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# April to June 2024 Outlook: Perspective for the Lower Rio Grande Valley/Deep S. Texas Region

March 25, 2024

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Expectations of Warmer and Drier Trends Continue as El Nino Likely to “Flip”

Will We  
Go From  
This on  
April 1...



...To This  
on June  
1?

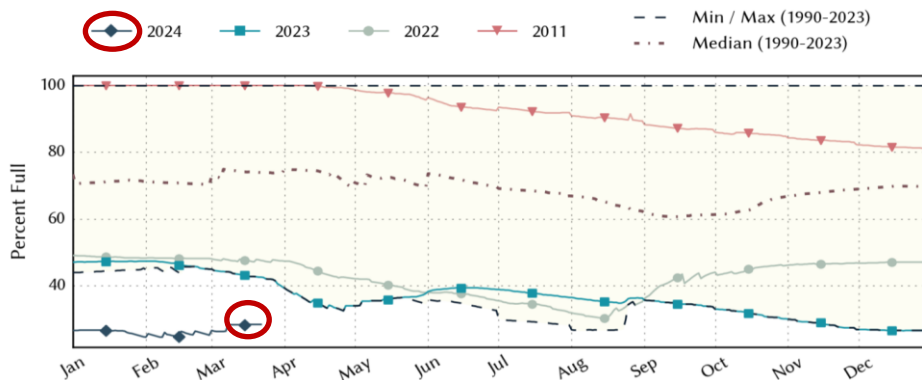


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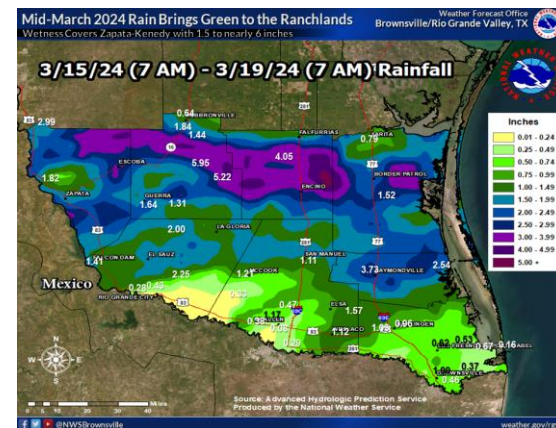
Building a Weather-Ready Nation // 1

# March 2024: Second Consecutive Month of Beneficial Rain for Some; Warmer than Average Conditions for All

- **El Nino's rainy pattern once again arrived mid-month with most falling over the northern Ranchlands.** Multiple rounds of showers and thunderstorms March 15<sup>th</sup>-17<sup>th</sup> yielded beneficial rains area-wide for a second consecutive month.
- The mid-month rains **kept the region out of any drought designations.** However, the monthly rainfall average for the populated RGV is on track to remain **below normal levels.**
- Despite the mid-month ranchland rainfall, the overall **rainfall has been limited across inflow regions of Falcon and Amistad Reservoirs**, keeping them at record low levels (combined) for March.



Texas share of Amistad, Falcon, Red Bluff Reservoirs.  
Credit: Texas Water Development Board



March 15-19, 2024 rainfall recap. The Northern Ranchlands received the heaviest amounts of rain where anywhere from 1.5 to 4 inches with local amounts up to 6 inches fell from Zapata to Kenedy Counties.



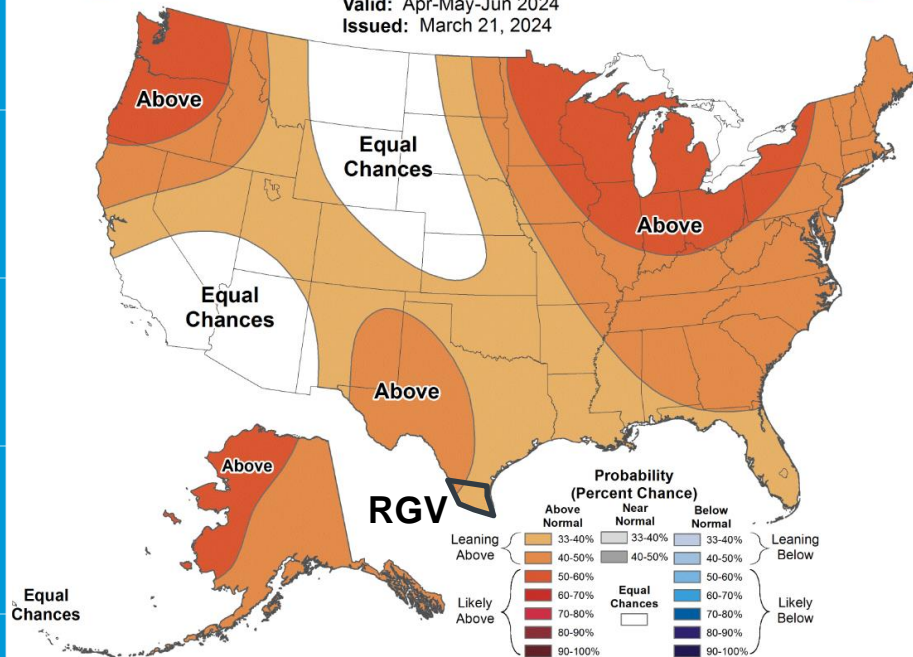


# Seasonal Forecast, April – June 2024 USA



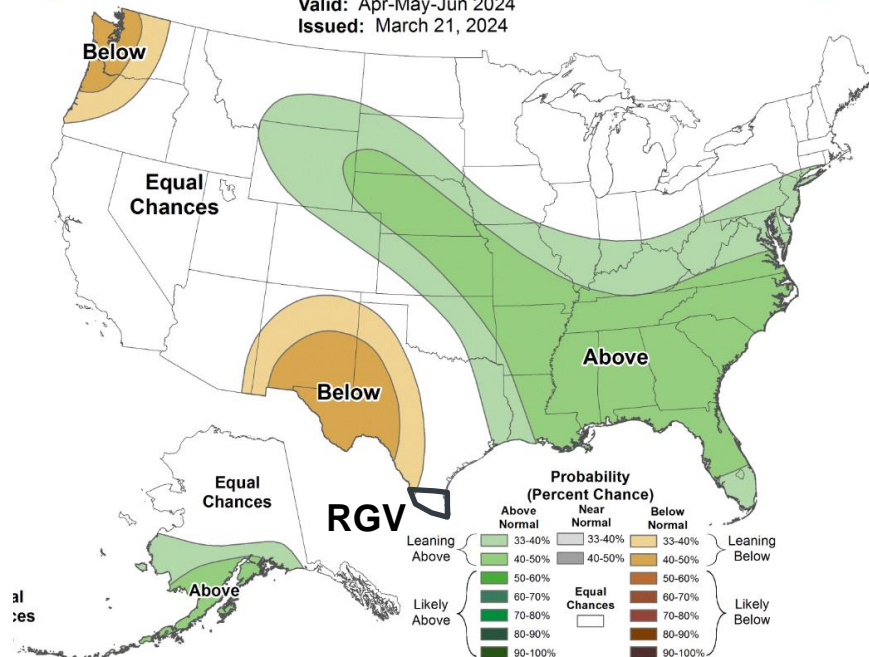
## Seasonal Temperature Outlook

Valid: Apr-May-Jun 2024  
Issued: March 21, 2024



## Seasonal Precipitation Outlook

Valid: Apr-May-Jun 2024  
Issued: March 21, 2024



# Key Takeaways: April – June 2024 Outlook

Confidence is **medium** on rainfall outcomes, and **medium** on temperature outcomes. As we transition from an El Niño to a La Niña, there remains a quite deal of uncertainty on the prevailing (average) signal that could enhance rainfall, or hold it back. Confidence is also **medium** on **dryness expansion or possible moderate to severe drought** redevelopment. Uncertainty remains **high** on a stormy period between April and June, but the **lean is for less active than in 2023**.

- Reservoir levels at Falcon continued to rise through early March due to sizable releases from Amistad, targeted for downstream use in Mexico, but leveled off thereafter. Amistad total water levels at the end of March remained **at/near all-time record lows**. Confidence is increasing on warm and dry conditions across the reservoir inflow regions through spring, with accelerating evaporation rates in April and May. **Confidence is near-certain on total storage remaining at or near record lows through spring** based on the temperature/rain forecast.
- Remaining El Niño influences combined with other “teleconnections” between oceans and atmosphere will **determine the eventual “sense” of weather through spring**.
- Severe Weather (**hail**, **wind**, **flooding**) arrived in mid March and could peak in April and May. However, the **number of events are expected to be fewer than in 2023**, when there were six between late April and early June.
- **Stage 2 and 3 water conservation continued in several RGV municipalities in March. Status quo is likely through spring**, worsening in April and May if storms are infrequent.
- **100° days are likely to increase in April and May**, especially from Brooks/Hidalgo west to Zapata – then **increase in number and location to include Cameron-Kenedy County, in June. Dangerous “feels like” temperatures – 111° or higher** – are likely, on occasion, in June, **for a third year in a row**.



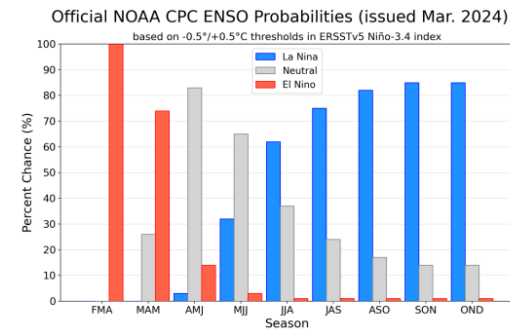
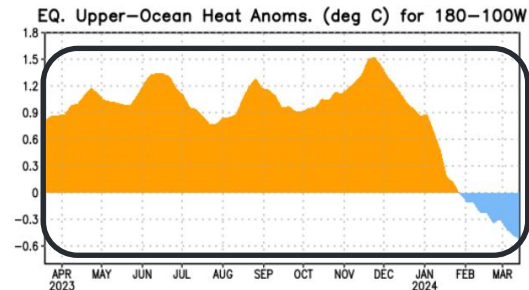
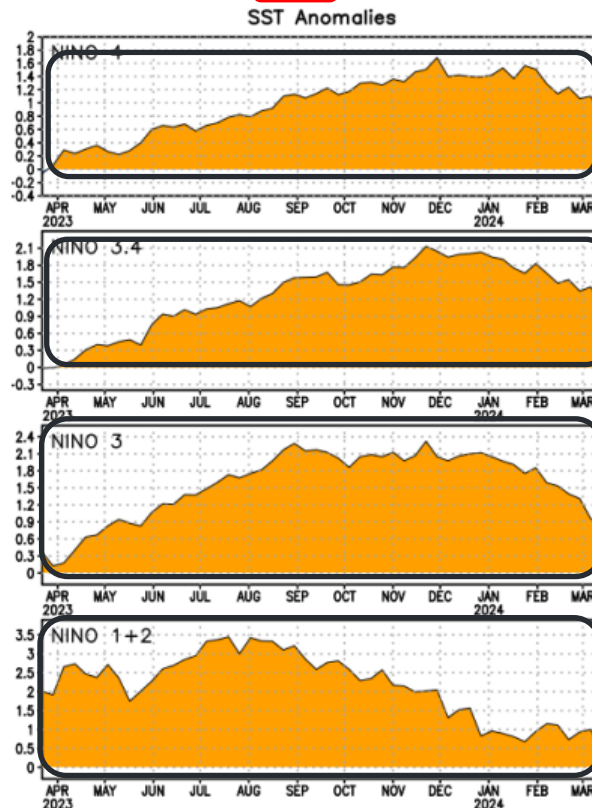
# The “Why” of the Forecast:

## ENSO Neutral on track to develop this Spring with La Nina on track to develop this Summer

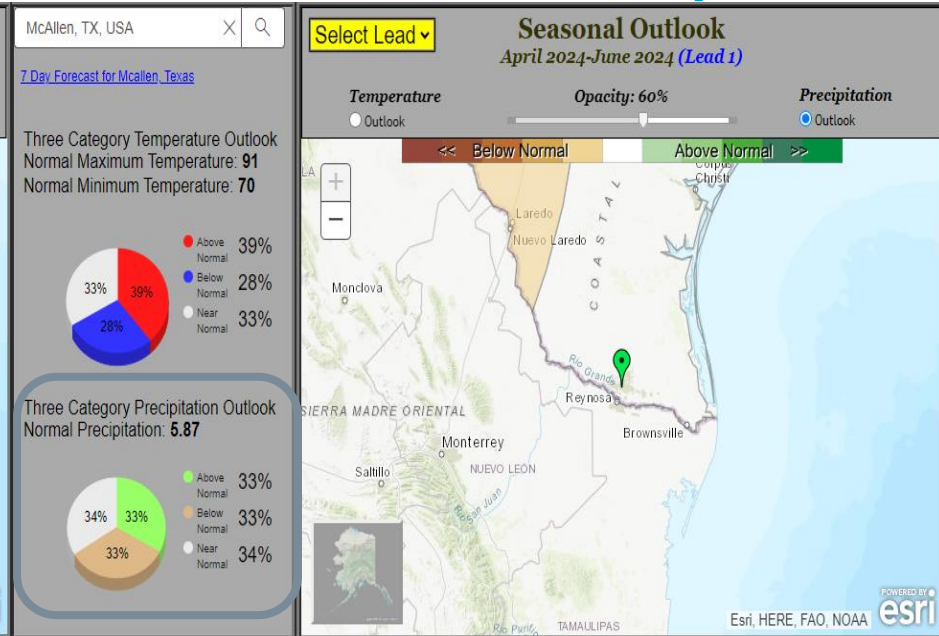
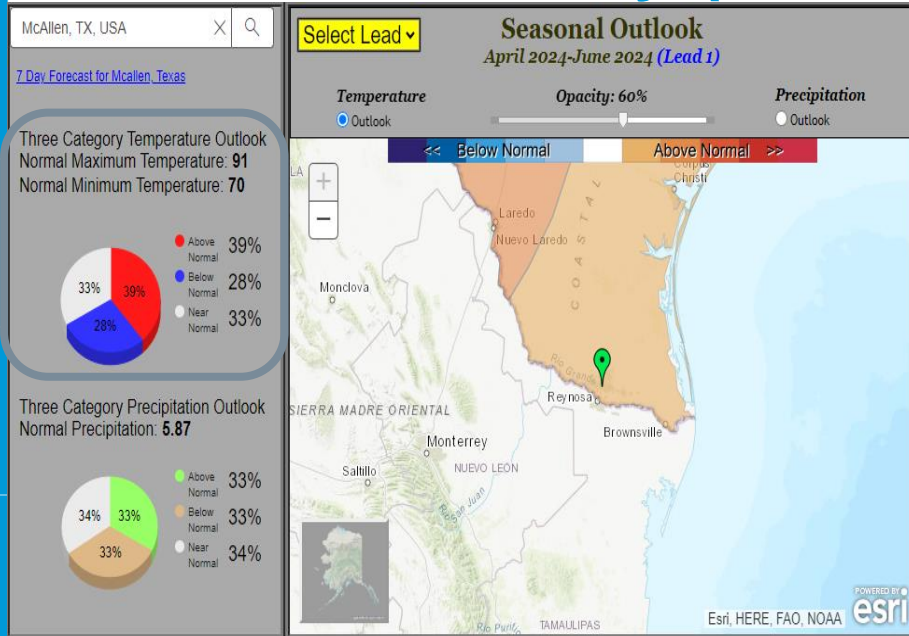
- Moderate to Strong El Niño maintained an active subtropical jet in March, aiding in the heavy rainfall/strong to severe weather events between March 15-19 that dropped anywhere from 1.5 to 4 inches of rainfall with locally higher amounts to 6 inches across parts of the northern Ranchlands.
- The rapid transition to into ENSO Neutral favors hotter and drier conditions through early summer, but uncertainty remains on whether several thunderstorm “cluster” events can occur and produce localized average to above average rainfall through May. A tropical wave cannot be ruled out in June, though “La Canícula” (dry upper level pattern in mid summer) may develop early.

\*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 2023, weakened slightly December-February.

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											



# The April-June 2024 Outlook: Rio Grande Valley (McAllen as Anchor Point)

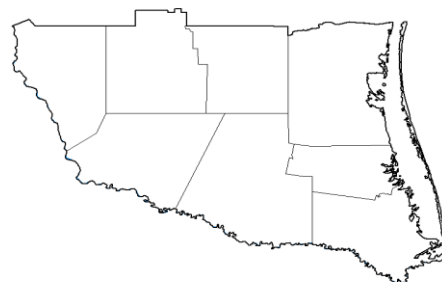
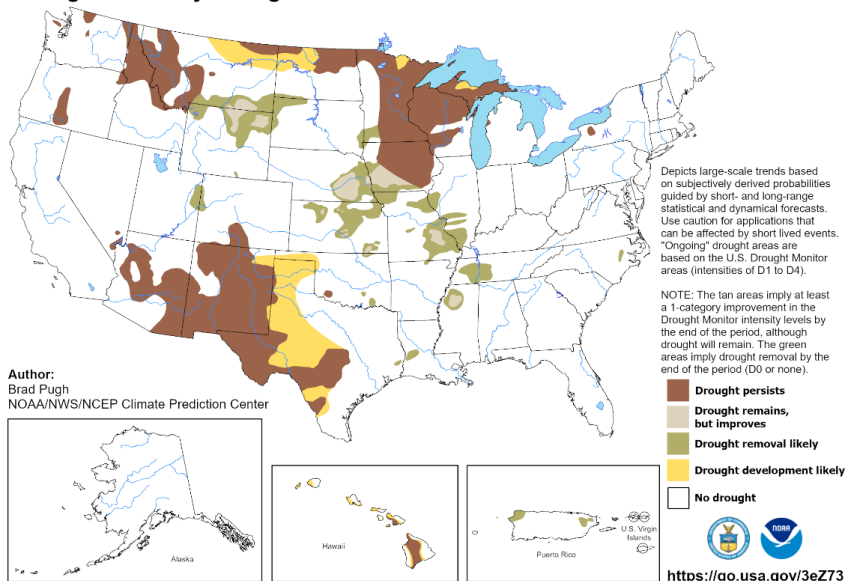


- **Temperature:** Slight lean towards warmer than normal temperatures April-June. RGV averages: Afternoon – Mid to Upper 80s at start of April, rising to the mid to upper 90s by the end of May. Wake-up: Around 65 in early April, rising to the upper 70s at the end of June
- **Precipitation:** Equal chances for above, below, and average. RGV averages: 4 (west) to 7 (east) inches.

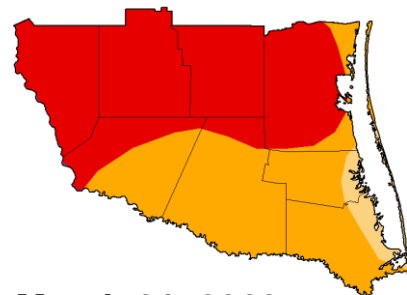
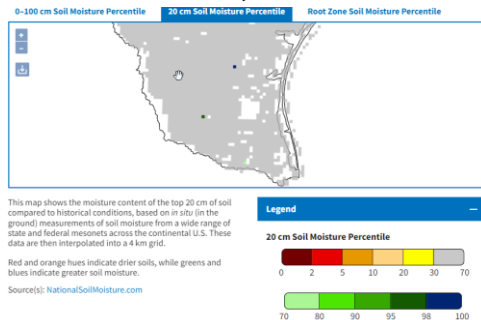
# The March-May 2024 “Droughtlook”

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

Valid for March 21 - June 30, 2024  
Released March 21, 2024



March 19, 2024



March 21, 2023

Drought Classification



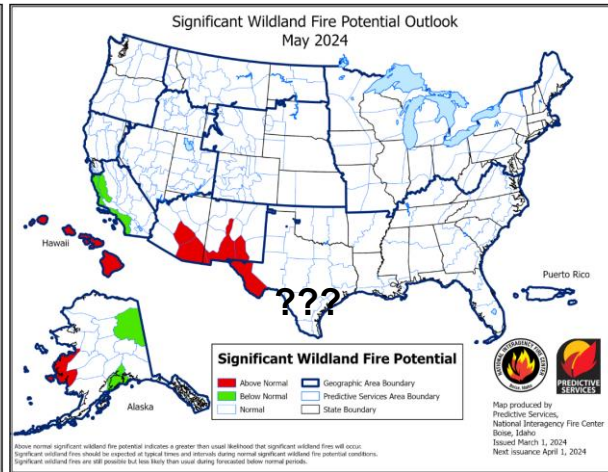
- **Dryness was removed – again – in mid March.** 4” (depth) soil moisture was neutral in late March (30-70 percent).
- Though the drought forecast (above, left) through June 30 indicates “no drought” for the Valley, the **“lean” toward a hot and dry late spring/early summer** suggests **moderate, to potentially severe**, drought may develop across parts of the region, especially from Hidalgo/Brooks out to Zapata.
- **The forecast remains uncertain** as upper level disturbances may bring occasional “coverage” rain events with fronts and/or tropical moisture feeds. **If persistent rain falls**, dryness/drought will not return. **If rains are fleeting or nonexistent, drought will return.**







# Wildfire Spread Potential Could Increase Through Early Summer



**Green-up** was completed from Hidalgo/Brooks County east by late March, and transitioning to green across the Brush Country/Rio Grande Plains. **Grass loads are moderate to high** and fuel moistures were around average in late March – but subject fluctuate (grasses).

**April** will be determined by fuel dryness trends.

**May and June** will continue to be highly dependent on “just in time” rainfall. Any rain would come in the form of thunderstorm systems. If such systems are seldom or not at all, wildfire growth potential will shift to **above average**. The most likely locations would be west of IH-69C/US 281. May and June typically are our most active period when it comes down to spring (non-tropical) thunderstorms.



Dewy, green morning in east Brownsville, Dec. 16, 2023







# Wildfire Prevention Review



- This **remains critical** through autumn, especially if severe to extreme drought continues over fuel-loaded rangeland north of the populated Valley. The 300+ acre fire at Santa Ana NWR happened in September, as did a similarly large fire in Starr County.
- 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.

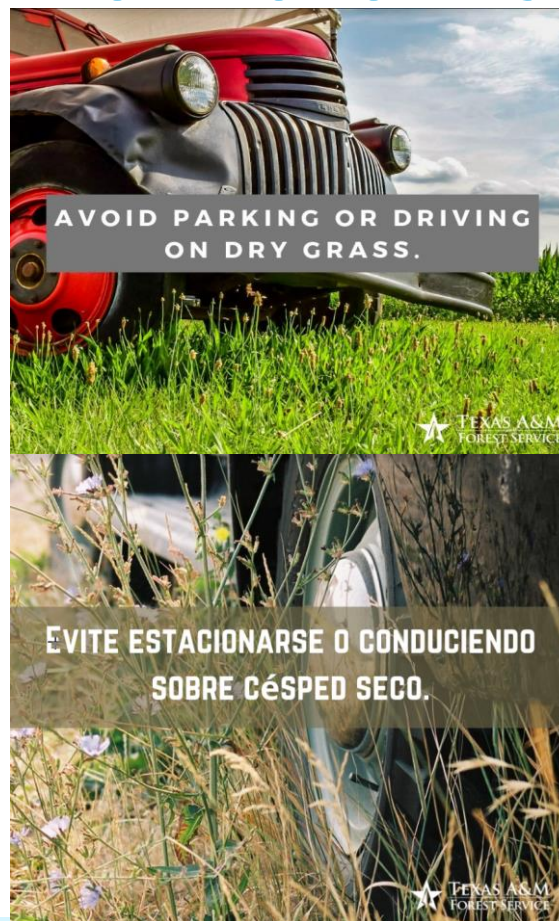


## Consejos de Seguridad Contra Incendios

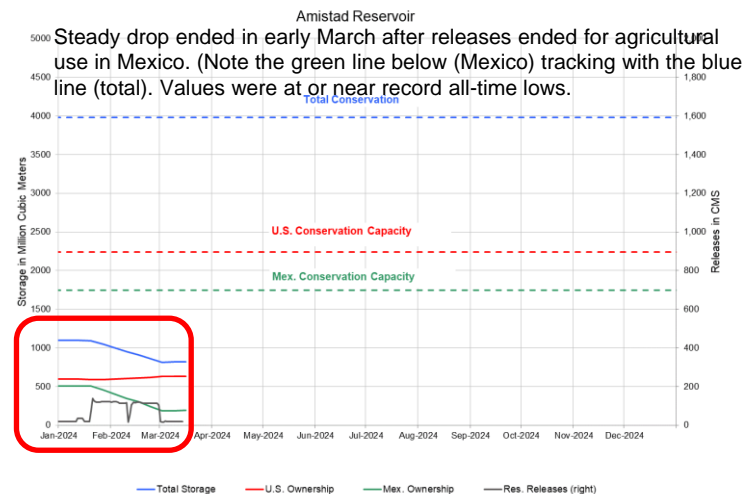
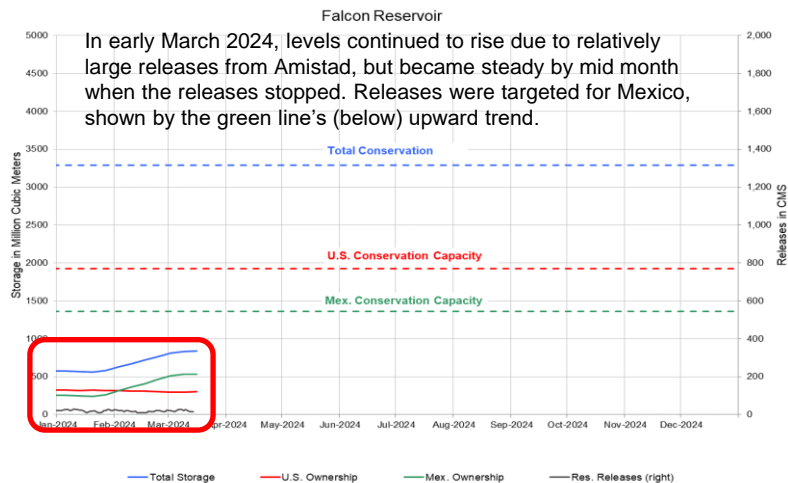
- Tenga cuidado de no arrastrar cadenas de remolque que podrían provocar chispas.
- No se estacione sobre césped seco.
- Evite las quemaduras al aire libre y revise las pilas recientemente quemadas para detectar brotes de fuego.
- Elimine la vegetación muerta alrededor de tu casa.
- Tenga cuidado soldar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



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

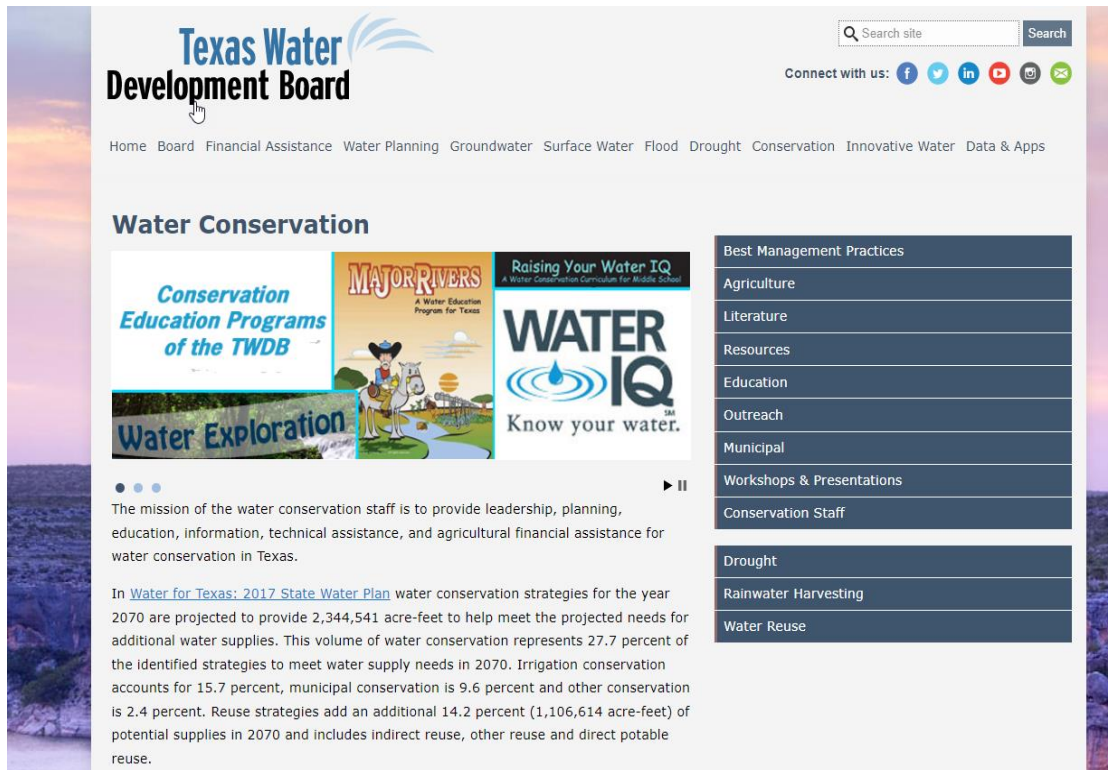


# Amistad remained at Record Seasonal Lows; Falcon Nudged Up



- Inflows leveled off in March, as releases from Amistad ended, and allowed Falcon to level out at **25.9%, up slightly from 23.9%** on February 27<sup>th</sup>. This level was above record lows for this date, but not too far above 30-year lows. The forecast that favors below average rainfall in the watershed suggests **values may remain steady or perhaps drop through spring and early summer**, barring additional releases from Amistad or organized thunderstorm systems that develop in the watershed, east of the Sierra Madre.
- Amistad remained at/near all-time record lows in late March.** Levels were at **20.7% on March 25<sup>th</sup>** – about steady from **late February (20.9%)**. The late spring/early summer forecast strongly suggests **minimal inflows into Amistad while temperature and evaporation rates rise.** Without assistance, **levels are likely to fall into the upper teens by April and remain through May and/or June.**

# Water Conservation is Key Until Further Notice!



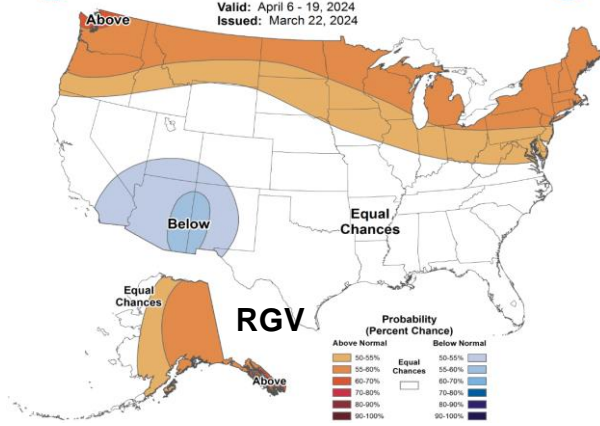
The screenshot shows the Texas Water Development Board (TWDB) website. The header includes the TWDB logo, a search bar, and social media links. The main navigation bar lists: Home, Board, Financial Assistance, Water Planning, Groundwater, Surface Water, Flood, Drought, Conservation, Innovative Water, and Data & Apps. The 'Water Conservation' section is highlighted, featuring three educational programs: '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 these, there's a 'Water Exploration' video player. A paragraph states: '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.' Another paragraph mentions: '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.' On the right, there's a sidebar with a list of resources: Best Management Practices, Agriculture, Literature, Resources, Education, Outreach, Municipal, Workshops & Presentations, Conservation Staff, Drought, Rainwater Harvesting, and Water Reuse.

- [“Stage 2” Restrictions](#) continued through early winter and are likely to continue through at least March, based on inflows from Amistad and Falcon.
- Learn more at the [Texas Water Development Board’s Conservation Page](#)

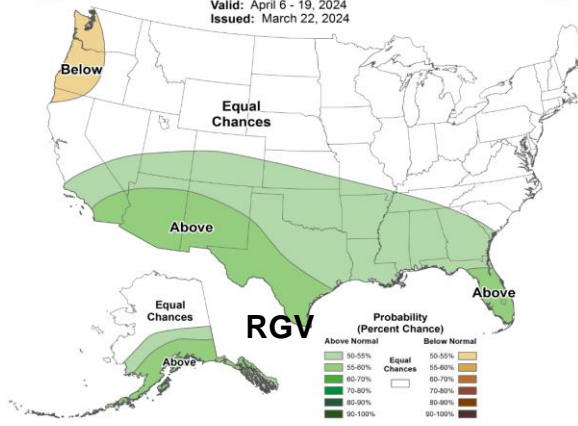


# April 2024: Confidence: Medium on Rainfall; Medium on Temperature

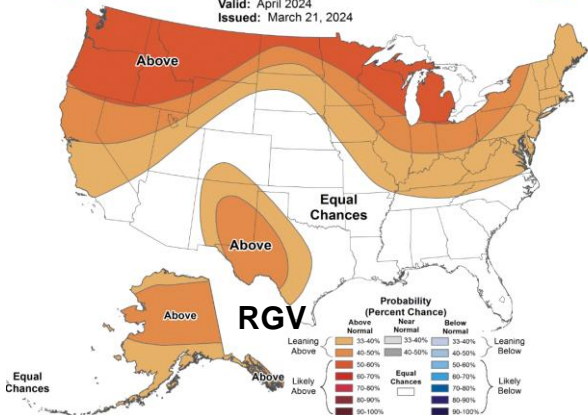
Weeks 3-4 Temperature Outlook  
Valid: April 6 - 19, 2024  
Issued: March 22, 2024



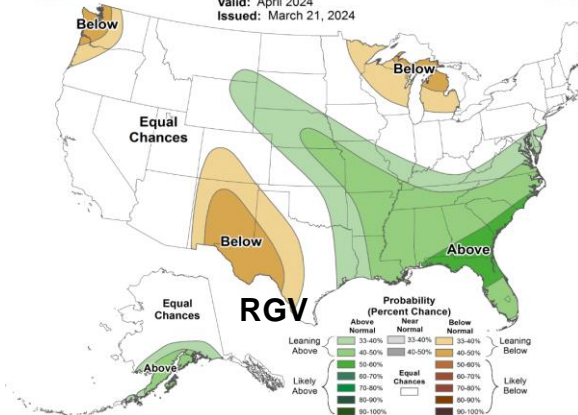
Weeks 3-4 Precipitation Outlook  
Valid: April 6 - 19, 2024  
Issued: March 22, 2024



Monthly Temperature Outlook  
Valid: April 2024  
Issued: March 21, 2024

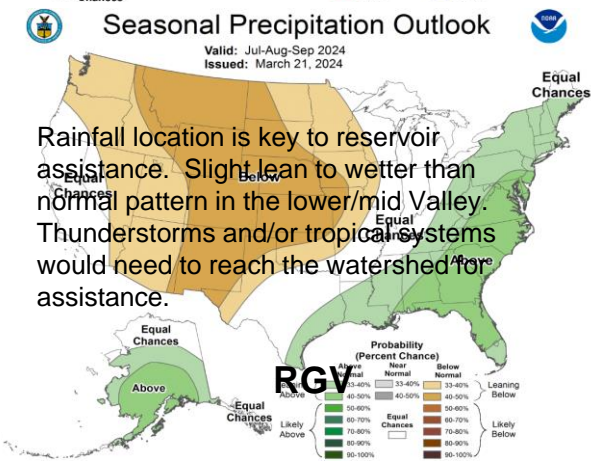
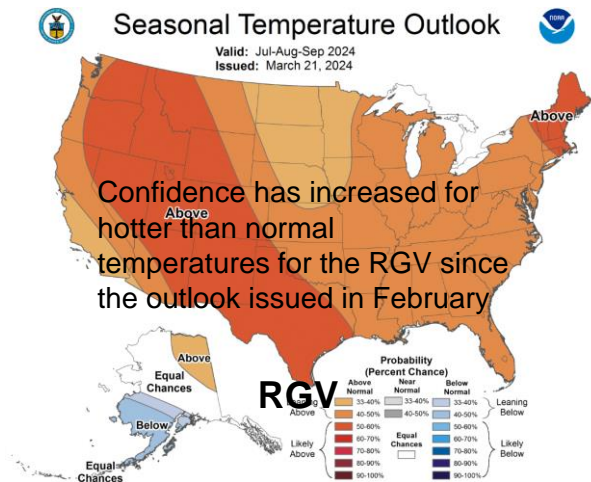
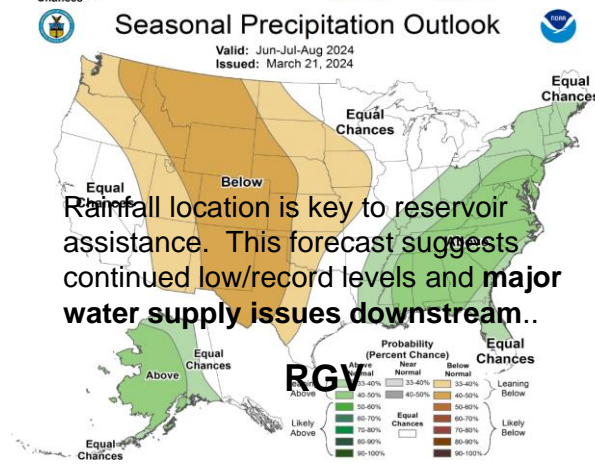
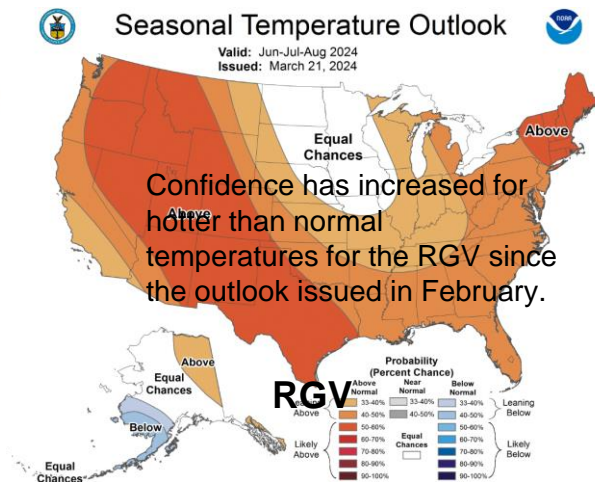
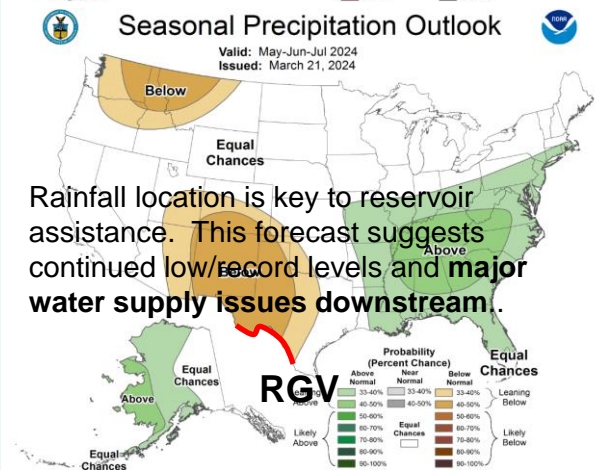
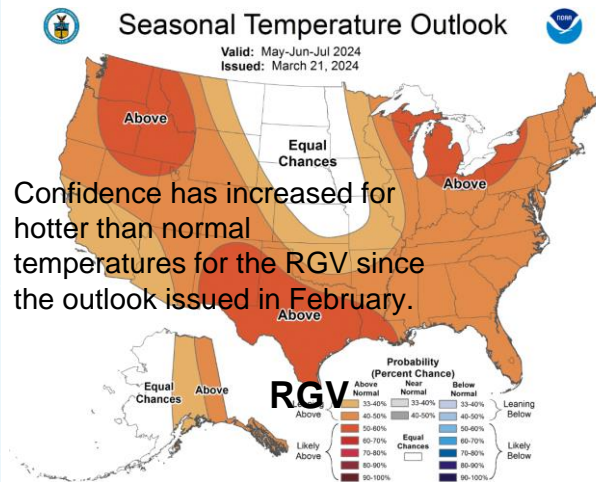


Monthly Precipitation Outlook  
Valid: April 2024  
Issued: March 21, 2024



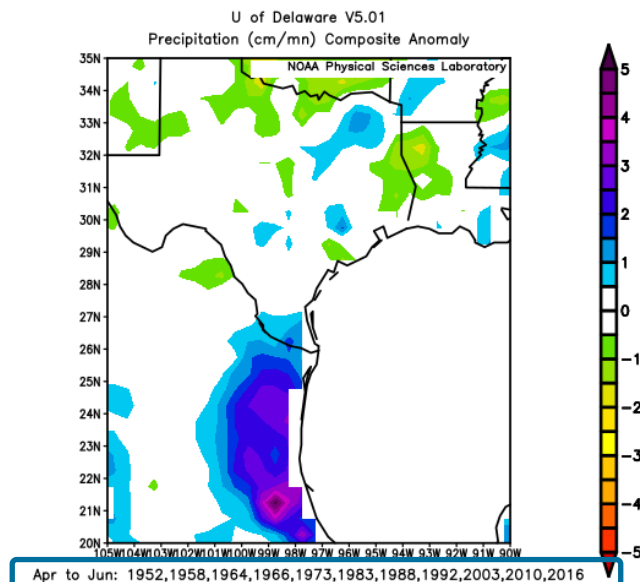
- **Bottom Line:** The pattern continues to lean warmer and drier, with continued weak frontal systems yielding to a mainly dry start to the month.
- Confidence in the rainfall forecast for the RGV is **medium for April**.
- Though April may get off to a slow start with little to no rain and may be leaning dry overall, the opportunity for showers and thunderstorms associated with upper level disturbances in the (southern) jet stream.
- This pattern could tap into the rich tropical moisture of the eastern tropical Pacific, southwest Gulf, and western Caribbean **could quickly push values above monthly averages** (Around 1 inch), while drier fronts could push moisture away and be **followed by up to ten days of dry air, reducing monthly rain to below average**.

# Late Spring through Summer 2024: Dryness and Heat Becoming More Likely; Tropical Season Dependency Increasing



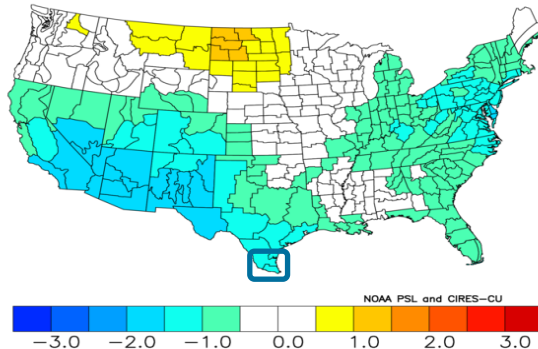


# Comparing Similar El Niño to La Niña Episodes; April-June Periods

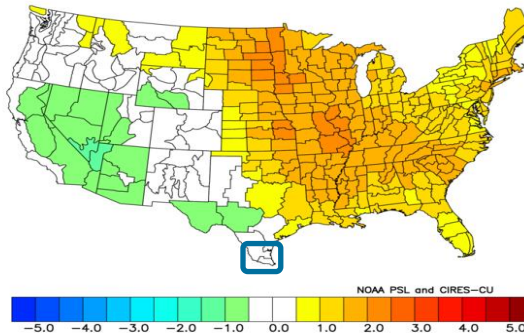


Composite departure from average rainfall for years where the Oceanic Niño Index (ONI) increased to moderate (1 to 1.4), strong (1.5 to 1.9), or “super” ( $\geq 2.0$ ) levels prior to the April-June window. Cutoff of rainfall on the coast is a map (mask) issue; the anomaly extends to the coast.

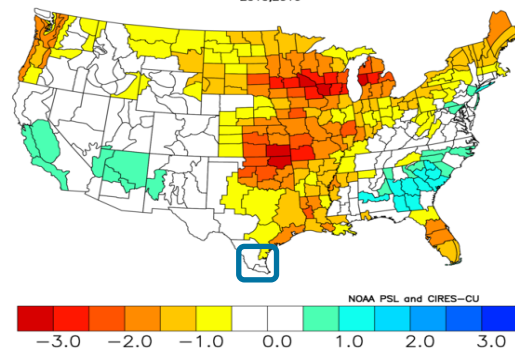
NOAA/NCEI Climate Division Composite Temperature Anomalies (F)  
Versus 1991–2020 Longterm Average  
Apr to Jun 1952,1958,1964,1966,1973,1983,1988,1992,1998,2003,2010,2016



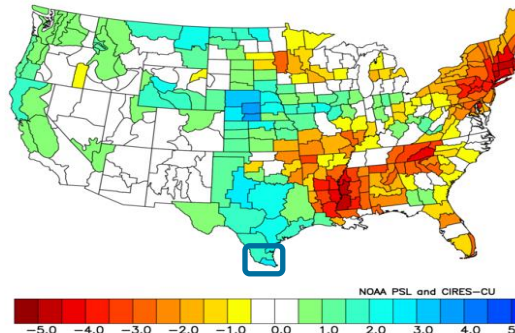
NOAA/NCEI Climate Division Composite Temperature Anomalies (F)  
Apr to Jun 2010,2016  
Versus 1991–2020 Longterm Average



NOAA/NCEI Climate Division Composite Precipitation Anomalies (in)  
Versus 1991–2020 Longterm Average  
Apr to Jun 1952,1958,1964,1966,1973,1983,1988,1992,1998,2003,2010,2016



NOAA/NCEI Climate Division Composite Precipitation Anomalies (in)  
Apr to Jun 2010,2016  
Versus 1991–2020 Longterm Average



- **Top:** Composite temperature (left) and precipitation (right) anomalies for moderate/strong/“super” El Niños leading into April-June, since 1950.
- **Bottom:** Same, except for most recent cases (2009/10 and 2015/16).

# Bottom Lines

- Sufficient inflows from Mexican reservoirs serving the Lower Rio Grande watershed remain unlikely during the April-June 2024 period. **Combined share of water in Amistad and Falcon now likely to continue well below Stage 2 triggers (25% or less) through June.** Water conservation, smart irrigation, and rainwater harvesting are **critical actions to continue.** A **water crisis by May or June** is a reasonable worst-case scenario for agriculture and some municipalities.
- It's **possible that drought develops across some locations along/west Hidago and Brooks as early as mid to late April** and spread into the **mid Valley by May.** Drought development will be predicated on **limited to no areawide thunderstorm events; multiple events would slow or hold off worsening drought.** Prolonged spells of warm to eventually hot weather with low humidity would bring severe (Level 2 of 4) drought as early as early May. The **Rio Grande Plains could reach extreme (Level 3) in May or June.** The combination of increasing heat (evaporation) and very limited water releases would have **major impact on the crop and livestock industry.**
- The expectation that El Niño will quickly turn neutral in spring, and possibly flip to La Niña by late spring and early summer, could be a harbinger of wildfire spread potential – after March “green up” is rapidly eliminated by increasingly warm/hot and dry weather. **April-June begins a critical period.**
- **Severe Weather?** April through June offers the best opportunity, as surface temperatures warm with the sun and instability could increase. However, *much would depend on an active subtropical jet stream linking up with stronger mid-latitude systems.* **A drier pattern, especially in April, would reduce opportunity.** Because of these factors, **confidence is low.** Typical threats would be **hail**, followed by **damaging wind** and **flooding rain.**
- **Early tropical activity?** **June is always a wildcard.** In 2023, the active west-east subtropical jet (steering) that produced rainfall through June 8<sup>th</sup> ended immediately on **June 9<sup>th</sup>, when “La Canicula”**- the pattern of atmospheric high pressure that extends from Coahuila/Chihuahua southeast through the Valley and western Gulf, **brought searing heat, humidity – and no rain.** This is a favored pattern again this year, but a **brief pattern** shift could allow a **June 2018 event (tropical wave/trough)** to slide in from the east and **provide beneficial rain.**