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

January 25, 2023

Barry Goldsmith, NWS Brownsville/Rio Grande Valley, Texas

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

Could Something Similar Happen in February 2023?



February 2011 and 2021



January 2, 2011



Kenedy County

Starr Co. Drought, March 2022



"Hayfield" Fire on the Norias Division of the King Ranch, March 24/25, 2022

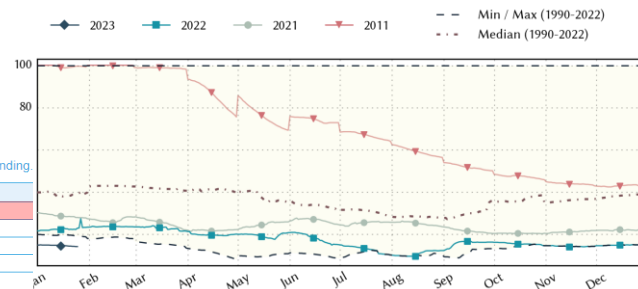
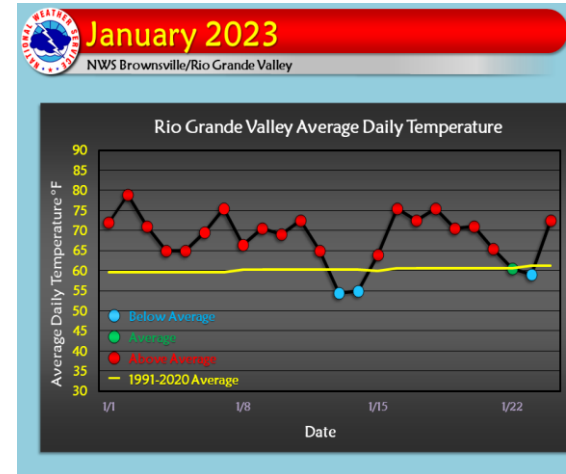


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Since January 1st...

- Overall, a warmer to much warmer than average, and drier than average, month. Month will end up in top five warmest Januaries on record (*since* dates below)
- Lack of rain, warm temperatures, abundant sunshine, and low humidity have worsened dryness and drought, especially across the ranch areas of Zapata, Starr, Jim Hogg, Brooks, northern Hidalgo, and Kenedy County
- Falcon International Reservoir began losing storage, and was tied with 30 year lows for the Texas share of capacity



Maximum 24-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	69.3	1880-01-24	0
2	69.0	2000-01-24	0
3	68.6	1890-01-24	0
4	68.5	2023-01-24	0
5	67.9	1950-01-24	0
6	67.8	2017-01-24	0
7	67.6	2020-01-24	0
8	67.4	1952-01-24	0
9	66.3	2005-01-24	0
-	66.3	1921-01-24	0

Period of record: 1878-01-01 to 2023-01-24

Brownsville

Maximum 24-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	69.9	1950-01-24	0
2	69.6	2023-01-24	0
3	69.5	2000-01-24	0
4	69.3	2017-01-24	0
5	68.0	1952-01-24	0
6	68.0	2020-01-24	0
7	66.5	1998-01-24	1
8	66.1	1989-01-24	2
9	65.5	2012-01-24	0
10	65.5	1990-01-24	0

Period of record: 1941-06-01 to 2023-01-24

McAllen

Maximum 24-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	70.5	2023-01-25	1
2	69.0	1950-01-25	0
3	68.9	2000-01-25	0
4	67.8	1933-01-25	0
5	67.0	1916-01-25	2
6	66.9	2017-01-25	0
7	66.8	1957-01-25	3
8	66.6	2020-01-25	0
9	66.6	1952-01-25	0
10	66.3	1935-01-25	0

Period of record: 1912-02-07 to 2023-01-25

Harlingen



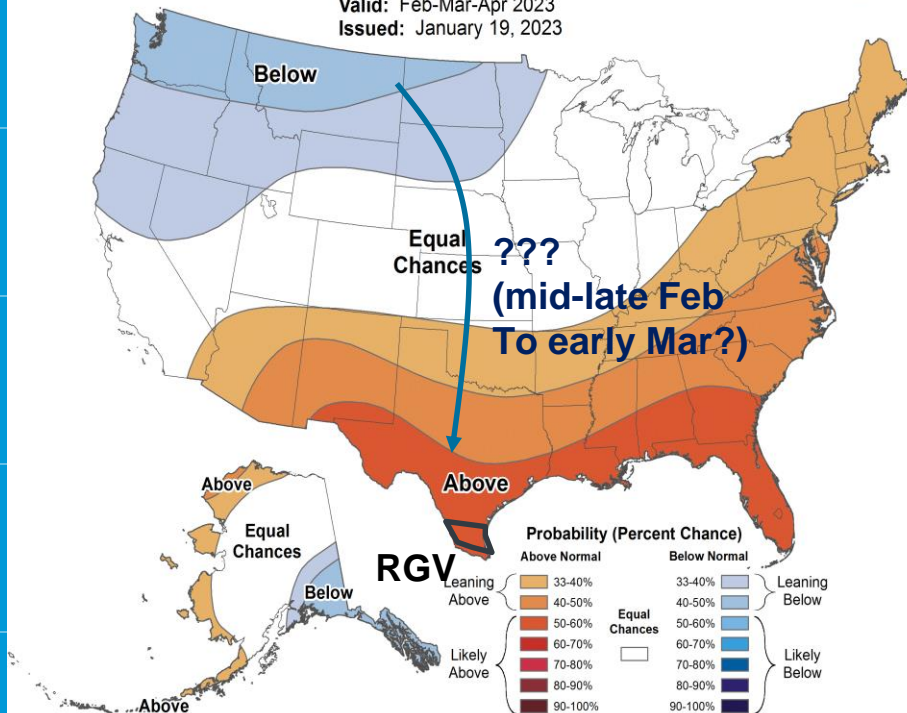
Seasonal Forecast February-April 2023 - USA



Seasonal Temperature Outlook



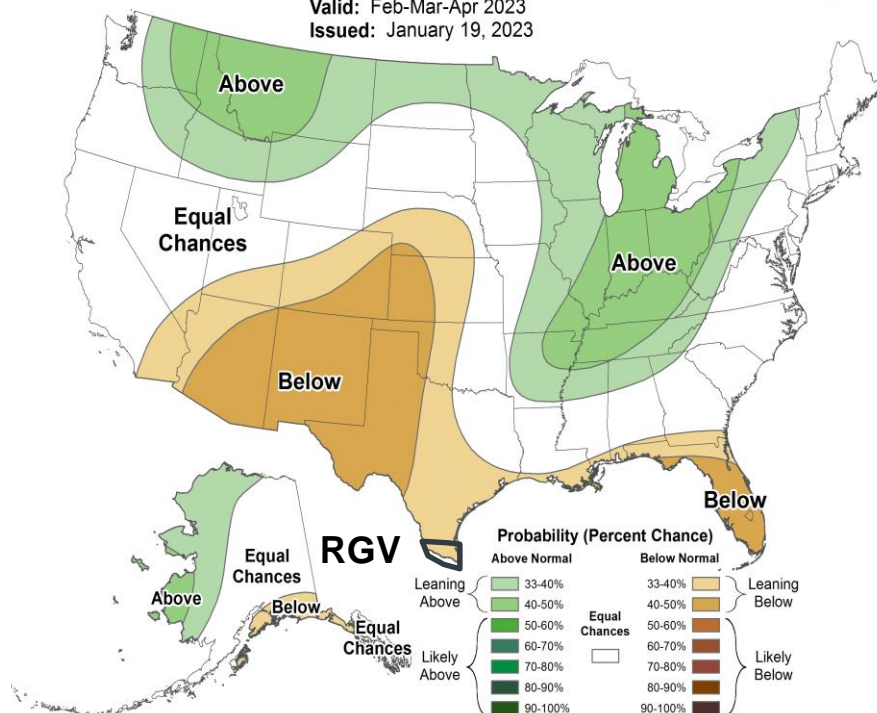
Valid: Feb-Mar-Apr 2023
Issued: January 19, 2023



Seasonal Precipitation Outlook



Valid: Feb-Mar-Apr 2023
Issued: January 19, 2023



Key Takeaways: February-April 2023

- **Above average temperatures**, and confidence for **below average rainfall continues...**
- **Confidence is high** on **warm and dry weather to dominate through April 2023**
- Breakdown:
 - 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, will set up **potential fire weather issues, peaking from late February through at least early April.**
 - **Persistent Warmth** which began in April 2022 will continue through April 2023. Warmth is favored for the period, but there remain cold “wild cards” into early March.
 - Reservoir levels at Amistad and Falcon remain leveled off. Falcon began dropping in early January and its drops will likely accelerate in March and April. Amistad was level, but will likely begin falling in February. **Water supply issues will remain a concern for many Valley locations in spring 2023.**
 - While the pattern overall favors warm and dry conditions, occasional cold fronts will continue to arrive. Another few **fronts could be strong, dropping “feels like” temperatures below 30°F** – with a **potential day-to-day change of up to 50°F** – into early March.
 - **Another freeze is possible in February and perhaps early March.** 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.**





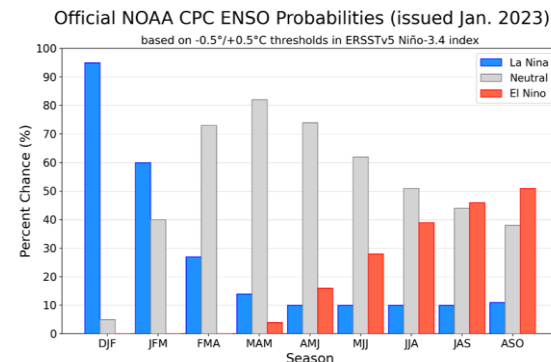
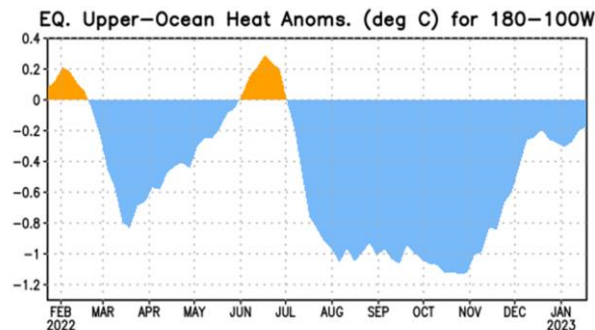
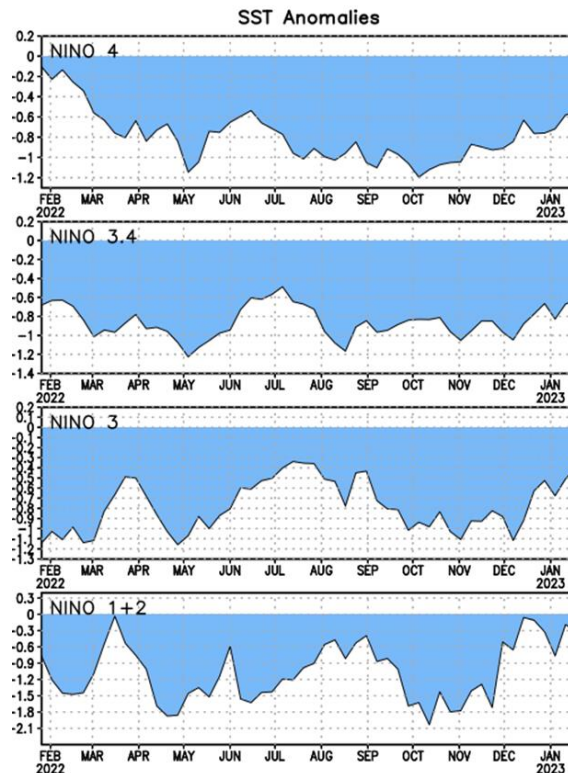
The “Why” of the Forecast:

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	-0.9	

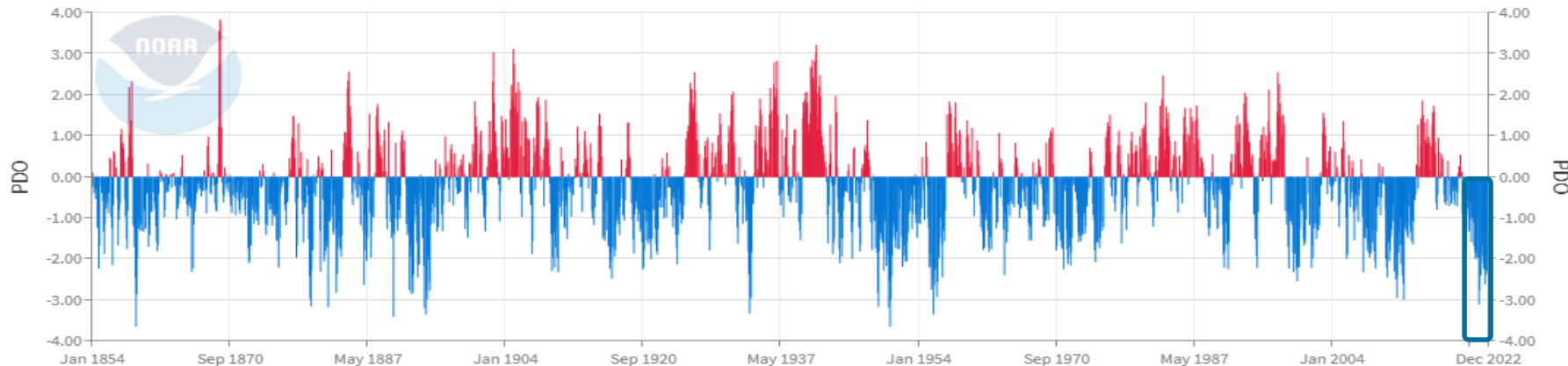
- **La Niña** will remain the dominant signal into late winter 2023, before shifting neutral in early spring
- The stout La Niña combined with general atmospheric patterns and other “teleconnections” still **leans toward warm and dry/drought conditions...**
- ...but La Niña can also support **additional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

*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)

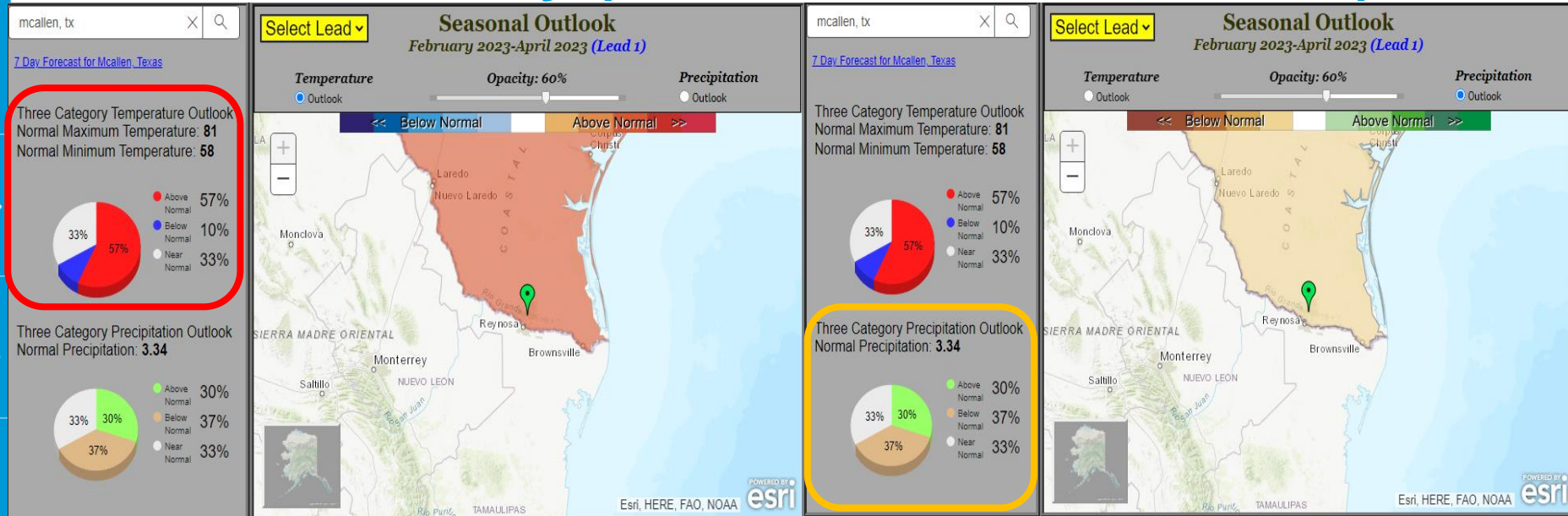


Source: <https://www.ncei.noaa.gov/pub/data/cmb/ersst/v5/index/ersst.v5.pdo.dat>

- 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 first four months of 2023**
- And, similar to 2011, 2021, and 2022, the potential for **sharp cold snaps and freezes** embedded within the warmer pattern **continues February and early March 2023**



The February-April 2023 Outlook: Rio Grande Valley (McAllen as Anchor Point)

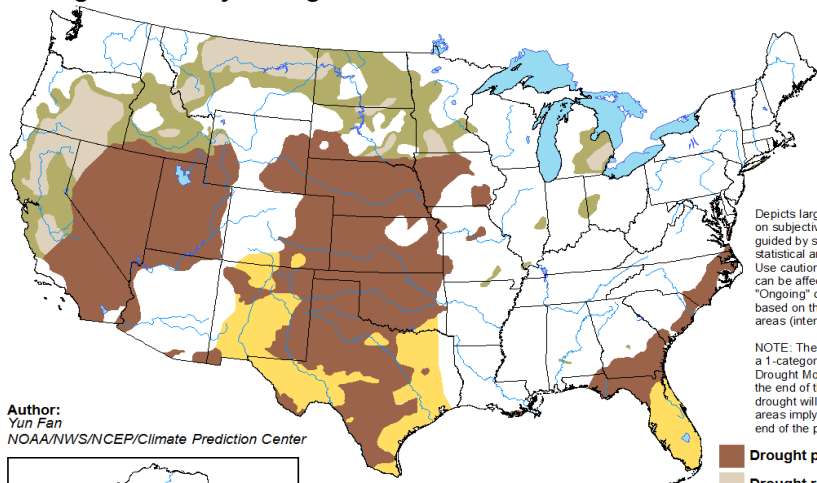


- Temperature: A **57 percent chance of above average**. A 10 percent chance for below average: RGV averages: Afternoon – Low-Mid 70s in early February, rising to the upper 80s by late April. Wake-up: 50-55 in early February, rising to 65-70 by the end of April
- Precipitation: A **37 percent chance of below average**; 30 percent for wetter than average. RGV averages: 3 (west) to 5 (east) inches.

The February-April 2023 “Droughtlook”

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

Valid for January 19 - April 30, 2023
Released January 17, 2023



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).

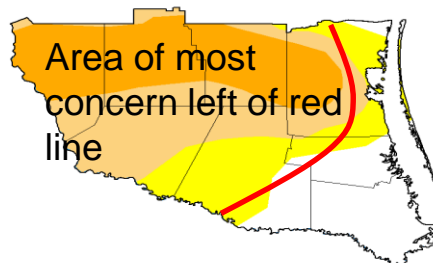
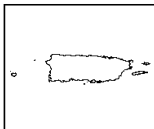
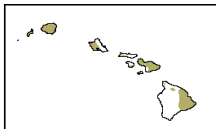
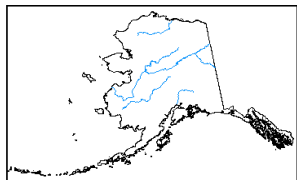
NOTE: The tan areas imply at least a 1-category improvement in the Drought Monitor intensity levels by the end of the period, although drought will remain. The green areas imply drought removal by the end of the period (D0 or none).

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



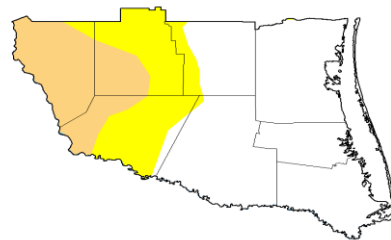
<http://go.usa.gov/3eZ73>

Author:
Yun Fan
NOAA/NWS/NCEP/Climate Prediction Center



Area of most concern left of red line

January 17, 2023



January 18, 2022

Drought Classification



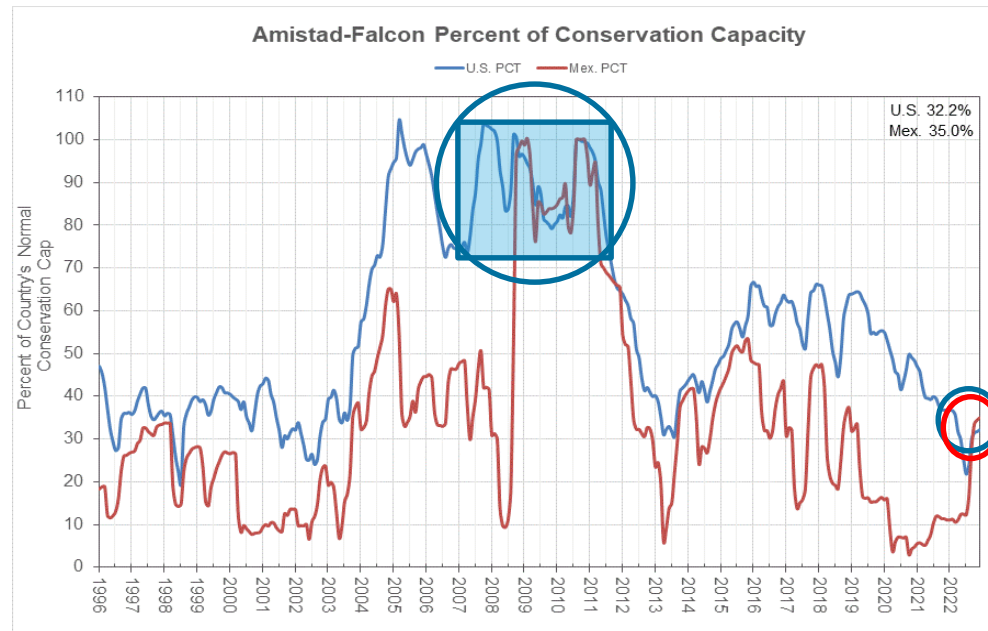
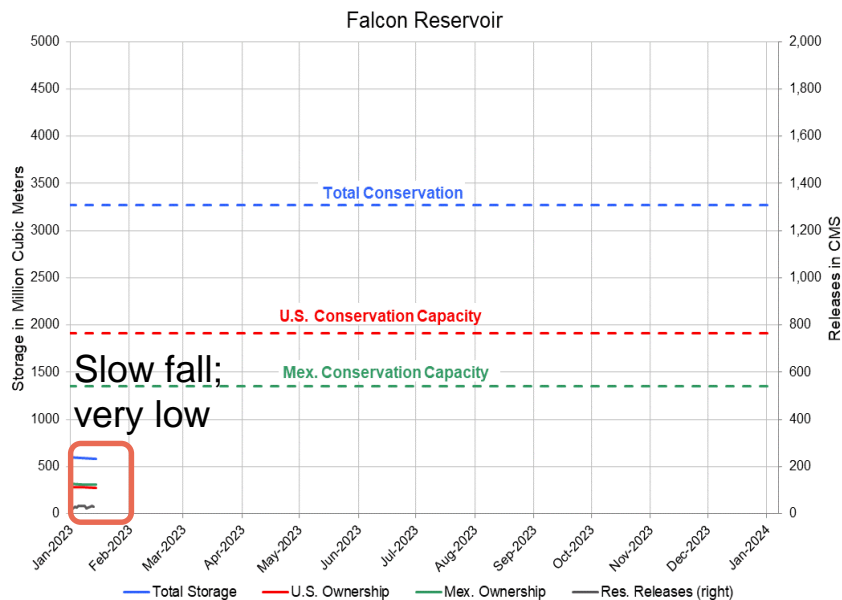
- As expected, **drought spread and worsened across the northern ranchlands** (Brush Country/Coastal Plains) from Zapata through Kenedy County; low rainfall following the Dec. 23-25 freeze spread dryness/drought into Starr/Hidalgo
- Severe to Extreme Drought (D2 to D3)** is possible by February and likely by March in more areas if dry fronts with very low humidity and warm temperatures are more common. **Exceptional (D4) Drought** could arrive by early April across the Brush Country and Rio Grande Plains.
- Moderate Drought** is possible by March elsewhere, including along/east of the IH-69E/US 77 corridor in Cameron County if rains are sparse.



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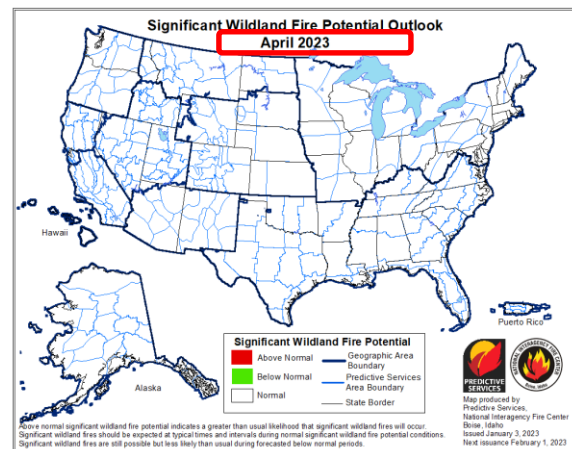
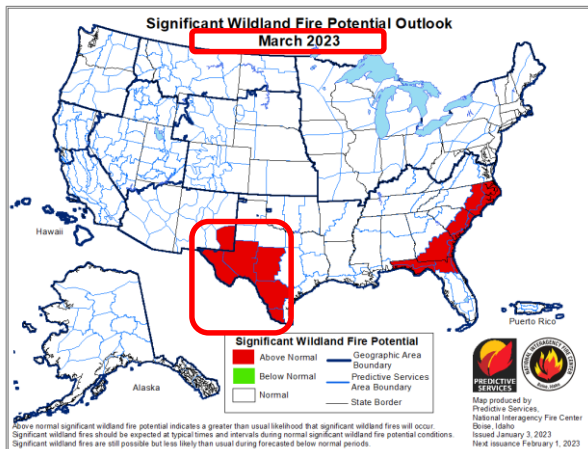
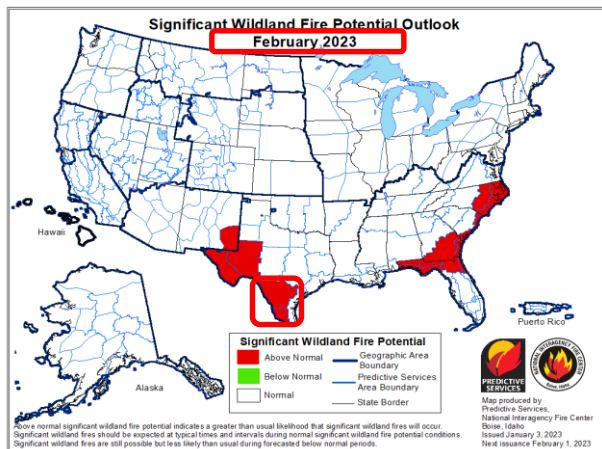
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Falcon Reservoir Slowly Falling; Both Reservoirs Likely to show a steady but slow fall in February, picking up in March and April



- Late January 2023 total capacity, Falcon Reservoir: **17.4 percent (down from 18.4 percent in late December)** on Jan. 25th. **Very low** relative to long term averages.
- Late January 2012 total capacity, Falcon Reservoir: **33 percent**

Wildfire Spread Potential Should Worsen by February/March 2023



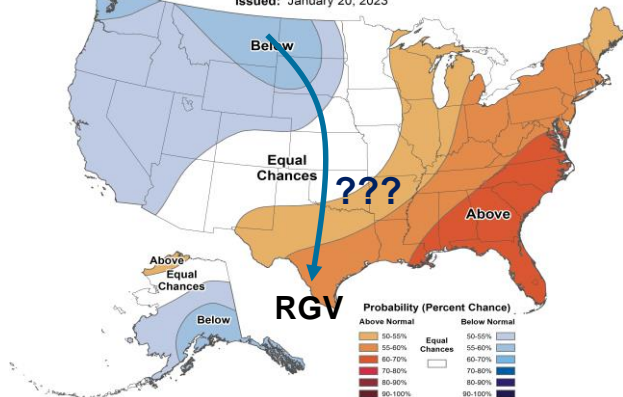
- **New growth fuels remain abundant** across the Rio Grande Valley, Brush Country, and Rio Grande Plains as of late January.
- **Sharply cured rangeland and brush remains across** the Deep South Texas region, with the Rio Grande Plains east to Northern Hidalgo/King Ranch under highest threat for future rapid wildfire growth
- Those fuels will 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 February and March. **April** is unknown, but drying winds and heat could peak then.



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

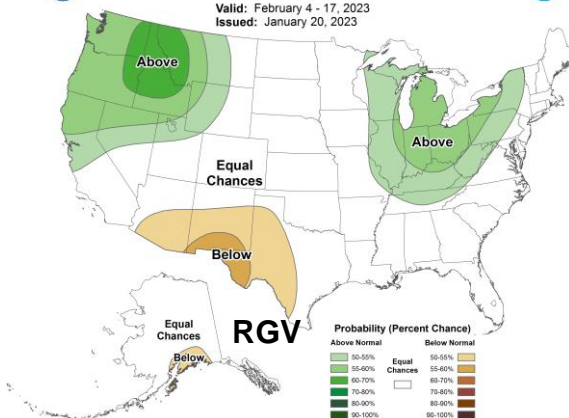
Weeks 3-4 Temperature Outlook

Valid: February 4 - 17, 2023
Issued: January 20, 2023



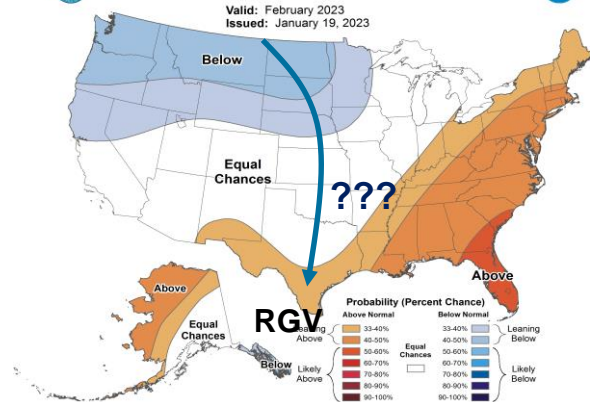
Weeks 3-4 Precipitation Outlook

Valid: February 4 - 17, 2023
Issued: January 20, 2023



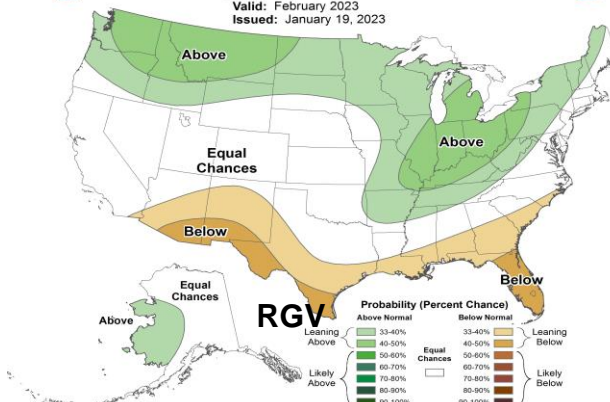
Monthly Temperature Outlook

Valid: February 2023
Issued: January 19, 2023



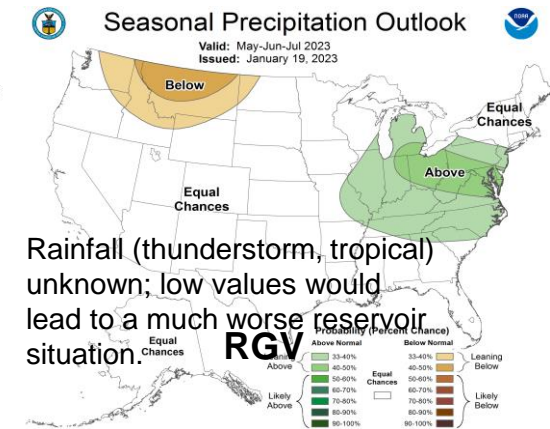
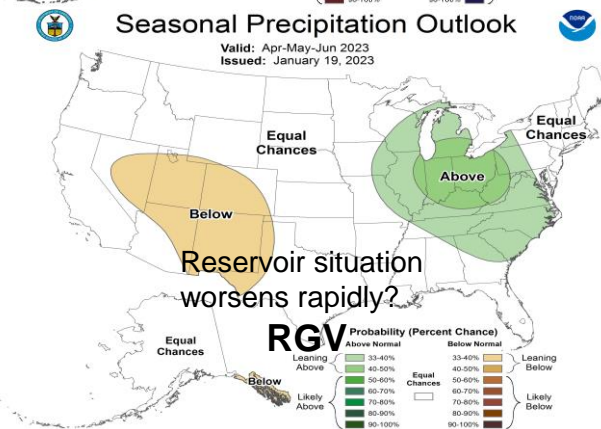
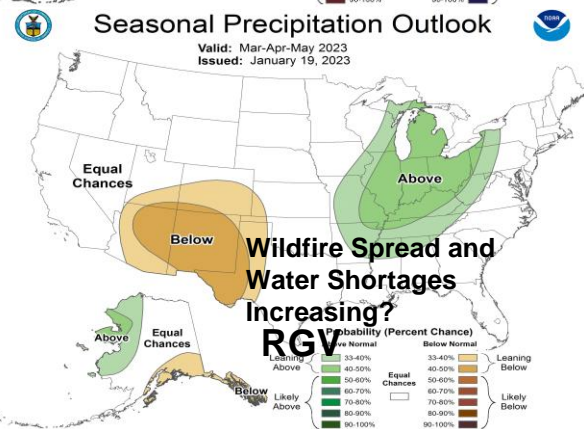
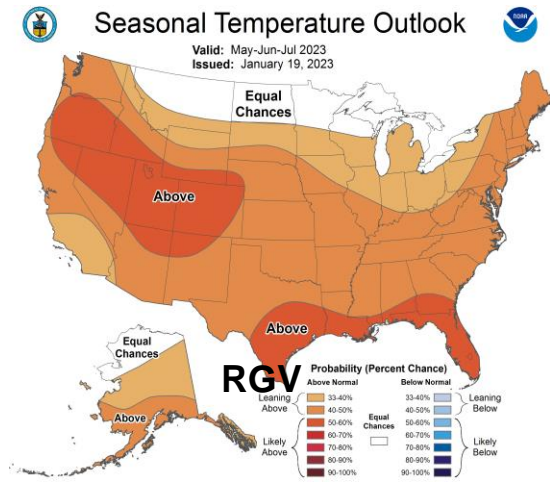
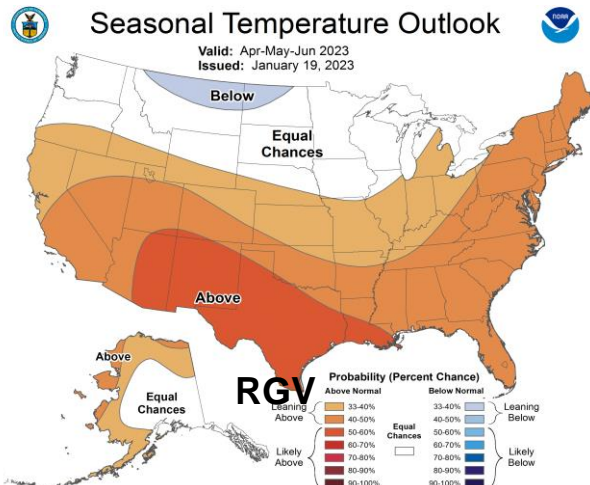
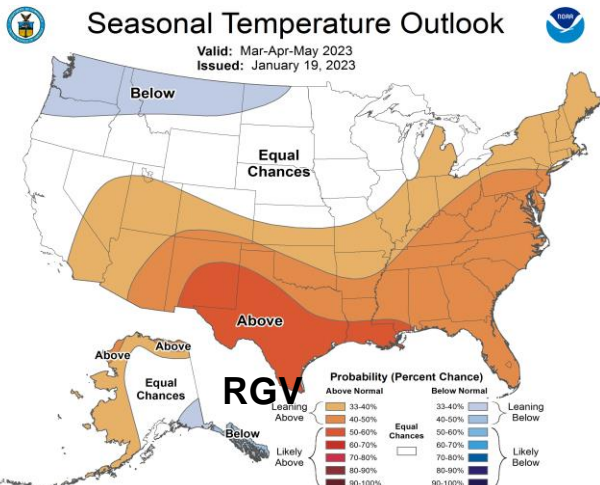
Monthly Precipitation Outlook

Valid: February 2023
Issued: January 19, 2023



- **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 February or early March could bring freezing temperatures along with freezing precipitation.

Spring and early Summer 2023 and Beyond: Continued Warm, then Hot, (and Dry)...



Wildfire Spread and Water Shortages Increasing?

Reservoir situation worsens rapidly?

Rainfall (thunderstorm, tropical) unknown; low values would lead to a much worse reservoir situation.



Bottom Lines

- The growth, thickness, and density of grasses and brush in autumn 2022 (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 peaking in February/March** and perhaps continuing into **April**, based on the forecast. Wildfire prevention activities should continue, and resources should be readied for deployment, just in case.
- Water storage levels at **Falcon** began to **fall slowly** in January, and will fall more rapidly by late March and April. The **combined share of water in Amistad and Falcon is likely to remain low to very low** headed into the spring growing season. Water conservation, smart irrigation, and rainwater harvesting are important actions through mid spring.
- **Another freeze or two is possible in February** – similar to 2021 and 2022. Another **hard freeze remains in play**. Utility companies, crop and livestock farmers, and transportation departments should **maintain their winter preparedness plans in light of the Dec. 23-25, 2022 Hard Freeze** to remain vigilant.
- A couple more **strong cold fronts** – dropping “feels like” temperatures between 35 and 50 degrees – are possible through early March. Three have occurred so far (mid November, mid December, December 22/23). Residents should keep **winter wardrobes** ready/updated and ensure **heating systems** are in proper working order.