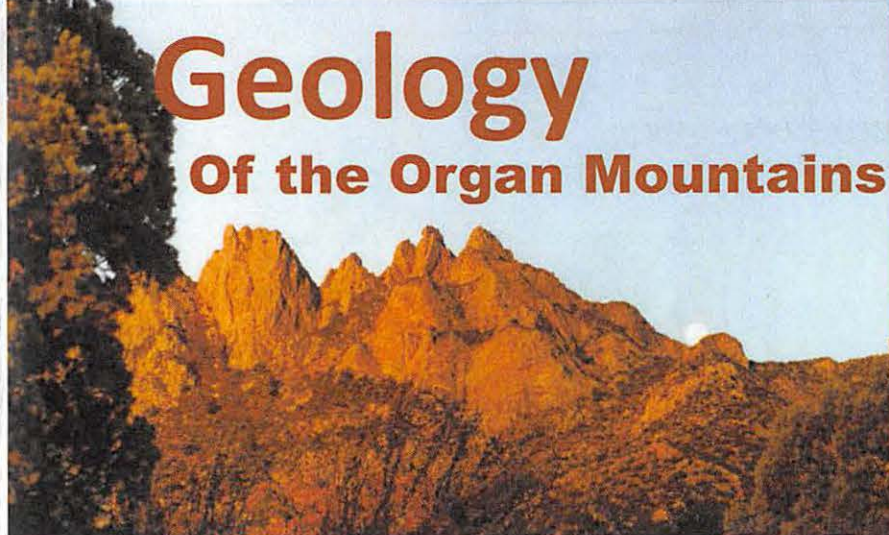


# Geology

## Of the Organ Mountains



The Organ Mountains originated about 32 million years ago in the middle of the Tertiary Period. At that time, magma began to ooze from great depths, pushing up the overlying layers of rock. Some of the magma was forced to the surface ejecting vast quantities of ash, rock, and lava over an area of 100 square miles. The result of this volcanic activity can be seen today as the dark red rocks of the Organ caldera that forms the southern portion of the range. The magma that did not reach the surface cooled slowly to form the Organ batholiths. The pinnacles of the northern Organs are remnants of this slowly cooled magma. This craggy, light gray rock of granite composition can be easily recognized in the northern section of the range. Along the western side of the pinnacles, the remnant of the sedimentary layers can be seen forced into nearly vertical bedded layers. The interface between the sedimentary rock and batholiths is the location of several historic mines.

Between 15 to 8 million years ago, faulting along the Rio Grande Rift lifted the Organ Mountains on the east and tilted the region down the west. The Rio Grande became a central conduit for many small streams, carrying Organ Mountain silt to the Gulf of Mexico. The Ice Age brought small glaciers to northern New Mexico mountains into the familiar needles and horns that form the Las Cruces eastern skyline today.

At the same time, another fault-block is buried under sand and gravel but visible parts are the Bishop's Cap Hills, Tortugas Mountains (A Mountain), and the Doña Ana Mountains.

The faulting along the Rio Grande Rift is still active. Occasionally, small earthquakes are felt in Las Cruces. Windblown rock and sand, rains, and changing temperature continue to erode away the Organ Mountains and the age-old cycle continues.

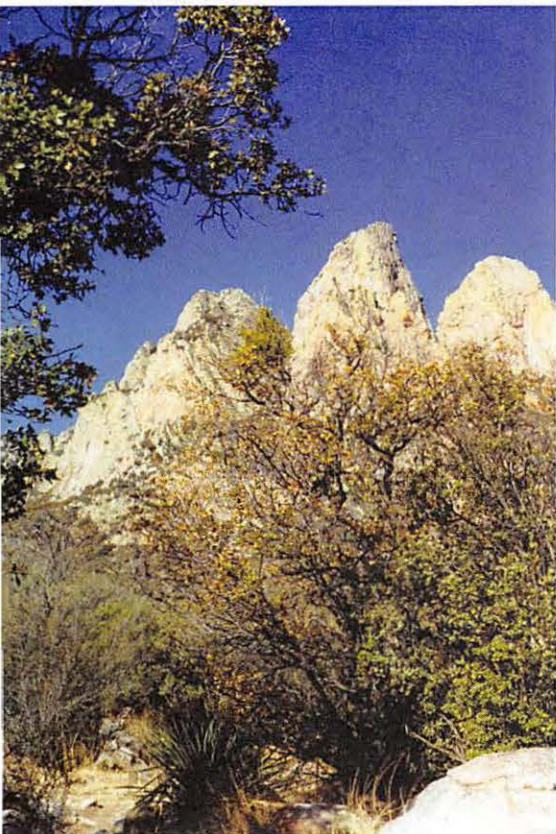
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Scientists currently document the birth of the Earth at 4.6 billion years ago. The oldest rocks in New Mexico are around 2 billion years old and were formed during the Pre-Cambrian Era of the Earth's history. This was a time of mountain building, turbulent seas, and volcanic activity of the former mountains. The rocks were then covered by masses of magma from the Earth's core that slowly cooled into beds of pinkish granite crossed by coarse pegmatite veins. Again, these mountains wore down and southern New Mexico lay featureless for millions of years.

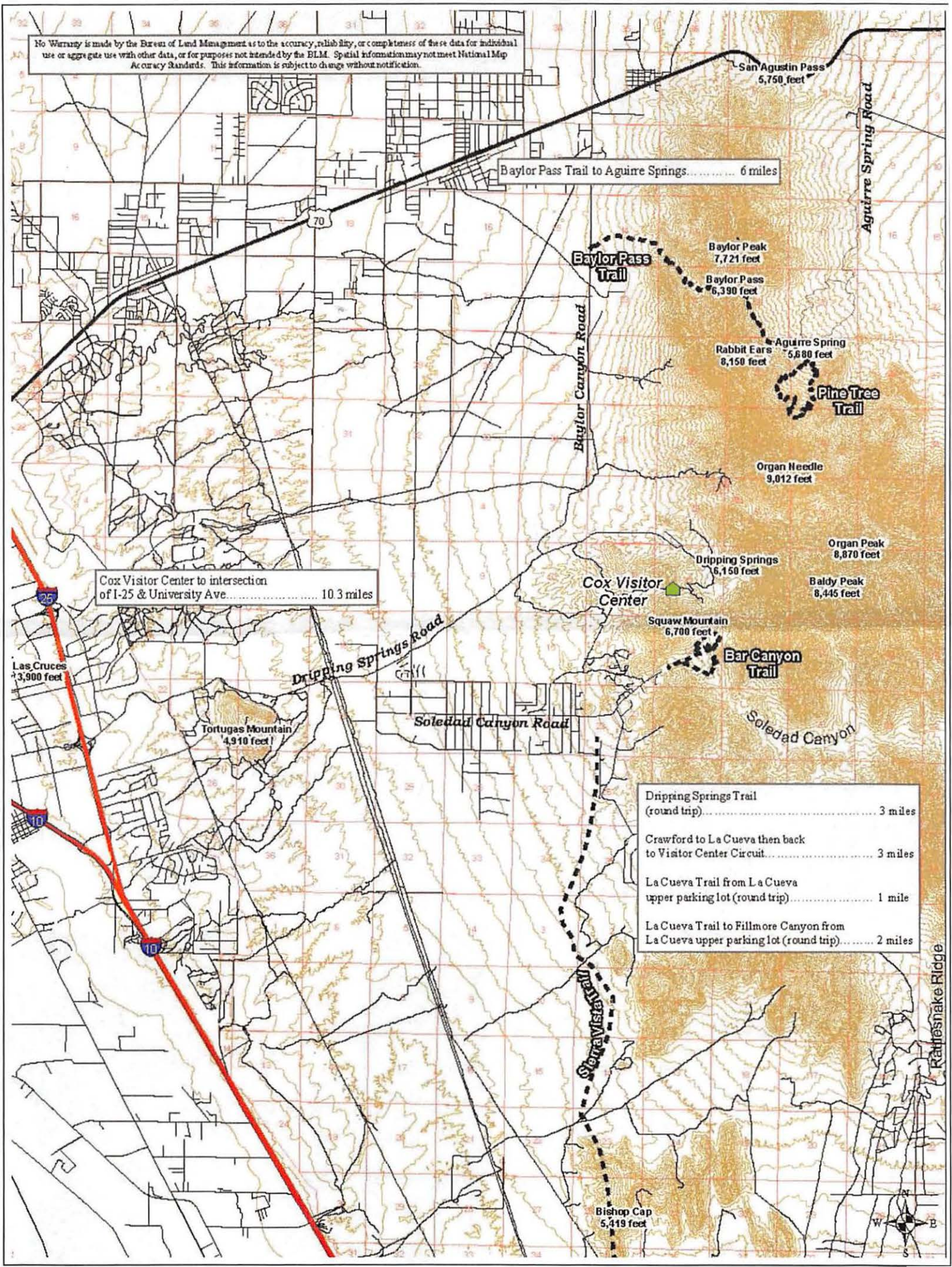
At the dawn of the Paleozoic Era (old life) 570 million years ago, the "Age of Fishes", the land was low. The Rio Grande did not exist and shallow warm seas covered the area that is now Las Cruces and the Organ Mountains. Sedimentary rocks such as limestone and dolomite were formed under the invading seas.

The Mesozoic Era (middle life), the "Age of Reptiles", began about 245 million years ago. The Las Cruces area was gently uplifted and then eroded away. Near the end of the Era, the shallow seas returned depositing sandstone, shale, and conglomerate rock thousands of feet thick.

Geological forces changed abruptly about 60 million years ago with the start of the Cenozoic Era (recent life), the "Age of Mammals", and its Tertiary Period. The land rose under tremendous pressures causing overriding cracks or faults in the Earth's crust. Massive blocks of older rock were forced up and over other blocks, forming mountain ranges and basins or valleys. Once again the mountains eroded and by 45 million years ago, the land was again flat.



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Baylor Pass Trail to Aguirre Springs..... 6 miles

Cox Visitor Center to intersection of I-25 & University Ave..... 10.3 miles

- Dripping Springs Trail (round trip)..... 3 miles
- Crewford to La Cueva then back to Visitor Center Circuit..... 3 miles
- La Cueva Trail from La Cueva upper parking lot (round trip)..... 1 mile
- La Cueva Trail to Fillmore Canyon from La Cueva upper parking lot (round trip)..... 2 miles

