

Oklahoma Water Resources Bulletin

& Summary of Current Conditions



October 27, 2004

Statewide Precipitation & General Summary

Moisture conditions in Oklahoma continue to improve. 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 from September 25 through October 24 (the last 30 days) is the East Central climate division (3.93 inches, a deficit of only 0.37 inches, 91 percent of normal). The Northeast climate division is the only other area to receive below normal precipitation for the period. The current state-averaged rainfall total is 3.70 inches, 109 percent of normal.

For the calendar year, the state-averaged rainfall total is 30.80 inches, 99 percent of normal.



Preliminary Statewide Precipitation By Climate Division

DIVISION (#)	CALENDAR YEAR JANUARY 1—OCTOBER 24, 2004			LAST 30 DAYS SEPTEMBER 25—OCTOBER 24, 2004		
	TOTAL RAINFALL (INCHES)	DEPARTURE FROM NORMAL (INCHES)	PERCENT OF NORMAL	TOTAL RAINFALL (INCHES)	DEPARTURE FROM NORMAL (INCHES)	PERCENT OF NORMAL
Panhandle	20.44	+1.42	107	1.74	+0.20	113
North Central	28.78	+1.11	104	2.83	+0.15	105
Northeast	36.33	+1.08	103	3.65	-0.11	97
West Central	28.38	+2.73	111	3.04	+0.46	118
Central	30.65	-1.69	95	3.86	+0.20	106
East Central	35.38	-2.47	93	3.93	-0.37	91
Southwest	27.10	+0.08	100	3.48	+0.49	116
South Central	33.66	-0.71	98	5.73	+1.57	138
Southeast	36.72	-3.96	90	4.97	+0.22	105
Statewide	30.80	-0.28	99	3.70	+0.32	109

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 (October 23, below), no regions in Oklahoma are currently experiencing drought conditions. In addition, none of Oklahoma's nine climate divisions have undergone PDSI moisture decreases since September 23. The most modest increase occurred in the Northeast climate division.

The latest monthly Standardized Precipitation Index (through September, below) indicates only some moderate long-term dryness in Oklahoma. Among the *selected* time periods (3-, 6-, 9- and 12-month SPIs), only the Southeast climate division indicates dry conditions ("moderately dry" over the 3-month period). Considering longer periods (through six years), the Southeast and East Central climate divisions report "moderately dry" conditions at times over the past 18, 24 and 30 months. [SPI updates are available around the 10th of each month.]

The latest Keetch-Byram Drought Index (October 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 have improved. Statewide, no Mesonet stations are currently at or above 600, generally indicative of more severe drought conditions (seven stations had a reading above 600 on September 28). Byars, in South Central Oklahoma, has the highest KBDI value (575). According to the Oklahoma Department of Agriculture, Food, and Forestry, Statewide Wildfire Preparedness remains at Level 2 (moderate fire danger). No counties are currently in a Burn Ban or Red Flag Fire Alert. Rains and higher humidity have temporarily reduced fire danger across eastern Oklahoma. However, dry, grassy fuels will still ignite easily and burn with surprising intensity when dry, windy conditions return to areas that have received only light moisture.

Palmer Drought Severity Index					Standardized Precipitation Index Through September 2004			
CLIMATE DIVISION (#)	CURRENT STATUS 10/23/2004	VALUE		CHANGE IN VALUE	3-MONTH	6-MONTH	9-MONTH	12-MONTH
		10/23	9/25					
Northwest (1)	UNUSUAL MOIST SPELL	2.78	1.82	0.96	MODERATELY WET	NEAR NORMAL	MODERATELY WET	NEAR NORMAL
North Central (2)	UNUSUAL MOIST SPELL	2.14	1.17	0.97	NEAR NORMAL	NEAR NORMAL	MODERATELY WET	NEAR NORMAL
Northeast (3)	INCIPIENT MOIST SPELL	0.88	0.56	0.32	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
West Central (4)	MOIST SPELL	1.67	1.18	0.49	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
Central (5)	MOIST SPELL	1.20	0.26	0.94	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
East Central (6)	NEAR NORMAL	0.28	-0.48	0.76	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
Southwest (7)	INCIPIENT MOIST SPELL	0.95	0.42	0.53	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
South Central (8)	MOIST SPELL	1.62	0.46	1.16	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
Southeast (9)	INCIPIENT MOIST SPELL	0.50	-0.62	1.12	MODERATELY DRY	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL

Keetch-Byram Drought Fire Index

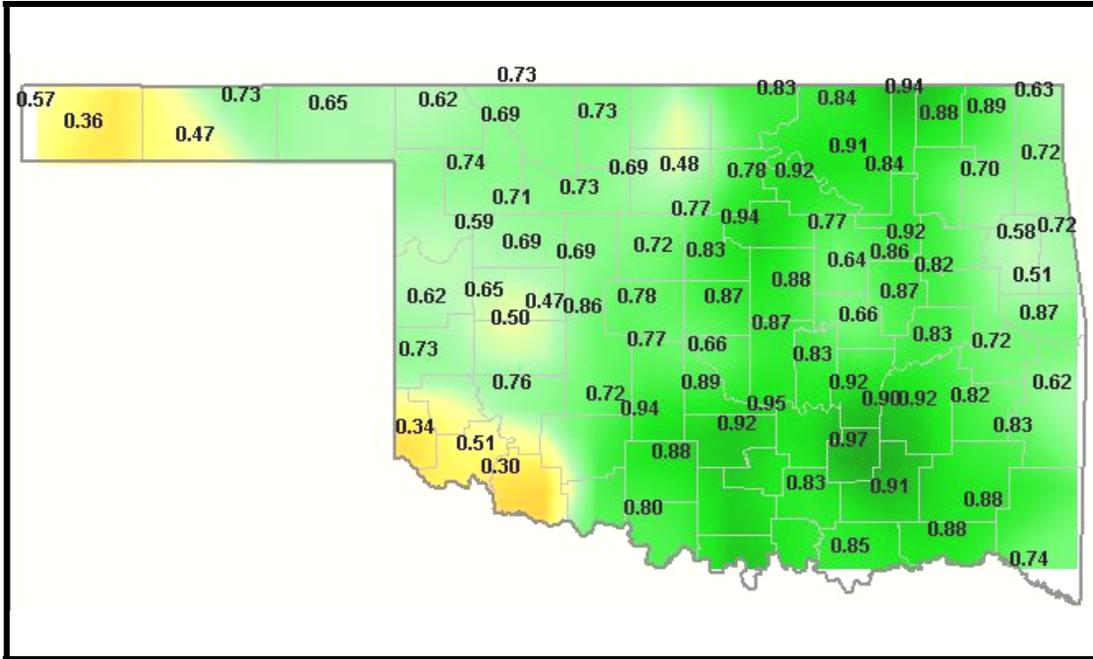
MESONET STATION	COUNTY	CLIMATE DIVISION	CURRENT VALUE 10/25/2004	ANTICIPATED IMPACT
Byars	Garvin	South Central	575	600-800: often associated with more severe drought; increased wildfire occurrence; intense deep burning fires with significant downwind spotting; live fuels also expected to burn actively. 400-600: lower litter and duff layers actively contribute to fire intensity and will burn actively; typical of late summer, early fall.
Webbers Falls	Muskogee	East Central	563	
Bristow	Creek	Central	507	

Total stations above 600 = 0

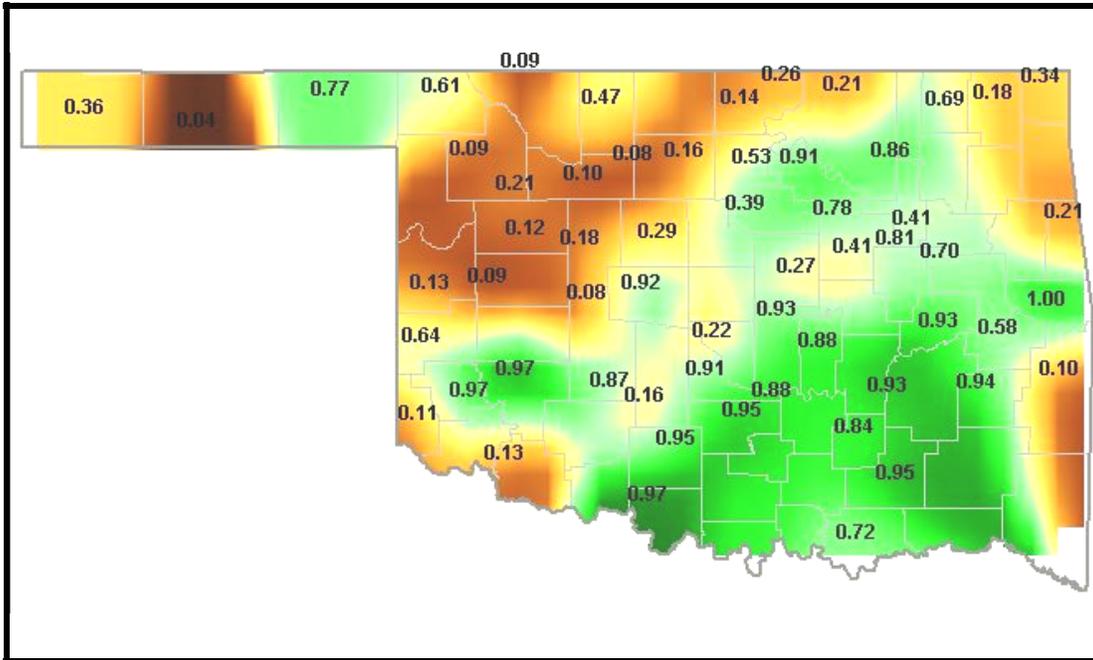
The PDSI may underestimate or overestimate the severity of ongoing dry periods. The SPI, more sensitive than the PDSI, provides a comparison of precipitation over a specified period with precipitation totals from that same period for all years included in the historical record. The 3-month SPI provides 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**
October 24, 2004
(Courtesy Oklahoma Climatological Survey)

5 cm (~2 inches)



60 cm (~2 feet)

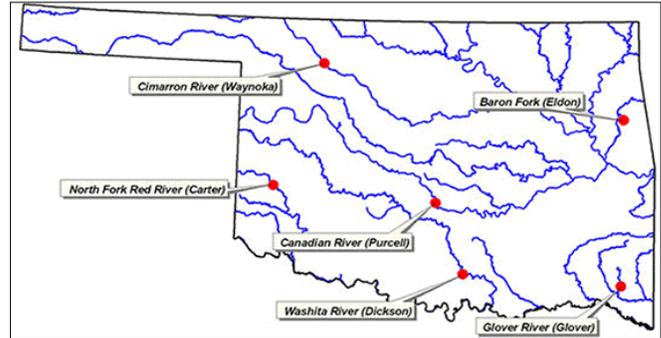


FWI Value Soil Wetness Conditions	
1.0 – 0.8	Enhanced Growth (~Field Capacity)
0.8 – 0.5	Limited Growth
0.5 – 0.3	Plants Dying
< 0.1	Barren Soil

Streamflow Conditions

Flows in rivers and streams in Oklahoma have receded somewhat, as of about two weeks ago. Considering overall trends as well as current flows, the most recent data (October 12, 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, 2002, compared to long-term, normal/median daily discharges) indicate **below average flow** in *south central* (Washita River, Carter County), *central* (Canadian River, McClain County), *southeast* (Glover River, McCurtain County) and *northwest* (Cimarron River, Woods County) Oklahoma; **near average flow** in the *northeast* (Baron Fork, Cherokee County) region; and **above average flow** in the *southwest* (North Fork/Red River, Beckham County).



Weather Forecast

The National Weather Service 8- to 14-day outlook (November 2-8) calls for below normal precipitation for all but the general southern one-half of Oklahoma, where normal rainfall is anticipated. Below normal temperatures should prevail for the entire state throughout the period.

The increase and eastward expansion of an area of anomalous warmth in the central equatorial Pacific Ocean from July through September may indicate the early stages of a warm (El Niño) episode. A majority of the statistical and coupled model forecasts indicate that this temperature pattern will continue through early 2005. 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

October 24 - Last week's sunshine and mild temperatures allowed farmers more time to work in the fields. Producers had 5.1 days available for field work. Many producers used this opportunity to try to finish up small grain planting. Rye planting was virtually complete with wheat and oat seeding winding down. Soil moisture declined slightly last week since little rain was received. Topsoil moisture was 2 percent surplus, 84 percent adequate, 10 percent short, and 4 percent very short. Subsoil moisture was 1 percent surplus, 71 percent adequate, 19 percent short, and 9 percent very short.

Small grain conditions were mostly good to excellent as planting nears completion. Some reports have indicated that the dryland wheat has been growing quickly with good stands. There were also reports of weed problems as well as some army worm and leaf hopper problems. Producers have not yet started turning cattle out onto the wheat fields but that should occur in the next few weeks. Wheat planted increased eight points to 89 percent complete. Wheat emerged also increased 8 points to 76 percent complete. Most of the rye was emerged and grazing was at 4 percent. Oats were behind last year but they made good progress last week. Seedbed prepared was at 85 percent complete, planted at 44 percent complete and 38 percent of the crop was emerged.

Row crop conditions continued to be mostly good to fair. All of the row crop progress was still a little behind normal. Corn harvest was at 92 percent harvested, slightly ahead of last year. Sorghum progress lagged behind normal the most with maturity at 71 percent, 20 points behind normal. Harvest jumped 10 points to 54 percent but was still behind normal trends. Soybeans were in good condition with 85 percent matured with harvest over halfway complete. Peanuts made good progress this week with a 19-point jump in dug and a 20-point jump in combined. Nearly all of the cotton bolls were opened and harvest made a 12-point increase to 34 percent.

Alfalfa hay cutting continued to be ahead of last year and the five-year average. The fifth cutting of alfalfa was at 83 percent, ahead of the previous year and the five-year average. The sixth cutting of alfalfa was at 33 percent complete. Other hay second cutting was 96 percent complete. All hay was in good to fair condition.

Cattle were rated in good to excellent condition. There are reports of stocker cattle on grass waiting for the first freeze before being put out on wheat pastures. Some producers were selling spring calves. Pastures remain in mostly good to fair condition throughout the state. Adequate moisture and warmer weather has allowed warm season forages to green up as well as cool season forages.

Reservoir Storage

Lake storage in Oklahoma remains generally good, although lakes in the southwest continue to experience low levels. As of October 25, the combined normal conservation pools of 31 selected major federal reservoirs across Oklahoma (see below) are approximately 92.9 percent full, a 1.6 percent decrease from that recorded on September 28, according to information from the U.S. Army Corps of Engineers (Tulsa District). Nine reservoirs have experienced lake level decreases since that time. Twenty-four reservoirs are currently operating at less than full capacity (compared to 27 last month). Three reservoirs—Lugert-Altus, only 20.7 percent full; Tom Steed, 56.6 percent; and Waurika, 77.8 percent—remain below 80 percent capacity.

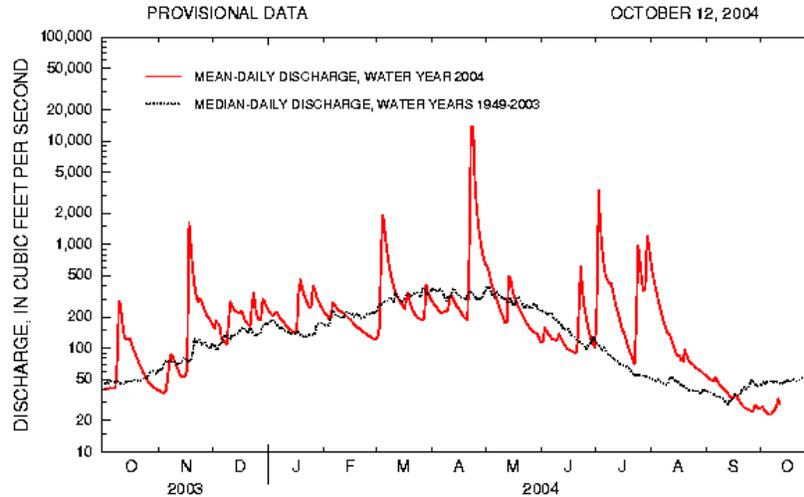
Storage in Selected Oklahoma Lakes & Reservoirs			
10/25/2004			
Climate Division Lake or Reservoir	Conservation Storage (acre-feet)	Present Storage (acre-feet)	Percent of Conservation Storage
North Central			
Fort Supply	13,900	12,502	89.9
Great Salt Plains	31,420	30,676	97.6
Kaw*	383,005	382,204	99.8
Regional Totals/Averages	428,325	425,382	99.3
Northeast			
Birch	19,225	18,164	94.5
Copan	43,400	43,097	99.3
Fort Gibson	365,200	365,200	100.0
Grand	1,672,000	1,536,570	91.9
Hudson	200,300	200,086	99.9
Hulah	25,100	25,100	100.0
Keystone	510,059	479,600	94.0
Oologah	552,210	529,859	96.0
Skiatook	322,700	312,323	96.8
Regional Totals/Averages	3,710,194	3,509,999	94.6
West Central			
Canton	111,310	92,569	83.2
Foss	165,480	152,067	91.9
Regional Totals/Averages	276,790	244,636	88.4
Central			
Arcadia	27,520	27,520	100.0
Heyburn	7,105	6,413	90.3
Thunderbird	119,600	118,340	98.9
Regional Totals/Averages	154,225	152,273	98.7
East Central			
Eufaula*	2,368,223	2,311,137	97.6
Tenkiller	654,100	612,833	93.7
Regional Totals/Averages	3,022,323	2,923,970	96.7
Southwest			
Fort Cobb	80,010	74,907	93.6
Lugert-Altus	132,830	27,435	20.7
Tom Steed	88,970	50,371	56.6
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*	2,661,266	2,464,986	92.6
Waurika*	190,200	148,048	77.8
Regional Totals/Averages	3,037,796	2,799,364	92.2
Southeast			
Broken Bow*	927,475	863,813	93.1
Hugo*	158,617	158,617	100.0
Pine Creek*	53,750	53,750	100.0
Sardis	274,330	273,125	99.6
Wister	60,162	51,668	85.9
Regional Totals/Averages	1,474,334	1,400,973	95.0
State Totals	12,405,797	11,530,282	92.9

* 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



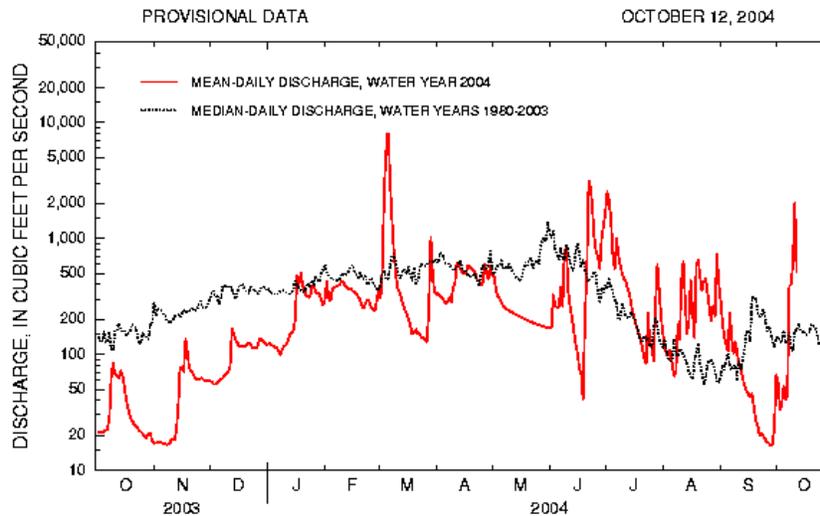
Comparison of daily discharges for water year 2004 and period of record for Baron Fork at Eldon, Oklahoma.

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 2004 and period of record for Canadian River at Purcell, Oklahoma.

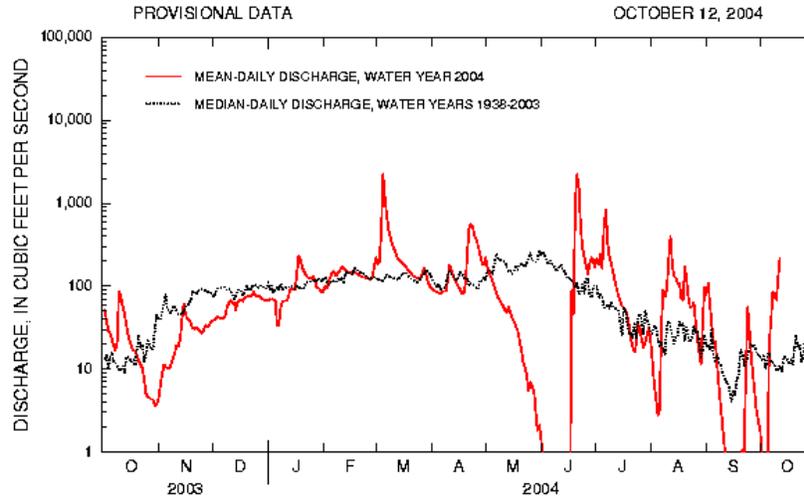
Data from U.S. Geological Survey

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 2004 and period of record for Cimarron River near Waynoka, Oklahoma.

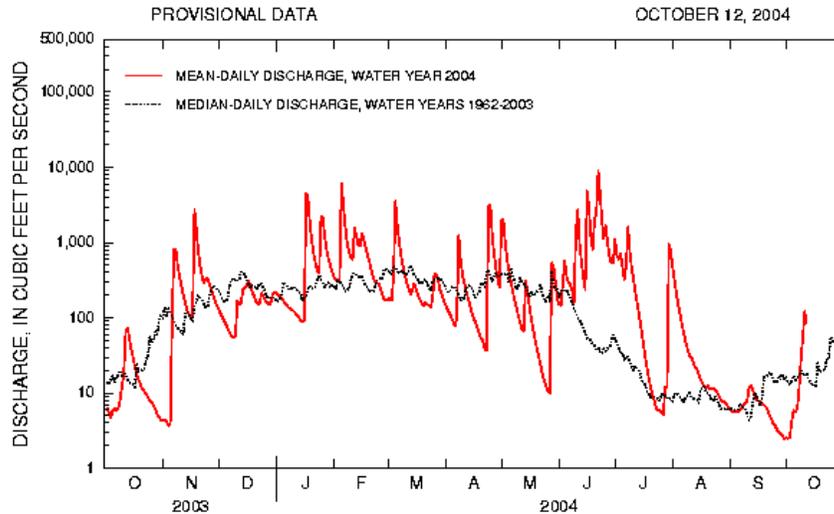
Data from U.S. Geological Survey

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 2004 and period of record for Glover River near Glover, Oklahoma.

Data from U.S. Geological Survey

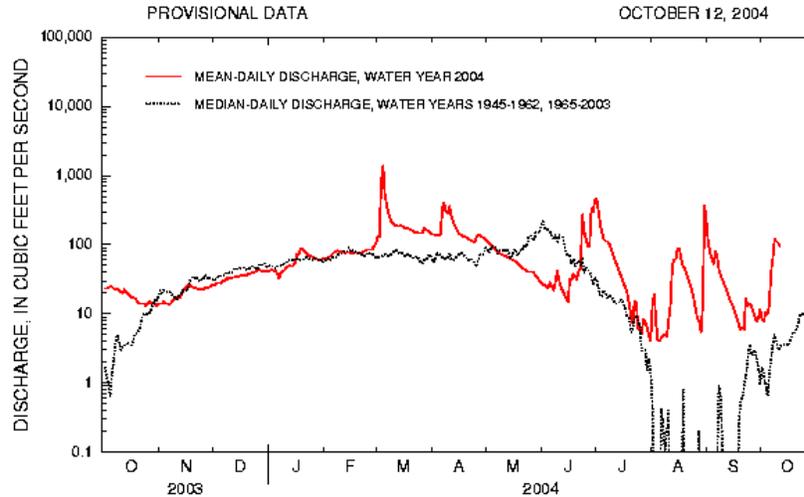
North Fork of the Red River near Carter

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 2004 and period of record for North Fork Red River near Carter, Oklahoma.

Data from U.S. Geological Survey

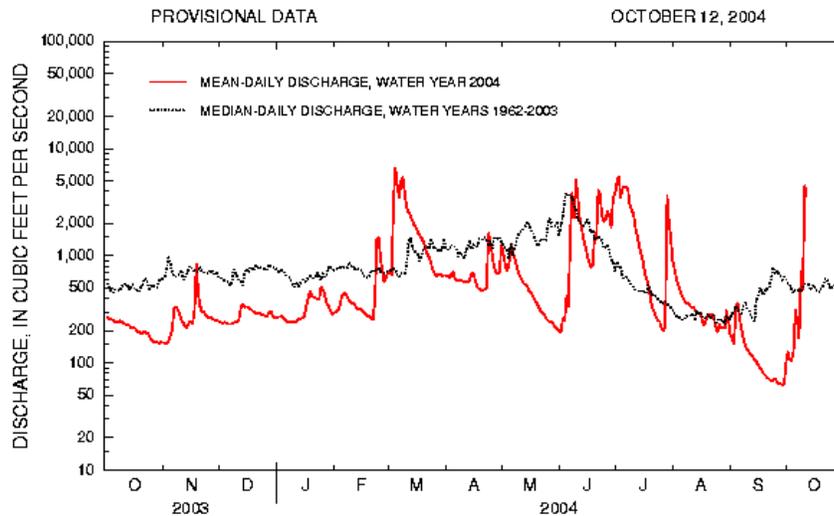
Washita River near Dickson

Washita River near Dickson, Oklahoma

Station No. 07331000

South-Central Oklahoma

Drainage Area 7,202 square miles



Comparison of daily discharges for water year 2004 and period of record for Washita River near Dickson, Oklahoma.

Data from U.S. Geological Survey