

Oklahoma Water Resources Bulletin & Summary of Current Conditions

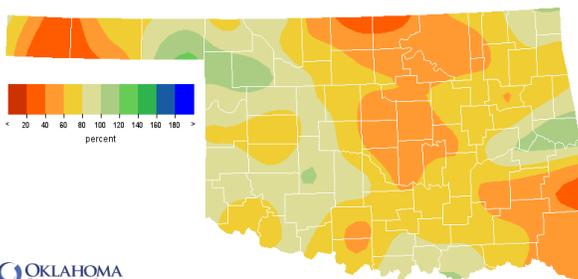


December 21, 2010

PRECIPITATION

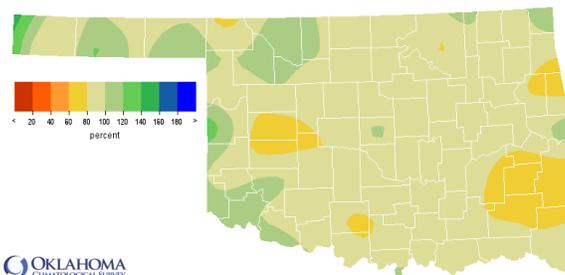
Statewide Precipitation

CLIMATE DIVISION	Cool Growing Season September 1 – December 19, 2010				Last 365 Days December 20, 2009 – December 19, 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	3.61"	-1.25"	74%	31st driest	20.58"	-0.52"	98%	41st wettest
North Central	5.59"	-3.08"	65%	26th driest	29.50"	-2.15"	93%	39th wettest
Northeast	8.97"	-4.46"	67%	25th driest	38.41"	-3.56"	92%	40th driest
West Central	6.38"	-1.64"	80%	39th driest	24.80"	-4.29"	85%	37th driest
Central	7.27"	-4.55"	62%	23rd driest	34.00"	-3.99"	89%	38th driest
East Central	12.31"	-3.05"	80%	39th driest	38.78"	-7.31"	84%	28th driest
Southwest	7.56"	-1.39"	85%	37th driest	29.06"	-1.74"	94%	39th wettest
South Central	9.48"	-3.76"	72%	30th driest	35.12"	-5.84"	86%	31st driest
Southeast	9.11"	-7.99"	53%	11th driest	38.59"	-12.34"	76%	10th driest
Statewide	7.76"	-3.49"	69%	24th driest	32.23"	-4.46"	88%	31st driest



OKLAHOMA CLIMATOLOGICAL SURVEY
Percentage of Normal Rainfall
Cool Growing Season

Sep 1, 2010 through Dec 19, 2010
Created 2010-12-20 10:01:08 UTC, Copyright © 2010



OKLAHOMA CLIMATOLOGICAL SURVEY
Percentage of Normal Rainfall
Last 365 Days

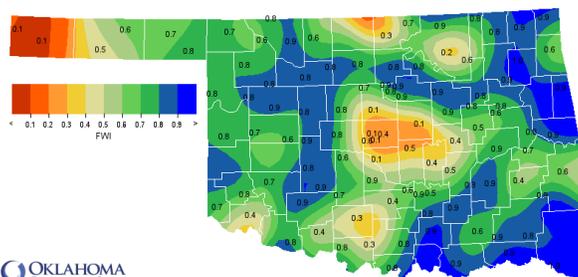
Dec 20, 2009 through Dec 19, 2010
Created 2010-12-20 10:01:12 UTC, Copyright © 2010

SOIL MOISTURE

Fractional Water Index¹

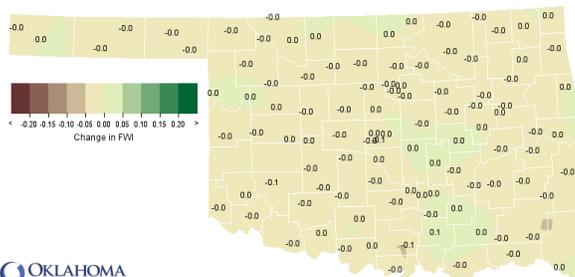
December 19, 2010

25 CM (~10 INCHES)



OKLAHOMA CLIMATOLOGICAL SURVEY
25-cm Fractional Water Index

Dec 19, 2010
Created 2010-12-20 10:01:08 UTC, Copyright © 2010



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

Dec 19, 2010
Created 2010-12-20 10:01:12 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.

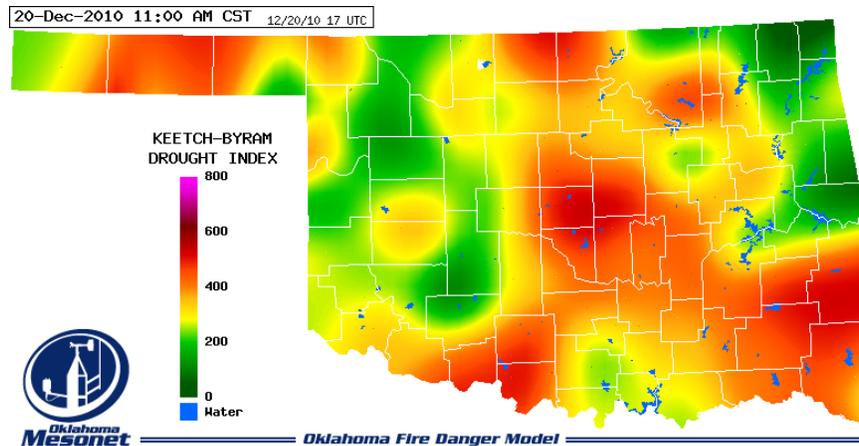
DROUGHT INDICES

Palmer Drought Severity Index ¹					Standardized Precipitation Index ² Through November 2010			
CLIMATE DIVISION	CURRENT STATUS 12/18/2010	VALUE		CHANGE IN VALUE	3-MONTH	6-MONTH	9-MONTH	12-MONTH
		12/18	11/27					
Northwest	INCIPIENT MOIST SPELL	0.63	0.74	-0.11	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
North Central	MOIST SPELL	1.01	1.87	-0.86	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
Northeast	INCIPIENT DROUGHT	-0.85	-0.17	-0.68	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
West Central	INCIPIENT MOIST SPELL	0.56	0.74	-0.18	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
Central	INCIPIENT DROUGHT	-0.96	-0.03	-0.93	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
East Central	INCIPIENT DROUGHT	-0.69	0.21	-0.90	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
Southwest	NEAR NORMAL	-0.05	0.90	-0.95	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
South Central	INCIPIENT DROUGHT	-0.63	-0.08	-0.55	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
Southeast	MODERATE DROUGHT	-2.39	-1.73	-0.66	NEAR NORMAL	MODERATELY DRY	VERY DRY	MODERATELY DRY

- Only one climate division (the Southeast) is currently experiencing drought conditions, according to the PDSI.
- All nine climate divisions have undergone PDSI moisture decreases since November 27.
- Only the Southeast climate division is experiencing near long-term dry conditions, according to the SPI.

Keetch-Byram Drought Fire Index³

MESONET STATION	COUNTY	CLIMATE DIVISION	CURRENT VALUE 12/20/2010	
Wynona	Osage	Northeast	537	<ul style="list-style-type: none"> • Stations currently at or above 600 (December 20) = 0 • Stations above 600 on November 29 = 0
OKC East	Oklahoma	Central	530	
OKC North	Oklahoma	Central	526	



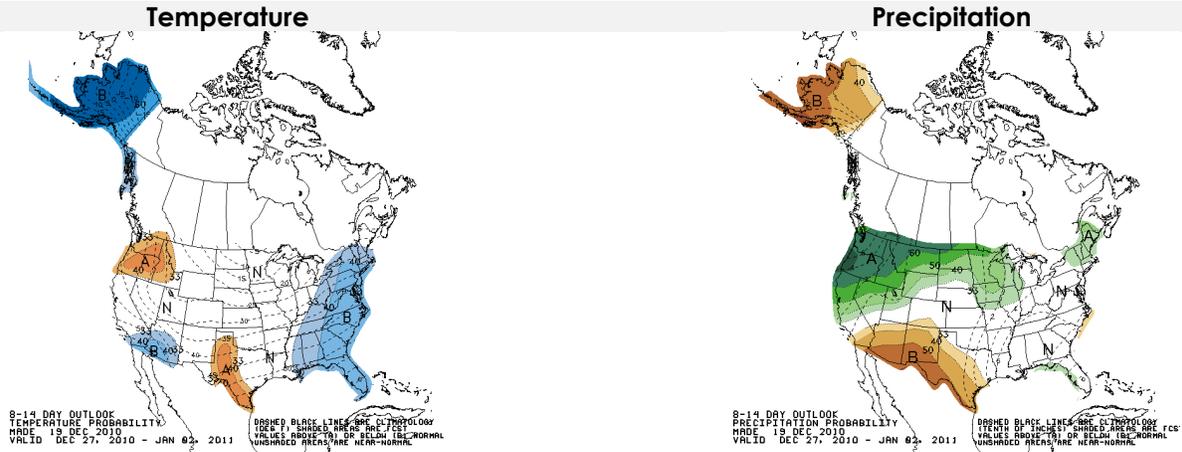
¹ The Palmer Drought Severity Index, the first comprehensive drought index developed in the United States, is calculated based on precipitation, temperature, and soil moisture. Though widely used by government agencies and states to trigger drought relief programs, the PDSI may underestimate or overestimate 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 27, 2010 – January 2, 2011

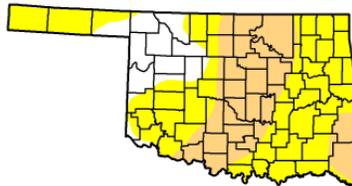


Regional Drought Summary & Outlook

U.S. Drought Monitor Oklahoma

December 14, 2010
Valid 7 a.m. EST

	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	14.8	85.2	32.5	0.0	0.0	0.0
Last Week (11/27/2010 map)	18.7	81.3	5.0	0.0	0.0	0.0
3 Months Ago (8/9/21/2010 map)	58.8	41.2	4.2	0.0	0.0	0.0
Start of Calendar Year (1/1/05/2010 map)	100.0	0.0	0.0	0.0	0.0	0.0
Start of Water Year (11/05/2010 map)	66.3	33.7	4.2	0.0	0.0	0.0
One Year Ago (11/21/2009 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

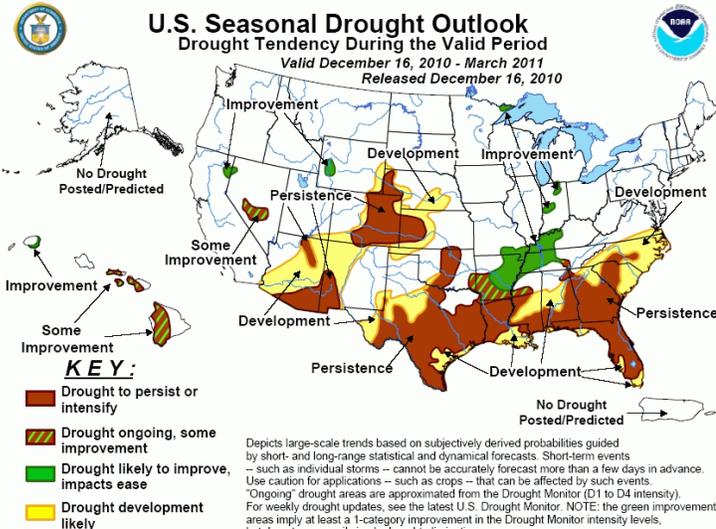
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

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

Released Thursday, December 16, 2010
Author: D. Miskus, CPC/NOAA

December 14 – The latest U.S. Drought Monitor reports that little or no precipitation fell on the southern half of the High Plains. Since receiving moderate to heavy precipitation back in early November, much of Oklahoma, Kansas, and Texas have recorded little or no precipitation, and moisture conditions have deteriorated. In Oklahoma's Osage and Creek counties, farm ponds are quite low, even lower than the drought of 2005 and 2006, and Skiatook Lake (Osage County) is 4 feet below normal, significant for this small lake. D2 stretched eastward into western Kansas from eastern Colorado as conditions have been as dry or even drier at 90-days and longer, while dry conditions in southeastern Kansas warranted D0. D1 was extended into southeastern Oklahoma from western Arkansas where they have also missed out on decent rains the past 3 months. The D0 hole in northeastern Texas also shrank with another dry week, although the Texas Panhandle (from Lubbock to Amarillo), northwest Oklahoma, and south-central Kansas continued to benefit from heavy rains in mid-October and early November.

U.S. Seasonal Drought Outlook Drought Tendency During the Valid Period Valid December 16, 2010 - March 2011 Released December 16, 2010



According to the Drought Outlook (December 16), drought coverage recently increased or intensified across much of the Southwest and southern Plains. Due to the expected continuation of moderate to strong La Niña conditions through the northern hemisphere winter season, there are increased odds for above median precipitation in the Northwest contrasting with greater chances of below median precipitation for the Southwest and southern Rockies. Continued improvement is expected for remaining drought areas in northern California and western Wyoming while drought expansion or intensification is forecasted for the desert Southwest and portions of the central and southern High Plains.

Depicts large-scale trends based on subjectively 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.

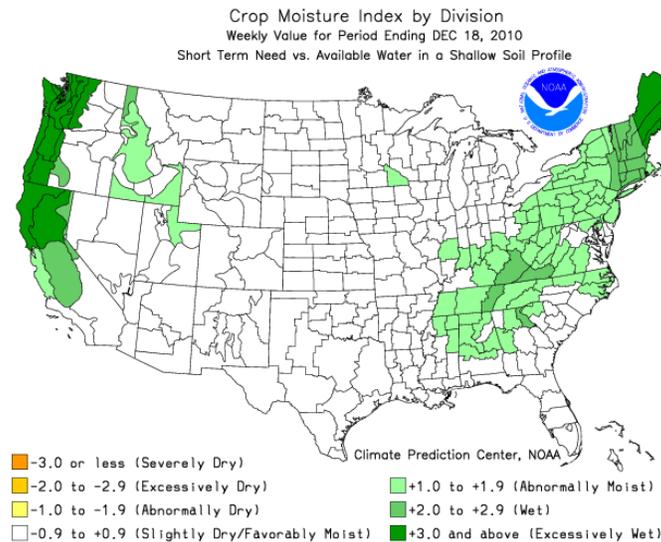
CROP REPORT

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

- 26 reservoirs are currently operating at less than full capacity (compared to 27 three weeks ago).
- 24 reservoirs have experienced lake level decreases.

Storage in Selected Oklahoma Lakes & Reservoirs					
December 20, 2010					
Lake or Reservoir	Normal Pool Elevation (feet)	Previous Elevation 11/30/2010 (feet)	Current Elevation 12/20/2010 (feet)	Change in Elevation (feet)	Current Flood Control Storage (acre-feet)
North Central					
Fort Supply	2004.00	2003.93	2004.29	0.36	544
Great Salt Plains	1125.00	1125.41	1125.25	(0.16)	2,098
Kaw*	1011.60	1010.65	1011.60	0.95	152
Northeast					
Birch	750.50	748.77	748.47	(0.30)	(2,249)
Copan	710.00	709.09	708.82	(0.27)	(4,561)
Fort Gibson	554.00	553.58	553.66	0.08	(6,359)
Grand*	742.00	742.04	742.04	0.00	1,759
Hudson	619.00	620.59	620.15	(0.44)	12,759
Hulah	733.00	732.13	732.06	(0.07)	(2,846)
Keystone*	723.00	721.00	720.36	(0.64)	(43,548)
Oologah*	638.00	636.95	636.66	(0.29)	(39,878)
Skiatook	714.00	710.19	709.75	(0.44)	(42,705)
West Central					
Canton	1615.40	1613.19	1613.26	0.07	(16,264)
Foss	1642.00	1640.51	1640.45	(0.06)	(10,244)
Central					
Arcadia	1006.00	1005.65	1005.55	(0.10)	(801)
Heyburn	761.50	760.30	760.23	(0.07)	(769)
Thunderbird	1039.00	1036.78	1036.55	(0.23)	(14,275)
East Central					
Eufaula*	585.00	582.99	582.23	(0.76)	(244,320)
Tenkiller	632.00	628.35	626.69	(1.66)	(65,958)
Southwest					
Fort Cobb	1342.00	1341.17	1341.26	0.09	(2,753)
Lugert-Altus	1559.00	1541.28	1541.82	0.54	(81,648)
Tom Steed	1411.00	1409.48	1409.23	(0.25)	(10,819)
South Central					
Arbuckle	872.00	871.32	871.03	(0.29)	(2,250)
McGee Creek**	175.90	175.41	175.30	(0.11)	(7,275)
Texoma*	617.60	617.14	616.33	(0.81)	(96,603)
Waurika*	951.40	950.84	950.56	(0.28)	(8,322)
Southeast					
Broken Bow*	599.50	591.97	591.69	(0.28)	(106,717)
Hugo*	406.00	400.84	400.69	(0.15)	(68,864)
Pine Creek*	433.00	430.46	430.14	(0.32)	(7,363)
Sardis	599.00	597.28	597.08	(0.20)	(25,300)
Wister	478.00	476.58	476.37	(0.21)	(9,281)

* indicates seasonal pool operation

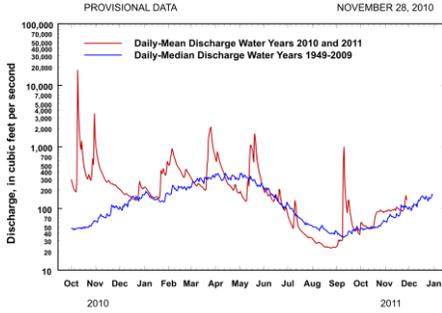
** elevation in meters

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

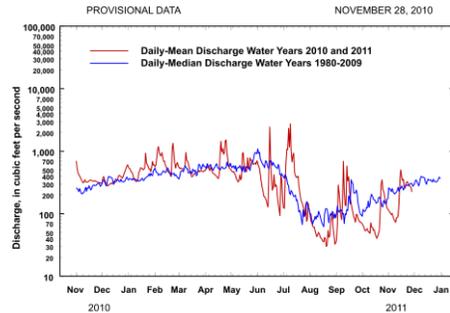


Comparison of daily discharges for water years 2010 and 2011 and period of record

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

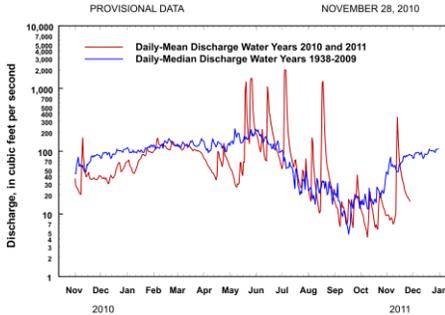


Comparison of daily discharges for water years 2010 and 2011 and period of record

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

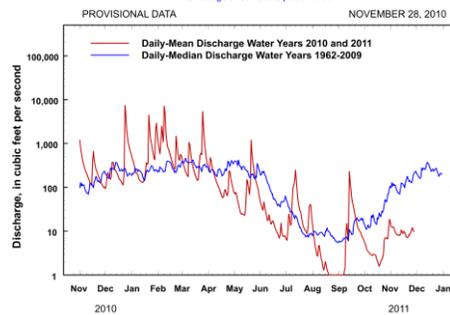


Comparison of daily discharges for water years 2010 and 2011 and period of record

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

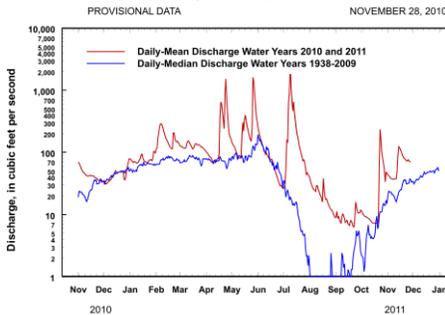


Comparison of daily discharges for water years 2010 and 2011 and period of record

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

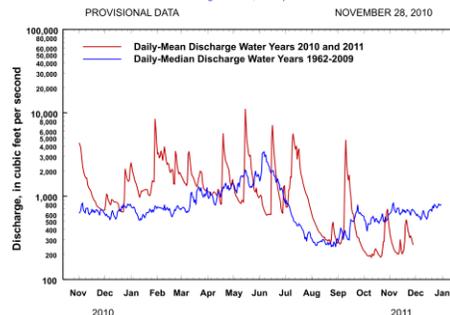


Comparison of daily discharges for water years 2010 and 2011 and period of record

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.