

# Oklahoma Water Resources Bulletin & Summary of Current Conditions

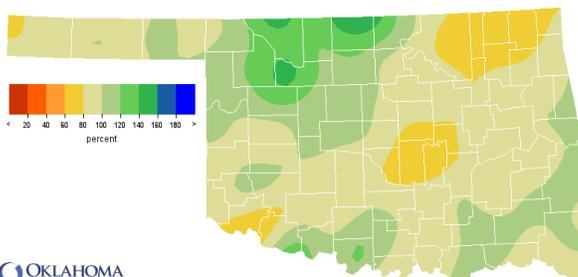


March 8, 2012

## PRECIPITATION

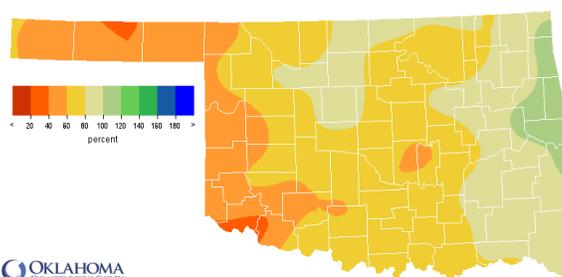
### Statewide Precipitation

CLIMATE DIVISION	Cool Growing Season September 1, 2011 – March 4, 2012				Last 365 Days March 6, 2011 – March 4, 2012			
	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	6.00"	-0.50"	92%	44th wettest	10.83"	-10.22"	51%	1st driest
North Central	13.85"	+2.18"	119%	16th wettest	24.10"	-7.47"	76%	18th driest
Northeast	14.85"	-3.48"	81%	36th driest	35.06"	-6.79"	84%	23rd driest
West Central	10.77"	-0.02"	100%	32nd wettest	17.39"	-11.63"	60%	5th driest
Central	14.17"	-2.07"	87%	44th driest	26.68"	-11.20"	70%	13th driest
East Central	19.61"	-1.99"	91%	43rd wettest	42.03"	-3.93"	91%	34th driest
Southwest	11.37"	-0.79"	94%	39th wettest	17.26"	-13.46"	56%	1st driest
South Central	17.43"	-1.35"	93%	39th wettest	27.37"	-13.47"	67%	9th driest
Southeast	24.82"	-0.38"	98%	33rd wettest	45.51"	-5.29"	90%	31st driest
<b>Statewide</b>	<b>14.64"</b>	<b>-1.00"</b>	<b>94%</b>	<b>39th wettest</b>	<b>27.23"</b>	<b>-9.36"</b>	<b>74%</b>	<b>11th driest</b>



OKLAHOMA CLIMATOLOGICAL SURVEY  
Percentage of Normal Rainfall  
Cool Growing Season

Sep 1, 2011 through Mar 4, 2012  
Created 5/30/07 AM March 6, 2012 CST. © Copyright 2012

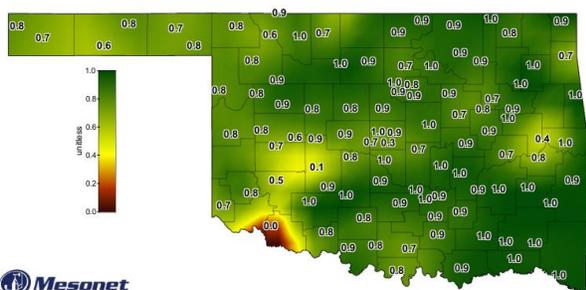


OKLAHOMA CLIMATOLOGICAL SURVEY  
Percentage of Normal Rainfall  
Last 365 Days

Mar 6, 2011 through Mar 4, 2012  
Created 5/30/07 AM March 6, 2012 CST. © Copyright 2012

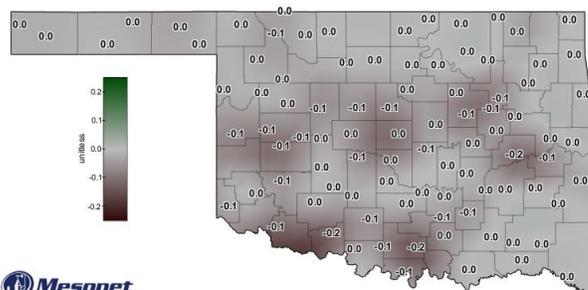
## SOIL MOISTURE

### Fractional Water Index<sup>1</sup> March 5, 2012



Mesonet  
Daily Averaged Fractional Water Index at 10 inches

March 5, 2012  
Created 5/30/07 AM March 6, 2012 CST. © Copyright 2012



Mesonet  
7-Day Change in Fractional Water Index at 10 inches

March 5, 2012  
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<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

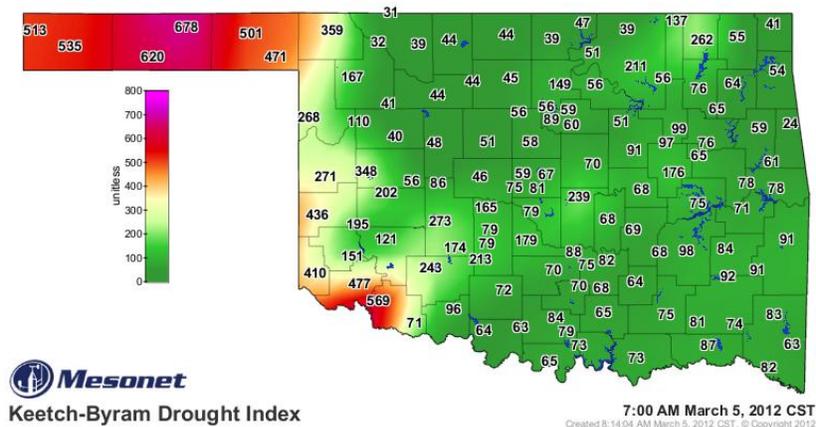
Palmer Drought Severity Index <sup>1</sup>					Standardized Precipitation Index <sup>2</sup> Through January 2012			
CLIMATE DIVISION	CURRENT STATUS 3/3/2012	VALUE		CHANGE IN VALUE	3-MONTH	6-MONTH	9-MONTH	12-MONTH
		3/3	2/4					
Northwest	INCIPIENT DROUGHT	-0.76	-0.62	-0.14	MODERATELY WET	NEAR NORMAL	VERY DRY	EXTREMELY DRY
North Central	UNUSUAL MOIST SPELL	2.47	2.72	-0.25	VERY WET	NEAR NORMAL	NEAR NORMAL	MODERATELY DRY
Northeast	NEAR NORMAL	-0.19	0.11	-0.30	NEAR NORMAL	NEAR NORMAL	MODERATELY DRY	NEAR NORMAL
West Central	NEAR NORMAL	0.26	0.19	0.07	VERY WET	NEAR NORMAL	MODERATELY DRY	VERY DRY
Central	NEAR NORMAL	-0.37	-0.31	-0.06	MODERATELY WET	NEAR NORMAL	NEAR NORMAL	MODERATELY DRY
East Central	INCIPIENT MOIST SPELL	0.57	1.65	-1.08	VERY WET	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
Southwest	MILD DROUGHT	-1.23	-1.30	0.07	VERY WET	NEAR NORMAL	MODERATELY DRY	VERY DRY
South Central	INCIPIENT MOIST SPELL	0.52	0.66	-0.14	VERY WET	MODERATELY WET	NEAR NORMAL	MODERATELY DRY
Southeast	MOIST SPELL	1.53	2.49	-0.96	EXTREMELY WET	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL

- Only one climate division (the Southwest) is currently experiencing drought conditions, according to the PDSI. However, seven climate divisions have undergone PDSI moisture decreases since February 4.
- Seven climate divisions are experiencing near long-term dry conditions, according to the SPI.

### Keetch-Byram Drought Fire Index<sup>3</sup>

MESONET STATION	CLIMATE DIVISION	CURRENT VALUE 3/5/2012
Hooker	Panhandle	678
Goodwell	Panhandle	620
Tipton	Southwest	569

- Stations currently at or above 600 (March 5) = 2
- Stations above 600 on February 7 = 2



<sup>1</sup> The Palmer Drought Severity Index, the first comprehensive drought index developed in the United States, is calculated based on 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>2</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>3</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.

# WEATHER/DROUGHT FORECAST

## 8- to 14-Day Outlook March 13-19, 2012

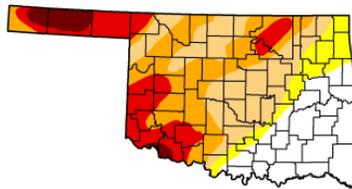


## Regional Drought Summary & Outlook

### U.S. Drought Monitor Oklahoma

March 6, 2012  
Valid 7 a.m. EST

	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	24.91	75.09	66.46	41.79	19.25	3.78
Last Week (02/29/2012 map)	24.91	75.09	66.46	41.79	19.03	3.78
3 Months Ago (12/06/2011 map)	12.56	87.44	80.27	50.88	32.08	2.11
Start of Calendar Year (12/27/2011 map)	14.83	85.17	78.76	50.55	27.48	3.33
Start of Water Year (09/27/2011 map)	0.00	100.00	100.00	100.00	78.97	66.42
One Year Ago (03/01/2011 map)	0.02	99.98	58.68	18.16	0.00	0.00

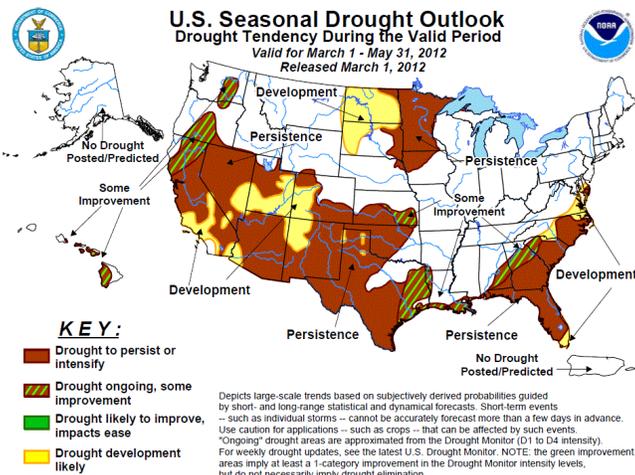


**Intensity:**  
 D0 Abnormally Dry  
 D1 Drought - Moderate  
 D2 Drought - Severe  
 D3 Drought - Extreme  
 D4 Drought - Exceptional

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

<http://droughtmonitor.unl.edu>

USDA National Drought Mitigation Center  
 Released Thursday, March 8, 2012  
 Michael Brewer, National Climatic Data Center, NOAA



March 6—The latest U.S. Drought Monitor reports that with the exception of extreme south Texas and near New Orleans, little precipitation fell in the south this week. Minor improvements in Exceptional Drought (D3) were made around southeastern Louisiana and in south central Texas. The mounting lack of precipitation in western Texas and the Texas Panhandle led to expansion in all drought classes in those areas, including expansion of Exceptional Drought (D4). In Kansas, Moderate Drought (D1) and Abnormal Dryness (D0) expanded in the north-central and western part of the state.

Two-thirds of Oklahoma is in at least Moderate Drought; about 19 percent of the state remains in at least Extreme Drought.

According to the latest Drought Outlook (March 1), there is a general tilt in the odds for above normal temperatures for areas east of the Continental Divide in March. This general pattern is also anticipated for the March-May 2012 season. The precipitation outlook calls for drier than normal conditions for both March 2012 and March-May 2012 over the Southwest, southern and central High Plains, immediate Gulf Coast, and Florida.

## CROP REPORT

March 5, 2012 – A storm system early in the week brought high winds but little precipitation to Oklahoma. Severe wind gusts over 60 mph were recorded in multiple locations across northern Oklahoma, depleting the limited topsoil moisture. A gust of 67 mph was recorded at the Woodward Mesonet station Tuesday evening. Temperatures were relatively warm.

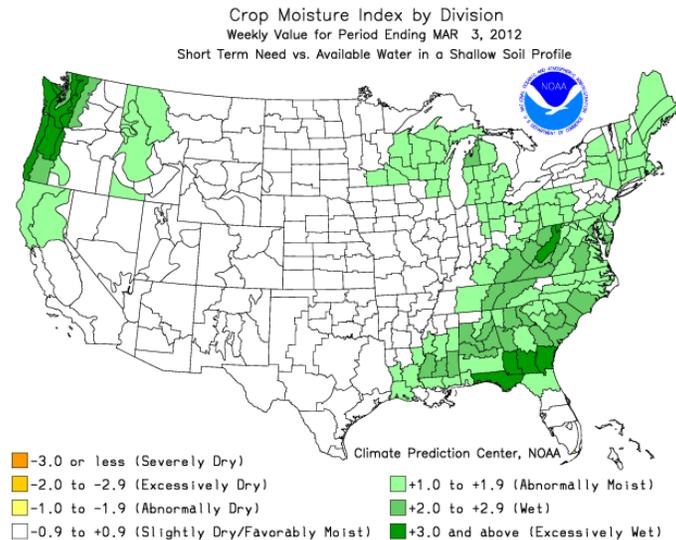
Topsoil moisture conditions worsened over the past week and were rated mostly short to adequate. Subsoil moisture conditions were also rated lower this week. Sixty eight percent was rated short to very short, up from 61 percent the week prior. There were 6.3 days suitable for field work.

Wheat was rated mostly in good condition this past week with 91 percent rated fair to excellent. However, the conditions varied across the state. Wheat in the panhandle, already stressed from the ongoing drought, was further damaged by the high winds. Most of the state's wheat crop is in good condition, but with the caveat that more rain is needed to continue normal development.

Conditions of wheat and other fall planted crops continued to be rated mostly good, with 11 percent of wheat and 17 percent of rye rated excellent, respectively. Wheat jointing was 22 percent complete while 31 percent of rye was jointing by Sunday. Oat planting was 76 percent complete by week's end.

Seedbed preparation began for row crops, though planting is still dependent on how much moisture is received in the coming months. Corn seedbed preparation was 26 percent complete by the end of the week. Sorghum seedbed preparation was 17 percent complete, and preparation of soybean seedbeds was 11 percent complete by Sunday. Cotton seedbed preparation was 19 percent complete by week's end, nine points ahead of last year.

Pasture and range continued to be rated mostly in poor to very poor condition. The mild winter resulted in some improvements to pasture and grass, however. Livestock conditions continued to be rated mostly good to fair. Along with the poor condition of pasture and grasses, low pond levels continued to concern livestock producers.



## RESERVOIR STORAGE

- 10 major reservoirs are currently operating at less than full capacity (compared to 12 four weeks ago).
- 22 reservoirs have experienced lake level decreases.

Storage in Selected Oklahoma Lakes & Reservoirs					
March 5, 2012					
Lake or Reservoir	Normal Pool Elevation	Previous Elevation	Current Elevation	Change in Elevation	Current Flood Control Storage
	(feet)	2/7/2012 (feet)	3/5/2012 (feet)	(feet)	(acre-feet)
<b>North Central</b>					
Fort Supply	2004.00	2003.82	2004.39	0.57	778
Great Salt Plains	1125.00	1126.37	1125.32	(1.05)	3,329
Kaw*	1008.20	1015.37	1008.23	(7.14)	457
<b>Northeast</b>					
Birch	750.50	742.14	741.91	(0.23)	(7,892)
Copan	710.00	711.25	711.26	0.01	5,797
Fort Gibson	554.00	555.08	555.01	(0.07)	19,500
Grand*	742.00	742.00	742.02	0.02	808
Hudson	619.00	619.74	619.68	(0.06)	7,561
Hulah	733.00	735.22	734.58	(0.64)	5,348
Keystone	723.00	726.50	723.71	(2.79)	12,002
Oologah	638.00	637.87	638.37	0.50	10,726
Skiatook	714.00	700.94	700.71	(0.23)	(118,518)
<b>West Central</b>					
Canton	1615.40	1604.82	1605.72	0.90	(60,612)
Foss	1642.00	1635.37	1635.22	(0.15)	(41,851)
<b>Central</b>					
Arcadia	1006.00	1006.41	1006.33	(0.08)	637
Heyburn	761.50	761.91	761.53	(0.38)	20
Thunderbird	1039.00	1034.05	1033.89	(0.16)	(28,400)
<b>East Central</b>					
Eufaula	585.00	585.81	585.05	(0.76)	4,581
Tenkiller	632.00	633.66	632.43	(1.23)	5,903
<b>Southwest</b>					
Fort Cobb	1342.00	1338.60	1338.72	0.12	(11,595)
Lugert-Altus	1559.00	1531.92	1532.45	0.53	(108,670)
Tom Steed	1411.00	1404.02	1403.78	(0.24)	(39,474)
<b>South Central</b>					
Arbuckle	872.00	868.61	868.65	0.04	(7,583)
McGee Creek**	175.90	176.91	175.99	(0.92)	1,091
Texoma*	615.00	615.86	616.09	0.23	77,806
Waurika	951.40	945.43	945.03	(0.40)	(56,880)
<b>Southeast</b>					
Broken Bow*	599.50	605.66	599.50	(6.16)	0
Hugo*	404.50	411.61	404.88	(6.73)	4,658
Pine Creek	433.00	438.67	433.84	(4.83)	2,428
Sardis	599.00	600.05	599.25	(0.80)	3,413
Wister	478.00	491.79	478.20	(13.59)	1,061

\* indicates seasonal pool operation

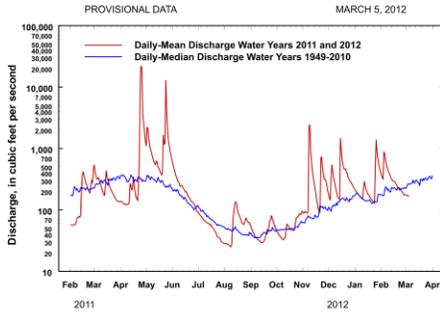
\*\* elevation in meters

negative numbers in red, parentheses

# STREAMFLOW CONDITIONS

## Baron Fork at Eldon

Baron Fork at Eldon, Oklahoma  
 Station No. 07197000 Northeast Oklahoma  
 Drainage Area 307 square miles

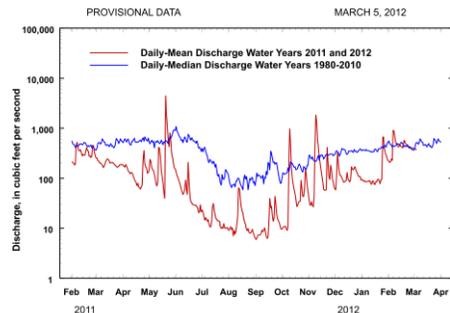


PROVISIONAL DATA MARCH 5, 2012  
 Comparison of daily discharges for water year 2011 and 2012 and period of record

Data from U.S. Geological Survey

## Canadian River at Purcell

Canadian River at Purcell, Oklahoma  
 Station No. 07229200 Central Oklahoma  
 Drainage Area 25,939 square miles

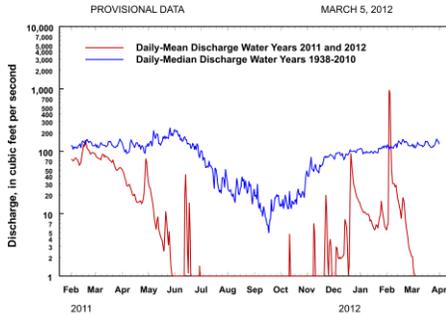


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 Comparison of daily discharges for water years 2011 and 2012 and period of record

Data from U.S. Geological Survey

## Cimarron River near Waynoka

Cimarron River near Waynoka, Oklahoma  
 Station No. 07158000 Northwest Oklahoma  
 Drainage Area 13,334 square miles

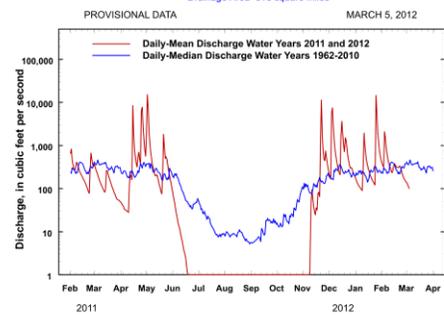


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Data from U.S. Geological Survey

## Glover River near Glover

Glover River near Glover, Oklahoma  
 Station No. 07337900 Southeast Oklahoma  
 Drainage Area 315 square miles

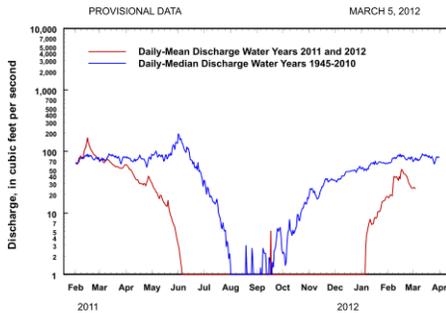


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Data from U.S. Geological Survey

## North Fork of the Red River near Carter

North Fork of the Red River near Carter, Oklahoma  
 Station No. 07301500 Southwest Oklahoma  
 Drainage Area 2,337 square miles

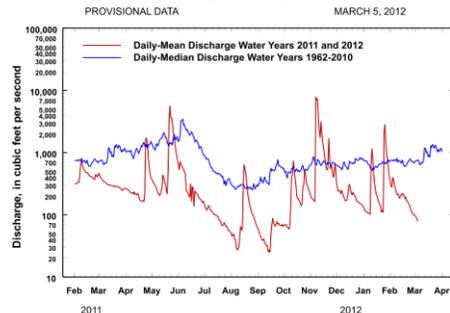


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Data from U.S. Geological Survey

## Washita River near Dickson

Washita River near Dickson, Oklahoma  
 Station No. 07331000 South-Central Oklahoma  
 Drainage Area 7,202 square miles



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Data from U.S. Geological Survey



Water Bulletin information/data courtesy of National Weather Service, Climate Prediction Center, Oklahoma Climatological Survey, State Department of Agriculture, Food, and Forestry, Agricultural Statistics Service, U.S. Army Corps of Engineers, U.S. Department of Agriculture/Forest Service, U.S. Geological Survey, Western Drought Coordination Council, and National Drought Mitigation Center. For more information, visit [www.owrb.ok.gov](http://www.owrb.ok.gov) and [www.mesonet.org](http://www.mesonet.org).