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A PETRIFIED FOREST ON THE KENAI PENINSULA, ALASKA

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During the Tertiary Period (1.8 to 65 million years ago), great swamps flourished in many parts of what is now Alaska. As swamp vegetation died, it was rapidly buried and thick organic layers accumulated. The thickness of the organic layers prevented total decay of the plant material, and very thick peat beds were formed. These peat beds were eventually buried and preserved by other materials such as sand, silt, and ash deposits. Eventually, the pressure of the overlying materials compacted and changed the peat layers into the lignite and subbituminous coal that is now abundant in many parts of Alaska. For example, on the Kenai Peninsula, coal beds of Tertiary age are common in the Beluga and Sterling Formations, which are middle to late Miocene in age (5 to 22.5 million years ago).

Preserved logs, branches, stumps, and root-systems are associated with coal beds of Tertiary age in several areas of Alaska. Some nearly complete trees have been found in their growth position. Fossilization of the trees generally involved the replacement of plant material by a mineral such as silica or calcium carbonate or combinations of these and other minerals. Conditions that promote this kind of preservation include rapid burial by flooding, mud slides, or volcanic-ash falls, and an environment of mineral-rich water that allows minerals to replace the decomposing organic materials.

Recently, geologists from the Alaska **Division** of Geological and Geophysical Surveys, with the cooperation of the Alaska Division of Parks and Outdoor Recreation, investigated a petrified forest exposed on the beach south of Anchor Point. This forest was probably buried by volcanic ash from one or more of the active volcanoes in the area. Because volcanism was prevalent during the Tertiary Period, several separate burial events may have occurred over a period of several million years.

The petrified-tree remnants found at Anchor Point represent one of the most extensive occurrences of petrified forests in Alaska. In addition to silicified tree stumps and root systems preserved in growth position, this forest contains tree stumps that have turned completely into coal.