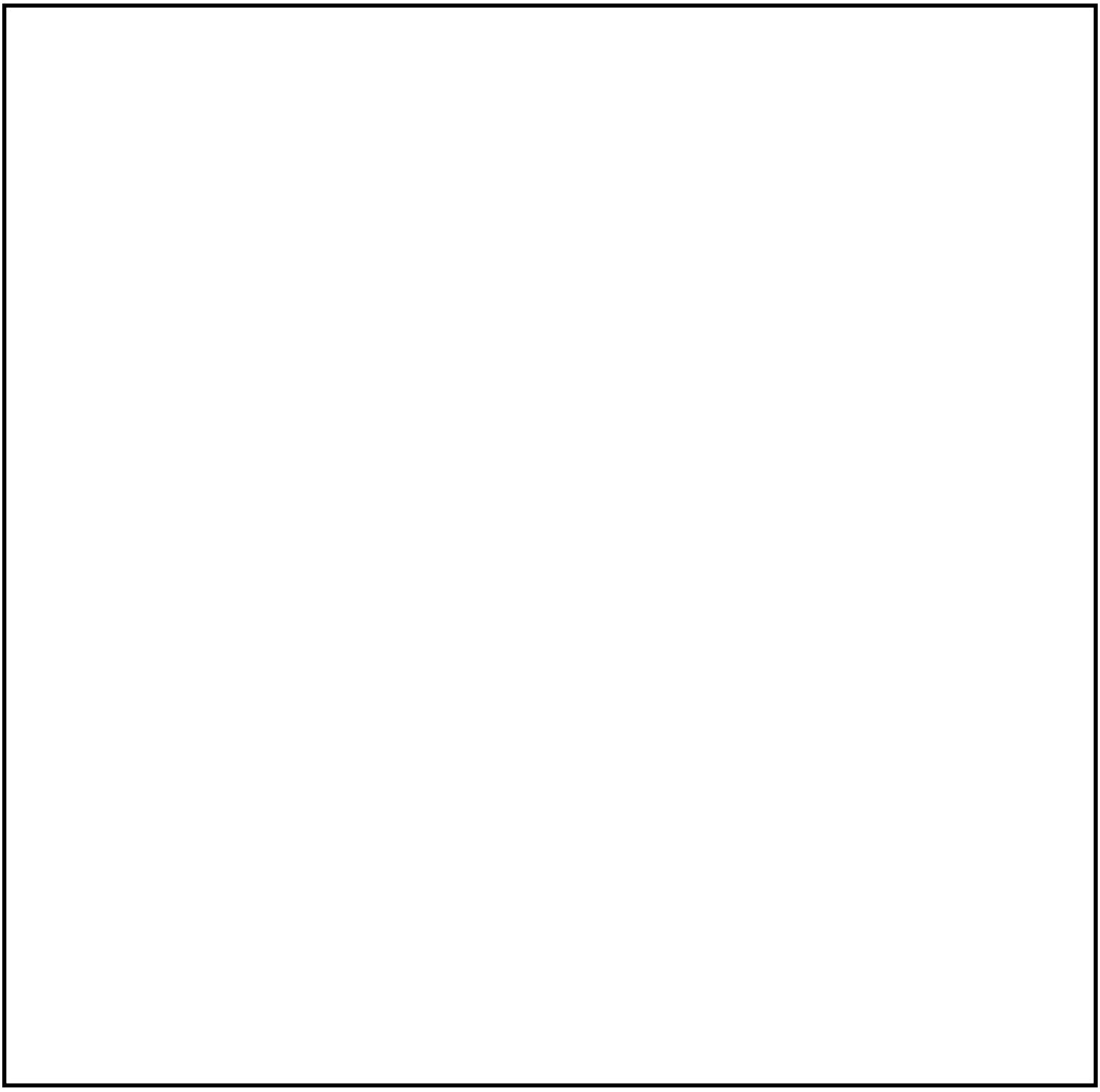
Columbia Plateau

Expert Group

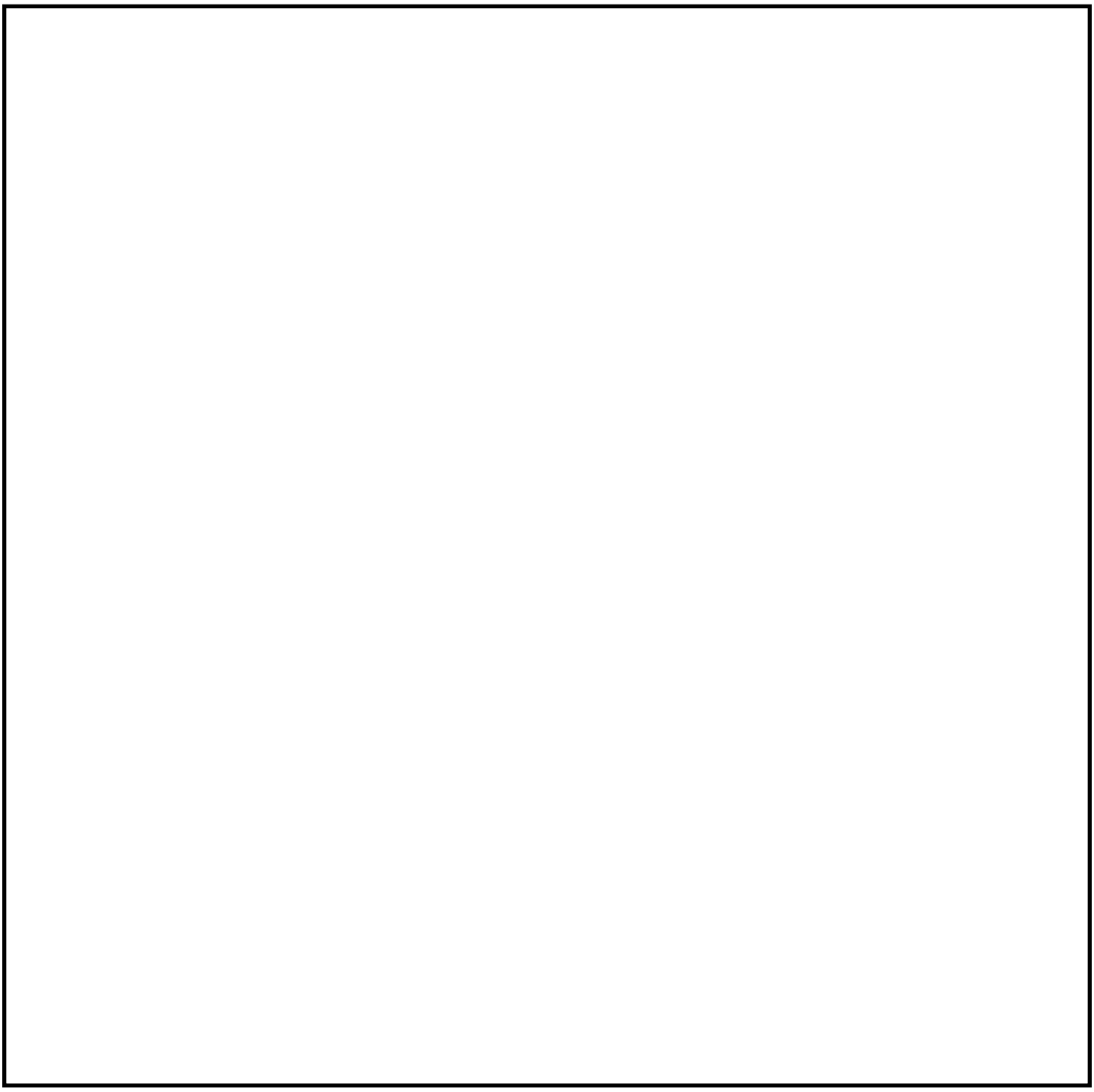
Landscape

The Columbia Plateau is located in Eastern Oregon between the Cascade Range and the Blue Mountains. It is warm and arid most of the year. The volcanic, sagebrush-covered plains and valleys are punctuated with river systems and isolated mountains.



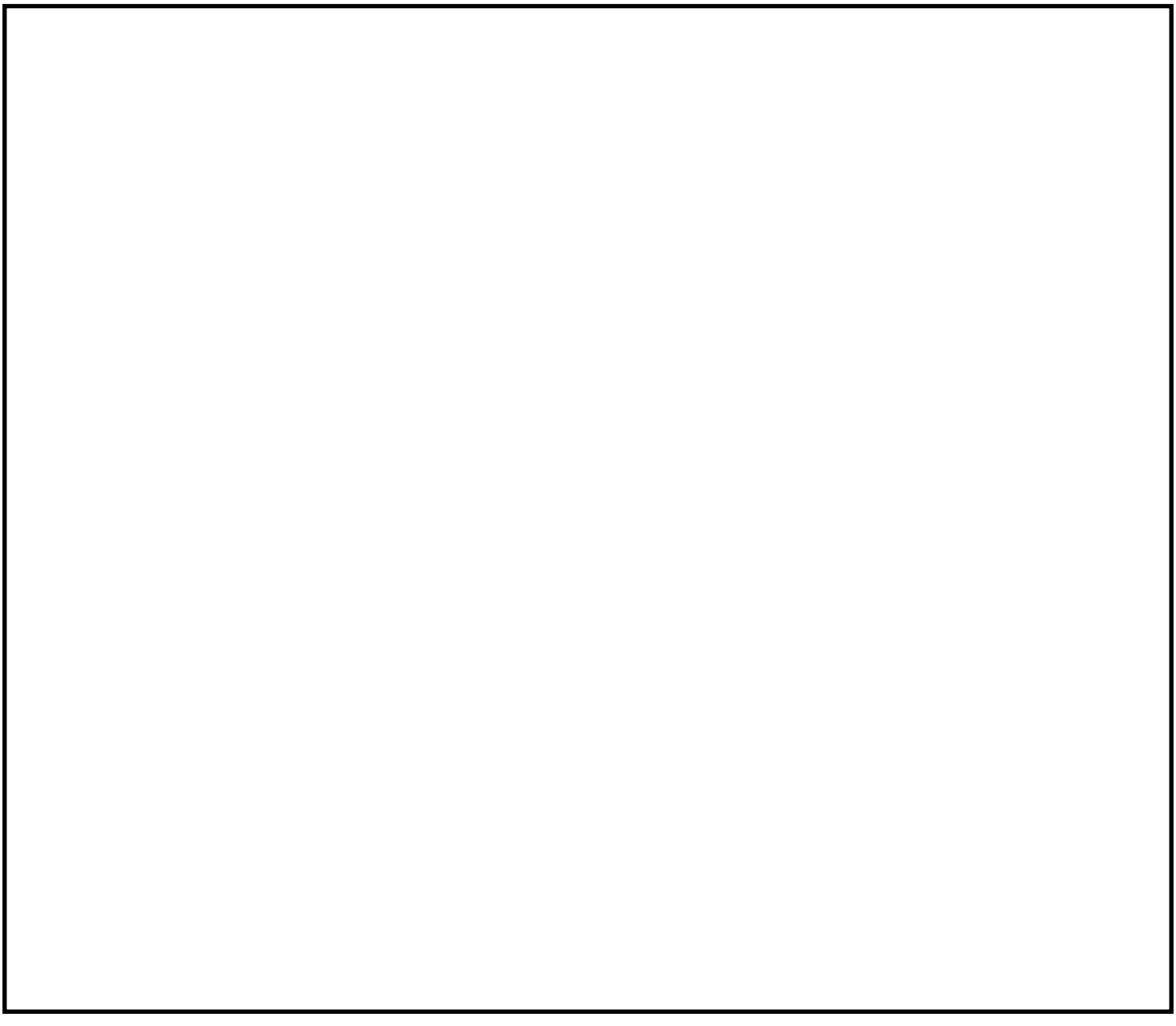
Geological Event

Long ago the movement of the Juan de Fuca plate and the North American Plate caused about 300 lava flows out of fissures in the Columbia Basin. These flows were spread out over millions of years. The lava flows covered 60,000 square miles and were 50-100 feet deep.



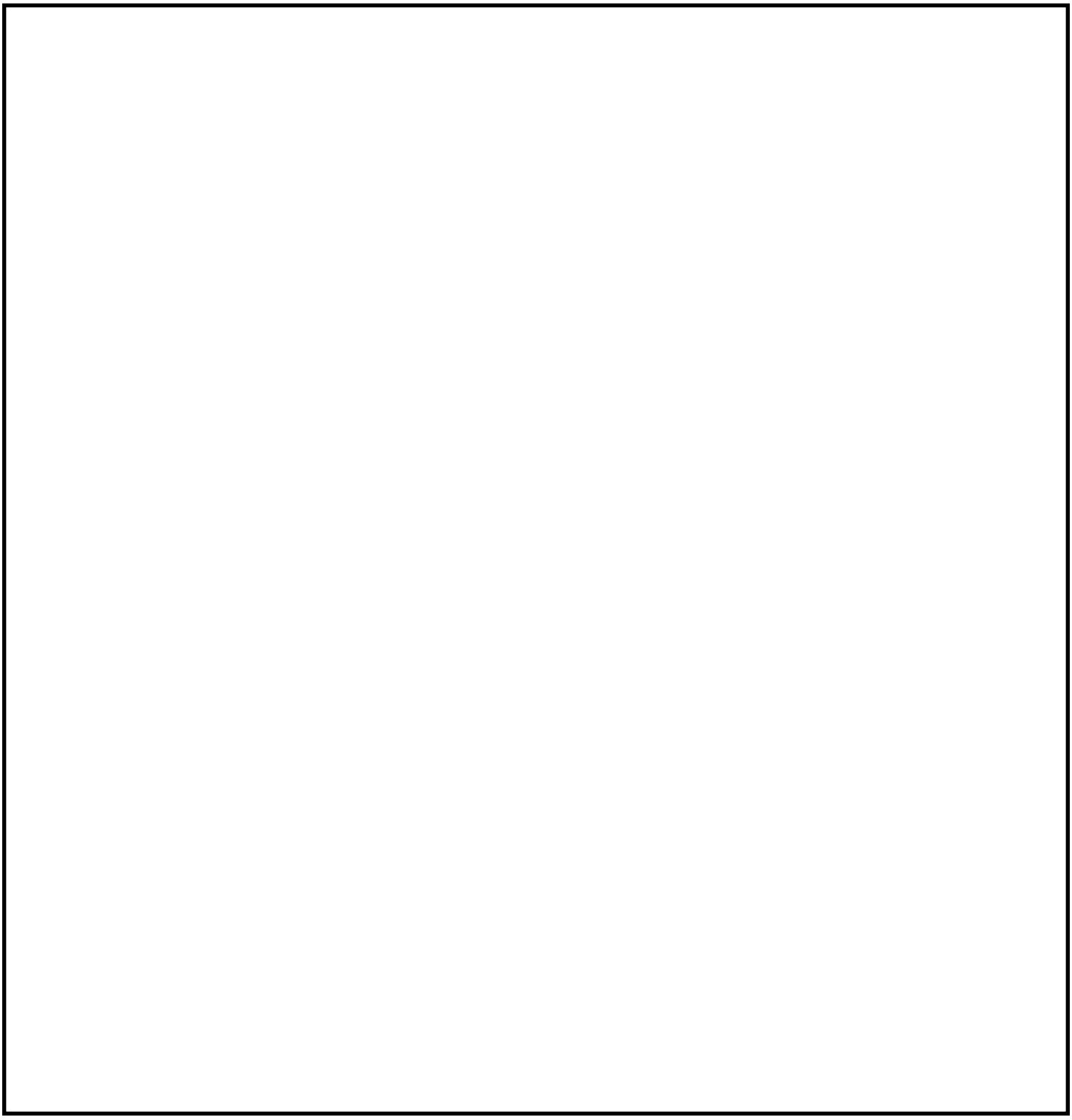
Rock Formation Evidence

When the volcanic fissures were inactive, water would accumulate in depressions, sediment would accumulate in valleys, and wind would deposit dust throughout the area. As soil was developed, forests and grasslands began to grow. Soon plants and animals appeared. The next lava flow would cover the land again and preserve a fossil record of these plants and animals.



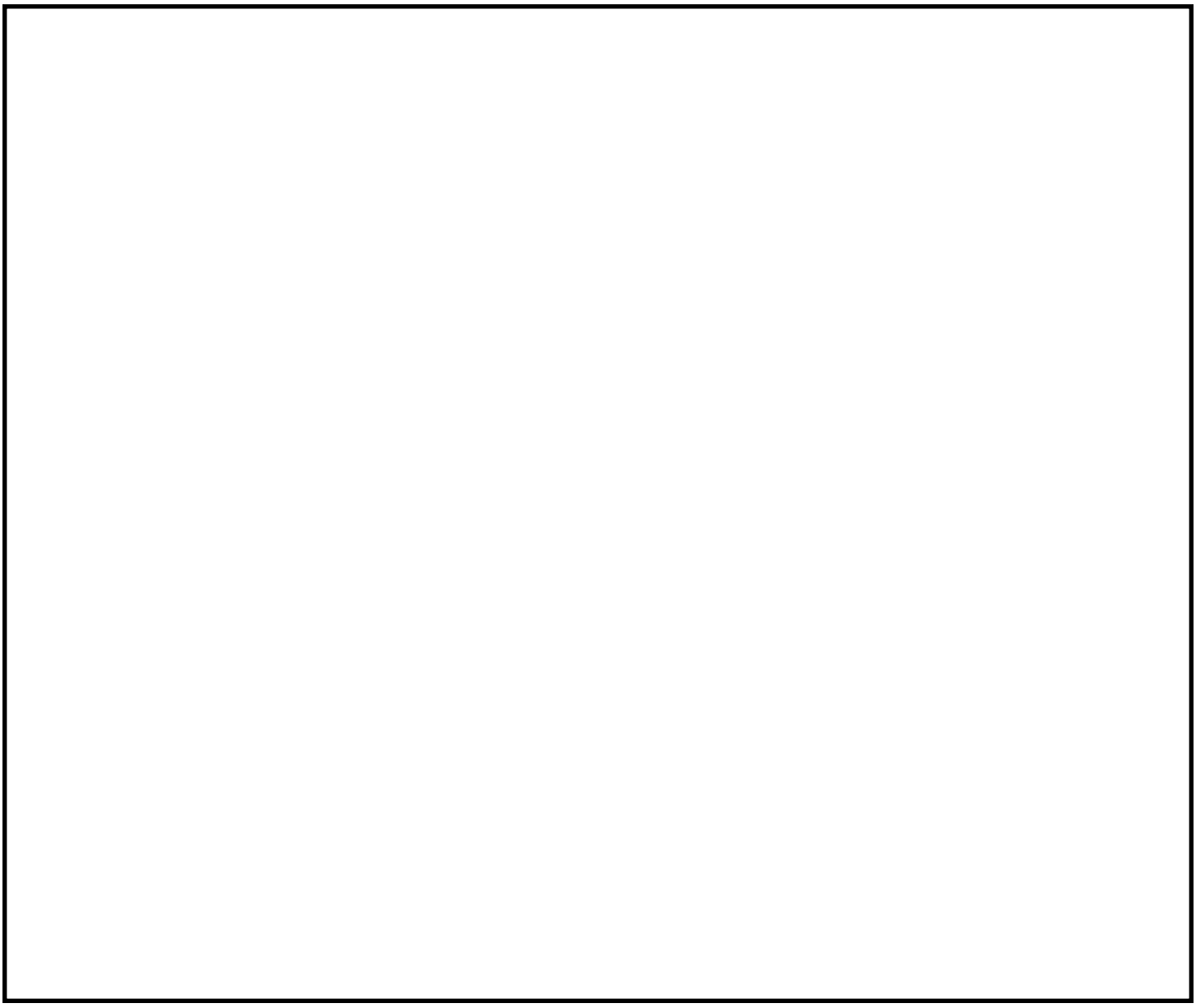
Changes over Time

The Great Missoula Flood carved deep channels and left giant ripple marks, potholes and glacier erratics. Over time the Columbia River has eroded away at the rock to expose layers of igneous rocks.



Large-Scale System Interactions

There are different theories on what caused the lava flows in the Columbia Basin. Some scientists believe they were caused by subduction. While others, believe there was a hot spot under Southern Oregon like the one in Yellowstone National Park now. Another theory, is a huge meteor rammed into southeastern Oregon setting off the violent eruptions.



Biogeology

The rich sandy loam is good for growing potatoes and wheat. Farmers in the plateau region can grow winter and spring wheat. The opening of the Union Pacific Railroad made it affordable to ship wheat to Portland. In the 1950's dams were built for hydroelectric power. Locks were also built to allow ships to easily move up and down the river.