

Current Aquifer Conditions

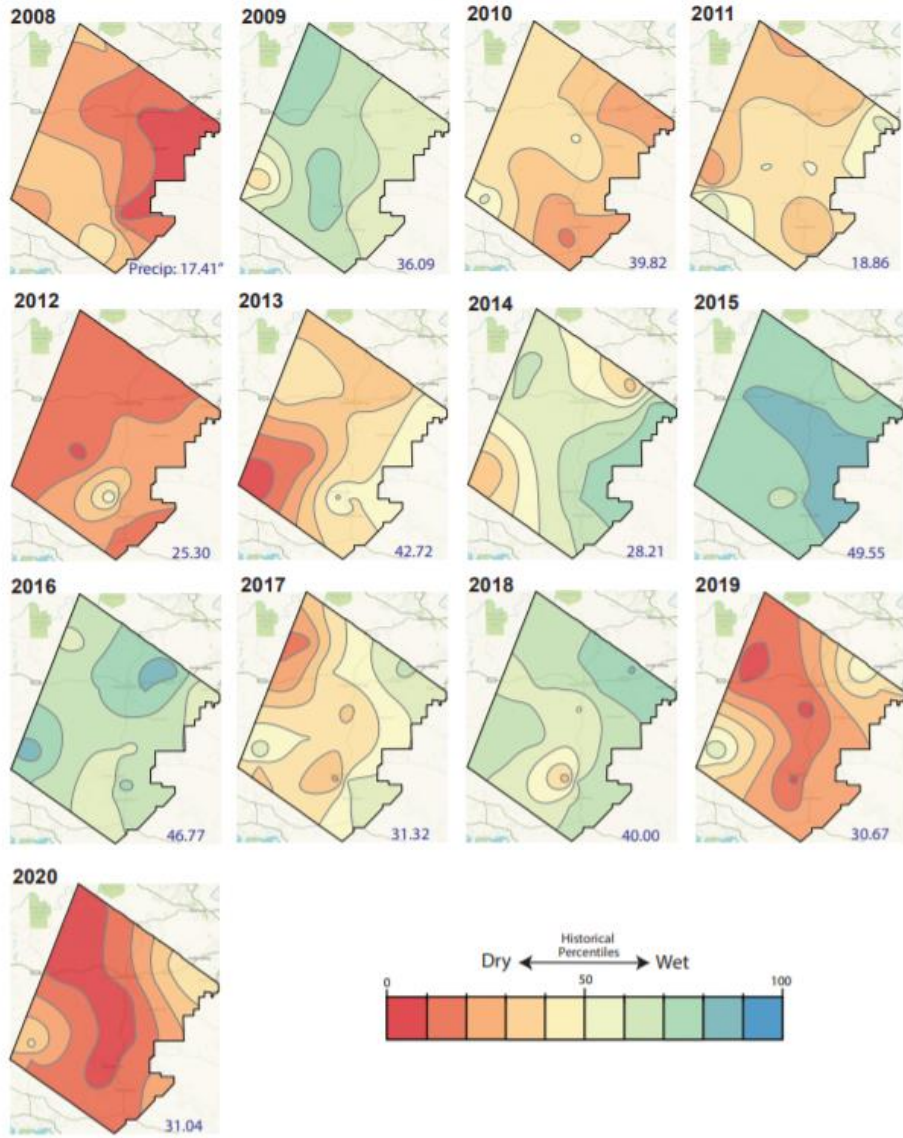
Dark oranges and purples are not good.

Recent rains have created slowly improving conditions.

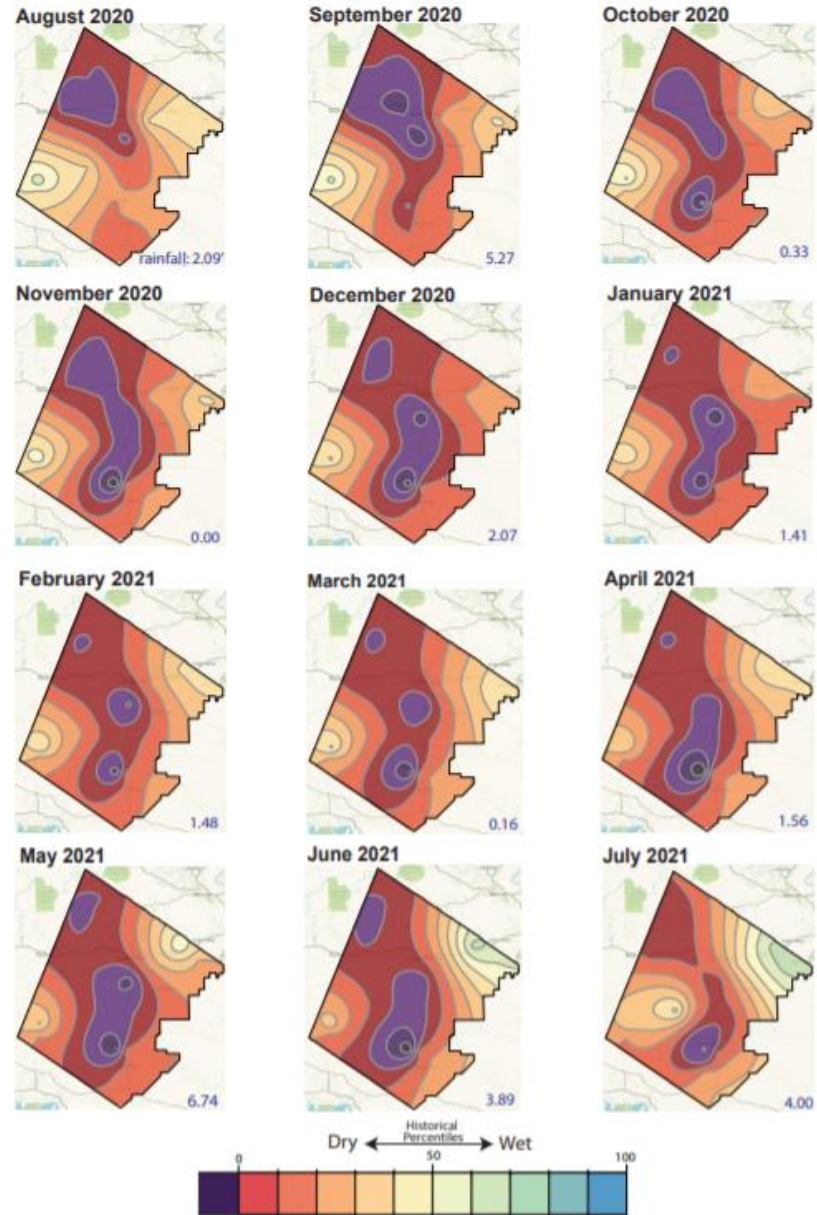
The District is currently in 20% drought stage.

Please conserve!

Middle Trinity Historical Percentiles 2008 - 2020



Middle Trinity Historical Percentiles



Regional Aquifer Management

- **2021** is the final year in the current 5-year planning cycle.
- The new 5-year planning cycle begins in 2022.
- Planning process relies on models and population data to determine changes.
- Groundwater Management Area-9 (GMA-9) has recommended a status as it waits for new census data and a superior model.

Regional Aquifer Management

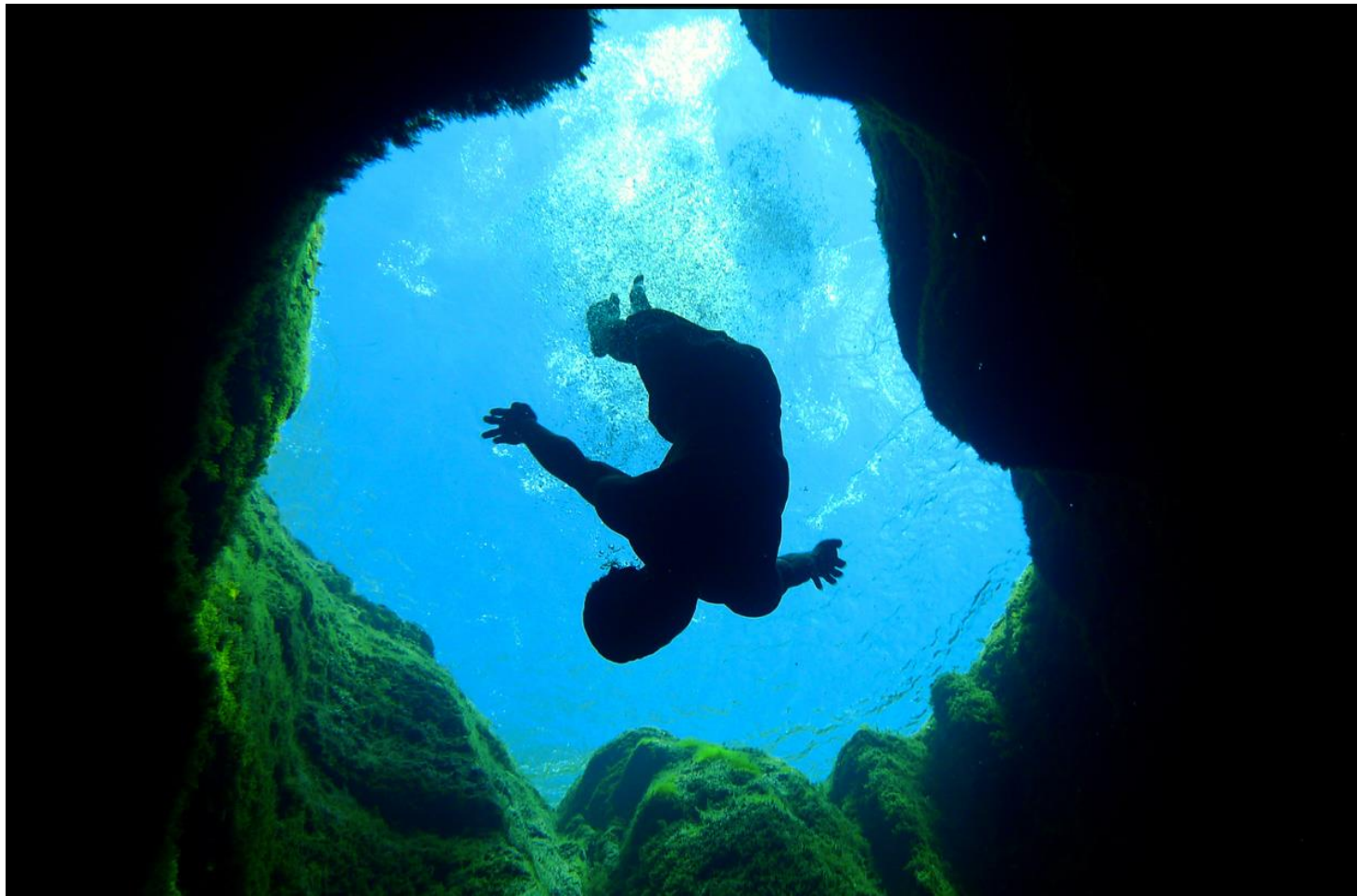
- **DFC = Desired Future Conditions** = average drawdown = Compromise between reasonable use and growth expectation and conservation.
- 30' across the Hill Country in 2060
- 19' of average drawdown across Western Hays
- **MAG = Managed Available Groundwater** = actual volume of water/year in DFC = 2,963,288,994 gallons/year

Regional Aquifer Management

- **Relevant Aquifers**
- *All aquifers are relevant !!*
- *In this case, aquifers declared relevant for regional planning purposes.*
- Aquifers that exist in multiple districts and benefit from intra-district management.
- Like the Trinity Aquifer

Regional Aquifer Management

- The new 5-year planning cycle begins in 2022.
- Groundwater Management Area-9 (GMA-9) has recommended a status as it waits for new census data and a superior model.
- It has gathered public comment to consider for adoption of DFCs and Relevant Aquifers.
- It will act in September or October on adopting a final plan.



March 2020 saw the completion of a community initiative that led to the creation of the **Jacobs Well Groundwater Management Zone**

Evaluation for the Development of a Jacob's Well Groundwater Management Zone Hays County, Texas

Technical Report prepared for the Hays Trinity Groundwater Conservation District, Hays County, Texas

Report: 2019-05
July 2019



THE MEADOWS CENTER
FOR WATER AND THE ENVIRONMENT
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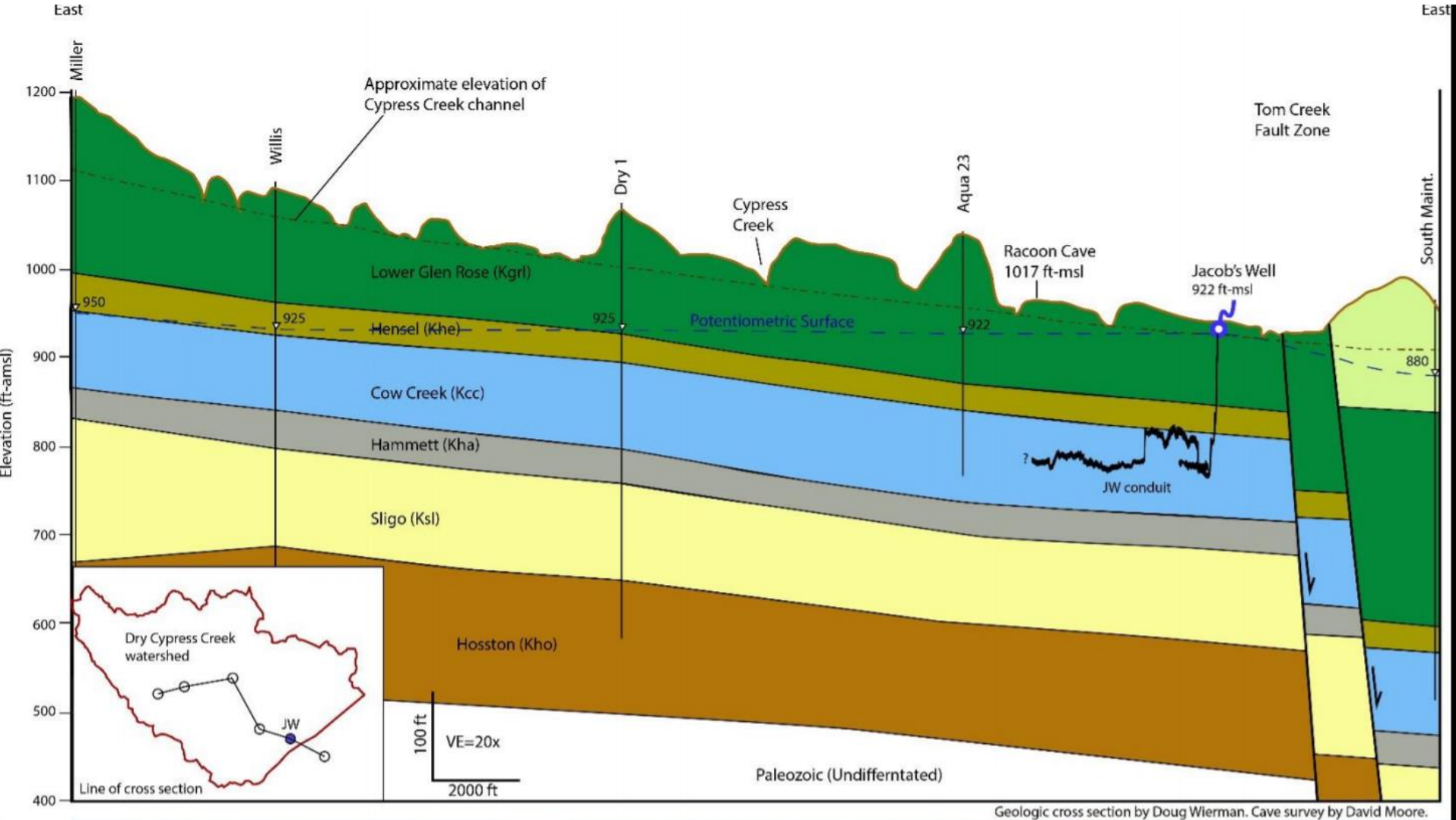
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Datasets

- Hydrogeologic setting
- Geologic structure
- Recharge area
- Well pumping data
- Historic Spring flow
- Historic Groundwater levels

Stratigraphic Analysis



Springshed Designation

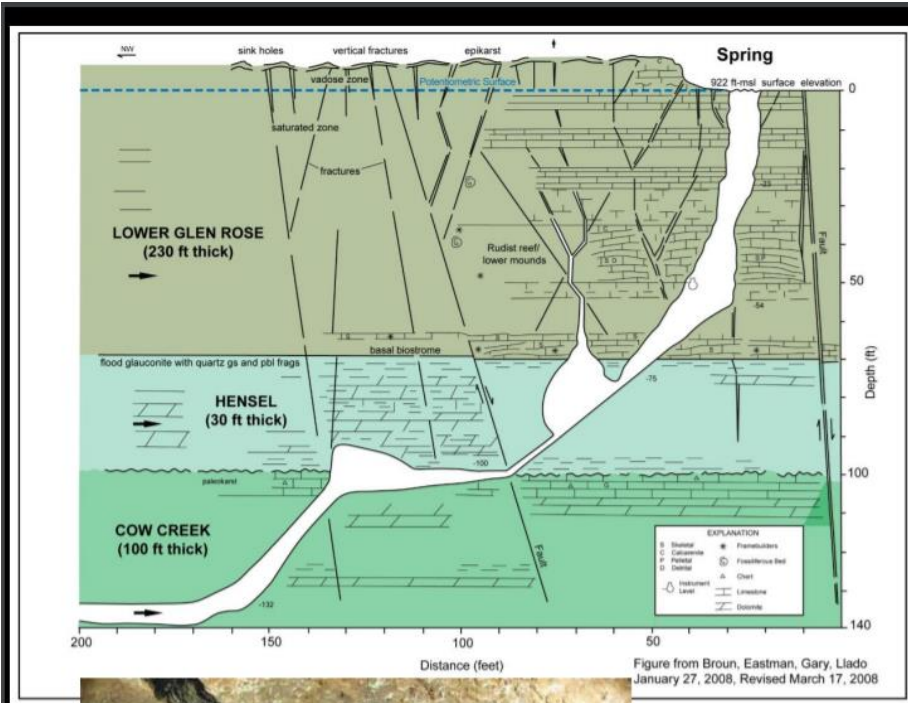
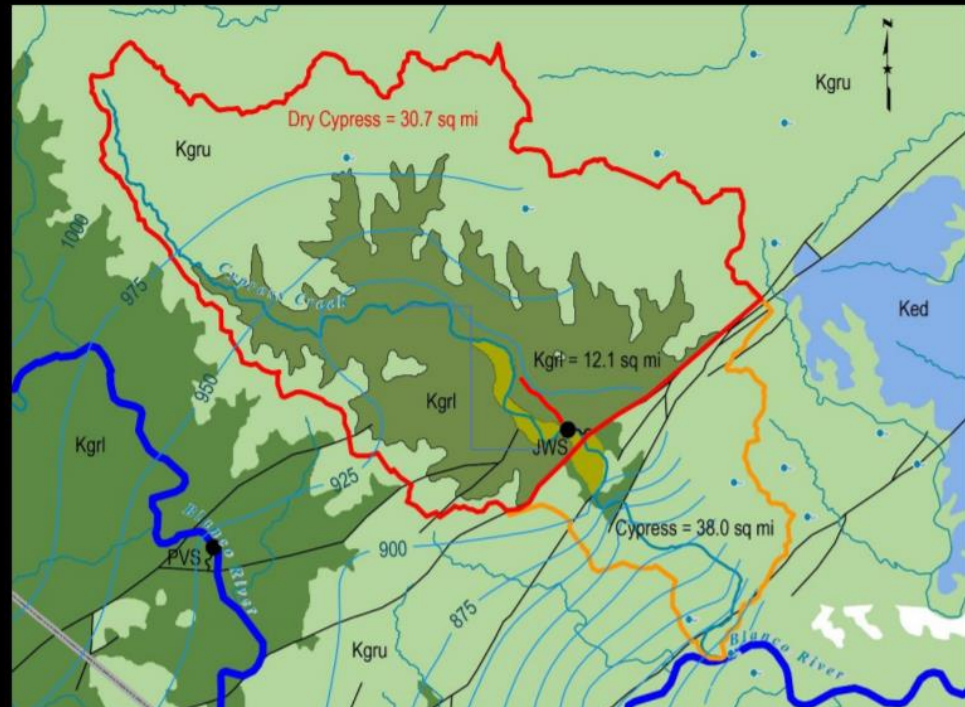


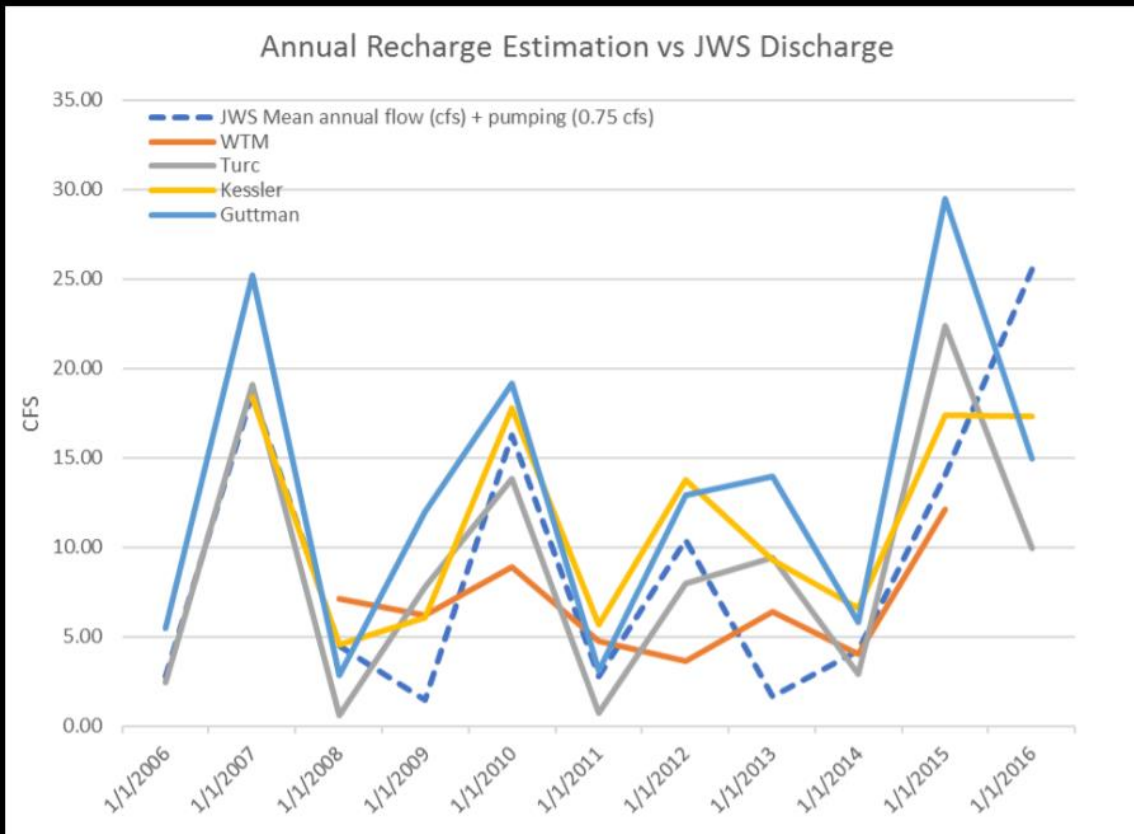
Figure from Broun, Eastman, Gary, Liado
January 27, 2008, Revised March 17, 2008

Jacob's Well Spring emerges from the underwater cave system that has developed along fractures in the limestone running from the spring to the northwest.



Recharge Studies

Multiple recharge analyses were conducted to evaluate area of greatest influence to spring flow

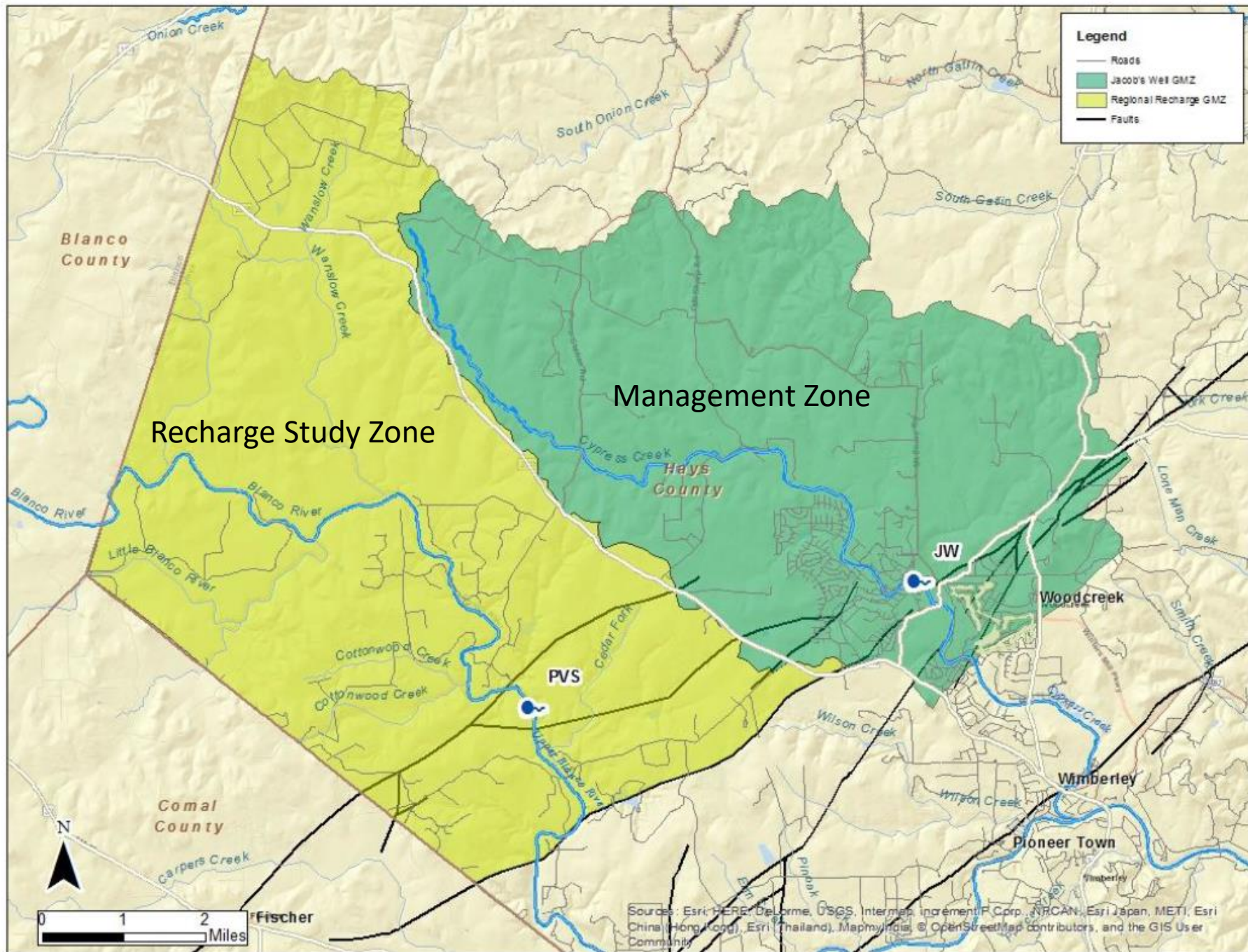


Springshed is estimated by integrating hydrologic data with methods published by Lanini et al., 2016 and Bonacci and Andric, 2015.

Springshed of Dry Cypress Creek (~31 mi², or less) is sufficient for all recharge estimates.

Estimated average annual effective recharge is about 30% of rainfall.

Hunt et. al, in prep







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Desired Future Condition (DFC) Annual Status 2008-2020

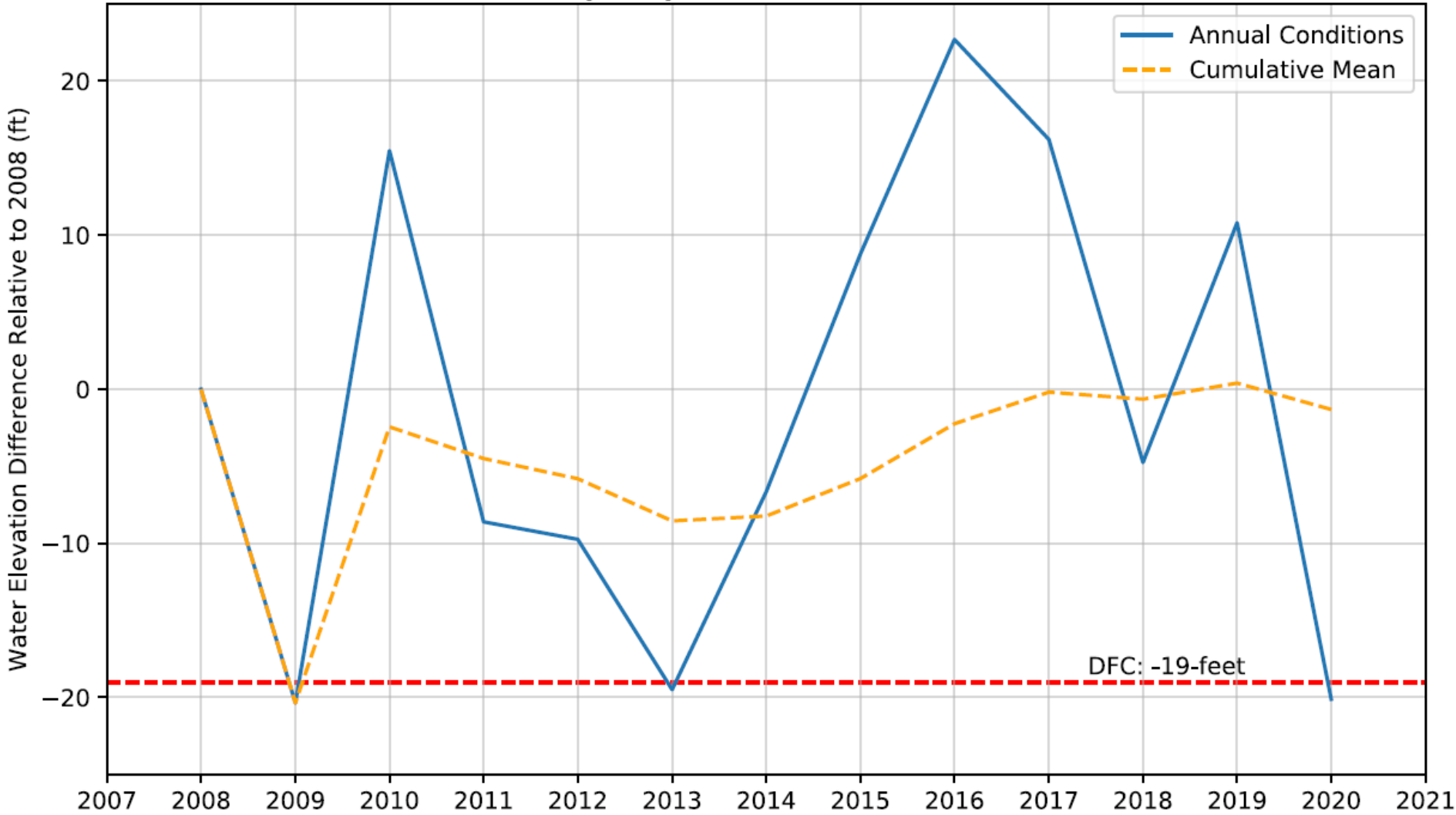
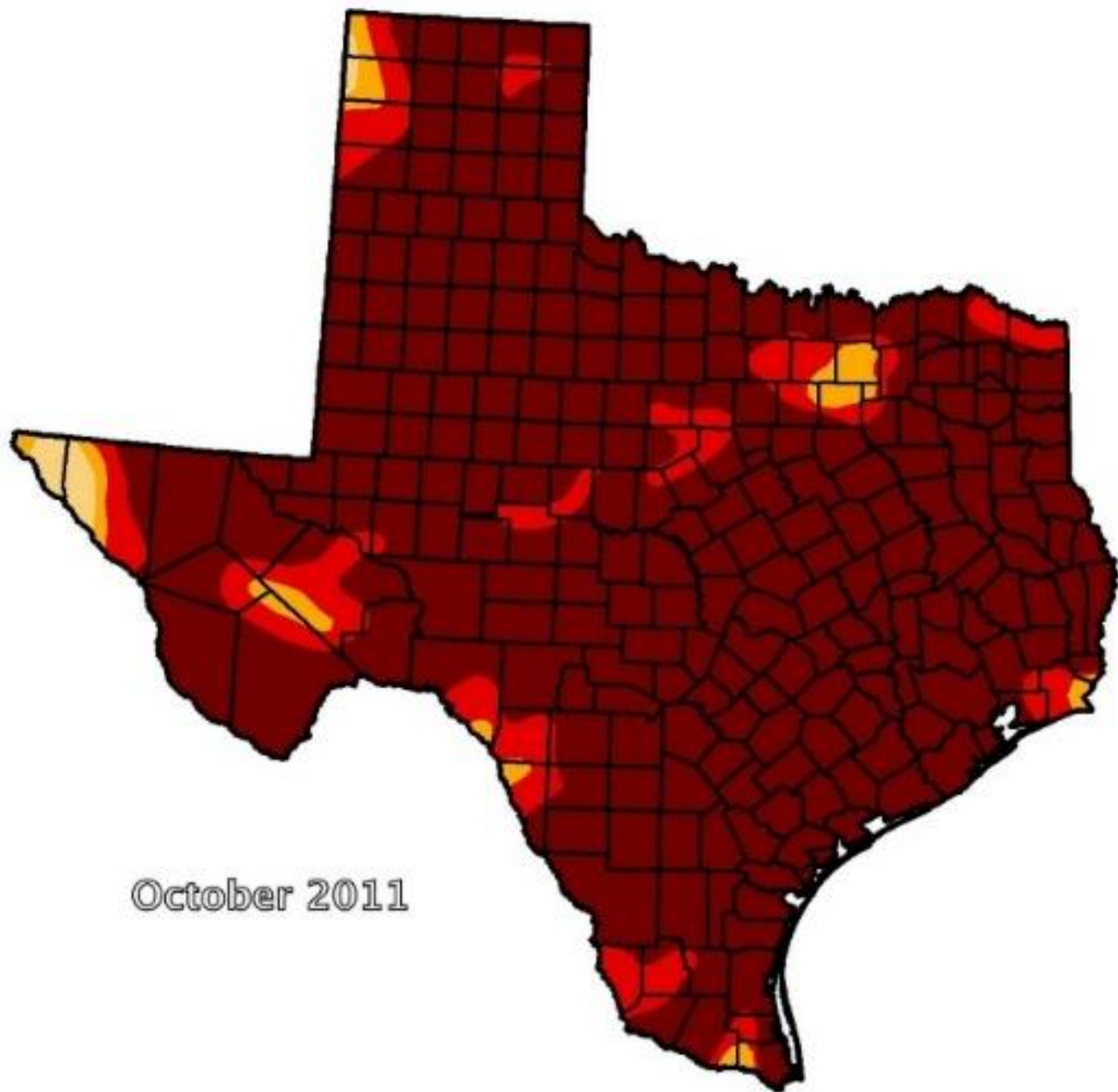


Figure. Annual water level differences from 2008 - 2020 (solid blue) relative to 2008, and a cumulative mean derived from these annual differences (dashed orange). Tracking the current status of HTGCD's DFC is done by averaging annual drawdowns in 9 Middle Trinity Aquifer monitoring wells. Using this methodology the average aquifer condition in HTGCD as of 2020 is 1.3 feet of drawdown from the 2008 baseline.



October 2011