



Bryce Amphitheater from Bryce Point by Larry Ulrich

Hoodoos Cast Their Spell

Hoodoo—a pillar of rock, usually of fantastic shape, left by erosion. Hoodoo—to cast a spell. At Bryce Canyon National Park erosion forms an array of fantastic shapes we know as hoodoos. Surrounded by the beauty of southern Utah, hoodoos cast their spell on all who visit. Geologists say that 10 million years ago forces within the Earth created and then moved the massive blocks we know as the Table Cliffs and Paunsaugunt plateaus. Rock layers on the Table Cliffs now tower 2,000 feet above their corresponding layers on the Paunsaugunt. Ancient rivers carved the tops and exposed the edges of these blocks, removing some layers and sculpting formations in others. The Paria Valley was created and later widened between the plateaus. The Paria River and its tributaries still carve the plateau edges. Carrying dirt and gravel, rushing waters gully the edges and steep slopes of the Paunsaugunt Plateau on which lies the national park. With time, tall and thin ridges called fins emerge. Fins then erode into pinnacles and spires called hoodoos, that, weakening and falling, add their bright colors to the hills below.

People have been in the Colorado Plateau region for about 12,000 years, but only random fragments of worked stone

reveal their presence near Bryce Canyon. Artifacts add details of human use at lower elevations beyond the park boundary. Ancestral Puebloan and Fremont cultural influences found nearby are studied by archeologists. Paiutes, who lived in this region when settlers and other people from the eastern states came to southern Utah, accounted for the hoodoos as the “Legend People” whom Coyote had turned to stone.

Capt. Clarence E. Dutton and John Wesley Powell explored this area in the 1870s and gave it many place names. Dutton's report gave the name Pink Cliffs to the Claron Formation. Names from the Paiute are Paunsaugunt, place or home of the beavers; Paria, muddy water or elk water; Panguitch, water or fish; and Yovimpa, point of pines. Paiutes were displaced by emissaries of the Church of Jesus Christ of Latter-day Saints who developed many small communities in Utah. Ebenezer Bryce did such work in southwestern Utah and northern Arizona. In 1875 Bryce came to the Paria Valley to live and harvest plateau timber. Neighbors called the canyon behind his home Bryce's Canyon. Soon after 1900, people were coming to see the colorful geologic sights, and the first accommodations were built

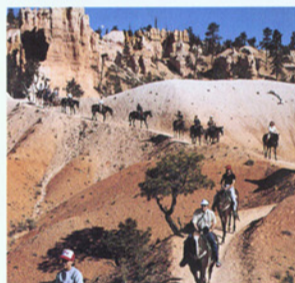
Utah prairie dogs live only in southwestern Utah. They are listed as a threatened species under the 1973 Endangered Species Act. They live in the park's meadows and are actually members of the rodent family.

They require vegetation sparse enough to see through and low enough to see over. They eat moist and nutritious grasses and grass-like forbs. Please respect their wildness. Do not try to get close to them or to any other wild animals in the park!



along the Paunsaugunt Plateau rim above Bryce's Canyon. By 1920 people were trying to protect the canyon's scenic wonders. In 1923 President Warren G. Harding proclaimed part of the area as Bryce Canyon National Monument under the Powell (now the Dixie) National Forest. In 1924 legislation was passed to establish the area as Utah National Park, but the provisions of the legislation were not met until 1928. Legislation passed that year changed the name of the new park to Bryce Canyon National Park.

Each year over 1.7 million people visit the park from all over the world and take delight in the sights, which are as varied as the hoodoo's shapes and colors. Open all year, the park offers recreational opportunities in each season. Hiking, sightseeing, and photography are the most popular summer activities. Spring and fall months offer greater solitude. Winter quiet combines with the region's best air quality for unparalleled views and serenity. In all seasons the fantastic shapes and colors cast their spell and remind us how important it is to protect places like Bryce Canyon National Park.



Horseback riding



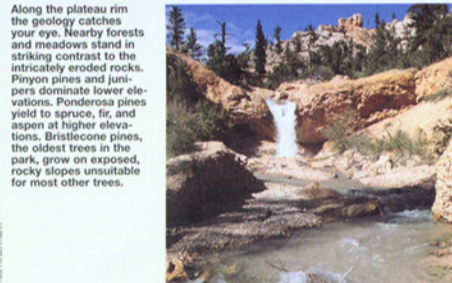
Snowpack at Bryce Point



Paintbrush and balsam-root



The Sentinel



Streams still work at carving the landscape

Sedimentation

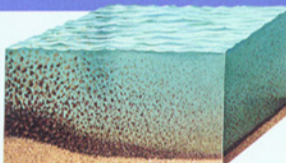
Ancient Sedimentation
Our dynamic planet is constantly being reshaped by dramatic events like earthquakes, volcanoes, and mudslides. Other changes may go undetected in human lifetimes. Geological timespans or periods cover millions of years. The Cretaceous Period began some 144 million years ago and lasted until about 65 million years ago. The rock formations you see exposed at Bryce Canyon began to develop during this time. For 60 million years a great seaway extended northward into this area. It deposited sediments of varying thickness and composition as it repeatedly invaded, retreated, and then re-invaded the region.

Retreating to the southeast, the seaway left sediments thousands of feet thick. Their remnants form the oldest, lowest, gray-brown rocks at Bryce Canyon.

In the Tertiary Period, between 65 and 40 million years ago, rivers and streams flowing from surrounding highlands deposited iron-rich, limy sediments into an ancient freshwater lake system. The sediments became the reddish-pink rocks that represent the Claron Formation from which the hoodoos are carved and for which the Pink Cliffs were named by Capt. Clarence E. Dutton.



The Cretaceous Seaway (at left) stretched northward from the Gulf of Mexico into this region of North America. The sediments that were deposited as the seaway invaded and then retreated became the brown and gray rocks of marine origin now exposed at the park's lowest elevations and across the Paria Valley.



Water running over surfaces removes the softer layers below hard cap rock to form monoliths like Thor's Hammer (right).

Sediments originate in debris eroded from the land. Water carries varying sizes of debris or dissolves it chemically. When the water slows or cools, particles settle to the bottom of the waterway, sorted by their size and weight. Rocks form when the particles are cemented and bonded together.



The hoodoos have been carved from the Claron Formation. Its rock was deposited by the ancient lakes, streams, and rivers over a period of 20 million years (above). Today's state shapes are shown for reference.

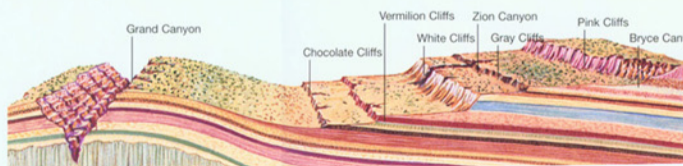
Uplift

Deformation, Uplift, and the Grand Staircase
Horizontal compression related to the formation of the Rocky Mountains deformed these rocks. Then volcanic materials from the north and west covered part of the region: black rocks at the mouth of nearby Red Canyon and on the Sevier Plateau—to the north—still protect softer underlying layers. About 10 million years ago the Earth pulled apart, moving and tilting great blocks along north-south trending fault lines. Layers that were once connected then became displaced vertically by several thousand feet, thereby forming the High Plateaus of Utah.

Older Cretaceous layers now rested side by side with younger Tertiary layers across the fault lines. Streams began to remove the sediments that had been deposited by their ancestors. Working on the weakened edges of the upthrown blocks, water gradually removed the uppermost Tertiary layers and exposed the Cretaceous rocks once again. At that point these drab marine sediments lay on the surface of the land side by side with the brightly colored rock formed from the deposits of freshwater lakes and streams.

Edges exposed by uplift are susceptible to erosion. In Utah the southern edges of the High Plateaus have eroded into the cliffs of the Grand Staircase.

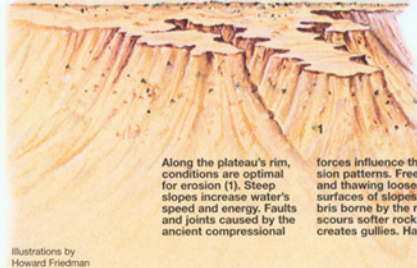
Plateaus have eroded into the cliffs of the Grand Staircase.



On the Colorado Plateau the high elevations and mountains create microclimates in which forests may grow surrounded by arid lowlands.

Erosion

Differential Erosion
Water erodes rock mechanically and chemically. Scouring, abrading, and gully erosion occur when fast-moving water scrapes its silt, gravel, and rock debris against firmer bedrock. Slow-moving or standing water enters minute rock pores and dissolves the cements holding the rock together. This leaves loose grains to wash away. Softer Cretaceous rocks were loosened and carried away from the upthrown block by the Paria River. The resulting Paria Valley is carved out of rocks that lie deep beneath the Paunsaugunt Plateau, whose edge now is exposed to erosion.



Along the plateau's rim, conditions are optimal for erosion (1). Steep slopes increase water's speed and energy. Faults and joints caused by the ancient compressional forces influence the erosion patterns. Freezing and thawing loosen the surfaces of slopes. Debris borne by the runoff scours softer rock and creates gullies. Harder rock will remain as fins (2). As the gullies widen to canyons, fins become exposed to more erosion at their vertical cracks. As freezing water expands within cracks in winter, it peels off layers and carves out vertical hoodoos (3).



Hoodoos and eroding fins

Exploring Bryce Canyon

Visiting the Park

Following the plateau rim for much of its 18 miles, the park road and its overlooks offer stunning geological panoramas. Stop at the visitor center first and watch a free video, look at the exhibits, and browse the books, maps, and other publications about the park and this area. At the information desk, you can get advice about your visit.

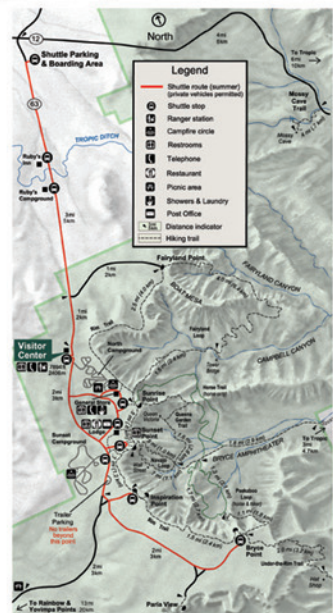
Bryce Canyon National Park offers more than driving tours. Rangers conduct walks, talks, and campfire programs in summer. Their topics range from geology and wildlife to air quality. Some 50 miles of hiking trails offer prospects of close encounters with hoodoos. Several trails lead down among them from overlooks on the main park road. Just a short walk will leave you surrounded by these unusual rock formations and greatly reward your effort.



Douglas fir on Wall Street

The small map (right) shows details of the developed area inside the matching rectangle on the large map.

Bryce Amphitheater Close-up



Visitor Center The park visitor center provides exhibits, information, publications, lost-and-found, backcountry permits, and first aid services. It is open 8 a.m. to 4:30 p.m. daily except for January 1, Thanksgiving, and December 25. In spring, summer, and fall the hours are extended.

For information visit our website at www.nps.gov/bryca or write to: Superintendent, Bryce Canyon National Park, P.O. Box 170001, Bryce Canyon, UT 84717-0001. You may also call 435-834-5322 weekdays 8 a.m. to 4:30 p.m. Mountain Time, except on federal holidays.

Bryce Canyon National Park is part of the National Park System, one of more than 380 parks that preserve important examples of the natural and cultural heritage of our nation.

In an emergency call 911 or the Garfield County Sheriff's office at 435-676-2411.

Enjoying the Park

Interpretive Programs Park rangers offer interpretive programs during summer: geology talks, campfire programs, and guided walks and hikes. Staffing may also permit off-season programs—check the schedule at the visitor center.

Lodging and Tours Bryce Canyon Lodge reflects the rustic style of its period. Local timbers and stone were used to build it in 1924-25. It has a restaurant, gift shop, and post office. Rooms and cabins are available from April to November. Register at the lodge for guided horse rides. For lodging reservations contact: Amfac Parks and Resorts, 14001 East Hill Ave., Suite 600, Aurora, CO 80014-1433; 303-297-2757.

General Store Groceries, quick meals, film, and camper supplies are sold April to mid-October at a store near the Sunrise Point parking area. There are also shower and laundry facilities here.

Wildlife

Forests and meadows of Bryce Canyon provide the habitat to support diverse animal life, from birds and small mammals to foxes and occasional mountain lions and black bears. Keep a healthy distance from all wildlife; feeding or approaching causes problems for the animals and can be dangerous to you. Be especially careful not to disturb their eating behavior and their natural warnings.



A mountain short-horned lizard suns itself on a rock.

Mule deer are the most common large mammals in the park. You will see them most readily on summer mornings and evenings in the roadside meadows. Mountain lions prey on the mule deer, which is mutually beneficial to their respective population dynamics. Elk and pronghorn antelope, which have been reintroduced near the park, are sometimes seen in the park now.

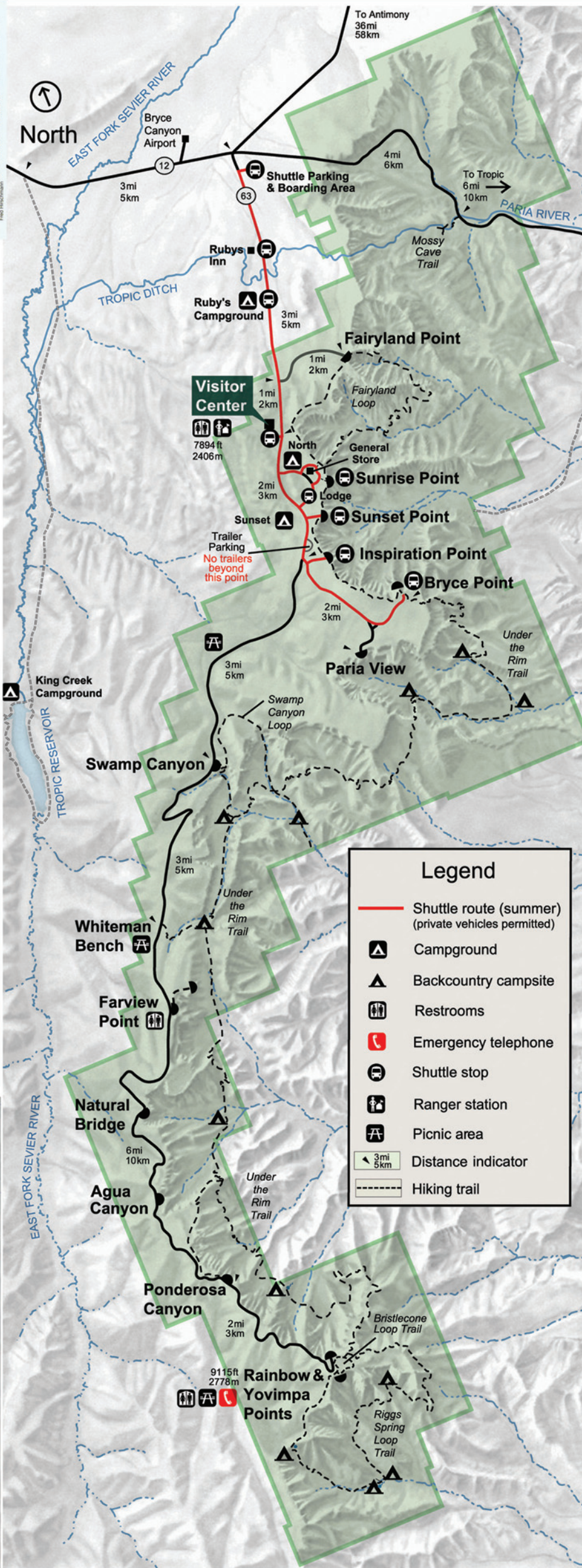
More than 160 species of birds visit the park each year. Watch swifts and swallows perform their aerobatics along cliff faces while feeding on insects in flight. Most bird species migrate to warmer climates, but jays, ravens, nuthatches, eagles, and owls spend the winter here. In winter, the mule deer, mountain lions, and coyotes will migrate to lower elevations.

Wildflowers

At these comparatively high elevations, many wildflowers that bloom in spring in other areas may bloom here in late summer. Elevations in the park range from 6,000 to 9,100 feet. Because soil and moisture conditions vary so much, elevation exerts great influence on the more than 400 plant species here.



Flower photographs by Margaret Littlejohn



Driving Along the Plateau Rim



Rabbitbrush and golden aspens in autumn

The 18-mile-long main park road affords outstanding views of the park and southern Utah scenery. From many overlooks you can see more than 100 miles on a clear day. On crisp winter days, only the curvature of the Earth restricts the view from Rainbow or Yovimpa points. As you drive south from the visitor center to Rainbow Point, you gradually gain 1,100 feet of elevation. Watch how the forests change from ponderosa pine to spruce, fir, and aspen. **Drivers note:** Trailers must be left at the trailer drop-off facility just inside the park unless you are using the campgrounds. Day-use visitors may park trailers at the visitor center or other designated sites; check with park staff. Vehicles over 25 feet long are not allowed at Paria View. All overlooks lie east of the road; to avoid crossing traffic, drive to the park's southern end and stop at the overlooks on your return.

Fairyland Point lies one mile off the main road between the entrance station and park boundary, so many visitors miss it. Highlighted by the Sinking Ship, with the Aquarius Plateau and distant Navajo Mountain as its backdrop, this scenery rivals any in the park. The road is not plowed in winter and is used as a cross-country ski trail then.

Sunrise, Sunset, Inspiration, and Bryce points encircle Bryce Amphitheater, the biggest natural amphitheater in the park. The Queen's Garden Trail starts at Sunrise Point—you can hike from there to either Thor's Hammer or Wall Street. Inspiration Point offers the best views of Silent City. Under-the-Rim Trail starts at Bryce Point. Vast panoramas from both points feature the Black Mountains in the northeast and Navajo Mountain in the south.



At Sunset Point you look down into Bryce Amphitheater, shown here.

Paria View looks out over hoodoos in an amphitheater carved by Yellow Creek. The Paria River valley and Table Cliffs Plateau form its backdrop. To the south you can see the White Cliffs, carved out of Navajo Sandstone.

Farview Point offers a panorama including its neighboring plateaus and mountains and, far to the southeast, the Kaibab Plateau of the Grand Canyon's North Rim. Here ponderosa pines begin to give way to Douglas fir and white fir.

Natural Bridge was not formed by a stream as true natural bridges are. More accurately an arch, it was carved by both rain and frost erosion acting from the top of the rock.

Ponderosa Canyon shows off its multicolored hoodoos framed by pine-covered foothills and the Table Cliffs Plateau to the north.

Agua Canyon displays contrasts of light and color that are among the most satisfying in the park. Look for small trees atop a hoodoo known as the Hunter. In the distance the rims of southern plateaus and canyons are visible.



Agua Canyon affords good views of the vertical cliffs that typify the southerly Paunsaugunt Plateau.

Yovimpa and Rainbow points offer expansive views of southern Utah. On most days you can see Navajo Mountain and the Kaibab Plateau 90 miles away in Arizona. On a very clear day the view extends into New Mexico. The foreground is awash in the colors of long-eroded slopes and remnant hoodoos. The park road ends at Rainbow Point.



Known as The Poodle, this hoodoo northwest of Rainbow Point seems to pose for the camera, although it is difficult to find. Behind it the Pink Cliffs look like a photographer's painted studio backdrop. At Rainbow Point the scenic drive along the canyon rim ends in a road loop that turns you back toward the park entrance.

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