

**PETRIFIED FOREST  
NATIONAL MONUMENT  
ARIZONA**



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE



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HAROLD L. ICKES, Secretary

NATIONAL PARK SERVICE

ARNO B. CAMMERER, Director

PETRIFIED FOREST NATIONAL MONUMENT

Open All Year

The most spectacular manifestations of petrified wood known in the world, as well as the most colorful portions of the Painted Desert, are included in the Petrified Forest National Monument, Arizona. Unique in its vivid and varied colors, the petrified wood of this area has long attracted the interest of visitors from all parts of the world. Six separate "forests" within the boundaries of the Monument, and many regions containing fossil remains of animal life and other plant life besides the petrified wood, are all of great popular and scientific interest. There are more than a hundred pre-Columbian Indian ruins within the Monument in addition to thousands of ancient Indian petroglyphs on the weathered sandstone cliffs.

Fine approach roads, U. S. Highways Nos. 66 and 260, connected by the Monument Highway, make this area easily accessible to motorists. Overnight accommodations are available at the Painted Desert and Rainbow Forest. Rangers and naturalists are on duty to explain the story of this most interesting region.

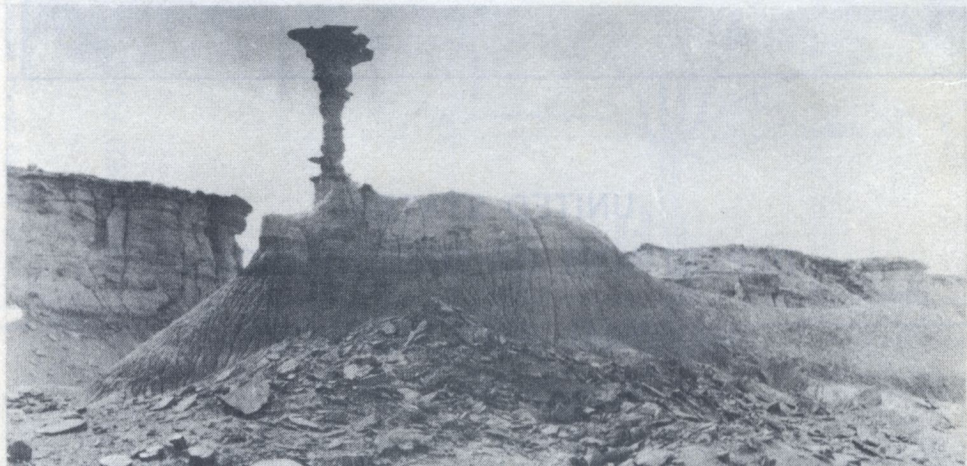
Attention was first directed to the petrified forests of Northern Arizona in the 1850's, but it was not until 1906, in response to the petition of citizens of Arizona, that the area was made a national monument to protect the petrified wood from exploitation and vandalism. Covering an area of 141 square miles, the Monument is administered by the National Park Service, United States Department of the Interior. Two museums, fine paved roads and foot trails contribute to the interest and convenience of visitors.

THE GEOLOGIC STORY

**THE TREES GREW IN TRIASSIC TIME.** About 160 million years ago Northern Arizona is believed to have been a lowland where shifting streams spread sand and mud over the plains. Trees, ancestral to the modern Araucarias of South America and Australia, grew in favorable spots, together with cycads, rushes and numerous kinds of ferns. Crocodile-like reptiles (Phytosaurs), and giant salamander-like amphibians (Stegocephalians) inhabited lowlands, rivers, and marshes.

**THE TREES WERE BURIED.** It was no sudden catastrophe, but rather the slow, natural processes, occasionally hastened by destructive fires and the ravages of insects, that are believed to have killed the trees even as these enemies kill forest trees today. Many of the trees, certainly, decayed on the ground, but others fell into streams and rivers and came to rest in bays or on sand bars where rapid burial by mud and sand prevented their decay. The deposits in which these trees were buried were eventually turned to hard sandstones and shales, and are now called the Chinle formation. The Chinle deposits were themselves buried at least 3,000 feet beneath layers of sand and silt spread by shallow seas.

Eagle Nest Rock





THE WOOD WAS REPLACED BY SILICA. While buried, the logs were saturated with water in which a mineral called silica was dissolved. Through some process the wood was removed, perhaps by solution, perhaps by a kind of decay; and as each wood cell disappeared, an equal amount of silica formed in its place. This substitution of mineral for wood was eventually so complete that not only was the form and shape of each log duplicated, but even the grain and microscopic cell structure in some specimens were perfectly reproduced. The silica was variously and beautifully colored by oxides of iron and manganese. The banded variety is called agate or onyx, the red opaque form is jasper, the translucent red is carnelian, and so on through a long series of colors and textures.

EROSION UNCOVERED THE PETRIFIED LOGS. Long after the logs were buried the mountain highlands of Western America began to take shape and the Northern Arizona plateau was lifted several thousand feet above sea level. Immediately wind and water began to erode away the thick burden of sandstone and shale from above the petrified forests. For nearly 60 million years this erosion has slowly progressed until during our own time certain parts of the forests are again being exposed on the surface of the earth.

Many logs lie exactly where erosion has uncovered them, but in other places deeper erosion has caused some logs to sink to lower levels where broken fragments and sections accumulate in irregular piles. Doubtless much fossil wood has been completely removed by erosion, but just as certainly much more remains still buried in the rocks.

ERODED CHINLE SHALES FORM THE PAINTED DESERT. Some of the shales formed during the Triassic period were exceptionally highly colored in red, yellow, blue, and white. The beautifully "painted" and carved badlands formed where these colored shales have been eroded into steep ravines, rounded knolls, turreted ridges and flat mesas, no doubt suggested to the early Spanish explorers the singularly appropriate name "El Pintado Desierto" or "Painted Desert."

PREHISTORIC INDIANS LIVED IN PETRIFIED FOREST. The ruins of pueblos built by Indians in pre-Columbian times, from 800 to 1,400 years ago, are scattered on nearly every mesa throughout the Monument. Low mounds, strewn with blocks of sandstone and bits of broken pottery, mark the fallen walls of these ancient homes. Sometimes these dwellings, such as the Agate House in the Third Forest, were built of blocks of petrified wood, and smaller fragments of this material were chipped into arrowheads, knives, and scrapers. These Indians were undoubtedly related to the other pueblo builders and cliff dwellers of the times, and the modern Hopi and other Pueblo Indians are thought to be their descendants. Petroglyphs, graven on nearby sandstone cliffs, might tell something more of these ancient inhabitants if these picture writings could be interpreted.

#### FOLLOW THIS GUIDE THROUGH THE MONUMENT

PAINTED DESERT RIM ROAD. Take 5-mile loop road north of U. S. Highway No. 66 leading to vantage points affording excellent views of the Painted Desert and the Painted Desert Inn and Museum.

PAINTED DESERT INN **Under Construction** MUSEUM OF INDIAN ARTS AND CRAFTS. The building which houses the Inn and Museum is a composite of Pueblo Indian and Early Spanish architectural types. Authentic Indian handicraft is available at the Inn, and the fascinating story of the development and technique of Indian arts and crafts is well

Painted Desert





presented in the museum. Many visitors make this an overnight stop in order to experience fully the enchantment of the Painted Desert as shadows shift and colors change with the sunrise and sunset.

**PUERCO RIVER INDIAN RUINS.** Located near the Ranger Station is the largest pueblo ruin accessible in the Monument. Three of its 125 rooms have been excavated, and charred corn and beans, pottery and artifacts found in the digging are among the rare objects of early culture exhibited in the Ranger Station. A petroglyph nearby called "The Stork" is of special interest.

**NEWSPAPER ROCK.** This cliff covered with petroglyphs has been called "the classic example of petroglyphs in the Southwest." Pictures of this sort have never been interpreted, but easily recognizable are representations of men and women, phallic symbols, antelope, lizards, snakes, birds, and geometric designs. This is well worth seeing. (Side road  $\frac{1}{4}$ -mile and trail, 15 minutes.)

**LOWER BLUE FOREST ROAD.** A  $\frac{1}{4}$ -mile drive from the Highway connects with the west end of the Blue Forest Trail near the Phytosaur and Stegocephalian quarries.

**BLUE FOREST TRAIL.** Passes through a painted desert landscape of interesting badland erosional forms cut into the deep velvet blue and maroon shales which differentiate the Blue Forest. Unusual pink-colored wood occurs along the path, and many logs may be seen in place embedded in the sandstone and in various degrees of resurrection and disintegration. Occasional pieces of fossil bones of prehistoric monsters are scattered on the ground. (1-mile trail. Hikers may start at either end and have their car meet them at the other end.)

**UPPER BLUE FOREST SCENIC ROAD.** Every visitor should make this drive. From the mesa top, where the road connects with the Blue Forest Trail, a great panorama extending from the Blue Forest to Pilot Mountain in the Painted Desert opens up to the north. (Side road, 3 miles, and return to highway.)

**THE AGATE BRIDGE.** For nearly 50 years this has been called "The most celebrated petrified log in the world." It spans a 40-foot arroyo carved in the white sandstone beneath to a depth of about 30 feet. The complete log is about 110 feet long and about 4 feet through at the base. (50 yards by trail from the parking area.)

**FIRST FOREST SCENIC ROAD.** The setting of this forest in a pocket carved into the sandstone-capped mesa gives the First Forest an individual charm. The attractiveness of the landscape, covered with fragments and large sections of highly colored agatized wood, is enhanced by the presence of a surrounding fringe of fantastic erosional forms of which Eagle Nest Rock is the most prominent. (Side road, 1 mile and return.)

**SECOND FOREST.** The finest examples of white and gray petrified wood together with an abundance of large, agatized and quartz-bejeweled logs are found in this area. Antelope, native to the region, are frequently seen a short distance south of this forest. (Trail through Second Forest, 20 minutes.)

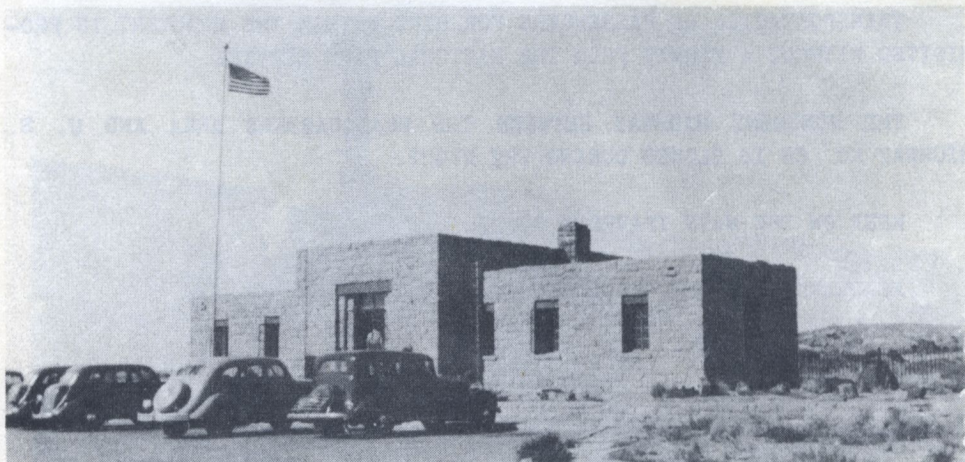
**THIRD FOREST AND AGATE HOUSE.** This forest covers the largest area and the logs are more concentrated and longer, as a rule, than in the other forests. A prehistoric Indian pueblo called the Agate House, consisting of seven rooms built entirely of blocks of petrified wood, has been reconstructed of this material on the original foundations. This in itself is sufficient inducement to lead one to the very end of the trail. (Side road,  $\frac{1}{4}$  mile, and trail 30 minutes.)

**RAINBOW FOREST.** This most colorful of the forests is reached by a short trail back of the museum. In a compact unit, this forest contains the famous Resurrection Log, Old Faithful, and many others. Old Faithful is one of the largest logs easily accessible to visitors.

**RAINBOW FOREST MUSEUM.** Brilliantly polished sections of petrified wood showing all the colors of agate, chalcedony, jasper, and onyx are a feature of this unique museum. A diorama depicting a restoration of the Triassic scene with reptiles in their river-bottom habitat amid dense forests, together with charts, diagrams, fossil skulls, and beautifully preserved fossil fern and cycad leaves, dramatically illustrate the geologic story of the Petrified Forest. A naturalist is always on duty in the museum.

Souvenirs of the Petrified Forest, tourist supplies, and photographs are available at Rainbow Forest Lodge.

Rainbow Forest Museum





## RULES AND REGULATIONS

The following excerpts from the General Rules and Regulations for the national parks and monuments, made, published, and approved by the Secretary of the Interior, June 18, 1936, are applicable to the Petrified Forest National Monument, and have the full force and effect of Federal Law:

IT IS UNLAWFUL TO INJURE, DESTROY, OR APPROPRIATE SPECIMENS OF PETRIFIED WOOD OF ANY SIZE WHATSOEVER, FOUND WITHIN THE MONUMENT BOUNDARY, OR TO DEFACE, INJURE, DISTURB OR MARK ANY RUINS, RELICS, PICTURES, PETROGLYPHS, OR OTHER WORKS OF PRIMITIVE OR PREHISTORIC MAN, GOVERNMENT PROPERTY OR NATURAL FORMATIONS, IN ANY MANNER, AND VIOLATORS WILL BE PROSECUTED TO THE FULL EXTENT OF THE LAW, PENALTY UP TO FIVE HUNDRED DOLLARS (\$500) FINE OR SIX (6) MONTHS IMPRISONMENT, OR BOTH.

At first glance it might seem that this law pertaining to the petrified wood is quite drastic, because the fragments and chips are so abundant within the monument. But it must be remembered that there are more than two hundred thousand visitors annually, and that it is most important that the petrified forest be kept absolutely intact so as to be enjoyed by future generations.

CAMPING AND PARKING ALLOWED AT DESIGNATED AREAS ONLY.

HUNTING OR SHOOTING PROHIBITED - KEEP DOGS ON LEASH.

TRANSPORTATION OF PASSENGERS FOR HIRE WITHIN THE MONUMENT IS PROHIBITED WITHOUT A PERMIT FROM THE NATIONAL PARK SERVICE.

THE MONUMENT HIGHWAY BETWEEN THE HEADQUARTERS AREA AND U. S. HIGHWAY NO. 66 IS CLOSED DURING THE NIGHT.

KEEP ON THE MAIN TRAVELED ROADS.

READ AND OBEY THE REGULATIONS.

PHOTOGRAPHS MAY BE FREELY TAKEN.

April 1939.



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SCALE  
1 0 1 2 3 4 5 6 Miles



NAVAJO INDIAN RESERVATION

