BADLANDS NATIONAL PARK

Badlands National Park contains 244,300 acres and preserves the world's finest deposits of mammal fossils from the Oligocene Epoch amidst some of the most spectacularly eroded landscapes to be found anywhere in the United States.

GEOLOGIC HISTORY

The geologic history of the Badlands and the fossils found here is an interesting one. The story begins about 80 million years ago, when this area was covered by a shallow inland sea. Materials brought in by rivers were deposited in the sea and later hardened into black shale.

Then, as the whole area was uplifted and the Black Hills area arose, the sea drained away. During the long period of erosion that followed, the surface layers of those ancient sea deposits were chemically altered, creating a color change in the rock. The low yellow mounds east and west of Pinnacles are remnants of those old sea deposits.

A long period of deposition followed in which streams heavily laden with silt and sand from the Black Hills built up a great flood plain more than 600 feet thick. A lush landscape and a climate similar to that of the present Gulf Coast supported varied and abundant life.

Conditions were ideal for fossilization. Bones of animals that lived and died at this time were either buried by river sediments or sank into the ooze and decaying vegetation of the marshes. As the deposition continued, these bones were buried deeper and deeper. It is these bones turned to stone that make the Badlands a valuable graveyard of ancient life.

The present landscape began to appear about 1 million years ago as the land gradually eroded to form the great pinnacles, sharp-edged ridges and spires that we see today. Rain and running water are slowly uncovering fossil bones that have been buried for millions of years.

The White River for thousands and thousands of years has cut deeply into that ancient plain, forming a broad floodplain lower than the surrounding land. On the northern edge of this floodplain, the Badlands Wall has formed, stretching for more than 50 miles and rising 200 feet or more to meet the upper plain to the north. It is this Badlands Wall from which the Badlands took its name.

HUMAN HISTORY

The Oglala Sioux Indians, who were here when the first explorers entered the region, called this area "mako sica" or "lands bad" because the barren buttes held little of subsistence value to them. The French fur trappers and traders called the area "mauvaises terres a traverser" or "bad lands to travel across."

The discovery of great fossil deposits drew paleontologists to the area. However, exploration and scientific study were limited at that time because the Badlands had been ceded to the Indians as part of a great reservation. In 1890 when the reservation was cut back, settlers came with their homesteads and cattle. In that same year, Chief Bigfoot led his people through the Badlands toward Wounded Knee where the last major encounter between the Indians and the United States Army resulted. The site where he crossed the Badlands Wall is now known as Bigfoot Pass.

First set aside as a national monument in 1939, the area was redesignated a national park by Congress in 1978. The park more than doubled in size in 1976 with the addition of the 133,300 acre South Unit which is part of the Pine Ridge Indian Reservation. This part of the park is held in trust by the United States for the Oglala Sioux Tribe and is now administered by the National Park Service under an agreement with the Tribe.

WEATHER

The Badlands are subject to sudden drastic weather changes. Summer storms are frequently accompanied by lightning, hail and high winds. Temperatures of summer days are in the 90°'s and may occasionally exceed 100°.

The long Indian summer of early fall is consistently the most enjoyable time for hiking. The prairie is golden brown and dry, but the days are generally clear and mild. Late April and May can be a wonderful time to hike, but the weather is unpredictable. Rain showers usually come in May and early June.

Winter backpacking should only be attempted by the most experienced. A succession of clear, cold days can be suddenly interrupted by a Great Plains blizzard lasting for several days. Sometimes such conditions can occur as late as April.

WILDLIFE

Southwestern South Dakota was once the home for thousands of buffalo, which roamed the plains together with elk, mule and white-tailed deer, grizzly and black bear, antelope, wolves and coyotes, mountain lions and bobcats, Audubon bighorn sheep, and many smaller mammals, including the endangered black-footed ferret and his prey, the prairie dog.

Today, in the Sage Creek Area of Badlands National Park, people can once again see a large herd of more than 200 buffalo, free-roaming antelope, and mule deer and an occasional white-tailed deer in the heavily wooded stream bottoms.

The Audubon bighorn is now extinct, but a herd of Rocky Mountain bighorn was introduced into the park in the Pinnacles area in 1964; this herd numbered 27 in the spring of 1981. The wolves are gone, but coyotes still stalk the prairie dogs, mice, and rabbits and break the night stillness with their haunting cry.

Buffalo are deceptively peaceful looking, but like any other wild animal, they are unpredictable in their behavior. Able to run faster than and outmaneuver a horse, buffalo should be given a wide berth. Particularly dangerous are the bulls during the July-August mating season, and the cows with calves during May and June.

Buffalo occasionally come to the prairie dog town 5 miles west of Pinnacles to wallow where the prairie dogs have bared the soil. Because no natural balances are adequate to control herd size, the buffalo herd has to be culled periodically. Surplus animals are live-shipped to the Oglala Sioux Tribe, where they are used to restock the herd on the Pine Ridge Indian Reservation.

In warm seasons, hikers should always be alert for prairie rattlesnakes.

VEGETATION

Despite the steep slopes and forbidding appearance of the park, about half the area is covered with vegetation, most of which is grass. This mixed prairie grassland is made up of about 50 kinds of grasses, the most common being blue grama, needle-and-thread, western wheat grass, buffalo grass, and side oats grama.

The yucca plant or Indian soapweed and the conspicuous and fragrant silver sagebrush are two easily identified shrubs. Meadow rose, buffalo berry, and gooseberry bushes are also common. Scattered juniper groves are found on hillsides, and cottonwood trees grow along drainages.

WILDERNESS TRAVEL

Badlands National Park has more than 60,000 acres of roadless designated wilderness that is ideal for backpacking and getting away from it all. Sage Creek Wilderness is rolling prairie in which grassy hills and wooded draws are interspersed with stark badlands.

The length of your backpacking trip is limited by how much water you can carry, because water fit for human consumption is available only at the Cedar Pass complex or the Pinnacles Ranger Station. Some backcountry water sources are specifically for wildlife and are not suitable for human use. Most surface water has clay particles in colloidal suspension. Early explorers described these waters as having "purgative powers." No open fires are permitted anywhere in the park because of the great danger of prairie fires. Those wishing to cook must use a gas stove.

During the summer, 1 gallon of water per person per day is recommended. Strenuous exertion during the summer under the midday sun should be avoided, particularly when temperatures are 95° or higher. Heat stroke and heat exhaustion are deadly threats.

If you hike cross country in the canyons and gullies, you'll soon discover that the terrain is definitely challenging. When an erosion channel goes from a hard rock to a soft rock, a dry falls is formed, sometimes 15 feet or more high. On some steep slopes, water percolates through the soil to form narrow gullies and sinkholes 20 feet or more deep. Often the only way out is the way you go in. Solo scrambling is not advised.

Use good judgment. Two basic rules to follow are never to go up or down where you can't return by the same route; second, if you travel off trail, tell someone where you're going and when you plan to return.

Follow the backpacker's code: "Take nothing but pictures, leave nothing but footprints."

To protect the natural state of the park, motor vehicles are allowed only on established roads. Cross country vehicle traffic is not permitted. Pets must be on a leash at all times and are allowed only where vehicle traffic is allowed.

If you desire current information on local conditions, or if you require emergency assistance, contact a park ranger.

The Cedar Pass Visitor Center and museum features a unique "Touch Room," where fossils and other natural objects may be handled. The White River Visitor Center tells the story of the Oglala Sioux Indians by means of exhibits and two video tapes.

Collecting within the park is restricted to universities and museums engaged in research activities.

TRAILS

A variety of trails lead into the Badlands. Three are easy, well-marked, self-guiding nature trails: Fossil Exhibit, Door, and Cliff Shelf. Along the Fossil Exhibit Trail are displayed replicas of fossils taken from the surrounding sediments. The ¾-mile-long Door Trail ventures through a natural doorway into the Badlands formations.

The Cliff Shelf Nature Trail explores an area where a massive downsliding of earth and rock hundreds of years ago formed a slump that catches and holds water. Here, a heavy cover of junipers, bushes, and grasses makes a habitat for many birds, deer, and small rodents.

Three other hiking trails, marked with stakes, explore the scenery and animal habitats. The Notch Trail, which is moderately difficult, leads through a dry canyon and up a ladder and steps to a shelf that bypasses a 20-foot dry waterfall. Young children need supervision along this shelf. The trail continues to a saddle overlooking the White River valley.

West of Cedar Pass, the Saddle Pass Trail climbs 200 feet in half a mile to meet the Castle Trail at the top of the Badlands Wall. The Castle Trail traverses the upper prairie for 6 miles between the Fossil Exhibit Trail and the Windows parking lot.

BADLANDS NATIONAL PARK
(SOUTH UNIT)

SOUTH DAKOTA

NATIONAL PARK SERIES (TOPOGRAPHIC)

INTERIOR—GEOLOGICAL SURVEY, RESTON, VIRGINIA—1981

SCALE 1:50 000
1 CENTIMETER ON THE MAP REPRESENTS 500 METERS ON THE GROUND
CONTOUR INTERVAL 10 METERS

KILOMETERS 1 .5 0 1 2 3 4 5 6 7 8 9 10
MILES 1 .5 0 1 2 3 4 5 6
1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10 000 METERS
2000 0 4000 8000 12 000 16 000 20 000 24 000 28 000 32 000 FEET

Produced by the United States Geological Survey
in cooperation with the National Park Service

Control by USGS and NOS/NOAA

Compiled from USGS 1:24 000-scale topographic maps dated 1950-1980. See index for dates of individual maps
Planimetry revised from information furnished by the National Park Service and aerial photographs taken 1979
Revised information field checked 1980. Map edited 1981

Projection and 5000-meter grid, zone 13 and zone 14 (North Unit) and zone 13 (South Unit), Universal Transverse Mercator
10 000-foot grid ticks based on South Dakota coordinate system, south zone
1927 North American Datum

All of the South Unit within Shannon County is in the Pine Ridge Indian Reservation

There may be private inholdings within the boundaries of the National or State reservations shown on this map

CONTOUR INTERVAL 10 METERS
NATIONAL GEODETIC VERTICAL DATUM OF 1929
CONTROL ELEVATIONS SHOWN TO THE NEAREST 0.1 METER
OTHER ELEVATIONS SHOWN TO THE NEAREST METER

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS

1981 magnetic declination from true north for the Badlands National Park varies from 11° (196 mils) east for the east edge to 11½° (204 mils) east for the west edge. UTM grid convergence for the center of the North Unit, zone 13 is 1°54′ (34 mils) east. UTM grid convergence for the center of the South Unit, zone 13 is 1°40′ (30 mils) east

CONVERSION TABLE

Meters	Feet
1	3.2808
2	6.5617
3	9.8425
4	13.1234
5	16.4042
6	19.6850
7	22.9659
8	26.2467
9	29.5276
10	32.8084

To convert meters to feet multiply by 3.2808

To convert feet to meters multiply by 0.3048

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SOUTH DAKOTA
SOUTH UNIT

1981

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