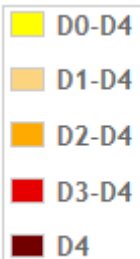
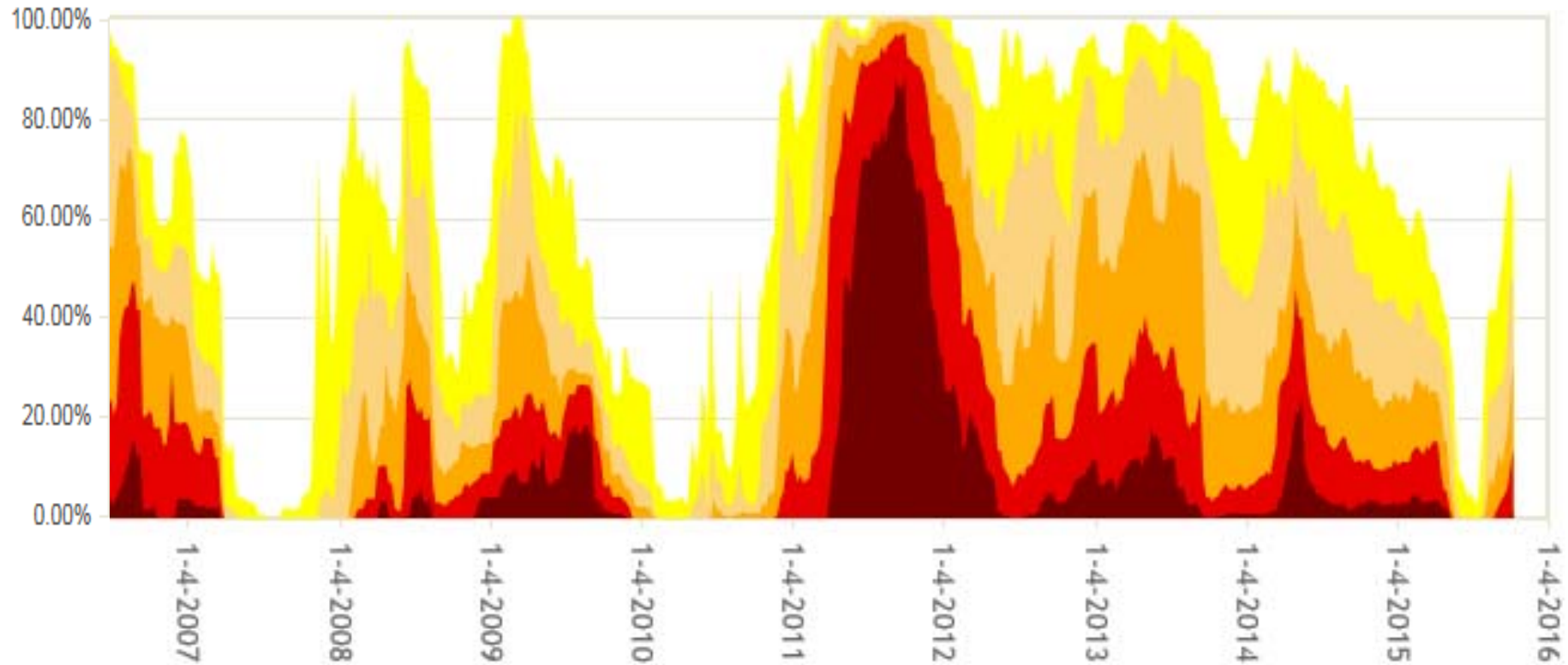


# FALL AND WINTER WEATHER OUTLOOK

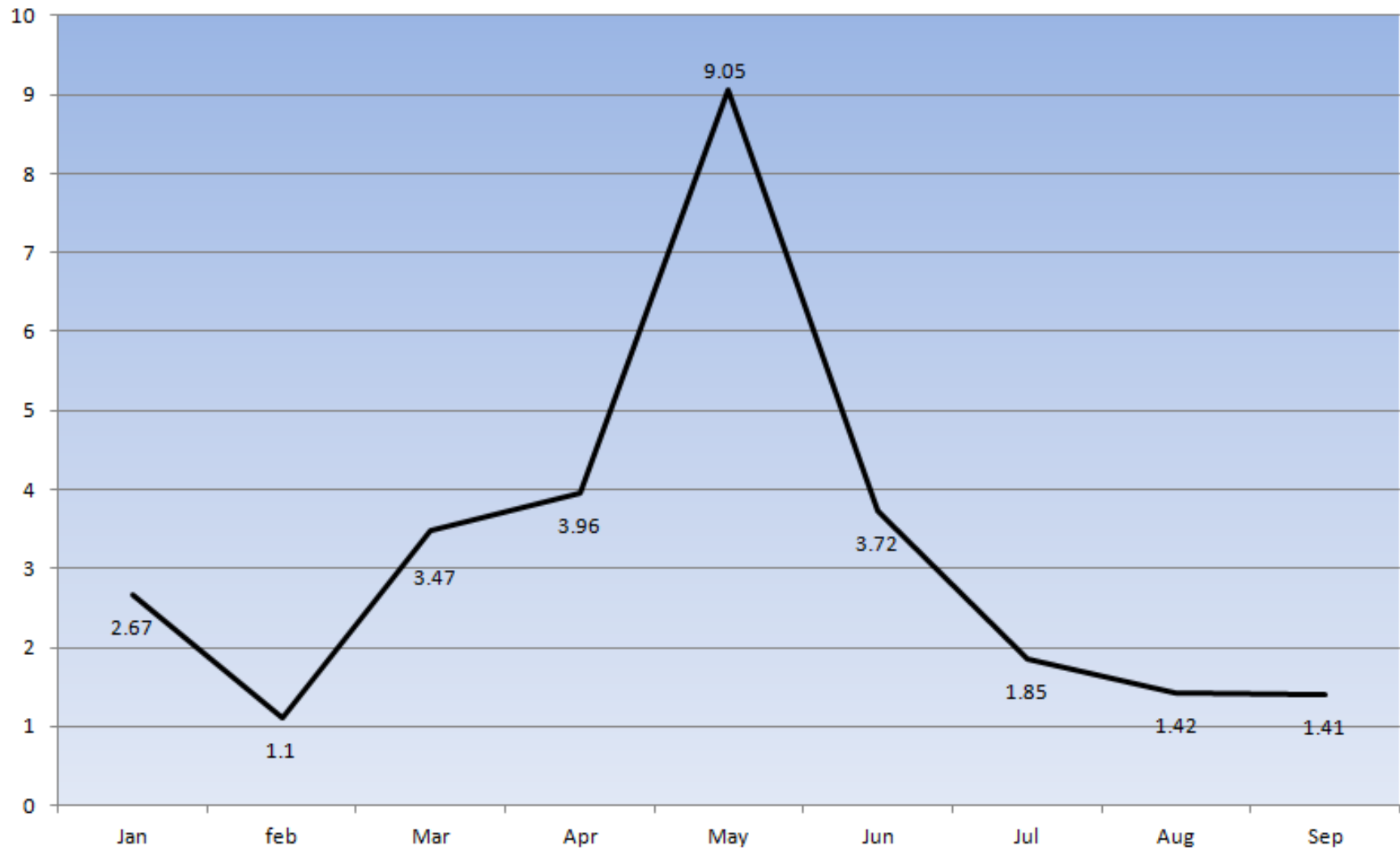
National Hydrologic Warning  
Council

October 29, 2015

# Texas Drought Time Series



# Texas Rainfall Jan-Sep 2015



# Texas May Rainfall Stats

- Rainfall averaged 9.06 inches.
- Wettest May on record.
- Wettest month ever (Previous was 6.66 inches in June 2004).
- Wettest spring on record.
- Wettest Jan-June on record.



SIZZLING

July/August/September

ISOLATED  
T-STORMS



AMARILLO

LITTLE ROCK



H

MASSIVE



EL PASO

HOT  
& DRY



HOUSTON

AccuWeather.com

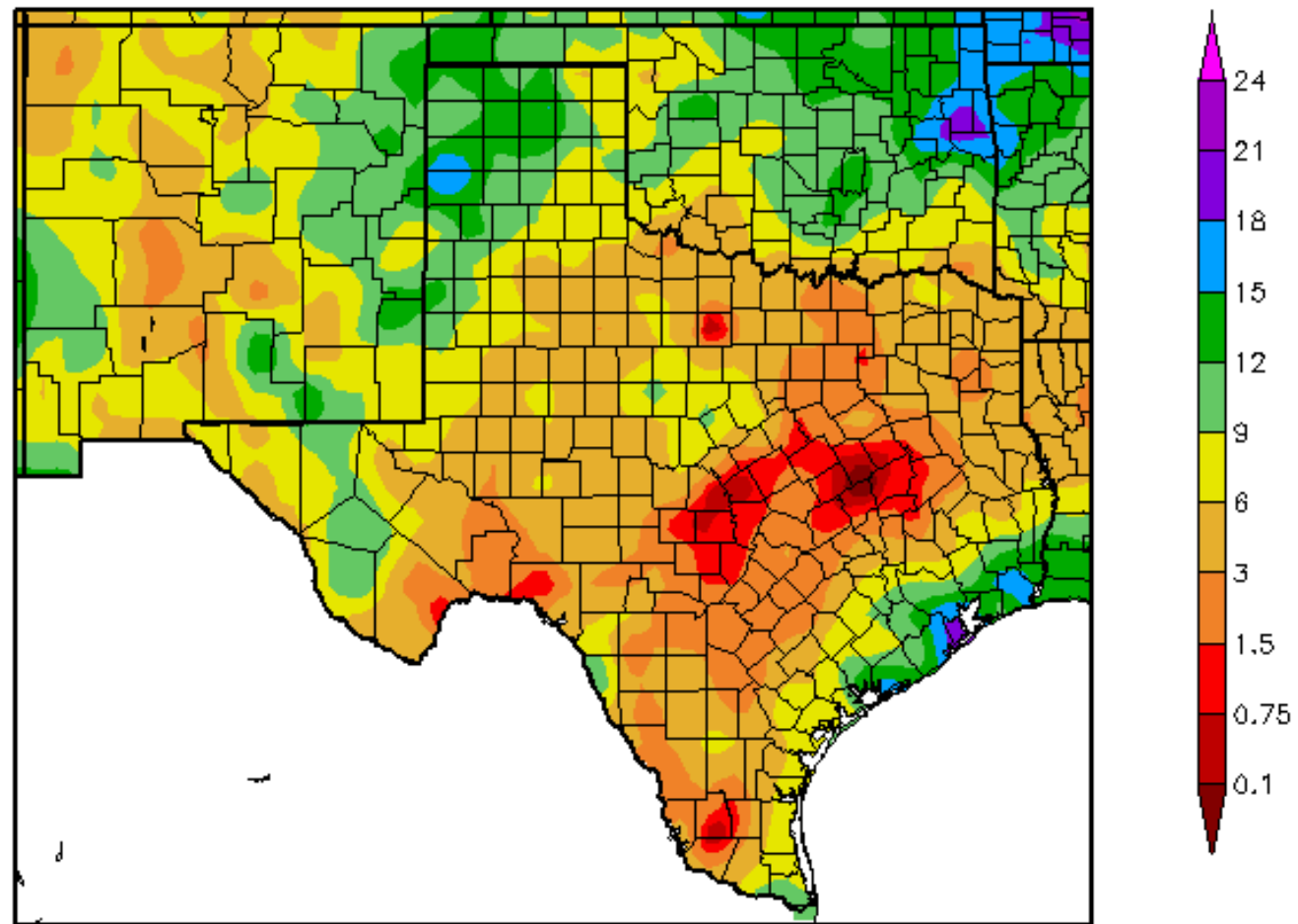
08:09Z 07/29/2015

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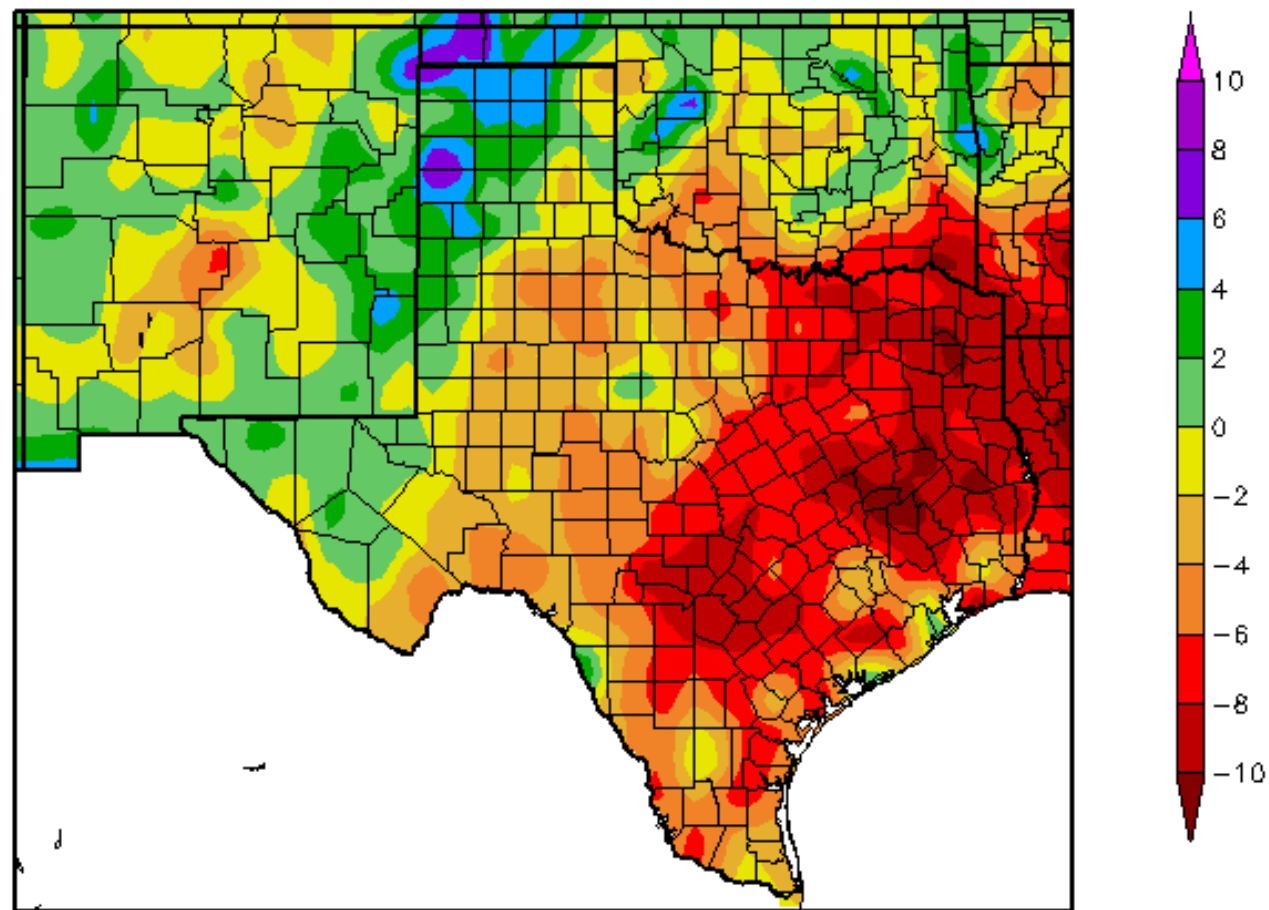
# Rainfall 7/1 thru 10/18

Precipitation (in)  
7/1/2015 – 10/18/2015



# Departure from Normal, July 1- Oct. 18

Departure from Normal Precipitation (in)  
7/1/2015 – 10/18/2015

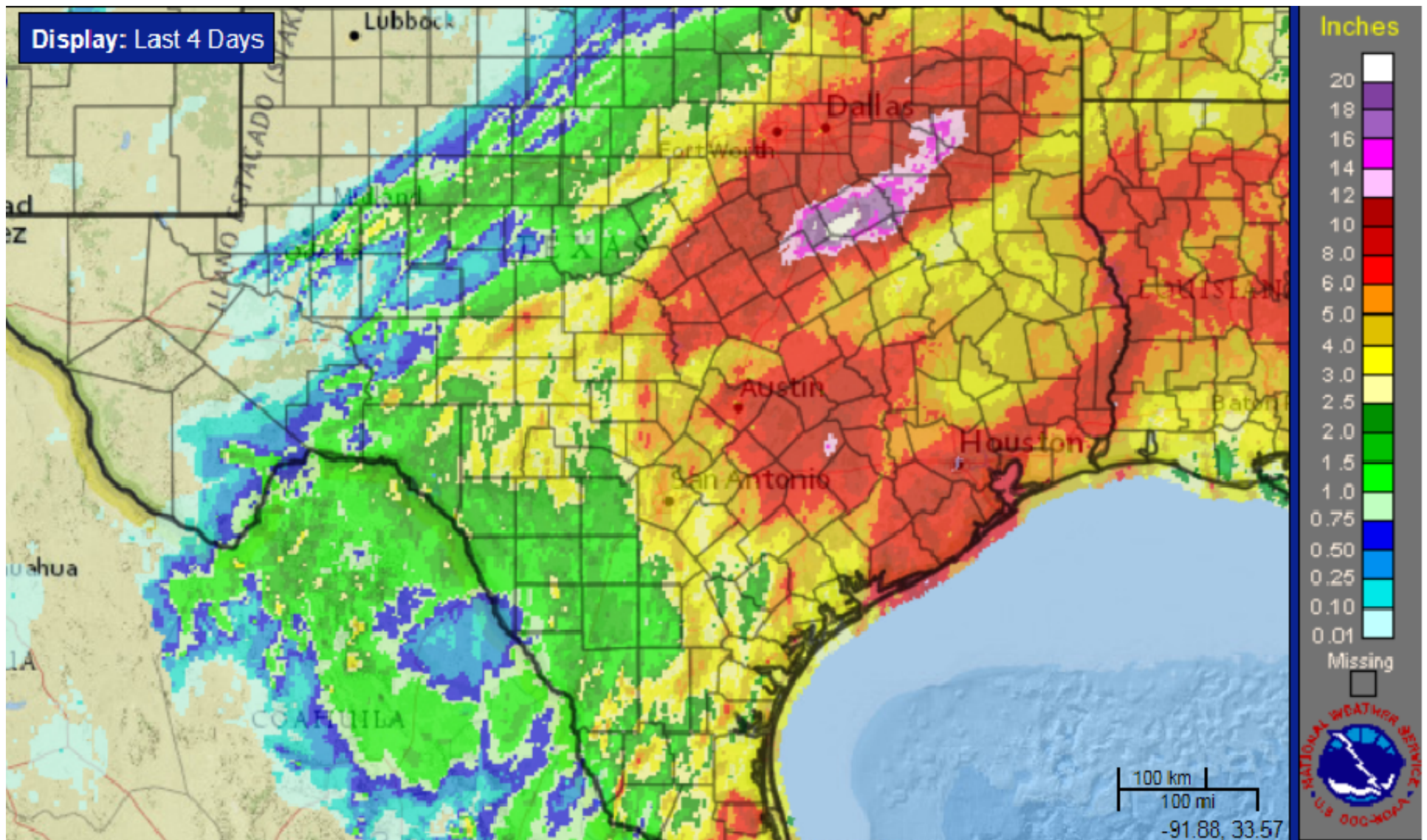


# Near Record Dry July-September

- Statewide 3-month rainfall totaled 4.68 inches.
- 2.90 inches below normal.
- 11<sup>th</sup> driest such period on record.

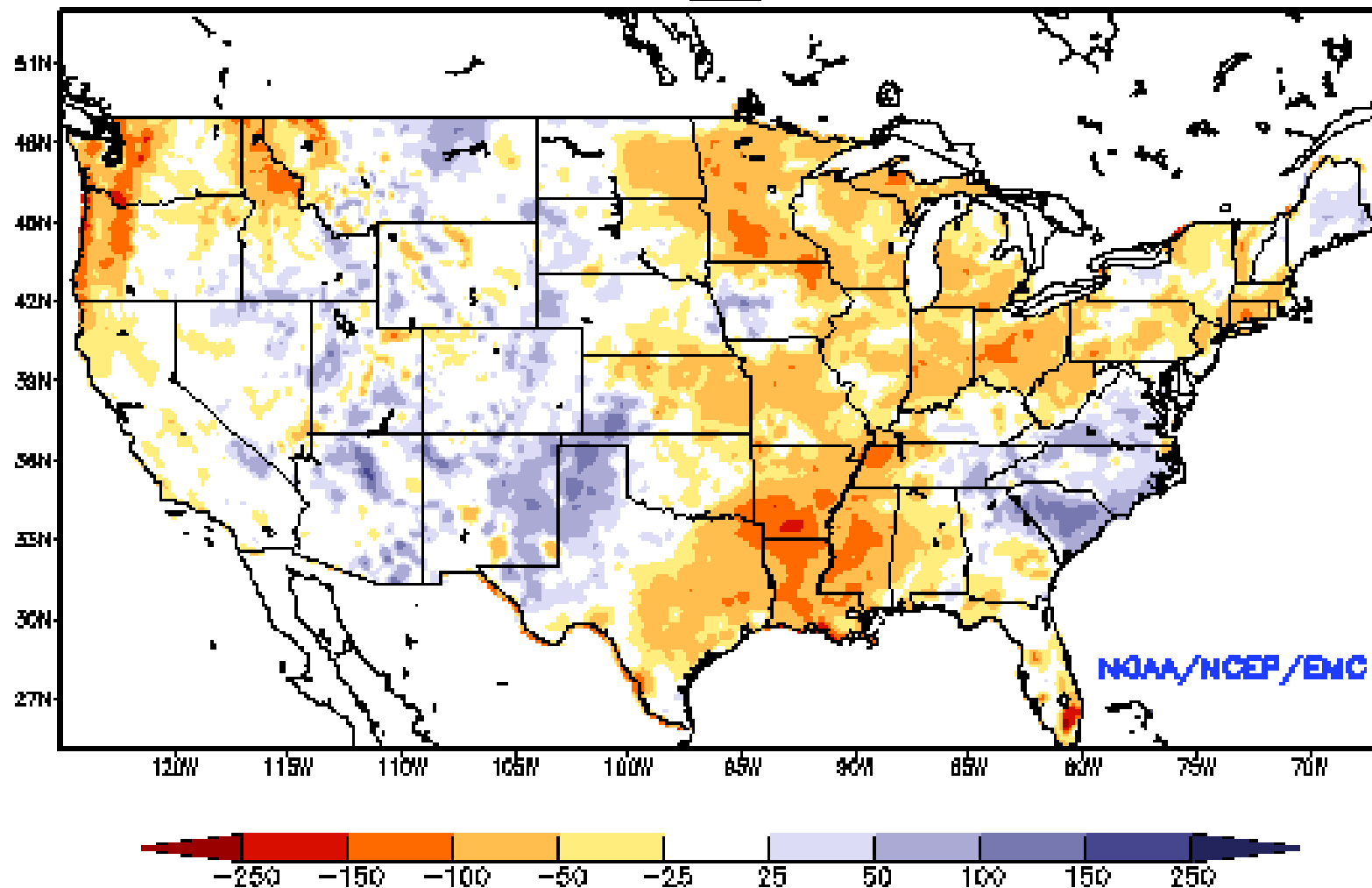


# Rainfall Last Thursday-Sunday



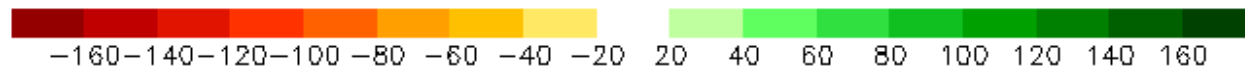
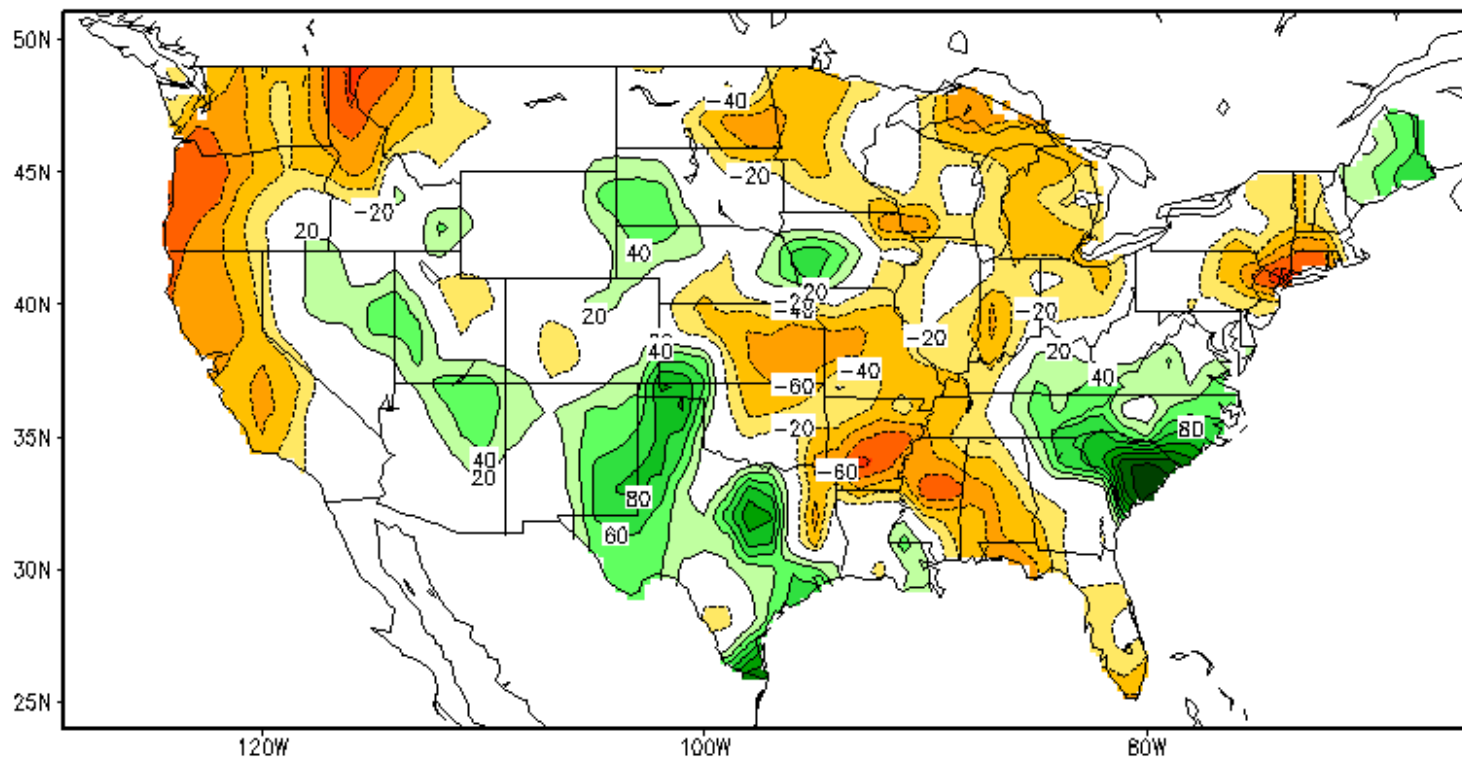
# Soil Moisture Was Well Below Normal

Ensemble-Mean - Current Total Column Soil Moisture Anomaly (mm)  
NCEP NLDAS Products Valid: OCT 23, 2015

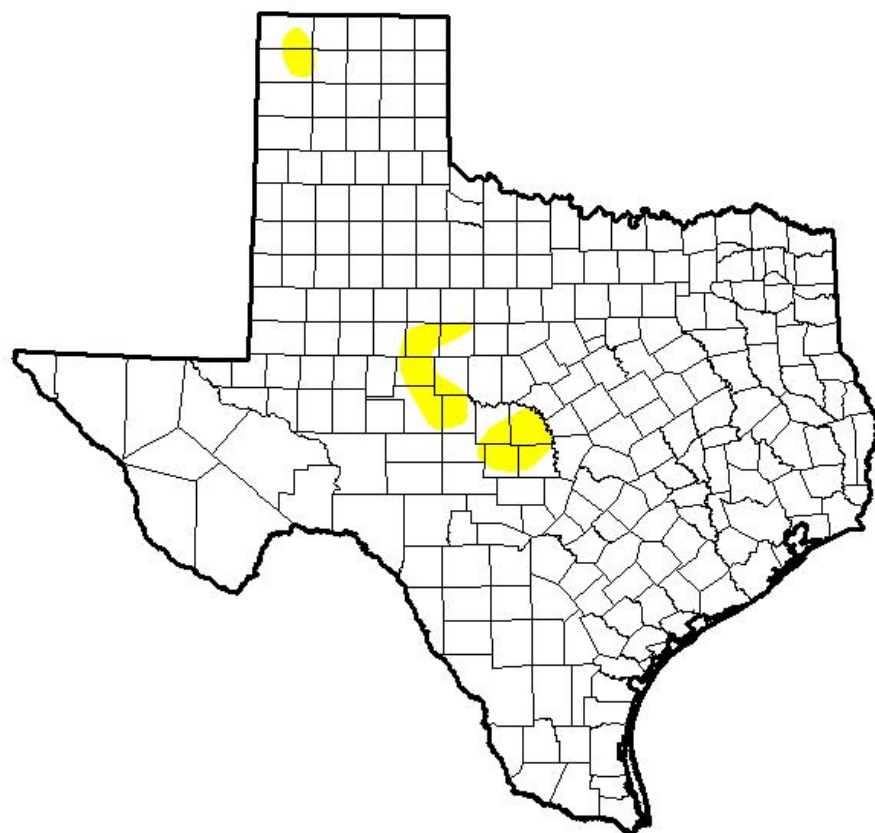


# Good Soil Moisture Recovery

Calculated Soil Moisture Anomaly (mm)  
OCT 26, 2015



# U.S. Drought Monitor Texas



**July 14, 2015**

(Released Thursday, Jul 16, 2015)

Valid 8 a.m. EDT

*Drought Conditions (Percent Area)*

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	97.16	2.84	0.00	0.00	0.00	0.00
<b>Last Week</b> 7/7/2015	95.37	4.63	0.25	0.00	0.00	0.00
<b>3 Months Ago</b> 4/14/2015	52.88	47.12	35.25	24.65	14.91	3.34
<b>Start of Calendar Year</b> 12/30/2014	34.37	65.63	44.68	25.73	11.70	3.17
<b>Start of Water Year</b> 9/30/2014	28.92	71.08	48.95	29.54	11.26	2.69
<b>One Year Ago</b> 7/15/2014	12.72	87.28	63.36	36.80	18.36	3.77

## Intensity:

D0 Abnormally Dry	D3 Extreme Drought
D1 Moderate Drought	D4 Exceptional Drought
D2 Severe Drought	

*The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.*

## **Author:**

David Simeral  
Western Regional Climate Center



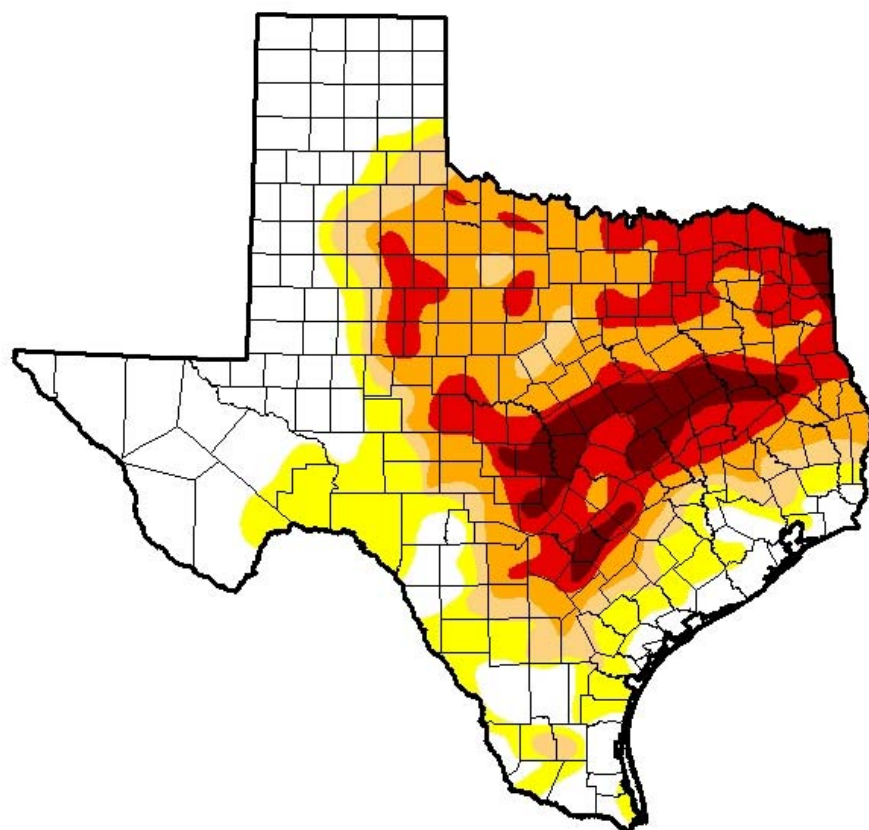
<http://droughtmonitor.unl.edu/>

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# U.S. Drought Monitor Texas

**October 20, 2015**  
(Released Thursday, Oct. 22, 2015)  
Valid 8 a.m. EDT



*Drought Conditions (Percent Area)*

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	34.75	65.25	50.28	41.88	21.40	5.52
<b>Last Week</b> 10/13/2015	36.47	63.53	47.03	31.88	13.89	1.42
<b>3 Months Ago</b> 7/21/2015	95.82	4.18	0.00	0.00	0.00	0.00
<b>Start of Calendar Year</b> 12/02/2014	34.37	65.63	44.68	25.73	11.70	3.17
<b>Start of Water Year</b> 9/29/2015	34.51	65.49	38.32	17.55	6.27	0.00
<b>One Year Ago</b> 10/21/2014	29.97	70.03	48.56	27.50	11.53	2.88

## Intensity:

D0 Abnormally Dry	D3 Extreme Drought
D1 Moderate Drought	D4 Exceptional Drought
D2 Severe Drought	

*The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.*

## **Author:**

Brad Rippey  
U.S. Department of Agriculture

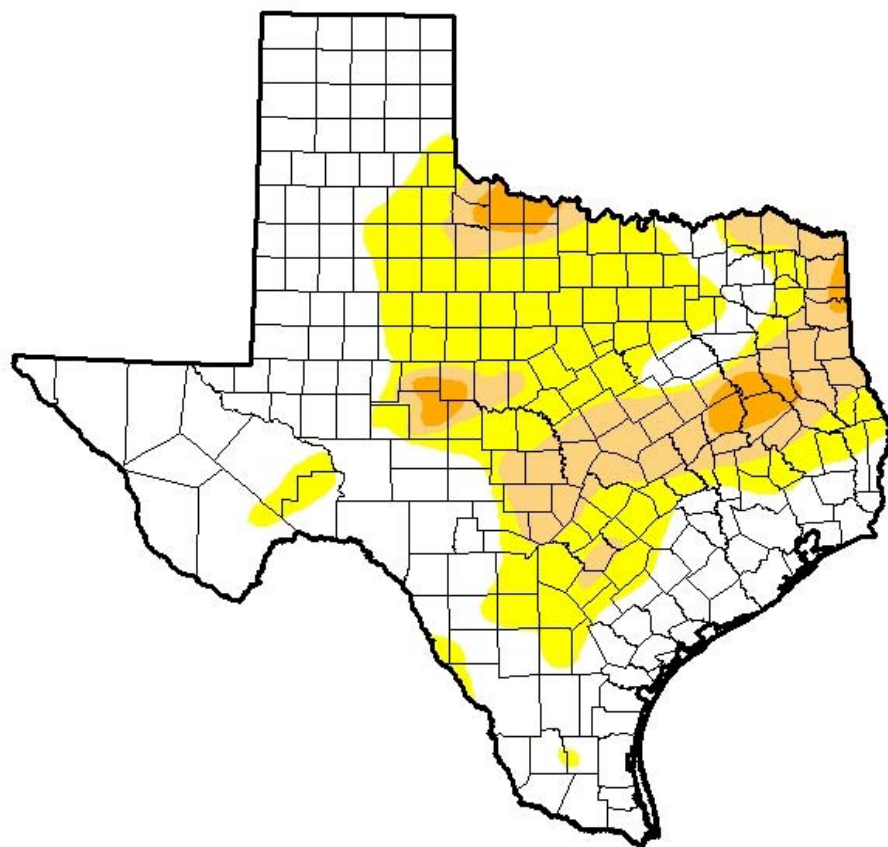


<http://droughtmonitor.unl.edu/>

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# U.S. Drought Monitor Texas

**October 27, 2015**  
(Released Thursday, Oct. 29, 2015)  
Valid 8 a.m. EDT



*Drought Conditions (Percent Area)*

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	56.34	43.66	15.67	2.85	0.00	0.00
<b>Last Week</b> <i>10/20/2015</i>	34.75	65.25	50.28	41.88	21.40	5.52
<b>3 Months Ago</b> <i>7/28/2015</i>	86.45	13.55	0.65	0.00	0.00	0.00
<b>Start of Calendar Year</b> <i>1/20/2014</i>	34.37	65.63	44.68	25.73	11.70	3.17
<b>Start of Water Year</b> <i>9/29/2015</i>	34.51	65.49	38.32	17.55	6.27	0.00
<b>One Year Ago</b> <i>10/28/2014</i>	24.84	75.16	49.20	27.86	11.90	3.62

## Intensity:

D0 Abnormally Dry	D3 Extreme Drought
D1 Moderate Drought	D4 Exceptional Drought
D2 Severe Drought	

*The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.*

## **Author:**

Brad Rippey  
U.S. Department of Agriculture



<http://droughtmonitor.unl.edu/>

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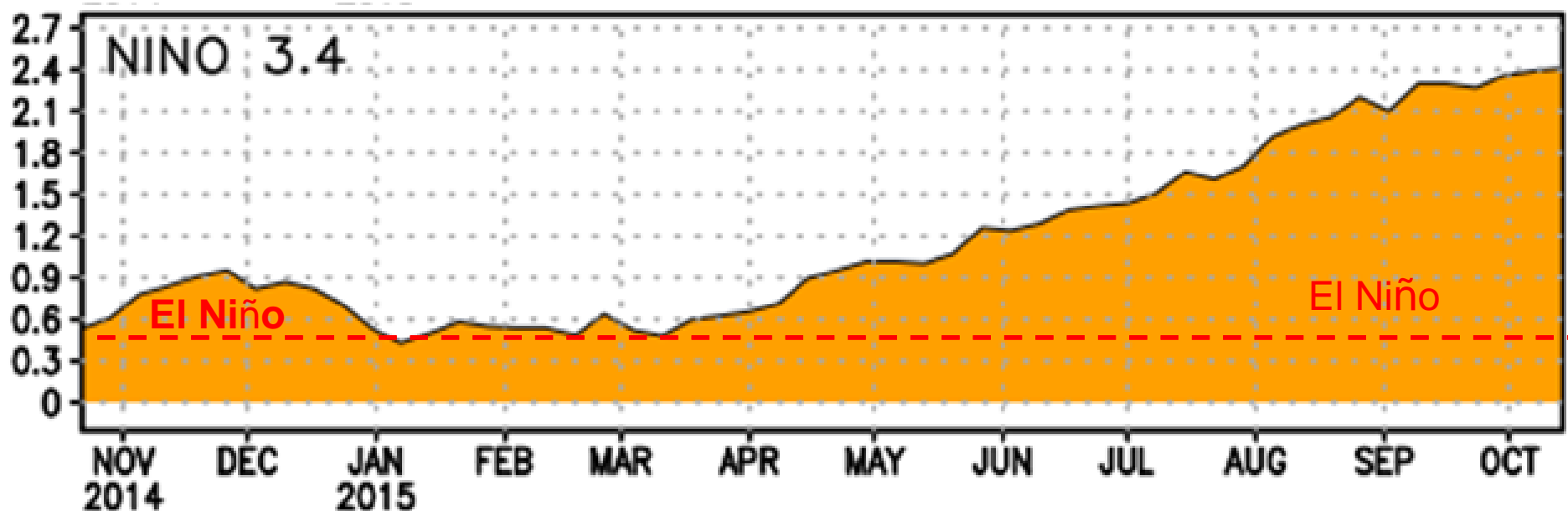




# The Return of El Niño

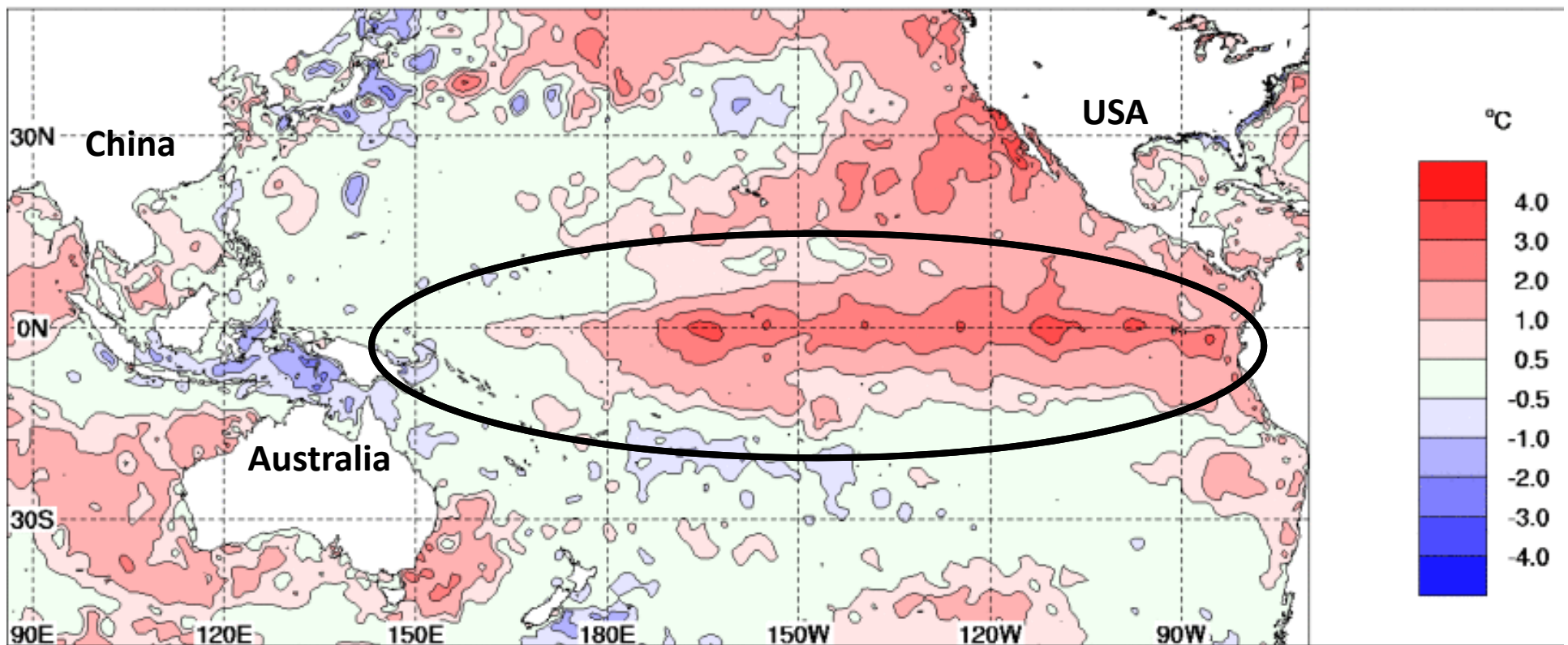
*Cape Ann Images*

# Sea Surface Temperature Timetable

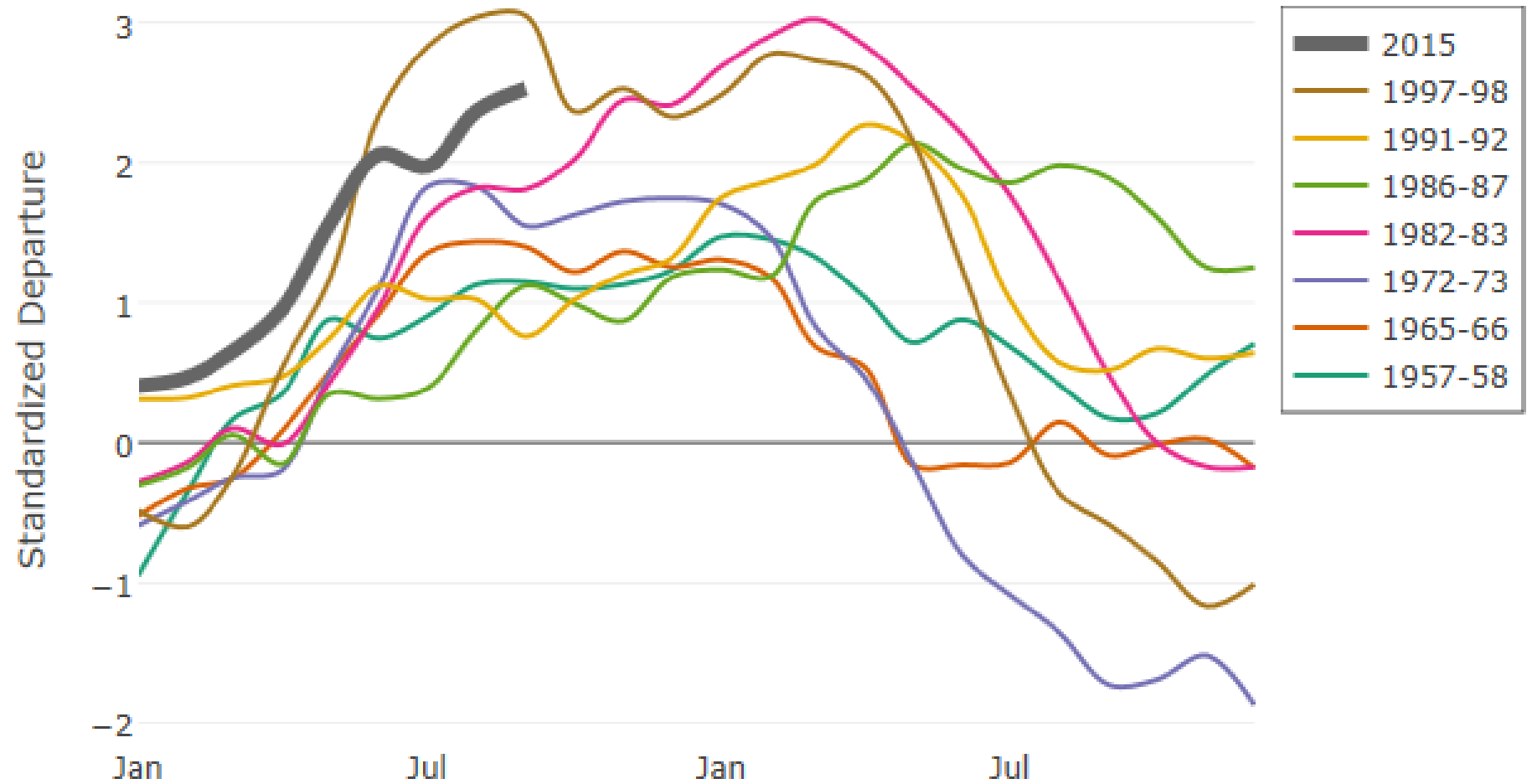


# A Strong El Niño in Place; Still Growing Stronger

SSTA 1.0X1.0 NMOC OCEAN ANOMALIES (C) 20151019 20151025

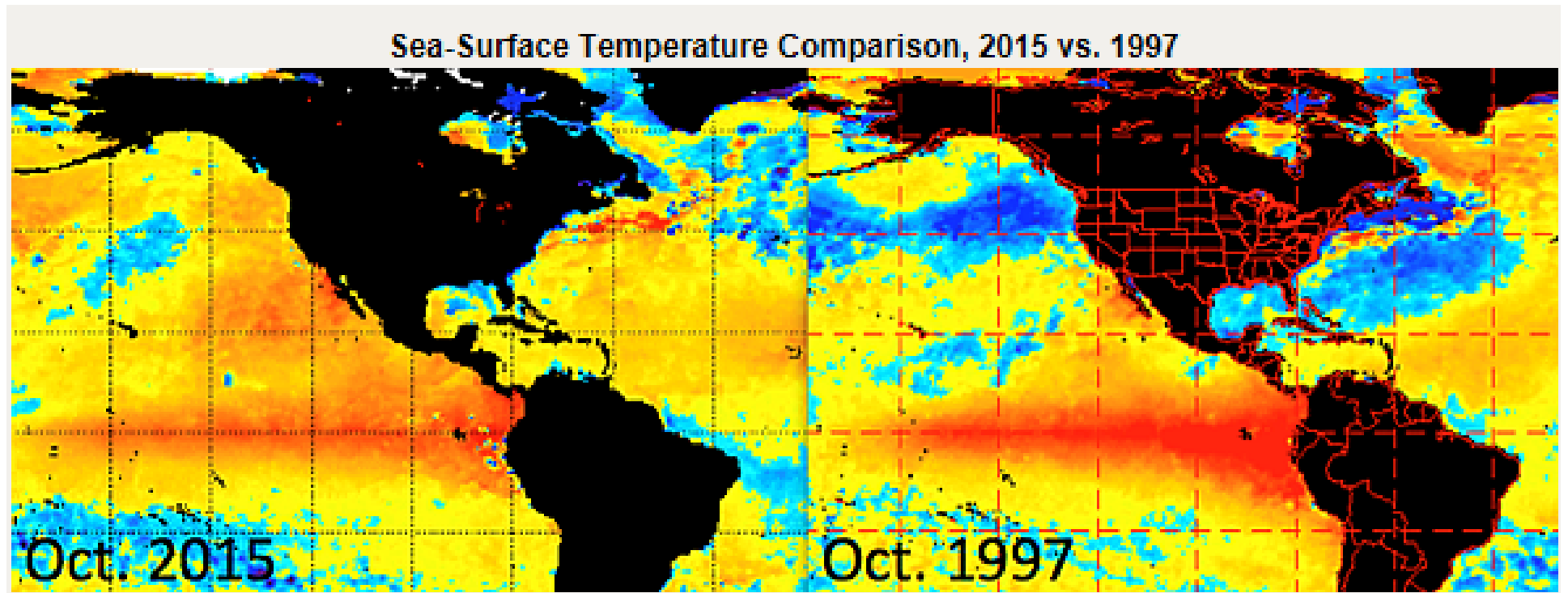


## Multivariate ENSO Index, Seven Strongest El Nino Events Since 1950



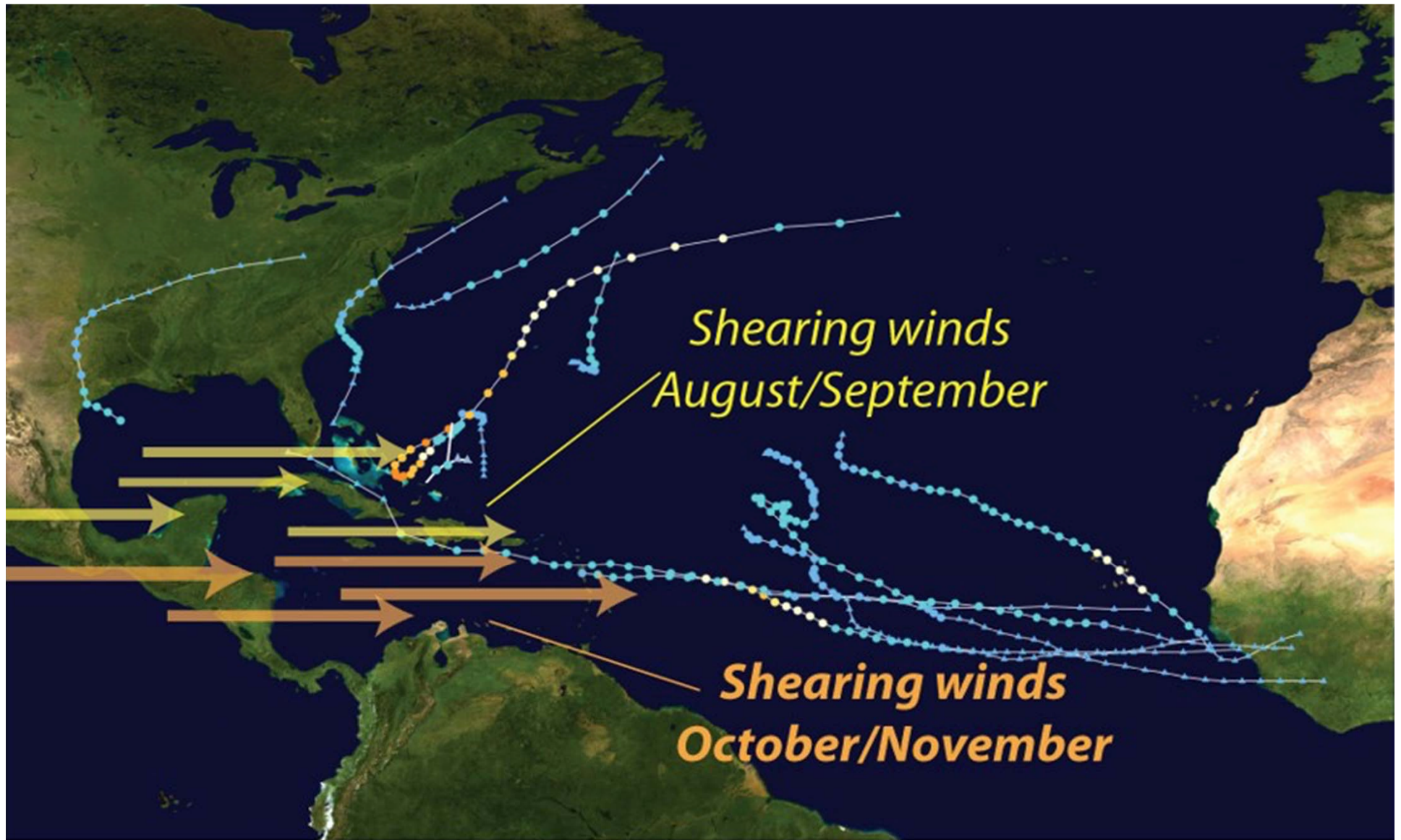
Source: [ESRL](#)

# Comparison of Sep. 1997 and Sep. 2015 El Niños

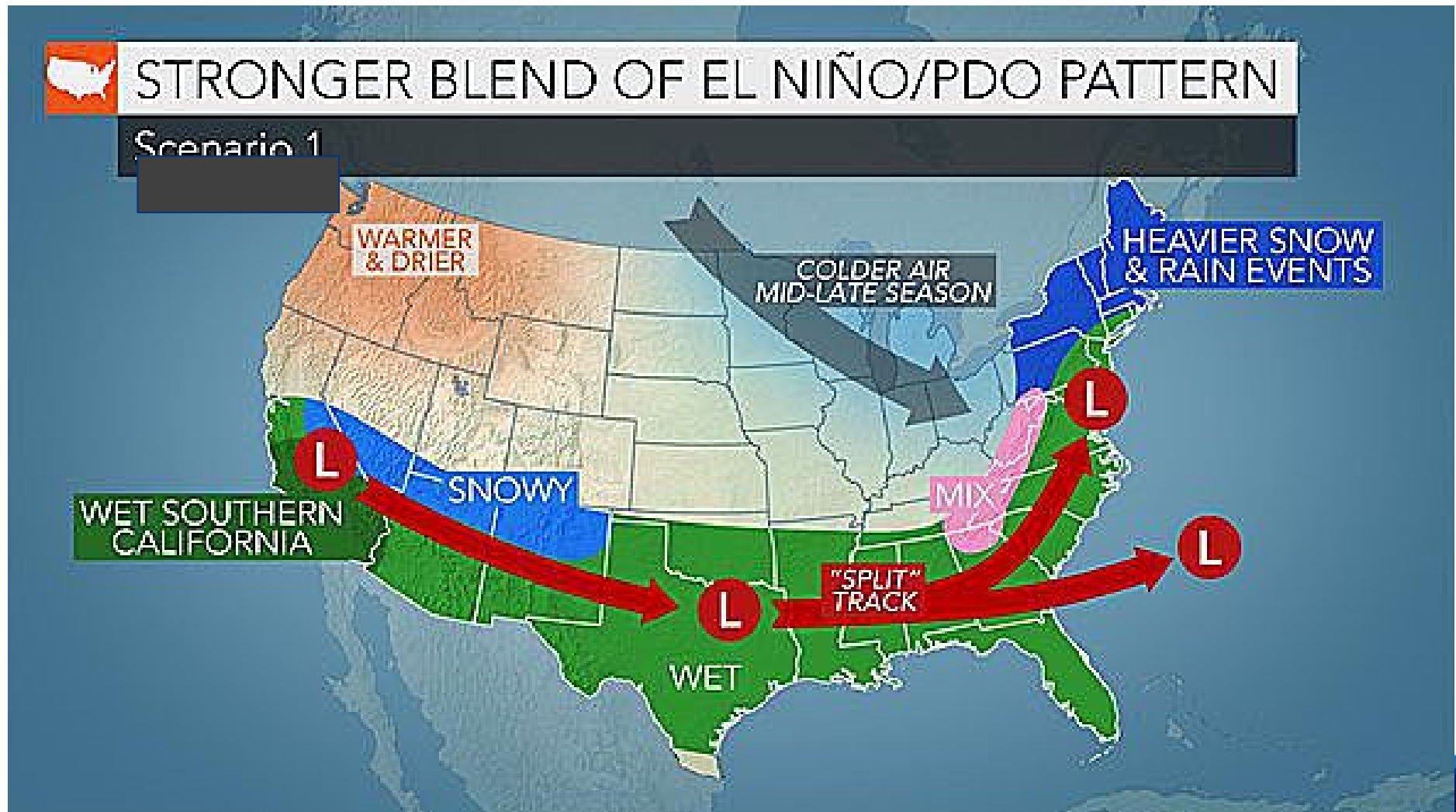




# Weather Pattern Changing



# El Niño Pattern this Winter

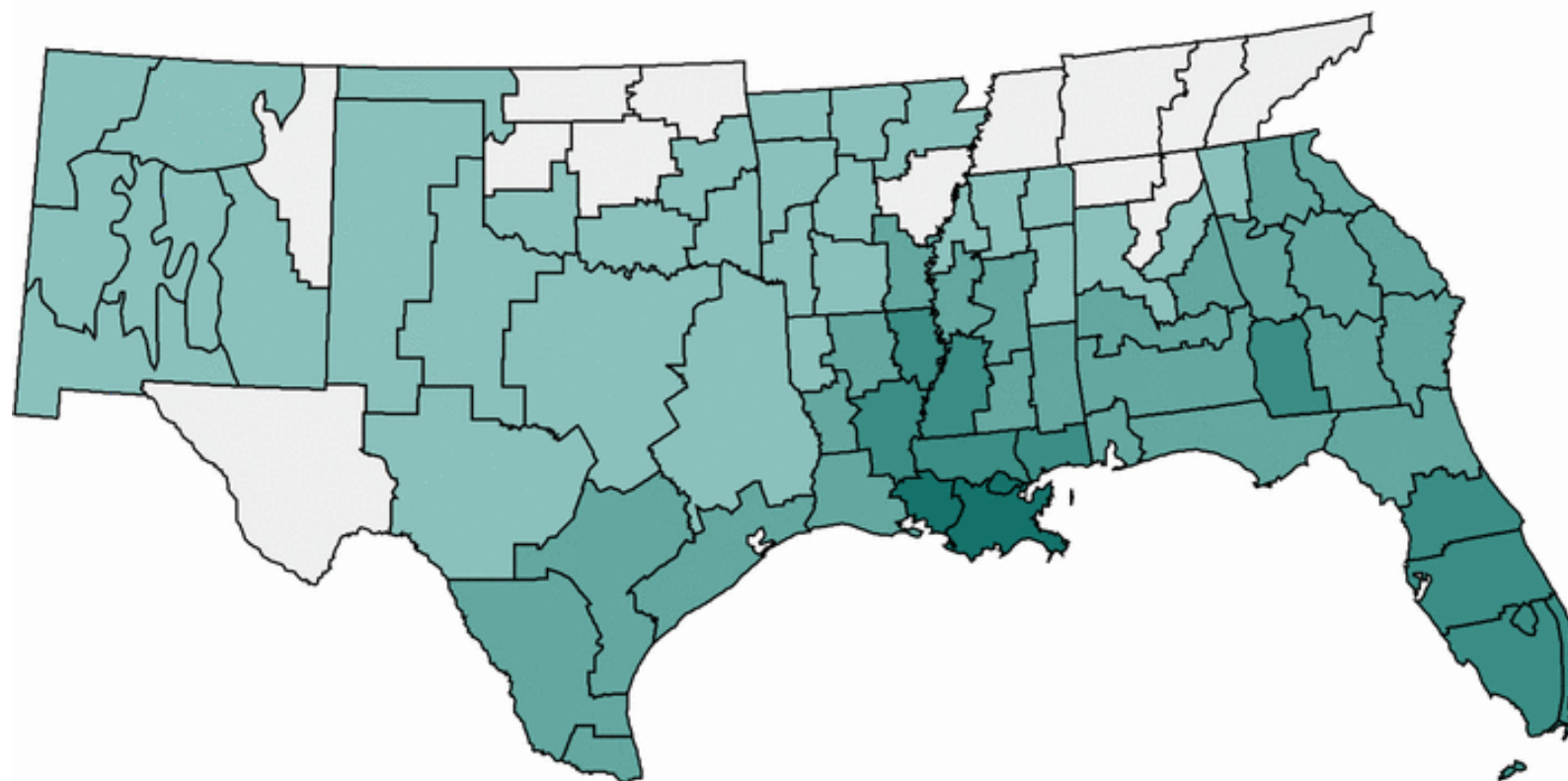


# Strong El Niño Precipitation Departure from Average

National Weather Service Southern Region

Composite: October–March 1957–58, 1965–66, 1972–73, 1982–83, 1991–92, 1997–98

Average Period: 1981–2010



Data Source: nClimDiv

Created by: National Centers for Environmental Information

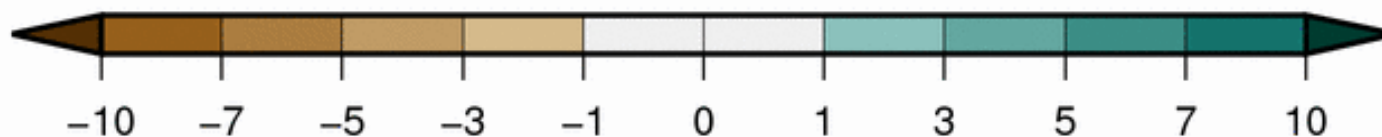
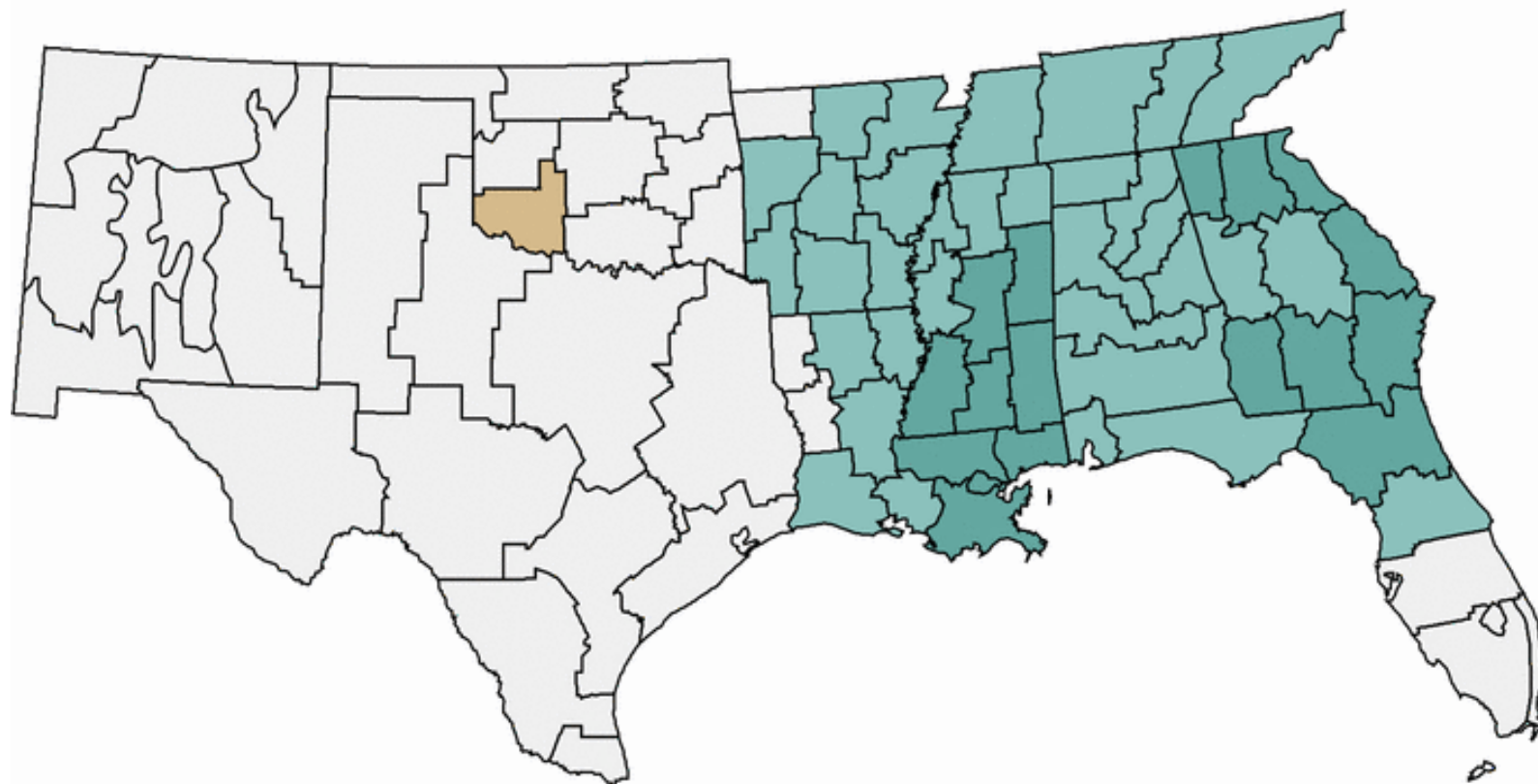


# Strong El Niño Precipitation Departure from Average

National Weather Service Southern Region

Composite: March–May 1958, 1966, 1973, 1983, 1992, 1998

Average Period: 1981–2010



Inches

Data Source: nClimDiv

Created by: National Centers for Environmental Information

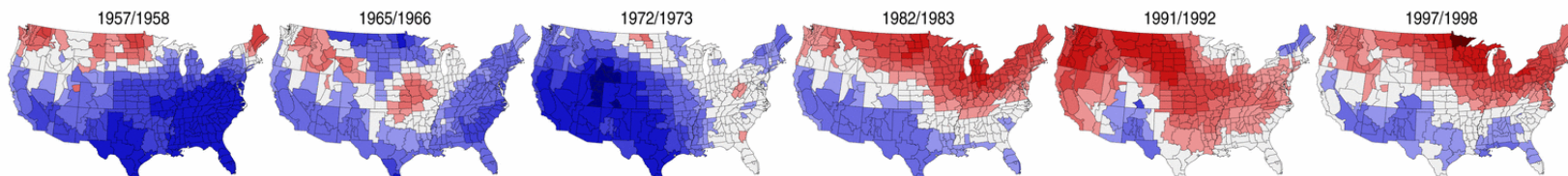
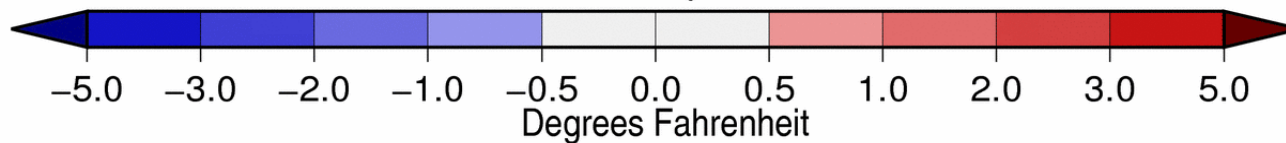
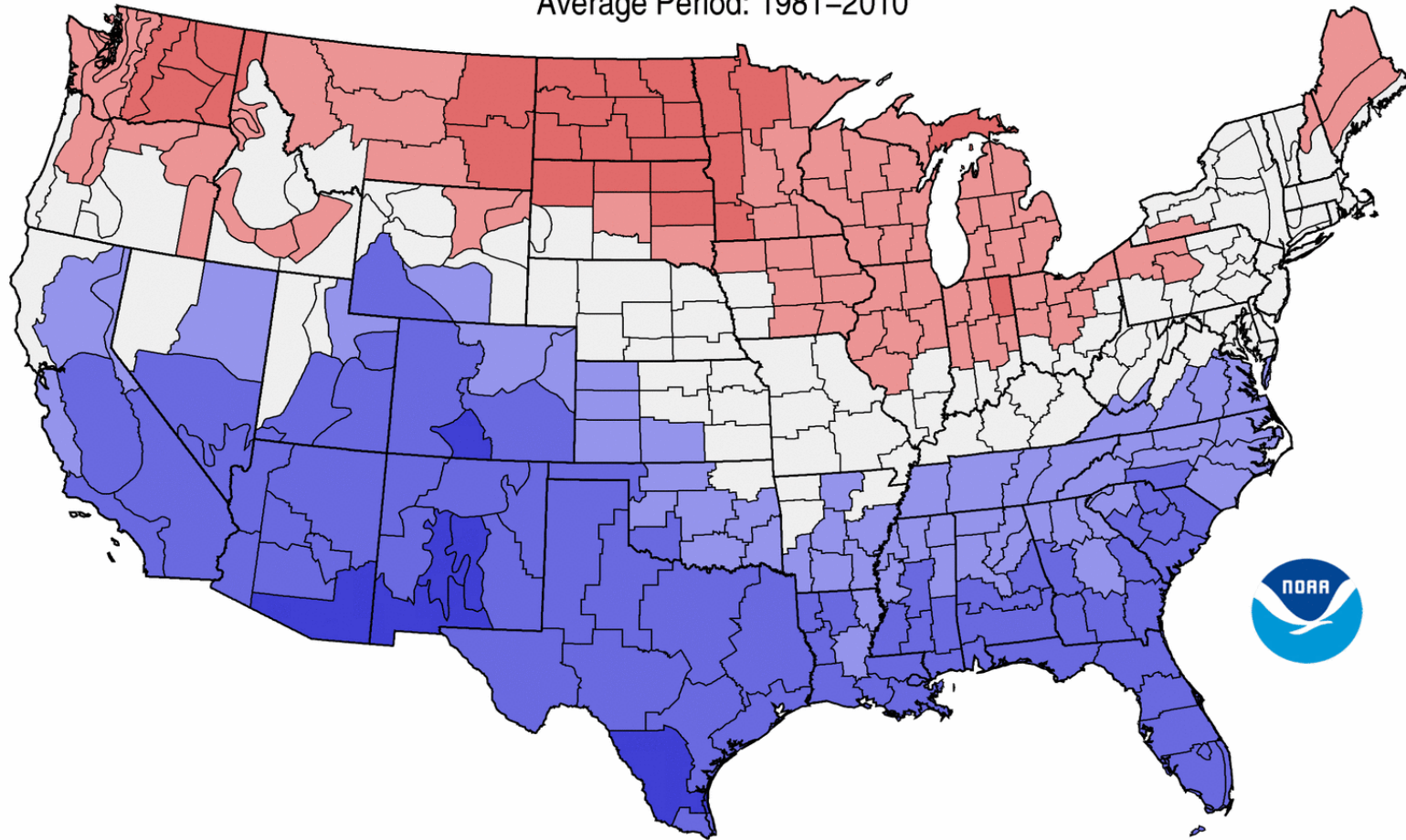




# Strong El Niño Mean Temperature Departure from Average

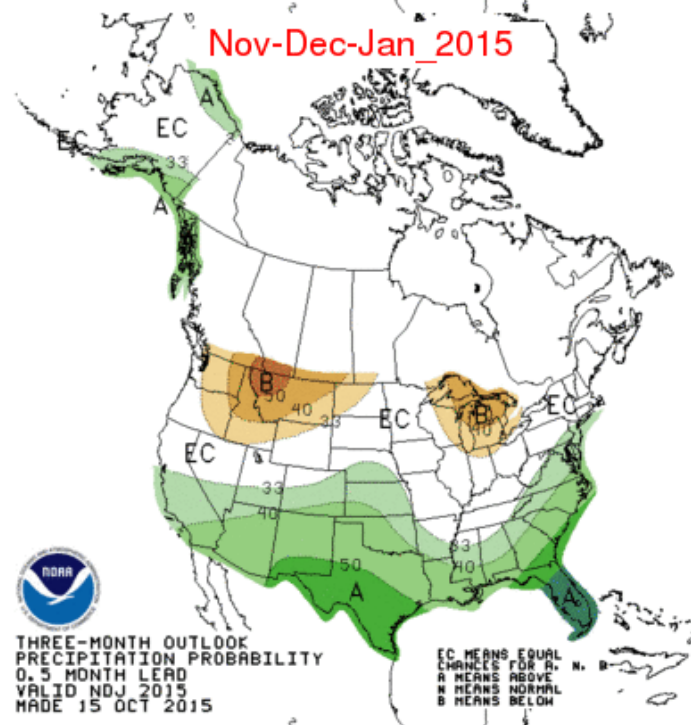
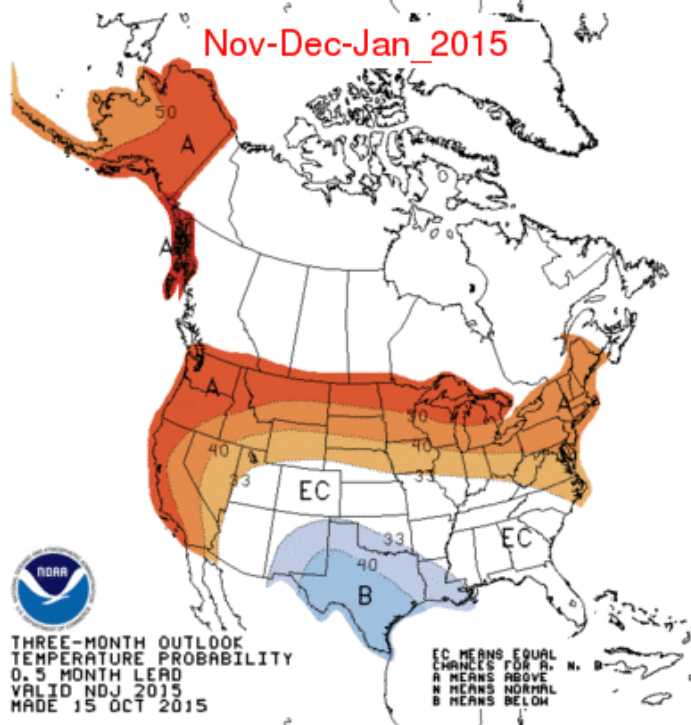
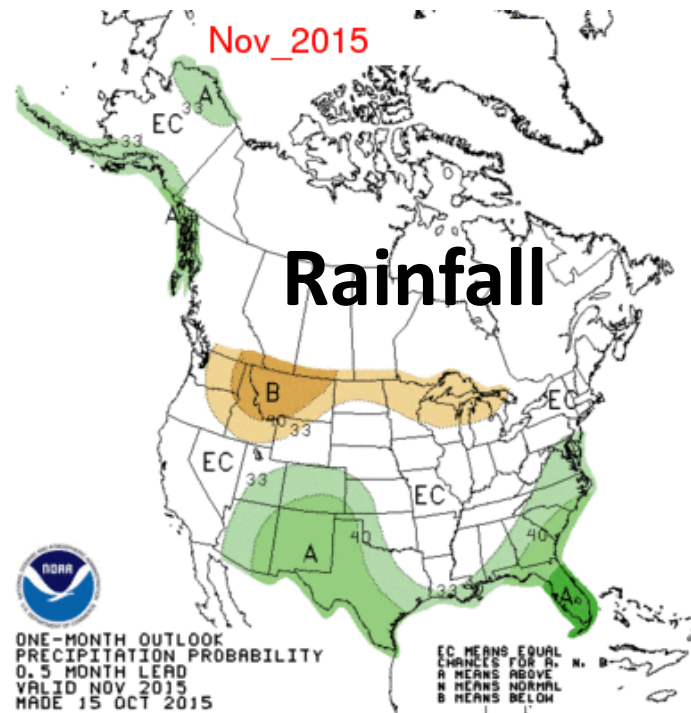
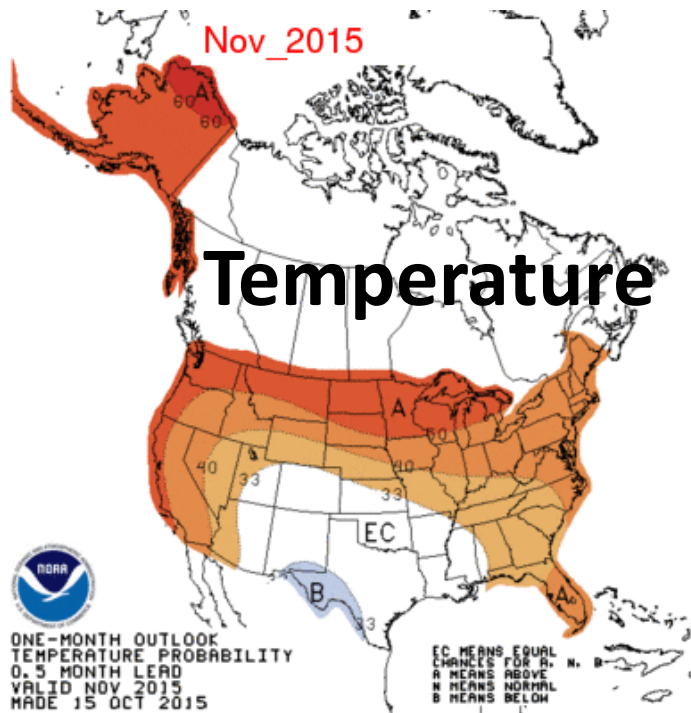
Composite: October–March 1957/1958, 1965/1966, 1972/1973, 1982/1983, 1991/1992, 1997/1998

Average Period: 1981–2010



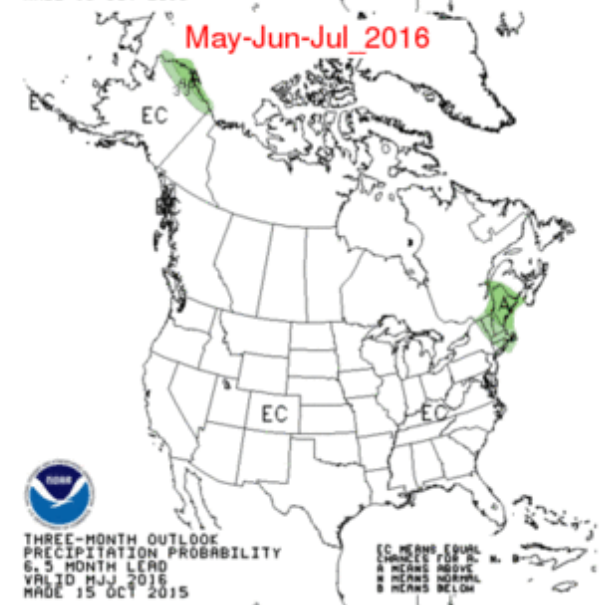
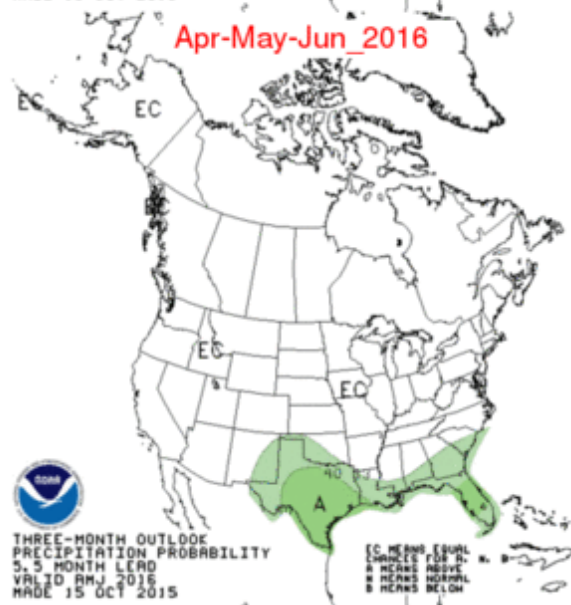
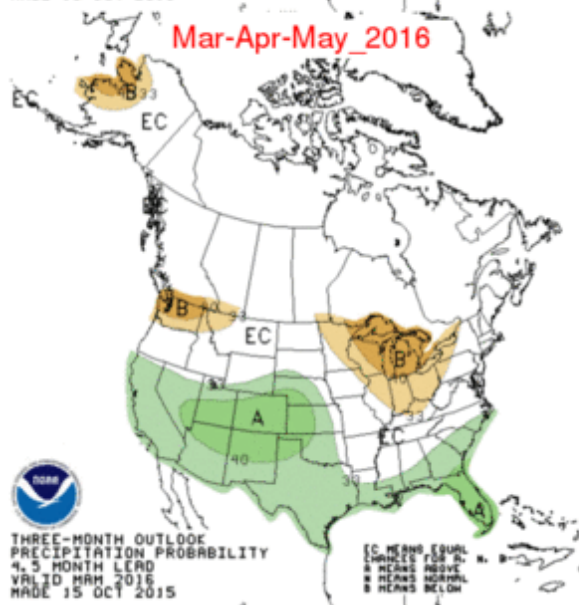
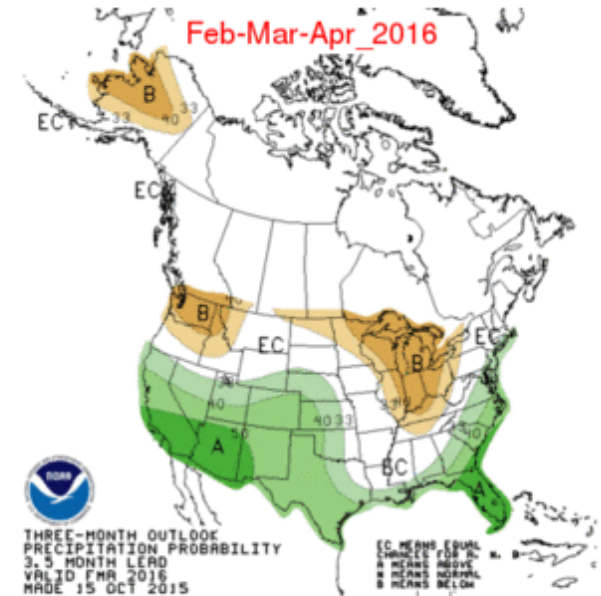
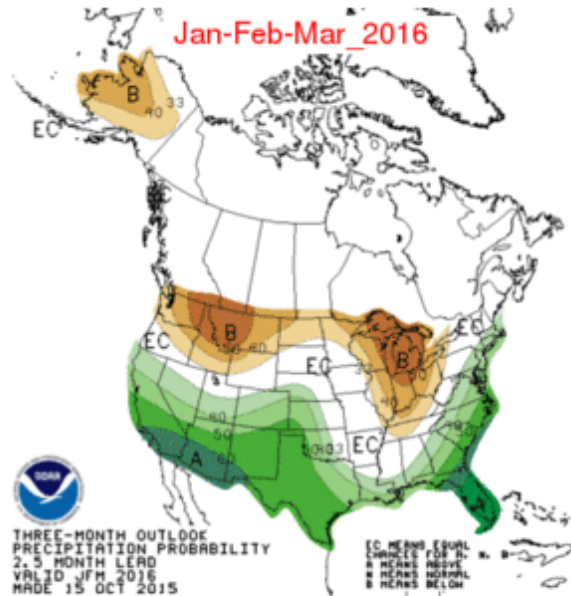
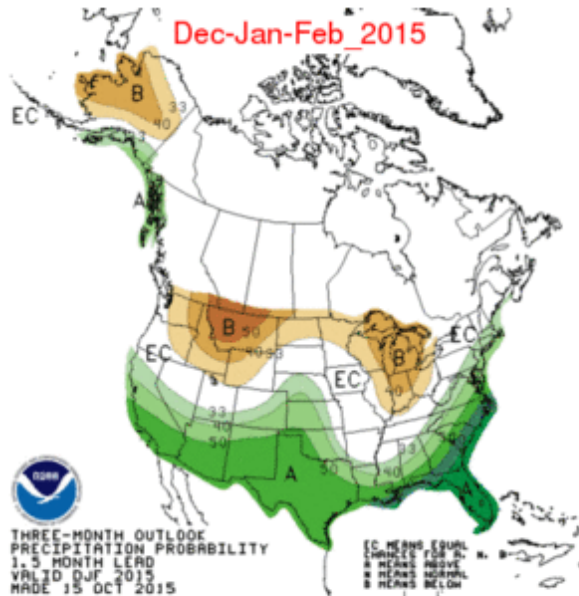
Data Source: 5km Divisional Dataset (nClimDiv)

Created by: National Centers for Environmental Information

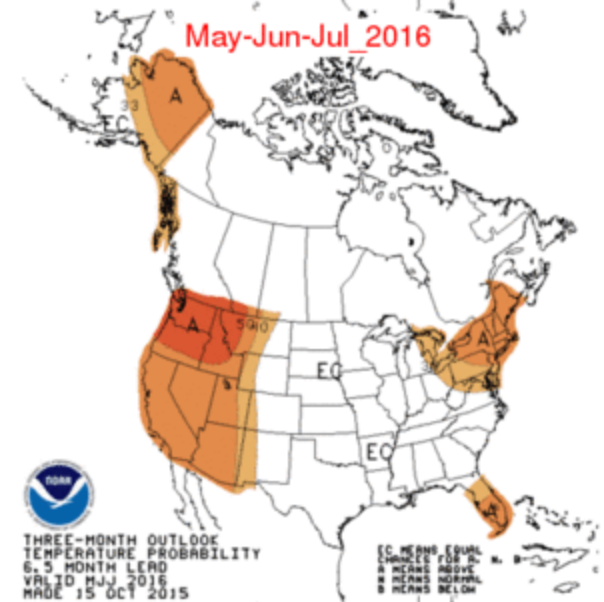
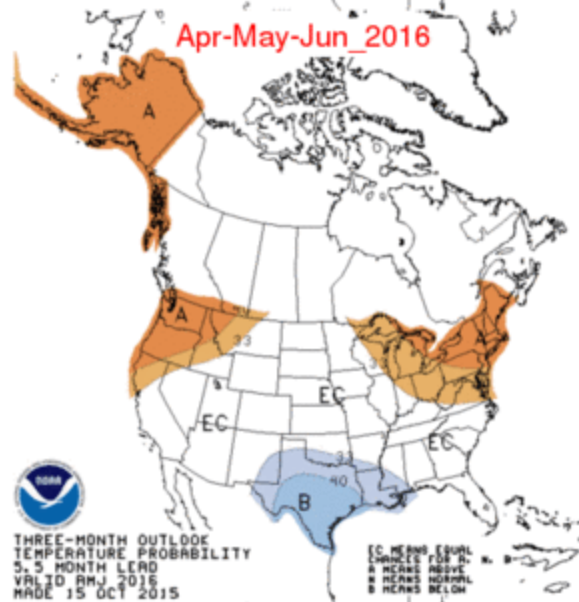
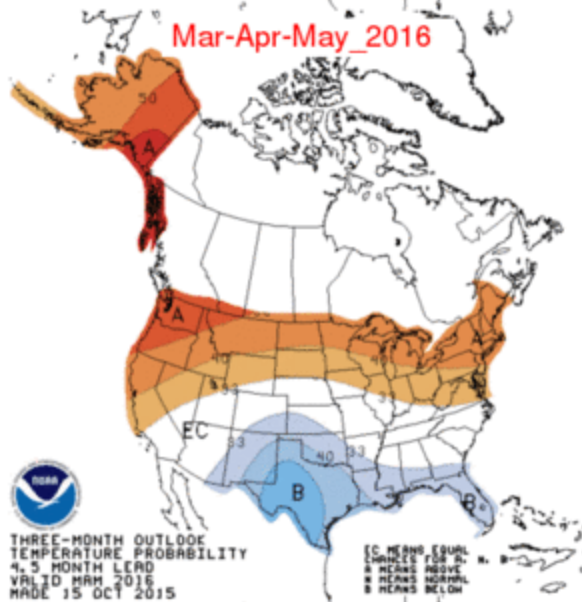
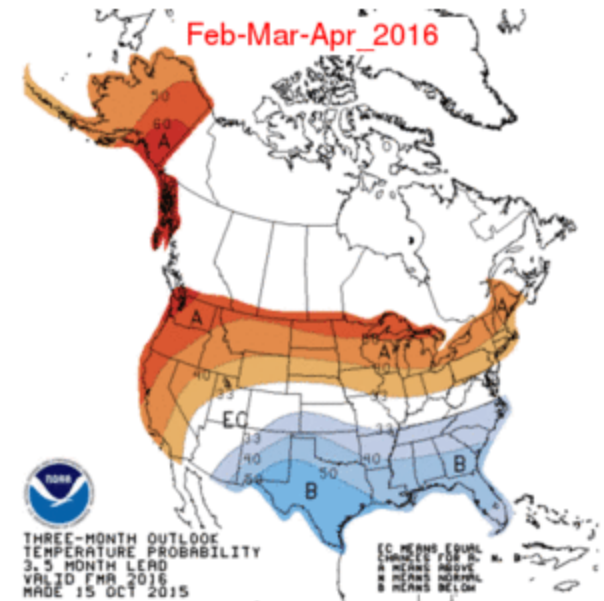
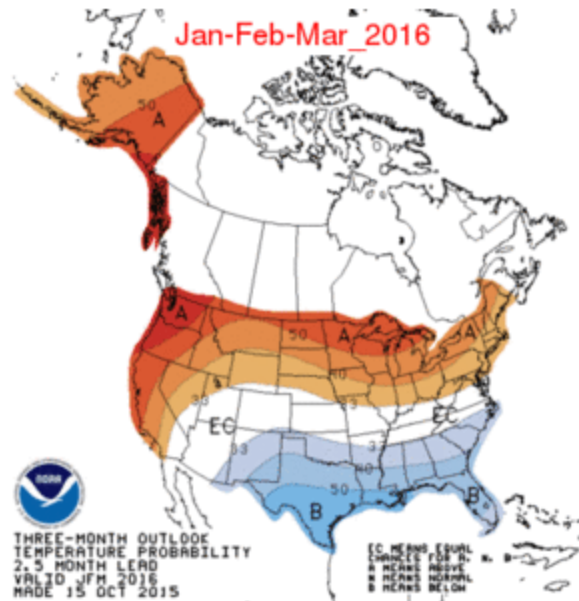
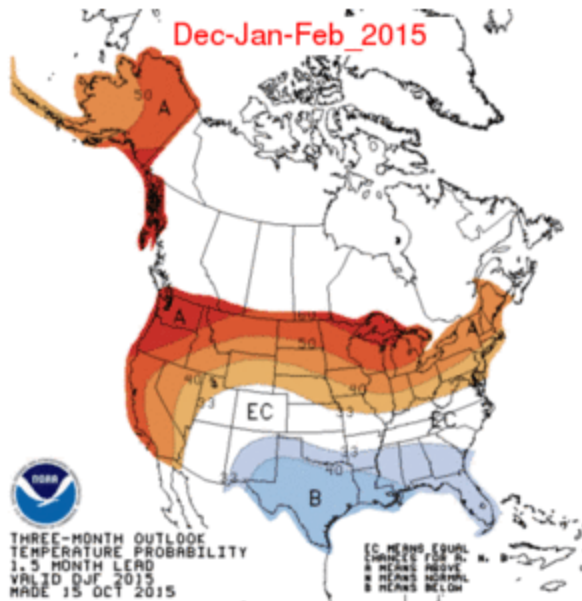




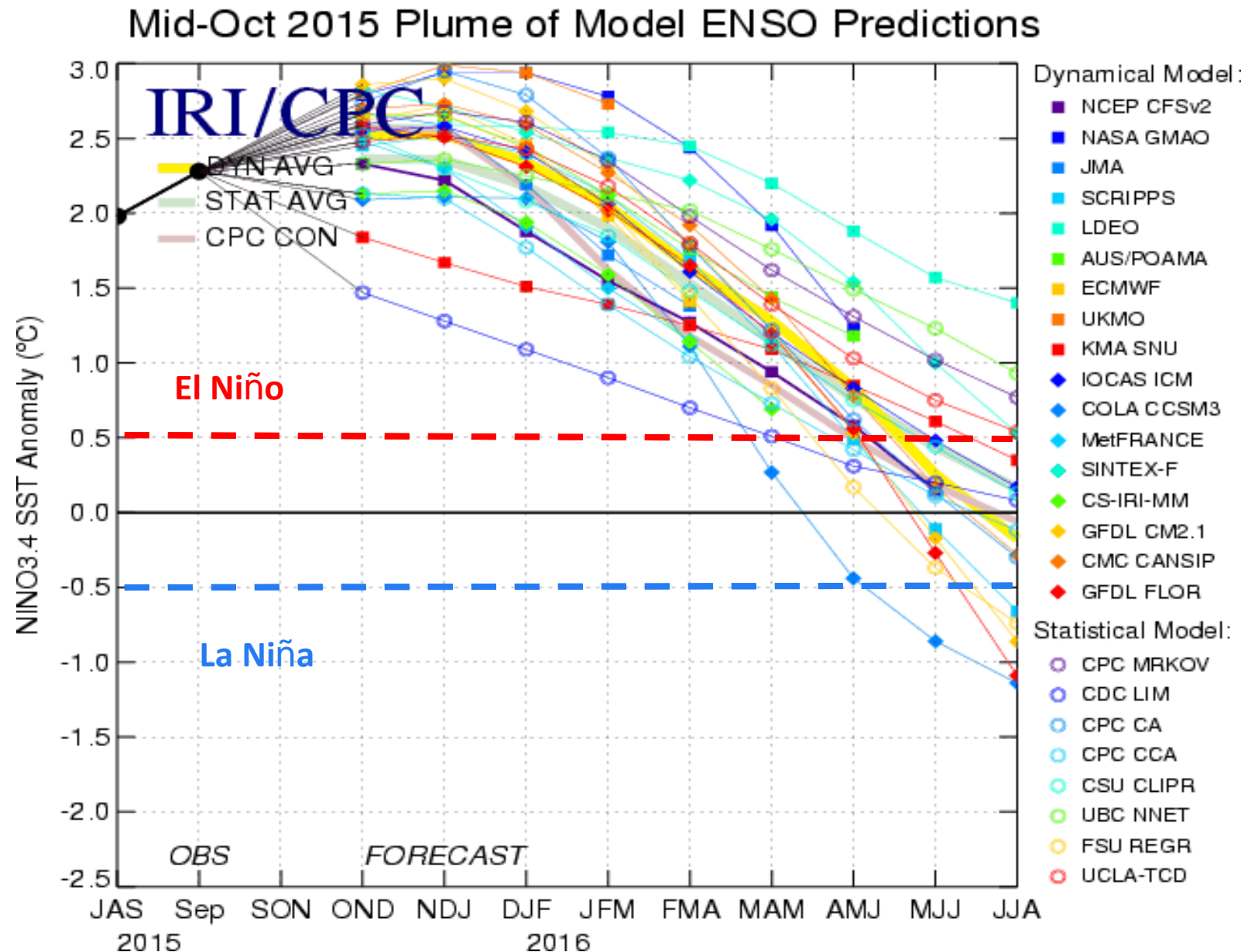
# NWS Rainfall Outlook



# NWS Temperature Outlook

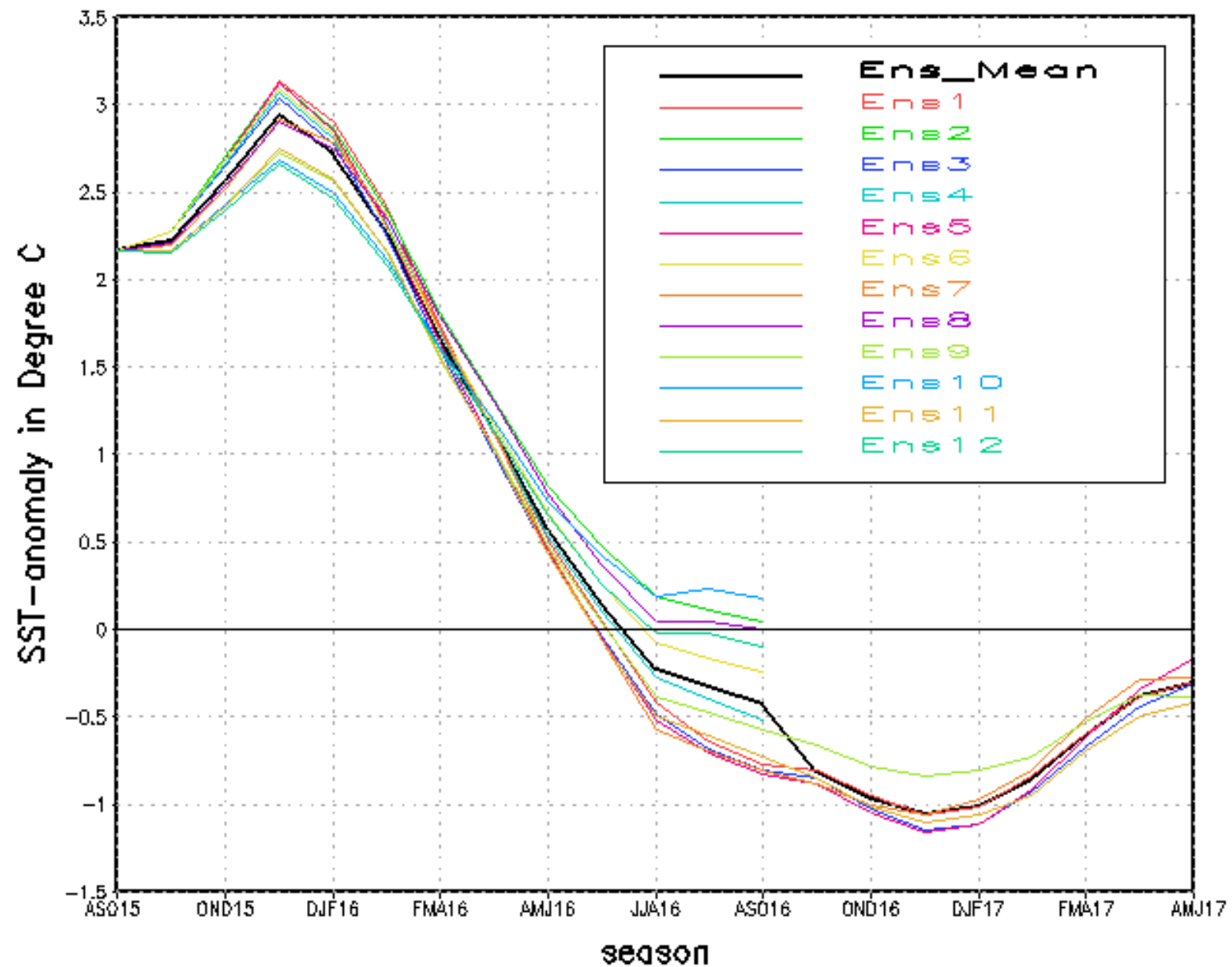


# Looking Ahead to Next Summer





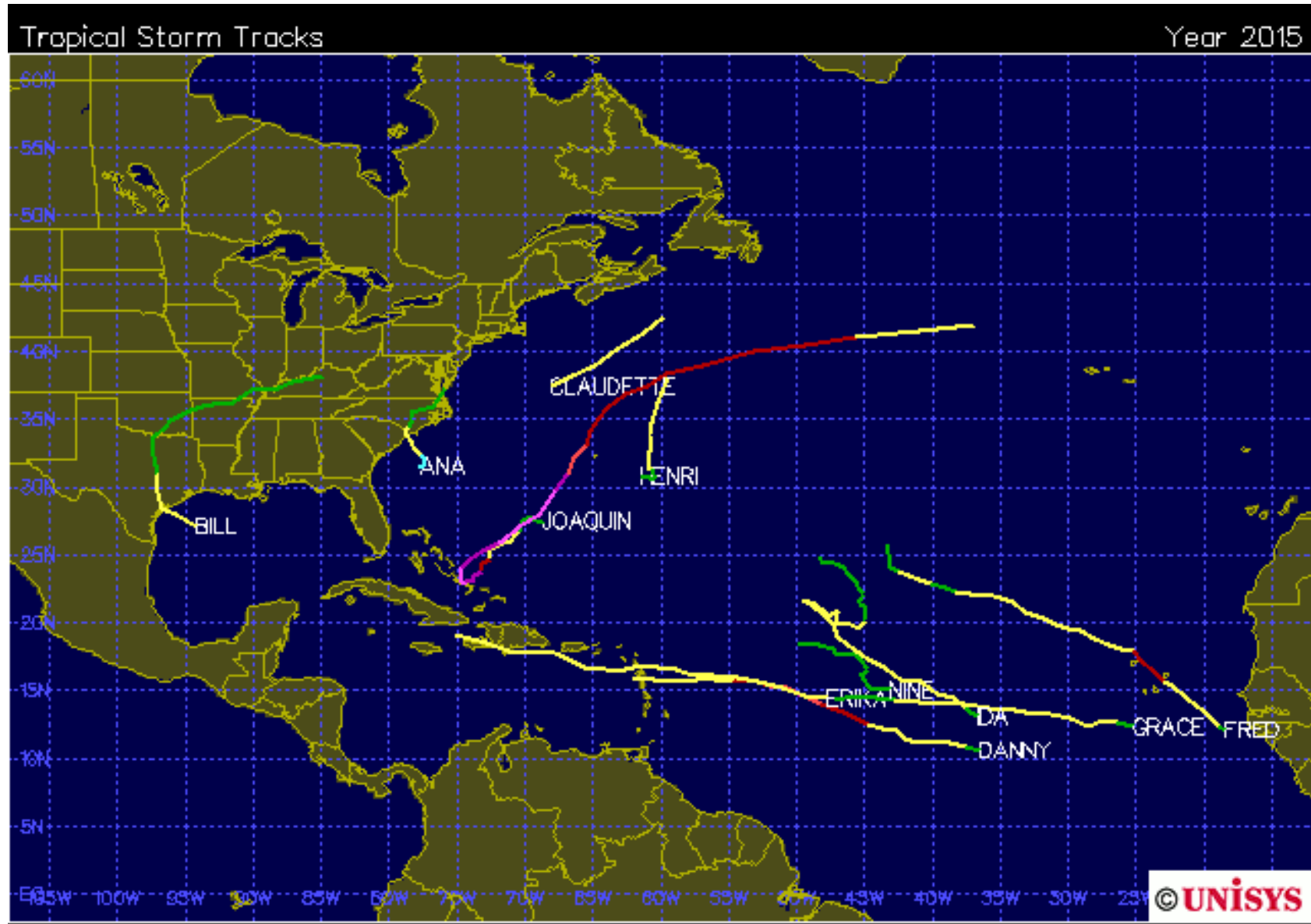
12 Member Ensemble CA Forecast Nino3.4  
data thru Oct 15 2015



# 2015 Atlantic Hurricane Season Update

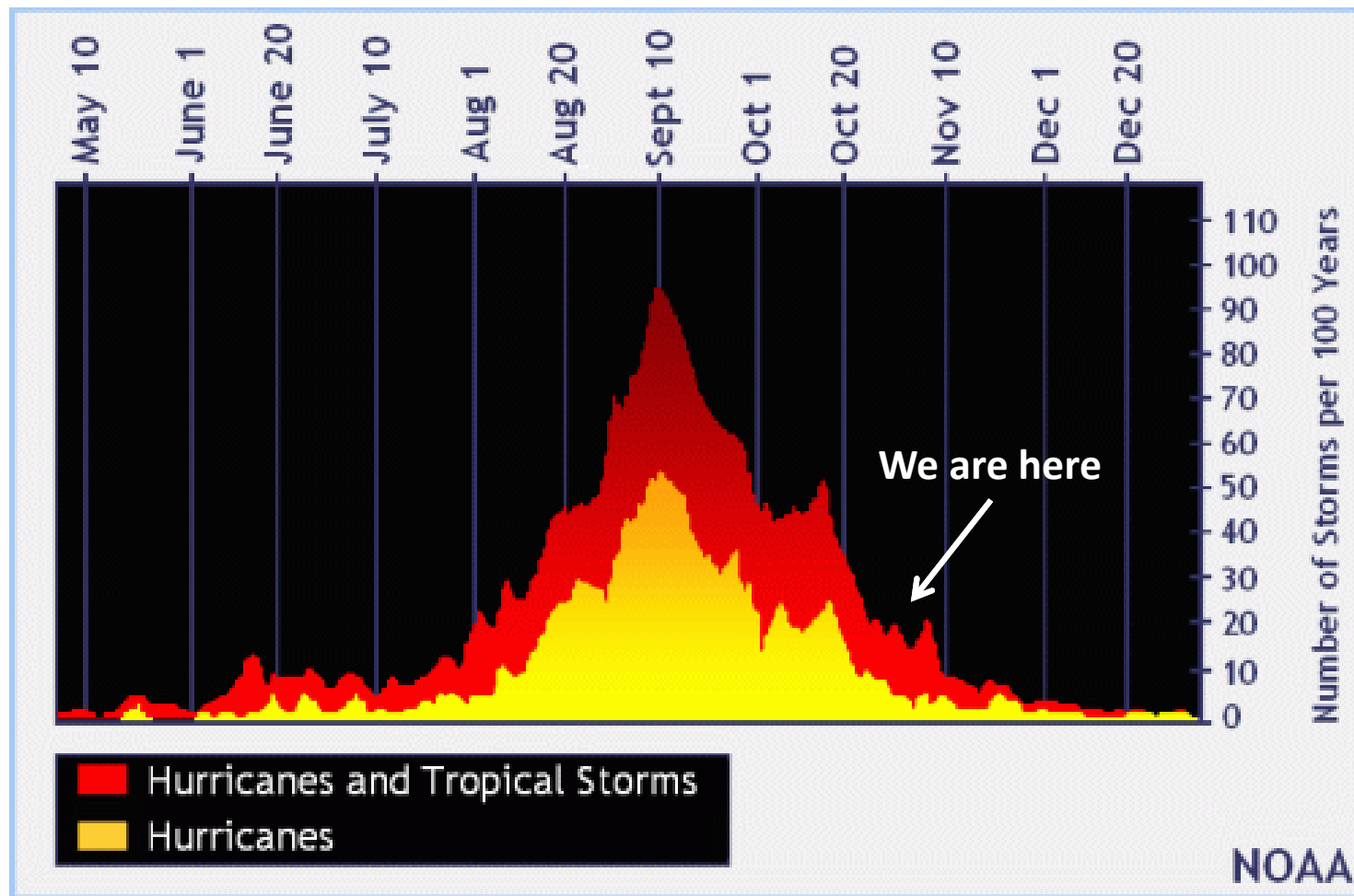


# It's Been A Quiet Season



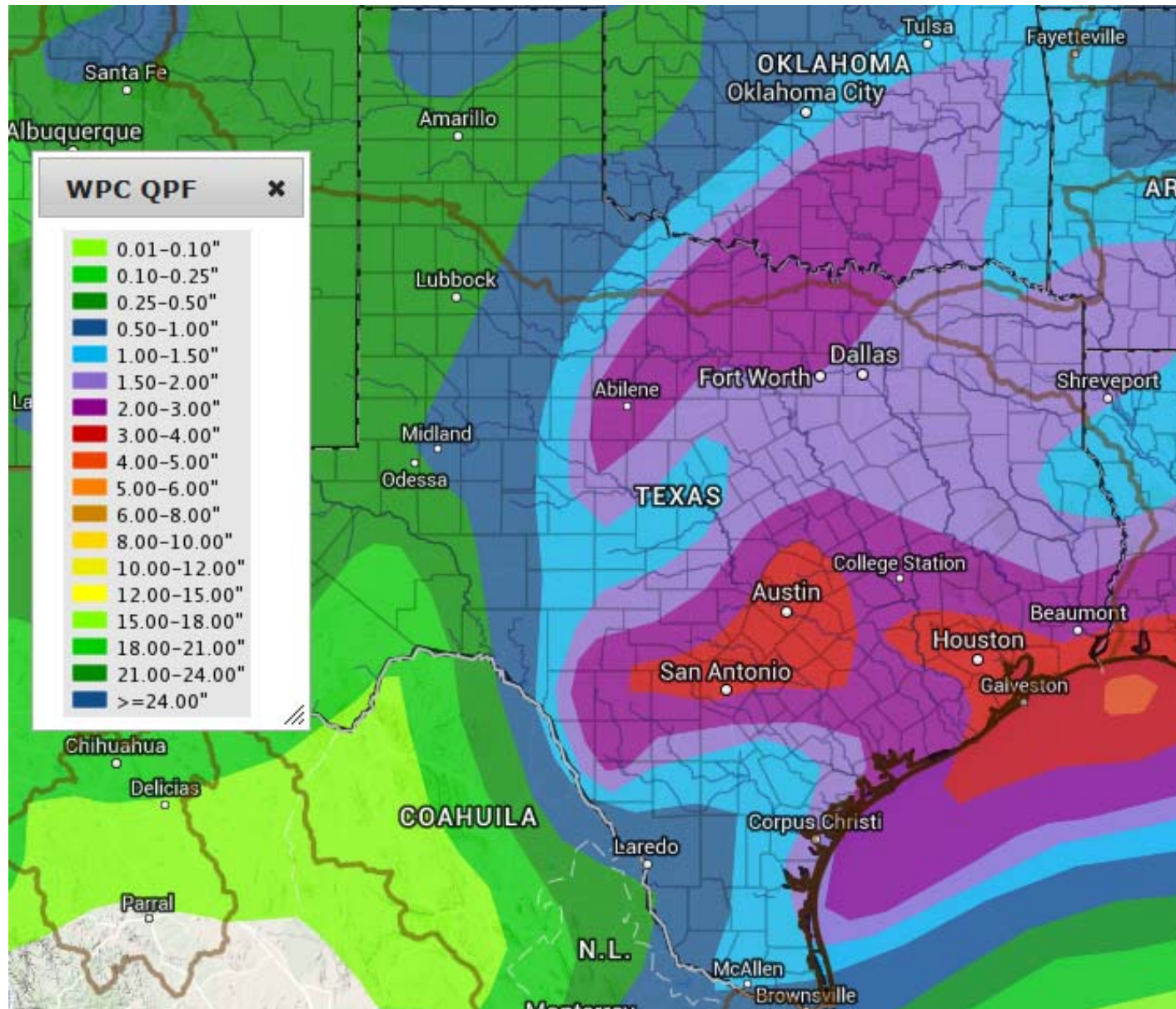


# Season is Winding Down



NOAA

# Rainfall, Today through Sat.





# Questions?

Bob Rose

LCRA Chief Meteorologist

[bob.rose@lcra.org](mailto:bob.rose@lcra.org)

512-578-3350