U.S. Department of the Interior
National Park Service
National Natural Landmarks Program

Name: Ginkgo Petrified Forest

Location: Kittitas County, Washington

Description:

Ginkgo Petrified Forest is among the most diverse assemblages of Miocene petrified wood in North America with 34 species of angiosperms and 6 species of gymnosperms represented. The landmark contains thousands of logs preserved in lava flows, including the Ginkgo tree, which is rarely found as fossil wood. Logs range up to 1.5 meters (5 feet) in diameter, with some as much as 27.4 meters (90 feet) in length. They occur both as single entities and in interlaced groups. Lack of roots, limbs or bark indicates that the logs were abraded by floodwater or a mudflow during their transportation from highlands to lakeshores and swamps. The petrified wood is colored by iron oxide impurities in the silica that has replaced the wood cells. Various degrees of silicification are represented, ranging from unmineralized organic material to completely impregnated wood. In some cases, the cell structure, ducts, rays, and canals are well-preserved, permitting identification of the individual tree species. Over 40 wood types have been identified at Ginkgo; these include both swamp-adapted trees and upland species that were transported to the lowlands.

This landmark is also exceptionally illustrative of the Ice Age Floods that transformed this landscape 13,000 to 28,000 years ago. During the peak of the last Ice Age, the massive Cordilleran continental ice sheet covered the northern parts of Washington, Idaho and Montana. Giant ice lobes blocked river drainages, including the Purcell Trench along the Clark Fork River near the Montana-Idaho border, causing Glacial Lake Missoula, a giant inland lake to form behind the blockage. Rising lake levels caused the ice dam to fail multiple times, sending a massive surge of floodwaters tearing across Idaho, Eastern Washington and Oregon, and eventually reaching the Pacific Ocean via the Columbia River. Moving highway speed these floodwaters transformed the landscape.

At Gingko Petrified Forest, which is located along the western banks of the Columbia River near Vantage, Washington, Ice Age floodwaters impacted the site via two distant routes based on the location of the Okanogan Lobe. When the Columbia River was free of ice, floodwaters entered from the north down the present-day channel of the river. When the Columbia River was blocked by the Okanogan Lobe at present-day Grand Coulee dam, floodwaters entered the Vantage area via Beverley Creek. Both routes resulted in Ice Age flood features. From the Ginkgo Petrified Forest Interpretive Center, overlooking the Columbia River, spectacular examples of the

cataclysmic flood features can be seen, including scabland basalt and gravel bar features. Hundreds of ice-rafted erratic deposits of multiple granite rock types can also be found throughout the site under 1,260 feet (384 meters) the approximate maximum height of floodwaters.

Significance:

Ginkgo Petrified Forest is the single most diverse locality of Miocene petrified wood in North America, creating one of the more unique fossil assemblages on Earth representing over 40 different wood types. The site contains thousands of logs petrified in lava flows containing an unusually large number of tree species, including the ginkgo tree, rarely found as fossil wood. Geologic features associated with the catastrophic Ice Age Floods are also exceptionally well-illustrated at this site.

Ownership: State, County, Private

Designation: October 1965

Evaluation: Bennett T. Gale, National Park Service, 1965