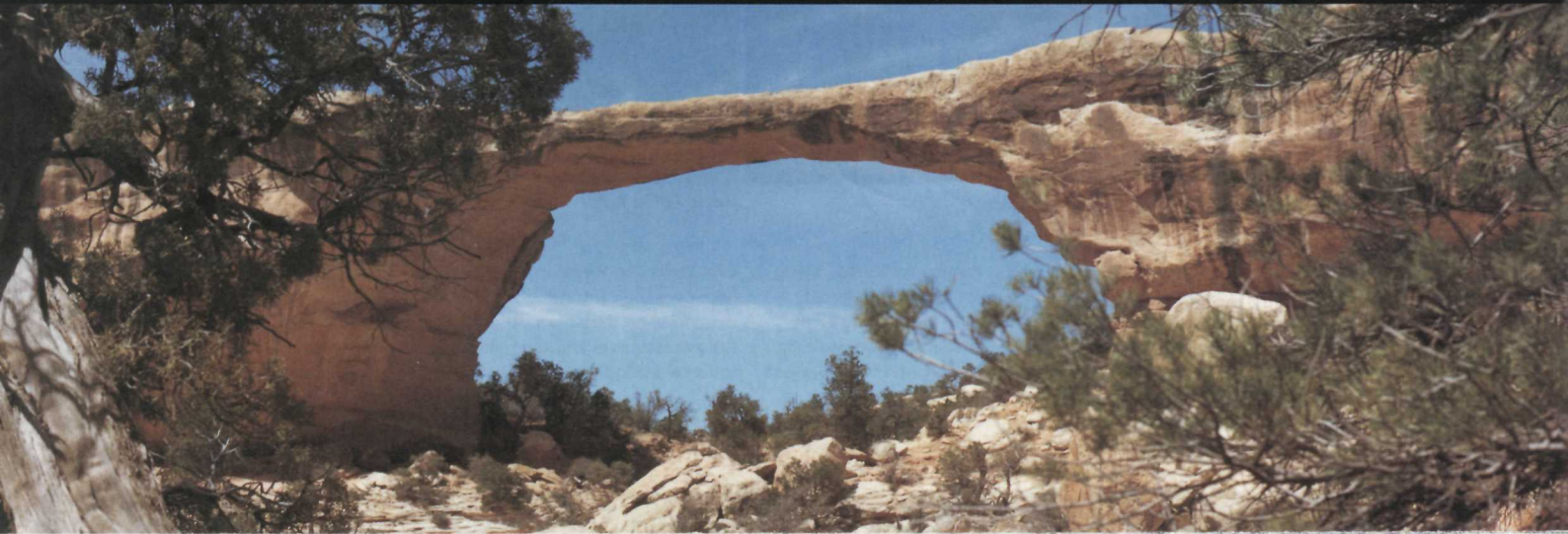


Natural Bridges

National Park Service
U.S. Department of the Interior

National Monument
Utah



The natural bridges in these photos represent three stages: old age, youth, and maturity. *Top* Streams no longer erode Owachomo in its old age, but frost action and seeping moisture

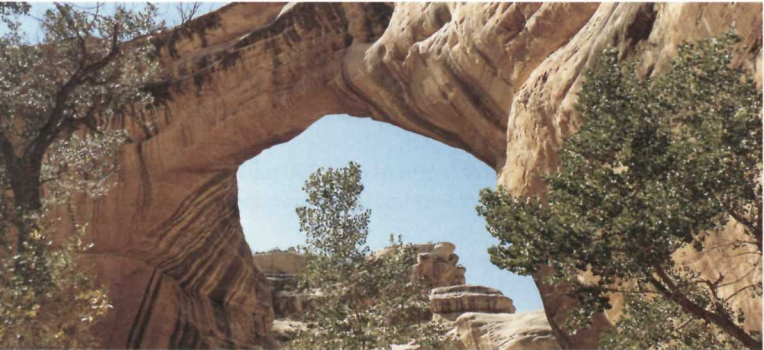
do. The bridge may now have a fatal crack, or it may stand for centuries. *Below right* Young Kachina Bridge looms big and bulky. White Canyon floodwaters still

work to enlarge its span. A trail threads the canyon between the three bridges. *Below* Mature, highest, and greatest in span, Sipapu Bridge can be

difficult to spot from the canyon rim overlook, despite its mass. It endures very little stream erosion because its abutments stand far from the stream.

Owachomo Bridge				
	Height	Span	Width	Thickness
Owachomo	106	180	27	9
Sipapu	220	268	31	53
Kachina	210	204	44	93

Dimensions in feet



Sipapu Bridge



Kachina Bridge
COURTESY MIT LINCOLN LABORATORY

Discovery of the Bridges

In 1883 prospector Cass Hite wandered up White Canyon from his base camp along the Colorado River. In search of gold, he found instead three magnificent bridges water had sculpted from stone. In 1904 *National Geographic Magazine* publicized the bridges; in 1908 President Theodore Roosevelt proclaimed Natural Bridges National Monument, creating Utah's first National Park System area.

The bridges have had several names. They were first named President, Senator, and Congressman in order of height. Later explorers renamed them Augusta, Caroline, and Edwin. In 1909 the park was enlarged to protect nearby Puebloan structures, and the General Land Office affixed the Hopi names Sipapu, Kachina, and Owachomo. Sipapu means "place of emergence," the entryway by which the Hopi believe their ancestors came into this world. Kachina is named for rock art symbols that resemble symbols commonly used on kachina dolls. Owachomo means "rock mound," a feature atop the bridge's east abutment.

Early Human History People repeatedly occupied and abandoned this area from 9,000 to 700 years ago. Only rock art and tools, left by those hunting small game and gathering wild plants, show humans living here then. Ancestors of modern Puebloan people moved onto the mesa tops 1,300 years ago to dry farm—using only natural precipitation—leaving as the environment changed.

About 900 years ago new migrants from across the San Juan River lived in small, single-family dwellings near the deepest, best-watered soils throughout this area. In the 1200s, farmers from Mesa Verde migrated here, but by the 1300s the ancestral Puebloans migrated southward. Navajos and Paiutes lived here in historic time, and Navajo oral tradition holds that their ancestors lived among the early Puebloans.

The evidence these people left is fragile and irreplaceable. To help preserve it, do not enter the structures or touch or mark walls or rock art. Leave artifacts in place and stay on trails.

Natural History Millions of years ago these sandstones were deposited and then slowly uplifted as part of the Colorado Plateau. Erosion gradually formed today's canyons and landscapes. Plant communities varied over time: Pollen studies show this area was once spruce-fir forest. Changes in climate changed the dominant plants, but pockets of Douglas fir still dot cooler, moist, north-facing cliffs near Sipapu Bridge.

Infrequent and unpredictable, precipitation can be dramatic—with long droughts to periods of heavy rain and snow. Plants and animals have adapted to this environment. Cryptobiotic soil, the black and lumpy crust here, holds moisture and stabilizes and adds nutrients to the soil. This allows other plant communities, like the pinyon-juniper forest, to develop and mature.

How Bridges and Arches Differ Natural bridges are formed by the erosive action of moving water. Arches are formed by other erosional forces—mainly frost action and seeping moisture—that also enlarge natural bridges once stream erosion forms them.

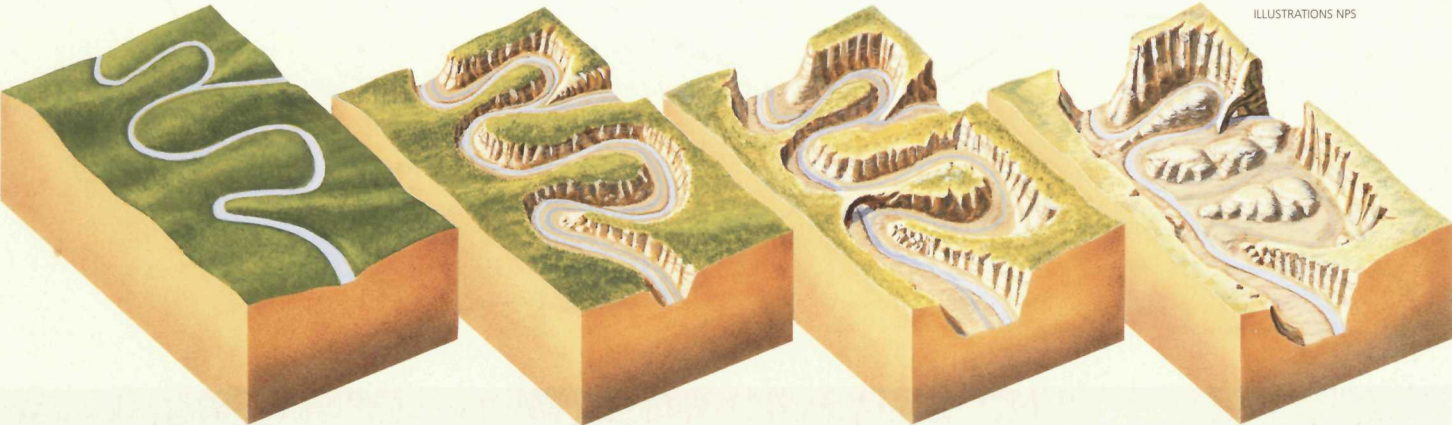
How Natural Bridges Form

The rock here is a sandstone first formed by wind-blown sand. Deep, looping White and Armstrong canyons and their three bridges are results of water's relentless action against the crossbedded sandstone. Episodes of great heads of water and sand scouring the desert stream set the conditions for forming natural bridges. Kachina and Sipapu straddle streams with long, winding curves.

Owachomo, straddling no stream now, apparently was cut by two streams.

As a stream forms a big looping meander and all but circles back on itself, it can carve the thin rock wall in which a natural bridge forms. Flood waters erode both sides of the thin wall, and even at low water levels, percolation weakens the wall.

Over time, the river breaks through and takes the shorter course under its new bridge, abandoning the old meander. The river keeps wearing down the rock, enlarging the hole by cutting itself deeper. A natural bridge is temporary. Blocks fall from its underside, and its surfaces weather, wear, and weaken. The span of the oldest, Owachomo, (*top photo above*) has now worn thin.



ILLUSTRATIONS NPS

Natural Bridges



Pinyon-juniper forest



Moss Back Butte
PHOTOS NPS EXCEPT AS CREDITED



Horse Collar Ruin
RON MCCANN, COURTESY CANYONLANDS NATURAL HISTORY ASSOCIATION



Horned lizard

A High Desert Environment

Yearly precipitation averages 13 inches, and elevations range from 5,500 to 6,500 feet. The Pinyon-juniper forest dominates the mesa top around the visitor center and Bridge View Drive. Grasses and

shrubs are scattered over lower elevations. Willow and cottonwood trees and other water-loving plants grow in canyons and where water sources are perennial. Hanging gardens are found near

canyon wall seeps. Douglas fir and ponderosa pine occur along some shaded canyon walls. In season wildflowers splash color against sandstone backdrops. The life and culture of the people

who came and went here over the centuries depended on the area's natural resources and the tools for using them.

Please stay on trails and do not touch rock art or write on canyon walls or enter structures. Leave all artifacts in place for others to enjoy.

Accessibility We strive to make our facilities, services, and programs accessible to all. For more information go to the visitor center, ask a ranger, call, or check our website.

Making the Most of Your Stay

Visitor Center Prepare for your visit at the visitor center. Exhibits and an audiovisual program portray the geology, history, and wildlife and plants of Natural Bridges. Ask park staff about activities you might enjoy. Fill water bottles here: once you leave the visitor center area there is no water.

Services A 13-site campground (no water) has tables, tent pads, grills, and pit toilets, with a limit of one vehicle (26 feet long or less) per site. Find gasoline, groceries, and lodging 40 miles east in Blanding or south in Mexican Hat.

Bridge View Drive Bridge View Drive leads to overlooks and trailheads for all three natural bridges and Horse Collar Ruin archeological site. This paved, one-way loop road is nine miles long. Each overlook and trailhead has limited parking. If towing a trailer or other vehicle, unhook and leave it in the visitor center parking lot.

Hiking Short hiking trails lead from Bridge View Drive to the base of each bridge. Trails along the canyon bottom and on the mesa top connect the bridges and trailheads and offer loop hikes of varied lengths (see chart below). The park is open year round, but late April through October is its most pleasant season.

Into the Canyon Descending into the canyon you may see hanging gardens in shady alcoves. Shelves and benches occur in canyon walls because rock layers erode at different rates. Mudstone and siltstone erode faster than sandstone, promoting sandstone's collapse, break-up, and removal. This creates the stairstep effect of alternating cliffs and benches from mesa top to canyon floor.

Wildlife Wildlife abounds here, but you may see only birds, rabbits, and lizards. Bobcats, coyotes, bears, mule deer, and mountain lions live in the area but will evade your notice if at all possible.

WARNINGS Watch for sheer drop-offs and unfenced trails and for lightning and flash floods from thunderstorms. Carry at least one gallon of water per person per day. **Climbing on bridges is prohibited. Dogs are prohibited on hiking trails;** they must be leashed when outside vehicles.

More Information
Natural Bridges National Monument
HC 60, Box 1, Lake Powell, UT 84533-0001
www.nps.gov/nabr or 435-692-1234

This is one of over 390 parks in the National Park System. Visit www.nps.gov to learn more.

Loop Hikes to More than One Bridge

	Sipapu	Kachina	Owachomo
Sipapu	0	5.6	8.6
Kachina	5.6	0	5.4
Owachomo	8.6	5.4	0

Miles, round-trip, from parking area

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