

Oklahoma Water Resources Bulletin

& Summary of Current Conditions



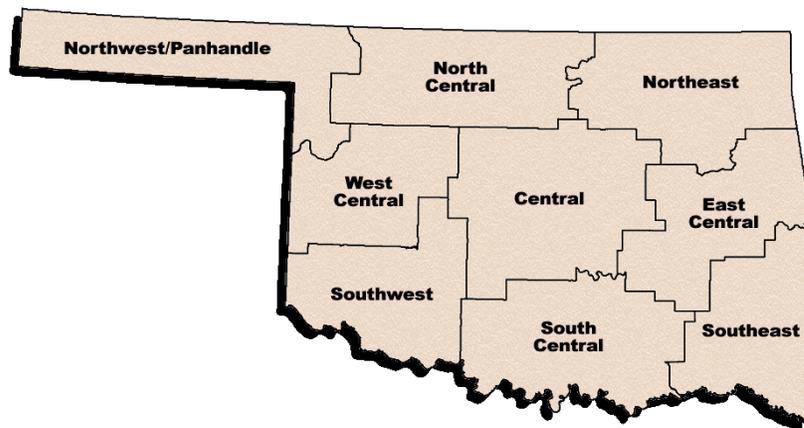
May 11, 2005

Statewide Precipitation & General Summary

A very dry April is impacting virtually all areas of Oklahoma. The statewide-averaged rainfall for the last 30-day period was the driest such period since 1921. Three of the state's climate divisions (Central, South Central, and Northeast) also recorded their driest such period.

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 April 9 through May 8) is the Central climate division (0.52 inches, 13 percent of normal). Seven additional regions received less than one-half their normal rainfall. The current state-averaged rainfall total is 1.17 inches—a deficit of 2.64 inches and only 31 percent of normal.

For the water year, which began October 1, 2004, moisture conditions are much more favorable. Four regions have received more than their anticipated normal precipitation. The state-averaged rainfall total is 19.13 inches, 99 percent of normal.



Preliminary Statewide Precipitation By Climate Division

DIVISION (#)	WATER YEAR OCTOBER 1, 2004—MAY 8, 2005			LAST 30 DAYS APRIL 9—MAY 8, 2005		
	TOTAL RAINFALL (INCHES)	DEPARTURE FROM NORMAL (INCHES)	PERCENT OF NORMAL	TOTAL RAINFALL (INCHES)	DEPARTURE FROM NORMAL (INCHES)	PERCENT OF NORMAL
Panhandle	10.57"	+1.81"	121%	1.53"	-0.69"	69%
North Central	14.55"	-0.50"	97%	0.73"	-2.66"	21%
Northeast	21.43"	-0.74"	97%	0.94"	-3.40"	22%
West Central	15.29"	+1.58"	112%	1.40"	-1.77"	44%
Central	17.83"	-2.10"	89%	0.52"	-3.52"	13%
East Central	26.73"	+0.68"	103%	1.58"	-3.11"	34%
Southwest	15.98"	+1.29"	109%	1.32"	-1.92"	41%
South Central	22.26"	-0.49"	98%	1.17"	-3.03"	28%
Southeast	29.16"	-1.51"	95%	1.77"	-3.16"	36%
Statewide	19.13"	-0.11"	99%	1.17"	-2.64"	31%

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 (May 7, below), three regions in Oklahoma are currently experiencing drought conditions. The Southeast, East Central, and Central climate divisions are in "mild drought." All nine of Oklahoma's climate divisions have undergone PDSI moisture decreases since April 9. The greatest decreases occurred in the Central and Northeast climate divisions.

The latest monthly Standardized Precipitation Index (through April, below) indicates that much of Oklahoma is becoming dry over the past month. Among the *selected* time periods (3-, 6-, 9- and 12-month SPIs), "very dry" conditions exist over the past 30 days in Central, South Central and Southeast Oklahoma; "moderately dry" conditions are reported elsewhere during that period, except in the Northwest. 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 (May 9, 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, while increasing somewhat, 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 April 11). Burneyville, in South Central Oklahoma, retains the highest KBDI value (306). According to the Oklahoma Department of Agriculture, Food, and Forestry, Statewide Wildfire Preparedness remains at Level 2 (moderate fire danger). As of April 11, rain, 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 April 2005			
CLIMATE DIVISION (#)	CURRENT STATUS 4/9/2005	VALUE		CHANGE IN VALUE	3-MONTH	6-MONTH	9-MONTH	12-MONTH
		5/7	4/9					
Northwest (1)	VERY MOIST SPELL	3.03	3.14	-0.11	NEAR NORMAL	MODERATELY WET	VERY WET	MODERATELY WET
North Central (2)	INCIPIENT MOIST SPELL	0.94	2.80	-1.86	MODERATELY DRY	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
Northeast (3)	INCIPIENT DROUGHT	-0.65	1.43	-2.08	MODERATELY DRY	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
West Central (4)	MOIST SPELL	1.39	2.21	-0.82	MODERATELY DRY	MODERATELY WET	MODERATELY WET	NEAR NORMAL
Central (5)	MILD DROUGHT	-1.12	0.97	-2.09	VERY DRY	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
East Central (6)	MILD DROUGHT	-1.16	0.65	-1.81	MODERATELY DRY	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
Southwest (7)	NEAR NORMAL	0.20	1.19	-0.99	MODERATELY DRY	MODERATELY WET	MODERATELY WET	MODERATELY WET
South Central (8)	INCIPIENT DROUGHT	-0.86	0.96	-1.82	VERY DRY	NEAR NORMAL	NEAR NORMAL	MODERATELY WET
Southeast (9)	MILD DROUGHT	-1.48	0.40	-1.88	VERY DRY	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL

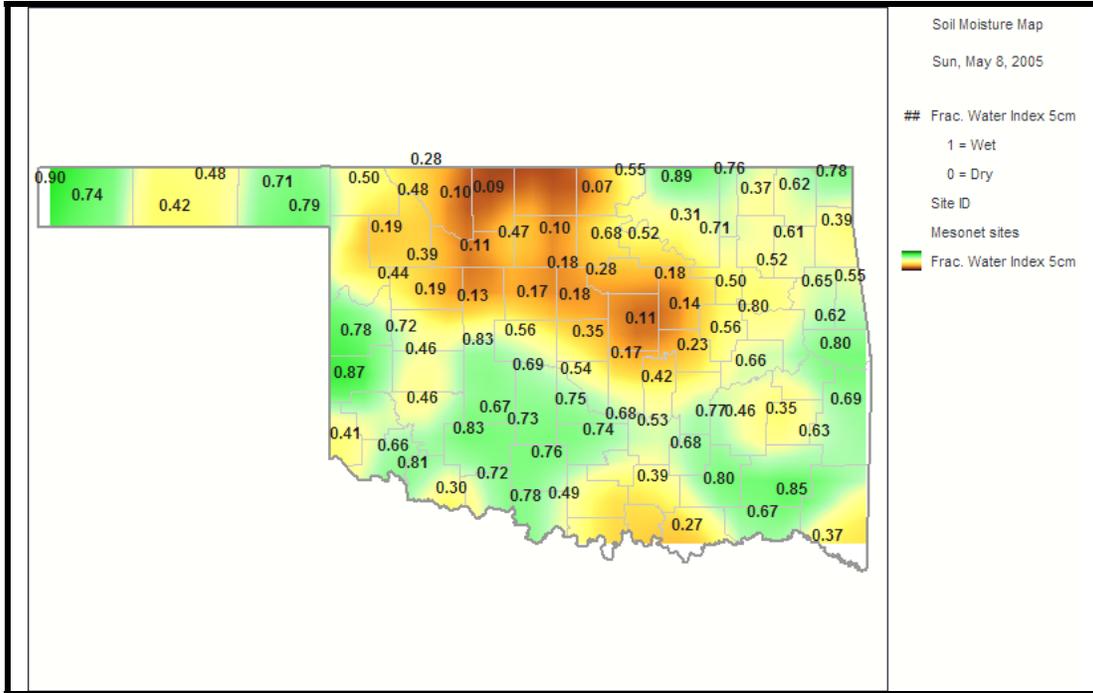
Keetch-Byram Drought Fire Index				
MESONET STATION	COUNTY	CLIMATE DIVISION	CURRENT VALUE 5/9/2005	ANTICIPATED IMPACT
Burneyville	Love	South Central	306	600-800: often associated with more severe drought; increased wildfire occurrence; intense deep burning fires with significant downwind spotting; live 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.
Bee	Johnston	South Central	303	
Vanoss	Pontotoc	South Central	298	

Total stations above 600 = 0

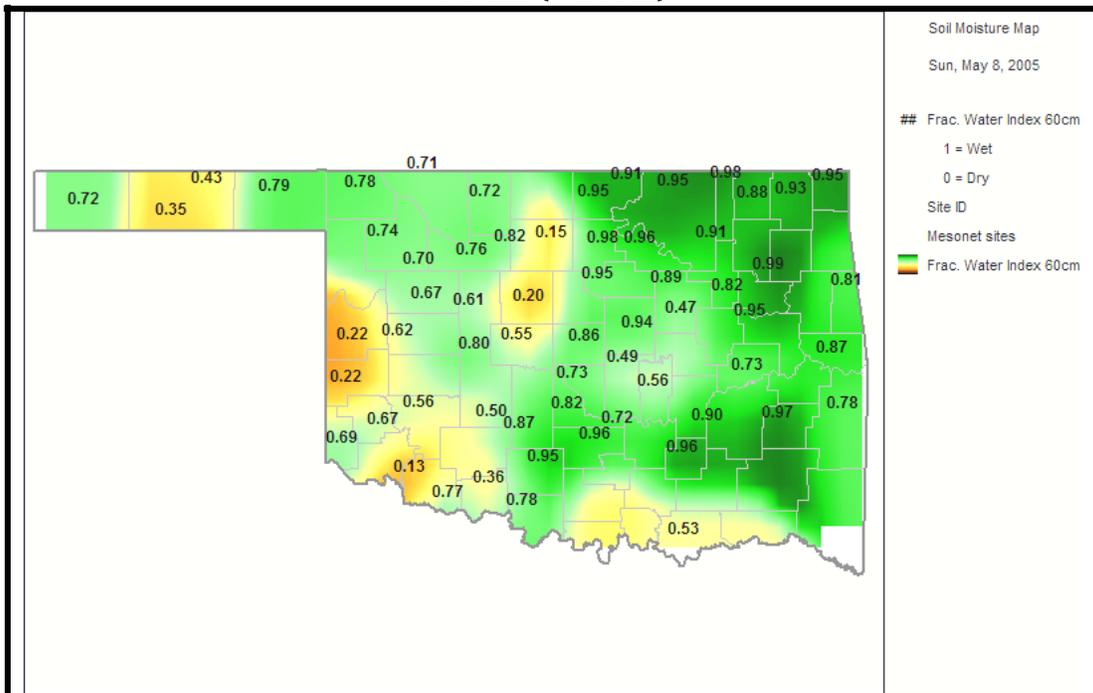
The PDSI may underestimate or overestimate the severity of ongoing dry periods. The SPI, more sensitive than the PDSI, provides a comparison of precipitation over a specified period with precipitation totals from that same period for all years included in the historical record. The 3-month SPI provides 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**
May 8, 2005
(Courtesy Oklahoma Climatological Survey)

5 cm (~2 inches)



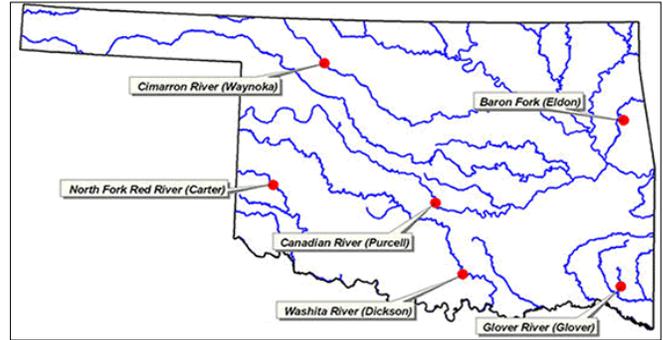
60 cm (~2 feet)



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 are becoming a concern due to the recent dry weather. Considering overall trends as well as current flows, the most recent data (May 9, 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, 2003, compared to long-term, normal/median daily discharges) indicate **much below average flow** in the *southeast* (Glover River, McCurtain County); **below average flow** in *south central* (Washita River, Carter County), *northeast* (Baron Fork, Cherokee County), and *central* (Canadian River, McClain County) Oklahoma; and **near average flow** in the *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 (May 17-23) calls for below normal precipitation for all but the general Panhandle region of Oklahoma, where normal rainfall is expected. Normal temperatures are forecasted for all of the state except the western half of the Panhandle, where above normal temperatures should prevail 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

May 9 - Parts of Oklahoma received a few storms late last week bringing temporary relief to rain-deprived small grains. Topsoil moisture reported as very short, at 28 percent, is 22 points higher than this time last year. Subsoil moisture continued to decline. Subsoil moisture rated as adequate, at 45 percent, dropped 7 points from last week. Farmers had 5.6 days suitable for fieldwork last week.

The amount of wheat in the good to excellent category has fallen another 5 points since last week as the wheat crop continues to struggle under the current dry conditions. With 31 percent of the wheat crop in the soft dough stage, some respondents expressed concerns that last week's rainfall was too late to boost yields. Rye condition was rated mostly good to fair. Rye in the soft dough stage, at 51 percent, is 8 points above this time last year. Oats headed, at 42 percent, is 9 points behind last year and 7 points behind the five-year average.

Row crop planting continued to progress last week. Corn, at 75 percent planted, is 3 points above last year, but 5 points behind the five-year average. Corn emerged increased 13 points to 48 percent. Sorghum planted, at 21 percent, was above last year and the five-year average. Soybeans and peanuts planted increased 9 and 11 points, respectively, from last week. Soybeans emerged, at 13 percent, was 4 points above last year and 1 point below the five-year average. Peanuts emerged, at 6 percent, was below last year and the five-year average. Cotton planted, at 3 percent, is well below normal for this time of year. The dry weather has prevented planting for some producers, but many respondents reported that cotton planting should be in full swing in the next few weeks.

Harvesting of alfalfa and other hay continued. Alfalfa conditions shifted downward slightly, due to the low amount of rainfall received. The first cutting of alfalfa was at 63 percent, 5 points above the five-year average. Other hay conditions remained mostly good to fair. Twenty-seven percent of the first cutting of other hay was completed, 4 points above the five-year average.

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 continued to be mostly good to fair. The Panhandle reported 35 percent of all pasture to be in excellent condition. Overall, pastures were still in need of rain and some warmer temperatures as grasses were developing slower than normal.

Reservoir Storage

Lake storage in Oklahoma remains generally good. As of May 9, the combined normal conservation pools of 31 selected major federal reservoirs across Oklahoma (see below) are approximately 95.1 percent full, a 1.1 percent decrease from that recorded on April 11, according to information from the U.S. Army Corps of Engineers (Tulsa District). Twenty-three reservoirs have experienced lake level decreases since that time; 13 reservoirs are currently operating at less than full capacity (compared to seven last month). Two reservoirs—Lugert-Altus, only 67.2 percent full; and Tom Steed, 73.4 percent—remain below 80 percent capacity.

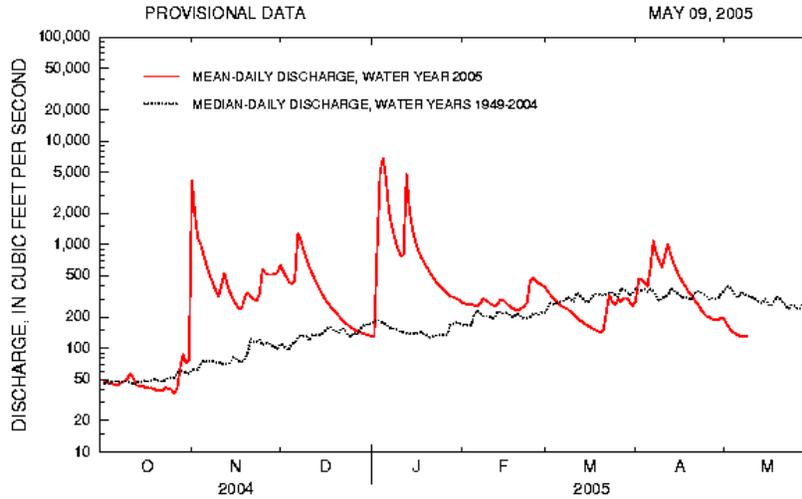
Storage in Selected Oklahoma Lakes & Reservoirs			
<i>05/09/2005</i>			
<i>Climate Division</i> Lake or Reservoir	Conservation Storage (acre-feet)	Present Storage (acre-feet)	Percent of Conservation Storage
North Central			
Fort Supply	13,900	13,900	100.0
Great Salt Plains	31,420	31,420	100.0
Kaw*	406,540	406,540	100.0
Regional Totals/Averages	451,860	451,860	100.0
Northeast			
Birch	19,225	18,574	96.6
Copan	43,400	43,324	99.8
Fort Gibson	365,200	365,200	100.0
Grand	1,672,000	1,564,720	93.6
Hudson	200,300	200,300	100.0
Hulah	25,100	25,100	100.0
Keystone	510,059	510,059	100.0
Oologah	552,210	547,679	99.2
Skiatook	322,700	322,700	100.0
Regional Totals/Averages	3,710,194	3,597,656	97.0
West Central			
Canton	111,310	111,310	100.0
Foss	165,480	158,411	95.7
Regional Totals/Averages	276,790	269,721	97.4
Central			
Arcadia	27,520	27,360	99.4
Heyburn	7,105	7,105	100.0
Thunderbird	119,600	118,880	99.4
Regional Totals/Averages	154,225	153,345	99.4
East Central			
Eufaula*	2,368,223	2,360,957	99.7
Tenkiller	654,100	654,100	100.0
Regional Totals/Averages	3,022,323	3,015,057	99.8
Southwest			
Fort Cobb	80,010	80,010	100.0
Lugert-Altus	132,830	89,294	67.2
Tom Steed	88,970	65,262	73.4
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*	2,499,506	2,260,432	90.4
Waurika*	190,200	189,592	99.7
Regional Totals/Averages	2,876,036	2,636,354	91.7
Southeast			
Broken Bow*	943,495	930,422	98.6
Hugo*	198,067	198,067	100.0
Pine Creek*	71,120	71,120	100.0
Sardis	274,330	274,330	100.0
Wister	60,162	60,162	100.0
Regional Totals/Averages	1,547,174	1,534,101	99.2
State Totals	12,340,412	11,731,779	95.1

* 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



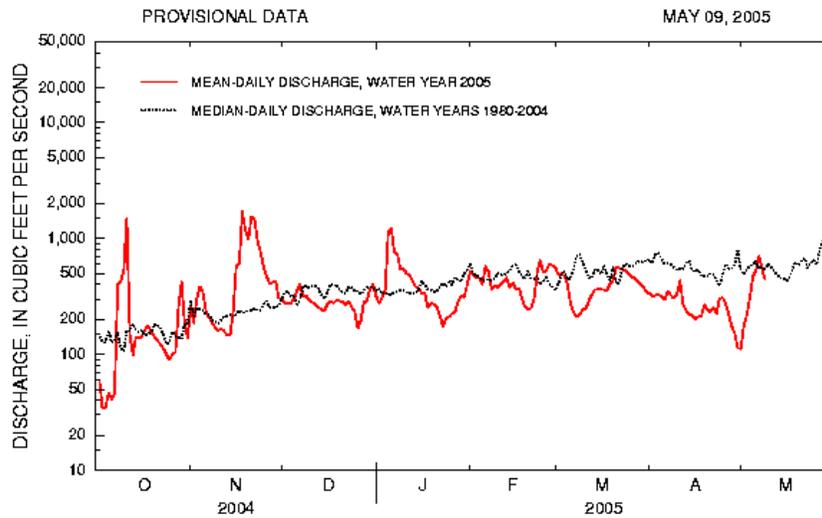
Comparison of daily discharges for water year 2005 and period of record for Baron Fork at Eldon, Oklahoma.

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

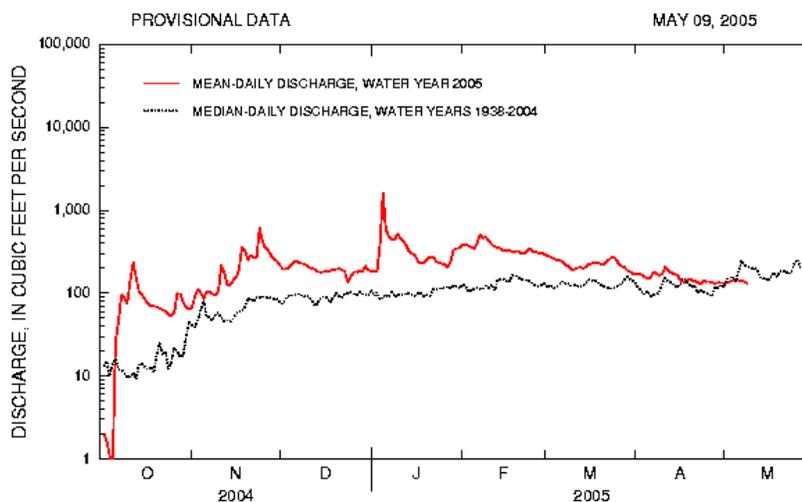
Cimarron River near Waynoka

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

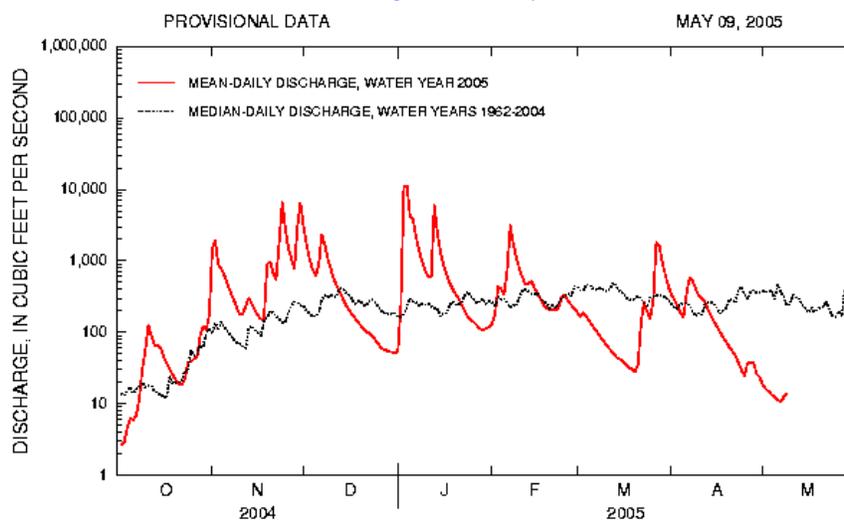
Glover River near Glover

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

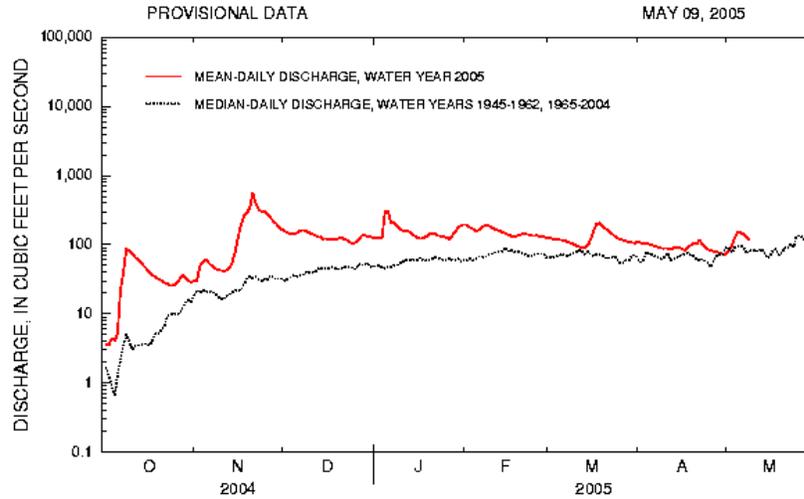
North Fork of the Red River near Carter

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

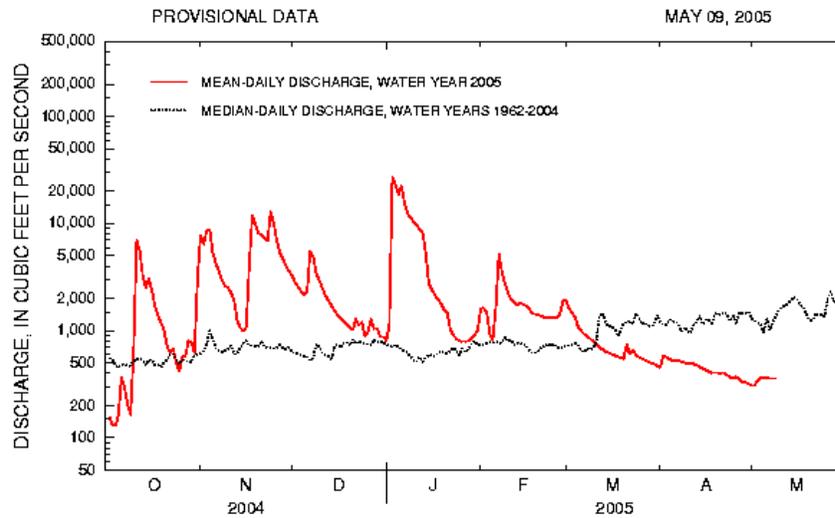
Washita River near Dickson

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