

Oklahoma Water Resources Bulletin & Summary of Current Conditions



DECEMBER 20, 2000

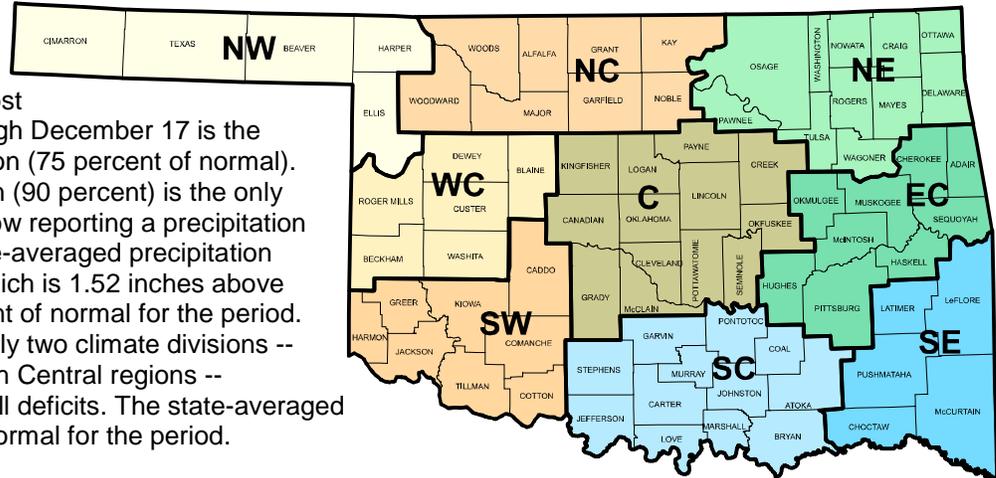
OKLAHOMA WATER RESOURCES BOARD

Statewide Precipitation & General Summary

Recent drought conditions in Oklahoma continue to diminish as a result of both rainfall and freezing precipitation throughout much of the state. According to preliminary Mesonet weather station data provided by the [Oklahoma Climatological Survey](#) and National Weather Service (see below), the area experiencing

the lowest percent of normal rainfall from September 1 (the general onset of this most recent dry period) through December 17 is the Northeast climate division (75 percent of normal). The West Central region (90 percent) is the only other climate division now reporting a precipitation deficit. The current state-averaged precipitation total is 11.86 inches, which is 1.52 inches above average and 115 percent of normal for the period.

Since January 1, only two climate divisions -- the Southeast and South Central regions -- continue to report rainfall deficits. The state-averaged total is 106 percent of normal for the period.



PRELIMINARY STATEWIDE PRECIPITATION BY CLIMATE DIVISION

(IN INCHES)

DIVISION (#)	AUTUMN			CALENDAR YEAR			RAINFALL SINCE NOVEMBER 20
	SEPTEMBER 1 – DECEMBER 17, 2000 TOTAL RAINFALL	DEPARTURE FROM NORMAL	PERCENT OF NORMAL	JANUARY 1 – DECEMBER 17, 2000 TOTAL RAINFALL	DEPARTURE FROM NORMAL	PERCENT OF NORMAL	
Northwest (1)	5.89	1.24	127	19.82	0.34	102	0.07
North Central (2)	8.90	0.82	110	32.44	4.71	117	0.41
Northeast (3)	9.70	-3.20	75	41.15	1.83	105	1.22
West Central (4)	6.97	-0.75	90	29.79	3.65	114	0.45
Central (5)	13.69	3.03	128	38.00	4.31	113	1.96
East Central (6)	15.10	1.09	108	45.73	3.59	109	2.73
Southwest (7)	12.49	4.03	148	32.12	4.54	116	1.54
South Central (8)	15.52	3.44	128	35.65	-1.58	96	2.76
Southeast (9)	18.44	2.84	118	43.61	-4.22	91	4.36
STATE-AVERAGED	11.86	1.52	115	35.37	1.89	106	1.70

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](#) (December 16, below), moisture/drought conditions continue to improve throughout virtually the entire state. No climate divisions currently report drought conditions. Only two of the state's nine climate divisions have undergone PDSI moisture decreases since November 18; the Northwest climate division experienced the greatest decrease during the period.

The latest monthly [Standardized Precipitation Index](#) (through November, below) indicates that no climate divisions in Oklahoma (among the selected time periods: 3-, 6-, 9- and 12-month) are experiencing long-term dryness. Among other time periods, only the Northeast climate division is experiencing dryness, according to the 4-month SPI.

The latest [Keetch-Byram Drought Index](#) (December 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 in Oklahoma continue to remain agreeable. Statewide, only six stations are above 400, generally indicative of moderate drought conditions (7 stations had readings above 400 on November 20). Breckinridge, in North Central Oklahoma, retains the highest KBDI value (467), followed by Beaver (460; Northwest) and Buffalo (429; Northwest).

According to the Oklahoma Department of Agriculture (Forestry Services), [Statewide Wildfire Preparedness](#) remains at Level 1 (low fire danger). Caution is still advised when conducting outdoor burning, particularly when high winds and low humidities are forecasted. Avoid burning anything outdoors when winds exceed 20 mph.

CLIMATE DIVISION (#)	PALMER DROUGHT SEVERITY INDEX				STANDARDIZED PRECIPITATION INDEX THROUGH NOVEMBER			
	CURRENT STATUS 12/16/2000	VALUE		CHANGE IN VALUE	3-MONTH	6-MONTH	9-MONTH	12-MONTH
		12/16	11/18					
Northwest (1)	MOIST SPELL	1.75	2.39	-0.64	MODERATELY WET	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
North Central (2)	UNUSUAL MOIST SPELL	2.87	2.92	-0.05	NEAR NORMAL	NEAR NORMAL	MODERATELY WET	MODERATELY WET
Northeast (3)	INCIPIENT MOIST SPELL	0.82	0.66	0.16	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
West Central (4)	MOIST SPELL	1.68	1.66	0.02	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	MODERATELY WET
Central (5)	UNUSUAL MOIST SPELL	2.43	2.07	0.36	MODERATELY WET	MODERATELY WET	MODERATELY WET	MODERATELY WET
East Central (6)	MOIST SPELL	1.43	1.19	0.24	NEAR NORMAL	MODERATELY WET	NEAR NORMAL	NEAR NORMAL
Southwest (7)	UNUSUAL MOIST SPELL	2.68	2.21	0.47	VERY WET	MODERATELY WET	MODERATELY WET	MODERATELY WET
South Central (8)	UNUSUAL MOIST SPELL	2.37	1.63	0.74	MODERATELY WET	MODERATELY WET	NEAR NORMAL	NEAR NORMAL
Southeast (9)	MOIST SPELL	1.90	1.68	0.22	MODERATELY WET	MODERATELY WET	NEAR NORMAL	NEAR NORMAL

KEETCH-BYRAM DROUGHT FIRE INDEX				
MESONET STATION	COUNTY	CLIMATE DIVISION	CURRENT VALUE 12/18/2000	ANTICIPATED IMPACT
Breckinridge	Garfield	North Central	467	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	460	
Buffalo	Harper	Northwest	429	
6 total 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.

Streamflow Conditions

For the current water year (beginning October 1, 1999), flows in most state rivers and streams remain at or above average and have generally recovered from long-term below normal precipitation and runoff. Considering overall trends as well as current flows, the most recent data (December 18) 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, 1999 compared to long-term, normal/median daily discharges) indicate **below average flow** in *northwest* (Cimarron River in Beaver County) Oklahoma; **near average flow** in the *southeast* (Glover River in McCurtain County), *northeast* (Baron Fork in Cherokee County), *south central* (Washita River in Carter County) and *southwest* (North Fork/Red River in Beckham County) regions; and **above average flow** in *central* (Canadian River in McClain County) Oklahoma.

Weather Forecast

The National Weather Service [6- to 10-day outlook](#) (December 24-28) calls for above normal precipitation for all but northeast and much of east central Oklahoma, where normal precipitation is expected. Normal temperatures are anticipated for all of Oklahoma except the Panhandle, where below normal temperatures are forecasted. The Climate Prediction Center's [seasonal forecast](#) projects a chance for above normal precipitation for virtually the entire state for January and above normal rainfall for most of the eastern one-half of Oklahoma through the January-March 2001 period.

Current models indicate that the persistent cold water phenomenon in the equatorial Pacific Ocean, referred to as La Niña, has strengthened somewhat over the past three months. However, this anomaly will be short-lived as tropical Pacific sea levels, which indicate how much heat is stored in the ocean, are expected to return to near normal this spring after three years of dramatic fluctuations.

Crop Report

December 3 - Cold weather has persisted throughout Oklahoma. The low night time temperatures have slowed down the emergence of wheat, rye and oats. Warmer weather will be needed to boost wheat emergence and growth. Fields have dried out somewhat. Producers took advantage of these drier conditions and made progress planting small grains and harvesting their row crops. Continued dry weather is essential in order to wrap up the remaining planting and harvesting activities. Supplemental feeding occurred in most areas.

Planting of fall small grains picked up in drier areas. Wheat seeding is 90 percent complete statewide, well behind the five-year average of 100 percent. Soil moisture levels remain too high in some areas and planting has been further delayed. Emergence of earlier planted fields has been hampered by the cold temperatures, advancing to 72 percent. Wheat is rated in mostly good to fair condition overall.

Harvesting of the remaining row crops continues in areas where conditions permit. Sorghum harvest has occurred in the drier areas, particularly in the Panhandle, and 96 percent of the crop is harvested statewide. Soybean harvest is winding down and 97 percent has been harvested. The cotton harvest totals 83 percent while peanuts dug and combined totaled 94 and 83 percent, respectively. Cotton and peanut grade and yield reduction continue to be reported. Abandonment of some peanut, cotton and soybean fields will occur as a result of the long standing wet conditions.

Alfalfa hay and all other hay are rated in mostly fair condition overall. Harvest has occurred in a few isolated areas with the fifth cutting of alfalfa totaling 63 percent. All other hay harvested has also made little progress, totaling 91 percent cut.

Wheat pasture available for grazing remains limited across the state. The cool temperatures and freezes have limited native pasture re-growth. Livestock are rated in mostly good condition statewide. Supplemental feeding continues, especially in areas that have been unable to graze wheat pasture. Insect pressure on cattle are minimal.

Reservoir Storage

Reservoir storage levels in Oklahoma remain generally steady. As of December 18, the combined normal conservation pools of 31 selected major federal reservoirs across Oklahoma (see below) are approximately 96.8 percent full, the same as that measured on November 20, according to information from the [U.S. Army Corps of Engineers \(Tulsa District\)](#). Thirteen – including all four in the South Central region -- have experienced lake level decreases since that time. Thirteen reservoirs are operating at less than full capacity (compared to 13 four weeks ago). Two reservoirs (Lugert-Altus and Tom Steed) remain below 80 percent capacity. Lugert-Altus is at only 41 percent.

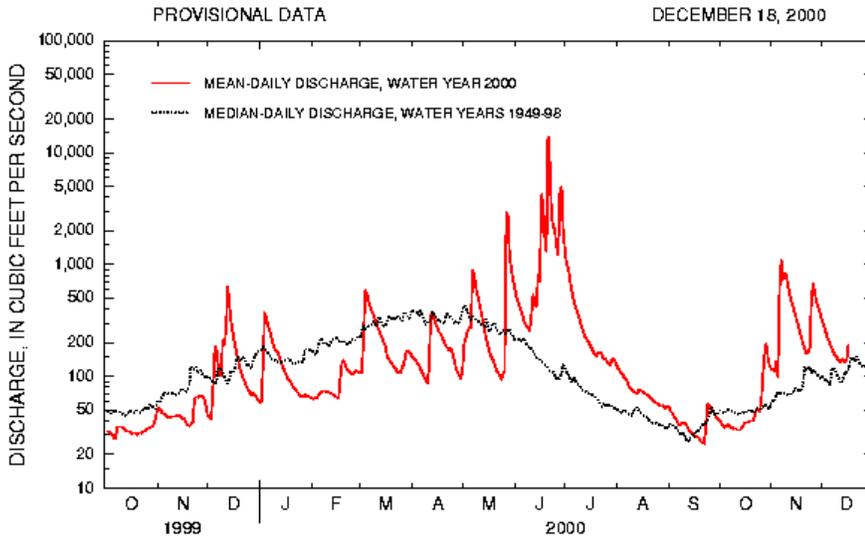
Storage in Selected Oklahoma Lakes & Reservoirs				
as of December 18, 2000				
Climate Division	Conservation Storage	Present Storage	Percent of Storage	
Lake or Reservoir	(acre-feet)	(acre-feet)	conservation	flood
NORTH CENTRAL				
Fort Supply	13,900	13,218	95.1	0.00
Great Salt Plains	31,420	31,420	100.0	1.78
Kaw*	406,540	406,540	100.0	3.19
Regional Totals/Averages	451,860	451,178	99.8	1.66
NORTHEAST				
Birch	19,225	16,431	85.5	0.00
Copan	43,400	36,889	85.0	0.00
Fort Gibson	365,200	365,200	100.0	0.08
Grand	1,672,000	1,537,000	91.9	0.00
Hudson	200,300	192,375	96.0	0.00
Hulah	31,160	31,160	100.0	0.49
Keystone	278,122	278,122	100.0	0.49
Oologah	552,210	518,591	93.9	0.00
Skiatook	322,700	281,580	87.3	0.00
Regional Totals/Averages	3,484,317	3,257,348	93.5	0.12
WEST CENTRAL				
Canton	111,310	111,310	100.0	0.30
Foss	165,480	160,604	97.1	0.00
Regional Totals/Averages	276,790	271,914	98.2	0.15
CENTRAL				
Arcadia	27,520	27,520	100.0	1.30
Heyburn	7,105	7,105	100.0	0.58
Thunderbird	119,600	119,600	100.0	3.27
Regional Totals/Averages	154,225	154,225	100.0	1.72
EAST CENTRAL				
Eufaula*	2,368,223	2,333,968	98.6	0.00
Tenkiller	654,100	638,171	97.6	0.00
Regional Totals/Averages	3,022,323	2,972,139	98.3	0.00
SOUTHWEST				
Fort Cobb	80,010	80,010	100.0	3.30
Lugert-Altus	132,830	54,400	41.0	0.00
Tom Steed	88,970	67,163	75.5	0.00
Regional Totals/Averages	301,810	201,573	66.8	1.10
SOUTH CENTRAL				
Arbuckle	72,400	72,400	100.0	1.70
McGee Creek	113,930	113,930	100.0	3.56
Texoma*	2,637,002	2,637,002	100.0	2.02
Waurika*	199,440	190,577	95.6	0.00
Regional Totals/Averages	3,022,772	3,013,909	99.7	1.82
SOUTHEAST				
Broken Bow*	918,070	918,070	100.0	2.27
Hugo*	184,917	184,917	100.0	2.17
Pine Creek*	53,750	53,750	100.0	2.16
Sardis	274,330	274,330	100.0	5.43
Wister	60,162	60,162	100.0	4.45
Regional Totals/Averages	1,491,229	1,491,229	100.0	3.30
STATE TOTALS	12,205,326	11,813,515	96.8	1.24

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

Baron Fork at Eldon, Oklahoma

*Station No. 07197000
Northeast Oklahoma*

Drainage Area 307 square miles



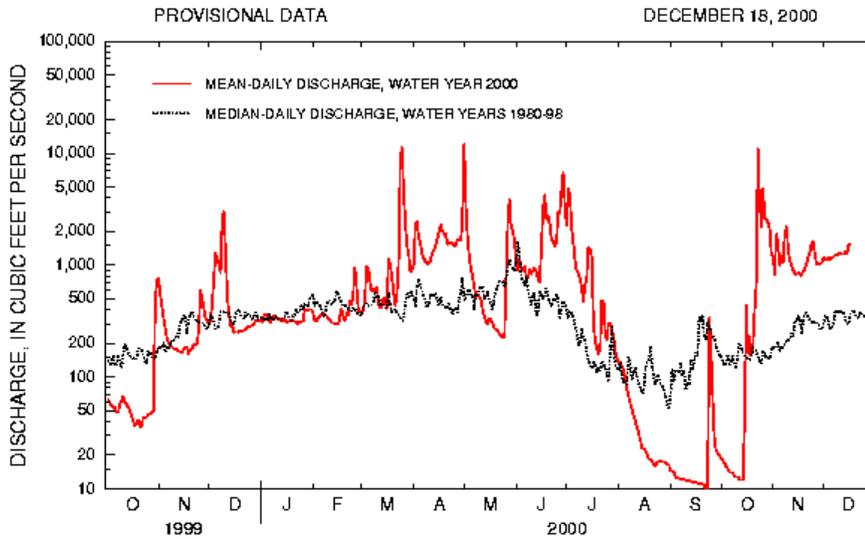
Comparison of daily discharges for water year 2000 and 2001 and period of record for Baron Fork at Eldon, Oklahoma.

Data from U.S. Geological Survey

Canadian River at Purcell, Oklahoma

*Station No. 07229200
Central Oklahoma*

Drainage Area 25,939 square miles



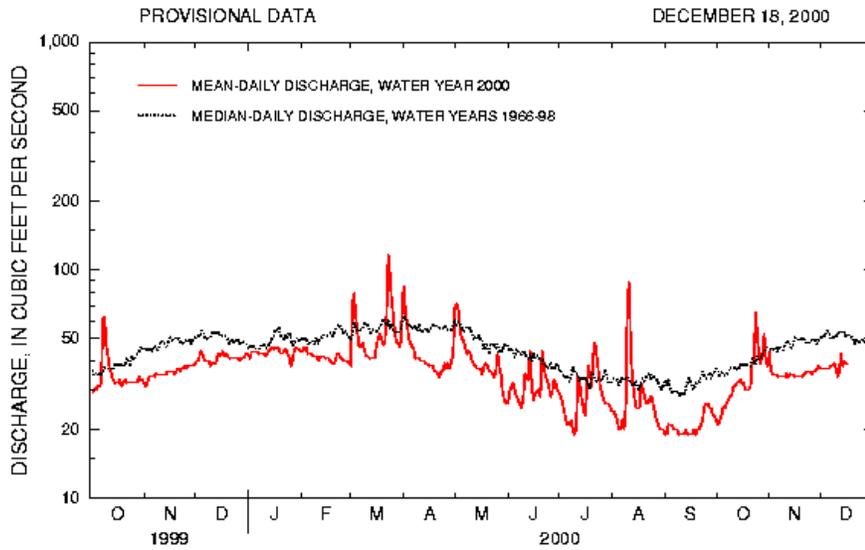
Comparison of daily discharges for water year 2000 and 2001 and period of record for Canadian River at Purcell, Oklahoma.

Data from U.S. Geological Survey

Cimarron River near Forgan, Oklahoma

*Station No. 07156900
Northwest Oklahoma*

Drainage Area 8,536 square miles



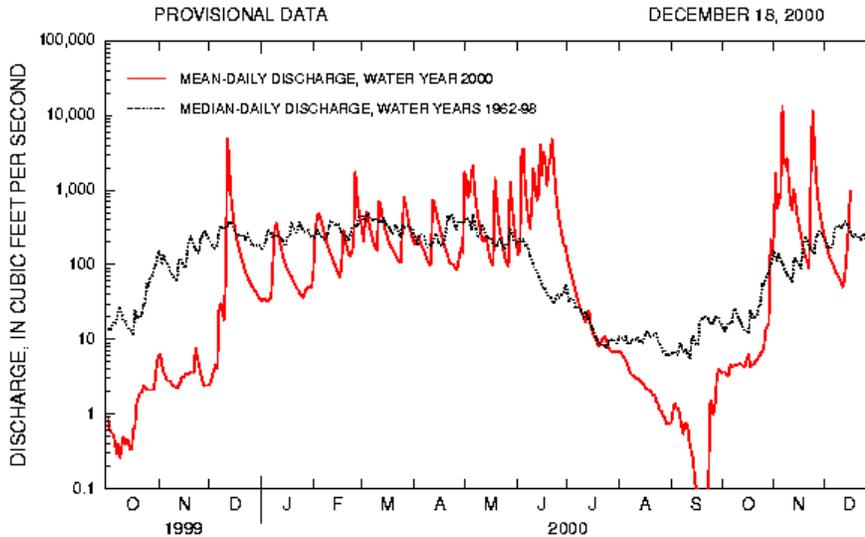
Comparison of daily discharges for water year 2000 and 2001 and period of record for Cimarron River near Forgan, Oklahoma.

Data from U.S. Geological Survey

Glover River near Glover, Oklahoma

*Station No. 07337900
Southeast Oklahoma*

Drainage Area 315 square miles



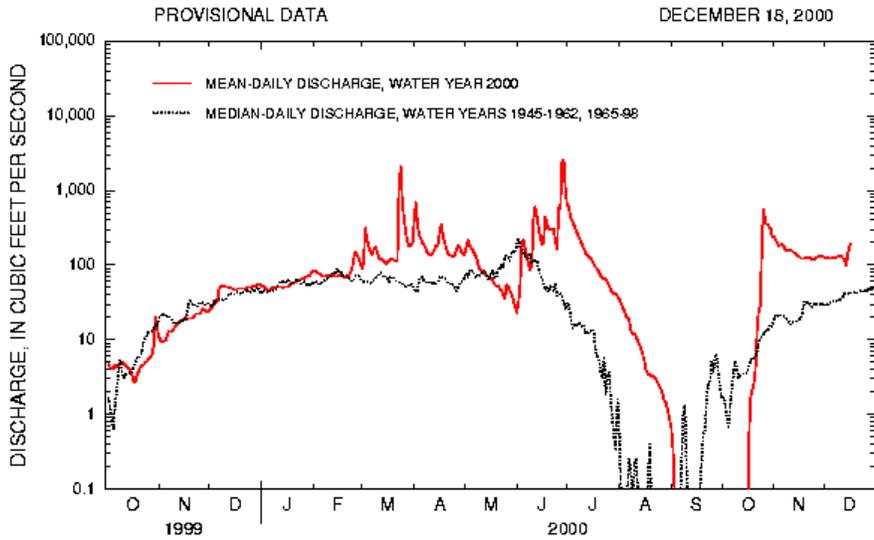
Comparison of daily discharges for water year 2000 and 2001 and period of record for Glover River near Glover, Oklahoma.

Data from U.S. Geological Survey

North Fork Red River near Carter, Oklahoma

*Station No. 07301 500
Southwest Oklahoma*

Drainage Area 2,337 square miles



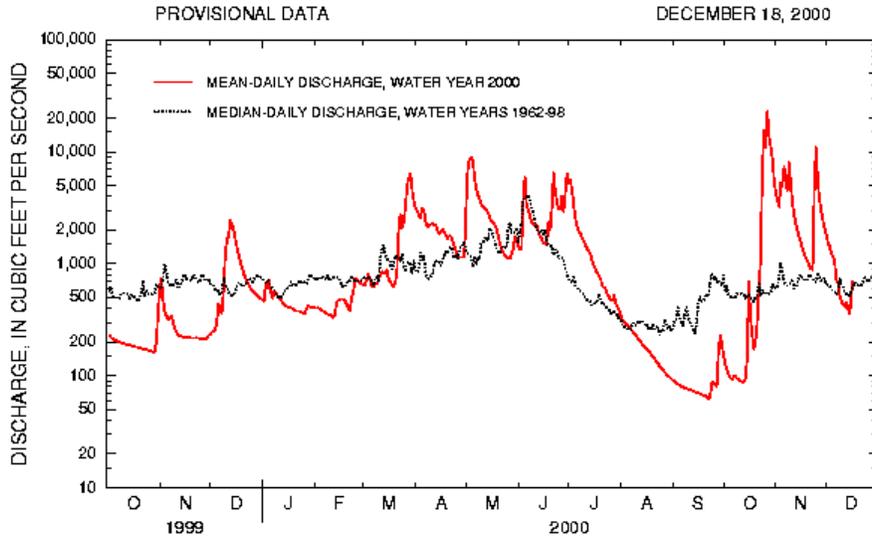
Comparison of daily discharges for water year 2000 and 2001 and period of record for North Fork Red River near Carter, Oklahoma.

Data from U.S. Geological Survey

Washita River near Dickson, Oklahoma

*Station No. 07331 000
South-Central Oklahoma*

Drainage Area 7,202 square miles



Comparison of daily discharges for water year 2000 and 2001 and period of record for Washita River near Dickson, Oklahoma.

Data from U.S. Geological Survey