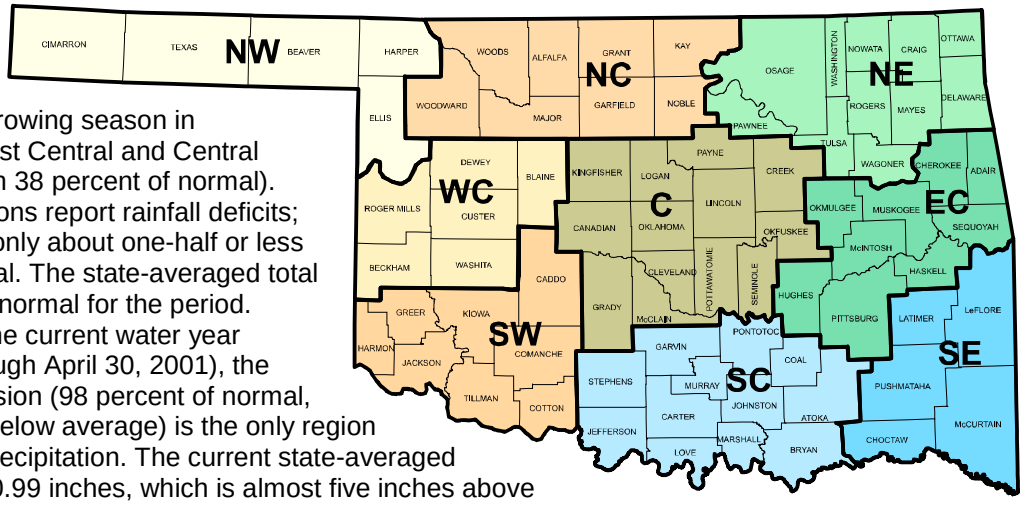
Oklahoma Water Resources Bulletin
& Summary of Current Conditions

MAY 2, 2001 **OKLAHOMA WATER RESOURCES BOARD**

Statewide Precipitation & General Summary

The recent surplus of moisture has diminished somewhat in many regions of Oklahoma due to moderately below normal rainfall during March and April. According to preliminary Mesonet weather station data provided by the Oklahoma Climatological Survey and National Weather Service (see below), the areas experiencing the lowest percent of normal rainfall from March 1 through April 30 (the current growing season in Oklahoma) are the East Central and Central climate divisions (each 38 percent of normal). However, all nine regions report rainfall deficits; seven have received only about one-half or less of their anticipated total. The state-averaged total is **only 49 percent** of normal for the period.



Conversely, for the current water year (October 1, 2000 through April 30, 2001), the Northeast climate division (98 percent of normal, almost one-half inch below average) is the only region without a surplus of precipitation. The current state-averaged precipitation total is 20.99 inches, which is almost five inches above average and 131 percent of normal for the period.

PRELIMINARY STATEWIDE PRECIPITATION BY CLIMATE DIVISION

(IN INCHES)

DIVISION (#)	CURRENT GROWING SEASON MARCH 1 – APRIL 30, 2001			WATER YEAR OCTOBER 1, 2000 – APRIL 30, 2001			RAINFALL SINCE MARCH 25
	TOTAL RAINFALL	DEPARTURE FROM NORMAL	PERCENT OF NORMAL	TOTAL RAINFALL	DEPARTURE FROM NORMAL	PERCENT OF NORMAL	
Northwest (1)	2.50	-0.33	88	10.51	3.74	155	1.01
North Central (2)	2.47	-2.36	51	16.33	4.35	136	0.97
Northeast (3)	3.01	-4.25	42	19.29	-0.47	98	1.78
West Central (4)	2.03	-2.10	49	13.60	2.82	126	0.88
Central (5)	2.25	-3.71	38	21.45	5.38	133	1.44
East Central (6)	3.13	-5.11	38	26.50	3.19	114	2.23
Southwest (7)	1.83	-2.42	43	18.47	6.59	155	0.97
South Central (8)	3.41	-3.43	50	28.62	9.65	151	2.61
Southeast (9)	5.73	-3.53	62	34.96	7.57	128	3.08
STATE-AVERAGED	**2.89**	**-3.01**	**49**	**20.99**	**4.95**	**131**	**1.66**

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.state.ok.us/~owrb/features/drought.html.

Drought Indices

According to the latest Palmer Drought Severity Index (April 28, below), moisture/drought conditions have deteriorated somewhat as a drying trend has begun to emerge throughout Oklahoma. All of the state's nine climate divisions have undergone PDSI moisture decreases since March 24; the Southeast climate division ("near normal") experienced the greatest decrease during the period. The driest region is currently the Northeast ("incipient drought").

The latest monthly Standardized Precipitation Index (through March, below) indicates that no climate divisions in Oklahoma are experiencing long-term dryness (among the selected time periods: 3-, 6-, 9- and 12-month). In addition, no regions are experiencing dryness over various time spans within the past six years.

The latest Keetch-Byram Drought Index (May 2, 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 in Oklahoma remain generally good, although conditions are becoming dry. Statewide, no stations are currently above 400, generally indicative of moderate drought conditions (no stations had readings above 400 on March 26). Medford, in North Central Oklahoma, has the highest KBDI value (388), followed by Beaver (Northwest; 376) and Hollis (358; Southwest). According to the Oklahoma Department of Agriculture (Forestry Services), as of April 24, Statewide Wildfire Preparedness remains at Level 2 (moderate fire danger). Conditions are generally dry and the danger of wildland fires escaping control is a concern. Caution is advised when conducting outdoor burning, particularly when high winds and low humidities are forecasted and outdoor burning should be avoided when winds exceed 20 mph.

Climate Division (#)	***Palmer Drought Severity Index***				***Standardized Precipitation Index*** *through March*			
	Current Status 4/28/2001	Value 4/28	Value 3/24	Change In Value	3-Month	6-Month	9-Month	12-Month
Northwest (1)	UNUSUAL MOIST SPELL	2.40	3.70	-1.30	MODERATELY WET	EXTREMELY WET	NEAR NORMAL	NEAR NORMAL
North Central (2)	MOIST SPELL	1.51	3.68	-2.17	MODERATELY WET	VERY WET	NEAR NORMAL	NEAR NORMAL
Northeast (3)	INCIPIENT DROUGHT	-0.92	1.83	-2.75	MODERATELY WET	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
West Central (4)	INCIPIENT MOIST SPELL	0.81	2.93	-2.12	MODERATELY WET	VERY WET	NEAR NORMAL	NEAR NORMAL
Central (5)	INCIPIENT MOIST SPELL	0.72	3.14	-2.42	MODERATELY WET	VERY WET	MODERATELY WET	MODERATELY WET
East Central (6)	NEAR NORMAL	-0.35	2.45	-2.80	MODERATELY WET	VERY WET	NEAR NORMAL	MODERATELY WET
Southwest (7)	MOIST SPELL	1.44	3.40	-1.96	NEAR NORMAL	EXTREMELY WET	MODERATELY WET	MODERATELY WET
South Central (8)	UNUSUAL MOIST SPELL	2.11	3.74	-1.63	MODERATELY WET	EXTREMELY WET	MODERATELY WET	NEAR NORMAL
Southeast (9)	NEAR NORMAL	0.04	2.99	-2.95	MODERATELY WET	VERY WET	NEAR NORMAL	NEAR NORMAL

Keetch-Byram Drought Fire Index

Mesonet Station	County	Climate Division	Current Value 5/2/2001	Anticipated Impact
Medford	Grant	North Central	388	400-600: lower litter and duff layers actively contribute to fire intensity and will burn actively; typical of late summer, early fall.
Beaver	Beaver	Northwest	376	
Hollis	Harmon	Southwest	358	
0 stations above 400				

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

April 29, 2001

(courtesy Oklahoma Climatological Survey)

5 cm

25 cm

60 cm

75 cm

Category Description		Depth -- Metric Conversion	
Category 4	Moist/wet	5 cm	2 inches
Category 3	Adequate	25 cm	9.8 inches
Category 2	Limited	60 cm	23.6 inches
Category 1	Dry	75 cm	29.5 inches

Streamflow Conditions

For the current water year (beginning October 1, 2000), flows in most state rivers and streams are generally near average. Considering overall trends as well as current flows, the most recent data (April 30, 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, 2000 compared to long-term, normal/median daily discharges) indicate **below average flow** in *northeast* (Baron Fork in Cherokee County) and *southeast* (Glover River in McCurtain County) Oklahoma; **near average flow** in the *central* (Canadian River in McClain County) and *south central* (Washita River in Carter County) regions; and **above average flow** in the *southwest* (North Fork/Red River in Beckham County) and *northwest* (Cimarron River in Woods County).

Weather Forecast

The National Weather Service 6- to 10-day outlook (May 8-12) calls for above normal precipitation for all of Oklahoma during the period. Normal temperatures are anticipated for all but the northeast, where above normal temperatures may prevail.

Current models indicate that the persistent cold water phenomenon in the equatorial Pacific Ocean, referred to as La Niña, will gradually weaken over the next several months, with near normal or slightly above normal conditions likely during the second half of 2001.

Crop Report

April 30 -- Warm temperatures, high winds and lack of adequate rainfall continued to sap soil moisture supplies. Many areas continued to become dry, particularly in southwest Oklahoma. Topsoil moisture levels decreased significantly from last week and were rated mostly adequate to short statewide. Rain is greatly needed to properly develop the wheat crop and allow good emergence of recently planted row crops. Nitrogen fertilizer supplies available across the state were adequate, however prices were much higher than normal. Farmers had 6.6 days suitable for fieldwork last week.

Wheat conditions slipped slightly during the week and the crop was rated in mostly fair to poor condition statewide. Most areas need additional rainfall to enable proper growth and maturity. Wheat development advanced substantially during the week but still remained behind normal. Ninety-six percent of the wheat had jointed, slightly behind the 99 percent jointed last year at this time and the five-year average of 97 percent. Wheat heading advanced to 40 percent but still lagged behind the 73 percent headed last year and the average of 48 percent. Crop insect activity was reported as light to none across the state. Insured wheat acres were being released in some areas due to low yield estimates. Producers stayed busy preparing row crop seedbeds and planting summer crops. Corn producers made significant progress and planted an additional 23 percent of the crop during the week, with 83 percent planted by week's end. Soybean and sorghum plantings were at 32 and 14 percent planted, respectively, both ahead of normal. Peanut and cotton planting continued on a limited scale.

The continued blowing winds and lack of adequate moisture have dried fields in many areas. Rainfall is greatly needed to improve soil moisture supplies and prevent the slowdown of future row crop planting. Peanut seedbed preparation was 88 percent complete, 21 points ahead of normal. As of Sunday, soybean seedbeds were 73 percent prepared, while 89 percent of cotton seedbeds had been prepared. Corn and sorghum seedbeds were at 92 and 60 percent prepared, respectively. Alfalfa and other hay cutting picked up pace for many farmers. The first cutting of alfalfa was at 43 percent while other hay cutting was reported at 17 percent, both ahead of last year and the five-year average. Wheat hay was also being cut last week in fields where grain harvest will not occur.

Livestock continued to make good weight gains on wheat and grass pastures and were rated in mostly good to fair condition. Livestock insect activity was rated mostly light to moderate. Cattle auctions reported slightly above average marketings for the week with an increase in feeder steers greater than 800 pounds. The price for feeder steers less than 800 pounds decreased from last week and averaged $94.70 per cwt. The price for feeder heifers less than 800 pounds also decreased from last week and averaged $88.00 per cwt. Pastures showed good growth last week but slowed some due to the dry conditions. Pasture conditions were rated in mostly fair to good condition statewide. Producers applied fertilizer to warm season pastures in isolated areas. Wheat fields utilized for grazing increased as more insured acres were being released.

Reservoir Storage

Reservoir storage in Oklahoma remains generally good throughout most of the state, although many lake levels are down from five weeks ago. As of May 1, the combined normal conservation pools of 31 selected major federal reservoirs across Oklahoma (see below) are approximately 97.3 percent full, a 2.1 percent decrease from that recorded on March 26, according to information from the U.S. Army Corps of Engineers (Tulsa District). Twenty-four reservoirs – including all in the North Central, West Central, East Central and Southeast regions -- have experienced lake level decreases since that time. Fourteen reservoirs are operating at less than full capacity (compared to six in late March), although only one reservoir (Tom Steed) remains below 80 percent capacity.

Storage in Selected Oklahoma Lakes & Reservoirs
as of May 1, 2001

Climate Division / *Lake or Reservoir*	*Conservation Storage* (acre-feet)	*Present Storage* (acre-feet)	*Percent of Storage* conservation	flood
NORTH CENTRAL				
Fort Supply	13,900	12,724	91.5	0.00
Great Salt Plains	31,420	31,420	100.0	1.82
Kaw*	406,540	401,560	98.8	0.00
Regional Totals/Averages	**451,860**	**445,704**	**98.6**	**0.61**
NORTHEAST				
Birch	19,225	19,225	100.0	0.06
Copan	43,400	43,400	100.0	0.54
Fort Gibson	365,200	356,412	97.6	0.00
Grand	1,672,000	1,554,161	93.0	0.00
Hudson	200,300	200,300	100.0	1.49
Hulah	31,160	31,160	100.0	0.23
Keystone	278,122	278,122	100.0	0.23
Oologah	552,210	552,210	100.0	0.00
Skiatook	322,700	322,700	100.0	0.58
Regional Totals/Averages	**3,484,317**	**3,357,690**	**96.4**	**0.35**
WEST CENTRAL				
Canton	111,310	111,310	100.0	0.18
Foss	165,480	162,207	98.0	0.00
Regional Totals/Averages	**276,790**	**273,517**	**98.8**	**0.09**
CENTRAL				
Arcadia	27,520	27,520	100.0	0.09
Heyburn	7,105	7,105	100.0	0.42
Thunderbird	119,600	119,600	100.0	1.19
Regional Totals/Averages	**154,225**	**154,225**	**100.0**	**0.57**
EAST CENTRAL				
Eufaula*	2,368,223	2,243,416	94.7	0.00
Tenkiller	654,100	648,729	99.2	0.00
Regional Totals/Averages	**3,022,323**	**2,892,145**	**95.7**	**0.00**
SOUTHWEST				
Fort Cobb	80,010	80,010	100.0	1.83
Lugert-Altus	132,830	110,817	83.4	0.00
Tom Steed	88,970	68,202	76.7	0.00
Regional Totals/Averages	**301,810**	**259,029**	**85.8**	**0.61**
SOUTH CENTRAL				
Arbuckle	72,400	72,400	100.0	1.57
McGee Creek	113,930	113,688	99.8	0.00
Texoma*	2,418,626	2,418,626	100.0	2.42
Waurika*	190,200	189,693	99.7	0.00
Regional Totals/Averages	**2,795,156**	**2,794,407**	**100.0**	**1.00**
SOUTHEAST				
Broken Bow*	938,155	933,066	99.5	0.00
Hugo*	198,067	194,446	98.2	0.00
Pine Creek*	71,120	71,120	100.0	0.14
Sardis	274,330	273,661	99.8	0.00
Wister	60,162	60,162	100.0	0.31
Regional Totals/Averages	**1,541,834**	**1,532,455**	**99.4**	**0.09**
STATE TOTALS	**12,028,315**	**11,709,172**	**97.3**	**0.42**

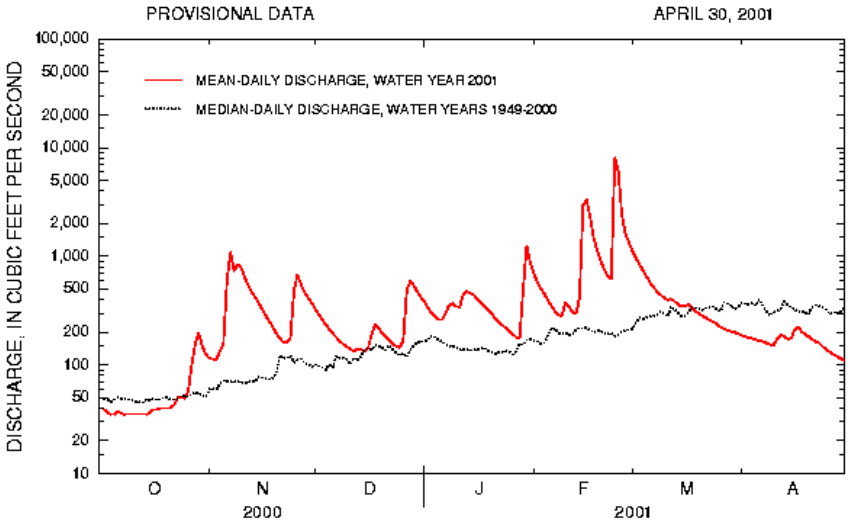
* indicates seasonal pool operation; actual storage figures/percentages may vary.

Baron Fork at Eldon

Baron Fork at Eldon, Oklahoma

Station No. 07197000
Northeast Oklahoma

Drainage Area 307 square miles



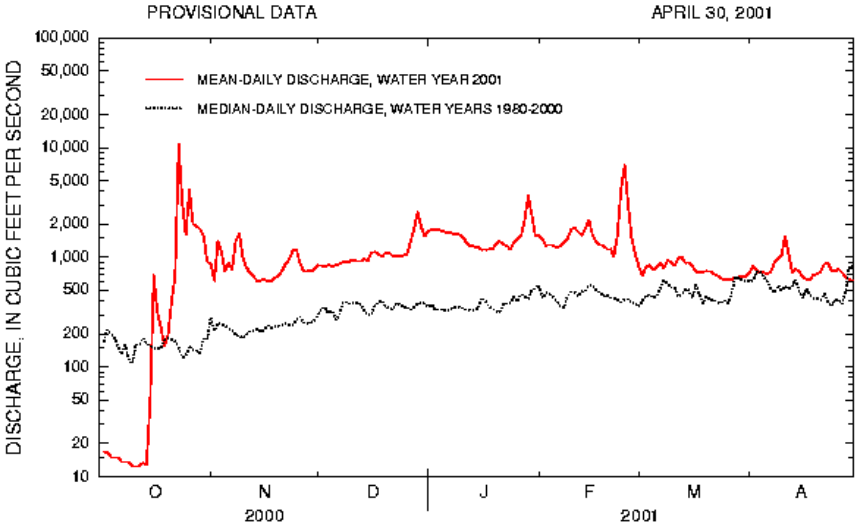
Comparison of daily discharges for water year 2001
and period of record for Baron Fork at Eldon, Oklahoma.

Canadian River at Purcell

Canadian River at Purcell, Oklahoma

Station No. 07229200
Central Oklahoma

Drainage Area 25,939 square miles



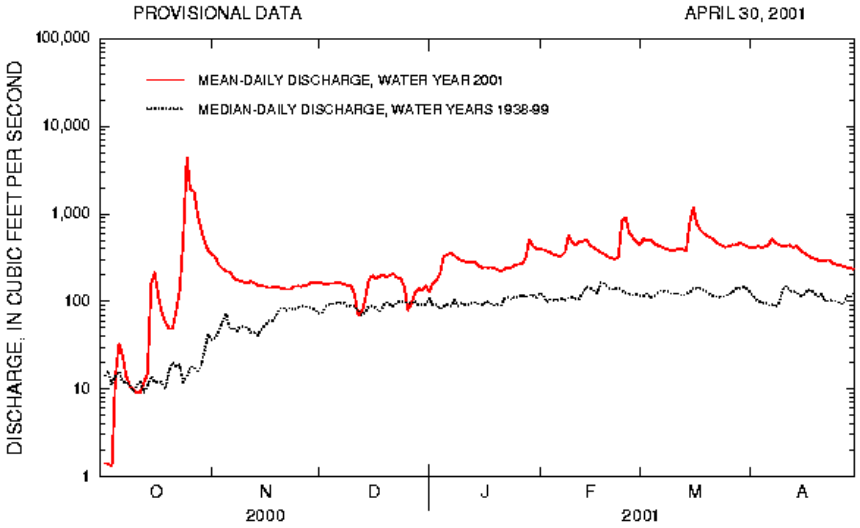
Comparison of daily discharges for water year 2001
and period of record for Canadian River at Purcell, Oklahoma.

Cimarron River near Waynoka

Cimarron River near Waynoka, Oklahoma

Station No. 07156000
Northwest Oklahoma

Drainage Area 13,334 square miles



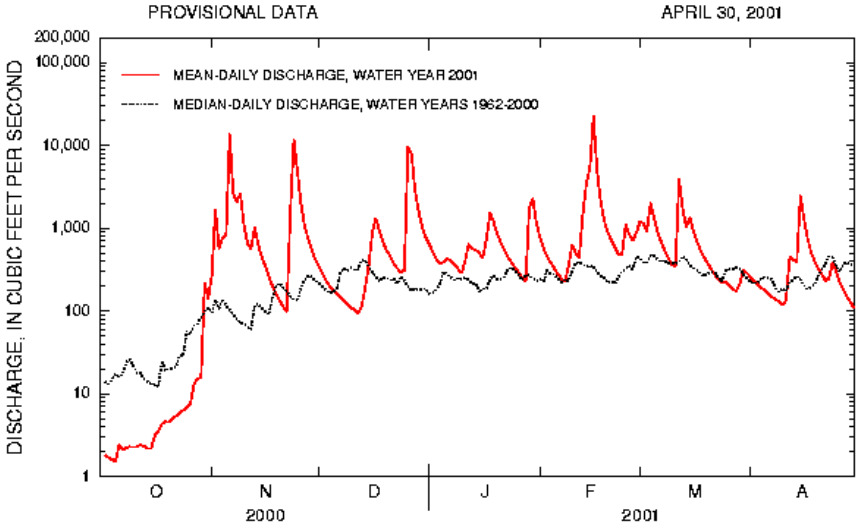
Comparison of daily discharges for water year 2001
and period of record for Cimarron River near Waynoka, Oklahoma.

Glover River near Glover

Glover River near Glover, Oklahoma

Station No. 07337900
Southeast Oklahoma

Drainage Area 315 square miles



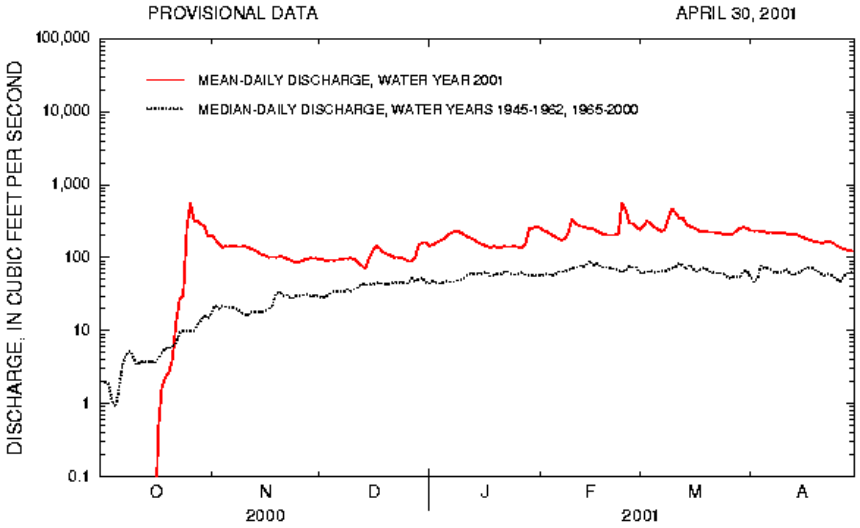
Comparison of daily discharges for water year 2001
and period of record for Glover River near Glover, Oklahoma.

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



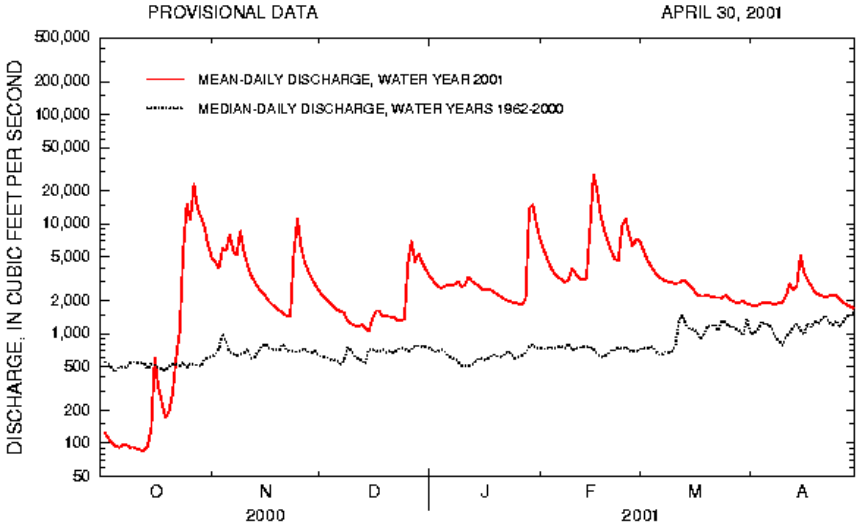
Comparison of daily discharges for water year 2001
and period of record for North Fork Red River near Carter, Oklahoma.

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 2001
and period of record for Washita River near Dickson, Oklahoma.