

Oklahoma Water Resources Bulletin & Summary of Current Conditions

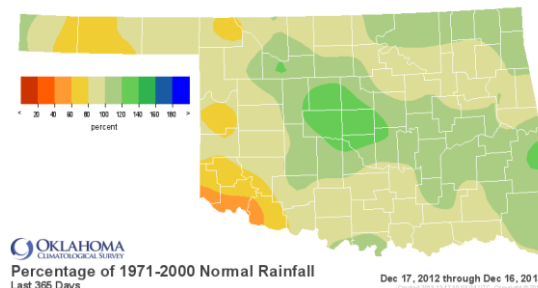
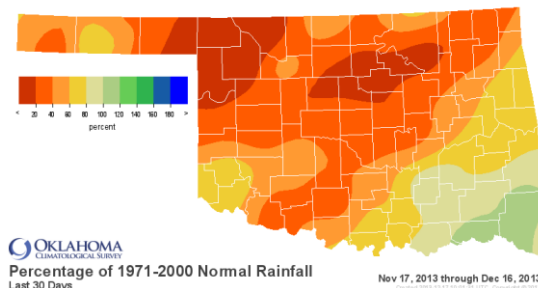


December 19, 2013

PRECIPITATION

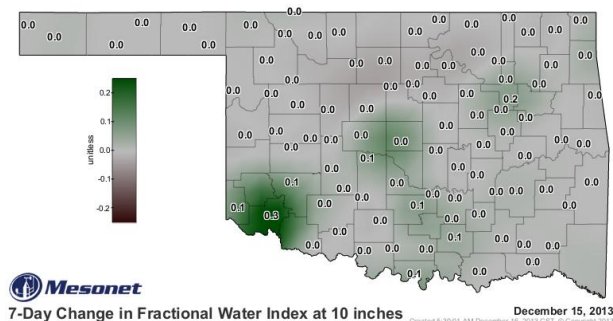
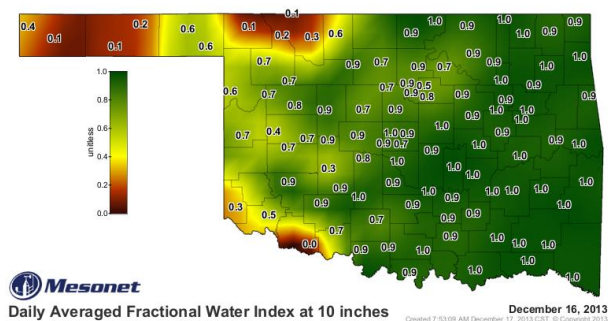
Statewide Precipitation

CLIMATE DIVISION	Last 30 Days November 17, 2013 – December 16, 2013				Last 365 Days December 17, 2012 – December 16, 2013			
	TOTAL RAINFALL (INCHES)	DEPARTURE FROM NORMAL (INCHES)	PERCENT OF NORMAL	RANK SINCE 1921	TOTAL RAINFALL (INCHES)	DEPARTURE FROM NORMAL (INCHES)	PERCENT OF NORMAL	RANK SINCE 1921
Panhandle	0.22"	-0.63"	26%	28th driest	17.56"	-3.54"	83%	27th driest
North Central	0.40"	-1.24"	24%	26th driest	30.88"	-0.77"	98%	39th wettest
Northeast	1.01"	-1.86"	35%	28th driest	42.97"	+1.00"	102%	33rd wettest
West Central	0.39"	-1.00"	28%	29th driest	25.35"	-3.74"	87%	42nd driest
Central	0.62"	-1.73"	27%	27th driest	42.32"	+4.33"	111%	12th wettest
East Central	2.25"	-1.29"	64%	43rd driest	46.26"	+0.17"	100%	32nd wettest
Southwest	0.74"	-0.78"	49%	39th driest	25.32"	-5.48"	82%	25th driest
South Central	1.75"	-1.01"	63%	39th driest	37.27"	-3.69"	91%	43rd driest
Southeast	4.19"	-0.28"	94%	41st wettest	53.32"	+2.38"	105%	27th wettest
Statewide	1.22"	-1.14"	52%	34th driest	35.88"	-0.81"	98%	38th wettest



SOIL MOISTURE

Fractional Water Index¹ December 16, 2013



¹ The Fractional Water Index ranges from very dry soil having a value of 0 to soil at field capacity illustrated by a value of 1. [1.0-0.8 = Enhanced Growth; 0.8-0.5 = Limited Growth; 0.5-0.3 = Plants Wilting; 0.3-0.1 = Plants Dying; <0.1 = Barren Soil.]

DROUGHT INDICES

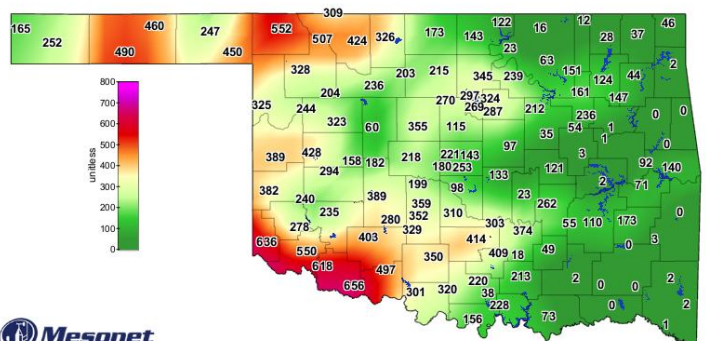
Palmer Drought Severity Index ¹				Standardized Precipitation Index ² Through November 2013				
CLIMATE DIVISION	CURRENT STATUS 12/14/2013	VALUE 12/14	CHANGE IN VALUE 11/9	3-MONTH	6-MONTH	12-MONTH	24-MONTH	
Northwest	INCIPIENT DROUGHT	-0.92	-0.56	-0.36	NEAR NORMAL	VERY MOIST	ABNORMALLY MOIST	NEAR NORMAL
North Central	MOIST SPELL	1.47	2.23	-0.76	NEAR NORMAL	ABNORMALLY MOIST	ABNORMALLY MOIST	NEAR NORMAL
Northeast	INCIPIENT MOIST SPELL	0.99	1.67	-0.68	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	ABNORMALLY DRY
West Central	NEAR NORMAL	-0.24	0.24	-0.48	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	ABNORMALLY DRY
Central	MOIST SPELL	1.59	2.35	-0.76	NEAR NORMAL	MODERATELY MOIST	MODERATELY MOIST	NEAR NORMAL
East Central	INCIPIENT MOIST SPELL	0.93	0.80	0.13	MODERATELY DRY	MODERATELY DRY	NEAR NORMAL	MODERATELY DRY
Southwest	MODERATE DROUGHT	-2.05	-1.31	-0.74	NEAR NORMAL	ABNORMALLY MOIST	NEAR NORMAL	NEAR NORMAL
South Central	NEAR NORMAL	-0.12	-0.82	0.70	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	ABNORMALLY DRY
Southeast	MOIST SPELL	1.51	1.18	0.33	ABNORMALLY MOIST	NEAR NORMAL	ABNORMALLY MOIST	NEAR NORMAL

- Two climate divisions, both in western Oklahoma, are classified as experiencing drought (or incipient drought) conditions, according to the PDSI. Six regions have undergone a PDSI moisture decrease since November 9.
- According to the latest SPI, four climate divisions are experiencing longer-term dry conditions.

Keetch-Byram Drought Fire Index³

MESONET STATION	CLIMATE DIVISION	CURRENT VALUE 12/16/2013
Grandfield	Southwest	656
Hollis	Southwest	636
Tipton	Southwest	618

- Stations currently at or above 600 (December 16) = 3
- Stations above 600 on November 12 = 3



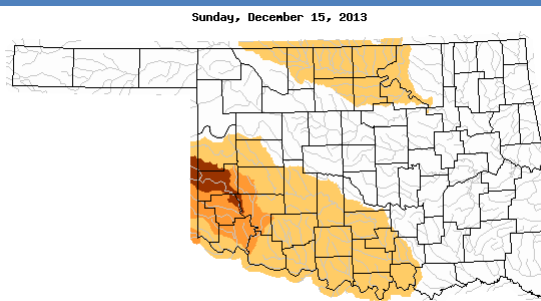
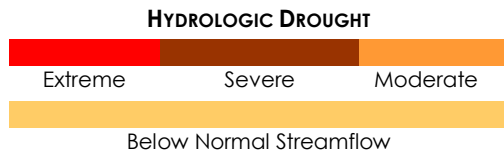
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Keetch-Byram Drought Index

1:00 PM December 16, 2013 CST
Created 2:14:03 PM December 16, 2013 CST. © Copyright 2013

STREAMFLOW CONDITIONS

December 15, 2013



USGS

¹ The Palmer Drought Severity Index is based upon precipitation, temperature, and soil moisture. Though widely used by government agencies and states to trigger drought relief programs, the PDSI may underestimate or overestimate the severity of ongoing dry periods.

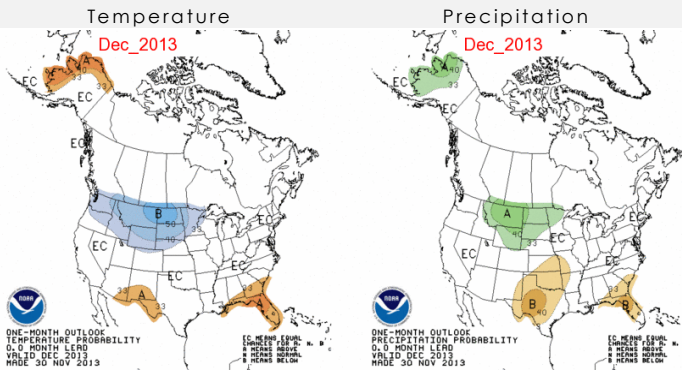
² The Standardized Precipitation Index, more sensitive than the PDSI, provides a comparison of precipitation over a specified period with precipitation totals from that same period for all years included in the historical record. The 3-month SPI provides a seasonal estimation of precipitation while the 6-month SPI can be very effective in showing precipitation over distinct seasons.

³ The Keetch-Byram Drought Index measures the state of near-surface soil moisture (within the uppermost eight inches of soil) as well as the amount of fuel available for fires. KBDI values of 600 and above are often associated with more severe drought and increased wildfire occurrence.

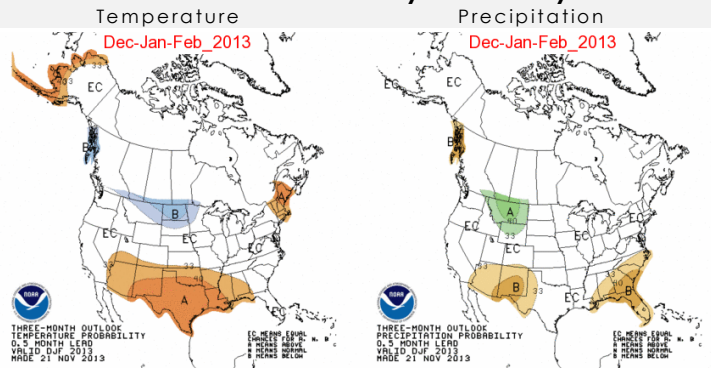
WEATHER/DROUGHT FORECAST

Seasonal Outlook

December



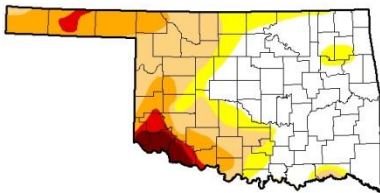
December-January-February



Regional Drought Summary & Outlook

U.S. Drought Monitor Oklahoma

December 17, 2013
(Released Thursday, Dec. 19, 2013)
Valid 7 a.m. EST



	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	49.22	50.78	38.05	18.99	4.92	2.40
Last Week (12/10/2013)	49.22	50.78	38.32	15.93	4.92	2.40
3 Months Ago (9/17/2013)	5.52	94.48	49.14	21.09	4.58	1.46
Start of Calendar Year (1/1/2013)	0.00	100.00	100.00	100.00	94.89	37.06
Start of Water Year (10/1/12)	21.74	78.26	43.00	17.62	4.42	1.45
One Year Ago (12/18/2012)	0.00	100.00	100.00	99.92	93.27	34.56

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

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

Author:
Mark Svoboda
National Drought Mitigation Center



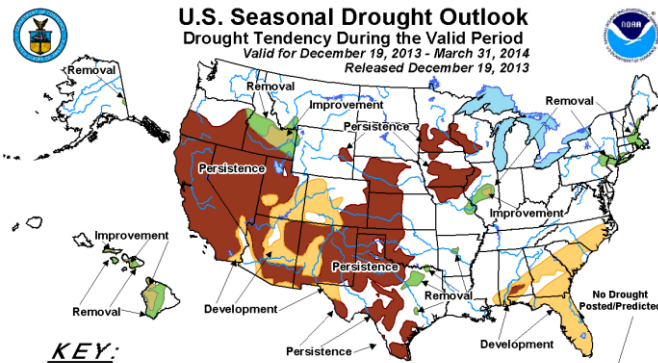
<http://droughtmonitor.unl.edu/>

December 17—According to the U.S. Drought Monitor, last week was rather cool and dry for most of the Southern Plains region as drought began to swell again across parts of southern Texas and western Oklahoma as well as the panhandles of both states. Scattered pockets of increases and/or introductions of D1/D3 are noted in both states given the continued dryness of late on top of long-term (12- to 36-months) dryness, which has left behind dry stock ponds and slowed winter wheat and pasture growth/recovery.

Less than five percent of Oklahoma is classified in Extreme Drought, virtually unchanged over the last few months. About 19 percent of the state is considered to be experiencing Severe Drought, and almost 39 percent remains in Moderate Drought—reflecting the recent marginal spread of drought across western Oklahoma. A substantial portion of far southwestern Oklahoma (especially the area consisting of Harmon, Jackson and Tillman Counties) remains in Exceptional Drought, the worst category. The Panhandle also remains quite dry.

According to the latest Drought Outlook, drought is expected to persist or intensify throughout the general western half of Oklahoma through March 2014.

U.S. Seasonal Drought Outlook Drought Tendency During the Valid Period Valid for December 19, 2013 - March 31, 2014 Released December 19, 2013



KEY:
 Drought persists or intensifies
 Drought remains but improves
 Drought removal likely
 Drought development likely

Author: Rich Tinker, Climate Prediction Center, NOAA
http://www.cpc.ncep.noaa.gov/products/expert_assessment/season_drought.html

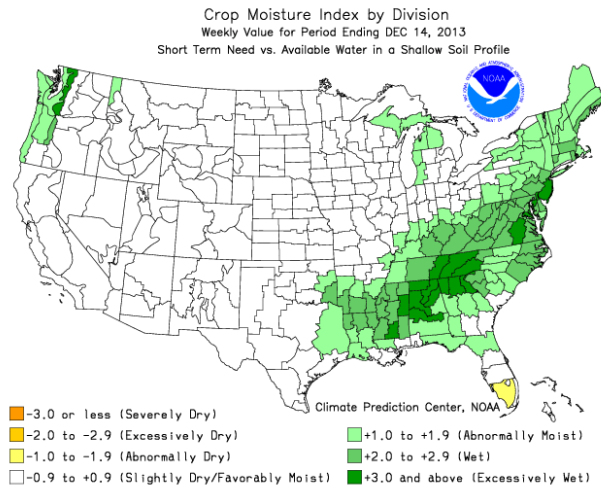
Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Short-term events — such as individual storms — cannot be accurately forecast more than a few days in advance. Use caution for applications — such as crops — that 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 tan areas imply at least a 1-category improvement in the Drought Monitor intensity levels by the end of the period although drought will remain.
The Green areas imply drought removal by the end of the period (D0 or none)

CROP REPORT SUMMARY

November 24, 2013 – Multiple fronts brought a cold and icy weekend to western and southern Oklahoma. The southwest received the most snow, with localized reports as high as 13 inches. Significant rain fell in the southeast. The ice and snow made field work difficult and slowed the progress of the cotton harvest. Topsoil moisture conditions were rated 63 percent adequate to surplus and 37 percent short to very short. Subsoil moisture conditions were rated 50 percent adequate to surplus and 50 percent short to very short. There were only 4.9 days suitable for fieldwork.

Operators were beginning to graze cattle on small grains. Virtually all wheat had emerged, slightly ahead of the five-year average. Ninety percent of oat seedbed preparation was complete by Sunday, and 61 percent was planted. Fifty-eight percent of the oat crop had emerged by week's end, six points ahead of normal. Harvest of remaining row crops made some progress. The sorghum harvest was 91 percent complete, five points ahead of the five-year average. The soybean harvest was 84 percent complete. Ninety-eight percent of the peanut crop was harvested, just ahead of normal. The cotton harvest was 66 percent complete by week's end, just behind normal. A fifth cutting of alfalfa hay was 68 percent complete by Sunday. A second cutting of other hay was 90 percent complete by Sunday, six points ahead of the five year average.

Conditions of pasture and range were rated mostly good to fair. Many operators were providing hay and supplemental feed for livestock, and were beginning to graze small grain pasture. The freezing temperatures and snow were a concern for livestock operators, however livestock continued to be rated mostly in good condition.



RESERVOIR STORAGE

December 16, 2013

