

Oklahoma Water Resources Bulletin

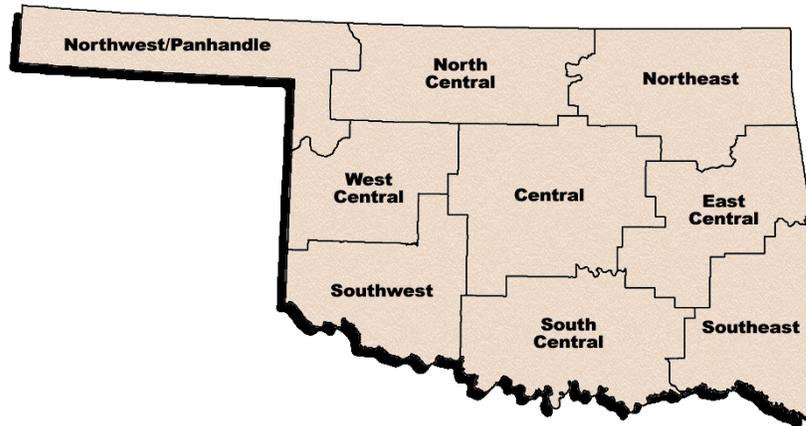
& Summary of Current Conditions



March 16, 2005

Statewide Precipitation & General Summary

While wet conditions have prevailed throughout much of the winter, a recent dry spell is beginning to impact many areas of Oklahoma. All regions of the state have received less than one-half of their respective normal precipitation over the past month. According to preliminary Mesonet weather station data provided by the Oklahoma Climatological Survey and National Weather Service (see below), the areas receiving the lowest percent of normal rainfall over the last 30 days (from February 13 through March 14) are the Panhandle (0.26 inches, 24 percent of normal) and South Central (0.69 inches, a deficit of 2.18 inches and 24 percent of normal) climate divisions. No region has received more than 37 percent of its average over the period. The current state-averaged rainfall total is 0.70 inches, 29 percent of normal.



For the cool growing season, which began September 1, 2004, moisture conditions are much more favorable. The state-averaged rainfall total is 17.51 inches, 105 percent of normal.

Preliminary Statewide Precipitation By Climate Division

DIVISION (#)	COOL GROWING SEASON SEPTEMBER 1, 2004—MARCH 14, 2005			LAST 30 DAYS FEBRUARY 13—MARCH 14, 2005		
	TOTAL RAINFALL (INCHES)	DEPARTURE FROM NORMAL (INCHES)	PERCENT OF NORMAL	TOTAL RAINFALL (INCHES)	DEPARTURE FROM NORMAL (INCHES)	PERCENT OF NORMAL
Panhandle	9.91"	+2.88"	141%	0.26"	-0.84"	24%
North Central	13.89"	+1.36"	111%	0.60"	-1.31"	32%
Northeast	18.85"	-0.67"	97%	0.91"	-1.87"	33%
West Central	14.24"	+2.68"	123%	0.47"	-1.27"	27%
Central	17.15"	-0.13"	99%	0.90"	-1.62"	36%
East Central	23.15"	+0.23"	101%	0.81"	-2.42"	25%
Southwest	15.48"	+2.58"	120%	0.66"	-1.12"	37%
South Central	21.04"	+1.11"	106%	0.69"	-2.18"	24%
Southeast	24.76"	-1.88"	93%	0.95"	-2.86"	25%
Statewide	17.51"	+0.87"	105%	0.70"	-1.71"	29%

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 (March 12, below), no regions in Oklahoma are currently experiencing drought conditions and all remain "moist." However, all of Oklahoma's nine climate divisions have undergone PDSI moisture decreases since February 12. The greatest decreases occurred in the Southeast and East Central climate divisions.

The latest monthly Standardized Precipitation Index (through February, below) indicates no long-term dryness in Oklahoma; wet conditions continue to dominate. Among the *selected* time periods (3-, 6-, 9- and 12-month SPIs), no climate divisions indicate dryness. And considering longer periods (through six years), no regions indicate dry conditions. [SPI updates are available around the 10th of each month.]

The latest Keetch-Byram Drought Index (March 14, 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 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 February 18). Burneyville, in South Central Oklahoma, has the highest KBDI value (128). According to the Oklahoma Department of Agriculture, Food, and Forestry, Statewide Wildfire Preparedness is at Level 3 (moderate fire danger). **However, as of March 11, a Red Flag Fire Alert has been issued for the entire state.** The fire danger is considered very high in all counties. High winds and low humidities are occurring throughout the state. Dry, grassy fuels will ignite easily and burn with surprising intensity. Additional caution is needed with all outdoor burning; state fire officials ask citizens to avoid burning anything outdoors when winds exceed 20 mph.

Palmer Drought Severity Index					Standardized Precipitation Index Through February 2005			
CLIMATE DIVISION (#)	CURRENT STATUS 3/12/2005	VALUE		CHANGE IN VALUE	3-MONTH	6-MONTH	9-MONTH	12-MONTH
		3/12	2/12					
Northwest (1)	UNUSUAL MOIST SPELL	2.97	4.09	-1.12	MODERATELY WET	VERY WET	EXTREMELY WET	VERY WET
North Central (2)	VERY MOIST SPELL	3.48	4.26	-0.78	MODERATELY WET	MODERATELY WET	VERY WET	VERY WET
Northeast (3)	MOIST SPELL	1.81	2.96	-1.15	MODERATELY WET	MODERATELY WET	MODERATELY WET	VERY WET
West Central (4)	UNUSUAL MOIST SPELL	2.51	3.26	-0.75	NEAR NORMAL	VERY WET	VERY WET	VERY WET
Central (5)	UNUSUAL MOIST SPELL	2.10	2.90	-0.80	NEAR NORMAL	MODERATELY WET	VERY WET	MODERATELY WET
East Central (6)	INCIPEINT MOIST SPELL	0.68	2.07	-1.39	NEAR NORMAL	NEAR NORMAL	VERY WET	MODERATELY WET
Southwest (7)	UNUSUAL MOIST SPELL	2.43	3.16	-0.73	NEAR NORMAL	VERY WET	VERY WET	VERY WET
South Central (8)	UNUSUAL MOIST SPELL	2.10	3.13	-1.03	NEAR NORMAL	MODERATELY WET	VERY WET	VERY WET
Southeast (9)	INCIPEINT MOIST SPELL	0.58	1.99	-1.41	NEAR NORMAL	MODERATELY WET	MODERATELY WET	NEAR NORMAL

Keetch-Byram Drought Fire Index

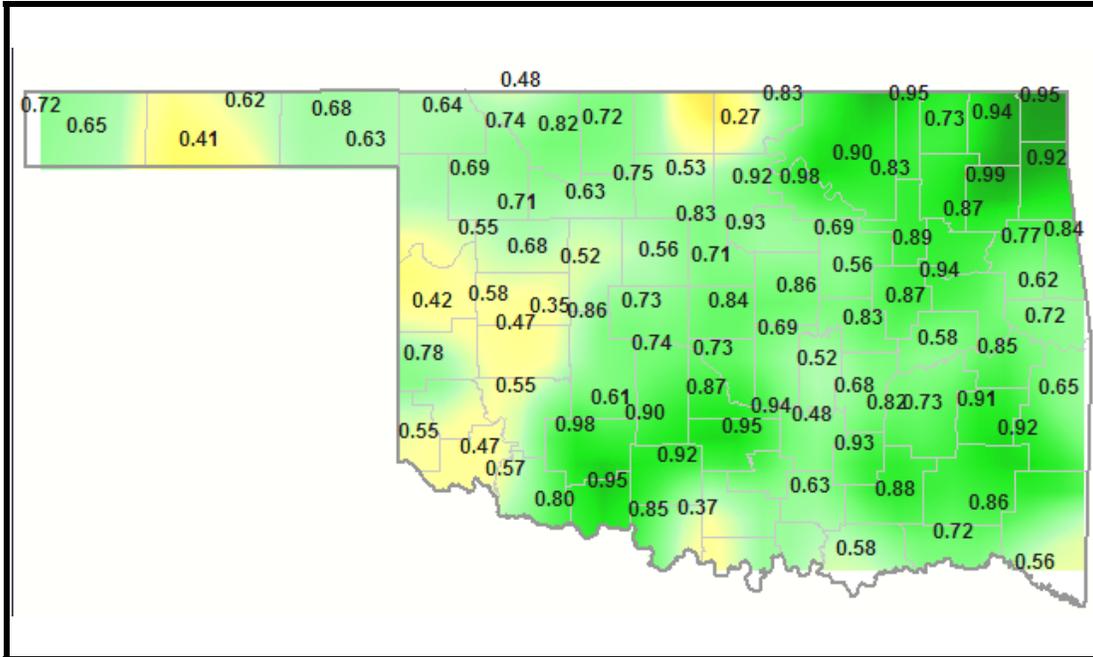
MESONET STATION	COUNTY	CLIMATE DIVISION	CURRENT VALUE 3/14/2005	ANTICIPATED IMPACT
Burneyville	Love	South Central	128	<u>600-800</u> : often associated with more severe drought; increased wildfire occurrence; intense deep burning fires with significant downwind spotting; live fuels also expected to burn actively. <u>400-600</u> : lower litter and duff layers actively contribute to fire intensity and will burn actively; typical of late summer, early fall.
Centrahoma	Coal	South Central	113	
Webbers Falls	Muskogee	East Central	113	

Total stations above 600 = 0

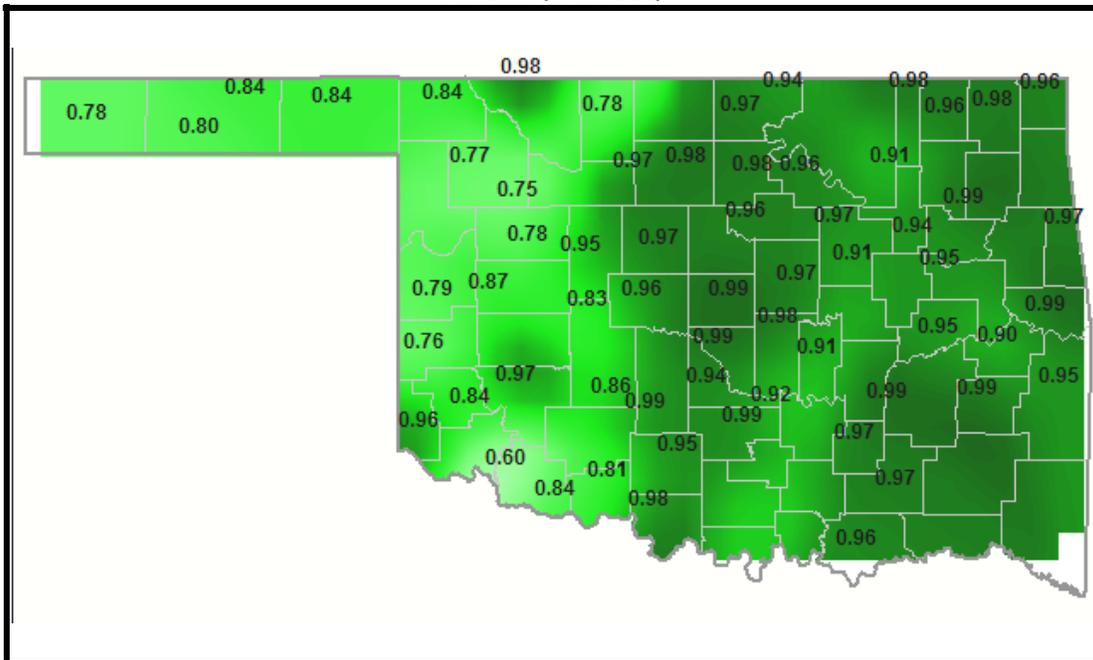
The PDSI may underestimate or overestimate the severity of ongoing dry periods. The SPI, more sensitive than the PDSI, provides a comparison of precipitation over a specified period with precipitation totals from that same period for all years included in the historical record. The 3-month SPI provides 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**
March 13, 2005
(Courtesy Oklahoma Climatological Survey)

5 cm (~2 inches)



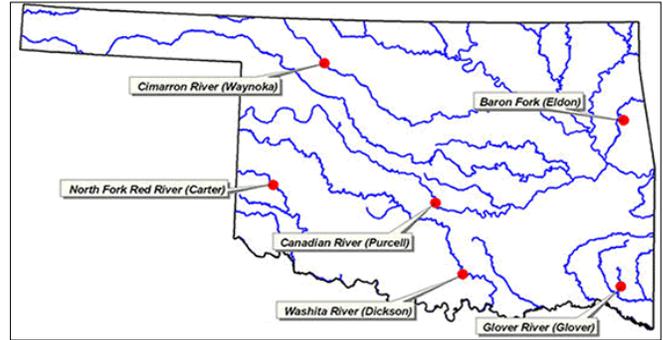
60 cm (~2 feet)



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 generally adequate but are trending slightly downward. Considering overall trends as well as current flows, the most recent data (March 14, 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 **below average flow** in *southeast* (Glover River, McCurtain County) Oklahoma; **near average flow** in the *south central* (Washita River, Carter County) and *northeast* (Baron Fork, Cherokee County) regions; and **above average flow** in *southwest* (North Fork/Red River, Beckham County), *central* (Canadian River, McClain County), and *northwest* (Cimarron River, Woods County) Oklahoma.



Weather Forecast

The National Weather Service 8- to 14-day outlook (March 22-28) calls for above normal precipitation for all but the general northwestern quarter of Oklahoma, where normal rainfall is expected. Normal temperatures are forecasted for the entire state throughout the period.

The weak warm (El Niño) episode currently in development is weakening. A majority of the statistical and coupled model forecasts indicate that early El Niño conditions will continue to weaken during the next three months and near-neutral conditions will prevail during the summer. 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

February 28 - Unseasonably warm temperatures were common during the month of February with temperatures averaging in the mid 40s throughout the state. Both topsoil and subsoil moisture continued to be mostly adequate to surplus. Many fields have not dried out since last fall's heavy rains. Topsoil moisture was 71 percent adequate and 26 percent surplus while subsoil moisture was 81 percent adequate and 15 percent surplus.

Wheat, rye and oat conditions were mostly good to excellent. All small grain conditions were up from last year this time, but slightly down from last month. Winter wheat being grazed was at 57 percent, up from both last year's 46 percent and the five-year average of 45 percent. The winter wheat condition was 14 percent excellent, 54 percent good, 28 percent fair, 3 percent poor and 1 percent very poor. During February of last year, the wheat condition was 7 percent excellent, 39 percent good, 31 percent fair, 14 percent poor and 9 percent very poor. Rye grazing was at 85 percent up from last year's 74 percent and the five-year average of 52 percent. Rye condition was 13 percent excellent, 67 percent good, 17 percent fair and 3 percent poor. Oat grazing was up from both last year and the five-year average. Oat condition was 3 percent excellent, 50 percent good, 41 percent fair, 5 percent poor and 1 percent very poor.

Livestock were rated in mostly good condition. Livestock conditions were 61 percent good and 24 percent fair compared to 44 percent good and 33 percent fair at this time last year. Death loss of cattle was mostly light. Hay supplies were rated as mostly average.

Pasture and range conditions were down slightly from last month, but continue to be mostly fair to good. Pasture and range conditions were 8 percent excellent, 45 percent good, 32 percent fair, 12 percent poor and 3 percent very poor. Some respondents reported that the pastures were still muddy and sunny weather was needed to dry them out.

Reservoir Storage

Lake storage in Oklahoma remains generally good, although lakes in the southwest continue to experience low levels. As of March 14, the combined normal conservation pools of 31 selected major federal reservoirs across Oklahoma (see below) are approximately 97.1 percent full, a 0.3 percent decrease from that recorded on February 18, according to information from the U.S. Army Corps of Engineers (Tulsa District). Twenty-three reservoirs have experienced lake level decreases since that time; only five reservoirs are currently operating at less than full capacity (compared to four last month). Two reservoirs—Lugert-Altus, only 59.2 percent full; and Tom Steed, 78.1 percent—remain below 80 percent capacity.

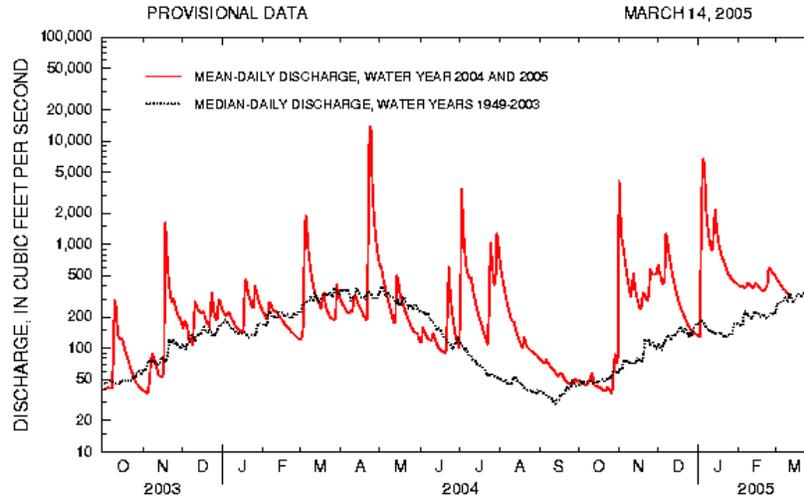
Storage in Selected Oklahoma Lakes & Reservoirs			
03/14/2005			
Climate Division Lake or Reservoir	Conservation Storage (acre-feet)	Present Storage (acre-feet)	Percent of Conservation Storage
North Central			
Fort Supply	13,900	13,508	97.2
Great Salt Plains	31,420	31,420	100.0
Kaw*	383,005	383,005	100.0
Regional Totals/Averages	428,325	427,933	99.9
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	1,554,601	93.0
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	3,592,795	96.8
West Central			
Canton	111,310	111,310	100.0
Foss	165,480	154,199	93.2
Regional Totals/Averages	276,790	265,509	95.9
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	78,594	59.2
Tom Steed	88,970	69,461	78.1
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*	2,418,626	2,418,626	100.0
Waurika*	190,200	190,200	100.0
Regional Totals/Averages	2,795,156	2,795,156	100.0
Southeast			
Broken Bow*	918,070	918,070	100.0
Hugo*	158,617	158,617	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	1,464,929	1,464,929	100.0
State Totals	12,153,752	11,796,555	97.1

* 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



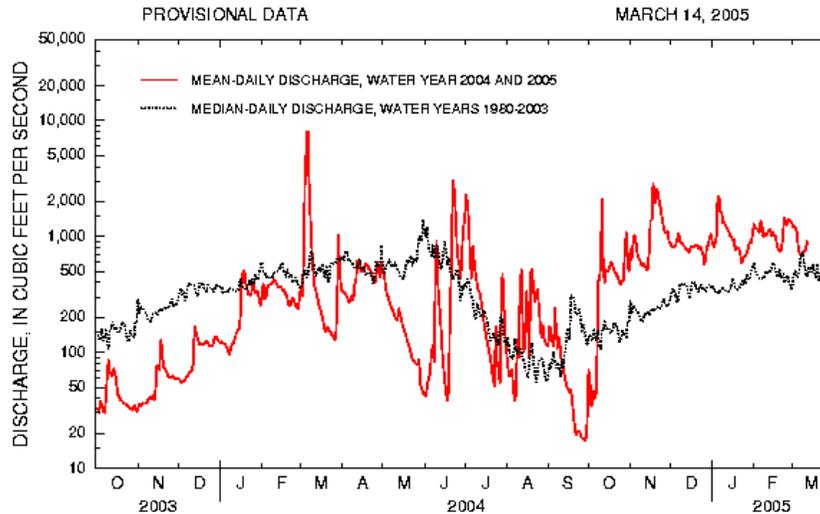
Comparison of daily discharges for water year 2004 and 2005 and period of record for Baron Fork at Eldon, Oklahoma.

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.

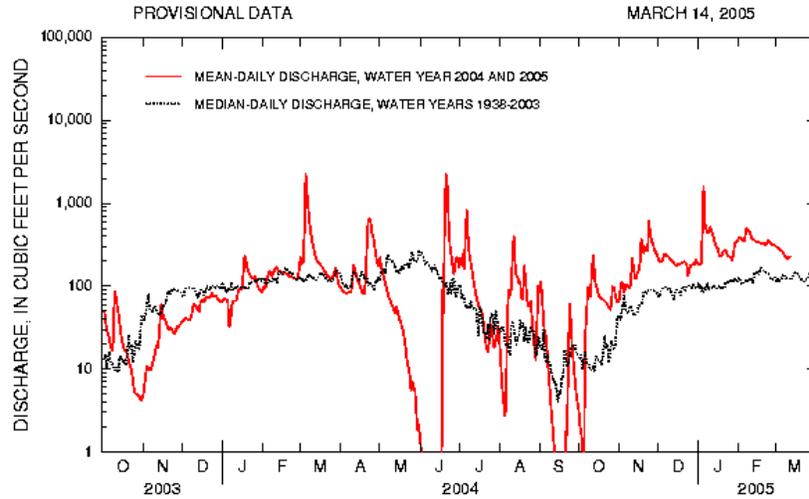
Data from U.S. Geological Survey

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.

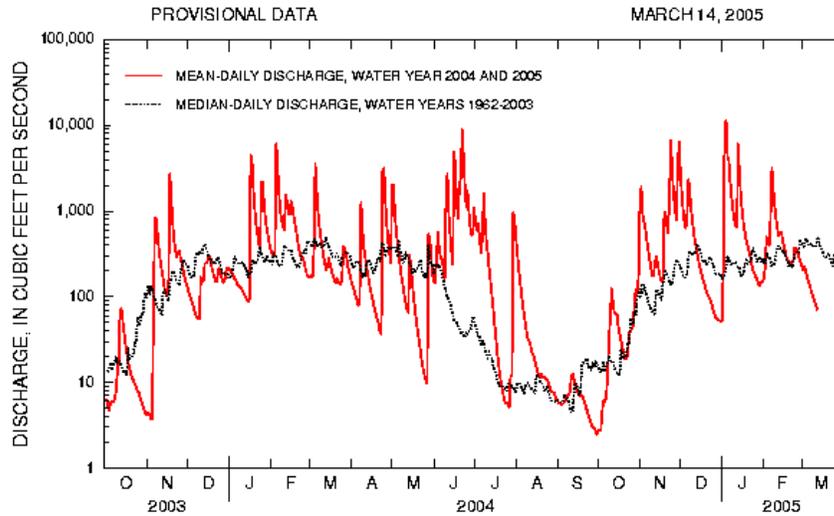
Data from U.S. Geological Survey

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

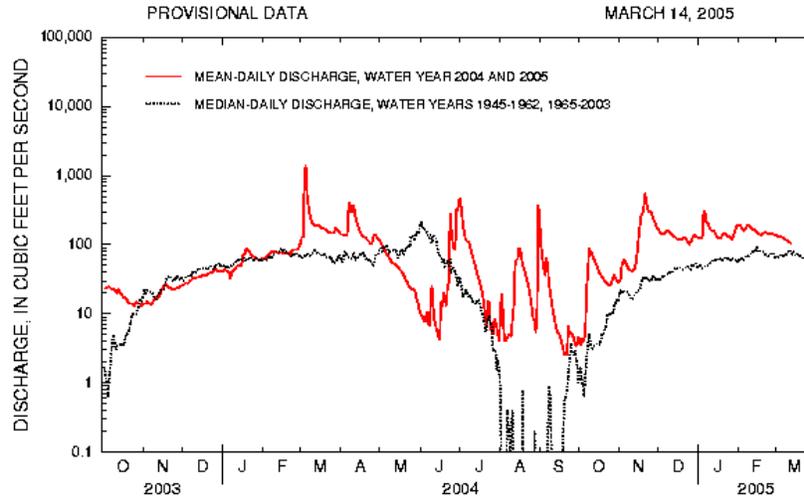
North Fork of the Red River near Carter

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

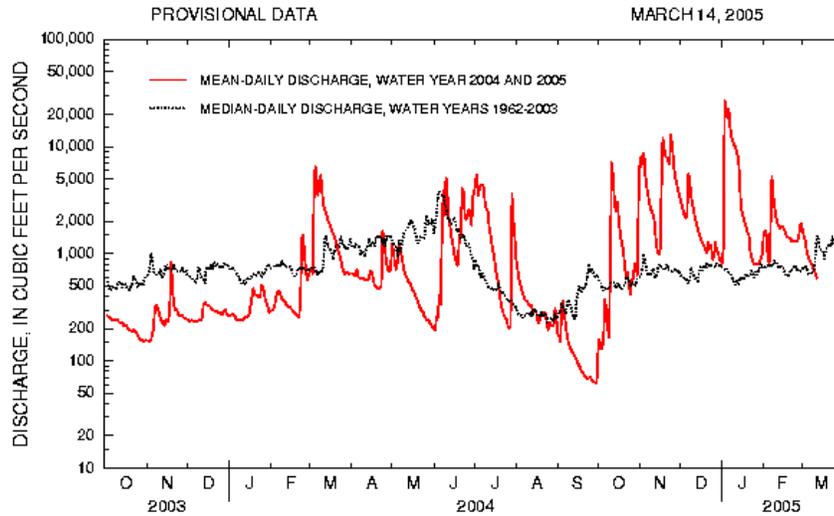
Washita River near Dickson

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