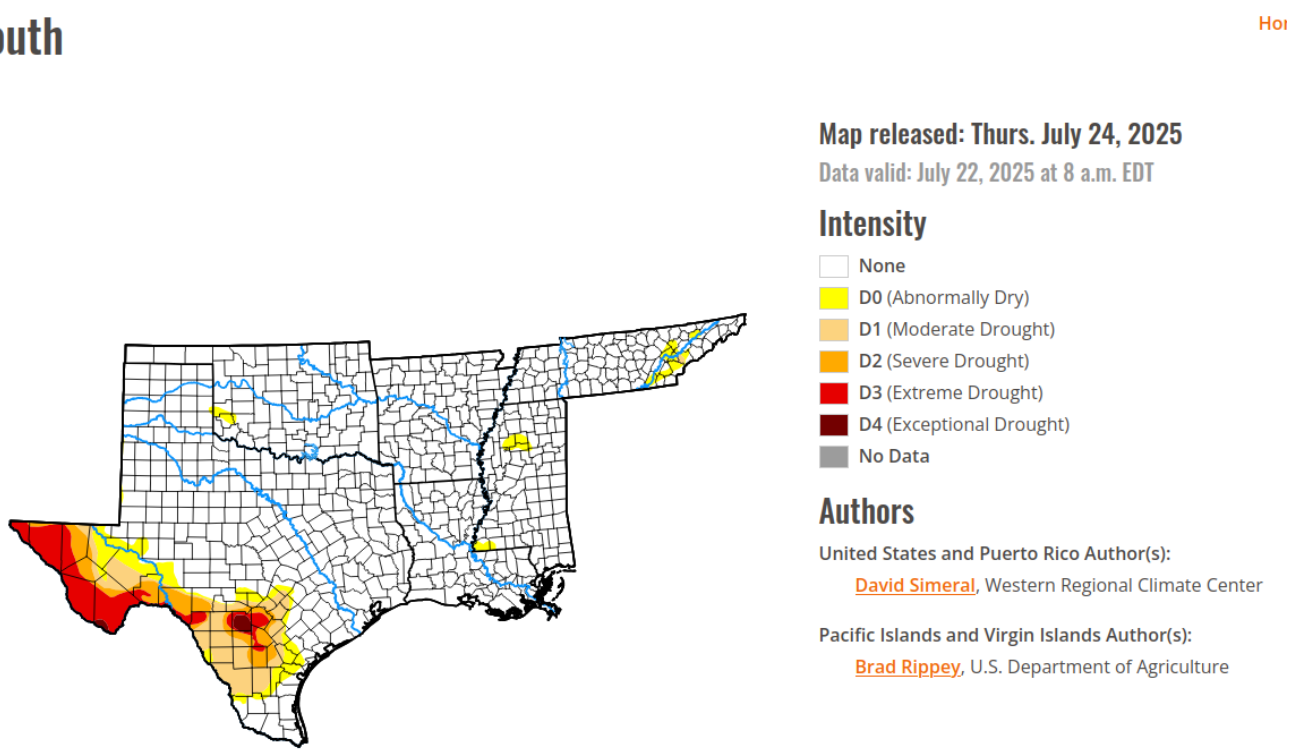
Bi-monthly Educational Topic #14 for CCGCD
by Texas Hill Country Weather Services, LLC
July 28, 2025

Current conditions:

As of July 24, 2025, due to the most recent series of moderate to heavy rainfall events in late June through middle July 2025, the severity of the on-going drought has continued to decrease across Kendall County. This is obviously welcomed news, not originally expected at the beginning of this Summer. The intensity of the drought ranges from D0 (abnormally dry) in the northern two-thirds of the county to D1 (moderate drought) across the southern third of the county (per the latest available US Drought Monitor map provided below). The drought does continue, but it has been relieved from the previous update in early July 2025 which reported intensities ranging from D0 up to D2 (severe drought) across the county. Some more rainfall events are expected to impact Kendall County through middle August, but how much more rainfall is in question considering this time of the year is usually hot with extended periods of dry weather spells.



This topic is going to display an example of the varying predicted rainfall values between the different weather forecast models for Kendall County. The point of showing you this example is to have you view how much values from the different models can vary for the same location and the same time frame. We will not go through the details of why they vary as that is a massive discussion not doable for this venue or purpose. In this example, we are looking at the Saturday 07/26/2025 00z model runs for the 48-hour rainfall totals (in units of inches) covering the predicted period for this weekend (Friday evening 07/26/2025 through Sunday evening 07/27/2025):

The Global Models:

CFS	N/A
GFS	0.07

ECMWF	0.32
ECMWF-AIFS	0.24
GDPS	0.07
ICON	0.04
UKMET	0.34

The Regional Models:

NAM	0.45
RAP	N/A
RDPS	0.34

The Convention Allowing Models:

HRRR	1.03
NAM 3km CONUS	0.12
HRW WRF-ARW	0.38
HRW WRF-NSSL	0.08
HRW FV3	0.03
RRFS A	N/A
GSL MPAS-G	N/A
NSSL MPAS-HN	1.15
NSSL MPAS-HT	0.46
NSSL MPAS-RT	0.50
HRDPS	N/A

Ensembles Models:

CMCE	0.17
EPS	0.02
EPS-AIFS	0.16
GEFS	0.09
ICON-GEFS	0.04
MOGREPS-G	N/A
SREF	0.28
NWS Blend of Models	N/A

Climate Model:

EPS Weeklies (Mean)	N/A

The calculated sum of all modeled rainfall values =	6.38 inches
The calculated average across all modeled rainfall values =	0.29 of an inch
The calculated median across all modeled rainfall values =	0.21 of an inch
The calculated standard deviation across all modeled rainfall values =	+-0.30 of an inch

The standard deviation statistic indicates that a no rainfall event is a possible outcome, yet none of the models for our county and period produce a result showing a value of 0 inches (a no rainfall solution). All rainfall values are above zero. So, we now have a weather forecasting dilemma. Meteorology 101 would encourage the weather forecaster to present the forecast using percentage of chances of rainfall occurrence, for this specific scenario. However, using such a technique diminishes the value of a weather forecast by defaulting to some random chance of occurrence. The forecaster can add value (as well as

risk of failure to verify) to the weather forecast published to the consumer by choosing a rainfall accumulation range with positive values, even though a 0 inches value could truly be the ultimate outcome for our county and time frame being tested.

So, what should the weather forecaster do? Give a range from 0 inches (no rainfall) to 0.59 of an inch? Give a positive value range somewhere in the middle such as 0.10 of an inch to 0.25 of an inch, an acceptable meteorological range? Or live with a random statistical percentage chance of occurrence such as a 50% chance of rainfall in this period and space and providing no rainfall value range?

What is your preference in this scenario without knowing what the real outcome will turn out to be, as of the writing of this topic, because we are looking into the crystal ball of the future?

Because we have access to excellent weather modeling technology today, adding a rainfall value range into the weather forecast is likely the best practice and most useful to the consumer even though it adds risk of a failed forecast and outward criticism from the consumer. Additionally, the consumer will likely find such a range produced by most weather forecasting vendors, both from the private and government sectors.

In this scenario, an example of a good forecast adding value to the consumer is the following:

“Rainfall is expected. Even though the atmosphere will be loaded with moisture, rainfall totals by the end of the weekend look to be on the low end generally ranging from 0.10 of an inch to a 0.25 of an inch across Kendall County. There could be isolated 0.5 of an inch to one inch rainfall totals in the county.”

Let the following statements be an educational message to the consumer. A good weather forecast does not mean the outcome is an accurate weather forecast. The forecast may be wrong – no rainfall occurs anywhere inside the county for the period in question, or much higher totals occur above the highest forecasted value. Instead, a good forecast means the forecast was built on and utilized acceptable and professional weather forecasting techniques for the scenario at hand that adds value to the consumer allowing the consumer more data to make their important personal decisions.

Other additional techniques could be taken into account to add even more value (and more risk for failure) to the weather forecast such as:

- Adding text language of the most likely time frame any rainfall could occur in the county such as from 4pm to 7pm each afternoon;
- Adding text language of the most likely locations any rainfall could occur in the county with such example as rainfall could be limited to the eastern half of the county or some other portion of the county;
- How about adding text about possible flooding, lightning or severe weather with hail, tornadoes or damaging winds occurrence?

Since the CCGCD and the Board are most interested in projected rainfall amounts or occurrence of dry spells to help them make their drought stage decisions, the weather forecasts and the weather outlooks provided to the District and also given out to the public on its Facebook account concentrate on potential rainfall events and their expected amounts and timings.

So, to conclude this topic, are you curious if this past weekend's weather forecast example verifies or not? We will check on Monday, look at the data and take note of its accuracy. Hopefully, it verifies, and there are no surprises.

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