

At Bright Angel Point

Arrival at Bright Angel Point places you on the edge of a vastness of scenery, time, and opportunity. The view confirms the tremendous uplift that has occurred, leaving the canyon's North Rim 1,000 feet/300 meters higher than the South Rim.

The dark depths of the inner canyon, barely visible from this point, record events that stretch our understanding nearly halfway back in the earth's 4.6-billion-year history. Multicolored rock layers record the rise and fall of oceans and continents, and the evolution of plants and animals. They record the appearance of trilobites (the first creatures in the fossil record that have eyes), the passing of giant dragonflies, and tales of the pursuits and wanderings of reptiles on ancient sand dunes. The walls of the canyon are much more than layers of rock. They are pages in the earth's journal, written over a period of nearly two billion years.

Though invisible at Bright Angel Point, the Colorado River is the erosive force responsible for the depth of Grand Canyon. Over the past 5 million years or so, it has carved a canyon one mile deep. The rate at which the Colorado River accomplishes this varies greatly depending upon many factors, including rock type and the volume of water the river carries at any given time. The flood of 1884 left debris 40 feet/12 meters above the current river level.

The Colorado River is not directly responsible for the canyon's width. The ten-mile gap between the North and South Rims is the result of erosion from other sources. Freezing and thawing, heating and cooling, and gravity all play a role in breaking down the rocks that the Colorado River has exposed.

Very little movement occurs until weather conditions conspire to produce canyon-widening flash floods.

In 1966 an unusual storm dropped 14 inches/36 cm of rain on the North Rim in thirty-six hours, sending a 40-foot/12-meter debris flow rampaging down Bright Angel Canyon. The flow in nearby Crystal Creek exceeded the normal flow of the Colorado River itself. This flood washed away a 1,000-year-old pueblo and created a new rapid on the Colorado by dumping house-size boulders into it. Floods wash debris from side canyons into the river. The river carries it to sea.

There is no such thing as a finished landscape; it is constantly being reshaped by cycles of slow change punctuated by cataclysm.

Understanding geologic time brings us to the realization that human activities are a remarkably small part of the canyon's story and are by no means the end of it. What of future rock layers? They will certainly come, but on a time scale that verifies our tenuous place in geologic time. To humans, long-term planning means 50 to 100 years, not 50 to 100 million years. Will the trends of environmental change unleashed by human impact have a consequence in geologic time?

Photo Right: The original North Rim lodge, circa 1928. Gilbert Stanley Underwood designed the rustic lodge and cabins to complement rather than conflict with their setting. NPS photo

Published by Grand Canyon National Park in cooperation with Grand Canyon Association. Dale Schmidt, NPS Writer; Tom Pittenger, NPS Editor; Faith Marcovecchio, GCA Project Editor; Ron Short, GCA Art Director. © Copyright 2001 Grand Canyon Association, Post Office Box 399, Grand Canyon, AZ 86023. Printed on recycled paper. ♻️

Returning to the Lodge

People have chosen to build in and use this area, and it is ours for a time. Environmentally sensitive planning on the North Rim resulted in buildings that complement rather than conflict with their setting. Gilbert Stanley Underwood designed a rustic lodge and cabins rather than a single hotel unit. A crew of 125 men, earning between 50 and 85 cents per hour, worked throughout the harsh winter of 1927-28 to build the lodge. When it opened to the public in 1928, staff would line up at the door to sing a song of welcome. In the evening they put on a talent show followed by a dance. Visitors would depart to strains of a farewell song sung by the accommodating staff.

On September 1, 1932, fire razed the four-year-old Grand Canyon Lodge. Rebuilding began in 1936. The design was altered somewhat: steepened roofs replaced flat rooftop observation decks, more stone was used, and less wood. Interior space became more massive with high, gabled ceilings and exposed beams; durability under snow load and resistance to fire were improved. The tower, with its museum and natural history exhibits painstakingly assembled by park naturalist Eddie McKee, was never replaced.

When the Union Pacific Railroad, builder of the lodge, ceased passenger operations in 1971, it had no incentive to promote accommodations like Grand Canyon Lodge. The lodge and cabins were donated to the National Park Service, which now leases the buildings to a concessioner. The lodge is on the National Register of Historic Places, ensuring that this aesthetically appealing structure will be maintained in its present condition until, millennia from now, canyon erosion returns it to the environment from which it came.

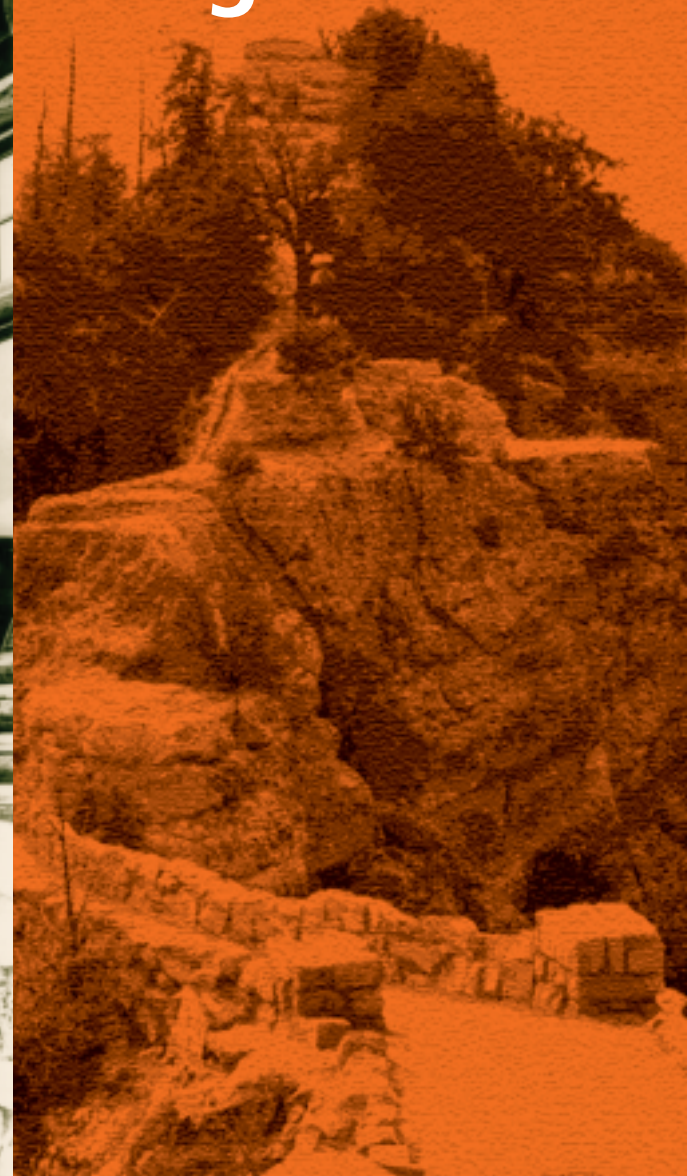


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Grand Canyon National Park
Arizona



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The paved trail to Bright Angel Point (0.25 mile/0.4 km) provides one of the North Rim's most spectacular views. Walk slowly and pace yourself; Bright Angel Point is 8,148 feet/2,484 meters above sea level (5,780 feet/1,762 meters above the Colorado River). High altitude and an elevation change of 200 feet/60 meters warrant extra caution for those with heart or respiratory conditions. The trail also follows a narrow, steep ridge and is exposed to lightning during storms. Stay on the trail and away from the edge. If a thunderstorm should pass through, seek shelter at the lodge.

The name Bright Angel originated on Major John Wesley Powell's pioneering exploration of the Colorado River in 1869. Powell regretted having named a muddy creek upstream the "Dirty Devil." Later, when he found a creek with sparkling clear water, he gave it the more reverent name, "Bright Angel," after a character in Milton's *Paradise Lost*. The name has since spread, adding its charm to several Grand Canyon features.

Photo Above: The trail to Bright Angel point affords spectacular scenic views. NPS photo

The Trail to Bright Angel Point

The large tributary canyon to the east (on your left as you walk out to the point) is Roaring Springs Canyon, a major tributary to Bright Angel Creek. The main source of water for both of these drainages is Roaring Springs. Water from rain and snowmelt seeps deep into the North Rim's Kaibab Plateau, migrating gradually southward due to the southward tilt of the plateau. Channeled by fault zones, caves, and impermeable rock layers, the water emerges spectacularly from cave-sized openings in the canyon wall.

Water from Roaring Springs has been pumped to the North Rim since 1928 and currently supplies both the North and South Rims. Power lines seen below this trail provide power to pump the water. On quiet days, you can hear Roaring Springs gushing out of a cliff 3,100 feet/950 meters below the rim.

The short walk to Bright Angel Point dramatizes the effect Grand Canyon has on its surroundings. A transition from the cool green forest of the plateau to a stunted forest of pinyon and juniper on the slope occurs within a very short distance. On flat land you would have to travel several hundred miles to experience this variation, but because of canyon topography the transition is compressed into a few hundred yards.

Warm air surges out of the canyon. Hot sun and drying winds draw moisture from soil and rock, creating inhospitable conditions for large trees. Plants that are adapted to this dynamic environment flourish, but they are shaped by its rigors.

Midway to the Point

Farther out toward the point, plants give way to bare rock. The rocks appear worn and in some places precarious. Chances of the rocks giving way beneath you on any particular day are exceedingly small, yet you can feel and see agents of erosion—sun, water, and wind—slowly wearing the rock away. These forces shape the canyon every day. Will the rocks on which you stand be here tomorrow? Probably. One thousand years from now? Maybe. Ten thousand years from now? It's not likely.

A timely example of Grand Canyon's dynamic forces occurred on January 3, 1991, in The Transept, the large tributary canyon to your right as you walk out to the point. A massive section of Coconino Sandstone (the light-colored layer of rock near the top) succumbed to gravity and erosion, cascading into the canyon and trailing debris along thousands of feet of canyon wall. In 1992 similar landslides closed several major trails. The Grand Canyon area has been eroding since regional uplift began about 70 million years ago. As long as the area remains above sea level, erosion will continue.

As the slide in The Transept attests, dramatic events can make a greater change in a few minutes than the cumulative changes of a century before. Someday the spot on which you are standing will be thin air. Deva, Brahma, and Zoroaster Temples to the southeast foreshadow the future of ridges like Bright Angel Peninsula. These buttes are islands of canyon wall isolated by erosion. The bridge near this trail's end is a reminder of the ultimate fate of Bright Angel Point.

