

**Oklahoma Climate Update**  
**November 15, 2011**

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**Associate State Climatologist**

**Oklahoma Climatological Survey**

# North of Guymon, OK: April 2011



Buffalo, OK:  
May 9, 2009



May 14, 2011



Kiamichi River  
Aug 1, 2011

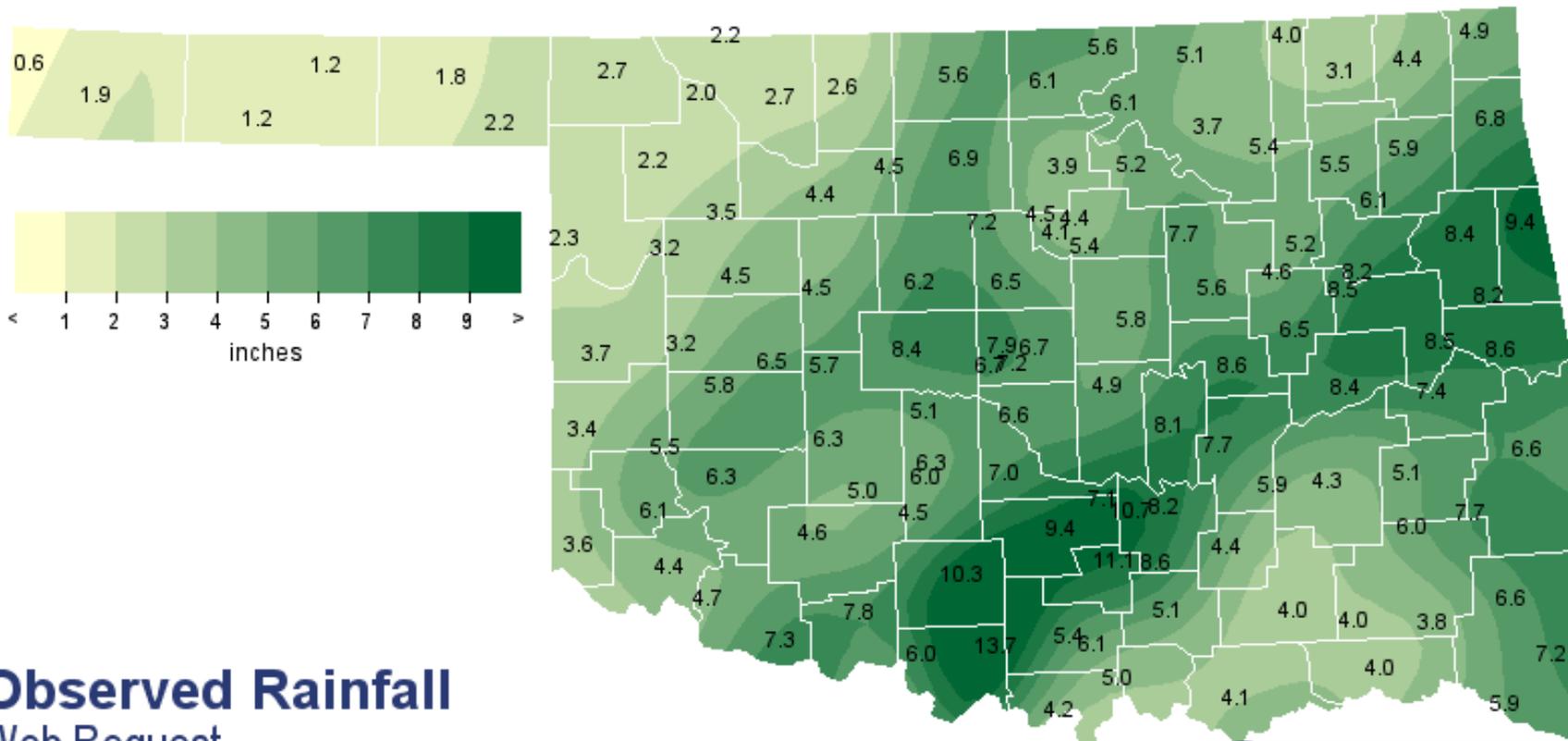


Canton Lake  
October, 2011



# Current conditions

# Drought on the run



## Observed Rainfall

Web Request

Oct 1, 2011 through Nov 16, 2011

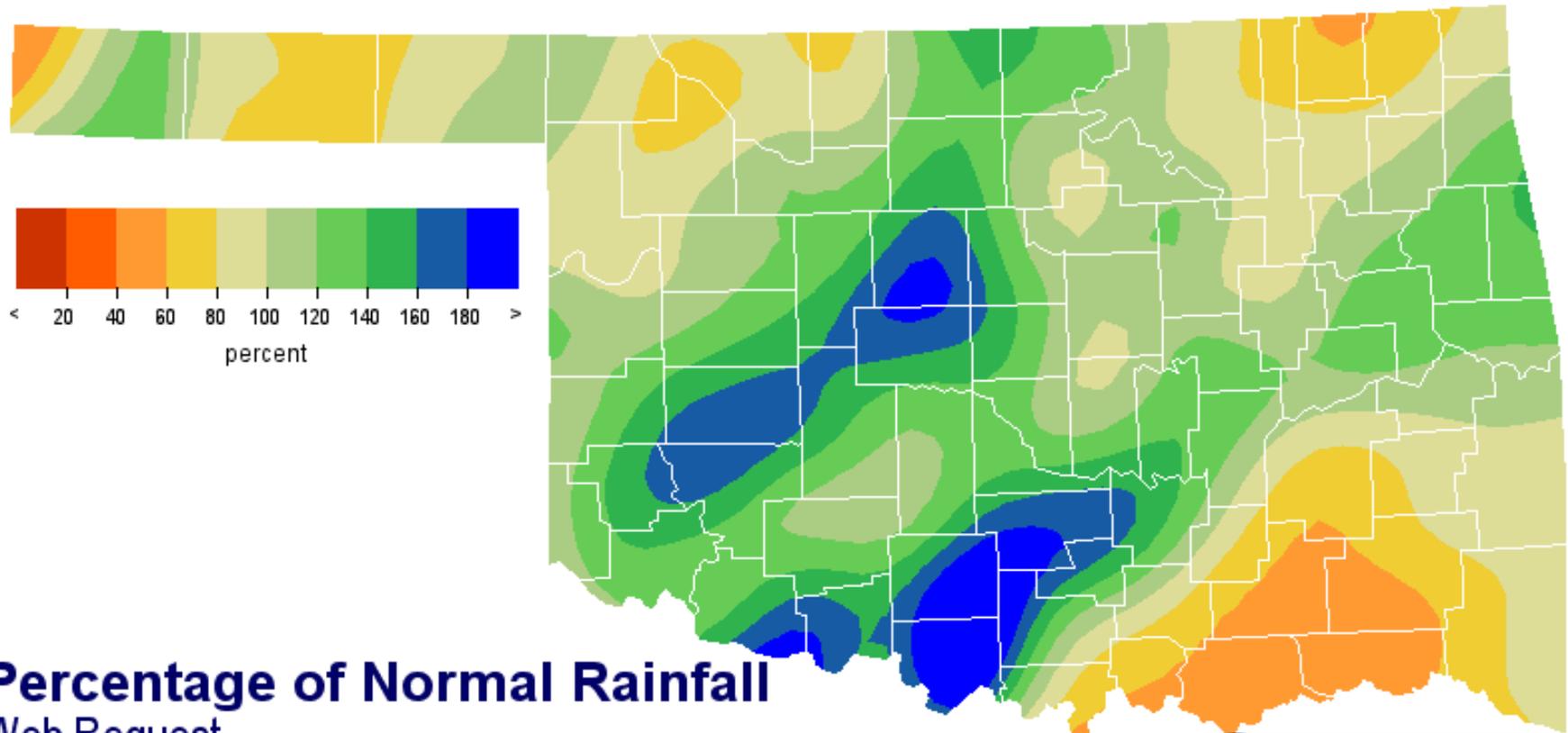
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Rainfall data collected by Oklahoma Mesonet.

 **OKLAHOMA**  
CLIMATOLOGICAL SURVEY

Image created 06:24 CST Nov 16, 2011.

# Have's and Have-Nots



## Percentage of Normal Rainfall

Web Request

Oct 1, 2011 through Nov 16, 2011

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Rainfall data collected by Oklahoma Mesonet.

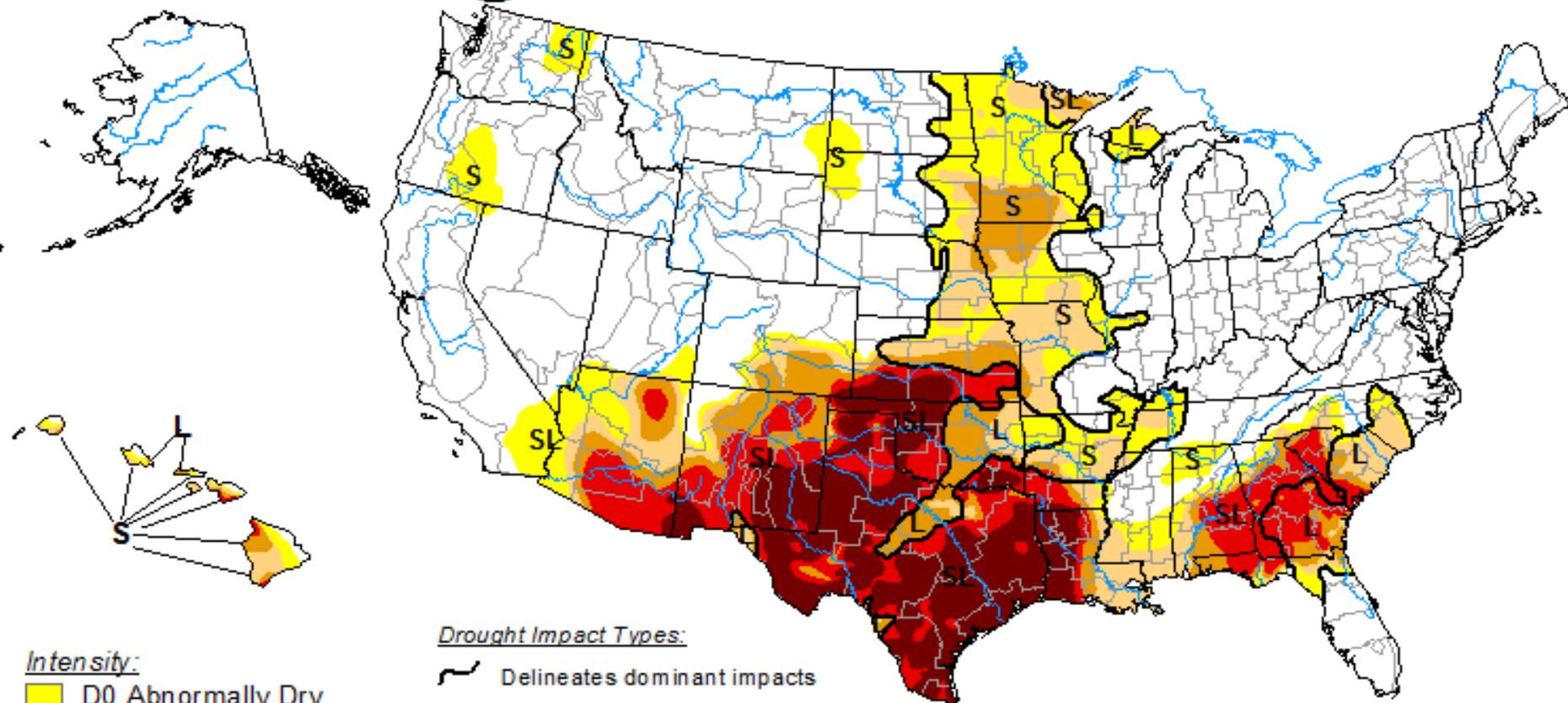
 **OKLAHOMA**  
CLIMATOLOGICAL SURVEY

Image created 06:24 CST Nov 16, 2011.

# U.S. Drought Monitor

November 15, 2011

Valid 8 a.m. EDT



## Intensity:

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

## Drought Impact Types:

-  Delineates dominant impacts
- S = Short-Term, typically <6 months  
(e.g. agriculture, grasslands)
- L = Long-Term, typically >6 months  
(e.g. hydrology, ecology)

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

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



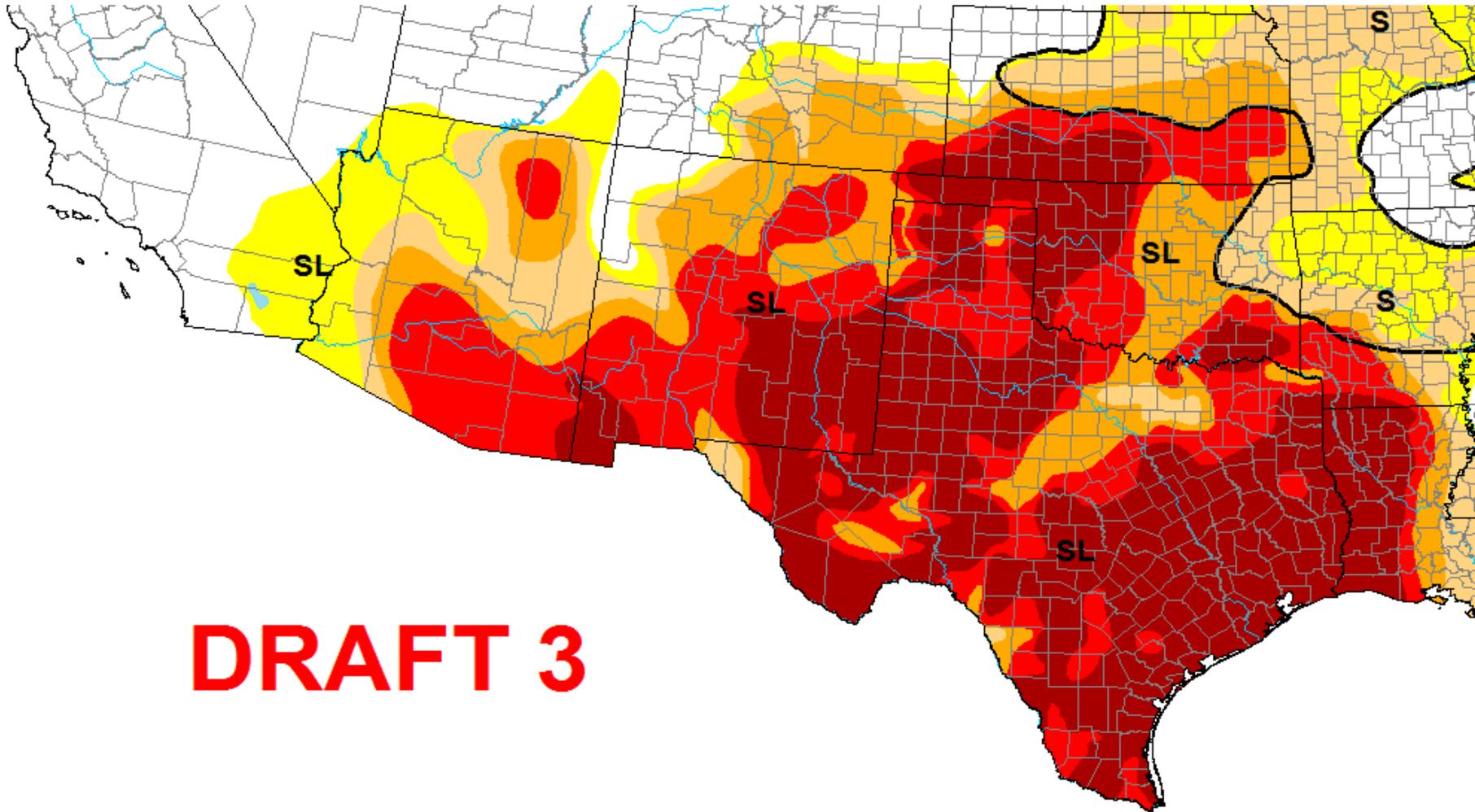
**Released Thursday, November 17, 2011**

Author: Anthony Artusa, NOAA/NWS/NCEP/CPC

# U.S. Drought Monitor

November 15, 2011

Valid 8 a.m. EDT



## DRAFT 3

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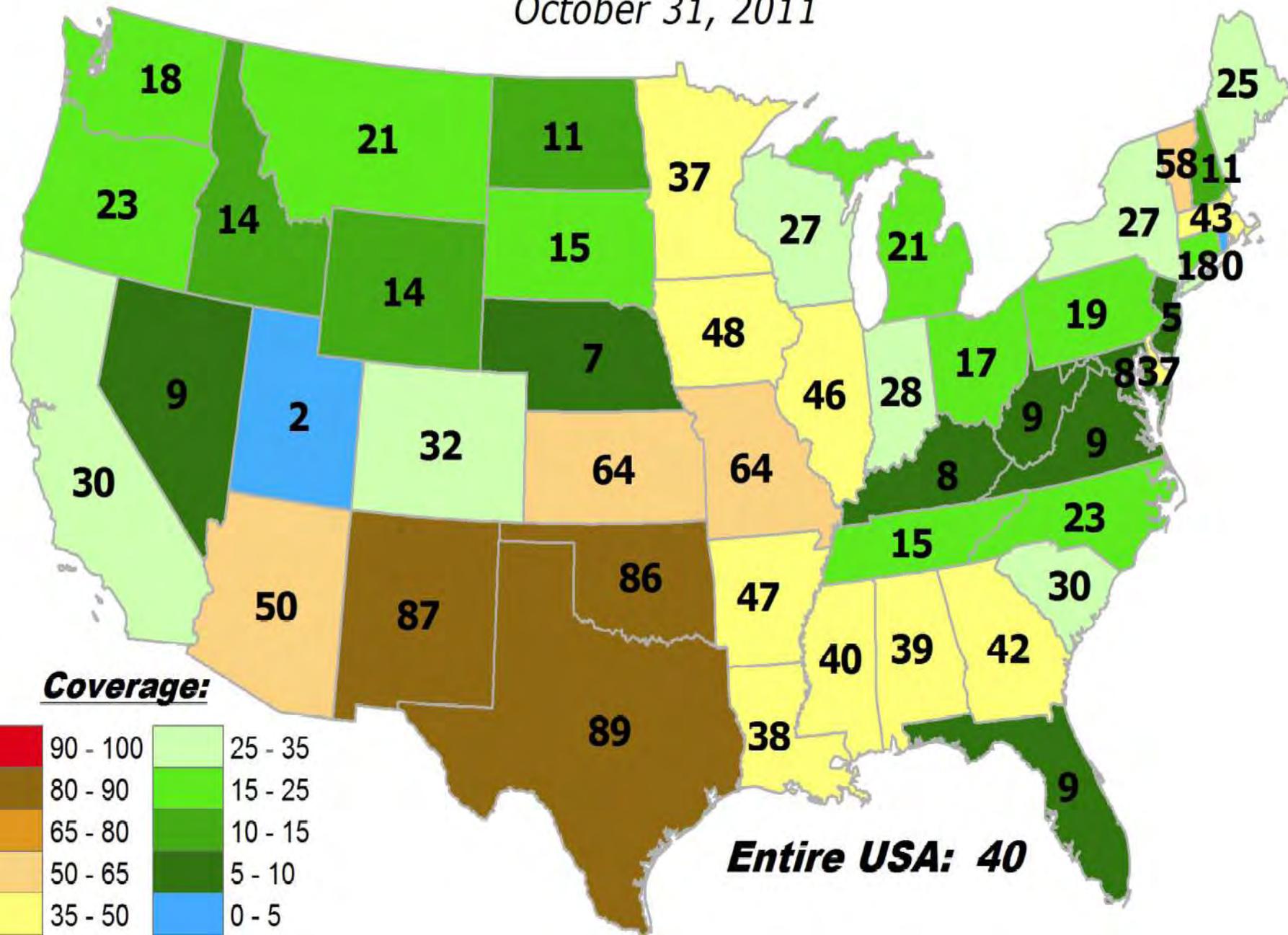
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(e.g. agriculture, grasslands)
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(e.g. hydrology, ecology)



# Percent of Pasture & Range Land in "Poor" or "Very Poor" Condition

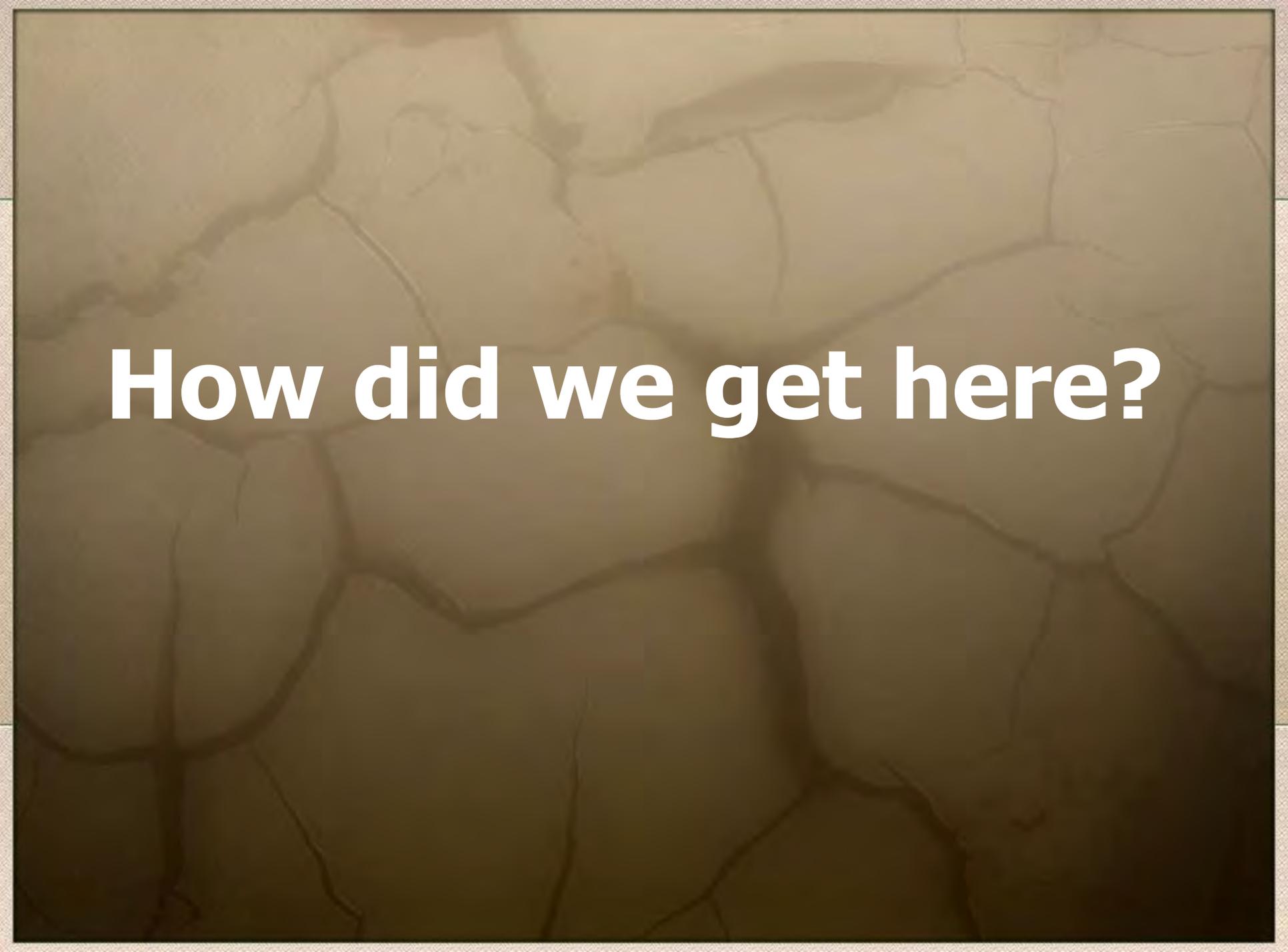
October 31, 2011







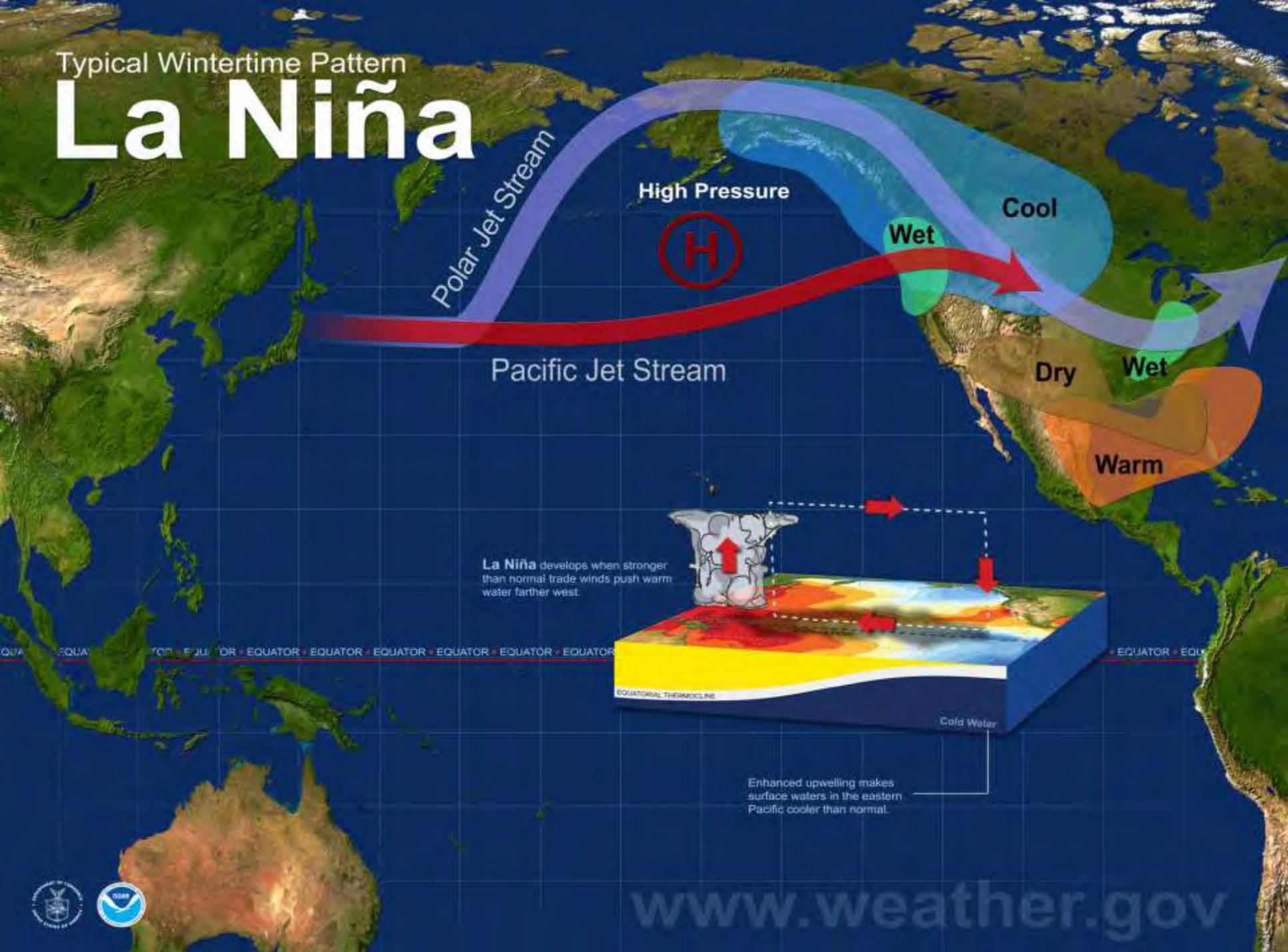




**How did we get here?**

Typical Wintertime Pattern

# La Niña



Polar Jet Stream

High Pressure

(H)

Cool

Wet

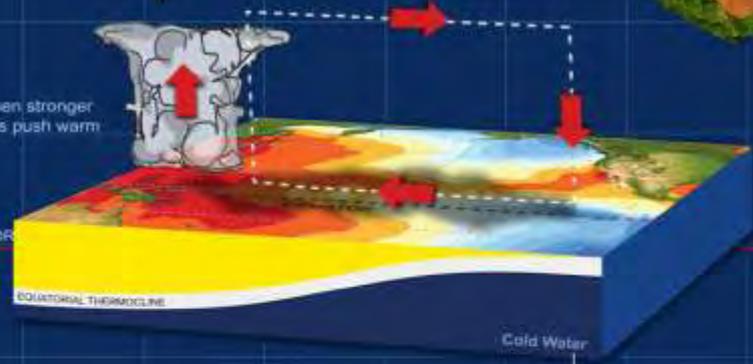
Pacific Jet Stream

Dry

Wet

Warm

La Niña develops when stronger than normal trade winds push warm water farther west.

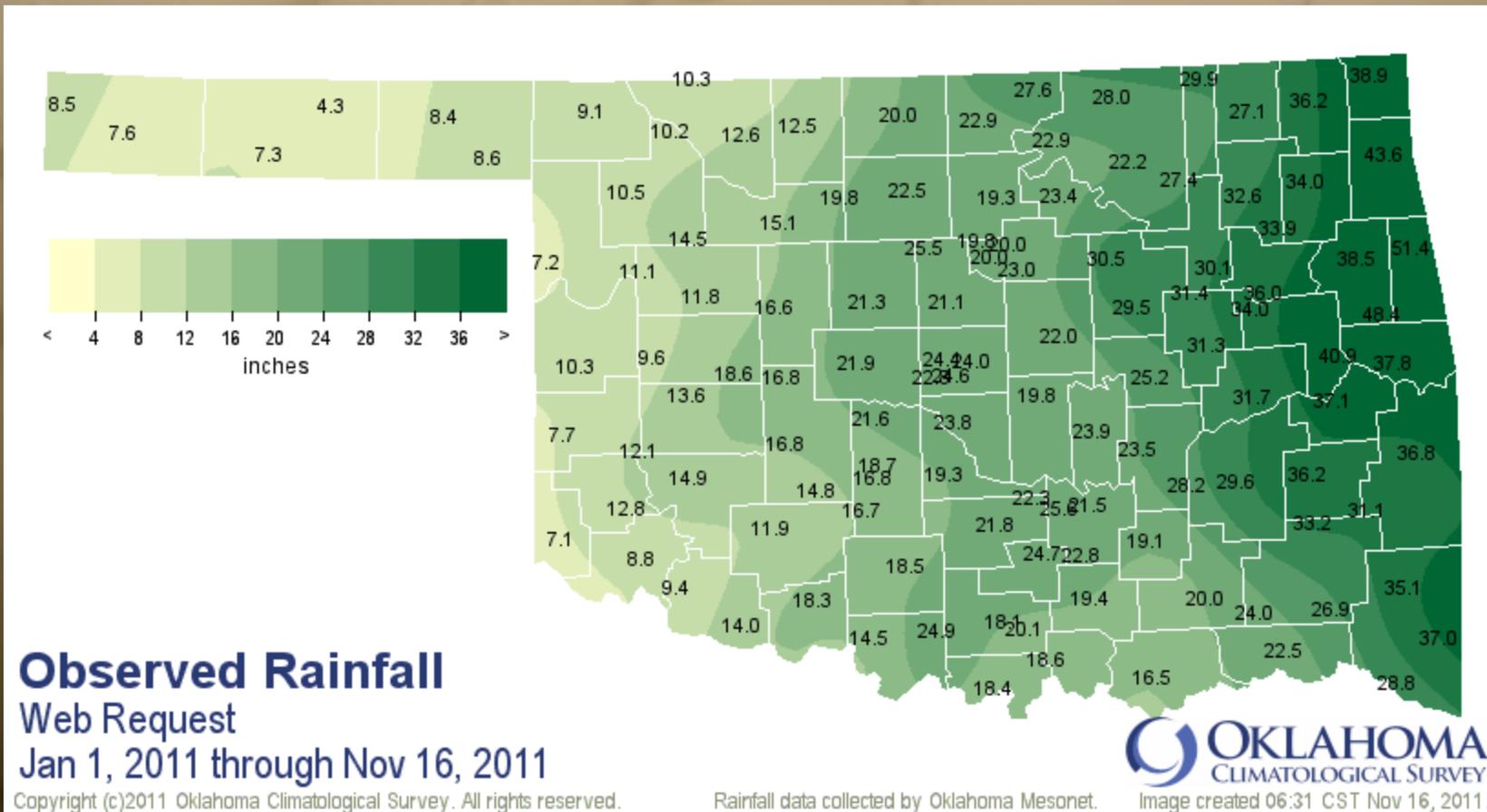


Enhanced upwelling makes surface waters in the eastern Pacific cooler than normal.



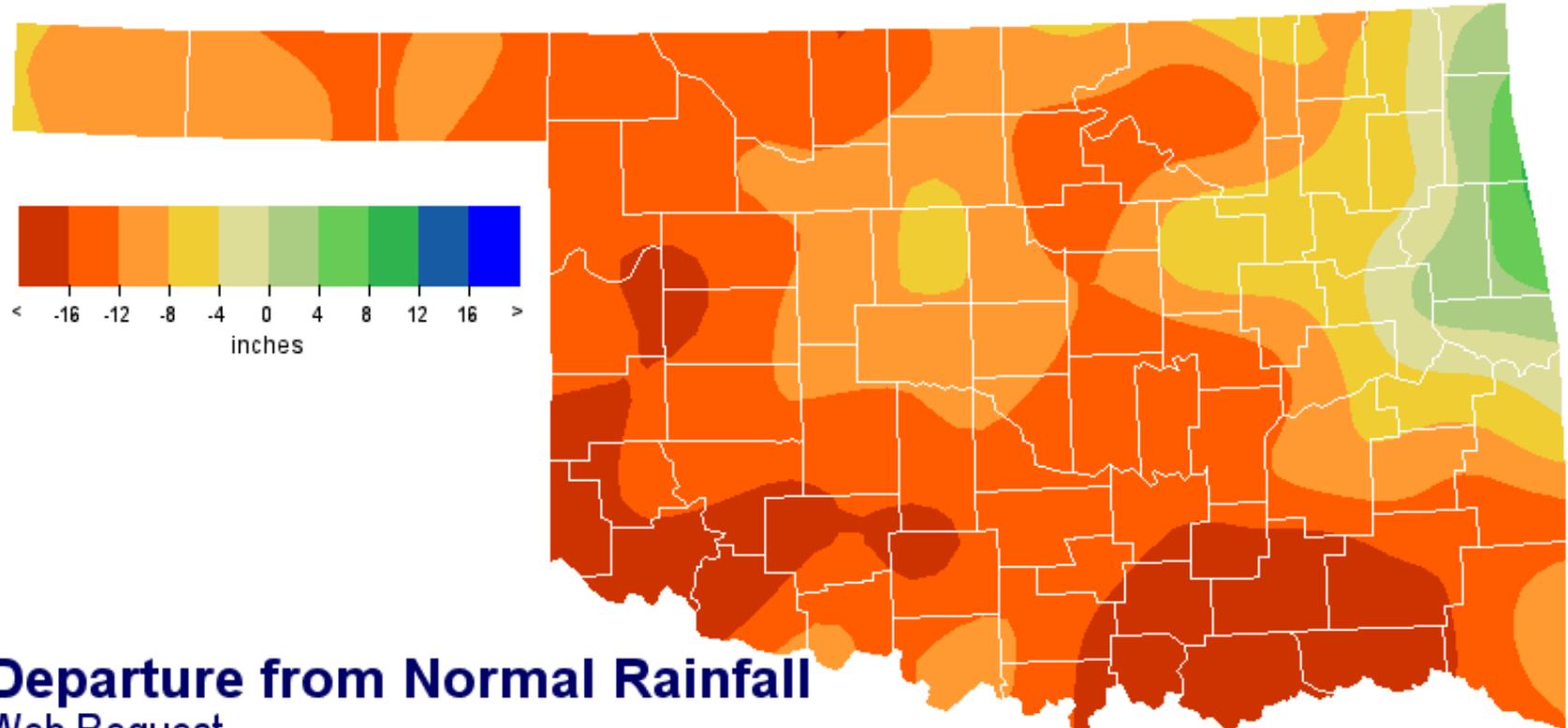
# Year-to-date Totals (Jan 1-Nov 16)

Lowest on record: 6.5", Regnier, 1956



**Statewide avg: 21.24"**  
**Record lowest: 19.04" (1910)**

# Year-to-date Dep. From Normal



## Departure from Normal Rainfall

Web Request

Jan 1, 2011 through Nov 16, 2011

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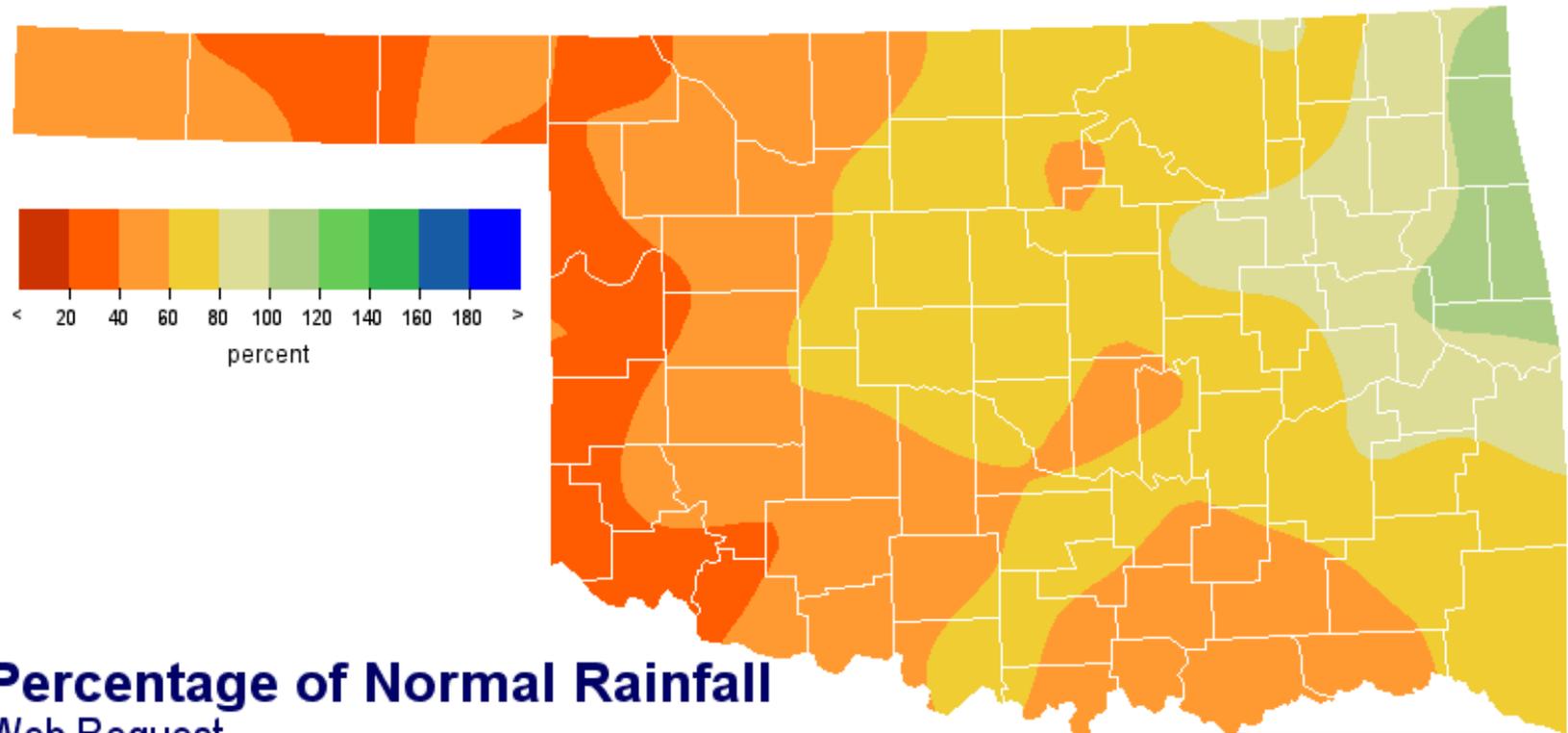
Rainfall data collected by Oklahoma Mesonet.

**OKLAHOMA**  
CLIMATOLOGICAL SURVEY

Image created 06:31 CST Nov 16, 2011.

# Deficits of 8"-20"/Surplus 4"-8" in NE

# Year-to-date Pct. of Normal



## Percentage of Normal Rainfall

Web Request

Jan 1, 2011 through Nov 16, 2011

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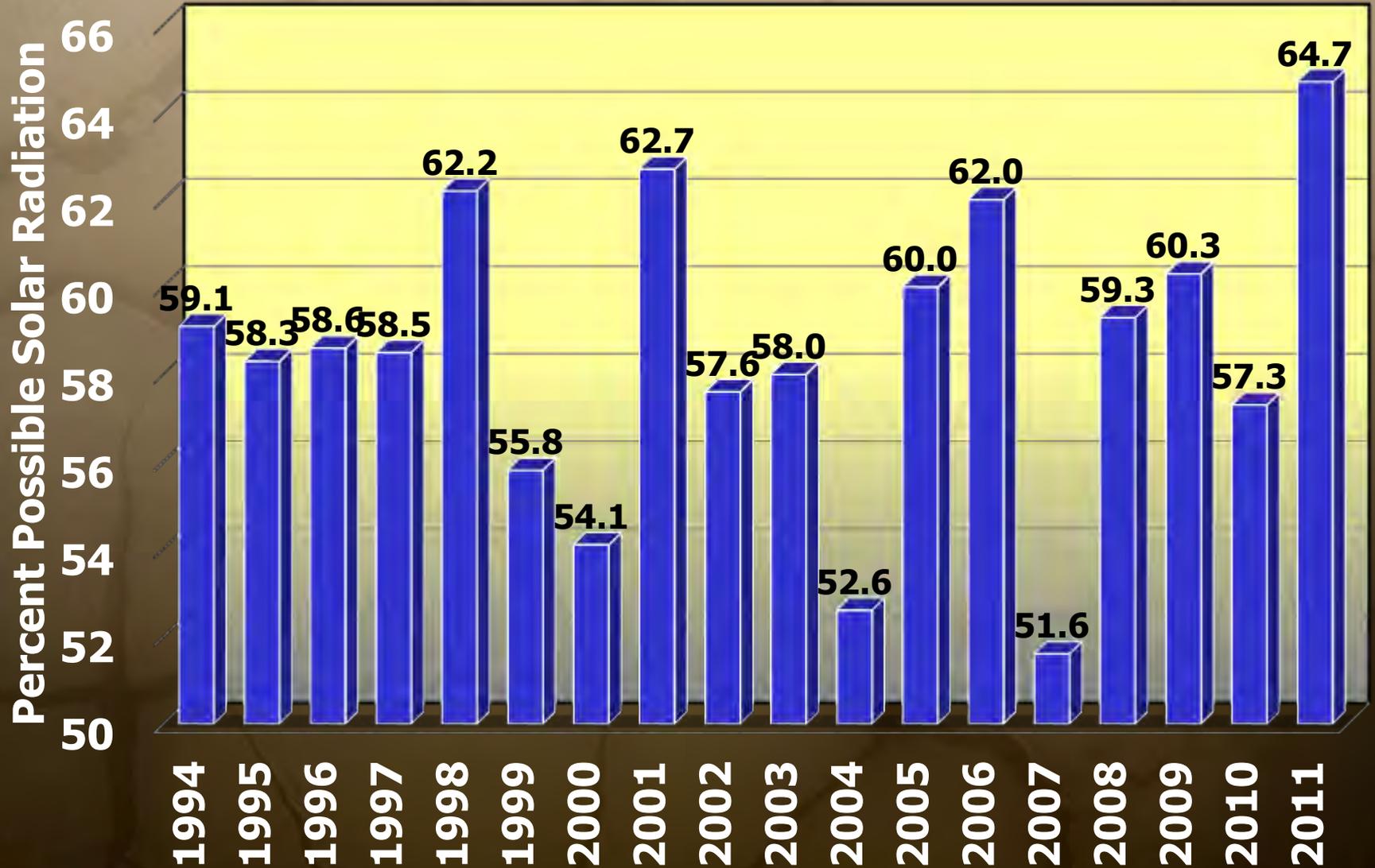
Image created 06:31 CST Nov 16, 2011.

**20-60% of normal in western OK**

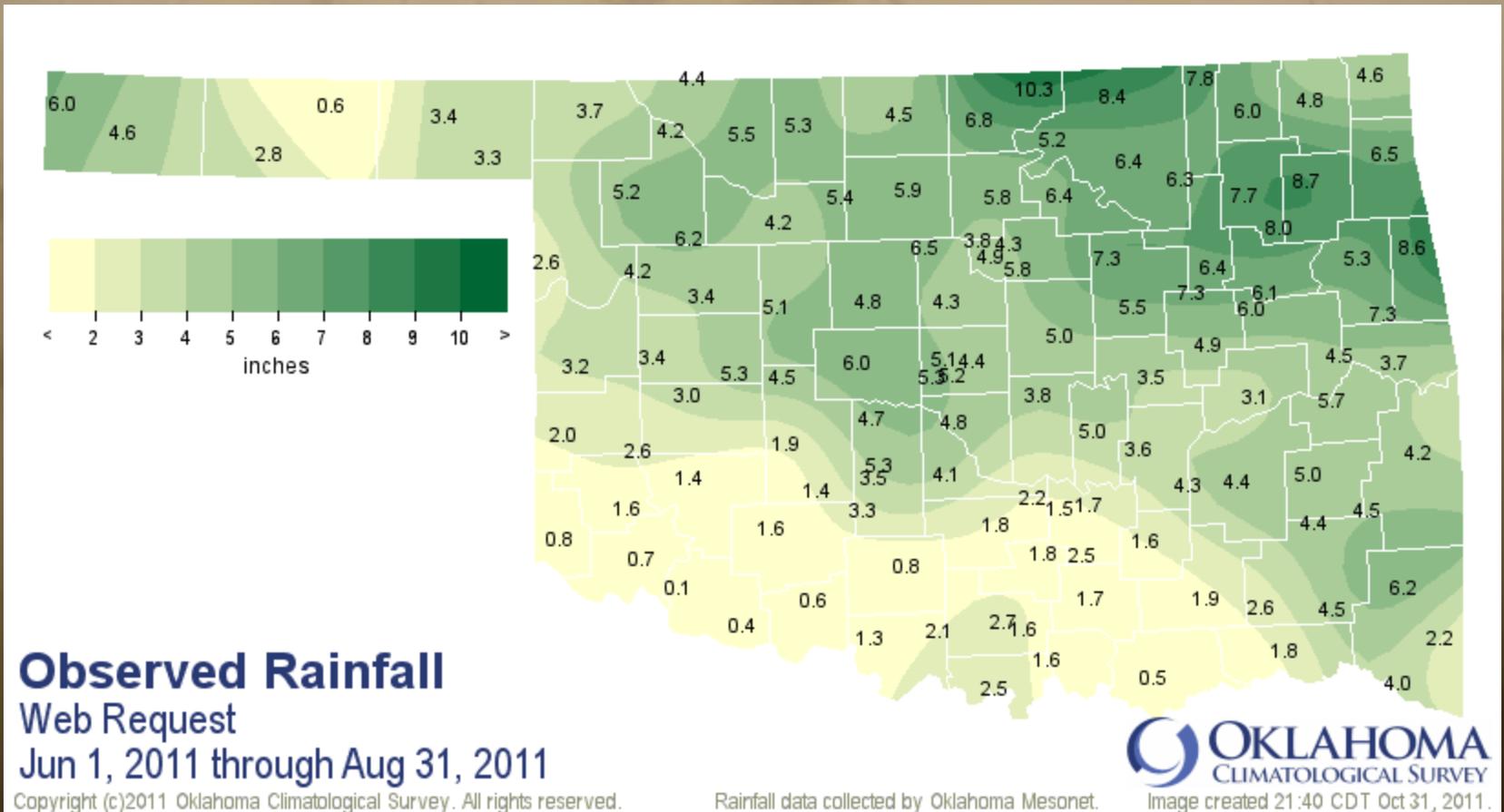


**A summer to remember!**

# June-August Percent of Possible Solar Radiation: 1994-2011



# Combine with low rainfall



**Statewide avg: 4.13 inches (5.16 below normal)**  
**3<sup>rd</sup>-driest on record**

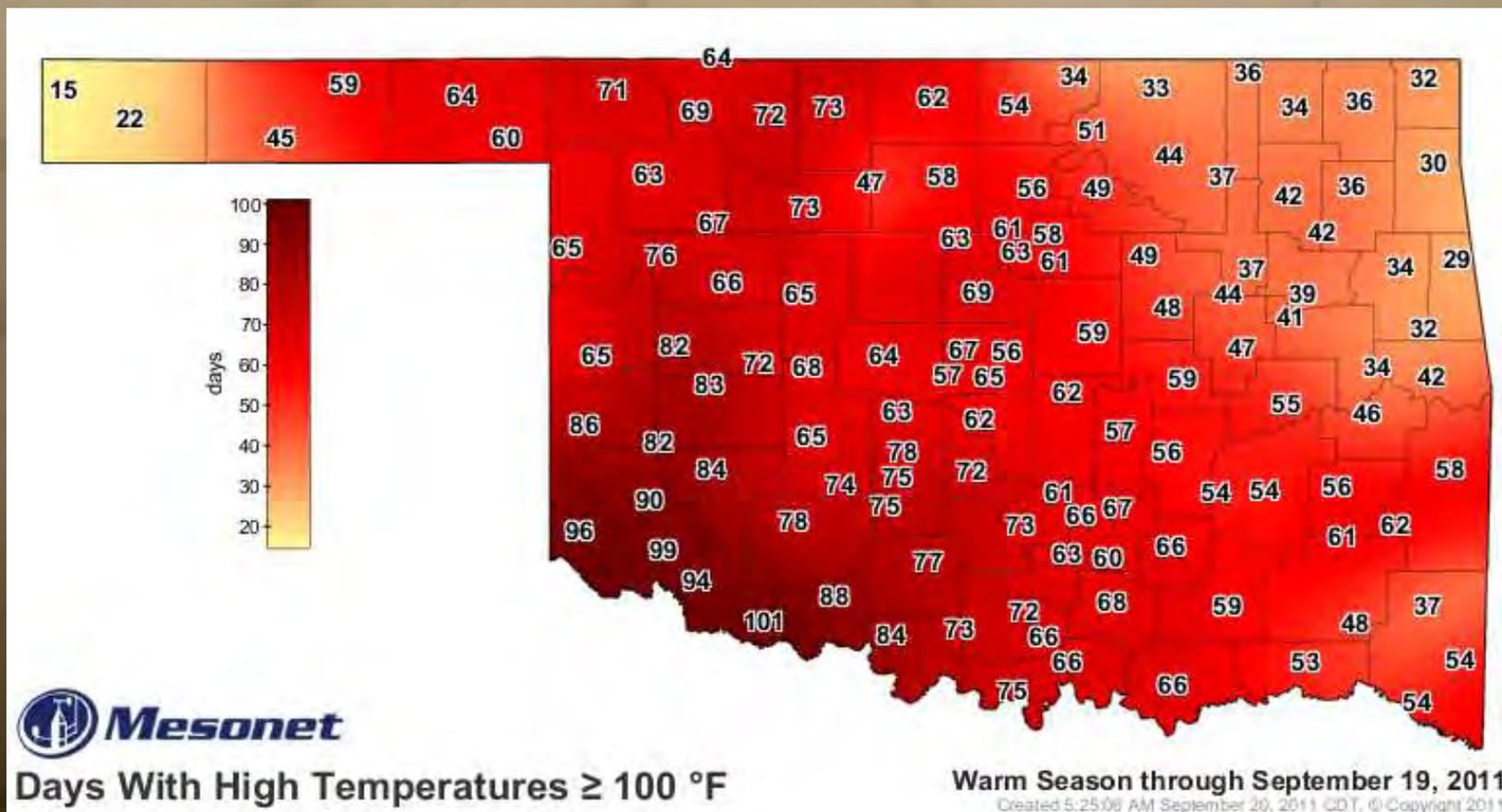
# Hottest month on record (1895-2011)

State	Month/Year	Statewide Avg. Temp.
<b>Oklahoma</b>	<b>July 2011</b>	<b>89.3</b>
Oklahoma	July 1954	88.1
Texas	August 2011	88.1
Oklahoma	July 1980	87.4
Oklahoma	July 1934	87.3

# Hottest summers on record (1895-2011)

State	Year	Statewide Avg. Temp.
<b>Oklahoma</b>	<b>2011</b>	<b>86.8</b>
<b>Texas</b>	<b>2011</b>	<b>86.7</b>
Oklahoma	1934	85.2
Oklahoma	1936	84.4
Oklahoma	1980	84.3
Louisiana	1998	84.3
Texas	1980	84.3
Texas	1998	84.3
Oklahoma	1954	84.2
Texas	1934	84.2
Louisiana	2010	84.1
Arkansas	1934	83.5

# Days above 100° record SMASHED!

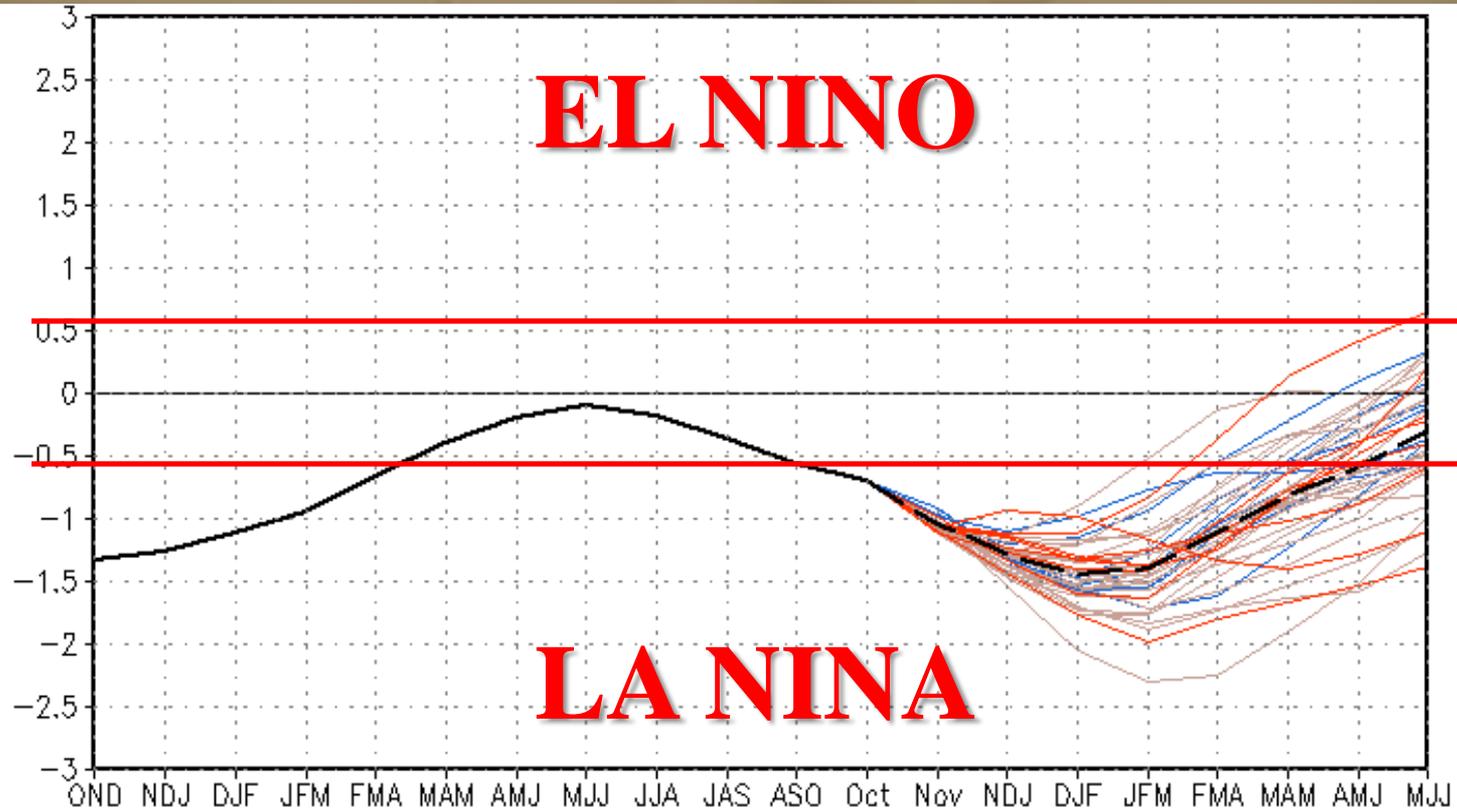


**Previous record: 86 days (Hollis 1956)**

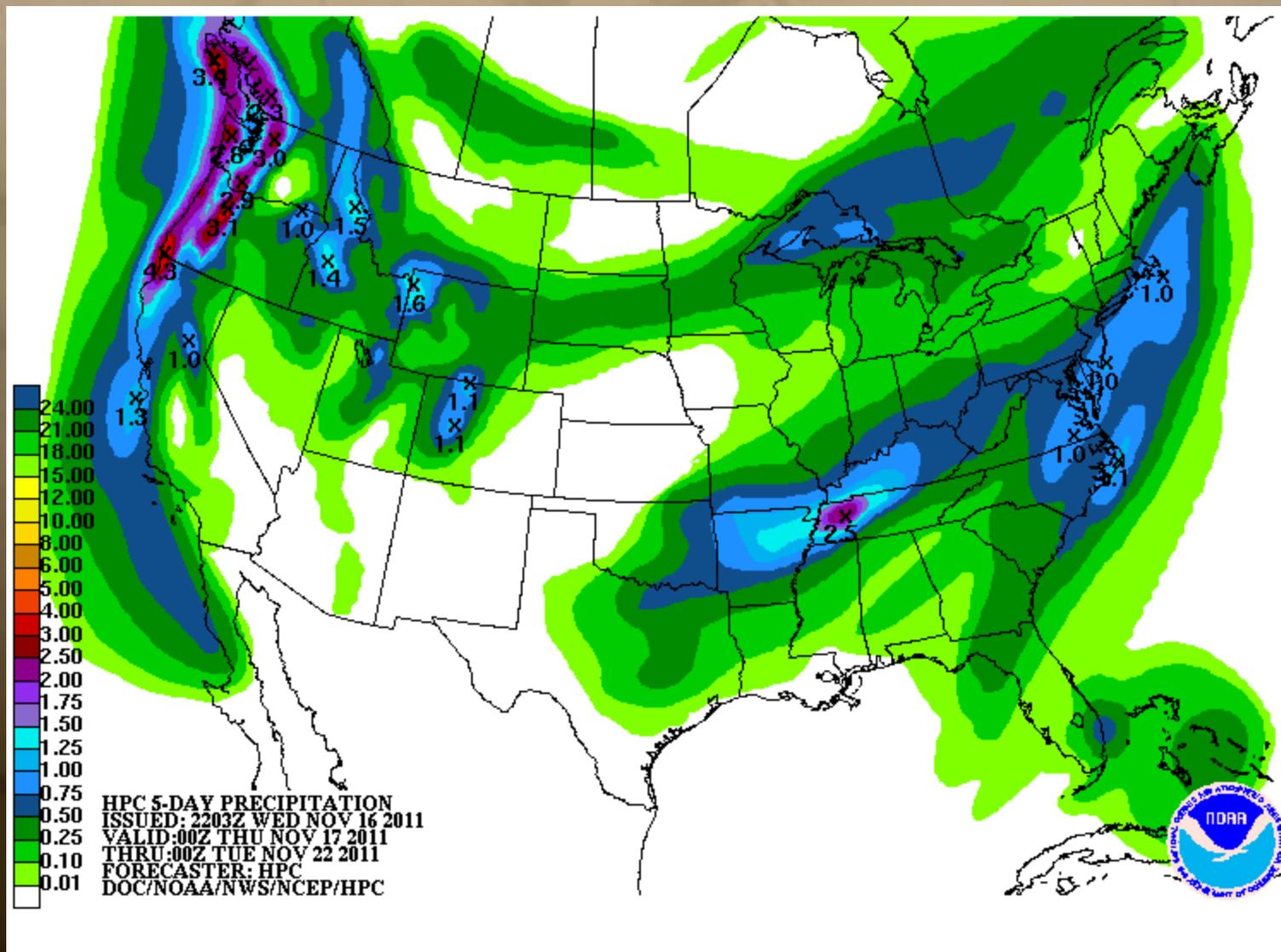
# Forecasts and Outlooks

# ENSO OUTLOOK

**La Niña is expected to strengthen and continue through the Northern Hemisphere winter 2011-12.**



# Next Five Days (thru Monday)

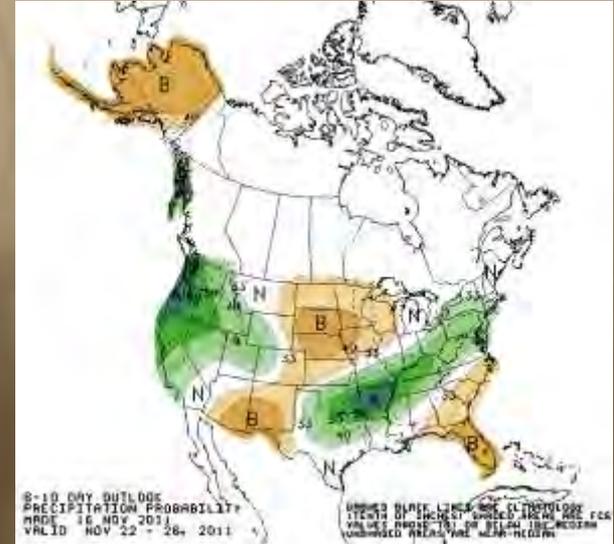
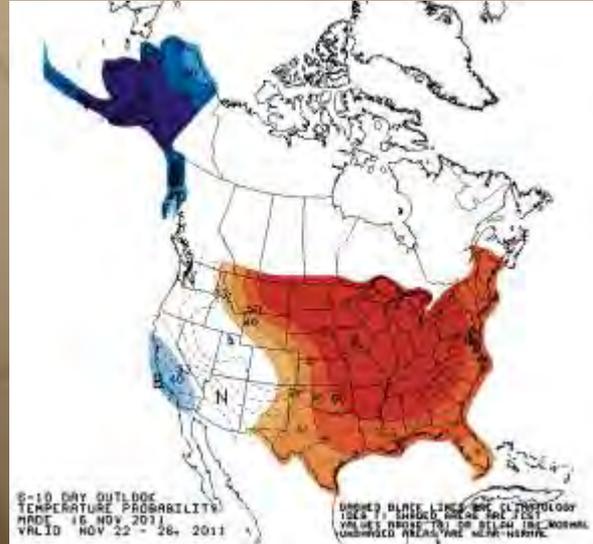


# Short-term Outlooks

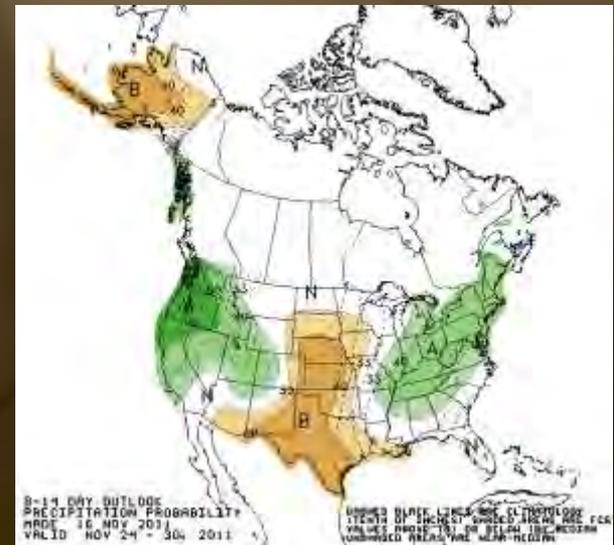
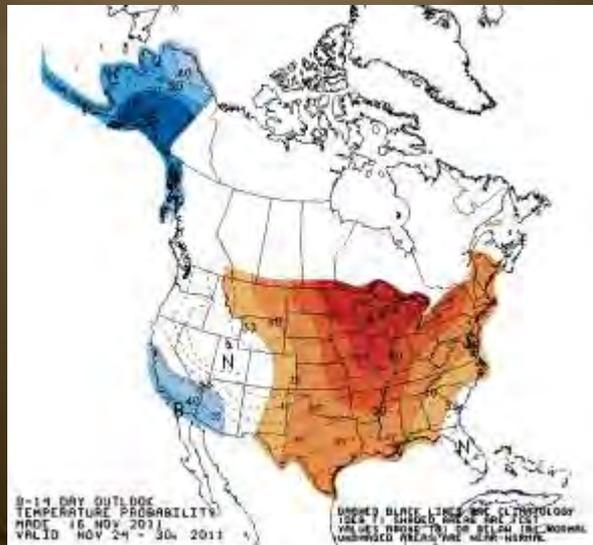
## Temperature

## Precipitation

Nov 22-26

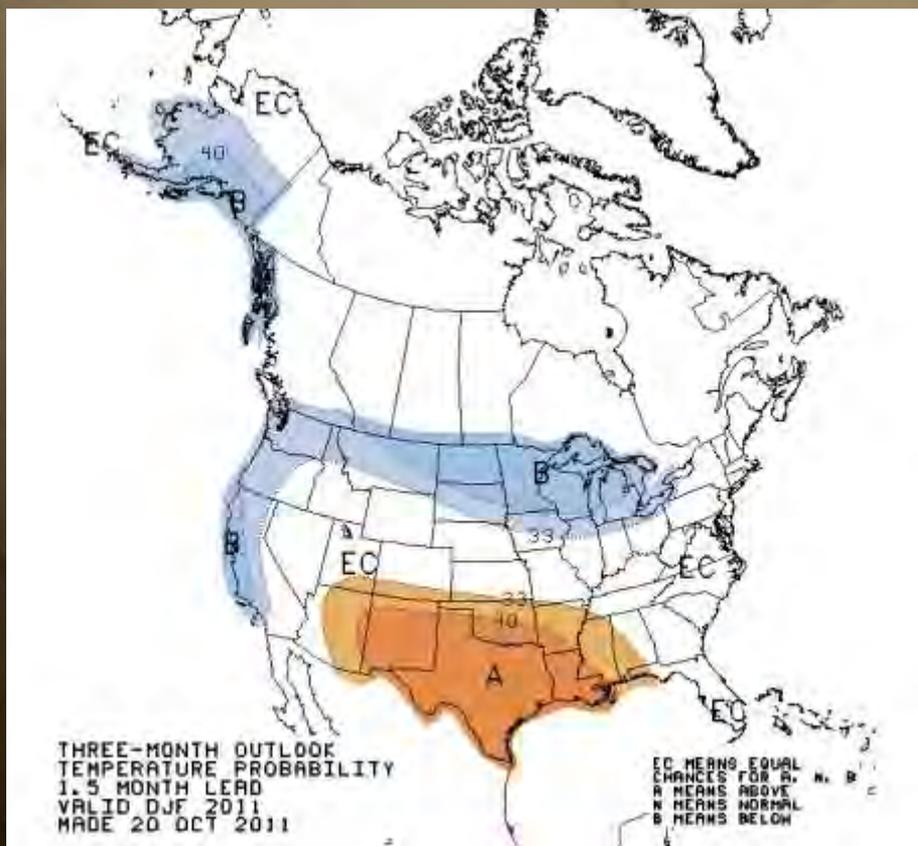


Nov 24-30

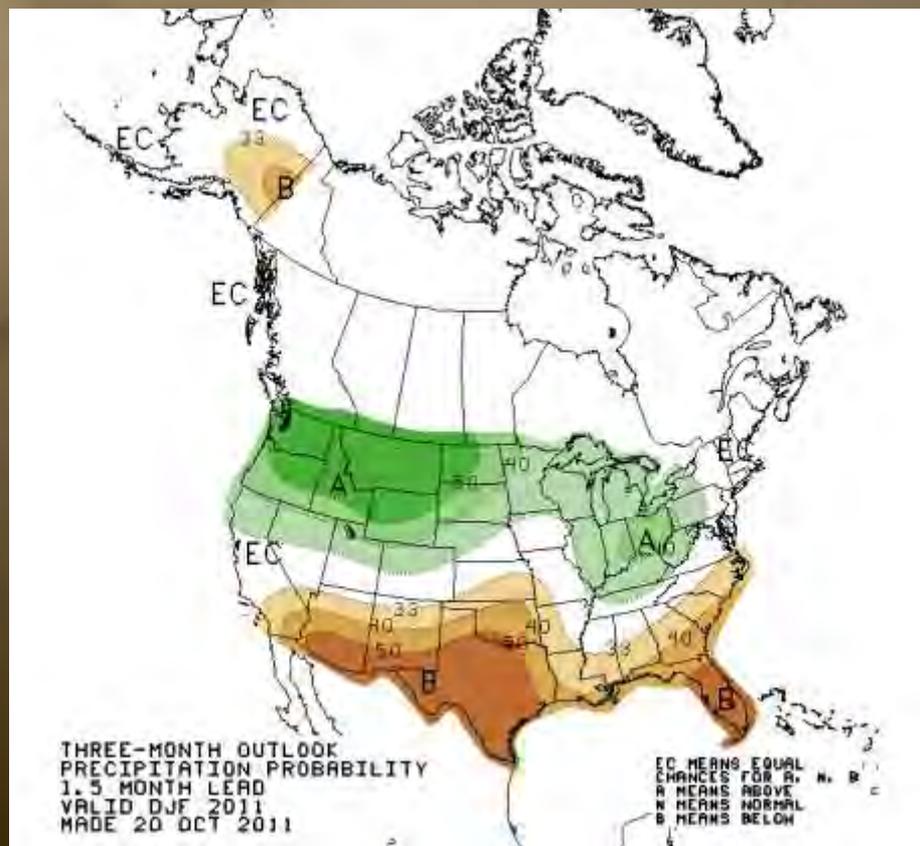


# December-February Outlooks

## Temperature



## Precipitation



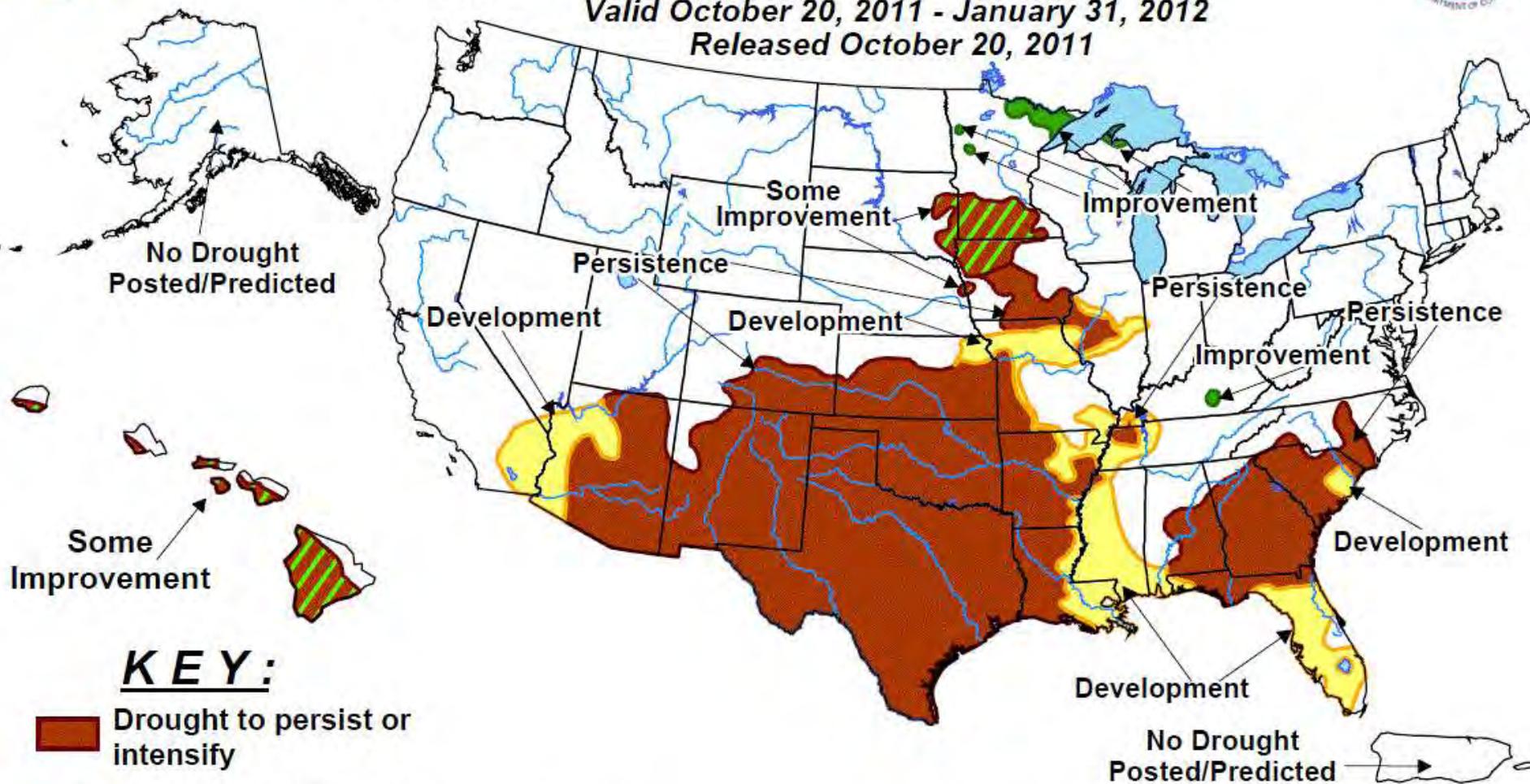


# U.S. Seasonal Drought Outlook

## Drought Tendency During the Valid Period

Valid October 20, 2011 - January 31, 2012

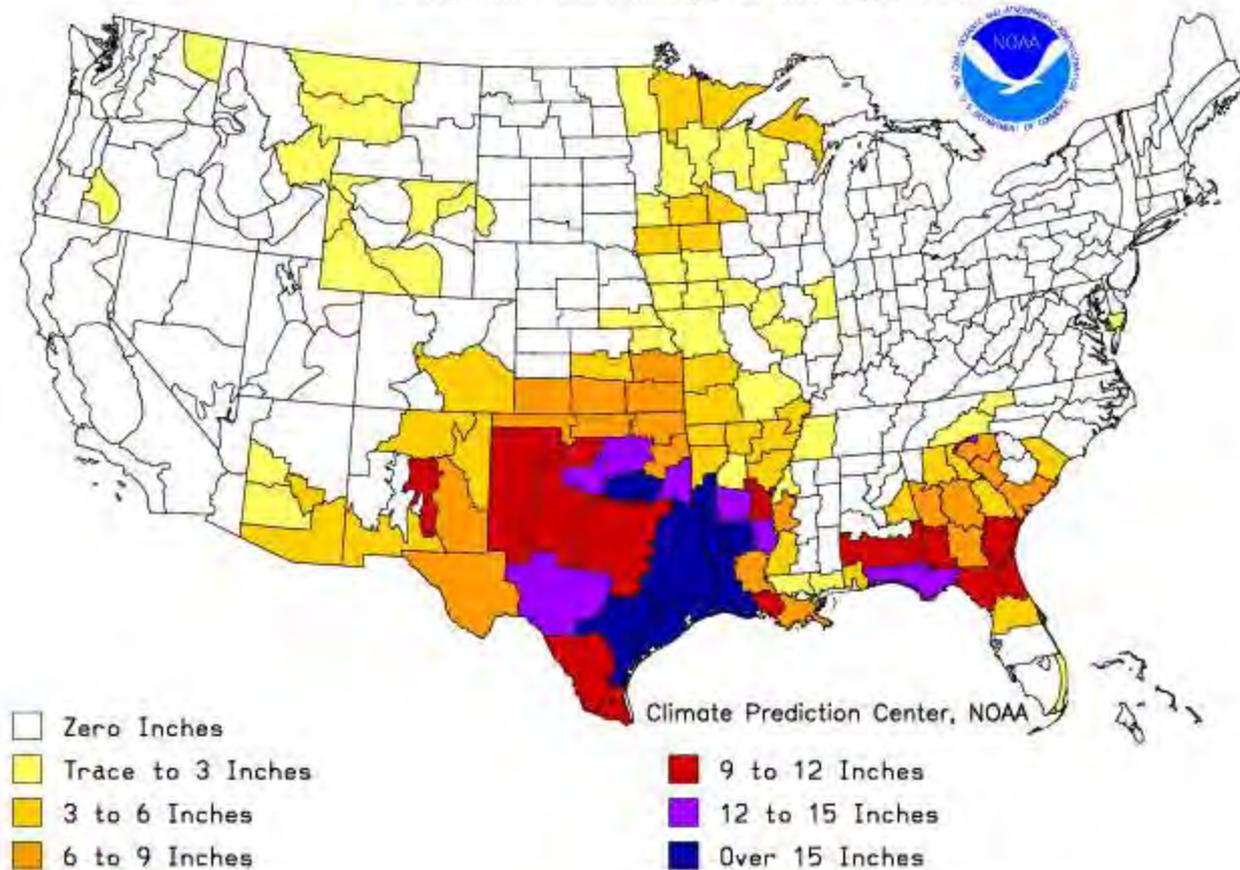
Released October 20, 2011



Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Short-term events -- such as individual storms -- cannot be accurately forecast more than a few days in advance. Use caution for applications -- such as crops -- that can be affected by such events. "Ongoing" drought areas are approximated from the Drought Monitor (D1 to D4 intensity). For weekly drought updates, see the latest U.S. Drought Monitor. NOTE: the green improvement areas imply at least a 1-category improvement in the Drought Monitor intensity levels, but do not necessarily imply drought elimination.

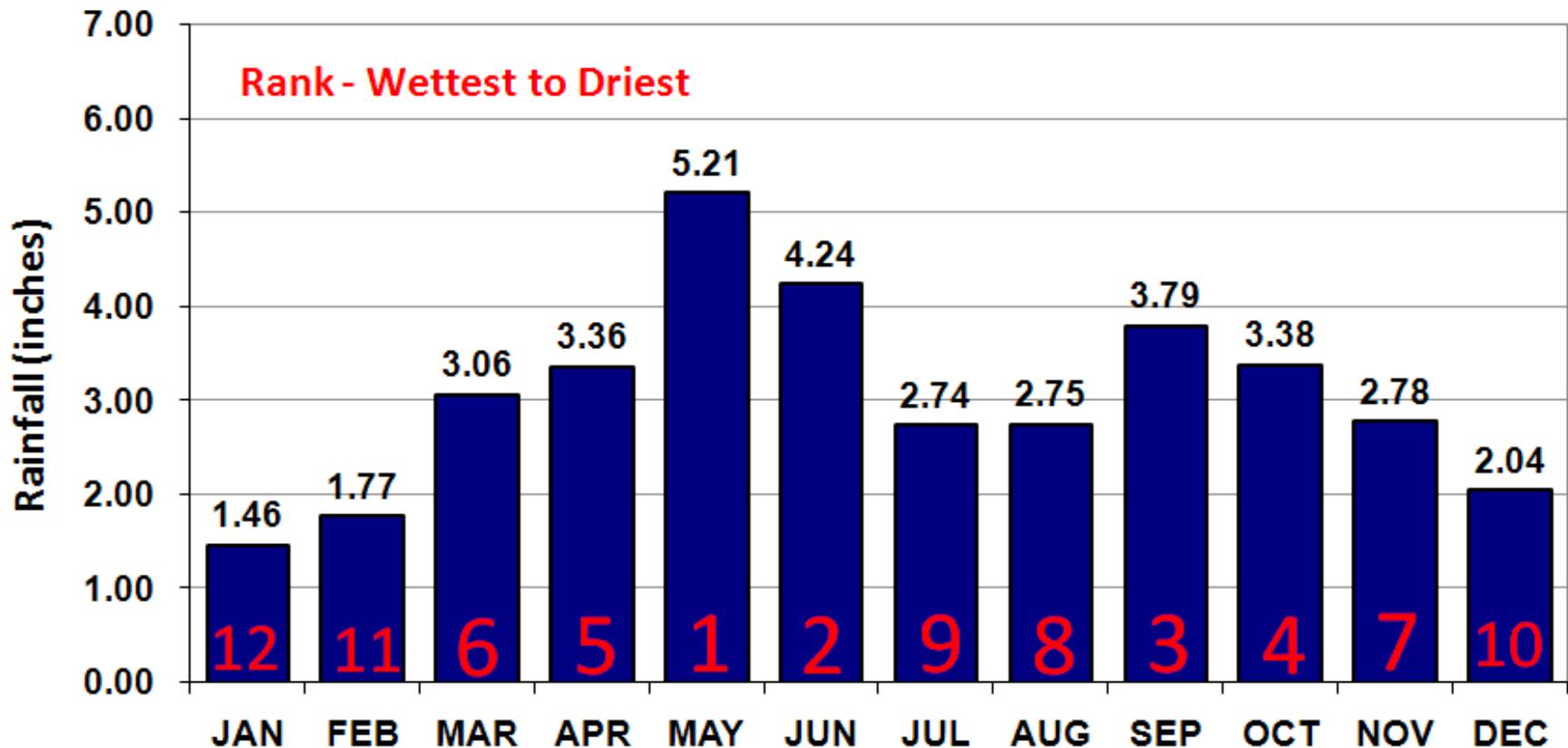
# How much do we need to **END** drought?

Additional Precip. Needed (In.) to Bring PDI to  $-0.5$   
Weekly Value for Period Ending NOV 12, 2011  
Long Term Palmer Drought Severity Index (PDI)



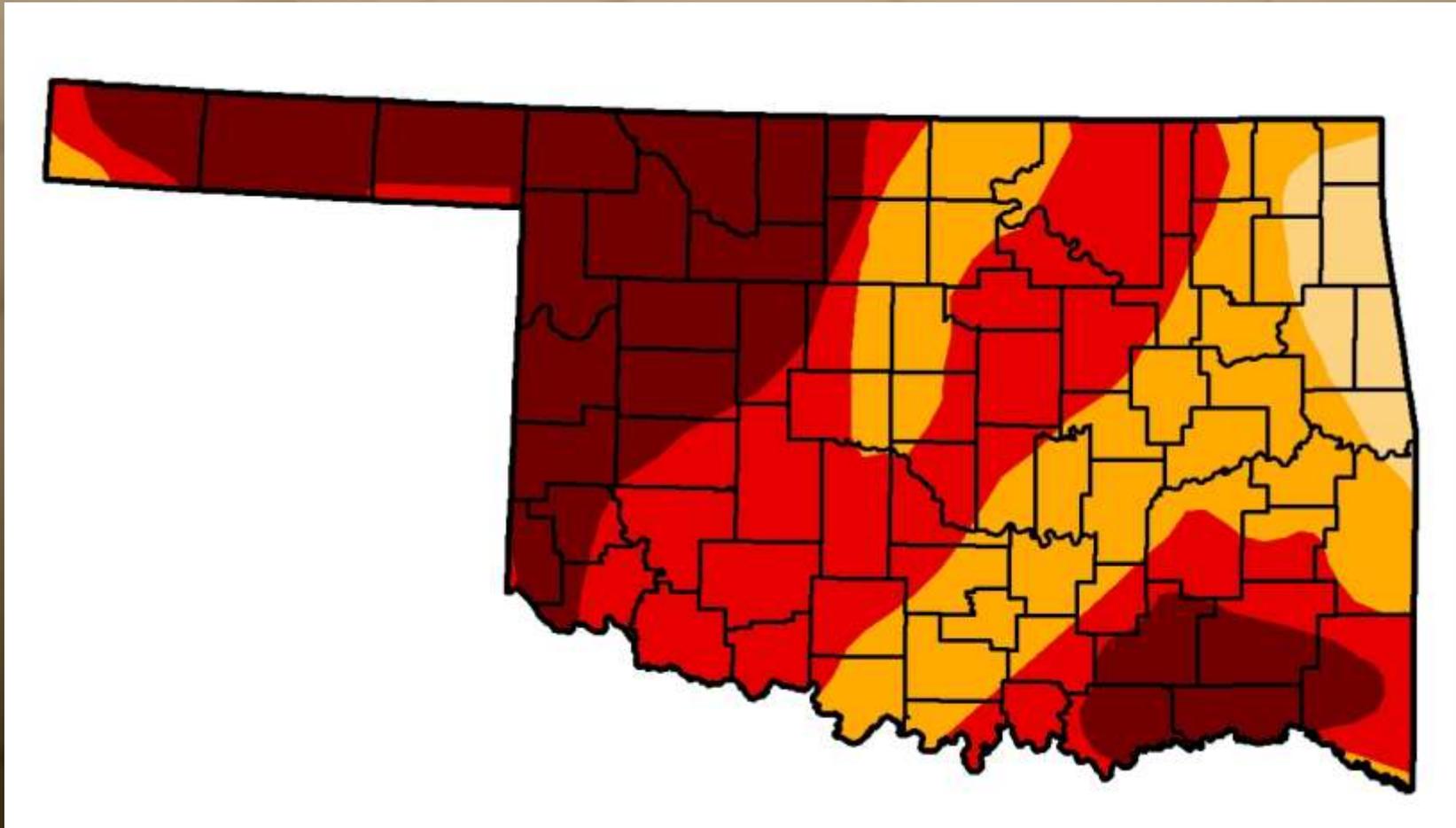
# “Normal” precipitation not enough

## Oklahoma Normal Monthly Precipitation

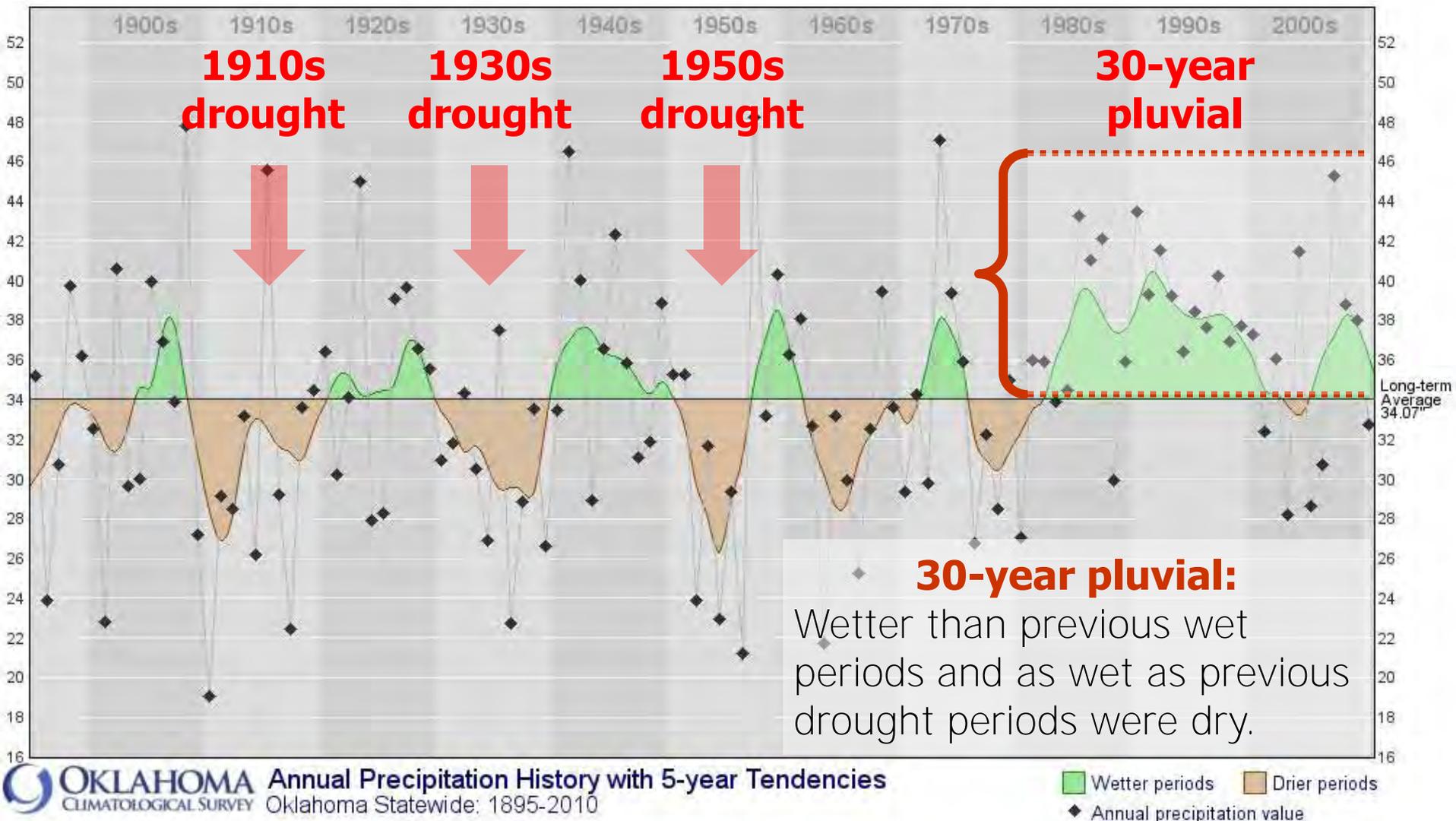




# November 2011



# Big droughts are always lurking



# The Good News

- Summer is just a bad memory now
- Cooler temperatures/dormant vegetation mean reduced impacts
- Serious dents continue to be made in drought
- Extremes of drought/heat during 2011 were not forecast, nor were they expected
- We should not expect them again
- La Nina not always the same
- **This drought will eventually end!**

# The Bad News

- Persistence of extreme-exceptional drought continues across much of Oklahoma
- Drought is predicted to persist across the region for next 1-3 months
- Some level of drought is likely to exist entering spring 2012
- Ocean temperature patterns possibly favor extended drought susceptibility

# Thank You!

Visit us at: <http://climate.ok.gov/>

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at [ticker@mesonet.org](mailto:ticker@mesonet.org)

Send your drought impact reports to  
[drought@mesonet.org](mailto:drought@mesonet.org)