Oklahoma Water Resources Bulletin
& Summary of Current Conditions

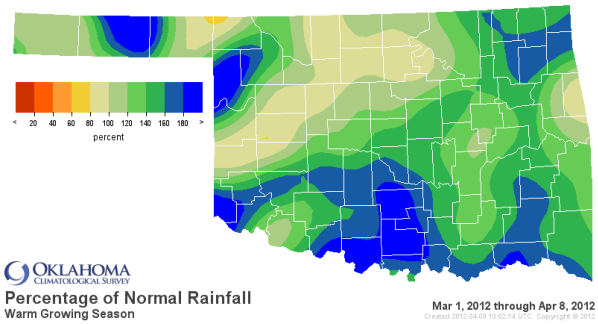
State of Oklahoma OWRB Water Resources Board the water agency

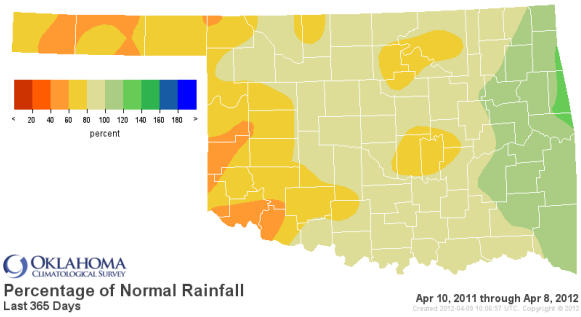
April 12, 2012

PRECIPITATION

Statewide Precipitation

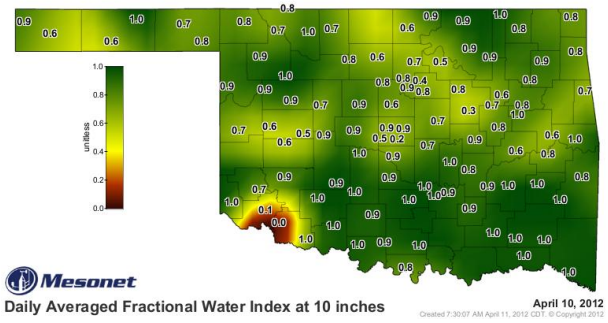
Climate Division	Warm Growing Season March 1, 2012 – April 8, 2012: Total Rainfall (inches)	Departure From Normal (inches)	Percent Of Normal	Rank Since 1921	Last 365 Days April 10, 2011 – April 8, 2012: Total Rainfall (inches)	Departure From Normal (inches)	Percent Of Normal	Rank Since 1921
Panhandle	2.75"	+0.63"	130%	16th wettest	13.27"	-7.77"	63%	7th driest
North Central	3.66"	+0.19"	105%	19th wettest	26.42"	-5.13"	84%	30th driest
Northeast	6.89"	+2.16"	146%	8th wettest	39.71"	-2.13"	95%	41st wettest
West Central	2.92"	-0.17"	94%	27th wettest	19.74"	-9.26"	68%	9th driest
Central	5.48"	+1.30"	131%	12th wettest	31.81"	-6.06"	84%	30th driest
East Central	6.61"	+1.37"	126%	16th wettest	47.74"	+1.79"	104%	30th wettest
Southwest	4.57"	+1.60"	154%	7th wettest	21.78"	-8.93"	71%	12th driest
South Central	7.58"	+3.02"	166%	4th wettest	34.76"	-6.07"	85%	31st driest
Southeast	8.83"	+3.15"	155%	9th wettest	53.19"	+2.40"	105%	29th wettest
Statewide	5.49"	+1.49"	137%	10th wettest	31.93"	-4.65"	87%	28th driest

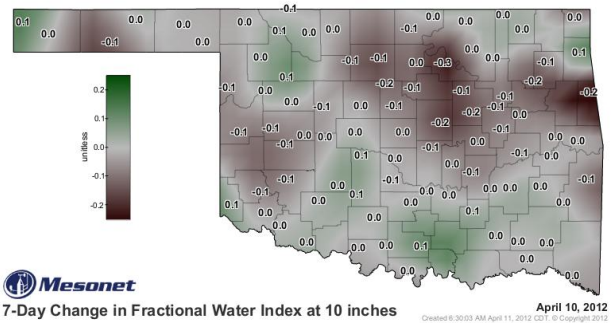




SOIL MOISTURE

Fractional Water Index[1]
April 10, 2012





[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. [1.0-0.8 = Enhanced Growth; 0.8-0.5 = Limited Growth; 0.5-0.3 = Plants Wilting; 0.3-0.1 = Plants Dying; <0.1 = Barren Soil.]*

DROUGHT INDICES

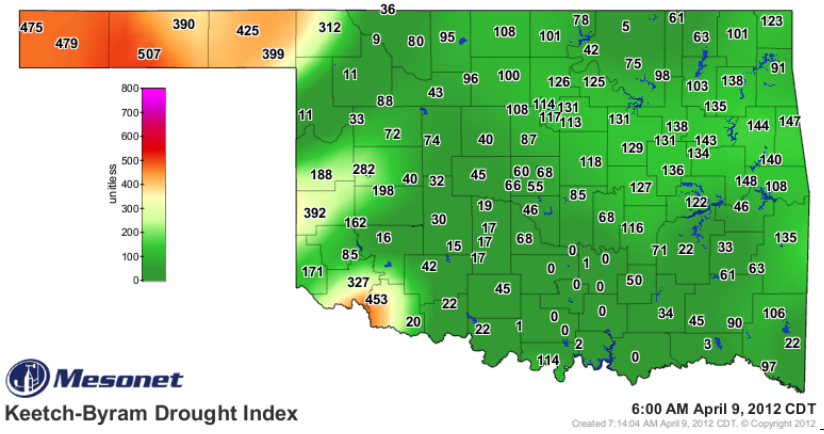
Palmer Drought Severity Index[1]					Standardized Precipitation Index[2] Through March 2012			
Climate Division	Current Status 4/7/2012	Value 4/7	Value 3/3	Change In Value	3-Month	6-Month	9-Month	12-Month
Northwest	NEAR NORMAL	0.16	-0.76	**0.92**	MODERATELY WET	MODERATELY WET	NEAR NORMAL	VERY DRY
North Central	UNUSUAL MOIST SPELL	2.39	2.47	**-0.08**	VERY WET	VERY WET	MODERATELY WET	NEAR NORMAL
Northeast	INCIPIENT MOIST SPELL	0.60	-0.19	**0.79**	VERY WET	MODERATELY WET	NEAR NORMAL	NEAR NORMAL
West Central	MOIST SPELL	1.04	0.26	**0.78**	NEAR NORMAL	MODERATELY WET	NEAR NORMAL	MODERATELY DRY
Central	MOIST SPELL	1.34	-0.37	**1.71**	MODERATELY WET	VERY WET	NEAR NORMAL	NEAR NORMAL
East Central	INCIPIENT MOIST SPELL	0.86	0.57	**0.29**	VERY WET	MODERATELY WET	NEAR NORMAL	NEAR NORMAL
Southwest	INCIPIENT MOIST SPELL	0.60	-1.23	**1.83**	MODERATELY WET	VERY WET	NEAR NORMAL	MODERATELY DRY
South Central	UNUSUAL MOIST SPELL	2.02	0.52	**1.50**	VERY WET	VERY WET	NEAR NORMAL	NEAR NORMAL
Southeast	MOIST SPELL	1.77	1.53	**0.24**	NEAR NORMAL	VERY WET	NEAR NORMAL	NEAR NORMAL

- No climate divisions are currently experiencing drought conditions, according to the PDSI. Only one climate division has undergone a PDSI moisture decrease since March 3.
- Only three climate divisions are experiencing near long-term dry conditions, according to the SPI.

Keetch-Byram Drought Fire Index[3]

Mesonet Station	Climate Division	Current Value 4/9/2012
Goodwell	Panhandle	507
Boise City	Panhandle	479
Kenton	Panhandle	475

- Stations currently at or above 600 (April 9) = 0
- Stations above 600 on March 5 = 2



[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.*

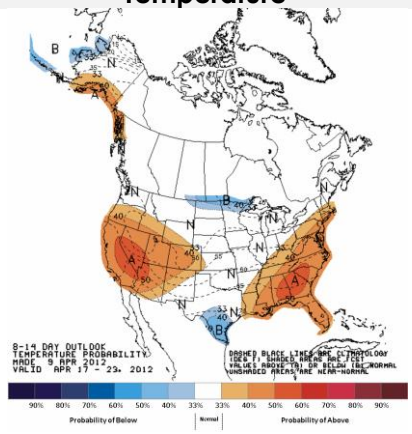
[2] *The Standardized Precipitation Index, more sensitive than the PDSI, provides a comparison of precipitation over a specified period with precipitation totals from that same period for all years included in the historical record. The 3-month SPI provides a seasonal estimation of precipitation while 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.*

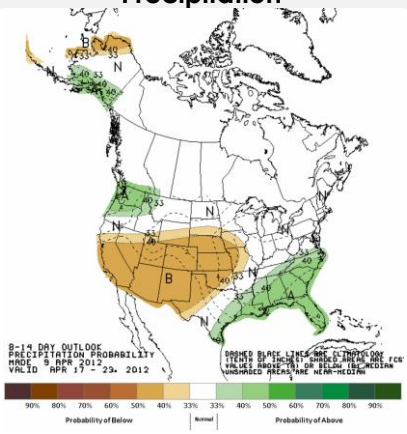
WEATHER/DROUGHT FORECAST

8- to 14-Day Outlook
April 17-23, 2012

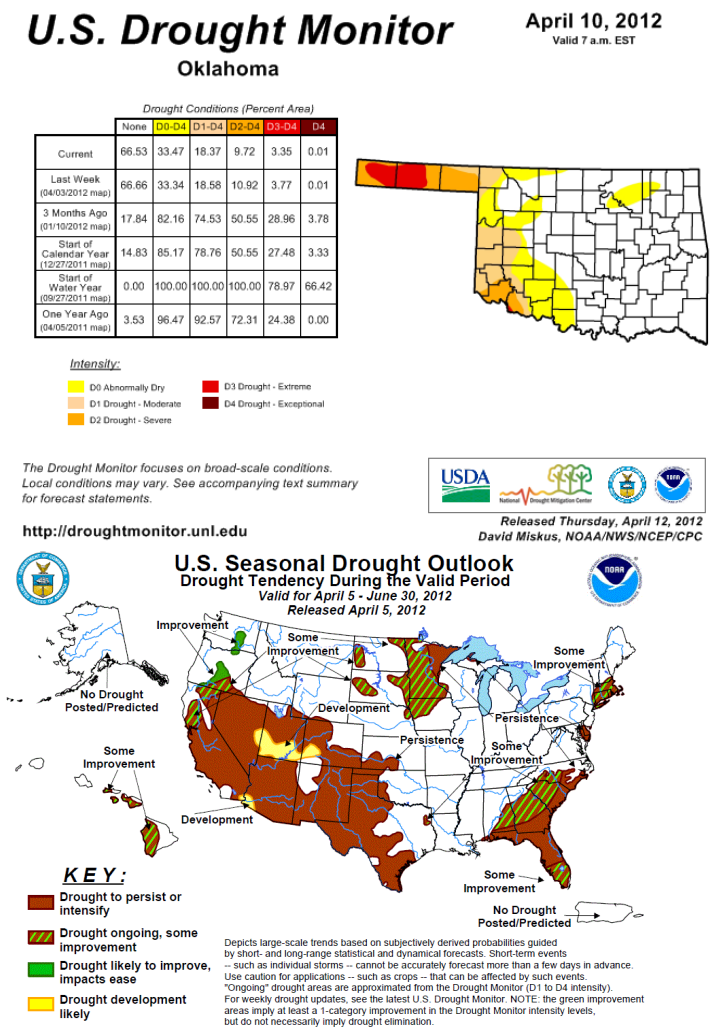
Temperature



Precipitation



Regional Drought Summary & Outlook



	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	66.53	33.47	18.37	9.72	3.35	0.01
Last Week (04/03/2012 map)	66.66	33.34	18.58	10.92	3.77	0.01
3 Months Ago (01/10/2012 map)	17.84	82.16	74.53	50.55	28.96	3.78
Start of Calendar Year (12/27/2011 map)	14.83	85.17	78.76	50.55	27.48	3.33
Start of Water Year (09/27/2011 map)	0.00	100.00	100.00	100.00	78.97	66.42
One Year Ago (04/05/2011 map)	3.53	96.47	92.57	72.31	24.38	0.00

April 10—The latest U.S. Drought Monitor reports that a scattering of moderate to heavy rains fell on parts of Texas, Oklahoma, Kansas, eastern Colorado, and southern Nebraska. Since October 2011, a persistent pattern of above-normal precipitation has brought slow but welcome relief to parts of the southern and central Plains. This week was no different as enough rain fell on northeastern Texas to remove the small D1 area there and cut back on some D0. In southwestern Texas, rain diminished D3 to D2. And a reassessment of SPI products and agricultural reports indicated improved conditions in the Coastal Bend area where a 1-category improvement was made. In northeastern Oklahoma, the D0(L) area was realigned to better represent hydrologic conditions. This included Lake Skiatook in eastern Osage County, which continued to struggle as the lake level declined even with an inch of rain in its watershed. In northern Kansas, southern Nebraska, and eastern Colorado, 1 to 2 inches of rain eliminated the short-term dryness (D0), while a reassessment of conditions was made in southwestern Kansas. Based upon several precipitation and soil moisture products out to 6-months, no large-scale deficiencies were found, and instead surpluses existed. But at 12-months and beyond, the deficits are there, mostly accumulated during the hot and dry summer months of 2011 when normals are much larger than the fall and winter months. In the northern Plains, however, another dry and mild week further depleted soil moisture as accumulated short-term deficiencies slowly increased.

Only about 18 percent of Oklahoma is currently experiencing at least Moderate Drought; just over three percent of the state remains in at least Extreme Drought.

According to the latest Drought Outlook (April 5), while drought has been eradicated in some areas, drought conditions are forecasted to persist or intensify in far western Oklahoma through June.

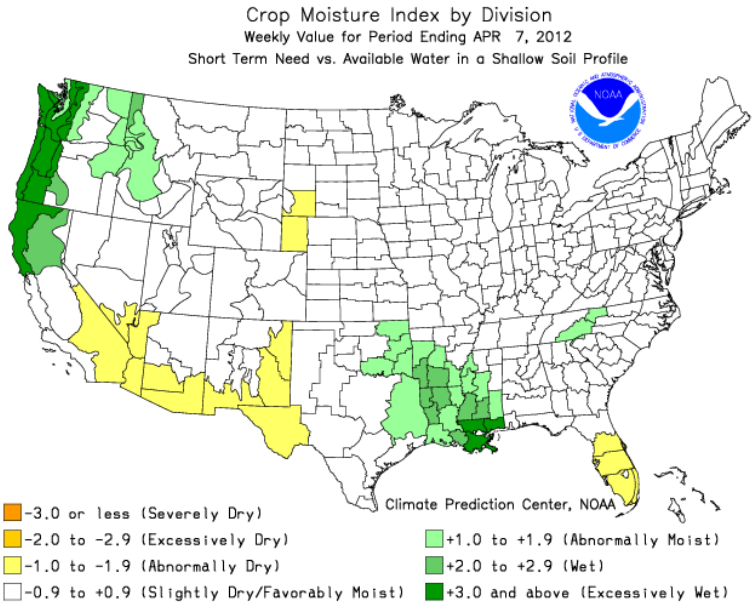
CROP REPORT

April 9, 2012 – Favorable growing conditions this spring have resulted in crop progress that is significantly ahead of normal. Over 40 percent of the wheat crop and almost three-fourths of the rye crop were heading by the end of the week. Virtually the entire canola crop was blooming and corn planting was ahead of normal with a small portion already emerged by Sunday. Additional rainfall continued to lessen the effects of the lingering drought. The April 3rd Drought Monitor showed continued improvements with D4 conditions all but gone. The panhandle and far western Oklahoma make up the 18.57 percent of the state still rated moderate to extreme in drought intensity. Subsoil moisture condition ratings showed very little change, with 54 percent rated adequate and 74 percent of topsoil moisture conditions were rated adequate. There were 4.5 days suitable for field work.

Heading of wheat and rye progressed well ahead of normal due to the favorable spring conditions. Wheat and canola conditions continued to improve; 27 percent of wheat and 23 percent of canola were rated excellent. All small grains were rated mostly good. Wheat jointing reached 92 percent complete by Sunday, 12 points ahead of the five-year average. Forty-one percent of wheat was heading by the end of the week, 35 points ahead of last year and the five-year average. Canola blooming was virtually complete by week's end, 30 points ahead of last year's crop. Rye jointing was 94 percent complete and 73 percent was heading by Sunday, over 60 points ahead of the five-year average. Oat emergence was near completion at 96 percent by the end of the week. Oat jointing was 43 percent complete, 12 points ahead of normal.

Field preparation for spring crops continued between rain showers, as did corn planting. Corn seedbed preparation was 88 percent complete by the end of the week, 12 points ahead of normal. Corn planting was 31 percent complete, 10 points ahead of last year's crop, and a small portion had emerged by the end of the week. Sorghum seedbed preparation was 55 percent complete, 21 points ahead of the five-year average. Preparation of soybean seedbeds was 33 percent complete by Sunday, on track with normal progress. Peanut seedbed preparation was slightly behind normal with 47 percent complete. Cotton seedbed preparation reached 73 percent complete, ahead of the five-year average.

Conditions of pasture and range improved from recent rainfall and new growth was reported. Only 20 percent was rated poor to very poor, down from 28 percent the previous week. Additional moisture and warm temperatures fostered continued growth. Improved grazing availability benefitted cattle producers. Livestock conditions continued to be rated mostly good to fair.



RESERVOIR STORAGE

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

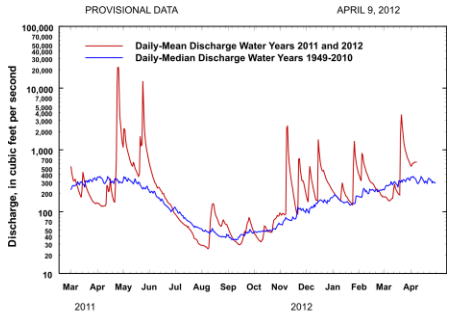
Storage in Selected Oklahoma Lakes & Reservoirs April 11, 2012					
Lake or Reservoir	Normal Pool Elevation (feet)	Previous Elevation 3/5/2012 (feet)	Current Elevation 4/11/2012 (feet)	Change in Elevation (feet)	Current Flood Control Storage (acre-feet)
North Central					
Fort Supply	2004.00	2004.39	2004.30	(0.09)	599
Great Salt Plains	1125.00	1125.32	1125.29	(0.03)	3,018
Kaw*	1009.70	1008.23	1012.13	3.90	39,970
Northeast					
Birch	750.50	741.91	746.84	4.93	(3,615)
Copan	710.00	711.26	710.13	(1.13)	592
Fort Gibson	554.00	555.01	554.54	(0.47)	10,422
Grand*	742.00	742.02	744.43	2.41	99,083
Hudson	619.00	619.68	619.51	(0.17)	5,671
Hulah	733.00	734.58	734.20	(0.38)	3,988
Keystone	723.00	723.71	724.17	0.46	20,103
Oologah	638.00	638.37	643.93	5.56	189,768
Skiatook	714.00	700.71	704.59	3.88	(87,392)
West Central					
Canton	1615.40	1605.72	1607.32	1.60	(52,540)
Foss	1642.00	1635.22	1635.29	0.07	(41,453)
Central					
Arcadia	1006.00	1006.33	1006.41	0.08	791
Heyburn	761.50	761.53	761.75	0.22	166
Thunderbird	1039.00	1033.89	1036.69	2.80	(13,505)
East Central					
Eufaula	585.00	585.05	587.20	2.15	208,730
Tenkiller	632.00	632.43	636.10	3.67	55,201
Southwest					
Fort Cobb	1342.00	1338.72	1339.43	0.71	(9,207)
Lugert-Altus	1559.00	1532.45	1534.03	1.58	(104,797)
Tom Steed	1411.00	1403.78	1403.71	(0.07)	(39,797)
South Central					
Arbuckle	872.00	868.65	873.55	4.90	3,716
McGee Creek**	175.90	175.99	176.19	0.20	3,692
Texoma*	615.00	616.09	617.93	1.84	226,837
Waurika	951.40	945.03	946.28	1.25	(49,060)
Southeast					
Broken Bow*	600.10	599.50	601.01	1.51	12,634
Hugo*	404.50	404.88	405.65	0.77	14,859
Pine Creek	433.00	433.84	433.73	(0.11)	2,110
Sardis	599.00	599.25	599.19	(0.06)	2,594
Wister	478.00	478.20	478.59	0.39	3,129

** indicates seasonal pool operation* *** elevation in meters* *negative numbers in red, parentheses*

STREAMFLOW CONDITIONS

Baron Fork at Eldon

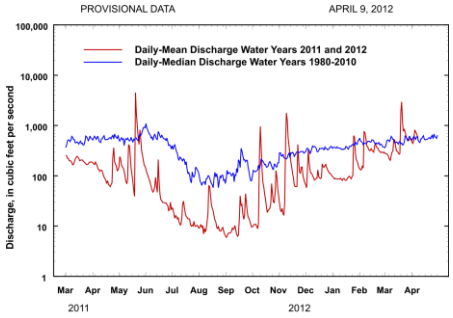
Baron Fork at Eldon, Oklahoma
Station No. 07197000 Northeast Oklahoma
Drainage Area 307 square miles



Comparison of daily discharges for waters year 2011 and 2012
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 2011 and 2012
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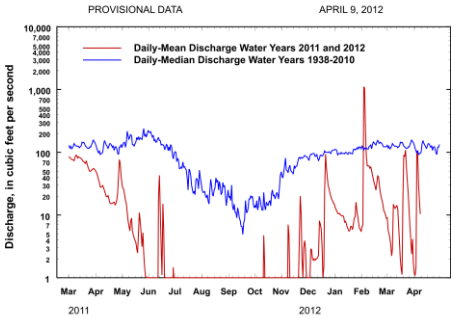
Data from U.S. Geological Survey

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 2011 and 2012
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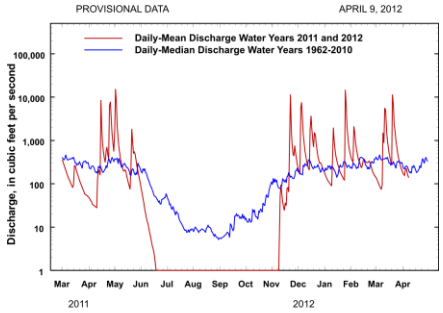
Data from U.S. Geological Survey

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 2011 and 2012
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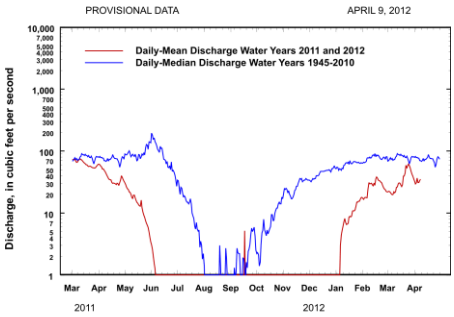
Data from U.S. Geological Survey

North Fork of the Red River near Carter

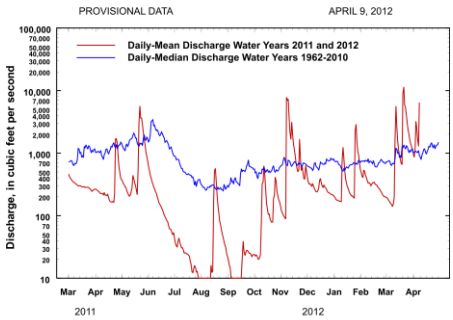
North Fork of the Red River near Carter, Oklahoma
Station No. 07301500 Southwest Oklahoma
Drainage Area 2,337 square miles



Comparison of daily discharges for water years 2011 and 2012
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 2011 and 2012
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.
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