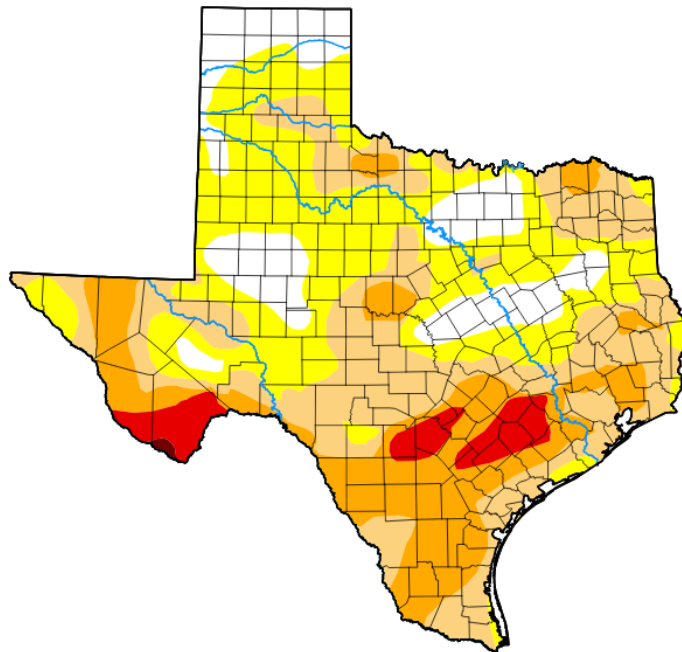


**Current conditions:**

As of November 13, 2025, the drought is intensifying across Kendall County, as expected, because of impact from the on-going dry La Niña event. We are in our second month of La Niña. According to the US Drought Monitor Map attached below, the intensity of the drought ranges from D1 (moderate drought) across most of the county to D2 (severe drought) across the far southern section of the county. Our on-going weak La Niña event is expected to continue to bring us drier than average and warmer than average conditions through early next year.

# Texas

[Home](#) / Texas



Map released: Thurs. November 13, 2025

Data valid: November 11, 2025 at 7 a.m. EST

### Intensity

- None
- D0 (Abnormally Dry)
- D1 (Moderate Drought)
- D2 (Severe Drought)
- D3 (Extreme Drought)
- D4 (Exceptional Drought)
- No Data

### Authors

United States and Puerto Rico Author(s):

[Curtis Riganti](#), National Drought Mitigation Center

Pacific Islands and Virgin Islands Author(s):

[Lindsay Johnson](#), National Drought Mitigation Center

We are getting close to wrapping up the year regarding these written educational topics for 2025. On that note, this deliverable will be a combination of the two small November 2025 topics as provided into one large topic for the entire month.

As a brief reminder, the District meets monthly (usually on the second Monday of each month) during the evening to discuss the District's matters in which regulatory-based water management decisions are made, as directly applicable only to water wells across Kendall County.

Today, we discuss four different types of weather forecast tenants the District regularly uses to help them make their monthly water-use restriction drought stage decision.

When one thinks of weather forecast providers, it is possible your mind goes to options such as the local TV news channel like KSAT12 Weather, the federal government's National Weather Service, a global network like The Weather Channel, YouTube providers such as Weatherman Plus or Max Velocity, or a cellphone weather application like Weather Underground.

By the way, these are all good options for sure. They are beneficial and useful. However, these options provide only snapshots of what the expected weather conditions could be across short periods of time. These snapshots may only go out to 10 days in time into the future, at best, and these snapshots updated daily are often subject to significant alterations and amendments to their forecast day-to-day, making reliability a factor as time extends out into the future.

The issue is that the District can't rely alone on just snapshot weather forecasts for use within their important monthly decisions. For example, within each monthly meeting, a thorough technical discussion occurs regarding what water-use restriction drought stage should be implemented for the month ahead, as applicable to only Kendall County. The District has four drought stages ([https://ccgcd.org/wp-content/uploads/2025/10/CCGCD\\_Rules\\_2025-09-09-FINAL.pdf](https://ccgcd.org/wp-content/uploads/2025/10/CCGCD_Rules_2025-09-09-FINAL.pdf)). Stage 1 is the least restrictive stage, and Drought Emergency (or Stage 4) is the highest restriction stage on water-use allowance. In any given monthly meeting, the District gets the opportunity to decrease the stage, remain at the current stage or increase the stage if not already in Stage 4 Drought Emergency. This is when the weather forecast comes into play, and the weather outlook is considered within the decision-making process. Thus, we come back to the idea presented initially which is what is the relevant weather forecast strategy that the District uses to help them make their drought stage decision that is more beneficial than the available snapshots.

The available 10-day snapshots don't work effectively, because the District needs a 30-day weather forecast strategy. A strategy has been developed and is used within each meeting. The strategy has four basic tenants that provide consistency, reliability and utility. The four basic tenants of the strategy are, as followed, in order, and are described below: (1) The El Niño-Southern Oscillation (ENSO) Diagnosis, (2) The Persistence Perspective, (3) The Dynamical Weather Forecast Model, and (4) The Use of Weather Artificial Intelligence.

#### (1) The Niño-Southern Oscillation (ENSO) Diagnosis:

The ENSO pattern is a multi-month climate phenomenon in the tropical Pacific Ocean that has three distinct phases: El Niño, neutral, and La Niña. Phase transitions of the ENSO pattern involve shifts in sea-surface temperatures and atmospheric conditions that influence the general weather and climate patterns across Texas for months to years at a time, impacting everything from temperatures to rainfall events. Each phase of the ENSO can vary in length of time from a consecutive six-month period to two consecutive years or longer.

At the District's monthly meetings, we discuss ENSO as the first part of the weather forecast strategy since it gives us an expected diagnosis of the expected weather pattern for a period of time beyond one-month in duration, making it a useful tool for the decision on which stage to consider. If the El Niño (usually the cool & wet pattern for Texas) phase is in place, then a less stringent stage may be highly considered. If the neutral (the wet, average or dry and warm or cool pattern for Texas) phase is in place then maintenance of the current stage may be highly considered. If the La Niña (usually the warm & dry pattern for Texas) phase is in place, then maintenance of the current stage or a more stage if available may be highly considered.

The ENSO diagnosis is the large-scale atmospheric analysis and the initial forecast step in the decision-making process.

## (2) The Persistence Perspective:

Now that ENSO has given us a diagnosis of the expected weather pattern over the following six months to a year or longer. The second step is looking at what the actual weather trend has been over the previous three to six month period. We use this most recent historical trend in weather over our region as a weather forecast applicable to the area for the near-future over the next month or so.

We refer to this weather forecasting technique as the persistence perspective or more commonly referred to as a persistence forecast. Persistence is an excellent technique to use especially for our area of Texas because the on-going ENSO does not usually allow or cause our weather pattern to shift too quickly, too sharply or vary at a high frequency of change as time goes on.

If the weather has been wet and cool and El Niño is in place, then a reasonable persistence forecast would be the continuation of wet and cool conditions over the next month or so.

If the weather has been average or moderate and neutral conditions are in place, then a reasonable persistence forecast would be the continuation of average or moderate weather, no big alterations one or way or another to be expected. There is also this idea of a dry or wet neutral pattern. If it is already dry, then dry conditions remain. If it is already wet, then wet conditions remain. If it has been cool, then coolish weather remains. If it has been warm, then warm weather remains.

If the weather has been dry and warm and La Niña is in place, then a reasonable persistence forecast would be the continuation of dry and warm conditions over the next month or so.

Persistence coupled with the ENSO diagnosis is the second forecast step in the decision making process.

## (3) The Dynamical Weather Forecast Model:

ENSO and persistence provide are useful tools when combined together to provide consistent and reliable weather forecasts out a month ahead or longer. However, such techniques don't provide temperature accuracy and magnitude of the expected wetness or dryness.

To bring in accuracy and magnitude into the weather forecast analysis, a dynamical weather forecast model must now be utilized as the third step in the process.

There is only one available dynamical weather forecast model that goes out a month ahead in time. We have discussed this model before which is the Climate Forecast System (CFS) Version 2. This weather model takes into account current conditions as well numeric algorithms that address the thermodynamics and solve the fundamental physics equations that govern atmospheric motion and surface and upper air weather parameters. This model specifically simulates the interactions between the atmosphere, oceans, land, and sea ice in a fully integrated system with variations in solutions to generate probabilistic forecasts.

As discussed within a previous topic, a simple equation that measures the difference between the monthly precipitation forecast from the CFS model and the expected monthly total amount of forecast reference evapotranspiration (FRET) is used to provide the magnitude of the expected wetness or dryness across Kendall County for the month ahead. Additionally, the CFS model can provide a temperature anomaly forecast which gives a numeric prediction of how much warmer or cooler than the 30-year temperatures averages may occur for the month ahead.

The model output from CFS and the consideration of FRET together provide the scale of impact which is used to confirm the ENSO diagnosis and persistence all combined together creating the third forecast step for the decision making process.

(4) The Use of Artificial Intelligence in Weather Forecasts:

If you haven't already noticed, Artificial Intelligence (AI) is rapidly impacting most activities available through the internet. If I go onto a web browser and search in Google any topic of choice, let's say, "expected precipitation total in Kendall County, Texas over the next 30 days ahead", Google responds with a header showing a response from AI Overview. AI Overview is a proprietary Google corporation owned Large Language Model (LLM), a set of prescribed algorithms in a data center somewhere on Earth, that literally thinks of the best way to address the query, reorganizing the query itself according to its algorithms and then it responds to its reorganized query after synthesizing publicly available information from multiple different internet web pages into a single, cohesive summary for us to read.

AI Overview shows the response "Official forecasts indicate a **high chance of above-normal precipitation** in Kendall County, Texas, over the next 30 days (mid-November to mid-December 2025)".

There are also dynamical weather forecast models that use AI technology such as the ECMWF-AI, AI-GFS, AI-GEFS and EPS-AI. These AI models only produce forecasts 15 to 16 days out in time, and the District needs 30-day forecasts. Even though these AI models have a limited out in time output, their performance is tracking better and better as they learn, and they can be used to help give validity to the half-way point of the CFS output.

The District is focused on using AI wisely and being careful with reliance and trust from the AI-related weather forecast products used for their decision making process.

Final Thoughts:

Every monthly weather forecast given to the District is verified against actual data to establish how well the four weather forecast tenants are performing month-to-month.

So far, the tenants are performing well, and the District can be confident then that their monthly water-use restriction drought stage decisions are utilizing the best available technology and science.

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