Oklahoma Water Resources Bulletin
& Summary of Current Conditions

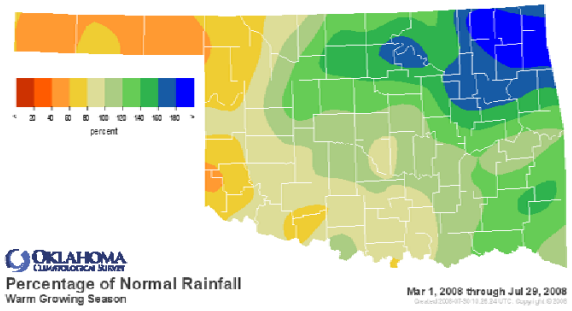
State of Oklahoma OWRB Water Resources Board the water agency

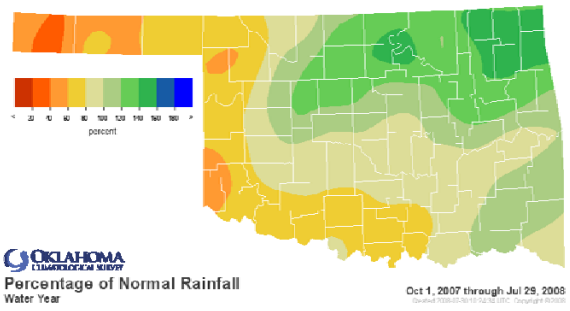
July 31, 2008

PRECIPITATION

Preliminary Statewide Precipitation

Climate Division (#)	Warm Growing Season March 1—July 29, 2008				Water Year October 1, 2007—July 29, 2008			
	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	6.97"	-5.17"	57%	5th driest	9.45"	-7.09"	57%	5th driest
North Central	20.34"	+3.25"	119%	13th wettest	27.49"	+2.21"	109%	19th wettest
Northeast	35.89"	+15.17"	173%	1st wettest	47.79"	+13.98"	141%	4th wettest
West Central	14.47"	-1.28"	92%	38th wettest	20.03"	-3.17"	86%	37th driest
Central	22.28"	+2.90"	115%	17th wettest	31.08"	-0.00"	100%	24th wettest
East Central	30.21"	+8.26"	138%	6th wettest	41.85"	+3.78"	110%	20th wettest
Southwest	13.64"	-2.46"	85%	35th driest	19.15"	-5.43"	78%	24th driest
South Central	19.08"	-0.85"	96%	41st wettest	26.77"	-7.15"	79%	21st driest
Southeast	29.98"	+6.61"	128%	10th wettest	44.81"	+1.38"	103%	30th wettest
Statewide	21.55"	+3.04"	116%	10th wettest	29.91"	-0.02"	100%	29th wettest

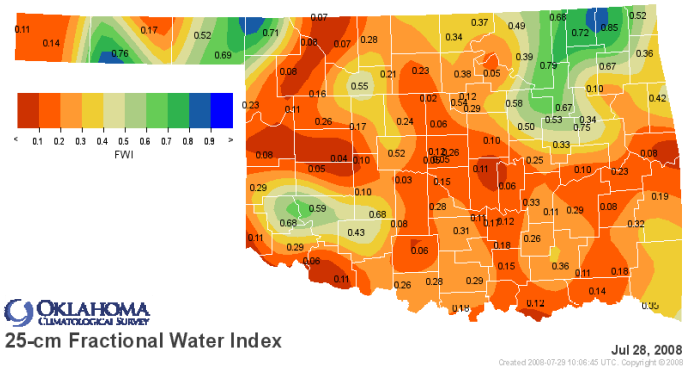


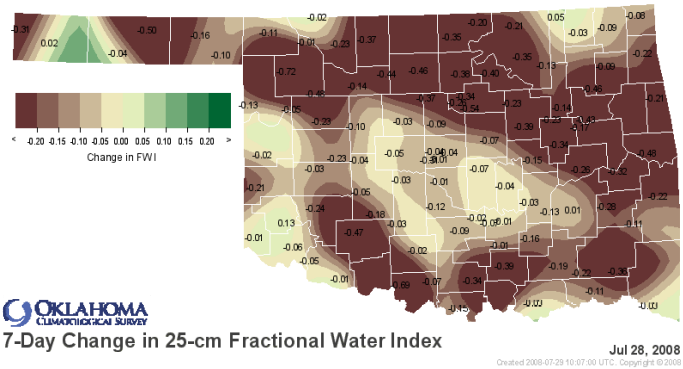


SOIL MOISTURE

Fractional Water Index[1]
July 28, 2008

25 CM (~10 INCHES)





[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. 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[1]

Climate Division (#)	Current Status 7/26/2008	Value 7/26	Value 7/5	Change In Value
Northwest (1)	MODERATE DROUGHT	-2.15	-2.42	**0.27**
North Central (2)	VERY MOIST SPELL	3.83	3.83	**0.00**
Northeast (3)	EXTREME MOIST SPELL	4.74	4.88	**-0.14**
West Central (4)	MOIST SPELL	1.43	2.25	**-0.82**
Central (5)	UNUSUAL MOIST SPELL	2.43	3.46	**-1.03**
East Central (6)	MOIST SPELL	1.93	2.74	**-0.81**
Southwest (7)	MILD DROUGHT	-1.62	-0.51	**-1.11**
South Central (8)	MILD DROUGHT	-1.72	-0.70	**-1.02**
Southeast (9)	INCIPIENT MOIST SPELL	0.91	2.27	**-1.36**

Standardized Precipitation Index[2] Through June 2008

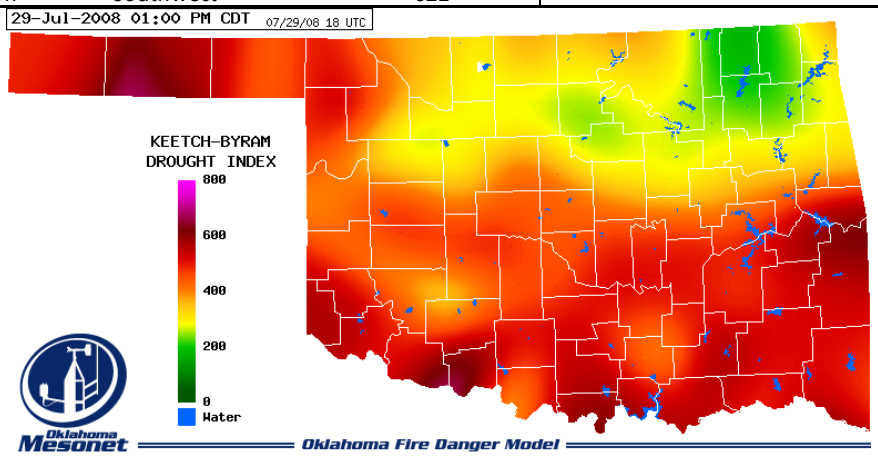
Climate Division (#)	3-Month	6-Month	9-Month	12-Month
Northwest (1)	MODERATELY DRY	MODERATELY DRY	MODERATELY DRY	VERY DRY
North Central (2)	VERY WET	VERY WET	VERY WET	MODERATELY WET
Northeast (3)	EXTREMELY WET	EXTREMELY WET	EXTREMELY WET	VERY WET
West Central (4)	NEAR NORMAL	MODERATELY WET	MODERATELY WET	VERY WET
Central (5)	MODERATELY WET	MODERATELY WET	MODERATELY WET	VERY WET
East Central (6)	MODERATELY WET	VERY WET	MODERATELY WET	VERY WET
Southwest (7)	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
South Central (8)	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
Southeast (9)	NEAR NORMAL	VERY WET	MODERATELY WET	MODERATELY WET

- Three climate divisions are currently experiencing drought conditions, according to the PDSI.
- Seven climate divisions have undergone PDSI moisture decreases since July 5.
- One climate division (the Northwest) is experiencing long-term dry conditions, according to the SPI.

Keetch-Byram Drought Fire Index[3]

Mesonet Station	County	Climate Division	Current Value 7/29/2008
Goodwell	Texas	Northwest	635
Grandfield	Tillman	Southwest	624
Walters	Cotton	Southwest	621

- Stations currently above 600 (July 29) = 3
- Stations above 600 on July 7 = 3



[1] 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.

[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.

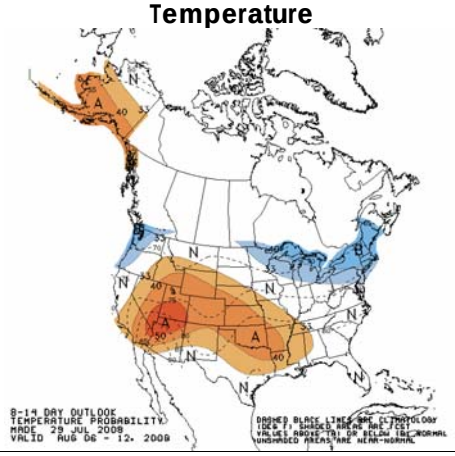
[3] The Keetch-Byram Drought Index measures the state of near-surface soil moisture (within the uppermost eight inches of soil) as well as the amount of fuel available for fires. KBDI values of 600 and above are often associated with more severe drought and increased wildfire occurrence.

WEATHER/DROUGHT FORECAST

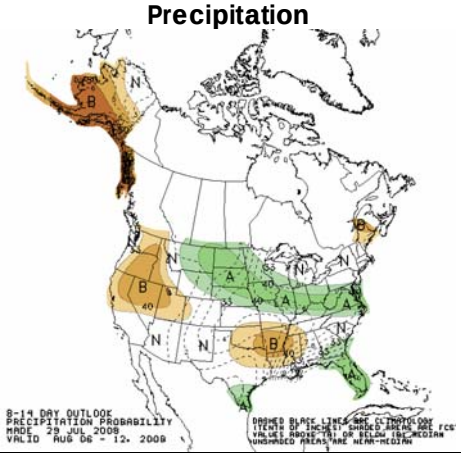
8- to 14-Day Outlook

August 6-12, 2008

Temperature



Precipitation



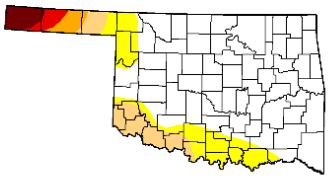
U.S. Drought Monitor

Oklahoma

July 29, 2008
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	74.0	26.0	13.0	5.6	3.9	2.4
Last Week (07/22/2008 map)	74.0	26.0	13.0	5.6	3.9	2.4
3 Months Ago (05/06/2008 map)	88.6	11.4	8.2	4.5	0.0	0.0
Start of Calendar Year (01/01/2008 map)	83.4	16.6	7.1	0.0	0.0	0.0
Start of Water Year (10/02/2007 map)	95.6	4.4	0.0	0.0	0.0	0.0
One Year Ago (07/31/2007 map)	97.8	2.2	0.0	0.0	0.0	0.0



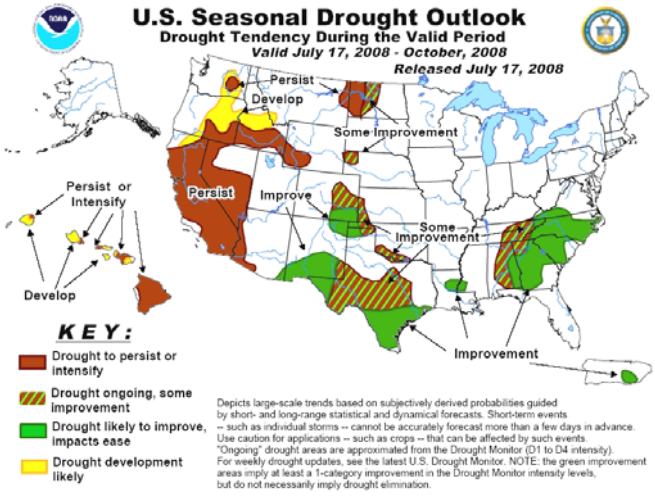
Intensity:

- 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

Released Thursday, July 31, 2008
Author: B. Fuchs, NDMC, and L. Edwards, WRCC



Regional Drought Summary & Outlook:

July 29—Texas saw both intensification and improvement this week. With the full assessment of tropical storm Dolly available, conditions were improved over the regions that received the most rain from this event. D0 was also eliminated in far west Texas and into southern New Mexico as monsoonal moisture along with the remnants of Dolly helped to improve conditions and even brought flooding in this region. In north central Texas, D2 was introduced and D1 was expanded to the west and east, as this area is close to 7.50 inches below normal precipitation since May 1. D0 was expanded in northeast Texas and D1 was also introduced into the Panhandle region. D2 was expanded and D3 introduced in the Pecos region, as this area has not benefited from the most recent rains. Midland Airpark has received only 0.76 inches of precipitation since May 1, which is close to 15 percent of normal for what should be the wettest time of year in this area.

According to the latest Drought Outlook, improvement is on tap for southern and eastern Texas with more limited relief for central and southwestern Texas. Extended-range forecasts suggest improvement during the second half of July due to a favorable upper air pattern. Later in the season there is an overall climatological increase in the odds for rain from tropical activity. For central Texas, some improvement is forecast due to the odds favoring improved soil moisture by late in the season. However, the water supply situation, including groundwater levels, should see little improvement unless a tropical weather system strikes the area. To the west, the robust onset of the summer monsoon during the first week in July has resulted in an increase in rainfall amounts.

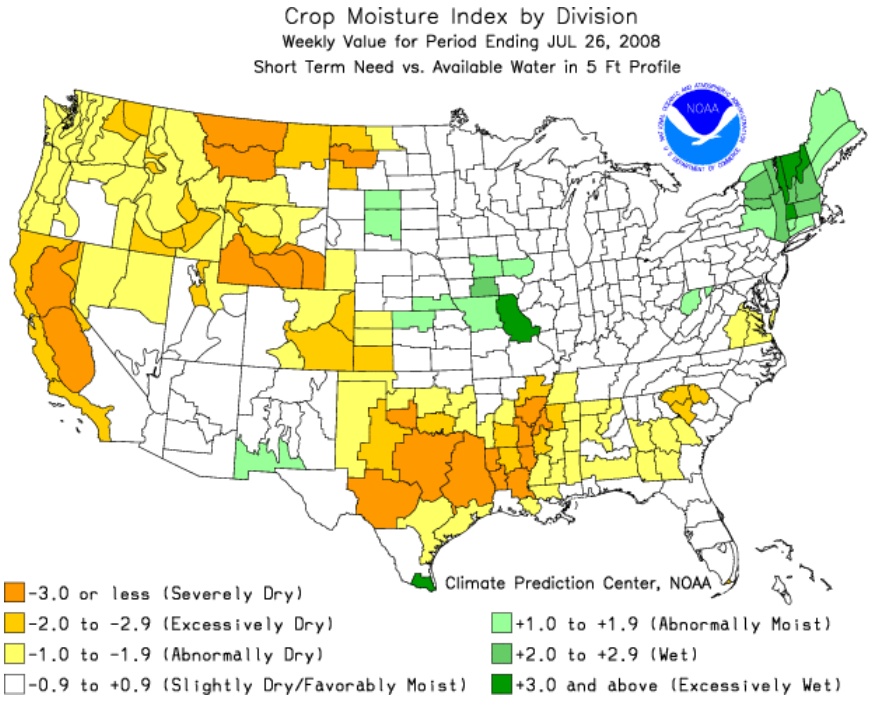
CROP REPORT

July 28, 2008—On July 27, 106 degrees was recorded in Tipton. Nearly all of Oklahoma was under a heat-related weather advisory sometime last week. Hot, dry winds were taking a toll on both irrigated and dryland crops. In some areas, irrigated crops had to be watered around the clock to keep up with moisture needs. Topsoil and subsoil moisture supplies decreased, leaving 28 percent of the state's topsoil moisture rated very short. There were 6.5 days suitable for fieldwork.

Many producers continued to cultivate small grain acres last week, causing winter wheat plowed to jump eight percentage points, rye plowed to increase six percentage points, and oats plowed to go up nine percentage points from the previous week. All were running close to normal. Hot, dry days have slowed progression of row crops. Some recently planted double crops risk failure if rainfall is not received. Corn silking reached 86 percent, an increase of seven percentage points from last week but two points behind normal. Forty-five percent of the corn crop had reached the dough stage, up eight points from the previous week but also eight points behind the five-year average. Twenty-three percent of the corn crop was beginning to dent. Sorghum emerged was at 86 percent, a 10 point jump from the previous week but 12 points behind normal. Twenty-five percent of the state's sorghum had headed, an increase of three points from the previous week. A small percentage of the state's sorghum was coloring by week's end. Soybeans emerged were at 98 percent, an increase of six points from the previous week and four points ahead of the five-year average. Soybeans blooming were at 53 percent by the end of the week, an increase of seven points from the previous week and five points ahead of normal. Thirteen percent of the state's soybeans were setting pods, 13 points behind normal. Peanuts pegging increased four points from the previous week to reach 85 percent, eight points behind normal, while peanuts setting pods were at 56 percent, five points behind normal. Cotton squaring increased two points to reach 66 percent, 17 points behind normal, and 19 percent of the state's cotton acreage was setting bolls, 15 points behind the five-year average.

The warm, dry weather allowed producers to cut and bale hay through Sunday. Eighty-three percent of the state's alfalfa had been cut for the third time, an eight-point increase from the previous week and three percentage points ahead of normal. Twelve percent of the state's alfalfa had been cut for the fourth time. Other hay first cutting increased six points from the previous week to reach 86 percent complete, while other hay second cutting reached 14 percent, 12 points behind the five-year average. Ninety-five percent of the state's watermelons were setting fruit, an increase of three percentage points from last week but four points behind normal. Watermelons harvested had reached 54 percent complete by week's end, nine points behind normal.

Pasture and range conditions remained mostly in the good to fair range despite the recent, extremely dry weather. Livestock conditions were rated mostly in the good to fair range. Mostly light to moderate insect activity was reported.



RESERVOIR STORAGE

- 15 reservoirs are currently operating at less than full capacity (compared to 6 three weeks ago).
- 29 reservoirs have experienced lake level decreases.

Storage in Selected Oklahoma Lakes & Reservoirs
July 29, 2008

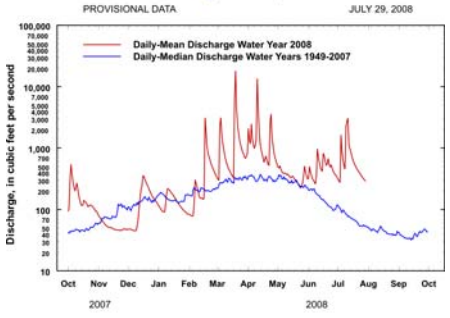
Lake or Reservoir	*Normal Pool Elevation* (feet)	*Previous Elevation 07/09/2008* (feet)	*Current Elevation 07/29/2008* (feet)	*Change in Elevation* (feet)	*Current Flood Control Storage* (acre-feet)
North Central					
Fort Supply	2004.00	2004.21	2004.28	0.07	526
Great Salt Plains	1125.00	1125.35	1124.80	(0.55)	(1,488)
Kaw*	1009.30	1024.15	1010.52	(13.63)	20,950
Northeast					
Birch	750.50	751.49	750.65	(0.84)	172
Copan	710.00	714.04	710.73	(3.31)	4,143
Fort Gibson	554.00	562.93	556.40	(6.53)	47,661
Grand	745.00	747.96	744.09	(3.87)	(41,859)
Hudson	619.00	624.45	620.89	(3.56)	21,187
Hulah	733.00	743.26	733.30	(9.96)	1,850
Keystone	723.00	731.49	726.26	(5.23)	78,850
Oologah	638.00	646.60	641.16	(5.44)	103,849
Skiatook	714.00	716.50	714.40	(2.10)	4,376
West Central					
Canton	1615.40	1615.50	1615.30	(0.20)	(794)
Foss	1642.00	1641.90	1641.81	(0.09)	(1,269)
Central					
Arcadia	1006.00	1005.95	1005.89	(0.06)	(196)
Heyburn	761.50	761.79	761.52	(0.27)	20
Thunderbird	1039.00	1039.37	1038.89	(0.48)	(660)
East Central					
Eufaula*	585.90	588.60	586.49	(2.11)	56,753
Tenkiller	632.00	635.24	636.12	0.88	54,468
Southwest					
Fort Cobb	1342.00	1342.16	1341.84	(0.32)	(595)
Lugert-Altus	1559.00	1553.48	1548.45	(5.03)	(55,946)
Tom Steed	1411.00	1409.86	1409.46	(0.40)	(9,460)
South Central					
Arbuckle	872.00	871.76	871.23	(0.53)	(1,786)
McGee Creek**	175.90	176.36	176.17	(0.19)	3,431
Texoma*	618.20	618.03	616.36	(1.67)	(139,710)
Waurika*	951.40	951.30	950.89	(0.41)	(5,122)
Southeast					
Broken Bow*	602.50	602.82	601.38	(1.44)	(16,288)
Hugo*	406.00	406.77	405.08	(1.69)	(12,348)
Pine Creek*	441.40	443.75	443.17	(0.58)	8,432
Sardis	599.00	599.33	599.01	(0.32)	139
Wister	478.00	478.28	477.86	(0.42)	(1,001)

** indicates seasonal pool operation* *** elevation in meters* *negative numbers in red, parentheses*

STREAMFLOW CONDITIONS

Baron Fork at Eldon

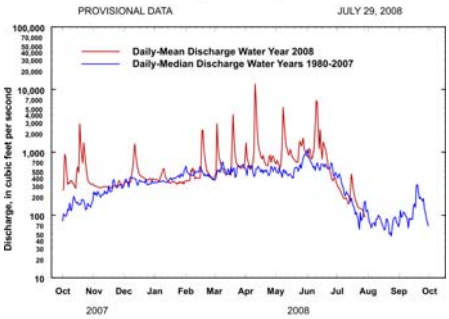
Baron Fork at Eldon, Oklahoma
Station No. 07197000 Northeast Oklahoma
Drainage Area 307 square miles



Comparison of daily discharges for water year 2008
and period of record
Data from U.S. Geological Survey

Canadian River at Purcell

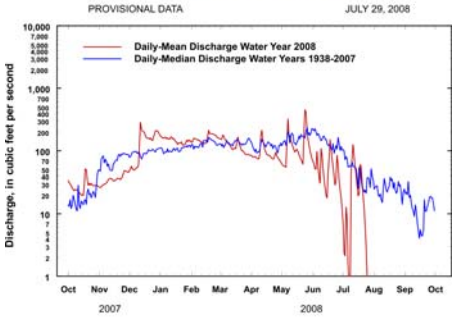
Canadian River at Purcell, Oklahoma
Station No. 07229200 Central Oklahoma
Drainage Area 25,939 square miles



Comparison of daily discharges for water year 2008
and period of record
Data from U.S. Geological Survey

Cimarron River near Waynoka

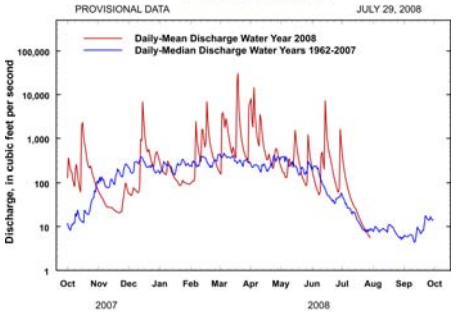
Cimarron River near Waynoka, Oklahoma
Station No. 07158000 Northwest Oklahoma
Drainage Area 13,334 square miles



Comparison of daily discharges for water year 2008
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 2008
and period of record
Data from U.S. Geological Survey

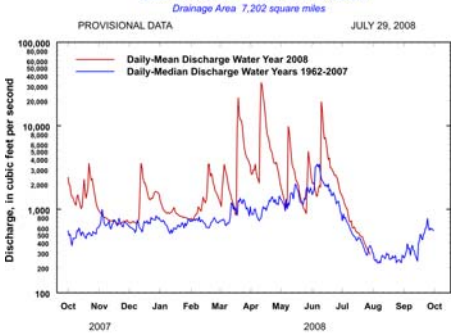
North Fork of the Red River near Carter

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 2008
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 2008
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 and www.mesonet.org**.