## Oklahoma Water Resources Bulletin & Summary of Current Conditions



#### April 3, 2014

## PRECIPITATION

Statewide Precipitation										
	Warm Growing Season March 1 – March 31, 2014					Last 120 Days December 2, 2013 – March 31, 2014				
CLIMATE DIVISION	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	0.21"	-1.42"	13%	13th driest	1.02"	-2.44"	30%	8th driest		
North Central	0.61"	-2.07"	23%	14th driest	1.72"	-4.36"	28%	3rd driest		
Northeast	2.25"	-1.42"	61%	34th driest	4.33"	-5.10"	46%	6th driest		
West Central	0.57"	-1.83"	24%	20th driest	1.29"	-4.23"	23%	3rd driest		
Central	1.70"	-1.54"	52%	29th driest	3.28"	-5.14"	39%	7th driest		
East Central	3.26"	-0.83"	80%	45th wettest	7.69"	-3.84"	67%	18th driest		
Southwest	1.08"	-1.18"	48%	28th driest	2.50"	-3.48"	42%	11th driest		
South Central	2.58"	-0.97"	73%	41st driest	6.13"	-3.98"	61%	22nd driest		
Southeast	3.90"	-0.58"	87%	44th driest	9.77"	-4.60"	68%	13th driest		
Statewide	1.78"	-1.33"	57%	28th driest	4.11"	-4.16"	50%	7th driest		





## SOIL MOISTURE





<sup>1</sup> 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								
Palme	er Drought Sev	verity	Inde	X <sup>2</sup>	Standardized Precipitation Index <sup>3</sup> Through February 2014			
Climate Division	CURRENT STATUS 3/29/2014	VA 3/29	lue 3/1	CHANGE IN VALUE	3-Month	12-Month	24-MONTH	
Northwest	MODERATE DROUGHT	-2.33	-2.06	-0.27	MODERATELY DRY	ABNORMALLY DRY	MODERATELY DRY	
North Central	NEAR NORMAL	-0.25	0.29	-0.54	SEVERELY DRY	NEAR NORMAL	MODERATELY DRY	
Northeast	INCIPIENT DROUGHT	-0.55	-0.74	0.19	EXTREMELY DRY	NEAR NORMAL	ABNORMALLY DRY	
West Central	MILD DROUGHT	-1.94	-1.71	-0.23	SEVERELY DRY	ABNORMALLY DRY	MODERATELY DRY	
Central	NEAR NORMAL	-0.15	-0.33	0.18	SEVERELY DRY	ABNORMALLY MOIST	NEAR NORMAL	
East Central	INCIPIENT DROUGHT	-0.51	-0.83	0.32	MODERATELY DRY	NEAR NORMAL	ABNORMALLY DRY	
Southwest	MODERATE DROUGHT	-2.61	-2.55	-0.06	MODERATELY DRY	ABNORMALLY DRY	MODERATELY DRY	
South Central	NEAR NORMAL	0.16	-0.45	0.61	MODERATELY DRY	NEAR NORMAL	MODERATELY DRY	
Southeast	INCIPIENT DROUGHT	-0.77	-0.93	0.16	MODERATELY DRY	NEAR NORMAL	ABNORMALLY DRY	

• Six climate divisions are classified as experiencing drought or incipient drought conditions, according to the PDSI. Four regions have undergone a PDSI moisture decrease since March 1.

• According to the latest SPI, all nine climate divisions are experiencing longer-term dry conditions (through the last two years).

#### Keetch-Byram Drought Fire Index<sup>4</sup>

Mesonet Station	Climate Division	CURRENT VALUE 3/31/2014	273 347	513	278	329 329 170 99 78 46   595 520 459 385, 269 202 119 76 48 46
Hollis	Southwest	653		800	400	395 263 247 367 305 104 80 51 48 325
Buffalo	Northwest	595		700-		416 352 331 368 374 90 178 322 347 174 208 27
Tipton	Southwest	583		600-		<u>397</u> 124 334 165 88 88 56 54 7
<ul><li>Stations currently</li><li>Stations above 600</li></ul>	at or above 600 (Mai 0 on March 4 = 1	rch 31) = 1		8 500 9 400 300 200 100- 0		$\begin{array}{cccccccccccccccccccccccccccccccccccc$

Keetch-Byram Drought Index

9:00 AM March 31, 2014 CDT

# STREAMFLOW CONDITIONS March 31, 2014





**≊USGS** 

<sup>&</sup>lt;sup>2</sup> 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.

<sup>&</sup>lt;sup>3</sup> 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.

<sup>&</sup>lt;sup>4</sup> 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.



#### **Regional Drought Summary & Outlook**

April 1, 2014



U.S. Drought Monitor

April 1—According to the U.S. Drought Monitor, in the southern Plains, continued short-term precipitation deficits, declining range and pasture conditions, and areas of belownormal streamflow activity led to expansion of areas of Moderate Drought (D1) and Severe Drought (D2) in the eastern half of Kansas and central Oklahoma where areas of Severe Drought (D2) pushed eastward. Temperatures were generally near-normal to slightly above-normal in the southern portions of the Plains during the past week. In Texas, conditions continued to deteriorate as short- and longterm precipitation deficits and declining reservoir levels raised concern.

All but a small portion of Oklahoma—including more than 77 percent of the land area classified in at least Moderate Drought (double the total from three months ago)—is suffering from categorical dryness of varying degrees. Almost one quarter of the state is classified in Extreme Drought. Western Oklahoma continues to experience the worst and most consistent impacts as almost the entire region remains in Extreme to Exceptional Drought.

According to the latest Drought Outlook, drought is expected to persist or intensify throughout most of western Oklahoma and the Panhandle region through June, although conditions could improve in the rest of the state.

### CROP REPORT SUMMARY

March 31, 2014 – Drought conditions remained the same across the state despite the recent rainfall. Low moisture and high winds continued to be a major concern last week. Wind erosion and dust storms continued in the Panhandle and southwest Oklahoma. The progression of small grain crops in western Oklahoma have slowed considerably due to the dry season. However, areas in the south central and southeast responded well to the recent warm temperatures. Small grains continue to be rated mostly fair to poor. Pastures started to green and crop conditions showed good progress. Topsoil moisture conditions were rated 26 percent adequate to surplus and 74 percent short to very short. Subsoil moisture conditions were rated 19 percent adequate to surplus and 81 percent short to very short. There were 6.0 days suitable for fieldwork on average across the state.

Conditions of pasture and range were rated 64 percent fair to poor. Livestock conditions were rated 86 percent good to fair. Livestock markets continue to hold strong. Producers were feeding hay and supplemental feed to livestock.







#### Oklahoma Surface Water Resources