

# Wind Cave

NATIONAL PARK • SOUTH DAKOTA

On the southeastern flank of South Dakota's Black Hills, Wind Cave National Park preserves part of the original prairie ecosystem. Preserved here also is a distinctly different type of limestone cavern—a series of subterranean passages and rooms, some lined with colorful calcite crystal formations. The strong currents of air that blow alternately in and out of the cave suggested its name. This strange phenomenon is apparently caused by changes in atmospheric pressure. When outside atmospheric pressure drops below that inside the cave, the wind blows outward; when the atmospheric pressure rises, the wind blows into the cave. Stop at the cave entrance to read nature's barometer. The 44-square-mile park includes a prime example of mixed-grass prairie—a rich natural blending of tall, medium, and short grasses—with a sprinkling of wildflowers that lend color to the scene in spring and summer. Here you may behold the beauty of a sea of wild grass rippling in the prairie wind.

#### A WILDLIFE SANCTUARY

The park is a sanctuary for many species of animals native to the Great Plains and the Rocky Mountains before the arrival of American pioneers. One of the park's main attractions is its bison herd. It is a rare day that you can't see from the road at least a few of these huge, shaggy beasts. As you drive through the park, you will notice several towns of black-tailed prairie dogs, a remnant of those that once covered many square miles of the Great Plains. Stop and watch the antics of these quick-moving little rodents, and visit the roadside exhibit near one of the towns to learn about their habits.

Here, too, is the graceful pronghorn, swiftest of North American mammals, and the only horned

species in the world that sheds its horn sheath annually. True antelopes never shed horns or sheaths. Its tan-and-white coat and conspicuous white rump patch help to identify the pronghorn. Among the other mammals of the park are elk, deer, coyote, badger and raccoon.

The long list of park birds includes meadowlarks, woodpeckers, warblers, chickadees, sharp-tailed grouse, kingbirds, bluebirds, and magpies.

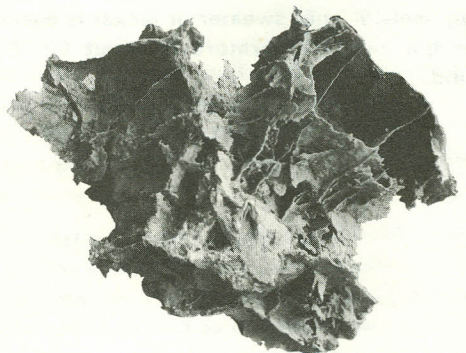
#### FORESTS AND FLOWERS

Great expanses of grassy plain separate this part of South Dakota from the deciduous forests to the east, Rocky Mountain forests to the west and the desert vegetation of the Southwest. Nevertheless, the flora in Wind Cave and the rest of the Black Hills has received immigrants from all these sources. Here are bur oak and American elm from the east; yucca, cactus, and cottonwood from the arid southwestern plateaus; and two species of conifers—ponderosa pine and Rocky Mountain juniper—from the Rocky Mountains.

Dominant grasses in the park include representatives of both true prairie and short-grass plains. Among the former are prairie junegrass, needle-grasses, and blue stems; the latter are represented by buffalograss and grammas. Here, too, in spring and summer, is a large assortment of wildflowers. Look for pasqueflower (South Dakota's State flower), scarlet globemallow, prairie coneflower, mariposa lily and prickly poppy. Some, such as the verbenas, parade their colors until the crisp frosts of autumn.



*The bison and the prairie dog, the largest and one of the smallest mammals on the short-grass prairie, have shared the same habitat for centuries. Boxwork is the common formation in the cave. This chandelier boxwork is from the Temple Room.*



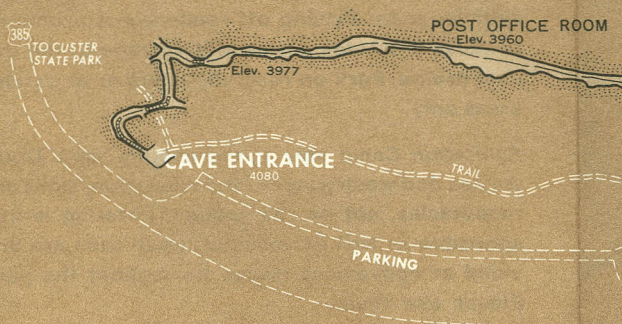
## GEOLOGY OF THE CAVE

The limestone bed from which Wind Cave was formed is from 300 to 630 feet thick in the Black Hills region. It is known as the Pahasapa limestone, a rock formation deposited in a great inland sea during the Mississippian period, about 300 million years ago. After deposition of this limestone, several periods of elevation and subsidence occurred. During periods of submergence, the Pahasapa limestone was covered by several hundred feet of sediments. The last uplift of the land from beneath the sea began at the end of the Cretaceous period, some 60 million years ago. Geologists believe the formation of Wind Cave began during this uplift.

The limestone fractured when it was subjected to uplift or warping. The closely-spaced cracks served as the mold for the cave's characteristic "boxwork" formations. The boxwork was formed when calcium carbonate was deposited in the cracks and crevices as calcite (a crystalline form of calcium carbonate). Later the more soluble limestone, between the calcite veins, was dissolved, leaving the network of cracks in relief which we now call boxwork. Besides the predominant boxwork formation, displays of unusual calcite "frostwork" and "popcorn" are seen. Remote areas of the cave feature delicate gypsum formations and huge helictite "bushes." Flowstone decorations, including stalactites and stalagmites, are uncommon.

Regular and candlelight tours follow about 1¼ miles of cave passages that have been made more comfortable by electric lighting, stairways and hard-surfaced trails. Another 15 miles of passages have been explored, but they are retained in their natural state. The total extent of Wind Cave is unknown.

- Surface Features
- Upper level. Approximate limits of elevation, 4080 to 3930 feet.
- - - - - Intermediate level. Approximate limits of elevation, 3930 to 3880 feet.
- ..... Lower level. Approximate limits of elevation, 3880 to 3840
- ===== Stairway.



## DISCOVERY AND EXPLORATIONS

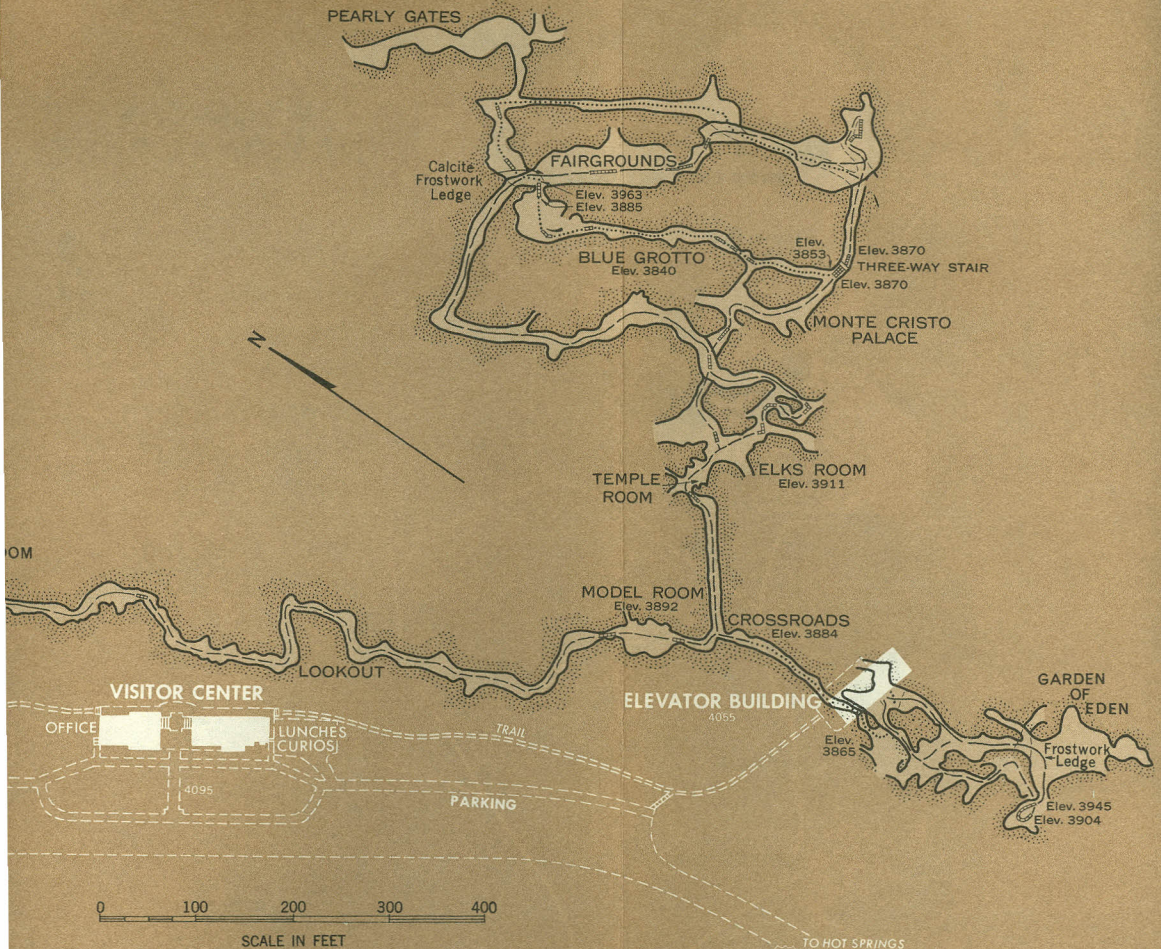
Tom Bingham, a Black Hills pioneer, is credited with the discovery of the cave in 1881 while deer hunting. He was attracted by a strange whistling and, after searching about in the undergrowth, discovered that it was caused by wind escaping through a small hole in some rocks. For several years after discovery, the area including the cave entrance lay open to claims. The South Dakota Mining Company filed location certificates on the cave in 1890. That same year, Jesse D. McDonald, accompanied by his sons, Elmer and Alvin, came to manage the property for the company. They made the first serious exploration of the cave and conducted the first guided tours.

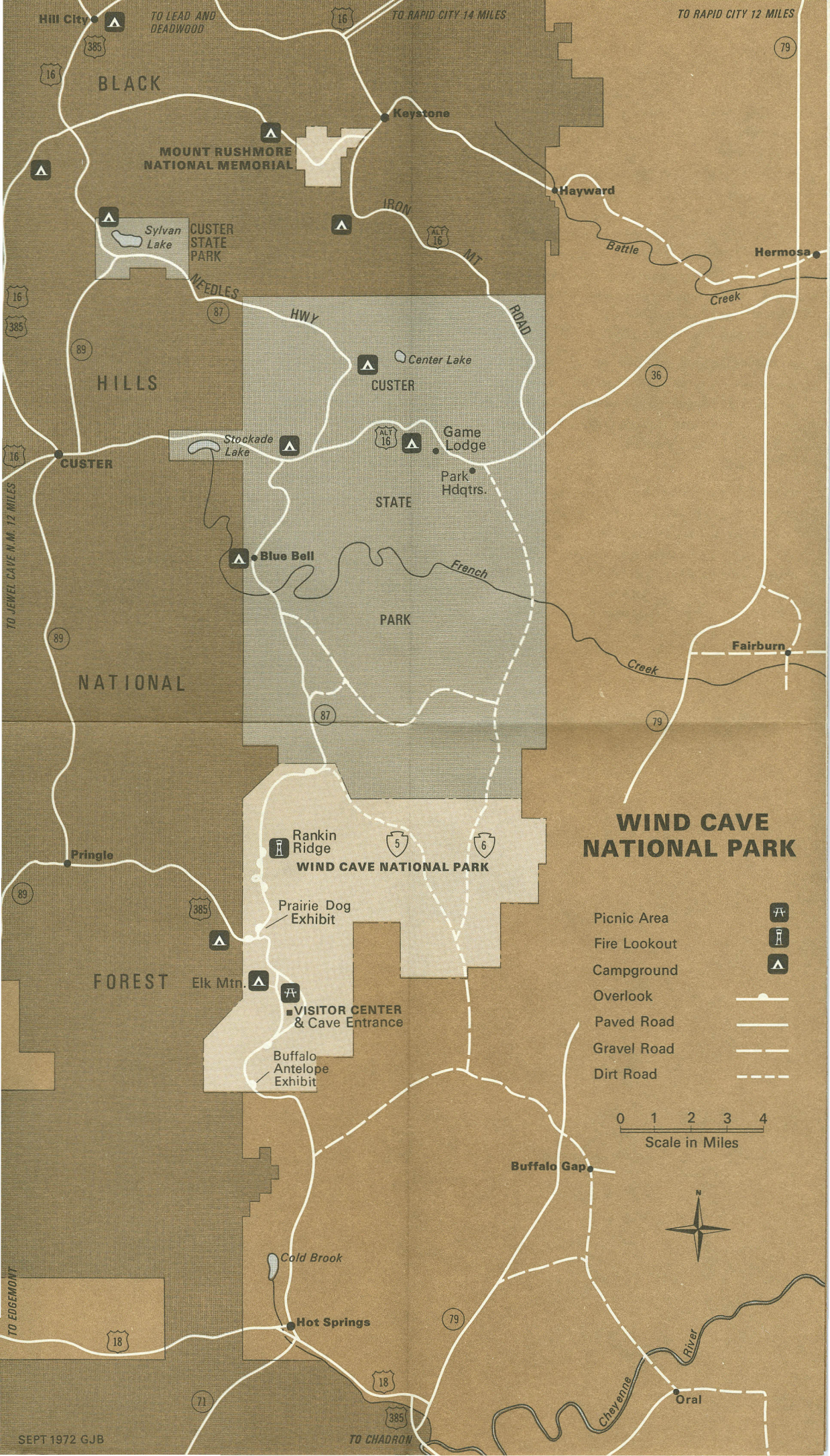
Alvin McDonald discovered many of the passages and rooms and kept an extensive diary in which he estimated distances, kept a record of explorations, and named rooms, interesting formations, and chief routes. A plaque now marks his grave near the cave entrance.

In 1892, the elder McDonald and several other people, including John and Charles Stabler, formed the "Wonderful Wind Cave Improvement Company" and took over the property. This company after opening passages and building stairways, operated the cave and guided visitors. On January 9, 1903, President Theodore Roosevelt signed a bill establishing Wind Cave National Park.



*From the age of 17 until he died at 20, Alvin McDonald explored hundreds of passages in the cave. In 1892 he and three other persons discovered one of the largest rooms. "George A. Stabler noticed a large hole in the roof," McDonald wrote in his diary. "We were all looking up the hole & wondering how we could get up there when I suggested that we could follow that long rock and climb up from the other end of it . . . when we got where the stone stopped there lay above us and on all sides of us an enormous (sic) cavern . . . Stabler named the room the 'Fair Grounds' and the name is very appropriate for the floor is unusually level and it contains nearly every kind of specimens that are found in the cave."*





Hill City

TO LEAD AND DEADWOOD

TO RAPID CITY 14 MILES

TO RAPID CITY 12 MILES

BLACK

MOUNT RUSHMORE NATIONAL MEMORIAL

Sylvan Lake  
CUSTER STATE PARK

IRON MT ROAD

Hayward

Battle Creek  
Hermosa

HILLS

Center Lake  
CUSTER

Stockade Lake

Game Lodge

STATE

Park Hdqtrs.

Blue Bell

French

PARK

NATIONAL

Fairburn

Pringle

Rankin Ridge

WIND CAVE NATIONAL PARK

Prairie Dog Exhibit

FOREST

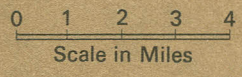
Elk Mtn.

VISITOR CENTER & Cave Entrance

Buffalo Antelope Exhibit

WIND CAVE NATIONAL PARK

- Picnic Area 
- Fire Lookout 
- Campground 
- Overlook 
- Paved Road 
- Gravel Road 
- Dirt Road 



Buffalo Gap

Cold Brook

Hot Springs

Oral

## THE INTERPRETIVE PROGRAM

A wide variety of summer activities are available to help make your visit more enjoyable and meaningful. Subterranean activities include ranger-guided regular tours, special candlelight tours, and half-day spelunking tours. Surface guided tours include a half-day nature hike and a wildlife caravan.

Evening campfire programs are presented in the campground. A fee is charged for each type of cave tour, but not for surface activities, except camping. Be sure to see the visitor center's exhibits on the area's human and natural history. A park ranger is on duty to answer your questions.

## BEST TIMES TO VISIT

Summer is the most popular time to visit the park. The weather is warm to hot, with occasional, brief, afternoon thunderstorms often accompanied by hail. If you wish to avoid crowds, plan your visit for spring or fall. Many of the Black Hills' attractions are open only from Memorial Day through Labor Day. Cave tours are usually conducted from April through October. The weather in the fall is generally warm and pleasant; springs can be blustery and occasionally marred by heavy snowfalls. Winter is mild to moderately severe, but icy roads, lack of accommodations and closed tourist attractions discourage visitors.

## PARK REGULATIONS

Regulations have been established to protect you and the park environment. Please observe them.

*Preserving natural features* It is unlawful to disturb, injure, destroy, deface, or remove any vegetation, rocks, minerals or cave formations. Do not even touch the cave formations and walls. Delicate crystal growths and boxwork are easily destroyed, forever marring the cave.

*Preservation of wildlife* The park is a sanctuary for many wild animals. Do not chase, harass, attempt to catch or feed any park animal. Hunting is not permitted in the park. *Firearms and other weapons are permitted only if they are packed so as to prevent their use.* All pets must be kept in vehicles, or caged, or leashed when in the park. Pets are not permitted in the cave or public buildings.

*Traffic* Drive carefully to protect yourself, other visitors and wildlife. Observe traffic signs. Park roads are also used by through traffic and commercial vehicles. Do not obstruct traffic by stopping on the road; pull over and let faster moving vehicles pass. Driving off roadways is prohibited because it creates permanent damage to the delicate prairie. Park on road shoulders or at parking areas only.

*Sanitation* Camp only at the campground. Dump wastes and wash water in the washroom sinks and receptacles, not on the ground. Littering is irresponsible as well as unlawful; trash cans are provided at convenient places throughout the park. Please use them.

*Fire Prevention* Camp- and stove-fires must not be left unattended. Thoroughly drown all campfires with water. Ground fires are not permitted during periods of extreme fire danger.

## ACCOMMODATIONS

Elk Mountain, the park's sole campground, is operated on a first-come, first-served basis. Wood, water, picnic tables, comfort stations and fireplaces are provided. Electrical, water and sewer hookups are not available. Campfires are limited to fireplaces. Cooking on gas or other types of portable stoves is always permitted. The campground is open from approximately May 15 through September 15.

Sandwiches and light lunches are provided by a concessioner in the visitor center during the summer. Camping supplies are not available in the park. There are numerous private and public campgrounds in the southern Black Hills. Motels, hotels, trailer courts, camping supplies, and garages are in the towns of Hot Springs and Custer.

## ADMINISTRATION

Wind Cave National Park is administered by the National Park Service under the U.S. Department of the Interior. A superintendent, whose address is Hot Springs, SD 57747, is in immediate charge.

As the Nation's principal conservation agency, the Department of the Interior has basic responsibilities for water, fish, wildlife, mineral, land, park, and recreational resources. Indian and Territorial affairs are other major concerns of America's "Department of Natural Resources." The Department works to assure the wisest choice in managing all our resources so each will make its full contribution to a better United States—now and in the future.

## FOR YOUR SAFETY

People have been killed or seriously injured by buffalo. Do not attempt to approach them on foot. Stay on the highway near your car.

While touring the cave, wear low-heeled, walking shoes with non-slip soles. Do not wear sandals or shoes with leather or hard composition soles or with high heels. A light sweater or jacket is desirable, for the cave temperature is about 50° F. year round.

**National Park Service**  
**U.S. DEPARTMENT OF THE INTERIOR**