Oklahoma Water Resources Bulletin

& Summary of Current Conditions

July 26, 2005

Statewide Precipitation & General Summary

Much of Oklahoma, especially in the south, remains relatively dry.

According to preliminary Mesonet weather station data provided by the Oklahoma Climatological Survey and National Weather Service (see below), the area receiving the lowest percent of normal rainfall over the last 30 days (from June 25 through July 24) remains the Southeast climate division (1.73 inches, only 47 percent of normal). The current state-averaged rainfall total is 2.43 inches—a deficit of 0.54 inches and 82 percent of normal.

For the warm growing season, which began March 1, moisture conditions continue to be less favorable. Three regions—the Southeast, South Central and East Central climate divisions—have received less than 60 percent of their anticipated normal precipitation. The state-averaged rainfall total is 11.71 inches, 65 percent of normal.

Preliminary Statewide Precipitation
By Climate Division

DIVISION (#)	Warm Growing Season March 1—July 24, 2005			Last 30 Days June 25—July 24, 2005		
	Total Rainfall (inches)	Departure From Normal (inches)	Percent Of Normal	Total Rainfall (inches)	Departure From Normal (inches)	Percent Of Normal
Panhandle	10.40	-1.33	89	1.96	-0.58	77
North Central	12.54	-4.07	75	2.60	-0.50	84
Northeast	13.90	-6.32	69	2.64	-0.73	78
West Central	11.61	-3.80	75	1.67	-0.75	69
Central	11.95	-7.01	63	2.89	-0.01	100
East Central	12.71	-8.77	59	2.25	-1.03	69
Southwest	9.68	-6.07	61	2.26	-0.26	90
South Central	10.72	-8.79	55	3.32	+0.43	115
Southeast	11.52	-11.28	51	1.73	-1.99	47
Statewide	11.71	-6.35	65	2.43	-0.54	82

Information and data contained in this update of Oklahoma's water resource conditions are courtesy of the National Weather Service, Climate Prediction Center, Oklahoma Climatological Survey, State Department of Agriculture, Oklahoma Forestry Services, 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. This publication is issued weekly during times of specific concern regarding statewide or regional water situations and periodically—biweekly or monthly—the remainder of the year. **For more information, visit http://www.owrb.state.ok.us/features/drought.html and http://climate.ocs.ou.edu/drought/**.

Drought Indices

According to the latest Palmer Drought Severity Index (July 23, below), six regions in Oklahoma are currently experiencing drought conditions, including the Southeast climate division, which is now in "severe drought." The South Central, East Central, and Central climate divisions are all in "moderate drought" while the Southwest and Northeast climate divisions are in "mild drought." Eight of Oklahoma's nine climate divisions have undergone PDSI moisture decreases since July 2. The greatest decrease occurred in the West Central climate division.

The latest monthly Standardized Precipitation Index (through June, below) continues to reflect relatively dry conditions in Oklahoma over the past several months. Among the *selected* time periods (3-, 6-, 9- and 12-month SPIs), "very dry" conditions exist in East Central, South Central and Southeast Oklahoma over the past 90 days. The 6-month SPI indicates "moderately dry" conditions in the South Central and Southeast climate divisions. Considering longer periods (through six years), only the Southeast climate division reports "moderately dry" conditions over the past 30 and 36 months. [SPI updates are available around the 10th of each month.]

The latest Keetch-Byram Drought Index (July 25, below), which 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, indicates that drought-related fire conditions are beginning to worsen, especially in southeast Oklahoma. Statewide, five Mesonet stations are currently at or above 600, generally indicative of more severe drought conditions (no stations had a reading above 600 on July 7). Talihina, in southeast Oklahoma, has the highest KBDI value (670). According to the Oklahoma Department of Agriculture, Food, and Forestry, Statewide Wildfire Preparedness is at Level 3 (high fire danger). As of July 15, **a Red Flag Fire Alert is in effect for nine counties in southeast and south central Oklahoma**. Extended very dry conditions through June and July has increased the fire danger in southern Oklahoma counties. Dry, grassy fuels will ignite easily and burn with surprising intensity; state fire officials ask citizens to avoid burning anything outdoors when winds exceed 20 miles per hour.

Palmer Drought Severity Index / Standardized Precipitation Index (Through June 2005)

Climate Division (#)	Current Status 7/23/2005	Value 7/23	Value 7/2	Change In Value	3-Month	6-Month	9-Month	12-Month
Northwest (1)	UNUSUAL MOIST SPELL	2.22	2.96	**-0.74**	NEAR NORMAL	NEAR NORMAL	MODERATELY WET	VERY WET
North Central (2)	NEAR NORMAL	0.41	0.44	**-0.03**	NEAR NORMAL	NEAR NORMAL	MODERATELY WET	NEAR NORMAL
Northeast (3)	MILD DROUGHT	-1.75	-1.44	**-0.31**	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
West Central (4)	NEAR NORMAL	-0.13	0.74	**-0.87**	NEAR NORMAL	NEAR NORMAL	MODERATELY WET	MODERATELY WET
Central (5)	MODERATE DROUGHT	-2.07	-2.10	**0.03**	MODERATELY DRY	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
East Central (6)	MODERATE DROUGHT	-2.76	-2.30	**-0.46**	VERY DRY	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
Southwest (7)	MILD DROUGHT	-1.92	-1.75	**-0.17**	MODERATELY DRY	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
South Central (8)	MODERATE DROUGHT	-2.84	-2.79	**-0.05**	VERY DRY	MODERATELY DRY	NEAR NORMAL	NEAR NORMAL
Southeast (9)	SEVERE DROUGHT	-3.13	-2.73	**-0.40**	VERY DRY	MODERATELY DRY	NEAR NORMAL	NEAR NORMAL

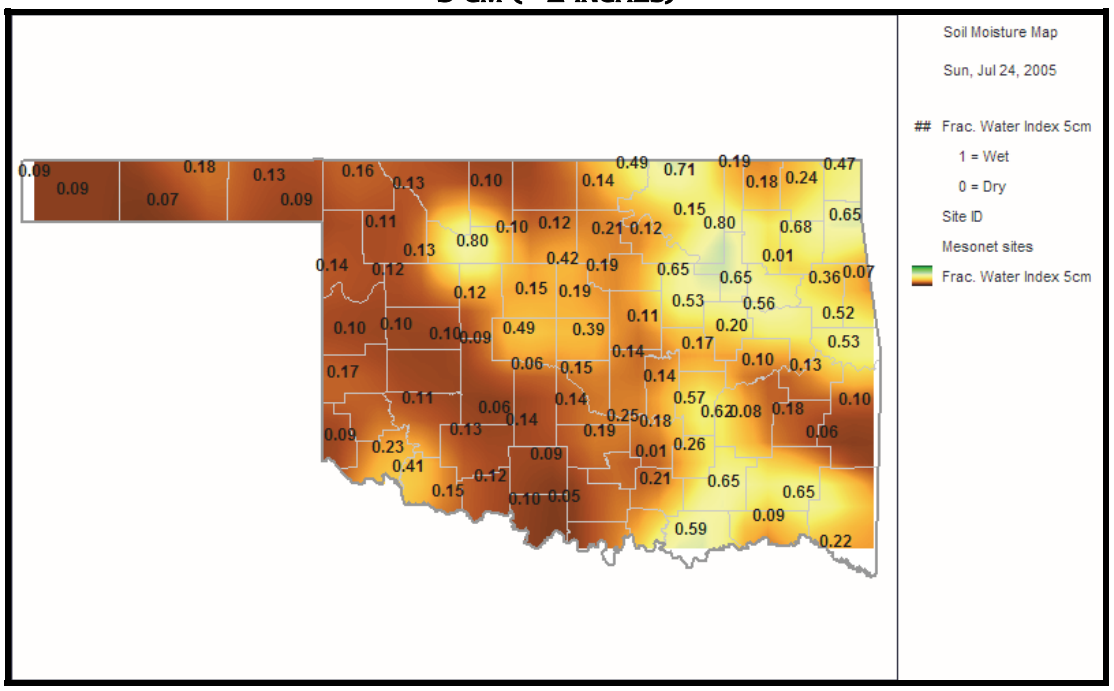
Keetch-Byram Drought Fire Index

Mesonet Station	County	Climate Division	Current Value 7/25/2005	Anticipated Impact
Talihina	McCurtain	Southeast	670	600-800: often associated with more severe drought; increased wildfire occurrence; intense deep burning fires with significant downwind spotting; live fuels also expected to burn actively.
Idabel	McCurtain	Southeast	661	
Broken Bow	McCurtain	Southeast	656	400-600: lower litter and duff layers actively contribute to fire intensity and will burn actively; typical of late summer, early fall.
Total stations above 600 = 5				

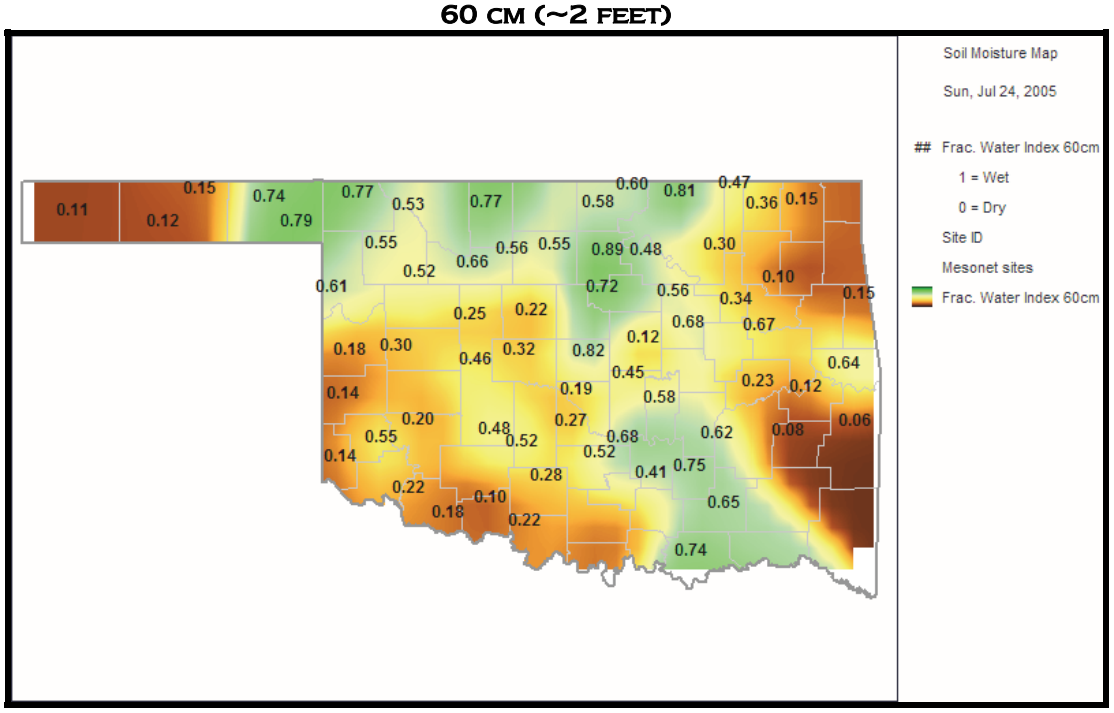
The PDSI may underestimate or overestimate the severity of ongoing dry periods. The SPI, more sensitive than the PDSI, provides a comparison of precipitation over a specified period with precipitation totals from that same period for all years included in the historical record. The 3-month SPI provides a seasonal estimation of precipitation while the 6-month SPI can be very effective in showing precipitation over distinct seasons. The Keetch-Byram Drought Index provides a gauge of dead fuel currently available for potential fires.

Soil Moisture
Fractional Water Index
July 24, 2005
(Courtesy Oklahoma Climatological Survey)

5 cm (~2 inches)



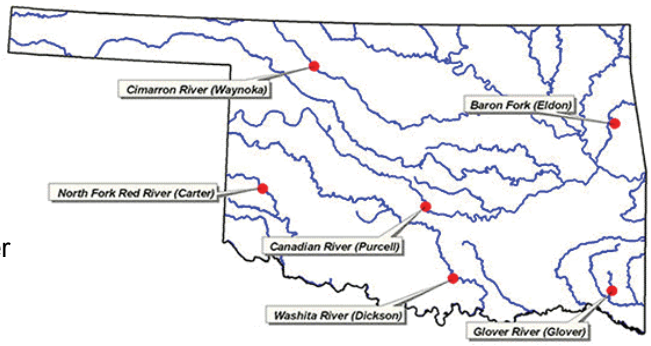
60 cm (~2 feet)



FWI Value	Soil Wetness Conditions
1.0 – 0.8	Enhanced Growth (~Field Capacity)
0.8 – 0.5	Limited Growth
0.5 – 0.3	Plants Dying
< 0.1	Barren Soil

Streamflow Conditions

Flows in rivers and streams in Oklahoma remain a concern due to the recent dry weather. Considering overall trends as well as current flows, the most recent data (July 19, attached) from the six U.S. Geological Survey/OWRB stream gage sites selected to monitor the general condition of Oklahoma streams (daily streamflow since October 1, 2004, compared to long-term, normal/median daily discharges) indicate **much below average flow** in *southeast* (Glover River, McCurtain County) and *central* (Canadian River, McClain County) Oklahoma; **below average flow** in the *northeast* (Baron Fork, Cherokee County) region; and **near average flow** in *south central* (Washita River, Carter County), *southwest* (North Fork/Red River, Beckham County), and *northwest* (Cimarron River, Woods County) Oklahoma.



Weather Forecast

The National Weather Service 8- to 14-day outlook (August 1-7) calls for normal precipitation for most of Oklahoma although below normal rainfall is expected to occur throughout much of the Panhandle region with above normal rainfall in portions of southeast and east central Oklahoma. Above normal temperatures are forecasted for the entire state throughout the period.

A majority of the statistical and coupled model forecasts indicate that near neutral El Niño Southern Oscillation (ENSO) conditions will continue throughout the next three to six months. El Niños, warm water patterns that increase the chances for generally cooler, wetter conditions in the southern U.S. (including Oklahoma), occur about every two to seven years.

Crop Report

July 25 - Extremely hot weather coupled with little to no rain adversely affected soil moisture by week's end. Sixty-four percent of topsoil moisture was in the short to very short categories compared to 39 percent in the same two categories the week before. Subsoil moisture was not affected as great as topsoil, but still showed an 8-point decrease in moisture rated as adequate. There were 6.7 days suitable for field work.

Small grain harvest has completed. Wheat, oats and rye were 87, 90, and 96 percent plowed, respectively. Due to the extremely high cost of fuel, many producers indicated that they plan to practice no-tillage or minimum tillage for small grain seedbed preparation this fall.

Many dryland crops were beginning to show signs of heat stress due to the high temperatures and lack of moisture. As of this report, row crops were still in mostly good condition. Forty percent of corn was in the dough stage. Corn maturity gained an additional 4 points to 11 percent mature. Sorghum heading and coloring increased slightly to 26 and 6 percent, respectively. Soybeans blooming reached 51 percent while 23 percent were setting pods. Peanuts pegging increased 4 points from the previous week to 94 percent complete, which was 9 points ahead of normal. In addition, peanut setting pods was 11 points ahead of normal at 60 percent. Cotton progressed to 83 percent squaring and 11 percent setting bolls. Crop and insect activities were light to moderate.

Both alfalfa and other hay remained in fair to good condition. The third cutting of alfalfa advanced to 85 percent complete, 10 points higher than the five-year average. Other hay first cutting was nearly complete with 91 percent cut while the second cutting gained three percentage points to 23 percent cut. Fifty-one percent of the watermelon crop has been harvested. Watermelon conditions were mostly fair to good.

Pasture conditions dipped slightly over the week, but still remain in mostly good to fair condition. Hot weather has dried out some areas. Livestock continued to be in mostly good condition. Livestock marketings were rated as average. Death loss of cattle was mostly light to average. Livestock insect activity was light to moderate.

Reservoir Storage

Lake storage in Oklahoma remains generally good. As of July 25, the combined normal conservation pools of 31 selected major federal reservoirs across Oklahoma (see below) are approximately 91.0 percent full, a 1.2 percent decrease from that recorded on July 5, according to information from the U.S. Army Corps of Engineers (Tulsa District). Twenty-six reservoirs have experienced lake level decreases since that time; 20 reservoirs are currently operating at less than full capacity (compared to 17 three weeks ago). Two reservoirs—Lugert-Altus, only 56.2 percent full; and Tom Steed, 69.7 percent—remain below 80 percent capacity.

Storage in Selected Oklahoma Lakes & Reservoirs
07/25/2005

Climate Division *Lake or Reservoir*	*Conservation Storage* (acre-feet)	*Present Storage* (acre-feet)	*Percent of Conservation Storage*
North Central			
Fort Supply	13,900	13,269	95.5
Great Salt Plains	31,420	31,420	100.0
Kaw*	417,202	417,202	100.0
Regional Totals/Averages	**462,522**	**461,891**	**99.9**
Northeast			
Birch	19,225	18,009	93.7
Copan	43,400	43,400	100.0
Fort Gibson	365,200	365,200	100.0
Grand	1,672,000	1,672,000	100.0
Hudson	200,300	200,300	100.0
Hulah	25,100	25,100	100.0
Keystone	510,059	510,059	100.0
Oologah	552,210	552,210	100.0
Skiatook	322,700	313,543	97.2
Regional Totals/Averages	**3,710,194**	**3,699,821**	**99.7**
West Central			
Canton	111,310	111,310	100.0
Foss	165,480	161,539	97.6
Regional Totals/Averages	**276,790**	**272,849**	**98.6**
Central			
Arcadia	27,520	27,217	98.9
Heyburn	7,105	6,929	97.5
Thunderbird	119,600	115,160	96.3
Regional Totals/Averages	**154,225**	**149,306**	**96.8**
East Central			
Eufaula*	2,443,319	2,137,722	87.5
Tenkiller	654,100	593,399	90.7
Regional Totals/Averages	**3,097,419**	**2,731,121**	**88.2**
Southwest			
Fort Cobb	80,010	79,340	99.2
Lugert-Altus	132,830	74,700	56.2
Tom Steed	88,970	62,055	69.7
Regional Totals/Averages	**301,810**	**73,685**	**24.4**
South Central			
Arbuckle	72,400	72,400	100.0
McGee Creek	113,930	111,991	98.3
Texoma*	2,693,618	2,320,601	86.2
Waurika*	190,200	186,652	98.1
Regional Totals/Averages	**3,070,148**	**2,691,644**	**87.7**
Southeast			
Broken Bow*	958,180	845,449	88.2
Hugo*	198,067	178,708	90.2
Pine Creek*	68,064	65,562	96.3
Sardis	274,330	266,162	97.0
Wister	60,162	56,299	93.6
Regional Totals/Averages	**1,558,803**	**1,412,180**	**90.6**
State Totals	**12,631,911**	**11,492,497**	**91.0**

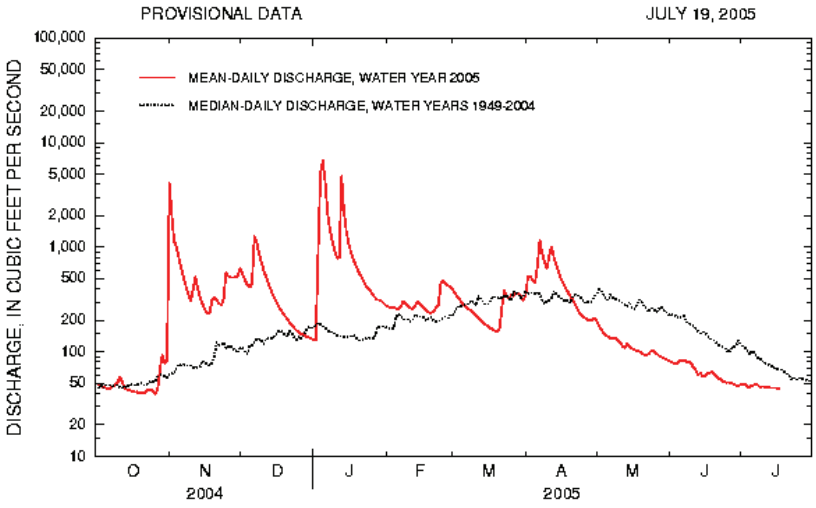
* indicates seasonal pool operation; actual storage figures/percentages may v ary.

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 2005
and period of record for Baron Fork at Eldon, Oklahoma.

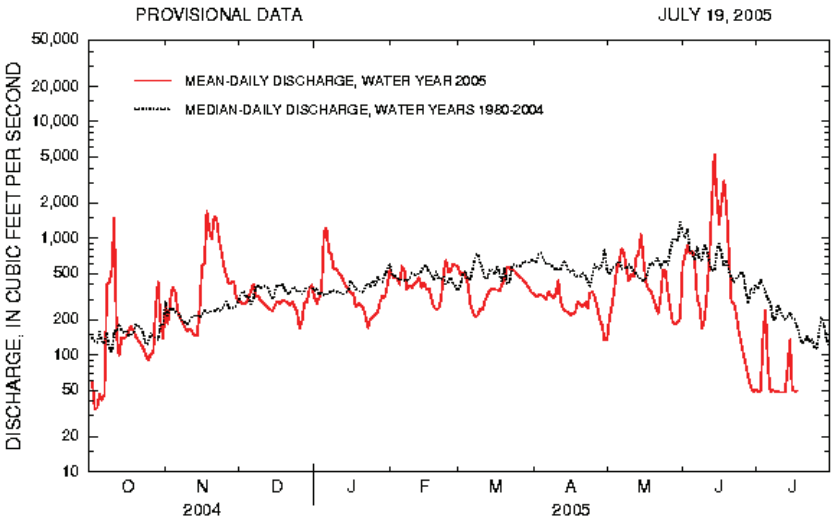
Data from U.S. Geological Survey

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 2005
and period of record for Canadian River at Purcell, Oklahoma.

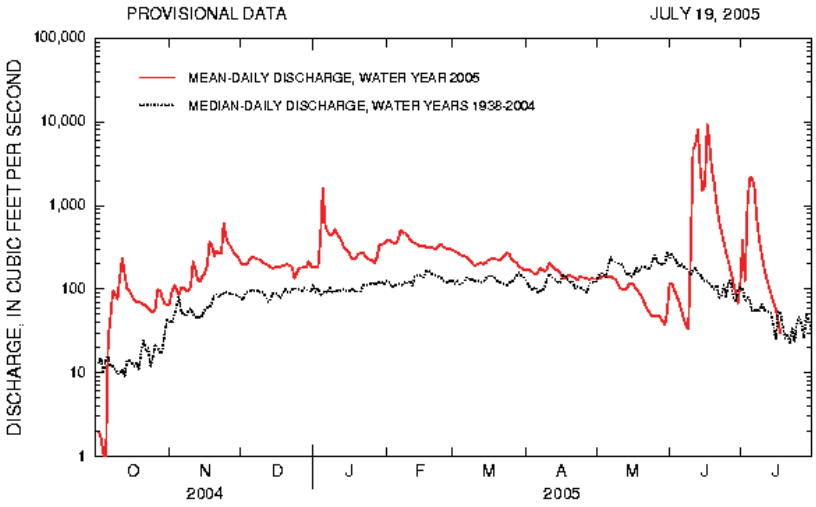
Data from U.S. Geological Survey

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 2005
and period of record for Cimarron River near Waynoka, Oklahoma.

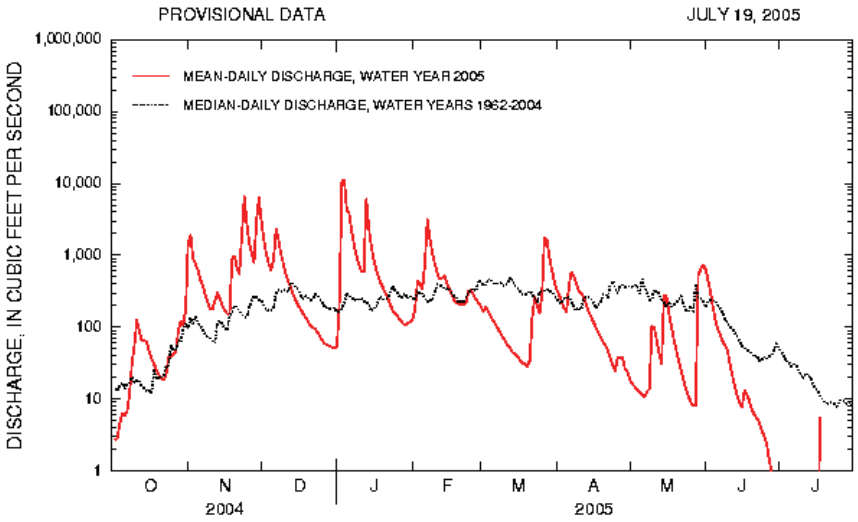
Data from U.S. Geological Survey

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 2005
and period of record for Glover River near Glover, Oklahoma.

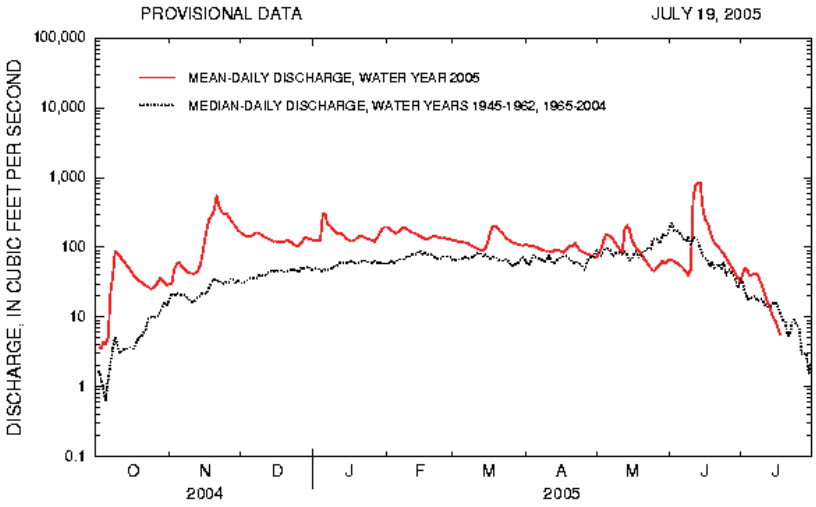
Data from U.S. Geological Survey

North Fork of the Red River near Carter

North Fork Red River near Carter, Oklahoma

Station No. 07301500
Southwest Oklahoma

Drainage Area 2,337 square miles



Comparison of daily discharges for water year 2005
and period of record for North Fork Red River near Carter, Oklahoma.

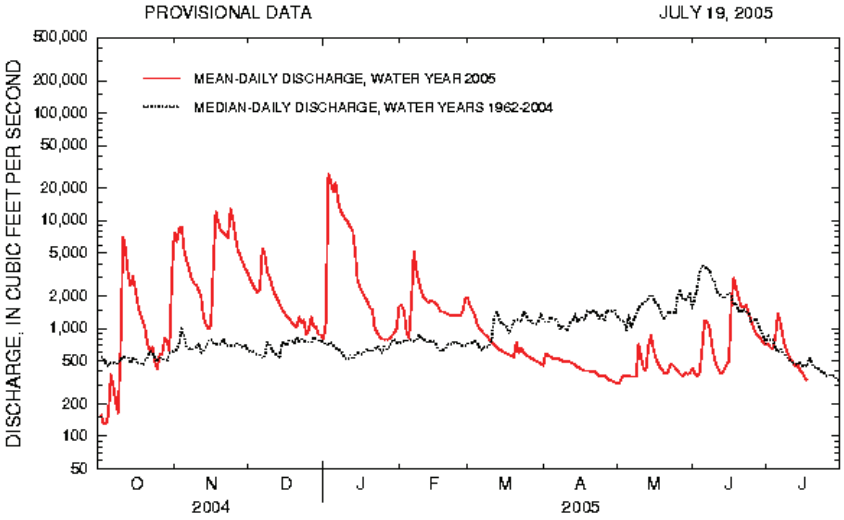
Data from U.S. Geological Survey

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 2005
and period of record for Washita River near Dickson, Oklahoma.

Data from U.S. Geological Survey