



**NATIONAL  
WEATHER  
SERVICE**

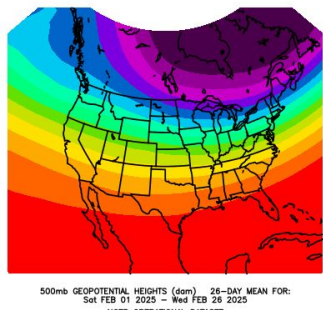
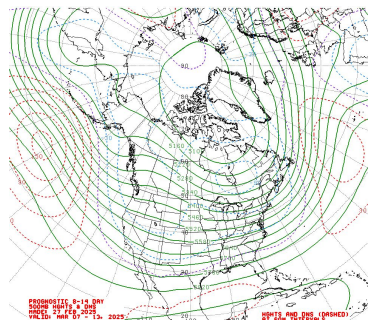
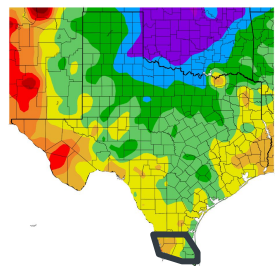
# March to May (Spring) 2025 Outlook: Perspective for the Lower Rio Grande Valley/Deep S. Texas Region

February 28, 2025

Andrei Evbuoma, Barry Goldsmith, & Rodney Chai  
NWS Brownsville/Rio Grande Valley, Texas

Warmer and drier than normal conditions are expected to continue; heat risks and heavy rain/flooding potential begins to increase; wildfire potential, water supply, and hazardous marine conditions remain in focus

Departure from Normal Temperature (F)  
2/1/2025 - 2/24/2025



Corn Field near Los Fresnos (2011)



SMAC ranch fire (2011)



# February 2025: An overachieving and prolonged cold event

## February 20-22, 2025 was a record setter and helped to reduce the average temperature for the month to near normal levels

Minimum 3-Day Mean Min Temperature for Brownsville Area, TX (ThreadEx)

Minimum 3-Day Mean Min Temperature for McAllen Area, TX (ThreadEx)

Minimum 3-Day Mean Min Temperature for HARLINGEN, TX

Click column heading to sort ascending, click again to sort descending.

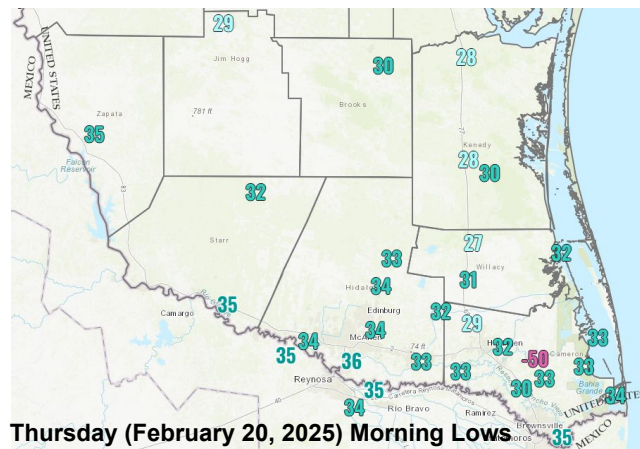
Click column heading to sort ascending, click again to sort descending.

Click column heading to sort ascending, click again to sort descending.

Rank	Value	Ending Date	Missing Days
1	37.0	2025-02-22	0
-	37.0	1978-02-22	0
3	40.0	1895-02-22	0
4	41.3	1904-02-22	0
5	41.7	1911-02-22	0
6	42.0	1929-02-22	0
7	42.3	1964-02-22	0
-	42.3	1905-02-22	0
9	42.7	1968-02-22	0
-	42.7	1955-02-22	0
Period of record: 1878-01-01 to 2025-02-22			

Rank	Value	Ending Date	Missing Days
1	35.7	2025-02-22	0
2	37.3	1978-02-22	0
3	39.0	1968-02-22	0
4	40.7	1955-02-22	0
-	40.7	1942-02-22	0
6	42.3	1964-02-22	0
7	42.7	1959-02-22	0
8	43.3	1963-02-22	0
9	43.7	1961-02-22	0
10	45.0	1984-02-22	0
Last value also occurred in one or more previous years.			
Period of record: 1941-06-01 to 2025-02-22			

Rank	Value	Ending Date	Missing Days
1	32.0	2025-02-22	0
2	35.0	1978-02-22	0
3	39.0	1939-02-22	1
4	40.3	1940-02-22	0
5	40.7	1929-02-22	0
-	41.0	1966-02-22	0
8	41.3	1955-02-22	0
9	41.7	2021-02-22	0
-	41.7	2006-02-22	0
Last value also occurred in one or more previous years.			
Period of record: 1912-02-07 to 2025-02-23			

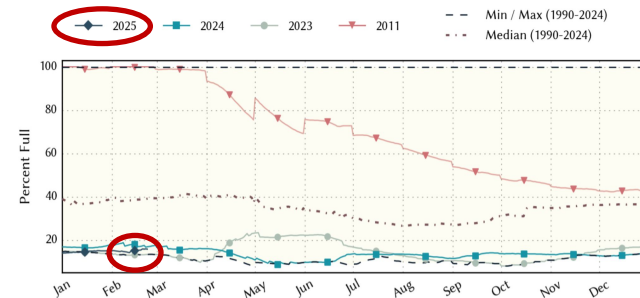


Thursday (February 20, 2025) Morning Lows  
Top Image: Observed morning lows Thursday morning.

As of February 26, 2025, Brownsville and McAllen's average temperature of 66.2F and 67.4 degrees were near normal levels with month to date departures of -0.2F and 0.4F degrees, respectively. Meanwhile, Harlingen's average temperature of 63.3F degrees is -2.0F degrees cooler than normal.

The three day cold snap from February 20-22, 2025 was the **coldest on record** for all three sites (Brownsville, Harlingen, and McAllen).

Rainfall production was slightly below normal levels for February. As of late February, combined shares at the Falcon Reservoir was seen higher from the previous month at 15.8%, **up 0.9%** from December's 14.9%, levels. As of February 23, shares still remained at/near record lows on par with 2022 and above 2023 levels.



Latest data from the Rio Grande Reservoirs (Texas Share) continue to indicate 2025 levels are at or below 30 year lows and near records. Total values have increased as of late.

Image: Texas Water Development Board



# February 2025: February 20-22 Cold Stun Event in Photos



Photos Courtesy of Sea Turtle Inc.



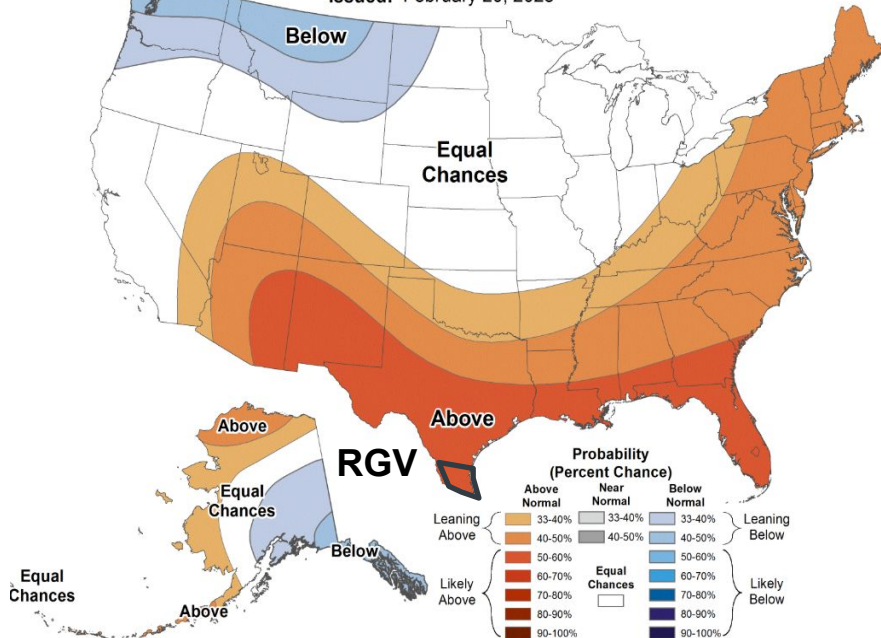
# Seasonal Forecast, March– May 2025 USA



## Seasonal Temperature Outlook



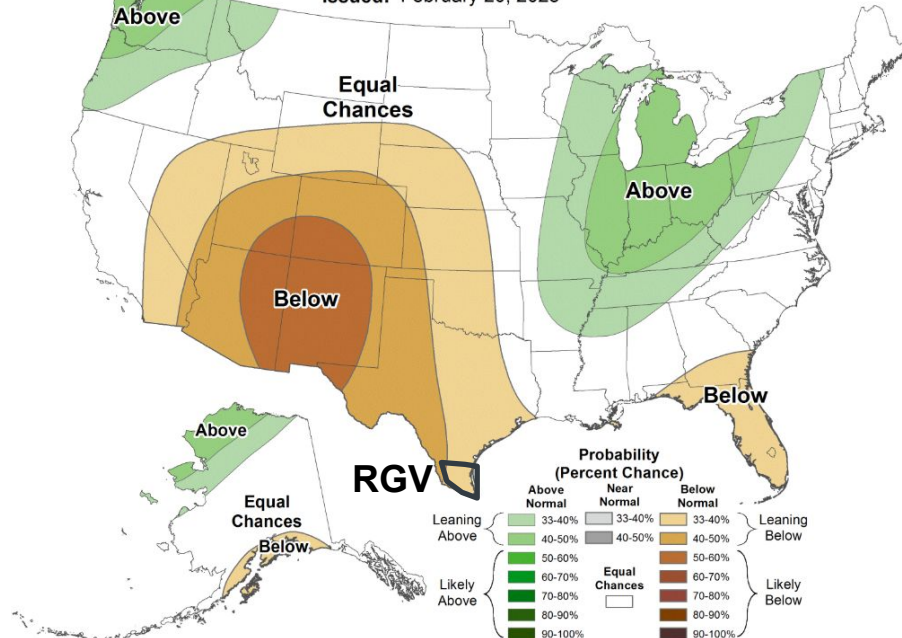
Valid: Mar-Apr-May 2025  
 Issued: February 20, 2025



## Seasonal Precipitation Outlook



Valid: Mar-Apr-May 2025  
 Issued: February 20, 2025



# Key Takeaways: March-May (Spring 2025) Outlook

- A **warmer and drier than normal outlook** is anticipated during the **March-May 2025** timeframe for Deep South Texas and the Rio Grande Valley. **Heat Risk** concerns are expected to begin increasing through April and into May.
- **Drought/dryness** concerns are expected to continue through the Spring Season. For areas west of IH-69E/US 77, there is a likelihood of **worsening conditions to D2 (Severe) and D3 (Extreme) levels**.
- Falcon and Amistad remained **near historic lows at the end of February**. **Confidence is near-certain (~100%) on total storage remaining at or near record lows through May**.
- Confidence remains **medium-high (60-80%)** that **temperatures will run normal to warmer than normal** from March through May. Confidence is **medium (30-50%)** on a **drier than normal outcome** for the period. Confidence is **medium-high (50-70%)** that **drought/dryness** will continue over Deep South Texas and the Rio Grande Valley through May.
- Following the January 20-22 Arctic Blast and to a lesser extent the February 20-22 overachieving cold episode, **wildfire growth concerns are expected to continue in March** as grasses across much of the region are freeze cured. The strength of cool/cold fronts through March and possibly April will be key!
- Despite a drier than normal outlook, **showers and thunderstorms that could produce heavy rainfall and localized flooding** has to be taken into consideration, especially in April and May.
- Occasional **cool fronts** are expected to continue through March/April, however will become weaker and weaker as we move forward in time given our latitudinal position and increasing sun angles.

Difficult to dangerous boating and beach conditions will continue on occasions through March 2025!



# The “Why” of the Forecast: ENSO (La Nina to Neutral Transition), soil moisture, long-term trends, and other key climate teleconnections to play a role

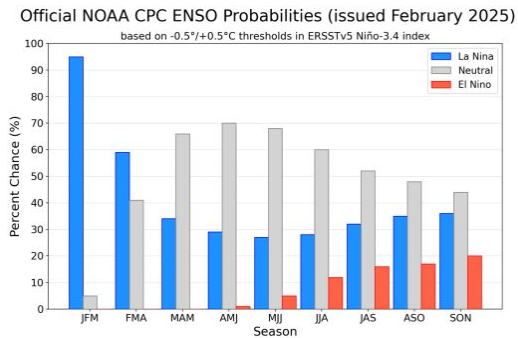
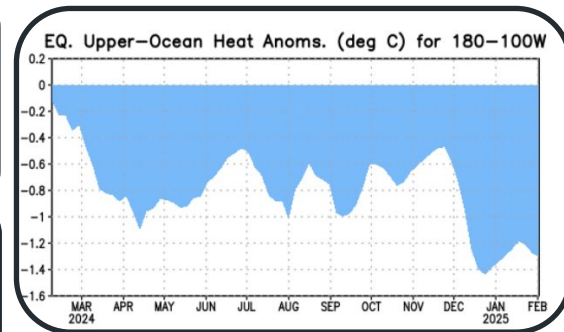
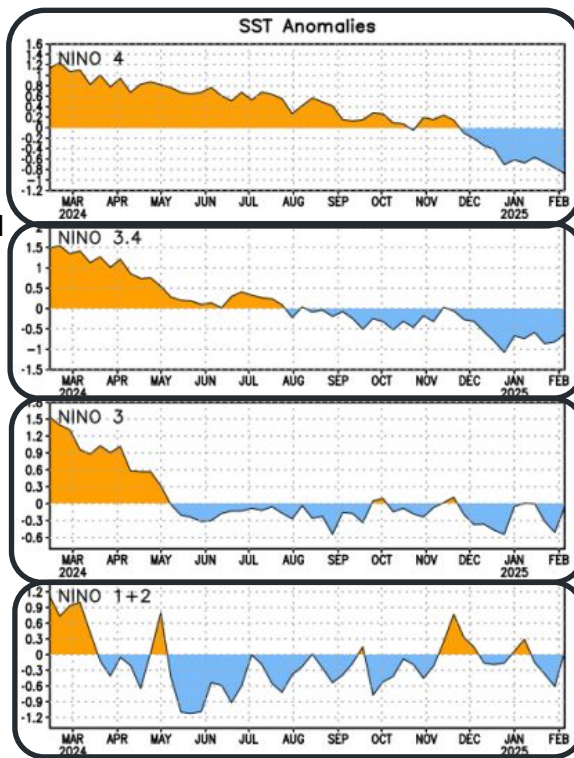
Year	DJF	JFM	FMA	MAM	AMJ	MJJ	JJA	JAS	ASO	SON	OND	NDJ
2021	-1.0	-0.9	-0.8	-0.7	-0.5	-0.4	-0.4	-0.5	-0.7	-0.8	-1.0	-1.0
2022	-1.0	-0.9	-1.0	-1.1	-1.0	-0.9	-0.8	-0.9	-1.0	-1.0	-0.9	-0.8
2023	-0.7	-0.4	-0.1	0.2	0.5	0.8	1.1	1.3	1.6	1.8	1.9	2.0
2024	1.8	1.5	1.1	0.7	0.4	0.2	0.0	-0.1	-0.2	-0.3	-0.4	-0.5

- With a La Nina in place and expected to transition to ENSO Neutral conditions this Spring, **warmer than normal temperatures** are favored to continue through May and potentially longer. Additionally, this setup favors an **overall drier than normal pattern** through the Spring Season.

- As we transition from a La Nina to ENSO Neutral conditions in the equatorial Pacific, the **placement of the jet stream and heat ridge, tropical moisture influx, soil moisture, amongst other weather/climate variables** will play a vital role in various weather events through the Spring Season such as increased **heat risks** and instances of **heavy rainfall/flooding!**

- Wildfire season** remains on the table through March as **drought/dryness** trends continue to **increase!**

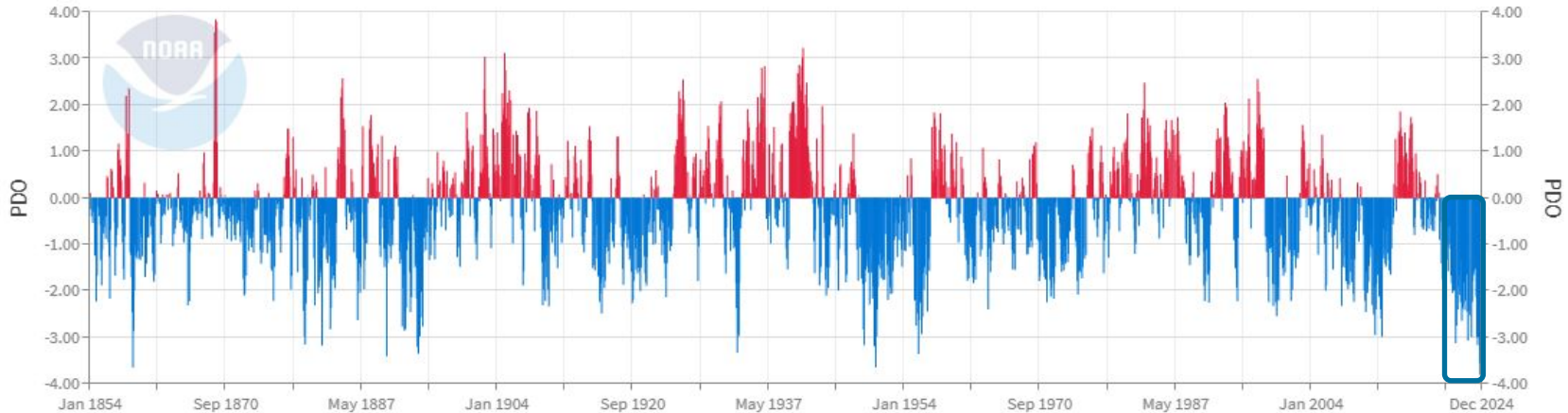
\*Above right: Oceanic Niño Index. Values below -0.5 (light blue) for five consecutive 3-month periods indicated La Niña. El Niño (red, +0.5) officially began in April-June 2023, reached strong levels (+1.5) by August-October 2023, strengthened further through November-January, then weakened rapidly through early summer. Neutral conditions arrived for April-June 2024.



# The “Why” of the Forecast: Pacific Decadal Oscillation (PDO) remains in Sharp Negative Phase

## Pacific Decadal Oscillation (PDO)

January 1854-December 2024



Source: <https://www.ncei.noaa.gov/pub/data/cmb/ersst/v5/index/ersst.v5.pdo.dat>

- The 2021-2025 **prolonged and strong negative PDO has persisted**, and should remain the case going through the Spring Season. This **increases confidence** for a **drier and warmer than normal pattern persisting through the Spring Season.**
- The sharply negative PDO combined with a La Nina to ENSO Neutral transition **adds confidence** to a dry warm forecast as we move through Spring 2025. **Confidence remains high** for sharply negative PDO to continue through the first half of 2025.



# The March-May (Spring 2025) Outlook: Rio Grande Valley (McAllen as Anchor Point)

McAllen, TX, USA

7 Day Forecast for McAllen, Texas

**Three Category Temperature Outlook**  
Normal Maximum Temperature: **86**  
Normal Minimum Temperature: **64**

Above Normal	58%
Below Normal	9%
Near Normal	33%

**Three Category Precipitation Outlook**  
Normal Precipitation: **4.52**

Above Normal	28%
Below Normal	39%
Near Normal	33%

Select Lead

**Seasonal Outlook**  
March 2025-May 2025 (Lead 1)

Temperature      Opacity: 60%      Precipitation

● Outlook      ● Outlook

<< Below Normal      Above Normal >>

POWERED BY esri

McAllen, TX, USA

7 Day Forecast for McAllen, Texas

**Three Category Temperature Outlook**  
Normal Maximum Temperature: **86**  
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**Seasonal Outlook**  
March 2025-May 2025 (Lead 1)

Temperature      Opacity: 60%      Precipitation

● Outlook      ● Outlook

<< Below Normal      Above Normal >>

POWERED BY esri

- **Temperature: Warmer than normal temperatures will likely persist Mar-May (Confidence: Medium-High).** RGV averages: Afternoon – Upper 70s-lower 80s through early March; Lower 80s-90F degrees mid-March through April; Wake-up: Upper 60s-lower 70s through early-March; Lower 70s-80F degrees mid-March through April.
- **Precipitation: Drier than normal conditions are expected to continue Mar-May (Confidence: Medium).** RGV averages: 5-6.5 inches (most in May).

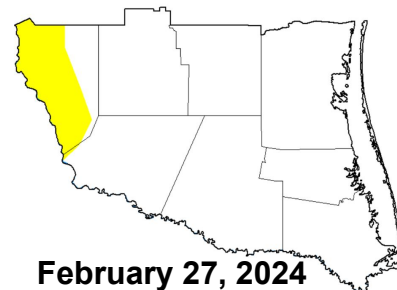
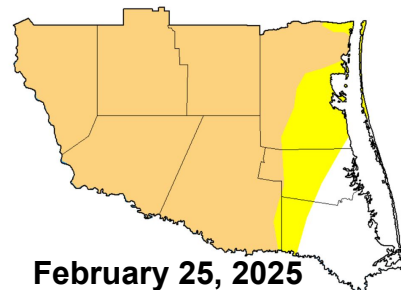
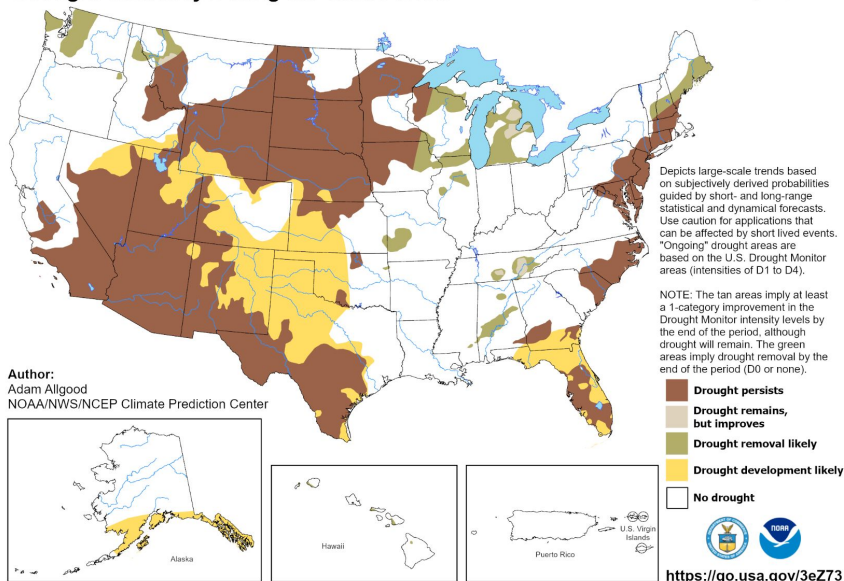




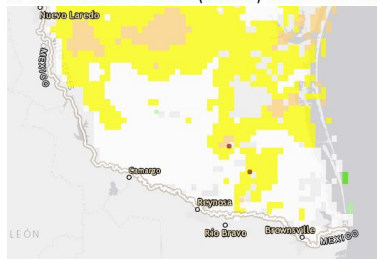
# The March-May 2025 “Droughtlook”

## U.S. Seasonal Drought Outlook Drought Tendency During the Valid Period

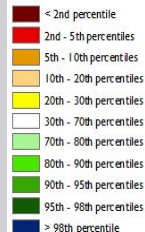
Valid for February 20 - May 31, 2025  
Released February 20, 2025



20 cm Soil Moisture Percentile (NKBlend) on Sat Feb 22 2025



Legend



### Drought Classification



This map shows the moisture content of the top 20 cm of soil compared to historical conditions, based on in situ (in the ground) measurements of soil moisture from a wide range of state and federal mesonet across the continental U.S. These data are then interpolated into a 4 km grid.

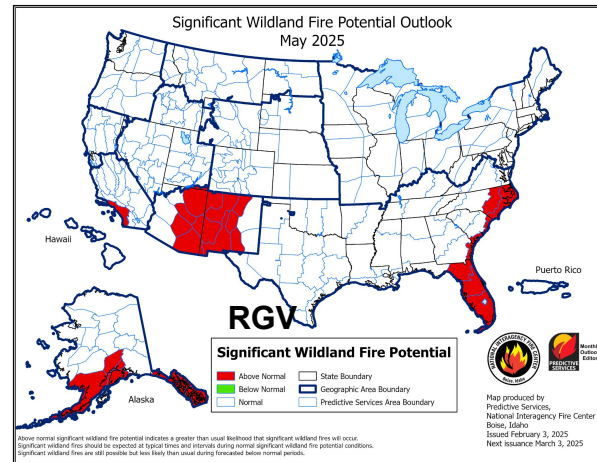
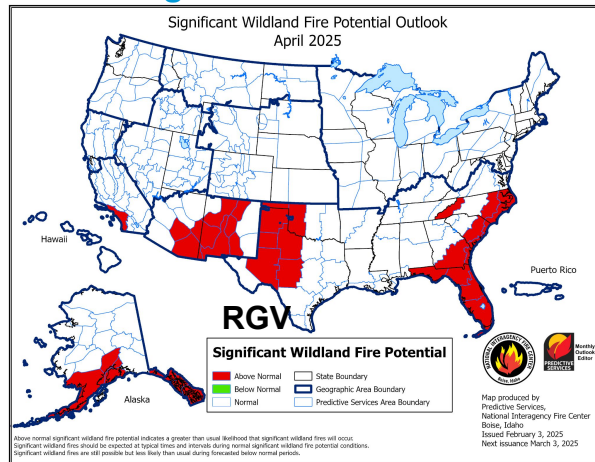
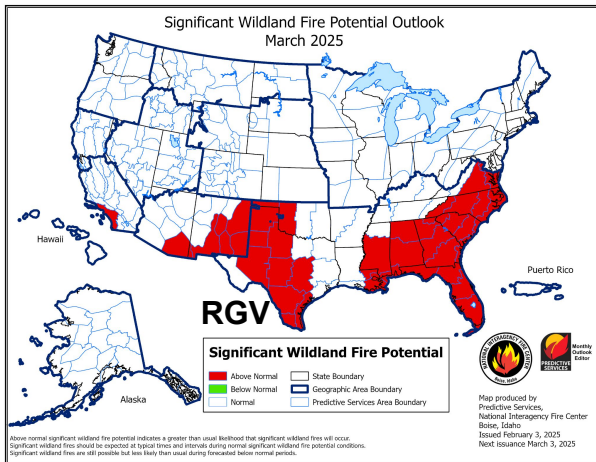
Red and orange hues indicate drier soils, while greens and blues indicate greater soil moisture.

Source(s): NationalSoilMoisture.com

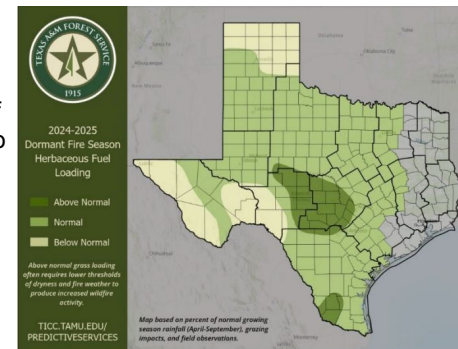
- **Year-over-Year (YoY) drought/dryness** over Deep South Texas and the Rio Grande Valley was greater this year compared to last year. Precipitation production once again have been few and far between for the entire region lately.
- After factoring in a La Nina transitioning to ENSO Neutral with climatological trends, the latest seasonal outlook continues to favor the potential for **expansion of dryness/drought** across the lower/mid Valley this upcoming Spring Season.



# Wildfire Concerns Will Remain Elevated Through March



- Following the **Jan 20-22 Arctic Blast**, grasses across all of Deep South Texas and the Rio Grande Valley have become **freeze-cured**. This has aided in **above normal fuels** for our **western areas** where it has also been **driest** (see lower right image).
- In the coming weeks, moisture levels will continue to be largely dependent on rain chances, the strength and number of cold frontal passages vs. days with a return flow out of the south boosting relative humidity (RH) values. Trends continue to favor more dry situations than moist situations through March.
- Above normal level fuels** are present across our western sections (i.e. along and west of (IH-69C). Above normal level fuels **could continue to spread east** depending on the conditions stated above.
- Bottom lines:**
  - Given the situation, **wildfire concerns** will remain in focus through March. The strength of the cool/cold fronts in addition to drying trends will be key!
  - The **National Interagency Fire Center (NIFC)** has all of the RGV/Deep South Texas ranchlands outlooked under an **“Above Normal Potential”** in its **Wildland Fire Potential Outlook for March**.
  - April remains uncertain, but could lean dry based on consensus of longer-lead monthly outlooks from trusted climate models.



Herbaceous Fuel Loading Map for Texas (January 22, 2025)



# Wildfire Prevention Review

- This remains critical through the late winter and especially into March, especially if severe to extreme drought continues over fuel-loaded/fuel-cured rangeland north of the populated Valley. February and March 2022, and March 2023, were both active - especially across the ranchlands north of the RGV. 2025 looks similar.
- Continue to focus on **farm, ranch workers, and other persons who might drive hot vehicles** on parched brush on critical/near-critical days – especially low humidity, breezy days following fronts.



# Infographics for Wildfire Prevention

## Fire Weather SAFETY TIPS

- Be careful to not drag trailer chains that could cause sparks.
- Do not park on dry grass.
- Avoid outdoor burning and check recently burned piles for flare-ups.
- Clear out dead vegetation from around your home.
- Be careful when welding in dry grass.



## Consejos de Seguridad Contra Incendios

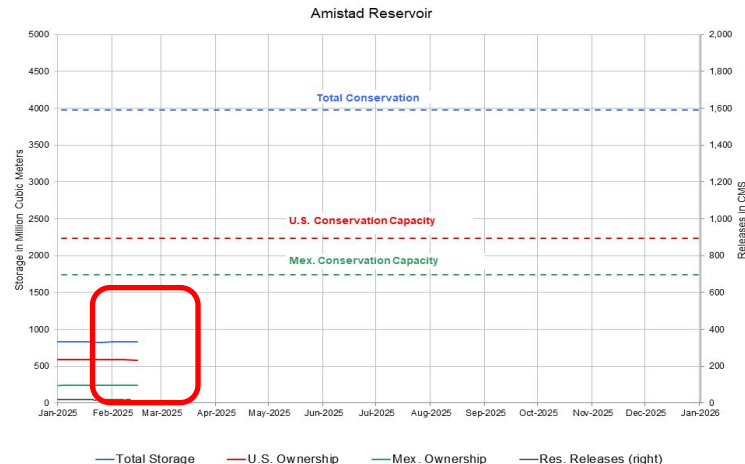
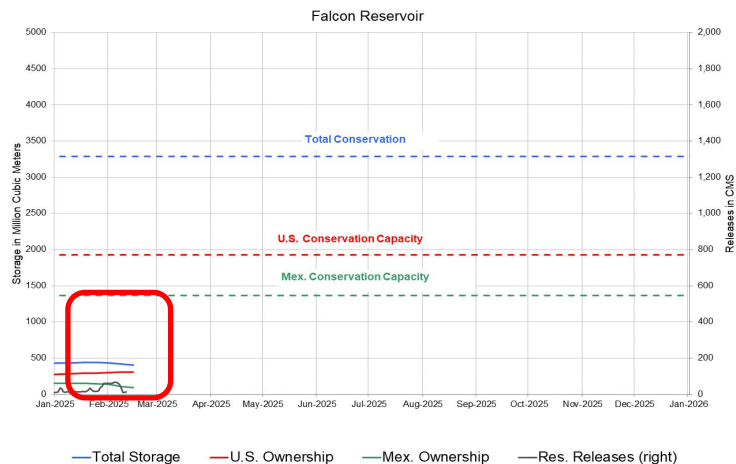
- Tenga cuidado de no arrastrar cadenas de remolque que podrían provocar chispas.
- No se estacione sobre césped seco.
- Evite las quemaduras al aire libre y revise las pilas recientemente quemadas para detectar brotes de fuego.
- Elimine la vegetación muerta alrededor de tu casa.
- Tenga cuidado soldar en hierba seca.



- ~50 in all (20 in Spanish)!
- Thanks to **Texas A&M Forest Service** for Many of These!



# Amistad and Falcon Reservoirs remains at or near Record Lows for the first part of 2025



- **Falcon remained nearly steady, ending late February at 12.1 percent (down slightly from 13.3% in late January).** This level is just a few ticks above prior records. Levels may not change much through May.
- **Amistad also remained steady and above all-time record lows in late February.** Levels were at 20.8% on February 21<sup>st</sup> (same level of 20.8% from January 23). Levels may not change much through May.

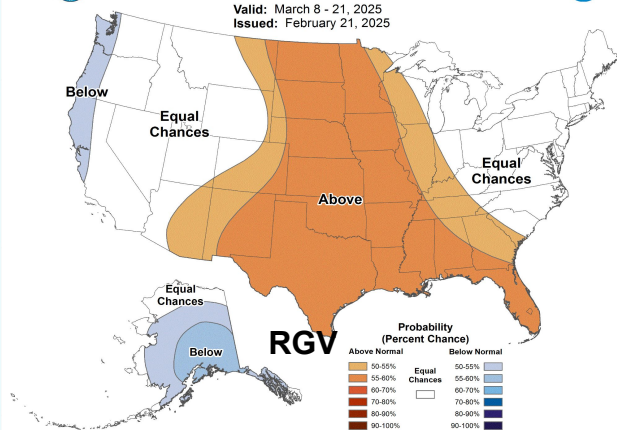
# Water Conservation is Key Until Further Notice!

The screenshot displays the Texas Water Development Board website. At the top left is the logo for the Texas Water Development Board. A search bar is located at the top right. Below the logo is a navigation menu with links: Home, Board, Financial Assistance, Water Planning, Groundwater, Surface Water, Flood, Drought, Conservation, Innovative Water, and Data & Apps. The main heading is "Water Conservation". Below this heading are three featured images: "Conservation Education Programs of the TWDB", "MAJOR RIVERS A Water Education Program for Texas", and "Raising Your Water IQ A Water Conservation Curriculum for Middle School". To the right of these images is a vertical menu with the following items: Best Management Practices, Agriculture, Literature, Resources, Education, Outreach, Municipal, Workshops & Presentations, and Conservation Staff. Below this menu is a section titled "Drought" with sub-items "Rainwater Harvesting" and "Water Reuse". Below the featured images is a paragraph of text: "The mission of the water conservation staff is to provide leadership, planning, education, information, technical assistance, and agricultural financial assistance for water conservation in Texas." Below this paragraph is another paragraph: "In [Water for Texas: 2017 State Water Plan](#) water conservation strategies for the year 2070 are projected to provide 2,344,541 acre-feet to help meet the projected needs for additional water supplies. This volume of water conservation represents 27.7 percent of the identified strategies to meet water supply needs in 2070. Irrigation conservation accounts for 15.7 percent, municipal conservation is 9.6 percent and other conservation is 2.4 percent. Reuse strategies add an additional 14.2 percent (1,106,614 acre-feet) of potential supplies in 2070 and includes indirect reuse, other reuse and direct potable reuse."

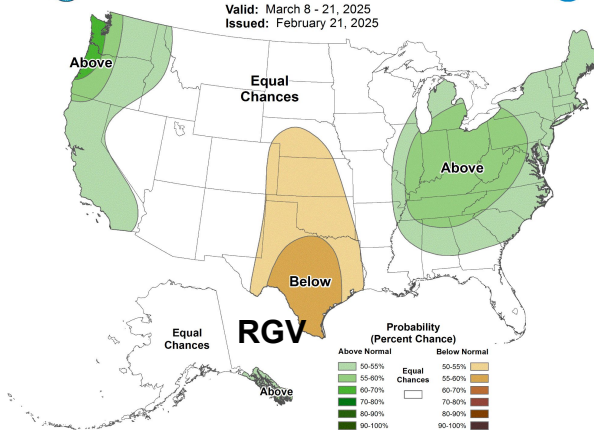
- [“Stage 2/3” Restrictions](#) continued through early winter 2025 and are likely to continue **until further notice** based on inflows from Amistad and Falcon.
- Learn more at the [Texas Water Development Board’s Conservation Page](#)

# March 2025: Confidence: Medium-High (60-80%) on Temperature and Precipitation Trends

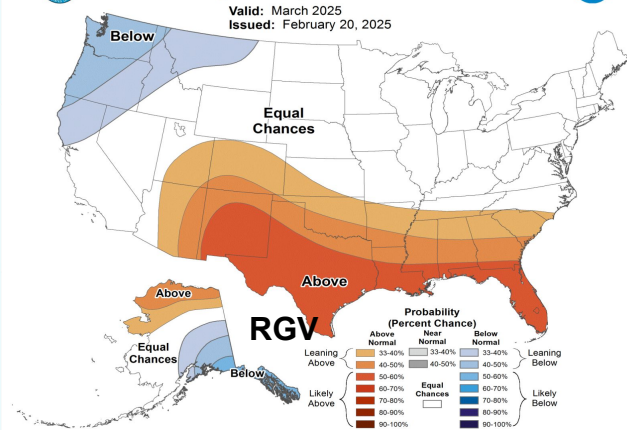
**Weeks 3-4 Temperature Outlook**



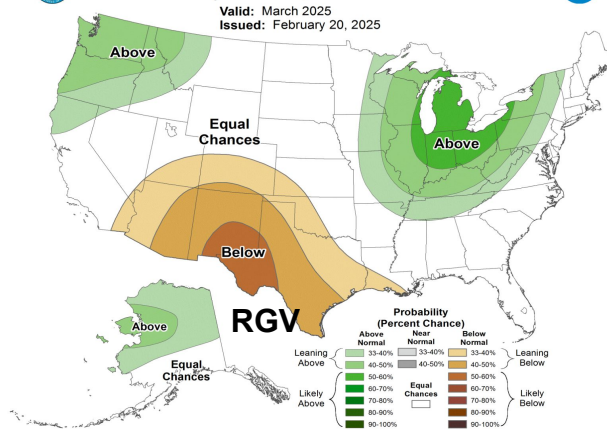
**Weeks 3-4 Precipitation Outlook**



**Monthly Temperature Outlook**



**Monthly Precipitation Outlook**



- Medium to long-range models are favoring a warmer and drier than normal pattern to take place through March. It's worth noting that March is one of our driest months climatologically. 4th driest for Brownsville and Harlingen. 5th driest for McAllen.

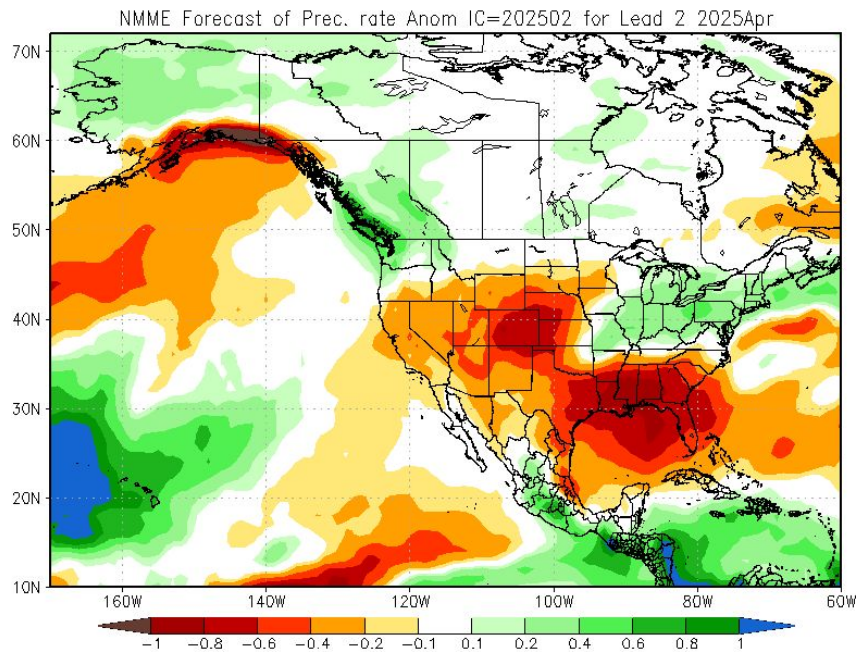
- Despite the **potential for a cool snap or two**, March should average out **warmer than normal** as **building atmospheric high pressure** will be more of the **dominant driver** in the weather pattern. The **onset of heat risk** will be on the **increase** as we move through March and especially April/May.

- A **drier than normal pattern** is expected for the month of March, though **moisture influx** and the **chance for non-tropical showers and storms** will **gradually be on the increase** as we move into the Spring Season.

- Though we are expecting a drier than normal pattern, **heavy rainfall or flooding events** can still develop. Have to **monitor the potential** for **showers and storms** that could **produce heavy rainfall/flooding risk!**



## Potential rainfall rate anomaly, April 2025



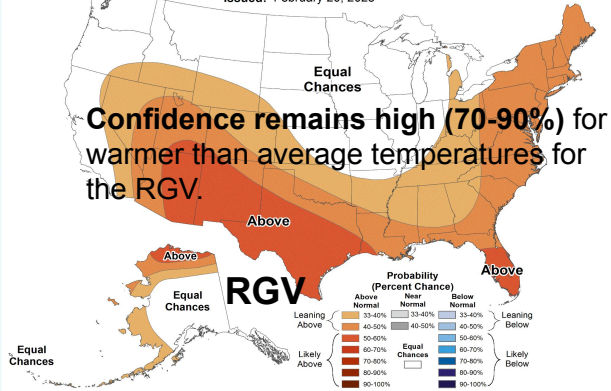
- This model's forecast for April suggest a **dry pattern** (note the red color over the area and nearby brown colors) continuing. Confidence is medium.
- As we shift into the Spring Season, **showers and thunderstorms chances are expected to increase**. **The position of the southern jet stream (subtropical jet) will be key!** Though we do expect to see showers and thunderstorms at times, we continue to lean towards an **overall drier than normal pattern** in April.



# Late Spring into Summer 2025: Warmer than Normal Trends remains Favored; Precipitation pattern is a toss-up

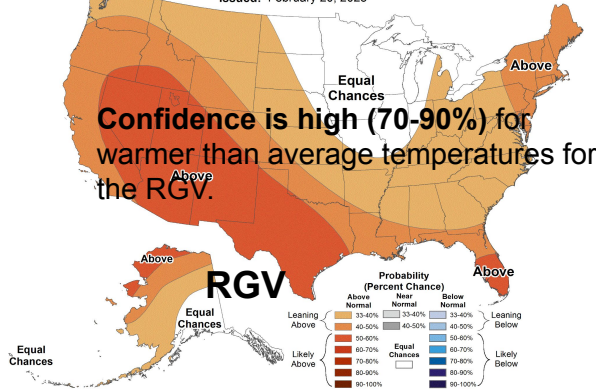
**Seasonal Temperature Outlook**

Valid: Apr-May-Jun 2025  
Issued: February 20, 2025



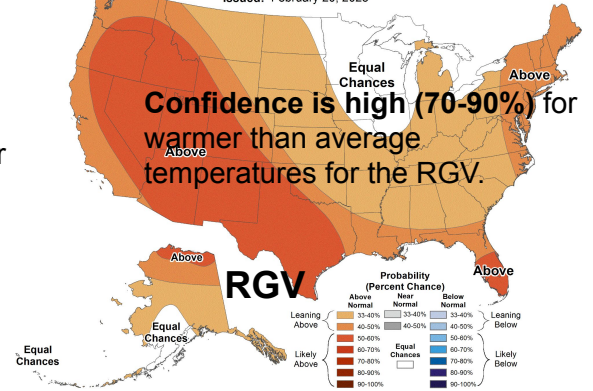
**Seasonal Temperature Outlook**

Valid: May-Jun-Jul 2025  
Issued: February 20, 2025



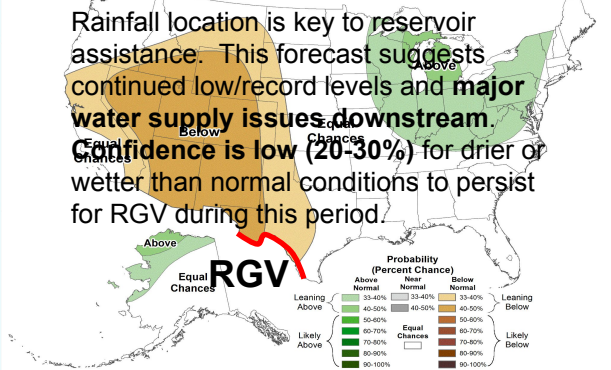
**Seasonal Temperature Outlook**

Valid: Jun-Jul-Aug 2025  
Issued: February 20, 2025



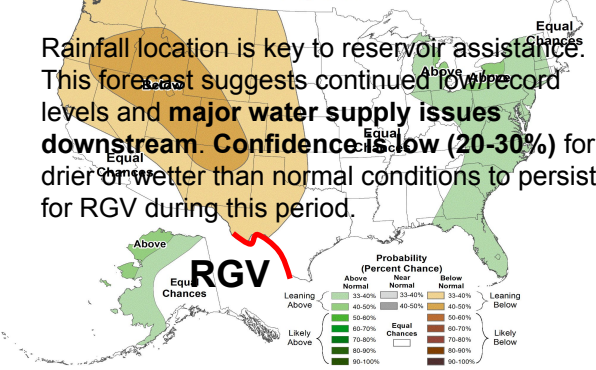
**Seasonal Precipitation Outlook**

Valid: Apr-May-Jun 2025  
Issued: February 20, 2025



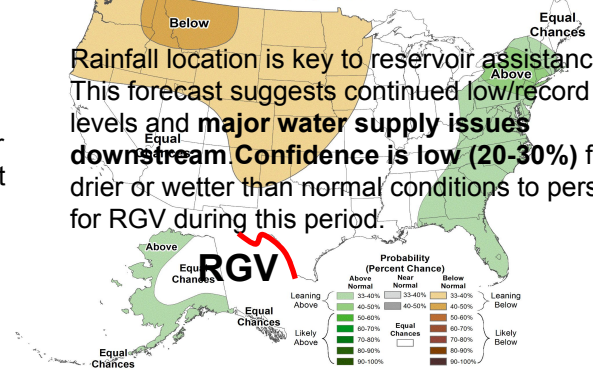
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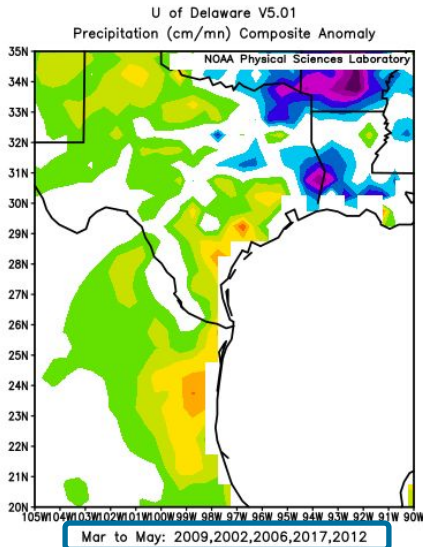


**Seasonal Precipitation Outlook**

Valid: Jun-Jul-Aug 2025  
Issued: February 20, 2025

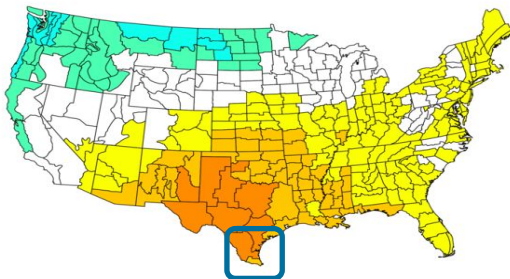


# Comparing Similar La Nina to Neutral Episodes mostly within the last 30 years; March-May Periods



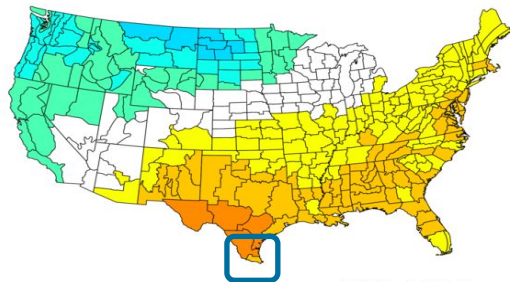
Composite departure from average rainfall for years of similar La Nina to Neutral transition episodes in the March-May window.

NOAA/NCEI Climate Division Composite Temperature Anomalies (F)  
Mar to May 2009,2018,2017,1972,2002,2006,2023,2012,2002  
Versus 1991-2020 Longterm Average



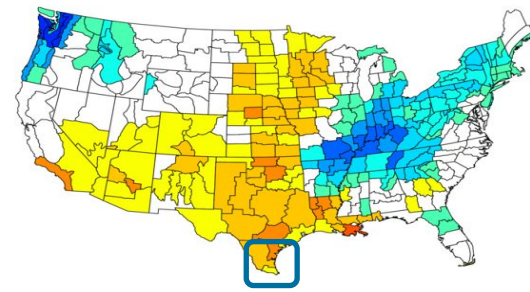
NOAA PSL and CIRES-CU  
-3.0 -2.0 -1.0 0.0 1.0 2.0 3.0

NOAA/NCEI Climate Division Composite Temperature Anomalies (F)  
Mar to May 2009,2018,2006,2002,2019,2023,2017,2022,2012,2011  
Versus 1991-2020 Longterm Average



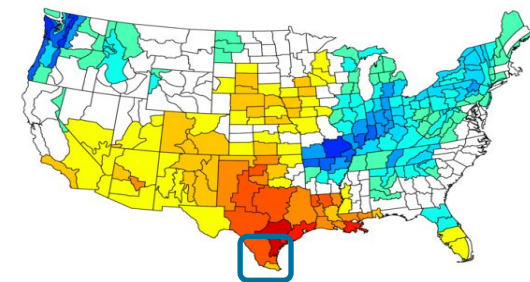
NOAA PSL and CIRES-CU  
-3.0 -2.0 -1.0 0.0 1.0 2.0 3.0

NOAA/NCEI Climate Division Composite Precipitation Anomalies (in)  
Mar to May 2009,2018,2011,2017,2002,2006,1997,1972  
Versus 1991-2020 Longterm Average



NOAA PSL and CIRES-CU  
-3.0 -2.0 -1.0 0.0 1.0 2.0 3.0

NOAA/NCEI Climate Division Composite Precipitation Anomalies (in)  
Mar to May 2009,2018,2011,2017,2006,1972,2002,2022  
Versus 1991-2020 Longterm Average



NOAA PSL and CIRES-CU  
-3.0 -2.0 -1.0 0.0 1.0 2.0 3.0

- **Top:** Composite temperature (left) and precipitation (right) anomalies for similar La Nina to Neutral transition episodes leading into March-May, since 1950.
- **Bottom Left:** Same, except added 2011 and 2019 seasons, and took out 1972 season.
- **Bottom Right:** Same, except added 2022 season and took out 1997 season.



# Bottom Lines

- **Warmer** and **drier** than normal conditions are expected to persist through the upcoming Spring Season with a La Nina expected to transition to ENSO neutral conditions. As we move through the Spring Season, particularly April and May, **heat risk concerns** are expected to increase. **Dryness** is expected remain in focus over Deep South Texas March-May.
- Sufficient inflows from Mexican and International reservoirs serving the Lower Rio Grande watershed remain unlikely. The **combined share of water in Amistad and Falcon will likely to continue well below Stage 2 and 3 triggers (25% or less) until further notice**. Water conservation, smart irrigation, and rainwater harvesting are **critical actions to continue as we move into the Spring season**.
- **Fire weather** is expected to remain in focus March-April, as **soils continue to dry** and **cool/cold fronts** continue. Farmers/ranchers should be ready to **implement fire safety rules!**
- **Note:** Just b/c a drier than normal pattern is forecasted March-May, it doesn't mean that heavy rainfall/flooding could not occur. Should the ideal pattern setup, there could be **instances of showers and thunderstorms that result in heavy rainfall/flooding** as we move through the Spring Season.