

# DROUGHT UPDATE

NOVEMBER 2023



Bandera County has seen much needed rainfall over the past few weeks; we need a lot more. The past few years have been drier and hotter than usual resulting in a surface water and groundwater deficit for the region. At Medina Lake we saw 8.79 in. as of November of 2022 and 15.97 in. as of November 2023 (Figure 2); much lower than the annual historic rainfall ( $\approx 30$  inches.). This 7.18 in. more in 2023 is welcome, but the rain has fallen on a very dry surface.

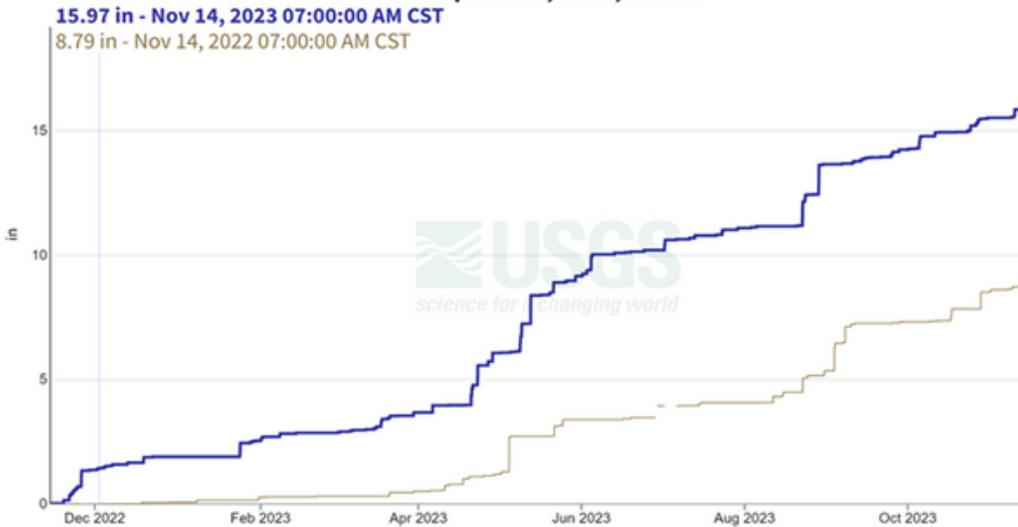
**Figure 1: Medina River at Bandera, TX - November 2023**

The Bandera County River Authority & Groundwater District (BCRAGD) was created by legislation, to protect and preserve the water resources of Bandera County and natural resources for the State of Texas. BCRAGD works diligently toward the protection and preservation of both surface water and groundwater within its jurisdiction. In accordance with Texas Water Code Chapter 36.0015(b), groundwater conservation districts are the state's preferred method of groundwater management in order to protect property rights, balance the conservation and development of groundwater to meet the needs of this state, and use the best available science in the conservation and development of groundwater.

While BCRAGD uses the U.S. Drought Monitor as a component of its gauge of drought it also considers flow conditions in its river basins, local aquifer conditions, and long-term atmospheric data (such as annual precipitation and temperatures). It is important to note that the last few years have been exceptionally dry. Four of the past five years have had less than average rainfall and higher than average temperatures. Given the extremely low rainfall totals and high average temperatures the recent rains have done little to improve the streamflow conditions and even less to improve the demand on groundwater resources within Bandera County.



November 14, 2022 - November 14, 2023  
**Precipitation, total, inches**



**Figure 2 – Cumulative precipitation at Medina Lake**

Figure 3 represents the amount of water flowing at the Medina River in Medina, TX. The USGS gauge shows discharge in cubic feet per second at Moffett Park in Medina. The blue line shows 2023 discharge, the gold line shows 2022 discharge, and the gray line shows the historical mean discharge at the station. It is important to note that the y-axis of this graph is logarithmic and changes rapidly. The readings show that as of November 14, 2023, the discharge rate is 2.91 ft<sup>3</sup>/s less than November 14, 2022, and approximately 14 ft<sup>3</sup>/s less than the median value for the recorded history of this gauge.

November 14, 2022 - November 14, 2023  
**Discharge, cubic feet per second**



**Figure 3 – Flow at the Medina River at Patterson Rd. at Medina, TX (2022 & 2023)**

Aquifer levels in both the Medina and Sabinal basins fluctuate with long-term weather conditions. With these recent dry years, we have been seeing consistent decreases in groundwater resources. Our drought stage is currently at the highest level, Exceptional. This is in an attempt to conserve current resources while planning for future development. The District will continue to monitor the U.S. Drought Monitor, local streamflows, and local aquifer conditions and update our drought stage on a weekly basis.