

# Petrified Forest

National Park  
Arizona

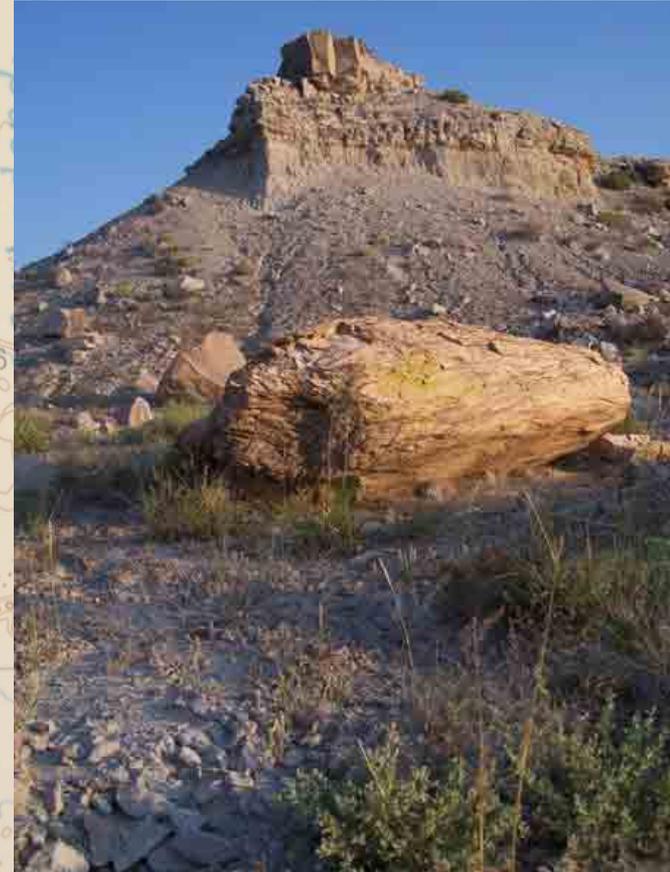
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U.S. Department of Interior



## Wilderness at Petrified Forest National Park

Gazing over a vast natural landscape dotted with petrified wood; smelling hints of moisture as the wind traces the curves in a winding drainage; hearing coyote howls and yips echoing amidst the badland hills; sensing the solitude and peace that surrounds you...these are all experiences you may have in the wilderness area of Petrified Forest National Park.

Designated on October 23, 1970 as one of the first National Park Service wilderness areas, over 52,000 acres of the park are managed according to the principles set forth in the 1964 Wilderness Act. Here there are no buildings, no roads, no trails...but you are welcome to come explore this wild land!



Petrified wood often lies around the edges of mesas after it erodes out of the steep hillsides.

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*"Away, away, from men and towns,  
To the wild wood and the downs, -  
To the silent wilderness,  
Where the soul need not repress  
Its music."*

Percy Bysshe Shelley  
"The Invitation," 1820,  
in *English Poetry II: from Collins to  
Fitzgerald*,  
edited by Charles W. Elliot

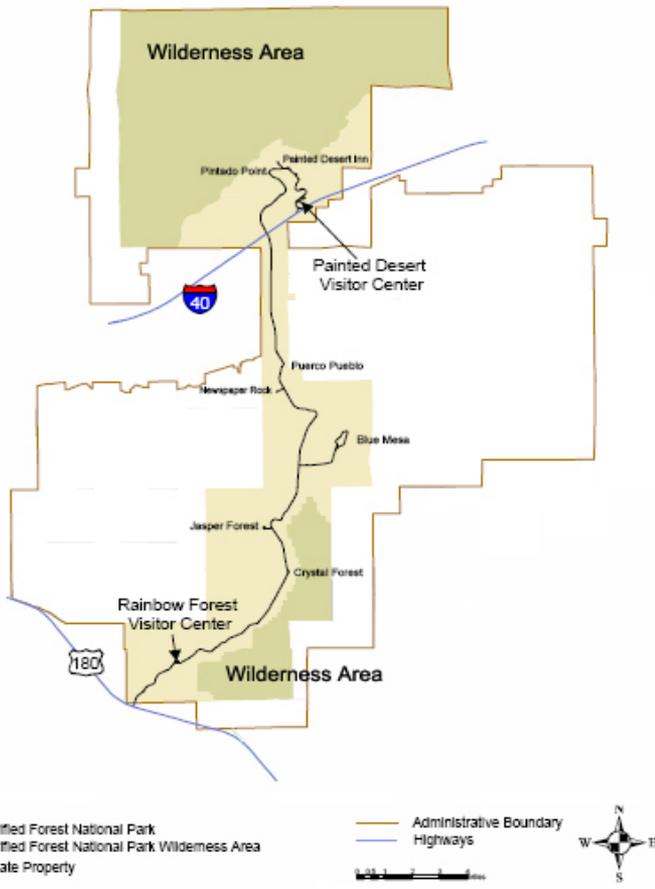


Petrified wood litters the landscape at the base of badland hills.

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Map of the park showing location of Wilderness Areas in the north and south.

Petrified Forest National Park has two distinct wilderness areas, one in the Painted Desert region, the second in the Rainbow Forest region. Both areas are managed under the same rules and regulations dictated by the 1964 Wilderness Act:

*"In order to assure that an increasing population, accompanied by expanding settlement and growing mechanization, does not occupy and modify all areas of the United States and its possessions, leaving no lands designated for preservation and protection in their natural condition, it is hereby declared to be the policy of the Congress to secure for the American people of present and future generations the benefits of an enduring resource of wilderness. ...."*

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Badland hills and colorful striations of the Painted Desert.

The Wilderness Act recognizes wilderness as:

*"an area where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain."*

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Designated wilderness is the highest level of conservation protection for federal lands. Only Congress may designate wilderness or change the status of wilderness. The Wilderness Act prohibits permanent roads and commercial enterprises. Most wilderness areas do not allow motorized equipment, motor vehicles, mechanical transport, temporary roads, permanent structures or installations. Wilderness areas are to be primarily affected by the forces of nature.



Wildflowers, such as these spring-blooming heliotrope, find an undisturbed home in the Wilderness.

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Petrified wood at the base of badland hills awaits an approaching monsoonal storm.

Many national parks have wild, undeveloped areas that have not been designated as wilderness. These areas are called "backcountry." Backcountry areas are susceptible to development, road building, and off-road mechanized vehicular use. National park backcountry is protected only by administrative regulations that administrators can change.

Having designated wilderness in national parks ensures that these areas will continue to be managed under wilderness guidelines even as administrations change.

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The Wilderness Act recognizes:

*"solitude or a primitive and unconfined type of recreation... ecological, geological, or other features of scientific, educational, scenic, or historical value"*

as elements of wilderness.



Petrified wood pieces from fractured logs erode out of the bentonite clay hills that have contained them for over 200 million years.

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A cottontail rabbit relaxes on a blanket of snow.

Wilderness areas provide habitat for wildlife and plants, including endangered and threatened species, and allow natural ecosystems to operate naturally. Wilderness protects open space, watersheds, natural soundscapes, and biodiversity. It provides improved air and water quality.

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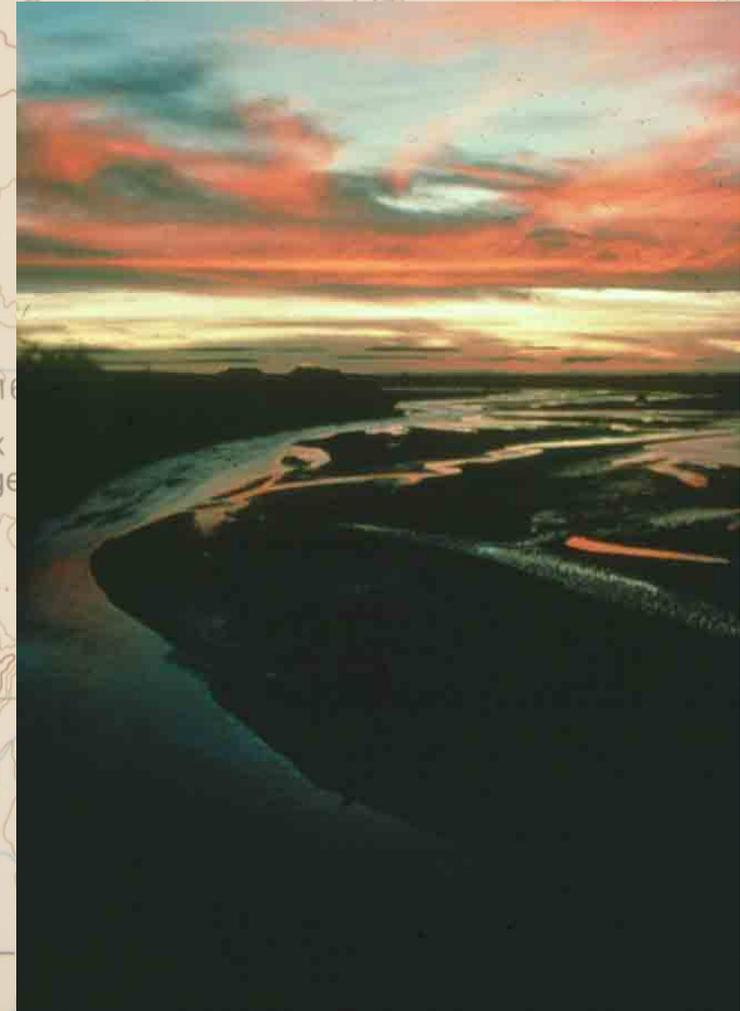
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Wilderness offers inspirational and spiritual opportunities, including opportunities to reflect on the community of life and the human place on Earth.

Wilderness is where humility and respect play a role in both individual and management activities.

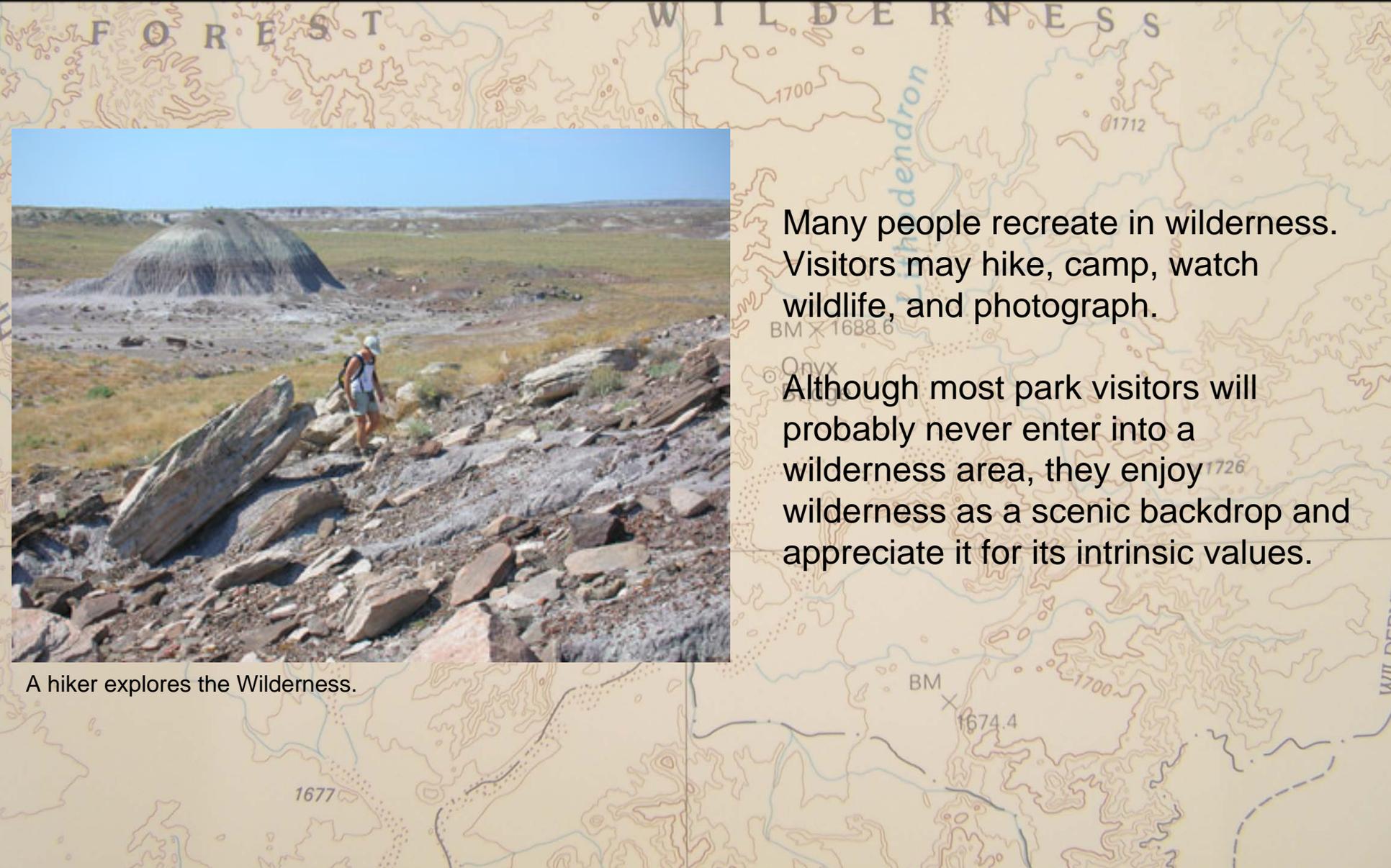


Sunset after monsoonal rains.

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Many people recreate in wilderness. Visitors may hike, camp, watch wildlife, and photograph.

Although most park visitors will probably never enter into a wilderness area, they enjoy wilderness as a scenic backdrop and appreciate it for its intrinsic values.

A hiker explores the Wilderness.

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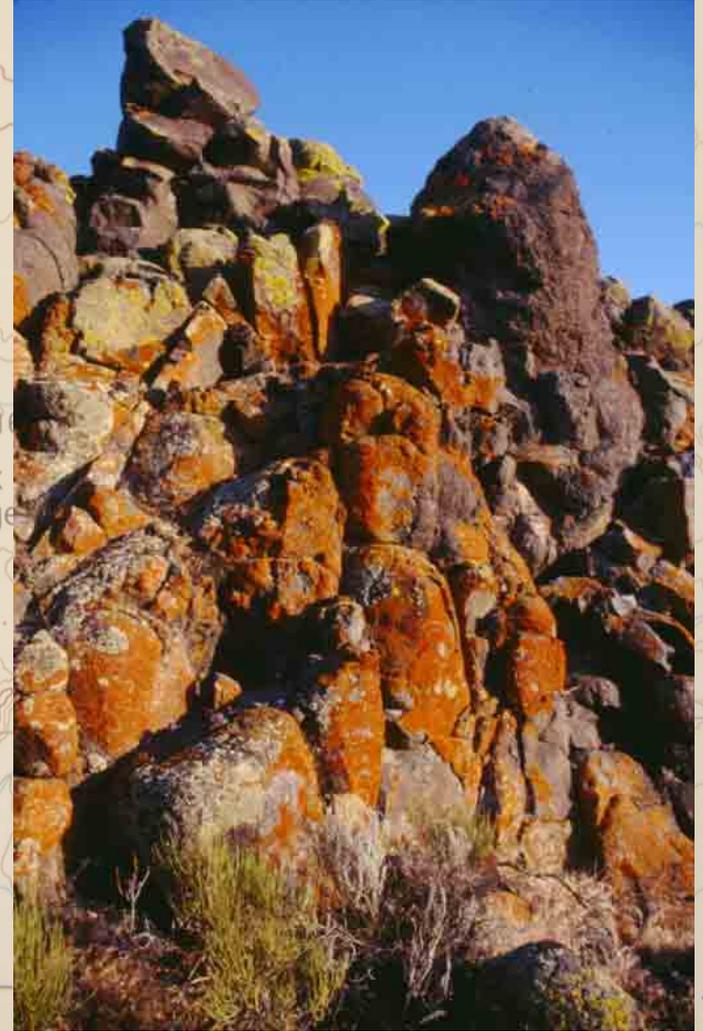
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*"Wilderness, then, assumes unexpected importance as a laboratory for the study of land-health.... In many cases we literally do not know how good a performance to expect of healthy land unless we have a wild area for comparison with sick ones.."*

Aldo Leopold  
"Wilderness,"  
*A Sand County Almanac, 1949*



Lichens cover Bidahochi basalt at the park's highest point, Pilot Rock.

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When visitors first see the open, arid landscape of Petrified Forest National Park, they may initially think, "What could possibly live here?"

The park is host to a recovering remnant of a shortgrass prairie ecosystem. Animals and plants adapted to this ecosystem thrive in the wilderness area where they are protected from hunting, grazing, and other disturbances.

A herd of pronghorn takes a break from foraging on a summer afternoon.

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Pilot Rock in the summer and in the winter.

Petrified Forest is a dynamic environment. In a land that initially appears sparse and barren, there is life. Through the extremes of temperature and moisture, plants and animals survive by both behavioral and physical adaptations.

Temperatures can soar over one hundred degrees Fahrenheit in the summer and drop well below freezing in the winter.

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Wildflowers are a colorful component of the grassland. When winter rains bring enough moisture, the display of flowers can be breathtaking!



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*"Wilderness is the bank of genetic variability of the earth."*

David Brower  
quoted in *Encounters with  
the Archdruid*,  
John McPhee, 1971



Snow over the Painted Desert.

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Most visitors find animals in the park to be elusive quarry for their camera lens. In order to adapt to the arid conditions of this region, animals are typically nocturnal, or most active at night.

All animals at Petrified Forest National Park are protected. If you are close enough to catch their attention, you are too close!

From top left: coyote footprints, collared lizard, and pronghorn.

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*"In God's wildness lies the hope of the world - the great fresh unblighted, unredeemed wilderness. The galling harness of civilization drops off, and the wounds heal ere we are aware."*

John Muir  
"The Alaska Trip,"  
*John of the Mountains*, 1938

The Painted Desert after a summer monsoonal storm.

1677

BM

1674.4

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The unique landscape of the park is created by the erosion of claystone, mudstone, and sandstone. Bentonite clay expands as it absorbs water then shrinks and shrivels when dry. This surface movement deters plant growth and increases the erosion. This earns the rolling hills the name “badlands” since little appears to make its home within them.



Varieties of badlands can be seen throughout the park.

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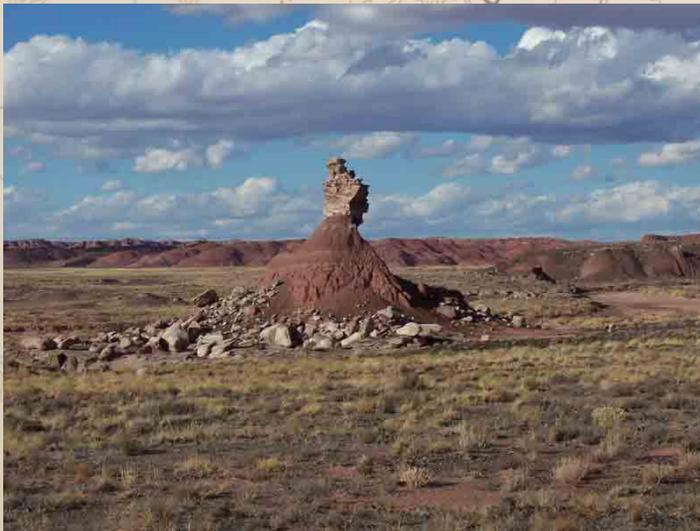
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Erosion creates fascinating geologic features within the wilderness area. From the rounded badland hills to tall spires and hoodoos, water and wind shape the landscape of today.

Petrified wood is also brought to the surface through erosion, slipping and tumbling down slopes, coming to rest inside drainages and at lower areas, where erosion continues to break it apart.

Erosional features and petrified wood.



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Onyx Bridge

In a few cases, water erosion cuts underneath a petrified tree, leaving the ends of the log embedded in the sides of the drainage. When this happens, the tension of the buried ends keeps the fractured log whole and creates a natural bridge, such as Onyx Bridge in the Painted Desert.

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Petrified Forest National Park is famous for its colorful petrified wood. Minerals have left behind a rainbow of red, blue, yellow, purple, grey, black and other colors. The abundance of exposed petrified wood at the park represents an important clue to understanding the ancient ecosystem of the Late Triassic.



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Fractured petrified log eroding on the edge of a mesa.

*"Wilderness is an anchor to windward. Knowing it is there, we can also know that we are still a rich nation, tending our resources as we should - not a people in despair searching every last nook and cranny of our land for a board of lumber, a barrel of oil, a blade of grass, or a tank of water."*

Clinton P. Anderson  
U.S. Senator  
*American Forest, July 1963*

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If you could go back in time to the Late Triassic, you'd want to take rubber boots with you! Where we walk through the Painted Desert today was a floodplain. A large river system entered the region, branching and spreading out over a vast area.

Representation of an underwater scene from the Late Triassic. Artwork by Doug Henderson, Copyright PFMA.

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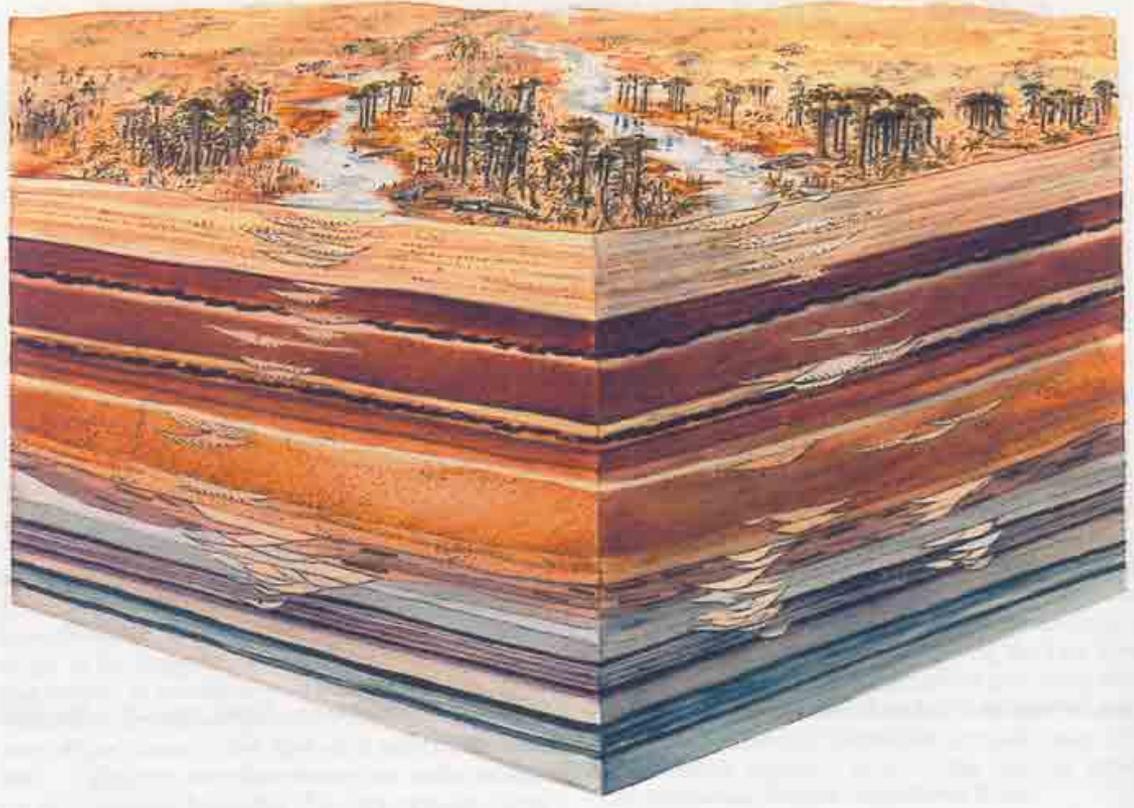
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Over hundreds and thousands of years, flood events deposited layer upon layer of sand, silt, clay, mud, detritus, and volcanic ash.

Today we see these layers as the colorful lines on the sides of badland hills.



Stratigraphic diagram of the park showing how rivers of the Triassic deposited layer upon layer of sediment over time.



Badland hill of today showing multicolored layers representing the deposition of ancient river sediment over thousands of years.

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Within these layers are some of the best Triassic fossils in the world.

Vertebrate bones, such as those of this aetosaur, fish scales, shark teeth, and clam shells represent some of the animals of the Triassic. Petrified wood, pollen, spores, and leaves represent some of the plants of the Triassic.

An average of 2-4 new species of animals and plants are found in the park each year.



Aetosaurs provide many fossil pieces because they were covered with bony plates from head to tail!

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The science of paleontology is dynamic. Ideas and theories can change as new discoveries are made. In 2005 a discovery of *Revueltosaurus callenderi* fossils challenged the theories of how and where the dinosaurs arose more than 210 million years ago.

Wilderness helps to preserve fossils from destruction, leaving them undisturbed for a scientist to discover.

If you find fossils, take a picture, including of the area, and report your find to a park ranger. Never disturb these fragile resources!

Fossil bone pieces photographed as found in the field.

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*"The true wilderness experience is one, not of escaping, but of finding one's self by seeking the wilderness."*

Howard Zahniser

"The Need for Wilderness Areas,"  
*The Living Wilderness*,  
winter-spring, 1956-1957, no. 59



Hikers explore the edge of a mesa across tumbled sandstone boulders.

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Many archeological and historic sites have been left relatively undisturbed because of their location within the Wilderness.

Potsherds, petrified wood flakes and hammer stones, grinding stones, and petroglyphs can be found with a quick eye and careful steps.

From below left to right: black on red potsherd, petrified wood hammer stone, grinding stone, petroglyph, black on white potsherd.



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All archeological and historic sites and artifacts are protected. If you pick up an artifact to examine it closely, please always return it where you found it.

An archeologist examines several pieces of black on white pottery.

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Petroglyphs are images, symbols, or designs scratched, pecked, or carved on natural rock surfaces.

Whether done for religious purposes, to mark migratory routes or water sources, to commemorate an event, to tell stories, or to keep track of seasons, these unique and intriguing images pecked into stone provoke many questions.

Petroglyph panel showing a variety of cultural symbols.



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Some petroglyphs were placed to create a specific interaction with the sun.

Using light captured through cracks, or shadows created by other rocks or geologic features, these solar markers indicate the summer and winter solstices, spring and fall equinoxes, as well as other solar times during the year.



At sunrise on the summer solstice this spiral petroglyph is marked by a shadow down its center, created as the sun rises behind a nearby rock formation.

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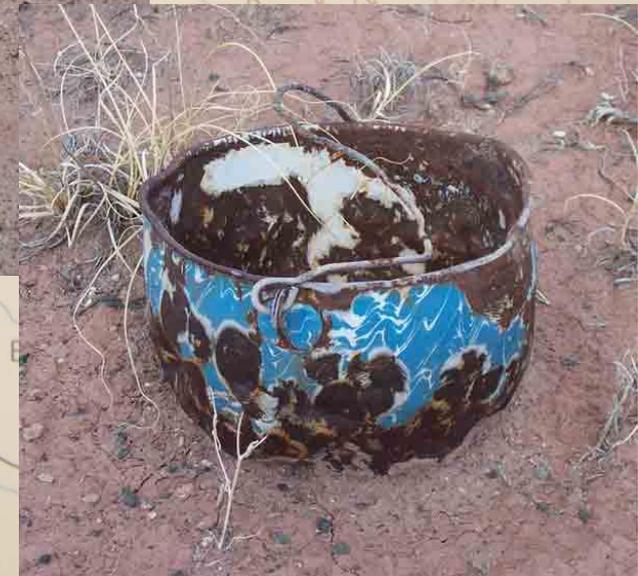


In addition to the prehistory, historic artifacts and features are also protected in the Wilderness.

From early explorers and scientists to workers in the Civilian Conservation Corps and the first tourists, evidence of use over the last 50-100 years is apparent in the signposts, cookware, bottles and cans scattered amongst the petrified wood and potsherds.



Directional signpost marking the way to Zuni Well and Pilot Rock; an historic cooking pot left at a Civilian Conservation Corps camp.



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Monsoons cross the Painted Desert.

*"As I sat there on the rock I realized that, in spite of the closeness of civilization and the changes that hemmed it in, this remnant of the old wilderness would speak to me of silence and solitude, of belonging and wonder and beauty. Though the point was only a small part of the vastness..., from it I could survey the whole."*

Sigurd Olson  
*Listening Point, 1958*

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Today's park visitors experience the vast expanses of the wilderness area in different ways. Some go out specifically to look for fossils or archeological sites. Some go out to photograph plants, animals, or geologic features. Some go out to experience the raw power of this landscape.



Hiker among sandstone boulders.

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Snow on the Painted Desert.

We each have the responsibility to help preserve this land as wild. Day hikers and overnight backpackers alike should practice "Leave No Trace" ethics, respect the plants and wildlife they encounter, and leave natural and cultural artifacts and fossils where they are found.

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John Muir said,  
*"Everybody needs  
beauty as well as bread,  
places to play in and  
pray in, where nature  
may heal and give  
strength to body and  
soul."*

Enjoy not only the  
Petrified Forest National  
Wilderness Area, but the  
many other wild lands  
still found in America  
today.



Sunset over the grassland.

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Juniper tree.

*"A man could be a lover and defender of the wilderness without ever in his lifetime leaving the boundaries of asphalt, powerlines and right-angled surfaces. We need wilderness whether or not we ever set foot in it. We need a refuge even though we may never need to go there. ... We need the possibility of escape as surely as we need hope; without it life of the cities would drive all men into crime or drugs or psychoanalysis."*

Edward Abbey,  
*Desert Solitaire*, 1968

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Here are some web-based resources where you can find more information.

## [Wilderness Map](#)

[www.wilderness.net/index.cfm?fuse=NWPS&sec=map](http://www.wilderness.net/index.cfm?fuse=NWPS&sec=map)

Check out a searchable map of all designated wilderness areas and find a place to explore near you!

## [Leave No Trace Principles](#)

[www.int.org/programs/int7/index.html](http://www.int.org/programs/int7/index.html)

These principles are a must to know if you plan to explore any type of wilderness area.

[www.wilderness.nps.gov](http://www.wilderness.nps.gov)

The official National Park Service source for updated information about wilderness area research, education, legislation, and preservation.

[www.wilderness.net](http://www.wilderness.net)

An abundance of information, this site is jointly managed by the Arthur Carhart National Wilderness Training Center, Aldo Leopold Wilderness Research Institute, and the University of Montana College of Forestry and Conservation's Wilderness Institute.



Petrified wood tumbles down a drainage as it erodes out of the softer claystone.