

# Oklahoma Water Resources Bulletin & Summary of Current Conditions

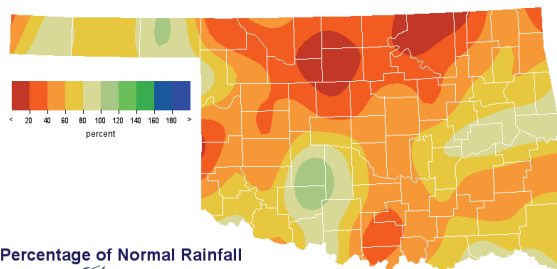


October 4, 2006

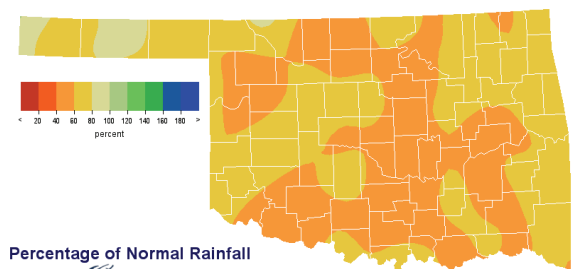
## PRECIPITATION

### Preliminary Statewide Precipitation

Climate Division (#)	Cool Growing Season September 1—October 3, 2006				Water Year October 1, 2005—October 3, 2006			
	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	1.39"	-0.64"	68%	27th driest	15.17"	-6.08"	71%	14th driest
North Central	0.93"	-2.46"	27%	11th driest	18.88"	-13.03"	59%	4th driest
Northeast	2.17"	-2.97"	42%	17th driest	27.08"	-15.24"	64%	5th driest
West Central	1.46"	-1.81"	45%	20th driest	18.82"	-10.52"	64%	6th driest
Central	2.40"	-2.06"	54%	28th driest	22.23"	-16.11"	58%	2nd driest
East Central	3.95"	-1.42"	74%	36th driest	27.81"	-18.70"	60%	2nd driest
Southwest	2.81"	-0.87"	76%	42nd wettest	18.03"	-13.06"	58%	3rd driest
South Central	2.49"	-2.26"	52%	29th driest	22.38"	-18.99"	54%	2nd driest
Southeast	3.25"	-1.80"	64%	32nd driest	32.07"	-19.35"	62%	2nd driest
<b>Statewide</b>	<b>2.29"</b>	<b>-1.85"</b>	<b>55%</b>	<b>22nd driest</b>	<b>22.40"</b>	<b>-14.62"</b>	<b>61%</b>	<b>2nd driest</b>



Percentage of Normal Rainfall  
Oklahoma Climatological Survey  
Cool Growing Season  
Sep 1, 2006 through Oct 3, 2006

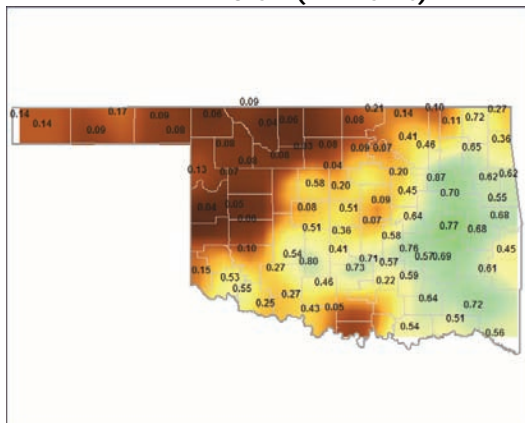


Percentage of Normal Rainfall  
Oklahoma Climatological Survey  
Water Year  
Oct 1, 2005 through Oct 3, 2006

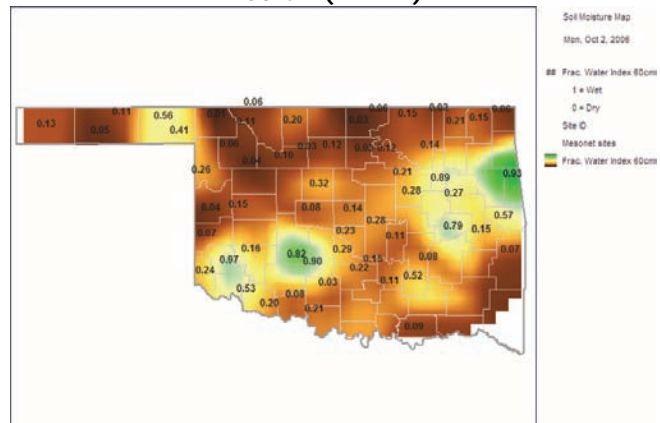
## SOIL MOISTURE

### Fractional Water Index<sup>1</sup> October 2, 2006

5 CM (~2 INCHES)



60 CM (~2 FEET)



<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. Specifically, 1.0 to 0.8 equals Enhanced Growth, 0.8 to 0.5 equals Limited Growth, 0.5 to 0.3 equals Plants Wilting, 0.3 to 0.1 equals Plants Dying, and less than 0.1 equals Barren Soil.

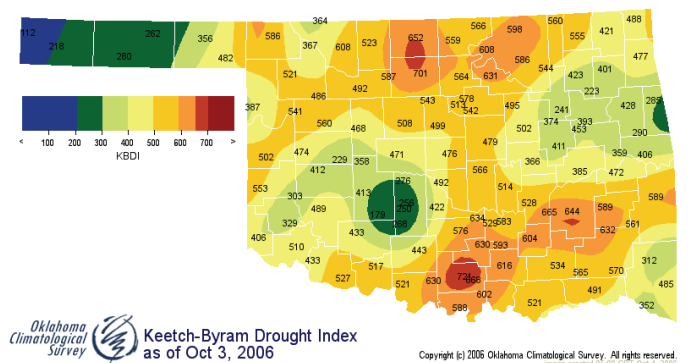
## DROUGHT INDICES

Palmer Drought Severity Index <sup>1</sup>					Standardized Precipitation Index <sup>2</sup> Through September 2006			
CLIMATE DIVISION (#)	CURRENT STATUS 9/30/2006	VALUE		CHANGE IN VALUE	3-MONTH	6-MONTH	9-MONTH	12-MONTH
		9/30	9/16					
Northwest (1)	INCIPIENT MOIST SPELL	0.53	0.83	-0.30	MODERATELY WET	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
North Central (2)	SEVERE DROUGHT	-3.60	-3.51	-0.09	NEAR NORMAL	MODERATELY DRY	VERY DRY	VERY DRY
Northeast (3)	EXTREME DROUGHT	-4.18	-4.66	0.48	NEAR NORMAL	NEAR NORMAL	MODERATELY DRY	VERY DRY
West Central (4)	MODERATE DROUGHT	-2.89	-2.67	-0.22	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
Central (5)	SEVERE DROUGHT	-3.99	-5.11	1.12	NEAR NORMAL	NEAR NORMAL	MODERATELY DRY	VERY DRY
East Central (6)	SEVERE DROUGHT	-3.55	-5.18	1.63	NEAR NORMAL	MODERATELY DRY	MODERATELY DRY	VERY DRY
Southwest (7)	MODERATE DROUGHT	-2.31	-2.86	0.55	NEAR NORMAL	NEAR NORMAL	MODERATELY DRY	VERY DRY
South Central (8)	SEVERE DROUGHT	-3.89	-4.96	1.07	MODERATELY DRY	VERY DRY	MODERATELY DRY	VERY DRY
Southeast (9)	SEVERE DROUGHT	-3.01	-4.38	1.37	MODERATELY DRY	MODERATELY DRY	NEAR NORMAL	VERY DRY

- Eight climate divisions are currently experiencing drought conditions.
- Six climate divisions have undergone PDSI moisture increases since September 16.

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

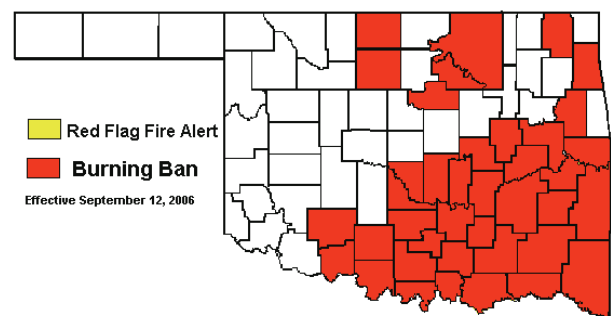
MESONET STATION	COUNTY	CLIMATE DIVISION	CURRENT VALUE 10/3/2006
Newport	Carter	South Central	719
Breckinridge	Garfield	North Central	699
Ardmore	Carter	South Central	665



- Stations currently above 600 (October 3) = 14
- Stations above 600 on September 19 = 19

### Statewide Wildfire Preparedness

As of September 12, the statewide Burning Ban has been amended to include 39 counties in southern, eastern, and northern Oklahoma. State officials urge citizens to avoid burning anything outdoors. Dry, grassy fuels will ignite easily when the humidity is low and the temperature and winds are high.



<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.

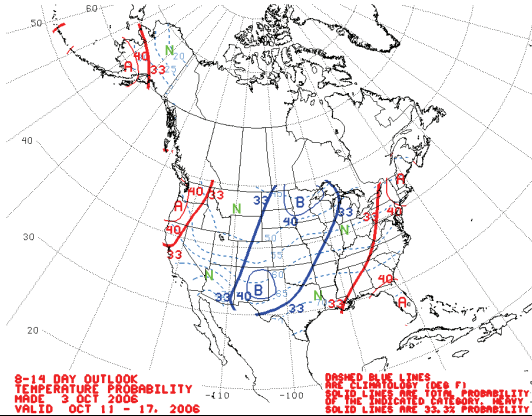
<sup>2</sup> The Standardized Precipitation Index, more sensitive than the PDSI, provides a comparison of precipitation over a specified period with precipitation totals from that same period for all years included in the historical record. The 3-month SPI provides a seasonal estimation of precipitation 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.

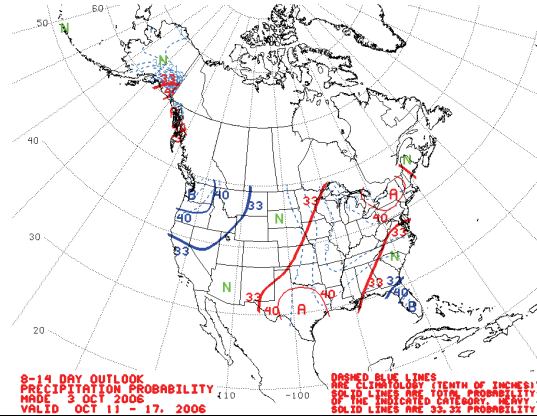
# WEATHER/DROUGHT FORECAST

8 to 14-Day Forecast  
October 11-17, 2006

## Temperature



## Precipitation

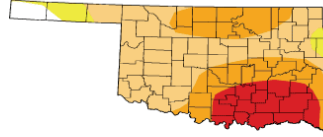


## U.S. Drought Monitor

October 3, 2006  
Valid 8 a.m. EST

Oklahoma

	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	2.7	97.3	92.7	46.2	16.6	0.0
Last Week (9/29/2006 map)	2.7	97.3	92.7	46.2	16.6	0.0
3 Months Ago (8/3/2006 map)	0.0	100.0	88.4	67.5	33.2	0.0
Start of Calendar Year (1/2/2006 map)	1.3	98.7	79.9	40.8	10.1	5.7
Start of Water Year (10/4/2005 map)	2.7	97.3	92.7	46.2	16.6	0.0
One Year Ago (10/4/2005 map)	80.1	19.9	9.1	0.2	0.0	0.0



**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.

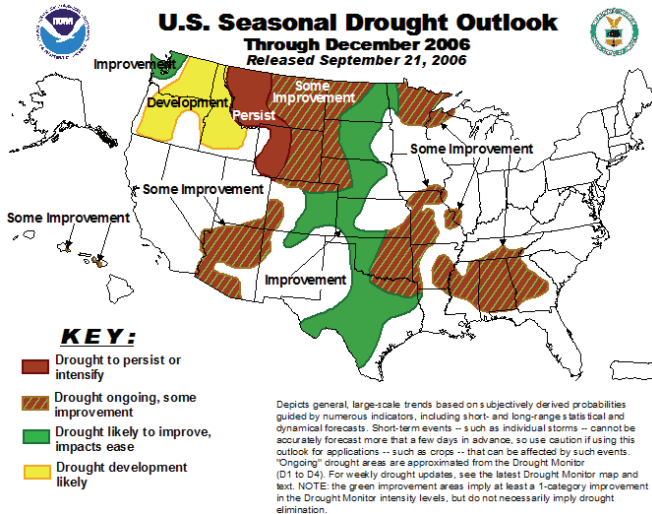
<http://drought.unl.edu/dm>

USDA  
 National Drought Mitigation Center  
 Released Thursday, October 5, 2006  
 Author: Rich Tinker, Climate Prediction Center, NOAA

## Drought Summary & Outlook—The Plains:

October 3—Little or no precipitation fell on those parts of the country classified as D0 (abnormally dry) or worse. Consequently, there were relatively few changes in the Drought Monitor map this week. Precipitation totals for the week topped 0.5 inch in isolated locations in southern Texas. Little or no precipitation fell on the remainder of the dry areas in the Great Plains. D1AH conditions expanded into many of the former D0AH areas in Missouri and Arkansas, and D3AH conditions pushed into part of central Texas, most notably in the Austin metropolitan area.

According to the Drought Outlook, the first half of September saw abundant rains bringing drought relief to many parts of the country, including the Southwest, southern Plains, the Rockies, and portions of the central and northern Plains and the Southeast. Indications are that further improvement will take place over many remaining drought areas in the Great Plains. In the Southwest, a record summer monsoon ended drought over New Mexico and parts of Arizona. Through December, some limited additional improvement is anticipated over remaining drought areas in Arizona, northwestern New Mexico, and southwestern Colorado. The expectation that recently-developed El Niño conditions should persist through the end of the calendar year makes it very unlikely the upcoming snow season will see anything resembling the dearth of snow observed last winter across the Southwest, and that should benefit water supplies. Elsewhere, some improvement is likely for drought areas from northeastern Texas into Missouri, and also across the Southeast.



## CROP REPORT

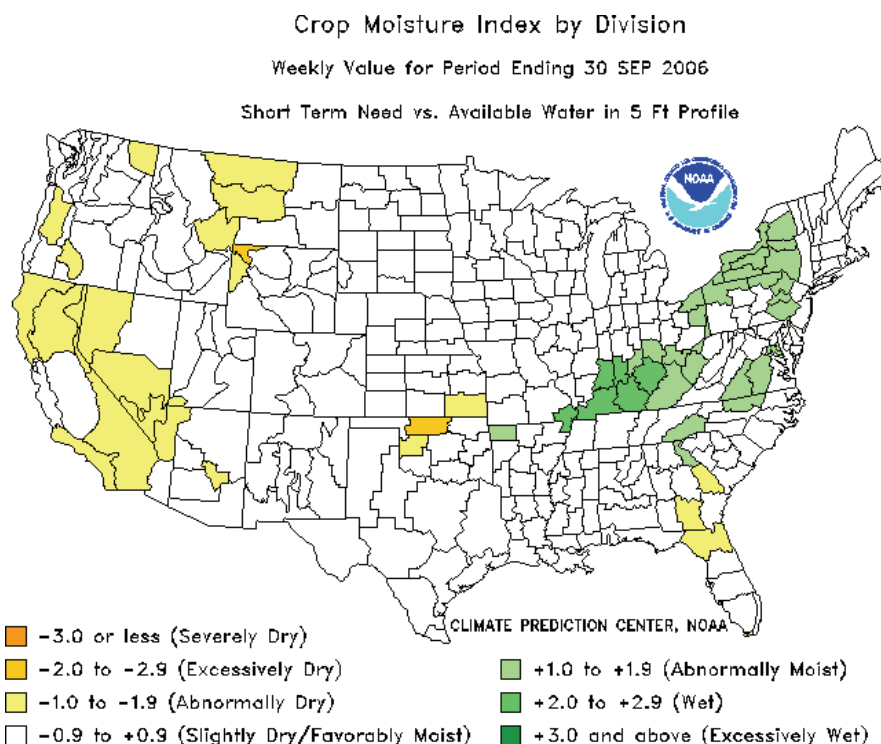
October 2—Oklahoma producers were again waiting for rainfall as last week's hot and windy weather pattern delayed many from planting their 2007 small grain crops. Even though very limited moisture was received last week, some producers were still able to plant their fields. Producers who were not able to plant last week had a good opportunity to prepare the fields and get the ground ready for the next rainfall. Some small grain producers were expecting to replant due to dry, wind-blown seedbeds. There were 6.5 days suitable for fieldwork.

Seedbed preparations for wheat were just slightly below normal at 92 percent. Wheat producers were eagerly awaiting more precipitation as they try to finish up wheat seeding. Wheat seeding was half complete. Wheat emergence was progressing at 22 percent but the dry winds and high temperatures were taking a toll on some already established fields. Some wheat producers had begun seeing army worms in seedling wheat. Seedbed preparations for rye were winding down while seeding was three-fourths complete. Rye emergence, at 37 percent, was 13 points behind normal. Oat seeding was slightly ahead of normal at 28 percent.

Major row crops in the state showed varying changes in condition last week. Peanut harvest had begun in a few isolated areas while two-thirds of the crop had reached maturity. Nearly all of the corn crop had reached maturity while harvest was progressing at 81 percent, a 21 point jump from last week. Sorghum development was still lagging and sorghum maturity and harvest were 34 and 19 percentage points behind normal, respectively. Soybeans at pod set was nearly complete by week's end. Over half of the soybean crop had matured with 30 percent of the crop already harvested, both behind normal. Nine percent of the peanuts were dug with combining underway at 3 percent. Cotton bolls were opening on 66 percent of the crop with harvest just beginning in limited areas.

Alfalfa conditions remained mostly in the fair to poor range with other hay conditions in the poor to very poor range. Ninety-one percent of the alfalfa crop had completed a fourth cutting, while fifth cuttings were 14 points below normal at 40 percent cut. Other hay second cuttings showed little advancement, and were 29 points behind normal. Pecan conditions remained mostly in the fair to poor range. Pecan nut set was rated as light last week.

Pasture and range conditions changed only slightly and remained mostly in the poor to very poor range. Pastures were continuing to show signs of drought across the state and grass growth was limited. Ponds and creek levels were diminishing due to lack of moisture and windy weather. Producers were hoping for more rainfall to fill up ponds for livestock. Livestock conditions showed improvement from last week but remained mostly in the fair to poor range. Livestock marketings were average with light to moderate insect activity.



## RESERVOIR STORAGE

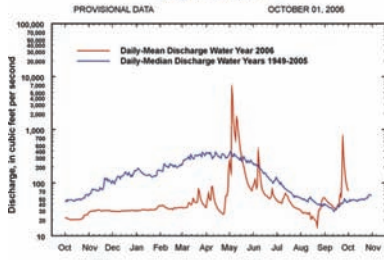
- 1.0 decrease (86.3%) in total storage from that recorded on September 19 (87.3%)
- 27 reservoirs have experienced lake level decreases
- 28 reservoirs are currently operating at less than full capacity (compared to 25 two weeks ago)
- 8 reservoirs are now below 80 percent of their total conservation storage

<b>Storage in Selected Oklahoma Lakes &amp; Reservoirs</b>			
<i>October 4, 2006</i>			
<b>Climate Division Lake or Reservoir</b>	<b>Conservation Storage (acre-feet)</b>	<b>Present Storage (acre-feet)</b>	<b>Percent of Conservation Storage</b>
<b>North Central</b>			
Fort Supply	13,900	9,888	71.1
Great Salt Plains	31,420	25,986	82.7
Kaw*	375,160	375,160	100.0
<b>Regional Totals/Averages</b>	<b>420,480</b>	<b>411,034</b>	<b>97.8</b>
<b>Northeast</b>			
Birch	19,225	16,665	86.7
Copan	34,634	27,817	80.3
Fort Gibson	365,200	361,087	98.9
Grand	1,672,000	1,509,910	90.3
Hudson	200,300	195,802	97.8
Hulah	22,565	20,240	89.7
Keystone	512,307	418,770	81.7
Oologah	552,219	510,351	92.4
Skiatook	322,700	228,371	70.8
<b>Regional Totals/Averages</b>	<b>3,701,150</b>	<b>3,289,013</b>	<b>88.9</b>
<b>West Central</b>			
Canton	111,310	74,178	66.6
Foss	165,480	136,940	82.8
<b>Regional Totals/Averages</b>	<b>276,790</b>	<b>211,118</b>	<b>76.3</b>
<b>Central</b>			
Arcadia	27,520	27,502	99.9
Heyburn	7,105	5,691	80.1
Thunderbird	119,600	78,486	65.6
<b>Regional Totals/Averages</b>	<b>154,225</b>	<b>111,679</b>	<b>72.4</b>
<b>East Central</b>			
Eufaula*	2,314,583	1,967,711	85.0
Tenkiller	654,100	602,009	92.0
<b>Regional Totals/Averages</b>	<b>2,968,683</b>	<b>2,569,720</b>	<b>86.6</b>
<b>Southwest</b>			
Fort Cobb	80,010	72,710	90.9
Lugert-Altus	132,830	10,508	7.9
Tom Steed	88,970	40,510	45.5
<b>Regional Totals/Averages</b>	<b>301,810</b>	<b>123,728</b>	<b>41.0</b>
<b>South Central</b>			
Arbuckle	72,400	63,165	87.2
McGee Creek	113,930	96,505	84.7
Texoma*	2,556,122	2,257,985	88.3
Waurika*	190,200	139,059	73.1
<b>Regional Totals/Averages</b>	<b>2,932,652</b>	<b>2,556,714</b>	<b>87.2</b>
<b>Southeast</b>			
Broken Bow*	954,175	796,073	83.4
Hugo*	158,617	158,617	100.0
Pine Creek*	53,750	53,750	100.0
Sardis	274,330	252,137	91.9
Wister	60,162	47,915	79.6
<b>Regional Totals/Averages</b>	<b>1,501,034</b>	<b>1,308,492</b>	<b>87.2</b>
<b>State Totals</b>	<b>12,256,824</b>	<b>10,581,498</b>	<b>86.3</b>

# STREAMFLOW CONDITIONS

## Baron Fork at Eldon

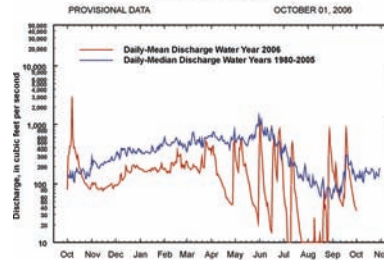
Baron Fork at Eldon, Oklahoma  
Station No. 07197000 Northeast Oklahoma  
Drainage Area 307 square miles



Comparison of daily discharges for water year 2006 and period of record  
Data from U.S. Geological Survey

## Canadian River at Purcell

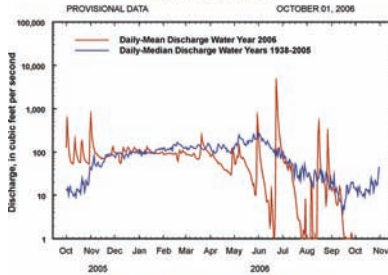
Canadian River at Purcell, Oklahoma  
Station No. 07229200 Central Oklahoma  
Drainage Area 25,939 square miles



Comparison of daily discharges for water year 2006 and period of record  
Data from U.S. Geological Survey

## Cimarron River near Waynoka

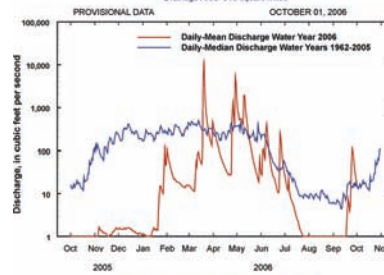
Cimarron River near Waynoka, Oklahoma  
Station No. 07150000 Northwest Oklahoma  
Drainage Area 13,334 square miles



Comparison of daily discharges for water year 2006 and period of record  
Data from U.S. Geological Survey

## Glover River near Glover

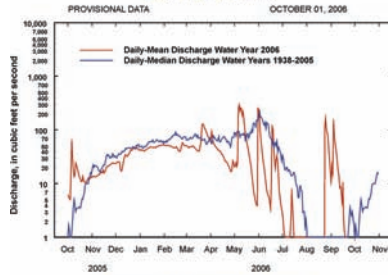
Glover River near Glover, Oklahoma  
Station No. 07337900 Southeast Oklahoma  
Drainage Area 315 square miles



Comparison of daily discharges for water year 2006 and period of record  
Data from U.S. Geological Survey

## North Fork of the Red River near Carter

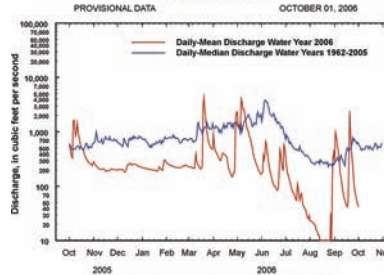
North Fork of the Red River near Carter, Oklahoma  
Station No. 07301500 Southwest Oklahoma  
Drainage Area 2,337 square miles



Comparison of daily discharges for water year 2006 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 year 2006 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.state.ok.us](http://www.owrb.state.ok.us) and <http://www.mesonet.ou.edu/public>.