



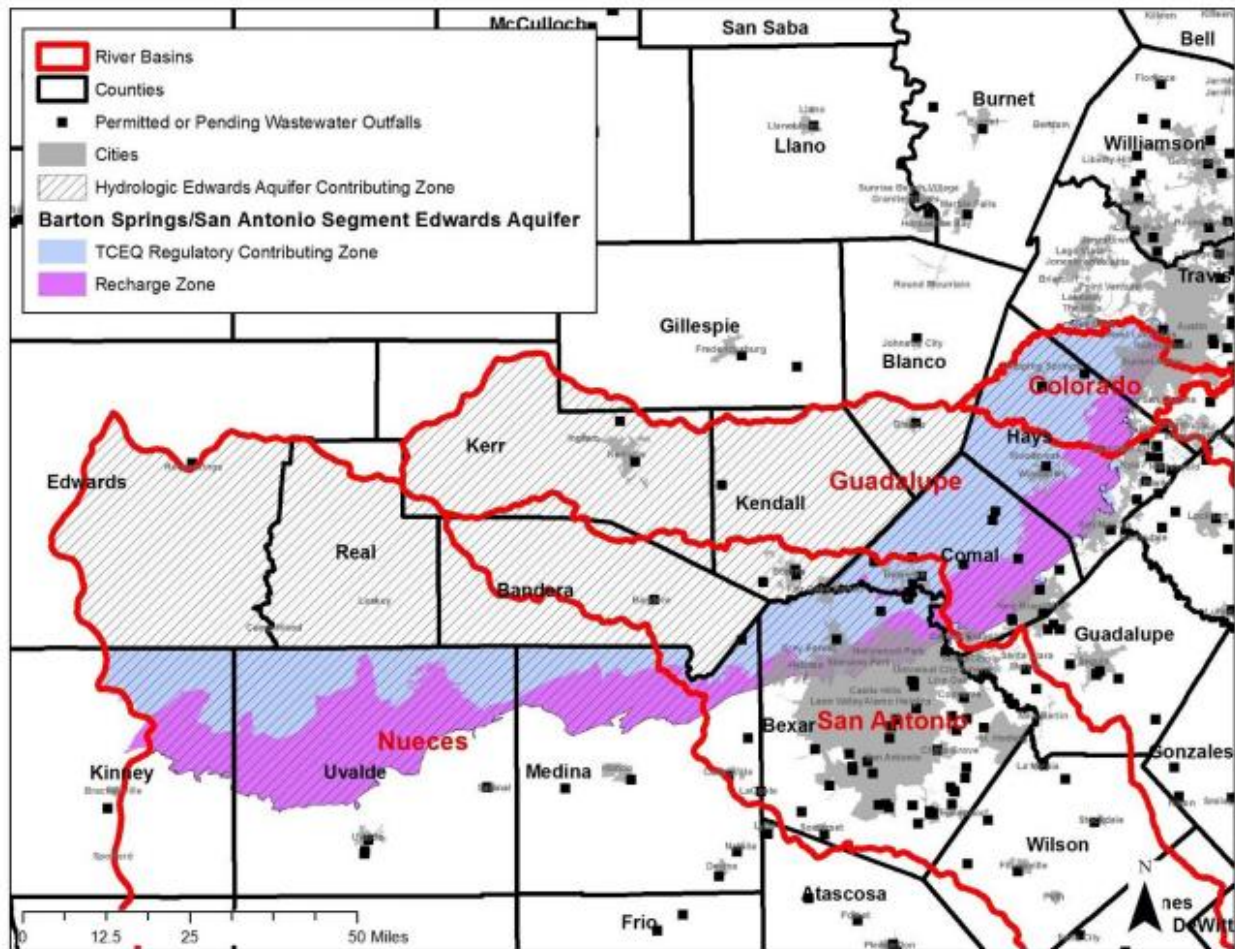
Aquifer Zones

By Dr. Larry Sunn

This month I'll leave rainwater catchment for a while to talk about area aquifers, recharge zones, contributory zones, and other cool stuff we see on roadway signage throughout the county. There are several watersheds in and around Comal County that recharge our two major aquifers.

In addition to replenishing our recreational surface water resources, the Trinity and Edwards aquifers are our county's major sources of drinking water. Because of the diverse geology of our hill country area, the depth of aquifers that lie beneath us varies from a few yards below the ground, to several hundred yards.

Aquifers are generally defined as naturally occurring underground spaces capable of absorbing and storing water.



Aquifers have storage capacity in the fractured spaces between rock, gravel, or sand grains that characterize its geologic layer. Here in central Texas, much of our aquifer storage is considered “karstic,” a term that describes surface and subsurface areas dominated by limestone rock, typically heavily fractured with caves and sinkholes. Enter, the Edwards Aquifer. The map depicts the various river basins in the hill country as well as clearly defining the Edwards aquifer's contributing and recharge zones.

The Edwards is the major drinking water source for the city of San Antonio and surrounding central Texas communities—including Comal's eastern side. It is a karst aquifer, so its fractures, caves, sinking streams, and

sinkholes act as conduits to the aquifer. While this means that the aquifer recharges quickly after a rain event—so rapidly that the current aquifer level is reported in the evening news. However, the rapid recharge also means that any surface pollution from stormwater runoff or spills directly impacts the water quality of the Edwards, possibly impairing drinking water and affecting its sensitive ecosystem.

Recharging both aquifers depends upon rainfall as well as surface water flow in streams that pass over surface outcrops of the aquifers. However, the two aquifers are not the same. The respective aquifer difference is in how it gets recharged and how the water is stored. The Edwards is direct with runoff water “dumping” into its large cave-like features, whereas the Trinity recharge is via much slower percolation as rainfall slowly moves through the soils and rock below us. Today’s rainfall takes up to three years to reach the pumpable water table in the Trinity.

At RainBees.com we are often called to homes in both Edwards and Trinity zones because of wells going dry. We know that the Trinity water table is dropping because the Comal Trinity Groundwater Conservation District monitors several wells throughout the county and the average decrease in the wells they monitor in western Comal is about two feet per year. The Edwards has become more stable; however, all present and future Edwards water is already allocated. People now living above the Edwards who desire to drill a new well must drill THROUGH the Edwards into the Trinity for their water.

As our county becomes increasingly urbanized, it is critical that we are aware of water we use, what we dump on the ground, and what we spray. Not doing so can result in scarcity as well as elevated pollutant concentrations. Growth is lowering water tables, and, at the same time, it slows the rate of groundwater recharge. Water is increasingly becoming a scarce commodity. That brings us full circle as to why capturing and using rainwater—in any amount—is critical to your, and Texas’, future.