Pedernales Falls — A Window to the Geologic Past

TECTORIC FORCES AT WORK
Why are the rocks that form the falls tilted?

In Texas, Oklahoma, and Arkansas, tectonic forces created the Ouachita Mountain Range. The weight of the mountains and sediments shed off their western slopes compressed the rock strata, causing them to tilt about 35 degrees to the southeast.

Later, over millions of years, the Ouachita Mountains were eroded, sank, and were covered once again by the sea. Only their buried roots remain in Central Texas, just west of this park. Deformed and eroded, the Old Merola Falls Limestone forms the falls we see today.

EVOLUTION OF THE LANDSCAPE
Erosional forces break down and shape the land.

Features such as the Pedernales slashed the landscape. At the falls, the erosion and transport of hundreds of feet of washing rock provide us with a window into the geologic history of Texas back to about 310 million years ago.

TEXAS THROUGH TIME
These maps illustrate the locations of land, sea, rivers, and mountains in the geologic history of Texas in this region. Over billions of years, mountain ranges have been uplifted, then eroded. Oceans have opened, then closed. Sea levels have risen, then fallen. The key to understanding such change is time. Small changes over long periods of time result in large changes to the Earth.

GEOLOGIC TIME
The primary goal of the Texas Geologic program is to establish a network of geologic information signs to engage and educate people about the geologic history of Texas when they visit parks, highway rest areas, and other public locations.