2010-13 Southern Plains Drought Evolution
March 7, 2013

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The OKLAHOMA, NEW MEXICO, KANSAS, COLORADO, LOUISIANA and Texas Drought of 2010-13
Start with the good

Last 30 days: 2-6 inches across parts of S.P.
150-400% of normal
Drought in Pictures
North of Guymon, OK: April 2011
Canton Lake (NW OK)  
13% capacity
Yesterday
Not just a fish story!

2 feet long
15 lbs.
Our Current Drought
Our 2-Year+ Drought Cycle

- Drought “begins” October 2010
  - Flash drought summer 2010 didn’t help
- Intensified through summer 2011
  - Almost entirely in Southern Plains
- Relief began for most October 2011
- Miraculous recovery through March 2012
- Warm winter and spring!
- Rainfall deficits again in April and May 2012
- Driest May-December on record
- 2012 - Warmest year on record
- Active cycle in 2013 brings improvements
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.
5-50% of normal in Southern Plains
The drought at its worst

70% of OK and 88% of TX in D4 drought
Oct. 2011-March 2012: Relief!
Above normal across much of SP
Early May, the drought’s end?

Drought to the west, drought free in the east
May 2012 – Drought intensifies again
May 1- Jan. 31 rainfall totals

Most of country below normal!
OK Annual Statewide Average Temperatures
2012 - Warmest year at 63 degrees

Annual Temperature History with 5-year Tendencies
Oklahoma Statewide: 1895-2012
Last 24 months: 25-75 percent of normal
Common area of both droughts?

2010-11 drought

2012-13 drought
Where are we now?
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

http://droughtmonitor.unl.edu/
Forecasts and Outlooks
Next Seven Days (thru Thur. a.m.)
Medium-term Outlooks: March 14-20
More moisture chances?
U.S. Seasonal Drought Outlook
Drought Tendency During the Valid Period
Valid for March 7 - May 31, 2013
Released March 7, 2013

**KEY:**
- **Drought to persist or intensify**
- **Drought ongoing, some improvement**
- **Drought likely to improve, impacts ease**
- **Drought development likely**

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.
Spring rainy season (April-June)
A bit worrisome
A Brief History of Drought
Extended period of drought susceptibility

1950-1974
Lots of La Nina’s
Negative PDO
DRY!

1975-2007
Mostly El Nino
Positive PDO
Unusually and consistently wet!

MULTIVARIATE ENSO INDEX

NOAA/ESRL/Physical Science Division – University of Colorado at Boulder/CIRES
Big droughts are always lurking
Statewide avg. rainfall (1895-2012)
Mega-droughts dot our past

A 2129-Year Reconstruction of Precipitation for Northwest New Mexico

from Grissino-Mayer 1996
Recent droughts are infants!
2010-13 Drought: Final points

• We have a much better cushion entering spring
• Need period of active weather to continue
• Another swing-and-miss during spring and 3rd straight year of drought becomes likely
• Ocean patterns have not been favorable
• We might be in for a longer period of “drought susceptibility”
• It’s what we don’t know, usually
• This drought will eventually end!
Thank You!

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