

Natural Bridges

Natural Bridges National Monument
Utah

National Park Service
U.S. Department of the Interior



The natural bridges represent three stages: old age, maturity, and youth.

▲ **Owachomo Bridge** no longer suffers stream erosion, but erosion by rain, frost action, and

sandblast. Now in its late phase, it could already have a fatal crack, or it could stand for centuries.

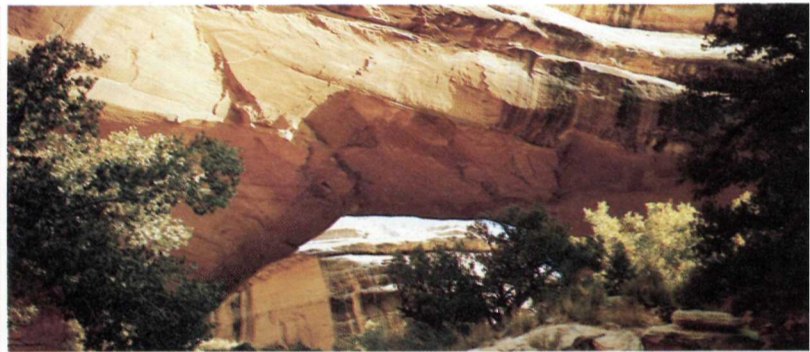
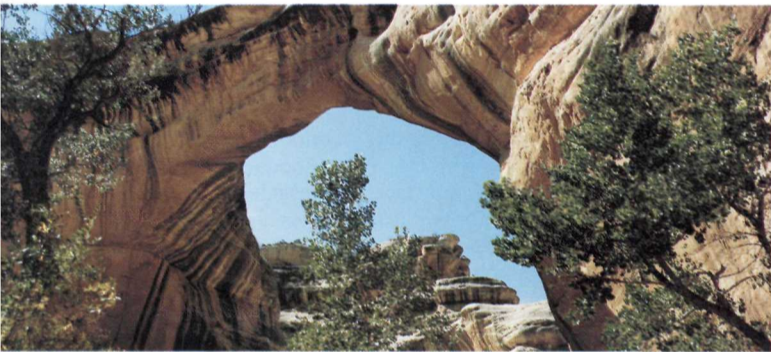
▼ **Sipapu Bridge** suffers little or no stream erosion because its abut-

ments now lie far from the streambed. A mature bridge, it is largest in both height and span (see chart at right). Sipapu can be hard to spot from the overlook on the canyon rim, despite its size.

▼ **Kachina Bridge**, in its youthful stage, looms huge and bulky. Floodwaters in White Canyon still work to enlarge it. A trail threads the canyon between Sipapu and Kachina bridges.

	Height	Span	Width	Thickness
Owachomo	32.3	54.9	8.2	2.7
	<i>106</i>	<i>180</i>	<i>27</i>	<i>9</i>
Sipapu	67	81.5	9.4	16
	<i>220</i>	<i>268</i>	<i>31</i>	<i>53</i>
Kachina	64	62.8	13.4	28.3
	<i>210</i>	<i>204</i>	<i>44</i>	<i>93</i>

Meters in regular type; feet in italics.



Discovering Three Scenic Treasures

Prospector Cass Hite came across these perforated rock walls, called natural bridges, when he was exploring White Canyon from his Colorado River placer gold camp in 1883. The nation was then newly eager to discover and protect its natural wonders. In 1904 *The National Geographic Magazine* publicized the bridges, and in 1908 President Theodore Roosevelt proclaimed the National Monument. The area was isolated, and until roads were built and then improved, access was difficult.

In 1904 the bridges were known by different names. Owachomo, Sipapu, and Kachina had been named, respectively, Edwin, Augusta, and Caroline, after early explorers or their relatives. In 1909 President William Howard Taft enlarged the boundaries and affixed the Indian names, which are Hopi. They are not the names of the Paiute or Navajo Indians who lived near here in historic times. The Paiutes had no names for individual bridges, but called them all "Ma-Vah-Talk-Tump," meaning "under the horse's belly." The names were probably chosen from the Hopi, rather than the Navajo, because the Hopi were found living in structures similar to the prehistoric cliff

dwellings of the Anasazi culture found in the park. Owachomo, meaning "rock mounds," is named for the large rounded rock mass found near the mesa. *Sipapu*, means "the place of emergence" in Hopi Indian legends. Prehistoric pictographs found here resembled *kachinas*, dancers, and so the youngest bridge got its name.

Prehistoric Indian populations occupied this part of Utah from about 2,000 to 650 years ago. There is evidence that the park area was used extensively by these early peoples. But both White and Armstrong Canyons were too narrow to support the farming activities of many families at a time. (If you come across ruins, do not enter or disturb them. They are important, irreplaceable records of Indian lifeways.) These peoples were Mesa Verdean Anasazi, whose culture is best exemplified at Mesa Verde in Colorado.

A frequent question is: What is the difference between a natural bridge and an arch? Natural bridges are formed by the erosive action of running water, but natural arches are formed by other erosional forces. Stream erosion is not involved. Natural bridges are *enlarged* and *shaped* by the same forces that

cause arches to grow and mature, but the bridges always begin through the action of stream erosion.

This canyon country is generally arid, but it supports a diversity of plant cover and wildlife. From atop the plateau, where the visitor center and loop road are, you sense this arid character directly. At this elevation the pinyon-juniper forest dominates. Desert shrubs and grasses dominate lower areas. Down in the canyon bottoms, however, where the streams have an influence, you will encounter cottonwood trees and willows. Along the cliffs are Douglas-fir, oak, and maple. You can walk down into the canyons by the trails near all three bridge overlooks (see map). For a longer trek take a trail between bridges through one of the canyons.

How Natural Bridges Form

The rock in the park is a sandstone initially formed by windblown sand. The deep, looping White and Armstrong Canyons and the three bridges within them can be traced to the relentless action of

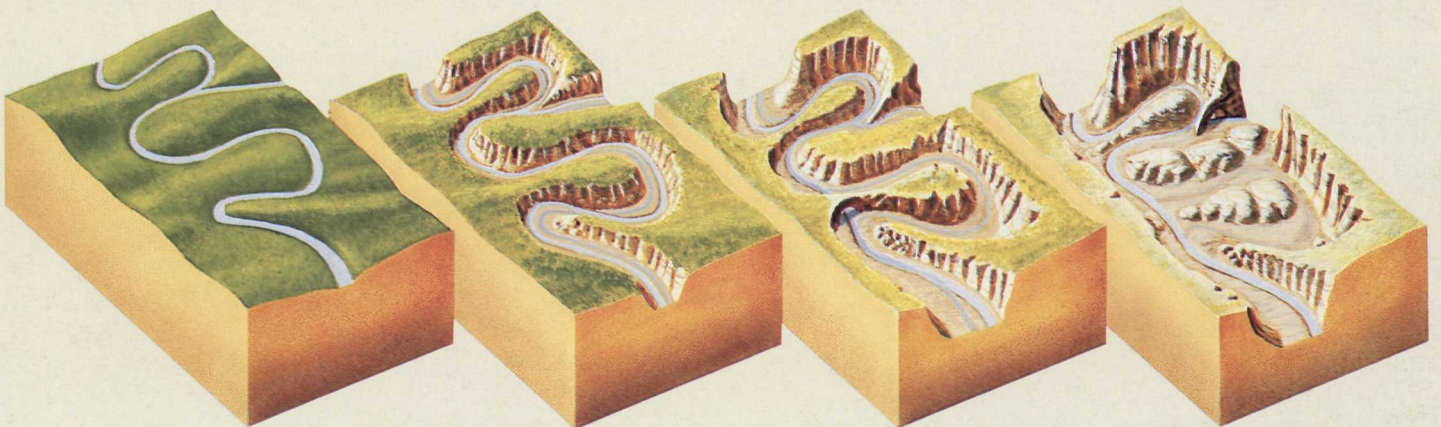
water against the cross-bedded sandstone. The desert stream would occasionally scour its bed with a great head of water and sand, so that conditions for forming natural bridges were set. Kachina and Sipapu

straddle streams with long winding curves. (Owachomo, now straddling no stream, was apparently cut by the action of two streams.) When a river forms a great looping meander, almost circling back

on itself, it can create the thin rock wall in which natural bridges form. Raging flood waters scrape away at both sides of the thin wall. Even during low water, percolation further weakens the wall.

Eventually the river breaks through and takes the shorter course under its new bridge, abandoning the old looping meander. The river continues to wear down the rock, enlarging the hole by

cutting itself deeper. A natural bridge is temporary. Blocks fall from its undersides and its surfaces weather, wear, and weaken. The span of Owachomo, for example, the oldest bridge, has worn thin.



Natural Bridges

▼ The world's largest photovoltaic power system, at the time, was dedicated here at Natural Bridges in 1980. It converts sunlight directly into electricity.

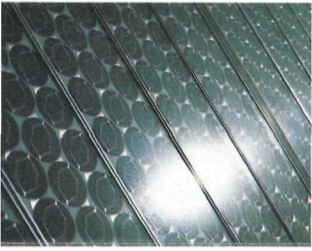
▼ The array of solar collectors covers nearly 0.4 hectare (1 acre). The direct current (DC) electricity can be converted to alternating current (AC) for immediate use, or stored in large lead-acid bat-

teries that hold a 2-day supply for use when the sun doesn't shine on the park. Ask for a free folder about the system.

▼ Centuries ago ancient Anasazi Indians made their homes here. Fairly good evidence suggests they lived comfortable, rewarding lives. The park's archeological evidence gives no clue why most sites

in this region were abandoned about 1300. Various theories suggest changing rainfall patterns, overpopulation, and drought as primary reasons.

▼ Hidden in this deep, dry, apparently desolate canyon country are many plants and animals adapted to its conditions. In season, wildflowers splash their colors against the sandstone backdrop.



Making the Most of Your Stay

Spending a short time in the visitor center before you see the rest of the park can enhance your understanding and enjoyment of this area. In the visitor center are free museum exhibits and a color slide program that present the history of the natural bridges area and sample the park's wildlife and plants. A ranger here can answer your questions, tell you about activities, and help you select trails you might enjoy hiking.

As you descend into a canyon you may get glimpses of hanging gardens on shelves in the canyon. The many shelves or benches in the canyon walls result from the different rates of erosion of the different layers of rock. The layers of mudstone and siltstone erode faster than the sandstone, promoting collapse, break up, and removal of the harder sandstone. This creates a stairstep effect of alternate cliffs and benches from mesa top to canyon floor.

You will most likely see only such wildlife as small birds, rodents, and an occasional lizard. Larger animals live here too, such as bobcats, coyotes, and mule deer. Their senses are acute and unless you surprise them, they will detect your presence first and evade you.

There are no services, such as gasoline, food, and lodging, in the park. The closest gasoline and grocery facilities are at Fry Canyon, which has limited lodging too, 42 kilometers (26 miles) west on U-95. Other overnight accommodations are in Blanding and Mexican Hat, both approximately 68 kilometers (42 miles) away. The park provides a 13-site primitive campground without drinking water. Campfire programs are offered here in the summer season.

The loop road leads away from the visitor center to link the trails to the three bridges.

The one-way road is 12.9 kilometers (8 miles) long. Parking is provided at the head of each trail (see map). The park is open all year, but the most pleasant season occurs from late April through October. For more information please write: Superintendent, Canyonlands National Park, Moab, Utah 84532.

Warning: There is hazardous terrain throughout the area. Please be careful. Lightning may strike the overlooks and viewpoints during storms. Flash floods occur in the canyon, often from thunderstorms outside the monument. The bridges can be safely viewed or photographed from several points, but climbing on the bridges is prohibited.

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