

October to December 2024 Outlook: Perspective for the Lower Rio Grande Valley/Deep S. Texas Region



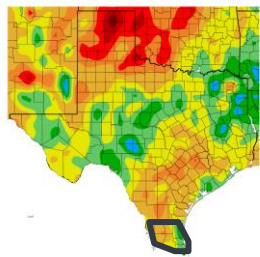
**NATIONAL
WEATHER
SERVICE**

September 27, 2024

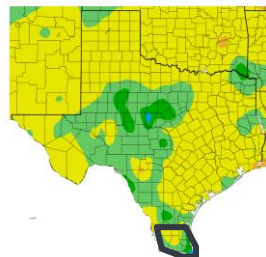
Andrei Evbuoma and Barry Goldsmith
NWS Brownsville/Rio Grande Valley, Texas

After a normal to wet September, forecast for dry trends with normal to warmer than normal temperatures remain intact October-December

Departure from Normal Temperature (F)
9/1/2024 – 9/21/2024

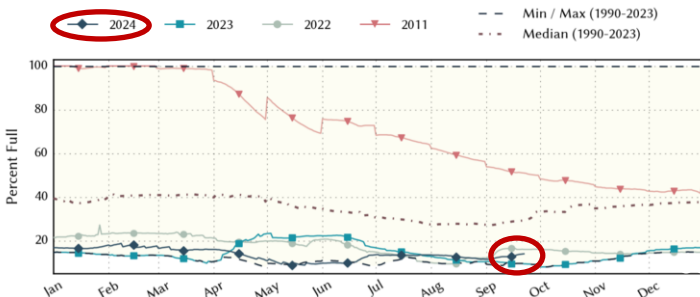


Departure from Normal Precipitation (in)
9/1/2024 – 9/21/2024



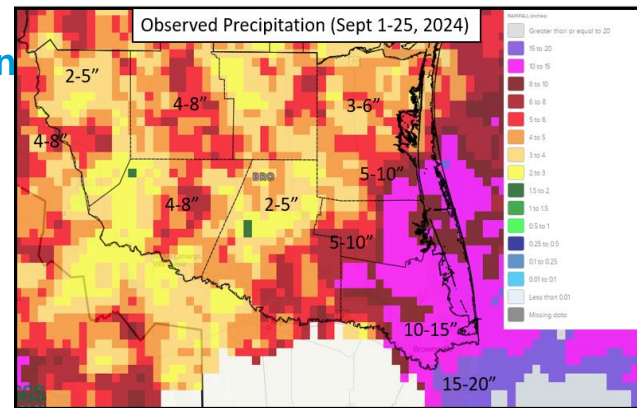
Sept 2024: Normal to wet month places rain numbers well ahead of curve for Cameron and Willacy Counties heading into the dry season

- Multiple heavy rain events including Tropical Storm Francine contributed to a wet September. Rainfall distribution, however, favored the lower Valley and coastal counties over the mid-Valley and to a greater extent our western counties. Water tables and underground reserves are better prepared for the dry season over the coastal counties than the western counties.
- September's monthly rainfall total as of the September 23rd of 9.98" is **+5.52" above normal** at Brownsville/South Padre Island International Airport (KBRO). Year-to-date amount to 33.40" is **+14.69" above normal**. Stark contrast from last year's **month-to-date of 0.02"** and **year-to-date amount of 14.90"**. Meanwhile, September's monthly rainfall total as of the September 23rd of 5.28" is **+1.55" above normal** at McAllen International Airport (KMFE). Year-to-date amount to 22.52" is **+5.57" above normal**. Stark contrast from **last year's month-to-date of 0.66"** and **year-to-date amount of 15.98"**.
- Unfortunately, the Falcon Reservoir remains in dire condition as rainfall was few and far in between over the US/Mexican Rio Grande Plains! Despite combined shares at the Falcon Reservoir rising slightly higher at 14%, **up around 2%** from August's 12.2%, levels still remained at/near record lows on par with 2022 and slightly above 2023 levels.

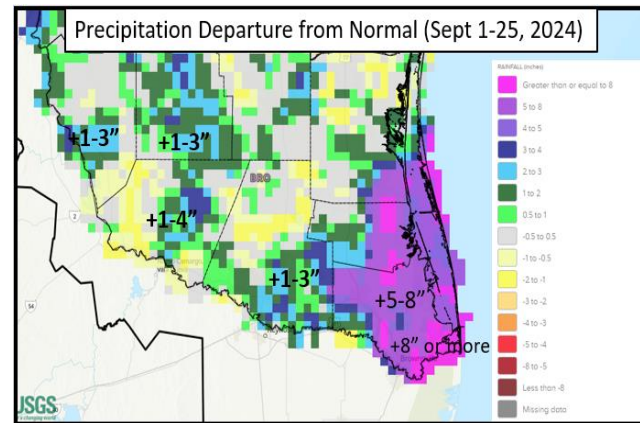


Latest data from the **Rio Grande Reservoirs (Texas Share)** continue to indicate 2024 levels are at or below 30 year lows (and near records. Total values increased slightly as of late. Moving into October, values may hold steady before decreasing slightly.

Image: Texas Water Development Board



Top Image: Multiple heavy rain events including Tropical Storm Francine contributed to a wet September. Anywhere from 7-15 inches of rain fell across the Lower Valley with the highest totals across SE Cameron County. Note the sharp gradient in the extreme rainfall. **Bottom Image:** Overall, departures were above normal across much of the area.



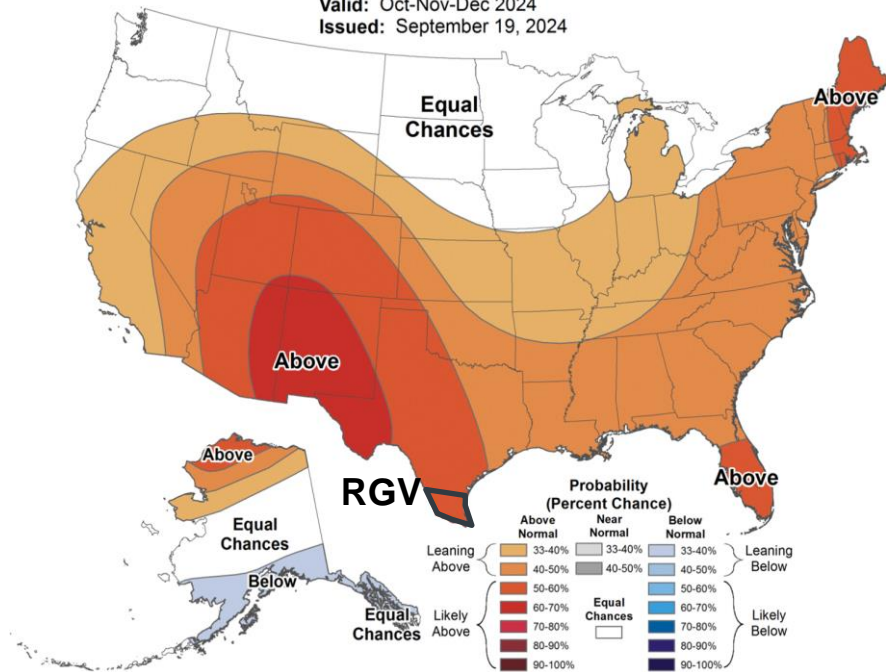
Seasonal Forecast, October – December 2024 USA



Seasonal Temperature Outlook



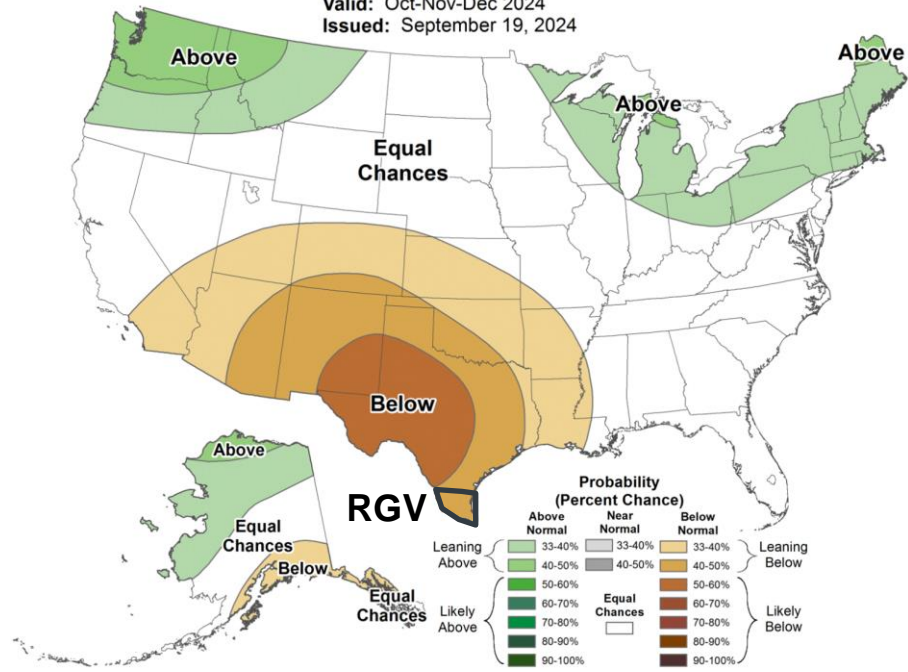
Valid: Oct-Nov-Dec 2024
Issued: September 19, 2024



Seasonal Precipitation Outlook



Valid: Oct-Nov-Dec 2024
Issued: September 19, 2024



Key Takeaways: October-December 2024 Outlook

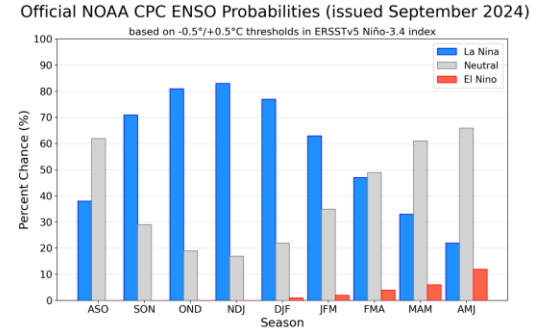
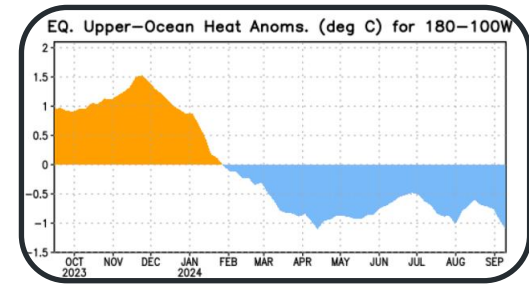
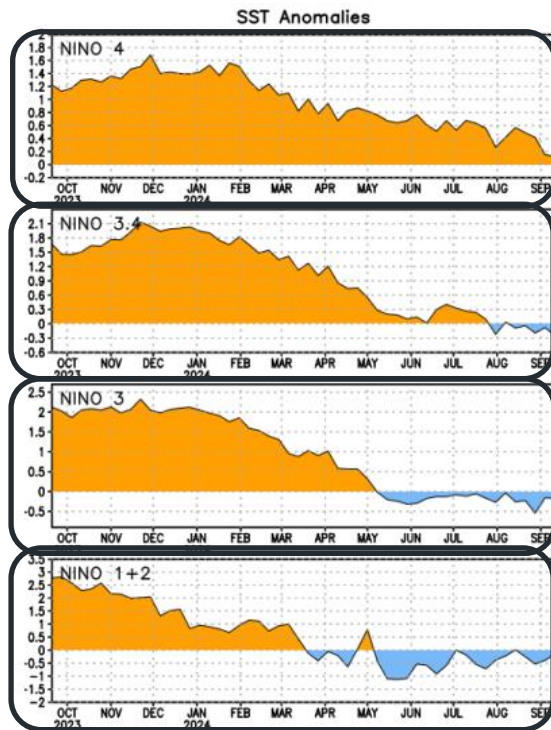
- Despite the beneficial, and in some cases copious amounts of rain across the Valley, Amistad and Falcon had yet to see the necessary rainfall to pull values above near-record lows. Falcon and Amistad remained **near historic lows at the end of September**. Confidence is becoming **near-certain on total storage remaining at or near record lows through December**.
- Astronomical, or “calendar” Autumn (Sept. 23 to Dec. 22) to gradually introduce a return to **cool and dry air intrusions** via cold fronts, which will become more frequent and progressively stronger in time. **Fire Weather, Tidal/Surf, and Marine (dangerous boating)** situations **could become more active** heading towards the end of the year.
- Precipitation is leaning **drier than normal** through the period for Deep South Texas and the Rio Grande Valley. Drought should by and large remain out of the picture through mid-October. However, if dryness persists, there is the **potential for abnormally dry to moderate drought conditions to develop**, first over the western sections of the region and eventually spreading eastward if dryness persists into November and beyond. Confidence is **medium** for Hidalgo/Brooks westward, and **low-medium** for Cameron to Kenedy.
- **Temperatures are likely to average out normal to warmer than normal** through the period for Deep South Texas and the Rio Grande Valley, with **medium-high** confidence. Heat spikes are still possible through October, but chances will become less and less in time. Climatology, cool fronts, and the weakening of the heat dome are primary reasons.
- **Keep an eye on the tropics for a sneaky system or two through mid October**. Indications suggest the potential for **rains across the coastal counties** and perhaps more impacts (**high tides, dangerous surf**). Amistad/Falcon inflow regions should remain dry.



The “Why” of the Forecast: La Nina on track to emerge this Fall (October-November period); other key climate forcings and teleconnections could play a factor

- The continued and rather **rapid transition from ENSO Neutral towards a La Nina** October through November (at 71% chance) favors mainly near seasonal temperatures (slightly warmer than normal) through December and potentially longer. Additionally, this setup favors a **drier trend in the pattern emerging through the Fall Season.**
- Other important **teleconnections, large-scale mid to upper level pattern, and synoptic trends** including increases in cool frontal boundaries will continue to play a **vital role** in the temperature and precipitation outcome through this Fall. **Keep an eye out on the tropics too for a sneaky system or two in October!**
- Wildfire season** could **emerge** as early as November and could potentially become robust in December through the early parts of 2025.

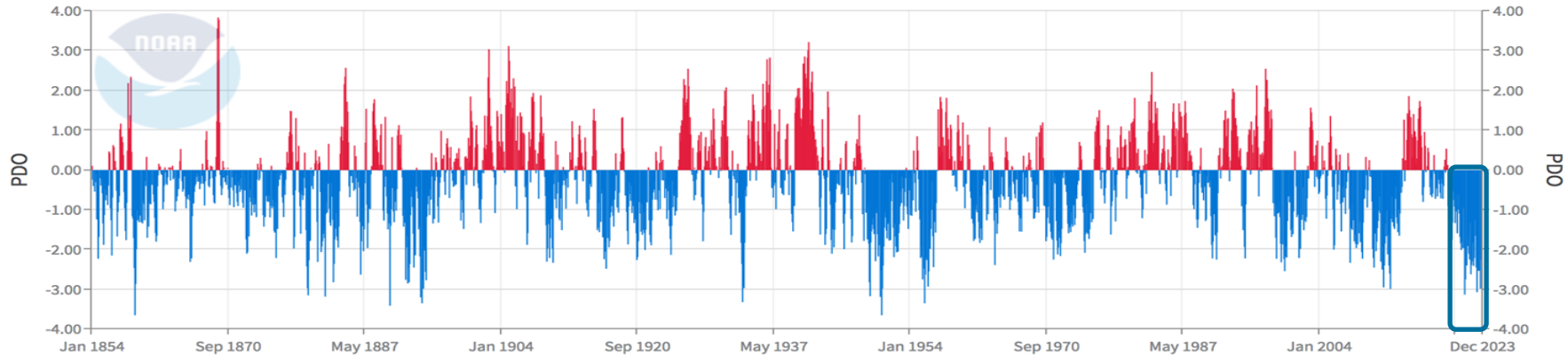
Year	DJF	JFM	FMA	MAM	AMJ	MJJ	JJA	JAS	ASO	SON	OND	NDJ
2021	-1.0	-0.9	-0.8	-0.7	-0.5	-0.4	-0.4	-0.5	-0.7	-0.8	-1.0	-1.0
2022	-1.0	-0.9	-1.0	-1.1	-1.0	-0.9	-0.8	-0.9	-1.0	-1.0	-0.9	-0.8
2023	-0.7	-0.4	-0.1	0.2	0.5	0.8	1.1	1.3	1.6	1.8	1.9	2.0
2024	1.8	1.5	1.1	0.7	0.4	0.2	0.1					



*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)



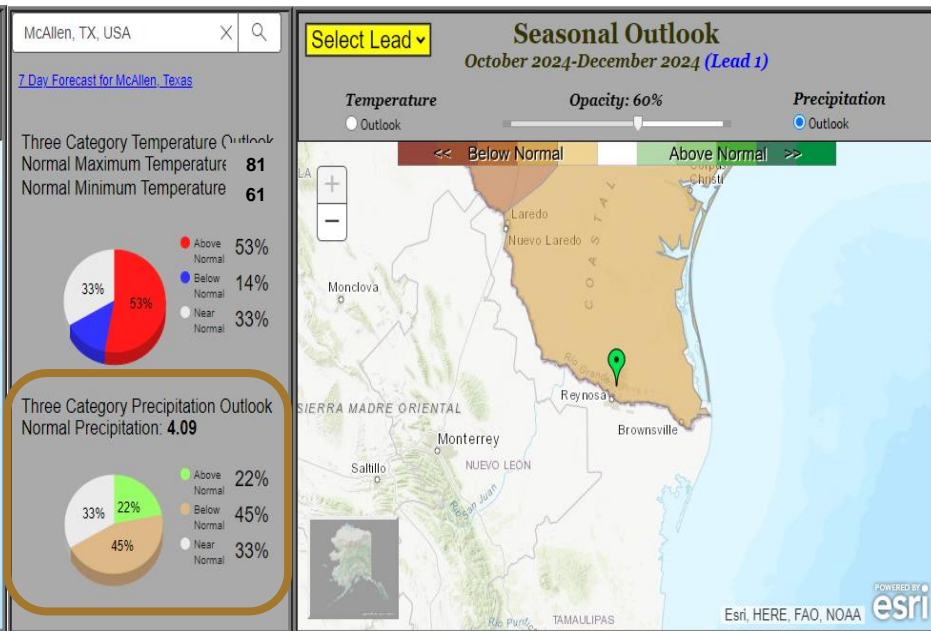
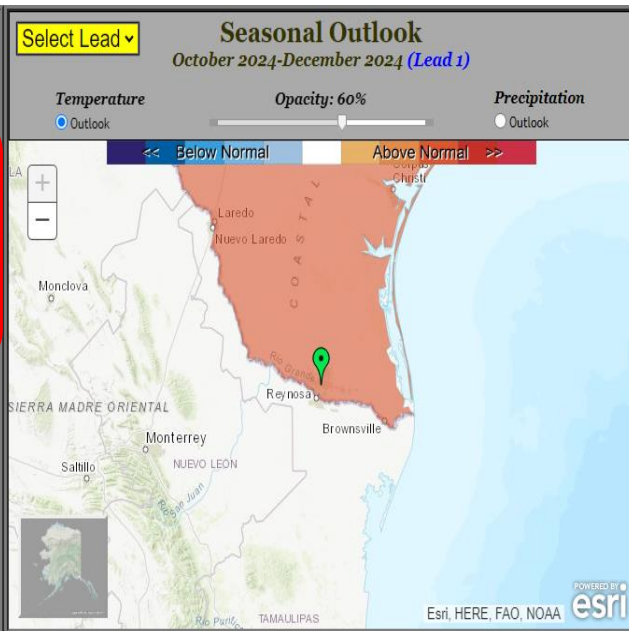
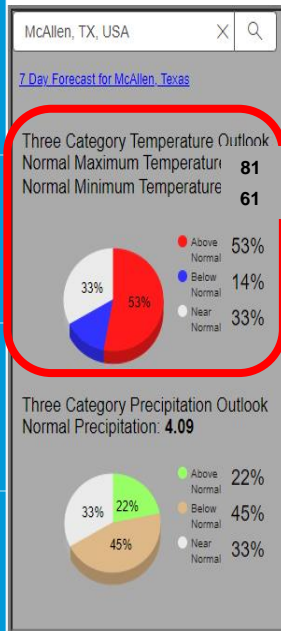
Source: <https://www.ncei.noaa.gov/pub/data/cmb/ersst/v5/index/ersst.v5.pdo.dat>

Powered by ZingChart

- The 2021-2024 **prolonged and strong negative PDO has persisted**, and should remain the case headed into the expected La Niña period. This **increases confidence** for a **developing dry and warmer than normal pattern developing as early as October and persisting through the Fall Season**.
- The sharply negative PDO combined with the developing La Niña adds confidence to an increasingly dry (and still warm) forecast as we approach the end of 2024. **Confidence is high** for sharply negative PDO to maintain through the end of the year.



The October-December 2024 Outlook: Rio Grande Valley (McAllen as Anchor Point)



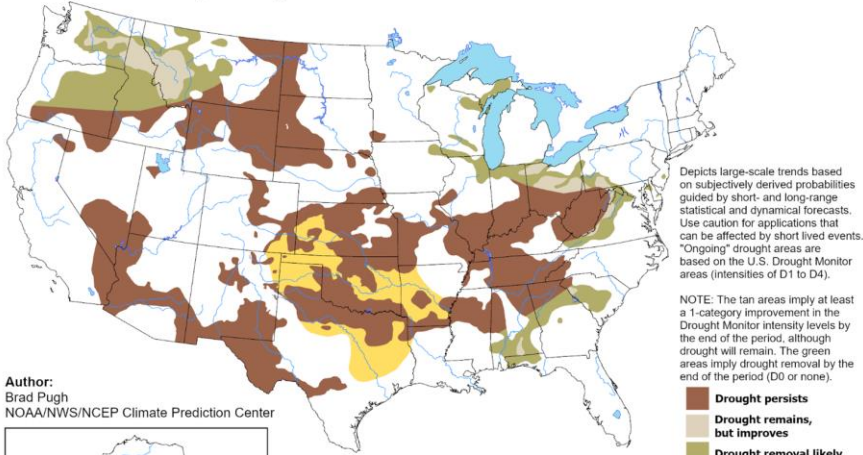
- **Temperature:** **Normal to warmer than normal temperatures** likely to persist October-December (Confidence: **Medium-High**). RGV averages: Afternoon – 90, falling to around 70 by the end of December. Morning: 68 to 73, falling to falling 47 to 52 by the end of December.
- **Precipitation:** **Drier than normal conditions** are expected to develop October-November and potentially persist through the end of the year (Confidence: **Medium**). RGV averages: 4.5 (west) - 7 inches (east); most in October.



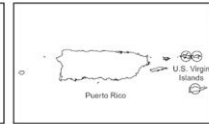
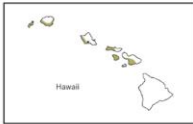
The October-December 2024 “Droughtlook”

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

Valid for September 19 - December 31, 2024
Released September 19, 2024



Author:
Brad Pugh
NOAA/NWS/NCEP Climate Prediction Center



Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Use caution for applications that can be affected by short lived events. “Ongoing” drought areas are based on the U.S. Drought Monitor areas (intensities of D1 to D4).

NOTE: The tan areas imply at least a 1-category improvement in the Drought Monitor intensity levels by the end of the period, although drought will remain. The green areas imply drought removal by the end of the period (D0 or none).

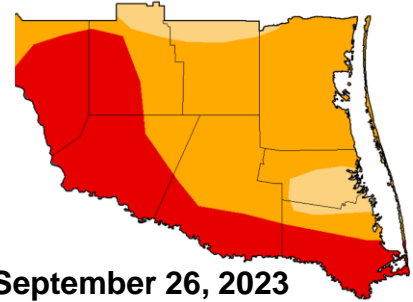
- Drought persists**
- Drought remains, but improves**
- Drought removal likely**
- Drought development likely**
- No drought**



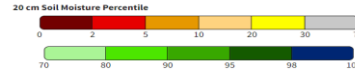
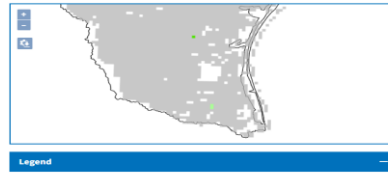
<https://go.usa.gov/3eZ73>



September 24, 2024



September 26, 2023



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 mesonets 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

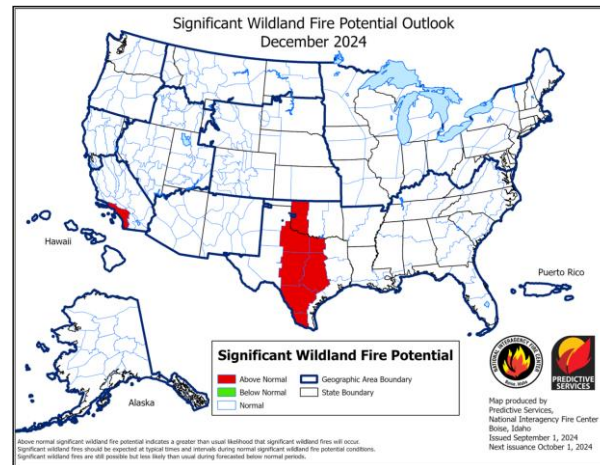
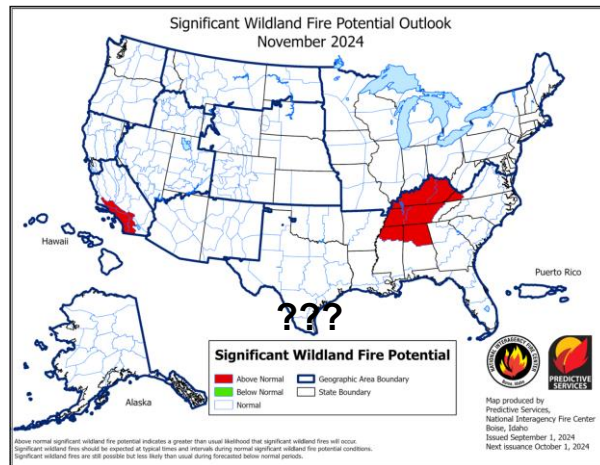
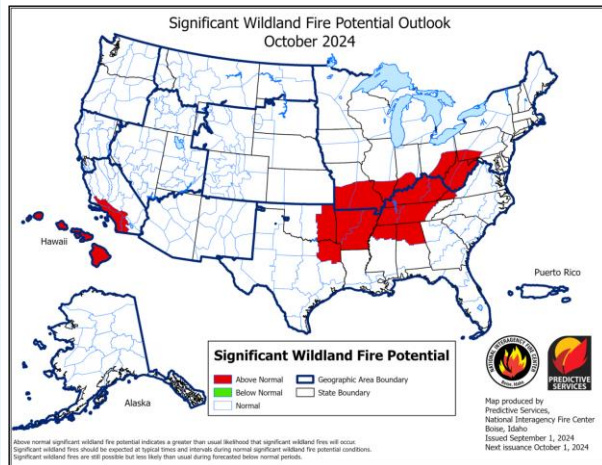
Drought Classification

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

- **What a difference a year makes! Heavy rains from over the Summer has led to adequate to sufficient soil moisture over the area this year compared to last year where the entire area was under a moderate to extreme drought.**
- Latest seasonal outlooks is currently not indicating any drought expansion through the Fall Season. However, that may/will change if dryness develops and persists. Latest forecast is leaning towards **drier than normal conditions October-December**, and abnormal dryness to **moderate (or greater) drought** could develop by **November/December**.



Wildfire Spread Potential in Check; Will Need to Monitor Trends After Mid September



- **Effective Green** was present across all of Deep South Texas and the Rio Grande Valley in late September with **above normal** moisture level present.
- **Effective Green** will likely to continue through mid-October.
- **Conditions Late October-November** will depend on if rain ends, heat remains, and humidity falls. Forecast calls for drier conditions to develop. If dry conditions persist through November, expect for **Effective Green** pastures to transition to **drier pasture** with **normal** to **dry** moisture levels taking over from west to east.
- Lastly, **recent heavy rains** have **primed fuels** for what could become a **busy wildfire season** if dryness develops. **Watch late this year through early 2025!**

Herbaceous
Green/Curing Map
for Texas (June 3rd)



Wildfire Prevention Review

- This may become critical in **November/December**, especially if moderate or worse drought develops over fuel-loaded rangeland north/west of the populated RGV. In early December 2011, a [large wildfire developed over the Burns Ranch](#) in very dry/warm conditions after a record wet water year (Oct-Sept) 2010.
- 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

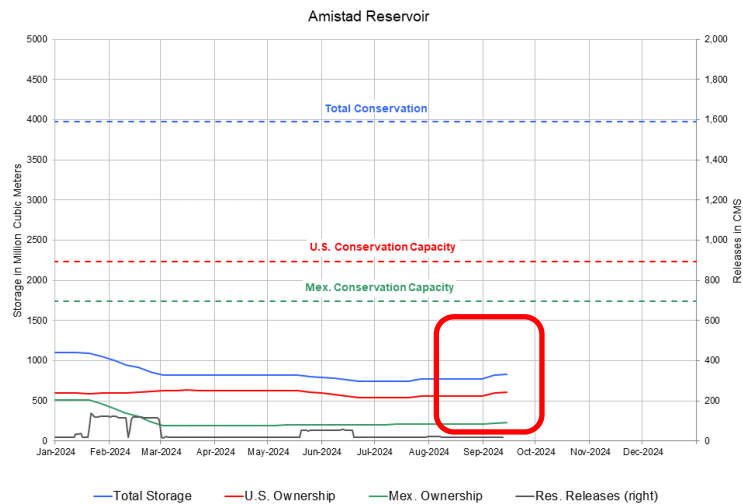
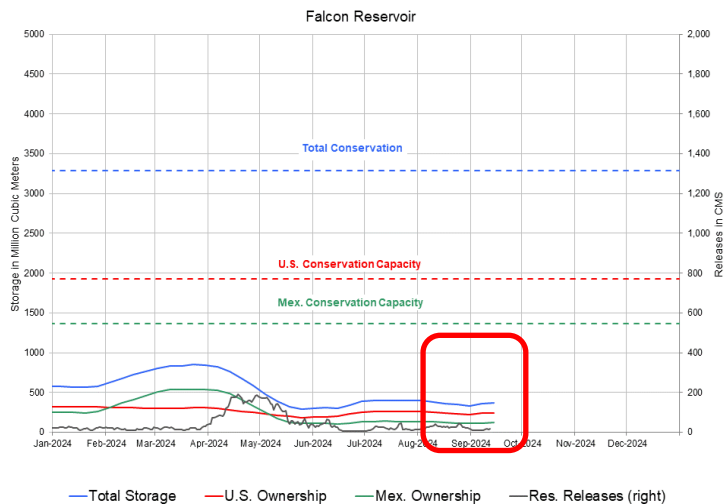
- Tenga cuidado de no arrastrar cadenas de remolque que podrían provocar chispas.
- No se estacione sobre césped seco.
- Evite las quemaduras al aire libre y revise las pilas recientemente quemadas para detectar brotes de fuego.
- Elimine la vegetación muerta alrededor de tu casa.
- Tenga cuidado soldar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



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



Amistad and Falcon remains at/near Record Lows heading into October



- **Falcon nudged higher in September**, ending at around **12.3 percent** (up from **10.5% in late August**). This level is just a few ticks above prior records. Uncertainty in the September-October rainfall forecast across inflow regions means that **levels may not change much through October**– and in fact **may begin to slide again** – without a notable tropical cyclone event.
- **Amistad remained above all-time record lows in late September** but was still near them. Levels were at **21% on September 26th** (up from **19.3% on August 27th**). Amistad’s recovery is **fully dependent on inflow provided by tropical cyclones into the Rio Conchos and other northern Mexican tributaries**, as well as monsoon flow along the Rio Grande in the Permian Basin...aided by remnant tropical cyclone torrential rain. Uncertainty in the September-October rainfall forecast across inflow regions means that **levels may not change much through October**– and in fact **may begin to slide again** – without a notable tropical cyclone event.



Water Conservation is Key Until Further Notice!

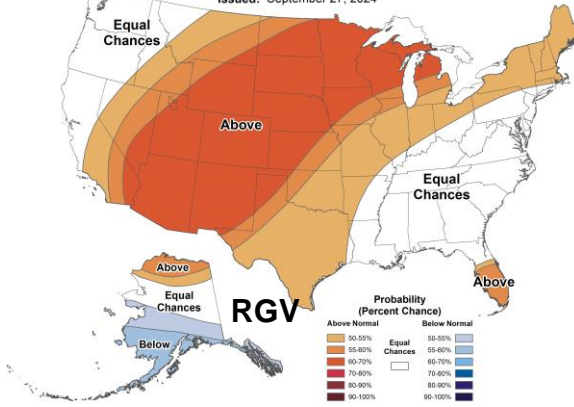
The screenshot shows the Texas Water Development Board website. At the top left is the logo with the text "Texas Water Development Board". To the right is a search bar and social media icons for Facebook, Twitter, LinkedIn, YouTube, Instagram, and Facebook Messenger. Below the logo is a navigation menu with links: Home, Board, Financial Assistance, Water Planning, Groundwater, Surface Water, Flood, Drought, Conservation, Innovative Water, and Data & Apps. The main content area is titled "Water Conservation" and features a carousel of three educational materials: "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". Below the carousel is a paragraph: "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 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." To the right of the main content is a vertical menu with the following items: Best Management Practices, Agriculture, Literature, Resources, Education, Outreach, Municipal, Workshops & Presentations, Conservation Staff, Drought, Rainwater Harvesting, and Water Reuse.

- “Stage 2/3” Restrictions continued through September 2024 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](#)

October 2024: Confidence: Medium-High on Temperature, Low-Medium on Precipitation Trends

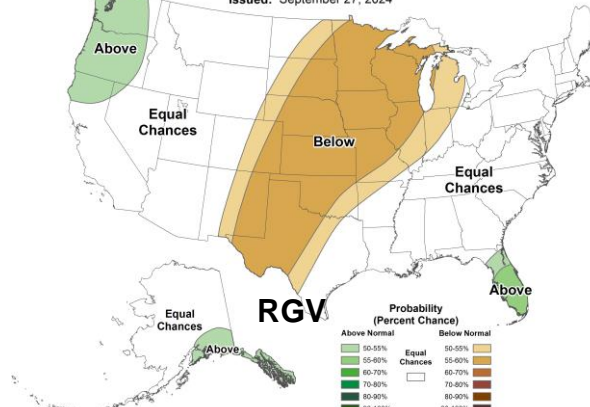
Weeks 3-4 Temperature Outlook

Valid: October 12 - 25, 2024
Issued: September 27, 2024



Weeks 3-4 Precipitation Outlook

Valid: October 12 - 25, 2024
Issued: September 27, 2024



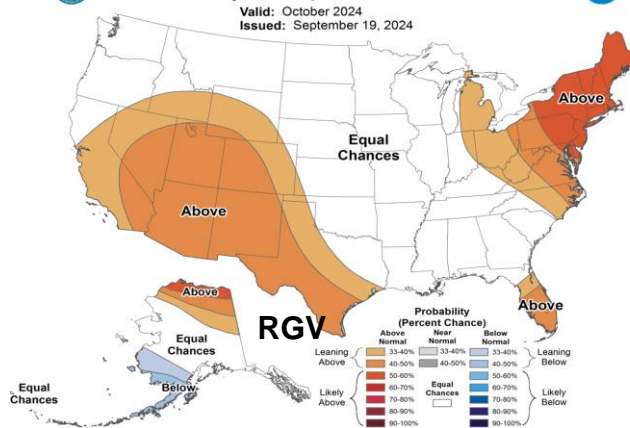
- Medium to long-range forecast models are suggesting the mid-upper level steering pattern to flatten out and shift to a southwest U.S./north Mexico ridge (heat dome).

- While heat spikes are still on the table, the pattern is suggesting for temperatures to run **slightly warmer than normal levels** through October. Rainfall/cloud cover will be key to the level of warmth.

- Equal chances** for drier, normal, or wetter than normal for October, but leaning dry across the Rio Grande Plains. **Tropics could be a key factor/wildcard!**

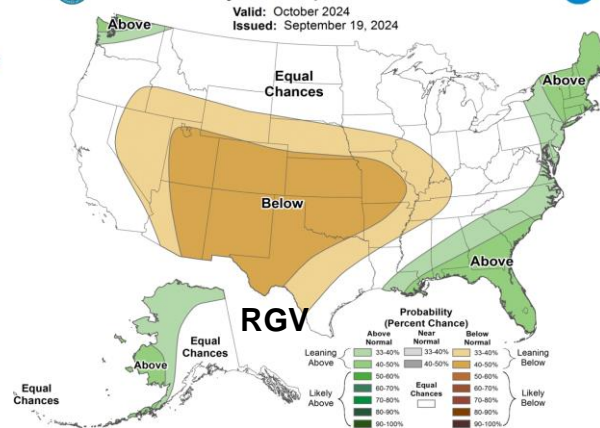
Monthly Temperature Outlook

Valid: October 2024
Issued: September 19, 2024



Monthly Precipitation Outlook

Valid: October 2024
Issued: September 19, 2024

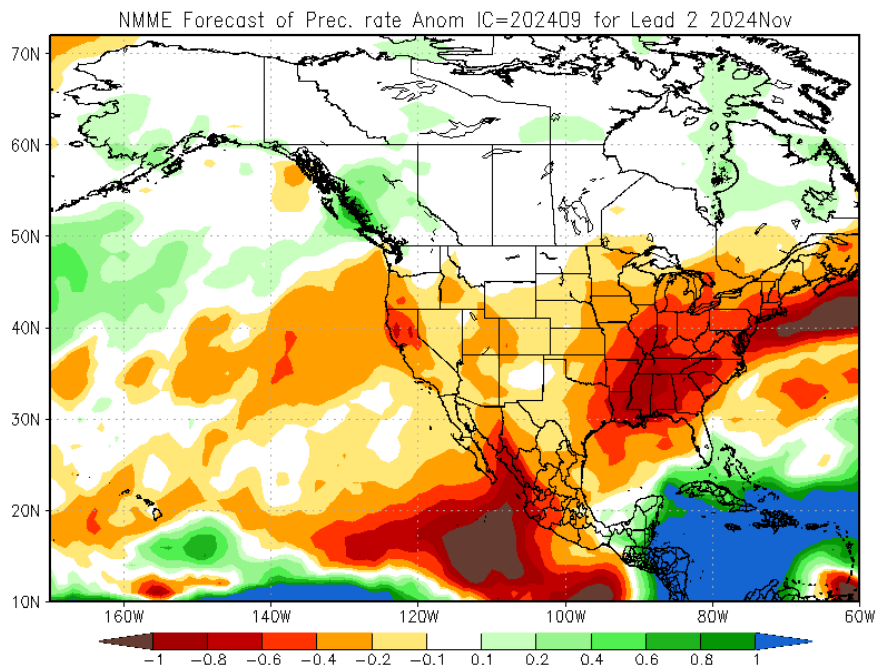


- Equal chances** for drier, normal, or wetter than normal for October, but leaning dry across the Rio Grande Plains. **Tropics could be a key factor/wildcard!**



Early Look: November 2024

Potential rainfall rate anomaly, November 2024

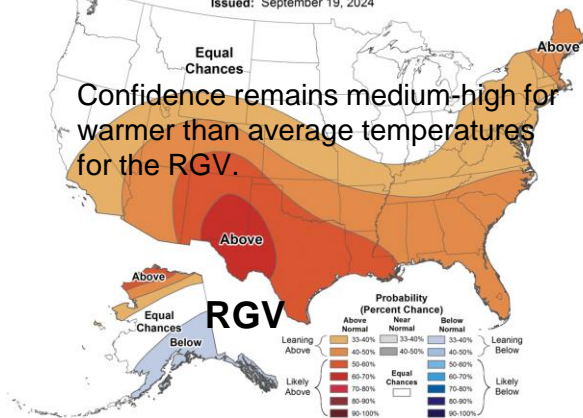


- This model's forecast for November is suggesting a **dry pattern** (note the brown colors over the area and nearby red color) to take shape. It's worth noting that this time of the year is around the start of our dry season.
- **Cooling fronts** moving into Texas will increase. Most will likely be dry, but there could be one or two that could reach the Valley/Deep South Texas ranchlands and could set off **showers and thunderstorms**. **Stronger cold fronts** could reach the Valley toward Thanksgiving.

Mid-Autumn – Winter 2024/2025: Warmer than Normal Trends to Continue; Drier Trends Return

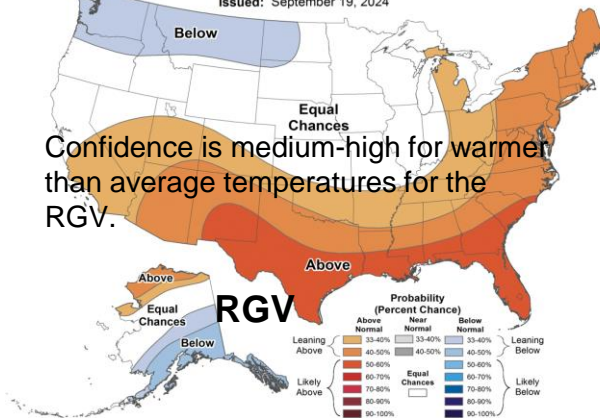
Seasonal Temperature Outlook

Valid: Nov-Dec-Jan 2024-25
Issued: September 19, 2024



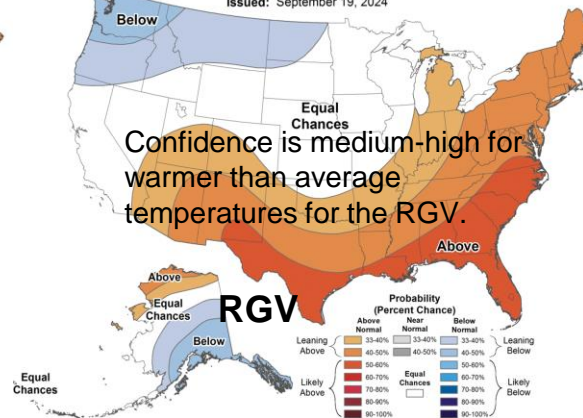
Seasonal Temperature Outlook

Valid: Dec-Jan-Feb 2024-25
Issued: September 19, 2024



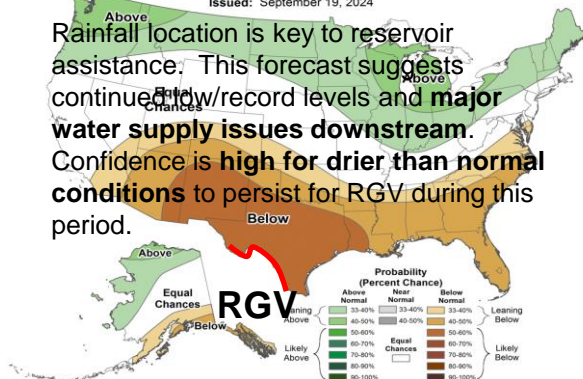
Seasonal Temperature Outlook

Valid: Jan-Feb-Mar 2025
Issued: September 19, 2024



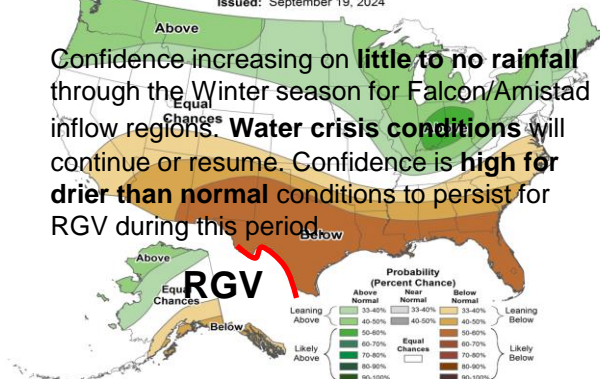
Seasonal Precipitation Outlook

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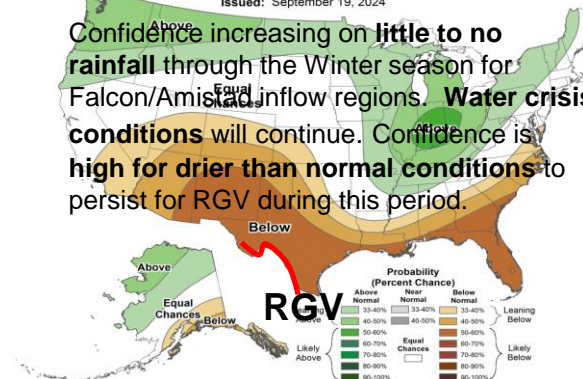
Seasonal Precipitation Outlook

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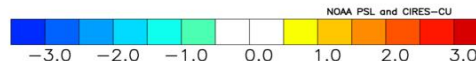
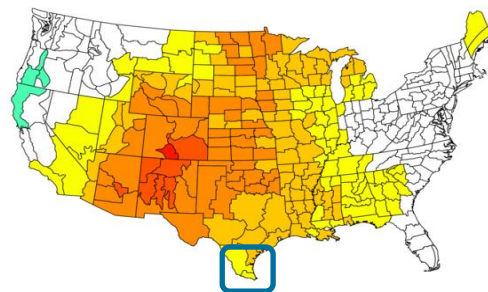
Seasonal Precipitation Outlook

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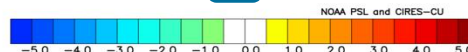
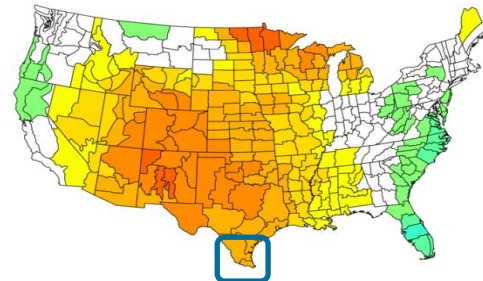


Comparing Similar El Niño to La Niña Episodes within the last 30 years; Oct-Dec Periods

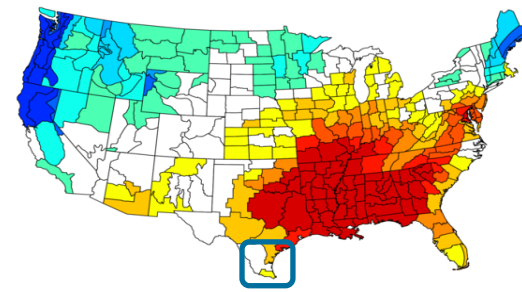
NOAA/NCEI Climate Division Composite Temperature Anomalies (F)
Oct to Dec 1998,2005,2016,2017,2010
Versus 1991-2020 Longterm Average



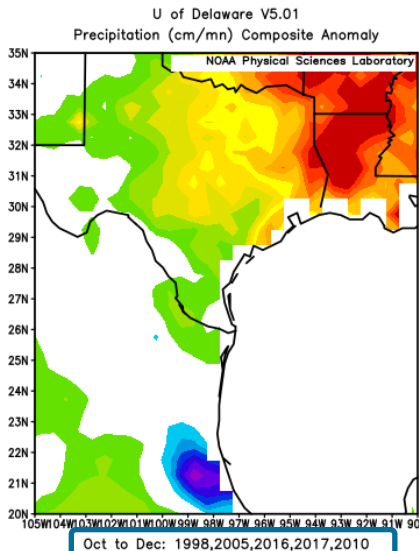
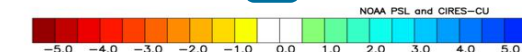
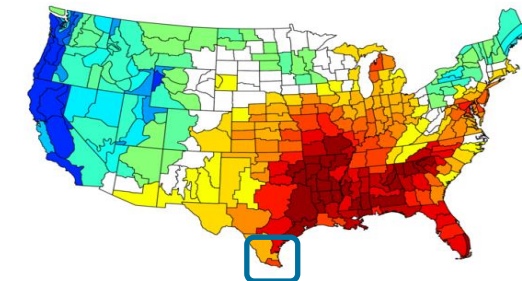
NOAA/NCEI Climate Division Composite Temperature Anomalies (F)
Oct to Dec 2016,2010
Versus 1991-2020 Longterm Average



NOAA/NCEI Climate Division Composite Precipitation Anomalies (in)
Oct to Dec 1998,2005,2016,2017,2010
Versus 1991-2020 Longterm Average



NOAA/NCEI Climate Division Composite Precipitation Anomalies (in)
Oct to Dec 2016,2010
Versus 1991-2020 Longterm Average



Composite departure from average rainfall for years of similar El Niño to La Niña transition episodes in the October-December window.

- **Top:** Composite temperature (left) and precipitation (right) anomalies for similar El Niño to La Niña transition episodes leading into October-December, since 1950.
- **Bottom:** Same, except for most recent cases (2009/10 and 2015/16).



Bottom Lines

Normal to **slightly warmer than normal conditions** are expected to persist through Fall 2024. Unlike 2023, dangerous heat has proven to be limited. However, heat spikes are still possible and residents should remain prepared for heat safety measures at times through mid-October.

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 dry season.**

The Atlantic tropics became very active in late September. **We'll continue to keep any eye out for any Gulf of Mexico development through mid-October.** That said, **dry trends** look to emerge especially as we move into mid-late autumn.

Fuel, in the form of grasses and brush, have **“loaded up” based on the recent heavy rainfall through mid-September.** A period of “flash dry” in October, if combined with heat, **could quickly turn that fuel into “tinder” for rapid wildfire growth** as early as late October over the Brush Country/Rio Grande Plains/upper Valley, but **more likely in November and December.** Farmers/ranchers should be ready to **implement fire safety rules.**

Stronger cold fronts may arrive by late November, with the potential for **day-to-day feels like temperatures dropping more than 40 degrees.** Residents should be prepared to bundle up if and when this occurs.

