

Oklahoma Water Resources Bulletin & Summary of Current Conditions

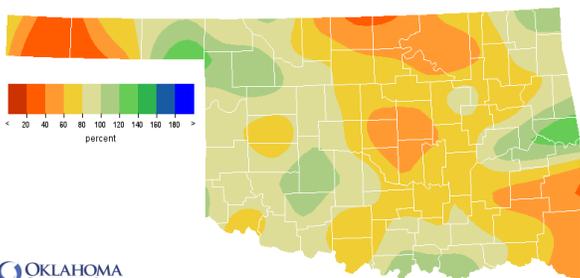


December 2, 2010

PRECIPITATION

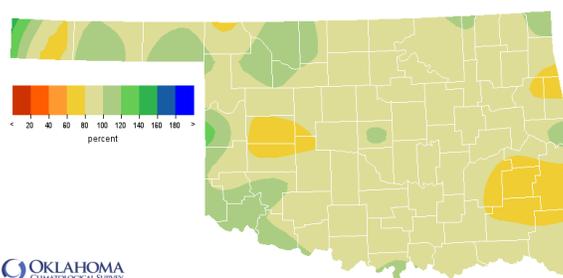
Statewide Precipitation

CLIMATE DIVISION	Cool Growing Season September 1 – November 29, 2010				Last 365 Days November 30, 2009 – November 29, 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	3.35"	-1.04"	76%	32nd driest	20.34"	-0.76"	96%	44th wettest
North Central	5.52"	-2.28"	71%	31st driest	29.50"	-2.15"	93%	44th wettest
Northeast	8.97"	-2.94"	75%	36th driest	38.75"	-3.22"	92%	41st driest
West Central	6.17"	-1.09"	85%	43rd wettest	24.70"	-4.39"	85%	34th driest
Central	7.19"	-3.30"	69%	31st driest	34.37"	-3.62"	90%	39th driest
East Central	12.25"	-1.14"	92%	40th wettest	39.31"	-6.78"	85%	25th driest
Southwest	7.50"	-0.54"	93%	44th wettest	29.46"	-1.34"	96%	38th wettest
South Central	9.30"	-2.29"	80%	40th driest	36.23"	-4.73"	88%	33rd driest
Southeast	8.91"	-5.52"	62%	23rd driest	39.48"	-11.46"	78%	10th driest
Statewide	7.64"	-2.27"	77%	38th driest	32.60"	-4.09"	89%	31st driest



OKLAHOMA CLIMATOLOGICAL SURVEY
Percentage of Normal Rainfall
Cool Growing Season

Sep 1, 2010 through Nov 29, 2010
Created 2010-11-30 10:00:19 UTC. Copyright © 2010



OKLAHOMA CLIMATOLOGICAL SURVEY
Percentage of Normal Rainfall
Last 365 Days

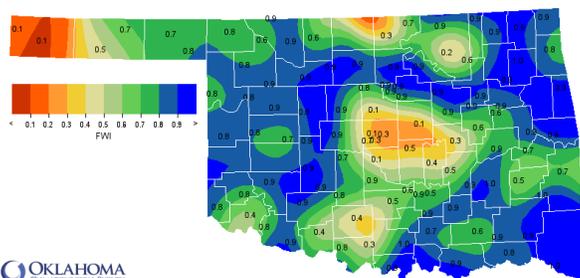
Nov 30, 2009 through Nov 29, 2010
Created 2010-11-30 10:00:23 UTC. Copyright © 2010

SOIL MOISTURE

Fractional Water Index¹

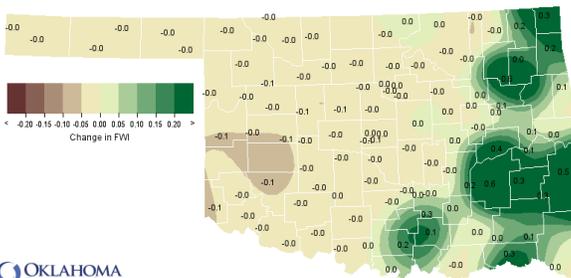
November 29, 2010

25 CM (~10 INCHES)



OKLAHOMA CLIMATOLOGICAL SURVEY
25-cm Fractional Water Index

Nov 29, 2010
Created 2010-11-30 10:01:03 UTC. Copyright © 2010



OKLAHOMA CLIMATOLOGICAL SURVEY
7-Day Change in 25-cm Fractional Water Index

Nov 29, 2010
Created 2010-11-30 10:01:06 UTC. Copyright © 2010

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 Wilted, 0.3 to 0.1 equals Plants Dying, and less than 0.1 equals Barren Soil.

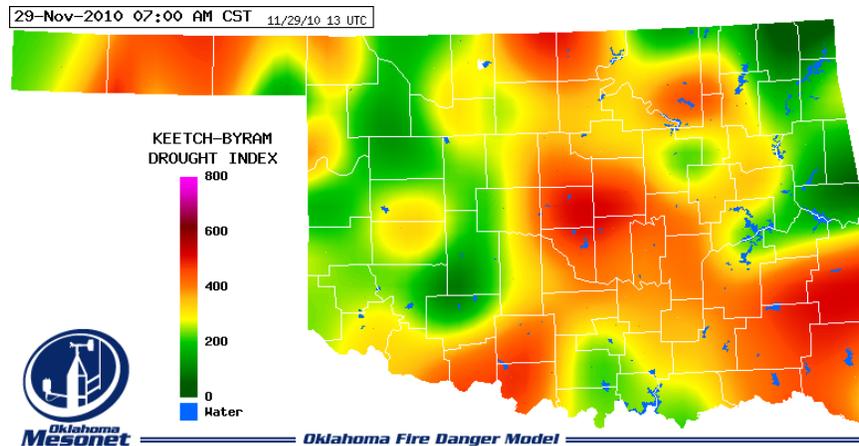
DROUGHT INDICES

Palmer Drought Severity Index ¹					Standardized Precipitation Index ² Through October 2010			
CLIMATE DIVISION	CURRENT STATUS 11/27/2010	VALUE		CHANGE IN VALUE	3-MONTH	6-MONTH	9-MONTH	12-MONTH
		11/27	10/30					
Northwest	INCIPIENT MOIST SPELL	0.74	-0.65	1.39	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
North Central	MOIST SPELL	1.87	1.23	0.64	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
Northeast	NEAR NORMAL	-0.17	-0.15	-0.02	MODERATELY DRY	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
West Central	INCIPIENT MOIST SPELL	0.74	-0.29	1.03	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
Central	NEAR NORMAL	-0.03	0.46	-0.49	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
East Central	NEAR NORMAL	0.21	0.53	-0.32	VERY DRY	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
Southwest	INCIPIENT MOIST SPELL	0.90	1.15	-0.25	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
South Central	NEAR NORMAL	-0.08	0.38	-0.46	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
Southeast	MILD DROUGHT	-1.73	-1.64	-0.09	MODERATELY DRY	MODERATELY DRY	MODERATELY DRY	MODERATELY DRY

- Only one climate division (the Southeast) is currently experiencing drought conditions, according to the PDSI.
- Six climate divisions have undergone PDSI moisture decreases since October 30.
- The three eastern climate divisions are all experiencing near long-term dry conditions, according to the SPI.

Keetch-Byram Drought Fire Index³

MESONET STATION	COUNTY	CLIMATE DIVISION	CURRENT VALUE 11/29/2010	
Wynona	Osage	Northeast	530	<ul style="list-style-type: none"> • Stations currently at or above 600 (November 29) = 0 • Stations above 600 on November 4 = 1
OKC East	Oklahoma	Central	519	
OKC North	Oklahoma	Central	515	



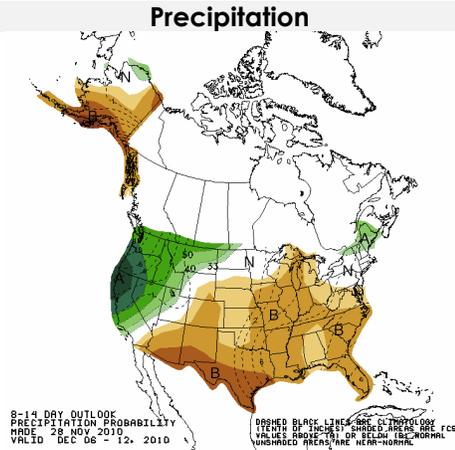
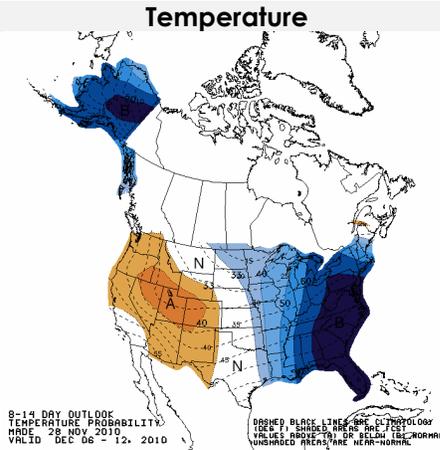
¹ The Palmer Drought Severity Index, the first comprehensive drought index developed in the United States, is calculated based on precipitation, temperature, and soil moisture. Though widely used by government agencies and states to trigger drought relief programs, the PDSI may underestimate or overestimate 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 December 6 – 12, 2010

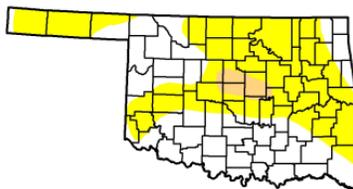


Regional Drought Summary & Outlook

U.S. Drought Monitor Oklahoma

November 30, 2010
Valid 7 a.m. EST

	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	46.3	53.7	3.1	0.0	0.0	0.0
Last Week (11/23/2010 map)	47.5	52.5	3.1	0.0	0.0	0.0
3 Months Ago (09/07/2010 map)	42.3	57.7	35.8	0.0	0.0	0.0
Start of Calendar Year (01/05/2010 map)	100.0	0.0	0.0	0.0	0.0	0.0
Start of Water Year (10/05/2010 map)	66.3	33.7	4.2	0.0	0.0	0.0
One Year Ago (12/01/2009 map)	100.0	0.0	0.0	0.0	0.0	0.0



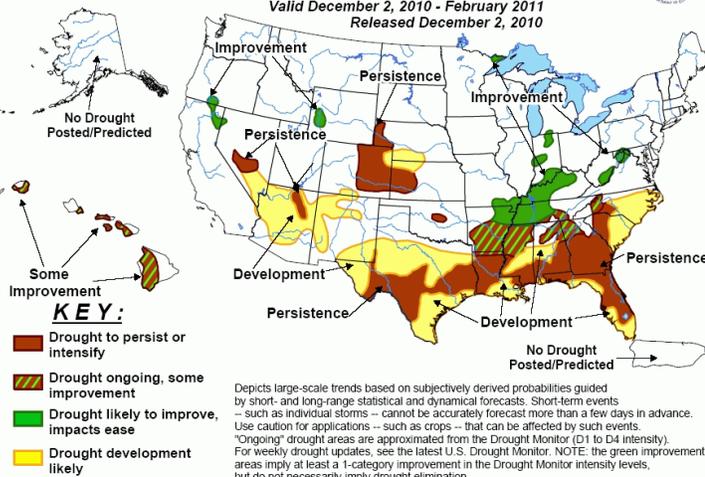
Intensity:
 D0 Abnormally Dry
 D1 Drought - Moderate
 D2 Drought - Severe
 D3 Drought - Extreme
 D4 Drought - Exceptional

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

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

USDA
 National Drought Mitigation Center
 Released Thursday, December 2, 2010
 Author: R. Tinker, CPC/NOAA

U.S. Seasonal Drought Outlook Drought Tendency During the Valid Period Valid December 2, 2010 - February 2011 Released December 2, 2010



November 30 – The latest U.S. Drought Monitor reports that light to moderate precipitation fell on parts of eastern Texas and Oklahoma while little or none fell elsewhere. Growing deficits led to a significant increase in D2 coverage in eastern Texas, with lesser areas of D0 and D1 expansion in this region. Farther south and west, D0 expanded to cover all of southern and southeastern Texas while D0 to D3 coverage in central and western Texas spread into larger sections of this area. Although traditional drought indicators don't appear particularly serious at first glance through southern and western Texas, county agricultural reports highlighted sharply increasing short-term deficits and frequently windy conditions that enhanced surface moisture depletion. Some impacts on crops, grasslands, and livestock upkeep have been reported, and burn bans have been mandated in a number of counties in this region. In addition, moderate drought extended northward through the eastern Big Bend region of Texas and pushed into adjacent southeastern New Mexico. Farther north, dryness expanded into the Oklahoma and northern Texas Panhandles while conditions broadly deteriorated in eastern Colorado and the western half of Kansas. Moderate drought expanded toward central Kansas, and severe drought developed through the Arkansas River Valley in southeastern Colorado.

According to the Drought Outlook (December 2), over the past few weeks, drought continued to increase in coverage and intensity across the southern and central Plains and parts of the southeast. Drought is projected to persist in the central and southern Plains, with drought expanding into parts of south-central Nebraska and northwestern Kansas. Due mainly to climate anomalies associated with moderate to strong wintertime La Niña episodes, drought is expected to persist and/or expand from the southern Rockies, central Great Basin into central Nevada, and continue to improve in the Pacific Northwest and the northern Rockies.

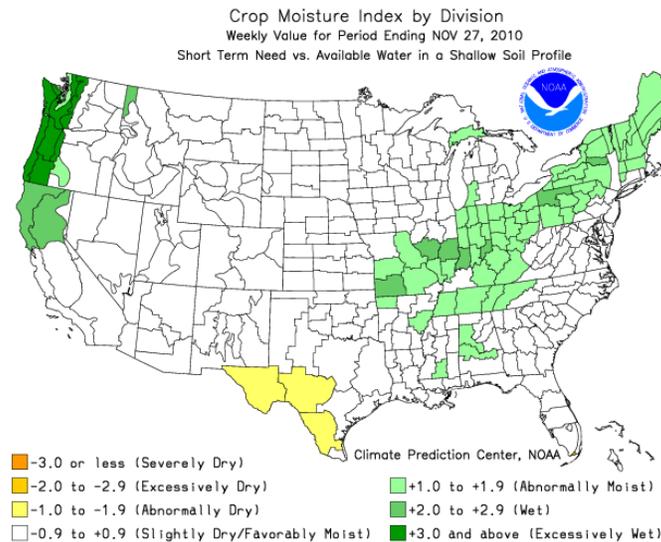
CROP REPORT

November 29, 2010 – Temperatures were unseasonably warm the first half of last week with multiple record high temperatures matched or exceeded in towns across Oklahoma. However, a predicted cold front came just in time for a chilly holiday on Thursday. Wind advisories were put out for Sunday and a few grass fires were reported in Creek County. The western half of the state was without rainfall last week while the eastern half received some rain. The rain over the past few weeks has been light and most of the state is still significantly below normal precipitation levels. Both topsoil and subsoil moisture conditions were rated mostly in the adequate range with 35 percent of topsoil and 48 percent of subsoil rated short to very short. There were 5.8 days suitable for field work.

Conditions for wheat and rye continued to improve slightly. Wheat emergence was virtually complete by the end of the week. Ninety-one percent of oat seedbeds were prepared by Sunday while 63 percent of oats were planted and 60 percent had emerged. Canola emergence was nearly complete by the end of the week.

Harvest is virtually complete with the exception of cotton. Sorghum harvest reached 96 percent complete by Sunday, seven points ahead of normal and 12 points ahead of a year ago. The soybean harvest was almost complete by the end of the week. The cotton harvest was 81 percent complete by Sunday, 12 points ahead of the five-year average. Alfalfa fifth cutting was 88 percent complete and the sixth cutting reached 38 percent complete by week's end.

Pasture and range conditions remained mostly in the good to fair range, with 27 percent rated poor to very poor. Conditions were rated mostly in the good to fair range with eight percent rated excellent. Below average precipitation has left pond levels low, particularly in the southeast.



RESERVOIR STORAGE

- 27 reservoirs are currently operating at less than full capacity (compared to 29 four weeks ago).
- 20 reservoirs have experienced lake level decreases.

Storage in Selected Oklahoma Lakes & Reservoirs					
November 29, 2010					
Lake or Reservoir	Normal Pool Elevation	Previous Elevation	Current Elevation	Change in Elevation	Current Flood Control Storage
	(feet)	11/01/2010 (feet)	11/30/2010 (feet)	(feet)	(acre-feet)
North Central					
Fort Supply	2004.00	2003.34	2003.93	0.59	(119)
Great Salt Plains	1125.00	1125.17	1125.41	0.24	3,441
Kaw*	1010.50	1009.02	1010.65	1.63	2,508
Northeast					
Birch	750.50	749.16	748.77	(0.39)	(1,928)
Copan	710.00	709.34	709.09	(0.25)	(3,548)
Fort Gibson	554.00	552.66	553.58	0.92	(7,854)
Grand*	742.00	741.41	742.04	0.63	1,759
Hudson	619.00	618.98	620.59	1.61	17,770
Hulah	733.00	732.67	732.13	(0.54)	(2,634)
Keystone*	723.00	721.43	721.00	(0.43)	(33,180)
Oologah*	638.00	637.68	636.95	(0.73)	(31,627)
Skiatook	714.00	710.77	710.19	(0.58)	(38,511)
West Central					
Canton	1615.40	1614.44	1613.19	(1.25)	(16,780)
Foss	1642.00	1640.57	1640.51	(0.06)	(9,855)
Central					
Arcadia	1006.00	1005.53	1005.65	0.12	(623)
Heyburn	761.50	760.32	760.30	(0.02)	(727)
Thunderbird	1039.00	1037.18	1036.78	(0.40)	(13,010)
East Central					
Eufaula*	585.00	583.55	582.99	(0.56)	(183,470)
Tenkiller	632.00	630.33	628.35	(1.98)	(45,695)
Southwest					
Fort Cobb	1342.00	1341.11	1341.17	0.06	(3,087)
Lugert-Altus	1559.00	1540.28	1541.28	1.00	(83,484)
Tom Steed	1411.00	1409.48	1409.48	0.00	(9,342)
South Central					
Arbuckle	872.00	871.63	871.32	(0.31)	(1,578)
McGee Creek**	175.90	175.54	175.41	(0.13)	(5,941)
Texoma*	618.50	616.74	617.14	0.40	(103,349)
Waurika*	951.40	951.17	950.84	(0.33)	(5,607)
Southeast					
Broken Bow*	599.50	592.29	591.97	(0.32)	(103,044)
Hugo*	406.00	401.00	400.84	(0.16)	(67,345)
Pine Creek*	433.00	431.54	430.46	(1.08)	(6,591)
Sardis	599.00	597.39	597.28	(0.11)	(22,711)
Wister	478.00	476.97	476.58	(0.39)	(8,141)

* indicates seasonal pool operation

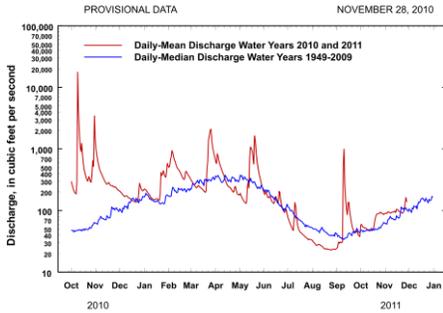
** elevation in meters

negative numbers in red, parentheses

STREAMFLOW CONDITIONS

Baron Fork at Eldon

Baron Fork at Eldon, Oklahoma
Station No. 07197000 Northeast Oklahoma
Drainage Area 307 square miles

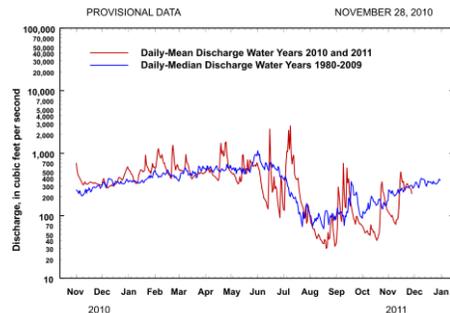


Comparison of daily discharges for water years 2010 and 2011 and period of record

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

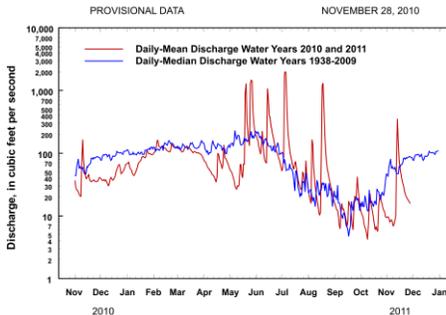


Comparison of daily discharges for water years 2010 and 2011 and period of record

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

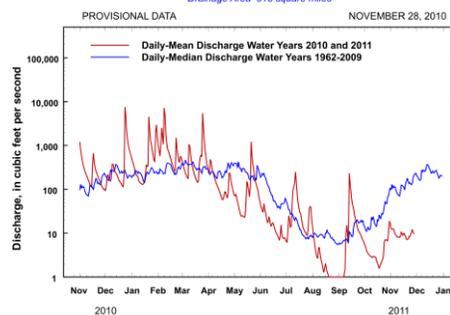


Comparison of daily discharges for water years 2010 and 2011 and period of record

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

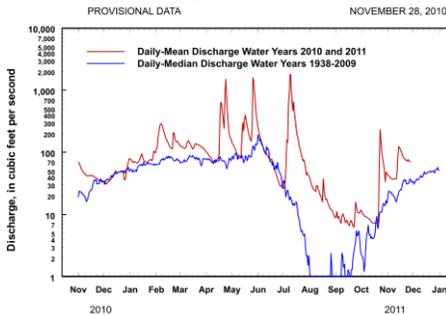


Comparison of daily discharges for water years 2010 and 2011 and period of record

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

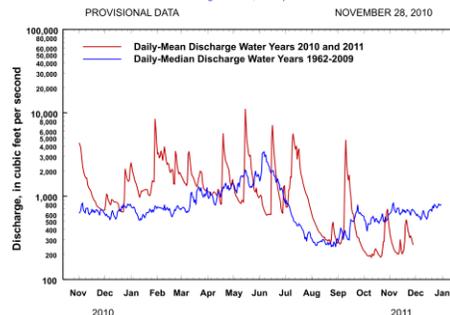


Comparison of daily discharges for water years 2010 and 2011 and period of record

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



Comparison of daily discharges for water years 2010 and 2011 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.