Petrified Forest

National Park
Arizona

National Park Service
U.S. Department of the Interior

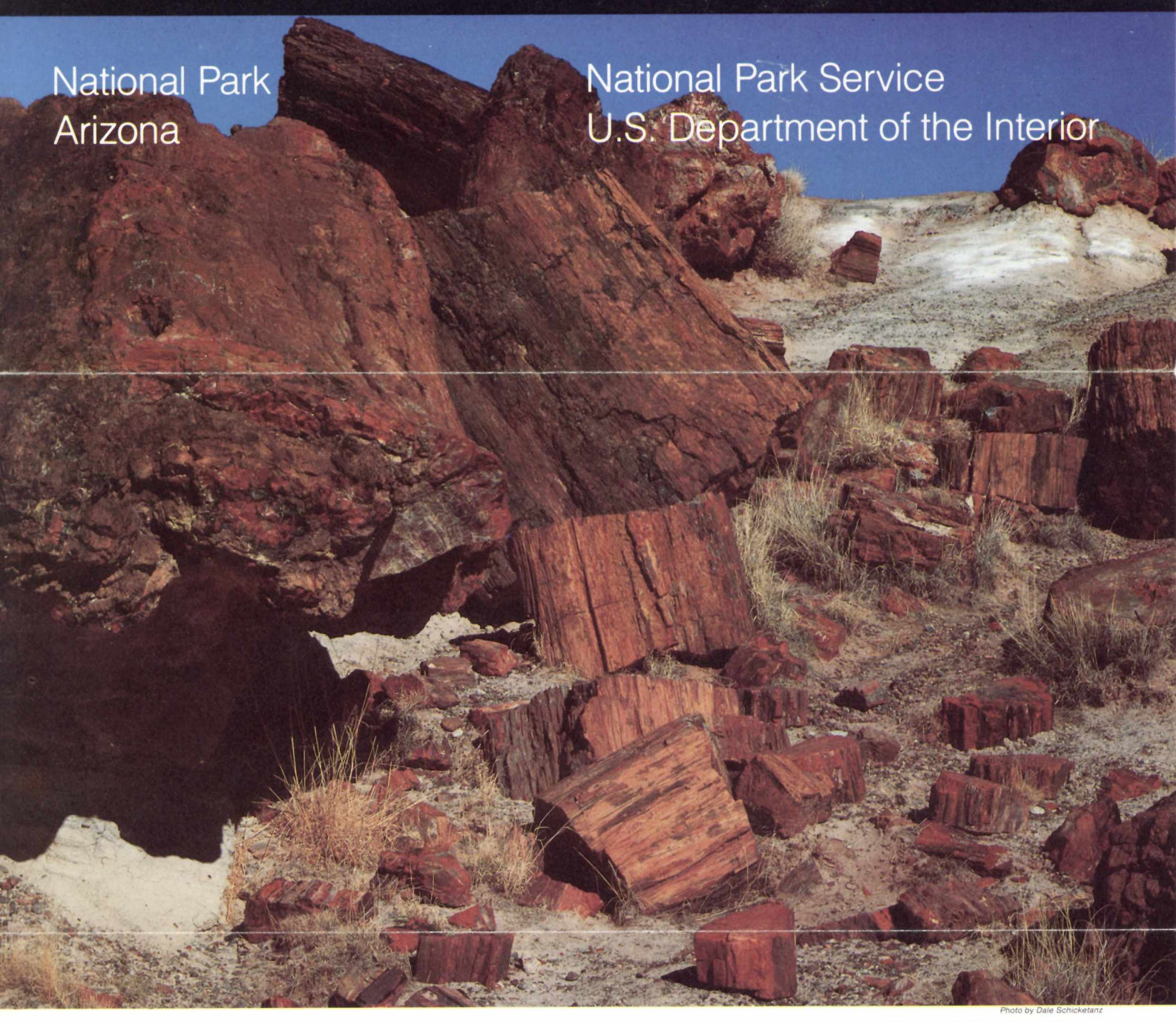


Photo by Dale Schicketanz

The petrified forest above lies in the Giant Logs area behind the Rainbow Forest Museum near the park's south entrance. Fossil ferns (right) show that climates were sometimes wetter here.

Indian petroglyphs (left) adorn Newspaper Rock and occur throughout the park. Human habitation had ended here when Spanish explorers first came here in 1540.

Stories of Climate and Culture Told in Stone

This high dry tableland was once a vast floodplain crossed by many streams. To the south, tall, stately pine-like trees grew along the headwaters. Crocodile-like reptiles; giant, fish-eating amphibians; and small dinosaurs lived among a variety of ferns, cycads, and other plants and animals that are known only as fossils today. The tall trees—Araucarioxylon, Woodworthia and Schilderia—fell and were washed by swollen streams into the floodplain. There they were covered by silt, mud, and volcanic ash, and this blanket of deposits cut off oxyen and slowed the logs decay.Gradually, silica-bearing ground waters seeped through the logs, and, bit by bit, replaced the original wood tissues with silica deposits. Slowly the process continued, the silicas hardened, and the logs were preserved as petrified wood.

That was about 200 million years ago in the late Triassic. After that time, the area sank, was flooded, and was covered with freshwater sediments. Later the area was lifted far above sea level and this uplift created stresses that cracked the giant logs. Still later, in recent geological time, wind and water wore away the gradually accumulated layers of hardened sediments. Now the petrified logs and fossilized animal and plant remains are exposed on the land's surface and the Painted Desert has its present sculpted form.

Today the ever present forces of wind and water continue to remove sediments. Erosion continues to break down the giant logs and reach for the logs and other remaining fossils still buried below the surface. In some places, up to 90 meters (300 feet) of fossil-bearing material remains. The petrified logs, the other fossils of plants and creatures that lived in the area, and the rocks locking them in place all testify to changes in the environment through millions of years.

But there are other stories here; that of man is readily seen on the landscape. Sites throughout the park tell of human history in the area for more than 2,000 years. We don't know the entire story, but there were separate occupations, a cultural transition from wandering families to settled agricultural villages—pueblos—and trading ties with neighboring villages. Then this story of early people, told by potsherds, rubble, and pictures on the rocks, fades about 1400 A.D.

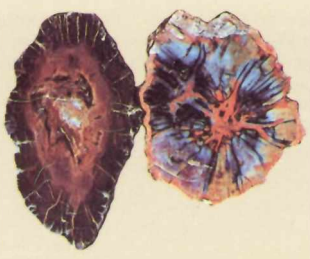
In the mid-1800s U.S. Army mappers and surveyors came into this area and carried back East stories of the remarkable "Painted Desert and its trees turned to stone." Next, farmers, ranchers, and sightseers made their ways into the area. After a period of using the wood for souvenirs and numerous commercial ventures, territorial residents recognized that the supply of petrified wood was not endless. In 1906 selected "forests" were set aside as Petrified Forest National Monument.

The Puerco Ruins were occupied twice, from 1100-1200 A.D. and from 1300-1400 A.D.

The pottery vessel was found in the Agate Bridge area.

In 1932 some 1,000 hectares (2,500 acres) more of the Painted Desert were purchased and added to the monument. In 1962 the area became Petrified Forest National Park, and in 1970, 35,000 hectares (50,000 acres) were further set aside as wilderness.

Research continues to unlock the geological and human stories of this area set aside for present and future generations. And today the story of our passing is added to the history of Petrified Forest National Park.



Polished samples of petrified wood (left) can show startling, crystal-like patterns. The colors of natural fragments (right) are muted but no less beautiful.

Photo by David Muench

Commercial Sources of Petrified Wood

Petrified Wood. The first historic record of petrified wood in this region came from a U.S. Army officer who found it near today's Canyon de Chelly National Monument, Arizona. Abundant deposits were recorded south of the present Petrified Forest National Park in the 1850s. By 1900, removal of the wood led to calls for preserving areas with large deposits of it. The park exists for this purpose and there is no collecting or giving out of samples permitted. Petrified wood can be bought from commercial dealers who collect it from areas outside the park. The commercial wood is from the same geological deposits and of the same quality as the wood found in the park. Small pieces are sold rough, tumbled, or polished. Artists and craftspeople work larger pieces into decorative objects. Jewelry, bookends, and clocks are popular sales items. Minerals and impurities deposited while the wood was petrifying add the bright colors and interesting patterns. Please do not take even the smallest piece of petrified wood from the park. Multiplied by hundreds of thousands of visitors each year, the small pieces taken from the park quickly amount to tons.

What Is That Color?

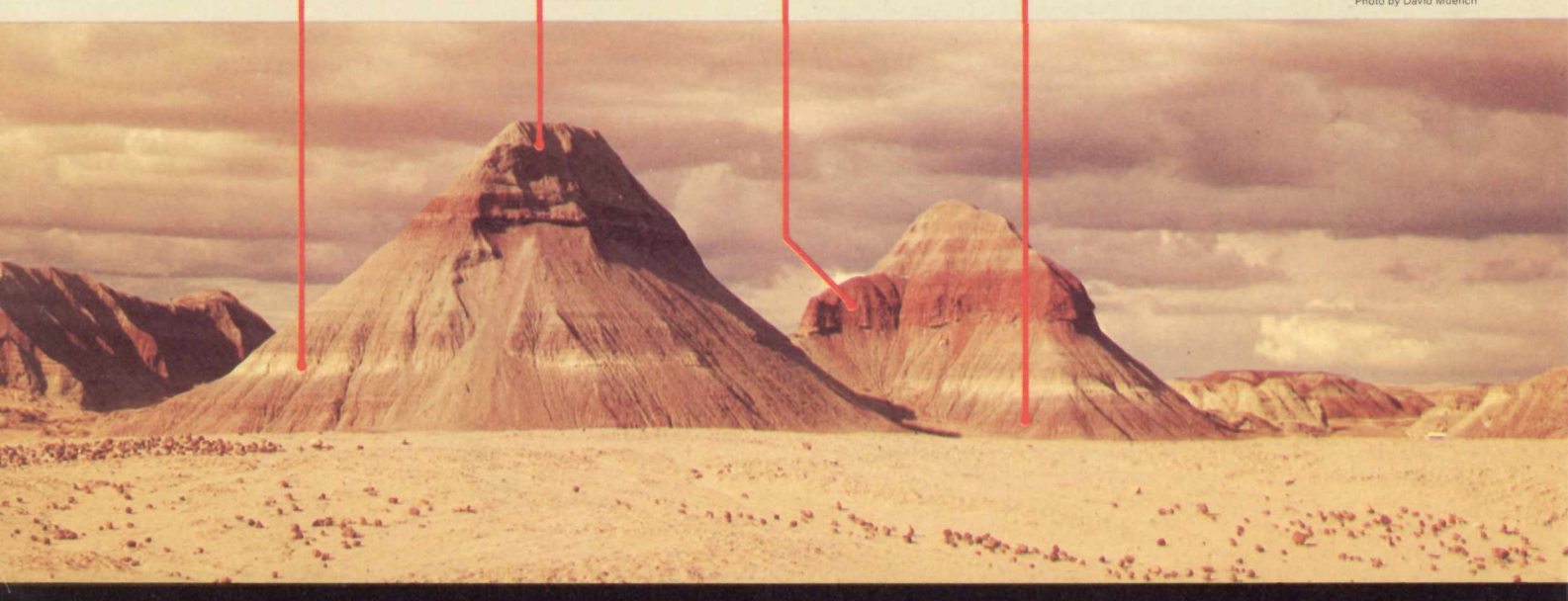
The distinct white layer interrupting the reddish base is sandstone.

The cap of the Tepees is clay. Dark layers are caused by high carbon content.

The darker red is iron-stained siltstone. The iron oxide is hematite.

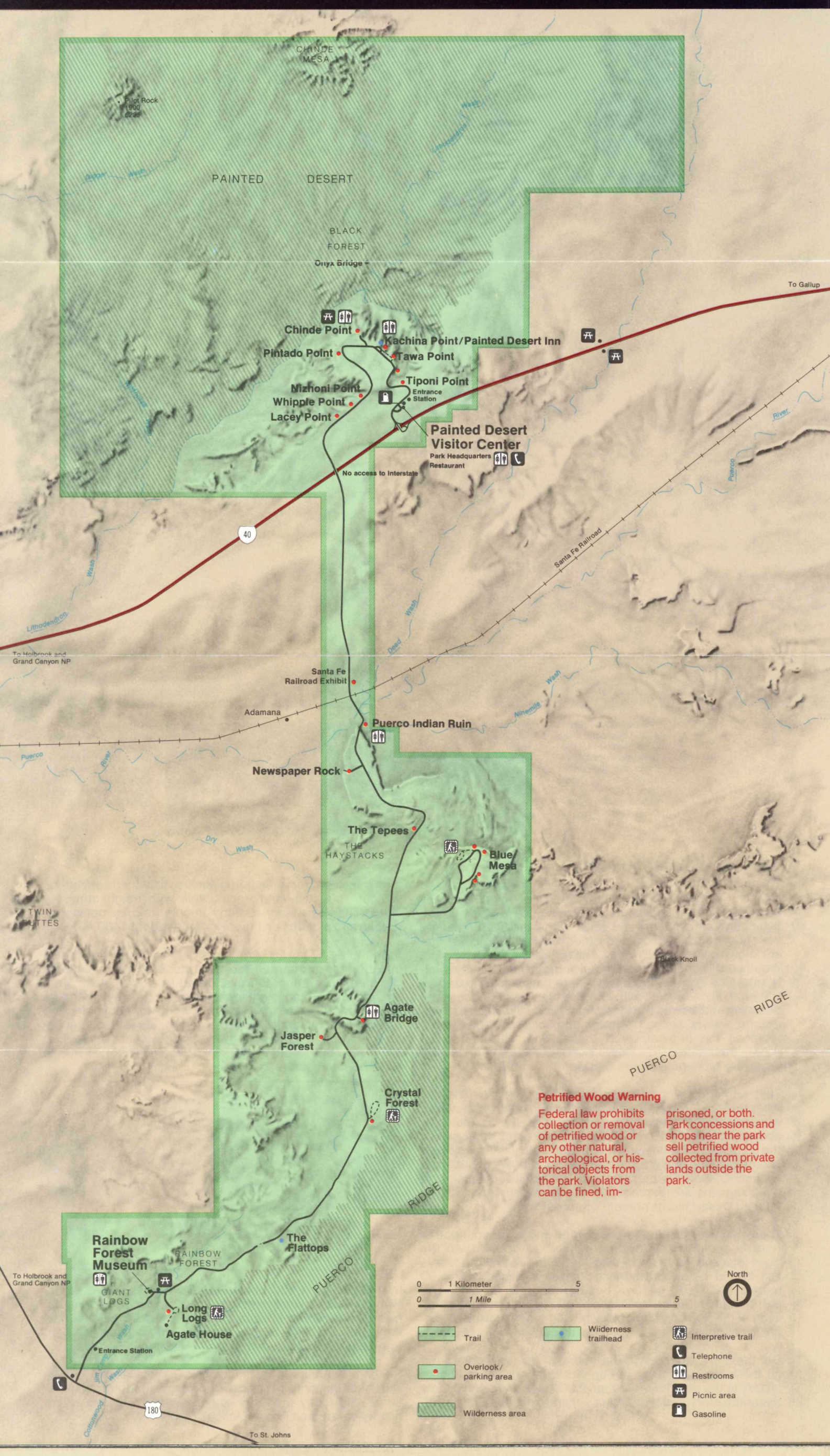
The reddish base is stained by iron oxide.

Photo by David Muench



Health and Safety Regulations

Obey posted speed limits; don't stop in roadway. Park in designated areas. Keep pets under physical control; they are not allowed in buildings. For long hikes and wilderness camping, take plenty of water; tell park rangers your plans. Elevation averages 1,650 meters (5,400 feet): know your limits. Don't climb on petrified logs: sharp edges can inflict wounds. Stay behind any barricades and on trails. Report vandalism or removal of objects to a ranger.



Petrified Wood Warning

Federal law prohibits collection or removal of petrified wood or any other natural, archeological, or historical objects from the park. Violators can be fined, imprisoned, or both. Park concessions and shops near the park sell petrified wood collected from private lands outside the park.

Visiting the Park

The Painted Desert Visitor Center at the north entrance serves as park headquarters. From I-40 this should be your first stop for information about the park.

Rainbow Forest Museum serves as the visitor center at the south entrance, off U.S. 180. Stop here for information and exhibits, and walk among the nearby giant logs.

Find information on seeing the park at the visitor centers. **Painted Desert Visitor Center** (north end) has a 17-minute film on how wood is petrified. **Rainbow Forest Museum** (south end) has exhibits of petrified wood and of the area's geological story and human history. The 43-kilometer (27-mile) scenic drive through the park has frequent pullouts. Two wilderness areas offer cross-country hiking and backpack camping. Ask about hiking, wilderness camping permits, weather conditions, and maps at visitor centers. There is no water away from the developed areas: Take plenty on hikes and overnight trips, and always start your return before half your water supply is gone! Points of interest are described below from north to south.

Eight overlooks along the rim give sweeping views of portions of the Painted Desert. The Painted Desert Inn Museum at **Kachina Point** is open in summer with exhibits on cultural history. The access to the Painted Desert Wilderness is behind the inn; wilderness camping begins beyond the washes. **Chinde Point** picnic area has water, and restrooms in warmer months.

The park road winds through 9.5 kilometers (6 miles) of high desert, crosses over Interstate 40, the Santa Fe Railroad tracks, and the Puerco River to arrive at the **Puerco Indian Ruins.** The ruins are silent testimony to human life here before 1400 A.D. A few rooms are excavated and partially restored. (Restrooms and water in warmer months.) Steps—120—lead down the cliff face to **Newspaper Rock,** a huge sandstone block covered with petroglyphs. **The Tepees** are badlands erosional formations, colored by iron, manganese, and other minerals.

A 5-kilometer (3-mile) spur road climbs **Blue Mesa** where pedestal logs abound. The hard logs act as capstones to soft clays beneath. Eventually the pedestal erodes, the log falls, and the cycle begins anew.

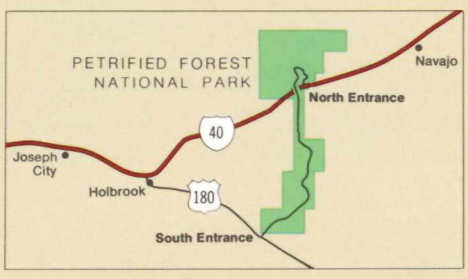
The Jasper Forest Overlook shows the area's topography, with petrified logs strewn below. Logs with root systems show that some of the trees grew nearby. Fossil destruction in the **Crystal Forest** area by souvenir hunters and gem collectors prompted Arizona Territory citizens to petition Congress to preserve the petrified wood sites. Cracks and hollows in logs here once held beautiful clear quartz and amethyst crystals. **The Flattops** are massive remnants of a once continuous layer of sandstone capping parts of this area. The remaining capstone protects layered deposits long eroded from other parts of the park. Flattops wilderness campers park here. Camping limits begin 0.8 kilometers (0.5 miles) from the road. The **Long Logs** and **Agate House** trails explore part of Rainbow Forest. Iron, manganese, carbon, and other minerals lend bright colors to the petrified wood. Agate House pueblo was partially restored by Civilian Conservation Corps crews.

The trail through **Giant Logs** behind the **Rainbow Forest Museum** follows up and down the slopes. The fence serves as a constant reminder that the petrified wood and *all natural and historic objects* in the park are preserved and protected by law. From the Rainbow Forest Museum, the park road continues 3.2 kilometers (2 miles) south to the park boundary and highway 180.

Services
Painted Desert: restaurant, service station, gift shop. Rainbow Forest: gift shop, fountain. Food and overnight accommodations may be found in nearby communities.

Camping and Picnics
There are no campgrounds in the park. Only wilderness backpack camping is allowed. Obtain the required free permit at a visitor center. Find picnic areas at Chinde Point and Rainbow Forest.

Administration
The National Park Service administers the park. The superintendent's office is in the Painted Desert Visitor Center. Address: Petrified Forest National Park, AZ 86028.



Save Time and Gas
From the West take U.S. 180 from Holbrook to south entrance; drive the park; rejoin I-40 at north entrance. From the East leave I-40 at north entrance; exit at south on U.S. 180 to I-40 at Holbrook.

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