



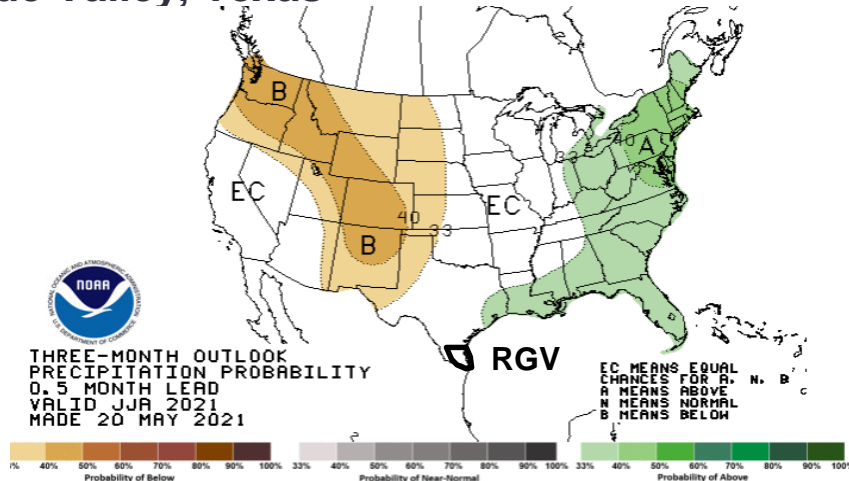
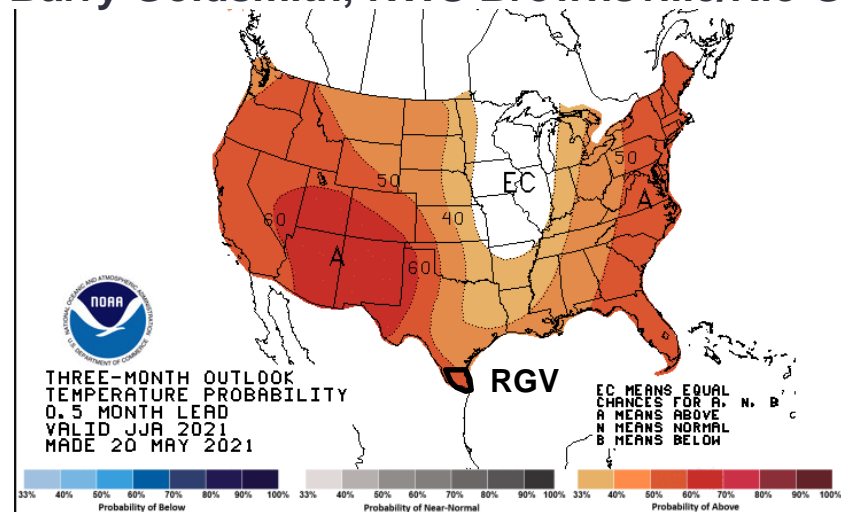
# NATIONAL WEATHER SERVICE

Protecting Lives and Property for 150 Years

## NOAA June-August (Summer) 2021 Outlook Perspective for the Rio Grande Valley/Deep S. Texas Region

June 2, 2021

Barry Goldsmith, NWS Brownsville/Rio Grande Valley, Texas



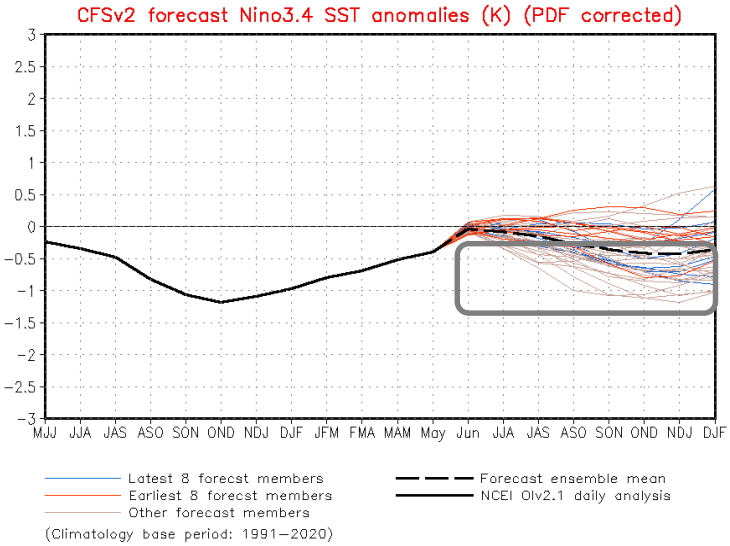
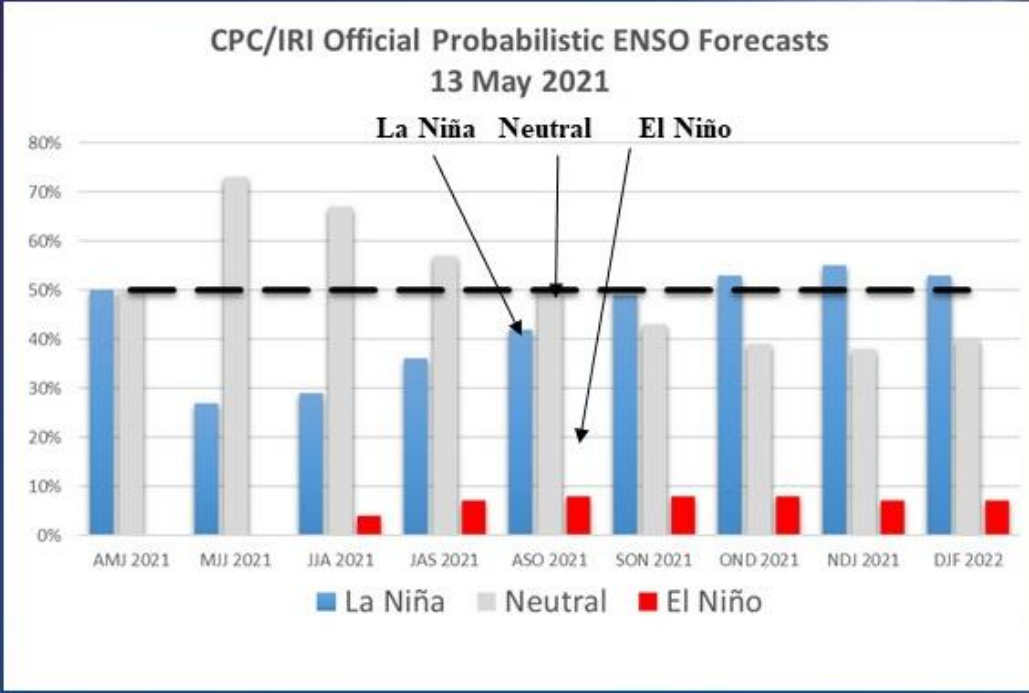
# Key Takeaways

- Change in Pattern? Summer (June) starting wet, but will “La Canícula” return in force by July?
- Uncertainty high, confidence low in the seasonal forecast
  - **Predictive Difficulty** a combination of sharp change in pattern during May (into early June), followed by usual uncertainty in the start of peak hurricane season (August).
  - **Drought is “out”** through June, but **dryness and low-end drought** could resume in July and August
  - **Dangerous “feels like” temperatures could reach/exceed 110°F** frequently in July and August
  - **Municipal and Agricultural** water supplies have been given a reprieve by “Top Ten” May rainfall and a wet start to June...
  - ...but Falcon Reservoir **remains low to begin summer**, even with some pool rises compared with late April low points
  - Could 2021 provide the **\*fourth\* consecutive flood** event in late June or July?  
*Impossible to predict specifics of late June/July pattern development.*



# The “Why” of the Forecast: Neutral-Weak La Niña

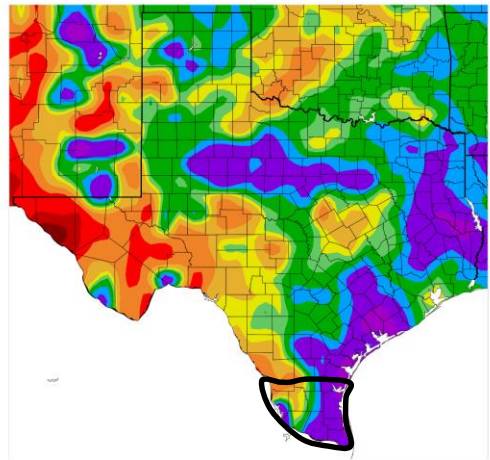
Year	DJF	JFM	FMA	MAM	AMJ	MJJ	JJA	JAS	ASO	SON	OND	NDJ
2020	0.5	0.5	0.4	0.2	-0.1	-0.3	-0.4	-0.6	-0.9	-1.2	-1.3	-1.2
2021	-1.0	-0.9	-0.8									



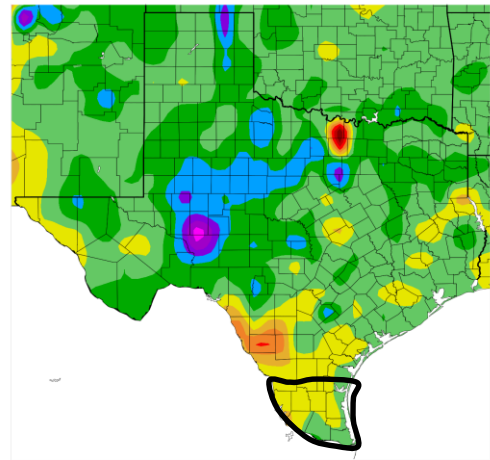
Neutral-Weak La Niña alone does not provide enough information for accurate summer rainfall forecasts

# Dryness Flipped to Wetness near End of Spring

Percent of Normal Precipitation (%)  
3/1/2021 – 5/31/2021



Departure from Normal Temperature (F)  
3/1/2021 – 5/31/2021



Generated 6/2/2021 at HPRCC using provisional data.

NOAA Regional Climate Centers

Generated 6/2/2021 at HPRCC using provisional data.

NOAA Regional Climate Centers

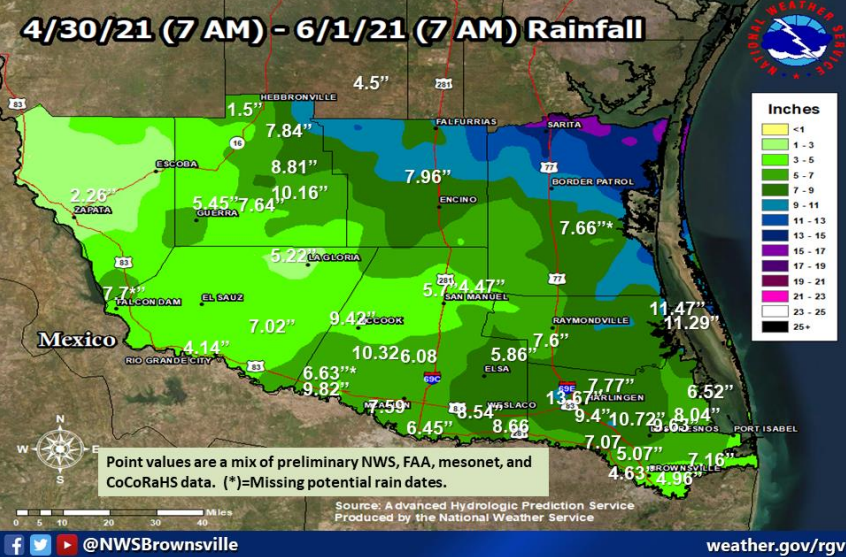
- March and April's very dry/relatively warm flipped to May's wet and "cooler" weather (except for the Rio Grande Plains)
- Temperatures slightly above average for the spring, but May pushed season back toward average
- Frequent "dry" fronts in March assisted rapid wildfire growth/spread; April's wildfire footprint was much less due to mitigation efforts despite more dry fronts. Weekly heavy rainfall events in May finished off the season



# May Rain...

Weather Forecast Office  
Brownsville/RGV, TX

May: Welcome Rainfall Ends/Erodes Drought  
At Long Last, the Thunderstorms Came...Often...in May

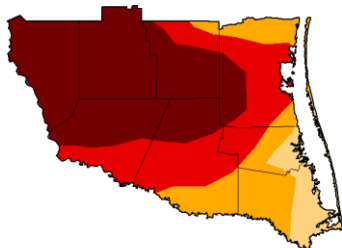


- **7 to 11 inches across the Valley**, extending northwest to Jim Hogg County, ended or sharply reduced the drought.
- May rainfall rankings: #3 McAllen, #1 Port Mansfield, #7 Falcon Dam (wettest)
- May average temperatures were limited by rain, clouds, and fronts. Values ranked close to the middle of the record for Valley stations

# ...Reduces/Removes Drought

With each 1-3 inch rain event, drought improved. Jim Hogg/Zapata/Starr had to wait until early June to drop below severe (D2) levels (most areas)

U.S. Drought Monitor  
Brownsville/Rio  
Grande Valley, TX WFO



April 27, 2021  
(Released Thursday, Apr. 29, 2021)  
Valid 8 a.m. EDT

	Drought Conditions (Percent Area)							
	None	D0	D1	D2	D3	D4	col D4	col D4
Current	0.00	100.00	100.00	03.34	75.92	49.92		
Last Week (4/20/2021)	0.00	100.00	100.00	03.34	75.92	36.21		
3 Months Ago (01/28/2021)	0.00	100.00	95.38	74.70	34.02	0.00		
Start of Calendar Year (12/31/2020)	0.00	100.00	100.00	73.94	17.05	0.00		
Start of Water Year (09/29/2020)	100.00	0.00	0.00	0.00	0.00	0.00		
One Year Ago (04/28/2020)	0.00	100.00	98.99	67.25	11.33	0.00		

Intensity:  
 None  
 D0 Abnormally Dry  
 D1 Moderate Drought  
 D2 Severe Drought  
 D3 Extreme Drought  
 D4 Exceptional Drought

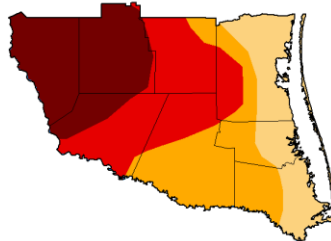
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/about.aspx>

Author:

Richard Heim  
NCEI/NOAA



U.S. Drought Monitor  
Brownsville, TX WFO



May 4, 2021  
(Released Thursday, May. 6, 2021)  
Valid 8 a.m. EDT

	Drought Conditions (Percent Area)							
	None	D0	D1	D2	D3	D4	col D4	col D4
Current	0.00	100.00	100.00	81.34	56.13	28.18		
Last Week (04/27/2021)	0.00	100.00	100.00	92.75	75.29	49.38		
3 Months Ago (02/03/2021)	0.00	100.00	94.80	73.95	33.68	0.00		
Start of Calendar Year (12/31/2020)	0.00	100.00	100.00	73.21	15.91	0.00		
Start of Water Year (09/29/2020)	100.00	0.00	0.00	0.00	0.00	0.00		
One Year Ago (04/28/2020)	0.00	100.00	100.00	67.08	19.91	0.00		

Intensity:  
 None  
 D0 Abnormally Dry  
 D1 Moderate Drought  
 D2 Severe Drought  
 D3 Extreme Drought  
 D4 Exceptional Drought

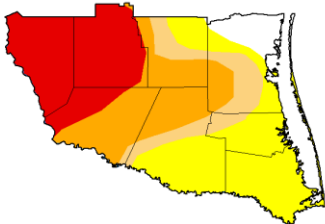
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Author:

David Simmeral  
Western Regional Climate Center



U.S. Drought Monitor  
Brownsville/Rio  
Grande Valley, TX WFO



May 18, 2021  
(Released Thursday, May. 20, 2021)  
Valid 8 a.m. EDT

	Drought Conditions (Percent Area)							
	None	D0	D1	D2	D3	D4	col D4	col D4
Current	4.80	95.20	63.40	51.88	28.54	0.00		
Last Week (05/11/2021)	0.00	100.00	100.00	62.15	56.71	28.49		
3 Months Ago (03/01/2021)	0.00	100.00	99.49	79.63	44.87	0.00		
Start of Calendar Year (12/31/2020)	0.00	100.00	100.00	73.94	17.05	0.00		
Start of Water Year (09/29/2020)	100.00	0.00	0.00	0.00	0.00	0.00		
One Year Ago (05/18/2020)	95.58	64.42	45.92	13.31	0.00	0.00		

Intensity:  
 None  
 D0 Abnormally Dry  
 D1 Moderate Drought  
 D2 Severe Drought  
 D3 Extreme Drought  
 D4 Exceptional Drought

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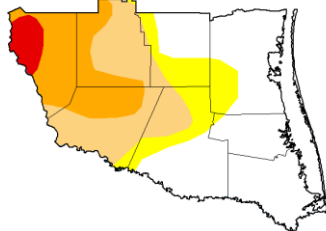
Author:

Adam Hartman  
NOAA/NWS/NCEP/CPD



[droughtmonitor.unl.edu](https://droughtmonitor.unl.edu)

U.S. Drought Monitor  
Brownsville/Rio  
Grande Valley, TX WFO



May 25, 2021  
(Released Thursday, May. 27, 2021)  
Valid 8 a.m. EDT

	Drought Conditions (Percent Area)							
	None	D0	D1	D2	D3	D4	col D4	col D4
Current	44.64	59.36	42.51	21.27	3.38	0.00		
Last Week (05/18/2021)	4.80	95.20	63.40	51.88	28.54	0.00		
3 Months Ago (03/01/2021)	0.00	100.00	99.70	67.42	56.25	0.00		
Start of Calendar Year (12/31/2020)	0.00	100.00	100.00	73.94	17.05	0.00		
Start of Water Year (09/29/2020)	100.00	0.00	0.00	0.00	0.00	0.00		
One Year Ago (05/25/2020)	58.81	41.19	13.49	1.82	0.00	0.00		

Intensity:  
 None  
 D0 Abnormally Dry  
 D1 Moderate Drought  
 D2 Severe Drought  
 D3 Extreme Drought  
 D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/about.aspx>

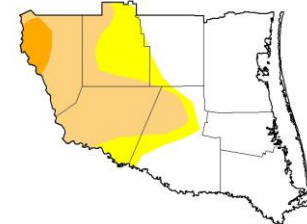
Author:

Adam Hartman  
NOAA/NWS/NCEP/CPD



[droughtmonitor.unl.edu](https://droughtmonitor.unl.edu)

U.S. Drought Monitor  
Brownsville/Rio  
Grande Valley, TX WFO



June 1, 2021  
(Released Thursday, Jun. 3, 2021)  
Valid 8 a.m. EDT

	Drought Conditions (Percent Area)							
	None	D0	D1	D2	D3	D4	col D4	col D4
Current	53.75	48.25	32.21	3.38	0.00	0.00		
Last Week (05/25/2021)	44.64	59.36	42.51	21.27	3.38	0.00		
3 Months Ago (03/01/2021)	0.00	100.00	100.00	69.21	66.78	0.00		
Start of Calendar Year (12/31/2020)	0.00	100.00	100.00	73.94	17.05	0.00		
Start of Water Year (09/29/2020)	100.00	0.00	0.00	0.00	0.00	0.00		
One Year Ago (06/01/2020)	86.50	13.50	1.88	0.00	0.00	0.00		

Intensity:  
 None  
 D0 Abnormally Dry  
 D1 Moderate Drought  
 D2 Severe Drought  
 D3 Extreme Drought  
 D4 Exceptional Drought

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Author:

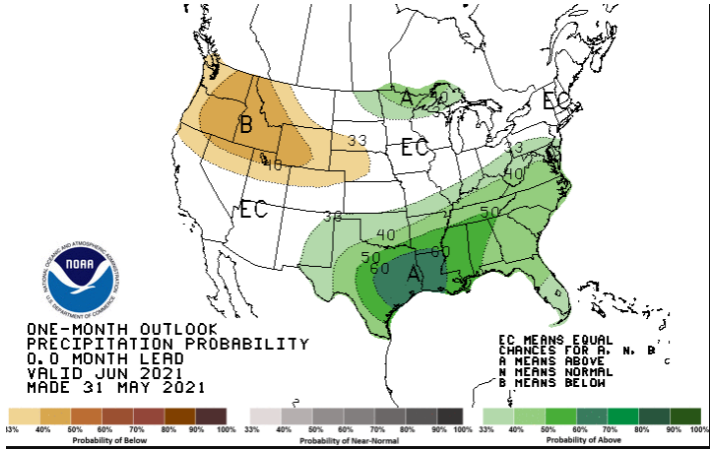
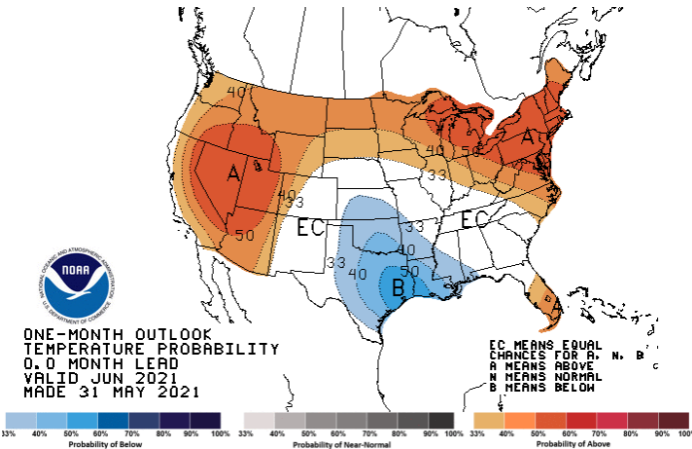
Brian Fuchs  
National Drought Mitigation Center



[droughtmonitor.unl.edu](https://droughtmonitor.unl.edu)



# June Outlook – 5/31/2021 Update



## Forecast Temperature Departure

## Forecast Precipitation Potential

Three Category Temperature Outlook  
Normal Maximum Temperature 95  
Normal Minimum Temperature 75

Category	Probability
Above Normal	33%
Below Normal	34%
Near Normal	33%

Three Category Precipitation Outlook  
Normal Precipitation 2.24

Category	Probability
Above Normal	45%
Below Normal	22%
Near Normal	33%

Monthly Outlook June 2021

Temperature Opacity: 60%

Centered on McAllen

**Avg. Afternoon Temp:** Mid to Upper 90s  
**Avg. Morning Temp:** Mid to Upper 70s  
**Avg. Rainfall:** 2 to 3 inches

Three Category Temperature Outlook  
Normal Maximum Temperature 95  
Normal Minimum Temperature 75

Category	Probability
Above Normal	33%
Below Normal	34%
Near Normal	33%

Three Category Precipitation Outlook  
Normal Precipitation 2.24

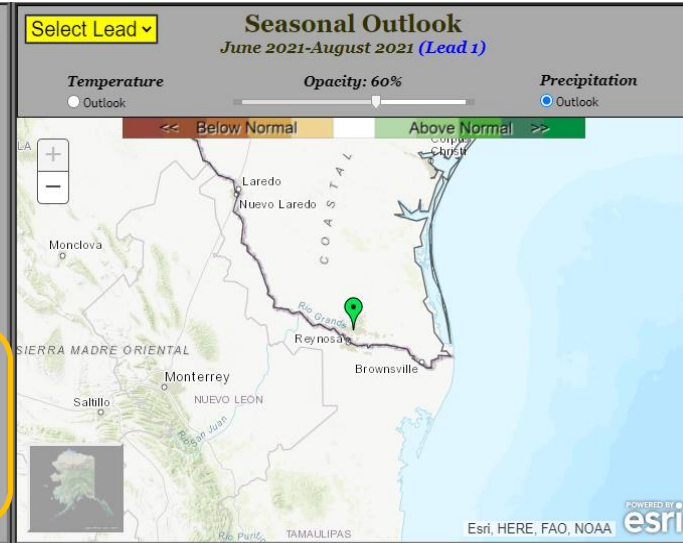
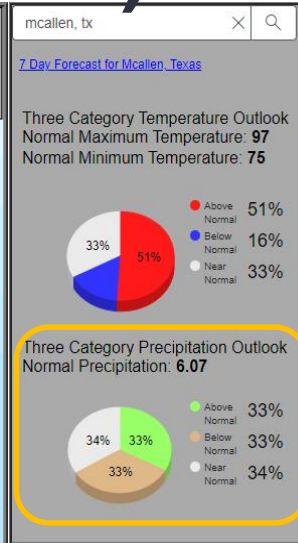
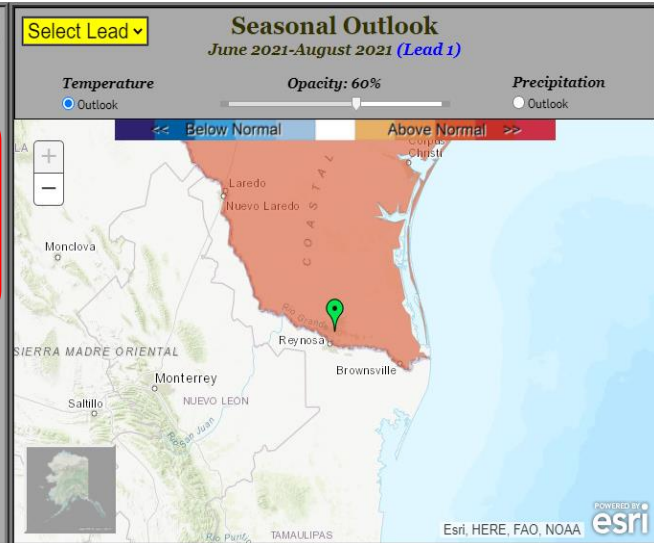
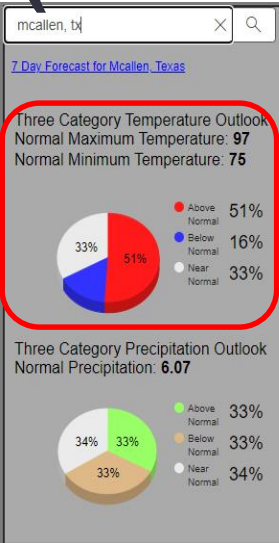
Category	Probability
Above Normal	45%
Below Normal	22%
Near Normal	33%

Monthly Outlook June 2021

Precipitation Opacity: 60%

Centered on McAllen

# The Summer 2021 Outlook: Rio Grande Valley (McAllen as Anchor Point)

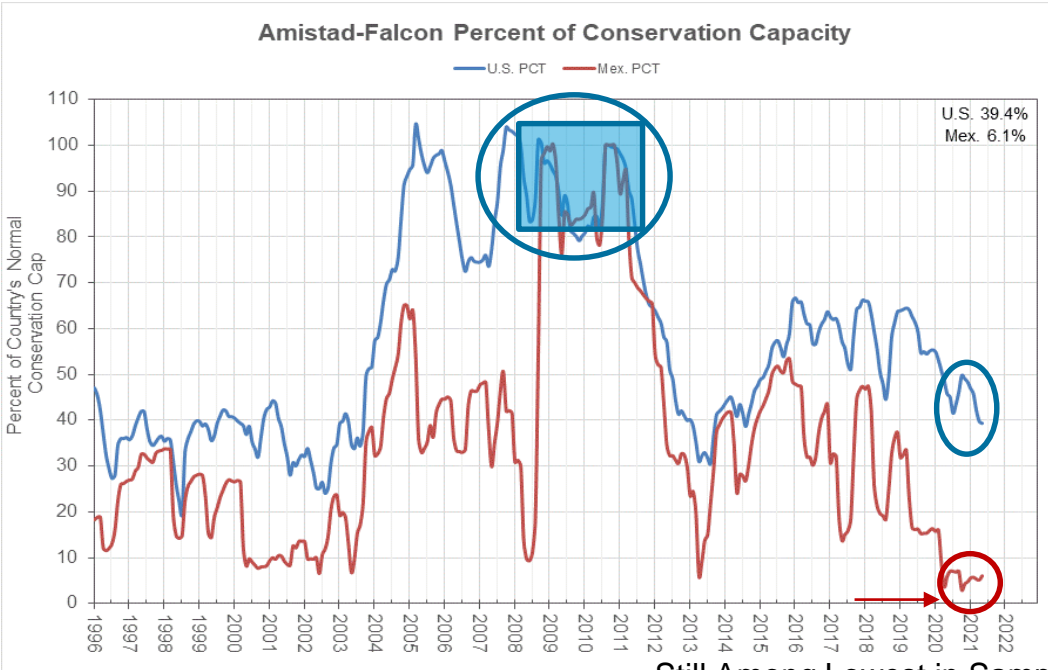
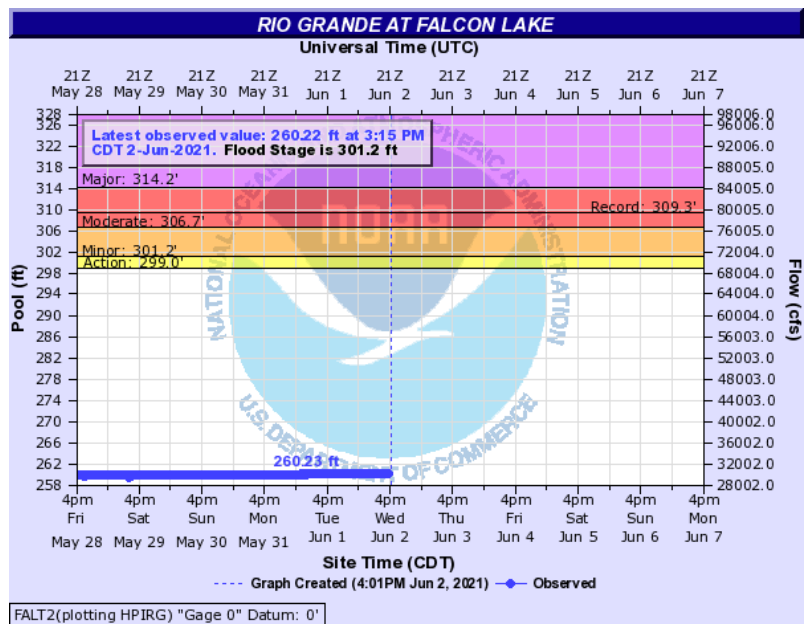


- Temperature: A 51% chance of **above average**. Seasonal average – Afternoons, Rising from the mid 90s° (on 6/1) to 96-102° (on 7/10, continuing through 8/15). Mornings: Rising from the mid 70s (6/1) to the upper 70s (7/31-8/31). Just a 16% chance of below average in 2021.
- Rainfall: Equal Chances (~33% for all categories) Seasonal average: 6 to 7 inches of rainfall



# Falcon Reservoir Began Rising in May 2021...

...but still needs a lot more inflow to catch up

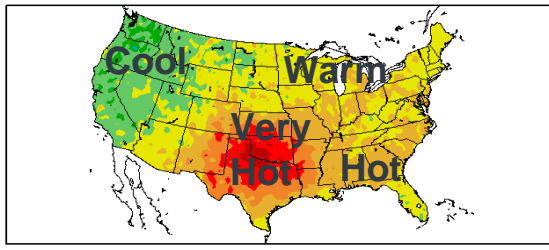


- June 1, 2021 total capacity, Falcon Reservoir: **17 percent**
- June 2011 total capacity, Falcon Reservoir: around **61 percent**

# 2021 vs. 2011

Uncertainty makes comparisons more difficult during summer months

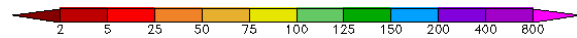
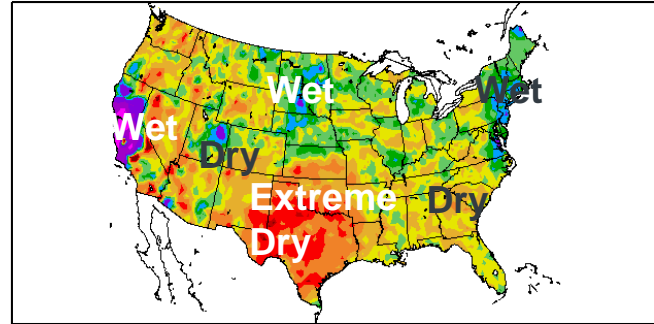
Departure from Normal Temperature (F)  
6/1/2011 - 8/31/2011



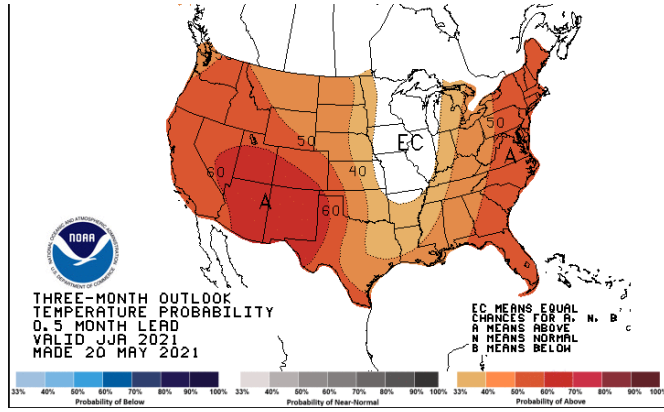
Generated 6/15/2012 at HPRCC using provisional data. Regional Climate Centers

## Observed June-August 2011

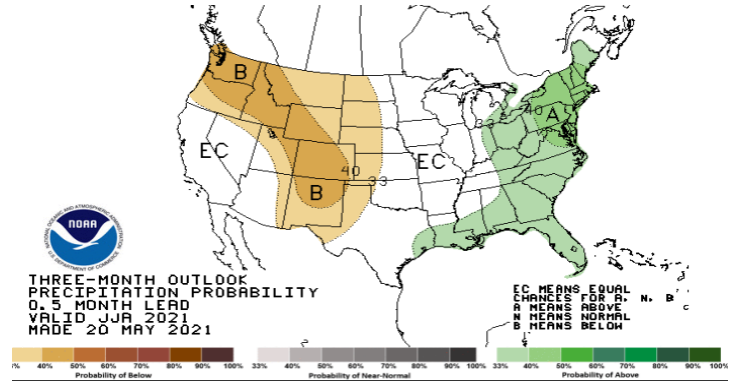
Percent of Normal Precipitation (%)  
6/1/2011 - 8/31/2011



Generated 6/15/2012 at HPRCC using provisional data. Regional Climate Centers



## Forecast June-August 2021



# July-September Outlook: Uncertainty Reigns

## (or is that “rains”?)

7 Day Forecast for Mcallen, Texas

Three Category Temperature Outlook  
 Normal Maximum Temperature: **96**  
 Normal Minimum Temperature: **74**

- Above Normal: 57%
- Below Normal: 10%
- Near Normal: 33%

Three Category Precipitation Outlook  
 Normal Precipitation: **7.92**

- Above Normal: 33%
- Below Normal: 33%
- Near Normal: 34%

Select Lead **▼** **Seasonal Outlook**  
 July 2021-September 2021 (Lead 2)

Temperature Outlook **Opacity: 60%** **Precipitation Outlook**

Below Normal Above Normal

Esri, HERE, FAO, NOAA

7 Day Forecast for Mcallen, Texas

Three Category Temperature Outlook  
 Normal Maximum Temperature: **96**  
 Normal Minimum Temperature: **74**

- Above Normal: 57%
- Below Normal: 10%
- Near Normal: 33%

Three Category Precipitation Outlook  
 Normal Precipitation: **7.92**

- Above Normal: 33%
- Below Normal: 33%
- Near Normal: 34%

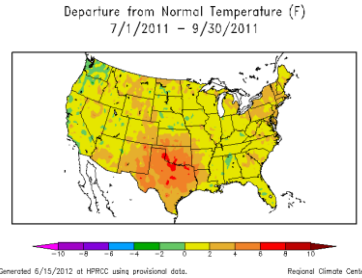
Select Lead **▼** **Seasonal Outlook**  
 July 2021-September 2021 (Lead 2)

Temperature Outlook **Opacity: 60%** **Precipitation Outlook**

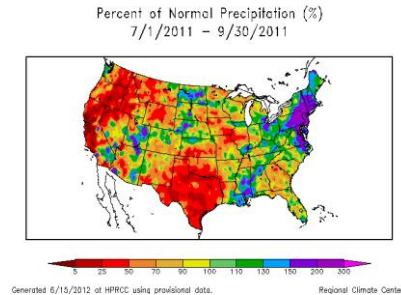
Below Normal Above Normal

Esri, HERE, FAO, NOAA

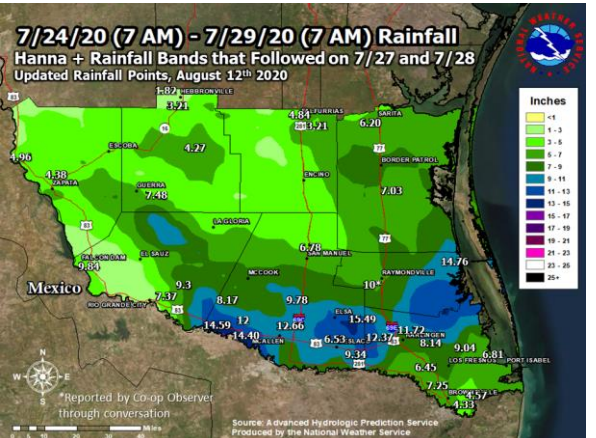
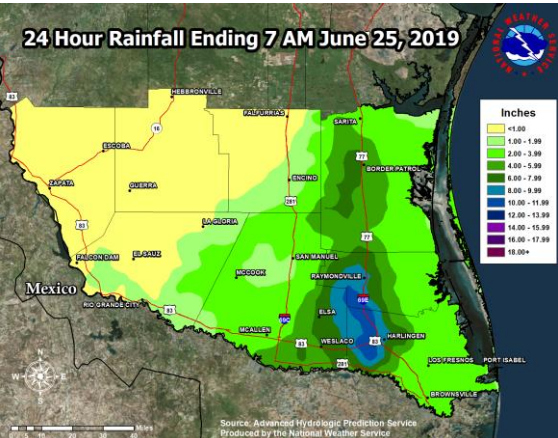
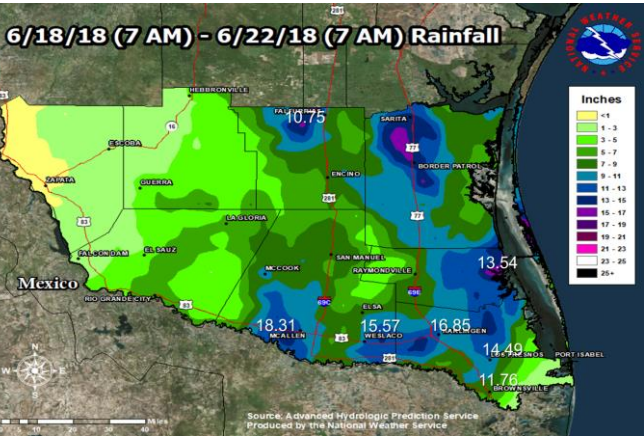
More confidence in warmer than average temperatures, though a 2011 repeat is looking unlikely given the summer 2021 starting point



Low confidence in the rainfall forecast heading into the peak of the 2021 Hurricane Season. A strong and long “La Canicula” could return prolonged drying; position and strength of the ridge will be critical



# Wildcard: Fourth Year in a Row?



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Building a Weather-Ready Nation //16

# In Summary: Impacts and Actions

- Very wet and relatively cool weather in May and early June have **temporarily removed drought and wildfire spread threat from the discussion**
- However, the potential remains for a rapid onset of **“La Canícula” (Dog Days) conditions by late June**, which could continue for much of summer
- Should La Canícula establish itself, benefits from May/June rainfall would be gone, and dryness/drought would resume in July and August. This could create a future wildfire growth/spread situation (late summer/autumn) given fuel “loading” from the May/June growth
- Should the upper ridge settle farther west, the door would open for an occasional influx of deep tropical moisture, particularly in August. Unknown is what the tropics might do along the Texas/northeast Mexico coast.
- Bottom lines? Prepare equally for the following:
  - **Dangerous summer heat** (“feels like” temperatures 110+) at times, especially from late June through mid August
  - **Flooding rains**, from tropical waves to potential cyclones (depressions to hurricanes)
  - **Wildfire spread**, should fuels dry out in mid summer heat and humidity/winds combine to enhance growth

