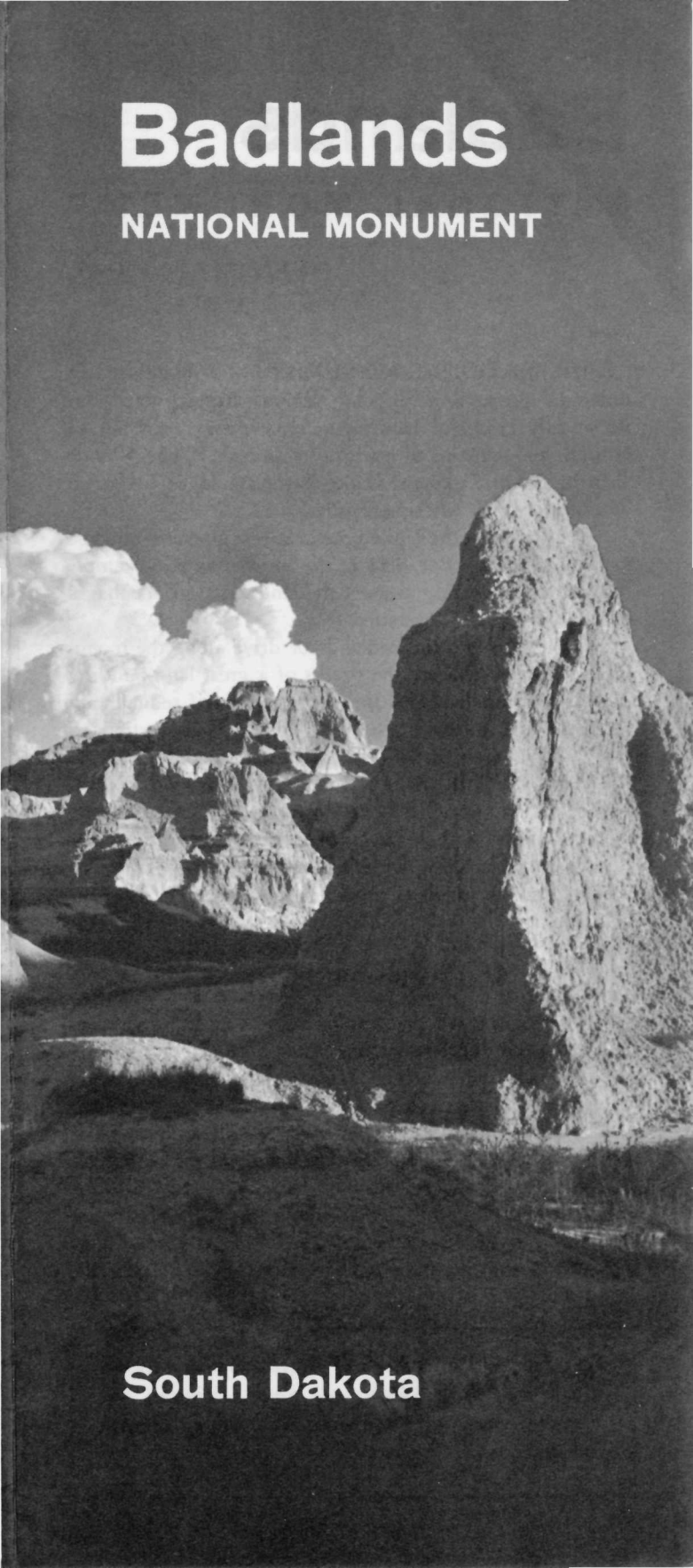
Badlands

NATIONAL MONUMENT



South Dakota

Badlands

NATIONAL MONUMENT

OPEN ALL YEAR

THIS NATIONAL MONUMENT was established in order to preserve a singular region that is noted for its weirdly beautiful landscapes, outstanding examples of erosion, and remains of prehistoric animals. The 40-mile strip of South Dakota's White River Badlands covers an area of more than 170 square miles.

Several areas in the United States have a type of landscape called badlands. But here is the most dramatic example of erosion, or wearing away of the land, on a surface that is poorly protected by vegetation.

As you hike into the badlands or drive along the monument road, you will see the results of a great land-building process—delicately color-banded formations of sedimentary rocks. These deposits are being cut in cross section so rapidly by erosion that the story of earlier deposition is revealed almost with the speed and continuity of a motion picture. Conditions that prevailed in the distant past, hinted at in the pagelike layers of rocks, and conditions that prevail today, boldly portrayed in the stark outline of pinnacle and spire, may prompt you to ask, "What happened here?"

WHAT HAPPENED HERE

To geologists and paleontologists, the rocks exposed at Badlands and the fossils they contain, together with related rocks in other areas, suggest what began happening here many millions of years ago.

The sedimentary rocks that you see—the clays, shales, and thin beds of sandstone—were deposited during Oligocene time, some 25 to 40 million years ago. At that time, geologists explain, this region was a broad marshy plain, covered with vegetation and crossed by sluggish streams. To the west and north lay the highlands of the Black Hills, which had been formed during late Mesozoic and early Cenozoic time by the same great disturbance in the earth's crust that resulted in the Rocky Mountain system.

The National Park System, of which this area is a unit, is dedicated to conserving the scenic, scientific, and historic heritage of the United States for the benefit and enjoyment of its people.

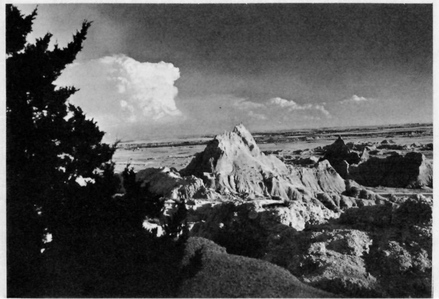
Down from the highlands flowed the silt- and sand-laden streams, tumbling gravel along the beds of their courses; and when they reached the flat plain they slowed their pace, spread their waters, and dropped part of their sediments. Centuries passed, and the sediments gradually accumulated.

The long stretches of time were marked by the birth, life, and death of the animals that splashed through the swamps or ranged the drier sections. Remains of some of the animals became embedded in the sediments and were preserved. And thus we know, from studying the fossils, what kinds of creatures lived here then.

Most fearsome of the creatures was probably the saber-toothed cat. Animals that it preyed upon included ancestors of the camel and the pig, the 3-toed sheep-size progenitor of the horse, and the titanothere. This gigantic rhinoceros-like grass-eater was the largest animal of its time. Among other animals that lived during the Oligocene epoch were ancestors of modern rats, squirrels, marmots, beavers, and rabbits, but not many were present-day types. There were also ancestral forms of gulls, pelicans, eagles, and owls.

Toward the end of the period of deposition, after more than 2,000 feet of sediments had been deposited, the scene slowly changed. Volcanic activity, possibly associated with the Black Hills and the uplifting of the Rocky Mountain front, ejected and hurled into the air great quantities of finely fragmented material, which the prevailing westerly winds bore eastward and spread as an ashen blanket over what is now the Badlands. The climate gradually changed from moist to semiarid. Silt-laden streams slowed down and finally stopped flowing. There was a lifting of the earth's crust, and erosion began.

Looking south toward the valley of the White River.



This transition had a powerful effect on the abundant life of that time. Some of the creatures, such as the titanothere, probably starved because they could no longer find the vegetation they required. Other less specialized animals were able to survive by migrating or by adapting themselves to the changing conditions.

And the face of the land changed. Streams now began to cut into the soft sedimentary rocks, exposing the whitish ash beds and the pink, red, tan, brown, bluish-gray, and gray layers of clays and shales and sandstones. The landscape began to appear as it looks today.

The processes of erosion continue. The occasional heavy rains, some of cloudburst proportions, in this part of South Dakota are major factors in the formation of the Badlands terrain. The soft rocks and loose soil are rapidly sculptured during the brief heavy rains, but they dry quickly and harden between storms to preserve the turreted ridges and sharp gullies. Rapid erosion and fast drying prevent a plant cover from developing—a plant cover that would retard the erosion.

A BIT OF PREHISTORY AND HISTORY

Probably the first white men to see the Badlands were French-Canadian trappers in search of beaver. They appropriately described this region as "les mauvaises terres à traverser" (bad lands to travel across). The Indians also had a name for it—"mako sica" ("mako" meaning land, and "sica" meaning bad).

Badlands National Monument contains ancient remains which indicate that Indians roamed over much of this country. Weapon points, knives, and scrapers, as well as chips and other camp refuse, are found in numerous places throughout the monument. Later Indians, probably the prehistoric Mandan and Arikara, brought pottery into the area on their seasonal bison hunts.

The Badlands were off the principal early travel routes, and hence they had only a minor role in the colorful episodes which figured so greatly in the settlement of the West.

But historians believe that two events of general interest occurred here. In 1823, Jedediah Smith, famous western explorer, probably saw much of the Badlands as he traversed the valley of the White River en route to the Black Hills. And in December 1890, the Sioux Indian Chief, Big Foot, left his camp on the Cheyenne River and began moving his band southward to the Pine Ridge Reservation. He temporarily eluded his pursuers, soldiers of the U.S. Seventh Cavalry, by using a little-known pass through the Badlands. However, the soldiers caught up with him near Wounded Knee Creek. The Battle of Wounded Knee, on December 29, was the last important clash between the white man and the Indian in the United States. Big Foot Pass is named for this Indian warrior.

The green of trees and prairie grasses, found in the many pockets and passes of the monument, relieves its generally barren appearance.

In 1846 and again in 1847, Dr. Hiram A. Prout, of St. Louis, published the first accounts of a fossil animal found in the Badlands. In 1849, Dr. John Evans explored and made fossil collections there. The report of Evans' findings was made by Dr. David Dale Owen, geologist of the General Land Office of U.S. Department of the Interior (now the Bureau of Land Management). Many paleontologists consider the Owen report as the beginning of the science of vertebrate paleontology in the United States. Since that time, many universities, museums, and scientific bodies have focused their attention on the area.

The monument was established on January 25, 1939, largely through the efforts of two men, the late United States Senator Peter Norbeck, of South Dakota, and Ben Millard, an early-day resident of the area. Two features in the monument, Norbeck Pass and Millard Ridge, commemorate their work.

PLANTS AND ANIMALS

Colorful wildflowers dot the landscape in the early spring and summer. About 60 percent of the monument is nearly barren throughout the year; the remaining area contains various types of grasses.

First of the wildflowers to appear are the pasqueflower and phlox, then the evening primrose, the wallflower, yellow sweetpea, and the loco, followed by the other members of the pea family. In June, the mariposa-lily appears by the thousands along the roadsides and in grassy meadows. Scarlet globemallow makes patches of color on the road shoulders. White, blue, and purple penstemon are common. One of the most spectacular floral shows is the pricklypear in full bloom. Fields of it stretch as far as the eye can see, each plant with its clusters of waxy, brilliant yellow blooms. The yucca, or Spanish-dagger, is in bloom in late June. You are requested not to pick flowers or dig plants in the monument. Picking and digging of these beautiful and distinctive plants would soon produce a barren roadside.

Small groves of juniper, with some ponderosa pine, grow in the vicinity of Sheep Mountain, and juniper is also found in many of the pockets and passes. These verdant patches relieve the barren appearance of the deeply eroded canyons and pinnacles.

Prevalent among the smaller forms of wildlife are chipmunks, ground squirrels, pocket gophers, and mice. You may see porcupines, badgers, cottontails, and jackrabbits, and—if you are lucky—you may catch a glimpse of the elusive coyote. Reptiles are less common, but rattlesnakes, bullsnakes, and blue racers are occasionally found.

Audubon bighorn, now extinct, were seen near Sheep Mountain less than 40 years ago. Bison (buffalo) herds grazed on the tablelands before 1880, and deer, elk, and pronghorn (antelope) occupied the area in certain seasons of the year. Of the variety of hoofed mammals that once roamed the Badlands, only the deer and pronghorn remain today.

Birds are present in surprisingly large numbers, especially on the grass-covered tablelands. Some are transients and are here for only a few days in the spring and autumn. Others nest here and move to warmer regions for the winter. Common monument residents are the American goldfinch, several species of sparrows and swallows, the white-breasted nuthatch, and the black-billed magpie.

TO HELP YOU ENJOY YOUR VISIT

WHEN TO VISIT. The monument is open all year. The most popular seasons are summer, spring, and autumn; nevertheless, a visit during the winter can also be rewarding even though sudden blizzards, which are characteristic of the northern Great Plains, may temporarily block roads. Although they may dismay the traveler, the blizzards mantle the sharp peaks and ridges with snow and enhance the striking scenery.

The best time of day to visit is early morning and late evening, when low suns produce the brilliant effects and long shadows that give the scene depth. For a special thrill, view the landscape during full moon: spires and pinnacles are set off by jetblack shadows, as if the skyline were cut from cardboard.

Parking areas and overlooks are located near unusual features or outstanding panoramas. Interpretive signs that explain some segment of the Badlands story are at most of these overlooks, and short trails lead to special views. So park your car, set your brakes, and enjoy the scenery.

PICNICKING AND CAMPING. Free picnic areas and campgrounds are operated on a first-come, first-served basis. No reservations can be made. Utility connections for trailers are not available, but there are comfort stations, and water can be obtained nearby. Open fires are not permitted in the monument; gas stoves and other self-contained fires are allowed in designated campgrounds.

THE NATURALIST PROGRAM. Be sure to make the visitor center near Cedar Pass one of your stops while in the monument, preferably one of your first stops if you are coming from the east. Colorful displays and exhibits in this building tell the Badlands story. Short recorded slide programs are also shown here to help you become better acquainted with the monument area. If you have any questions, ask the uniformed park ranger-naturalist on duty in the visitor center.

During the summer, park ranger-naturalists conduct evening campfire programs at the George H. Sholly Memorial Amphitheater. You can obtain information about these programs at the visitor center.

HOW TO REACH THE MONUMENT

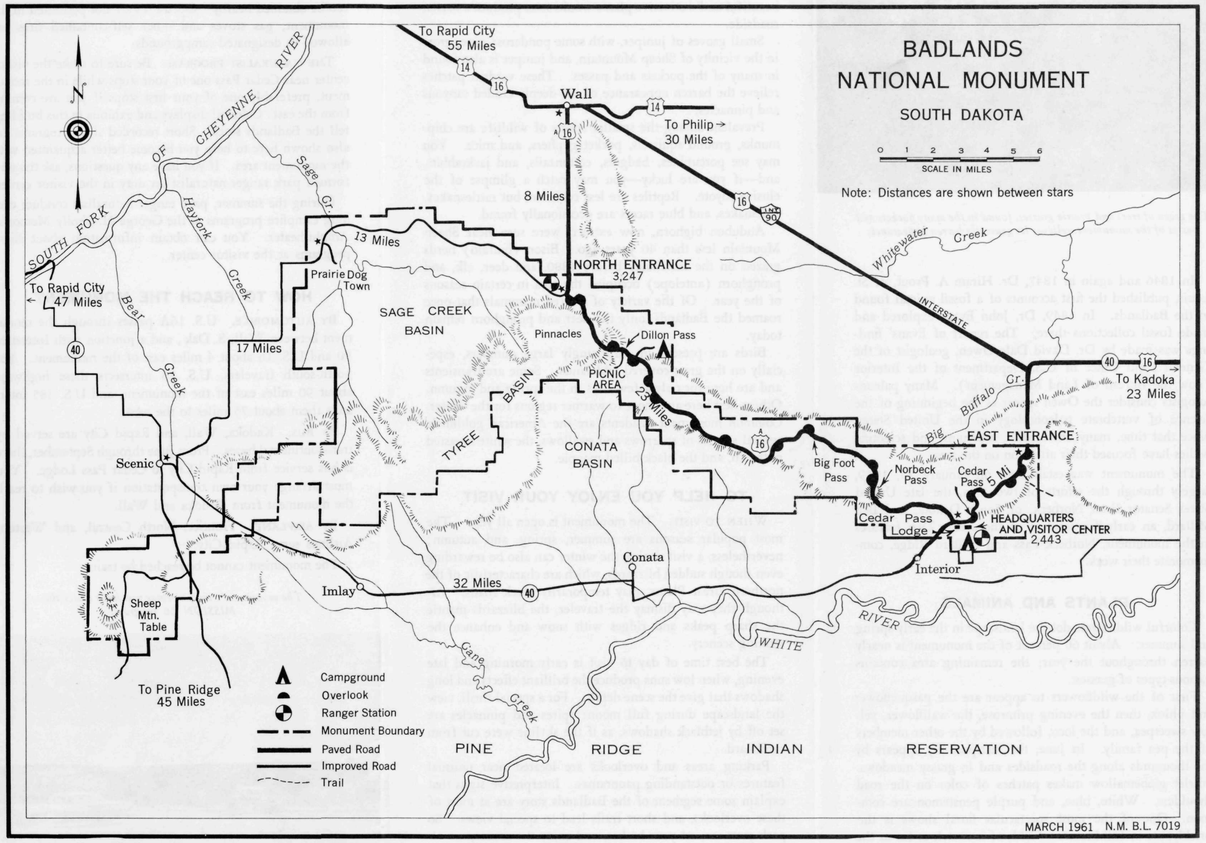
BY AUTOMOBILE. U.S. 16A passes through the monument between Wall, S. Dak , and a junction with Interstate 90 and U.S. 16 about 4 miles east of the monument. For north-south travelers, U.S. 83 intersects these highways about 90 miles east of the monument, and U.S. 385 intersects them about 75 miles to the west.

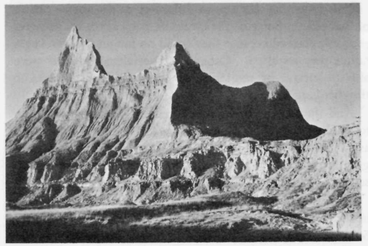
BY BUS. Kadoka, Wall, and Rapid City are served by transcontinental buses. From June through September, there is bus service from Rapid City to Cedar Pass Lodge. You must arrange your own transportation if you wish to reach the monument from Kadoka and Wall.

BY AIRPLANE. Frontier, North Central, and Western Airlines serve Rapid City.

The monument cannot be reached by train.

The monument's visitor center was built under the MISSION 66 program.





This roadside spire graphically illustrates the monument's weird erosional forms.

WHERE TO STAY

Cabins, meals, fountain service, gasoline, oil, souvenirs, and other items are available at Cedar Pass Lodge. This lodge, open during the summer, is on private land and is not subject to Government regulation or supervision.

HELP PROTECT YOUR MONUMENT

Badlands National Monument is a magnificent outdoor museum. The thoughtfulness of visitors who preceded you here has made it possible for you to see all the features in their natural, unspoiled condition. By observing the monument's regulations, you can express your consideration for those who will come after you. Here are the regulations you will want to remember:

MONUMENT FEATURES. Please do not drive over the grasslands. Leave all rocks, animals, and plants just as you find them. *Unauthorized removal of fossils or any natural* object is not permitted.

FIRES. Be sure that matches and cigarettes are entirely out before you dispose of them. Prairie fires are devastating.

ACCIDENTS. Report all accidents as soon as possible to the nearest park ranger or to monument headquarters.

SPEED LIMITS. The maximum speed on monument roads is 45 miles per hour. Zones of reduced speed limits are posted. The roads are designed for leisurely enjoyment of the monument scenery. *Drive carefully.*

LOST AND FOUND. Report any lost or found article to the monument headquarters. Articles unclaimed after 60 days will be returned to the finder.

DISPOSING OF LITTER. Please place trash in containers located in the parking areas. *Don't be a litterbug.*

ADMINISTRATION

Badlands National Monument is administered by the National Park Service, U.S. Department of the Interior. A superintendent, whose address is Interior, S. Dak., is the official in charge.

Created in 1849, the Department of the Interior—America's Department of Natural Resources—is concerned with the management, conservation, and development of the Nation's water, wildlife, mineral, forest, and park and recreational resources. It also has major responsibilities for Indian and Territorial affairs.

As the Nation's principal conservation agency, the Department works to assure that nonrenewable resources are developed and used wisely, that park and recreational resources are conserved for the future, and that renewable resources make their full contribution to the progress, prosperity, and security of the United States—now and in the future.

MISSION 66 AT BADLANDS

MISSION 66 is a 10-year conservation, development, and improvement program of the National Park Service. It was launched in 1956 and is scheduled for completion in 1966, the golden anniversary of the establishment of the National Park Service. This program is concerned with developing, staffing, and improving the areas that are managed by the National Park Service in such a way that assures their wisest possible use. For you, this means that work is being done that will permit your maximum enjoyment and understanding of the areas; for the areas themselves, it means the maximum preservation of the scenic, scientific, and historic resources that give them their distinction.

At Badlands, a visitor center has been built under this program, where exhibits and an audiovisual presentation describe the vistas and explain the earth's processes that are so graphically displayed within the monument. Other improvements include an amphitheater, a modern campground, realinement of the main monument road, a utility building, employee housing, and picnic facilities.

COVER: *Late afternoon shadows.*

UNITED STATES
DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

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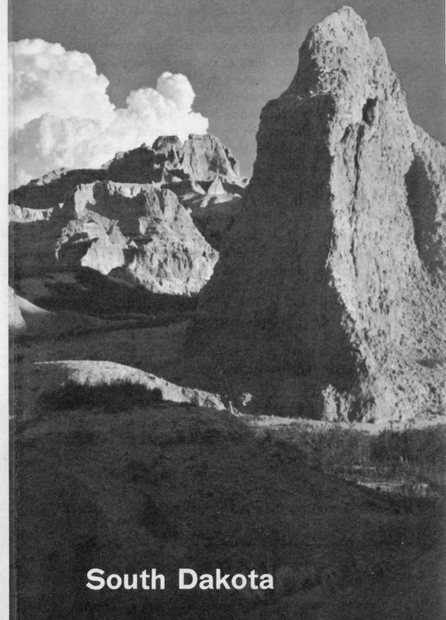

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