August-October 2022 Outlook: Perspective for the Lower Rio Grande Valley/Deep S. Texas Region

NATIONAL WEATHER SERVICE

July 27, 2022

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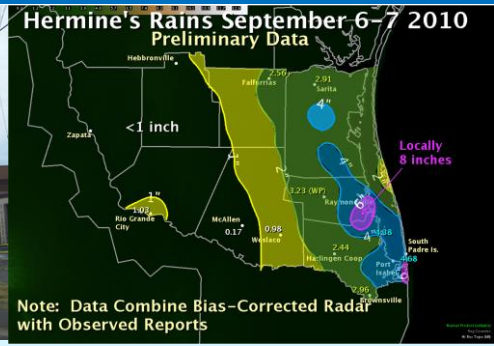
Drought or Flood? Late Summer/Early Autumn Could Have Both

Falcon Dam, July 2022 (credit: New York Times)

Damage in Raymondville from TS Hermine, September 2010



Since July 1st…

- The heat has maintained, and rainfall has been sparse. Despite temperatures being near the “warmer” 1991-2020 30-year averages, the total average from April 1-July 25 ranked among the top three hottest on record for the RGV anchor cities (top right).
- Rainfall was only a fraction of average for June and July, and drought had returned to much of the area.
- Water levels at Falcon International Reservoir and Amistad International Reservoir combined were **at/near their lowest levels in the past 30 years.**

Maximum 116-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	84.4	2022-07-25	0
2	83.5	2019-07-25	0
3	83.2	2011-07-25	0
4	83.2	2020-07-25	0
5	83.2	2012-07-25	0
6	82.9	2018-07-25	0
7	82.3	2017-07-25	0
8	82.3	1978-07-25	0
9	82.3	2006-07-25	0
10	82.2	2001-07-25	0

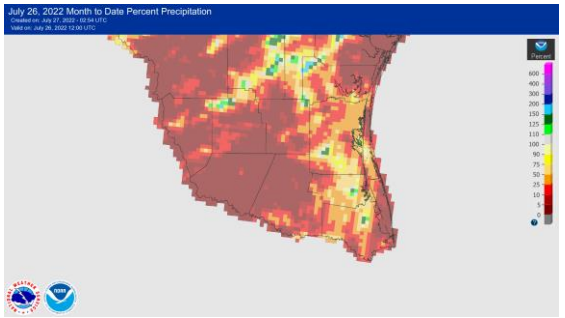
Period of record: 1878-01-01 to 2022-07-25

Maximum 116-Day Mean Avg Temperature for HARLINGEN, TX

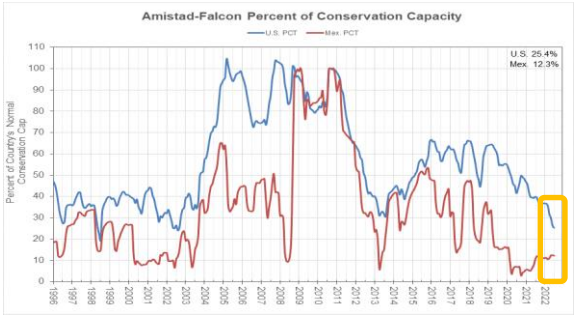
Click column heading to sort ascending, click again to sort descending.

Rank	Value	Ending Date	Missing Days
1	84.5	2022-07-26	2
2	83.6	2020-07-26	8
3	83.5	1953-07-26	2
4	83.0	2019-07-26	9
5	82.7	2016-07-26	2
6	82.7	2017-07-26	6
7	82.6	1945-07-26	2
8	82.6	2011-07-26	6
9	82.6	2002-07-26	1
10	82.6	1998-07-26	1

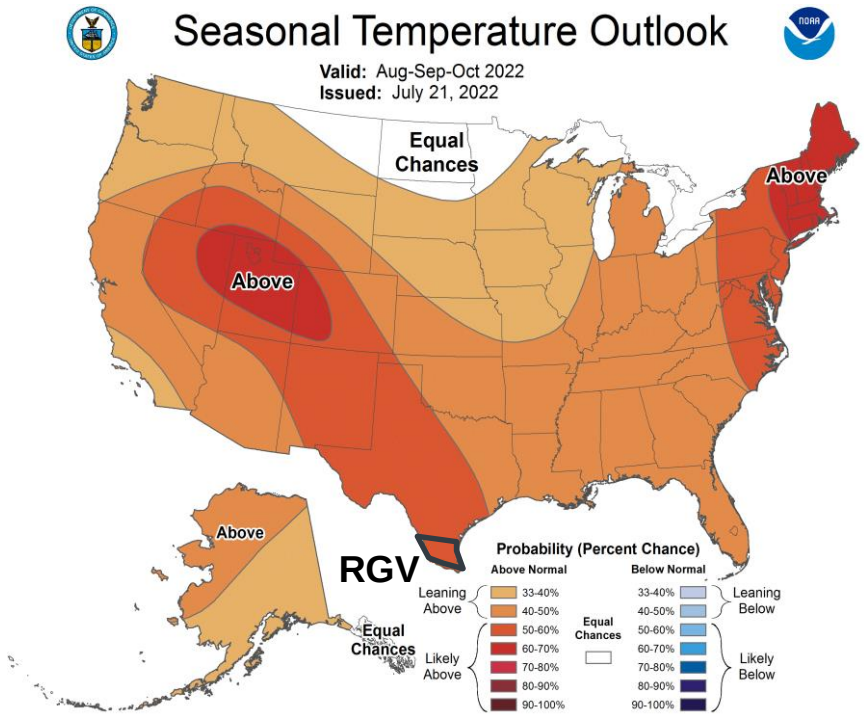
Period of record: 1912-02-07 to 2022-07-26

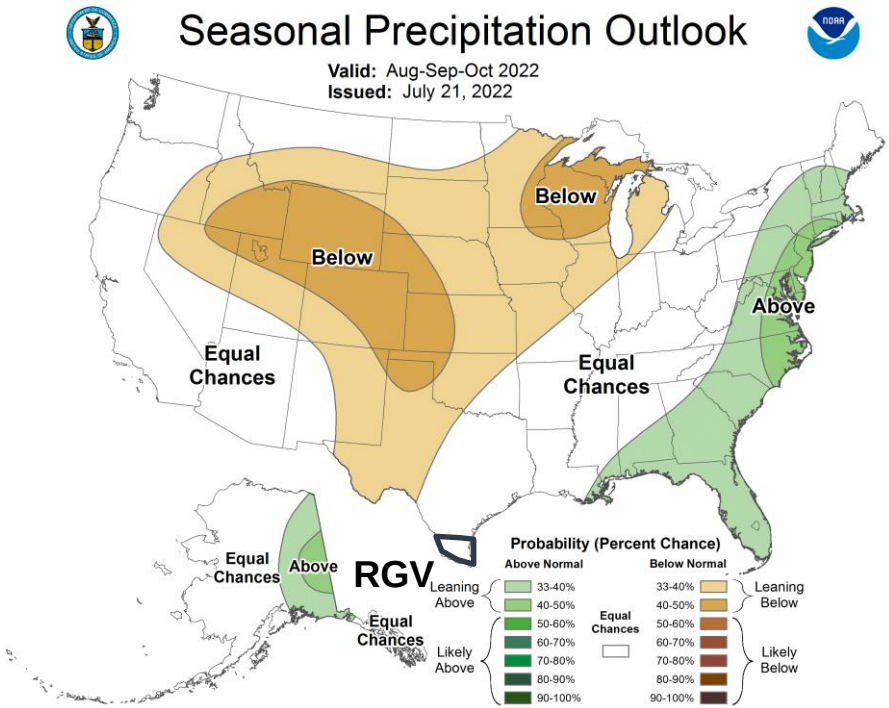


Percent of Average Rainfall, July 1-25, 2022



Seasonal Forecast August-October 2022 - USA





Key Takeaways: August – October 2022

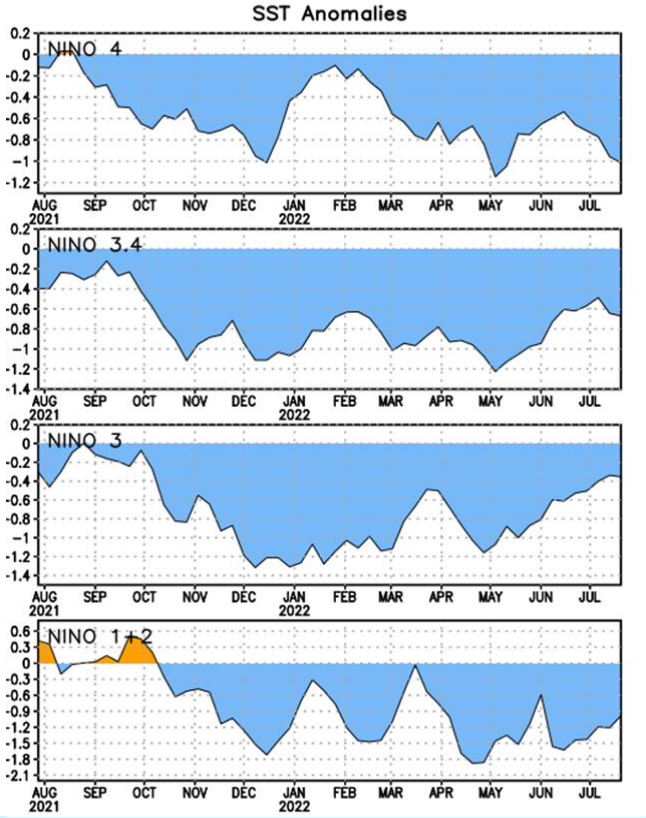
- **Above to average temperatures**, and a "lean" toward below average rainfall continues...
- ***Confidence is high*** on a **hot late summer/early autumn**, but rainfall remains "wild card" due to tropical potential
  - **Persistent Heat** which began in May will continue through early autumn. This persistence resulted in a uptick in heat-related illnesses by mid July, and this should continue into August and September, barring any rain relief.
  - **September is critical** to autumn climate outcomes, including **drought and a potential water shortage crisis**. Without sufficient rainfall during the wettest month of the year, **this will become reality**.
  - **Tropical "wild cards"** are possible just about anytime from mid August through early October, in the form of cyclones or energy waves. **Without them**, **drought will continue to worsen across the region**. **With them**, **flooding** (and worse) is likely.
  - Without sufficient rainfall, parched grasses and brush combined with occasionally breezy conditions will maintain the threat for **rapid wildfire spread/growth**. Areas under highest threat would be along and west of IH-69C from Brooks/Hidalgo to Zapata.
  - Reservoir levels at Amistad and Falcon will **likely set new record low levels in August**. Water supply issues are likely for an increasing number of Valley locations.

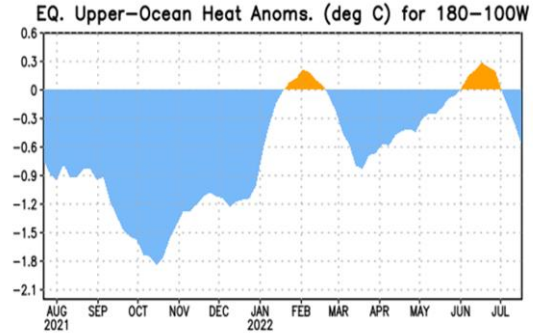
The “Why” of the Forecast: El Niño/Southern Oscillation (ENSO) solidly in La Niña Phase

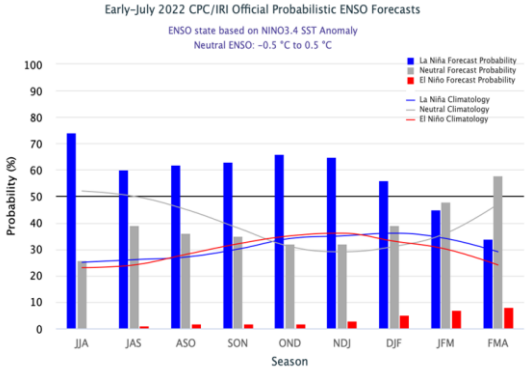
Year	DJF	JFM	FMA	MAM	AMJ	MJJ	JJA	JAS	ASO	SON	OND	NDJ
2021	-1.0	-0.9	-0.8	-0.7	-0.5	-0.4	-0.4	-0.5	-0.7	-0.8	-1.0	-1.0
2022	-1.0	-0.9	-1.0	-1.1	-1.0							

- La Niña will remain the dominant signal into autumn
- The stout summer La Niña combined with general atmospheric patterns and other “teleconnections” generally leans toward hot and dry/drought conditions…
- …but La Niña and other factors also support potential for tropical cyclones. Time will tell if cyclones can develop and reach the region.

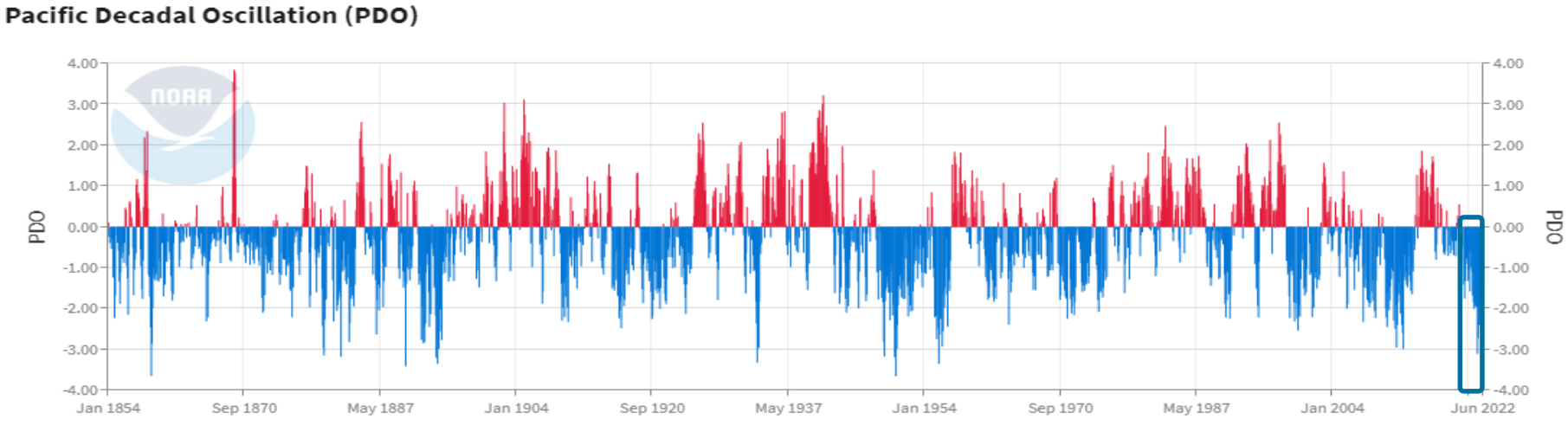
*Above right: Oceanic Niño Index. Values below -0.5 (light blue) indicate a 3-month La Niña episode.







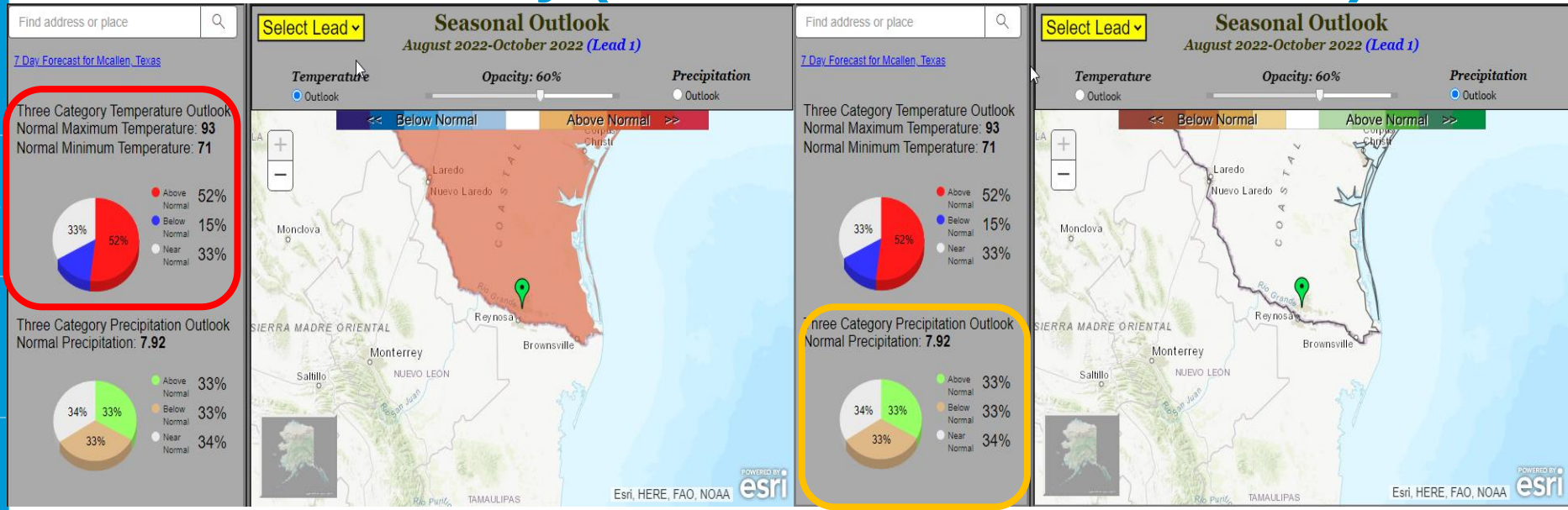
The “Why” of the Forecast: Pacific Decadal Oscillation (PDO) in Negative Phase



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

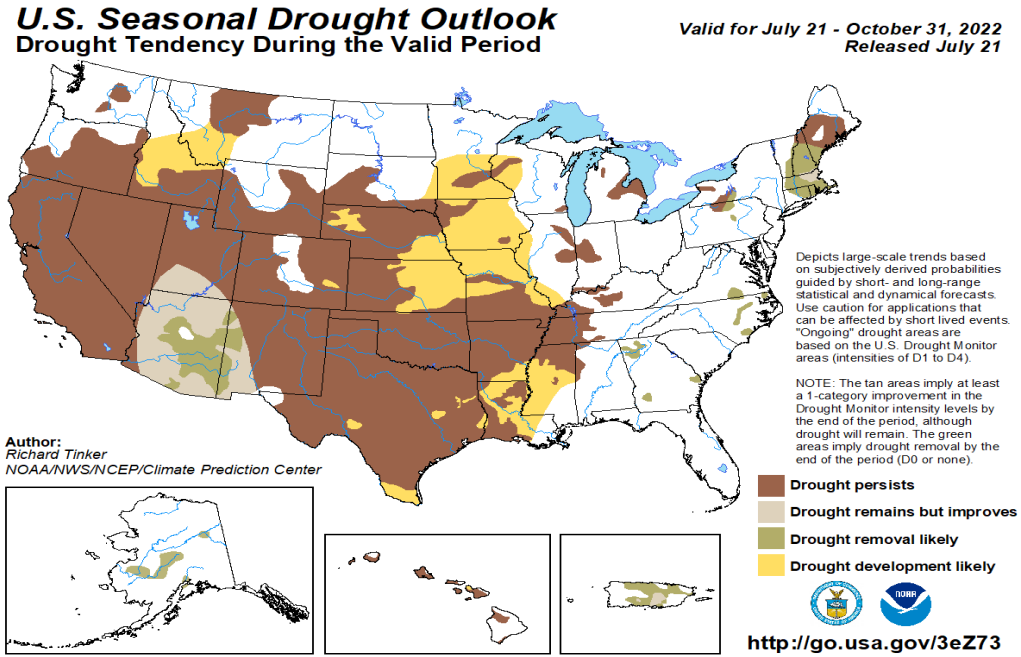
- The 2021/2022 prolonged negative PDO remains similar to that of late 2010 through 2011. Combined with the persistent La Niña – also very similar to that from late 2010-2011 (though 2011 was a bit stronger), **confidence remains high on a continued hot late summer and early autumn 2022**.
- Still, late summer/early autumn remains a **rainfall wild card:** Oceanic/atmospheric combinations favor an active Atlantic Hurricane season from mid August through early October…but confidence in this forecast was beginning to wane.

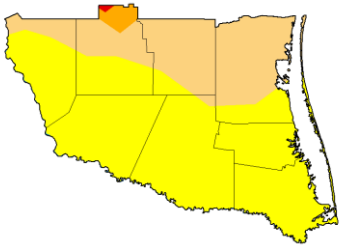
The August-October 2022 Outlook: Rio Grande Valley (McAllen as Anchor Point)



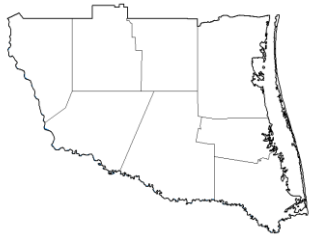
- Temperature: A 52 percent chance of above average. RGV averages: Afternoon - Upper 90s to 100+, falling to the mid 80s by the end of October. Morning: 75 to 80 falling to the 60s by the end of October
- Precipitation: Equal chances (~33.3 percent of all three categories but a “dry” lean). RGV averages: 8 to 12 inches (from west to east).
- Of note: Average temperatures rose ~2 degrees for the 1991-2020 sample, making it more difficult to forecast a late summer value much above this.

The August-October 2022 “Droughtlook”





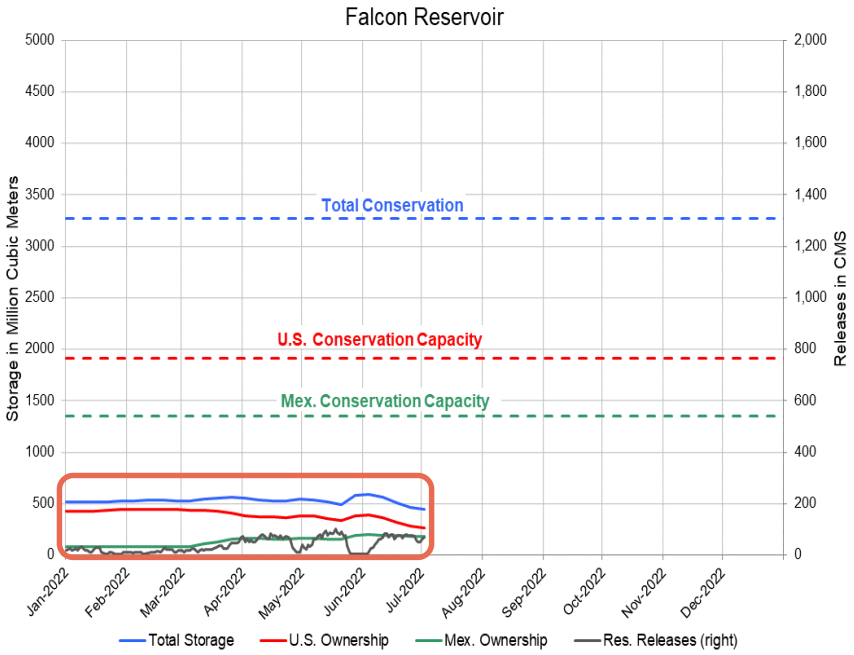
July 19, 2022

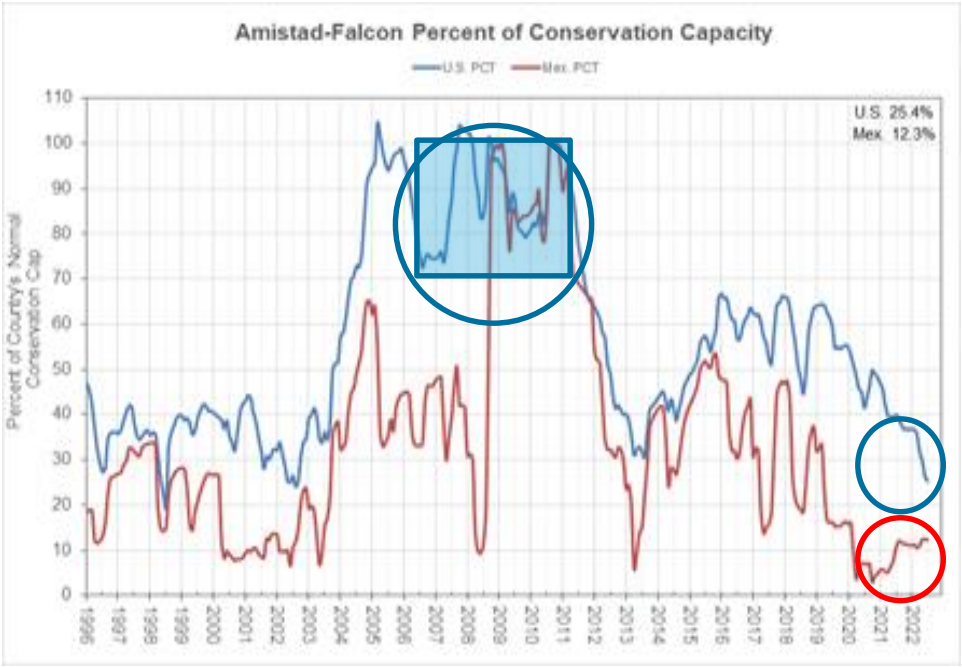


July 20, 2021

- If “wild card” or tropical rains do ***not*** occur, drought will worsen **across the Rio Grande Valley/Deep S. Texas late summer into early Autumn.** Best chance for severe to extreme drought is in areas along/west of IH-69C (Brooks/Hidalgo through Zapata)

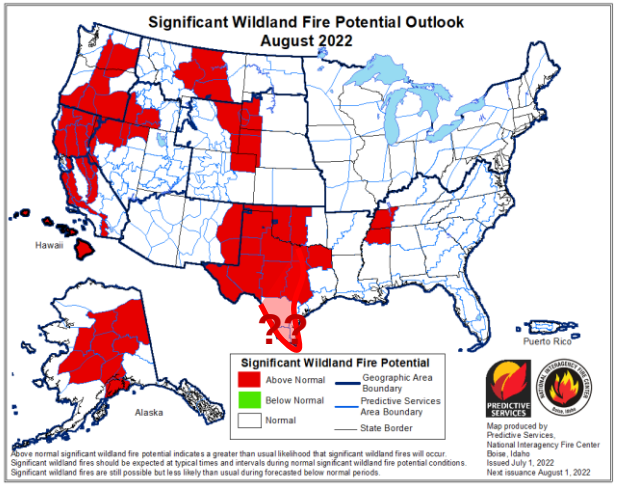
Falcon Reservoir nearing 30-year lows in late July

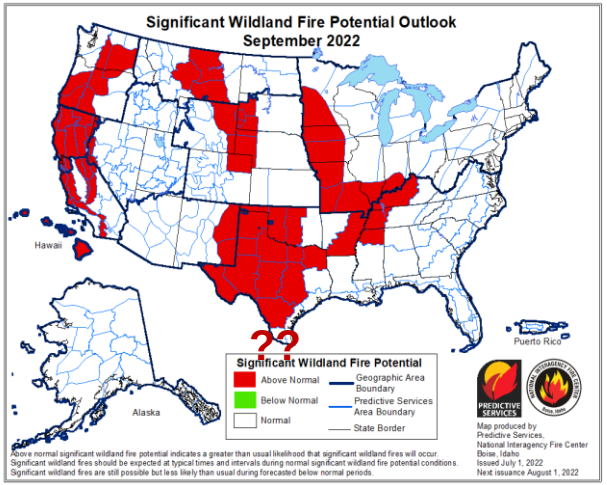


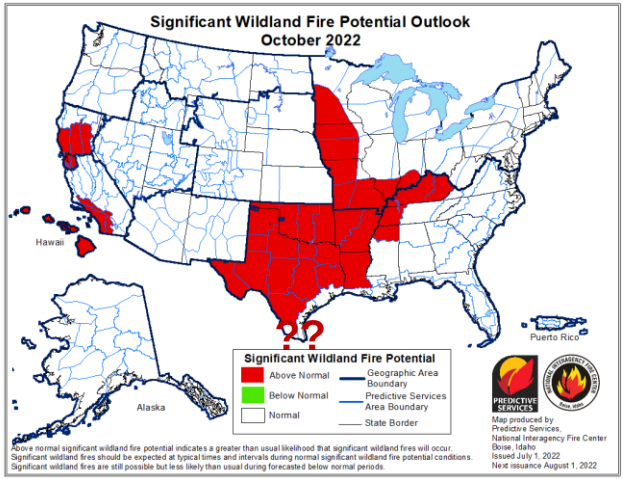


- Late July 2022 total capacity, Falcon Reservoir: **12 percent**
- Late July 2011 total capacity, Falcon Reservoir: **56 percent**

Wildfire Spread Potential Could Worsen through October

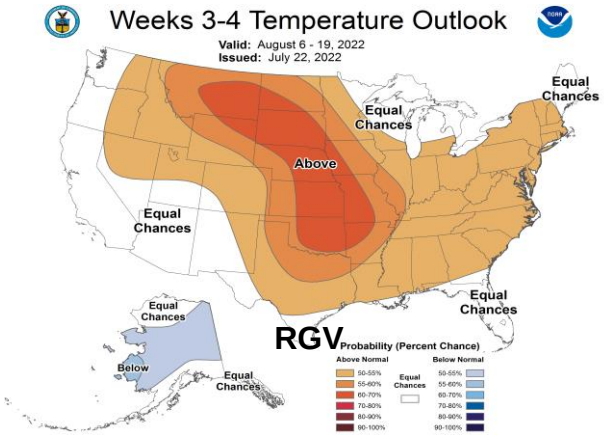


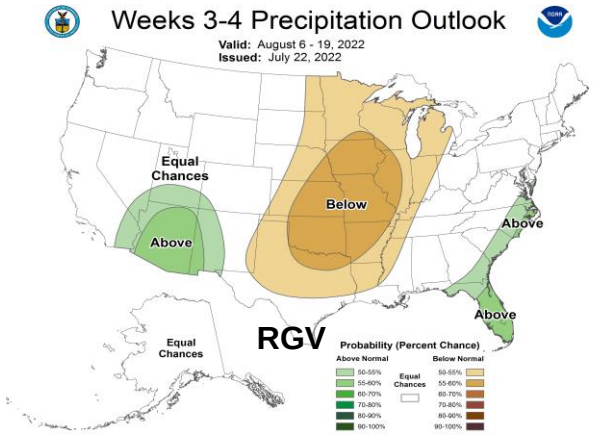


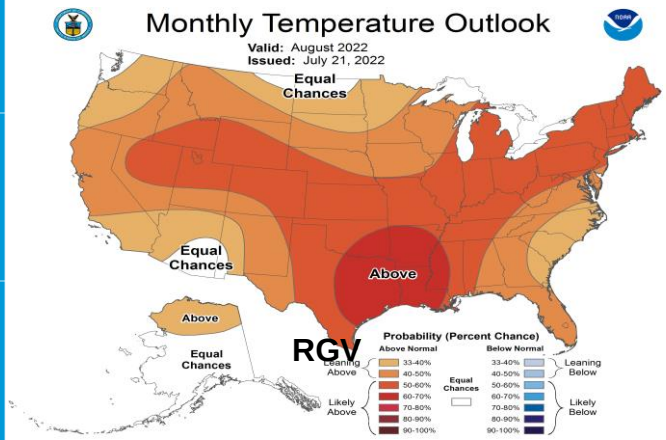


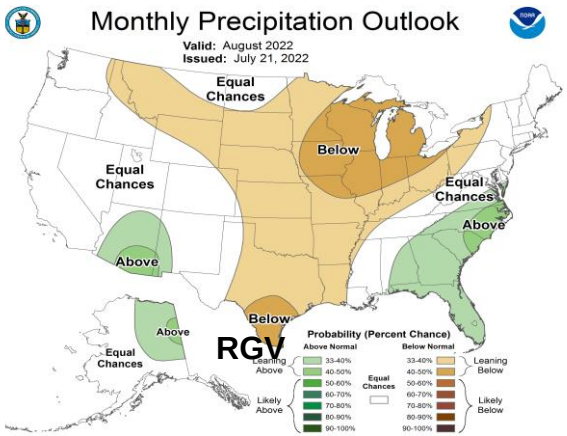
- Abundant fuels from late April and late May torrential rains have become parched, and are now active for “initial attack” wildfires. In July alone, more than 8,000 acres had burned in rural Deep S. Texas.
- Without appreciable rain in July into August, updated maps for August may include the southern tip of Texas. Look for the update here.
- Favored areas remain west of IH-69C/US 281 from western Brooks/Hidalgo through Zapata County, but all areas will be under threat if rain fails to materialize in August and beyond.
- September is the true wild card. Without the monthly average (4.5 to 6 inches) of rainfall, wildfire spread threat will increase markedly, and would likely continue through October and beyond as drier airmasses arrive.

August 2022: Confidence High on Heat, Increasing on Rainfall



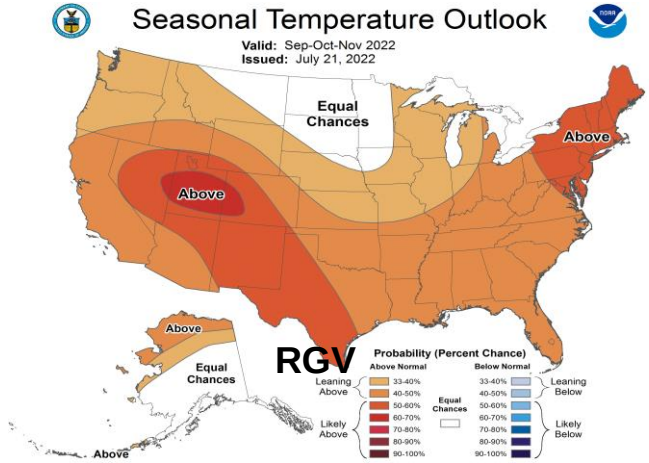


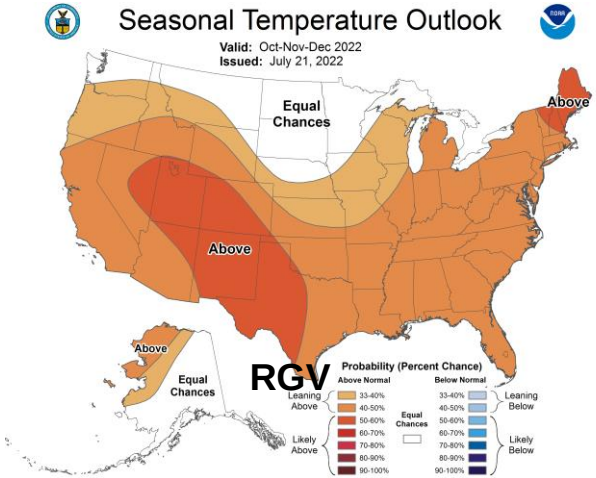


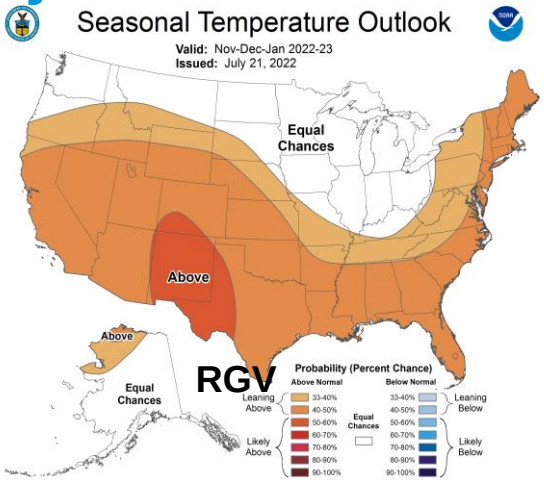


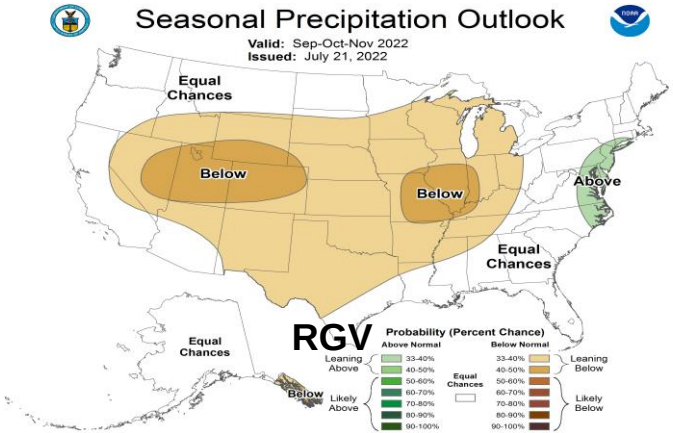
- **Bottom Line:** Through August, slightly hotter than average temperatures should prevail. Rain will depend on if any tropical/related development occurs – otherwise, this is typically one of the drier periods of the year. Drought/dryness will steadily spread back across the Lower Rio Grande Valley if little to no rain falls during this period.
- There are increasing signs that tropical development in August will be muted by dry air over much of the Atlantic Basin. The western Gulf, however, remains a “wild card” though trends are leaning dry.

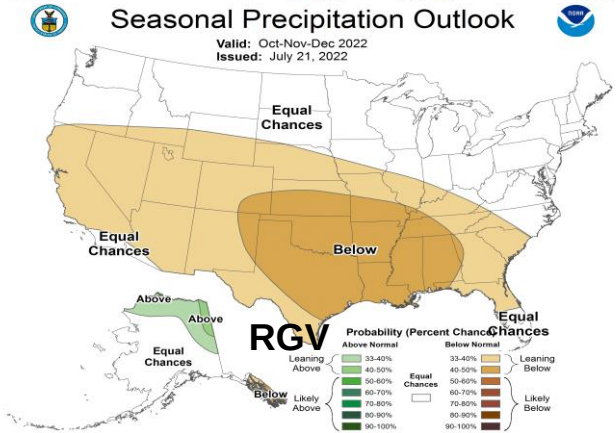
Autumn/Winter 2022: Continued Warm and Dry

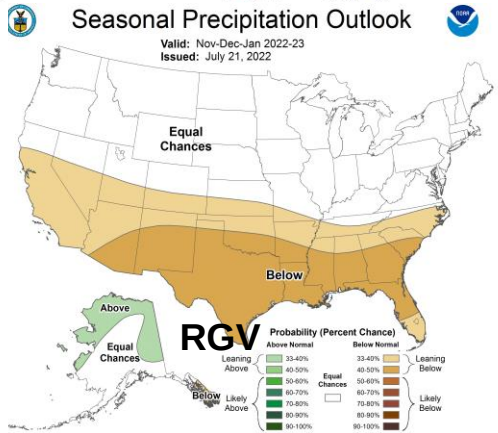












Bottom Lines

- **Heat** will remain dominant through late summer and autummn, setting the stage for *another top-ranked warm calendar year* should much warmer than average conditions persist through the rest of 2022. **Heat safety** should be promoted frequently into September.
- **Agriculture and municipal water shortages will increase** with high evaporation, lack of significant rainfall, and very low water levels in Falcon Reservoir, through early autumn **if little to no rain falls across the Rio Grande Basin**. ***Conservation***, ***smart irrigation***, ***rainwater harvesting***, **etc. are imperative for the rest of 2022.**
- **Drought is likely to reset to severe to extreme mainly west of IH 69/US 281** in August if no "just-in-time" rain falls. **Severe drought** would extend east toward Cameron/Willacy/Kenedy in this case. Brown, brittle grass and brush will continue across most areas, and be **sufficient fuel for rapid spread of wildfire**.
- **Late summer and early autumn 2022** remains a "wild card" for **torrential rain and flooding**. As events since 2018 have shown, it only takes a day or two to shift from drought to flood in the Rio Grande Valley – and that potential still exists between mid August and early October. Depending on the timing, torrential rain could be a boon or a disaster for late summer agriculture.