Oklahoma Water Resources Bulletin
& Summary of Current Conditions

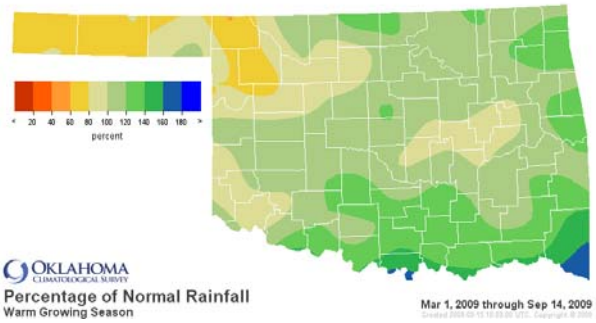
State of Oklahoma OWRB Water Resources Board the water agency

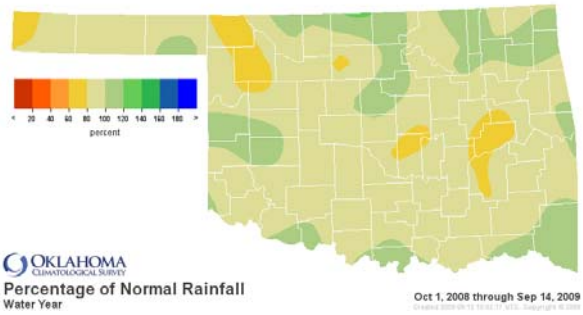
September 17, 2009

PRECIPITATION

Statewide Precipitation

Climate Division	Warm Growing Season March 1—September 14, 2009 Total Rainfall (inches)	Departure From Normal (inches)	Percent Of Normal	Rank Since 1921	Water Year October 1, 2008— September 14, 2009 Total Rainfall (inches)	Departure From Normal (inches)	Percent Of Normal	Rank Since 1921
Panhandle	11.80"	-3.88"	75%	18th driest	16.71"	-3.39"	83%	28th driest
North Central	21.71"	-0.08"	100%	34th wettest	27.82"	-2.16"	93%	43rd wettest
Northeast	30.47"	+4.13"	116%	18th wettest	39.36"	-0.07"	100%	32nd wettest
West Central	20.07"	+0.04"	100%	30th wettest	26.36"	-1.12"	96%	36th wettest
Central	26.20"	+2.11"	109%	22nd wettest	32.54"	-3.25"	91%	39th wettest
East Central	29.34"	+2.01"	107%	28th wettest	37.43"	-6.01"	86%	30th driest
Southwest	21.74"	+1.23"	106%	23rd wettest	26.70"	-2.29"	92%	42nd wettest
South Central	30.87"	+6.21"	125%	9th wettest	36.27"	-2.38"	94%	43rd wettest
Southeast	37.75"	+9.29"	133%	7th wettest	48.04"	-0.46"	99%	41st wettest
Statewide	25.51"	+2.29"	110%	17th wettest	32.26"	-2.40"	93%	42nd wettest

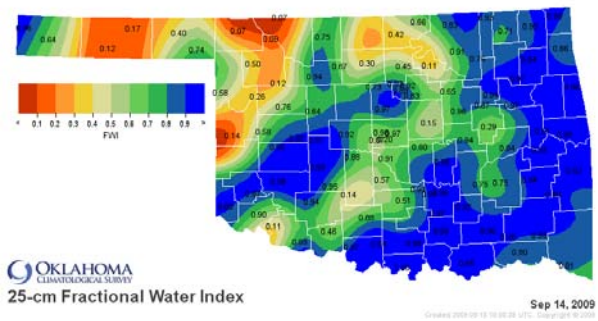


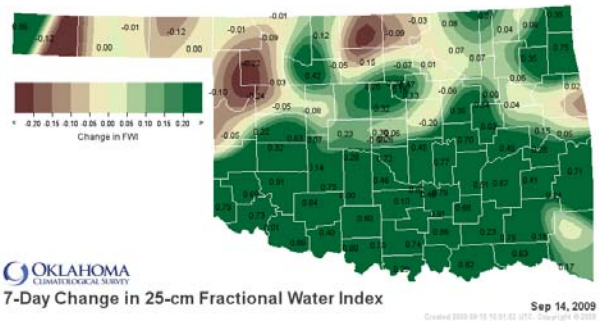


SOIL MOISTURE

Fractional Water Index[1]
September 14, 2009

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 August 2009

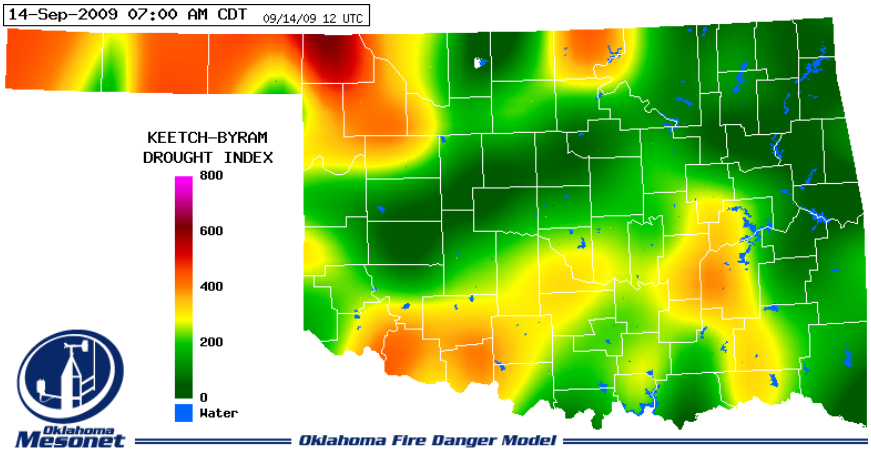
Climate Division	Current Status 9/12/2009	Value 9/12	Value 8/15	Change In Value	3-Month	6-Month	9-Month	12-Month
Northwest	NEAR NORMAL	0.18	-0.23	**0.41**	NEAR NORMAL	MODERATELY DRY	MODERATELY DRY	NEAR NORMAL
North Central	VERY MOIST SPELL	3.14	0.03	**3.11**	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
Northeast	UNUSUAL MOIST SPELL	2.51	-0.95	**3.46**	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
West Central	UNUSUAL MOIST SPELL	2.38	0.14	**2.24**	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
Central	MOIST SPELL	1.60	-0.21	**1.81**	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
East Central	MOIST SPELL	1.35	-1.22	**2.57**	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
Southwest	MOIST SPELL	1.23	-0.53	**1.76**	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	MODERATELY DRY
South Central	INCIPIENT MOIST SPELL	0.95	-0.14	**1.09**	NEAR NORMAL	MODERATELY WET	NEAR NORMAL	NEAR NORMAL
Southeast	MOIST SPELL	1.58	0.54	**1.04**	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL

- No climate divisions are currently experiencing drought conditions, according to the PDSI.
- No climate divisions have undergone PDSI moisture decreases since August 15.
- Only two climate divisions are experiencing near long-term dry conditions, according to the SPI.

Keetch-Byram Drought Fire Index[3]

Mesonet Station	County	Climate Division	Current Value 9/14/2009
Buffalo	Harper	Northwest	599
Kenton	Cimarron	Northwest	455
Beaver	Beaver	Northwest	447

- Stations currently at or above 600 (September 14) = 0
- Stations above 600 on August 19 = 1



[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.

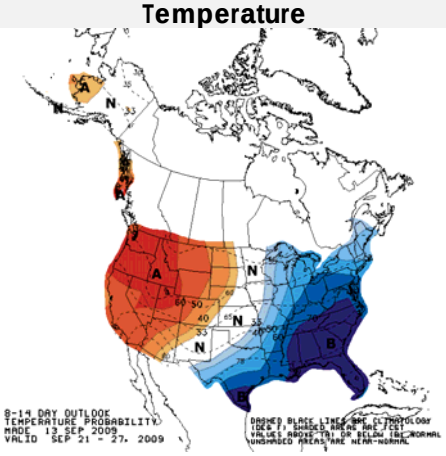
[2] The Standardized Precipitation Index, more sensitive than the PDSI, provides a comparison of precipitation over a specified period with precipitation totals from that same period for all years included in the historical record. The 3-month SPI provides a seasonal estimation of precipitation while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

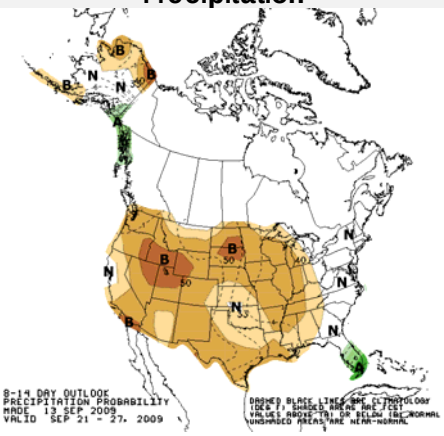
WEATHER/DROUGHT FORECAST

8- to 14-Day Outlook
September 21-27, 2009

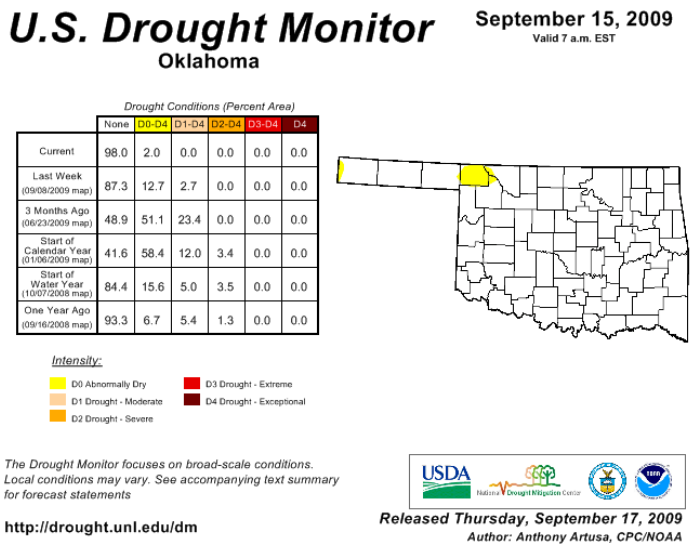
Temperature

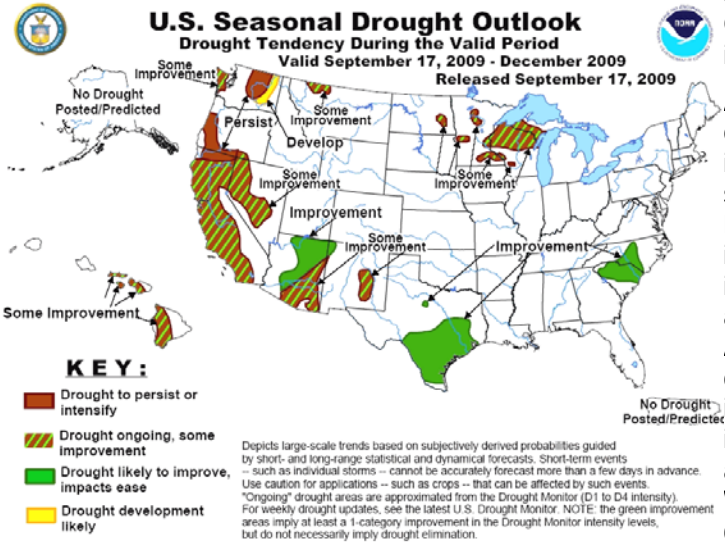


Precipitation



Regional Drought Summary & Outlook





September 15—The latest U.S. Drought Monitor reports that widespread, beneficial rains (generally 2.0 to 5.0 inches, locally heavier) fell across much of central Texas, Oklahoma, and southeast Louisiana, thanks to a nearby quasi-stationary frontal system and the availability of copious Gulf moisture. In Oklahoma, the steady, soaking rains over the past few days have resulted in the removal of D0 and D1 areas in southwestern parts of the state, with little to no precipitation reported across the Panhandle region. In north-central, central, and south-central Texas, the recent rains have provided much needed short-term relief for agriculture. These rains were mostly absorbed by dry soils, with a comparatively small fraction of this water being available to recharge rivers and streams. The longer-term, hydrologic drought is still far from over in this region. Localized amounts of 6 to 10 inches or more have been received in southern Dallas County and portions of nearby counties, and these heavy rain totals continue southward along the I-35 corridor to Jarrell, TX (about 40 miles north of Austin). In addition, generally 1.0 to 3.0 inches of rain has fallen across portions of the lower Rio Grande Valley. Therefore, significant, shorter term improvement is indicated for Texas.

According to the Drought Outlook (September 17), heavy early-September rains brought significant and widespread improvements to the drought conditions affecting central and southern Texas for the first time in several months, and the Drought Outlook through December 2009 calls for additional improvements throughout the region. Elsewhere, drought improvement is also anticipated by the end of December across the Carolinas and in most of central and northern Arizona. More limited improvement is forecast for many of the other areas of drought currently affecting the country, including the scattered areas from the western Great Lakes into the northern Plains, eastern New Mexico, east-central and southern Arizona, northwestern Montana, western Washington, much of southeastern Hawaii, and the multi-year drought affecting much of California and Nevada.

CROP REPORT

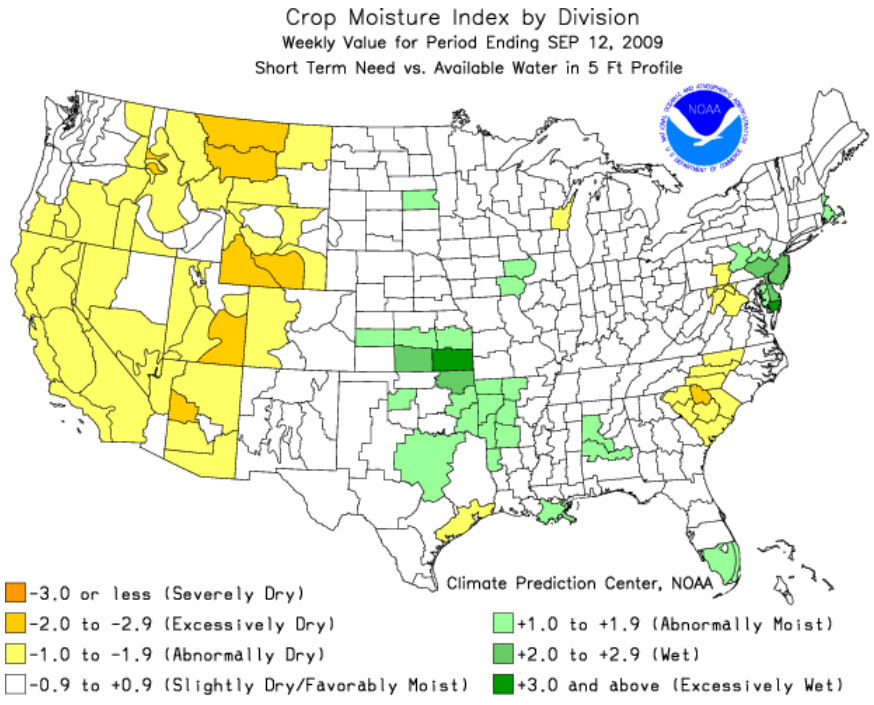
September 14, 2009—Scattered showers during the week and heavy weekend rains boosted summer crop and pasture conditions but delayed planting of small grains. Cool temperatures and cloudy days were experienced statewide. The Panhandle experienced continued dry weather, receiving less than half an inch of rainfall during the week. Soil moisture conditions are much improved from the previous week, as over two-thirds were rated in the surplus to adequate range for both topsoil and subsoil. There were 4.2 days suitable for field work.

Several days of wet weather delayed small grain planting in many areas. Wheat seedbed preparation reached 74 percent, while nine percent of the 2010 wheat crop was planted by week's end, both behind normal. Rye seedbed preparations were 76 percent complete while plantings were 22 percent complete. Oat seedbed preparation reached 58 percent complete and a small portion of the 2010 oat crop had been planted by Sunday.

Widespread precipitation and cooler temperatures provided a boost to row crop conditions, continuing to rate mostly in the good to fair range. Ninety-one percent of the state's corn crop had reached the dent stage by Sunday, while 58 percent of the crop had reached maturity, eight points behind the five-year average. Corn harvest continues, although the wet weather halted combines over the weekend. Many producers are seeing high levels of aflatoxin in harvested corn. By week's end, nearly a quarter of the corn had been harvested, up two points from the previous week but 20 points behind normal. Sorghum headed is nearing completion at 96 percent, while 62 percent of the sorghum was coloring by Sunday, up 12 points from the previous week. Sixteen percent of the sorghum had reached maturity by week's end, 11 points behind normal, while a small portion of the crop was harvested. Nearly all of the state's soybean crop was setting pods by week's end, while 13 percent of the crop had reached maturity, 16 points behind the five-year average. Seventeen percent of the soybean crop is rated in excellent condition. Peanuts setting pods was virtually complete while peanuts reaching maturity was at 21 percent, 25 points behind normal. Bolls were opening on 35 percent of the state's cotton acreage, up nine points from last week but three points behind the five-year average. More sunshine is needed to help mature the bolls. The Oklahoma watermelon harvest is winding down at 93 percent complete, six points behind the five-year average.

Rainy weather hampered cutting and baling activities. Conditions of both alfalfa and other hay rated mostly in the good to fair range. As of Sunday, fourth cuttings of alfalfa reached 81 percent complete, up two points from the prior week but eight points behind normal. A fifth cutting was completed on 17 percent of the state's alfalfa acres, 19 points behind the five-year average. Producers completed a second cutting on 64 percent of the other hay acres, five points behind normal.

Pastures are on the rebound in most areas, due to the heavy rainfall and cooler temperatures. Pasture and range conditions continued to rate mostly in the good to fair range. Livestock conditions continued to rate mostly in the good to fair range. Average livestock marketings were reported last week.



RESERVOIR STORAGE

- 18 reservoirs are currently operating at less than full capacity (compared to 16 four weeks ago).
- 15 reservoirs have experienced lake level decreases.

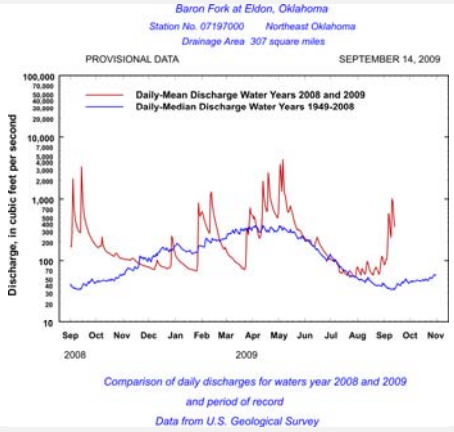
Storage in Selected Oklahoma Lakes & Reservoirs
September 15, 2009

Lake or Reservoir	*Normal Pool Elevation* (feet)	*Previous Elevation 08/19/2009* (feet)	*Current Elevation 09/15/2009* (feet)	*Change in Elevation* (feet)	*Current Flood Control Storage* (acre-feet)
North Central					
Fort Supply	2004.00	2002.94	2002.74	(0.20)	(2,116)
Great Salt Plains	1125.00	1125.62	1126.24	0.62	10,673
Kaw*	1008.00	1008.53	1009.20	0.67	19,500
Northeast					
Birch	750.50	751.37	750.39	(0.98)	(126)
Copan	710.00	710.25	711.72	1.47	9,760
Fort Gibson	554.00	556.17	557.94	1.77	80,504
Grand*	741.00	742.75	746.75	4.00	261,000
Hudson	619.00	620.04	622.97	2.93	45,946
Hulah	733.00	733.05	733.17	0.12	1,048
Keystone*	723.00	722.82	726.53	3.71	73,209
Oologah*	638.00	638.05	645.61	7.56	267,822
Skiatook	714.00	713.21	712.99	(0.22)	(10,189)
West Central					
Canton	1615.40	1614.74	1614.56	(0.18)	(6,538)
Foss	1642.00	1641.05	1641.03	(0.02)	(6,479)
Central					
Arcadia	1006.00	1006.54	1006.74	0.20	1,376
Heyburn	761.50	760.72	760.99	0.27	(513)
Thunderbird	1039.00	1038.42	1038.35	(0.07)	(3,900)
East Central					
Eufaula*	585.00	584.89	584.86	(0.03)	(12,983)
Tenkiller	632.00	631.38	634.22	2.84	29,082
Southwest					
Fort Cobb	1342.00	1341.90	1342.68	0.78	2,647
Lugert-Altus	1559.00	1540.78	1534.13	(6.65)	(104,540)
Tom Steed	1411.00	1406.51	1406.94	0.43	(23,656)
South Central					
Arbuckle	872.00	872.02	871.81	(0.21)	(441)
McGee Creek**	175.90	175.98	175.84	(0.14)	(727)
Texoma*	616.50	617.37	616.08	(1.29)	(30,943)
Waurika*	951.40	951.04	950.77	(0.27)	(6,286)
Southeast					
Broken Bow*	602.50	600.36	598.72	(1.64)	(54,224)
Hugo*	404.50	404.54	404.11	(0.43)	(42,721)
Pine Creek*	440.00	440.21	440.13	(0.08)	558
Sardis	599.00	598.85	598.85	0.00	(2,009)
Wister	478.00	477.63	477.85	0.22	(879)

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

STREAMFLOW CONDITIONS

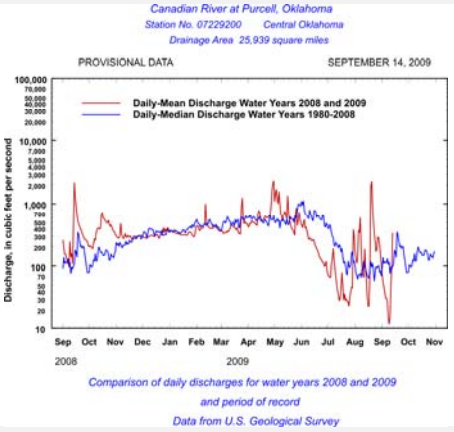
Baron Fork at Eldon



Comparison of daily discharges for waters year 2008 and 2009 and period of record

Data from U.S. Geological Survey

Canadian River at Purcell



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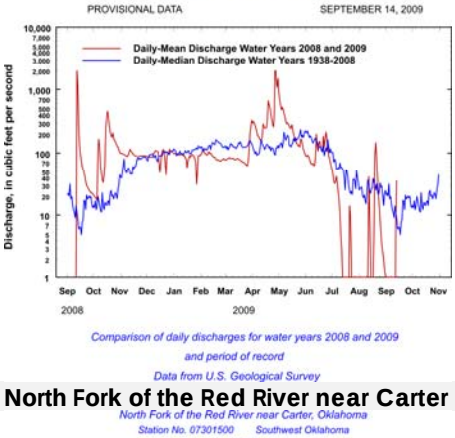
Cimarron River near Waynoka



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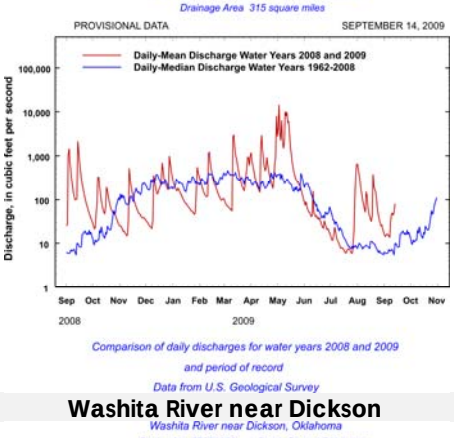
Glover River near Glover



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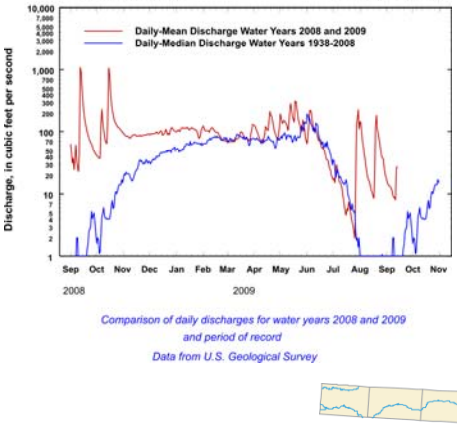
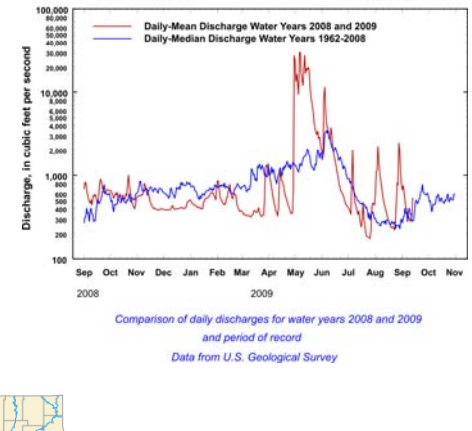
North Fork of the Red River near Carter



Comparison of daily discharges for water years 2008 and 2009 and period of record

Data from U.S. Geological Survey

Washita River near Dickson



Comparison of daily discharges for water years 2008 and 2009 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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