NATIONAL WEATHER SERVICE

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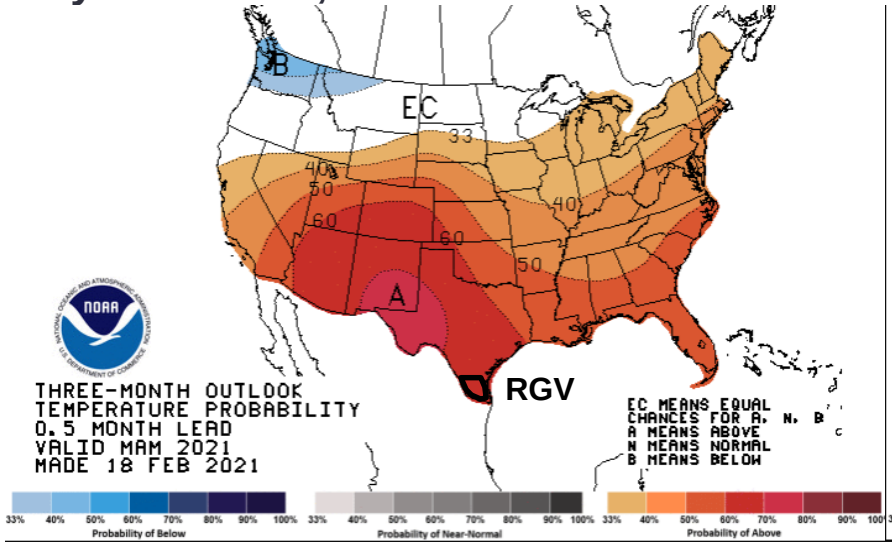
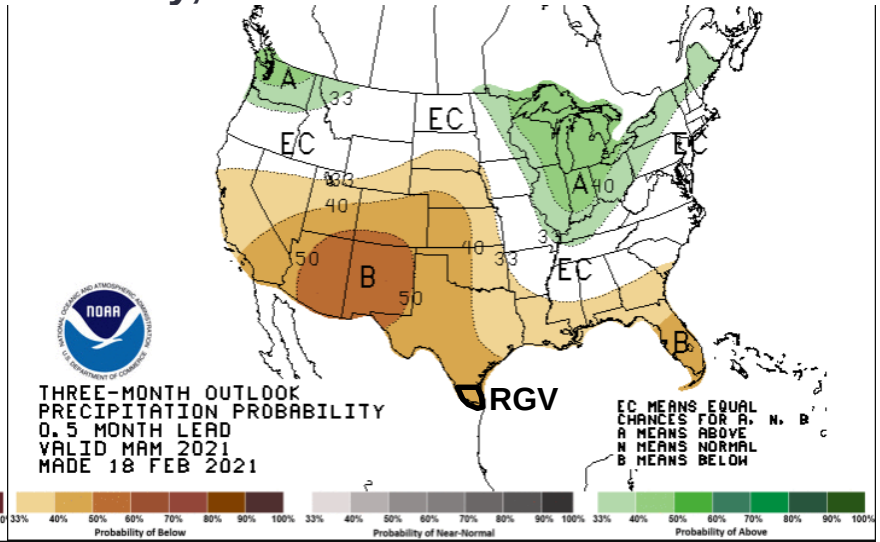
NOAA Spring (March-May) 2021 Outlook Perspective for the Rio Grande Valley/Deep S. Texas Region

March 1, 2020

Barry Goldsmith, NWS Brownsville/Rio Grande Valley, Texas





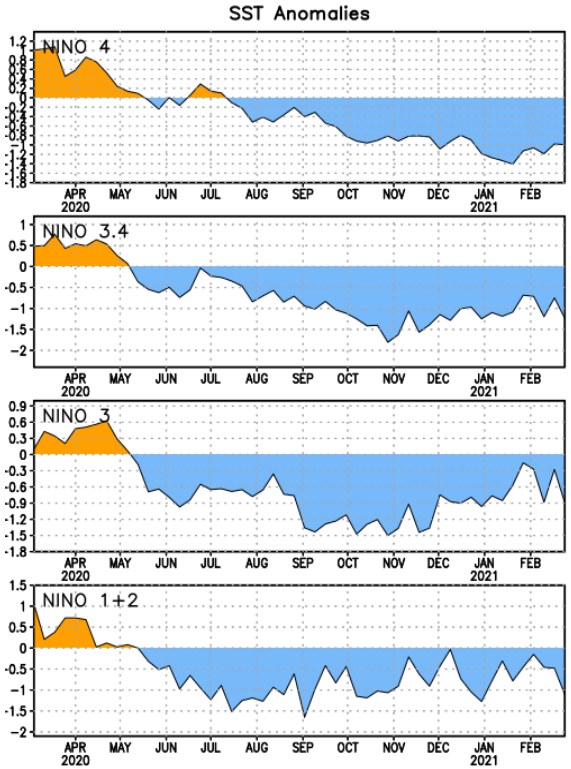
Key Takeaways

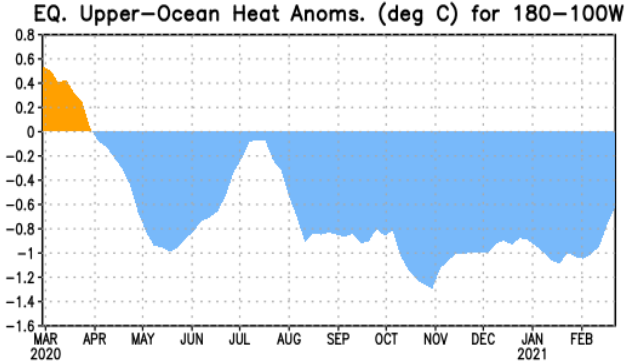
- **Above to much above average temperatures** and **below average precipitation** remains the forecast
- Based on this forecast becoming reality:
  - **Drought** will **worsen by the end of May**. **Extreme to Exceptional Drought** will cover all areas by the end of May. **Exceptional Drought** arrives in March across the ranch country.
  - **Wildfire spread threat will become extreme** based on the combination of "super" freeze-cured fuels with additional drying. Each month could have critical low humidity and strong wind events conducive to **explosive** wildfire spread.
  - **Municipal and Agricultural water shortages** are now expected to be an issue in mid to late spring as Falcon Reservoir will remain low – and need releases from Amistad to assist.
  - The threat for **Widespread Severe Weather (Wind/Hail)** is slim, but local events cannot be ruled out, particularly in May.

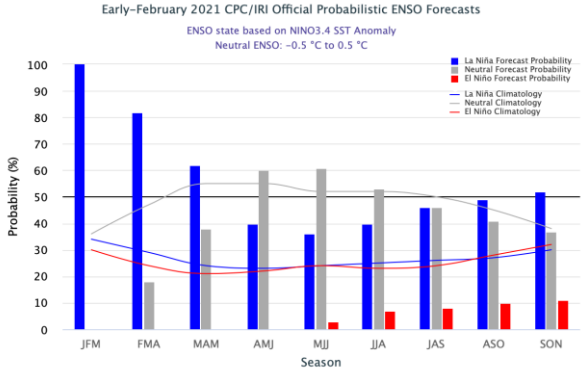
The "Why" of the Forecast: La Nina, Locked In

Year	DJF	JFM	FMA	MAM	AMJ	MJJ	JJA	JAS	ASO	SON	OND	NDJ
2020	0.5	0.5	0.4	0.2	-0.1	-0.3	-0.4	-0.6	-0.9	-1.2	-1.3	-1.2

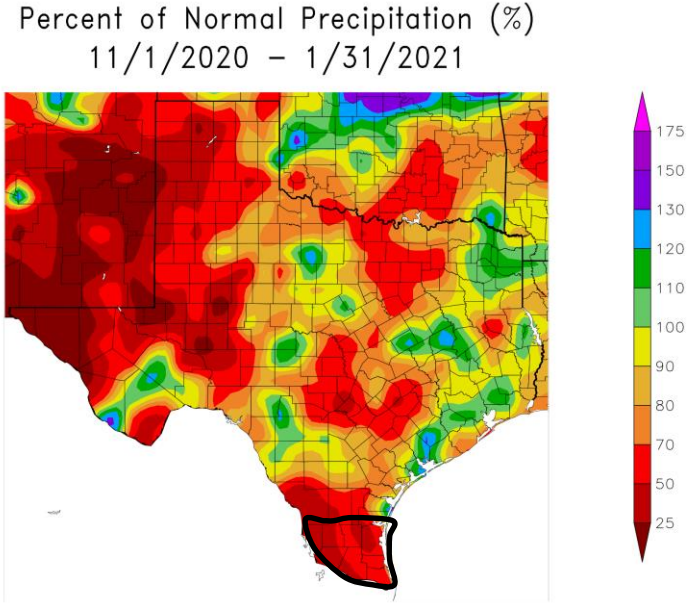
- Moderate La Niña continues (blue colored areas; -1 to -1.5), and should remain so through March or April
- Persistent warmth over several years in the southwest U.S./northern Mexico is expected to continue

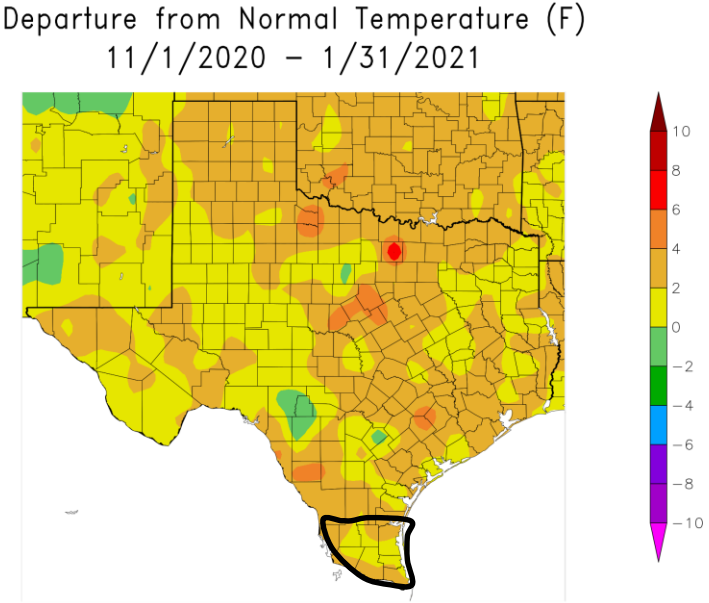






November 2020 through January 2021: Table…Set

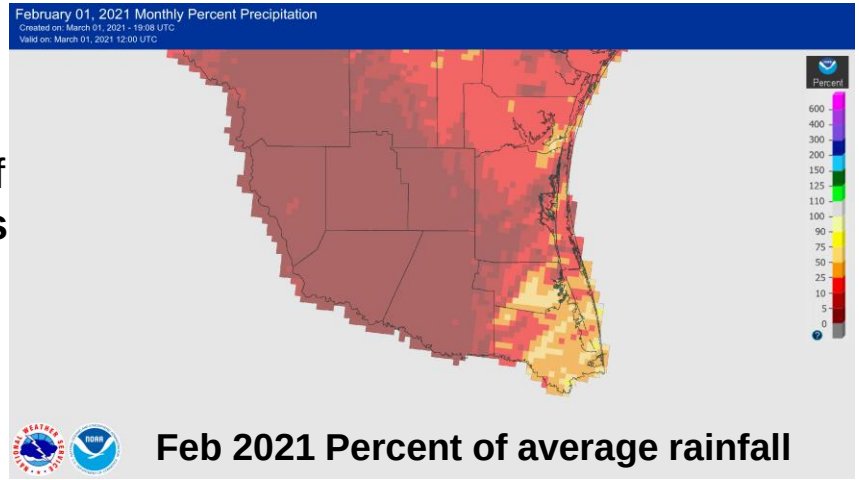




- Dry to Very Dry Compared with Average. Rainfall generally 0.75 to 3 inches (west to east) (average: 3 to 4.5 inches)
- Temperatures 1 to 3 degrees above average; November was well above (4 to 6 degrees), while December and January were closer to average (1 to 2 degrees)
- Due to frequent “dry” fronts, drought continued to worsen by February 1, 2021

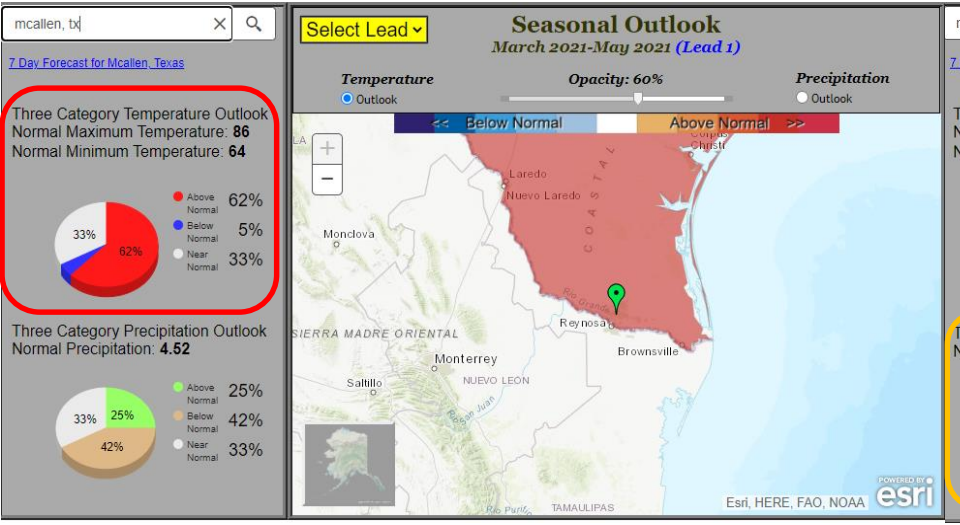
February 2021

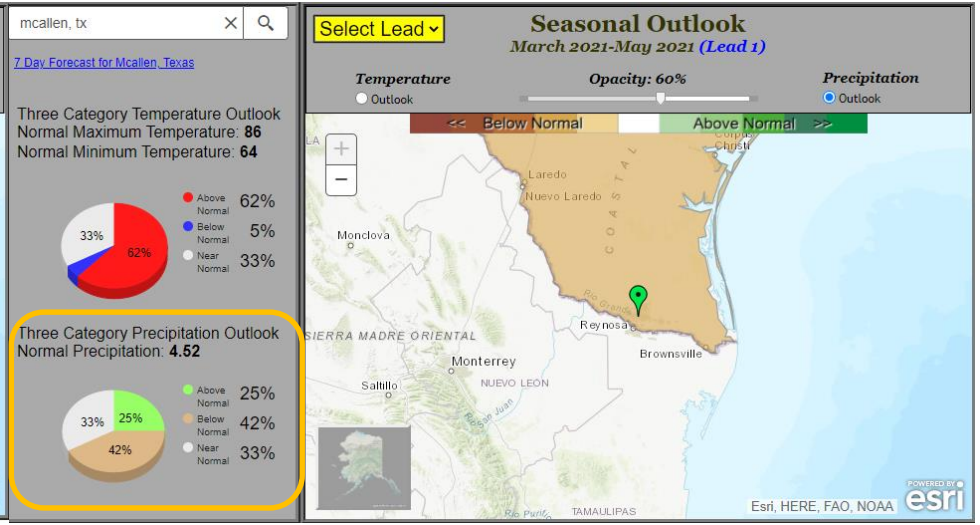
- **"Freeze Dried!"** Mid-month, prolonged cold/extreme cold, unprecedented for the time of year in the last 100 years, **super-cured all fuels by drought and dormancy**.
- Another month with **below average** rainfall contributed; month ended with severe to extreme drought in most agricultural and ranch areas
- Cold snap was followed by a huge warm-up; while month ended up well below average (-4˚F), the rank was in the Top 15 to Top 25 coldest, rather than the Top 5/10 coldest



Feb 2021 Percent of average rainfall

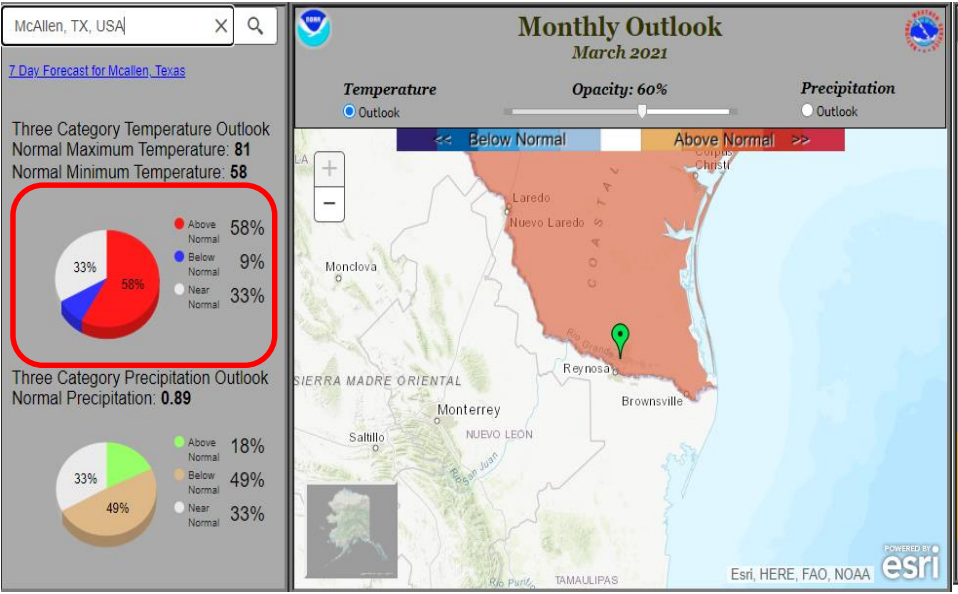
The March-May 2021 Outlook: Rio Grande Valley (McAllen as Anchor Point)

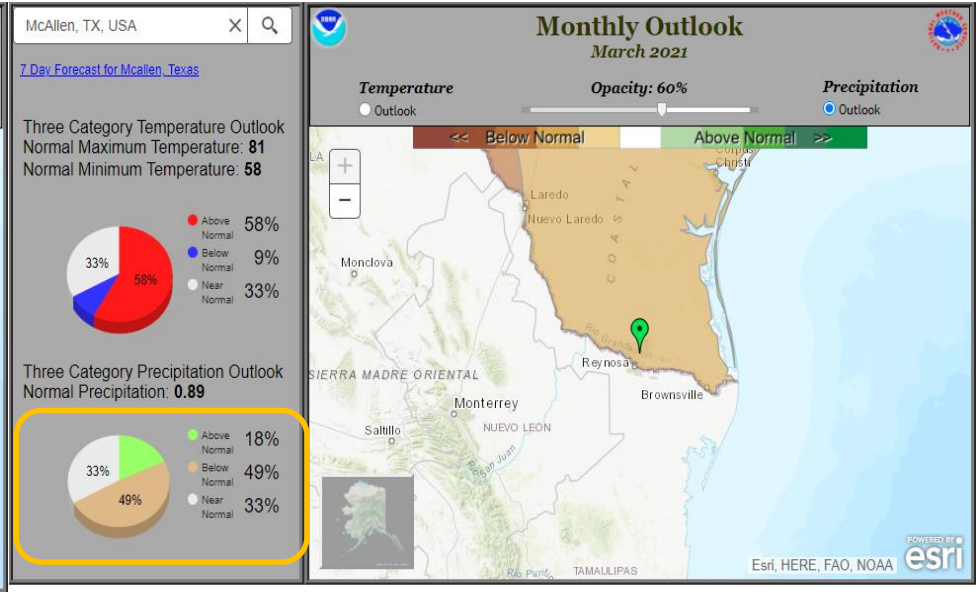




- **Temperature: A 62% chance of *above* average. Seasonal average – Afternoons, Rising from ~77˚ (on 3/1) to ~94˚ on 5/31). Mornings: Rising from 50-55˚ (3/1) to 70-74˚ (5/31). Just a 5% chance of below average in 2021.**
- **Rainfall: A 42% chance of *below* average. Seasonal average: 4 to 5.5 inches of rainfall**
- **Probability of above average precipitation is 25 percent.**

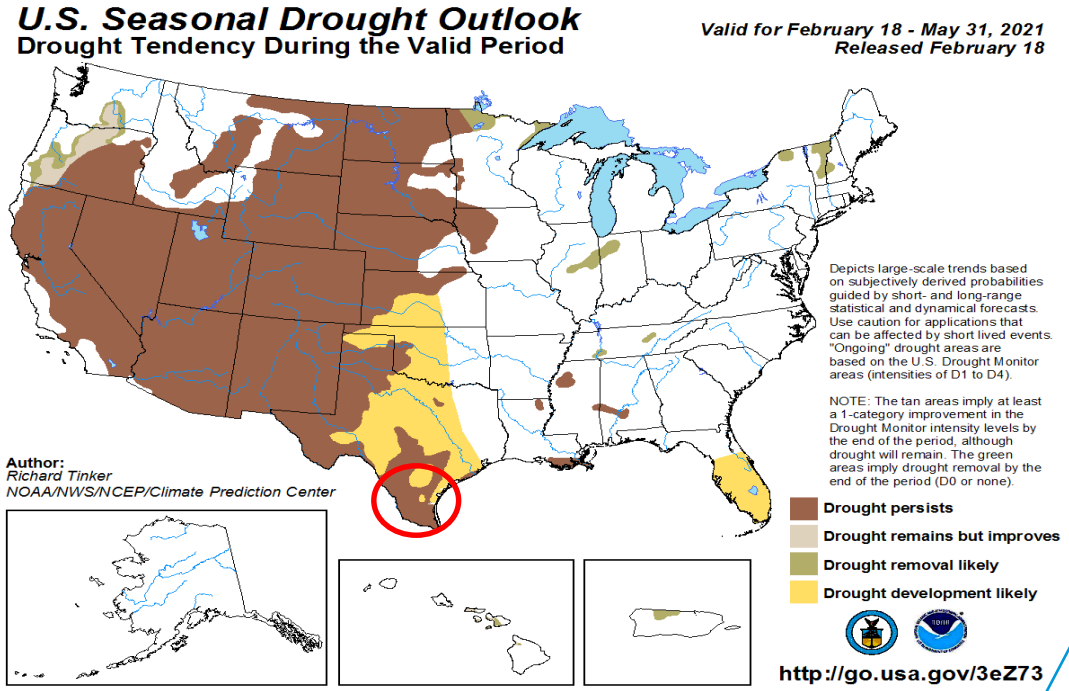
March Outlook: Rio Grande Valley (McAllen as Anchor Point)



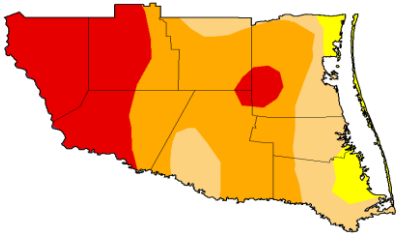


- **Temperature: A 58% chance of *above* average. Monthly average – Afternoons, Rising from ~77˚ to ~84˚. Mornings: Rising from ~55 to 61˚. Just a 9% chance of below average.**
- **Precipitation: A 49% chance of *below* average. Monthly average: 1 to 1.5 inches of rainfall. An 18% chance of above average.**

The "Droughtlook"



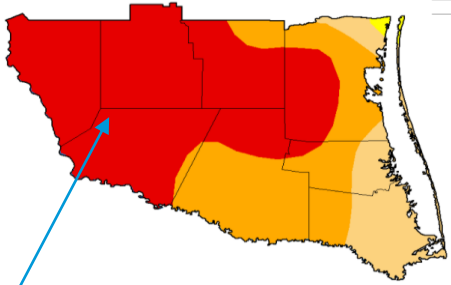
Observed: January 21, 2021



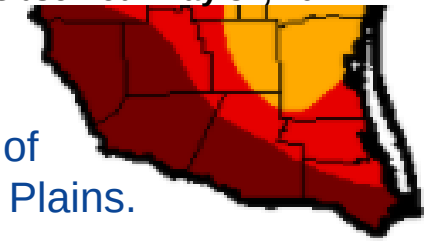
Drought Classification

- None
- D0 (Abnormally Dry)
- D1 (Moderate Drought)
- D2 (Severe Drought)
- D3 (Extreme Drought)
- D4 (Exceptional Drought)

Observed: February 23, 2021



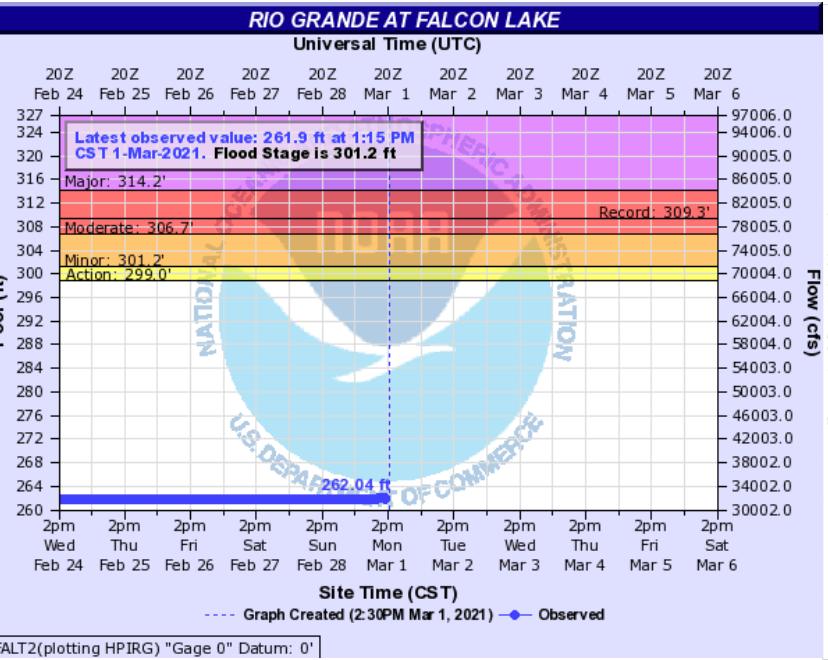
Observed: May 31, 2011*

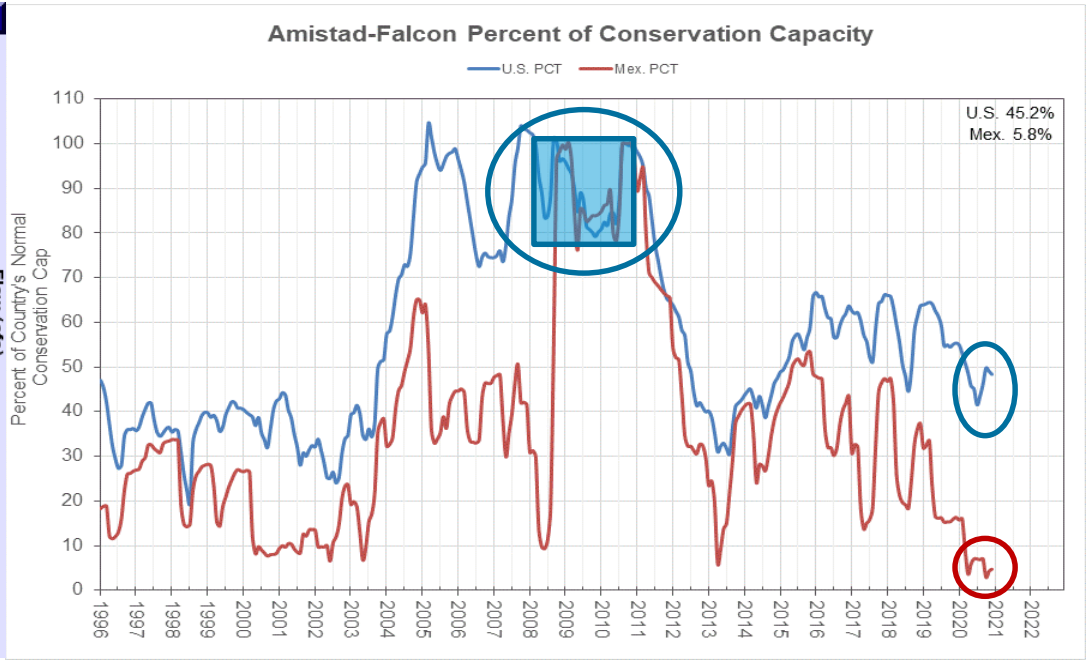


*Analog assumes very warm/dry conditions prevail

- Conditions should become similar or worse than the end of spring 2011. **Exceptional** likely to arrive in March in RG Plains.

Falcon Reservoir remained low at the end of February 2021

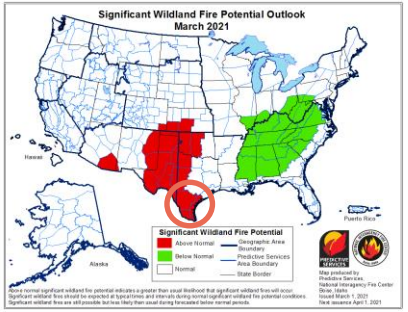


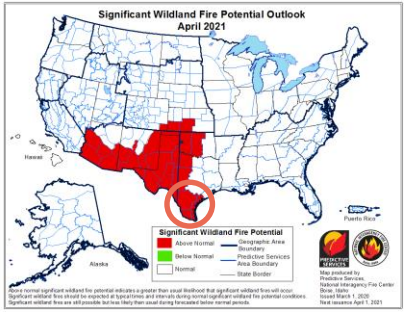


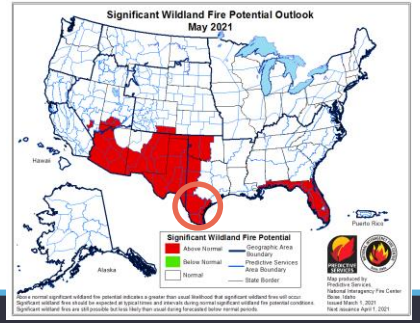
- February 2021 total capacity, Falcon Reservoir: **19 percent**
- February 2011 total capacity, Falcon Reservoir: around **95 percent**

Wildfire Spread Potential Could Become Extreme in Spring 2021

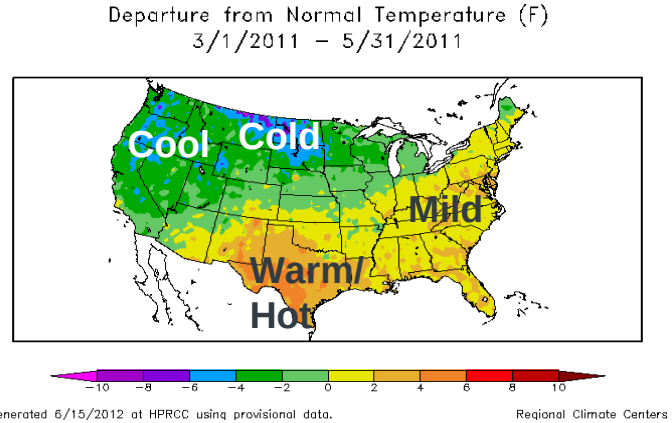
- 1-hour fuels (grasses) were **super-cured** (dormant "litter") by February 20th ; these conditions continued through the end of the month.
- **10, 100, and 1000** hour fuels (brush and timber) also sustained **freeze-curing**; greatest impacts across locations west of IH-69C/US 281 (western Brooks/Hidalgo through Zapata)
- Wildfire spread **will depend on wind**, given that green-up will be spotty, even in March.
- **Explosive spread conditions** are likely on days with northwest wind/warm to hot temperatures/very low humidity. **Best chances** for these are **April and May**



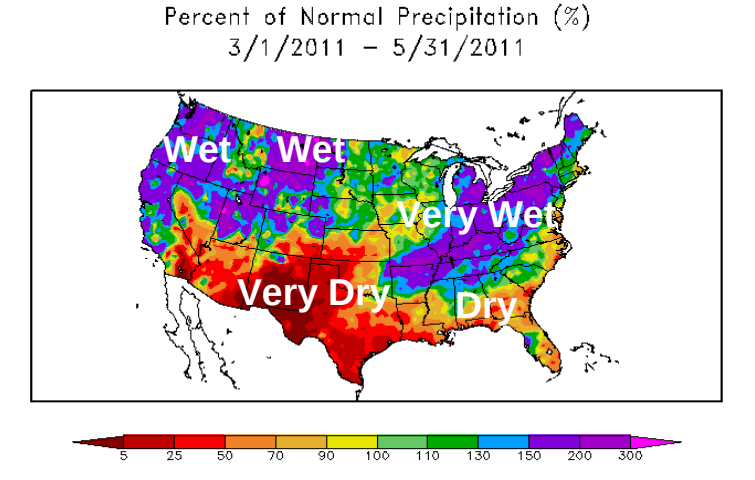


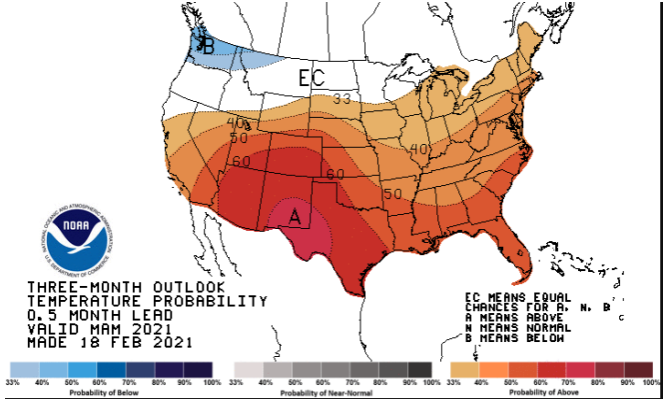


2021 vs. 2011

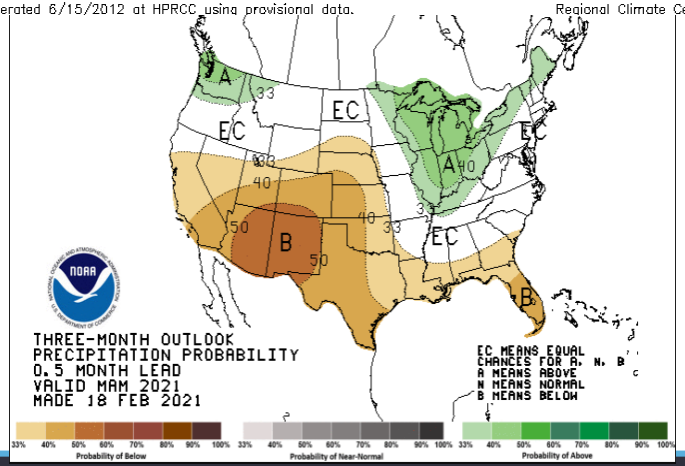


Observed Mar-May 2011

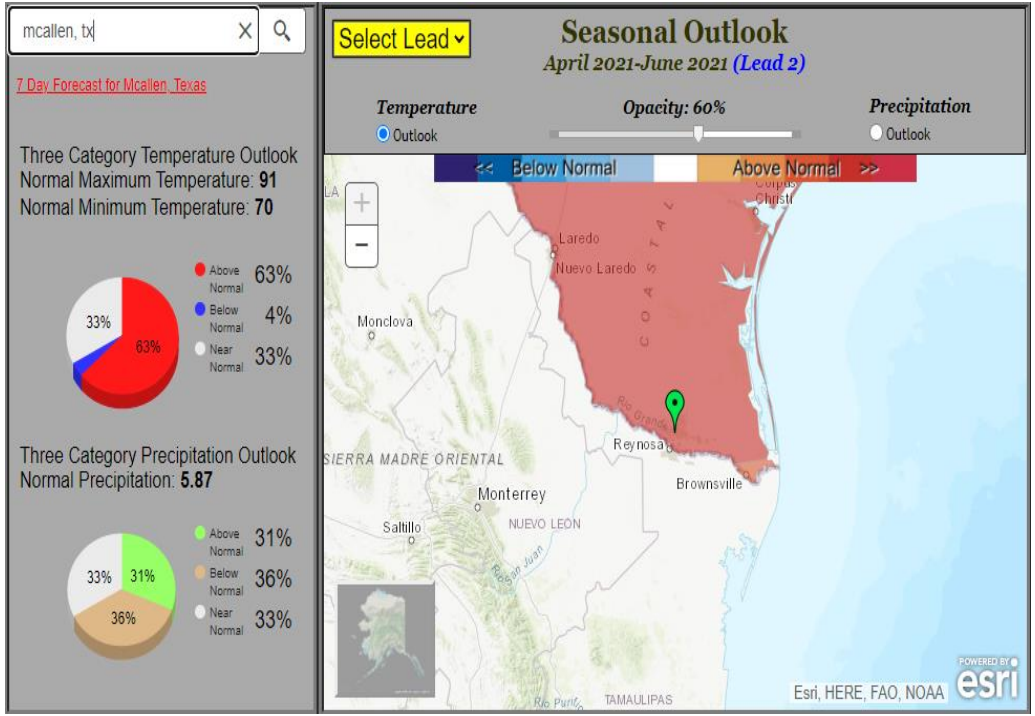


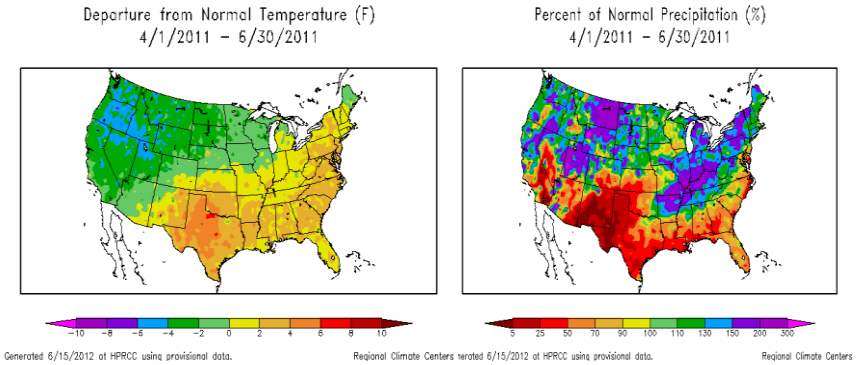


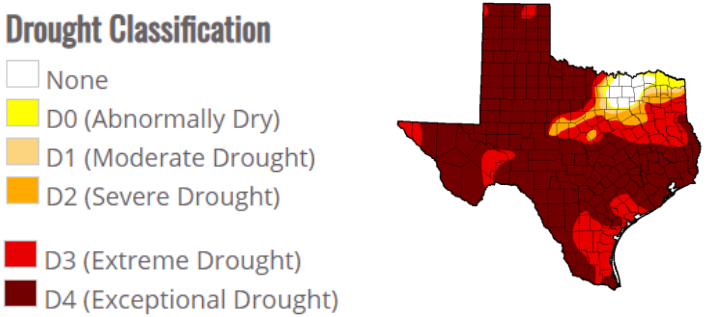
Forecast Mar-May 2021



April-June 2021 Outlook: More of the Same?







2021 Forecast, March – May (McAllen) – Updated 12/17/2020

Drought, June 28, 2011

In Summary: Impacts and Actions

- **Finalize wildland management plans** ahead of what is potentially an active to explosive wildfire growth period in spring and early summer 2021.
- Do **everything you can to promote wildfire prevention**, all spring long. Start at weather.gov/safety/wildfire, smokeybear.com, and firewise.org.
- Increasing confidence in **extreme** to **exceptional** drought as early as late March means **now is the time** to look at agriculture and municipal water plans in case of **water shortages**.
- Gear up for **early onset of summer-like heat**, particularly during April. Heat index, or "feels like" temperatures, could rise above 105 at times. This could cause heat stress in some people due to **lack of acclimation**.
- Actual temperatures – especially in low level west to southwest flow – could hit 100˚F as early as late March, from Brooks/Hidalgo Counties out to Zapata. **Several 100˚F afternoons are possible** from the end of April into May in many areas away from the coast.