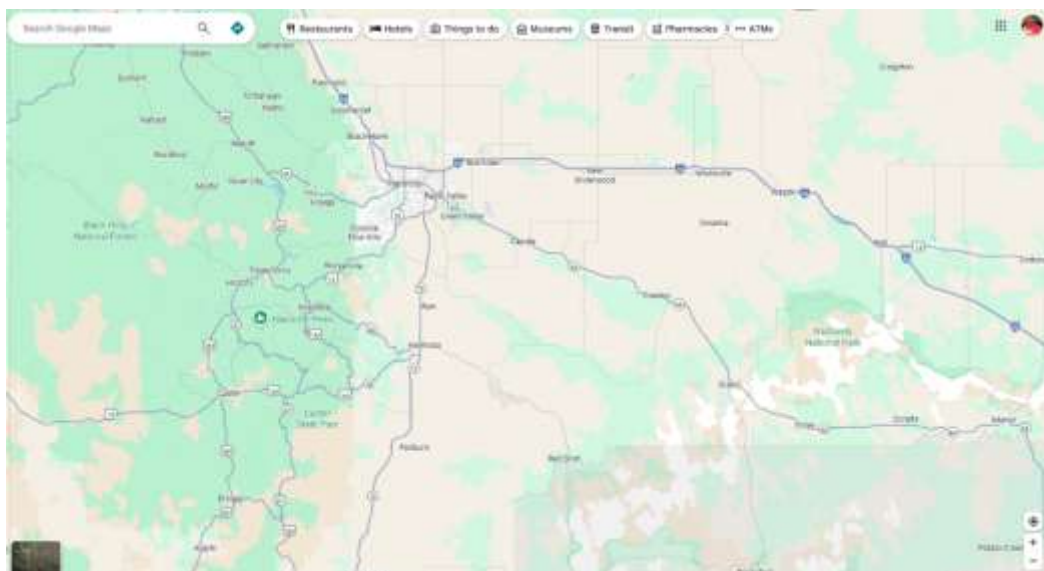


## DAY 6 – BADLANDS, SOUTH DAKOTA



<https://www.nps.gov/thingstodo/badl-loop-road.htm> Drive Loop (Hwy 240)

On the road to Badlands National Park, we encounter Wall Drug roadside attraction!

[https://en.wikipedia.org/wiki/Wall\\_Drug](https://en.wikipedia.org/wiki/Wall_Drug)

Wall Drug Store, often called simply Wall Drug, is a [roadside attraction](#) and [tourist stop](#) located in **the town of Wall, South Dakota, adjacent to Badlands National Park**. Wall Drug consists of a collection of cowboy-themed stores, including a [drug store](#), [gift shop](#), several [restaurants](#), and various other stores, as well as an art gallery and an 80-foot (24 m) [brontosaurus](#) sculpture.

Unlike a traditional [shopping mall](#), all the stores at Wall Drug operate under a single entity rather than being run individually. *The New York Times* has described Wall Drug as "a sprawling tourist attraction of international renown [that] draws some two million annual visitors to a remote town".



<https://www.roadsideamerica.com/story/79173>

The Jackalope -- half jackrabbit, half-antelope -- appeared in the American West soon after the arrival of the first tourists. Gift shops sold postcards and trophy heads of the elusive creature. Some Jackalopes grew to an immense size before they were [saddled and stuffed](#).

But no Jackalope is bigger than the 40-foot-tall mega-bunny in Wall.

Built in the autumn of 2022, the Wall Jackalope is the apex (thus far) of the South Dakota chainsaw-carving skills of Jarrett and Jordan Dahl.

















Most visitors to **Badlands National Park** drive the **Loop Road** as part of their visit. Whether you get out at every overlook on the Loop Road or enjoy the views from the comfort of your car, you're sure to see some amazing vistas on this drive!

<https://www.nps.gov/thingstodo/badl-loop-road.htm> (Highway 240)







**The Loop Road can be accessed by heading south from Interstate 90 via Exit 110 (Wall) or Exit 131. Along Badlands Loop Road, there are over a dozen spectacular overlooks and trailheads.**









**Sign: Born of Volcanos. Thirty-seven million years ago, the ancient crystalline core of the Black Hills had already been exposed by erosion. The long blue profile of these mountains, visible to the west, looked much as it does not.**

**About that time, streams flowing from the west began to deposit sediments in this area. Most of the sediment was wind-blown volcanic ash which had settled into the watershed which fed the streams. Occasionally the rivers brought gravel and stream-worm rocks from the Black Hills themselves. The ash weathered into clay and turned into rock.**

**Erosion did not begin to gully the Badlands layers and foretell the present landscape until quite recently, perhaps only half a million years ago.**



**How did the Badlands get there? Why do they look like that?**

**The formations in Badlands National Park and badlands formations around the world are the end-product of two simple processes: deposition and erosion.**

**Deposition is the process of rocks gradually building up. Over the course of millions of years, the layered rocks of the Badlands were slowly stacked on top of each other like a layer cake. These rocks were deposited by a number of natural forces which range from shallow inland seas to rivers to wind. Deposition began about 75 million years ago with the formation of the Pierre Shale, the base of the geologic formations in the park. Deposition ended about 28 million years ago with the Sharps Formation, the uppermost unit of Badlands stratigraphy.**

**<https://www.nps.gov/articles/000/badl-geologic-formations.htm>**





**Erosion is the process of rocks gradually wearing away. The Badlands began eroding about 500,000 years ago as the Cheyenne and White Rivers carved their way through the landscape. They are the reason for the narrow channels, canyons, and rugged peaks of the Badlands which we see today. And the Badlands are still eroding – it is estimated that the Badlands erode at the rate of one inch per year, which is a rapid rate for rocks. In contrast, the granite of the Black Hills, to the west of Badlands National Park, erodes at the rate of one inch per 10,000 years. Scientists estimate that in the next 500,000 years, the Badlands will have eroded completely –**

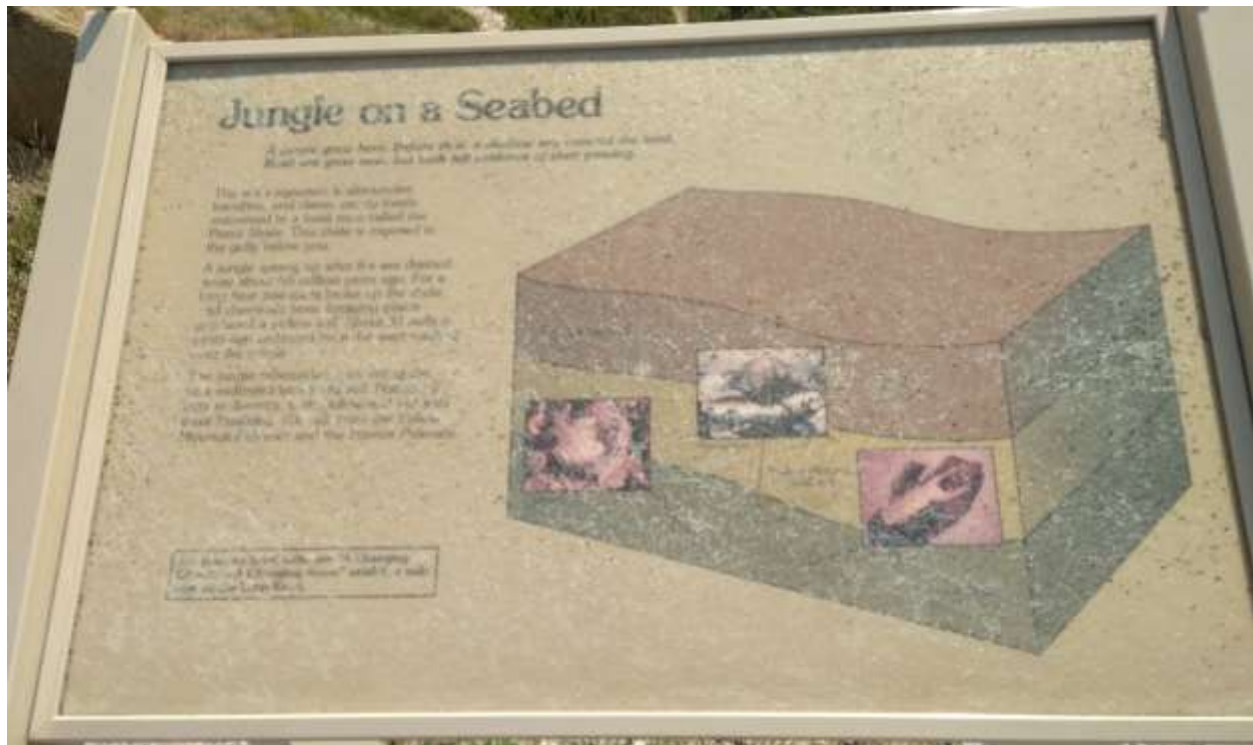
**You may have heard the term “badlands” used before, but not in reference to our park. That’s because in addition to being a geographic term, describing Badlands National Park in South Dakota, this word is also a geologic term! The lowercase version of badlands is used to describe most terrains that look like the formations in our park. They are typically characterized by soft sedimentary rocks that erode easily.**



For 11,000 years, [Native Americans](#) have used this area for their hunting grounds.<sup>[16]</sup> Long before the [Lakota](#) were the [paleo-Indians](#), followed by the [Arikara](#) people. Their descendants live today in [North Dakota](#) as a part of the [Three Affiliated Tribes](#). Archaeological records combined with oral traditions indicate that these people camped in secluded valleys where fresh water and game were available year-round. Eroding out of the stream banks today are the rocks and charcoal of their campfires, as well as the arrowheads and tools they used to butcher bison, rabbits, and other game. From the top of the Badlands Wall, they could scan the area for enemies and wandering herds. If hunting was good, they might hang on into winter, before retracing their way to their villages along the [Missouri River](#). The Lakota people were the first to call this place "mako sica", which translates to — literally — "badlands". Extreme temperatures, lack of water, and the exposed rugged terrain led to this name. French-Canadian fur trappers called it "les mauvaises terres pour traverser," or "bad lands to travel through."<sup>[17]</sup> By one hundred and fifty years ago, the [Lakota Nation](#) consisting of seven tribes including the Oglala Lakota, had displaced the other tribes from the northern prairie. [https://en.m.wikipedia.org/wiki/Badlands\\_National\\_Park](https://en.m.wikipedia.org/wiki/Badlands_National_Park)







**Sign: Jungle on a Seabed.**

**A jungle grew here. Before that, a shallow sea covered the land. Both are gone now, but both left evidence of their passing.**

**The sea's signature is ammonites, baculites, and clams, fossils entombed in a fossil mud called the Pierre Shale. This shale is exposed in the gully below you.**

**A jungle sprang up after the sea drained away about 65 million years ago. For a long time tree roots broke up the shale, and chemicals from decaying plants produced a yellow soil. About 37 million years ago sediment washed over the jungle.**



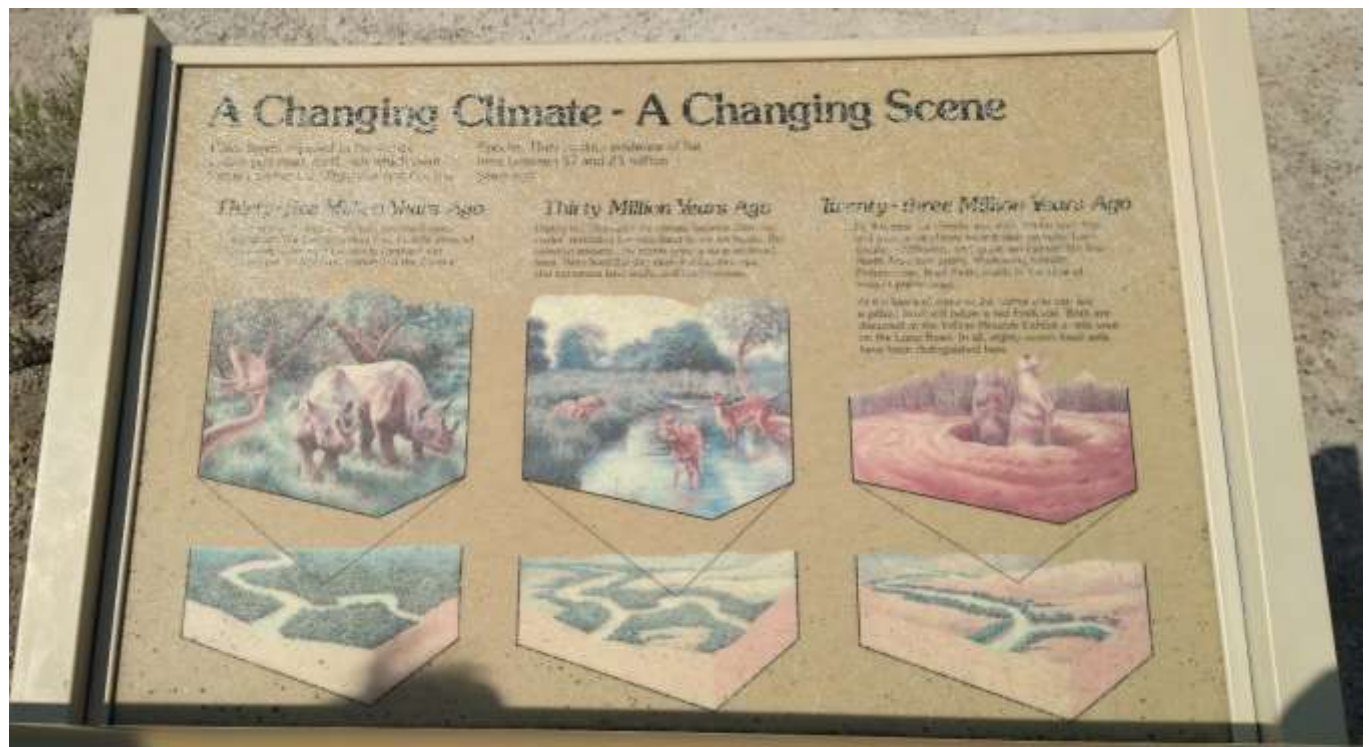


The Pierre Shale, which forms the bottommost layer of the park's geology, was deposited 75-69 million years ago. It was laid down by a shallow inland sea known as the Western Interior Seaway. On top of the Pierre Shale sit the Yellow Mounds, which are just an altered version of the Pierre Shale despite their striking differences in appearance. After the Western Interior Seaway drained North into the Arctic Ocean, the leftover shales weathered into soils. Those soils are now preserved as the Yellow Mounds, which are what geologists call a paleosol. Paleosols are ancient fossilized soils preserved in the rock record, and they often appear as brightly colored layers like the Yellow Mounds, which gets its mustardy color from a mineral called Goethite. <https://www.nps.gov/articles/000/badl-geologic-formations.htm>



The Brule Formation, deposited 34-30 million years ago, represents a cooler and drier time in geologic history. The hot, wet vegetated floodplains of the Chadron Formation now transformed into an open savannah, where occasional river channels would cut through the plains. Many grazers, like the [oreodonts](#) commonly found in Badlands National Park, made good use of eating the grasses and plants which grew here. Consequently, there were also predators who made good use of the grazers, like [nimravid](#), a cat-like animal with saber teeth.





**Sign: A Changing Climate – a Changing Scene.**

**Layers – contain evidence of life here between 37 to 23 million years ago.**

**Eocene Epoch (35 million years ago) – large mammals.**

**Oligocene Epoch (30 million years ago) – tiny mammals: deer-like, and land turtles.**

**Northern American prairie (23 million years ago) – mammals like prairie dogs.**

**In all, 87 fossil soils have been distinguished here.**



**Sign: Homesteads and Ranches. Homesteaders poured into the Badlands when the Milwaukee Railroad completed track through the White River Valley in 1907. Most of the homesteads turned out to be “Starvation Claims” and were abandoned or sold. Starved-out homesteaders moved on to build towns and cities, or to seek another homestead in a land less harsh.**





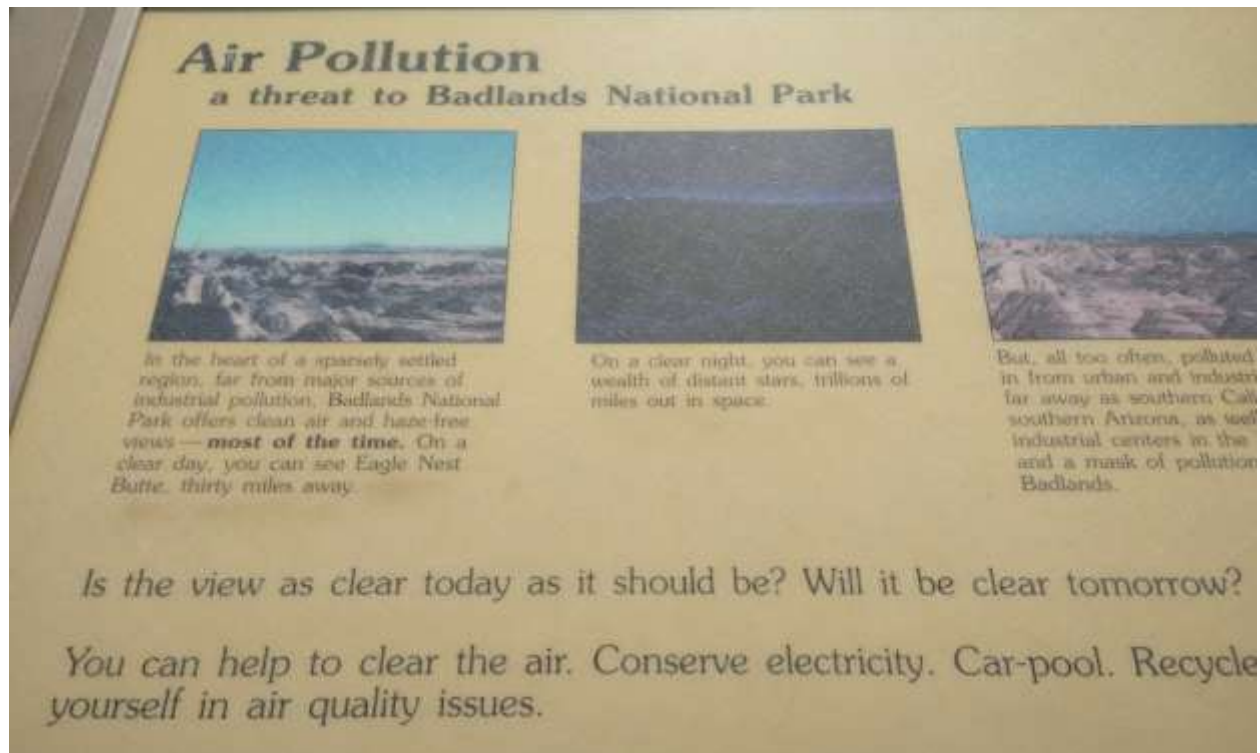


The history of the White River Badlands as a significant [paleontological](#) resource goes back to the traditional Native American knowledge of the area. The Lakota found large fossilized bones, fossilized seashells and turtle shells. They correctly assumed that the area had once been under water, and that the bones belonged to creatures which no longer existed.<sup>[19]</sup> Paleontological interest in this area began in the 1840s. Trappers and traders regularly traveled the 300 miles (480 km) from [Fort Pierre](#) to [Fort Laramie](#) along a path which skirted the edge of what is now Badlands National Park. Fossils were occasionally collected.



Throughout the late 19th century and continuing today, scientists and institutions from all over the world have benefited from the fossil resources of the White River Badlands. The White River Badlands have developed an international reputation as a fossil-rich area. They contain the richest deposits of [Oligocene](#) mammals known, providing a glimpse of life in the area 33 million years ago.





**Sign: Air Pollution, a threat to Badlands National Park.**

**In the heart of a sparsely settled region, far from major sources of industrial pollution, Badlands National Park offers clean air and haze-free views – most of the time. On a clear day, you can see Eagle nest Butte, thirty miles away.**

**On a clear night, you can see a wealth of distant stars, trillions of miles out in space.**

**But, all too often, polluted air comes in from urban and industrial areas as far away as southern California and southern Arizona, as well as industrial centers in the area, and a mask of pollution is seen in the Badlands.**



A prairie is a large, open expanse of [grasslands](#). A mixed-grass prairie is a grassland where grasses of many different heights grow. Mixed-grass prairies are the transition between eastern tall-grass prairies, where more rainfall means that taller grasses can grow, and western short-grass prairies, where the dry environment favors shorter grasses. In mixed-grass prairies, such as the grasslands surrounding Badlands National Park, grasses can range in height from ankle-high to waist-high. Although trees, shrubs, and [forbs](#)<sup>[41]</sup> grow in the Badlands, grasses dominate the landscape. The most common grass in the park is [Western Wheatgrass](#), which grows one to three feet tall and is the state grass of South Dakota.





**Flower common to the area, with a bee.**



Badlands National Park ([\*Lakota: Makǵóšiča\*](#)) is a [national park of the United States](#) in southwestern [South Dakota](#). The park protects 242,756 acres (379.3 sq mi; 982.4 km<sup>2</sup>) of sharply [eroded buttes](#) and [pinnacles](#), along with the largest undisturbed [mixed grass prairie](#) in the United States. The [National Park Service](#) manages the park, with the South Unit being co-managed with the [Oglala Lakota](#) tribe.

Authorized as Badlands National Monument on March 4, 1929, it was not established until January 25, 1939. Badlands was redesignated a national park on November 10, 1978.

The movies [Dances with Wolves](#) (1990) and [Thunderheart](#) (1992) were partially filmed in Badlands National Park.









**Sign: A 75-Million-Year Walk.**

**This trail features seven types of animals that once lived in the area now known as Badlands National Park. Each of these lineages met a different fate as the climate changed. Some moved, some adapted to the changes, and some are now extinct. Walk the trail to learn their stories and discover how this place and its inhabitants have changed over the course of 75 million years.**

**Move: Some animals moved (like the alligator) to habitats that were more favorable.**

**Adapt: As the climate changed, habitats changed. Many animals adapted to new environments. Early horses and dogs were flexible enough to survive in these new environments.**

**Die: Some animals could not adapt to the changing climates and habitats. Example: the oredont went extinct.**





**Sign: Dying to become a Fossil. Oreodonts were common throughout the Badlands but became extinct. Their fossil remains provide evidence of their lives and habitat. Fossils can develop over time when animal or plant remains are quickly covered in sediment and replaced by minerals.**

**Ancient Life: There are a number of ways animals and plants can become fossils. Remains can have all, some, or none of the original materials replaced by minerals. Some fossils are impressions, casts, or molds of the remains. The basic steps are illustrated here for this oreodont fossil.**

- 1. Death and Decay:** When this animal died, its remains were quickly buried in mud, sand, or soil. Soft elements decayed quickly while hard bone or teeth remained.
- 2. Burial:** Over time, more and more sediment covered the remains. Teeth, bones and other parts less likely to break-up or decay were encased in the sediment.
- 3. Change:** Eventually, the skeletal material dissolved and was replaced by minerals. This process resulted in a copy of the oreodont preserved within the rock.
- 4. Discovery:** Fossils surviving the ravages of time, particularly erosion, may be discovered by paleontologists or visitors.



A hands-on display of a fossil.





**Sign: Fight for Survival.** Fossils can reveal how animals lived and died, and what their environment was like. Evidence from one of the park's nimravid fossils offers crime-scene clues. The size and location of the holes in the forehead of this fossil match the knife-like teeth of another large nimravid.



**Sign: It's a Dog's Life.** Dogs have changed and adapted over millions of years. Members of the dog lineage gradually evolved into the wolf by growing longer, stronger legs and a shorter tail. This increased size led to increased strength and power to hunt food and escape predators. Today's wolf and modern domestic dogs are descendents of early canids. Hesperocyon = this early dog, or canid, was a small active hunter with a long body and tail, but short legs. Wolf = humans domesticated the wolf and bred canine varieties. Living Dog Breeds = Hesperocyon is an ancestor of today's dogs – "man's best friend."





**Sign: Reading the Rocks.**

These rocks were deposited millions of years ago when rivers and wind spread silt, sand, and ash across the landscape. About 500,000 years ago, ancient rivers began eroding this area, leading to the present day landscape. Modern rivers, rain, and wind continue to sculpt the land by washing away soft rocks at a rate of about one inch a year. Differences in the composition of each layer reveal what the climate was like when the sediments were deposited. The oldest layers, not visible from here, represent a marine environment. The top layers are the most recent, representing a cool, dry savannah. Together the rock layers tell a dramatic story of changing climate and ancient animal migration, adaptation, and extinction from 24 to 75 million years ago.

**Sharps Formation:** The peaks and pinnacles of the highest rocks are part of the 28-30 million year old Sharps Formation. Ancient rivers deposited coarse sands and silts. These sediments and the fossils found in this formation are evidence of a cool dry climate.

**Rockyford Ash:** A line of gray rock marks the transition from the older Brule Formation to the younger Sharps Formation. Thirty million years ago, this ash layer blew across the Badlands from a distant volcano.

**Brule Formation:** Meandering rivers flowing through dry and cool shrublands and woodlands left thick sediments 30-34 million years ago. Animals like oreodonts and nimravids thrived in these habitats.



**Sign: See Ya later, Alligator. Prehistoric alligators lived in swampy conditions, as they do today. Alligators lived in the badlands area 34-37 million years ago when the climate was like modern-day Florida. Physically, alligators have changed mostly in size over the last several million years, ancient alligators grew to only 6-7 feet long.**



**Sign: Off to the Races. Horses have adapted to North America over millions of years. As woodlands changed to grasslands, the dog-sized, primitive horses gradually evolved into the lineage that led to the modern-day horse.**

***Mesohippus* was the first three-toed horse; ancestors to earlier horses had five toes. This is one of the adaptations allowing *Mesohippus* to have a greater chance of survival on open shrublands.**





**Sign: Titanic Discovery.** The discovery of this specimen led to the golden age of paleontology in North America. After acquiring this fossil from fur traders, Dr. Hiram Prout wrote about it in 1846. His description captured the attention of scientists. At that time, vertebrate paleontology, the study of ancient creatures with a backbone, was a young science. Many began to do further fieldwork on fossils from the western United States.

***Titanotheres* ate leafy plants and thrived in the warm, subtropical climate. Their family lineage became extinct as climate and habitats changed. Rock layers younger than the Chadron Formation show no evidence of titanothere fossils in the park.**



**Sign: Under the Sea. Ammonite (Placenticeras) fossil.**

**Ammonite fossils found in the park are evidence that this area was under water 75 million years ago. Some ammonites could grow to more than three feet across and served as food source for giant mosasaurs and other predators.**



Sign: Bands of Time.

Rock layers in Badlands National Park contain fossils that show a dramatic cooling and drying of global climate over millions of years. The oldest rock layers contain marine fossils, roughly 70 million years old, from when this area was underwater. Although dinosaurs lived during this time, they did not live in this area. Younger layers show evidence of cooler and drier climates. The most recent layers reveal animals and plants from an open shrubland. Today, rock layers are stripped away by erosion, exposing new fossils within these bands of time.

1. Sharps Formation – 28-30 million years ago.
2. Rockyford Ash – 30 million years ago.
3. Brule Formation – 30-34 million years ago.
4. Chadron Formation – 34-37 million years ago.
5. Yellow Mounds – 67 million years ago.
6. Pierre Shale – 67-75 million years ago.





**This national park was originally a reservation of the Oglala Sioux Indians and spans the southern unit of the park. The area around Stronghold Table was originally Sioux territory and is revered as a ceremonial sacred site rather than a place to live.**

**In 1868, at the [Second Treaty of Fort Laramie](#), the United States assured the Sioux that the Badlands shall forever be the property of the Sioux. In 1889, however, the treaty was broken, and the Badlands were confiscated by the United States.**











<https://www.dahlschainsawart.com/>

For over a decade, the Dahl brothers have been carving a name for themselves in the world of chainsaw art. Jarrett and Jordan Dahl are award-winning, internationally recognized chainsaw artists who use the backdrop of the beautiful Black Hills to create their chainsaw carvings. These original pieces of chainsaw art are completed from Black Hills (ponderosa) pine and other local woods, which adds to their uniqueness. No piece of art is identical to the other and each brother has their own style. Subjects can vary from Bigfoot to the famous Freedom Eagles, custom pieces, and even a 36,000-pound archway.

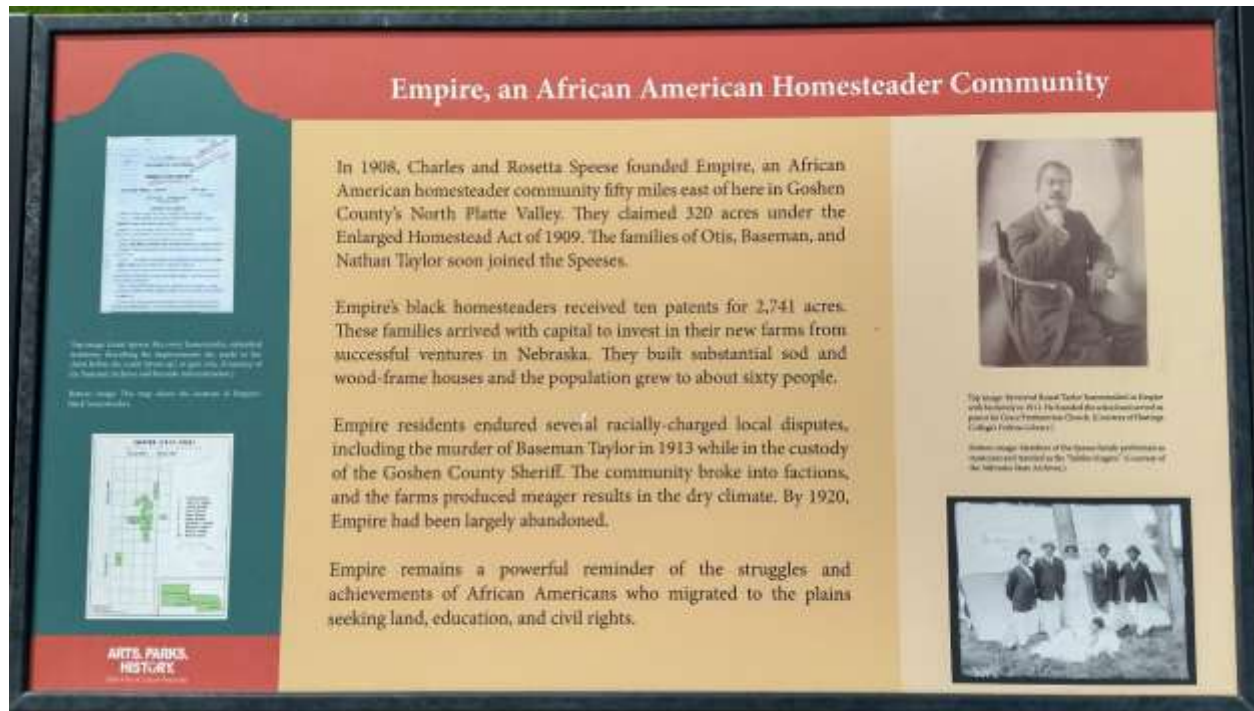








On the way from the Black Hills of South Dakota to our next adventure, we had to decide whether to travel through Nebraska down south to Colorado, or through Wyoming. We chose Wyoming. Why? Because we would travel through Cheyenne, the capitol of Wyoming.



- Empire was a short-lived African American homesteading community in Goshen County, Wyoming, founded around 1908 by families like the Speeses and Taylors from Nebraska, who hoped to escape racism and build their own economically self-sufficient community. Though initially successful with experienced farmers and some capital, the community ultimately failed due to a combination of recurring drought, a challenging post-war economy, and persistent racism and violence, with the community disappearing within a few years of its peak prosperity around 1913.

### Empire Wyoming

#### Homestead National Historical Park

<https://www.nps.gov/places/empire-wyoming.htm>

Originally established as a private fur trading fort in 1834, Fort Laramie evolved into the largest and best-known military post on the Northern Plains. This “Grand Old Post” witnessed the entire sweeping saga of America’s western expansion and Indian resistance to encroachment on their territories. Fort Laramie’s roles in western history is vast, as it covers the years of early American Indian inhabitants, fur trappers, Mexican workers, Westward bound immigrants, the United States Military, and the families of these groups of people. The fort interprets and preserves the many important histories of these people, along with over 50 structures and foundations that were built during the military era at the historic site. <https://www.nps.gov/fola/what-is-fort-laramie.htm>



Oregon Trail Ruins Historic Site



Gurnsey State Park



Wyoming State Historic Sites



Ames Monument

# EPIC TRAILS *since* THE 1800s

## A TRIP THROUGH HISTORY



In the 1800s, the North Platte River was a natural barrier for pioneers. Pioneers set up camps of **Register Creek Historic Site** on the river. The site is just one of many old buildings and ruins in Wyoming.



Pioneers, immigrants and the cowboys. You can see their tracks across the landscape at **Oregon Trail Ruins Historic Site**.

In the 1830s, the Civilian Conservation Corps designed and built the two systems of **Gurnsey State Park**.

The park system consists of many areas which provide a variety of scenic views of the park, mountains and the river.



Next stop—Douglas Wooten—known for his political buildings and his ownership of **Wooten and Pioneer history**. Visit **Camp Douglas Officer's Club**, the primary house and a Prisoner of War (POW) camp for Wooten, and **Fort Fetterman** the military post established in 1867. You can view original buildings in a natural setting.



The western landscape that remains of Wyoming are continuously expanding and include a variety of hiking and mountain destinations at **Curt Gowdy and Glendle State Parks**.

Come for the day or stay the night at a cabin, yurt or campsite. Don't forget to pick up your supplies, snacks and sightseeing on your way to the next site.

No one is allowed without a visit to the **Wyoming Pioneer Memorial Museum** to enjoy artifacts and the history of Wyoming's pioneers.



Finally, just a short drive from **Edwards K. Williams State Park**. Here you'll find a swimming pool and over 40 acres of scenic views and recreational areas. Trails, picnic tables and horseback riding paths are just a few of the many amenities.

# AMAZING ARCHITECTURE

## HISTORY BUILT TO LAST



Memories are made at **Wyoming State Historic Sites** where you will find original historic buildings and carefully presented stories.



Immerse yourself in Territorial history at the **Wyoming Territorial Prison Historic Site**. At the "Big House" known for its "display of justice, cells and solitary" are the stories of people from the pioneer past. For 20 years it held slaves and prisoners including the infamous **Butch Cassidy**. The site offers museum exhibits, historic buildings, museum exhibits, a historic tool, historic jewelry, a picnic area, and a picnic shelter with gift shop. Experience the site through guided tours or on your own.



Visit **Ames Monument**. The monument on the park's hill is a memorial to **W.H. Richardson**, the architect who built the majority of houses and other homes. Lookers who placed a key ring in Wyoming's national history.



Join us in the capital city at the **Wyoming Governor's Mansion**. From 1905 - 1974, the Mansion was the residence of 20 of Wyoming's first families, including Wyoming's first Governor, **John Taylor**. The house has been listed in the National Historic Register. The house has been listed in the National Historic Register. The house has been listed in the National Historic Register.



**Gurnsey State Park** represents some of the most significant contributions made by the Civilian Conservation Corps. This will enjoy the original historic buildings in the hills at the Gurnsey Museum, interpretive trails and picnic areas. The Gurnsey picnic shelter will be open weekdays and special occasions. There is an observation area for spectacular views of the park and the surrounding landscape.

FIND SOMETHING UNEEXPECTED





**Cheyenne, Wyoming**  
**Capitol**



Cheyenne (*/ˈʃaɪˈæn/ shy-AN* or */ˈʃaɪˈɛn/ shy-EN*) is the capital and most populous city of the U.S. state of Wyoming. The population was 65,132 at the 2020 census,<sup>[6]</sup> while the Cheyenne metropolitan area encompassing all of Laramie County has an estimated 102,000 residents. Cheyenne is situated on Crow Creek and Dry Creek. It is the county seat of Laramie County.







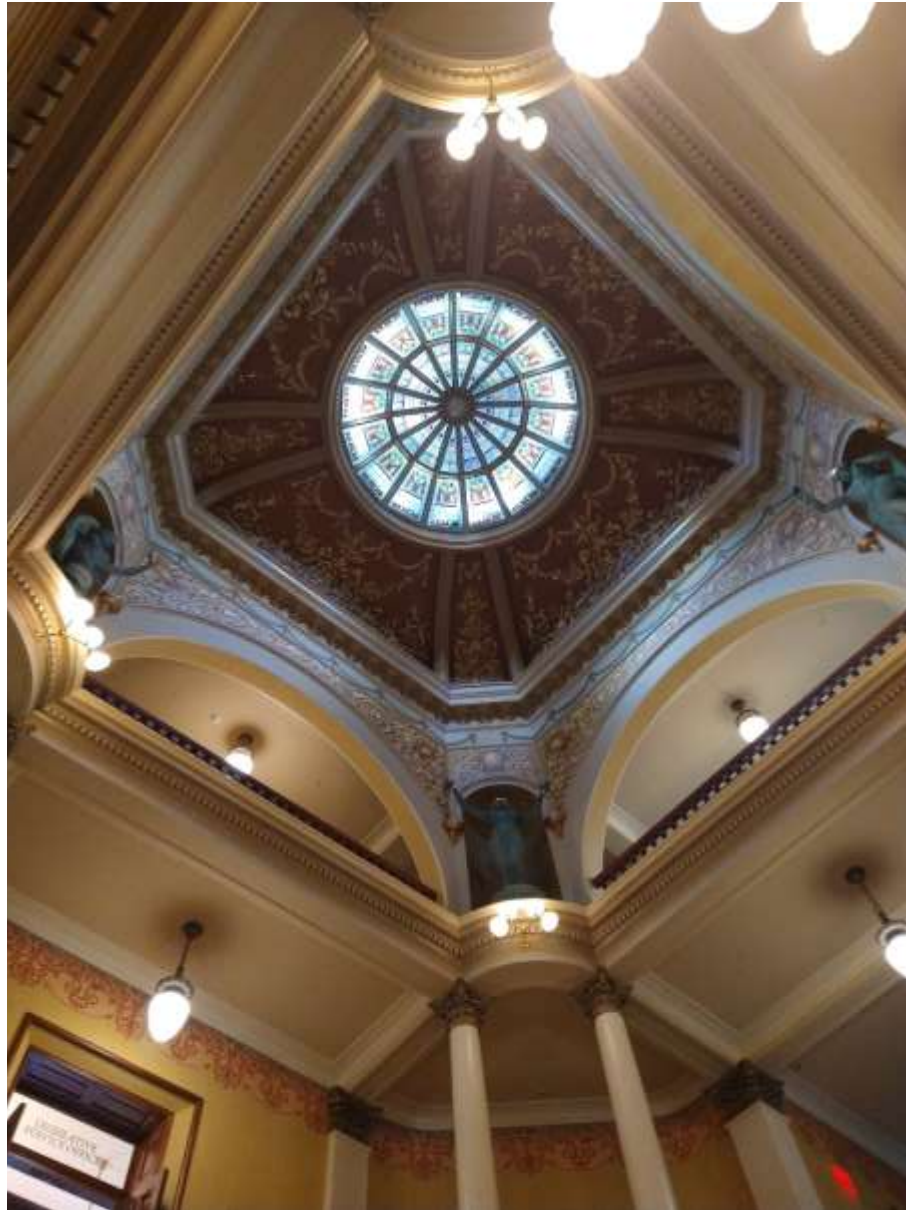


[https://en.wikipedia.org/wiki/Cheyenne,\\_Wyoming](https://en.wikipedia.org/wiki/Cheyenne,_Wyoming)

Cheyenne was established within the [Dakota Territory](#) in 1867 as a junction along the [Union Pacific Railroad](#). Local residents named the town for the [Cheyenne](#) people. Its economy is anchored by government services, transportation, and military operations, notably [Francis E. Warren Air Force Base](#), with emerging growth in data centers and renewable energy. Cheyenne hosts cultural institutions such as the [Wyoming State Museum](#) and [Cheyenne Frontier Days Old West Museum](#), and is known for the annual [Cheyenne Frontier Days](#), a longstanding rodeo and cultural event. Cheyenne is the northern terminus of the extensive [Southern Rocky Mountain Front](#).

On August 8, 1867, the Town of Cheyenne, Dakota Territory was incorporated, and on August 10, 1867, [H. M. Hook](#) was elected as Cheyenne's first mayor.<sup>[11]</sup> The tracks of the Union Pacific Railroad reached Cheyenne on November 13, 1867, and the first train arrived the following day.<sup>[10]</sup> Cheyenne grew so quickly it gained the nickname of "Magic City of the Plains".

On July 25, 1868, the United States organized the [Territory of Wyoming](#).



The construction of the capitol began prior to Wyoming gaining statehood. Cheyenne was born in 1867 in the path of the transcontinental railroad, when the Union Pacific crews arrived to lay tracks westward. Cheyenne soon laid claim to a higher status than older Wyoming settlements such as those at Fort Laramie, Fort Bridger, and the mining town of South Pass City, changing Cheyenne from a village to a city in a matter of months. The seat of the new Territorial government was established in Cheyenne in 1869. The building was designated a [National Historic Landmark](https://en.wikipedia.org/wiki/National_Historic_Landmark) in 1987, for its role in Wyoming's history, including specifically the role it played in hosting conventions that ensured woman's suffrage in the state constitution.

[https://en.wikipedia.org/wiki/Wyoming\\_State\\_Capitol](https://en.wikipedia.org/wiki/Wyoming_State_Capitol)





↑ State Museum

↗ Visitor Center

↗ Historic Depot





**The "girl with flag" statue in Cheyenne is the "Native Girl Holding a Flag" by George Linden, located near the Wyoming State Capitol building, which honors the Indigenous people who called the area home before it was a state.**





<https://stmarycathedral.com/>