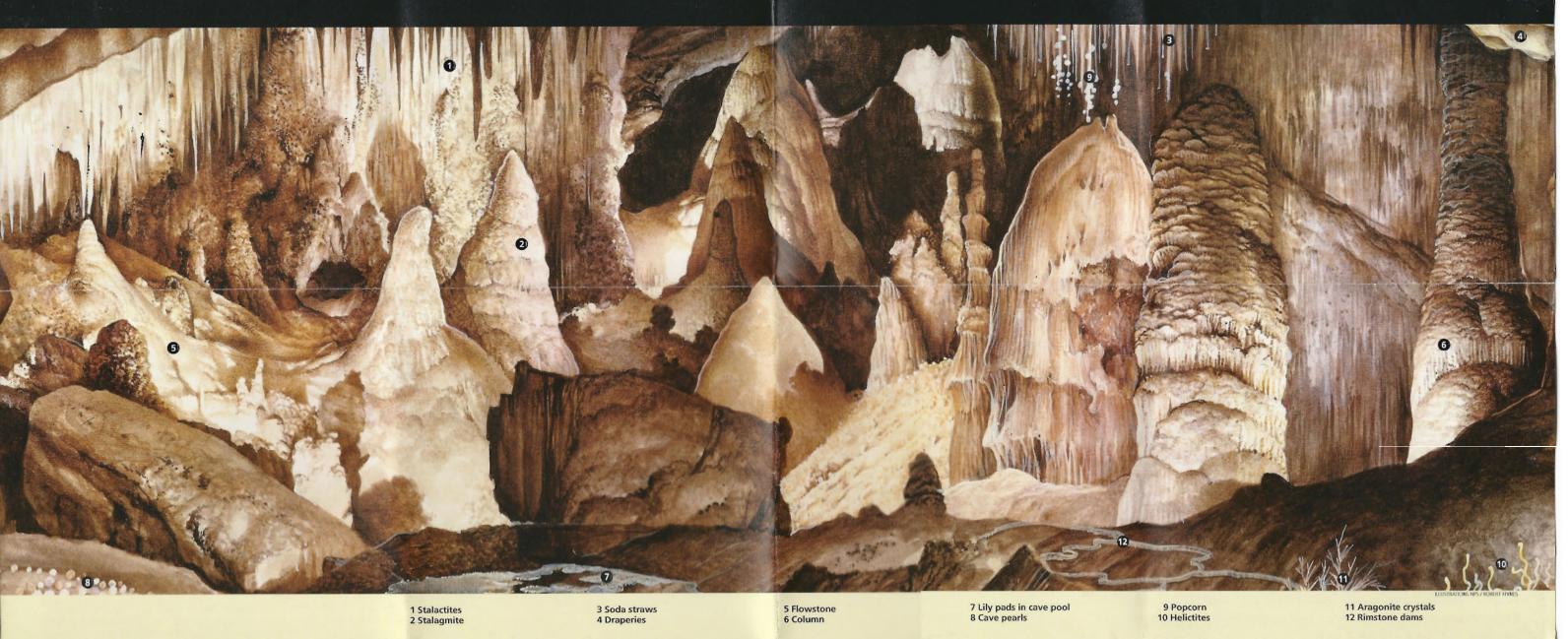
Exploring the Chambers of Wonders



The Cave is Created and Decorated, Drop by Drop

The story of Carlsbad Cavern begins 250 million years ago with the creation of a 400-mile-long reef in an inland sea that covered this region. This horseshoe-shaped reef formed from the remains of sponges, algae, and seashells and from calcite that precipitated directly from the water. Cracks developed in the reef as it rose. Eventually the sea evaporated, and the reef was buried under deposits of salts and gypsum.

Then, a few million years ago, uplift and erosion of the area began to uncover the buried rock reef.

During the uplift that would become the Guadalupe Mountains, rainwater seeped downward through cracks and faults in the limestone. At the same time, hydrogen sulfide-rich water migrated upward from vast oil and gas fields to the south and east. These two waters mixed, forming sulfuric acid, which dissolved the limestone and opened up the fractures and faults into the large chambers we see today. As the mountains were pushed up, the level where the rooms and passages in the cave were being formed moved lower into the ancient reef rock. This

process created nearly horizontal levels connected by steep passages. In Carlsbad Cavern, the older Bat Cave level and the younger Big Room level are connected by the steeply descending trail from the natural

The decoration of Carlsbad Cavern with stalactites, stalagmites, and an incredible variety of other formations began over 500,000 years ago after much of the cavern had been carved out. It happened slowly--drop by drop—at a time when a wetter, cooler climate prevailed. Creation of each formation depended

on water that dripped or seeped down into the limestone bedrock and into the cave. As a raindrop fell to the ground and percolated downward, it absorbed carbon dioxide gas from the air and soil, and a weak acid was formed. As it continued to move down, the drop dissolved a little limestone, absorbing some of the basic ingredient needed to build most cave formations—the mineral calcite. Once the drop finally emerged in the cave, the carbon dioxide escaped into the cave air. No longer able to hold the dissolved calcite, the drop deposited its tiny mineral load as a crystal of calcite.



Billions and billions of drops later, thousands of cave formations had taken shape. Oh, the shapes they

Where water dripped slowly from the ceiling, soda straws and larger stalactites appeared. Water falling onto the floor created stalagmites. Sometimes a stalactite and stalagmite met and merged into a column. Draperies were hung where water ran down a slanted ceiling. Flowstone was created by water flowing over the surface of a wall or floor while depositing layers of calcite. Cave pearls, lily pads, and rimstone

dams appeared where pools of water occurred in the cave. Like pearls from oysters, cave pearls developed as layer upon layer of calcite built up around a grain of sand or other tiny object. Lily pads formed on the surface of pools, while dams formed

Another type of cave formation that decorated cave walls and even other formations was popcorn, which formed when water evaporated and left behind aragonite. Aragonite is a mineral chemically identical to calcite but with a different crystal

where water flowed slowly on the

structure. These crystals tend to be small, delicate, and shaped like

Some of the more unusual formations that occur in Carlsbad Cavern are helictites. They grow seemingly without regard to gravity, their twisting shapes governed by crystal shapes, impurities, and the force of water under pressure.



tailed bats. The bats, which are mammals, migrate from Mexico to Carlsbad Cavern each year to give birth and raise their young. Young are born in June, under the cover of darkness and away from predators or disturbances. A female usually has just one offspring. Each birth occurs on

next four to five weeks, the youngster stays on the ceiling. During the day, mothers and pups hang in clusters on the ceiling, resting and nursing. As many as 300 bats may crowd into one square foot. At night the young are left in the cave while the adults leave to feed.

of its cry. In July or August eech young bat takes its first flight, joining the adults on nightly forays. In Bat Cave, bats share their quarters with only a few insects and spiders. In late October or early November the adults and young leave for Mexicoand return again next year.



Mexican free-tailed bats are born nak

Cavern. Then in a matter of minutes a thick bat whirlwind spirals out of the cave up into the darkening night sky. The exodus can last from 20 minutes to 2½ hours. Once out of the cave the mass of thousands of bats undulates, serpentine fashion, toward the southeast

its sonar system, each bet may catch and eat more than half their body weight in insects in a single night. With the coming of dawn, the bats begin flying back to the cave individually or in small groups. They reenter the cave in a fashion almost as remarkable as their departure.

and plummets like a hailstone into the blackness of Carlsbad Cavern, making strange buzzing sounds as it does. One by one, the bats return to the safety of Bat Cave, where they sleep until dusk the next evening.

Lure of the Unknown

Over 1,000 years ago American Indians ventured into the entrance of Carlsbad Cavern. They left no record of entering the dark zone of the cave, but they did leave mysterious drawings on cave walls near the natural entrance. In the 1800s settlers discovered the cavern, drawn to it by the spectacle of hundreds of thousands of bats rising up out of the natural entrance in the evening. Some stayed on to mine the huge deposits of bat guano in the cave and sell it as a natural fertilizer. A cowboy named Jim White became fascinated by the cave and spent hours exploring it. White was eager to show the natural wonders of this extraordinary place to others, but few believed his improbable tales of a huge underground wilderness full of unusual formations lit took photographs to convince skeptics that Carlsbati Cavern was everything it was said to be.

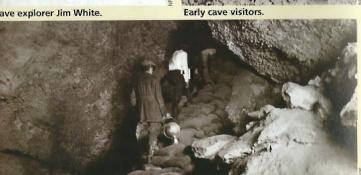
In 1915 black-and-white pictures taken by Ray V. Davis, who accompanied White on a cave trip, were displayed in the town of Carlsbad, N.M. They created a sensation. People clamored to see the marvelous cave. White took them on tours that began with a 170-foot descent in a bucket once used to haul bat guano from the cave.

Word of the cave spread, finally reaching Washington, D.C. Again, there were nonbelievers. In 1923 the U.S. Department of the Interior sent Inspector Robert Holley to see whether Carlsbad Cavern was truly an outstanding natural scenic wonder. Originally a skeptic, Holley wrote in his final report: "I am wholly conscious of the feebleness of my efforts to convey in words the deep conflicting emotions, the feeling of fear and awe, and the desire for an inspired understanding of the



Cave explorer Jim White.





National Geographic Society expedition, 192.14, climbs a stairway made of yumo bags.



Chandelier Ballroom in Lednuguilla Cave has spectacular gypsum tormation

Divine Creator's work which presents to the human eye such a complex aggregate of natural wonders."

Later that year Carlsbad Cavern was proclaimed a national monument. White, who continued cave explorations for most of his life, became its first chief ranger. In 1930 Congress created Carlsbad Caverns National Park. Through illustrated articles in magazines like National Geographic and by word of mouth, Carlsbad Caverns became one of the world's most celebrated cave systems and was designated a World Heritage Site in 1995. The park has expanded and now includes 46,766 acres and over 100 other caves.

Experienceà underground explorers, or cavers, and cave scientists are the Christopher Cd umbuses of today journeying beyond what is known into the anknown. For many wears

cavers felt a strong breeze blowing from the floor of a small cave known as Misery Hole. In 1986 they received permission to explore and break through this level. Their discoveries opened Lechuguilla Cave.

Lechuquilla Cave extends over 112

miles and holds a spectacular but fragile ecosystem. To protect this system, entry into Lechuguilla is restricted to exploration and scientific groups. Lechuguilla Cave will probably not be opened to the public. Within, cave scientists have discovered microbes that produce enzymes capable of destroying cancer cells. Scientific discoveries continue to give us clues about the complex creation of the area's caves, about bats and other members of the cave community, and how human activities affect these fraghe underground worlds.

Natural Entrance

feasting on insects. You

October. Check at the

scheduled time or call

the bats, cameras and

camcorders are not al-

lowed at the bat flight

eign objects ruin the nat-

pools and are difficult to

remove. Also, the chemi-

cal reaction among the

foreign objects, the water, and the rock can

leave permanent stains

Photography is permit-

ted on most cavern

tours. Photographers

should not step off the

trails or rest tripods or

Strollers are not permit

ted because parts of the

trails are steep and nar-

ural appearance of the

575-785-3012. To protect

visitor center for the

can view this exciting

spectacle from the out-

door amphitheater at the

cave's natural entrance.

Before each flight a park

ranger gives a short talk

on bats. Because the bats

winter in Mexico, the

flights occur only from

Preserving a National Treasure

Cave Regulations

park regulations.

Please help preserve Carls-

park caves by observing

bad Cavern and other

Touching any cave for-

mation is prohibited.

Formations are easily

broken, and the oil from

your skin permanently

tobacco is not permitted.

Eating and drinking are

not permitted except in

the underground rest

area and lunchroom.

Throwing coins, food, or other objects in cave

pools is forbidden. For-

discolors the rock.

The Bat Flight

bats of Carlsbad Cavern is a natural phenomenon

as fascinating as the cave

Mexican free-tailed bats

(also known as Brazilian

free-tailed bats) fly from

Protection and preserva-

tion of Carlsbad Cavern

is the mission of the Na-

tional Park Service. It's

your responsibility, too.

Unfortunately, over the

have damaged many of

more delicate formations.

Experimental techniques,

the cave's smaller and

like those that enable

rangers to match pieces

of broken stalactites and

painstakingly glue them

times successful, but in

age is irreversible.

practically all cases dam-

years careless people

the cave for a night of

itself. In a mass exodus

at dusk, thousands of

A Journey Underground

Your encounter with Carlsbad Caverns National Park begins in the Chihuahuan Desert of the Guadalupe Mountains. But beyond the somewhat familiar surroundings of rugged mountains and broad plains is another world. Away from sunlight, away from the flowering cactus, away from the songs of the desert birds and the howl of the coyote, lies the celebrated underground world of Carlsbad Cavern. It is an incomparable realm of gigantic subterranean chambers, fantastic cave formations, and extraordinary features. The first adventurers entering Carlsbad Cavern had no idea what to expect as they walked, crawled, and climbed down into the darkness. Today many of the wonders of Carlsbad Cavern are well known, yet the experience of exploring its chambers is every bit as exciting.

GREEN LAKE ROOM **QUEENS CHAMBER** PAPOOSE

Top of the Cross

Altogether over 30 miles of passages have been explored. The deepest chamber is 1,037 feet

slippery. • Use handrails

where available. . Take.

a jacket or sweater: the

cave's temperature is a

constant 56°F. • Stay on

trails. Beyond the trails

and injure yourself, and

there are unlighted pas-

Other Park Activities

sages where you could

are steep drop-offs

where you could fall

Carlsbad Cavern Tours

Self-guiding Tours:

Natural Entrance Route 1 mile, 1 hour

Ranger-guided Tour:

Cave tour routes wind through the chambers of Carlsbad Cavern, shown in the illustration above. Public tours view conty.

Public tours view only

part of the cave. Beyond these passages are more underground rooms,

of Carlsbad Cavern is

comfortable, enjoyable,

and safe, please follow

these important rules

and recommendations.

skid shoes for walking

on the paved cave trails,

which can be steep and

The visitor center has information

mountains, and desert. Publications,

topographic maps, a schedule of

activities, and exhibits are avail-

able. Rangers can help you plan

bookstore, and kennel are avail-

December 25.

575-785-2232

your visit. A restaurant, gift shop,

able at the visitor center. Services

about the park's underground,

· Wear low-heeled, non-

Safety in the Park

Big Room Route 1 mile, 1½ hours

Kings Palace Tour 1 mile, 1½ hours

Temple of the Sun-

You may choose from three main

Your first stop for any cave tour is the visitor center information desk,

Painted Grotto. Highly decorated and immense, the 8.2-acre Big Room is a must-see tour for all visitors to the park. You can get to the Big Room by elevators located in the visitor center. The relatively level and well-lit trails make this the ideal tour yvalking difficulties. Portions of the Big Room are accessible to visitors in wheelchairs; a map is available at the visitor center information desk. Visitors in wheelchairs should only go into the Big Room with as-

CORRIDOR

Natural Entrance Route The Natural Entrance route is a self-guiding tour available to visitors with plenty of time and in good physical condition. This one-mile tour follows the traditional explorers' route, entering the cavern through the large hi storic natural entrance. over 750 feet into the Earth followa tal'i and spacious trunk passage

called the Main Corridor. The route culminates in the lunchroom and underground rest area, near the elevators and the Big Room route starting point. Visitors in good health who plan to take both selfguiding tours may enjoy starting with the Natural Entrance route. Highlights along this route include Bat Cave, Devil's Spring, Green Lake Overlook, and the Bonevard, a complex maze of highly dissolved limestone rock reminiscent of Swiss cheese. Watch for Iceberg Rock, a single 200,000-ton boulder that fell from the cave ceiling thousands of years ago.

Kings Palace Guided Tour A third option is the Kings Palace tour, a 11/2-hour ranger-guided tour through four highly decorated scenic chambers. Departing from the underground rest area, the Kings Palace tour descends to the deepest portion of the cavern with paved trails, 830 feet beneath the desert surface. Although not as difficult

as the Natural Entrance route, this one-mile tour does require you to descend-and later climb-an eightstory-high hill. Look for speleothems or cave decorations including helictites, draperies, columns, and soda straws. Rangers often conduct blackout programs during this tour, briefly turning off all artificial lights to reveal the permanent inky blackness of the natural cave environment Reservations are suggested; contact the park or see our website. A separate fee is charged for this tour.

All trails in the cave are paved and

well lit. You should wear comfortable, closed-toe shoes with rubber soles for maximum safety and traction. The cave temperature varies little from the annual 56°F average, making a sweater or light jacket appropriate year-round. You may want to bring a camera and a flashlight. Strollers are not allowed in any underground cave area, but infant backpacks are permitted on the self-guiding tours.

A pre-tour restroom stop is advisable because restrooms are only available in the visitor center and at the underground rest area and lunchroom. All tours are preceded by a mandatory cavern orientation briefing to promote resource protection and cavern safety. All tours exit the cave by elevator.

Rangers are available throughout the cave to protect park resources and to help you with information and questions. On both self-quiding tours, audio guides are available to provide you with in-depth information about ecology, history, and cave formation. To enjoy the natural quiet of the cave, please speak

The cavern is open daily except December 25 and operates on summer and non-summer hourly schedules. For current hours and information contact the park at 575-785-2232 or www.nps.gov/cave.

BIG ROOM

Crystal Spring Donne

Exploring the Cave

cave tour options depending on your time, interest, and physical ability. Two are self-guiding; the third is a ranger-quided tour.

where rangers can answer your questions about tours, and you may purchase tickets. The basic entry fee allows you to take either, or both, self-guiding tours. Rangers at the information desk can provide information on special ranger activities. They can tell you about wild cave tours that may be available.

Big Room Route The basic tour through Carlsbad Cavern is the Big Room Route, a onemile, self-guiding, underground stroll around the perimeter of the largest room in the cave. Taking approximately 11/2 hours, this circular route passes many large and famous features, including Bottomless Pit, Giant Dome, Rock of Ages, and

Visitor

Center

Picnic area

Unpaved road

The Natural Entrance route descends ing steep and narrow trails through

Camping and Picnicking

There is no developed campground in the park, but the nearby towns of Whites City and Carlsbad have several. These towns have lodging, restaurants, gasoline stations, and other services. Camping in the backcountry requires a permit, available free at the visitor center. Picnic tables are near the visitor center and in Walnut Canyon. Rattlesnake Springs has a picnic area with tables, grills, dinking water, and restrooms.

Expect warm summers and mild winters. Average summer highs are in the 90s°F; winter highs are in the 50s and 60s°F. Thunderstorms occur in summer, posing the danger oflightning in higher areas and of floods in low-lying areas.



Christmas Tree, Slaughter Canyon Cave

Slaughter Canyon Cave

Ranger-guided tours of Slaughter Canyon Cave take you into an underground wilderness without electricity, paved walkways, or modern conveniences. In this wild cave, darkness is penetrated only by the light of flashlights carried by tour members. Highlights of the two-hour tour are the sparkling. crystal-decorated Christmas Tree column and the Chinese Wall, a delicate, ankle-high rimstone dam. Old bat guano mining excavations can be seen. You must hike a strenuous 1/2-mile trail to the cave entrance where the tour begins. Sturdy walking shoes, flashlights, and water are required. Tours are given daily in the summer season and weekends the rest of the year. A fee is charged; reservations are required. For details contact the park or check our website.

are available year-round except For More Information Carlsbad Caverns National Park 3225 National Parks Highway Carlsbad, NM 88220-5354 www.nps.gov/cave

The 91/2-mile Walnut Canyon Desert Drive is a gravel, one-way loop through dramatic desert mountain scenery. Passenger vehicles can travel the road easily-but the narrow, twisting route is not recommended for trailers or motor homes. The visitor center has guide booklets.

get lost. Also, fragile

formations on the floor.

walls, and ceilings can

be damaged by anyone

straying from the trails.

unattended in vehicles

months. Kennel services

are available at the visi-

ANIQITAN

CARLSBAD CAVERNS

NATIONAL PARK

Do not leave pets

during the summer

The park's trail system includes a short nature trail and, for experienced hikers, over 50 miles of primitive backcountry trails. Trailheads are located along each of the park roads, Backcountry hikers should carry an ample supply of water and a topographic map. Overnight hikers must register at the visitor