

## TRAVEL INFORMATION

Petrified Forest National Park is open during daylight hours every day of the year.

Paved highways make the park easily accessible by car. U.S. 66, crossing the park near Painted Desert, is the approach from the east. Travelers from the southwest, south, and west enter by way of U.S. 180. The park road connects these two main highways and leads through the more interesting parts of the area.

Travelers by airplane, train, or bus can rent drive-it-yourself cars in Gallup, N. Mex., and can obtain taxi service in Holbrook and Winslow, Ariz.

## ACCOMMODATIONS AND SUPPLIES

Refreshments, lunches, souvenirs, and gasoline can be purchased at the Painted Desert Inn and Rainbow Forest Lodge. These establishments, about 26 miles apart, are located near the entrances to the park. Both are open daily throughout the year.

Small picnic areas with tables are maintained at the Rainbow Forest and the Painted Desert.

There are no overnight facilities within the park, and camping is not allowed. The nearest campgrounds are in national forests to the southeast and west, nearly 100 miles away.

Motels and restaurants are located along the highways that cross the park and in nearby communities.

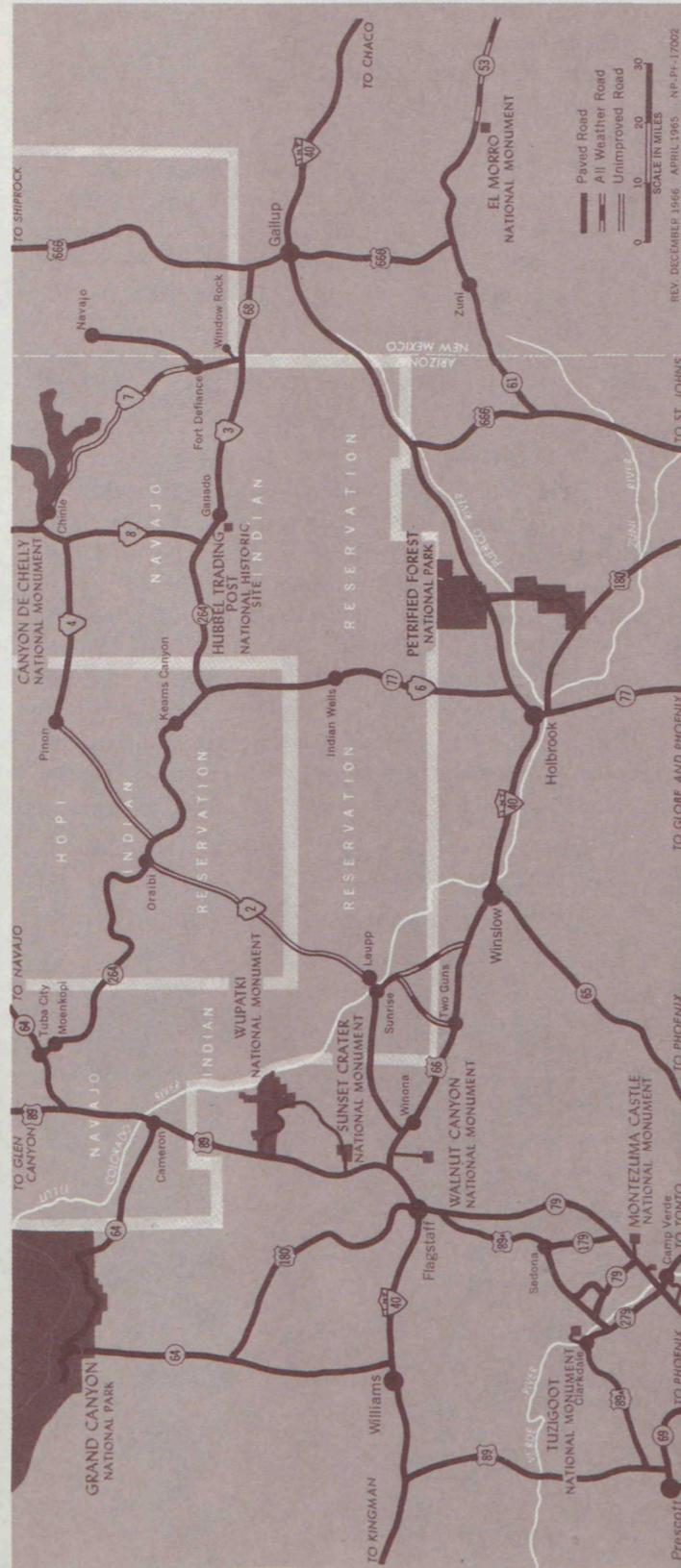
## ADMINISTRATION

Petrified Forest National Park is administered by the National Park Service, U.S. Department of the Interior.

The National Park System, of which this area is a unit, is dedicated to conserving the scenic, scientific, and historic heritage of the United States for the benefit and enjoyment of its people.

The office of the superintendent, who is in immediate charge of the park, is in the Painted Desert Visitor Center. Inquiries and comments concerning the park should be addressed to the Superintendent, Petrified Forest National Park, Holbrook, Ariz. 86025.

THE DEPARTMENT OF THE INTERIOR—the Nation's principal natural resource agency—bears a special obligation to assure that our expendable resources are conserved, that renewable resources are managed to produce optimum benefits, and that all resources contribute to the progress and prosperity of the United States, now and in the future.



## PARK REGULATIONS

The National Parks and Monuments belong to you and your neighbors. Your cooperation in observing the following rules and regulations is necessary if the areas are to be preserved for your children and theirs.

*The natural features.* The park is a sanctuary for all living things. You are asked not to molest the birds or animals nor to pick wildflowers. Fragments of petrified wood are a temptation, but please do not carry them away. The Indian petroglyphs and ruins are irreplaceable; do not deface them or damage them in any way.

*Dogs and other pets.* You may take a dog, cat, or other pet into the park provided it is kept on a leash, in a crate, or otherwise under physical restrictive control.

*Care in driving.* The park road is intended primarily for the enjoyment of the area—it is not a speedway. Please observe posted speed limits and practice the usual courtesies of the road. Keep to the right of the center stripe; avoid parking on curves; pass cars going in your direction only when road signs or center striping indicate that it is safe to do so.

*General.* Picknicking is permitted during daylight hours at designated areas only. Overnight camping is not allowed.

Trash receptacles are conveniently located throughout the park, and you can obtain trash bags at either entrance station. Please dispose of all refuse properly.

Cover: Jasper Forest.

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DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE



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# Petrified Forest

NATIONAL PARK • Arizona





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## NATIONAL PARK

The most wondrous display of petrified wood known in the world and some of the most colorful parts of the Painted Desert are included in Petrified Forest National Park, an area of 94,161 acres in northeastern Arizona. Singular in its vivid and varied colors, the petrified wood in this area has long attracted visitors from many countries. Within the park are six separate "forests," with great logs of agate and jasper lying on the ground and countless broken sections, fragments, and smaller chips forming a varicolored ground cover.

The area is a part of the Painted Desert of northern Arizona, a region of banded rocks of many hues, carved by wind and rain into a landscape of fantastic color and form. Here and there are beds of shale containing perfectly preserved fossil leaves of plants of a remote age. Occasionally the bones of giant amphibians and reptiles are washed from their burial places in soft rock.

Many Indian ruins and petroglyphs tell of the folk who lived here long before America was found by white men.

### HISTORY

The first known report of the "stone trees" was made by Lt. Lorenzo Sitgreaves, an army officer who explored parts of northern Arizona in 1851, soon after Arizona was acquired by the United States from Mexico. But the petrified forest remained almost unknown until settlement of northern Arizona began in 1878 and the Atlantic and Pacific (now Santa Fe) Railway was completed in 1883.

During the following years, the existence of the petrified forest was threatened by souvenir hunters, gem collectors, and commercial jewelers. Entire logs were blasted open in search for the amethyst crystals that were often found in hollow logs, and much agate was carried away to be used in making jewelry. Alarmed, the citizens of Arizona, through their territorial legislature, petitioned Congress to make the area a national reserve so that "future generations may enjoy its beauties, and study one of the most curious . . . effects of nature's forces."

The erection of a stamp mill near Adamana, intended to crush the petrified logs into abrasives, created a threat demanding immediate action. The most imminent danger led to special investigations by the U.S. Geological Survey, with the result that the Federal Government withdrew the lands from entry and provided statutory protection of the fossil trees to prevent their damage or removal. Decisive

action by public-spirited men of vision thus saved an irreplaceable national treasure.

Finally, on December 8, 1906, President Theodore Roosevelt created Petrified Forest National Monument by proclamation, under authority granted only a short time before in the Act for the preservation of American Antiquities. On December 9, 1962, the area became known officially as Petrified Forest National Park, having met all the requirements set forth in an act of Congress passed in 1958, authorizing the establishment of Petrified Forest National Park.

### GEOLOGICAL HISTORY

#### *The Forest Lives*

Between 180 and 200 million years ago, this area was part of a vast flood plain. At times the streams crossing the plain were wide raging torrents; at other times they were narrow and sluggish. Small fresh-water lakes and swamps, which alternately filled and drained as stream volumes changed, dotted the nearly level landscape.

Along the water courses and by the lakes and swamps grew ferns, giant horsetails, clubmosses, and cone-bearing trees. Amphibians, lungfishes, and primitive dinosaurlike reptiles lived among the plants and in the waters. Upstream, and on well-drained sites between the watercourses, grew

Painted Desert badlands.



*PLEASE—cooperate in observing the regulations against removing petrified wood or other natural objects from the park. In cases of violation, it is necessary to impose penalties of fine or imprisonment, or both, as provided for by law.*

stately pinelike trees that were to become the petrified logs of today.

Throughout the 20 million years of this time period, called the Late Triassic by geologists, plants and animals lived and died. Most rotted where they fell, but some were buried in mud, sand, and volcanic ash carried by the flooding streams. Deep in these stream deposits there was little oxygen, and decay and rot were arrested. Eventually, this material, with the logs encased, hardened into the sandstones and shales that make up what is now called the Chinle Formation.

#### *The Logs Are Petrified*

Petrification of once living tissues is a process that is little understood. Apparently, Triassic streams contained chemicals that allowed silica, a mineral in the volcanic ash, to go into solution. This mixture percolated into the wood cells and other water-filled spaces of the buried logs. There the silica was deposited, leaving the wood largely intact. In a few of the logs all the original wood tissue remains; the silica, turned to quartz, fills only the cell interiors and holes created by rot, insects, etc., before submersion. Most petrified logs, however, have only part of the original wood left in them. Some are almost completely stone.

As Triassic time came to an end, the flood plain with the encased trees sank below sea level, and layers of oceanic sediments were laid down on top of the stream-borne deposits. Mountain-building forces later lifted the area far above sea level. Entombed in the heaving rock, the trees cracked by stresses imparted to them as the earth moved.

#### *The Logs Are Uncovered and Sectioned*

In more recent times, wind and rain have carved away the deposits covering and surrounding the logs. In level areas the uncovered logs look much as they did when they were buried so long ago. Washed from hillsides or otherwise disturbed, the broken sections appear to have been cut into regular pieces by some ancient lumberjack, an effect of the widening of cracks that first appeared while the logs were buried.



Newspaper Rock.

brown, and yellow. These colors are most vivid immediately after a rain in the early morning or late evening, and cloud shadows create a kaleidoscope of moving colors.

A 6-mile drive along the rim of the Painted Desert has a number of overlooks from which there are superb views. Rapid erosion of the desert soils makes it impossible to maintain either roads or trails into the desert below the rim. Consequently, the Black Forest, a concentration of dark petrified wood, is virtually inaccessible. *While you are not prohibited from entering the desert, you should not attempt it unless you are conditioned to desert biking, and you must give prior notice of your trip to a park ranger.*

#### PLANTS AND ANIMALS OF TODAY

The park ranges from 5,300 to 6,200 feet elevation, and receives less than 10 inches of moisture in an average year. These are primary factors determining the makeup of the plant and animal populations.

Most of the plants that have become established in this semiarid situation are small and inconspicuous. Many have delicately beautiful flowers. The showier blossoms of yuccas, mariposa-lily, and cactuses are on display only in spring; but aster, painted-cup (paintbrush), rabbitbrush, and sunflowers bloom through much of the summer.

Birds, mammals, and reptiles are far more common than you may suppose. Common mammals include the jack-rabbit, cottontail, whitetail antelope squirrel, skunk, coyote, bobcat, porcupine, and pronghorn (antelope). Among noticeable resident songbirds are the horned lark, house finch, rock wren, phoebe, and several species of sparrows. There are more than a dozen species of snakes and lizards, including the prairie rattlesnake.

#### INTERPRETIVE SERVICE

You are invited to stop at the Painted Desert Visitor Center (near the entrance from U.S. 66), where you can obtain information about this and other areas in the Southwest administered by the National Park Service. And at the Rainbow Forest Museum (near the entrance from U.S. 180) you can see exhibits that include a diorama, outstanding specimens of polished petrified wood, fossils, minerals, and diagrams that explain how wood becomes petrified and how badlands are formed. Wayside exhibits at major points of interest along the park road will also increase your enjoyment and understanding of the area, and they may provide the answers to the very questions that have come to your mind.

#### A GUIDE TO THE PARK

The many points of interest in Petrified Forest National Park are located along a road that extends from the Painted Desert on the north to Rainbow Forest on the south, a dis-

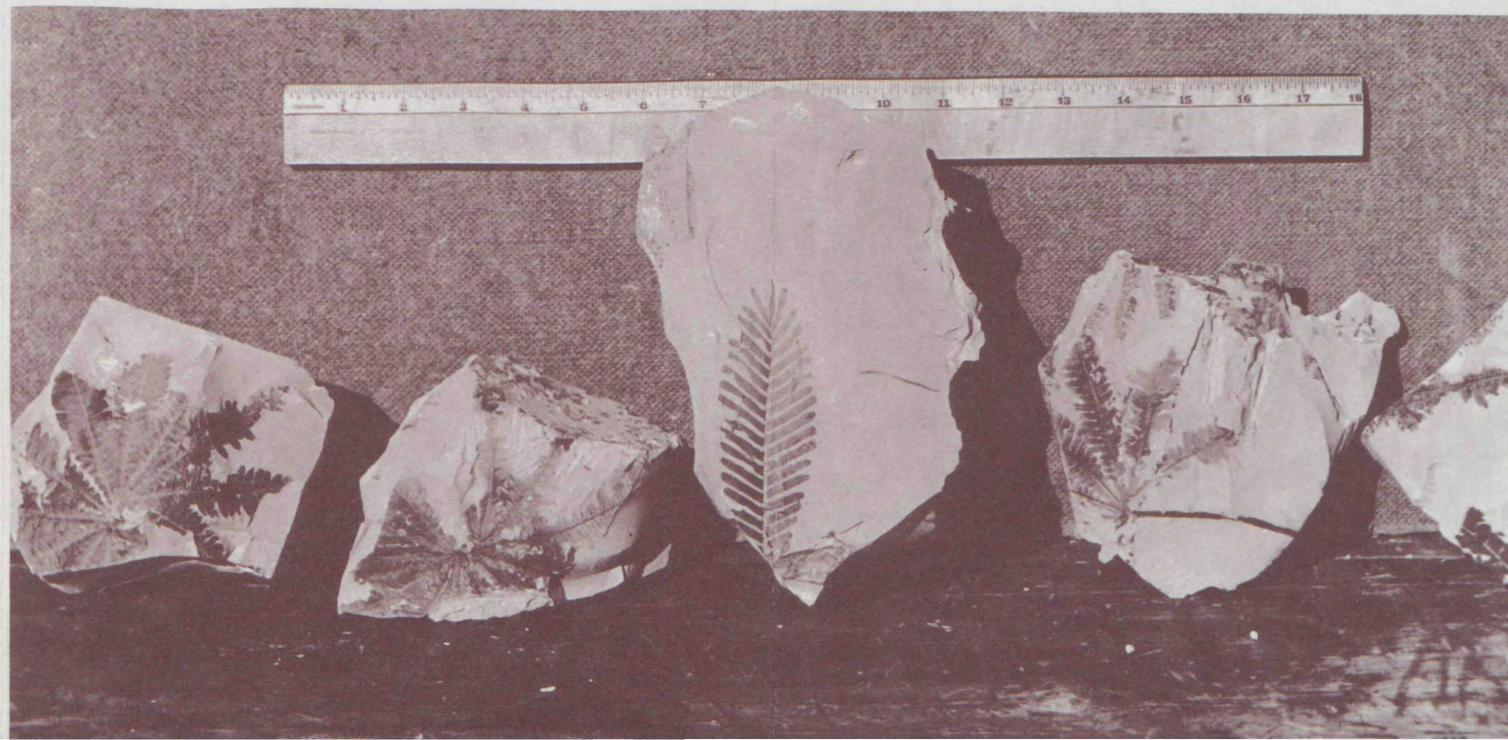
tance of about 28 miles. Short drives to several places back from the main road may increase the distance of the complete trip through the area to about 34 miles. The guide map on the following pages shows the principal points of interest by number, and corresponding numbers beside the map refer to descriptions of these features.

No attempt is made in the guide section to give detailed information regarding the listed features. You will find a more comprehensive story in exhibits at several points along the way and in the Rainbow Forest Museum. Publications available at the Painted Desert Visitor Center contains additional information.

The park ranger on duty at either the Painted Desert Visitor Center (at the U.S. 66 end) or the museum (at the U.S. 180 end) will be happy to help you plan your tour to assure that you will see Petrified Forest without adding needless miles to your travel.

Now, turn to page 10, examine the map, and prepare for your first stop, which will be at ① if you enter the park from U.S. 66 or at ⑬ if you enter from U.S. 180.

Fossil impressions of leaves in shale.

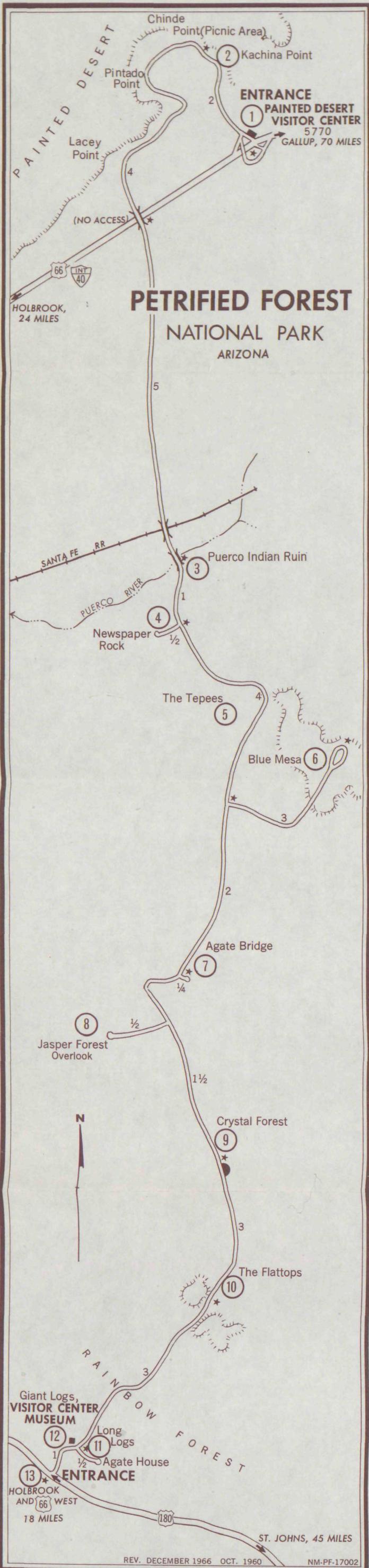


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① **Painted Desert Visitor Center and Headquarters.** If you enter the park from U.S. 66, stop here for information. There are exhibits on this and other units of the National Park System. Meals, souvenirs, and a service station are available.

② **Painted Desert.** From several overlooks along the rim and from the observation site on Kachina Point, sweeping views offer excellent opportunities for taking color photos of the Painted Desert. To the northwest is Pilot Rock, highest point in the park—elevation 6,235 feet. The Black Forest, a deposit of dark petrified wood in the midst of colorful badlands, is not accessible.

A picnic area is located on Chinde Point, just west of Kachina Point Observation site.

③ **Puerco Indian Ruin.** This ancient pueblo, or village, was occupied until about 600 years ago. Remains of walls at the site indicate a rectangular village of perhaps 150 rooms completely enclosing a large courtyard. A few rooms have been excavated.

④ **Newspaper Rock.** Here are picture-writings, or petroglyphs, pecked into the surface of a massive sandstone block. They cannot be accurately interpreted, but are thought to be records of events in the lives of Indians who inhabited nearby village sites.

⑤ **The Tepees.** This group of small peaks resembling tepees or haystacks shows the results of erosion of soft, layered clay deposits.

⑥ **Blue Mesa.** Here you will see how petrified logs play a part in the constant renewal of the sculptured landscape. The soft earth erodes away, leaving a gradually narrowing ridge beneath the length of each log. Eventually, sections of the log roll off the ridge; erosion then reduces the ridge to a series of rounded pinnacles. When a section of a fossil log remains as a protecting cap atop one of these pinnacles, erosion often produces a pedestal-like formation capped by the log section. Sections of logs that come to rest at new locations on the soft clay after tumbling from their perches immediately start the erosional cycle all over again.

⑦ **Agate Bridge.** More than 100 feet of this famous log are exposed, but both ends are still encased in the sandstone in which the log was buried. A 40-foot-wide ravine has gradually been carved into the sandstone, leaving the log spanning the narrow draw like a natural bridge. A concrete-beam support was placed under the heavy log in 1917 as a precaution against collapse.

⑧ **Jasper Forest Overlook.** The spur road takes you to the edge of Jasper Forest Mesa. Great masses of log sections litter the valley floor and clog the gullies that cut into the edge of the mesa. Look carefully and you will see a number of logs protruding from the top-most layer beneath the rim. In time, these too will be fully exposed by erosion, and the sections will roll to the lower levels, adding to the concentration on the valley floor. The name "Jasper Forest" is derived from the opaque colors of some of the petrified wood that is found here.

⑨ **Crystal Forest.** Here were once many fossil logs in which beautiful clear and amethyst quartz crystals filled the cracks and hollows. Before Federal protection of the area, collectors and souvenir hunters blasted many of the logs in search of these gems. This type of activity prompted the citizens of the Arizona Territory to petition Congress for the preservation of Petrified Forest.

⑩ **The Flattops.** Massive remnants of a once continuous layer of durable sandstone have protected a series of layered deposits that have elsewhere been removed by erosion. The road passes through a cleft separating the two main bodies of this surviving tableland.

⑪ **The Long Logs and Agate House.** The eastern part of Rainbow Forest is most notable for the number of exceptionally long logs, which are only partly uncovered. Here, you can best observe the "logjam" character of the deposits, with the logs resting helter-skelter upon one another like jackstraws. A partially restored pueblo, now called Agate House, is at the end of a foot trail from the parking area.

⑫ **Rainbow Forest Museum and Giant Logs.** The exhibits here answer pertinent questions that visitors may have in arriving at or leaving the park. Behind the exhibit hall are Old Faithful Log and many other exceedingly large logs. Nearby is a picnic area; meals, souvenirs, and a service station are available.

⑬ **Rainbow Forest Entrance Station.** This is 2 miles from the park boundary on U.S. 180.