

# Oklahoma Water Resources Bulletin & Summary of Current Conditions

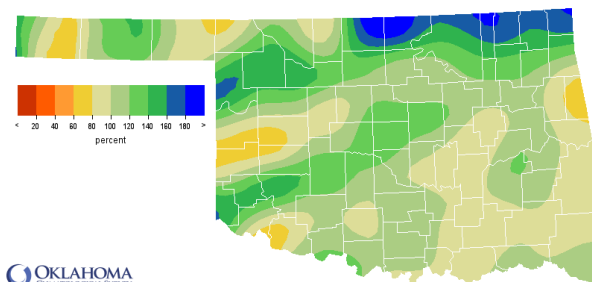


May 10, 2012

## PRECIPITATION

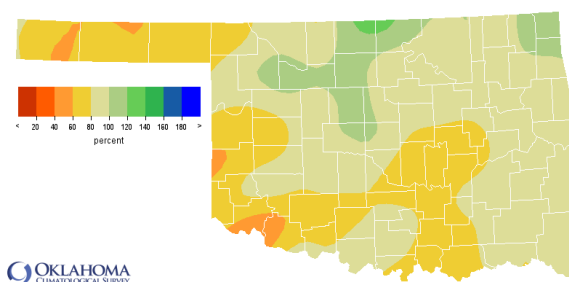
### Statewide Precipitation

CLIMATE DIVISION	Warm Growing Season March 1, 2012 – May 7, 2012				Last 365 Days May 9, 2011 – May 7, 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	4.58"	+0.34"	108%	25th wettest	14.23"	-6.76"	68%	15th driest
North Central	9.15"	+2.44"	136%	9th wettest	30.84"	-0.66"	98%	32nd wettest
Northeast	12.61"	+3.71"	142%	9th wettest	39.83"	-1.96"	95%	41st wettest
West Central	5.54"	-0.56"	91%	38th wettest	21.66"	-7.27"	75%	18th driest
Central	8.92"	+0.88"	111%	19th wettest	32.53"	-5.28"	86%	35th driest
East Central	9.34"	-0.41"	96%	41st wettest	39.38"	-6.52"	86%	28th driest
Southwest	7.25"	+1.19"	120%	21st wettest	23.34"	-7.30"	76%	16th driest
South Central	8.55"	-0.02"	100%	32nd wettest	31.52"	-9.26"	77%	14th driest
Southeast	10.38"	-0.02"	100%	43rd wettest	43.12"	-7.62"	85%	27th driest
<b>Statewide</b>	<b>8.57"</b>	<b>+0.93"</b>	<b>112%</b>	<b>18th wettest</b>	<b>30.82"</b>	<b>-5.70"</b>	<b>84%</b>	<b>25th driest</b>



OKLAHOMA CLIMATOLOGICAL SURVEY  
Percentage of Normal Rainfall  
Warm Growing Season

Mar 1, 2012 through May 7, 2012  
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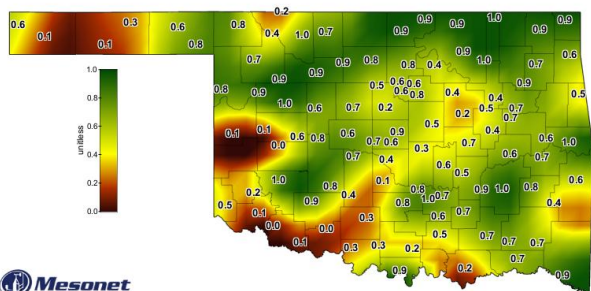


OKLAHOMA CLIMATOLOGICAL SURVEY  
Percentage of Normal Rainfall  
Last 365 Days

May 9, 2011 through May 7, 2012  
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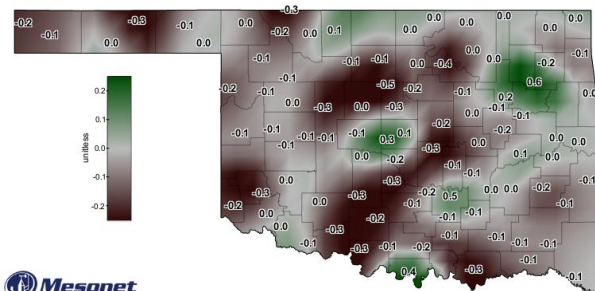
## SOIL MOISTURE

### Fractional Water Index<sup>1</sup> May 7, 2012



Mesonet  
Daily Averaged Fractional Water Index at 10 inches  
May 7, 2012

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

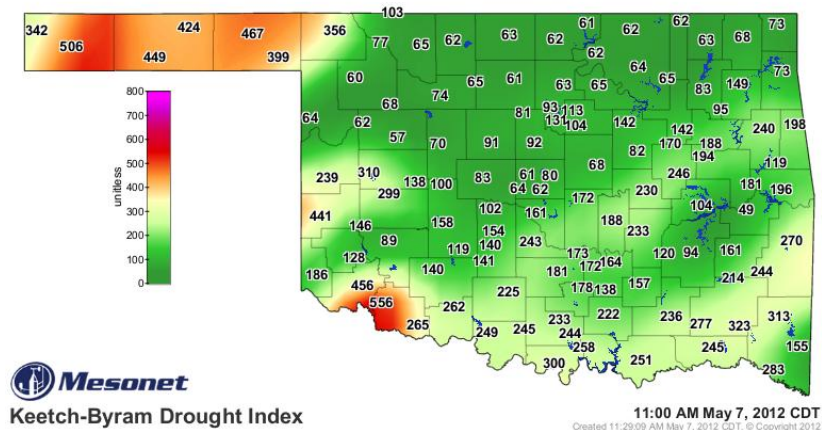
Palmer Drought Severity Index <sup>1</sup>					Standardized Precipitation Index <sup>2</sup> Through April 2012			
CLIMATE DIVISION	CURRENT STATUS 5/5/2012	VALUE		CHANGE IN VALUE	3-MONTH	6-MONTH	9-MONTH	12-MONTH
		5/5	4/7					
Northwest	NEAR NORMAL	-0.01	0.16	-0.17	VERY WET	EXTREMELY WET	VERY WET	NEAR NORMAL
North Central	VERY MOIST SPELL	3.36	2.39	0.97	EXTREMELY WET	EXTREMELY WET	VERY WET	NEAR NORMAL
Northeast	MOIST SPELL	1.20	0.60	0.60	VERY WET	VERY WET	MODERATELY WET	NEAR NORMAL
West Central	MOIST SPELL	1.19	1.04	0.15	MODERATELY WET	MODERATELY WET	NEAR NORMAL	MODERATELY DRY
Central	MOIST SPELL	1.04	1.34	-0.30	MODERATELY WET	VERY WET	NEAR NORMAL	NEAR NORMAL
East Central	INCIPIENT DROUGHT	-0.79	0.86	-1.65	NEAR NORMAL	VERY WET	NEAR NORMAL	NEAR NORMAL
Southwest	NEAR NORMAL	0.31	0.60	-0.29	VERY WET	VERY WET	NEAR NORMAL	NEAR NORMAL
South Central	NEAR NORMAL	0.39	2.02	-1.63	NEAR NORMAL	VERY WET	NEAR NORMAL	NEAR NORMAL
Southeast	INCIPIENT DROUGHT	-0.66	1.77	-2.43	MODERATELY DRY	MODERATELY WET	NEAR NORMAL	MODERATELY DRY

- No climate divisions are currently experiencing drought conditions, according to the PDSI. Six climate divisions have undergone a PDSI moisture decrease since April 7.
- Only two 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 5/7/2012
Tipton	Southwest	556
Boise City	Panhandle	506
Beaver	Panhandle	467

- Stations currently at or above 600 (May 7) = 0
- Stations above 600 on April 9 = 0



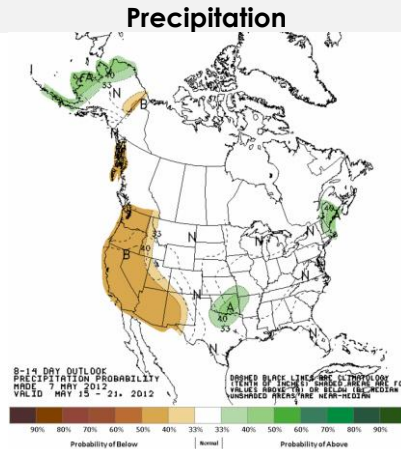
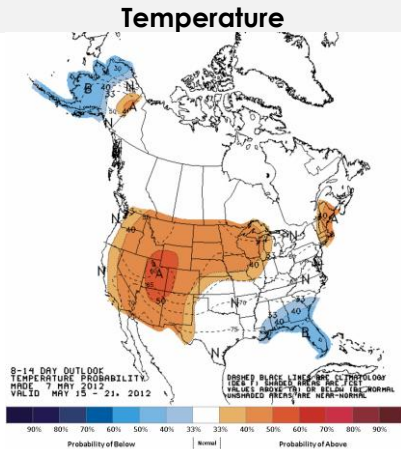
<sup>1</sup> The Palmer Drought Severity Index, the first comprehensive drought index developed in the United States, is calculated based on precipitation, temperature, and soil moisture. Though widely used by government agencies and states to trigger drought relief programs, the PDSI may underestimate 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 May 15-21, 2012

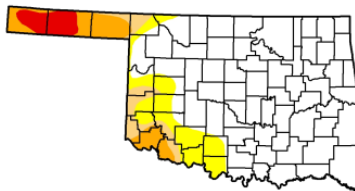


## Regional Drought Summary & Outlook

### U.S. Drought Monitor Oklahoma

May 8, 2012  
Valid 7 a.m. EST

	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	75.76	24.24	14.15	9.78	3.27	0.00
Last Week (05/01/2012 map)	75.68	24.32	14.11	9.78	3.27	0.00
3 Months Ago (02/07/2012 map)	24.91	75.09	66.53	41.82	18.57	3.78
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 (05/03/2011 map)	24.44	75.56	69.37	55.77	37.52	5.39



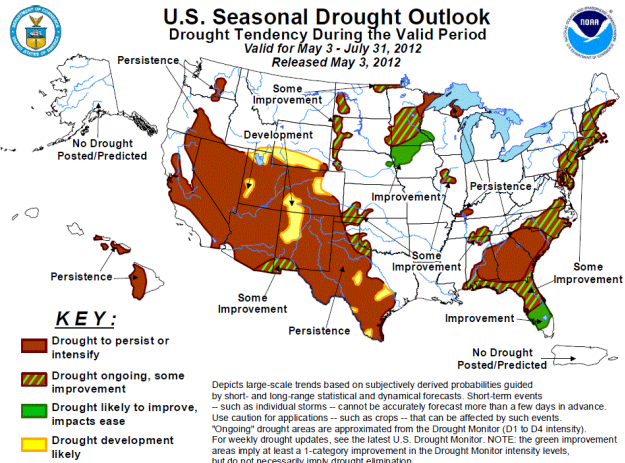
**Intensity:**

- 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, May 10, 2012  
Matthew Rosencrans, NOAA/NWS/NCEP/CPC



May 8—The latest U.S. Drought Monitor reports that reductions in the coverage of exceptional (D4) and extreme (D3) drought were made across western Texas and southeastern New Mexico. Rains this week were not exceptional, but a recent wet pattern has helped to alleviate some of the dryness across the central and southern Plains region. Heavy rains across central Texas prompted improvements there, but poor groundwater storage and slowly responding reservoir levels continue to mitigate the recovery, so the only modest reductions in coverage were indicated. Across southwestern Kansas, River Forecast Center precipitation data indicated small pockets of significant rains (0.5 - 1.5 inches), so small areas of D0 and D1 were removed.

Only about 14 percent of Oklahoma is currently experiencing at least Moderate Drought. That's down about four percent from four weeks ago. Just over three percent of the state remains in at least Extreme Drought, entirely in the western Panhandle region.

According to the latest Drought Outlook (May 3), some improvement can be expected across the drought areas of the central and southern high Plains, while drought is expected to persist or expand across parts of the west along with western and south-central Texas.

## CROP REPORT

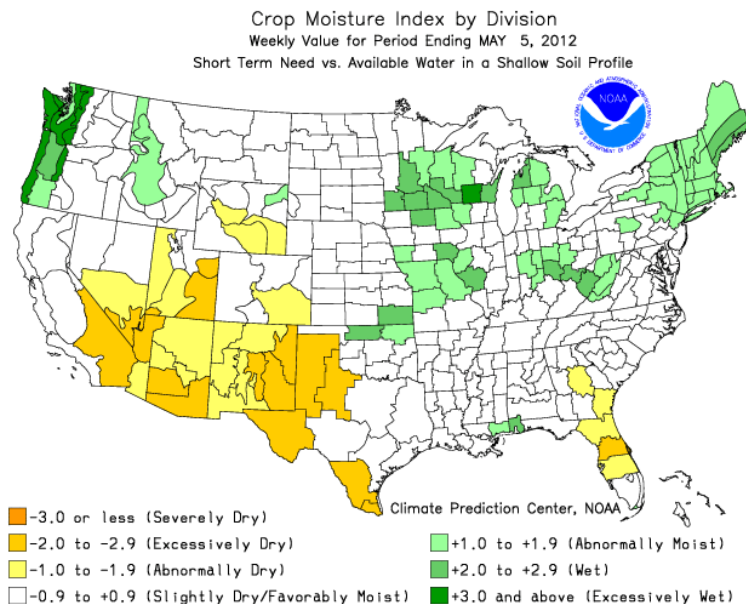
May 7, 2012 – There were a few reports of wheat and canola being harvested over the weekend in southwestern Oklahoma. The extent of the damage to wheat from hail and high winds the past few weeks will be seen as the crop is harvested over the next month. Storms Monday continued from the past Sunday dumping an additional 3.67 inches at Blackwell in Kay County, giving them over 10 inches in two days. A few other storms throughout the week resulted in a statewide average precipitation of 0.74 inches.

Although the rainfall the last two months has been close to or above normal, areas of western Oklahoma and the Panhandle have still not recovered adequate soil moisture to overcome the drought. Friday night a severe storm in Tillman and Cotton counties was reported with hail up to baseball size, damaging vehicles, properties, and wheat almost ready for harvest. The Mesonet station at Grandfield recorded a wind gust of 89 mph during that storm. Temperatures were above normal for April, and a high of 106 was recorded at Altus on Sunday. The warm temperatures and windy conditions continued to dry out soil. Topsoil and subsoil moisture conditions were rated mostly adequate, although the amount rated short to very short increased from the previous week. There were 5.7 days suitable for field work.

Conditions continued to be rated mostly good for all small grains, and all stages were ahead of normal with a few reports of wheat harvested over the weekend in far southwestern Oklahoma. Wheat heading was virtually complete by the end of the week, and 60 percent of the crop had reached the soft dough stage of development, 41 points ahead of the five-year average. The canola crop was 59 percent mature by Sunday, nine points ahead of the previous year. Rye in the soft dough stage was 71 percent complete by the end of the week. Oat jointing was virtually complete, 65 percent was headed and 16 percent was in the soft dough stage by Sunday.

Corn conditions were reported for the first time this season and the crop was rated mostly good. Corn planting was 92 percent complete by the end of the week, and 53 percent had emerged. Sorghum seedbed preparation was 77 percent complete and 20 percent was planted by Sunday. Soybean seedbed preparation was 68 percent complete by week's end with 22 percent planted. Peanut seedbed preparation was 85 percent complete and 34 percent of the crop was planted by week's end, 13 points ahead of normal. Cotton seedbed preparation was 83 percent complete and 12 percent was planted by Sunday. Watermelon planting was 73 percent complete by the end of the week, 18 points ahead of the five-year average. Twenty-one percent of the crop was putting out vines by Sunday. Conditions for both alfalfa and other hay were rated mostly good. Some areas are in need of moisture to improve warm season forage production. Insects continued to be a problem after a mild winter. A first cutting of alfalfa hay was 80 percent complete by the end of the week; a first cutting of other hay was 41 percent complete, both well ahead of normal.

Pasture and range conditions continued to be rated mostly good to fair. Livestock conditions continued to be rated mostly good.





## RESERVOIR STORAGE

- 13 major reservoirs are currently operating at less than full capacity (compared to 9 four weeks ago).
- 14 reservoirs have experienced lake level decreases.

Storage in Selected Oklahoma Lakes & Reservoirs					
May 8, 2012					
Lake or Reservoir	Normal Pool Elevation  (feet)	Previous Elevation 4/11/2012  (feet)	Current Elevation 5/8/2012  (feet)	Change in Elevation  (feet)	Current Flood Control Storage  (acre-feet)
<b>North Central</b>					
Fort Supply	2004.00	2004.30	2003.98	(0.32)	(33)
Great Salt Plains	1125.00	1125.29	1125.77	0.48	8,012
Kaw*	1010.00	1012.13	1012.64	0.51	43,452
<b>Northeast</b>					
Birch	750.50	746.84	751.59	4.75	1,062
Copan	710.00	710.13	722.77	12.64	83,332
Fort Gibson	554.00	554.54	555.07	0.53	20,700
Grand*	742.50	744.43	745.09	0.66	105,057
Hudson	619.00	619.51	620.38	0.87	15,447
Hulah	733.00	734.20	747.91	13.71	80,636
Keystone	723.00	724.17	726.56	2.39	71,041
Oologah	638.00	643.93	647.97	4.04	340,342
Skiatook	714.00	704.59	708.72	4.13	(50,574)
<b>West Central</b>					
Canton	1615.40	1607.32	1609.14	1.82	(42,409)
Foss	1642.00	1635.29	1635.10	(0.19)	(42,532)
<b>Central</b>					
Arcadia	1006.00	1006.41	1005.94	(0.47)	(99)
Heyburn	761.50	761.75	761.60	(0.15)	66
Thunderbird	1039.00	1036.69	1037.07	0.38	(11,394)
<b>East Central</b>					
Eufaula	585.00	587.20	585.70	(1.50)	64,149
Tenkiller	632.00	636.10	632.64	(3.46)	8,786
<b>Southwest</b>					
Fort Cobb	1342.00	1339.43	1339.92	0.49	(7,538)
Lugert-Altus	1559.00	1534.03	1534.80	0.77	(102,817)
Tom Steed	1411.00	1403.71	1404.51	0.80	(36,001)
<b>South Central</b>					
Arbuckle	872.00	873.55	872.63	(0.92)	1,499
McGee Creek**	175.90	176.19	176.17	(0.02)	3,431
Texoma*	615.90	617.93	616.93	(1.00)	75,408
Waurika	951.40	946.28	945.76	(0.52)	(53,264)
<b>Southeast</b>					
Broken Bow*	601.40	601.01	599.87	(1.14)	(20,651)
Hugo*	406.00	405.65	405.21	(0.44)	(10,610)
Pine Creek	433.00	433.73	432.70	(1.03)	(819)
Sardis	599.00	599.19	599.22	0.03	3,003
Wister	478.00	478.59	478.52	(0.07)	2,758

\* indicates seasonal pool operation

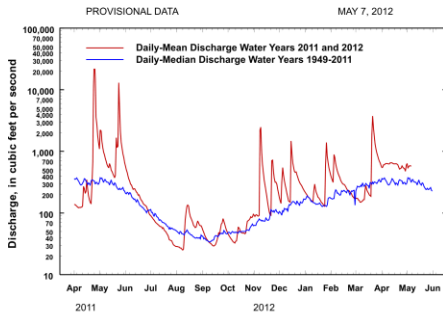
\*\* elevation in meters

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

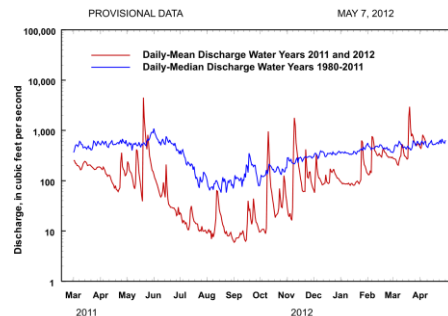


Comparison of daily discharges for water years 2011 and 2012 and period of record

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

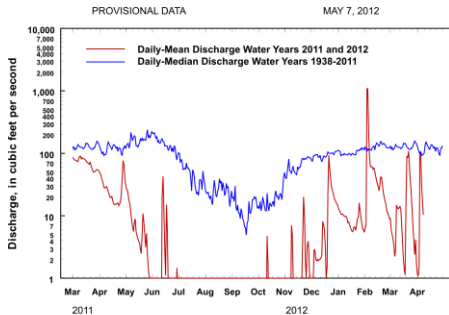


Comparison of daily discharges for water years 2011 and 2012 and period of record

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

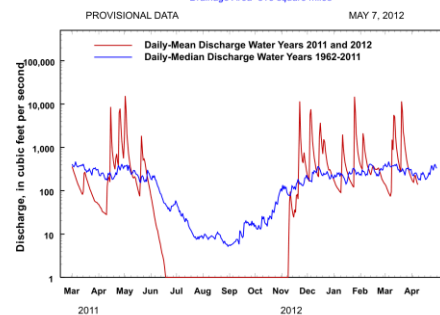


Comparison of daily discharges for water years 2011 and 2012 and period of record

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

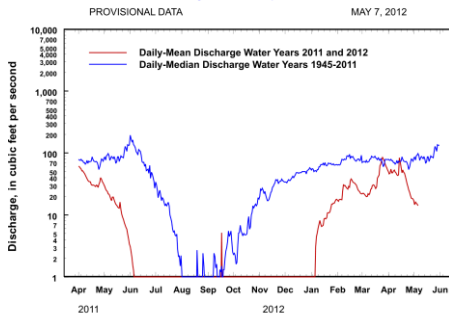


Comparison of daily discharges for water years 2011 and 2012 and period of record

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

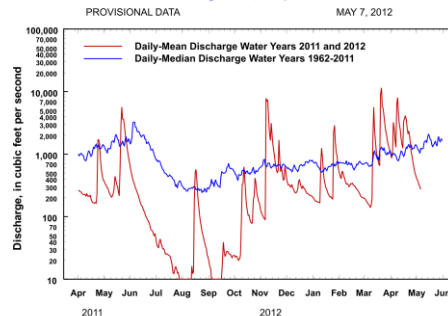


Comparison of daily discharges for water years 2011 and 2012 and period of record

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



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

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).