

Oklahoma Water Resources Bulletin & Summary of Current Conditions

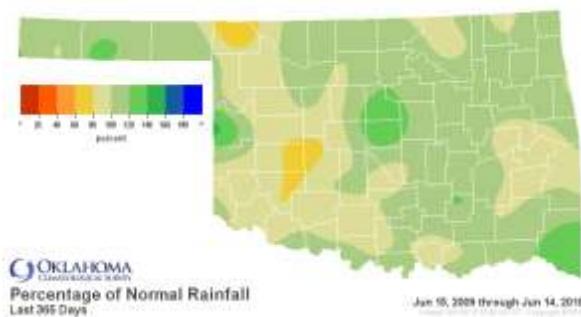
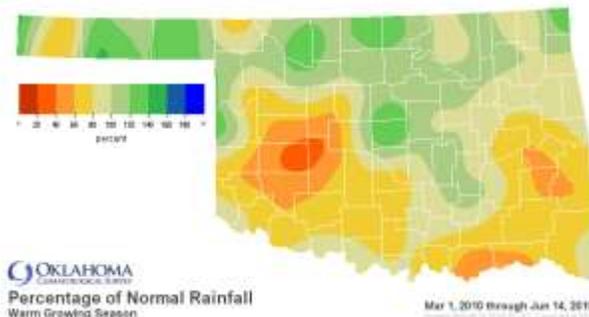


June 17, 2010

PRECIPITATION

Statewide Precipitation

CLIMATE DIVISION	Warm Growing Season March 1 – June 14, 2010				Last 365 Days June 15, 2009 – June 14, 2010			
	TOTAL RAINFALL (INCHES)	DEPARTURE FROM NORMAL (INCHES)	PERCENT OF NORMAL	RANK SINCE 1921	TOTAL RAINFALL (INCHES)	DEPARTURE FROM NORMAL (INCHES)	PERCENT OF NORMAL	RANK SINCE 1921
Panhandle	8.74"	+0.53"	106%	30th wettest	21.08"	-0.02"	100%	37th wettest
North Central	13.43"	+1.23"	110%	23rd wettest	31.87"	+0.22"	101%	31st wettest
Northeast	15.40"	+0.10"	101%	36th wettest	44.77"	+2.80"	107%	22nd wettest
West Central	7.49"	-4.21"	64%	13th driest	27.19"	-1.90"	93%	36th wettest
Central	14.47"	-0.06"	100%	31st wettest	41.62"	+3.63"	110%	18th wettest
East Central	13.53"	-3.04"	82%	28th driest	46.44"	+0.35"	101%	36th wettest
Southwest	7.32"	-4.53"	62%	8th driest	27.24"	-3.56"	88%	39th driest
South Central	12.11"	-2.97"	80%	26th driest	42.21"	+1.25"	103%	28th wettest
Southeast	11.71"	-5.82"	67%	10th driest	55.76"	+4.82"	109%	18th wettest
Statewide	11.86"	-1.81"	87%	36th driest	37.70"	+1.01"	103%	31st wettest

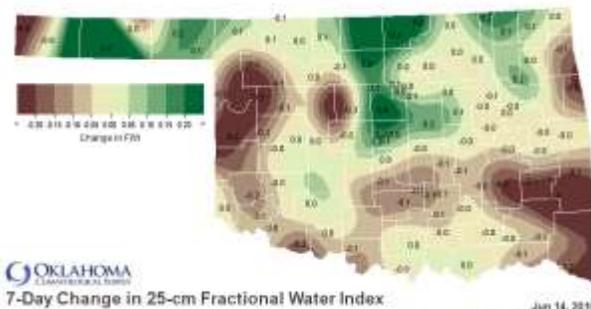
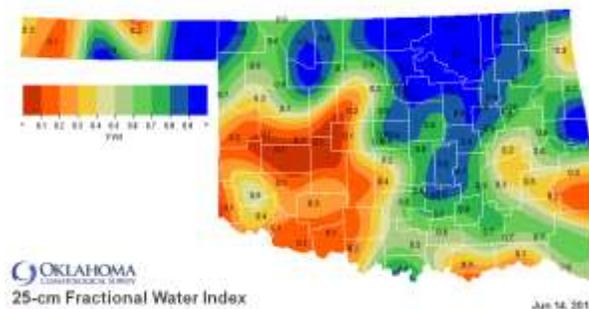


SOIL MOISTURE

Fractional Water Index¹

June 14, 2010

25 CM (~10 INCHES)



¹ The Fractional Water Index ranges from very dry soil having a value of 0 to soil at field capacity illustrated by a value of 1. Specifically, 1.0 to 0.8 equals Enhanced Growth, 0.8 to 0.5 equals Limited Growth, 0.5 to 0.3 equals Plants Wilting, 0.3 to 0.1 equals Plants Dying, and less than 0.1 equals Barren Soil.

DROUGHT INDICES

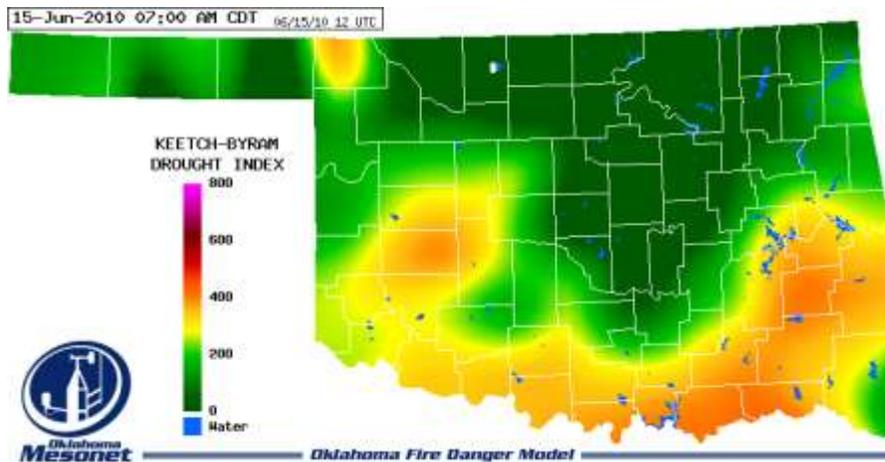
Palmer Drought Severity Index ¹					Standardized Precipitation Index ² Through May 2010			
CLIMATE DIVISION	CURRENT STATUS 6/12/2010	VALUE		CHANGE IN VALUE	3-MONTH	6-MONTH	9-MONTH	12-MONTH
		6/12	5/15					
Northwest	MOIST SPELL	1.81	1.22	0.59	NEAR NORMAL	NEAR NORMAL	MODERATELY WET	NEAR NORMAL
North Central	UNUSUAL MOIST SPELL	2.26	2.03	0.23	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
Northeast	NEAR NORMAL	0.31	1.05	-0.74	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
West Central	NEAR NORMAL	0.30	2.05	-1.75	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
Central	NEAR NORMAL	0.40	2.16	-1.76	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
East Central	MILD DROUGHT	-1.18	0.33	-1.51	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
Southwest	MILD DROUGHT	-1.38	1.71	-3.09	MODERATELY DRY	MODERATELY DRY	NEAR NORMAL	NEAR NORMAL
South Central	INCIPIENT DROUGHT	-0.58	2.22	-2.80	MODERATELY DRY	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
Southeast	INCIPIENT DROUGHT	-0.56	1.32	-1.88	VERY DRY	NEAR NORMAL	MODERATELY WET	MODERATELY WET

- Two climate divisions are currently experiencing drought conditions, according to the PDSI.
- Seven climate divisions have undergone PDSI moisture decreases since May 15.
- Three climate divisions are experiencing near long-term dry conditions, according to the SPI.

Keetch-Byram Drought Fire Index³

MESONET STATION	COUNTY	CLIMATE DIVISION	CURRENT VALUE 6/14/2010
Buffalo	Harper	Northwest	418
Minco	Grady	Central	404
Bessie	Washita	West Central	401

- Stations currently at or above 600 (June 14) = 0
- Stations above 600 on May 17 = 0



¹ The Palmer Drought Severity Index, the first comprehensive drought index developed in the United States, is calculated based on precipitation, temperature, and soil moisture. Though widely used by government agencies and states to trigger drought relief programs, the PDSI may underestimate or overestimate the severity of ongoing dry periods.

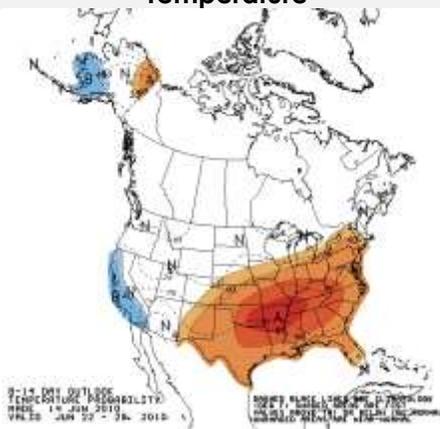
² The Standardized Precipitation Index, more sensitive than the PDSI, provides a comparison of precipitation over a specified period with precipitation totals from that same period for all years included in the historical record. The 3-month SPI provides a seasonal estimation of precipitation while the 6-month SPI can be very effective in showing precipitation over distinct seasons.

³ The Keetch-Byram Drought Index 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. KBDI values of 600 and above are often associated with more severe drought and increased wildfire occurrence.

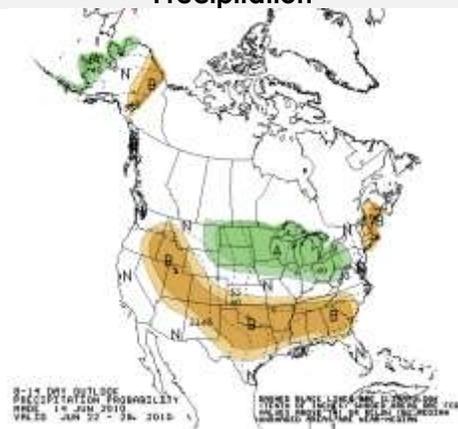
WEATHER/DROUGHT FORECAST

8- to 14-Day Outlook
June 22 – 28, 2010

Temperature



Precipitation

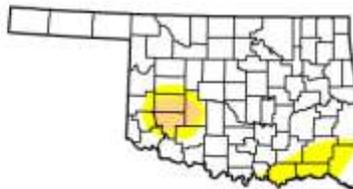


Regional Drought Summary & Outlook

U.S. Drought Monitor Oklahoma

June 15, 2010
Valid 7 a.m. EST

	Drought Conditions (Percent Area)					
	D0-D4	D1-D4	D2-D4	D3-D4	D4	D4
Current	86.4	13.6	3.2	0.0	0.0	0.0
Last Week (2009/06/07 map)	77.8	22.2	4.4	0.0	0.0	0.0
3 Months Ago (2009/03/02 map)	100.0	0.0	0.0	0.0	0.0	0.0
Start of Calendar Year (2010/01/01 map)	100.0	0.0	0.0	0.0	0.0	0.0
Start of Water Year (1996/07/01 map)	98.0	2.0	0.0	0.0	0.0	0.0
One Year Ago (2009/06/07 map)	51.7	48.3	16.2	0.0	0.0	0.0



- Intensity:**
- D0 Abnormally Dry
 - D1 Drought - Moderate
 - D2 Drought - Severe
 - D3 Drought - Extreme
 - D4 Drought - Exceptional

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

<http://drought.unl.edu/dm>



Released Thursday, June 17, 2010

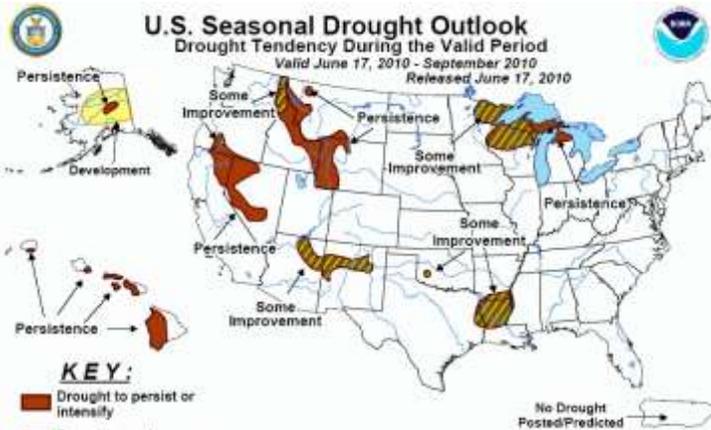
Author: Laura Edwards, Western Regional Climate Center

June 15 – The latest U.S. Drought Monitor reports that record rainfall in Texas was worthy of a one- to two-category improvement in a swath from San Antonio to Texarkana, resulting in no drought depiction. Two inches or more of rain fell along this line, with local seven-day totals of more than 10 inches. Elsewhere in Texas, the abnormally dry conditions expanded along the Gulf Coast from the Brazos River to Lake Charles, Louisiana. In Oklahoma, significant precipitation brought reductions in the extent of dryness in the southwestern part of the state. Oklahoma Mesonet stations in the counties of Comanche and Grady and near Oklahoma City reported from two to over 11 inches of rain on June 14th. The area of D1 was reduced to Washita County and northern Caddo County.

According to the Drought Outlook (June 17), monsoon-generated thunderstorm activity might bring some improvement to drought areas in Arizona and New Mexico. And although short term forecasts indicate dry, hot conditions across the southern Plains states and lower Mississippi Valley, daily air-mass thunderstorm development and the potential for tropical-cyclone related moisture influxes maintain prospects for some drought improvement.

U.S. Seasonal Drought Outlook Drought Tendency During the Valid Period

Valid June 17, 2010 - September 2010
Released June 17, 2010



- KEY:**
- Drought to persist or intensify
 - Drought ongoing, some improvement
 - Drought likely to improve, impacts ease
 - Drought development likely

Depicts large-scale trends based on objectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Short-term events – such as individual storms – cannot be accurately forecast more than a few days in advance. Use caution for applications – such as crops – that can be affected by such events. (“Ongoing” drought areas are approximated from the Drought Monitor (D1 to D4 intensity). For weekly drought updates, see the latest U.S. Drought Monitor. NOTE: the green improvement areas imply at least a 1-category improvement in the Drought Monitor intensity levels, but do not necessarily imply drought elimination.

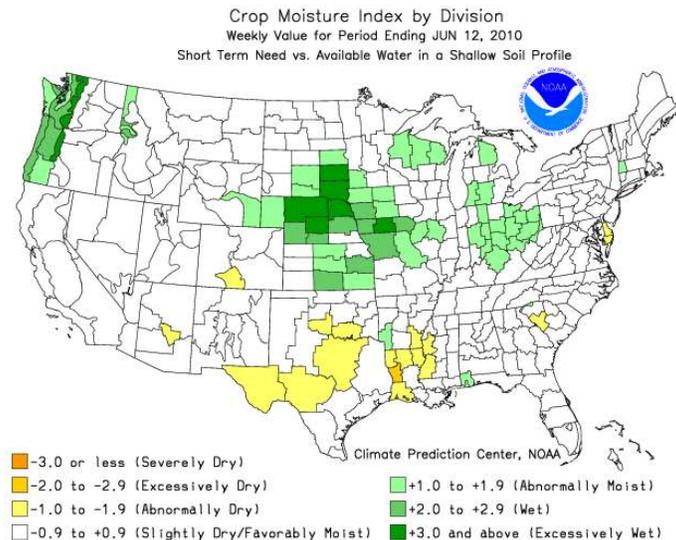
CROP REPORT

June 15, 2010 – Oklahoma temperatures soared while rainfall remained scarce. The dry weather that was persistent throughout most of the state enabled wheat producers to continue to harvest aggressively with few delays. Both topsoil and subsoil moisture conditions were mostly rated in the adequate to short range. There were 5.4 days suitable for field work.

Wheat harvest continues as a result of the hot and dry temperatures. Wheat in the soft dough stage of development reached 95 percent complete by week's end, a three point increase from the previous week, but four points behind normal. By Sunday, 38 percent of the state's wheat had been harvested, a 26 point increase from the previous week, but eight points behind normal. Rye in the soft dough stage of development was virtually complete Sunday, while 38 percent of rye had been harvested, a 32 point increase from the previous week and six points ahead of normal. Oats jointing was virtually complete by week's end. Oats in the soft dough stage of development reached 85 percent complete, a 13 point increase from the previous week, but two points behind normal. Sixty-nine percent of oats were harvested by week's end, a 36 point increase from the previous week.

Row crop conditions continue to be rated mostly in the good to fair range. Virtually all of the state's corn had emerged by week's end. Virtually all sorghum seedbed preparations were completed by Sunday. Seventy-two percent of the crop had been planted, up two points from the previous week, and 18 points ahead of normal. Sixty-one percent of sorghum had emerged by Sunday, up 22 points from the previous week, and 23 points ahead of the five-year average. Soybean seedbed preparation was 92 percent complete by week's end. Seventy-five percent of soybeans were planted by Sunday, a seven point increase, while soybeans emerged reached 66 percent complete, a 16 point increase from the previous week. All peanuts were emerged by week's end. Cotton planted increased 13 points from the week prior to 95 percent complete, still nine points ahead of the five-year average. Cotton emerged reached 85 percent complete, a 21 point increase from the previous week and 13 points ahead of normal. By week's end, mostly all the state's watermelon crop was planted. Watermelons running increased 17 points from the previous week to 80 percent, 12 points ahead of normal.

Conditions of both alfalfa and other hay continued to be rated mostly in the good to fair range. First cuttings of alfalfa were virtually complete by Sunday. Seventy percent of alfalfa hay received a second cutting by Sunday, a 35 point increase from the previous week and 20 points ahead of normal. First cuttings of other hay increased six points to reach 53 percent complete, four points behind normal. Pasture and range conditions were rated mostly in the good to fair range, with 12 percent rated excellent. Livestock conditions rated mostly in the good to fair range.



RESERVOIR STORAGE

- 10 reservoirs are currently operating at less than full capacity (compared to 6 four weeks ago).
- 9 reservoirs have experienced lake level decreases.

Storage in Selected Oklahoma Lakes & Reservoirs					
June 16, 2010					
Lake or Reservoir	Normal Pool Elevation (feet)	Previous Elevation 05/17/2010 (feet)	Current Elevation 06/16/2010 (feet)	Change in Elevation (feet)	Current Flood Control Storage (acre-feet)
North Central					
Fort Supply	2004.00	2004.60	2004.53	(0.07)	995
Great Salt Plains	1125.00	1125.48	1126.91	1.43	17,041
Kaw*	1013.00	1011.95	1025.55	13.60	273,155
Northeast					
Birch	750.50	750.95	755.76	4.81	6,497
Copan	710.00	711.63	714.69	3.06	26,643
Fort Gibson	554.00	552.52	552.65	0.13	(25,000)
Grand*	744.00	746.89	744.97	(1.92)	44,619
Hudson	619.00	620.77	620.71	(0.06)	19,137
Hulah	733.00	735.90	743.40	7.50	56,014
Keystone*	723.00	724.61	733.49	8.88	268,812
Oologah*	638.00	640.90	645.26	4.36	254,121
Skiatook	714.00	714.12	717.78	3.66	41,353
West Central					
Canton	1615.40	1615.72	1615.74	0.02	2,699
Foss	1642.00	1641.89	1641.90	0.01	(668)
Central					
Arcadia	1006.00	1007.31	1022.28	14.97	39,521
Heyburn	761.50	762.17	769.62	7.45	10,340
Thunderbird	1039.00	1039.38	1039.79	0.41	4,819
East Central					
Eufaula*	585.00	586.52	586.97	0.45	194,214
Tenkiller	632.00	632.75	632.81	0.06	10,611
Southwest					
Fort Cobb	1342.00	1342.32	1341.98	(0.34)	(74)
Lugert-Altus	1559.00	1550.30	1553.37	3.07	(32,346)
Tom Steed	1411.00	1407.23	1406.75	(0.48)	(24,654)
South Central					
Arbuckle	872.00	873.39	873.76	0.37	4,227
McGee Creek**	175.90	175.97	176.00	0.03	1,213
Texoma*	619.00	618.16	618.29	0.13	(54,597)
Waurika*	951.40	951.72	951.93	0.21	5,373
Southeast					
Broken Bow*	602.50	601.45	602.03	0.58	(6,871)
Hugo*	406.00	406.33	405.03	(1.30)	(13,019)
Pine Creek*	441.90	442.25	437.97	(4.28)	(16,397)
Sardis	599.00	599.05	598.94	(0.11)	(803)
Wister	478.00	479.62	478.16	(1.46)	1,013

* indicates seasonal pool operation

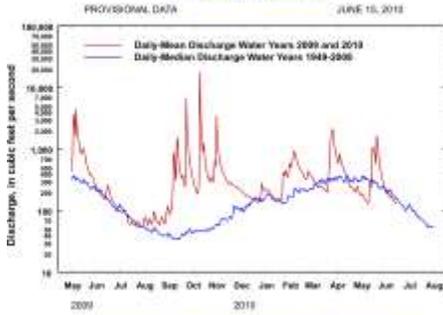
** elevation in meters

negative numbers in red, parentheses

STREAMFLOW CONDITIONS

Baron Fork at Eldon

Baron Fork at Eldon, Oklahoma
 Station No. 07207500 Northeast Oklahoma
 Drainage Area 387 square miles

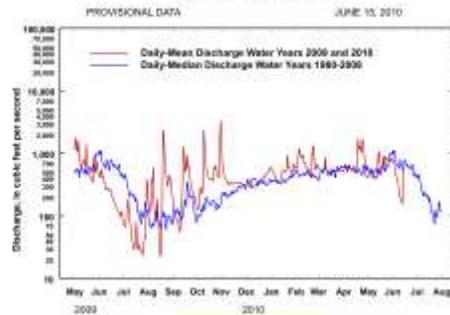


Comparison of daily discharges for water years 2009 and 2010 and period of record

Data from U.S. Geological Survey

Canadian River at Purcell

Canadian River at Purcell, Oklahoma
 Station No. 07220200 Central Oklahoma
 Drainage Area 25,538 square miles

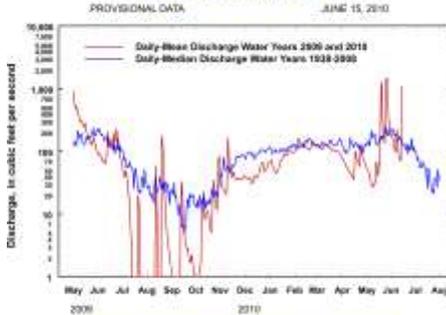


Comparison of daily discharges for water years 2009 and 2010 and period of record

Data from U.S. Geological Survey

Cimarron River near Waynoka

Cimarron River near Waynoka, Oklahoma
 Station No. 07158000 Northeast Oklahoma
 Drainage Area 73,334 square miles

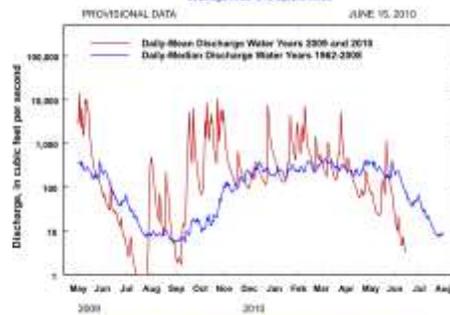


Comparison of daily discharges for water years 2009 and 2010 and period of record

Data from U.S. Geological Survey

Glover River near Glover

Glover River near Glover, Oklahoma
 Station No. 07375000 Southeast Oklahoma
 Drainage Area 315 square miles

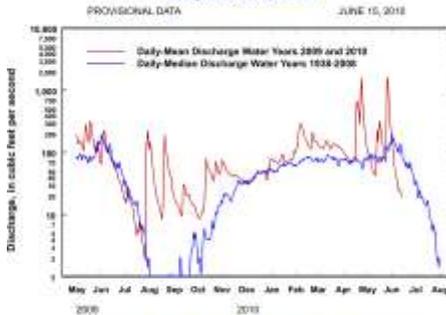


Comparison of daily discharges for water years 2009 and 2010 and period of record

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. 07057000 Southwest Oklahoma
 Drainage Area 2,337 square miles

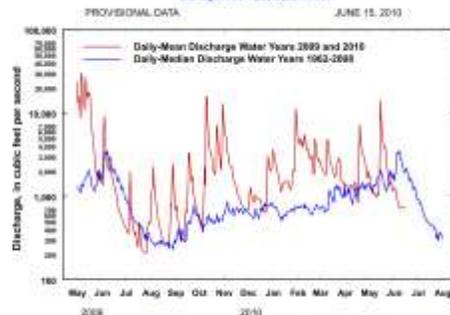


Comparison of daily discharges for water years 2009 and 2010 and period of record

Data from U.S. Geological Survey

Washita River near Dickson

Washita River near Dickson, Oklahoma
 Station No. 07531000 South-Central Oklahoma
 Drainage Area 7,010 square miles



Comparison of daily discharges for water years 2009 and 2010 and period of record

Data from U.S. Geological Survey



Water Bulletin information/data courtesy of National Weather Service, Climate Prediction Center, Oklahoma Climatological Survey, State Department of Agriculture, Food, and Forestry, 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. For more information, visit www.owrb.ok.gov and www.mesonet.org.