

KNOW YOUR KARST!



Photo: Michael Amador/TxDOT

2021 is the International Year of Caves and Karst — and a good time to get to know and better understand the whole rocky system through which the water flows —sustaining an ecosystem and providing water for many lives.

A quarter of the world's population depends upon water supplied from karst aquifers. In Central Texas and the Hill Country, millions of people are dependent on the water being held within the rocks and holes below.

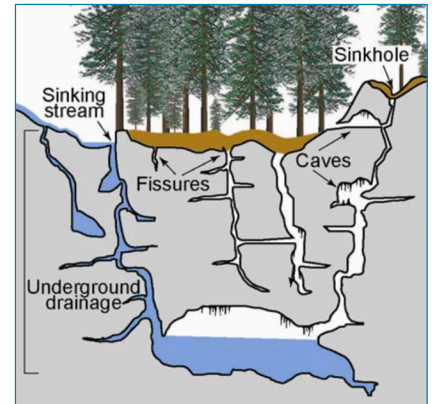
Understanding the fragility of the karst system and the ease with which it can be damaged and polluted is key to protecting our precious water supply.

Trinity Edwards Springs Protection Association (TESPA) and Wimberley Valley Watershed Association (WVWA) have teamed up again to spread the knowledge and love of our unique karst aquifers — from which our water flows!

WHAT IS KARST?

Karst is a landscape formed from the dissolution of soluble rocks including limestone, dolomite and gypsum. It is characterized by sinkholes, caves and underground drainage systems. Nearly all surface karst features are formed by internal drainage, subsidence and collapse triggered by the development of underlying caves. Rainwater becomes acidic as it comes in contact with carbon dioxide in the atmosphere and the soil. As it drains into fractures in the rock, the water begins to dissolve away the rock creating a network of passages.

Over time, water flowing through the network continues to erode and enlarge the passages; this allows the plumbing system to transport increasingly larger amounts of water. This process of dissolution leads to the development of the caves, sinkholes, springs, and sinking streams typical of a karst landscape.



Features of a karst system.

WHY IS KARST IMPORTANT?

Dissolution associated with karst development in Central Texas limestone has created a complex underground water flow network that includes caves large enough for humans to access. Rainwater travels through the network, controlled by the Balcones fault system, until it reaches the water table. The karstified limestone acts as an aquifer where water can be stored and later extracted by humans.

Two million people in central Texas get their drinking water from the karst aquifer known as the Edwards Aquifer. This resource is especially important for Central Texas as the region becomes more urbanized. With a higher density of people, Central Texas will face higher demand and increased pollution. Just like rainwater, pollutants can easily pass through the karstified limestone. Another difficulty is that streams and surface runoff entering the aquifer via sinkholes and caves bypass the natural filtration produced by seeping through soil and bedrock. This direct recharge quickly replenishes the water supply; however, it also leaves the aquifer particularly vulnerable to contamination.

Information and image above sourced with permission from: Environmental Science Institute, The University of Texas at Austin. For more information: www.esi.utexas.edu/outreach/cave



WVWA-TESPA EDUCATION CAMPAIGN

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