

[This script was read on KUNM during Earth Science Week in 2016.]

Welcome to Earth Matters – field notes on the geology of New Mexico’s Enchanting Landscapes. Celebrating Earth Science Week, I’m Lewis Land.

The Guadalupe Mountains of southeastern New Mexico and west Texas are an often overlooked destination for residents of the northern part of our state, primarily because of their remote location. However, this spectacular mountain range is worth the trip, providing a remarkable example of the stark beauty of an arid mountain landscape at the northern edge of the Chihuahuan Desert. The Guadalupes were part of the original homeland of the Mescalero Apaches, and are now home to two National Parks and one of New Mexico’s two world heritage sites, Carlsbad Cavern. Although the cave formed several million years ago, it still contains actively growing cave formations and the Big Room, the fifth largest cave chamber in North America. The Guadalupe Mountains have also been designated as the type area for rocks of middle Permian age, which were originally formed about 260 million years ago on the margins of an inland sea near the equator. The importance of these rocks cannot be overstated – most of the rock units exposed in the canyons and cliffs of the Guadalupes are reservoirs for oil and gas in the subsurface of the Permian Basin region, and are visited by hundreds of geology students and petroleum geologists on field trips every spring and summer. The Capitan Reef, the host rock for the Big Room in Carlsbad Cavern, is also an important aquifer in southeastern New Mexico, providing drinking water for the city of Carlsbad, and brine in the saltier portions of the aquifer that’s used for industrial purposes. For all these economic, environmental, aesthetic, and scientific reasons, the Guadalupe Mountains are a unique geoheritage site in the state of New Mexico.

Celebrating Earth Science Week, I’m Lewis Land, hydrogeologist with the Bureau of Geology at New Mexico Tech.