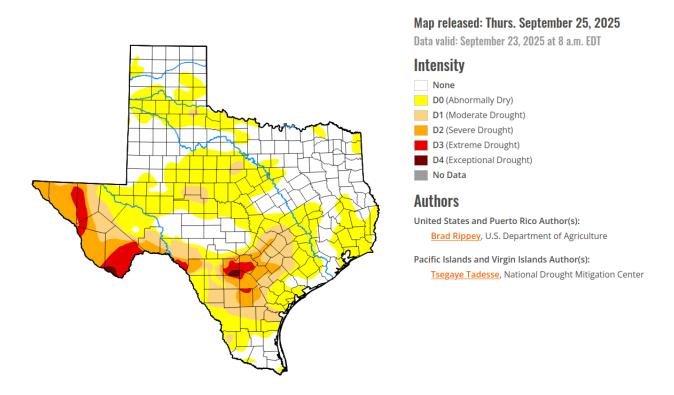
Bi-monthly Educational Topic #18 for CCGCD by Texas Hill Country Weather Services, LLC September 27, 2025

Current conditions:

As of September 23, 2025, approximately 50% of the county remains in drought, the southern half. The intensity of the drought ranges from D0 (abnormally dry) to D2 (severe drought). The positive impact from our Summer's rains have diminished. Our Fall season has started out on the dry side as our ENSO Neutral pattern dissipates and transitions into a weak and brief La Niña event. A La Niña generally brings us drier than average and warmer than average conditions. This La Niña event should take over later this Fall and shortly last through our coming Winter season. Drought impacts are likely to reintensify across Kendall County. However, we still have an active hurricane season which will also be with us through late November. Thus, there is still a small chance we could get a tropical system or two move into our area from the Gulf and Caribbean regions, bringing us potential beneficial rains. In the meantime, only expect infrequent rainfall chances this coming October.

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Each month at the District meeting, a monthly weather forecast outlook is provided. This forecast helps aid the District's decision on what water restrictions drought stage gets applied to that month ahead.

This forecast is quantitative, and it is a simple algorithm. Simply put, the following equation for the monthly forecast (f_{mon}) is:

$$f_{mon} = p_{mon} - FRET_{mon}$$

Recall, from the previous written topic, FRET_{mon} is Forecast Reference Crop Evapotranspiration for the month ahead and p_{mon} is the expected forecast precipitation total for the month ahead, both applicable to only Kendall County.

Essentially, for the month ahead, we want to know the potential of what water could be gained represented by p_{mon} and want to know the potential of what water could be lost represented by FRET_{mon}.

As discussed within the previous topic in more detail, FRET_{mon} is attained from the NWS Graphical Forecasts website https://digital.weather.gov/, viewing the latest weekly FRET and then multiplied by 4 to account for the monthly period ahead. Obviously, there is forecast error involved with this technique, but we have no actual monthly FRET product available at this time from the NWS.

As for the p_{mon} forecast, this predicted value comes from the publicly available Climate Forecast System (CFS) weather model which is maintained and produced by the National Centers for Environmental Prediction (NCEP)¹.

However, to get p_{mon} for Kendall County, the F768 Total QPF (in) one-month forecast value from the CFS model is nicely presented and attained from <u>www.pivotalweather.com</u>.

Now both values of p_{mon} and FRET can be entered into the f_{mon} equation. If f_{mon} is negative, then a water loss for the coming month could be expected; or if f_{mon} is positive, then a water gain for the coming month could be expected.

This f_{mon} value is then communicated to the District at the monthly meeting among many other data points and from there the District and the Board can take all of this data to make their decision on which water restriction drought stage should be implemented for the coming month.

Stay tuned into CCGCD's website page, as TXHCWS will soon be providing more educational materials.

¹Reference: http://cfs.ncep.noaa.gov. Saha S. et al., 2014: The NCEP climate forecast system version 2. J. Climate, 27, 2185-2205, https://doi.org/10.1175/JCLI-D-12-00823.1