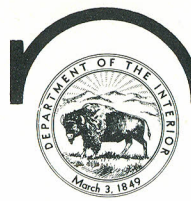


# NATURAL BRIDGES

National Monument

UTAH

A black and white photograph of a natural rock archway. The arch is formed by a single, thick, horizontal rock ledge that spans across a gap in a cliff face. Below the arch, the ground is a rocky, sloping terrain with several large, rounded boulders scattered across it. In the background, a line of trees is visible against a light sky. The overall scene is a rugged, natural landscape.



# Natural Bridges

## NATIONAL MONUMENT

UNITED STATES DEPARTMENT OF THE INTERIOR

Oscar L. Chapman, *Secretary* • NATIONAL PARK SERVICE, Newton B. Drury, *Director*

*Three gigantic natural bridges carved out of sandstone and located in a region of superb scenery, one of the true wilderness areas in the United States*

SAN JUAN COUNTY, in the southeastern corner of Utah, is a land of brilliantly colored cliffs, tortuous box canyons, pinnacles, and arches. Near the center of this scenic and geologic potpourri is Natural Bridges National Monument.

Within the monument are three huge natural bridges. Among known natural bridges they are exceeded in size only by the great Rainbow Bridge, which lies about 60 miles to the southwest in Rainbow Bridge National Monument, and the more recent discovery, Gregory Bridge.

The road from Blanding, Utah, ends at the rim of Armstrong Canyon. Directly across the 600-foot-deep canyon, spanning the mouth of a short tributary canyon, is Owachomo Bridge. To visit the other bridges in Natural Bridges National Monument one must walk. The trail is unimproved, and sometimes rough, but the 9-mile hike is rewarded by views of the magnificent canyons, the bridges, and ancient Indian ruins.

From the end of the road the trail drops to the bottom of Armstrong Canyon to a point where one can walk under the Owachomo Bridge. Three miles down Armstrong Canyon, at the point where it joins White Canyon, is the Kachina Bridge. Up White Canyon, past a fine cliff dwelling, the trail leads to Sipapu Bridge, and finally it tops out on the mesa between the canyons to return by way of the Owachomo to the end of the road. The trail forms an almost perfect equilateral triangle—3 miles to a side, with a bridge at each angle.

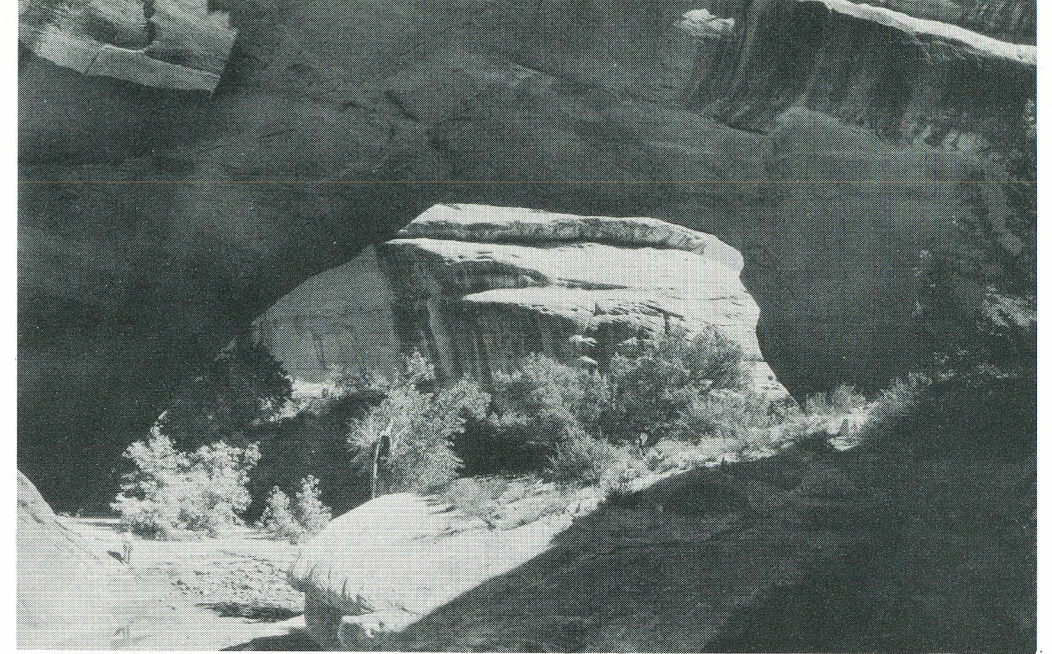
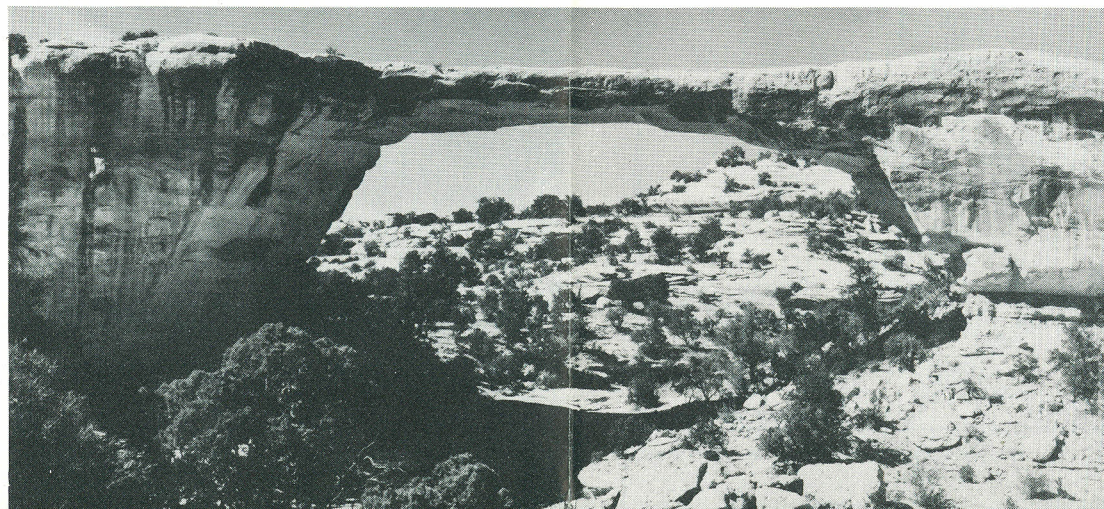
Cover: *Owachomo Bridge.*

### The Bridges and Their Names

THE FIRST known white men to see the bridges were two Mormon pioneers, W. C. McLoyd and C. C. Graham, who carved their names on an abutment of the Kachina Bridge during the winter of 1892-93. From that time on the bridges were well known throughout southern Utah, but few men made the arduous trip to see them. In 1908, President Theodore Roosevelt proclaimed the Natural Bridges National Monument as a result of the pleas of Utah citizens and of a Government surveyor that they be protected by the Government.

Early explorers had named the bridges for members of their parties or for relatives. When the monument was proclaimed, an effort was made to find Indian names which would fit the bridges. Paiute Indians, who still live in the country, had no names for the individual

*Owachomo is in view at the end of the road.*



*Kachina Bridge—the youngest of the three.*

bridges. At the time they were questioned they professed to know only a single term which they applied to all bridges, natural or otherwise. This was "Ma-Vah-Talk-Tump," or "Under the Horse's Belly."

At that time it was generally thought that the prehistoric people who had lived in the ruins of southern Utah were direct ancestors of the Hopi Indians, so it was natural, when no Paiute names were forthcoming, that Hopi names were applied to the bridges. They are:

**Owachomo (Rock Mound)**—So named because of a large, rounded block of rock on the mesa near one end of the bridge. Also formerly known as the Edwin Bridge.

**Kachina**—On one of the abutments of this bridge are numerous prehistoric pictographs, some of which resemble Hopi masked dancers, or kachinas. The former name for this bridge was Caroline.

**Sipapu**—The graceful arch of this bridge suggested to its namers the sipapu (place of emergence), a hole through which the Hopi believe their ancestors emerged from a lower, dark world into the present, sunlit one. This was also known as the Augusta Bridge.

The dimensions of the bridges are:

Bridge	Height (feet)	Span (feet)	Width (feet)	Thickness (feet)
Owachomo . . .	108	200	35	11
Kachina . . . . .	205	206	49	107
Sipapu . . . . .	222	261	37	56

### How Natural Bridges Are Made

TO MAKE a natural bridge Mother Nature must have several ingredients: a proper stone that

will shape well (a cross-bedded sandstone is best), a slowly rising landscape, and a desert-type stream that occasionally will scour its bed with a tremendous head of water and sand. All these were present in southern Utah.

The stone of the Natural Bridges area is a cross-bedded grey sandstone, known as the Cedar Mesa sandstone. It is of Permian age and is similar in appearance and structure to the more recent Navajo sandstone in which so many caves and arches have been formed.

When the land began to rise slowly from its ancient sea bed, two small streams formed on the western slopes of the Elk Ridge. The streams are known today as White River and Armstrong Creek, its tributary. They made meandering channels across the flat land and gradually entrenched themselves into tortuous canyons. As the land continued to rise, the streams cut ever deeper canyons.

The main purpose, or the driving force, of a stream is to make the shortest distance between two points, that is, a straight line. Every creek and river attempts to make a straight channel with an even grade from its source to its mouth. Hills, ridges, blocks of rock, or any other obstacles which a stream must bypass are gradually worn away as the stream makes a channel

more to its choice.

The tortuous streams in their deep rock channels were constantly trying to straighten their courses. During floods the silt-laden waters were thrown with great force against the walls of the meanders. In several places the fins of rock around which the windings of the streams passed were so thin that during the course of many centuries of buffeting the rock gradually wore away and a hole was bored through the fin. The waters poured through the gap and the bridge was born. After the initial breach was made, the stream continued to enlarge the opening and to cut its channel still deeper. Eventually, the old meander was left high and dry as a "fossil" stream bed.

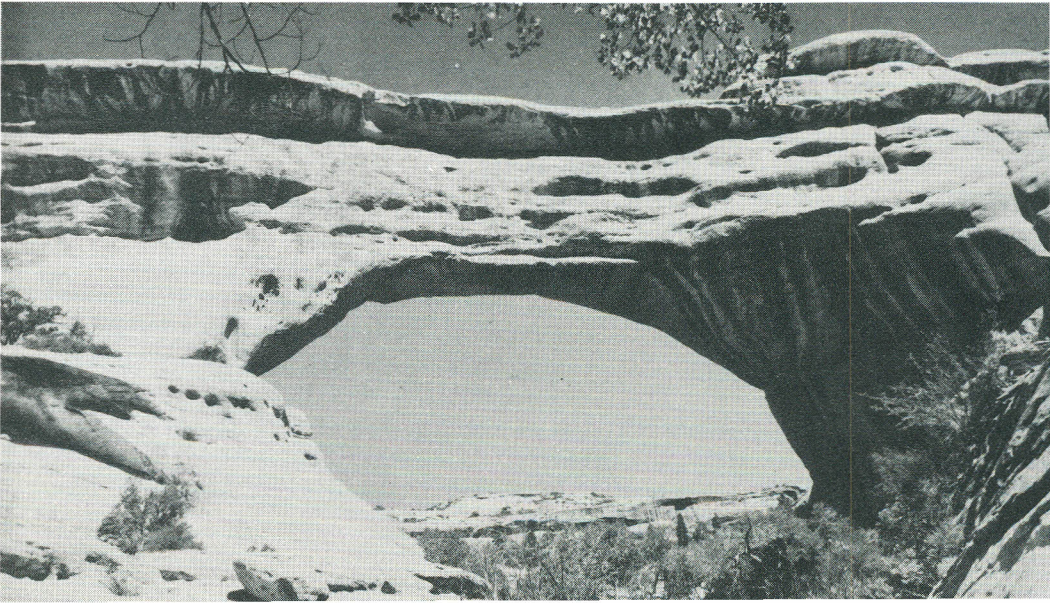
### Ages of the Bridges

SEVERAL phases of bridge-making may be seen at Natural Bridges National Monument.

Kachina Bridge is a new bridge. It is huge and bulky, and has a comparatively small opening. White River is still actively enlarging the opening beneath the span.

Sipapu Bridge is mature. It is a graceful, symmetrical span, and its abutments now lie far

*Sipapu Bridge, looking up White Canyon.*



enough from the stream bed that the river has little or no cutting action on the rock.

Owachomo Bridge is in its old age. It suffers no erosion from the stream; only the slight erosion from rains, frost action, or wind-blown sands now attack its surface. The life expectancy of Owachomo is short compared with that of the other two; it may span the canyon for centuries yet, or the crack which will ultimately cause its collapse may already have started.

The fate of all the bridges may be seen a short distance up White Canyon from Sipapu Bridge where faint scars and damaged abutments on the canyon walls indicate the point where a fourth bridge once spanned the canyon.

### Comparison With Other Types of Natural Bridges

MOST of the natural bridges of the United States are in the Four Corners region of the Southwest where favorable materials and conditions for bridge-making are to be found. There are two other types of bridges which are entirely dissimilar. Tonto Natural Bridge, in central Arizona, is a "built-up" bridge created by travertine deposited by springs. Natural Bridge, in Virginia—another well-known bridge—apparently was formed when most of the roof of a cavern collapsed.

### Wildlife

DEER are numerous in the pinyon and juniper forest which surrounds the monument, and mountain sheep, which spend their summers on the Elk Ridge, winter in the canyons. Smaller mammals are numerous, as are the coyotes and wildcats. An occasional lion works through the monument.

### Archeology

THIS section of Utah supported a large human population from about 2,000 years ago until about A. D. 1300. Thousands of ruins stud the

mesas and canyons of the district. Comparatively few sites lie within the monument, however, for both White and Armstrong Canyons are too narrow to have furnished enough farming land for more than a few families.

Visitors who hike around the trail to the bridges may see one cliff dwelling of about 20 rooms and several small rooms (apparently granaries) which were built on ledges high on the cliffs. An outstanding feature of the cliff dwelling is a kiva, or ceremonial room, with the original roof and ladder intact. The people who lived here during prehistoric times were closely related to those who lived on the Mesa Verde in southwestern Colorado.

### Caution

NATURAL BRIDGES National Monument is 50 miles, by dirt road, from Blanding, Utah. Much of the road is unsurfaced and is either difficult or impossible to travel after storms. Grades over the Elk Ridge are steep. There are no accommodations for travelers beyond Blanding. Visitors should make certain that they have ample water, gasoline, oil, and food before they leave Blanding. There is camping space at the monument for those who have bedding and cooking equipment.

The pass over Elk Ridge (The Bear's Ears, elevation 9,000 feet) is usually blocked by snow and impassable from late September until late April or May. A National Park Service ranger is stationed at the monument only during the months that the road is open.

### Administration

NATURAL BRIDGES National Monument, with an area of 2,649.70 acres of federally owned land, is a part of the National Park System administered by the National Park Service of the Department of the Interior. Communications regarding the monument should be addressed to the Regional Director, Region Three, National Park Service, Box 1728, Santa Fe, N. Mex.

