

Sinkholes: A Window into the World Beneath Your Feet

By Heather Hill



Florida is a state known for its thousands of sinkholes that dot the landscape. This is due to the state lying on a giant slab of limestone that was formed over millions of years by the accumulation of dead shellfish. The Texas bedrock is the same limestone, and therefore has the same karst topography that Florida does. “Karst topography” can be defined as bedrock made up of limestone or gypsum that is slowly eroded away by water to form underground caverns and sinkholes.

Sinkholes are a fascinating window into the world below our feet. They provide access to the underground aquifer, as well as sustain life that is found nowhere else in the world!

These “karst windows” are formed over hundreds of years as the limestone is eroded away. Limestone itself is a very soft rock made primarily of calcium carbonate; the same compound found in the shells of various mollusks and clams. Since limestone is soft, it doesn’t take a very strong acid to dissolve it; which is why rainwater is so adept at eroding away the limestone to form underground caverns.

As these caverns grow larger, the ceiling grows weaker under the weight of the soil, plants, and other things on the surface. Eventually, the ceiling collapses in on itself, bringing everything on the surface down with it. Over the course of several days, the soil and grass that was first pulled into the sinkhole will slowly disappear down the hole, and into the aquifer. The trees follow, seeming to fall in slow motion toward the bottom of this new pit in the Earth’s surface. This process gradually continues as more soil sloughs off into the hole, making it bigger as time goes on. The water that pours in begins its underground journey through the aquifer before it eventually emerges as a spring, or is brought up by someone’s well. This water is adding to the groundwater, a process known as “recharging”.

Fish and other animals can live down here with no problem; and some are permanent residents. These include blind crayfish and salamanders that hunt using touch rather than sight. In the sinkhole bowl itself, you can find species of plants, salamanders, and invertebrates that thrive solely in that specific environment.

Sinkholes are just one example of how connected all the plants and animals, including humans, are on this planet. If one part of this ecosystem is changed, it can have damaging repercussions down the line; whether it be destroying the delicacy of the karst window itself, or contaminating our drinking water. We have to be cognizant of our actions, otherwise we will also pay the price.

Photo Caption: "An example of a sinkhole in Florida that opened up recently; showing trees slowly falling into the hole."

Photo by Michael Hill