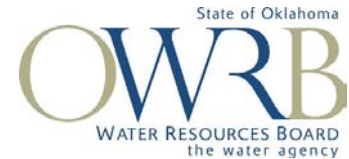


Oklahoma Water Resources Bulletin

& Summary of Current Conditions



December 22, 2004

Statewide Precipitation & General Summary

A general surplus of moisture exists throughout much of 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 November 20 through December 19 (the last 30 days) is the East Central climate division (2.77 inches, a deficit of 0.63 inches, 82 percent of normal).

Only one other region, the Northeast (91 percent of normal), has received below normal precipitation for the period. The current state-averaged rainfall total is 2.45 inches, 108 percent of normal.

For the calendar year, only the Southeast climate division is below average. The state-averaged rainfall total is 38.33 inches, 107 percent of normal.



Preliminary Statewide Precipitation By Climate Division

DIVISION (#)	CALENDAR YEAR JANUARY 1—DECEMBER 19, 2004			LAST 30 DAYS NOVEMBER 20—DECEMBER 19, 2004		
	TOTAL RAINFALL (INCHES)	DEPARTURE FROM NORMAL (INCHES)	PERCENT OF NORMAL	TOTAL RAINFALL (INCHES)	DEPARTURE FROM NORMAL (INCHES)	PERCENT OF NORMAL
Panhandle	24.23"	+3.40"	116%	1.64"	+0.83"	202%
North Central	34.52"	+3.37"	111%	1.72"	+0.16"	110%
Northeast	44.10"	+3.01"	107%	2.48"	-0.24"	91%
West Central	35.13"	+6.48"	123%	1.93"	+0.60"	145%
Central	38.43"	+1.22"	103%	2.40"	+0.13"	106%
East Central	45.63"	+0.69"	102%	2.77"	-0.63"	82%
Southwest	34.54"	+4.27"	114%	1.73"	+0.25"	117%
South Central	42.47"	+2.49"	106%	2.67"	-0.01"	100%
Southeast	46.58"	-2.79"	94%	5.03"	+0.68"	116%
Statewide	38.33"	+2.42"	107%	2.45"	+0.18"	108%

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 (December 18, below), no regions in Oklahoma are currently experiencing drought conditions. Five of Oklahoma's nine climate divisions have undergone PDSI moisture decreases since November 20. The greatest decrease occurred in the West Central climate division.

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

The latest Keetch-Byram Drought Index (December 20, 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 improve. 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 November 22). Idabel, in Southeast Oklahoma, retains the highest KBDI value (312). 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. However, dormant, grassy fuels will easily ignite and burn with surprising intensity when winds are high and humidity is low. The benefits of November rains are very temporary in light fuels with high winds. Avoid burning anything outdoors when winds exceed 20 mph.

Palmer Drought Severity Index					Standardized Precipitation Index Through November 2004			
CLIMATE DIVISION (#)	CURRENT STATUS 12/18/2004	VALUE		CHANGE IN VALUE	3-MONTH	6-MONTH	9-MONTH	12-MONTH
		12/18	11/20					
Northwest (1)	VERY MOIST SPELL	3.59	3.84	-0.25	VERY WET	VERY WET	VERY WET	VERY WET
North Central (2)	VERY MOIST SPELL	3.32	3.28	0.04	MODERATELY WET	MODERATELY WET	MODERATELY WET	VERY WET
Northeast (3)	UNUSUAL MOIST SPELL	2.19	2.23	-0.04	NEAR NORMAL	MODERATELY WET	MODERATELY WET	MODERATELY WET
West Central (4)	UNUSUAL MOIST SPELL	2.79	3.28	-0.49	VERY WET	VERY WET	VERY WET	VERY WET
Central (5)	UNUSUAL MOIST SPELL	2.53	2.53	0.00	MODERATELY WET	VERY WET	MODERATELY WET	MODERATELY WET
East Central (6)	MOIST SPELL	1.39	1.56	-0.17	MODERATELY WET	VERY WET	MODERATELY WET	MODERATELY WET
Southwest (7)	UNUSUAL MOIST SPELL	2.76	2.82	-0.06	VERY WET	VERY WET	VERY WET	VERY WET
South Central (8)	UNUSUAL MOIST SPELL	2.76	2.61	0.15	MODERATELY WET	VERY WET	MODERATELY WET	MODERATELY WET
Southeast (9)	MOIST SPELL	1.40	1.17	0.23	MODERATELY WET	MODERATELY WET	NEAR NORMAL	NEAR NORMAL

Keetch-Byram Drought Fire Index

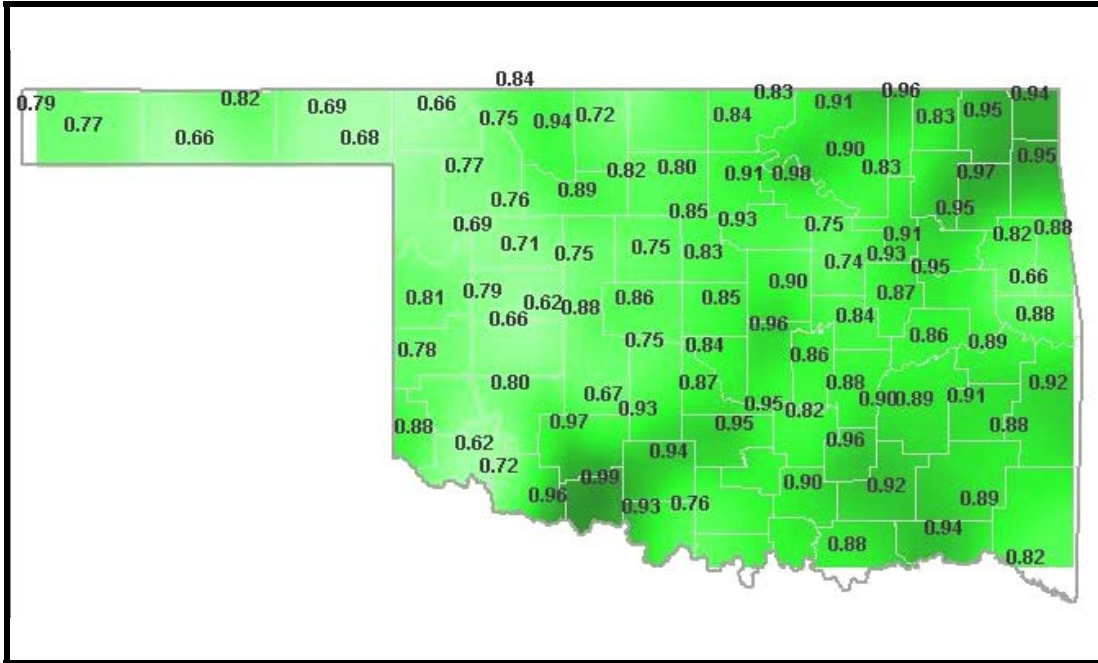
MESONET STATION	COUNTY	CLIMATE DIVISION	CURRENT VALUE 12/20/2004	ANTICIPATED IMPACT
Idabel	McCurtain	Southeast	312	600-800: often associated with more severe drought; increased wildfire occurrence; intense deep burning fires with significant downwind spotting; live fuels also expected to burn actively. 400-600: lower litter and duff layers actively contribute to fire intensity and will burn actively; typical of late summer, early fall.
Oilton	Creek	Central	142	
Buffalo	Harper	Northwest	122	

Total stations above 600 = 0

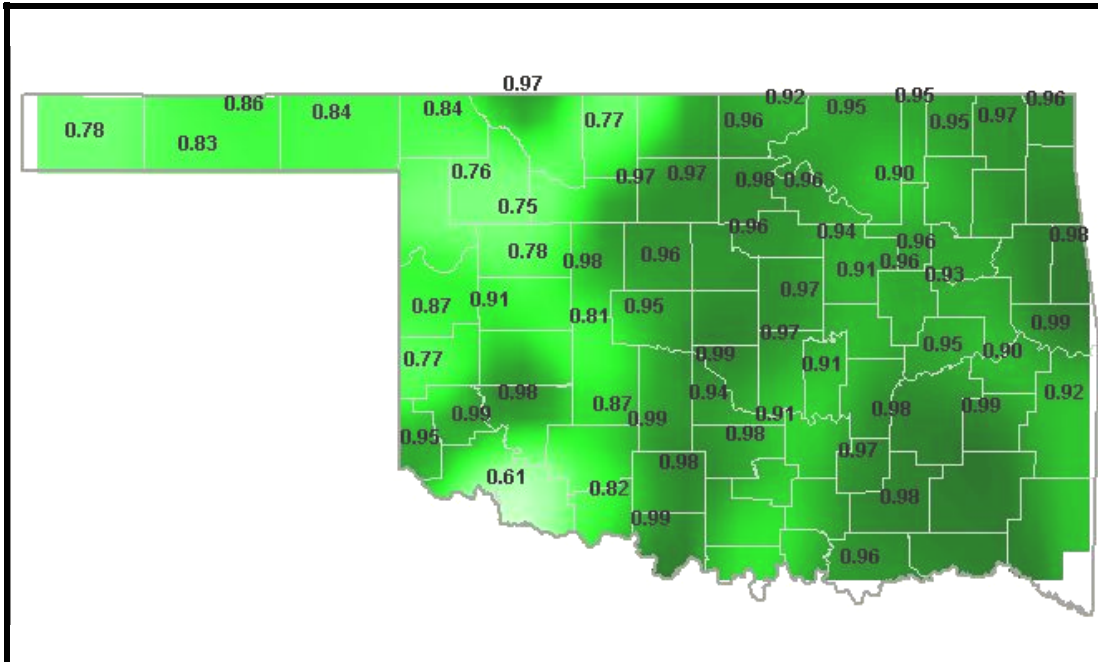
The PDSI may underestimate or overestimate the severity of ongoing dry periods. The SPI, more sensitive than the PDSI, provides a comparison of precipitation over a specified period with precipitation totals from that same period for all years included in the historical record. The 3-month SPI provides 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**
December 19, 2004
(Courtesy Oklahoma Climatological Survey)

5 cm (~2 inches)



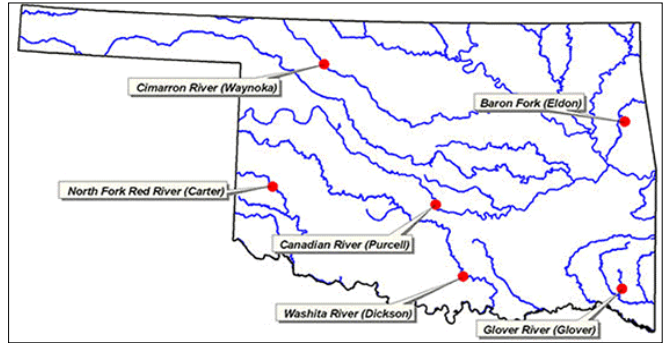
60 cm (~2 feet)



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 remain generally adequate. Considering overall trends as well as current flows, the most recent data (December 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, 2002, compared to long-term, normal/median daily discharges) indicate **near average flow** in *northwest* (Cimarron River, Woods County) and *southeast* (Glover River, McCurtain County) Oklahoma and **above average flow** in the *south central* (Washita River, Carter County), *central* (Canadian River, McClain County), *southwest* (North Fork/Red River, Beckham County) and *northeast* (Baron Fork, Cherokee County) regions.



Weather Forecast

The National Weather Service 8- to 14-day outlook (December 27 through January 2) calls for normal precipitation and above normal temperatures for Oklahoma 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 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

November 28 - Last week was another week of rainy weather that further saturated fields. There were only 1.1 days suitable for field work. There were many reports of rain, snow and first freezes. Producers were hoping for a sunny day soon. The good news about the rain is that soil moisture has been replenished from the dry summer months. Topsoil moisture was 64 percent surplus, 35 percent adequate, and 1 percent short. Subsoil moisture was at 28 percent surplus, 67 percent adequate, and 5 percent short.

Wheat seeding increased only one point to 96 percent. According to reports, there were several thousand acres of wheat still unplanted. It will have to dry out quickly in order for producers to be able to get into the fields to finish planting. Wheat emergence increased to 94 percent. Wheat conditions continued to be good to excellent. Oats seedbed prepared, planted and emerged all increased one point to 93, 59, and 58 percent, respectively. Oat and rye conditions were mostly good.

There were still a lot of unharvested row crops because harvest has been delayed due to the rain and muddy fields conditions. Sorghum maturity increased eight points to 97 percent and sixty-nine percent of the sorghum was harvested. Soybeans harvested and peanuts combined progressed four points to 80 and 76 percent complete, respectively. Cotton harvest increased one point and still lagged 25 points behind normal. There were many reports of cotton waiting in the field for harvest as soon as conditions will allow. Alfalfa hay cutting was coming to an end as colder temperatures and muddy fields put a halt to cutting. Alfalfa fifth and sixth hay cutting progressed only slightly last week.

Due to the muddy pastures, many producers were having to feed cattle. Livestock conditions were in good to excellent condition with a light to average death loss reported. Pasture and range was in good condition but muddy pasture land was causing problems. Muddy conditions continue to delay some producers from turning cattle out on small grain pastures. In some areas farmers were not able to get into the wheat fields to put up electric fences.

Reservoir Storage

Lake storage in Oklahoma remains generally good, although lakes in the southwest continue to experience low levels. As of December 20, the combined normal conservation pools of 31 selected major federal reservoirs across Oklahoma (see below) are approximately 97.5 percent full, a 0.3 percent increase from that recorded on November 22, according to information from the U.S. Army Corps of Engineers (Tulsa District). Seventeen reservoirs have experienced lake level decreases since that time and only eight reservoirs are currently operating at less than full capacity (compared to eight last month). Two reservoirs—Lugert-Altus, only 37.7 percent full; and Tom Steed, 77.1 percent—remain below 80 percent capacity.

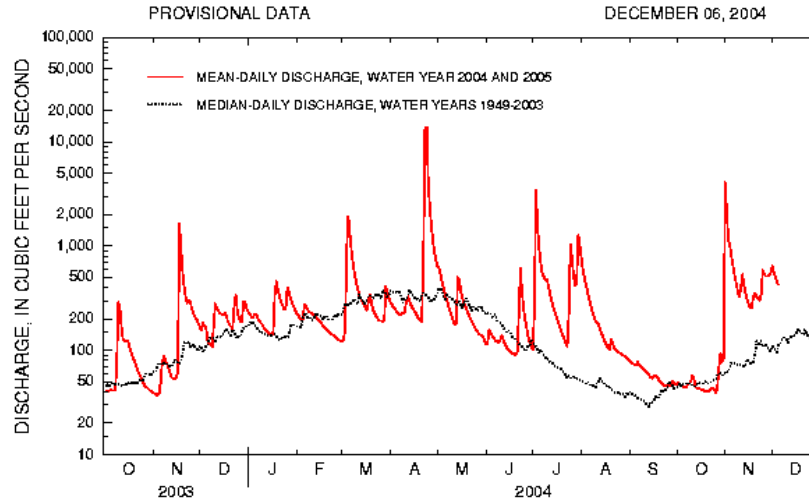
Storage in Selected Oklahoma Lakes & Reservoirs			
12/20/2004			
Climate Division Lake or Reservoir	Conservation Storage (acre-feet)	Present Storage (acre-feet)	Percent of Conservation Storage
North Central			
Fort Supply	13,900	13,900	100.0
Great Salt Plains	31,420	31,420	100.0
Kaw*	431,418	431,418	100.0
Regional Totals/Averages	476,738	476,738	100.0
Northeast			
Birch	19,225	19,225	100.0
Copan	43,400	43,400	100.0
Fort Gibson	365,200	332,280	91.0
Grand	1,672,000	1,631,520	97.6
Hudson	200,300	200,300	100.0
Hulah	25,100	25,100	100.0
Keystone	510,059	510,059	100.0
Oologah	552,210	552,210	100.0
Skiatook	322,700	322,700	100.0
Regional Totals/Averages	3,710,194	3,636,794	98.0
West Central			
Canton	111,310	110,754	99.5
Foss	165,480	159,668	96.5
Regional Totals/Averages	276,790	270,422	97.7
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	79,303	99.1
Lugert-Altus	132,830	50,094	37.7
Tom Steed	88,970	68,586	77.1
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*	2,628,914	2,628,914	100.0
Waurika*	190,200	186,348	98.0
Regional Totals/Averages	3,005,444	3,001,592	99.9
Southeast			
Broken Bow*	918,070	918,070	100.0
Hugo*	184,917	184,917	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	1,491,229	1,491,229	100.0
State Totals	12,438,753	12,127,008	97.5

* 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



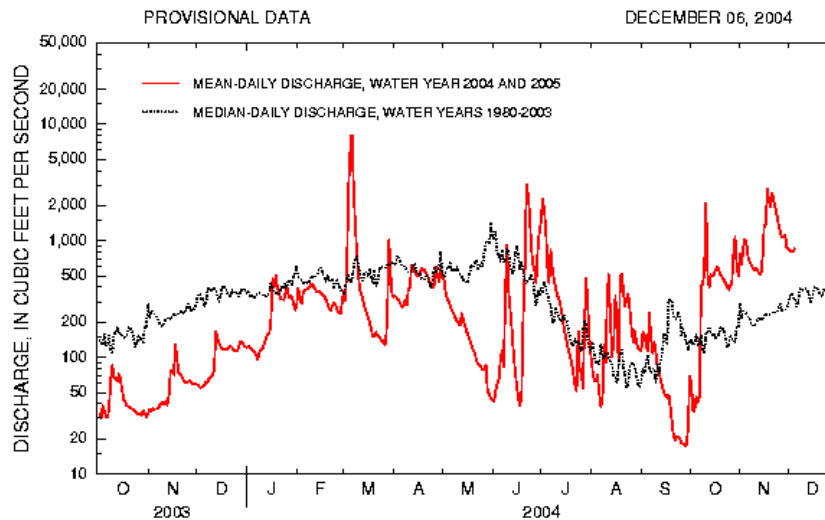
Comparison of daily discharges for water year 2004 and 2005 and period of record for Baron Fork at Eldon, Oklahoma.

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

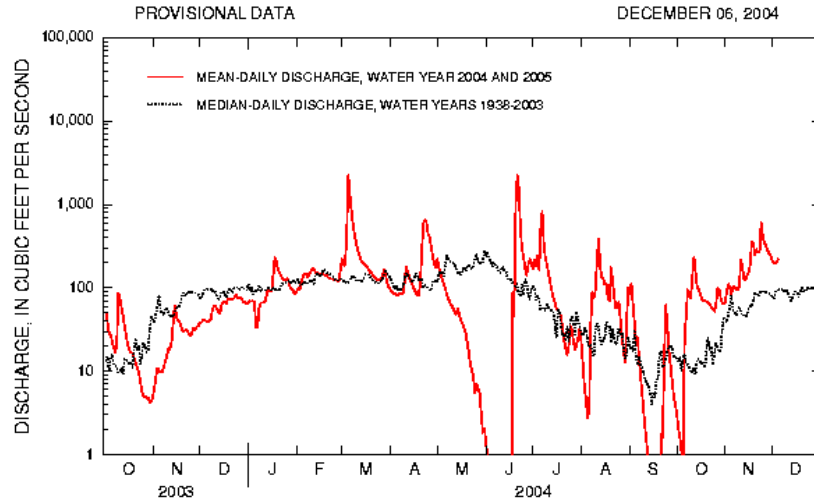
Cimarron River near Waynoka

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

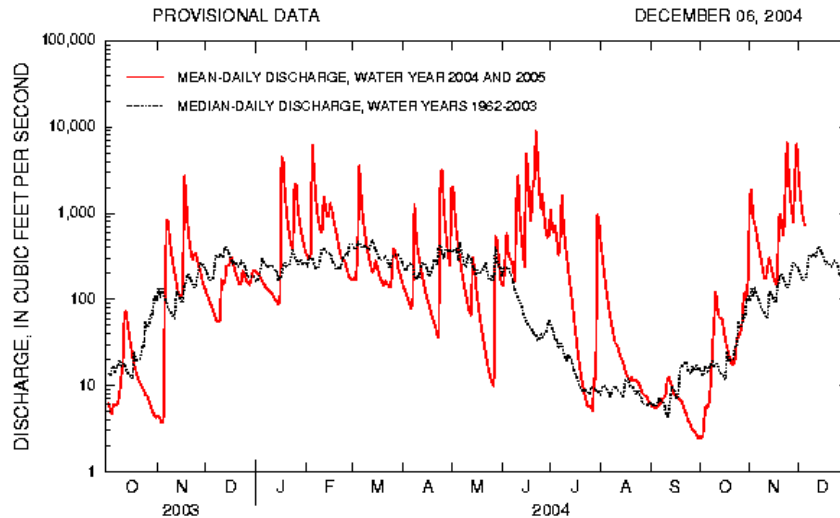
Glover River near Glover

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

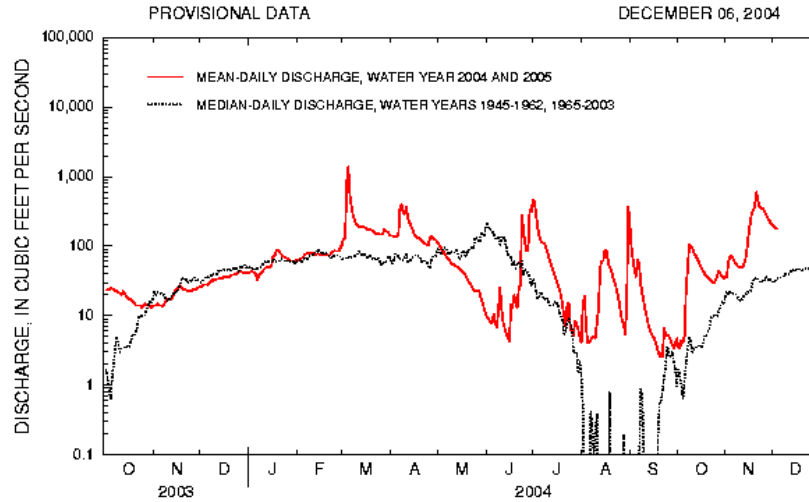
North Fork of the Red River near Carter

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

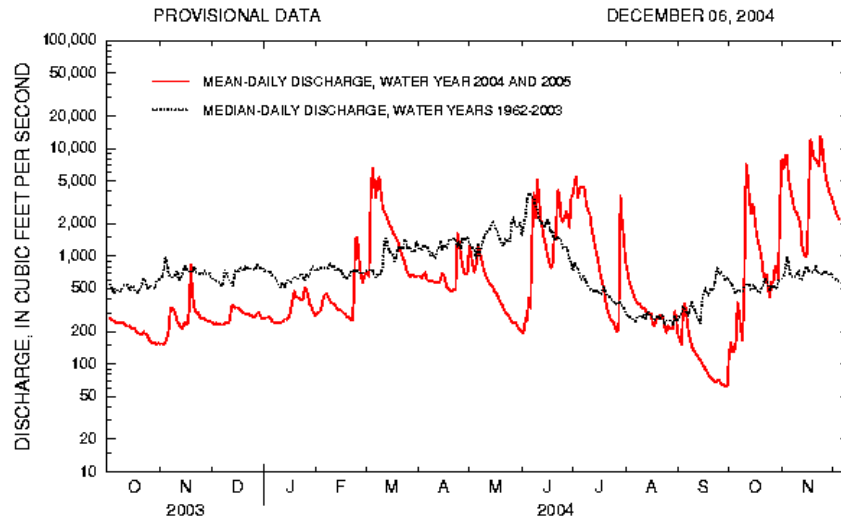
Washita River near Dickson

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