

Oklahoma Water Resources Bulletin & Summary of Current Conditions



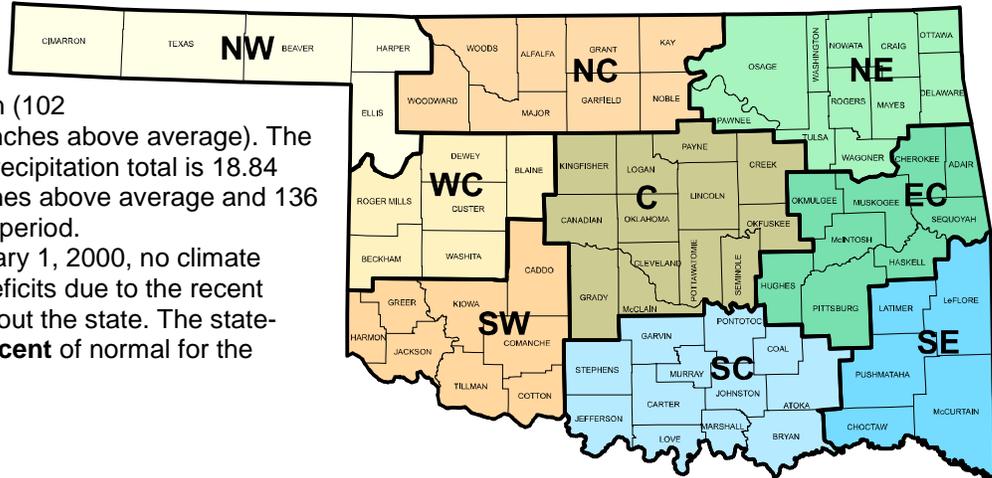
FEBRUARY 28, 2001

OKLAHOMA WATER RESOURCES BOARD

Statewide Precipitation & General Summary

A surplus of autumn/winter moisture has greatly benefited virtually all areas of Oklahoma. 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, 2000 through February 25, 2001 (the current growing season) is the Northeast climate division (102 percent of normal, 0.33 inches above average). The current state-averaged precipitation total is 18.84 inches, which is 4.94 inches above average and 136 percent of normal for the period.

Similarly, since January 1, 2000, no climate divisions report rainfall deficits due to the recent abundant rainfall throughout the state. The state-averaged total is **224 percent** of normal for the period.



PRELIMINARY STATEWIDE PRECIPITATION BY CLIMATE DIVISION

(IN INCHES)

| DIVISION (#) | CURRENT GROWING SEASON SEPTEMBER 1, 2000 – FEBRUARY 25, 2001 | | | CALENDAR YEAR JANUARY 1 – FEBRUARY 25, 2001 | | | RAINFALL SINCE JANUARY 15 |
|-----------------------|---|--------------------------|----------------------|--|--------------------------|----------------------|---------------------------------|
| | TOTAL RAINFALL | DEPARTURE FROM NORMAL | PERCENT OF NORMAL | TOTAL RAINFALL | DEPARTURE FROM NORMAL | PERCENT OF NORMAL | |
| Northwest (1) | 8.05 | 2.12 | 136 | 1.97 | 0.96 | 195 | 1.87 |
| North Central (2) | 13.85 | 3.46 | 133 | 4.65 | 2.85 | 259 | 4.02 |
| Northeast (3) | 17.50 | 0.33 | 102 | 7.64 | 4.37 | 234 | 6.64 |
| West Central (4) | 11.37 | 1.49 | 115 | 3.81 | 2.09 | 221 | 3.13 |
| Central (5) | 20.29 | 6.15 | 143 | 6.18 | 3.45 | 226 | 5.02 |
| East Central (6) | 25.51 | 6.13 | 132 | 10.08 | 5.98 | 246 | 8.55 |
| Southwest (7) | 17.40 | 6.32 | 157 | 4.44 | 2.34 | 212 | 3.54 |
| South Central (8) | 25.25 | 8.77 | 153 | 8.07 | 4.59 | 232 | 7.03 |
| Southeast (9) | 30.78 | 8.23 | 137 | 9.83 | 4.52 | 185 | 9.23 |
| STATE-AVERAGED | 18.84 | 4.94 | 136 | 6.28 | 3.47 | 224 | 5.42 |

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](#) (February 24, below), moisture/drought conditions continue to improve dramatically throughout Oklahoma. None of the state's nine climate divisions have undergone PDSI moisture decreases since January 13; the Southwest climate division ("very moist") experienced the most modest increase during the period. The "driest" region is the Northeast ("unusually moist").

The latest monthly [Standardized Precipitation Index](#) (through January, 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](#) (February 26, 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 good. Statewide, no stations are currently above 400, generally indicative of moderate drought conditions (only three stations had readings above 400 on January 16). Beaver, in Northwest Oklahoma, retains the highest KBDI value (373), followed by Hooker (296; Northwest) and Medford (290; North Central). According to the Oklahoma Department of Agriculture (Forestry Services), as of February 4, [Statewide Wildfire Preparedness](#) is at Level 2 (moderate fire danger). Caution is 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 JANUARY | | | | |
|----------------------|-------------------------------|------------|----------------------|--|----------------|----------------|----------------|----------------|
| | CURRENT STATUS 2/24/2001 | VALUE 2/24 | CHANGE IN VALUE 1/13 | 3-MONTH | 6-MONTH | 9-MONTH | 12-MONTH | |
| Northwest (1) | VERY MOIST SPELL | 3.11 | 1.56 | 1.55 | NEAR NORMAL | NEAR NORMAL | NEAR NORMAL | NEAR NORMAL |
| North Central (2) | EXTREME MOIST SPELL | 4.19 | 2.89 | 1.30 | NEAR NORMAL | NEAR NORMAL | NEAR NORMAL | MODERATELY WET |
| Northeast (3) | UNUSUAL MOIST SPELL | 2.54 | 0.76 | 1.78 | NEAR NORMAL | NEAR NORMAL | NEAR NORMAL | NEAR NORMAL |
| West Central (4) | VERY MOIST SPELL | 3.14 | 2.11 | 1.03 | NEAR NORMAL | NEAR NORMAL | NEAR NORMAL | MODERATELY WET |
| Central (5) | EXTREME MOIST SPELL | 4.00 | 2.73 | 1.27 | MODERATELY WET | NEAR NORMAL | MODERATELY WET | MODERATELY WET |
| East Central (6) | VERY MOIST SPELL | 3.64 | 1.56 | 2.08 | MODERATELY WET | NEAR NORMAL | MODERATELY WET | NEAR NORMAL |
| Southwest (7) | VERY MOIST SPELL | 3.87 | 3.02 | 0.85 | MODERATELY WET | MODERATELY WET | NEAR NORMAL | MODERATELY WET |
| South Central (8) | EXTREME MOIST SPELL | 4.35 | 2.79 | 1.56 | VERY WET | MODERATELY WET | NEAR NORMAL | NEAR NORMAL |
| Southeast (9) | VERY MOIST SPELL | 3.47 | 2.02 | 1.45 | VERY WET | NEAR NORMAL | NEAR NORMAL | NEAR NORMAL |

KEETCH-BYRAM DROUGHT FIRE INDEX

| MESONET STATION | COUNTY | CLIMATE DIVISION | CURRENT VALUE 2/26/2001 | ANTICIPATED IMPACT |
|----------------------------|--------|------------------|-------------------------|---|
| Beaver | Beaver | Northwest | 373 | 400-600: lower litter and duff layers actively contribute to fire intensity and will burn actively; typical of late summer, early fall. |
| Hooker | Texas | Northwest | 296 | |
| Medford | Grant | North Central | 290 | |
| 3 total stations above 400 | | | | |

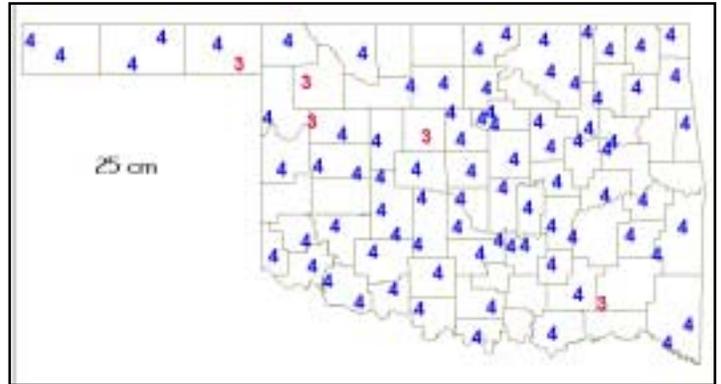
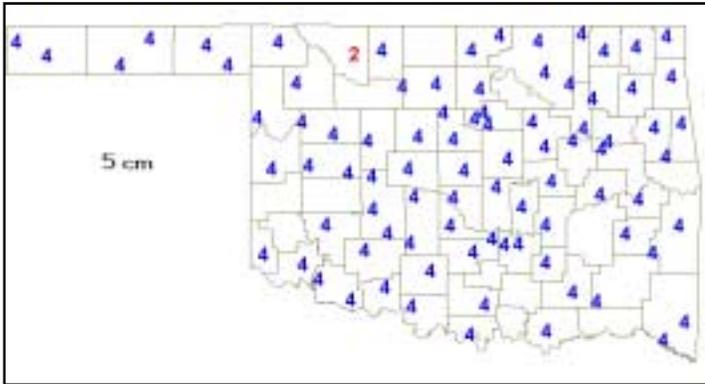
The PDSI may underestimate or overestimate the severity of ongoing dry periods. The SPI, more sensitive than the PDSI, provides a comparison of precipitation over a specified period with precipitation totals from that same period for all years included in the historical record. The 3-month SPI provides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

Soil Moisture

Saturday, February 24, 2001

– courtesy Oklahoma Climatological Survey

| | |
|----|--------------------|
| ## | Cat. 4 = Moist/Wet |
| ## | Cat. 3 = Adequate |
| ## | Cat. 2 = Limited |
| ## | Cat. 1 = Dry |



Streamflow Conditions

For the current water year (beginning October 1, 2000), flows in most state rivers and streams remain at or above average. Considering overall trends as well as current flows, the most recent data (February 20, 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 **above average flow** in *northwest* (Cimarron River in Woods County), *southwest* (North Fork/Red River in Beckham County), *southeast* (Glover River in McCurtain County) and *northeast* (Baron Fork in Cherokee County) Oklahoma; and **much above average flow** in the *central* (Canadian River in McClain County) and *south central* (Washita River in Carter County) regions.

Weather Forecast

The National Weather Service [6- to 10-day outlook](#) (March 4-8) calls for normal precipitation for all but far southwestern Oklahoma, where above normal precipitation is expected. Normal temperatures are anticipated for the eastern two-thirds of the state; above normal temperatures are forecasted for the western and Panhandle areas.

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 conditions likely during the summer of 2001.

Crop Report

February 5 -- Low temperatures and freezing weather endured throughout the state during much of January. Most areas remained wet during the month with most regions accumulating more than three inches of precipitation. The cold and wet conditions restricted growth of wheat pasture and limited available grazing to 17 percent. Supplemental feeding was heavy in most areas of the state.

Wheat was rated in mostly fair to poor condition at January's closing. Much of the late planted wheat has been growing slowly due to the persistent cold weather. Some of the wheat fields that had previously been dusted in have experienced problems with cheat and rye growth. Producers that were unable to plant some or all of their wheat acreage are considering planting these acres to spring oats or grain sorghum.

Livestock were rated in mostly fair condition statewide, but the cold and ice have had an affect on many stockers and calves. In many areas, cattle previously purchased for grazing on wheat pasture have been surviving on hay and creep feed, thus reducing profit potential for producers. Farmers and ranchers have fed large quantities of hay during January and hay supplies for the rest of the season were rated below average.

Wheat pasture available for grazing was scarce across the state as a result of the extended cold temperatures. Many fields have already been grazed off. Pastures were rated in mostly poor to fair condition statewide. Cattle producers need warm, dry weather to enable green-up of wheat and grazing to occur on a broader scale.

Reservoir Storage

Reservoir storage levels in Oklahoma remain very good throughout most of the state. As of February 26, the combined normal conservation pools of 31 selected major federal reservoirs across Oklahoma (see below) are approximately 99.4 percent full, a 1.8 percent increase from that measured on January 16, according to information from the [U.S. Army Corps of Engineers \(Tulsa District\)](#). Only two reservoirs – Fort Supply and Foss -- have experienced lake level decreases since that time. Five reservoirs are operating at less than full capacity (compared to 9 last month). Two reservoirs (Lugert-Altus and Tom Steed) remain below 80 percent capacity; Lugert-Altus is at only 63 percent.

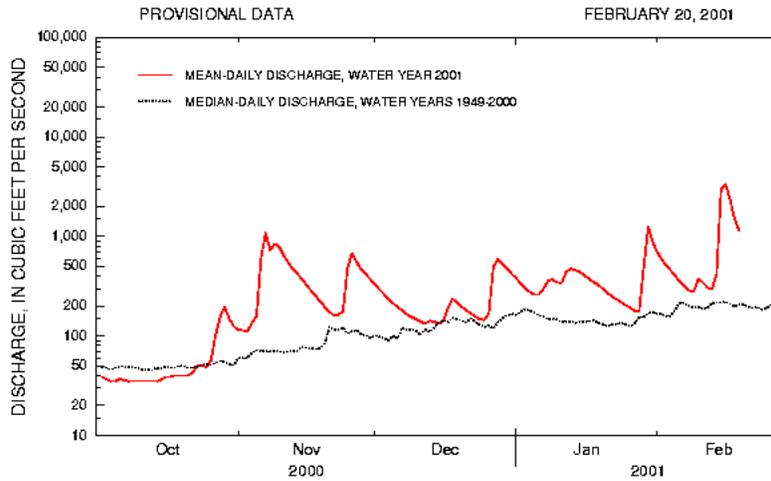
| Storage in Selected Oklahoma Lakes & Reservoirs | | | | |
|--|-----------------------------|------------------------|---------------------------|--------------|
| as of February 26, 2001 | | | | |
| Climate Division | Conservation Storage | Present Storage | Percent of Storage | |
| Lake or Reservoir | (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 | 8.16 |
| Kaw* | 367,315 | 367,315 | 100.0 | 18.19 |
| Regional Totals/Averages | 412,635 | 411,953 | 99.8 | 8.78 |
| NORTHEAST | | | | |
| Birch | 19,225 | 19,225 | 100.0 | 10.12 |
| Copan | 43,400 | 43,400 | 100.0 | 15.41 |
| Fort Gibson | 365,200 | 365,200 | 100.0 | 35.76 |
| Grand | 1,672,000 | 1,672,000 | 100.0 | 50.40 |
| Hudson | 200,300 | 200,300 | 100.0 | 61.07 |
| Hulah | 31,160 | 31,160 | 100.0 | 22.55 |
| Keystone | 278,122 | 278,122 | 100.0 | 22.55 |
| Oologah | 552,210 | 552,210 | 100.0 | 21.65 |
| Skiatook | 322,700 | 319,241 | 98.9 | 0.00 |
| Regional Totals/Averages | 3,484,317 | 3,480,858 | 99.9 | 26.61 |
| WEST CENTRAL | | | | |
| Canton | 111,310 | 111,310 | 100.0 | 1.05 |
| Foss | 165,480 | 163,008 | 98.5 | 0.00 |
| Regional Totals/Averages | 276,790 | 274,318 | 99.1 | 0.53 |
| CENTRAL | | | | |
| Arcadia | 27,520 | 27,520 | 100.0 | 3.51 |
| Heyburn | 7,105 | 7,105 | 100.0 | 7.01 |
| Thunderbird | 119,600 | 119,600 | 100.0 | 14.50 |
| Regional Totals/Averages | 154,225 | 154,225 | 100.0 | 8.34 |
| EAST CENTRAL | | | | |
| Eufaula* | 2,368,223 | 2,368,223 | 100.0 | 62.50 |
| Tenkiller | 654,100 | 654,100 | 100.0 | 34.80 |
| Regional Totals/Averages | 3,022,323 | 3,022,323 | 100.0 | 48.65 |
| SOUTHWEST | | | | |
| Fort Cobb | 80,010 | 80,010 | 100.0 | 4.40 |
| Lugert-Altus | 132,830 | 83,842 | 63.1 | 0.00 |
| Tom Steed | 88,970 | 70,446 | 79.2 | 0.00 |
| Regional Totals/Averages | 301,810 | 234,298 | 77.6 | 1.47 |
| SOUTH CENTRAL | | | | |
| Arbuckle | 72,400 | 72,400 | 100.0 | 14.84 |
| McGee Creek | 113,930 | 113,930 | 100.0 | 51.97 |
| Texoma* | 2,418,626 | 2,418,626 | 100.0 | 32.70 |
| Waurika* | 190,200 | 190,200 | 100.0 | 15.43 |
| Regional Totals/Averages | 2,795,156 | 2,795,156 | 100.0 | 28.73 |
| SOUTHEAST | | | | |
| Broken Bow* | 918,070 | 918,070 | 100.0 | 44.27 |
| Hugo* | 158,617 | 158,617 | 100.0 | 36.74 |
| Pine Creek* | 53,750 | 53,750 | 100.0 | 42.37 |
| Sardis | 274,330 | 274,330 | 100.0 | 34.63 |
| Wister | 60,162 | 60,162 | 100.0 | 57.19 |
| Regional Totals/Averages | 1,464,929 | 1,464,929 | 100.0 | 43.04 |
| STATE TOTALS | 11,912,185 | 11,838,060 | 99.4 | 23.35 |

* 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



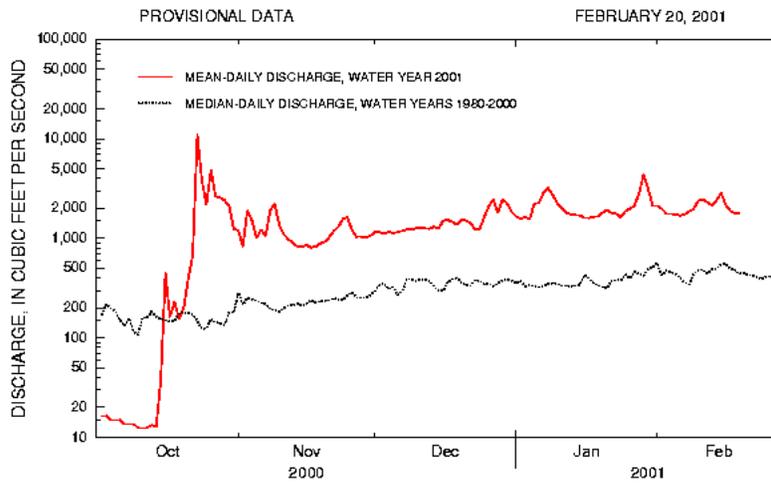
Comparison of daily discharges for water year 2001 and period of record for Baron Fork at Eldon, Oklahoma.

Data from U.S. Geological Survey

Canadian River at Purcell, Oklahoma

*Station No. 07229200
Central Oklahoma*

Drainage Area 25,939 square miles



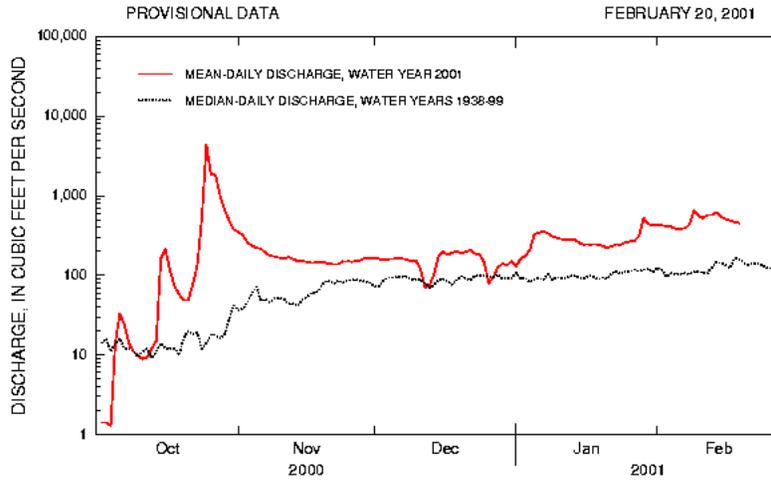
Comparison of daily discharges for water year 2001 and period of record for Canadian River at Purcell, Oklahoma.

Data from U.S. Geological Survey

Cimarron River near Waynoka, Oklahoma

Station No. 07156000
Northwest Oklahoma

Drainage Area 13,334 square miles



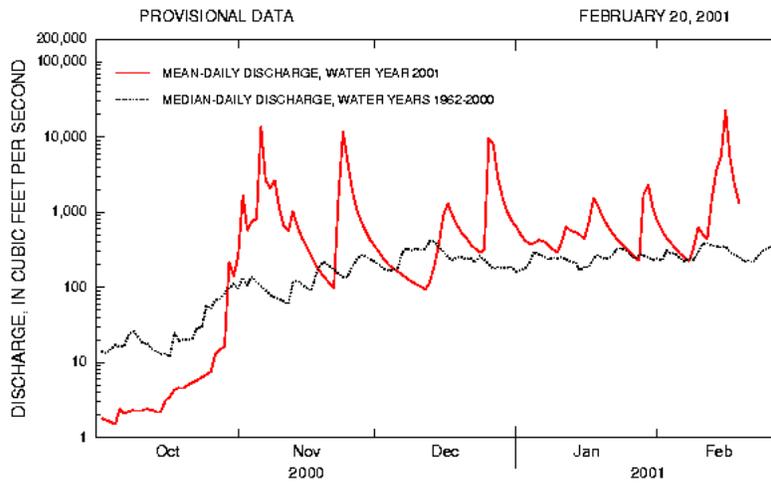
Comparison of daily discharges for water year 2001 and period of record for Cimarron River near Waynoka, Oklahoma.

Data from U.S. Geological Survey

Glover River near Glover, Oklahoma

Station No. 07337900
Southeast Oklahoma

Drainage Area 315 square miles



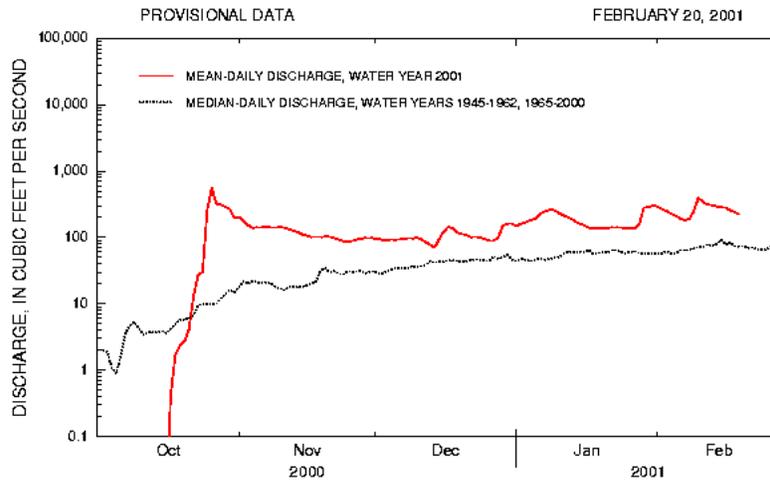
Comparison of daily discharges for water year 2001 and period of record for Glover River near Glover, Oklahoma.

Data from U.S. Geological Survey

North Fork Red River near Carter, Oklahoma

*Station No. 07301500
Southwest Oklahoma*

Drainage Area 2,337 square miles



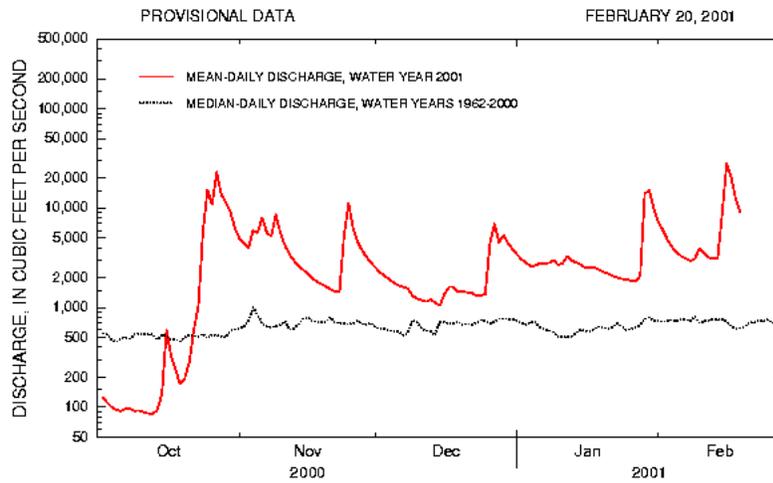
Comparison of daily discharges for water year 2001 and period of record for North Fork Red River near Carter, Oklahoma.

Data from U.S. Geological Survey

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.

Data from U.S. Geological Survey