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Hill Country water and West Lake Hills

By Juli Hennings / Southwestern Travis County Groundwater Conservation District Posted Nov 15, 2018 at 9:08 AM Updated Nov 15, 2018 at 10:22 AM



Water is a shared resource, and Texas manages its water sources in different ways.

Atmospheric water that falls as rain or snow belongs to the owner of the land on which it falls, until it makes its way into a waterway, at which time it becomes the property of the state of Texas.



Surface water - that portion of atmospheric water that finds its way to streams, rivers and lakes - can only be used with the state's permission, through the Texas Commission on Environmental Quality.

Groundwater occurs in the pores of permeable rocks called aquifers. Groundwater that occurs in aquifers below a property belongs to the landowner. The TCEQ does not have regulatory jurisdiction over groundwater, which is managed in one of two ways. It may be managed individually by landowners under the "rule of capture," adopted in 1904. This rule is sometimes referred to as the "law of the biggest pump" because heavy pumping could cause groundwater to move away from neighboring property, and may affect nearby, offsite wells. Alternatively, groundwater conservation districts may be established to manage groundwater in a specific area. They try to maintain a balance between protecting the rights of private landowners and the responsibility to protect Texas' water resources for other users and future generations.

Those different ways of managing water resources create interesting challenges. Clearly rainwater is connected to surface water and also serves to recharge aquifers. In some cases surface water is connected to groundwater, especially in places like the Hill Country, where the geology enables springs to bring groundwater to the surface. Sometimes surface water in streams disappears into the ground to become groundwater.

During recent droughts, without rain to fill our streams and rivers, the level of Lake Travis dropped dramatically. At the same time, water levels in aquifers in the region dropped with increased pumping and decreased rainwater recharge. The reverse is true when extreme rains cause floods - the rivers and lakes fill up, and the aquifers recharge. As hydrologists learn more about this dynamic surface water-groundwater interaction, they are better equipped to create quality resource management strategies for the future.

The city of West Lake Hills gets its water supply from Lake Austin through the city of Austin, but most rural Travis County residents to our west depend on Trinity Aquifer wells for their domestic water supply. West Lake Hills has its share of Trinity wells, but most of those are used for landscape irrigation or are idle. The Edwards Aquifer supplies springs and wells to the east and south of West Lake Hills.

How does this affect West Lake Hills?

Decades ago, the Texas Legislature enacted legislation authorizing the TCEQ, the Texas Water Development Board and Texas Parks and Wildlife to identify areas in Texas where critical groundwater problems exist or may exist. Those areas are known as Priority Groundwater Management Areas, or PGMAs. The legislation also provided for the establishment of groundwater conservation districts in the PGMAs to help manage groundwater resources. In 1990, the Hill Country Priority Groundwater Management Area was established and includes parts of nine groundwater conservation districts.

West Lake Hills forms the northeast corner of the Hill Country PGMA, and is covered by two groundwater districts. The Barton Springs Edwards Aquifer Conservation District has been operating for more than 30 years in the Edwards Aquifer Recharge Area east of West Lake Drive.

The part of Travis County south of the Colorado River and west of West Lake Drive is in the only part of the PGMA without a confirmed groundwater conservation district. During the most recent legislative session, the Southwestern Travis County Groundwater Conservation District was established and a temporary board was appointed. If confirmed, the district will be the 100th in the state. If not, the area will remain subject to the "rule of capture."



In Texas, the Water Development Board gathers data for specific aquifers and develops regional

groundwater models to better understand groundwater supply, to estimate current and future groundwater demand, and to inform quality decision-making on our shared resources. A new model covering the Hill Country PGMA is due to be developed in the next few years. However, existing groundwater data is sparse in the southwestern part of Travis County, reducing the overall reliability of the model for neighboring groundwater conservation districts that use connected groundwater resources.

To that end, Travis County has partnered with the Barton Springs Edwards Aquifer Conservation District to conduct a Trinity Aquifer groundwater study in southwestern Travis County. Hydrologists are collecting information on wells, including basic water quality data and water levels. Water level tracking is particularly important in the Edwards and Trinity aquifers to help understand how aquifers respond to drought and flooding. When well owners know the depth of their pump, a water level measurement helps indicate the reliability of their water supply.

The appointed board members of the Southwestern Travis County Groundwater Conservation District are working with Travis County and the Barton Springs Edwards Aquifer Conservation District to develop science and education outreach materials, and will be meeting with constituents around the district – at City Council and HOA meetings, and festivals – for the purpose of public education about groundwater in the area.

When well owners and policy makers understand groundwater dynamics, they can better coordinate conservation and manage groundwater resources for everyone.

For more information go to: swtcgcd.org, bseacd.org or traviscountytx.gov.

Juli Hennings is the West Lake Hills representative on the Southwestern Travis County Groundwater Conservation District.



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