

The right ingredients

The limestone rocks of the Edwards group were originally deposited about 100 million years ago when a warm, shallow sea covered central Texas. Marine life flourished. As the marine organisms died, their calcium carbonate shells and skeletons sank and solidified into layers of limestone. The sea level lowered and the Edwards limestone was buried and then uplifted. Major karstification began with a major uplift approximately 25 million years ago (Sharp, 1997). Fractures and faults, such as the Balcones fault, allow rainwater to penetrate into and dissolve the soluble rock layers of the Edwards group (Ferrill et al., 2004).

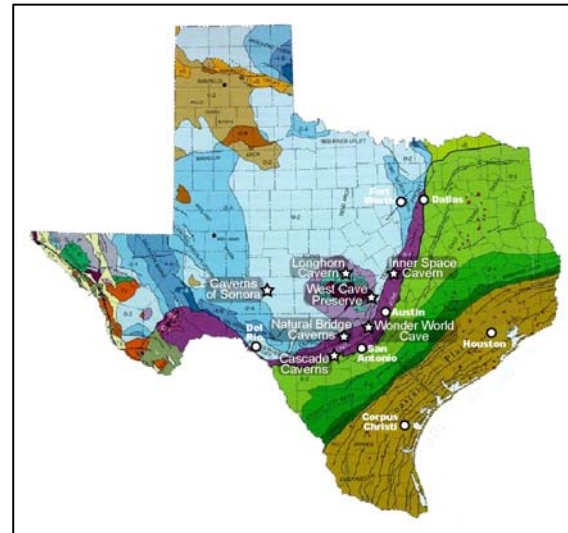


Figure 1 shows the locations of several caves in central Texas. The Balcones Fault Zone is shown in dark purple and runs from Del Rio through San Antonio to Dallas.

Texas caves: two shining examples

Inner Space Cavern, 20 miles north of Austin,



was originally found by the Texas Highway Department in 1963. In order to determine that the ground could support the weight of a

highway overpass, they drilled several test holes; repeatedly the drill bit broke through into open cavities. The first human to enter the cave was lowered on a drill bit through an enlarged test hole.

Inner Space Cavern is a highly decorated cave with over 4 miles of passage. The man-made entrance is the only access into the cave passages; however, the remains of 5 sinkholes called bone sinks, rich in fossil remains, have been identified. The cave tour only covers about 1/8th of the existing passage in Inner Space Cavern.

The Natural Bridge Caverns are located between



San Antonio and New Braunfels, 8 miles west of 135. The main cavern was discovered by 4 cavers from St. Mary's University in 1960. The

area was known as a well-karstified region, so the cavers went scouting for caves. After a crawl through a long, tight crawl, Orion Knox stumbled into the large network of passages that the tour route follows today. The two caves received their name from the natural rock bridge above the entrance to the north cavern.

The tour route passes through a series of large highly-decorated rooms and reaches a depth of 200 feet at Purgatory Creek. After heavy rains, recharge causes the water table to rise and occasionally fill Purgatory Creek.

References

- Ferrill, D.A., Sims, D.W., Waiting, D.J., Morris, A.P., Franklin, N.M., and Schultz, A.L., 2004, Structural framework of the Edwards Aquifer recharge zone in south-central Texas. *Geological Society of America Bulletin*, v. 116(3-4), p. 407-418.
- Sharp, J.M., Banner, J.L., 1997, The Edwards Aquifer: a resource in conflict, *GSA Today*, v. 7 (8), p. 1-9.