



Item 5.1: 2019 Summer Weather Update

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Board of Directors Meeting

ERCOT Public

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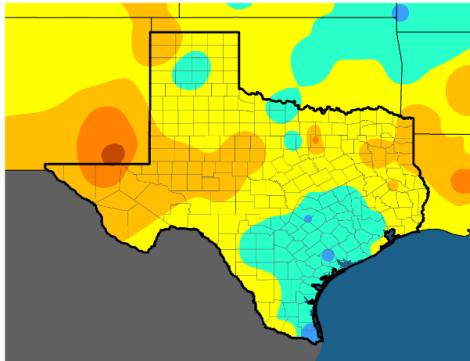
Mean / Max Temperature Ranking of Recent Summers (Texas)

Years	Ranking
2018	6th / 27th
2017	22nd / 71st
2016	22nd / 58th
2015*	17th / 34th
2014	50th / 79th
2013	21st / 32nd
2012	12th / 16th
2011	1st / 1st
2010	10th / 42nd
2009	28th / 38th
2008	76th / 79th
2005, 2004, 2003*	25th / 27th, 110th / 110th, 86th / 78th
*2015, 2005, 2004, 2003 are recent years with similarities to 2019	

Summers with similarities to 2019

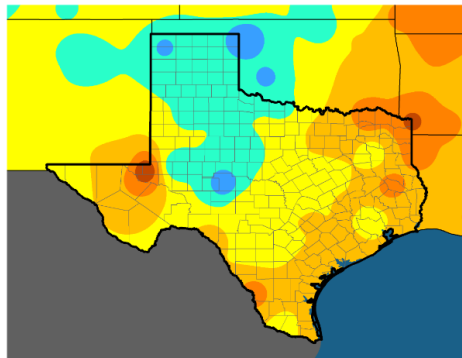
2015

Fifteen Year Max Temperature Anomaly in °F from 20150601 to 20150930



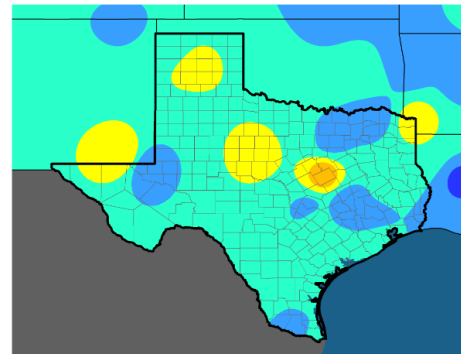
2005

Fifteen Year Max Temperature Anomaly in °F from 20050601 to 20050930

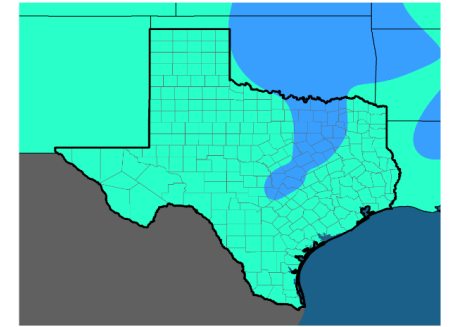


1960

Average Temperature (°F) Departure from 19600601 to 19600930 - Fifteen Year Average

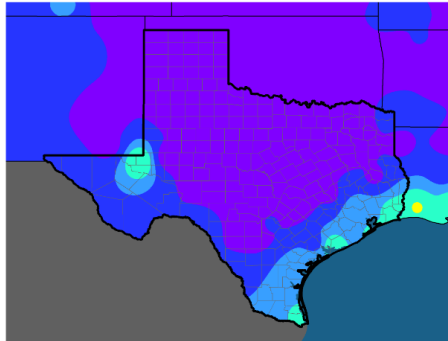


Fifteen Year Avg Temperature Anomaly in °F from 0601 to 0930



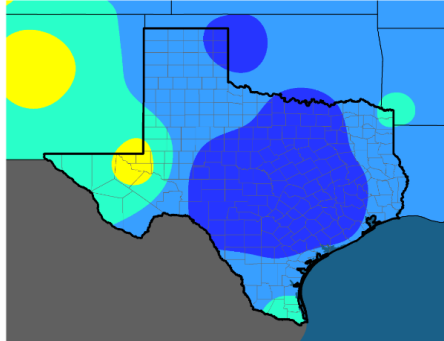
Composite

Fifteen Year Max Temperature Anomaly in °F from 20040601 to 20040930



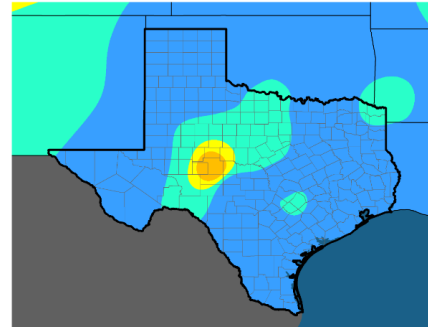
2004

Average Temperature (°F) Departure from 20030601 to 20030930 - Fifteen Year Average



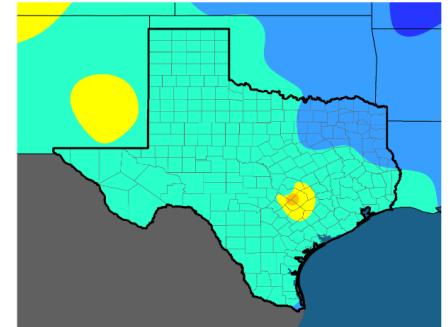
2003

Average Temperature (°F) Departure from 19600601 to 19600930 - Fifteen Year Average



1960

Average Temperature (°F) Departure from 19580601 to 19580930 - Fifteen Year Average



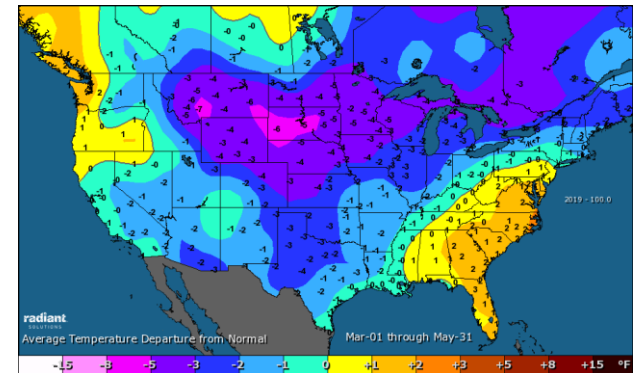
1958

1000000

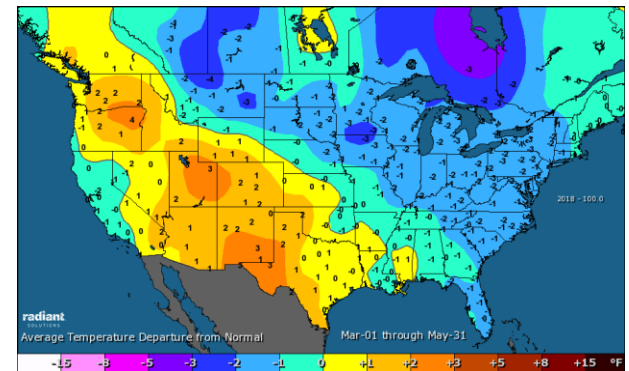
Note: 2003, 2004, 2005, 2015

Recent cool, wet periods

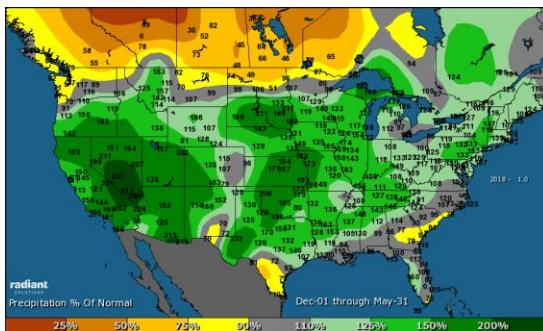
- Spring 2019 will be the coolest mean/max temperature since at least 2014
- Winter 2018-19 was the coldest max temperature average since 2014
- Fall 2018 was the 9th coolest on record for maximum temperatures since 1895
- May 1, 2018 – April 30, 2019 was the wettest 12-month period on record for the U.S. and 9th wettest for Texas
- Only one of the 15 wettest May-Apr periods for Texas resulted in a top 25 hottest summer (max temps, 1977, #13)
- Extended periods of cool and wet tend not to turn to a hot, dry extreme easily



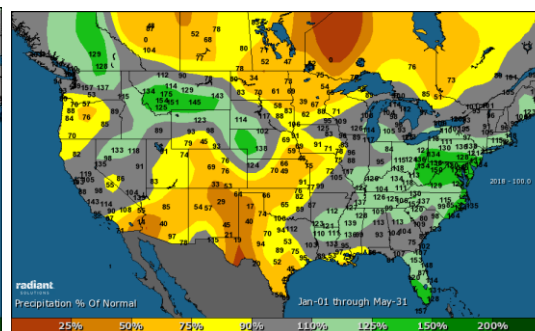
Spring 2019



Spring 2018



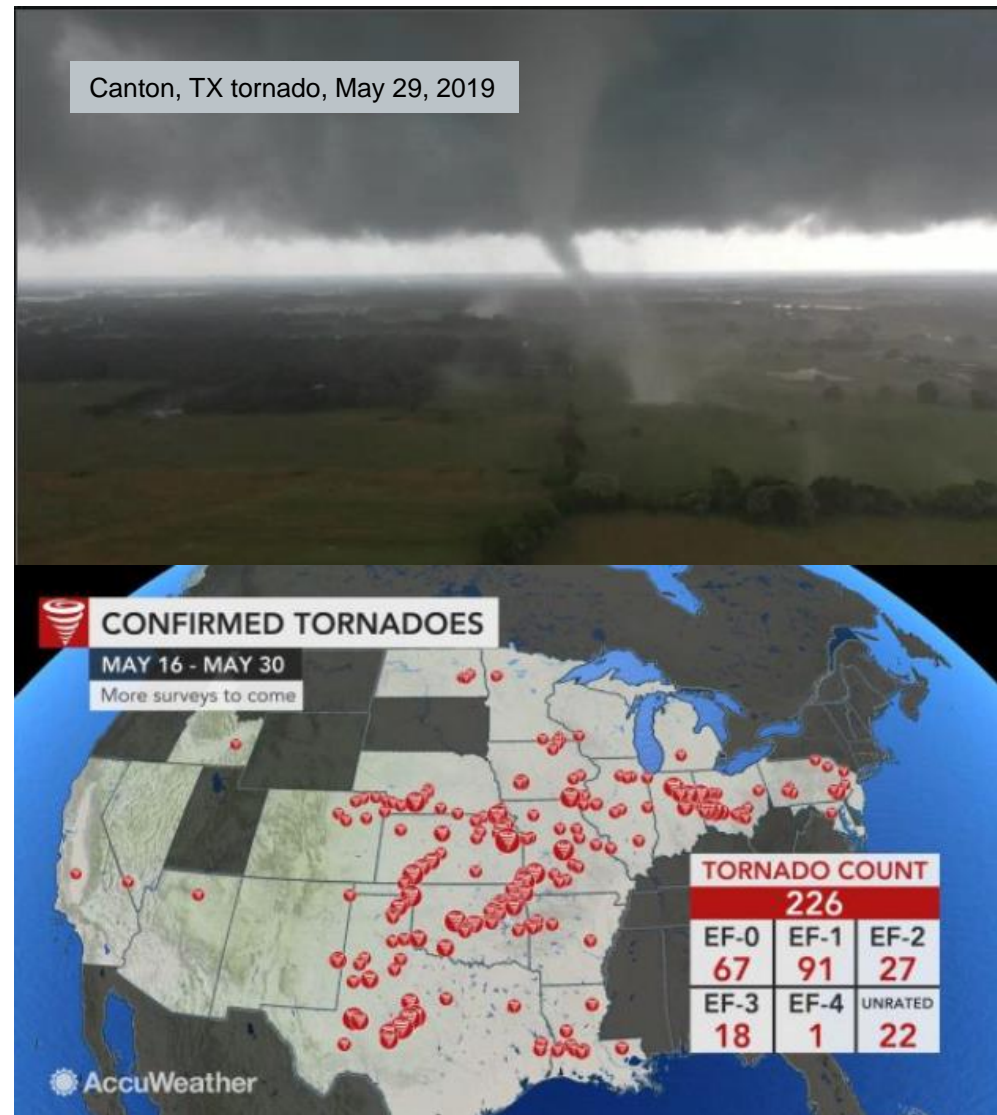
Winter 2018-Spring 2019



Winter 2017-Spring 2018

Record Tornado Numbers

- 13 consecutive days with 8 tornadoes or greater through 5/29/19. Broke record from 1980
- 1,008 tornadoes (preliminary) 1/1/19 through 5/30/19
- 516 tornadoes (preliminary) in May 2019 – breaking old record of 515 from **2015**
- Only four other years have recorded at least 500 tornadoes within any 30-day period: **2003, 2004**, 2008, 2011
- Three of the previous active tornado years are three of the historical matches considered for the summer weather outlook



Summer 2019 Temperature Outlook

- Similarities to recent summers from this decade, especially 2015
- Best chance for above-normal summer heat will be in Far West Texas
- Austin and San Antonio have greater potential for an above-normal summer than the other large cities
- Unlikely to be as hot as last summer (daytime highs, averaged over the season)
- Minimum temperatures (morning lows) are likely to be more above normal than maximum (daytime highs)

2019 100° days projections:

Dallas: 10-19 (23 in 2018)

Houston: 0-4 (5 in 2018)

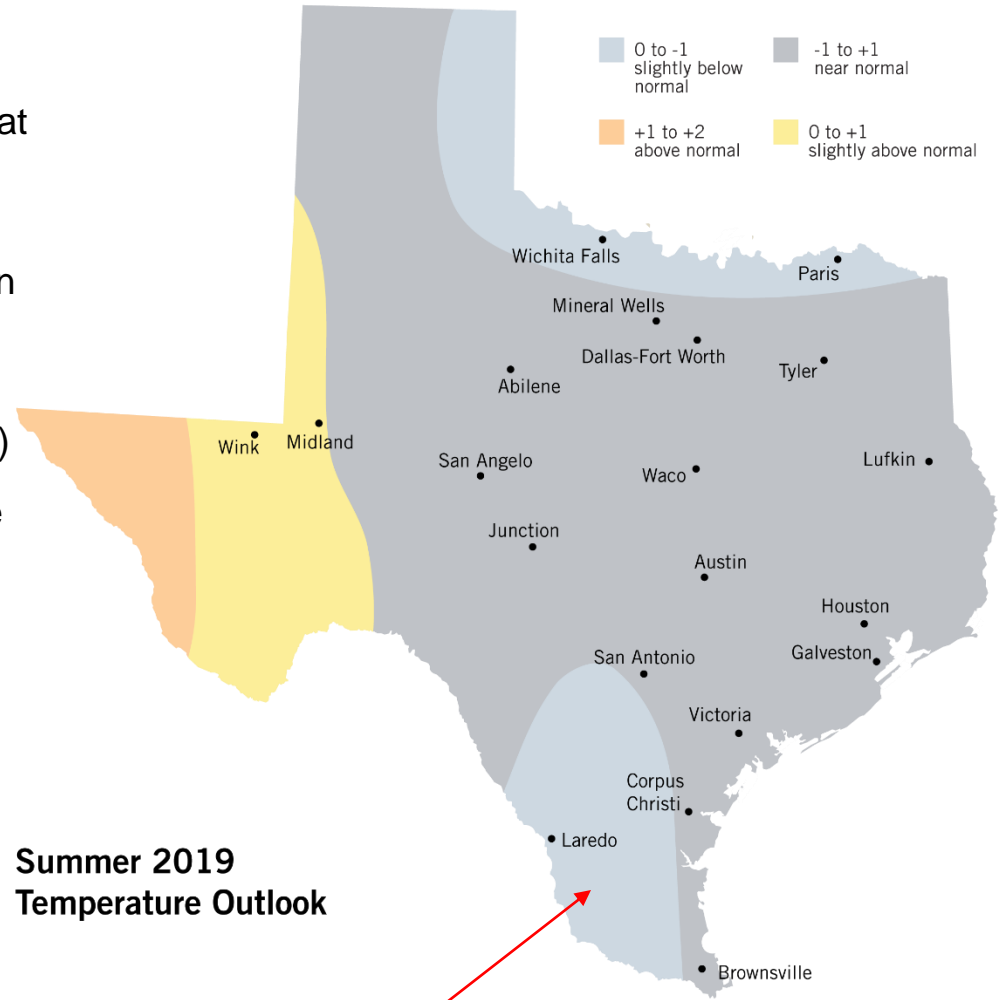
Austin (ABIA): 5-15 (41 in 2018)

San Antonio: 3-14 (27 in 2018)

Midland: 14-28 (36 in 2018)

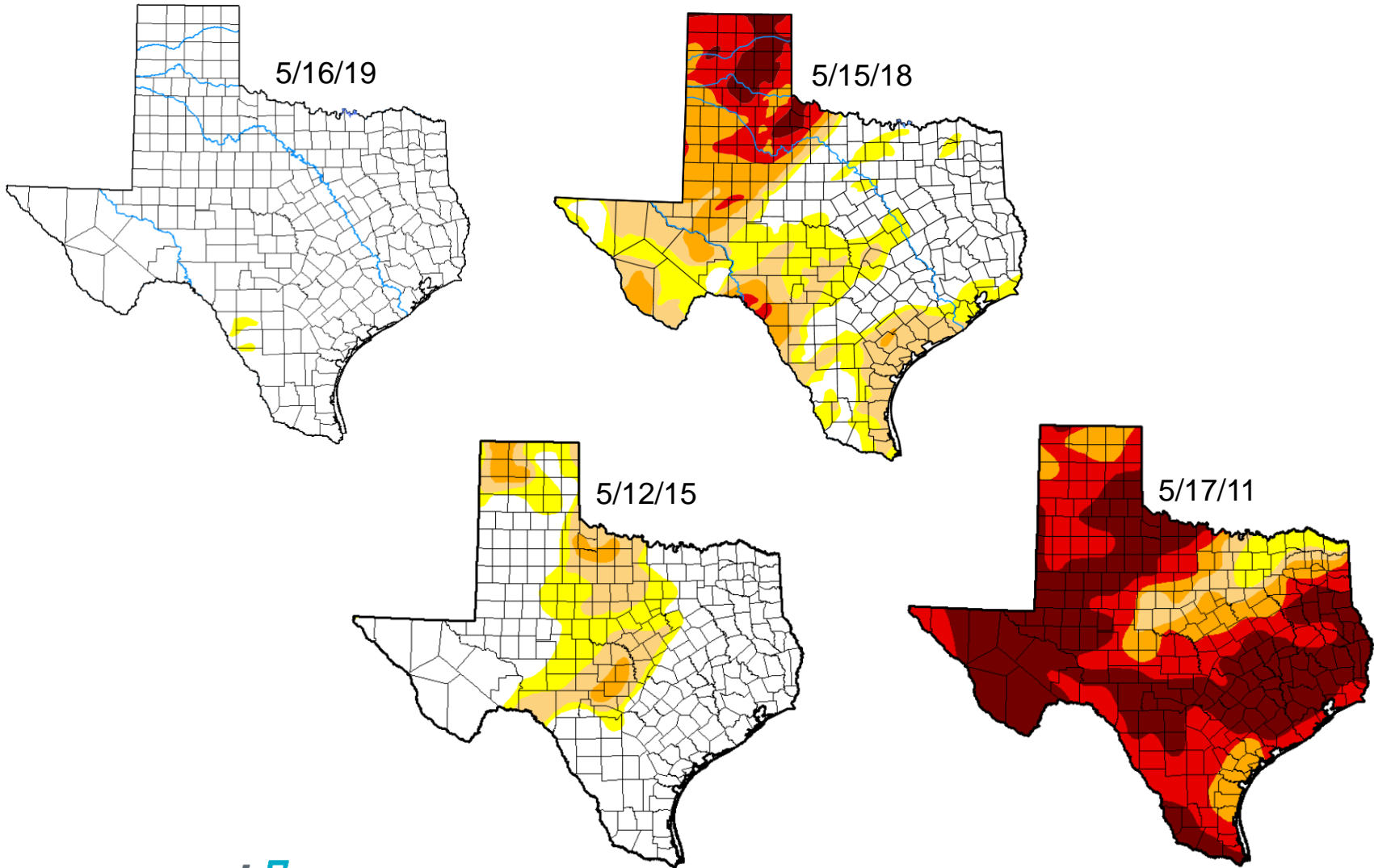
McAllen: 22-42 (71 in 2018)

Final counts more likely lower than forecast rather than higher
– especially Dallas and Midland



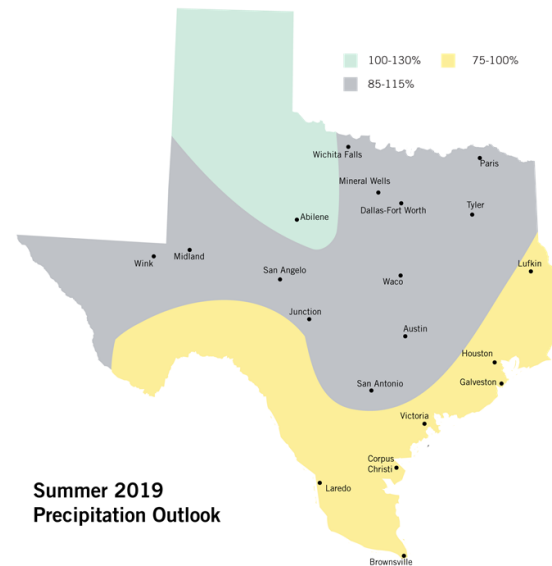
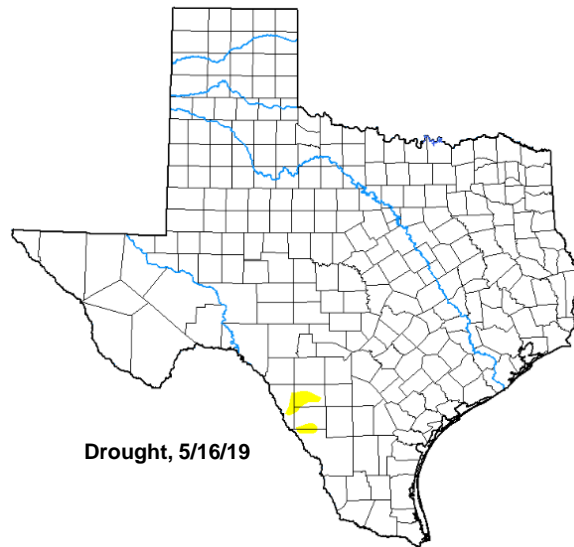
Possible change from initial forecast: warmer potential

Summer 2019 Rainfall & Drought Outlook



Summer 2019 Rainfall & Drought Outlook

- Although some regions within ERCOT will be more prone to a relatively dry summer, the forecast doesn't support widespread drought returning this summer
- South and Southwest Texas most likely to see a drier-than-normal summer
- More potential for a wetter pattern than a drier



Hurricanes

- Normal: 12/6/3
- 2018 Season: 15/8/2
- 2019 Forecast: 15/7/4

(named storms/hurricanes/major hurricanes)



Currently an El Niño is in place and expected to continue through at least the summer season. This *could* limit the 2019 hurricane season a bit.

NOAA/NESDIS 50 KM GLOBAL ANALYSIS: SST Anomaly (degrees C), 5/27/2019
(white regions indicate sea-ice)

