; swelling starting within 5 minutes and progressing up the limb (swelling may continue to advance for several hours); discoloration and blood-filled blisters developing in 6 to 48 hours; and in severe cases, nausea, vomiting, sweating, weakness, bleeding, coma, and death. In 25% of rattlesnake bites, no venom is injected.
- If there are immediate, severe symptoms, keep the victim quiet; activity increases venom absorption. Have someone contact a ranger as soon as possible to begin evacuation.
- If there is no immediate reaction, you may choose to walk slowly with the victim to the trailhead. Begin evacuation as quickly as possible; contact a ranger for assistance. If evacuation is prolonged and there are no symptoms after six to eight hours, there has probably been no envenomation. However, all bites can

cause infection and should be treated by a physician.

- Transport the victim to a medical facility where antivenin is available. The closest facility to the park is Carlsbad Medical Center, at the north end of Carlsbad, New Mexico on US 285 (2430 West Pierce); driving time is 1½ hours from Pine Springs.

To avoid rattlesnake bites, stay on trails where you are more easily able to see a snake.



Hiker Safety for Different Weather Conditions



NPS Photo/Michael Haynie

Lightning may be the most awesome hazard faced by hikers. In our area, storms are common from May through September, and usually occur in the late afternoon or early evening. You can estimate the distance of a lightning strike in miles by counting the time in seconds between flash and sound and dividing by five.

The effects of being close to a lightning strike may be minor, such as confusion, amnesia, numbness, tingling, muscle pain, temporary loss of hearing or sight, and loss of consciousness. Severe injuries include burns, paralysis, coma, and cardiac arrest. Since injuries may not be obvious initially—burns and cardiac injury may not appear until 24 hours after the lightning strike—medical observation is recommended for all lightning victims.

Decrease your risk of injury from lightning:

- Get an early start so that you can finish your hike before storms erupt.
- Be aware of current and predicted weather. Watch the sky for development of anvil-shaped cumulus clouds. If a storm is building, descend to lower elevations.
- If a storm occurs, seek shelter. A car or large building offers good protection. Tents offer no protection.
- Turn off cell phones and other electronic equipment.
- If totally in the open, avoid single trees. Stay off exposed ridges.
- When caught in heavy lightning, the best stance is to crouch with feet close together, minimizing the opportunity for ground currents to find a path through the body. Crouch on a dry sleeping pad, if available.
- Stay out of shallow caves or overhangs. Large dry caves which are deeper than their width offer some protection; but do not lean against walls. Adopt the feet-together crouch.
- Valleys and ditches offer some protection. Avoid a depression with a stream.
- In forests, seek low spots under thick growth or smaller trees.
- Avoid standing water, fences, power lines, and pipelines. Discard metal hiking sticks.
- Groups should not huddle together. Scatter so if one person is injured, the others can help—stay at least 30 feet apart.

The body balances heat loss against heat gain to keep the core body temperature within narrow limits. With strenuous exercise in hot climates, heat gain can exceed loss. Core temperatures may rise, sometimes to dangerous levels. Dehydration exacerbates heat illness.

Heat Exhaustion develops over hours due to water and electrolyte loss from sweating; it causes collapse or gradual exhaustion with an inability to continue to exercise. Symptoms include headache, dizziness, fatigue, nausea, vomiting, muscle cramps, rapid pulse, thirst and profuse sweating, gooseflesh, chills, and pale skin, and low blood pressure—the victim may faint.

Heatstroke occurs in people who undertake heavy exertion in hot climates, and results in sudden collapse with extreme elevation of body temperature, decreased mental status, and shock. It is a medical emergency that can kill; begin treatment immediately. Symptoms include headache, drowsiness, irritability, unsteadiness, confusion, convulsions, coma, a rapid pulse and low blood pressure, and either dry or sweat-moistened hot skin.

Prevention

Drink plenty of water when exercising in hot weather, before feeling thirsty and after feeling satisfied. Drink enough to produce clear urine regularly during the day. Eat high carbohydrate foods for energy. Avoid heavy exercise in high temperatures and high humidity. Wear light-colored clothes that fit loosely and cover all sun-exposed skin surface. Avoid alcohol and caffeine; both increase loss of fluid.

Treatment

- Have the victim rest in the shade.
- Remove excess clothing.
- Wet the victim to increase evaporation.
- Have the victim drink fluids; if available, add 1/4 teaspoon salt and 6 teaspoons sugar to 1 quart of water.
- In serious cases, begin immediate, rapid cooling by one of these methods:
 - a) Increase evaporation by sprinkling water on the skin and fanning vigorously.
 - b) Immerse the victim's body in cool water.
 - c) Place cold packs on the neck, abdomen, armpits, and groin.
- Stop cooling when mental status improves. Continue to monitor the victim.
- Contact a park ranger for assistance.

Cold



NPS Photo/Michael Haynie

Hypothermia is a cooling of the body core when more heat is lost than is produced, and can be life threatening. Wetness and wind are a lethal combination that chill a person more rapidly than dry cold. Hypothermia can occur in any season of the year: the hiker exposed to a sudden summer hailstorm while wearing only a T-shirt and shorts is more likely to become hypothermic than a well-dressed winter hiker. Windchill adds to the problem, but affects only the exposed parts of the body. Wearing windproof clothing reduces the effects of windchill.

Signs of mild hypothermia include progressively worsening shivering, uncharacteristic behavior, grumbling about feeling cold, inappropriate excitement or lethargy, poor judgement, confusion, and hallucinations. The victim may experience stiff muscles and cramps, uncoordinated movements, and stumbling. Skin will be cold, pale and blue-gray due to constricted blood vessels.

As hypothermia becomes severe, shivering ceases. The victim's behavior changes from erratic to apathetic to unresponsive. The pulse becomes weak, slow, and irregular. Breathing slows, pupils become dilated. Eventually the victim will slip into a coma.

Prevention

Know the weather forecast; carry appropriate extra clothing, such as a water/wind repellent shell, jacket, hat and mittens, and a space blanket or tarp for shelter. Evaporation of sweat is a major source of heat loss

during exercise; try to avoid sweating by wearing ventilated clothing. Watch for early signs of hypothermia, and act promptly to avert it. Gauge the day's activity to the party's weakest member; children are more prone to hypothermia than adults. Being exhausted, hungry, dehydrated, or demoralized prevents a proper response to cold and hastens the onset of hypothermia.

Treatment

- Do not delay.
- Find shelter out of the wind.
- Remove wet clothes and replace with dry; add layers and a wool cap to increase insulation.
- Give food and warm, sweet drinks.
- If the victim is shivering strongly, place victim inside a sleeping bag well-insulated from the ground.
- If the victim responds to rest and warmth, he may be able to continue hiking.
- For severe hypothermia, provide heat to the victim's trunk after rescue by whatever means are available—body-to-body contact, hot water bottles, chemical heating pads, hot rocks wrapped in clothing. Place the heat sources in the groin and armpits and alongside the neck. Always have clothing between a heat source and the skin to prevent burns.
- Never leave a hypothermic victim alone.
- Contact a park ranger for assistance.

Carlsbad Caverns National Park

PHOTOGRAPHY

Photography is permitted on most tours; however, please use proper etiquette. Warn those around you before using a flash, and do not use the rocks as your personal tripod. For safety reasons, tripods are not allowed on any guided tours. Tripods are allowed in the Big Room, Main Corridor, or Natural Entrance. Do not use the ultra-bright lights available on some cameras. Electronic devices are not allowed at the Bat Flight Program offered from mid-May through October.

ENTRANCE FEES

Visit www.nps.gov/cave for dates and times of tours, or call 575-785-2232.

Adults—age 16 and older.....\$10.00
 Children—15 and younger.....free
 plus Audio Guide.....\$5.00

All fees and tours are subject to change.

There is no entrance fee for those who own any of the following passes (up to three individuals plus the cardholder): The Annual Pass, Annual Pass (Military), Senior Pass, Access Pass (all three are part of the America the Beautiful—National Parks & Federal Recreational Lands Pass), Golden Age Passport and Golden Access Passport all cover the basic entrance fee. Pass holders must still obtain free entry tickets.

Entrance fee applies to self-guided tours. Guided tours require an additional fee.

Reservations

We recommend that you make reservations for guided tours at least six weeks in advance. Some tours fill quickly. Reservations are not necessary for self-guided tours. To make reservations call the National Park Reservation System at: 877-444-6777 or visit www.Recreation.gov

Reserved tickets must be picked up no later than 30 minutes prior to the posted tour starting time. Tickets will not be issued if within ten minutes of the start of any tour. **No refunds for late arrivals.**

Have a Safe Tour

Cave temperature is 56° F (13° C) year-round. A light jacket or sweater and good walking shoes are recommended. Do not wear sandals. For your safety:

- Stay on the paved trail.
- Supervise children closely; children under 16 must remain with an adult at all times.
- Ask park rangers for help.
- Take prescribed medications with you.
- High humidity in the cave can affect respiratory problems; bring your inhaler just in case.
- If you are **diabetic**, be sure you have eaten enough calories.
- If you have an infant with you, child-carrying backpacks are recommended. **Strollers are not allowed.**
- Leave your pet at the kennel, not in your car.

Protect the Cave

- Never touch, tap or handle the cave formations; the oils on your skin damage the formations.
- Never take gum, tobacco, food, or drinks other than plain water into the cave.
- Never throw coins or other objects into the pools.

CARLSBAD CAVERNS ROUTES & TOURS

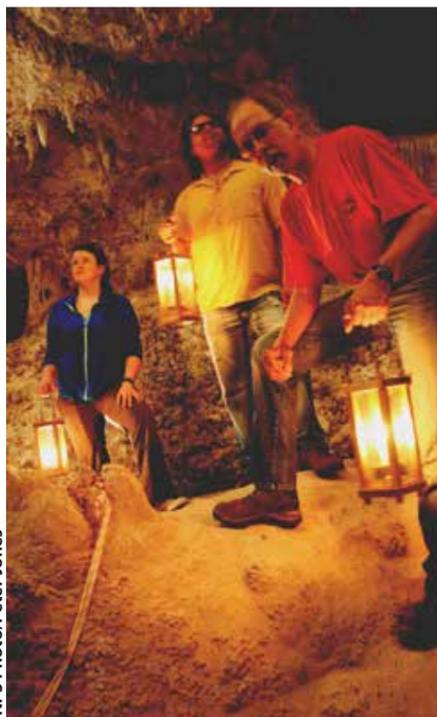


NPS Photo/Kristi Haynie

NATURAL ENTRANCE SELF-GUIDED ROUTE

Length: 1.25 miles, 1 hour
 Fee: Entrance Fee

This hike is similar to walking into a steep canyon (a descent of about 800 feet in one mile). It is recommended only for those physically fit and healthy; sturdy footwear required. Highlights include the Natural Entrance, Devil's Spring, Whale's Mouth, and Iceberg Rock.



NPS Photo/Peter Jones

LEFT-HAND TUNNEL

Fee: Entrance Fee and \$7.00 Tour Ticket (Half price for children, Senior Pass, and Access Pass cardholders)

Moderately strenuous. This is a historic candle-lit lantern tour through an undeveloped section of the cave on unpaved trails. The dirt trail winds over uneven surfaces with some steep, slippery slopes. Careful footing is required to navigate on steep, slippery slopes, around cavern pools and fragile formations. Not recommended for anyone who has difficulty seeing in dim-lit or candle-lit conditions. Lanterns are provided. Sturdy closed-toed shoes or hiking boots required. No backpacks. Tour departs from the visitor center.



NPS Photo/Peter Jones

BIG ROOM SELF-GUIDED ROUTE

Length: 1.25 miles, 1.5 hours
 Fee: Entrance Fee

Descend by elevator to start the tour in the Underground Rest Area. The non-skid trail is paved and mostly level, although there are a couple of short, steep hills. All visitors to Carlsbad Cavern should experience this tour. Highlights include the Lion's Tail, Hall of Giants, Bottomless Pit, and Rock of Ages. Some of this trail can be navigated by wheelchairs, with assistance. The park does not provide wheelchairs. This trail can also be accessed after hiking the 1.25-mile Natural Entrance Self-Guided Route.



NPS Photo/Peter Jones

LOWER CAVE

Fee: Entrance Fee and \$20.00 Tour Ticket (Half price for children, Senior Pass, and Access Pass cardholders)

Strenuous. Initial descent is ten feet down a flowstone slope by knotted rope, then a fifty-foot descent down three sets of ladders. Bring three new AA alkaline batteries. Sturdy, closed-toed shoes or hiking boots required. Helmets and headlamps provided. Backpacks not allowed. Not recommended for anyone with a fear of enclosed spaces, heights, or darkness. Tours depart from the visitor center.



NPS Photo/Dale Pate

SLAUGHTER CANYON CAVE

Fee: \$15.00 Tour Ticket (Half price for children, Senior Pass, and Access Pass cardholders)

Strenuous. Tour meets at the visitor center. Participants will then caravan to the cave site. **Participants must hike a steep, rocky, and uneven 1/2 mile trail with 500' elevation gain to the cave entrance.** Bring water and sunscreen for the hike. The tour is slippery, muddy, and requires an ascent of a 15' slope using a knotted rope. Must wear sturdy, closed-toed hiking boots or shoes. Bring three AA batteries. Helmets and headlamps are provided.

Carry water—weather may be very hot in summer and very cold in winter. Stay on the trail and wear sturdy hiking shoes.



NPS Photo/Peter Jones

KING'S PALACE GUIDED TOUR

Length: 1 mile, 1.5 hours
 Fee: Entrance Fee and \$8.00 Tour Ticket (Half price for children, Senior Pass, and Access Pass cardholders)

Moderately strenuous. There is a steep eighty-foot hill you must go down initially and then back up at the end of the tour. Walk through four naturally-decorated chambers with a variety of cave formations by descending to the deepest portion of the cavern open to the public. Rangers briefly turn off all lights to reveal the natural darkness of the cave. The trail is paved. Sturdy walking shoes required. Light jacket recommended. *Tours depart from the Underground Rest Area.*

AUDIO GUIDES

Enhance your visit with an audio guide rental. As you tour the cavern, you will learn about the natural and cultural history of Carlsbad Caverns National Park.

Audio guide rentals are administered by Western National Parks Association (WNPA), a non-profit organization. The cost is \$5.00.

SURFACE ACTIVITIES

SERVICES

Facilities include a visitor center, exhibits, bookstore, restaurant, gift shop and kennel service.

INFORMATION & EXHIBITS

Elevation 4,408 feet. The visitor center is open daily 8:00 a.m. to 5:00 p.m. Closed Thanksgiving, December 25, and January 1. Last ticket sales at 3:15 p.m.

NATURE TRAIL

This one-mile paved, partially wheelchair accessible trail begins near the visitor center and highlights desert plants.

SCENIC DRIVE

A one-hour drive through the Chihuahuan Desert, this 9.5-mile gravel road is suitable for high clearance vehicles. Brochures are available at the visitor center information desk. The scenic drive is open 1/2 hour before sunrise and closes 1/2 hour after sunset. These hours are subject to change.

RATTLESNAKE SPRINGS

This historic oasis includes a picnic area, shade trees, restrooms and excellent bird watching. Located 5.5 miles south of White's City on Highway 62/180, then 2.5 miles west on County Road 418. Day use only.

HIKING & CAMPING

The park's wilderness offers day hikes and backcountry camping (permit required). Rangers at the visitor center can provide free permits, trail and weather information, and backcountry camping tips. The bookstore sells topographic maps, which are considered essential for desert hiking.

Carlsbad Caverns National Park

FOR TOUR RESERVATIONS CALL 877-444-6777 OR TDD 1-877-833-6777

Tour	Trail Surface	Tour Dates and Times	Adult Fee	Age Limit	Tour Length	Group Size
King's Palace	Paved Trail; 80 foot hill must be climbed on return trip	Due to repairs to the elevators that are underway at the time of printing, visit www.nps.gov/cave for dates and times for all tours, or call 575-785-2232. <i>Meet at the Underground Rest Area</i>	Adults \$8 Children (4-15), Senior Pass, and Access Pass cardholders \$4 A General Admission Ticket is also required.	4	1.5 hours	55
Left Hand Tunnel	Uneven dirt trail and slippery slopes	<i>Meet at the visitor center</i>	\$7.00 and General Admission Ticket (\$3.50 ages 6-15, Senior Pass, and Access Pass holders)	6	2 hours	15
Lower Cave	Must negotiate fifty feet of ladders, low light, and slippery, dirt trails. Might get dirty.	<i>Meet at the visitor center</i>	\$20.00 and General Admission Ticket (\$10.00 ages 12-15, Senior Pass, and Access Pass holders)	12	3 hours	12
Slaughter Canyon Cave	Strenuous climb required to reach cave entrance. Trail in cave is slippery, uneven and rocky.	<i>Meet at the visitor center</i>	\$15.00 (\$7.50 ages 8-15, Senior Pass, and Access Pass holders)	8	5.5 hours	20

BAT FLIGHT PROGRAMS (MAY-OCTOBER)

A few hundred thousand bats fly from Carlsbad Cavern each evening from mid-May to the end of October, when they migrate to Mexico. The ranger program generally begins each evening 30 to 60 minutes before sunset at the park amphitheater, though weather and lightning can cause cancellation of the program. Check at the visitor center for the exact time the program starts or call 575-236-1374.

To protect the bats, all electronic devices like cameras, cell phones, and camcorders are prohibited at the Bat Flight Program.

This rule is strictly enforced.

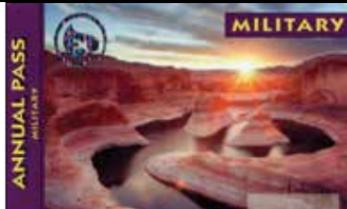


AMERICA THE BEAUTIFUL: THE NATIONAL PARKS & FEDERAL RECREATIONAL LANDS PASS



ANNUAL PASS

The annual pass sells for \$80.00 and is good for one year from date of purchase. The pass covers entrance fees at National Park Service and U.S. Fish & Wildlife sites and standard amenity fees at Bureau of Land Management, Bureau of Reclamation and U.S. Forest Service sites. The pass can be purchased at federal recreation sites that charge entrance or standard amenity fees.



ANNUAL PASS—MILITARY

The Military annual pass is free to U.S. Military members with a current CAC card, and their dependents with ID card Form 1173. The card is good for one year from the date it is obtained. The pass covers entrance fees at National Park Service and U.S. Fish & Wildlife sites and standard amenity fees at Bureau of Land Management, Bureau of Reclamation and U.S. Forest Service sites. The pass can be obtained at federal recreation sites that charge entrance or standard amenity fees.



SENIOR PASSES

Any U.S. citizen or permanent resident of the United States 62 years or older may purchase the Annual Senior Pass or Lifetime Senior Pass.

It covers the entrance fees to National Park Service and U.S. Fish & Wildlife sites and standard amenity fees at Bureau of Land Management, Bureau of Reclamation, and U.S. Forest Service Sites. Some camping and guided tour fees are discounted 50% for cardholders. The pass can be purchased at federal recreation sites that charge entrance or standard amenity fees.



You can now purchase a \$20 Annual Senior Pass. The Annual Pass is good for one full year from the date of purchase. You can also purchase a \$80 Lifetime Senior Pass. The Lifetime Pass does not need to be renewed.

A Lifetime Senior Pass can be purchased anytime for \$80. Four Annual Senior Passes may be exchanged for a free Lifetime Senior Pass.



ACCESS PASS

The Access Pass is available for free to any U.S. citizen or permanent resident of any age that has been medically determined to have a permanent disability.

The Access Pass covers the entrance fees to National Park Service and U.S. Fish & Wildlife sites and standard amenity fees at Bureau of Land Management, Bureau of Reclamation, and U.S. Forest Service Sites. Some camping and guided tour fees are discounted 50% for cardholders. The free pass can be obtained upon signing a medical affidavit at federal recreation sites that charge entrance or standard amenity fees.

GUADALUPE MOUNTAINS NATIONAL PARK ANNUAL PASS



Guadalupe Mountains National Park offers an annual pass for \$20.00 for visitors who plan on visiting the park more than once a

year, but may not visit other federal fee areas.

The pass covers entrance fees and is good for 3 individuals plus the cardholder (persons 15 years and younger are free with or without the Guadalupe Mountains NP Annual Pass). The pass is available for purchase at the park at the Pine Springs Visitor Center.

EVERY KID IN A PARK (EKIP) PASSES



Any 4th grader who is a U.S. citizen or permanent resident (or 10 year-old for those who are in alternative school environments) may complete the education material on the Every Kid in a Park website (www.everykidinapark.gov) to obtain a free EKIP pas. It is available to U.S. 4th graders (including home-schooled and free-choice learners 10 years of age) who present a valid

EKIP paper pass, and is valid for the duration of the 4th grade school year through the following summer (September -August).

These passes are honored nationwide at Forest Service, National Park Service, Bureau of Land Management, Bureau of Reclamation, and US Fish & Wildlife Service sites charging entrance or standard amenity fees.

They admit the pass holder and any accompanying passengers in a private non-commercial vehicle. At per-person fee sites, they admit

the pass holder and up to 3 people who are 16 and older (for a maximum of four people). Anyone 15 and younger is free of charge.

Paper passes can be obtained by visiting the Every Kid in a Park website (www.everykidinapark.gov).

Paper passes should be exchanged for a plastic 4th Grade Pass; however, paper passes are also considered valid passes.

Digital versions of the paper pass (such as on smart phones or tablets) will not be accepted to exchange for an Annual 4th Grade Pass.

Guadalupe Mountains National Park

ENTRANCE FEE
\$5.00/person (16 & older)
Free for Senior, Access,
and Annual Pass cardholders

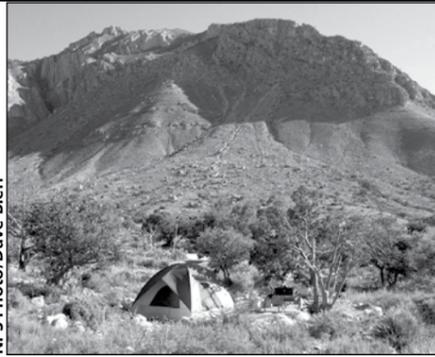
NPS Photo/Michael Haynie



NPS Photo/Dave Bieri



NPS Photo/Dave Bieri



NPS Photo



SERVICES

Facilities and services within and near Guadalupe Mountains National Park are extremely limited. The nearest gas stations are 43 miles west (Dell City, TX), 35 miles east (White's City, NM), or 65 miles south (Van Horn, TX). There is no campstore; bring everything you need with you.

INFORMATION & EXHIBITS

Pine Springs Visitor Center

Elevation 5,730'. On Highway 62/180, 55 miles southwest of Carlsbad, 110 miles east of El Paso, and 65 miles north of Van Horn on Highway 54 and Highway 62/180. Open every day except December 25. Open daily 8:00 a.m. to 4:30 p.m. (Mountain Time Zone). Information, natural history exhibits, introductory slide program.

Frijole Ranch History Museum

The ranch house features exhibits describing historic and current use of the Guadalupe. Grounds include a picnic area near a spring shaded by large oak trees. Open intermittently.

McKittrick Canyon

Highway entrance gate is open 8:00 a.m. to 4:30 p.m. Mountain Standard Time. During Daylight Savings Time, hours are expanded 8:00 a.m. to 6:00 p.m. Restrooms, outdoor exhibits, slide program, picnic tables.

Hike Safely...

- There is no water available along park trails, so be sure to bring plenty with you. One gallon per person per day is recommended.
- Trails are rocky—wear sturdy shoes. Trekking poles are recommended.
- Carry a trail map.
- Pack warm clothing and rain gear; sudden weather changes are common.

Protect the Park...

- Stay on trails; don't cut across switchbacks or create new trails.
- Carry out all trash, including cigarette butts.
- Report any trail hazards to the Pine Springs Visitor Center or any park staff member.
- Collecting of natural, historic or prehistoric objects is prohibited.

Weather

	Average Temperature (° F)		Average Rainfall
	High	Low	Inches
Jan	56	34	0.67
Feb	59	36	0.90
Mar	65	41	0.58
Apr	73	48	0.60
May	82	56	0.91
June	88	62	2.18
July	88	64	2.37
Aug	86	63	3.29
Sep	81	58	2.54
Oct	73	50	1.34
Nov	63	41	0.97
Dec	56	33	1.05
Average annual precipitation for Pine Springs (1980-2003)			17.4

HIKING

Pinery Trail

Distance: .67 mile
Difficulty: Easy, wheelchair accessible, slight incline on return trip.

Discover the desert as you walk to the ruins of the Pinery, a stagecoach station on the Butterfield Overland Mail Route in 1858. Trailside exhibits. This is the only trail pets on leash are allowed.

McKittrick Canyon Trail

Distance: to Pratt Cabin 4.8 miles roundtrip, to the Grotto, 6.8 miles roundtrip
Difficulty: Moderate, level but rocky trail, 200' elevation gain to Grotto.

Follow an intermittent stream through the desert and canyon woodlands to the historic Pratt Cabin. A guidebook is available at the trailhead. The Grotto Picnic Area and Hunter Line Cabin are one mile beyond the Pratt Cabin. Please do not drink the water or wade in the creek. To protect this fragile environment, you are required to stay on the trail.

Guadalupe Peak Trail

Distance: 8.4 miles
Difficulty: Strenuous. Approximately 3,000' elevation gain, steep, rocky path.

Hike to the "Top of Texas" at 8,751' for spectacular views. Avoid the peak during high winds and thunderstorms. During warm temperatures, carry a gallon of water per person.

CAMPING

Water and restrooms are available, but there are no showers, RV hookups, or dump stations. The fee is \$8.00 per night, per site, \$4.00 with a Senior Pass (or existing Golden Age Passport) or Access Pass (or existing Golden Access Passport). No wood or charcoal fires are permitted; camp stoves are allowed.

Pine Springs Campground

Located near the Pine Springs Visitor Center, there are twenty tent and nineteen RV campsites (including a wheelchair accessible tent site) available on a first-come, first-served basis. Two group campsites are available for groups of 10-20 people. Reservations (for group sites only) can be made by phoning 915-828-3251 x2124 up to two months in advance. Campers planning on day hiking in McKittrick Canyon, to Guadalupe Peak or the Bowl will want to stay here.

Dog Canyon Campground

Located at the end of New Mexico Highway 137, 70 miles from Carlsbad and 110 miles from Park Headquarters, at an elevation of 6,290' in a secluded, forested canyon on the north side of the park. The campground has nine tent and four RV campsites (including a wheelchair accessible tent site). There is one group site for groups of 10-20 people. Reservations for the group site only can be made up to two months in advance by calling 915-828-3251 x2124.

BACKPACKING

Eighty-five miles of trails lead through forests, canyons, and desert to ten backcountry campgrounds. A free permit is required if you plan to spend a night in the backcountry. Permits are issued at the Pine Springs Visitor Center and the Dog Canyon Ranger Station. For those coming through Carlsbad, Dog Canyon is a great place to begin a backpacking trip because it requires less elevation gain to get into the backcountry.

Wood and charcoal fires are prohibited. Camp stoves are allowed. Pack out all your trash. Pets are not allowed on park trails.

Preparation is the key to an enjoyable backpacking trip. Be prepared for changing weather conditions. Carry plenty of water—there are no water sources in the backcountry. Topographic maps, hikers' guides, and information can be found at the Pine Springs Visitor Center and the Dog Canyon Ranger Station.

HORSEBACK RIDING

Sixty percent of the park's trails are open to stock use. A backcountry permit is required for all stock use. These free permits are issued at the Pine Springs Visitor Center and Dog Canyon Ranger Station. Stock riding is limited to day trips only.

Stock corrals are available at Dog Canyon and near Frijole Ranch. Each has four pens and will accommodate a maximum of 10 animals. Reservations may be made two months in advance by calling 915-828-3251 ext. 2124.

OTHER POPULAR HIKES...

Trailhead	Trail	Distance Roundtrip	Description
Pine Springs	Devil's Hall Trail	4.2 miles	Moderate to Strenuous. Hike in Pine Spring Canyon to the Hikers' Staircase and Devil's Hall. After the first mile, the trail drops into the wash and becomes very rocky and uneven. Turn left and follow the canyon bottom to the Hiker's Staircase and a beyond to the Devil's Hall. Area beyond Devil's Hall closed March - August due to sensitive species.
	The Bowl	8.5 miles	Strenuous. The Bowl shelters a highcountry conifer forest. Recommended route: Tejas Trail, Bowl Trail, Hunter Peak, Bear Canyon Trail, Frijole Trail, Tejas Trail (.1 mile) back to campground. Trail climbs 2,500'. Bear Canyon Trail is very rocky and extremely steep.
	El Capitán Trail	11.3 miles	Moderate to Strenuous. Desert lovers will appreciate the rocky arroyos and open vistas while skirting along the base of El Capitán. Recommended route: El Capitán Trail, Salt Basin Overlook, and return to Pine Springs on the El Capitán Trail.
Frijole Ranch	Manzanita Spring	.4 miles	Easy. Path is paved and wheelchair accessible. Hike to a small pond that serves as a desert oasis. Dragonflies, butterflies, and birds are active here in the warmer months. During winter, bluebirds frequent the area. Opportunities for chancing upon other wildlife are higher here as well.
	Smith Spring Trail (entire loop)	2.3 miles	Moderate. Look for birds, deer and elk as you pass Manzanita Spring on the way to the shady oasis of Smith Spring. Trees around Smith Spring include madrones, maples, oaks, chokecherry, ponderosa pines and others.
McKittrick Canyon	McKittrick Nature Loop	0.9 miles	Moderate. Climb the foothills and learn about the natural history of the Chihuahuan Desert. Trailside exhibits.
	Permian Reef Trail	8.4 miles	Strenuous. For serious geology buffs, this trail has stop markers that can be used with a geology guidebook sold at the Visitor Center. There are excellent views into McKittrick Canyon from the ridgetop. Trail climbs 2,000'.
Dog Canyon	Indian Meadow Nature Loop	0.6 miles	Easy. Enjoy a stroll around a meadow frequented by a variety of birds and other wildlife. Along the way you will see evidence of recent fires and regrowth.
	Marcus Overlook	4.6 miles	Moderate. Follow the Bush Mountain Trail to the ridgetop for a view into West Dog Canyon. Trail climbs 800'.
	Lost Peak	6.4 miles	Strenuous. Climb out of Dog Canyon on the Tejas Trail to visit the conifer forest above. Outstanding views from Lost Peak. Lost Peak is a short distance off trail to the right, before the horse hitches. Trail climbs 1,500'.
Salt Basin Dunes	Salt Basin Dunes (Day Use Only)	3-4 miles	Moderate. Follow the old roadbed from the parking area, for a little over a mile, to the north end of the dune field. There is one high dune to ascend that some may find difficult. No shade. Enjoy the contrast of the pure white dunes with the sheer cliffs of the the Guadalupe as a backdrop. Great for sunrise or sunset hikes all year, and daytime hikes during the winter.

McKittrick Canyon—the most beautiful spot in Texas

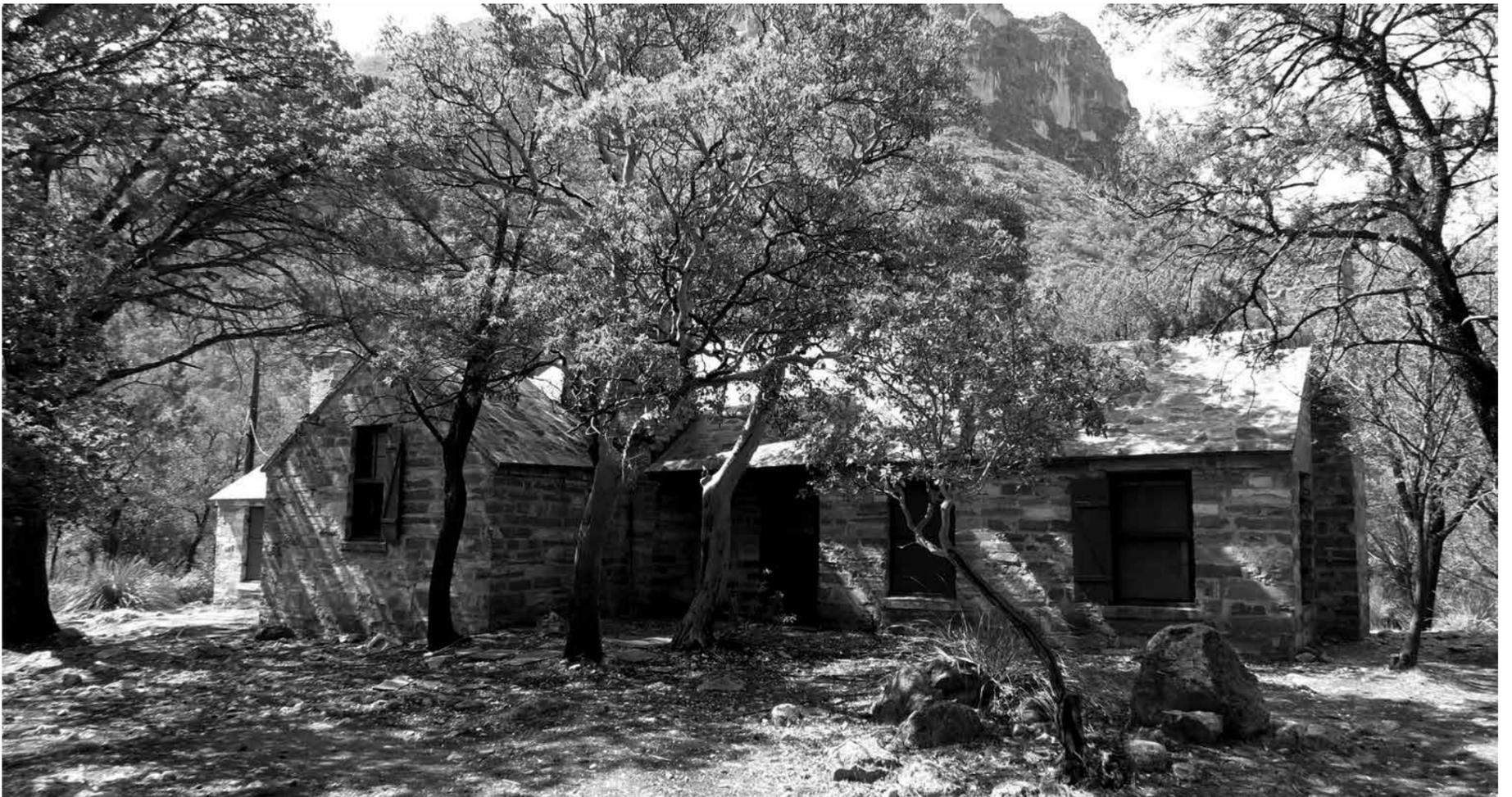
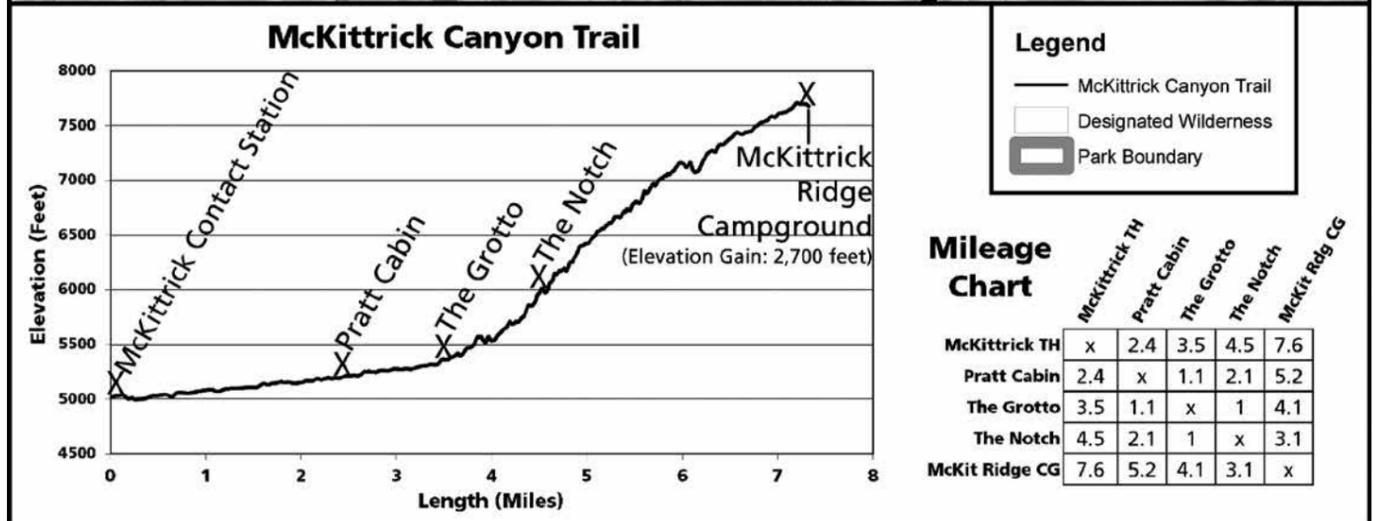
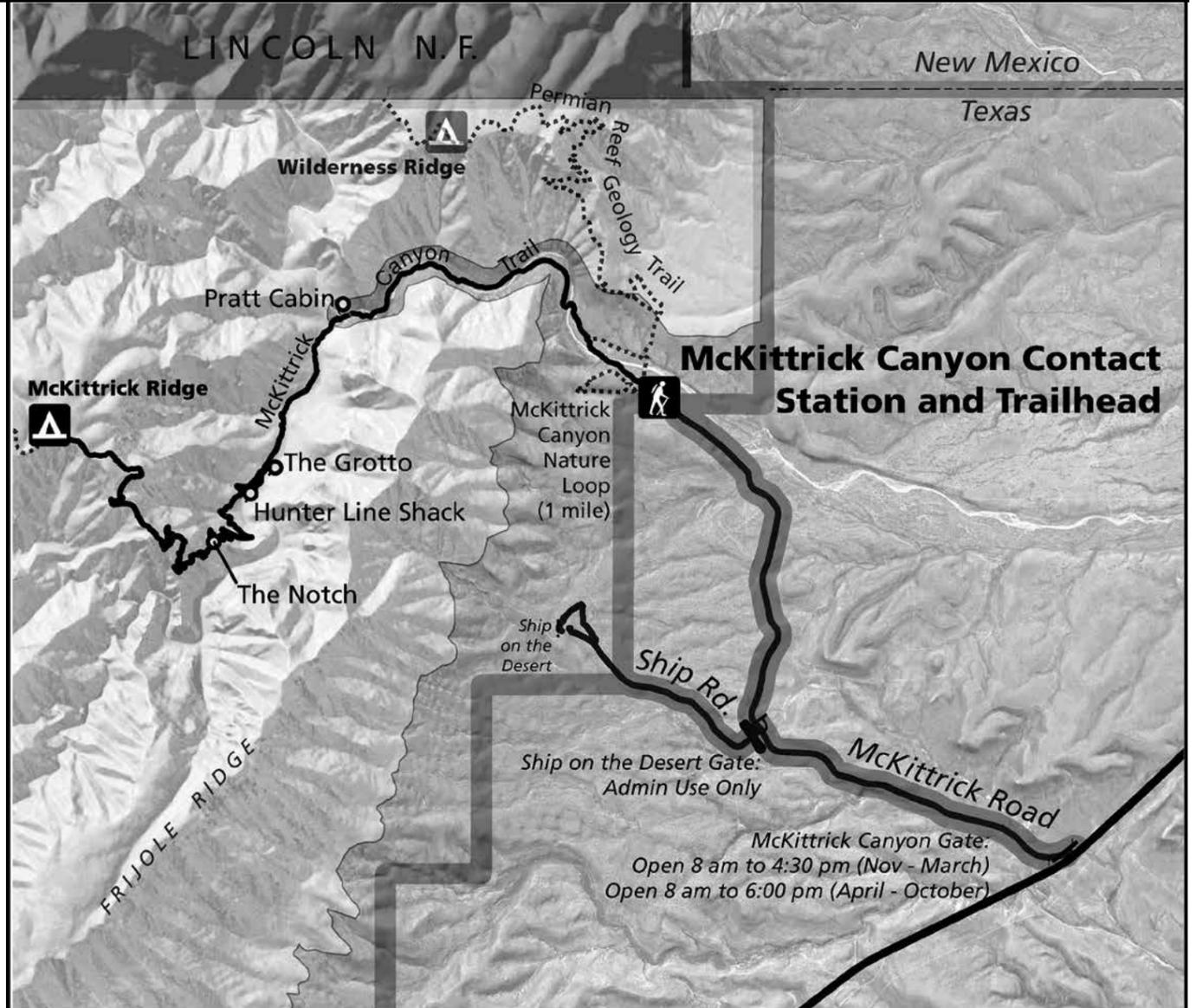
McKittrick Canyon is one of the best places to witness the diversity of life found in the Guadalupe Mountains. This is an extremely scenic hike through a canyon that contains a year-round, spring-fed stream. It will introduce hikers to the extremely unique riparian woodland ecosystem. It is especially beautiful in fall when the bigtooth maples are turning various shades of red, orange, and yellow. This normally occurs mid-October to mid-November.

This is a moderate hike with minimal elevation gain. It will take from four to five hours to complete the roundtrip hike, depending on how far up the canyon you choose to go. The hike to Pratt Cabin is a 4.8 mile roundtrip that will take from two to three hours to complete. The hike to the Grotto is a 6.8 mile roundtrip that will take from four to five hours to complete.

The first mile of the hike is open desert, but further in the canyon you will see an increase in the number and type of trees...bigtooth maples, chinkapin oaks, Texas madrones, velvet ash. Some crossings of the creekbed are dry and those that are wet, have stepping stones to help you across. Which crossings are wet versus dry changes from year to year and during the season. Rainfall levels are highest in the summer and lowest in the spring.

Beyond Pratt Cabin, where geologist Wallace Pratt made his summer vacation home, the trail continues through a dense riparian woodland alongside the stream that makes this canyon unique. The Grotto provides a beautiful spot to have a picnic lunch alongside the stream. Several old historic stone tables and benches make it a comfortable spot to take a rest break. Just a short walk beyond the Grotto is the historic Hunter Line Cabin.

Hikers will also have the option of continuing a bit further beyond the Grotto to the Notch. Beyond the Grotto, the trail begins to climb in elevation, getting quite steep below the Notch. The Notch is approximately 1.5 miles beyond the Grotto with an additional elevation gain of 800 feet. The Notch provides fantastic views of South McKittrick Canyon.



The stone-roofed Pratt Cabin is the perfect place for a rest and a picnic.

Stagecoaching Was No Picnic



Traces of the Butterfield Overland Mail Route and the ruins of one of its stations are still evident in the park.

By Sherri Ramseyer

GUADALUPE MOUNTAINS NATIONAL PARK IS NOT just a pretty place with mountains, desert, and trees. It has a history of occupation, exploration, and settlement that started thousands of years ago. One of the driving forces behind the development and settlement of the West was the Butterfield Overland Stage Route. It was initiated to enable travel across the continent and to connect the East coast with the West coast with a way to exchange information. The trials and tribulations of this precursor of the Pony Express were many.

“Remember boys, nothing on God’s earth must stop the United States mail!” John Butterfield gave his employees these last instructions before September 16, 1858, when Butterfield personally loaded the first bags of mail onto a beautiful, new Concord Stagecoach. He handed the bags to his son, John Jr., who was the first driver of the westbound stage from Tipton, Missouri to San Francisco, with El Paso (then called Franklin), being the midway point.

The conductor cried, “All aboard,” blew his coach horn, and the first westbound coach was on its way at 6:15 pm, just a few minutes late. The eastbound stage left San Francisco more than 24 hours ahead of schedule.

John Butterfield was born in 1801 in Albany County, New York. He had a love for horses and coaches, even as a young man. His first job was as a driver and runner for a coach firm where he was to lure passengers away from the competition. He soon became well-known and well-regarded throughout New England as a great runner and driver.

Butterfield saved his money and soon was able to purchase his own horse and a two-seated carriage that he used for his own livery service business. He and his wife Malinda Harriet Baker invested in a boarding house along with his thriving livery service. Butterfield soon became owner of controlling interest in several New York stage lines.

California’s population was growing by leaps and bounds because of the gold rush in Sacramento in 1848. By 1851, the estimated new arrivals to California was 300,000. There was an increased need for a better mail delivery system. The one in place back then was a semi-monthly steamer service between New York and California by way of the Isthmus of Panama. The trip averaged about 3 ½ to 4 weeks by steamer. There was a land route between Sacramento and Salt Lake City where it connected with another carrier to Independence, MO, but that one took 2 months and had no room for passengers.

In 1856, Aaron Brown was appointed post master general. He advertised for bids on a new overland mail route. Nine proposals were received, three of those were from John Butterfield all for central routes. One proposal was from James Birch for a more southern route from Memphis to San Francisco. The

northerners favored the northern route and the southerners favored the southern route, so much so that the Civil War almost broke out then rather than three years later when Ft. Sumter was fired upon.

James Birch was awarded the bid for the southern route which was nicknamed the “Ox-Bow Route” because it was not a direct route to San Francisco. Instead, it was a big bow to the south. The southern route was preferred because it would avoid the Rocky Mountains and much snow in the winter. Birch made sure the first delivery was on its way from the west and then he boarded the steamer on August 20th headed for Panama. Passengers from the steamer were transferred to the Panama railroad for the four hour trip across the isthmus. Then they boarded the luxury steamer in Central America for the long trip to New York. The ship got caught in a storm by the South Carolina coast and went down. Four hundred passengers and crew were lost, including James Birch.

After James Birch’s death, a new contract was awarded for the southern route to John Butterfield, even though he had only bid on central routes. The contract was for \$600,000 a year with the stipulation that the route had to be run from St. Louis to San Francisco in 25 days, semi-weekly. The Butterfield Overland Stage was the longest in the world, over 2,800 miles. A branch line came from Memphis, Tennessee and met at Fort Smith, Arkansas to go on to San Francisco. At the beginning of the route, fares for the eastbound passengers were \$100, for people going west, \$200. Later the fares were changed to \$150 both ways.

Many editorials in the newspapers thought that the proposed schedule could not be kept. “Human ingenuity cannot devise a plan for such an unheard of achievement. . . It never has been done. It never will be done.” Despite protests, John Butterfield started building his stage line. It’s no wonder most people doubted that the route would be on schedule. Butterfield had just one year to get the line ready to go and it was a monumental task—almost half of the 2,800 route was in wilderness! The whole route had to be surveyed, some roads needed improvement, and some roads had to be built. Bridges had to be built over streams. Two hundred stations had to be built, stocked with food and equipment for repairs, wells had to be dug, and water had to be brought in where wells were not possible. Butterfield spent one million dollars in preparing the line for operation, buying 1,000 horses, 500 mules, 800 sets of harnesses, 500 coaches and utility wagons.

Then people had to be hired to drive the coaches, to man the stations, to have meals ready for passengers, and to have teams of horses or mules ready for hitching up to the coaches. Most of the stations were about 20 miles apart. While only some stations were meal stations, all were “change” stations where they could get a fresh team of horses or mules. About every 300 miles, a new coach was sup-

plied. Concord coaches and Celerity wagons were the main vehicles used on the route and were on the move both day and night. Most passengers had trouble sleeping the first couple of nights, but after that, they would sleep from sheer exhaustion.

Two meals a day were served at an extra cost to the passengers and could come at any time of the day or night, so the passengers were encouraged to bring their own food. Passengers never knew if they were getting breakfast or dinner, but it really didn’t matter because most of the meals were similar; beans, jerky, hard tack, and black coffee. Once in a while, some of the stations would have vegetables, eggs, milk, and honey, but those were few and far between.

Waterman Lilly Ormsby, a special correspondent of the New York Herald from September 26 to November 19, 1858, was the first and only through passenger on the first west-bound stage. His accounts of the first Butterfield Overland Mail Route were informative and sometimes amusing.

“We now came to a patch of woods through which the road was torturous and stony, but our driver’s ambition to make good time overcame his caution, and away we went, bounding over the stones at a fearful rate. The moon shone brightly, but its light was obstructed by the trees, and the driver had to rely much on his knowledge of the road for a guide. To see the heavy mail wagon whizzing and whirling over the jagged rocks through such a labyrinth, in comparative darkness, and to feel oneself bouncing—now on the hard seat, now against the roof, and now against the side of the wagon—was no joke, I assure you, though, I can truthfully say that I rather liked the excitement of the thing. But it was too dangerous to be continued without accident, and soon two heavy thumps and a bound of the wagon that unseated us all, and a crashing sound, denoted that something had broken.” It turned out to be the tongue of the wagon and at the next station it was fixed, but it took more time to fix it than the time the driver saved at going fast. Moral: “Make haste slowly!”

At one stop, there was a delay in changing the teams because the wild mules had to be caught and harnessed. Several hours of their advanced time was lost. Ormsby wrote that when they got underway, “the mules reared, pitched, twisted, whirled, wheeled, ran, stood still, and cut up all sorts of capers. The wagon performed so many revolutions, that I, in fear for my life, abandoned it and took to my heels, fully confident that I could make more progress in a straight line, with much less risk of breaking my neck.”

The threat of Indian attacks was always present on the stage routes. Ormsby noted that on a 40 mile stretch through barren plains with clumps of scrub oaks, weeds, and grass, the only out-of-the-ordinary thing was a Comanche woman riding “straddle” and cows taking care of themselves. Even though the Indians didn’t attack the stage on this first trip, the drivers were always aware that they were being watched from the top of the mountains and behind the rocks. More often the Indians would attack the stations, taking stock and food and killing the people at the stations. More than 50 employees were killed, hundreds of animals stolen, and many stations looted and burned by Indians. The ruins of the Pinery Station here in the Guadalupe Mountains were reportedly burned by Mescalero Apaches in 1860.

The Civil War and removal of the troops from the forts as well as the confiscation of the Overland property and stations by the Secessionists put an end to the great Butterfield Overland Mail in March of 1861. Stock, coaches, and equipment were transferred to the Central Route run by Wells Fargo who Butterfield owed money to.

The Butterfield Overland Mail Route, the precursor to the Pony Express and the transcontinental railroad, was the driving force for settlement and development of the West. The Pinery has the designation of being the only ruin of an original company built Butterfield Station standing on the route in close proximity to a national highway. The Pinery is listed in the National Register of Historic Places.

Hints for Plains Travelers

—from an article in the Omaha Herald (1877)

Don’t smoke a strong pipe inside, especially in the morning.

Spit on the leeward side of the coach.

Don’t swear nor lop over on your neighbor when sleeping.

Don’t ask how far it is to the next station until you get there.

Never attempt to fire a gun or pistol while on the road, it may frighten the team.

Don’t discuss politics or religion nor point out places on the road where horrible murders have been committed, if delicate women are among the passengers.

Don’t growl at the food at the stations, stage companies generally provide the best they can get.

Don’t grease your hair before starting or dust will stick there in sufficient quantities to make a respectable “tater patch.”

Wildland Caving Opportunities in the Lincoln National Forest

By Brad Bolton

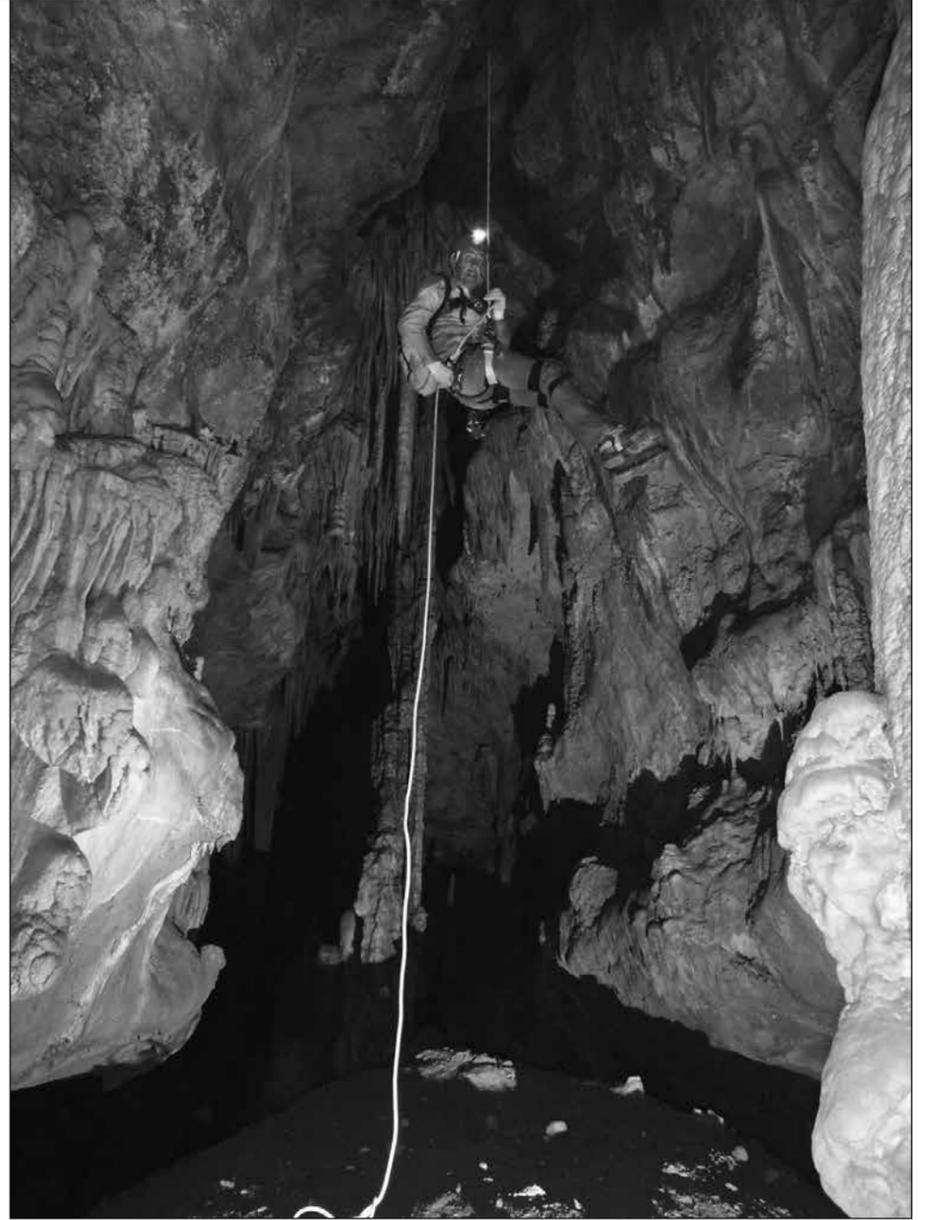
DO YOU LIKE A CHALLENGE AND TO travel where you rely on your own wits and physical strength to climb and negotiate through cave passages? For folks who really enjoy 'wild caving'-type of trips, there are many adventures to be found in nearby Lincoln National Forest.

The Lincoln National Forest manages numerous caves, many of which are in the same mountains shared with the two national parks. While nothing can compare to Carlsbad Caverns, many Forest Service caves are spectacular, unique, and world renowned for exquisite formations. In addition, many caves have vertical entrances requiring rapeling and rope work to enter! New discoveries are made yearly as scientists come to the Lincoln to study the geology and biology of caves. The caves are in a completely natural setting nestled in the high mountains and deep canyons. Visiting caves in the Lincoln National Forest can be challenging and remote, requiring specialized equipment, weeks of planning, and extensive training.

Below ground, management of backcountry caves is very similar for the different agencies. That is because the same 1988 Cave Protection Act is the federal law that requires management of significant caves for all national parks and National Forests. Lincoln National Forest promotes conservation by facilitating a backcountry cave permit system, and by coordinating volunteers from the National Speleological Society who monitor the caves for research, wildlife conservation, and preventing misuse.

Imagine starting out on a caving trip to Lincoln National Forest; things can be very different. Like many National Forests, primitive roads provide driving access into some very remote areas. These roads can be extremely rough and many folks opt to get out and hike along the beautiful ridgetops. Primitive camping is allowed almost everywhere and car camping is allowed within 300' of most roads. After finding the perfect campsite, high in the Guadalupe Mountains, the next task is actually finding the caves themselves. There are no established trails that take visitors to wild caves so finding the cave entrance can be an extensive search along the side of a steep canyon, with the added challenges of orienteering and following maps. To help groups find caves and promote conservation, Lincoln National Forest facilitates a public trip leader program. Members of the National Speleological Society (NSS) with extensive cave experience lead others to find new adventures.

If 'wild caving' sounds like fun, there is an easy way to get started and it starts right where you live. There are caving clubs called "Grottos" located across the country as part of the National Speleological Society or NSS. Finding and contacting one of these Grottos is a click away at www.caves.org. There you will find a U.S. map and contact information for caving enthusiasts from across the country. The National Speleological Society is a great partner organization and NSS Grottos provide the necessary training and education needed for visiting the backcountry caves of Lincoln National Forest.



Visiting caves in the Lincoln National Forest can be challenging and remote, requiring specialized equipment, weeks of planning, and extensive training.

Sitting Bull Falls (Lincoln National Forest)

By Jeremy Evans

THE GUADALUPE RANGER DISTRICT, the southern-most district of the Lincoln National Forest, has many spectacular recreation opportunities. Remote, quiet and mysterious, the District beckons the visitor to explore this unique desert landscape. The Guadalupe Ranger District shares its southern boundary with two national parks; Guadalupe Mountains and Carlsbad Caverns. Hiking, camping, hunting, bird watching, and horseback riding are just some of the incredible activities that can be enjoyed on the district. One of the recreational highlights is Sitting Bull Falls Recreation Area. It sits at the end of a long remote canyon and has a series of waterfalls (fed from springs atop the canyon) that create a large pool of water at the base of the falls, which is 150 feet from top to bottom. The Sitting Bull Falls Recreation Area meets ADA guidelines for accessibility and some of the features include paved sidewalks, restrooms, picnic tables, rock cabanas, fresh water, trash containers, and a viewing deck of the waterfall.

Sitting Bull Falls and the surrounding landscape are the remnants of an ancient reef, known as Capitan Reef. Approximately 260 million years ago the area was on the edge of a huge inland sea. The predominant geology of the area is limestone and is full of fissures and caves that were slowly eroded by acidic water over long periods of time. Also, deep and rough canyons have been carved by annual flooding and rains. Other geologic forces have created picturesque valleys teeming with wildlife and those forces, over time, helped create the underground water reservoirs and springs that feed into Sitting Bull Falls.

The Guadalupe Mountains sit on the northern edge of the Chihuahuan Desert and has a rich and diverse geologic and archaeological history. American Indians first came into the area around 10,000 years ago and the Mescalero Apache called the area their home for many, many years. Then Spanish explorers came to the area around the 1500s, bringing horses, which proved to be very valuable to the Apache. By the mid-1800s explorers, settlers, ranchers, businessmen, cattlemen, and outlaws had migrated into the area. Because of the rough and remote terrain, the Guadalupe Mountains were settled very slowly.

In the 1930's the Civilian Conservation Corps was assigned to the area and built impressive stone structures that still stand today as the picnic sites at Sitting Bull Falls. The 1970s ushered in a little more development, crews installed vault restrooms, added more cabanas and improved the trail to the falls. In the 1980s a route to the top of the falls was built by the Youth Conservation Corps. Then on Easter Sunday of 2011 the Last Chance Fire burned through the area, severely damaging the picnic cabanas and destroying the trees and vegetation. Sitting Bull Falls was closed for a year while repairs were made and then reopened only to be damaged again by a flood event in September of 2013. Again in 2014, another flood delayed reconstruction efforts. Finally, by May of 2015, all reconstruction and repairs were completed. A new walkway was built to the falls which leads to a viewing deck with a bird's-eye view of the falls! The entrance road to the well-known site was also reconstructed and literally "re-paved" the way to a whole new experience!



Come and enjoy Sitting Bull falls and the surrounding area. Take a hike on the many trails or relax and have a picnic with your family. Whatever you decide to do, your adventure to the Guadalupe Ranger District will be memorable. Don't forget to come prepared. Bring plenty of water and pay attention! Deer, javelina, mountain lions, snakes, tarantulas, rabbits, and many other animal species call the area home. If you decide to go out and explore the backcountry, please go prepared, the weather in this area can be unpredictable and so can the wildlife! Please be safe and enjoy YOUR National Forest.

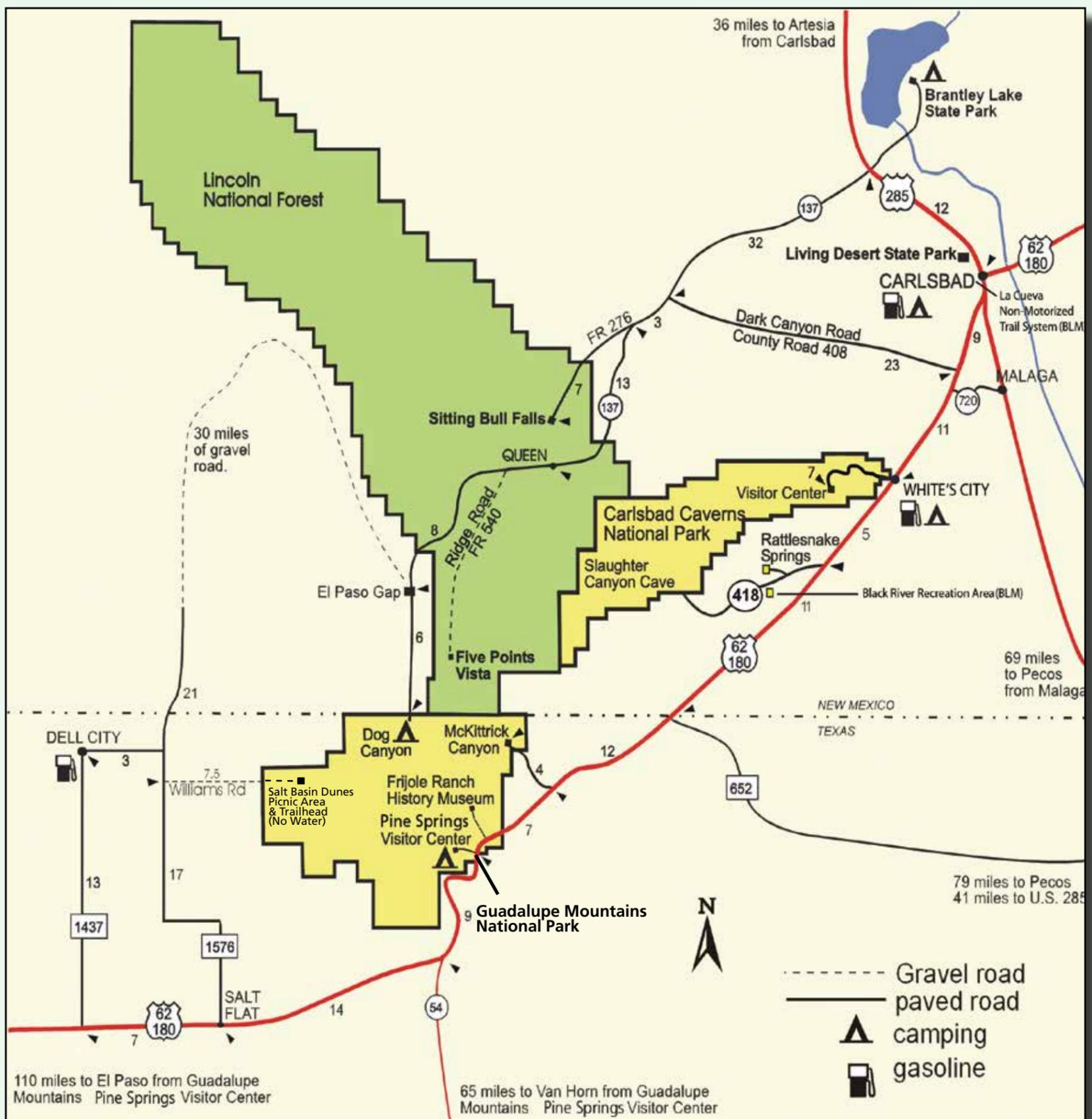
It is a day-use area and is open from 9 - 5 daily from October to March and 8:30 - 6 from April to September; the standard amenity fee is a bargain at \$5 per vehicle. Visitors can wade in the water below the falls, hike, or picnic. The picnic sites have tables and grills, but you'll need to bring your own charcoal and also be aware of any fire danger warnings. Many of the picnic sites provide overhead shelter from the sun's rays that bear down on the area most of the day. Fresh water and restroom facilities are available. There is a paved, ADA accessible, path to the falls viewing area. Camping is not allowed in the falls day use

area, but is allowed almost anywhere else on the Guadalupe Ranger District.

If you have questions, please visit the Guadalupe Ranger District office located at 5203 Buena Vista Drive in Carlsbad, or call 575-885-4181.

Sitting Bull Falls is approximately 42 miles west of Carlsbad, New Mexico and can be reached by car via Highway 285 to Highway 137, and then on to Forest Road 276 / County Road 409. Pets on leashes are allowed.

Nearby Attractions



BRANTLEY LAKE STATE PARK

575-457-2384
www.emnrd.state.nm.us/SPD/brantley-lakestatepark.html

Located 12 miles north of Carlsbad on U.S. Highway 285, the campground has 51 RV sites with water and RV electric hook-ups (a few with sewer), a dump station, playground, restroom with hot showers, shelters, tables and grills. Other facilities include picnic areas with sheltered tables and grills, playground, a fishing dock, boat ramps with docks, and a visitor center.

Open all year—24 hours/day.
 Wheelchair accessible.

Fees
 Day Use Only—\$5.00 per vehicle
 Camping—\$14.00 per night (\$10.00 for each additional vehicle driven into the same site)
 Primitive Camping Area—\$8.00 per vehicle per night.

BUREAU OF LAND MANAGEMENT (BLM)

575-234-5972
www.blm.gov/nm/st/en/fo/Carlsbad_Field_Office

Black River Recreation Area

The 1,200-acre Black River Recreation Area is managed to provide low-impact recreation and environmental education opportunities while maintaining a healthy river system and riparian habitat. This oasis in the Chihuahuan Desert is home to rare species of plants, fish, and reptiles in and around the river. The most frequently visited site is the Cottonwood Day Use Area, which includes a wildlife viewing platform, picnic tables, and a toilet. Turn west onto CR418, travel two miles, and then turn left at the fork.

La Cueva Non-Motorized Trail System
 The trail system covers approximately 2,200 acres and contains more than 15 miles of maintained trails. The non-motorized trails are used by mountain bikers, hikers, and equestrians. The trails wind through the rolling limestone foothills of the Guadalupe Mountains and the rugged Chihuahuan Desert environment.

The area is located partially within the city limits of Carlsbad, NM. From Lea Street, go west to Standpipe Rd. Turn south and travel 3 miles to the gravel access road. Turn right and travel approximately 0.3 miles to the trailhead and parking area. There are no facilities other than the parking area and trail signs.

LINCOLN NATIONAL FOREST (GUADALUPE DISTRICT)

575-885-4181
www.fs.usda.gov/lincoln/home

The forest encompasses 1,103,441 acres for hiking, caving, camping, picnicking, horseback riding, hunting and sightseeing. Maps are available at the Guadalupe Ranger District Office located at 5203 Buena Vista Drive Carlsbad, NM 88220.

Five Points & Indian Vistas
 Eleven miles south of State Highway 137 on Forest Route 540, an improved gravel road. A panoramic view of the desert from the top of the Guadalupe Mountains. Interpretive signs explain natural features.

LIVING DESERT ZOO & GARDENS STATE PARK

575-887-5516
www.emnrd.state.nm.us/SPD/livingdesert-statepark.html

Come face to face with a mountain lion at this unique zoo and botanical garden offering an opportunity to experience the Chihuahuan Desert first-hand. See a large collection of live animals, including the rare Mexican gray wolf, and the roadrunner, the state bird of New Mexico. There is also an unusual collection of cacti and other succulents from around the world.

The park is located high atop the Ocotillo Hills overlooking the northwest edge of Carlsbad, just off U.S. Highway 285, and features exhibits, an art gallery, gift shop, and refreshments.

Open daily except December 25.
 Wheelchair accessible.

Summer Hours (Memorial Day to Labor Day)
 8:00 a.m. to 5:00 p.m.
 Last tour entry—3:30 p.m.

Winter Hours (after Labor Day)
 9:00 a.m. to 5:00 p.m.
 Last tour entry—3:30 p.m.

Fees

Ages 13 and up	\$5.00
Children 7 - 12	\$3.00
Children 6 and under	free
Group (20+) discount available.	