On August 25, 1916, President Woodrow Wilson signed the act creating the National Park Service, a new federal bureau in the Department of the Interior responsible for protecting the 35 national parks and monuments then managed by the department and those yet to be established. This “Organic Act” established the mission of the National Park Service (NPS). The NPS is proud to...

"...to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations."

The National Park System of the United States now comprises more than 400 areas covering more than 84 million acres in 50 states, the District of Columbia, American Samoa, Guam, Puerto Rico, Saipan, and the Virgin Islands.

Today more than 20,000 National Park Service employees care for America’s 400+ national parks and work with communities across the nation to help preserve local history and create close-to-home recreational opportunities.

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 (8,751’).

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 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,

Eric Brunnenmann
Superintendent
Guadalupe Mountains
National Park

Douglas S. Neighbor
Superintendent
Carlsbad Caverns
National Park
Guadalupe Mountains National Park Welcomes New Superintendent

ERIC BRUNNEMANN FIRST BECAME A PARK SUPERINTENDENT in 2000 at War in the Pacific National Historical Park in the U.S. territory of Guam, and at American Memorial Park on the Island of Saipan in the Northern Mariana Islands. While in Guam, he also served as NPS cultural representative to the Guam Historic Resources Division, State Historic Preservation Office, with special representation to the government of Guam.

In 1999, Brunnemann returned stateside to become cultural resources manager for the NPS Southeast Utah Group (Canyonlands and Arches National Parks and Natural Bridges and Hovenweep National Monuments). He later served as acting superintendent of Hovenweep and Natural Bridges.

Brunnemann’s other NPS assignments include stints at Pinnacles National Monument (now national park) in California and Petroglyph National Monument in New Mexico. He began his NPS career as a seasonal museum aide at Fort Davis National Historic Site in Texas.

Brunnemann is a Southwest archeologist by training. He holds master’s degrees in anthropology from the University of Texas (UT) at Austin and American studies from the University of New Mexico in Albuquerque. He also received an associate degree in advertising and computer programming from San Antonio College and a bachelor’s degree in archeology from UT Austin.

“I knew when I began my National Park Service career at Fort Davis that someday I would return to west Texas,” Brunnemann said. “I was very interested back then in the Butterfield Trail, which passed through Fort Davis. Now I am returning to the place where that same historic route comes through the Guadalupe Mountains. I am so excited to be back and I look forward to working with the park staff, park partners, and all who love Guadalupe Mountains.”

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 kitchen for a $10 fee. Call 975-785-4248 for details. A citation will be issued if animals are left in vehicles when ambient air temperatures will reach 70° Fahrenheit (21° Celsius) 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
575-793-3171

Guadalupe Mountains National Park
Fernin Salas, Volunteer-In-Park Coordinator
955-828-345 ext. 231
Drips resonating through the thick si-
scent inexplicably both musty and fresh.

By Christian Caparelli

nald moved beyond the boundaries of the
architectural lighting designer and artist
true to the grandeur and natural colors
less likely to grow algae while remaining
easy to maintain, lower temperature, and
seeking a design that would be efficient,
cave and moved to update the lighting,
cave ecosystem. In the late 1960s, the
flourished near the artificial lighting,
dependent invertebrates. Algae and other
drier cave and jeopardizing moisture-
consequences of introduced light. Older
national park enjoyed a more relaxed
mostly trailside floodlights, displaying a
1932, all cave routes were illuminated by
of infrastructure installed after Carls-
to adventurous visitors of all abilities,
ply stroll casually along the public trails in
deepest known cave passages, or to sim-
move beyond our limitations and ponder
LED light fixture, has encouraged us to
whether projected from a modified coffee
of variegated colors, offering a wider
world. Light is so essential that we tend
to take it for granted, and the complete
absence of light is both daunting and
humbling. Our ability to harness light,
whether projected from a modified coffee
can lantern on a sooty and sophisticated
LED light fixture, has encouraged us to
be wireless and maneuver through the
deepest known cave passages, or to sim-
ply stroll casually along the public trails in
Carlsbad Cavern.

Part of adapting the cave environment
to adventurous visitors of all abilities,
electric lighting was one of the first types
of infrastructure installed after Carls-
bad Caverns became a federal site. By
1932, all cave routes were illuminated by
mostly trailside floodlights, displaying a
blasted, flat view of immense surrounding
chambers. Although visitors to the new
national park enjoyed a more relaxed
tour, the cave soon began showing the
consequences of introduced light. Older
lights produced heat, contributing to a
driever cage and jeopardizing moisture-
dependent invertebrates. Algae and other
native photosynthetic organisms
flourished near the artificial lighting,
damaging formations and the balance of
the cave ecosystem. In the late 1960s, the
park replaced the electrical system in the
cave and moved the update to the lighting,
seeking a design that would be efficient,
easy to maintain, lower temperature, and
less likely to grow algae while remaining
to the grandeur and natural colors
of the cave. In 1974, the park chose an
architectural lighting designer and artist
named Ray Grenald to take on the job.

Engaging his understanding of lighting
theory and the human experience, Gre-
ald moved beyond the boundaries of the
trail, using warm and cool white fluores-
cent, mercury vapor, and incandescent
lights to accentuate depth and distance.
He accommodated the sensitivity of the
human eye to low light by concealing light
sources and planned intentional dark
spots to soothe, to generate anticipation,
and to stimulate the imagination. The
redesign reduced maintenance hours,
heat, and energy usage. However, despite
the success and progress of Grenald’s
design, it proved difficult to maintain
from the start and has been largely lost,
leading to an inconsistent vision of Carls-
bad Cavern. Algae continue to grow, and
the most effective method of treatment,
diluted bleach, harms natural cave fauna,
leaves behind residue, and does not fully
eliminate exterminated algae. Forty years
later, an efficient and reliable cave light-
ing system that operates at a low tempera-
ture and deters algae growth remains the
priority of Carlsbad Caverns National
Park.

Deadly Disease Continues to Kill Bats

by Dale Pate

Bats are important for ecosystems across
the country and the world. They are excel-
 lent 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 bats 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 nos, ears, and on
wing conditions. 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 per-
cent to 100 percent of all bats in that par-
ticular colony. An additional concern is that
WNS is spreading rapidly. It is now found
in caves and mines in 41 states. The most recent
occurrence of WNS was found in a cave in
western Oklahoma.

There are lots of unknowns concerning
WNS. At this time, it does not appear to be
affecting summer bat colonies such as Bra-
zilian 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
spread of this deadly disease.

Unveiling Wonder
New Lights for an Old Cave

In the fall of 2013, visitors began notic-
new cables, panels, and transformers,
the realization of an electrical renovation
years in the making. Electricians have
been since carefully navigating off trail,
installing innovative LED light fixtures
designed specifically for Carlsbad Cavern.
LEDS operate at cooler temperatures,
are incredibly energy efficient, and last years
of continuous usage, longer if dimmed.
Carlsbad Cavern’s new lights have the
potential to mix three different color
temperatures, visually ranging from bold
amber to warm white to cool white, most-
ly yellowish color temperatures proven to
inhibit algae growth. Cave Specialist Rod
Horrocks has been using his experience
gained lighting thirteen other cave tour
routes and his passion for and knowledge of
the subterranean world, along with
responses from both employees and vis-
itors, to sculpt a new lighting design that
is both less impactful and appropriate for
the largest underground limestone cham-
er in the United States. Accompanied by
Ellen Trautner, an accomplished park
guide intimately familiar with Carlsbad
Cavern, he has directed the placement
and focusing of over 1100 LED lights, and,
using sophisticated software, he blends colors and varying intensity to enhance delicate hues and textures of
cave formations and walls. Using this
same software, park employees will know
quickly when specific issues arise, leading
to less off-trail travel and a more stable
appearance. As Horrocks paints with
light, he emphasizes celebrated features
and exploits ambient glow to reach previ-
ously unseen cave formations, all while
tempting visitors with patches of evoca-
tive darkness.

Though more work will remain, such as
minimizing glare, removing old infra-
structure, and concealing the new,
followed by months of fine adjustments,
LED lights will brighten the trails of
Carlsbad Cavern by early 2016. Every
time new lights are installed in Carlsbad
Cavern, a new splendor is revealed. This
breath-taking beauty has been present
all along, hidden from us by darkness,
and, on the eve of the centennial of the
National Park Service, there is no more
fitting reminder of why we protect these
natural wonders.

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

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

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 entry tickets.

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

All fees and tours are subject to change.

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 ten 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 into the cave.
- Never throw coins or other objects into the pools.

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.

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 the 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.

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

Strenuous. Initial descent is 150 feet up the south stems. Tour is down to a 30° descent through two sets of ladders. Because of the A/L 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.

SLAUGHTER CANYON CAVE
Fee: $15.00 Tour Ticket
(Half price for children, Senior Pass, and Access Pass cardholders)
Tour postponed until Spring 2015
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 150’ 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. Participants must 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.

ALL-FICTION GUIDED TOURS
Tours departs from visitor center.

GUIDED TOURS
Tours depart from visitor center. Participants drive their vehicles to the trailhead and hike a steep, rocky, and uneven trail for 1/2 mile to the cave entrance. Bring a hat and water.

SUGGESTED TRAILS

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 candlelit 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 or candlelit conditions. Lanterns are provided. Sturdy closed-toed shoes or hiking boots required. No backpacks. Tours depart from the visitor center.

HALL OF THE WHITE GIANT
Fee: Entrance Fee and $20.00 Tour Ticket
(Half price for children, Senior Pass, and Access Pass cardholders)

Extremely strenuous. Participants navigate ladders, ropes, and slippery surfaces, belly-crawl for extended periods of time, and free climb rock chimneys. Not recommended for anyone with a fear of enclosed spaces, heights, or darkness. Bring three new A/L 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.

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

Extremely strenuous. Participants navigate slippery surfaces, bellycrawl for extended periods of time, and free climb rock chimneys. Not recommended for anyone with a fear of enclosed spaces, heights, or darkness. Bring three new A/L alkaline batteries. Sturdy, closed-toed shoes or hiking boots required. Helmets and headlamps provided. Backpacks not allowed. Tour departs from visitor center. Participants drive their vehicles to the trailhead and hike a steep, rocky, and uneven trail for 1/2 mile to the cave entrance. Bring a hat and water.

Photography
Photography is permitted on most tours; however, please use proper etiquette. Warn those around you before you 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. Video cameras are permitted on the Big Room, Natural Entrance, and Kings’ Palace tours. Please use caution and do not use the ultra-bright lights available on some cameras. Photography is not allowed at the Bat Flight Program offered from mid-May to mid-October.

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

Optional Audio Guides

Canyon Exploration
Price: $5.00
Tours depart from the visitor center. Participants drive their vehicles to the trailhead and hike a steep, rocky, and uneven trail for 1/2 mile to the cave entrance. Tours 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 the 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.

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 Carlsbad Caverns-Guadalupe Mountains Association (CCGMA), a non-profit organization. The cost is $5.00.

4 Visitor Guide
For Reservations call 877-444-6777 or TDD 1-877-833-6777

<table>
<thead>
<tr>
<th>Tour</th>
<th>Trail Surface</th>
<th>Tour Dates and Times</th>
<th>Adult Fee</th>
<th>Age Limit</th>
<th>Tour Length</th>
<th>Group Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kings Palace</td>
<td>Paved Trail; 80' hill must be climbed on return trip</td>
<td>Due to repairs to the elevators that are underway at the time of printing, visit <a href="http://www.nps.gov/cave">www.nps.gov/cave</a> for dates and times for all tours, or call 575-785-2232.</td>
<td>Adult:</td>
<td>8</td>
<td>1.5 hours</td>
<td>55</td>
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<td></td>
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<td>Children (4-15), Senior Pass, and Access Pass cardholders</td>
<td>$8</td>
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<td>A General Admission Ticket is also required.</td>
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<tr>
<td>Left Hand Tunnel</td>
<td>Uneven dirt trail and slippery slopes</td>
<td>Meet at the visitor center</td>
<td>Adult:</td>
<td>7</td>
<td>2 hours</td>
<td>15</td>
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<td>Children (4-15), Senior Pass, and Access Pass cardholders</td>
<td>$7.00 and General Admission Ticket ($3.50 ages 6-15, Senior Pass, and Access Pass holders)</td>
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<tr>
<td>Lower Cave</td>
<td>Must negotiate fifty feet of ladders, low light, and slippery, dirt trails. Might get dirty</td>
<td>Meet at the visitor center</td>
<td>Adult:</td>
<td>20.00 and General Admission Ticket ($10.00 ages 12-15, Senior Pass, and Access Pass holders)</td>
<td>12</td>
<td>3 hours</td>
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<tr>
<td>Slaughter Canyon Cave</td>
<td>Steep climb required to reach cave entrance. Trail in cave is slippery, uneven and rocky</td>
<td>Meet at the visitor center</td>
<td>Adult:</td>
<td>$15.00 ($7.50 ages 8-15, Senior Pass, and Access Pass holders)</td>
<td>8</td>
<td>5.5 hours</td>
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<td>Wild Caving—Caving gear provided</td>
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<tr>
<td>Hall of the White Giant</td>
<td>Climbing and crawling, tight squeezes, drop-offs, will get dirty</td>
<td>Meet at the visitor center</td>
<td>Adult:</td>
<td>$20.00 and General Admission Ticket ($10.00 ages 12-15, Senior Pass, and Access Pass holders)</td>
<td>12</td>
<td>4 hours</td>
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<tr>
<td>Spider Cave</td>
<td>Climbing and crawling, tight squeezes, drop-offs, will get dirty</td>
<td>Meet at the visitor center</td>
<td>Adult:</td>
<td>$20.00 ($10.00 ages 12-15, Senior Pass, and Access Pass holders)</td>
<td>12</td>
<td>4 hours</td>
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**Surface Activities**

**SERVICES**
Facilities include a visitor center, exhibits, bookstore, restaurant, gift shop and kennel service. Ranger programs are offered daily. Other activities include:

**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 for $0.50. The scenic drive is open 8:00 a.m. to 6:30 p.m. mid-May to mid-October. It is open 8:00 a.m. to 10:30 p.m. mid-October to mid-May. 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.

**BAT FLIGHT PROGRAMS (MAY-OCTOBER)**
A few hundred thousand bats fly from Carlsbad Cavern each evening from mid-May until the bats migrate to Mexico sometime in mid-October. 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 575-785-3012.

Cameras are not allowed. The lights and high frequency sounds made by the cameras disturb the bats. This rule is strictly enforced.

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**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 may 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 PASS**
The Senior Pass sells for $10.00 and is good for life. Any U.S. citizen or permanent resident of the United States 65 years or older may purchase the 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. The Senior Pass sells for $10.00 and is good for life. Any U.S. citizen or permanent resident of the United States 65 years or older may purchase the 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.

**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 NP 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.

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**Visitor Guide 5**
Daylight Savings Time, hours are expanded 4:30 p.m. Mountain Standard Time. During intermittently.

The ranch house features exhibits describing historic and current use of the Guadalupe Mountains National Park. 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 to 20 people. Reservations for the group site only can be made up to two months in advance by calling 915-828-3251 x224.

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 to 20 people. Reservations for the group site only can be made up to two months in advance by calling 915-828-3251 x224.

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 the 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. 224.

Pine Springs Visitor Center
Open daily 9 a.m. to 6 p.m., except Dec 25.

Frijole Ranch History Museum
The ranch house features exhibits describing historic and current use of the Guadalupe Mountains National Park. 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 to 20 people. Reservations for the group site only can be made up to two months in advance by calling 915-828-3251 x224.

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Weather

<table>
<thead>
<tr>
<th>Month</th>
<th>Average Temperature (°F)</th>
<th>Average Rainfall</th>
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<tbody>
<tr>
<td>Jan</td>
<td>56</td>
<td>34</td>
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<td>Feb</td>
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<td>Mar</td>
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<td>46</td>
</tr>
<tr>
<td>Dec</td>
<td>56</td>
<td>33</td>
</tr>
</tbody>
</table>

Average annual precipitation for Pine Springs (1980-2003) 17.4

Other Popular Hikes...

<table>
<thead>
<tr>
<th>Trailhead</th>
<th>Trail</th>
<th>Distance</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pine Springs</td>
<td>Devil's Half Trail</td>
<td>4.2 miles</td>
<td>Moderate to Strenuous. Hike in Pine Springs Canyon to the Hikers’ Staircase and Devil’s Hall. After the first mile, the trail drops into a 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.</td>
</tr>
<tr>
<td>Smith Spring</td>
<td>The Bowl</td>
<td>8.5 miles</td>
<td>Moderate to Strenuous. Follow the Bush Mountain Trail to the ridgetop for a view into West Dog Canyon. 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 2,500’.</td>
</tr>
<tr>
<td>Empson</td>
<td>Salt Basin Loop</td>
<td>0.9 miles</td>
<td>Moderate. Climb the foothills and learn about the natural history of the Chihuahuan Desert. Trailside exhibits.</td>
</tr>
<tr>
<td>Dog Canyon</td>
<td>Indian Meadow Nature Loop</td>
<td>0.6 miles</td>
<td>Easy. Enjoy a stroll around a meadow frequented by a variety of birds and other wildlife. Approx. 20 min. Light foot pace.</td>
</tr>
<tr>
<td>Salt Basin</td>
<td>Salt Basin Dunes (Day Use Only)</td>
<td>3.4 miles</td>
<td>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 Guadalupeas as a backstop. Great for sunset or sunrise hikes all year, and daytime hikes during the winter.</td>
</tr>
</tbody>
</table>
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.
- 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 10 feet-together crouch.
- Valleys and ditches offer some protection. Avoid a depression with a stream.
- 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.
- 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.

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, goose-flesh, 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-soaked 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 splashing water on the skin and fanning vigorously.
  b) Immerse the victim’s body in cool water.
  c) Place cold packs on the neck, abdomen, arms, and groin.
- Stop cooling when mental status improves. Continue to monitor the victim.
- Contact a park ranger for assistance.

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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 wind chill.

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.

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.

Visitor Guide 7
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 coughing 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 are the only venomous snakes found in the Guadalupe Mountains. They are recognized by the triangular, flat head, wider than the neck, vertical, elliptical pupils, and a heat-sensitive “pit” located between the eye and the nostril. Rattlesnakes are generally present, but may be broken off.

To avoid rattlesnake bites, stay on trails where you are more easily able to see a snake. Watch where you put your hands and feet, look around before sitting down. If you see a rattlesnake, leave it alone. Alert other members of your party. Do not attempt to move it, simply walk around it and continue your hike.

Do not use these methods to treat a snakebite:
- a tourniquet, which causes severe damage if wound too tightly.
- cold or ice, which does not inactivate the venom and poses a frostbite hazard.
- the “cut-and-suck” method; it can damage blood vessels and nerves.
- mouth suction, your mouth is filled with bacteria, and you may infect the wound.
- electric shock; no medical studies support this method.
- alcoholic beverages, which dilate vessels and compound shock.
- aspirin, which increases bleeding.

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.
- 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.

- 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.
- No medical studies support this method.
- The “cut-and-suck” method; it does not inactivate the venom and poses a frostbite hazard.

To avoid rattlesnake bites, stay on trails where you are more easily able to see a snake.
I learned the violet flowers of the silverleaf poppy, its jagged blue-gray stems and leaves. I saw the papery white flowers of the prickly pear cactus's spiny, spindly arms. My eyes were riveted in July, the monsoon season was in full swing, and the desert and everything that happened before we arrived.

Where you are standing now, for example—on solid ground in the Chihuahuan Desert at about 7500 feet or so, elevation, in West Texas—would have been at the bottom of an inland sea that spread over the West coast of the supercontinent Pangaea, during the Permian. The inland sea eventually dried up, and the reef was buried in salt and minerals. Later, there was a mass extinction, when 90 percent of life on the planet disappeared. Then later, much later, the reef was uplifted into towering mountains, and canyons were carved through them. And this was all before humans arrived to hunt big game with spears in the Guadalupes around 12,000 years ago.

Though I was enthralled by the ancient earth that I could see and touch and imagine, it was difficult for me to focus solely on fossils and sedimentary rocks. When I arrived in July, the monsoon season was in full swing, and storms gathered and rolled over the mountains and down across the basin each afternoon in sheets of blue, punctuated by bolts of pink lightning. The cholla were in bloom, red flowers brilliant as roses on the cactus's spiny, spindly arms. My eyes were frantic with color. Everywhere I looked, there was a blossum unfolding.

I saw the papery white flowers of the prickly poppy, its jagged blue-gray stems and leaves (its species name squarrosa means “rough”). I learned the violet flowers of the silverleaf nightshade, its leaves covered with little hairs and sharp spines (another rough desert plant). I watched the large white trumpet-shaped flowers of the datura emerge from their velvety cases at dusk. Mexican hats swayed, festive and orange, in the soft breeze that swept through each evening.

While I knew I had come to write about ancient earth history—the Then and There, a different earth, really, than the one we stand on today—I could not pull myself from the wonder of the Here and Now. Every scurry, every buzz, every flower, every bolt of lightning needled for my attention.

At Frijole Spring, as I sat trying to contemplate deep time, damselsflies floated and alighted, folded their wings to reveal their stick-like bodies, striped blue of the deep sea. I did not think about the Permian Era as I watched rabbits leap across my path, black tails and tall ears darting away.

Birds singing, flies and grasshoppers buzzing, crickets whirring in the dark, thunder, wind blowing through the canyon—nothing was ever still in all my moments here. And yet a stillness came over me. An ancientness seeped into me.

I did, in the end, write about the deep time that is present here in the fossils and rocks, and realized, too, that the spiral of the galaxy at the moment the earth was born, and the spiral coiled within the calcite shell of the ammonoids that are fossilized in the rocks of the Permian, are the same shape of the rattlesnake that I found coiled under a juniper bush one evening near sundown, just as the desert rocks began to give off the heat of the day.

When the snake felt my vibrations it uncoiled and slid across the trail away from me, pausing to flick its tongue into the air. I held my breath and admired its beautiful markings, knowing that it had descended from the first snake that evolved during the Jurassic some 150 million years ago. I felt lucky that we had journeyed, that snake and me, from our respective Thens and Theres to arrive at the Here and Now together.

If you are visiting the park now, in winter, it will be different than when I was here in the summer, with its thunderous storms and the incessant buzzing of grasshoppers, summer when the monsoons brought large and tiny blossoms everywhere and a spectrum of greets grew among the hime-white stones. There will be other sounds, other weather, other colors— it will be a different Now, and Here will be a different Here.

Perhaps you will look up to see that a dusting of snow has covered the mountains, perhaps you will find ice in the crevices of rocks, when you are peering at the fossils of gastropods. I hope that in such moments you will feel, also, the vast stretch of long gone time behind you, and that it will make those moments all the more miraculous.

Dear >>-------->
Here where all but the light treads lightly, I am a shadow. Not to speak of the rust-red wings of dragonflies, hovering. It is easy to fall into silence. But I will tell you I am ghostly among the stones. I do not think, of time so much as sediment & dust. When a word like metamorphosis is on my tongue the evening wind picks up. There are these moments of transformation. I do not think, I watch how the light changes.

I am writing to tell you that there is not a future so much as an infinite unfolding of rock, & that I can hear my heart beating here. Traveler, when you are ready I will meet you in the long hall of translucence, where the juniper grows. I won’t say there isn’t distance in the sedimentary world. But in my recent visions even the faraway is very near.

many levitations, li

*Shadow* by Artist in Residence Holly Haworth

Scientific Monitoring Continues

By Edna Flores

How would you like to have ‘no-madist Scientist’ as a job title? Although it is not a technical title, that is exactly what the members of the Chihuahuan Desert Network (CHDN) are. This network is only one of thirty-two National Park Service (NPS) inventory and monitoring networks throughout the country, and it is made up of a group of scientists that travel all over the Chihuahuan Desert. The CHDN crew monitors a total of seven different NPS sites throughout west Texas and Southeastern New Mexico. The sites include Amistad National Recreation Area, Big Bend National Park, Carlsbad Caverns National Park, Fort Davis National Historical Site, White Sands National Monument, the Rio Grande Wild and Scenic River, and of course, Guadalupe Mountains National Park.

The monitoring efforts at Guadalupe Mountains include air quality, climate, invasive plants, land birds, landscape dynamics, spring ecosystems, and upland vegetation and soils. Vegetation and soils monitoring supports a comprehensive understanding of terrestrial ecosystems and integrates six “vital signs”: vegetation community dynamics, vegetation lifeform abundance, exotic plant species—status and trends, biological soil crusts, soil aggregate stability, and soil cover.

For the last five years the CHDN crew has been visiting the park installing plots in different areas of the park. Each specific plot locations are recorded and catalogued as a site where scientists monitor natural and physical resources so that park managers can make important decisions using sound scientific data. The CHDN believes that monitoring can tell us how resources are changing over time, if management action is needed or if it is working, and what the consequences of environmental changes are.

A typical five to seven day trip for the CHDN crew in the Guadalupe Mountains means hiking on rugged, steep terrain to set up their plot layouts. Plot location elevations can also vary greatly starting around 3,000 feet and rising to 8,000+ feet. The sampling plots require setting up an area that is 20x50 meters and then divided into six transects where the crew samples vegetation, soil and biological soil crust cover, soil stability, the presence of perennial vegetation, and the number of annual non-native plants.

Monitoring is tough work. Aside from carrying their personal backpacking gear, each person is responsible for carrying their water, food, and scientific equipment. Any person who has hiked into the backcountry of the Guadalupe knows that there are no water sources available and that long hikes require a lot of preparation and often multiple re-watering trips that mean hiking down and back up the mountains. These scientists are human machines carrying large amounts of weight on their back to accomplish their work.

As the fall of 2016 rolls around, the CHDN crew will return to Guadalupe Mountains to begin collecting data from the first plots installed back in 2010. After five years of monitoring, the data collected will be analyzed and interpreted in comprehensive status and trend reports that will then be published in the National Park Service Natural Resources’ Technical Report Series. All of their hard work is then kept and used during park management planning. To learn more about the National Park Service’s scientific efforts and how you can explore nature around you, visit www.nature.nps.gov.
**Mule Deer: Graceful Survivors**

By Doug Buehler

Think about all the wild animals you enjoy seeing in a national park area. Through the years one of the main animals people consistently see are mule deer. Seeing a deer in its natural habitat creates sense of wonderment. Mule deer have some amazing characteristics that enable them to survive in the rugged landscape of Guadalupe Mountains National Park.

When you see a mule deer, one of the first things you may notice is the large size of their ears. They received their common name due to their ears resembling those of a mule. These large ears are used to detect danger from any direction and relatively long distances away. The ability to hear well is a big advantage in terrain that varies with many ups and downs.

The soft, brown eyes of the mule deer seem to stare right through you. They have excellent eyesight. Many times when I am around a deer and they see me out in the open there is a less chance of spooking them, than if you try and sneak up on them. I find this especially true if I play like I could care less if the deer is there or not, a tip for potential deer watchers.

When rapidly moving, the deer not only runs, but also does something that looks peculiar. They seem to bounce in a stiff fashion on all four legs. This movement is called slotting. This method of movement has some real advantages. A deer can jump over obstacles that a predator has to go around. Quick changes in direction are possible with slotting which makes it harder for enemies to catch them. Also they can bound up very vertical terrain with ease and leave behind an exhausted pursuer. I am not sure how the deer evade all the cactus and other sharp pointed plants when bounding away, but they do a great job of landing in the right spot.

The major predators of the deer are mountain lions, coyotes, and eagles. Mule deer are most vulnerable when first born. The spots of a young fawn make an excellent camouflage. Fawns have very little scent. A predator can come very near and not see or smell a young fawn. Deer mature at a rapid rate and are able to do their special trick of slotting relatively quickly after birth.

One of the most noticeable things about a mule deer at certain times of the year are antlers found on the buck deer. Antlers are different than horns, since they are shed each year while horns continually grow for the life of an animal. They start growing in the spring and are fully developed by fall. It is amazing how fast the antlers grow. It is interesting there are seldom major injuries between bucks fighting to establish dominance. Usually the animal with larger size and antlers wins a contest of strength. When fighting off predators, antlers come in handy. Even the shed antlers on the ground are good for something. They provide a food source and chewing surface for rodents such as mice and pack rats.

Mule deer are very adaptive in what they eat. They can eat a wide variety of plants including many that other types of mammals cannot easily eat. Deer are browsers as opposed to grazers. As a result they can feed on woody shrubs and other types of vegetation other then grasses. Their digestive system can process plants that are somewhat toxic and hard to digest.

So between hearing and eyesight, a particular method of running, special adaptations when eating habits the mule deer is a real survivor. The next time you see one think about some of these interesting characteristics. Their calm demeanor helps make them fairly easy to see and will add to your enjoyment of the park. One of the great things about a national park is the fact animals are protected in their natural habitat for all to enjoy now and in the future.

**Ringtail What?**

By Doug Buehler

One night while camping, I heard a noise outside of my tent. I stuck my head out of the tent flap and caught a glimpse of a cat-like animal with a long bushy ringed tail scurrying up a tree. At first I thought it was a raccoon, but the face was unlike any raccoon I have ever seen. It was a ringtail cat, a somewhat mixed up animal that seems to be part fox and part raccoon. It is a part of the raccoon family, and not a cat at all. It is seldom seen because of its living habits, however it is a fascinating survivor in the park.

Even though ringtail cats are fairly common one does not see them often since their primary time of activity is at night. Think about being out at night in the desert. Being active at night can have some real benefits. It is cooler at night and more comfortable in the desert. It is harder for predators to see you at night. A host of potential prey is more active at night, especially rodents. In fact, the ringtail can eat quite a variety of food including berries, mice, pack rats, small birds, lizards, snakes, and insects. Many times a visitor will ask what is the reddish-looking scat in the trails of the park. Most of the time it is from ringtails with the red color coming from the berries and fruit it has eaten. The smorgasbord of food the ringtail can eat enables it to survive in a harsh environment.

The more flexible one is about sources of food the greater the chance of survival. What would you be willing to eat in a survival situations? Maybe the same things as a ringtail cat.

The ringtail is truly a champion gymnast in the animal world. The raccoon-like tail is actually longer then its body. The tail helps the ringtail keep its balance more readily as it races across uneven surfaces and scurries up trees. It can also fluff the tail up and curl it above its body to appear larger and scarier when facing predators such as bobcats and mountain lions. Curling up with their tail adds warmth on cold winter days. Its claws are partly retractable and aid in gripping surfaces. The ringtail is so acrobatic they can “chimney” up vertical cracks in gripping surfaces. The ringtail is so acrobatic they can “chimney” up vertical cracks. "Chimneying” allows the ringtail to get to hard to reach places such as high up in trees.

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Wildland Caving Opportunities on the Lincoln National Forest

By Brad Bolton

DOES THE HALL OF THE WHITE GIANT Tour or the Spider Cave Tour sound really exciting to you? Signing up for one of these tours is a great way to experience ‘wild caving’ where you rely on your own wits and physical strength to climb and negotiate through cave passages. For folks that really enjoy these types of trips there are many other caves that can 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 the caves. The caves are in a completely natural setting nestled in the high mountains and deep canyons. Visiting caves on 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 ridgelines. Primitive camping is allowed almost everywhere and car camping is allowed within 300’ of most roads. After finding the perfect campsite, hike 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.

Sitting Bull Falls (Lincoln National Forest)

By Jeremy Evans

THE GUADALUPE RANGE RANGER DISTRICT, the southern-most district on 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 water falls (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 acid 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 1900s, bringing horses, which proved to be very valuable to the Apache. By the mid 20th century, settlers, ranchers, businessmen, cattlemen, and outlawlaws had migrated into the area. Because of the rough and remote terrain, the Guadalupe Mountains were settled very slowly.

In the 1950’s the Civilian Conservation Corps was assigned to the area and built impressive stone structures that still stand today in 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 in 1995, due to an El Nino event in the Fall of 2005, 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.

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 Guadalup Ranger District office located at 5303 Buena Vista Drive in Carlsbad, or call 575-885-4081.

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.

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 out there as enjoy YOUR National Forest.

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

**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)**
575-887-556
www.fs.usda.gov/lincoln/home
The forest encompasses 1,053,441 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.

Open daily except December 25. Wheelchair accessible.

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

**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.

**BRUNTON 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.

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