

# ARCHES 

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Gigantic but graceful arches and immense windows perforate vertical fins of dull red sandstone in Utab's "slickrock" country overlooking the deep gorge of the Colorado River

IN THE HEART of the famed red rock country of southeastern Utah, north across the Colorado River from the picturesque old Mormon pioneer town of Moab, is Arches National Monument. It contains more natural stone arches, windows, spires, and pinnacles, carved by the Master Sculptor in great buff-colored sandstone cliffs and fins, than any other known section of the Nation. Natural windows, enlarged and smoothed by weathering, have been carved in the hundreds of vertical slabs cut by erosion from a 300 -foot layer of sedimentary rock called the Entrada sandstone.

Eighty-eight openings, large enough to be classed as arches, have been discovered within the boundaries of this national monument, hence the origin of its name. Other arches are probably hidden away in remote and rugged portions of the area. Spectacular towers, sweeping coves, picturesque shapes resembling figures of beasts and men, balanced rocks, and other weird forms resulting from the combined action of running water, wind, rain, frost, and sun form a setting to which the arches themselves are a majestic culmination.

## The Windows (Arches) Section

WITHIN the east-central and most readily accessible portion of the monument, a great mass of the Entrada sandstone towers over the surrounding plain, dotted with piñon and juniper trees. In these massive walls the forces of nature have carved eight immense arches in addition to many smaller windows, passageways, coves, pinnacles, spires, and balanced rocks. Here are the famous Double Arch, Parade of the Elephants, Cove of the Caves, North and South Windows, Balanced Rock, and other erosional features which have helped to make the monument famous. This part of the area may be reached by automobile through Willow Flats at all seasons of the year over graded State Route 93, which leaves U. S. 160, 12 miles north of Moab. A foot trail will enable you to approach closely all of the numerous features of interest.

## Courthouse Towers

ALTHOUGH they are much nearer to U. S. 160 than to The Windows, the scenic features

The National Park System, of which this area is a unit, is dedicated to conserving the scenic, scientific, and bistoric beritage of the United States fox the benefit and enjoyment of its people.
of the Courthouse Towers section can be reached only by foot, or on horseback, over a trail which climbs from monument headquarters to the top of the escarpment overlooking the gorge of the Colorado River. On the mesa top behind these cliffs are several canyons, the most spectacular of which is known as Park Avenue because of the massive towers, spires, and pinnacles topping its sheer walls and resembling the skyscrapers of a great city.

## Devils Garden

THE Devils Garden section may be reached by an extension of State Route 93, continuing $81 / 2$ miles north and west from The Windows Junction. From the terminus of this road near Skyline Arch, trails lead 2 miles to Double O Arch, 1 mile to Landscape Arch, and to Fin Canyon, Tunnel Arch, and others of the 70 arches which are found in this spectacular portion of the monument.

Landscape Arch, believed to be the longest natural-stone span in the world, has a length of 291 feet. One portion of this area was uti-
lized by the prehistoric Indians, perhaps as a winter campground. Here the soil is littered with chips of agate and chalcedony used by them in making arrow points and other stone implements. Here, too, the cliffs are decorated with many petroglyphs, including the figures of humans and animals.

The Fiery Furnace portion of the Devils Garden in Arches National Monument is so rugged that it has not yet been fully explored. Its name stems from the fact that in the light of the setting sun this great jumble of vertical slabs of red rock appears to glow as if from the heat of a furnace.

## Klondike Bluffs

THIS is another area which has not been adequately investigated because of the difficult terrain. It lies west of the Dark Angel portion of Devils Garden and consists of long parallel rows of immense upright sandstone fins and grotesque rock forms. This spectacle makes the 2 -mile trail trip to Klondike Bluffs well worth while.

Park Avenue is lined with pinnacles resembling big-city skyscrapers.

## Delicate Arch

THE scenic features of the monument culminate in the impressive grandeur of Delicate Arch, with its unsurpassed setting of cliffs and massive "slickrock" domes, and with the gorge of the Colorado River beyond and the snowcapped peaks of the La Sal Mountains in the distance. A spur of State Route 93 leads to within $11 / 2$ miles of Delicate Arch. A foot trail covers the balance of the distance.

## How the Arches Were Formed

TO those interested in earth structure and the power of erosion, Arches National Monument is a great outdoor museum. Rocks of the area are predominantly sedimentary: originally sands deposited in ancient seas. Some have been altered by heat and pressure to form metamorphic rocks. Geologists explain that here the Entrada sandstone was deposited during the Jurassic Period in the Age of Reptiles. The Entrada sandstone is cut by two series of cracks, called joint systems, which cross each other at right angles. Minor parallel cracks about 20 feet apart extend through the entire thickness of the formation. For untold centuries, water entering these joint systems has dissolved the cementing substances in the sandstone, carrying away the loosened materials. This progressively enlarged the parallel cracks of the series of master joints which follow the slopes. During thousands of years, these parallel cracks have been gradually enlarged to form wide, deep fissures between which rise huge separating slabs of the dull red sandstone. These slabs, or fins, are often less than 20 feet in thickness and 100 feet or more in height.
It is in these remaining fins that arches have been formed. In this region quarrying is done largely by water entering the secondary sets of joints at right angles to the slab faces, gradually loosening blocks of sandstone, or, lacking joints, loosening disks and shell-
shaped chunks. With the aid of gravity these are removed by water and wind and by freezing and thawing, thus developing holes, or windows, in the great fins. The persistent agents of weathering enlarge the windows, smoothing their contours to develop large well-formed arches.

However, the process of weathering does not confine itself to such activity. It also removes other portions of the fins leaving some arches quite isolated, standing alone, like Delicate Arch, pictured below. Becoming so thin from the ceaseless attacks of the elements that they can no longer support themselves, the spans of the arches eventually fall, leaving the remnants in place as mere buttresses, or pillars. All stages in the development and decay of arches are to be seen in the monument.

## Wildlife

NATIVE plants and animals found in Arches National Monument are protected by the National Park Service against activities of man that might reduce their numbers or alter their habitats. The local species are characteristic of the sparse piñon and juniper forest communities of the Great Basin Desert. The larger

Delicate Arch-notice the figure of a park ranger under it.

mammals such as deer, coyotes, and foxes are present but rarely observed. Birds of many species, numerous small rodents such as ground squirrels, rabbits, and kangaroo rats, and, occasionally, small reptiles may be seen. From May to August, except in abnormally dry years, colorful displays of wildflowers carpet moist locations, particularly in the Salt Valley.

## About Your Visit

WITH the extension of State Route 93, major scenic features of the monument are accessible by graded road. However, as in the majority of national parks and monuments, leisurely travel through portions of the area which cannot be reached by automobile yields much in the way of interest that is missed by motorists. Trails lead to many scenic points, and arrangements for pack trips may be made through the superintendent.

There are no food or lodging facilities in the monument, but several restaurants and auto courts and hotels are located in Moab.

Those who plan hiking or pack trips, or who desire to camp anywhere in the monument, should report to the superintendent before entering the area. Lack of drinking water, the possibility of getting lost, and sudden storms that wash out portions of the road present real hazards. Therefore, the superintendent should know of all parties in the area in case assistance is needed. The su-
perintendent's office is at monument headquarters, about 5 miles northwest of Moab.

To protect the natural features of the monument, and for your comfort and convenience, please note:

The monument is a sanctuary for wildlife. Hunting or the use of firearms is not permitted.

Flowers, shrubs, and trees should not be disturbed; initials or names should not be carved on rocks; and natural objects or artifacts should not be defaced, destroyed, or removed.

Fires may not be built within monument boundaries without permission of the superintendent.

## The Monument

ARCHES National Monument was established by Presidential proclamation on April 12,1929 , with an area of 4,420 acres. On November 25, 1938, a boundary change was authorized, also by Presidential proclamation. The present area is 53 square miles.

## Administration

ARCHES National Monument is administered by the National Park Service of the United States Department of the Interior. A superintendent, whose address is Box 98, Moab, Utah, is in immediate charge.


