

Oklahoma Water Resources Bulletin

& Summary of Current Conditions



January 18, 2006

Statewide Precipitation & General Summary

Much of Oklahoma remains very dry. According to preliminary Mesonet weather station data provided by the Oklahoma Climatological Survey and National Weather Service (see below), the area receiving the lowest percent of normal rainfall for the cool growing season (since September 1, 2005) is the East Central climate division (13.41 inches below normal and only 24 percent of the average). In all, six regions have received less than one-half of their expected rainfall over the period. The current state-averaged rainfall total is 4.9 inches—a deficit of 7.88 inches and 38 percent of normal.

Over the last 30 days (from December 18 through January 16), the state has experienced very little rainfall. Five climate divisions have received 15 percent or less of their expected normal rainfall over the period. The state-averaged rainfall total for the period is only 0.30 inches—a deficit of 1.36 inches and only 18 percent of normal.



Preliminary Statewide Precipitation By Climate Division

DIVISION (#)	Cool Growing Season SEPTEMBER 1, 2005—JANUARY 16, 2006			LAST 30 DAYS DECEMBER 18, 2005—JANUARY 16, 2006		
	TOTAL RAINFALL (INCHES)	DEPARTURE FROM NORMAL (INCHES)	PERCENT OF NORMAL	TOTAL RAINFALL (INCHES)	DEPARTURE FROM NORMAL (INCHES)	PERCENT OF NORMAL
Panhandle	2.80	-2.60	52	0.20	-0.38	34
North Central	4.80	-4.85	50	0.30	-0.77	28
Northeast	5.34	-9.78	35	0.69	-1.15	38
West Central	4.41	-4.50	49	0.30	-0.67	31
Central	4.82	-8.48	36	0.23	-1.39	14
East Central	4.20	-13.41	24	0.36	-2.08	15
Southwest	6.02	-4.01	60	0.13	-1.04	11
South Central	5.63	-9.57	37	0.08	-2.04	4
Southeast	6.26	-13.86	31	0.49	-2.80	15
Statewide	4.90	-7.88	38	0.30	-1.36	18

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.owrb.state.ok.us/features/drought.html> and <http://climate.ocs.ou.edu/drought/>.**

Drought Indices

According to the latest Palmer Drought Severity Index (January 14, below), drought conditions persist in six regions of the state. **The Southeast climate division is now in “extreme drought” while the East Central climate division remains in “severe drought.”** The Northeast and South Central regions are in “moderate drought.” All of Oklahoma’s nine climate divisions have undergone PDSI moisture decreases since December 31.

The latest monthly Standardized Precipitation Index (through December, below) reflects increasingly dry conditions throughout much of Oklahoma, especially in the east and south. In particular, among the *selected* time periods (3-, 6-, 9- and 12-month SPIs), **“exceptionally dry” conditions are now being experienced in the Southeast climate division over the past 3 months and the region is “extremely dry” over the past 6, 9 and 12 months. In addition, “extremely dry” conditions are present in East Central Oklahoma (3-, 6- and 9-month periods).** Considering longer periods (through six years), the Southeast and East Central climate divisions report long-term “very dry” and “moderately dry” conditions over multiple time periods during the past 60 months. [SPI updates are available around the 10th of each month.]

The latest Keetch-Byram Drought Index (January 17, 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 continue to be of concern, especially in eastern Oklahoma. Statewide, 9 Mesonet stations are currently at or above 600, generally indicative of more severe drought conditions (8 stations had a reading above 600 on January 3). McAlester and Webbers Falls, in east central Oklahoma, have the highest KBDI values (663). According to the Oklahoma Department of Agriculture, Food, and Forestry, **Statewide Wildfire Preparedness is at Level 5 (extreme fire danger). Gov. Henry’s Burning Ban continues for all counties in Oklahoma.** Extended dry conditions and high winds continue to increase the fire risk throughout the state. Dry vegetation will ignite easily and burn with surprising intensity.

Palmer Drought Severity Index					Standardized Precipitation Index Through December 2005			
CLIMATE DIVISION (#)	CURRENT STATUS 1/14/2006	VALUE		CHANGE IN VALUE	3-MONTH	6-MONTH	9-MONTH	12-MONTH
		1/14	12/31					
Northwest (1)	NEAR NORMAL	-0.28	0.06	-0.34	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
North Central (2)	NEAR NORMAL	-0.44	-0.17	-0.27	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
Northeast (3)	MODERATE DROUGHT	-2.58	-2.39	-0.19	VERY DRY	MODERATELY DRY	VERY DRY	MODERATELY DRY
West Central (4)	NEAR NORMAL	-0.38	-0.30	-0.08	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
Central (5)	MILD DROUGHT	-1.75	-1.45	-0.30	VERY DRY	NEAR NORMAL	MODERATELY DRY	MODERATELY DRY
East Central (6)	SEVERE DROUGHT	-3.59	-3.35	-0.24	EXTREMELY DRY	EXTREMELY DRY	EXTREMELY DRY	VERY DRY
Southwest (7)	MILD DROUGHT	-1.48	-1.18	-0.30	MODERATELY DRY	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
South Central (8)	MODERATE DROUGHT	-2.56	-2.21	-0.35	VERY DRY	NEAR NORMAL	VERY DRY	MODERATELY DRY
Southeast (9)	EXTREME DROUGHT	-4.16	-3.90	-0.26	EXCEPTIONALLY DRY	EXTREMELY DRY	EXTREMELY DRY	EXTREMELY DRY

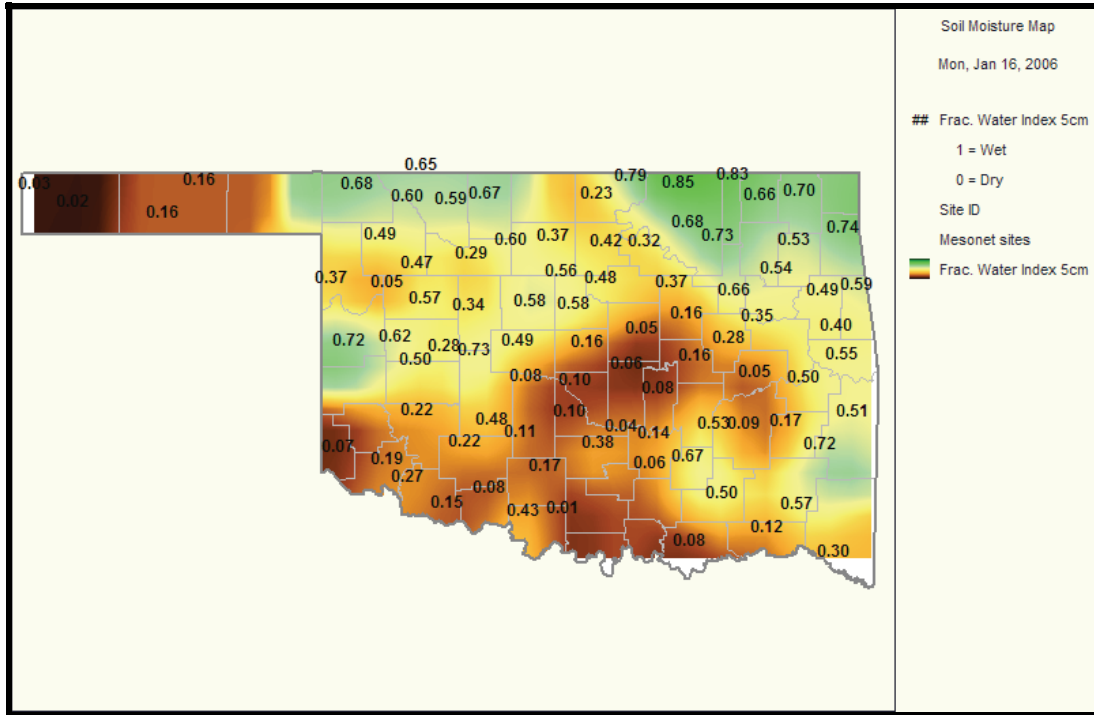
Keetch-Byram DROUGHT FIRE INDEX

MESONET STATION	COUNTY	CLIMATE DIVISION	CURRENT VALUE 1/17/2006	ANTICIPATED IMPACT
McAlester	Pittsburg	East Central	663	600-800: often associated with more severe drought; increased wildfire occurrence; intense deep burning fires with significant downwind spotting; live fuels also expected to burn actively. 400-600: lower litter and duff layers actively contribute to fire intensity and will burn actively; typical of late summer, early fall.
Webbers Falls	Muskogee	East Central	663	
Eufaula	McIntosh	East Central	662	

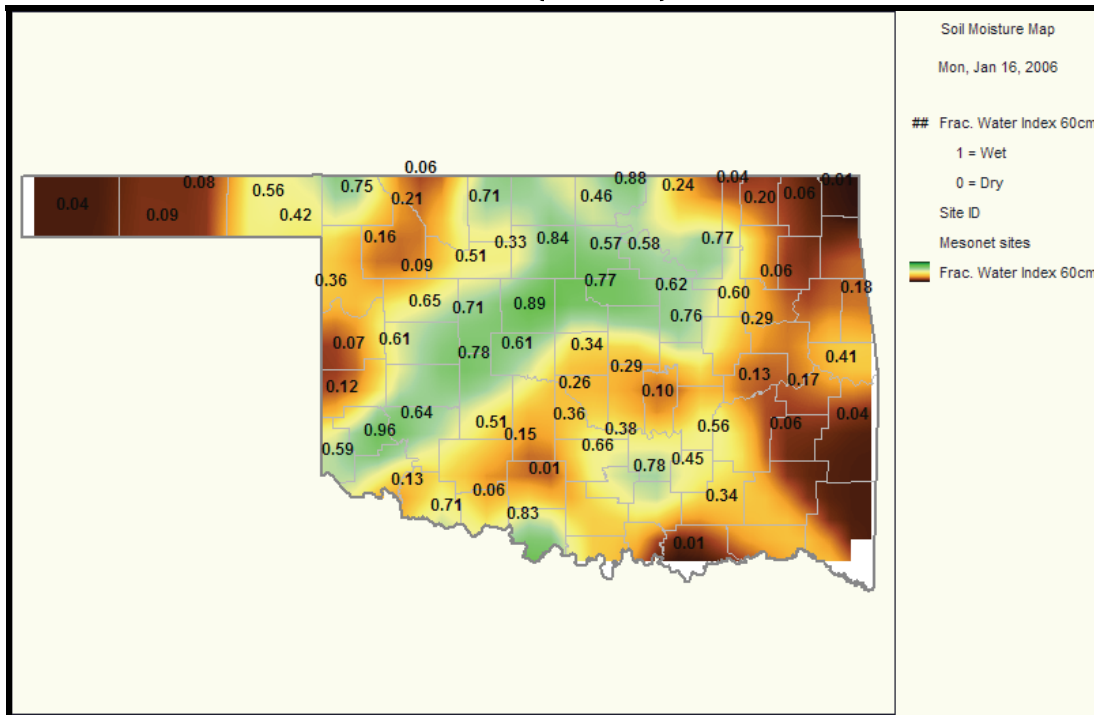
Total stations above 600 = 9

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
Fractional Water Index**
January 16, 2006
(Courtesy Oklahoma Climatological Survey)
5 CM (~2 INCHES)



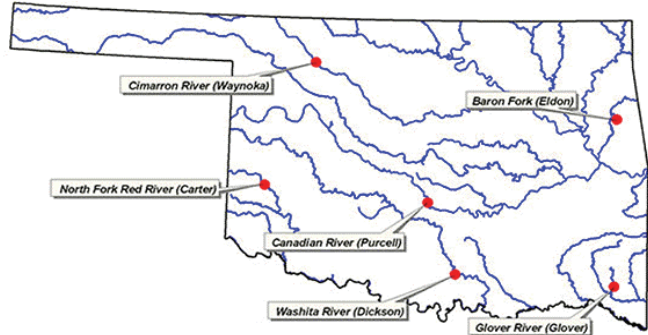
60 CM (~2 FEET)



FWI Value Soil Wetness Conditions			
1.0 – 0.8	Enhanced Growth (~Field Capacity)	0.5 – 0.3	Plants Dying
0.8 – 0.5	Limited Growth	< 0.1	Barren Soil

Streamflow Conditions

Flows in many state rivers and streams remain generally below normal due to the recent dry conditions. Considering overall trends as well as current flows, the most recent data (January 17, 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, 2004, compared to long-term, normal/median daily discharges) indicate **much below average flow** in *southeast* (Glover River, McCurtain County) and *northeast* (Baron Fork, Cherokee County) Oklahoma; **below average flow** in the *south central* (Washita River, Carter County) and *central* (Canadian River, McClain County) regions; and **near average flow** in *southwest* (North Fork/Red River, Beckham County) and *northwest* (Cimarron River, Woods County) Oklahoma.



Weather Forecast

The National Weather Service 8- to 14-day outlook (January 25-31) calls for normal precipitation for all of Oklahoma. Above normal temperatures are forecasted for all but the Panhandle/northwest region of the state, where normal temperatures should prevail.

Although much uncertainty exists, a majority of the statistical and coupled model forecasts signal development of weak La Niña conditions in the near future. La Niña is a cold-water phenomenon that is generally believed to cause drier conditions throughout the western U.S.

Crop Report

January 3 – Lack of rain, above normal temperatures, and high winds during December caused moisture supplies to plummet. Ponds were drying up due to the lack of rain. This, combined with poor wheat pasture conditions, was forcing some producers to sell some of their cattle. Wildfires caused by the drought conditions were also taking a toll on pastures, hay supplies and livestock. Ninety-seven percent of Oklahoma reported topsoil moisture as very short to short last week, leaving only 3 percent of the state reporting adequate moisture conditions. Subsoil moisture was 9 percent adequate, 25 percent short and 66 percent very short.

The extreme dry weather has made a negative impact on small grains. The continued dry weather and high winds have further delayed any new growth on wheat and rye pastures. Although 53 percent of the wheat ranged from fair to good condition, just under half of the wheat was in very poor to poor condition. This was a 29-point drop since the last condition report on November 28. Oats and rye took similar drops with 79 percent of the oats and 51 percent of the rye being in very poor to poor condition. Winter wheat grazed was at 29 percent, down significantly from last year at 50 percent and slightly below the five-year average at 31 percent. Rye grazed was at 58 percent, up from the normal of 44 percent, but down from last year at 65 percent.

Pastures dropped to mostly fair to poor condition due to the unseasonably warm temperatures and limited rainfall. Preliminary reports indicate that nearly 300,000 acres have burned since November 1, 2005. Livestock grazing on wheat pastures has been limited in some areas due to lack of forage growth and not having rooted-down plants. Pasture and range conditions were at 1 percent excellent, 14 percent good, 31 percent fair, 28 percent poor and 26 percent very poor.

Livestock conditions also deteriorated from 82 percent good on November 28 to 19 percent good on December 31. They were still in mostly fair condition. Forage supplies for cattle have been depleted in many pastures due to the lack of any regrowth. Fewer cattle were grazing on small grain pastures due to the decline of wheat conditions. The death loss of cattle was light to average. Hay supplies were rated as mostly average.

Reservoir Storage

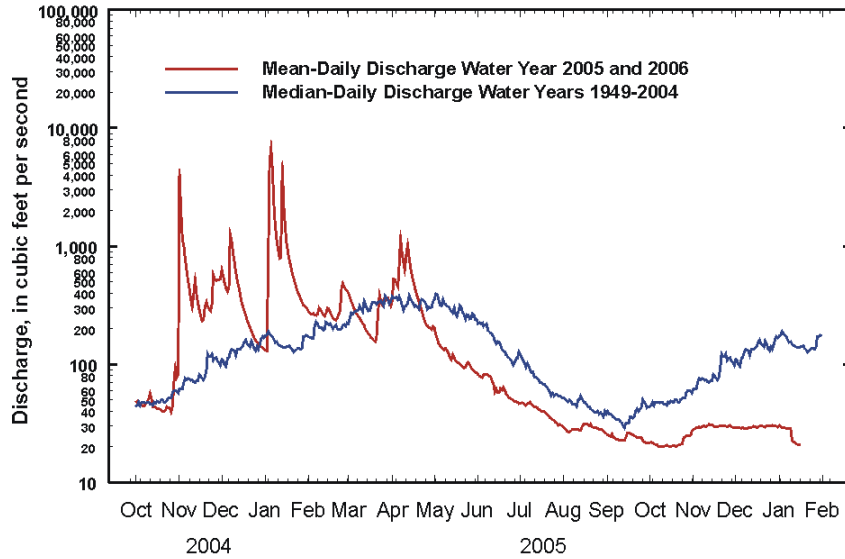
Lake storage continues to be of concern in many areas of Oklahoma, especially in the east. As of January 17, the combined normal conservation pools of 31 selected major federal reservoirs across Oklahoma (see below) are approximately 85.1 percent full, a 0.5 percent increase from that recorded on January 3, according to information from the U.S. Army Corps of Engineers (Tulsa District). Seventeen reservoirs have experienced lake level decreases since that time; 29 reservoirs are currently operating at less than full capacity (compared to 27 two weeks ago). Eleven reservoirs are now below 80 percent capacity.

Storage in Selected Oklahoma Lakes & Reservoirs			
01/17/2006			
Climate Division Lake or Reservoir	Conservation Storage (acre-feet)	Present Storage (acre-feet)	Percent of Conservation Storage
North Central			
Fort Supply	13,900	13,764	99.0
Great Salt Plains	31,420	31,420	100.0
Kaw*	459,850	458,927	99.8
Regional Totals/Averages	505,170	504,111	99.8
Northeast			
Birch	19,225	13,468	70.1
Copan	45,983	33,233	72.3
Fort Gibson	365,200	364,826	99.9
Grand	1,672,000	1,497,010	89.5
Hudson	200,300	160,767	80.3
Hulah	34,896	20,938	60.0
Keystone	510,059	414,490	81.3
Oologah	616,690	530,472	86.0
Skiatook	322,700	266,160	82.5
Regional Totals/Averages	3,787,053	3,301,364	87.2
West Central			
Canton	111,310	99,829	89.7
Foss	165,480	152,067	91.9
Regional Totals/Averages	276,790	251,896	91.0
Central			
Arcadia	27,520	26,772	97.3
Heyburn	7,105	6,145	86.5
Thunderbird	119,600	100,155	83.7
Regional Totals/Averages	154,225	133,072	86.3
East Central			
Eufaula*	2,314,583	1,729,634	74.7
Tenkiller	654,100	512,536	78.4
Regional Totals/Averages	2,968,683	2,242,170	75.5
Southwest			
Fort Cobb	80,010	80,010	100.0
Lugert-Altus	132,830	51,935	39.1
Tom Steed	88,970	61,635	69.3
Regional Totals/Averages	301,810	193,580	64.1
South Central			
Arbuckle	72,400	68,666	94.8
McGee Creek	113,930	100,772	88.5
Texoma*	2,523,770	2,403,963	95.3
Waurika*	190,200	177,127	93.1
Regional Totals/Averages	2,900,300	2,750,528	94.8
Southeast			
Broken Bow*	918,070	702,031	76.5
Hugo*	158,617	120,138	75.7
Pine Creek*	53,750	39,887	74.2
Sardis	274,330	246,371	89.8
Wister	60,162	36,619	60.9
Regional Totals/Averages	1,464,929	1,145,046	78.2
State Totals	12,358,960	10,521,767	85.1

* 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

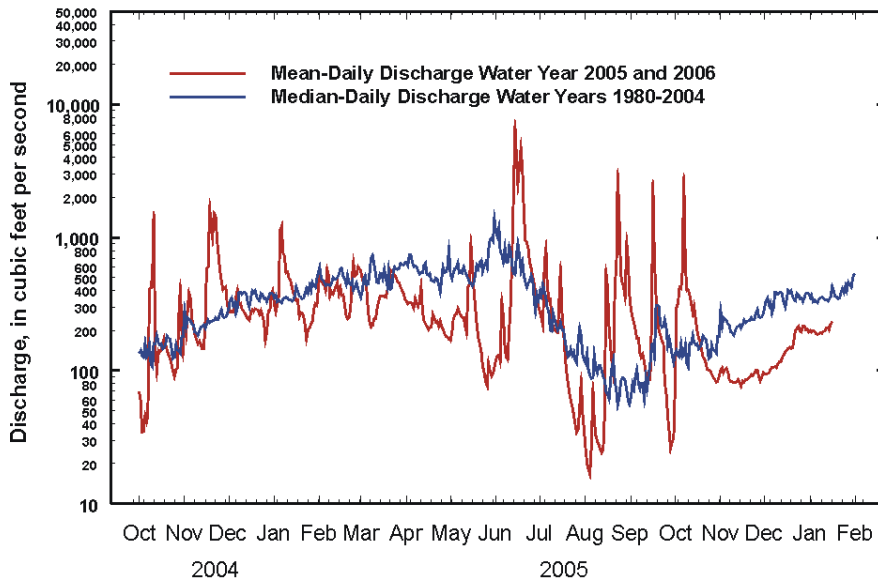
PROVISIONAL DATA JANUARY 17, 2006



Comparison of daily discharges for water year 2005 and 2006 and period of record
 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

PROVISIONAL DATA JANUARY 17, 2006

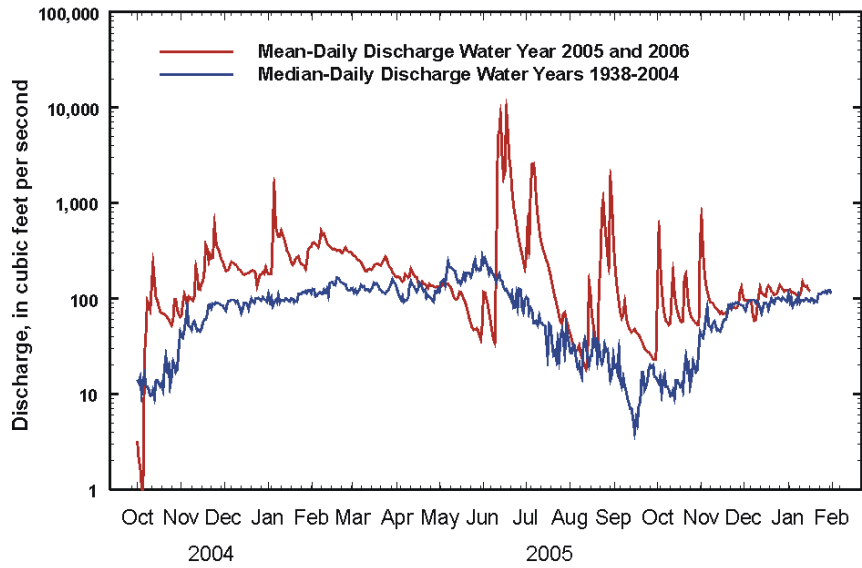


Comparison of daily discharges for water year 2005 and 2006 and period of record
 Data from U.S. Geological Survey

Cimarron River near Waynoka

Cimarron River near Waynoka, Oklahoma
 Station No. 07158000 Northwest Oklahoma
 Drainage Area 13,334 square miles

PROVISIONAL DATA JANUARY 17, 2006

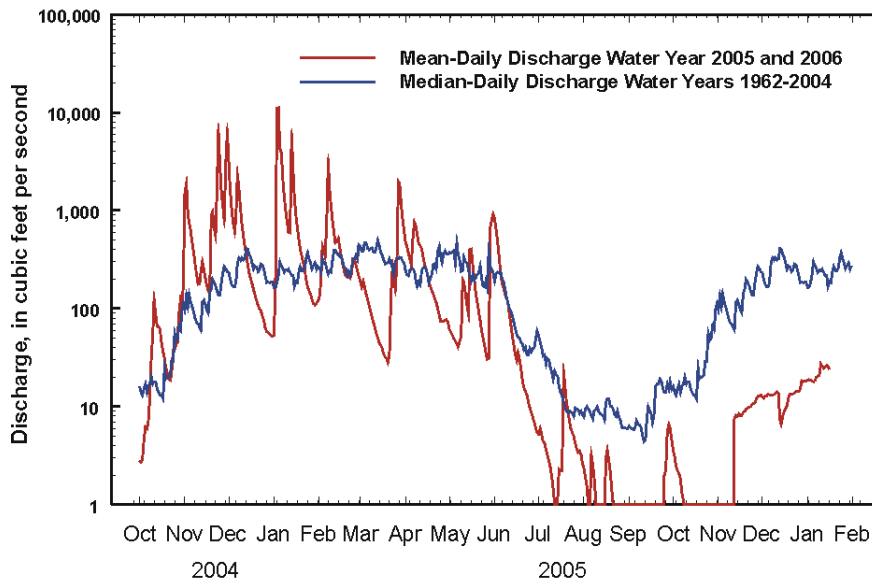


Comparison of daily discharges for water year 2005 and 2006 and period of record
 Data from U.S. Geological Survey

Glover River near Glover

Glover River near Glover, Oklahoma
 Station No. 07337900 Southeast Oklahoma
 Drainage Area 315 square miles

PROVISIONAL DATA JANUARY 17, 2006



Comparison of daily discharges for water year 2005 and 2006 and period of record
 Data from U.S. Geological Survey

North Fork of the Red River near Carter

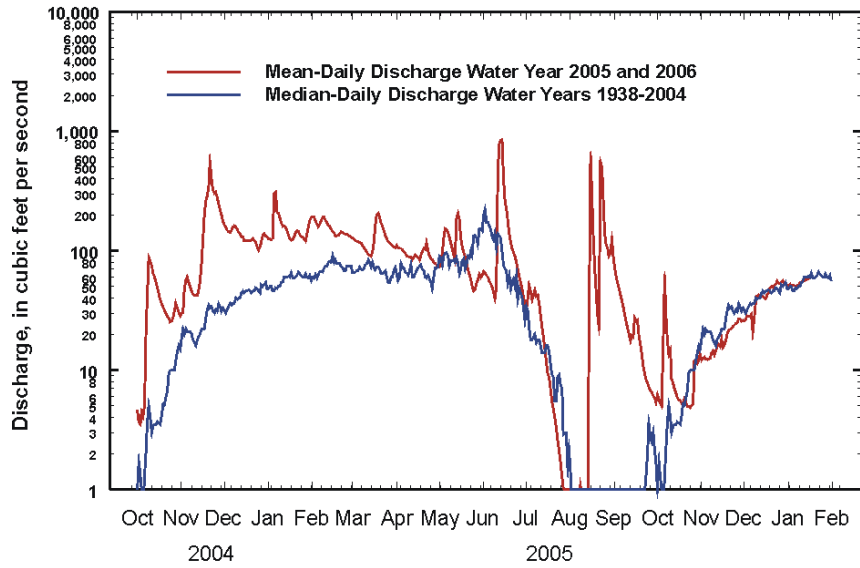
North Fork of the Red River near Carter, Oklahoma

Station No. 07301500 Southwest Oklahoma

Drainage Area 2,337 square miles

PROVISIONAL DATA

JANUARY 17, 2006



Comparison of daily discharges for water year 2005 and 2006 and period of record

Data from U.S. Geological Survey

Washita River near Dickson

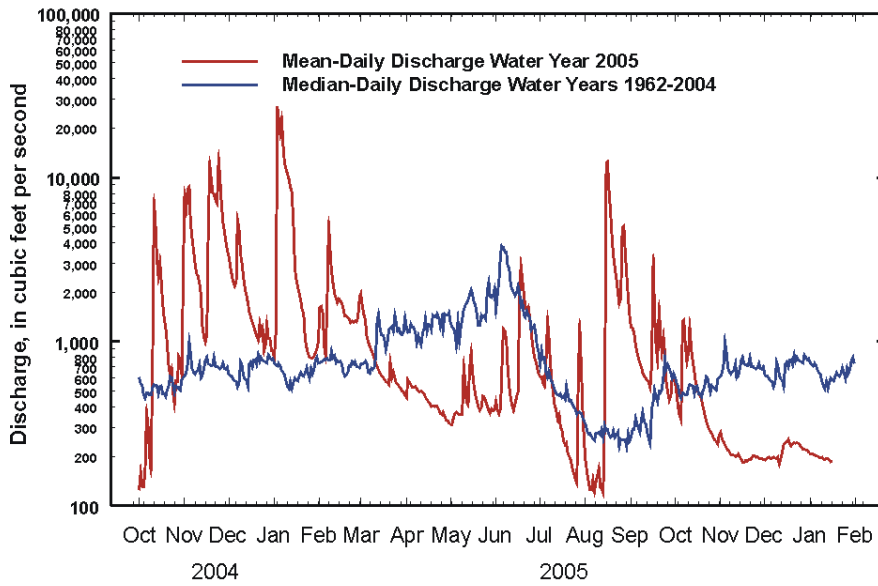
Washita River near Dickson, Oklahoma

Station No. 07331000 South-Central Oklahoma

Drainage Area 7,202 square miles

PROVISIONAL DATA

JANUARY 17, 2006



Comparison of daily discharges for water year 2005 and 2006 and period of record

Data from U.S. Geological Survey