

Oklahoma Water Resources Bulletin & Summary of Current Conditions



JANUARY 17, 2001

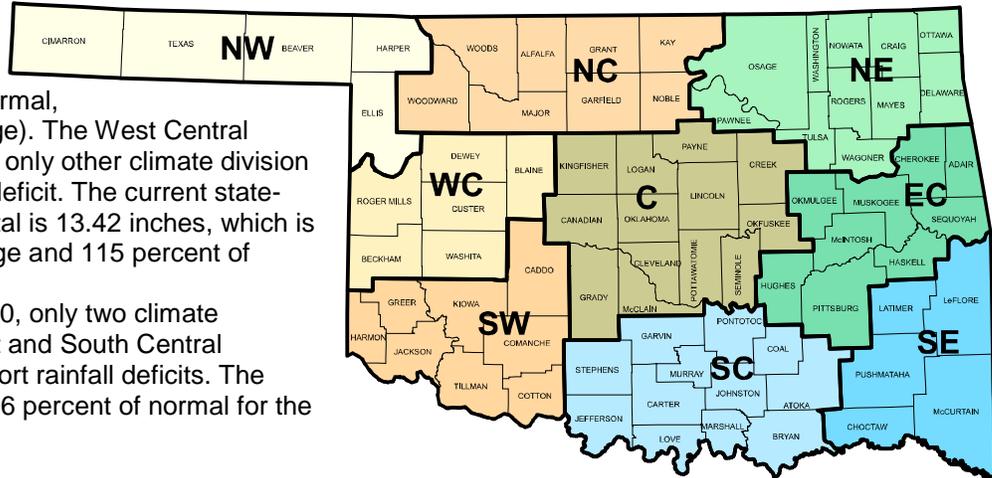
OKLAHOMA WATER RESOURCES BOARD

Statewide Precipitation & General Summary

Most of Oklahoma continues to benefit from a moderate surplus of autumn/winter moisture. 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 through January 15 continues to be the

Northeast climate division (74 percent of normal, 3.82 inches below average). The West Central region (97 percent) is the only other climate division reporting a precipitation deficit. The current state-averaged precipitation total is 13.42 inches, which is 1.72 inches above average and 115 percent of normal for the period.

Since January 1, 2000, 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 DECEMBER 17
	SEPTEMBER 1, 2000 – JANUARY 15, 2001 TOTAL RAINFALL	DEPARTURE FROM NORMAL	PERCENT OF NORMAL	JANUARY 1, 2000 – JANUARY 15, 2001 TOTAL RAINFALL	DEPARTURE FROM NORMAL	PERCENT OF NORMAL	
Northwest (1)	6.18	1.06	121	20.10	0.16	101	0.29
North Central (2)	9.83	0.86	110	33.36	4.74	117	0.93
Northeast (3)	10.86	-3.82	74	42.31	1.21	103	1.16
West Central (4)	8.24	-0.27	97	31.06	4.13	115	1.27
Central (5)	15.27	3.25	127	39.59	4.53	113	1.58
East Central (6)	16.96	0.75	105	47.59	3.26	107	1.86
Southwest (7)	13.86	4.39	146	33.49	4.91	117	1.37
South Central (8)	18.22	4.44	132	38.34	-0.57	99	2.70
Southeast (9)	21.55	3.12	117	46.71	-3.94	92	3.11
STATE-AVERAGED	13.42	1.72	115	36.93	2.10	106	1.56

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](#) (January 13, below), moisture/drought conditions continue to improve throughout much of the state. Only two of the state's nine climate divisions have undergone PDSI moisture decreases since December 16; the Northwest climate division experienced the greatest decrease during the period.

The latest monthly [Standardized Precipitation Index](#) (through December, below) indicates that no climate divisions in Oklahoma are experiencing long-term dryness (among the selected time periods: 3-, 6-, 9- and 12-month). Among other time periods, the Northwest, Northeast and Southeast climate divisions are experiencing only moderate dryness over various time spans within the past six years.

The latest [Keetch-Byram Drought Index](#) (January 16, 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, only three stations are above 400, generally indicative of moderate drought conditions (six stations had readings above 400 on December 18). Beaver, in Northwest Oklahoma, has the highest KBDI value (466), followed by Buffalo (433; Northwest) and Breckinridge (408; North Central). 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 DECEMBER			
	CURRENT STATUS 1/13/2001	VALUE		CHANGE IN VALUE	3-MONTH	6-MONTH	9-MONTH	12-MONTH
		1/13	12/16					
Northwest (1)	MOIST SPELL	1.56	1.75	-0.19	VERY WET	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
North Central (2)	UNUSUAL MOIST SPELL	2.89	2.87	0.02	VERY WET	NEAR NORMAL	NEAR NORMAL	MODERATELY WET
Northeast (3)	INCIPIENT MOIST SPELL	0.76	0.82	-0.06	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
West Central (4)	UNUSUAL MOIST SPELL	2.11	1.68	0.43	VERY WET	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
Central (5)	UNUSUAL MOIST SPELL	2.73	2.43	0.30	VERY WET	NEAR NORMAL	MODERATELY WET	MODERATELY WET
East Central (6)	MOIST SPELL	1.56	1.43	0.13	MODERATELY WET	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
Southwest (7)	VERY MOIST SPELL	3.02	2.68	0.34	VERY WET	NEAR NORMAL	NEAR NORMAL	MODERATELY WET
South Central (8)	UNUSUAL MOIST SPELL	2.79	2.37	0.42	VERY WET	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
Southeast (9)	UNUSUAL MOIST SPELL	2.02	1.90	0.12	MODERATELY WET	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL

KEETCH-BYRAM DROUGHT FIRE INDEX

MESONET STATION	COUNTY	CLIMATE DIVISION	CURRENT VALUE 1/16/2001	ANTICIPATED IMPACT
Beaver	Beaver	Northwest	466	400-600: lower litter and duff layers actively contribute to fire intensity and will burn actively; typical of late summer, early fall.
Buffalo	Harper	Northwest	433	
Breckinridge	Garfield	North Central	408	
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.

Streamflow Conditions

For the current, extended water year (beginning October 1, 1999), flows in most state rivers and streams remain at or above average. Considering overall trends as well as current flows, the most recent data (January 16, 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, 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); **above average flow** in the *northeast* (Baron Fork in Cherokee County), *central* (Canadian River in McClain County) and *southwest* (North Fork/Red River in Beckham County) regions; and **much above average flow** in *south central* (Washita River in Carter County) Oklahoma.

Weather Forecast

The National Weather Service [6- to 10-day outlook](#) (January 21-25) calls for normal precipitation for all but southeast Oklahoma, where **above normal precipitation** is expected. Above normal temperatures are anticipated for all but the southern, west central and Panhandle areas of Oklahoma, where normal temperatures are forecasted. The Climate Prediction Center's [seasonal forecast](#) projects a chance for above normal precipitation 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, will weaken during the next three months, followed by near normal conditions during March-May 2001.

Crop Report

December 31 - Cold temperatures and freezing weather persisted throughout the state in December with large amounts of snow, sleet and ice received during the last two weeks of the month. The accumulated precipitation left thousands without electricity and travel conditions were hampered due to slick roads. Supplemental feeding was heavy in most areas as available wheat pasture was limited.

The wheat condition fell from good to fair at the beginning of the month to mostly fair to poor condition by the end of the month. Cold temperatures and freezes have halted wheat growth and some of the late-planted fields have yet to emerge.

Livestock were rated in mostly fair condition statewide. Most producers were heavily feeding hay and protein to livestock. Hay supplies are currently adequate, although this may change if hay continues to be fed at the current pace. The ice and cold has taken its toll on many stockers and calves; producers are concerned about high death loss if the current weather continues much longer. Many ponds were frozen and ice had to be broken for livestock. Wheat pasture available for grazing was limited across Oklahoma due to the snow and ice cover. Wheat pasture growth has stopped and some fields have already been grazed off. Pastures were rated in mostly fair to poor condition statewide.

Reservoir Storage

Reservoir storage levels in Oklahoma remain generally good. As of January 16, the combined normal conservation pools of 31 selected major federal reservoirs across Oklahoma (see below) are approximately 97.6 percent full, a .8 percent increase from that measured on December 18, according to information from the [U.S. Army Corps of Engineers \(Tulsa District\)](#). Nine reservoirs -- including four in the Southeast region -- have experienced lake level decreases since that time. Nine 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 47 percent.

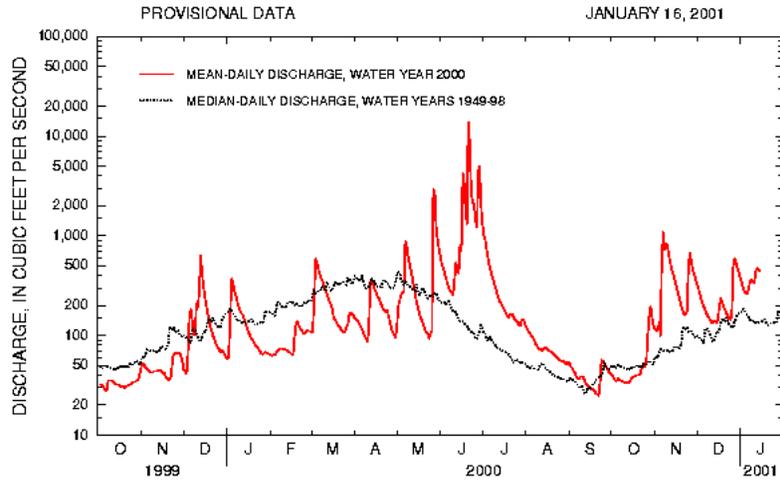
Storage in Selected Oklahoma Lakes & Reservoirs				
as of January 16, 2000				
Climate Division	Conservation Storage	Present Storage	Percent of Storage	
Lake or Reservoir	(acre-feet)	(acre-feet)	conservation	flood
NORTH CENTRAL				
Fort Supply	13,900	13,900	100.0	0.00
Great Salt Plains	31,420	31,420	100.0	1.78
Kaw*	383,005	383,005	100.0	3.19
Regional Totals/Averages	428,325	428,325	100.0	1.66
NORTHEAST				
Birch	19,225	17,137	89.1	0.00
Copan	43,400	37,551	86.5	0.00
Fort Gibson	365,200	365,200	100.0	0.08
Grand	1,672,000	1,544,039	92.3	0.00
Hudson	200,300	200,300	100.0	0.00
Hulah	31,160	31,160	100.0	0.49
Keystone	278,122	278,122	100.0	0.49
Oologah	552,210	534,088	96.7	0.00
Skiatook	322,700	282,424	87.5	0.00
Regional Totals/Averages	3,484,317	3,290,021	94.4	0.12
WEST CENTRAL				
Canton	111,310	111,310	100.0	0.30
Foss	165,480	164,144	99.2	0.00
Regional Totals/Averages	276,790	275,454	99.5	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	2,368,223	100.0	0.00
Tenkiller	654,100	654,100	100.0	0.00
Regional Totals/Averages	3,022,323	3,022,323	100.0	0.00
SOUTHWEST				
Fort Cobb	80,010	80,010	100.0	3.30
Lugert-Altus	132,830	62,531	47.1	0.00
Tom Steed	88,970	67,217	75.6	0.00
Regional Totals/Averages	301,810	209,758	69.5	1.10
SOUTH CENTRAL				
Arbuckle	72,400	72,400	100.0	1.70
McGee Creek	113,930	113,930	100.0	3.56
Texoma*	2,531,858	2,531,858	100.0	2.02
Waurika*	199,440	193,518	97.0	0.00
Regional Totals/Averages	2,917,628	2,911,706	99.8	1.82
SOUTHEAST				
Broken Bow*	918,070	918,070	100.0	2.27
Hugo*	183,602	183,602	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	1,489,914	1,489,914	100.0	3.30
STATE TOTALS	12,075,332	11,781,726	97.6	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



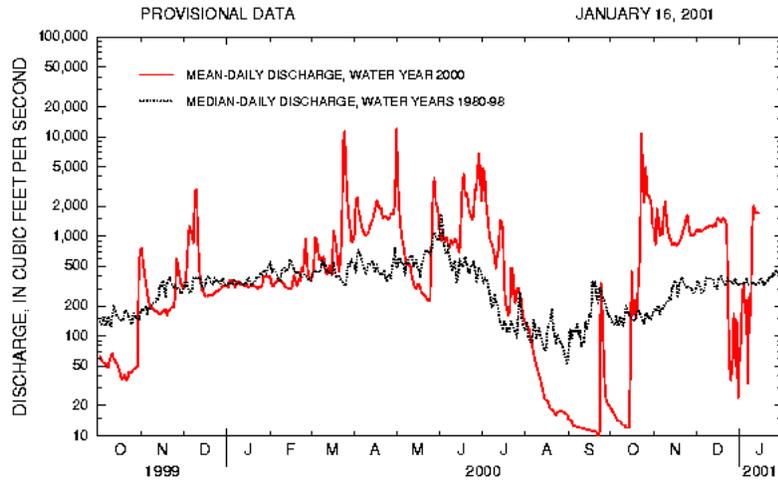
Comparison of daily discharges for water year 2000 and 2001 and period of record for Baron Fork at Eldon, Oklahoma.

Data from U.S. Geological Survey

Canadian River at Purcell, Oklahoma

Station No. 07229200
Central Oklahoma

Drainage Area 25,939 square miles



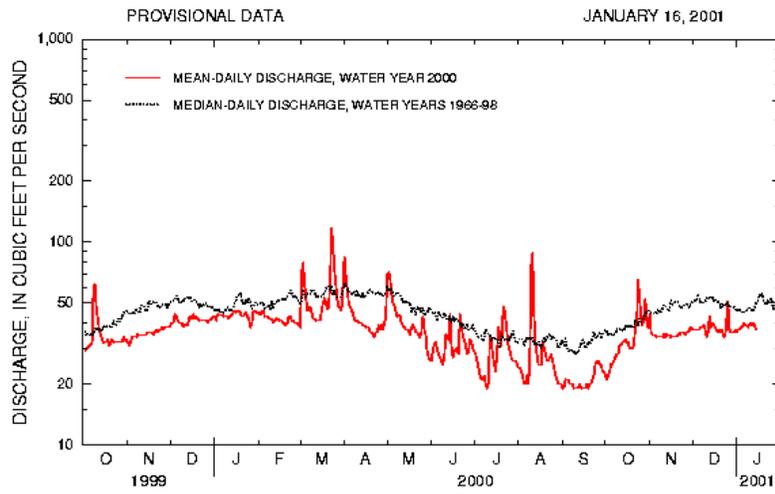
Comparison of daily discharges for water year 2000 and 2001 and period of record for Canadian River at Purcell, Oklahoma.

Data from U.S. Geological Survey

Cimarron River near Forgan, Oklahoma

*Station No. 07156900
Northwest Oklahoma*

Drainage Area 8,536 square miles



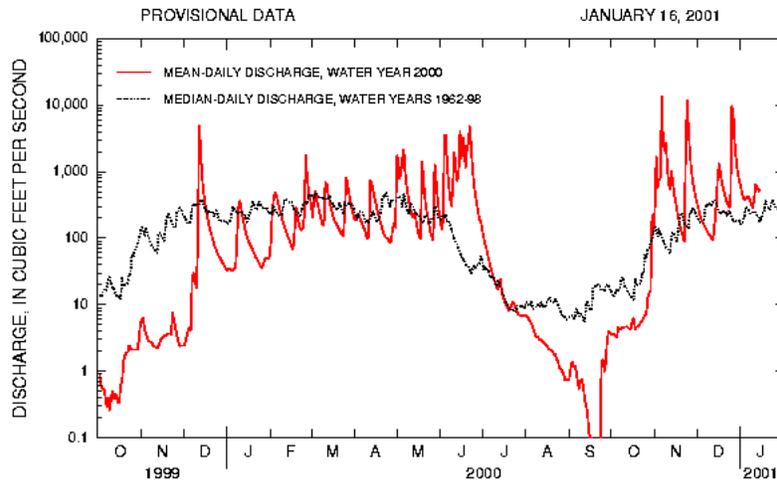
Comparison of daily discharges for water year 2000 and 2001 and period of record for Cimarron River near Forgan, Oklahoma.

Data from U.S. Geological Survey

Glover River near Glover, Oklahoma

*Station No. 07337900
Southeast Oklahoma*

Drainage Area 315 square miles



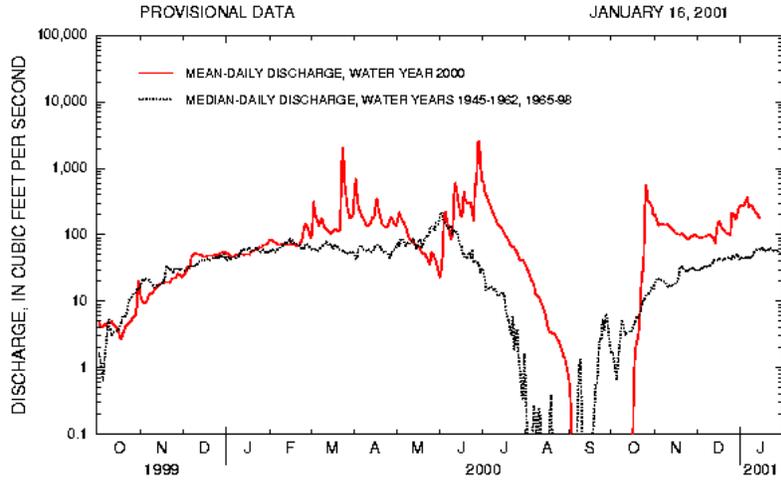
Comparison of daily discharges for water year 2000 and 2001 and period of record for Glover River near Glover, Oklahoma.

Data from U.S. Geological Survey

North Fork Red River near Carter, Oklahoma

*Station No. 07301500
Southwest Oklahoma*

Drainage Area 2,337 square miles



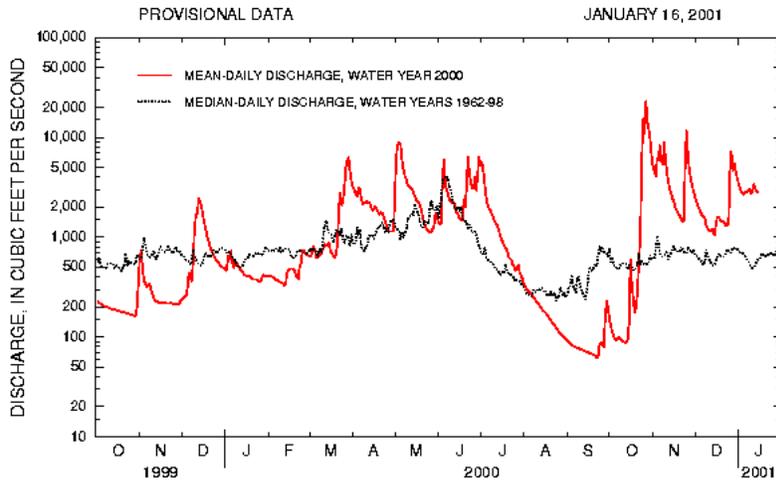
Comparison of daily discharges for water year 2000 and 2001 and period of record for North Fork Red River near Carter, Oklahoma.

Data from U.S. Geological Survey

Washita River near Dickson, Oklahoma

*Station No. 07331000
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