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January-March 2023 Outlook: Perspective for the Lower Rio Grande Valley/Deep S. Texas Region

December 29, 2022

Barry Goldsmith, NWS Brownsville/Rio Grande Valley, Texas

Overall Dryness to Continue; Warm Temps With A Few Cold Snaps

September 2022

From This...



Falcon Dam and State Park

January 2, 2011

...To This?



Kenedy County

December 23+, 2022

Could This Happen Again in Jan/Feb?



Brownsville/Harlingen



La Feria



Brownsville



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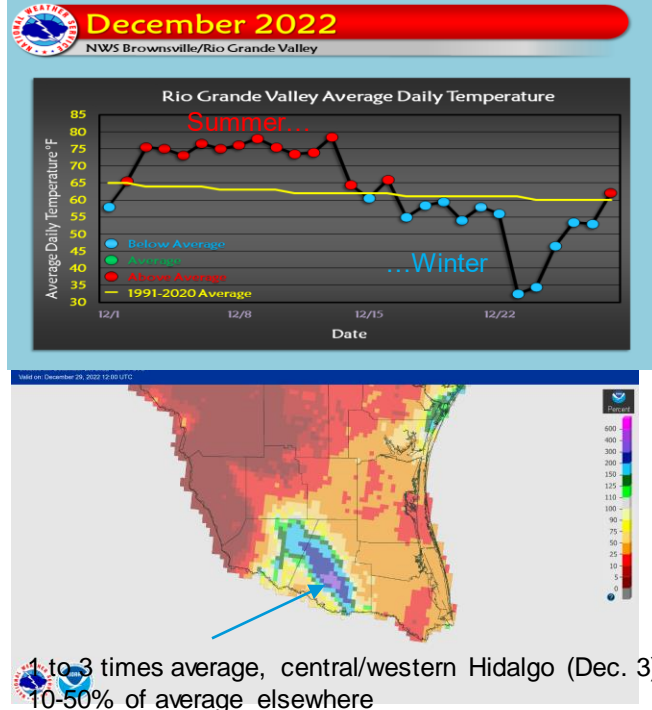
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Since December 1st ...

A schizophrenic month, with a top-five warm start (through the 14th) followed by a cool-down, culminating in the coldest Christmas Time since the 1980s (right). The hard freeze was followed by a warm finish

Temperatures shifted from much warmer than average to slightly below average after the hard freeze, but would end at or slightly above average by month's end. Despite the freeze, rankings from April 1-December 28 ranked generally within the top ten warmest on record (bottom)

Rainfall was well below average except for a pocket of Hidalgo County (right, on December 3); combined with the curing freeze, the stage was set for a potentially active spring wildfire growth season.



Maximum 272-Day Mean Avg Temperature
for Brownsville Area, TX (ThreadEx)

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

Rank	Value	Ending Date	Missing Days
1	80.4	2012-12-28	0
2	80.1	2021-12-28	0
3	80.1	2019-12-28	0
4	80.1	2016-12-28	0
5	79.9	2022-12-28	0
6	79.8	2020-12-28	0
7	79.4	2011-12-28	0
8	79.4	2015-12-28	0
9	79.4	2018-12-28	0
10	79.4	2017-12-28	0

Maximum 272-Day Mean Avg Temperature
for McAllen Area, TX (ThreadEx)

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

Rank	Value	Ending Date	Missing Days
1	83.2	2016-12-28	0
2	81.8	2017-12-28	0
3	81.7	2015-12-28	0
4	81.7	2012-12-28	0
5	81.4	2009-12-28	0
6	81.2	2011-12-28	0
7	81.2	2019-12-28	0
8	81.1	2018-12-28	3
9	80.4	1998-12-28	2
10	80.4	2020-12-28	1
11	80.2	2022-12-28	1

Maximum 272-Day Mean Avg Temperature
for HARLINGEN, TX

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

Rank	Value	Ending Date	Missing Days
1	80.8	2016-12-29	10
2	80.4	2019-12-29	34
3	80.1	2017-12-29	36
4	79.8	1946-12-29	15
5	79.7	2021-12-29	7
6	79.7	2022-12-29	4
7	79.6	2012-12-29	12
8	79.4	2020-12-29	19
9	79.2	2006-12-29	13
10	79.2	1945-12-29	12



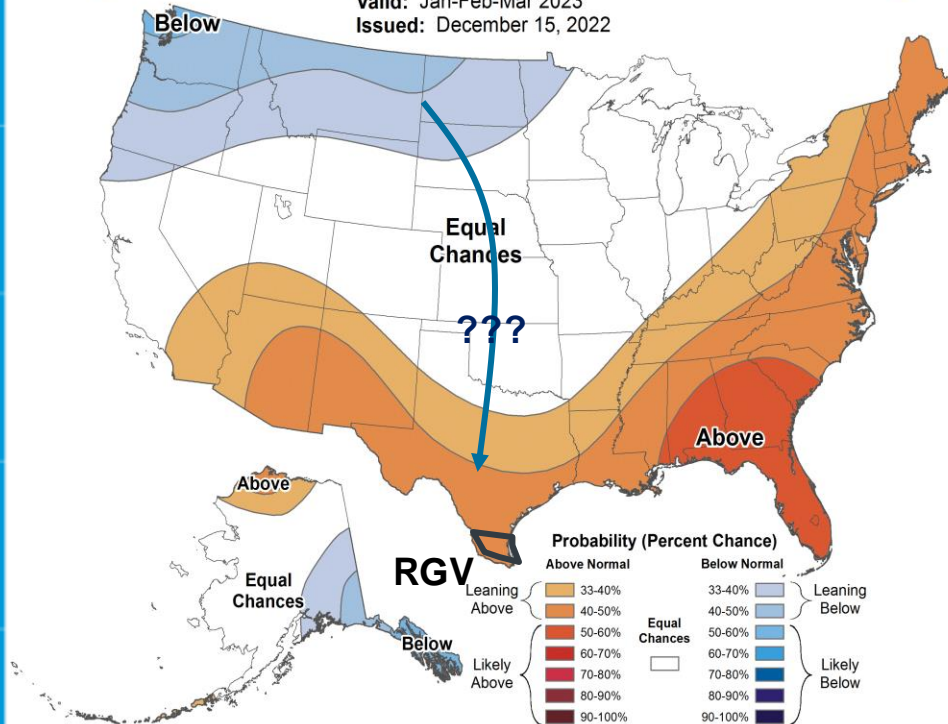
Seasonal Forecast January-March 2023 - USA



Seasonal Temperature Outlook



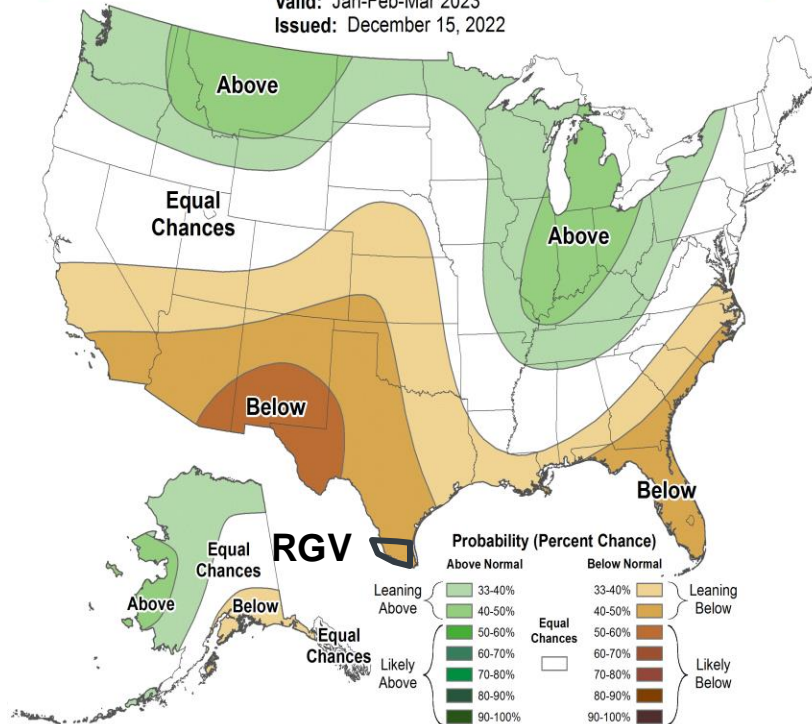
Valid: Jan-Feb-Mar 2023
Issued: December 15, 2022



Seasonal Precipitation Outlook



Valid: Jan-Feb-Mar 2023
Issued: December 15, 2022



Key Takeaways: January-March 2023

- **Above average temperatures**, and confidence for **below average rainfall continues...**
- **Confidence is high** on a **warm and dry start to 2023**
- The potential for another one or two **freeze/extreme cold event** continues in **January and February**
- Breakdown:
 - **Persistent Warmth** which began in April will continue through the first three months of 2023 Warmth is favored for January and February, but there remain cold “wild cards”.
 - While the pattern overall favors warm and dry conditions, occasional cold fronts will continue to arrive. A few more **fronts could be strong, dropping “feels like” temperatures below 30°F** – with a **potential day-to-day change of up to 50°F**.
 - **Another freeze or two is possible in January and February, similar to 2021 and 2022**. A **hard freeze** – temperatures below 28°F for more than 2 hours – needs to be considered. **A repeat of February 2021’s “Uri” needs to remain in the back of the mind**.
 - The expectation of drier, but still warm, air across the Rio Grande Plains/Brush Country/King Ranch – combined with “freeze-cured” grass and brush from the Christmas Time 2022 Freeze, could set up **potential fire weather issues, peaking in February and March**.
 - Reservoir levels at Amistad and Falcon remain leveled off; each reservoir will see a slow drop through winter with an increase in March. **Water supply issues will remain a concern for many Valley locations by spring 2023.**





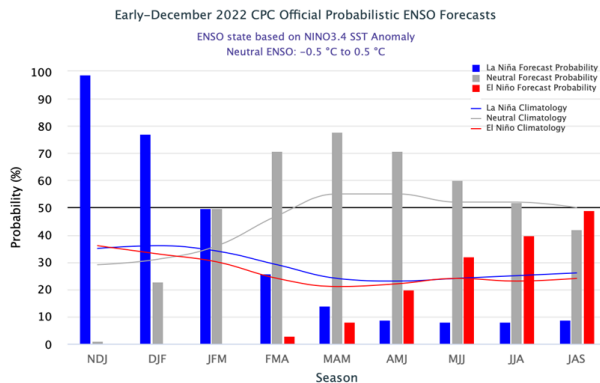
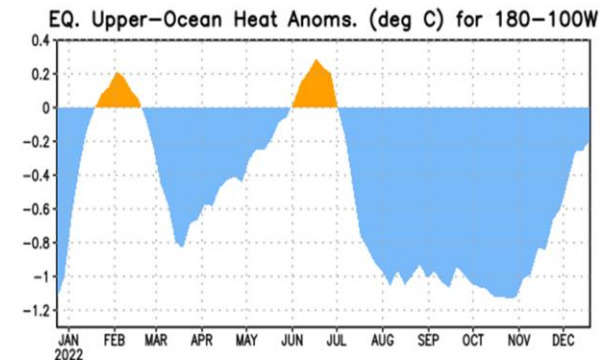
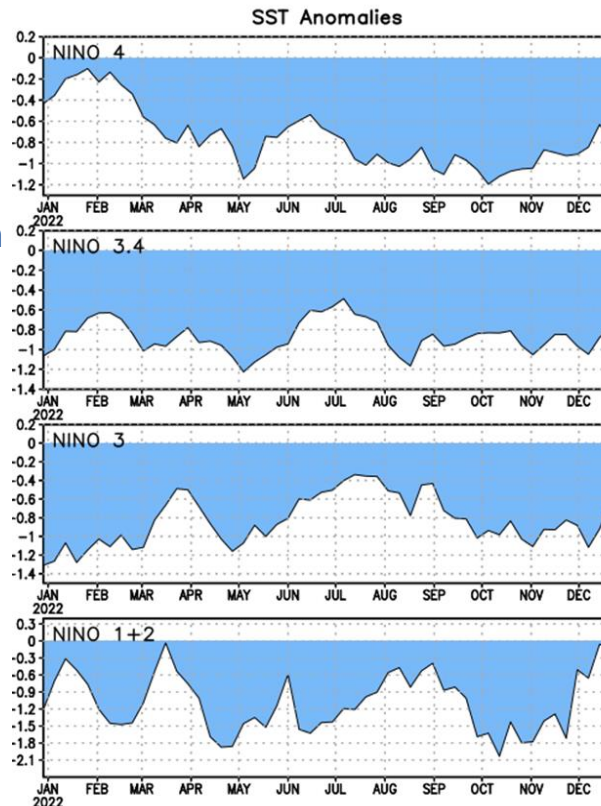
The “Why” of the Forecast:

El Niño/Southern Oscillation (ENSO) still in La Niña Phase

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		

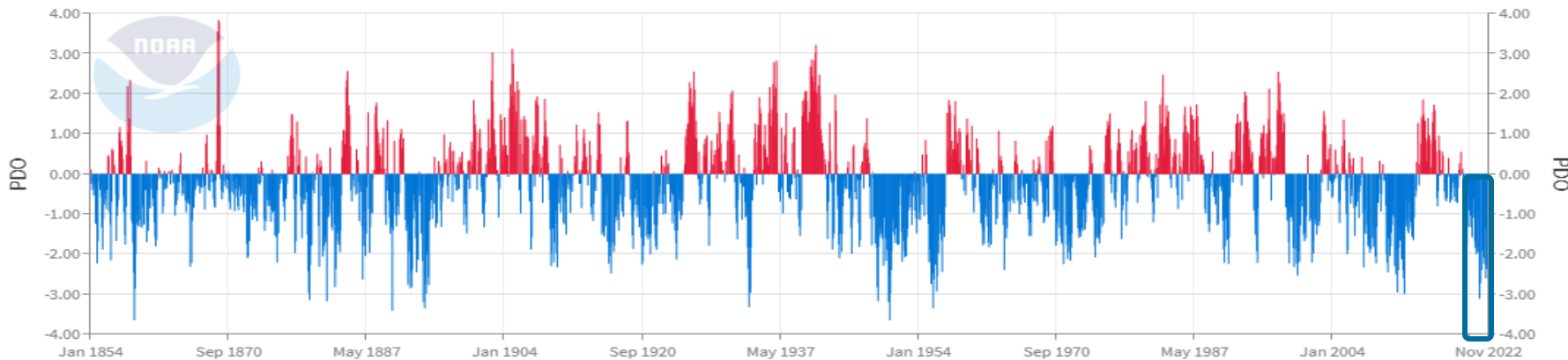
- **La Niña** will remain the dominant signal into late winter 2023, before shifting neutral in early spring
- The stout La Niña combined with general atmospheric patterns and other “teleconnections” still **leans toward warm and dry/drought conditions...**
- ...but La Niña can also support **additional notable cold snaps during early 2023**

*Above right: Oceanic Niño Index. Values below -0.5 (light blue) indicate a 3-month La Niña episode. Current La Niña expected to last up to 18 months.



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

Pacific Decadal Oscillation (PDO)

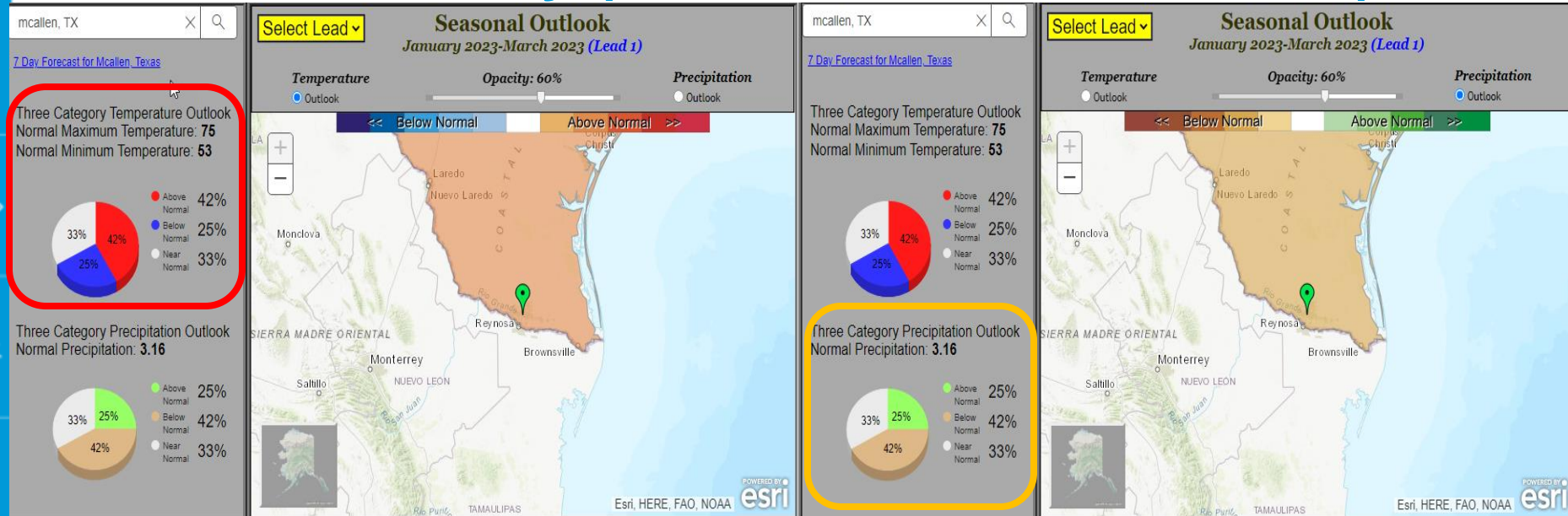


Source: <https://www.ncsl.noaa.gov/pub/data/cmb/ersst/v5/index/ersst.v5.pdo.dat>

- The 2021-2022 prolonged and strong negative PDO remains similar to that of late 2010 through 2011. Combined with the persistent La Niña – also very similar to that from late 2010-2011 (though 2011 was a bit stronger), **confidence remains high on warm January-March** overall.
- The same PDO when combined with the strong and persistent La Niña, maintains confidence in a **drier than average start of 2023**
- And, similar to 2011, 2021, and 2022, the potential for **sharp cold snaps and freezes** embedded within the warmer pattern **continues for January-February 2023**



The January-March 2023 Outlook: Rio Grande Valley (McAllen as Anchor Point)

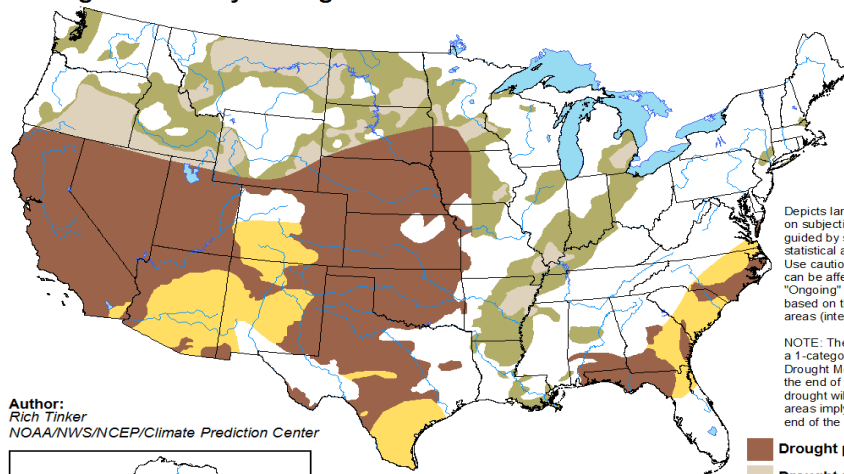


- Temperature: A **45 percent chance of above average**. A 25 percent chance for below average: RGV averages: Afternoon – 70-lower 70s in early January, rising to the by the end of December through January then rising to the low to mid 80s by late March. Morning: 47 to 52 by through the end of January, then low to mid 60s by the end of March.
- Precipitation: A **43 percent chance of below average**; 25 percent for wetter than average. RGV averages: 3 to 4.25 inches (from west to east).

The January-March 2023 “Droughtlook”

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

Valid for December 15, 2022 - March 31, 2023
Released December 15, 2022



Author:
Rich Tinker
NOAA/NWS/NCEP/Climate Prediction Center

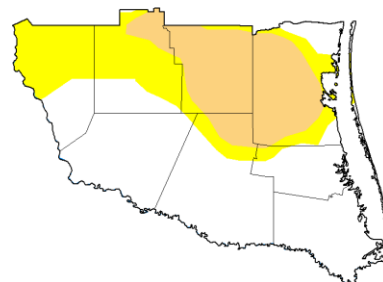
Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Use caution for applications that can be affected by short lived events. “Ongoing” drought areas are based on the U.S. Drought Monitor areas (intensities of D1 to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

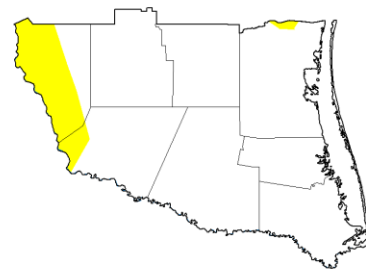
Drought persists
Drought remains but improves
Drought removal likely
Drought development likely



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

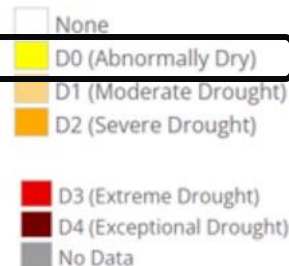


December 27 2022



December 28 2021

Drought Classification



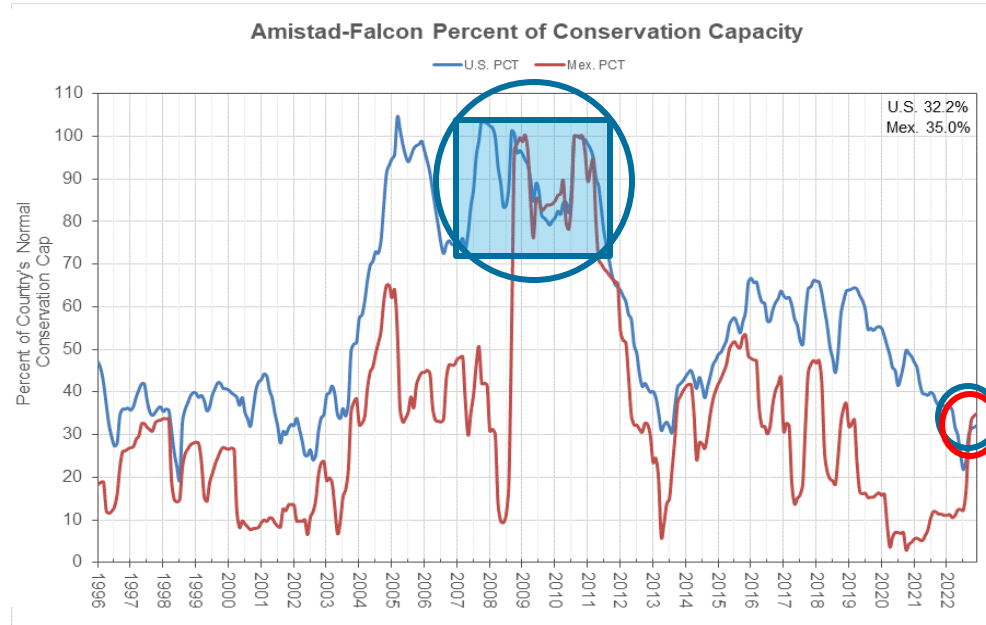
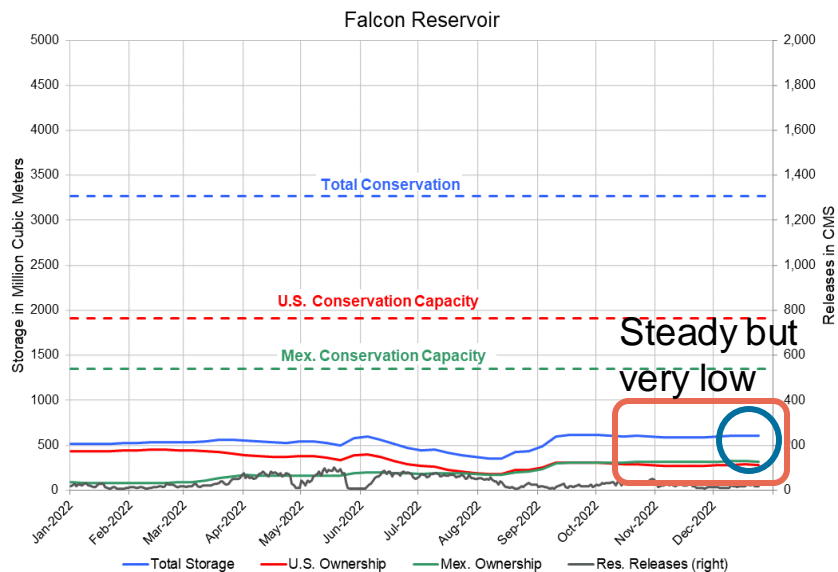
- In December, **Dryness slowly worsened across the northern ranchlands** (Brush Country/Coastal Plains) from Zapata through Kenedy County; rainfall in Hidalgo County held moisture surplus there – but low rainfall and the Dec. 23-25 freeze “cured” grasses and brush
- Severe Drought (D1 to D2)** is still expected to develop across the Brush Country and Brooks/Kenedy ranches in January. **Severe to Exceptional Drought (D2 to D3)** is possible by February and likely by March if dry fronts with very low humidity and warm temperatures are more common
- Moderate to locally Severe Drought** is possible by February elsewhere, worsening in March, except along/east of the IH-69E/US 77 corridor in Cameron County.



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Falcon and Amistad Reservoirs Steady, Likely to begin a steady but slow fall in February, picking up in March

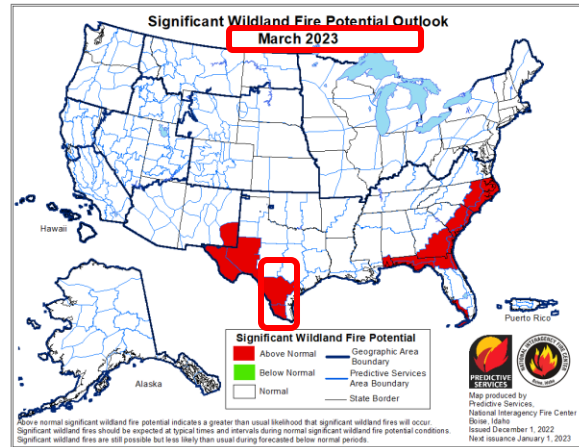
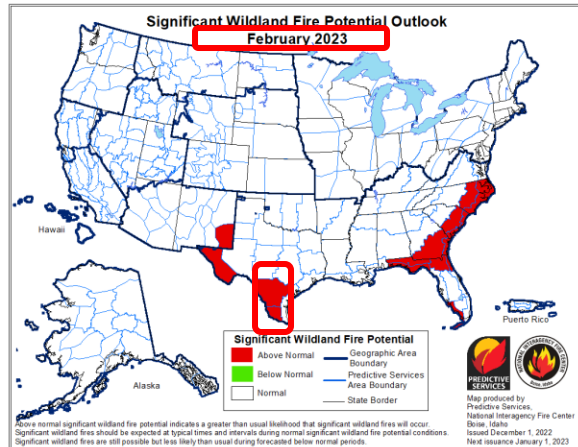
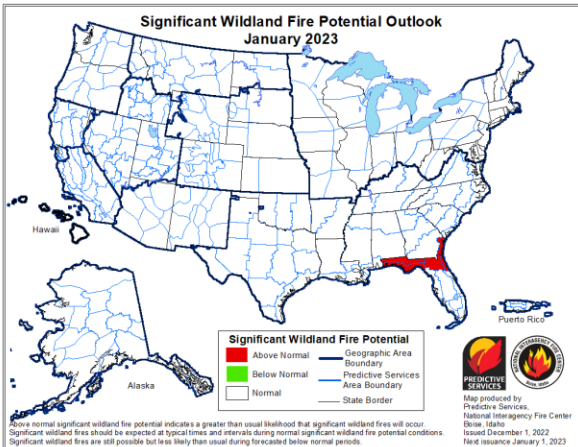


- Late December 2022 total capacity, Falcon Reservoir: **18.4 percent (up from 17.9 percent at end of November)** on Dec. 29th. Still **very low** relative to long term averages.
- Late December 2011 total capacity, Falcon Reservoir: **41 percent**



Wildfire Spread Potential Should Worsen by February/March

2023



- **New growth fuels remain abundant** across the “upper” Rio Grande Valley, Rio Grande Plains, and Brush Country as of late December.
- The dry and hard freeze on December 23/24 **sharply cured rangeland and brush across** the Deep South Texas region, with the Rio Grande Plains east to the King Ranch under highest threat for future rapid wildfire growth
- Those fuels are likely to **become further parched**, especially if “dry” fronts surge strong northwest winds and very low humidity across high growth areas, bringing **“flash drying” and perhaps a flash drought** event in winter, at any time during the period.

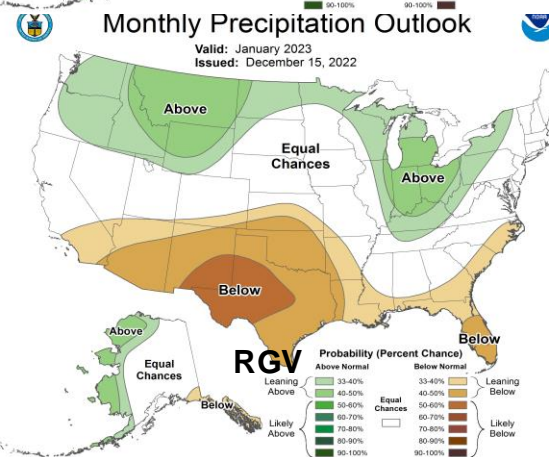
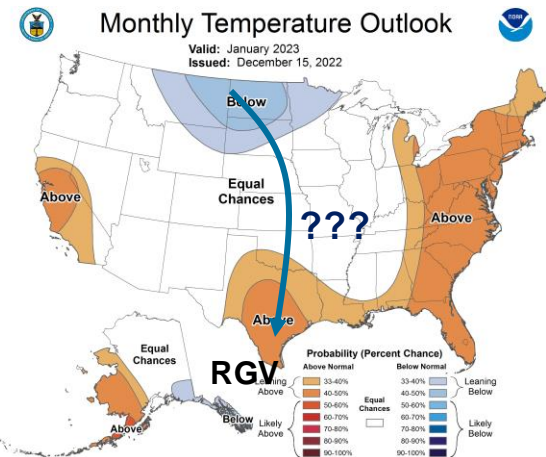
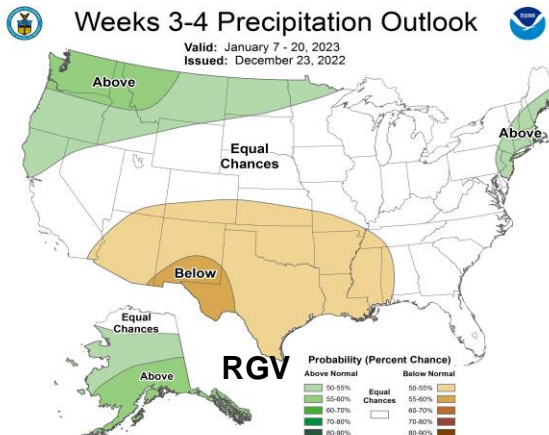
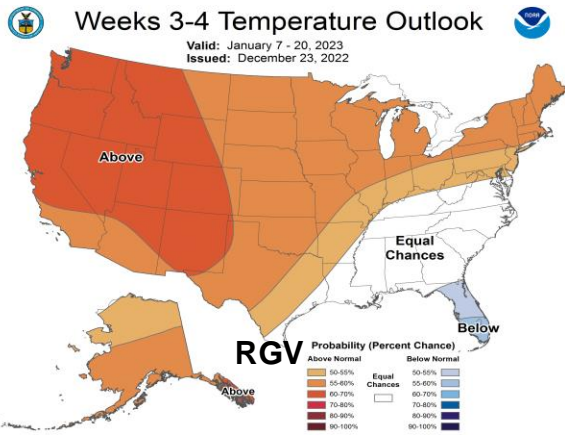
Could this scene repeat in late January through March 2023 somewhere in ranch country?



Kenedy County, Jan 2, 2011



January 2023: Confidence High on Dryness, Medium-High on Heat

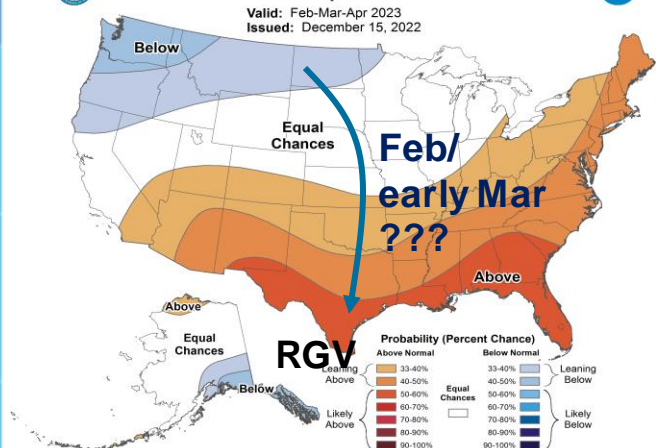


- **Bottom Line:** Warm and generally dry weather is expected, with occasional fronts providing scattered mainly light rain mainly toward the coast.
- **Beware the wild card, still:** Colder than average temperatures across the northern Plains could be a sign for a strong front to “break the dam” and send that cold air surging into the southern Great Plains, including all of Texas. Such a front in late January could bring freezing temperatures similar to Dec. 23-25 2022, along with freezing precipitation.

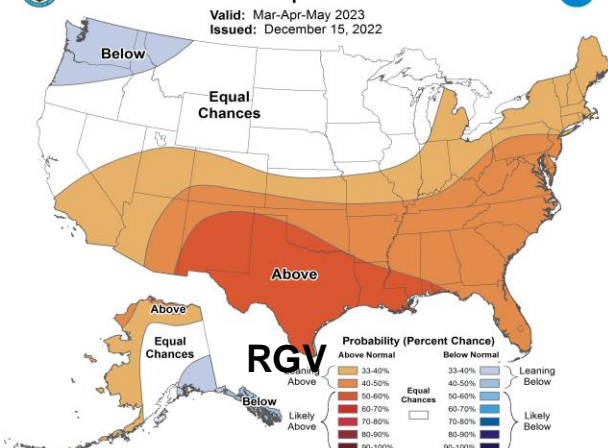
Spring 2023: Continued Warm, then Hot, and Dry...

...but last of the cold snaps could still impact February/early March

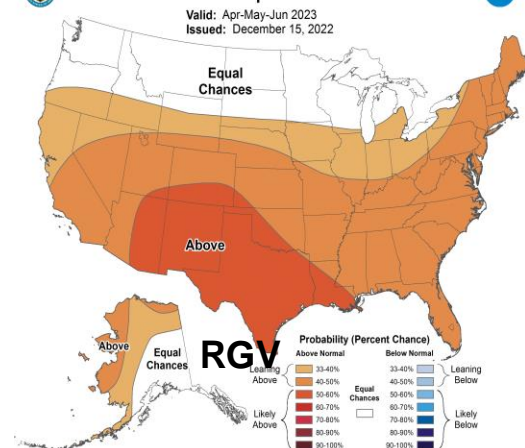
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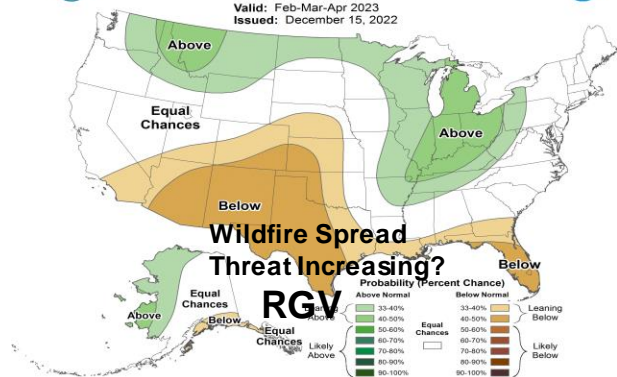
Seasonal Temperature Outlook
Valid: Mar-Apr-May 2023
Issued: December 15, 2022



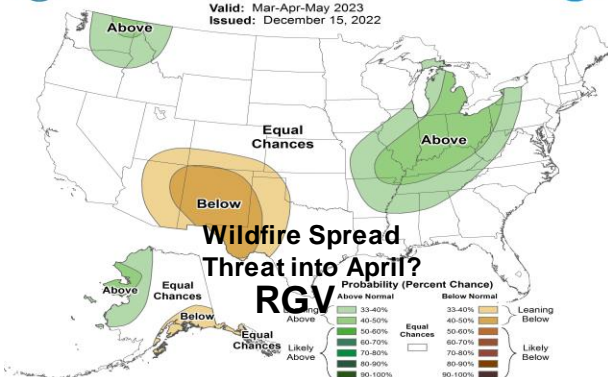
Seasonal Temperature Outlook
Valid: Apr-May-Jun 2023
Issued: December 15, 2022



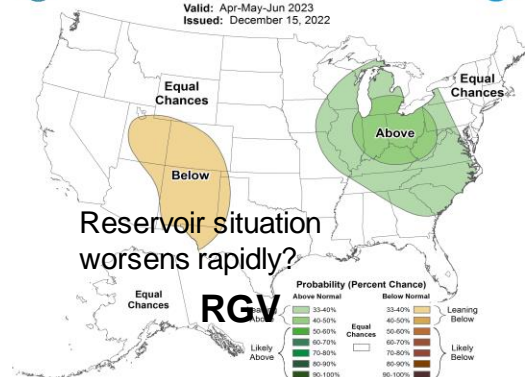
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Seasonal Precipitation Outlook
Valid: Mar-Apr-May 2023
Issued: December 15, 2022



Seasonal Precipitation Outlook
Valid: Apr-May-Jun 2023
Issued: December 15, 2022



Bottom Lines

- Water storage levels at **Falcon and Amistad** will begin to **fall slowly** then a bit more rapidly by late March. The **combined share of water is likely to remain low to very low** headed into the spring growing season. Water conservation, smart irrigation, and rainwater harvesting are still viable actions through winter.
- **Another freeze or two is likely in January and February** – similar to 2021 and 2022. Another **hard freeze remains in play**. Utility companies, crop and livestock farmers, and transportation departments should **update their winter preparedness plans in light of the Dec. 23-25, 2022 Hard Freeze** to remain vigilant.
- The growth, thickness, and density of grasses and brush in mid September through late November (in rural RGV areas) has largely been “freeze cured” from the Dec. 23-25, 2022 event and is now **“tinder/duff” for rapid-spread wildfires in January, peaking in February/March**, based on the forecast. Wildfire prevention activities should continue, and resources should be readied for deployment, just in case. Conditions are likely to intensify/peak into April.
- A few more **strong cold fronts** – dropping “feels like” temperatures between 35 and 50 degrees – are expected through winter. Three have occurred so far (mid November, mid December, December 22/23. Residents should have **winter wardrobes** ready/updated and ensure **heating systems** are in proper working order.

