



Item 5: 2016 Fall / Winter Weather Outlook

Chris Coleman

ERCOT Sr. Meteorologist

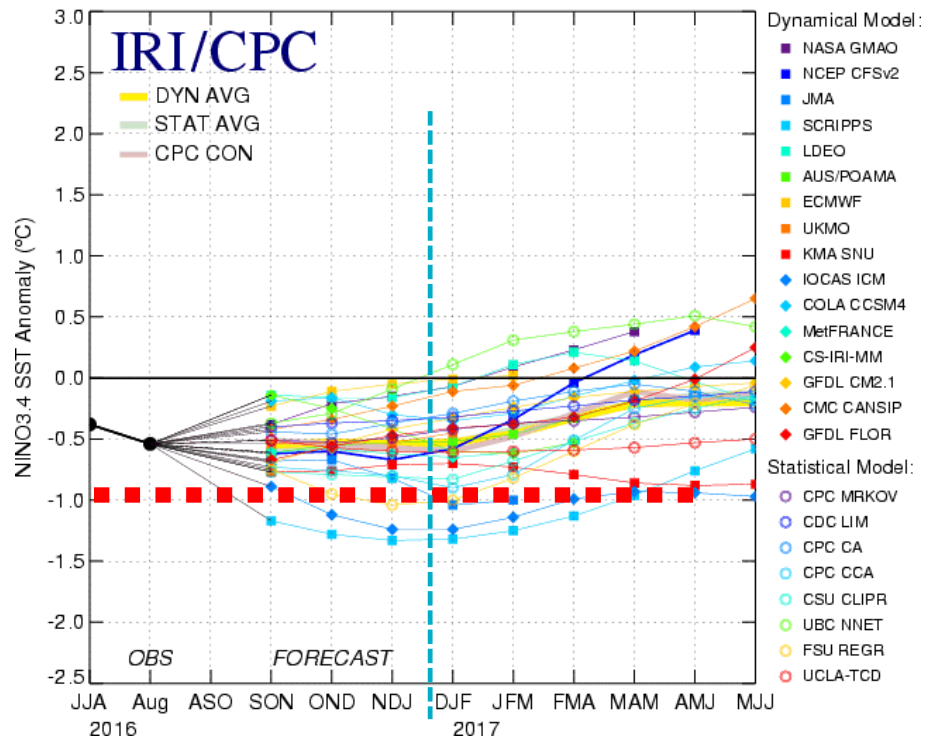
Board of Directors Meeting

ERCOT Public

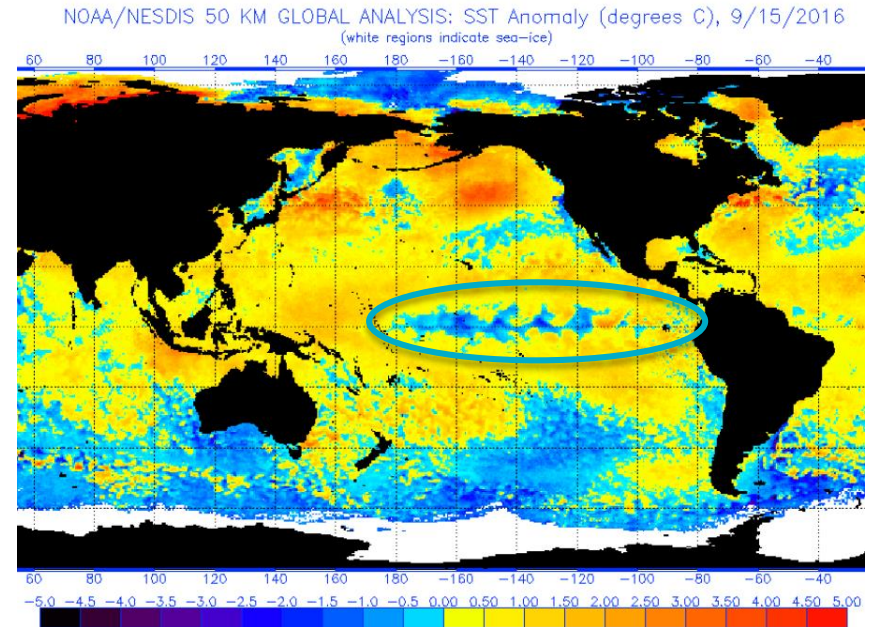
October 11, 2016

La Niña?

Mid-Sep 2016 Plume of Model ENSO Predictions



Weak La Niña events suggest other factors could be bigger drivers of the weather.

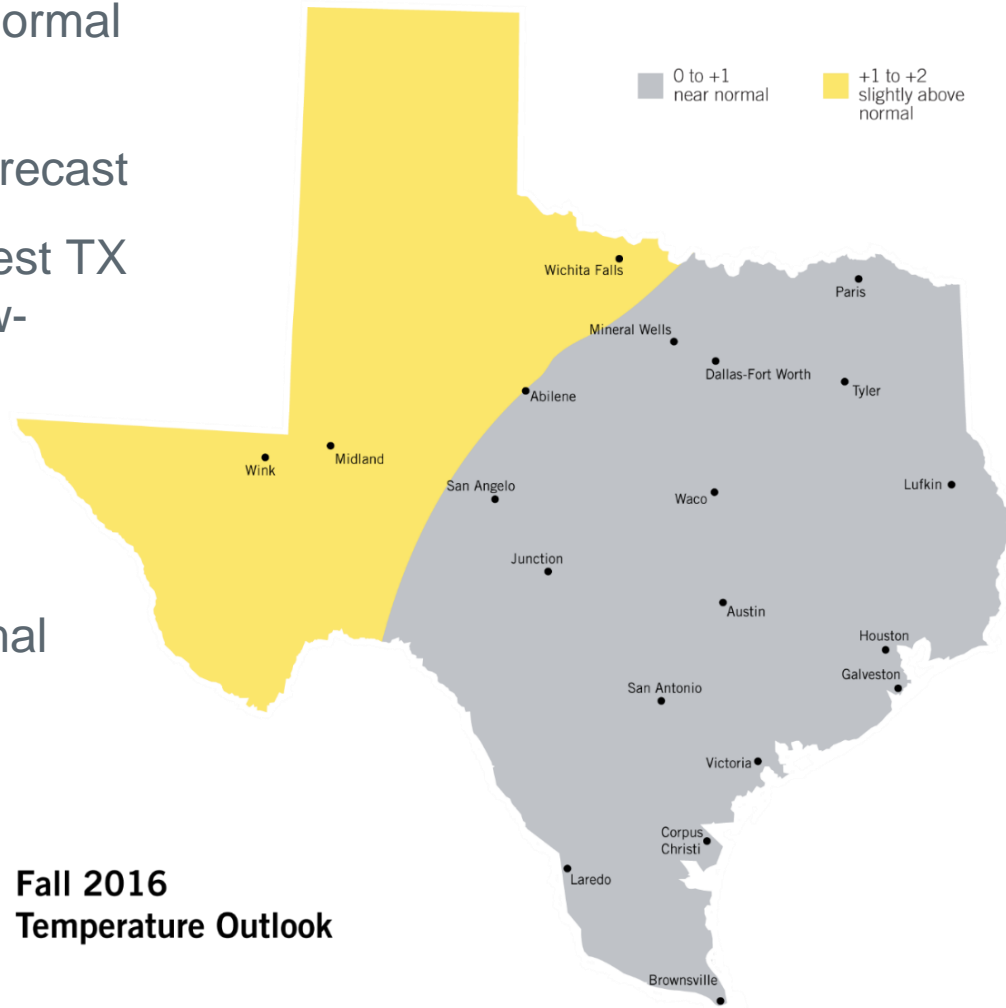


La Niña struggling to get established

Jun-Aug ENSO: -0.3°C
Late-Sept ENSO: -0.4°C

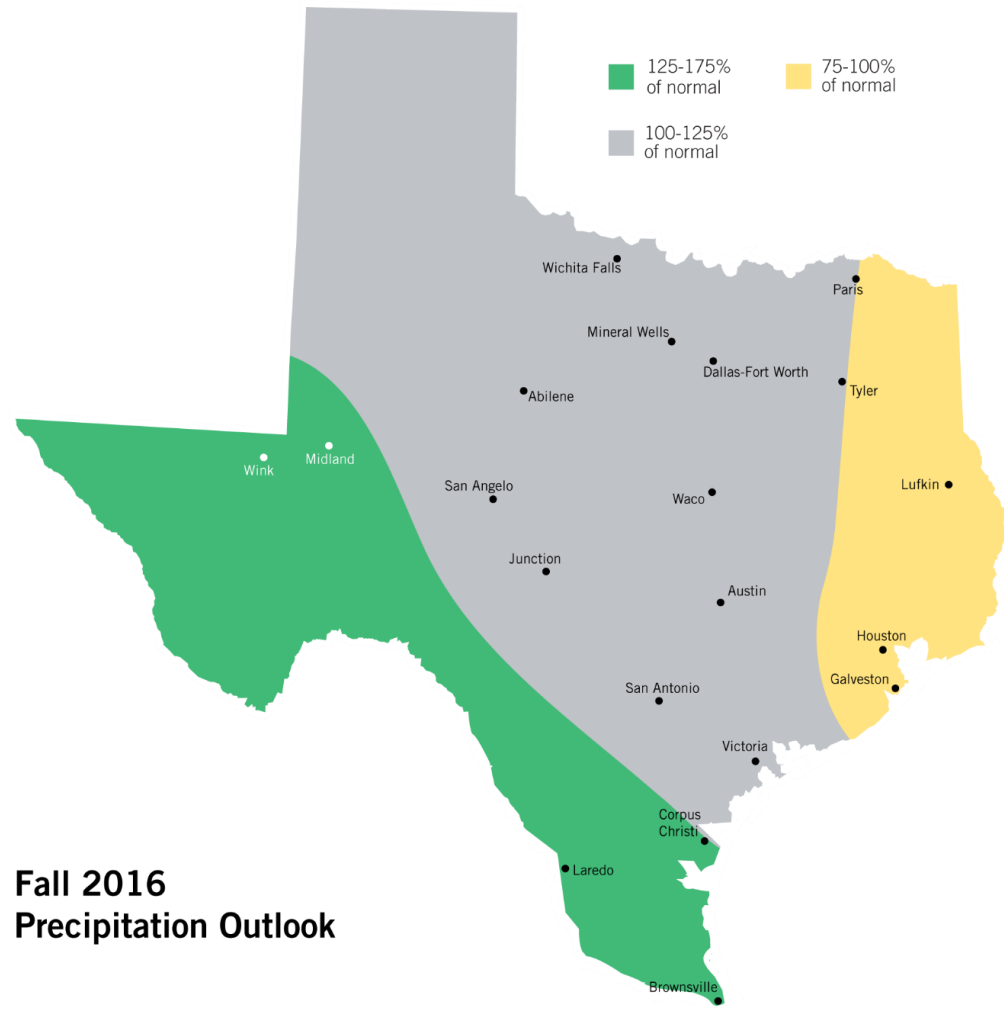
Fall Temperature Outlook

- Entire ERCOT region is forecast normal to above-normal temperatures
- Warmer potential than currently forecast
- While not forecast, South-Southwest TX has the highest potential for below-normal temperature anomalies
- Continuing recent trend with daytime max temperatures closer to the normal range and morning lows running above-normal
- November shows more above-normal potential than October

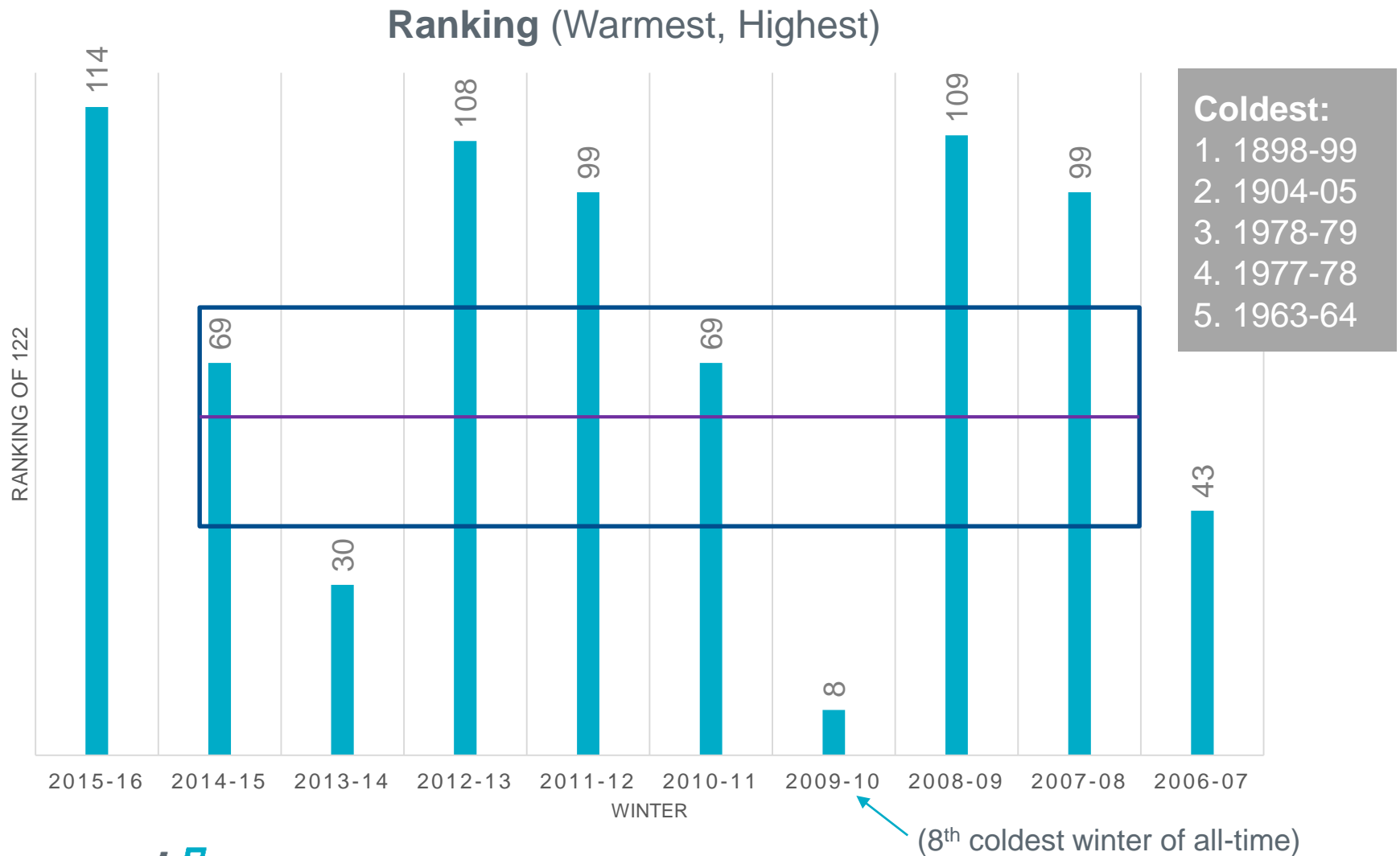


Fall Precipitation Outlook

- Unlikely to see a drier-than-normal season for the ERCOT system, on average
- Midland – San Angelo – Laredo and points south of that line has the greatest potential for above-normal rainfall
- 2015 & 2016 remains on-track to be the two wettest consecutive years in TX weather history

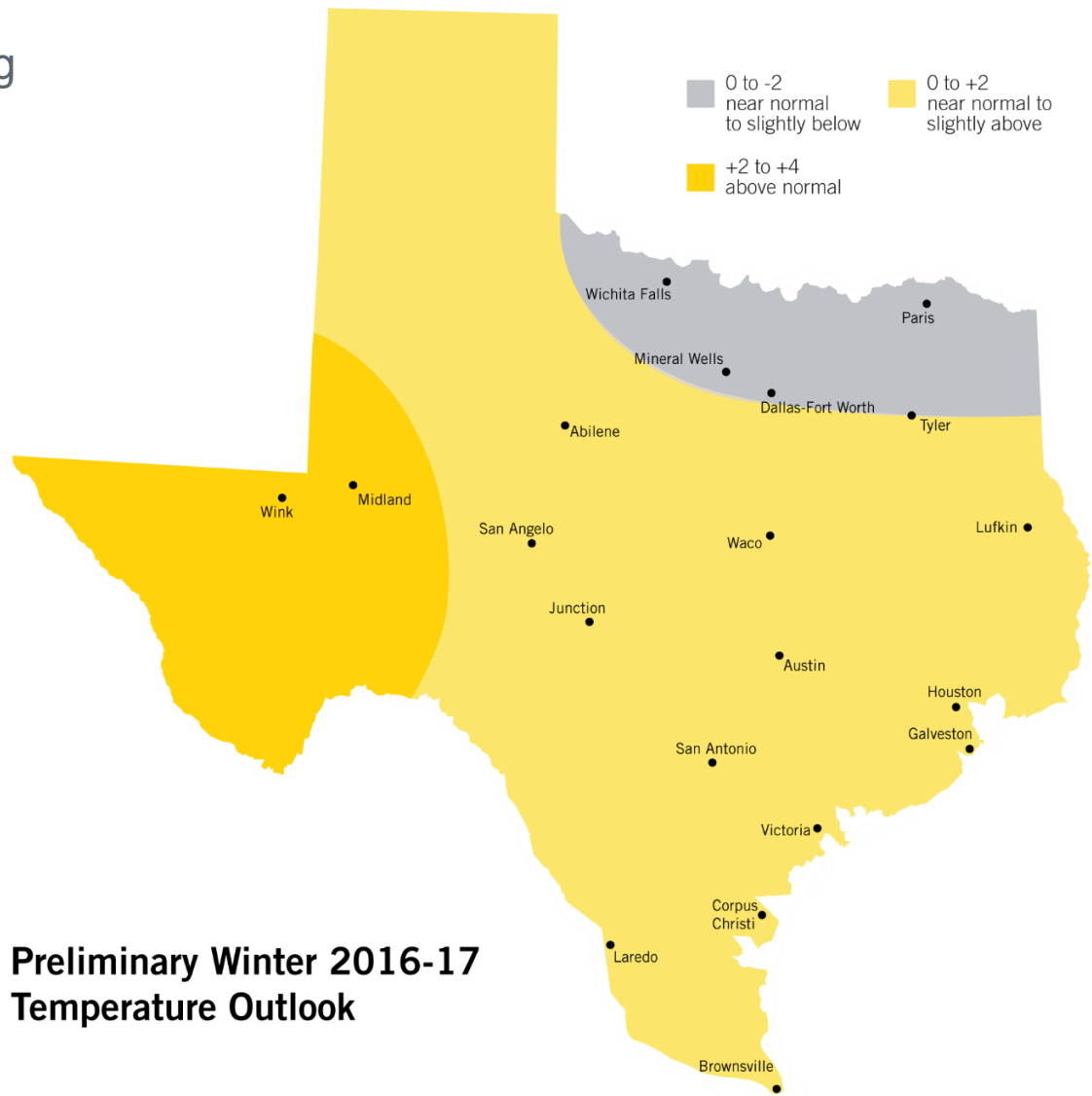


Temperature Ranking of Past Winters (Texas)



Winter 2016-17 Temperature Outlook

- At this time, not seeing a strong cold signal
- December has the warmest anomaly potential
- January and February could both feature some periods of below-normal temperatures
- The overnight/morning lows show a slightly colder (relative to normal) look than the mean temperature
- Unlikely to be as warm as last winter (114th coldest) ... but not impossible
- Very unlikely to be as cold as the winter of 2013-14 (30th coldest)



**Preliminary Winter 2016-17
Temperature Outlook**

Seasonal versus Extremes

February 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)

ERCOT system has not been colder since that date.

Winter of 2010-11:

69th coldest in TX weather history

December 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)

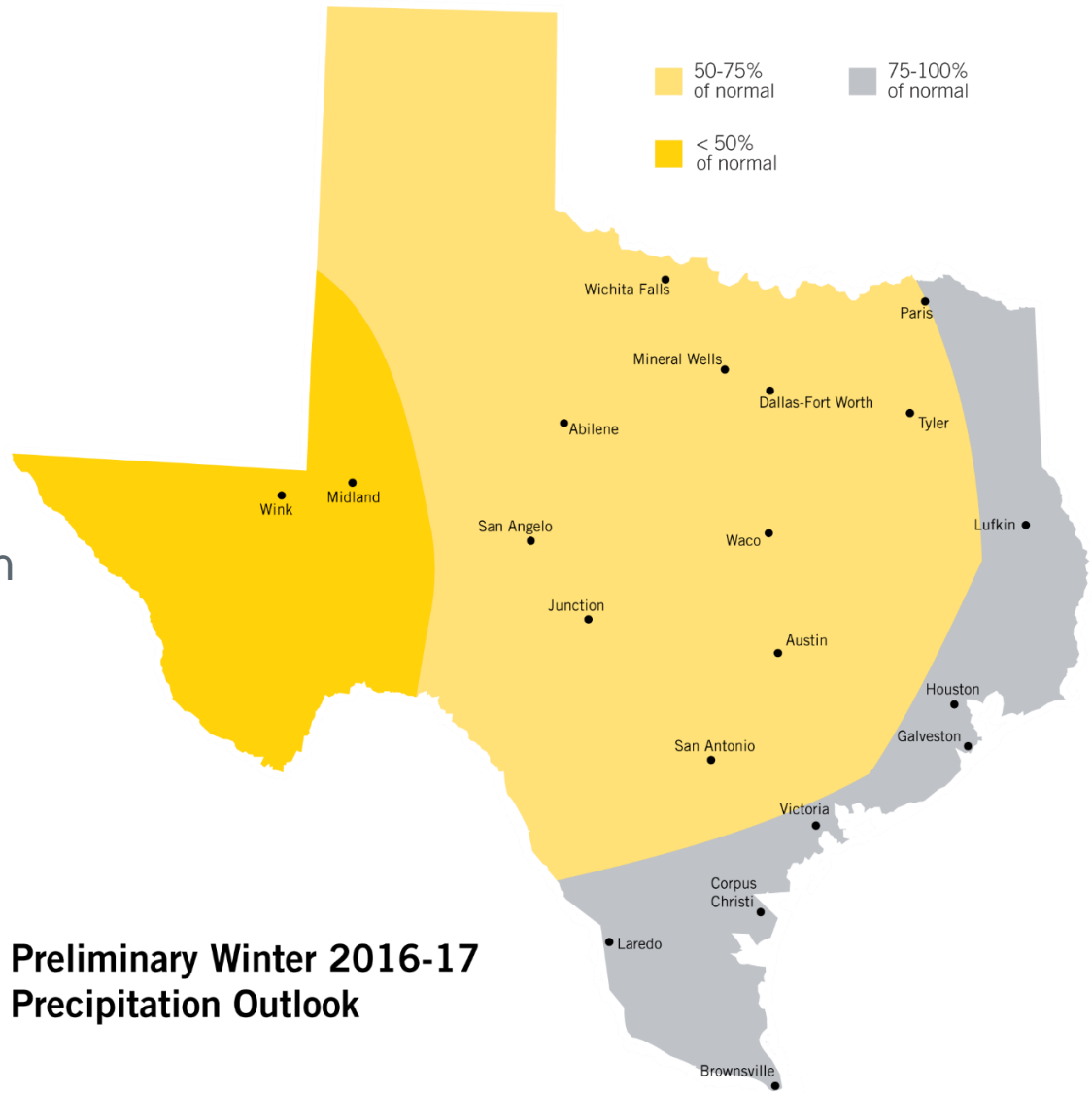
Midland: 0° (4MPH wind)

Winter of 1989-90:

72nd coldest in TX weather history

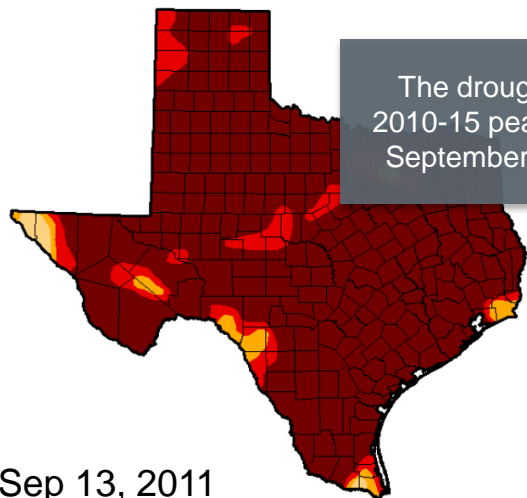
Winter 2016-17 Precipitation Outlook

- Drier than normal especially over West Texas
- Potentially drier than last winter
- Forecasting the 5th consecutive winter of either normal or drier-than-normal precipitation
- Temperature and precipitation outlooks would not support a winter with multiple major snow or ice events



**Preliminary Winter 2016-17
Precipitation Outlook**

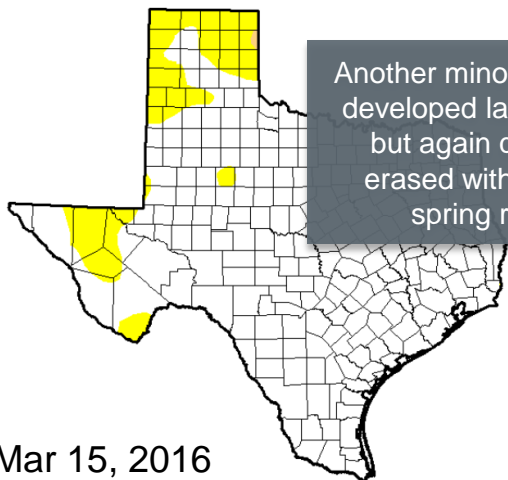
Drought Update



The drought of 2010-15 peaked in September 2011

Sep 13, 2011

100% in moderate or worse drought



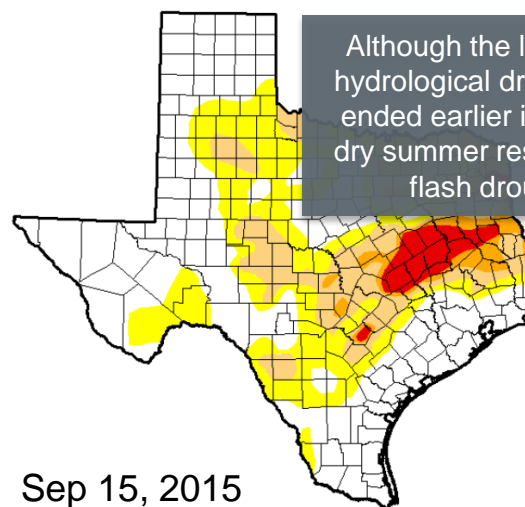
Another minor drought developed last winter but again quickly erased with early-spring rain

Mar 15, 2016

<1% in moderate or worse drought

PDO+ began in January 2014. No extreme, long-term droughts have been recorded during PDO+ cycles.

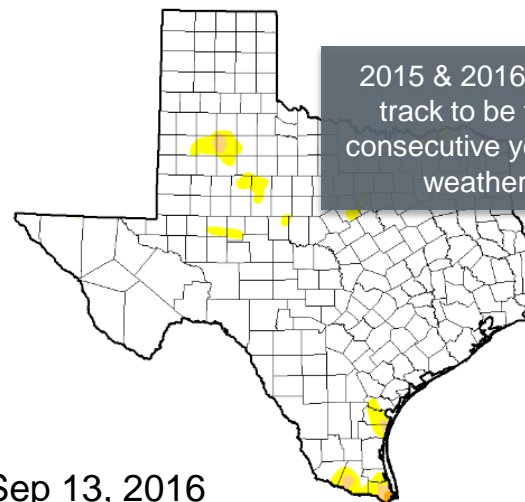
It's likely this PDO+ cycle will continue for another 10-20 years



Although the long-term hydrological drought had ended earlier in 2015, a dry summer resulted in a flash drought

Sep 15, 2015

27% in moderate or worse drought



2015 & 2016 period is on track to be the wettest consecutive years in Texas weather history

Sep 13, 2016

<1% in moderate or worse drought

Summary

- Autumn forecast is for normal to above-normal temperatures and precipitation
- Preliminary winter forecast is mild and dry
- This is a preliminary forecast. It will be **finalized by November 1** and posted to ERCOT.com
- There remains a **scenario that would result in a significantly colder winter** that cannot be dismissed at this point
- **Unlikely to be as warm as last winter** (114th coldest)
- **Unlikely to be as cold as the winter of 2013-14** (30th coldest)
- Better chance to be similar to last winter than the “polar vortex” winter of 2013-14