

Oklahoma Water Resources Bulletin & Summary of Current Conditions



MARCH 27, 2001

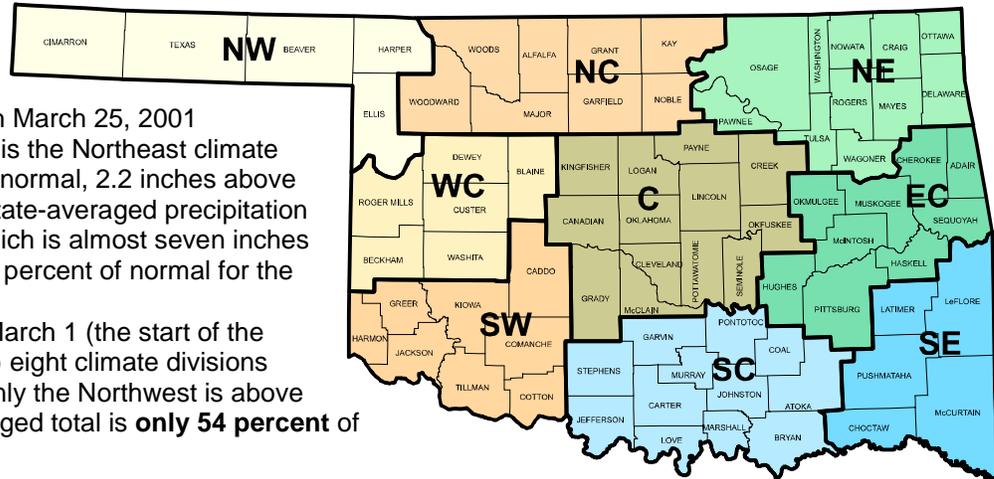
OKLAHOMA WATER RESOURCES BOARD

Statewide Precipitation & General Summary

Most areas of Oklahoma remain moderately wet, although the generous surplus of recent precipitation has been diminished somewhat due to below normal rainfall during March. 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 October 1, 2000 through March 25, 2001 (the current water year) is the Northeast climate division (114 percent of normal, 2.2 inches above average). The current state-averaged precipitation total is 19.33 inches, which is almost seven inches above average and 156 percent of normal for the period.

Conversely, since March 1 (the start of the current growing season) eight climate divisions report rainfall deficits; only the Northwest is above normal. The state-averaged total is **only 54 percent** of normal for the period.



PRELIMINARY STATEWIDE PRECIPITATION BY CLIMATE DIVISION (IN INCHES)

DIVISION (#)	CURRENT GROWING SEASON MARCH 1 – MARCH 25, 2001			WATER YEAR OCTOBER 1, 2000 – MARCH 25, 2001			RAINFALL SINCE FEBRUARY 25
	TOTAL RAINFALL	DEPARTURE FROM NORMAL	PERCENT OF NORMAL	TOTAL RAINFALL	DEPARTURE FROM NORMAL	PERCENT OF NORMAL	
Northwest (1)	1.49	0.49	149	9.50	4.56	192	1.51
North Central (2)	1.50	-0.29	84	15.36	6.42	172	1.58
Northeast (3)	1.23	-1.58	44	17.51	2.20	114	1.23
West Central (4)	1.15	-0.39	75	12.72	4.53	155	1.44
Central (5)	0.81	-1.41	37	20.01	7.68	162	0.85
East Central (6)	0.89	-2.24	28	24.27	6.06	133	1.19
Southwest (7)	0.86	-0.68	56	17.50	8.33	191	0.93
South Central (8)	0.80	-1.72	32	26.01	11.36	178	1.65
Southeast (9)	2.65	-0.96	73	31.88	10.14	147	3.71
STATE-AVERAGED	1.23	-1.04	54	19.33	6.93	156	1.51

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](#) (March 24, below), moisture/drought conditions remain good, although the PDSI is beginning to indicate a drying trend throughout much of Oklahoma. Eight of the state's nine climate divisions have undergone PDSI moisture decreases since February 24; the East Central climate division ("unusually moist") experienced the greatest decrease during the period. The "driest" region is currently the Northeast ("moist").

The latest monthly [Standardized Precipitation Index](#) (through February, 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](#) (March 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 remain good. Statewide, no stations are currently above 400, generally indicative of moderate drought conditions (no stations had readings above 400 on February 26). Beaver, in Northwest Oklahoma, retains the highest KBDI value (331), followed by Medford (278; North Central) and Hooker (240; Northwest). According to the Oklahoma Department of Agriculture (Forestry Services), as of March 22, [Statewide Wildfire Preparedness](#) remains at Level 2 (moderate fire danger). Although showers may cause temporary reductions in fire danger, as long as vegetation remains dormant, the fire danger will rapidly increase following rains. 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 FEBRUARY			
	CURRENT STATUS 3/24/2001	VALUE		CHANGE IN VALUE	3-MONTH	6-MONTH	9-MONTH	12-MONTH
	3/24	2/24						
Northwest (1)	VERY MOIST SPELL	3.70	3.11	0.59	MODERATELY WET	VERY WET	NEAR NORMAL	MODERATELY WET
North Central (2)	VERY MOIST SPELL	3.68	4.19	-0.51	VERY WET	MODERATELY WET	NEAR NORMAL	MODERATELY WET
Northeast (3)	MOIST SPELL	1.83	2.54	-0.71	VERY WET	NEAR NORMAL	NEAR NORMAL	MODERATELY WET
West Central (4)	UNUSUAL MOIST SPELL	2.93	3.14	-0.21	VERY WET	MODERATELY WET	NEAR NORMAL	MODERATELY WET
Central (5)	VER MOIST SPELL	3.14	4.00	-0.86	VERY WET	VERY WET	VERY WET	MODERATELY WET
East Central (6)	UNUSUAL MOIST SPELL	2.45	3.64	-1.19	VERY WET	VERY WET	VERY WET	MODERATELY WET
Southwest (7)	VERY MOIST SPELL	3.40	3.87	-0.47	MODERATELY WET	VERY WET	VERY WET	VERY WET
South Central (8)	VERY MOIST SPELL	3.74	4.35	-0.61	VERY WET	VERY WET	VERY WET	MODERATELY WET
Southeast (9)	UNUSUAL MOIST SPELL	2.99	3.47	-0.48	VERY WET	VERY WET	VERY WET	MODERATELY WET

KEETCH-BYRAM DROUGHT FIRE INDEX				
MESONET STATION	COUNTY	CLIMATE DIVISION	CURRENT VALUE 3/26/2001	ANTICIPATED IMPACT
Beaver	Beaver	Northwest	331	400-600: lower litter and duff layers actively contribute to fire intensity and will burn actively; typical of late summer, early fall.
Medford	Grant	North Central	278	
Hooker	Texas	Northwest	240	
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

March 24, 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 remain at or above average. Considering overall trends as well as current flows, the most recent data (March 26, 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 **near average flow** in *northeast* (Baron Fork in Cherokee County) and *southeast* (Glover River in McCurtain County) Oklahoma; above average flow in the *south central* (Washita River in Carter County) region; and **much above average flow** in the *central* (Canadian River in McClain County), *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](#) (April 1-5) calls for above normal precipitation and normal temperatures for all of Oklahoma.

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

March 19 -- Although much of the state experienced a few warm, dry days during the week, many areas received additional rainfall, further soaking already saturated soils. Row crop field preparation slowed until conditions improve. Producers are in desperate need of dry, warm weather to prepare soil for planting and warmer days are needed to trigger wheat growth and improve wheat and pasture conditions. Moisture supplies have increased and both topsoil and subsoil moisture conditions were rated in the adequate or surplus categories.

Wheat was rated in mostly fair to poor condition. Warm and dry weather will be required before significant growth can occur. Fifteen percent of the wheat was jointing, behind the five-year average of 42 percent. Some producers were fertilizing fields but many were still debating whether it will be economically feasible. Some wheat acres will be grazed out, hayed, or abandoned due to lack of proper emergence or heavy infestations of cheat. Seedbed preparation for this year's row crops proceeded where conditions allowed. However, conditions were still too wet last week to make significant progress statewide. At week's end, corn and sorghum seedbed prepared were both at 21 percent, while soybeans and peanuts were at 14 and 5 percent prepared, respectively.

Livestock were rated in mostly fair condition. Farmers and ranchers continued to feed large quantities of hay during the week and hay supplies for the rest of the season were rated below average. Cattle auctions reported average marketings for the week. Wheat pasture available for grazing remained limited across the state. This deficiency of grazing availability has led to continued heavy supplemental feeding in most areas. Pastures improved slightly and were rated in mostly fair to poor condition statewide. Isolated areas have reported growth and greening in some pastures.

Reservoir Storage

Reservoir storage levels in Oklahoma remain good throughout most of the state. As of March 26, the combined normal conservation pools of 31 selected major federal reservoirs across Oklahoma (see below) are approximately 99.4 percent full, the same as this time last month (February 26), according to information from the [U.S. Army Corps of Engineers \(Tulsa District\)](#). However, 27 reservoirs – including all in the Central, East Central, South Central and Southeast region -- have experienced lake level decreases since that time. Still, only six reservoirs are operating at less than full capacity (compared to five last month). Two reservoirs (Lugert-Altus and Tom Steed) remain below 80 percent capacity.

Storage in Selected Oklahoma Lakes & Reservoirs				
<i>as of March 26, 2001</i>				
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	0.52
Great Salt Plains	31,420	31,420	100.0	5.48
Kaw*	387,712	387,712	100.0	5.02
Regional Totals/Averages	433,032	433,032	100.0	3.67
NORTHEAST				
Birch	19,225	19,225	100.0	0.00
Copan	43,400	43,400	100.0	0.60
Fort Gibson	365,200	358,094	98.1	0.00
Grand	1,672,000	1,662,339	99.4	0.00
Hudson	200,300	200,300	100.0	0.95
Hulah	31,160	31,160	100.0	0.47
Keystone	278,122	278,122	100.0	0.47
Oologah	552,210	552,210	100.0	5.10
Skiatook	322,700	322,700	100.0	0.00
Regional Totals/Averages	3,484,317	3,467,550	99.5	0.84
WEST CENTRAL				
Canton	111,310	111,310	100.0	0.42
Foss	165,480	165,013	99.7	0.00
Regional Totals/Averages	276,790	276,323	99.8	0.21
CENTRAL				
Arcadia	27,520	27,520	100.0	0.38
Heyburn	7,105	7,105	100.0	0.69
Thunderbird	119,600	119,600	100.0	1.11
Regional Totals/Averages	154,225	154,225	100.0	0.73
EAST CENTRAL				
Eufaula*	2,368,223	2,368,223	100.0	0.07
Tenkiller	654,100	654,100	100.0	1.34
Regional Totals/Averages	3,022,323	3,022,323	100.0	0.71
SOUTHWEST				
Fort Cobb	80,010	79,936	99.9	0.00
Lugert-Altus	132,830	100,011	75.3	0.00
Tom Steed	88,970	70,391	79.1	0.00
Regional Totals/Averages	301,810	250,338	82.9	0.00
SOUTH CENTRAL				
Arbuckle	72,400	72,400	100.0	0.65
McGee Creek	113,930	113,930	100.0	0.71
Texoma*	2,418,626	2,418,626	100.0	7.29
Waurika*	190,200	190,200	100.0	8.52
Regional Totals/Averages	2,795,156	2,795,156	100.0	4.29
SOUTHEAST				
Broken Bow*	918,070	918,070	100.0	14.21
Hugo*	183,602	183,602	100.0	3.11
Pine Creek*	60,042	60,042	100.0	3.22
Sardis	274,330	274,330	100.0	8.26
Wister	60,162	60,162	100.0	3.39
Regional Totals/Averages	1,496,206	1,496,206	100.0	6.44
STATE TOTALS	11,963,859	11,895,153	99.4	2.32

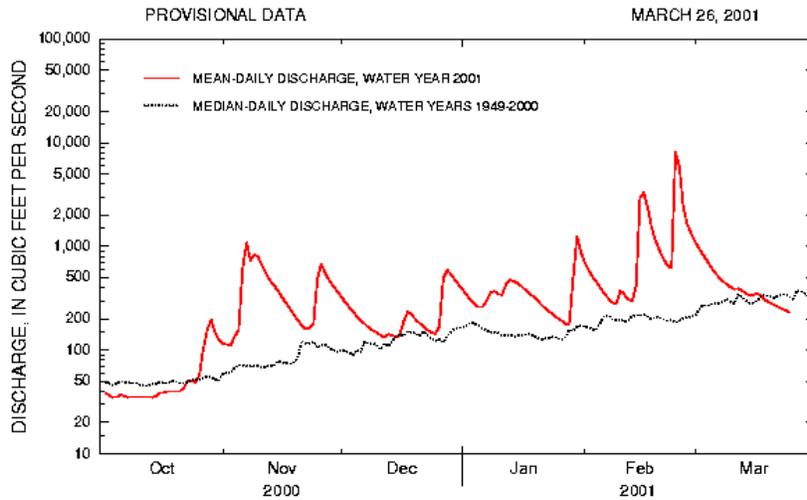
* indicates seasonal pool operation; actual storage figures/percentages may vary.

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.

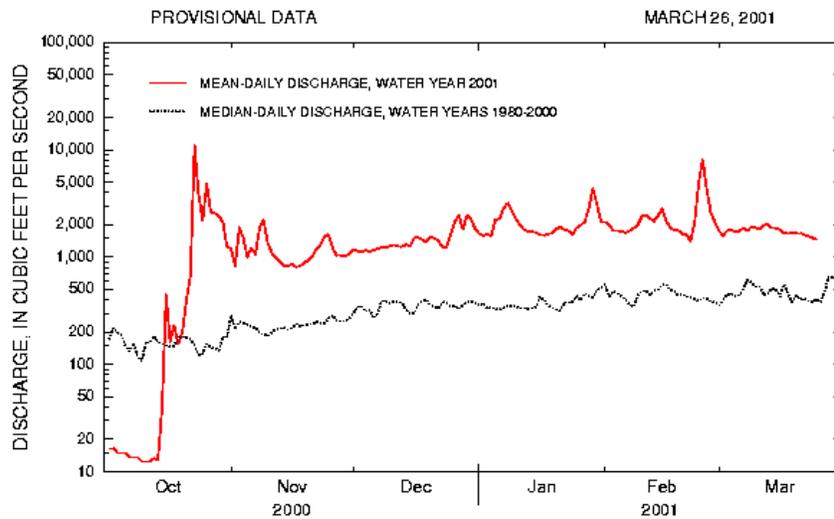
Data from U.S. Geological Survey

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 2001 and period of record for Canadian River at Purcell, Oklahoma.

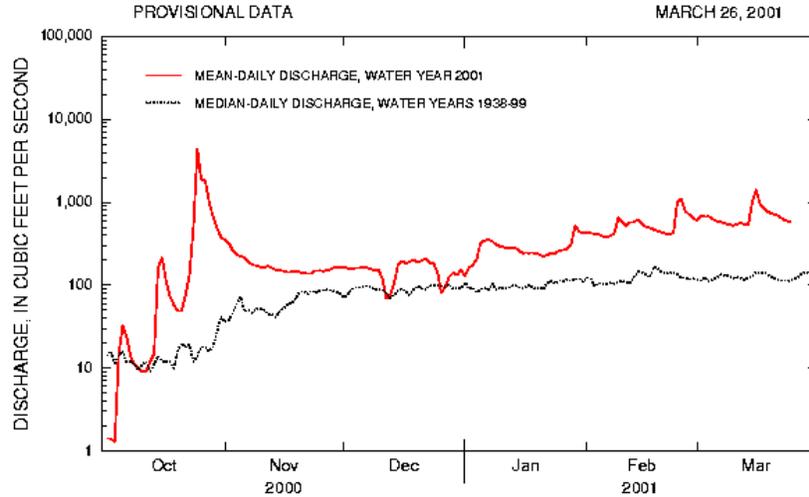
Data from U.S. Geological Survey

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 2001 and period of record for Cimarron River near Waynoka, Oklahoma.

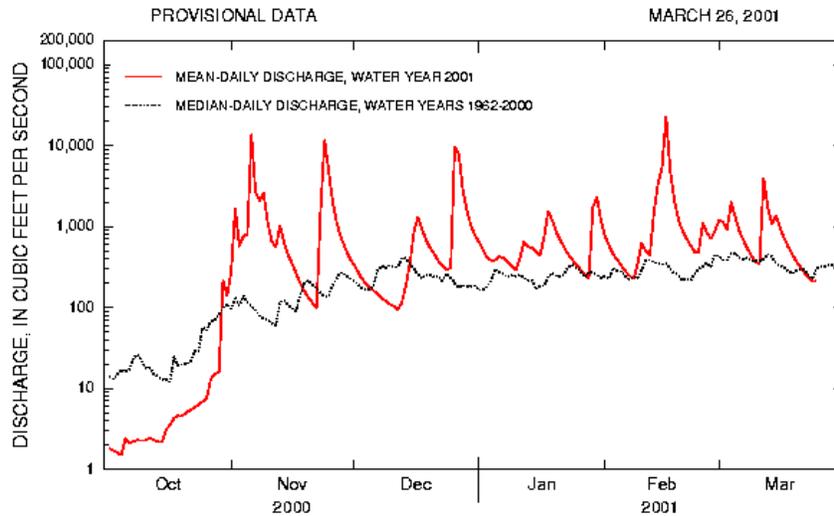
Data from U.S. Geological Survey

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 2001 and period of record for Glover River near Glover, Oklahoma.

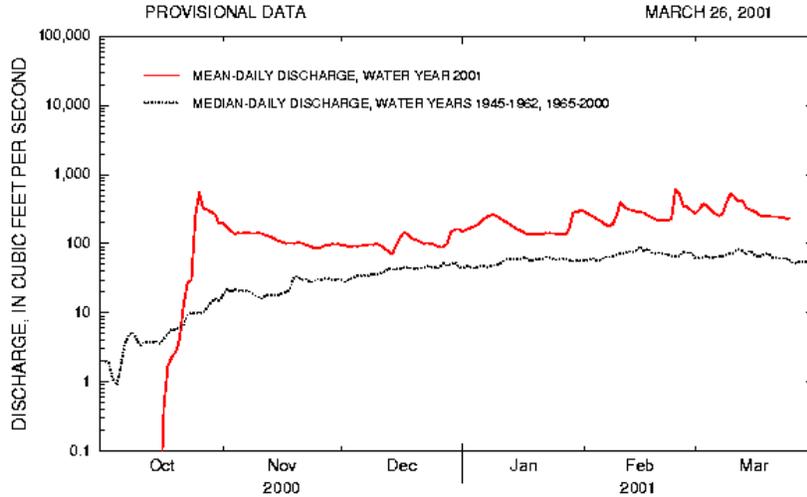
Data from U.S. Geological Survey

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 2001 and period of record for North Fork Red River near Carter, Oklahoma.

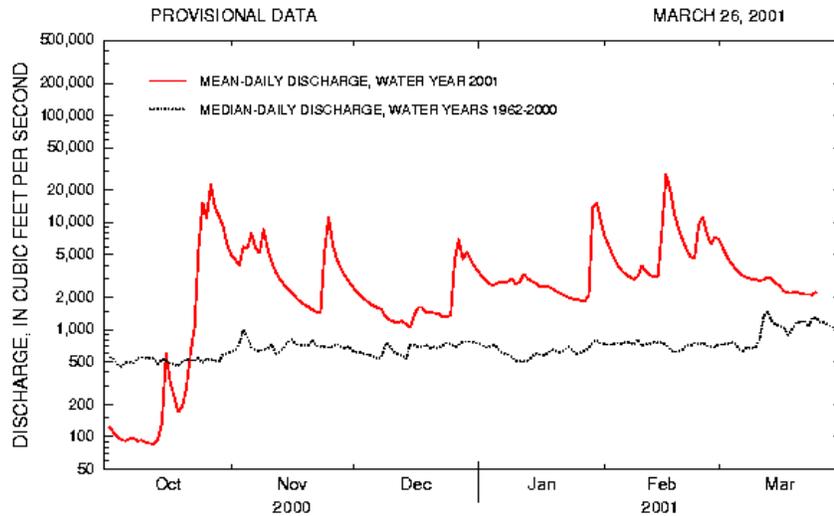
Data from U.S. Geological Survey

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

Data from U.S. Geological Survey