

Oklahoma Water Resources Bulletin

& Summary of Current Conditions



January 19, 2005

Statewide Precipitation & General Summary

A general surplus of moisture continues to exist throughout Oklahoma. 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 December 19 through January 17 (the last 30 days) is the Southwest climate division (1.35 inches, a surplus of 0.19 inches, 116 percent of normal).

Three regions have received more than twice their normal precipitation over the period. The current state-averaged rainfall total is 2.93 inches, 178 percent of normal.

For the calendar year, the state-averaged rainfall total is 2.89 inches, which is 363 percent of normal.



**Preliminary Statewide Precipitation
By Climate Division**

DIVISION (#)	CALENDAR YEAR JANUARY 1—17, 2005			LAST 30 DAYS DECEMBER 19, 2004—JANUARY 17, 2005		
	TOTAL RAINFALL (INCHES)	DEPARTURE FROM NORMAL (INCHES)	PERCENT OF NORMAL	TOTAL RAINFALL (INCHES)	DEPARTURE FROM NORMAL (INCHES)	PERCENT OF NORMAL
Panhandle	0.88	+0.60	310	0.97	+0.39	168
North Central	2.27	+1.76	445	2.27	+1.21	215
Northeast	3.84	+2.98	446	3.84	+2.02	211
West Central	1.55	+1.06	320	1.55	+0.59	161
Central	2.24	+1.49	298	2.24	+0.65	141
East Central	5.30	+4.14	454	5.31	+2.90	220
Southwest	1.35	+0.77	232	1.35	+0.19	116
South Central	3.42	+2.38	328	3.46	+1.36	164
Southeast	5.50	+3.96	357	5.75	+2.50	177
Statewide	2.89	+2.09	363	2.93	+1.29	178

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 (January 15, below), no regions in Oklahoma are currently experiencing drought conditions and all remain "moist." In addition, none of Oklahoma's nine climate divisions have undergone PDSI moisture decreases since December 18. The most modest increase occurred in the Northwest climate division.

The latest monthly Standardized Precipitation Index (through December, below) indicates no long-term dryness in Oklahoma. In fact, wet conditions continue to dominate. Among the *selected* time periods (3-, 6-, 9- and 12-month SPIs), no climate divisions indicate dryness. Considering longer periods (through six years), only the Southeast region indicates dry conditions ("moderately dry" over the past 24- and 30-month periods). [SPI updates are available around the 10th of each month.]

The latest Keetch-Byram Drought Index (January 18, 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 remain very 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 December 20). Kenton, in Northwest Oklahoma, has the highest KBDI value (97). 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. High humidity and cloudy and rainy weather have resulted in low fire danger. High fire danger will quickly return to the state when dry, sunny and windy conditions return. State fire officials ask citizens to avoid burning anything outdoors when winds exceed 20 mph.

Palmer Drought Severity Index					Standardized Precipitation Index Through December 2004			
CLIMATE DIVISION (#)	CURRENT STATUS 1/15/2005	VALUE		CHANGE IN VALUE	3-MONTH	6-MONTH	9-MONTH	12-MONTH
		1/15	12/18					
Northwest (1)	VERY MOIST SPELL	3.72	3.59	0.13	VERY WET	VERY WET	VERY WET	VERY WET
North Central (2)	EXTREME MOIST SPELL	4.15	3.32	0.83	MODERATELY WET	NEAR NORMAL	NEAR NORMAL	MODERATELY WET
Northeast (3)	VERY MOIST SPELL	3.05	2.19	0.86	MODERATELY WET	NEAR NORMAL	NEAR NORMAL	MODERATELY WET
West Central (4)	VERY MOIST SPELL	3.11	2.79	0.32	VERY WET	MODERATELY WET	NEAR NORMAL	VERY WET
Central (5)	UNUSUAL MOIST SPELL	2.86	2.53	0.33	VERY WET	MODERATELY WET	NEAR NORMAL	MODERATELY WET
East Central (6)	UNUSUAL MOIST SPELL	2.41	1.39	1.02	MODERATELY WET	MODERATELY WET	MODERATELY WET	MODERATELY WET
Southwest (7)	UNUSUAL MOIST SPELL	2.93	2.76	0.17	VERY WET	VERY WET	MODERATELY WET	VERY WET
South Central (8)	VERY MOIST SPELL	3.11	2.76	0.35	VERY WET	MODERATELY WET	MODERATELY WET	MODERATELY WET
Southeast (9)	UNUSUAL MOIST SPELL	2.54	1.40	1.14	MODERATELY WET	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL

Keetch-Byram Drought Fire Index

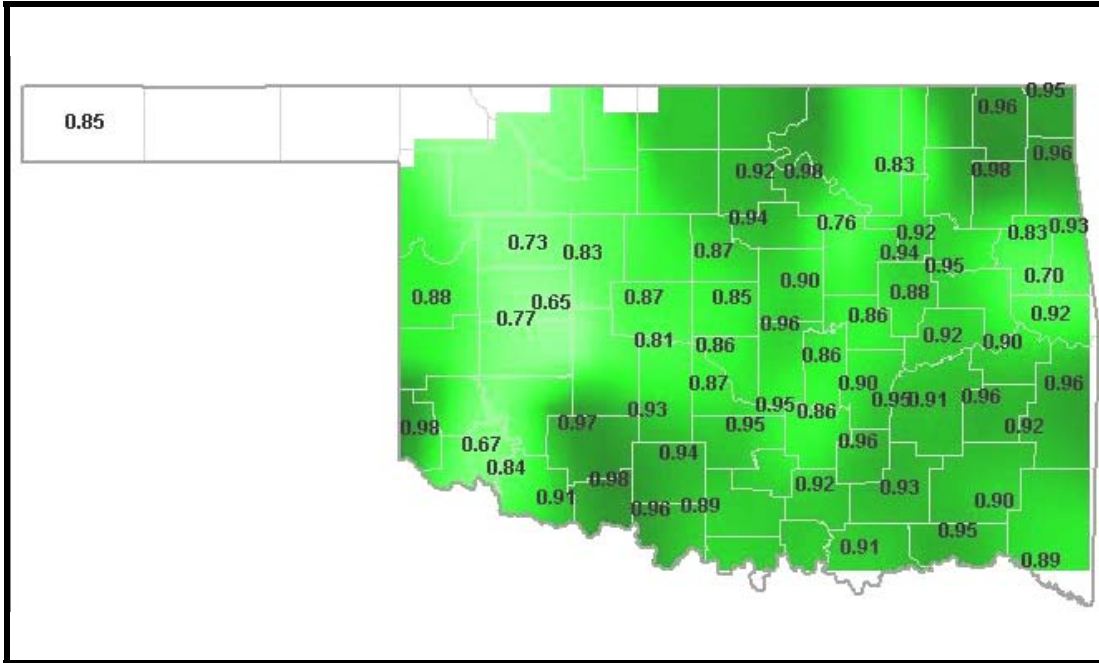
MESONET STATION	COUNTY	CLIMATE DIVISION	CURRENT VALUE 1/18/2005	ANTICIPATED IMPACT
Kenton	Cimarron	Northwest	97	600-800: often associated with more severe drought; increased wildfire occurrence; intense deep burning fires with significant downwind spotting; live fuels also expected to burn actively. 400-600: lower litter and duff layers actively contribute to fire intensity and will burn actively; typical of late summer, early fall.
Erick	Beckham	West Central	53	
Retrop	Washita	West Central	45	

Total stations above 600 = 0

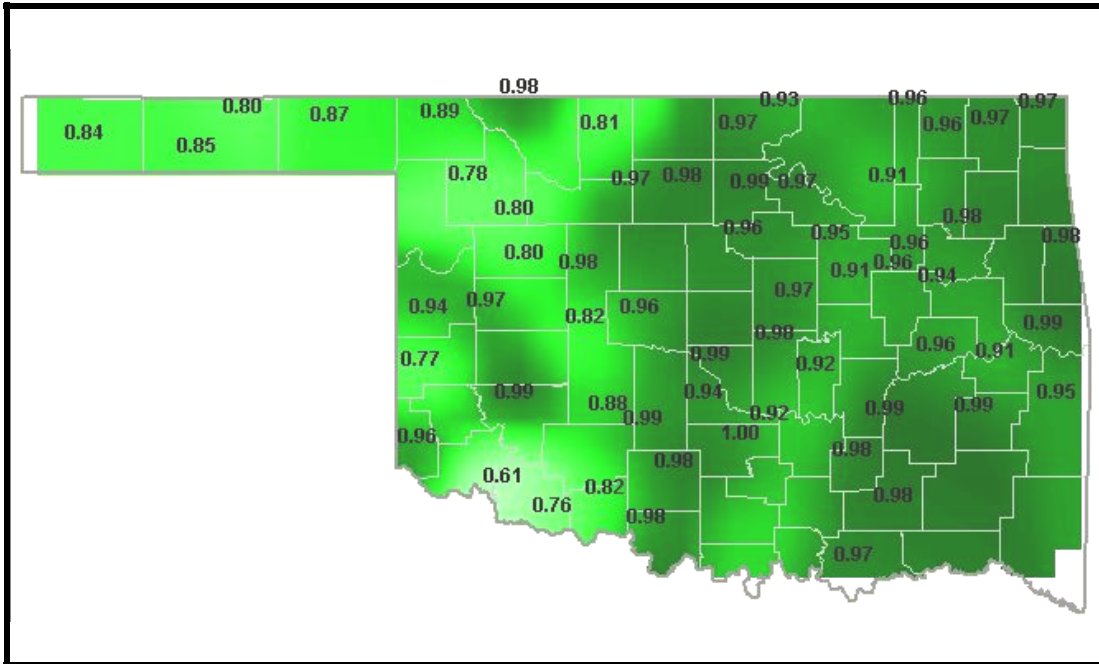
The PDSI may underestimate or overestimate the severity of ongoing dry periods. The SPI, more sensitive than the PDSI, provides a comparison of precipitation over a specified period with precipitation totals from that same period for all years included in the historical record. The 3-month SPI provides 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**
January 17, 2005
(Courtesy Oklahoma Climatological Survey)

5 cm (~2 inches)



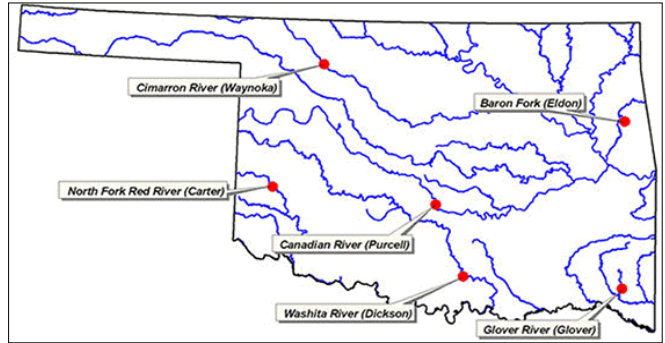
60 cm (~2 feet)



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 generally above normal. Considering overall trends as well as current flows, the most recent data (January 10, 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 **near average flow** in *southeast* (Glover River, McCurtain County) Oklahoma and **above average flow** in the *south central* (Washita River, Carter County), *southwest* (North Fork/Red River, Beckham County), *northwest* (Cimarron River, Woods County), *northeast* (Baron Fork, Cherokee County) and *central* (Canadian River, McClain County) regions.



Weather Forecast

The National Weather Service 8- to 14-day outlook (January 25-31) calls for below normal precipitation for the general southern one-third of Oklahoma and normal rainfall for the remainder of the state. Above normal temperatures are forecasted for the entire state throughout the period.

The increase and eastward expansion of an area of anomalous warmth in the central equatorial Pacific Ocean since July indicates the early stages of a weak warm (El Niño) episode. A majority of the statistical and coupled model forecasts indicate that this temperature pattern will continue through at least the next three 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

December 31 - Drier conditions combined with unusually warm temperatures throughout December allowed fields to dry out so producers could finish up harvest of row crops and small grain planting. Topsoil moisture at the end of December was 6 percent surplus, 79 percent adequate, 14 percent short, and 1 percent very short. Subsoil moisture was 6 percent surplus, 84 percent adequate, 8 percent short and 2 percent very short.

Due to wet conditions during the fall of 2004, a small percentage of producers were still planting wheat into December. Wheat conditions continued to be mostly good to excellent. Winter wheat grazed was at 50 percent, up significantly from last year, which was 35 percent, and the five-year average at 34 percent. Oat and rye conditions were mostly good at 61 percent and 81 percent, respectively. Oats grazed were at 17 percent, down from the normal of 24 percent. However, rye grazed, at 65 percent, was up significantly from the normal of 36 percent.

Livestock conditions ranged from mostly good to fair. Livestock conditions were 70 percent good and 17 percent fair compared to 56 percent good and 31 percent fair at this time last year. The death loss of cattle was average to light. Hay supplies were rated as mostly above average. Pastures were in mostly good condition due to the above average rainfall received throughout the summer and fall. Milder temperatures have also been beneficial to pastures. Pasture and range conditions were at 8 percent excellent, 51 percent good, 32 percent fair, 8 percent poor and 1 percent very poor.

Reservoir Storage

Lake storage in Oklahoma remains generally good, although lakes in the southwest continue to experience low levels. As of January 18, the combined normal conservation pools of 31 selected major federal reservoirs across Oklahoma (see below) are approximately 98.1 percent full, a 0.6 percent increase from that recorded on December 20, according to information from the U.S. Army Corps of Engineers (Tulsa District). Only two reservoirs have experienced lake level decreases since that time and only three reservoirs are currently operating at less than full capacity (compared to eight last month). Two reservoirs—Lugert-Altus, only 45.8 percent full; and Tom Steed, 77.8 percent—remain below 80 percent capacity.

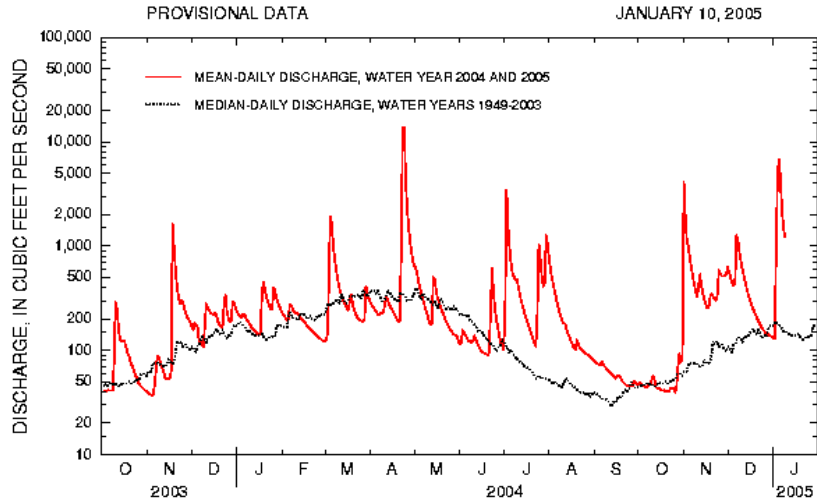
Storage in Selected Oklahoma Lakes & Reservoirs			
<i>01/18/2005</i>			
<i>Climate Division</i> Lake or Reservoir	Conservation Storage (acre-feet)	Present Storage (acre-feet)	Percent of Conservation Storage
North Central			
Fort Supply	13,900	13,900	100.0
Great Salt Plains	31,420	31,420	100.0
Kaw*	442,080	442,080	100.0
Regional Totals/Averages	487,400	487,400	100.0
Northeast			
Birch	19,225	19,225	100.0
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	322,700	100.0
Regional Totals/Averages	3,710,194	3,710,194	100.0
West Central			
Canton	111,310	111,310	100.0
Foss	165,480	162,207	98.0
Regional Totals/Averages	276,790	273,517	98.8
Central			
Arcadia	27,520	27,520	100.0
Heyburn	7,105	7,105	100.0
Thunderbird	119,600	119,600	100.0
Regional Totals/Averages	154,225	154,225	100.0
East Central			
Eufaula*	2,368,223	2,368,223	100.0
Tenkiller	654,100	654,100	100.0
Regional Totals/Averages	3,022,323	3,022,323	100.0
Southwest			
Fort Cobb	80,010	80,010	100.0
Lugert-Altus	132,830	60,838	45.8
Tom Steed	88,970	69,242	77.8
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*	2,523,770	2,523,770	100.0
Waurika*	190,200	190,200	100.0
Regional Totals/Averages	2,900,300	2,900,300	100.0
Southeast			
Broken Bow*	918,070	918,070	100.0
Hugo*	179,657	179,657	100.0
Pine Creek*	53,750	53,750	100.0
Sardis	274,330	274,330	100.0
Wister	60,162	60,162	100.0
Regional Totals/Averages	1,485,969	1,485,969	100.0
State Totals	12,339,011	12,107,613	98.1

* 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



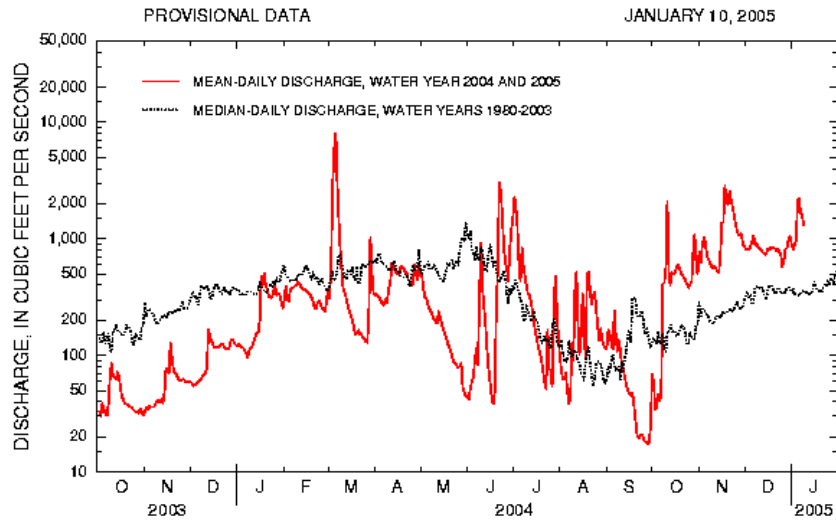
Comparison of daily discharges for water year 2004 and 2005 and period of record for Baron Fork at Eldon, Oklahoma.

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 2004 and 2005 and period of record for Canadian River at Purcell, Oklahoma.

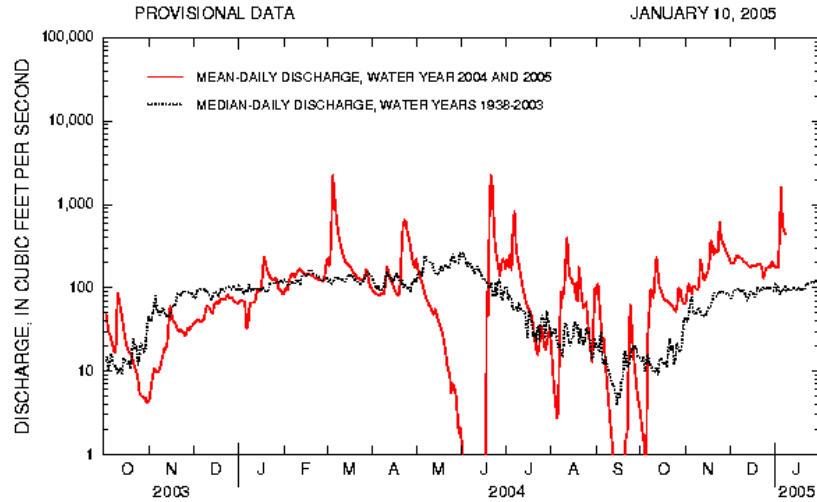
Data from U.S. Geological Survey

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 2004 and 2005 and period of record for Cimarron River near Waynoka, Oklahoma.

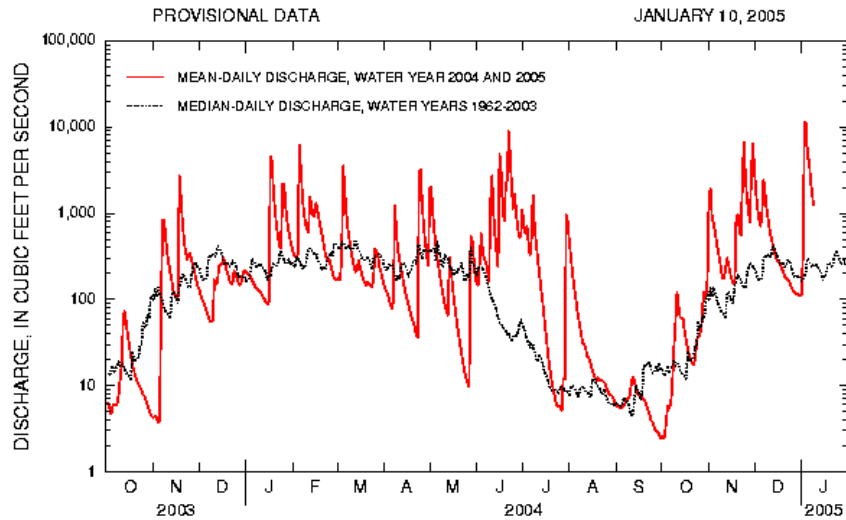
Data from U.S. Geological Survey

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 2004 and 2005 and period of record for Glover River near Glover, Oklahoma.

Data from U.S. Geological Survey

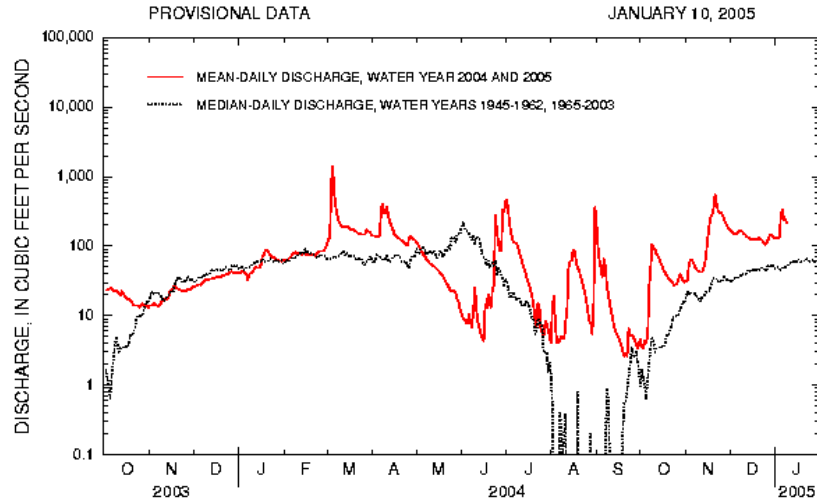
North Fork of the Red River near Carter

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 2004 and 2005 and period of record for North Fork Red River near Carter, Oklahoma.

Data from U.S. Geological Survey

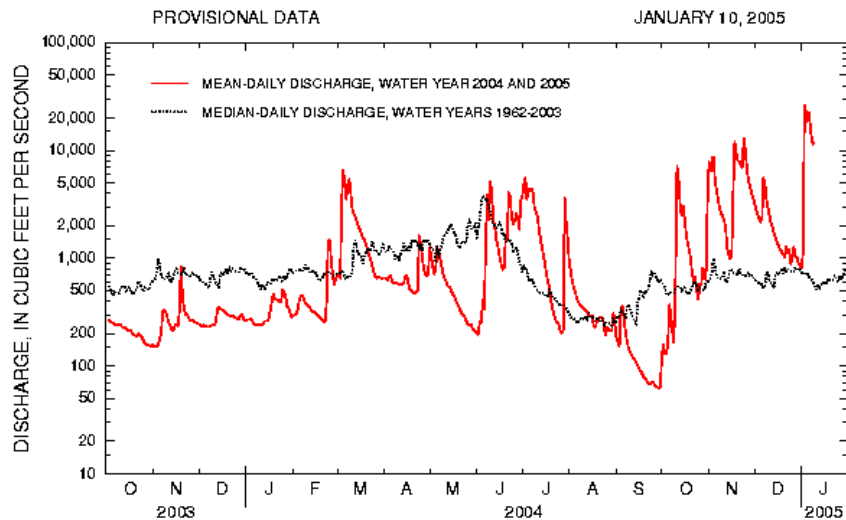
Washita River near Dickson

Washita River near Dickson, Oklahoma

Station No. 07331000

South-Central Oklahoma

Drainage Area 7,202 square miles



Comparison of daily discharges for water year 2004 and 2005 and period of record for Washita River near Dickson, Oklahoma.

Data from U.S. Geological Survey