

Geology of West Texas

As you watch the west Texas scenery out the window, it may seem as though this land has been dry forever. But this peaceful desert landscape once was the site of continents colliding, and later held deep inland seas teeming with aquatic life.

By studying the rock layers, geologists have determined that the region near our route through southwest Texas was once the south margin of the North American continent...and around 400 million years ago our continent collided with another huge landmass to thrust layers of rock up into mountain ranges. The basins between the mountain ranges became deep seas.

Mollusks and other sea creatures lived and died in the ancient sea. Limestone was formed by the calcium carbonate of these animals' shells, often making massive layers of gray rock. If you tried to chisel the limestone, you would find it very hard, but over time it can be molded into beautiful smooth shapes by flowing water. Watch for the Eagle's Nest Canyon, ½ mile east of Lantry, TX, and look for the dark gray, smooth limestone.

Can you see thick, rounded, sand-colored layers of sandstone in the hillsides? You may also be able to notice thinner layers of tan shale with sharp edges, breaking into piles of rubble. As in today's oceans, ancient rivers carried sand and silt from the mountains into the sea. The sediments formed layers which were buried and compressed by the weight of other sediments laid on top of them, forming the sandstone and shale which we see today.

As you might expect, fossils of ancient shells and other marine animals can be found in these sedimentary rocks. In many places in this region, conditions were perfect for huge numbers of tiny marine organisms to be transformed by bacteria, heat, time and pressure into something we value highly – petroleum!

While the land outside may look motionless, forces within the earth and weather acting upon it, continue to transform the countryside.

Source(s):

http://www.twdb.state.tx.us/publications/reports/GroundWaterReports/GWReports/Report%20356/Chapter2_3.pdf

<http://www.tshaonline.org/handbook/online/articles/GG/swgqz.html>

Author(s):

Written by Susan G. Scott, Lecturer in the Department of Recreation, Park and Tourism Sciences at Texas A&M University, as part of a National Park Service Trails and Rails project funded by Amtrak, 2009.