

# 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.

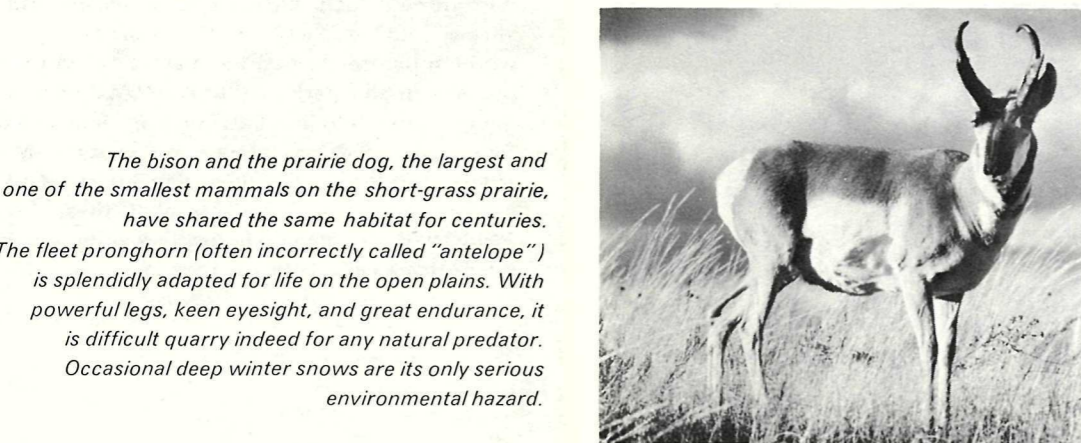
#### A WILDLIFE SANCTUARY

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



*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. The fleet pronghorn (often incorrectly called "antelope") is splendidly adapted for life on the open plains. With powerful legs, keen eyesight, and great endurance, it is difficult quarry indeed for any natural predator. Occasional deep winter snows are its only serious environmental hazard.*



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 bluestems; 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.



#### 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 tours follow about 1-1/4 miles of cave passages that have been made more comfortable by electric lighting, stairways, and hard-surfaced trails. Another 32 miles of passages have been explored, but they are retained in their natural state. The total extent of Wind Cave is unknown.

#### 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.



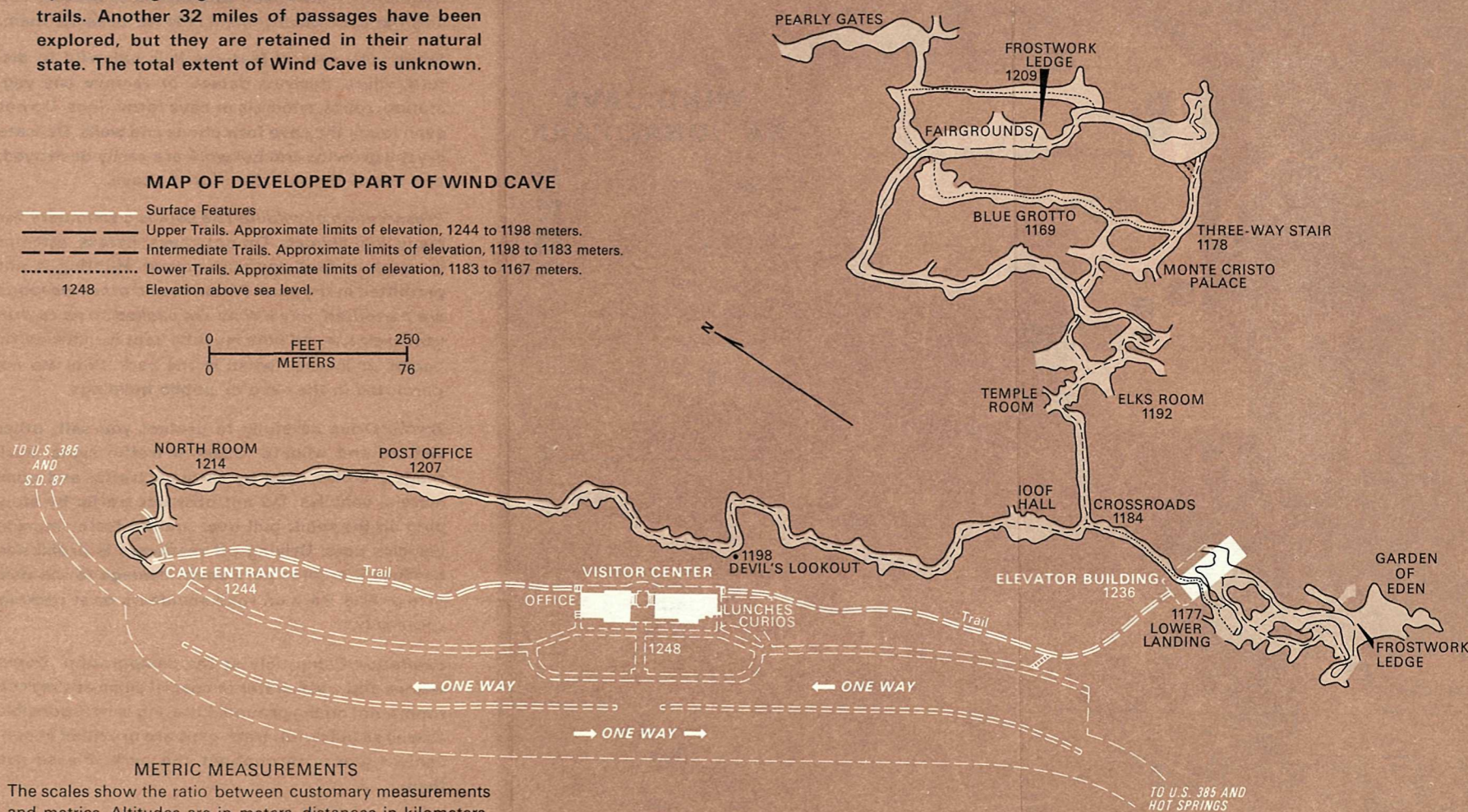
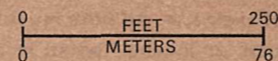
*From the age of 17 until he died at 20, Alvin McDonald explored hundreds of passages in the cave. In 1892 he and three other persons discovered one of the largest rooms. "George A. Stabler noticed a large hole in the roof," McDonald wrote in his diary. "We were all looking up the hole & wondering how 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."*

#### MAP OF DEVELOPED PART OF WIND CAVE

- Surface Features
- Upper Trails. Approximate limits of elevation, 1244 to 1198 meters.
- - - Intermediate Trails. Approximate limits of elevation, 1198 to 1183 meters.
- ..... Lower Trails. Approximate limits of elevation, 1183 to 1167 meters.

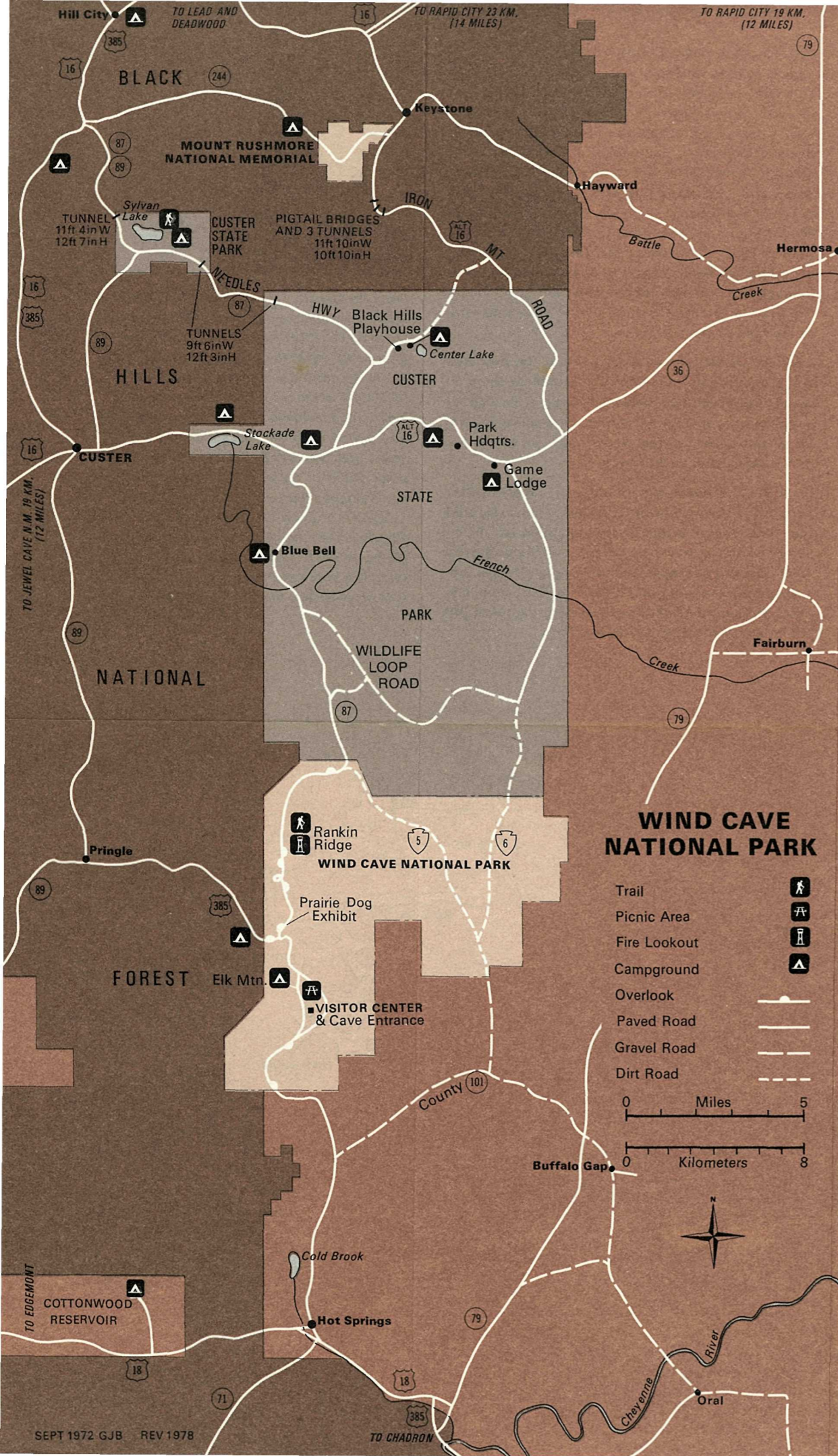
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Elevation above sea level.



#### METRIC MEASUREMENTS

The scales show the ratio between customary measurements and metrics. Altitudes are in meters, distances in kilometers. One meter is 3.280833 feet, 1 kilometer is 0.62137 miles.



### THE INTERPRETIVE PROGRAM

Many summer activities are available to help make your visit more enjoyable and meaningful. Subterranean activities include ranger-guided one-mile and 0.5-mile tours, historical candlelight tours, and spelunking tours. Surface programs include a variety of ranger-guided activities.

Evening campfire programs are presented in the campground in the summer season, mid-June through mid-August. A fee is charged for each type of cave tour, but not for surface activities (except camping). At the visitor center are exhibits on the area's human and natural history. A park ranger is on duty to answer your questions. You can obtain a current schedule of activities at the visitor center.

### BEST TIMES TO VISIT

Summer is the most popular time to visit the park. The weather is warm to hot, with occasional brief afternoon thundershowers 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. A full schedule of cave tours is available during the summer season. Daily tours are available at other times of the year, but are given less frequently. The weather in the fall is generally warm and pleasant; spring can be blustery and is 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, and oils of the skin discolor 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 special sinks at the restrooms, 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** Wildfires are destructive and dangerous. Fires are permitted only in the fireplaces found in the campground, and must not be left unattended. Thoroughly drown all campfires with water. Help prevent destructive and costly wildfires.

Prescribed burning is a new resource management activity, and is used experimentally in the park to obtain more natural environmental conditions. You may see a prescribed fire or the results of a prescribed fire in the park, and we encourage you to ask questions about this new technique. Prescribed burns are ignited by authorized park personnel under very restricted and controlled conditions.

### ACCOMMODATIONS

Elk Mountain, the park's only 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. Weather conditions may alter these dates.

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 responsibility for most of our nationally owned public lands and natural resources. This includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure that their development is in the best interests of all our people. The Department also has a major responsibility for American Indian reservation communities and for people who live in Island Territories under U.S. administration.



The common limestone decoration in the cave is an intricate formation called boxwork.

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### FOR YOUR SAFETY

The cave trail is dimly lit, and the surface is paved but uneven. At certain places and at some times of the year the trail surface may be wet and slippery. **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. The cave temperature is about 53° F. at all times of the year.

Bison are wild. If disturbed or annoyed, they may attack you. For your own protection, view them from a safe distance. **PRAIRIE DOGS** can bite. The feeding of any wild animal in the park is prohibited. Prairie dog burrows may harbor rattlesnakes. **RATTLESNAKES** don't always give a warning before they strike. Always be alert while walking in the park. **WILD ANIMALS** may suddenly bound into the path of a moving vehicle. To avoid accidents, drive with caution. Many animals are more active during hours of darkness; extra care is necessary at these times. **POISON-IVY** is common in the park and elsewhere in the Black Hills. Learn to recognize and avoid it.

National Park Service  
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