Oklahoma Water Resources Bulletin
& Summary of Current Conditions

June 8, 2005

Statewide Precipitation & General Summary

Oklahoma recorded its lowest March-April-May period precipitation since record keeping began in 1895. Although early June rainfall will help, many areas of the state are beginning to experience drought-like conditions.

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 May 7 through June 5) is the North Central climate division (2.17 inches, 49 percent of normal). North Central Oklahoma was the only region to receive less than one-half of normal rainfall over the period. The current state-averaged rainfall total is 3.08 inches—a deficit of 1.83 inches and 63 percent of normal.

For the warm growing season, which began March 1, moisture conditions are less favorable. Five regions, including the North Central and Central climate divisions (36 and 38 percent, respectively), have received less than 50 percent of their anticipated normal precipitation. The state-averaged rainfall total is 4.12 inches, only 48 percent of normal.

Preliminary Statewide Precipitation By Climate Division

DIVISION (#)	WARM GROWING SEASON MARCH 1—JUNE 5, 2005			LAST 30 DAYS MAY 7—JUNE 5, 2005		
	TOTAL RAINFALL (INCHES)	DEPARTURE FROM NORMAL (INCHES)	PERCENT OF NORMAL	TOTAL RAINFALL (INCHES)	DEPARTURE FROM NORMAL (INCHES)	PERCENT OF NORMAL
Panhandle	3.65"	-1.69"	68%	2.12"	-1.09"	66%
North Central	2.83"	-4.92"	36%	2.17"	-2.29"	49%
Northeast	4.34"	-5.11"	46%	3.50"	-1.69"	67%
West Central	4.13"	-3.50"	54%	2.73"	-1.87"	59%
Central	3.46"	-5.76"	38%	2.95"	-2.35"	56%
East Central	4.59"	-5.58"	45%	3.30"	-2.26"	59%
Southwest	4.84"	-2.96"	62%	3.53"	-1.17"	75%
South Central	5.06"	-4.32"	54%	4.08"	-1.21"	77%
Southeast	4.57"	-6.17"	43%	3.37"	-2.54"	57%
Statewide	4.12"	-4.49"	48%	3.08"	-1.83"	63%

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 (June 4, below), five regions in Oklahoma are currently experiencing drought conditions, compared to three regions last month. The Central climate division is in "moderate drought" while the Southeast, South Central, East Central, and Northeast climate divisions are in "mild drought." All nine of Oklahoma's climate divisions have undergone PDSI moisture decreases since May 7. The greatest decrease occurred in the North Central climate division.

The latest monthly Standardized Precipitation Index (through May, below) reflects increasingly dry conditions in Oklahoma over the past several months. Among the *selected* time periods (3-, 6-, 9- and 12-month SPIs), "extremely dry" conditions exist in Central and South Central Oklahoma over the past 90 days; "very" or "moderately dry" conditions are reported in all other regions, except the Northwest, during that period. The 6-month SPI indicates similarly dry conditions in five climate divisions, although none are suffering extreme dryness. Considering longer periods (through six years), 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 (June 6, 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 continue to worsen somewhat yet remain generally good. Statewide, no Mesonet stations are currently at or above 600, generally indicative of more severe drought conditions (no stations had a reading above 600 on May 9). Washington, in Central Oklahoma, has the highest KBDI value (388). According to the Oklahoma Department of Agriculture, Food, and Forestry, Statewide Wildfire Preparedness remains at Level 2 (moderate fire danger). Warmer temperatures and seasonal green-up have reduced the fire danger throughout the state. However, persons conducting outdoor burning are encouraged to take precautions to assure a safe burn; 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 May 2005)

Climate Division (#)	Current Status 6/4/2005	Value 6/4	Value 5/7	Change In Value	3-Month	6-Month	9-Month	12-Month
Northwest (1)	MOIST SPELL	1.72	3.03	**-1.31**	NEAR NORMAL	NEAR NORMAL	MODERATELY WET	VERY WET
North Central (2)	INCIPIENT DROUGHT	-0.69	0.94	**-1.63**	VERY DRY	MODERATELY DRY	NEAR NORMAL	NEAR NORMAL
Northeast (3)	MILD DROUGHT	-1.44	-0.65	**-0.79**	VERY DRY	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
West Central (4)	NEAR NORMAL	0.11	1.39	**-1.28**	MODERATELY DRY	NEAR NORMAL	NEAR NORMAL	MODERATELY WET
Central (5)	MODERATE DROUGHT	-2.09	-1.12	**-0.97**	EXTREMELY DRY	VERY DRY	NEAR NORMAL	NEAR NORMAL
East Central (6)	MILD DROUGHT	-1.80	-1.16	**-0.64**	VERY DRY	MODERATELY DRY	NEAR NORMAL	NEAR NORMAL
Southwest (7)	INCIPIENT DROUGHT	-0.74	0.20	**-0.94**	MODERATELY DRY	NEAR NORMAL	NEAR NORMAL	VERY WET
South Central (8)	MILD DROUGHT	-1.88	-0.86	**-1.02**	EXTREMELY DRY	VERY DRY	NEAR NORMAL	MODERATELY WET
Southeast (9)	MILD DROUGHT	-1.97	-1.48	**-0.49**	VERY DRY	MODERATELY DRY	NEAR NORMAL	NEAR NORMAL

Keetch-Byram Drought Fire Index

Mesonet Station	County	Climate Division	Current Value 6/6/2005
Washington	McClain	Central	388
Talihina	LeFlore	Southeast	370
Clayton	Pushmataha	Southeast	366

Total stations above 600 = 0

Anticipated Impact:

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.

400-600: lower litter and duff layers actively contribute to fire intensity and will burn actively; typical of late summer, early fall.

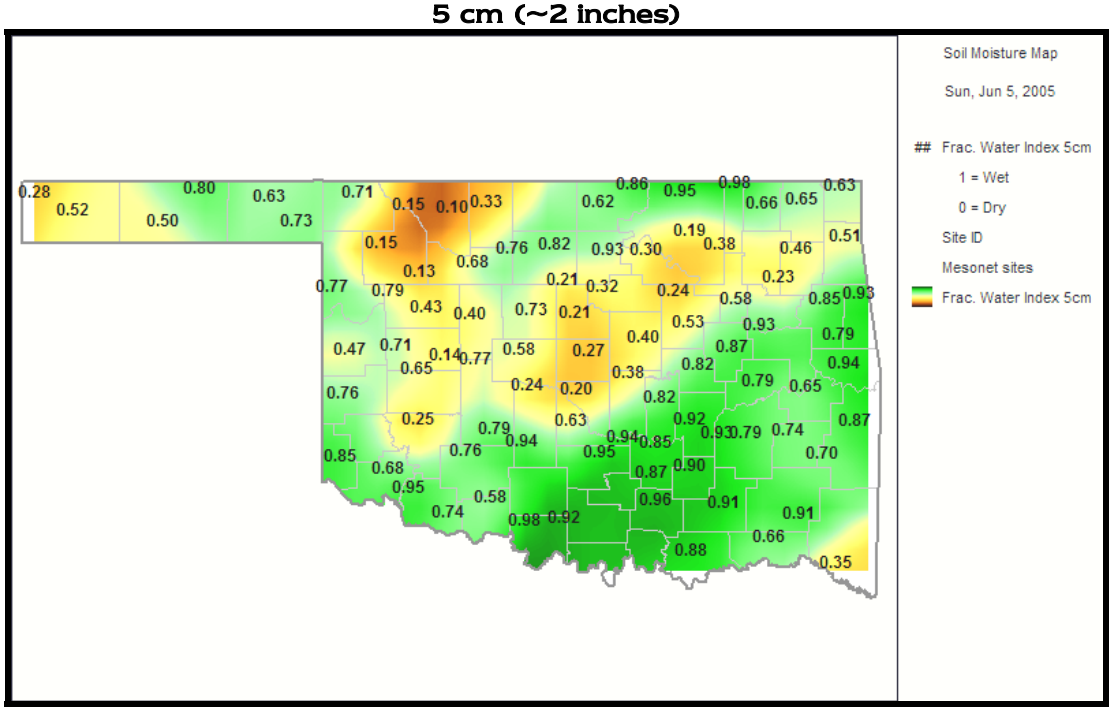
The PDSI may underestimate or overestimate the severity of ongoing dry periods. The SPI, more sensitive than the PDSI, provides a comparison of precipitation over a specified period with precipitation totals from that same period for all years included in the historical record. The 3-month SPI provides 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

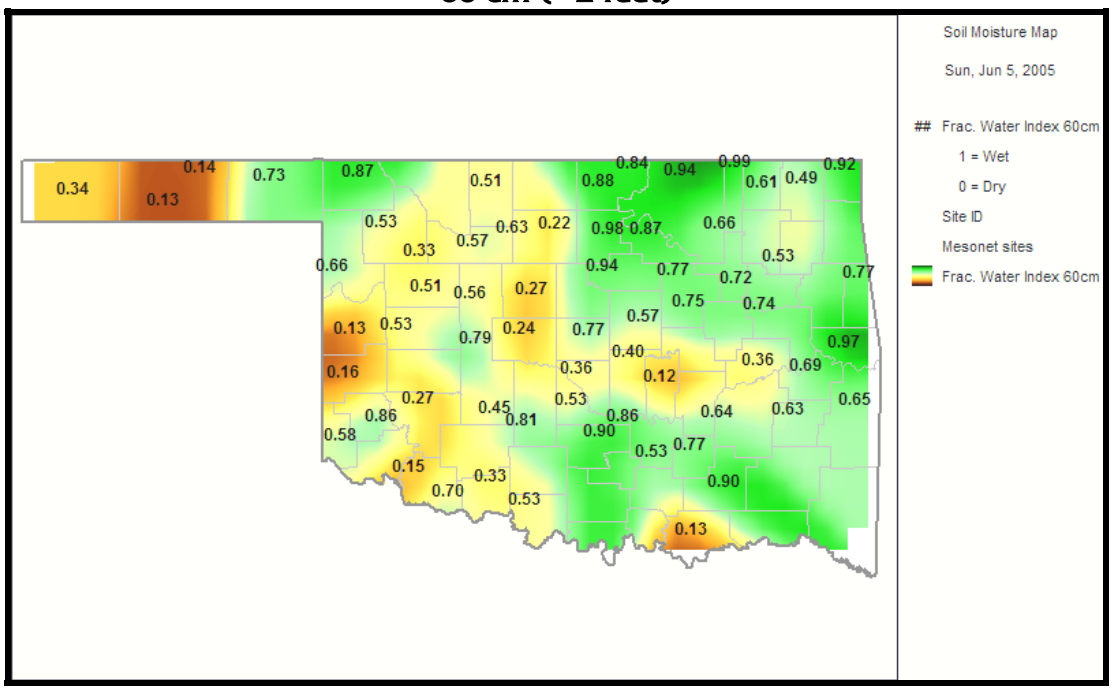
June 5, 2005

(Courtesy Oklahoma Climatological Survey)

5 cm (~2 inches)



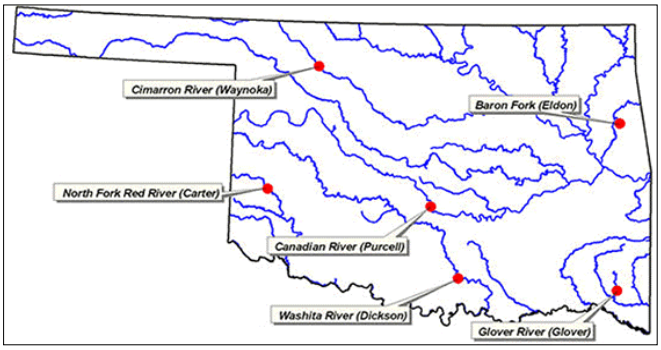
60 cm (~2 feet)



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 (June 6, 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 *south central* (Washita River, Carter County) Oklahoma; and **below average flow** in the *southeast* (Glover River, McCurtain County), *central* (Canadian River, McClain County), *northeast* (Baron Fork, Cherokee County), *northwest* (Cimarron River, Woods County), and *southwest* (North Fork/Red River, Beckham County) regions.



Weather Forecast

The National Weather Service 8- to 14-day outlook (June 13-19) calls for below normal precipitation for all but about the eastern one-third of Oklahoma, where normal rainfall is expected. Above normal temperatures are forecasted for all of the state throughout the period.

The recent weak warm (El Niño) episode continues to weaken. A majority of the statistical and coupled model forecasts indicate that a transition to near neutral conditions will continue through August. For the remainder of the year, much uncertainty exists in the forecasts. 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

June 6 - Wheat harvested reached 7 percent even though progress was slowed due to the scattered showers and storms across the state. Topsoil moisture levels improved slightly this week with one percent rated surplus, 49 percent adequate, 32 percent short and 18 percent very short. Subsoil moisture, with 54 percent rated as short or very short, was still in need of a good soaking rainfall. Farmers had 4.7 days suitable for fieldwork last week.

Wheat condition improved slightly over the week recovering from the low conditions recorded last week. Light hail damage was reported in seven regions. Wheat harvest, at 7 percent, was well behind normal at 25 percent. The combination of rain and high humidity kept combines out of the fields. Southwest Oklahoma led harvest with 20 percent complete. All other areas ranged from zero to 9 percent harvested. Rye harvest reached 5 percent and oat harvest was underway with a little over one percent completed.

Row crops were still behind normal at week's end. Corn was in mostly good to excellent condition. Silking reached 3 percent statewide. East central and south central areas recorded the highest levels of silking at 25 and 15 percent, respectively. Sorghum planted, at 41 percent, was 6 points behind the five-year average. Sorghum emergence ranged from just over 1 percent in the Panhandle to 66 percent in northeast Oklahoma. Soybeans were in mostly fair to good condition. Soybeans planted, at 57 percent, were 11 points behind the five-year average. Forty-six percent of the soybean acreage had emerged. Peanut planting and emergence remained behind normal. Cotton planting, at 63 percent, was 24 points behind the five-year average. Cotton condition was mostly fair to good.

Alfalfa condition was mostly good to fair. The first cutting of alfalfa was nearing completion. The second cutting of alfalfa, at 37 percent, was one point ahead of normal. The first cutting of other hay, at 55 percent, was slightly behind normal. Other hay condition remained mostly fair to good. Watermelon planting was nearing completion at 95 percent. Vines running, at 53 percent, were 4 points below normal.

Livestock continued to be in good to excellent condition. Death loss of cattle was rated as mostly light. Livestock marketings were rated as average. Pasture and range conditions were mostly fair to good. The recent moisture improved pasture in some areas. Conditions were at 4 percent very poor, 18 percent poor, 42 percent fair, 34 percent good and 2 percent excellent.

Reservoir Storage

Lake storage in Oklahoma remains generally good although levels are beginning to show signs of stress. As of June 6, the combined normal conservation pools of 31 selected major federal reservoirs across Oklahoma (see below) are approximately 91.7 percent full, a 3.4 percent decrease from that recorded on May 9, according to information from the U.S. Army Corps of Engineers (Tulsa District). Thirteen reservoirs have experienced lake level decreases since that time; 10 reservoirs are currently operating at less than full capacity (compared to 13 last month). Two reservoirs—Lugert-Altus, only 70.9 percent full; and Tom Steed, 72.8 percent—remain below 80 percent capacity.

Storage in Selected Oklahoma Lakes & Reservoirs
06/06/2005

Climate Division Lake or Reservoir	*Conservation Storage* (acre-feet)	*Present Storage* (acre-feet)	*Percent of Conservation Storage*
North Central			
Fort Supply	13,900	13,900	100.0
Great Salt Plains	31,420	31,420	100.0
Kaw*	415,425	415,425	100.0
Regional Totals/Averages	**460,745**	**460,745**	**100.0**
Northeast			
Birch	19,225	17,854	92.9
Copan	43,400	43,400	100.0
Fort Gibson	365,200	365,200	100.0
Grand	1,672,000	1,627,839	97.4
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	317,715	98.5
Regional Totals/Averages	**3,710,194**	**3,659,677**	**98.6**
West Central			
Canton	111,310	111,310	100.0
Foss	165,480	160,937	97.3
Regional Totals/Averages	**276,790**	**272,247**	**98.4**
Central			
Arcadia	27,520	27,520	100.0
Heyburn	7,105	7,105	100.0
Thunderbird	119,600	116,720	97.6
Regional Totals/Averages	**154,225**	**151,345**	**98.1**
East Central			
Eufaula*	2,529,143	2,213,369	87.5
Tenkiller	654,100	654,100	100.0
Regional Totals/Averages	**3,183,243**	**2,867,469**	**90.1**
Southwest			
Fort Cobb	80,010	80,010	100.0
Lugert-Altus	132,830	94,117	70.9
Tom Steed	88,970	64,789	72.8
Regional Totals/Averages	**301,810**	**73,685**	**24.4**
South Central			
Arbuckle	72,400	72,400	100.0
McGee Creek	113,930	113,930	100.0
Texoma*	2,742,146	2,280,055	83.1
Waurika*	190,200	190,200	100.0
Regional Totals/Averages	**3,118,676**	**2,656,585**	**85.2**
Southeast			
Broken Bow*	958,180	958,180	100.0
Hugo*	198,067	198,067	100.0
Pine Creek*	71,120	71,120	100.0
Sardis	274,330	273,928	99.9
Wister	60,162	60,162	100.0
Regional Totals/Averages	**1,561,859**	**1,561,457**	**100.0**
State Totals	**12,767,542**	**11,703,210**	**91.7**

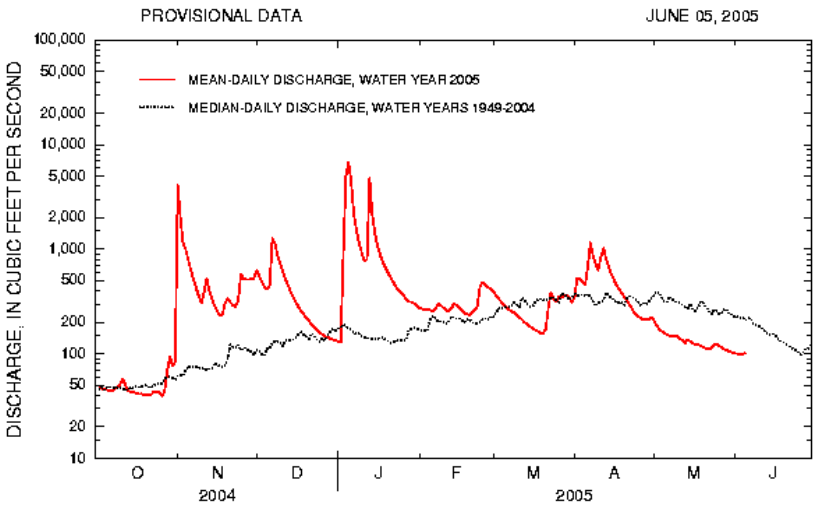
* indicates seasonal pool operation; actual storage figures/percentages may vary.

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.

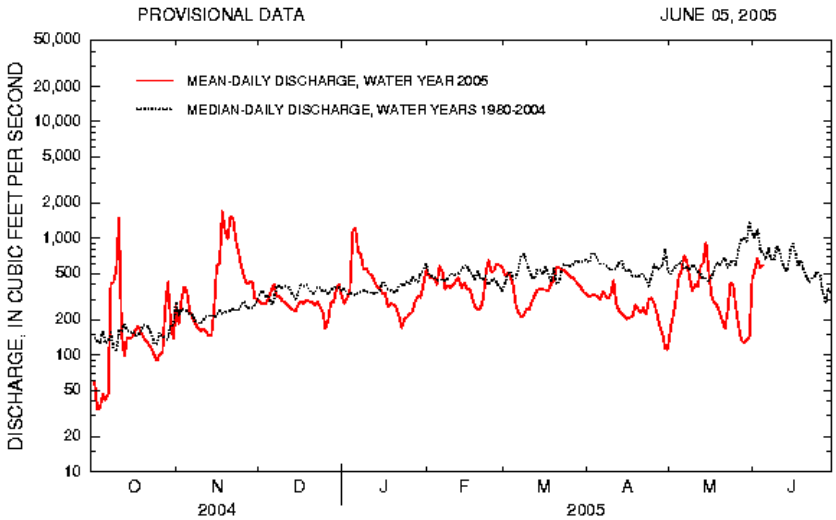
Data from U.S. Geological Survey

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.

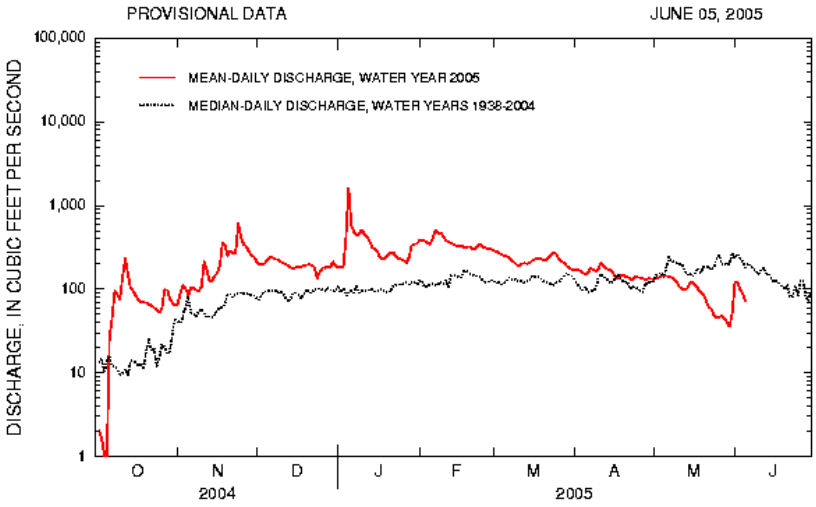
Data from U.S. Geological Survey

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.

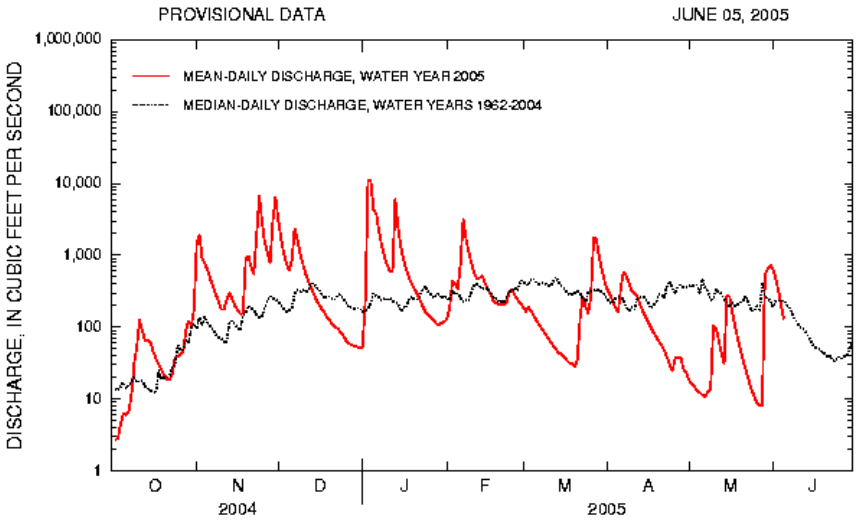
Data from U.S. Geological Survey

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.

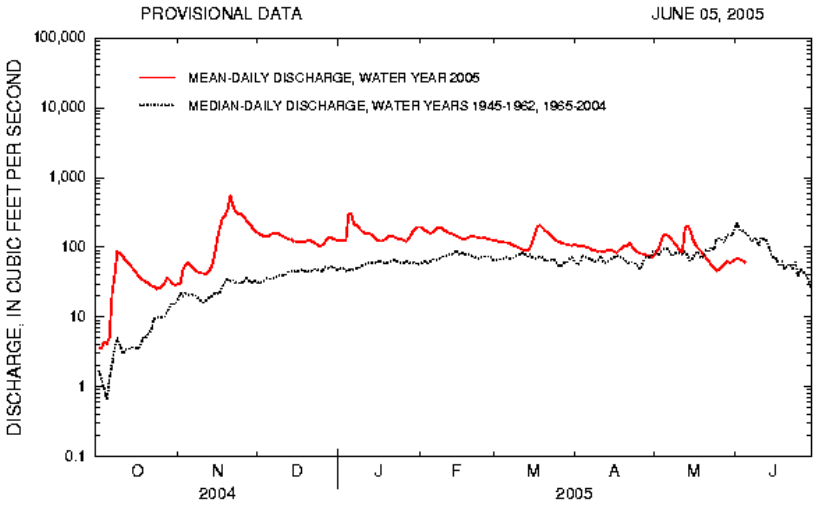
Data from U.S. Geological Survey

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.

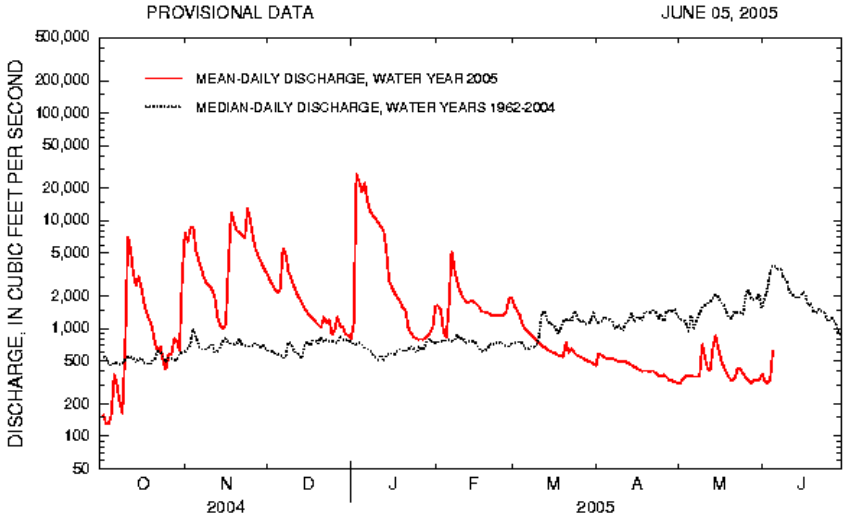
Data from U.S. Geological Survey

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