TEXAS A&M FOREST SERVICE

THE TEXAS WATER SOURCE

UPDATING HAYS COUNTY LANDOWNERS ON LAND MANAGEMENT & WATER ISSUES

February 2023

Why is the Water Level Low?

Worst Drought Since 2011

2022 was the 11th driest year in the past 128 years and the worst drought since 2011. The week of August 9th, 2022, approximately 68% of the state was in an "extreme" drought condition, and nearly 30% was in "exceptional" drought condition. These are ratings used by the U.S. Drought Monitor, which releases weekly analysis of drought conditions across the country.

The impacts of drought extend much further than turning yards brown; they can result in economic losses, loss of water security, and serious health risks. The U.S. Department of Agriculture (USDA) estimated the agriculture industry alone suffered losses between $11.1 billion and $15.5 billion during the 2010-2014 drought. Total economic loss to the state approached $73 billion, and 271 Texans lost their lives as a result of the drought, according to the National Oceanic and Atmospheric Administration (NOAA).

A Scarce Resource

In addition to drought, one stressor on our state's water resources is the increased demand on municipal water systems. The Texas Demographic Center reported that Texas's population grew at 10 times the national average from 2020 to 2021. Much of this growth is in the suburban areas near Houston, Dallas, Fort Worth, Austin, and San Antonio.

This demand on water resources will continue to increase over the coming years as populations continue to grow, according to the state's water plan. The state water plan models the water needs of all of Texas and also predicts the potential water shortages incurred with increasing populations. Potential water shortages made up 7% of Texas's water needs in 2020, but the state water plan estimates that water shortages will account for 46% of the state's water needs by 2070. This prediction highlights the importance of implementing protective actions on the state's water resources before the increased municipal demand becomes unmanageable.

Reason to Hope

Recent Drought Monitor reports have shown that the drought is easing, with just 71% of the state experiencing drought at the beginning of 2023. With careful conservation, our state's water resources can be used effectively for generations to come. Reach out to your watershed managers and agencies to find out what you can do at an individual level to benefit your local waterbodies. For more information regarding the ongoing drought, use the links below.

For more information:

- http://bit.ly/3Xp2mtW
- http://bit.ly/3GOAKHi

Organization Spotlight

Guadalupe-Blanco River Authority

The Guadalupe-Blanco River Authority (GBRA) was first created in 1933 by the Texas Legislature with its original name, the Guadalupe River Authority. In 1935, it was reauthorized by the Texas Legislature as the Guadalupe-Blanco River Authority. GBRA is responsible for the stewardship of water resources in Kendall, Comal, Hays, Caldwell, Guadalupe, Gonzales, DeWitt, Victoria, Calhoun, and Refugio counties.

GBRA owns and operates six lakes in its jurisdiction: Lake Dunlap, Lake McQueeney, Lake Placid, Lake Nolte, Lake Gonzales, and Lake Wood. The agency's operations include water and wastewater treatment; hydroelectric generation; and water resources, reservoir, and lakes management. One highlight of their operations is the Guadalupe River Habitat Conservation Plan. GBRA is developing this plan to "provide greater certainty in its ability to meet future water supply and wastewater treatment needs, while providing protections for threatened and endangered species in the Guadalupe River Basin."

GBRA offers many resources to the public on its website, such as online issues of the publication River Run, a publication that provided updates and insight on the water issues and science going on in GBRA's management area. Other resources include river basin highlight and summary reports, drought and water conservation plans, and a collection of resources for citizens to stay up-to-date on flood status and safety measures along with FEMA flood insurance programs.

GBRA is an important piece of the puzzle when it comes to protecting and conserving the water and water quality in your area. To learn more about the services and resources they provide, refer to the link below.

For more information:

- https://www.gbra.org/

GBRA's Educational Programs and Services

GBRA offers many programs and resources for teachers and students, ranging from loanable classroom materials to scholarships for graduating high school seniors. They "[work] with customers, teachers, students, and the general public to increase their awareness and appreciation of the water and natural resources in the Guadalupe River basin, and GBRA's stewardship, protection, conservation, and reclamation of these resources."

One of the services offered is a set of trunks designed for elementary and secondary schools. These trunks contain the necessary materials for learning activities that can teach classes about the properties of water, the water cycle, stream erosion, and many other fundamentals of natural resources. Each trunk can be loaned out to its appropriate school for one week at a time. GBRA also offers a scholarship program for graduating high school seniors. These students must live in one of the ten counties in the agency's management area, and they must have at least a "B" average in school.

One other service is the GBRA Lab, which performs physical, chemical, and biological analyses of water and wastewater. The lab is open to tours for area classes and frequently assists with local and regional science fairs.

For more information:

- https://www.gbra.org/education/

The Cypress Creek Project

Born in Texas

The Cypress Creek Project was started by the River Systems Institute (later renamed The Meadows Center for Water and the Environment) at Texas State University in 2008. The project consisted of two phases. The first phase, occurring between 2008 and 2010, focused on setting the wheels in motion for the development of a watershed protection plan. This involved the staff and community acquiring the necessary knowledge for establishing and carrying out a watershed protection plan. The second phase occurred 2010 to 2012. The project team used this phase to develop and implement the watershed protection plan. This plan is a "holistic document that approaches water quality and watershed issues through a collaborative approach by recommending management strategies that address more than one watershed and community concern."

Many partners were involved with funding and conducting this project. These include The Meadows Center for Water and the Environment at Texas State University (MCWE), the City of Wimberley, the Texas Water Development Board, Hays County, the Wimberley Valley Watershed Association, Doucet & Associates, Texas Master Naturalist, the Environmental Protection Agency, Hays-Trinity Groundwater Conservation District, Texas A&M AgriLife Extension, Texas State University, TreeFolks, the Texas Clean Rivers Program, the Guadalupe-Blanco River Authority, the City of Woodcreek, and Lions Clubs International. All of these partners dedicated significant funding to achieve project success.

Cypress Creek Watershed Protection Plan

In June 2009, communities in the Cypress Creek watershed formed the Cypress Creek Stakeholder Committee with the help of The Meadows Center for Water and the Environment. This committee sought to "develop a management strategy to keep Cypress Creek clean, clear, and flowing." The result of their work is the Cypress Creek Watershed Protection Plan (CCWPP). This plan provides details about best management practices (BMPs) and other actions to manage and improve the water quality of the creek and its tributaries.

The contract period of the CCWPP was August 2016 to February 2020. Within that time, MCWE conducted a variety of projects to support the project's goals. Twenty public workshops and events were hosted to inform local citizens on ways to prevent non-point source pollution, monitor water quality, and install green stormwater infrastructure (GSI) BMPs. Additionally, the Texas Well Owner Network held a workshop to "educate Wimberley residents about managing household wells, improving and protecting water resources, septic system maintenance, well maintenance and construction, and water quality treatment."

Almost half of the streams listed as impaired in Texas receive the designation due to increased levels of *E. coli* in the water; this is often managed by proper septic system maintenance or repair. At the time of the CCWPP's publication, Cypress Creek was not listed on the impaired waters list for Texas, but it was on the 2020 draft list for potentially depressed oxygen levels. As of 2023, the creek is listed as an impaired stream due to depressed dissolved oxygen levels.

Thanks to the CCWPP, some green stormwater infrastructure has already been installed in the watershed. To learn more about how you can implement some of these structures on your property, consult the CCWPP link below for descriptions of the GSI already installed, and reach out to the water management organizations in your area.

For more information:

- http://bit.ly/3WH4njX

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The Meadows Center for Water and the Environment

In 2012, The Meadows Foundation made a generous contribution to Texas State University to "help establish a $10 million center at Texas State University-San Marcos [to focus] on water research and water's relationship with the environment." To recognize the significance of this gift, the Board of Regents of the Texas State University System voted to rename the River Systems Institute to The Meadows Center for Water and the Environment. Now, MCWE works in many ways to further the science of water management and protection. One highlight is the Watershed Services team. This team works with "public, private, and non-profit organizations to provide practical, science-based solutions to complex water challenges.

THE MEADOWS CENTER
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