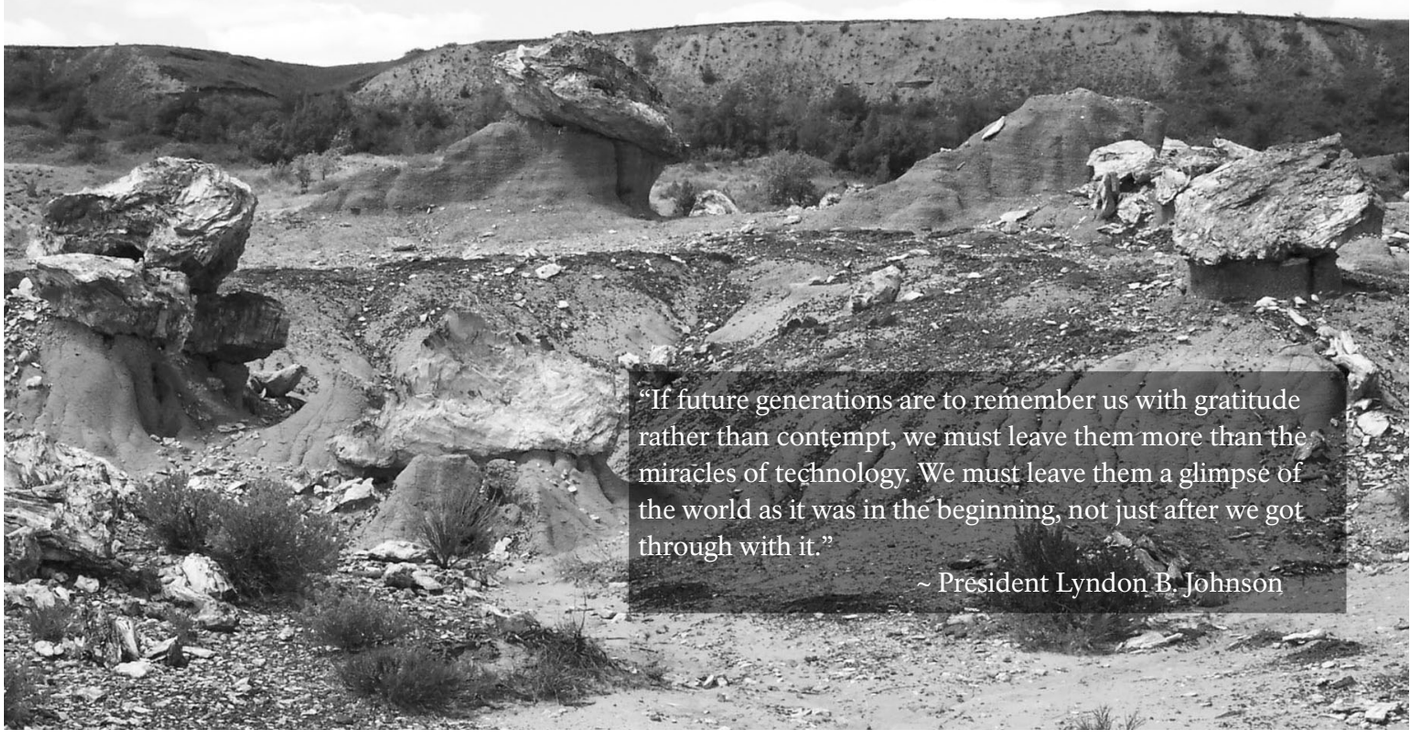
Theodore Roosevelt

National Park Service
U.S. Department of the Interior

Theodore Roosevelt National Park

Petrified Forest



One Unique Story

Theodore Roosevelt National Park preserves a wealth of geologic history that can be enjoyed by visitors and studied by scientists. The unique landscape tells us about events that occurred long ago and changes that took place over millions of years. Just a short visit here can offer insight into the past, instill wonder, inspire questions, and spark a desire to learn more about the geologic forces that helped shape the badlands.

Sixty million years ago, this area was on the eastern edge of a flat, swampy expanse covered with rivers that fanned out into a broad, sea-level delta. This swampy region contained dense forests of bald cypress, magnolias, palm trees, and other water-loving trees and plants growing in or near the shallow water. Year after year, leaves and other plant material fell into the sluggish swamp water forming a dense layer of compacted vegetation called *peat*. Over millions of years, pressure from overlying sediments combined with elevated temperatures, caused chemical changes in the peat that transformed it into a soft, woody-textured coal called *lignite*. North Dakota has the world's largest reserve of lignite coal, and thin coal seams are visible throughout the park.

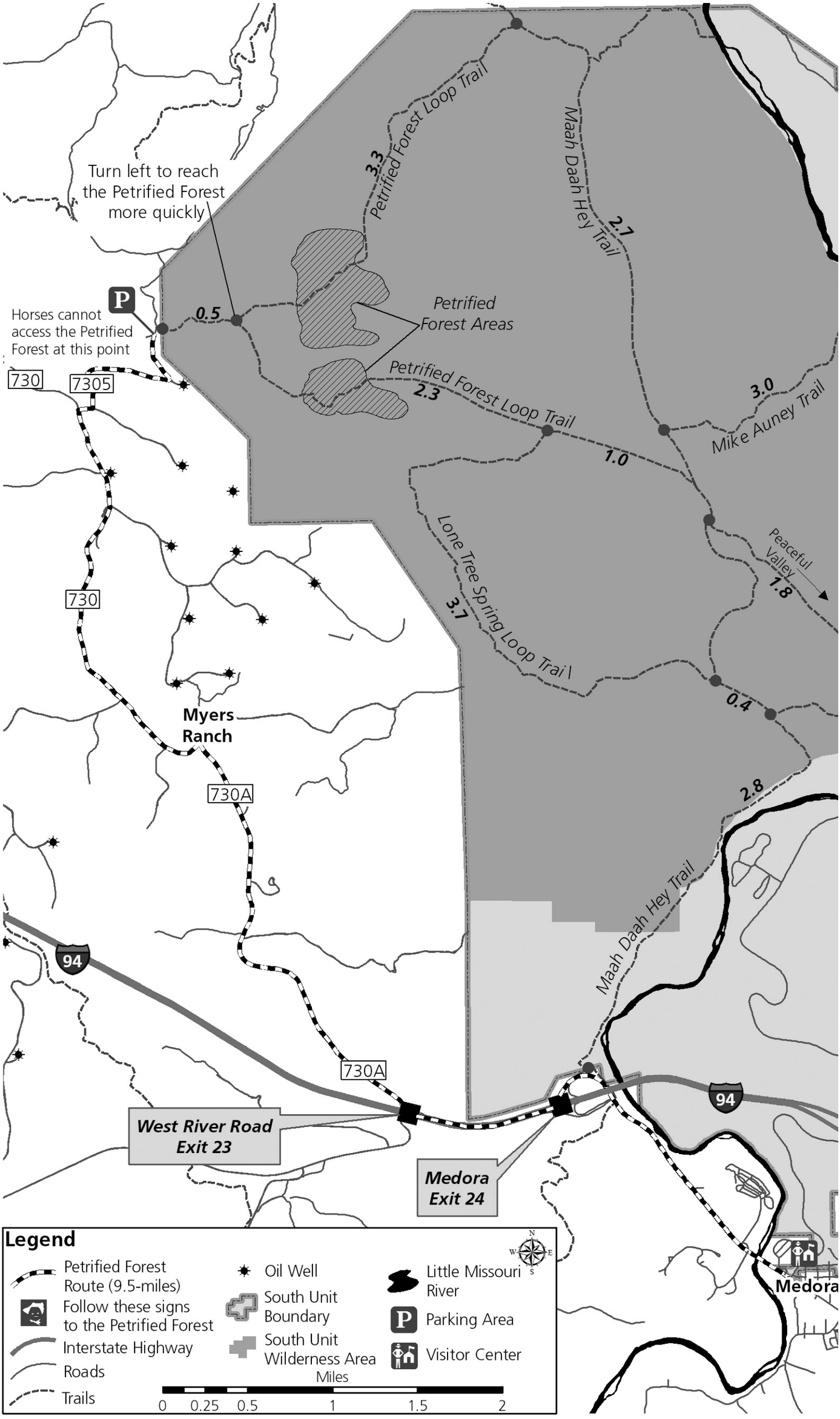
Ash from volcanic eruptions during the formation of the Rocky Mountains was carried by wind and deposited in western North Dakota. At the same time, water from fast-flowing rivers and streams flooded this area. Due to these abrupt and momentous natural events, some forest areas were quickly buried by flood deposits or volcanic ash fallout. Quick burial of plants or animals by such incidents may prevent decay and can lead to fossilization.

Groundwater moving through the silica-rich volcanic ash and sediments dissolved naturally occurring silica or quartz. As this silica-rich water soaked into the buried trees, organic compounds in the wood dissolved and were replaced by small quartz crystals, turning the wood into stone. This process is called *petrifaction* or *petrification*. At times, the crystals are so tiny that much of the internal structure of the tree is preserved, including the growth rings. The degree of petrification can range from specimens that are well silicified, to splintery, or to soft lignite. In the Petrified Forest, mostly stumps remain. This indicates that the lower parts of the trees were buried quickly. Exposed upper sections decayed and were not preserved.

One Special Place

The Petrified Forest is within the Theodore Roosevelt Wilderness and is believed to be the third largest petrified wood area in the United States (following Petrified Forest and Yellowstone National Parks). As Congressionally designated wilderness, this area has the highest level of protection and will remain undeveloped, allowing retention of its primeval and wild character. It offers the opportunity for solitude, contemplation, discovery, and the ability to experience this unique area in its natural state.

You are welcome to wander and explore throughout the area and make your own discoveries. Please remember that all rocks and fossils are clues to the area's geologic past and must be left where they are found for other visitors to enjoy and scientists to study. Collecting of any kind is prohibited.


Turn left to reach the Petrified Forest more quickly
Horses cannot access the Petrified Forest at this point
P
0.5
3.3
Petrified Forest Loop Trail
Maah Daah Hey Trail
2.7
Petrified Forest Areas
Petrified Forest Loop Trail
2.3
3.0
Mike Auney Trail
1.0
730
7305
730
Lone Tree Spring Loop Trail
3.7
Peaceful Valley
1.8
0.4
Myers Ranch
730A
2.8
Maah Daah Hey Trail
94
730A
94
West River Road Exit 23
Medora Exit 24
Medora
Legend
Petrified Forest Route (9.5-miles)
Follow these signs to the Petrified Forest
Interstate Highway
Roads
Trails
Oil Well
South Unit Boundary
South Unit Wilderness Area
Little Missouri River
Parking Area
Visitor Center
Miles
0
0.25
0.5
1
1.5
2