



Item 6: Summer Review and Fall-Winter Weather Outlook

Chris Coleman

ERCOT Sr. Meteorologist

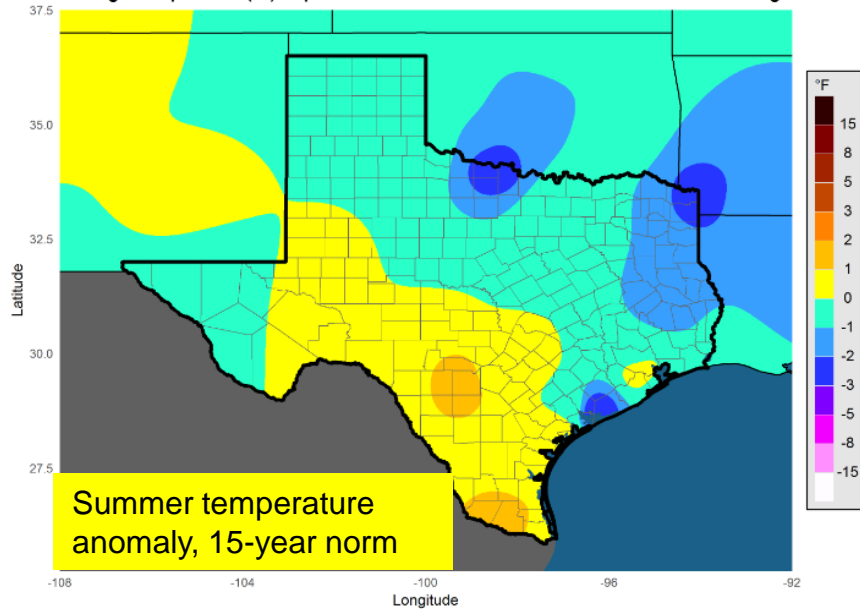
Board of Directors Meeting

ERCOT Public

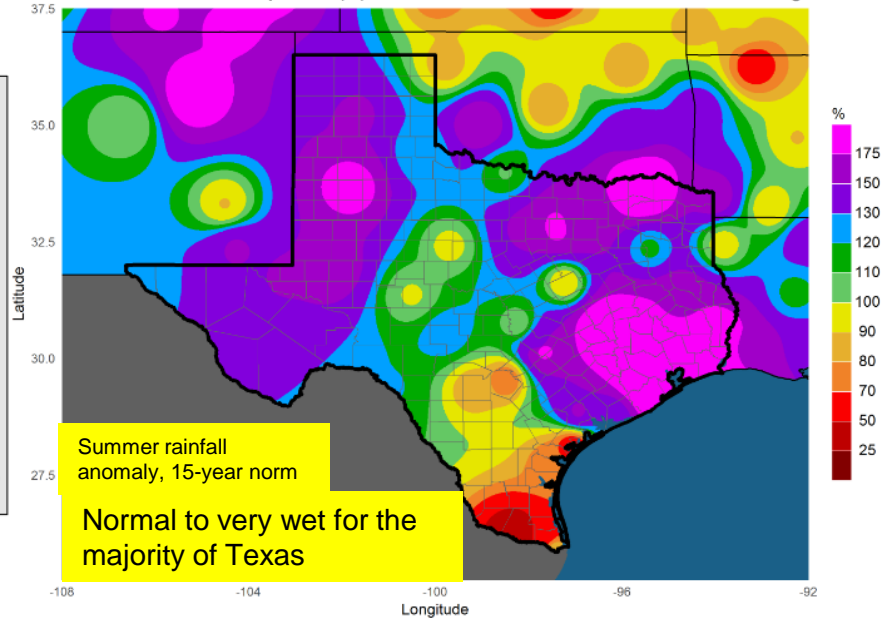
October 13, 2017

Summer 2017 Review

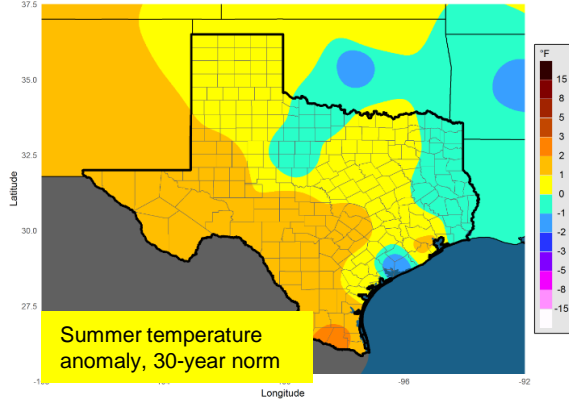
Average Temperature (°F) Departure from 20170601 to 20170930 - Fifteen Year Average



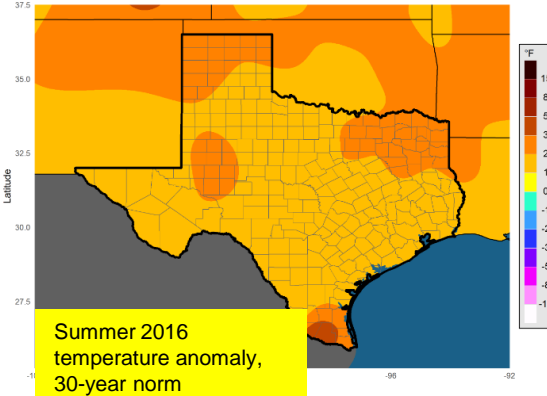
Percent of Normal Precipitation (%) from 20170601 to 20170930 - Fifteen Year Average



Average Temperature (°F) Departure from 20170601 to 20170930 - Thirty Year Average



Average Temperature (°F) Departure from 20160601 to 20160930 - Thirty Year Average



Temperatures:

- This past summer will rank close to normal based on a 15-year normal.
- Above-normal for a 30-year normal
- Cooler than the summer of 2016

Summer 2017 Review – 100-Degree Days

Dallas: **10**

Average is 18. Fewest since 2007.

Houston: **1**

Average is 5. Fewest since 2006.

Austin (ABIA): **23**

Average is 20. Most since 2013.

Austin (Mabry): **42**

San Antonio: **15**

Average is 12. Most since 2014.

McAllen: **86**

Average is 31. Second most on record –
behind 2016.

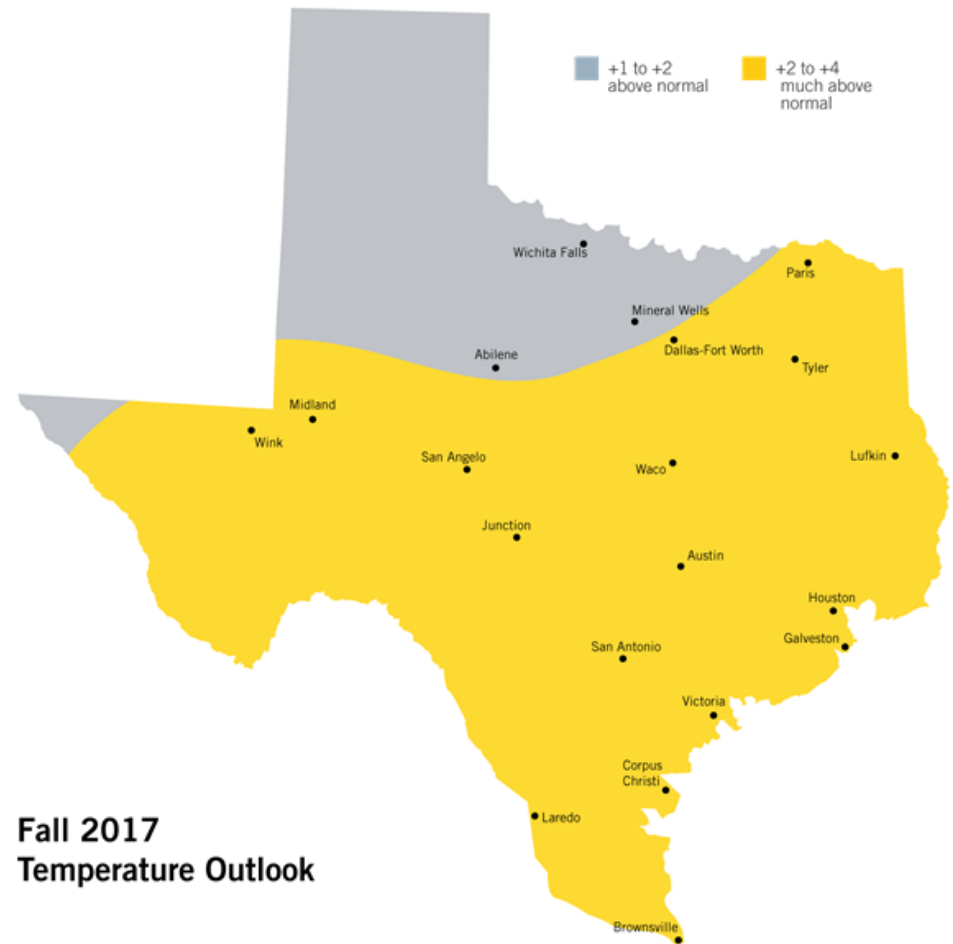
Midland: **24**

Average is 18. Fewest since 2014.



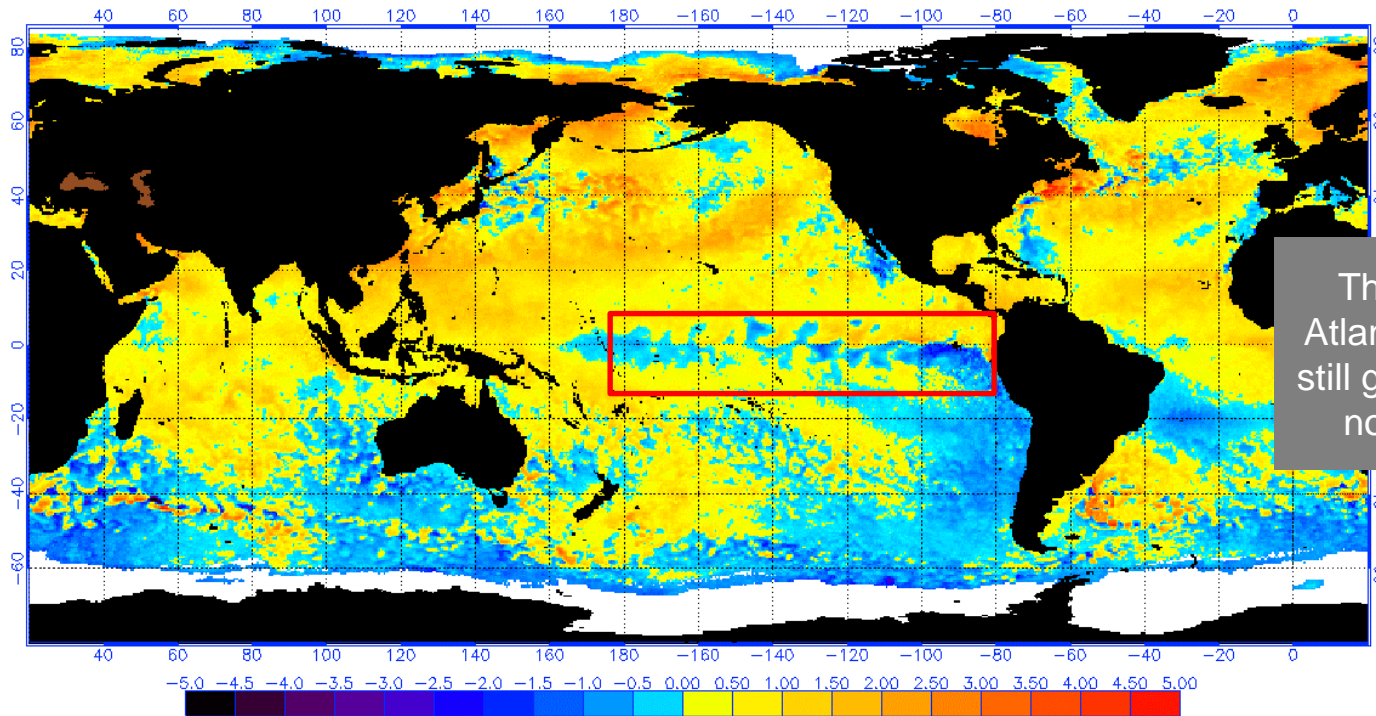
Fall 2017 Temperature Outlook

- **Historical Matches: 2006, 2003, 2012, 2009** (1960, 1988, 2004, 2015)
- This forecast shows above-normal across all of ERCOT.
- Possibly warmer in Far West Texas
- Forecast is warmer than fall of 2016.
- October has potential for cooler periods – volatile temperature month.
- November shows more above-normal potential than October.



The Oceans/ENSO Update

NOAA/NESDIS 50 KM GLOBAL ANALYSIS: SST Anomaly (degrees C), 10/2/2017
(white regions indicate sea-ice)

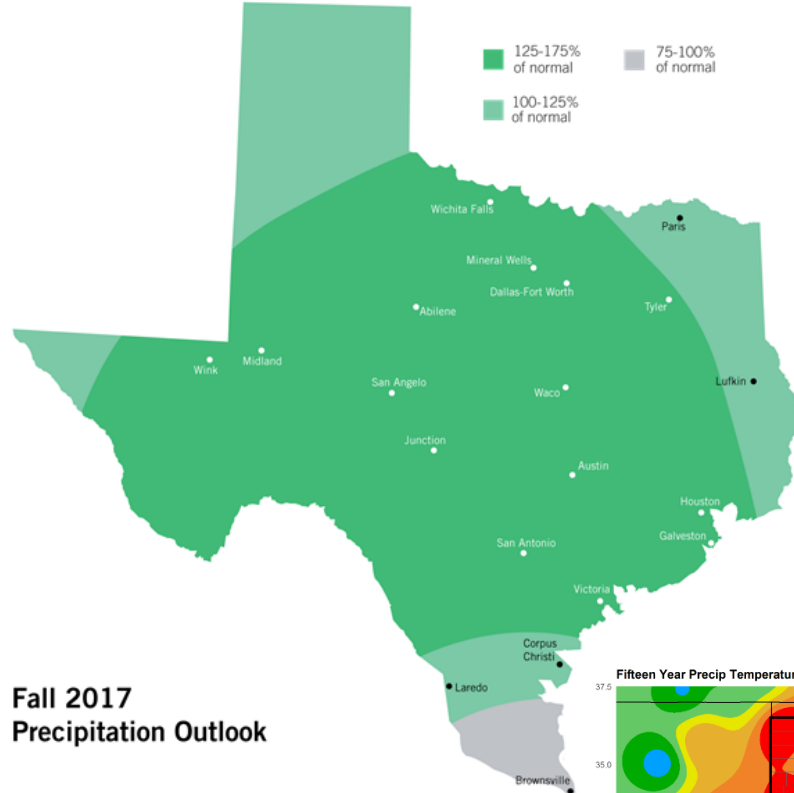


The Pacific and Atlantic Oceans are still generally above-normal warmth

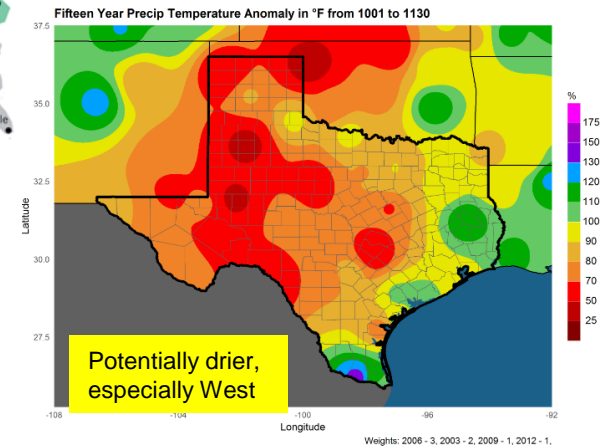
- Currently very close to a La Niña
- Last year at this time, we were in a weak La Niña.
- Last year's La Niña faded by mid-winter.
- This year, there is a possibility it fades.
- Likely either a weak La Niña or a neutral phase
- Not expected to be a major influence on the fall & winter weather patterns

Fall 2017 Precipitation Outlook

- Although this is (was) the final fall rainfall forecast, there are increasing signs it will be drier.
- Best chance of much drier than forecast is West Texas
- Best chance of a wet fall is East-Southeast TX, including Houston



Fall 2017
Precipitation Outlook



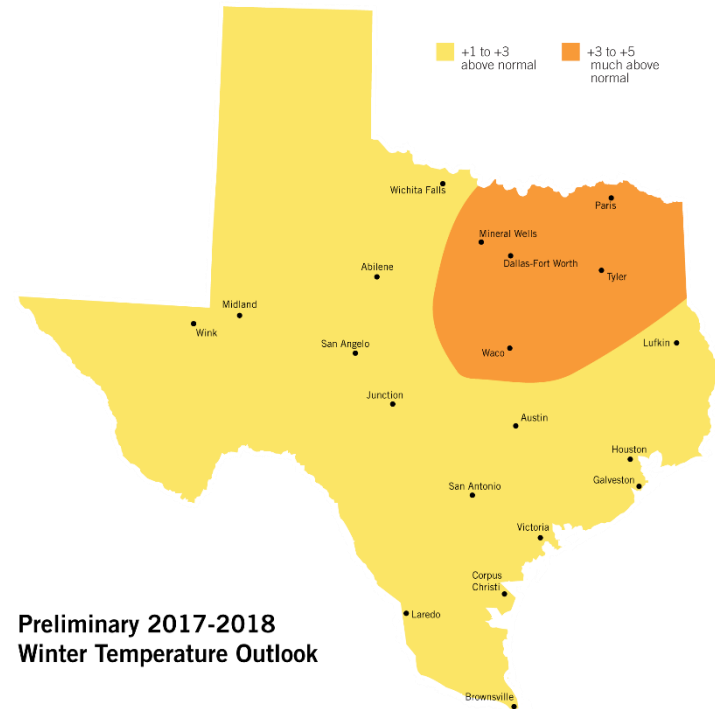
Temperature Ranking of Recent Winters (Texas)

Year	Ranking
2016-17	122nd coldest (warmest winter on record)
2015-16	115th coldest (8th warmest of 122)
2014-15	69 th
2013-14	30 th
2012-13	108th
2011-12	98th
2010-11	69 th
2009-10	8th
2008-09	109th
2007-08	99th
2006-07	43 rd

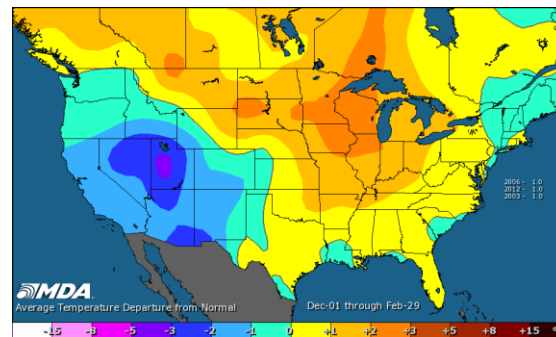
Since 2001, only two winters have ranked in the coldest third of historical winters.

Preliminary Winter Temperature Outlook

- **Historical Matches: 2006, 2003, 2012, 2009** (1960, 1988, 2004, 2015)
- The preliminary forecast shows above-normal across all of ERCOT.
- Recent trends are indicating colder potential.
- Best chance for below-normal temperatures in West Texas
- Forecast will be finalized Nov. 1; see ERCOT website.
- Not shown, but preliminary data does not support a dry winter.



Preliminary 2017-2018
Winter Temperature Outlook

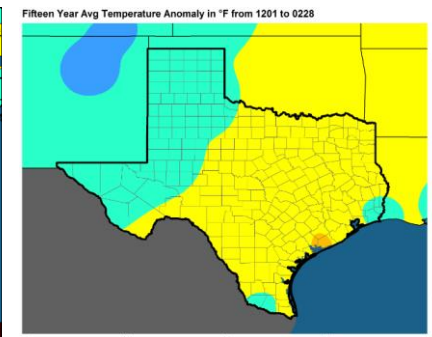


MDA

Average Temperature Departure from Normal

Dec-01 through Feb-29

-15 -10 -5 0 +1 +2 +3 +5 +8 +15 °F



Fifteen Year Avg Temperature Anomaly in °F from 1201 to 0220

Weights: 2008 - 1, 2003 - 1, 2012 - 1.

Seasonal Versus Extremes

*****Mild winters can have very cold periods.*****

- Dec. 23, 1989:
- Dallas: -1° (8MPH wind)
- Houston: 7° (9MPH wind)
- San Antonio: 6° (7MPH wind)
- Austin: 4° (9MPH wind)
- Brownsville: 17° (15MPH wind)
- Abilene: -3° (6MPH wind)
- Midland: 0° (4MPH wind)

Winter of 1989-90: 72nd coldest in TX weather history

(ERCOT system has not been colder since Dec. 23, 1989.)

- Feb. 2, 2011:
- Dallas: 13° (20MPH wind)
- Houston: 21° (16MPH wind)
- San Antonio: 19° (25MPH wind)
- Austin: 18° (26MPH wind)
- Brownsville: 32° (26MPH wind)
- Abilene: 7° (16MPH wind)
- Midland: 6° (16MPH wind)

Winter of 2010-11: 69th coldest in TX weather history

- Jan. 6, 2017:
- Dallas: 22° (14MPH wind)
- Houston: 34° (25MPH wind)
- San Antonio: 31° (18MPH wind)
- Austin: 30° (20MPH wind)
- Brownsville: 36° (18MPH wind)
- Abilene: 21° (17MPH wind)
- Midland: 23° (12MPH wind)

Winter of 2016-17: 122nd coldest in TX weather history

*****Warmest winter on record*****

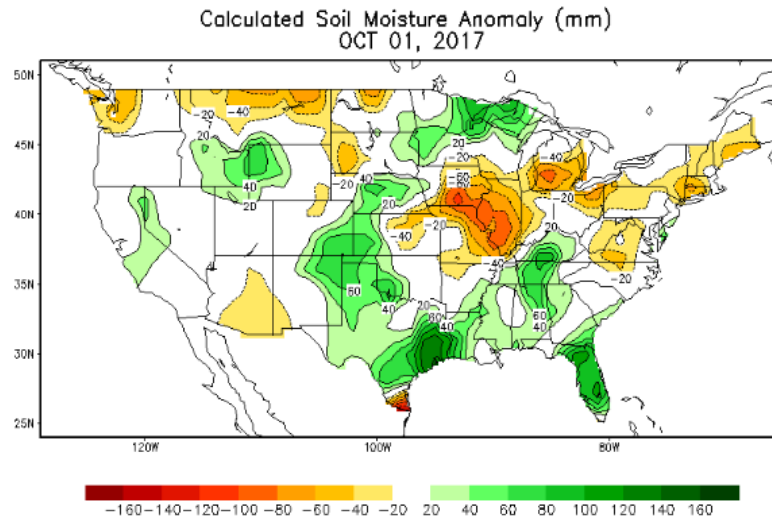
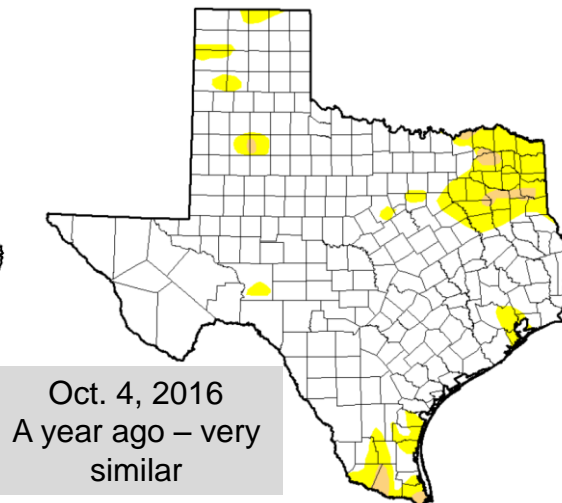
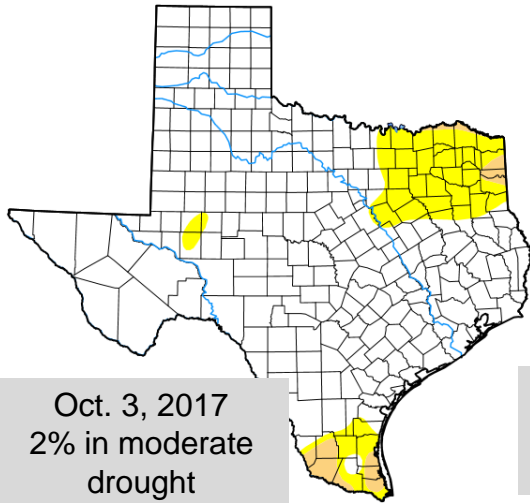
All-time winter peak load on this date: 59,650 MW (PM peak)

Peak would have been the morning of Jan. 7, but was a Saturday.

Jan. 7: DFW: 14°, IAH: 21°, SAT: 20°, AUS: 19°, BRO: 30°, ABI: 9°, MAF: 10°



Drought Update and Outlook



- At this point, the Rio Grande Valley has the most significant drought concerns.
- The RGV is likely to continue to be the area of greatest concern through the fall season.
- Hurricane season “officially” continues through Nov. 30.
- There have been no hurricanes historically to make landfall in Texas after Oct. 16.
- However, many remnants of tropical cyclones (especially from the Pacific) have impacted Texas with flooding rains during the fall months.
- Widespread drought will not develop this fall and is not likely in the winter.
- Conditions could deteriorate, however, especially West and possibly South.