# Oklahoma Water Resources Bulletin
## & Summary of Current Conditions

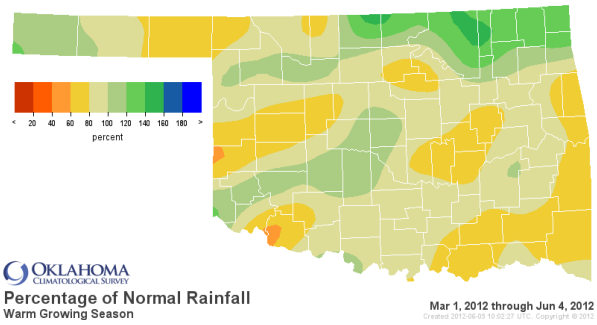
State of Oklahoma OWRB Water Resources Board the water agency

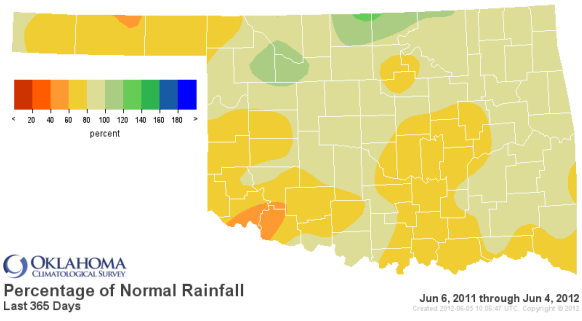
June 7, 2012

## PRECIPITATION

### Statewide Precipitation

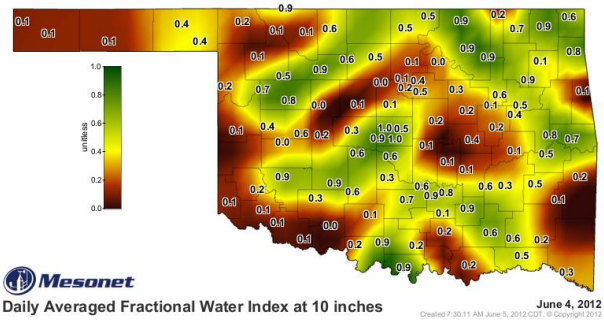
| Climate Division | Warm Growing Season March 1, 2012 – June 4, 2012 Total Rainfall (inches) | Departure From Normal (inches) | Percent Of Normal | Rank Since 1921 | Last 365 Days June 6, 2011 – June 4, 2012 Total Rainfall (inches) | Departure From Normal (inches) | Percent Of Normal | Rank Since 1921 |
|---|---|---|---|---|---|---|---|---|
| Panhandle | 5.85" | -1.39" | 81% | 41st driest | 14.90" | -6.10" | 71% | 14th driest |
| North Central | 10.75" | -0.14" | 99% | 32nd wettest | 30.25" | -1.27" | 96% | 41st wettest |
| Northeast | 16.07" | +2.30" | 117% | 15th wettest | 37.53" | -4.28" | 90% | 43rd driest |
| West Central | 7.68" | -2.73" | 74% | 30th driest | 22.03" | -6.93" | 76% | 21st driest |
| Central | 11.88" | -1.13" | 91% | 40th wettest | 30.89" | -6.95" | 82% | 29th driest |
| East Central | 12.09" | -2.86" | 81% | 27th driest | 36.98" | -8.95" | 81% | 23rd driest |
| Southwest | 9.74" | -0.71" | 93% | 41st wettest | 22.47" | -8.19" | 73% | 13th driest |
| South Central | 11.27" | -2.26" | 83% | 32nd driest | 30.45" | -10.36" | 75% | 10th driest |
| Southeast | 12.68" | -3.28" | 79% | 24th driest | 41.43" | -9.35" | 82% | 18th driest |
| **Statewide** | 11.01" | -1.24" | 90% | 43rd driest | 29.73" | -6.82" | 81% | 22nd driest |

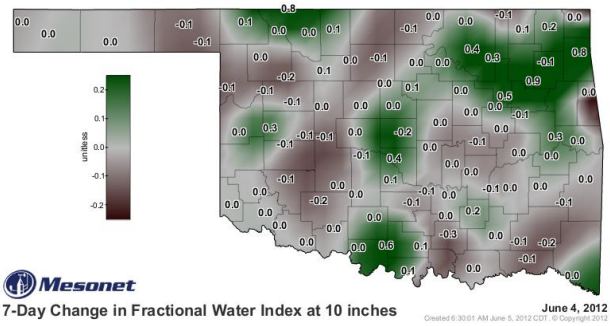



## SOIL MOISTURE

### Fractional Water Index[1] June 4, 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]

| Climate Division | Current Status 6/2/2012 | Value 6/2 | Value 5/5 | Change In Value |
|---|---|---|---|---|
| Northwest | MODERATE DROUGHT | -2.60 | -0.01 | **-2.59** |
| North Central | MOIST SPELL | 1.29 | 3.36 | **-2.07** |
| Northeast | MILD DROUGHT | -1.14 | 1.20 | **-2.34** |
| West Central | NEAR NORMAL | 0.02 | 1.19 | **-1.17** |
| Central | NEAR NORMAL | -0.28 | 1.04 | **-1.32** |
| East Central | MODERATE DROUGHT | -2.11 | -0.79 | **-1.32** |
| Southwest | INCIPIENT DROUGHT | -0.64 | 0.31 | **-0.95** |
| South Central | INCIPIENT DROUGHT | -0.99 | 0.39 | **-1.38** |
| Southeast | MODERATE DROUGHT | -2.40 | -0.66 | **-1.74** |

### Standardized Precipitation Index[2] Through April 2012

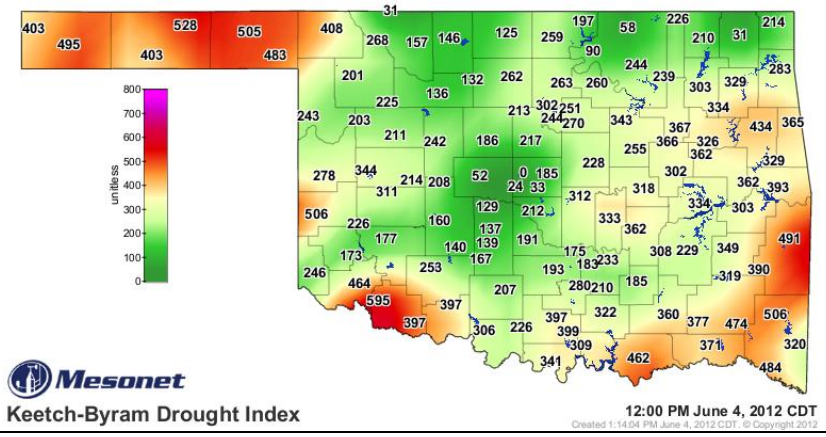
| Climate Division | 3-Month | 6-Month | 9-Month | 12-Month |
|---|---|---|---|---|
| Northwest | VERY WET | EXTREMELY WET | VERY WET | NEAR NORMAL |
| North Central | EXTREMELY WET | EXTREMELY WET | VERY WET | NEAR NORMAL |
| Northeast | VERY WET | VERY WET | MODERATELY WET | NEAR NORMAL |
| West Central | MODERATELY WET | MODERATELY WET | NEAR NORMAL | MODERATELY DRY |
| Central | MODERATELY WET | VERY WET | NEAR NORMAL | NEAR NORMAL |
| East Central | NEAR NORMAL | VERY WET | NEAR NORMAL | NEAR NORMAL |
| Southwest | VERY WET | VERY WET | NEAR NORMAL | NEAR NORMAL |
| South Central | NEAR NORMAL | VERY WET | NEAR NORMAL | NEAR NORMAL |
| Southeast | MODERATELY DRY | MODERATELY WET | NEAR NORMAL | MODERATELY DRY |

- Four climate divisions are experiencing drought conditions, according to the PDSI. All nine climate divisions have undergone a PDSI moisture decrease since May 5.
- Only two 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 6/4/2012 |
|---|---|---|
| Tipton | Southwest | 595 |
| Hooker | Panhandle | 528 |
| Erick | West Central | 506 |

- Stations currently at or above 600 (June 4) = 0
- Stations above 600 on May 7 = 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.*

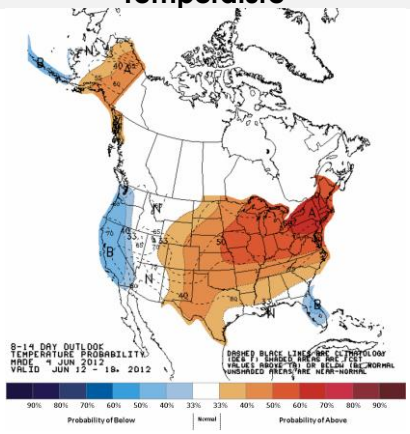
[2] *The Standardized Precipitation Index, more sensitive than the PDSI, provides a comparison of precipitation over a specified period with precipitation totals from that same period for all years included in the historical record. The 3-month SPI provides a seasonal estimation of precipitation while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

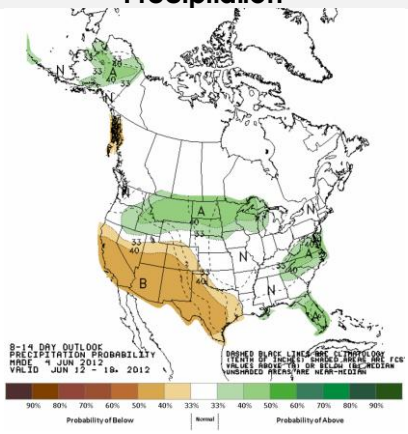
# WEATHER/DROUGHT FORECAST

## 8- to 14-Day Outlook
**June 12-19, 2012**

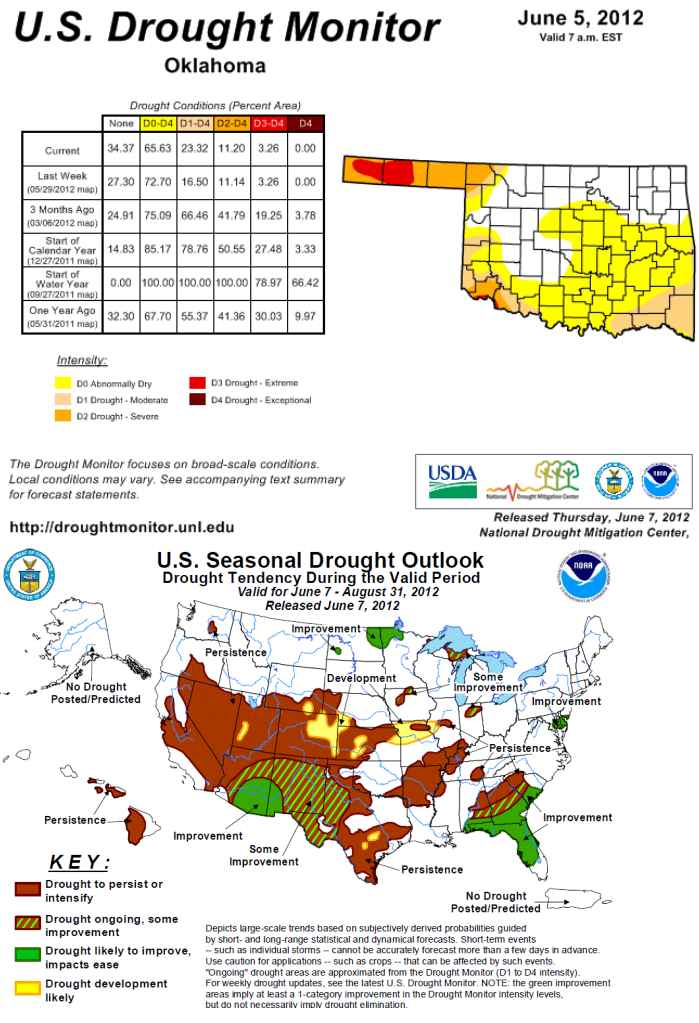
### Temperature




### Precipitation




## Regional Drought Summary & Outlook







June 5—The latest U.S. Drought Monitor reports that with the late spring and early summer months normally the wettest time of the year in the High Plains, several weeks of dry and warm weather usually does not bode well for moisture conditions. Unfortunately after a relatively wet and warm April, drier and warmer weather enveloped the central High Plains during May and early June. Some county reports indicated that pastures have begun to show signs of stress.

Moderate to heavy rains fell on south-central and southeastern Kansas, northern and eastern Oklahoma, and parts of northern Texas and the Texas Panhandle, but most of this rain fell on non-drought areas of Kansas and Oklahoma (although northeastern Oklahoma was trending back toward D0-D1). Fortunately in Texas, the rain did provide some relief, with some trimming of D1 to D4 areas in the northern Panhandle where 1 to 3 inches fell. Farther southeast, however, another dry and warm week expanded D1 across southeastern Texas, with some small areas degrading into D2 that had larger short-term deficits.

Overall, dryness held steady in Oklahoma as only about 14 percent of the state is currently experiencing at least Moderate Drought, about the same as four weeks ago. Just over three percent of the state remains in at least Extreme Drought, entirely in the western Panhandle region.

According to the latest Drought Outlook (June 7), La Niña conditions in the equatorial Pacific transitioned to ENSO-neutral during Spring 2012. ENSO-neutral conditions are expected to continue this summer. Persistence and slight expansion of drought can be expected across the central/southern Great Plains and middle Mississippi Valley. During the upcoming three month period, drought persistence is expected across the Great Basin and central Rockies due to a dry climatology. The onset of the monsoon season may bring some relief to portions of the Southwest.

## *CROP REPORT*

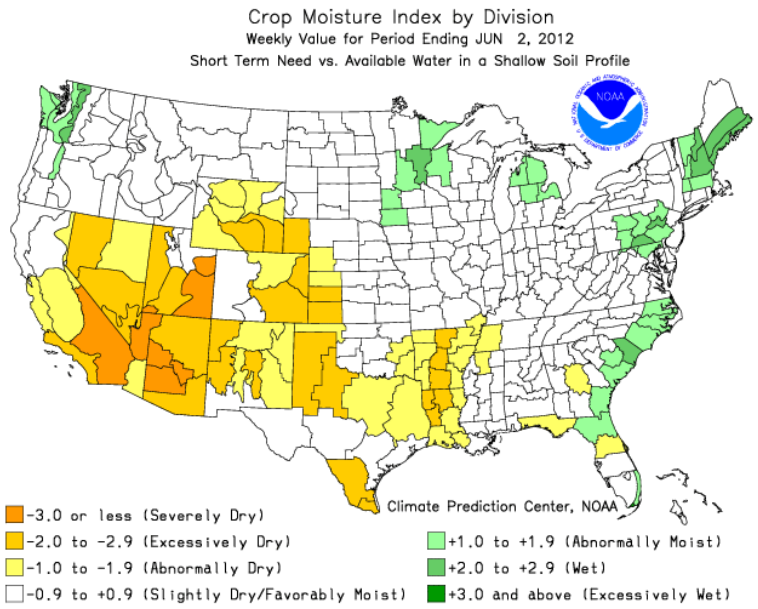
June 4, 2012 –The month of May ended last week as the fifth warmest and fourth driest on record, according to Oklahoma Mesonet data. A few severe thunderstorms throughout the week brought an inch of rain on average for the state. All Mesonet stations recorded some precipitation for the week. Hail and high winds were also reported around the state, damaging wheat that was not yet harvested. Wheat was still rated mostly good and harvest was 60 points ahead of the five-year average by the end of the week while the canola harvest was virtually complete. Topsoil moisture conditions improved slightly with 45 percent rated adequate and 40 percent rated short. Subsoil moisture was rated 36 percent adequate and 46 percent short. There were 5.7 days suitable for field work.

Wheat harvest made significant progress, despite slowing down for wet fields. Hail and wind damage was reported, but conditions continued to be rated mostly good. The wheat harvest was 73 percent complete by Sunday, 60 points ahead of the five-year average. The canola harvest was virtually complete by the end of the week. Rye harvest was 49 percent complete, 43 points ahead of normal. Oat heading was 98 percent complete and 89 percent was in the soft dough stage by Sunday. The oat harvest was also well ahead of normal, with 48 percent harvested by week's end.

Planting on single-cropped acreage was winding down. Conditions of most emerging row crops were rated mostly good while cotton was rated good to fair. Sorghum seedbed preparation was 96 percent complete by Sunday. Sorghum planting was 72 percent complete and 47 percent had emerged by the end of the week, 20 points ahead of normal. Soybean seedbed preparation was 93 percent complete by week's end. Soybean planting was 66 percent complete and 55 percent had emerged by Sunday. Peanut planting was 95 percent complete and 72 percent of the crop had emerged by the end of the week. Cotton seedbed preparation was 94 percent complete. Cotton planting was 63 percent complete and half of the crop was emerged by Sunday. The watermelon crop had 72 percent of plants running vines by week's end and 15 percent was setting fruit.

Cutting of hay was well ahead of normal although condition ratings continued to decline; alfalfa hay was rated mostly good and other hay was rated good to fair. A second cutting of alfalfa was 55 percent complete by the end of the week, 37 points ahead of normal. A first cutting of other hay was 76 percent complete, 33 points ahead of the five-year average.

Pasture and range conditions were rated mostly good to fair. Condition ratings worsened slightly as the long-term lack of adequate rainfall continued to impact pasture. Livestock conditions continued to be rated mostly good.



## RESERVOIR STORAGE

- 18 major reservoirs are currently operating at less than full capacity (compared to 13 four weeks ago).
- 27 reservoirs have experienced lake level decreases.

**Storage in Selected Oklahoma Lakes & Reservoirs**
*June 5, 2012*

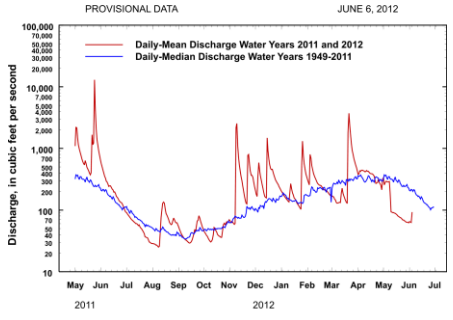
| Lake or Reservoir | Normal Pool Elevation (feet) | Previous Elevation 5/8/2012 (feet) | Current Elevation 6/5/2012 (feet) | Change in Elevation (feet) | Current Flood Control Storage (acre-feet) |
|---|---|---|---|---|---|
| **North Central** | | | | | |
| Fort Supply | 2004.00 | 2003.98 | 2003.87 | (0.11) | (215) |
| Great Salt Plains | 1125.00 | 1125.77 | 1125.11 | (0.66) | 1,144 |
| Kaw* | 1010.50 | 1012.64 | 1011.15 | (1.49) | 10,504 |
| **Northeast** | | | | | |
| Birch | 750.50 | 751.59 | 752.91 | 1.32 | 2,570 |
| Copan | 710.00 | 722.77 | 710.54 | (12.23) | 2,460 |
| Fort Gibson | 554.00 | 555.07 | 554.38 | (0.69) | 7,334 |
| Grand* | 744.00 | 745.09 | 743.94 | (1.15) | (2,454) |
| Hudson | 619.00 | 620.38 | 619.46 | (0.92) | 5,115 |
| Hulah | 733.00 | 747.91 | 735.26 | (12.65) | 7,862 |
| Keystone | 723.00 | 726.56 | 724.37 | (2.19) | 23,868 |
| Oologah | 638.00 | 647.97 | 638.29 | (9.68) | 8,406 |
| Skiatook | 714.00 | 708.72 | 710.00 | 1.28 | (39,037) |
| **West Central** | | | | | |
| Canton | 1615.40 | 1609.14 | 1609.08 | (0.06) | (42,763) |
| Foss | 1642.00 | 1635.10 | 1634.82 | (0.28) | (44,098) |
| **Central** | | | | | |
| Arcadia | 1006.00 | 1005.94 | 1007.27 | 1.33 | 2,431 |
| Heyburn | 761.50 | 761.60 | 761.11 | (0.49) | (259) |
| Thunderbird | 1039.00 | 1037.07 | 1036.62 | (0.45) | (13,890) |
| **East Central** | | | | | |
| Eufaula | 585.00 | 585.70 | 584.44 | (1.26) | (51,926) |
| Tenkiller | 632.00 | 632.64 | 631.37 | (1.27) | (8,057) |
| **Southwest** | | | | | |
| Fort Cobb | 1342.00 | 1339.92 | 1339.80 | (0.12) | (7,947) |
| Lugert-Altus | 1559.00 | 1534.80 | 1535.09 | 0.29 | (102,062) |
| Tom Steed | 1411.00 | 1404.51 | 1404.03 | (0.48) | (38,316) |
| **South Central** | | | | | |
| Arbuckle | 872.00 | 872.63 | 872.33 | (0.30) | 785 |
| McGee Creek** | 175.90 | 176.17 | 176.03 | (0.14) | 1,604 |
| Texoma* | 619.00 | 616.93 | 616.70 | (0.23) | (198,423) |
| Waurika | 951.40 | 945.76 | 945.14 | (0.62) | (58,134) |
| **Southeast** | | | | | |
| Broken Bow* | 602.50 | 599.87 | 598.00 | (1.87) | (61,219) |
| Hugo* | 406.00 | 405.21 | 404.06 | (1.15) | (24,953) |
| Pine Creek | 433.00 | 432.70 | 431.52 | (1.18) | (3,959) |
| Sardis | 599.00 | 599.22 | 598.96 | (0.26) | (532) |
| Wister | 478.00 | 478.52 | 478.23 | (0.29) | 1,220 |

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

# STREAMFLOW CONDITIONS

## Baron Fork at Eldon

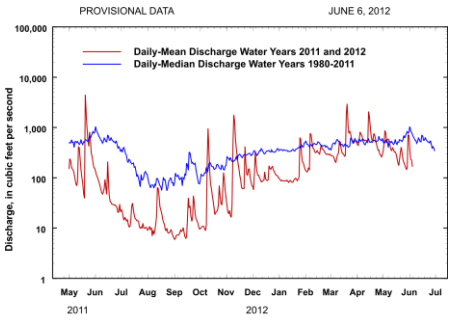
*Baron Fork at Eldon, Oklahoma*
*Station No. 07197000 Northeast Oklahoma*
*Drainage Area 307 square miles*




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

## Canadian River at Purcell

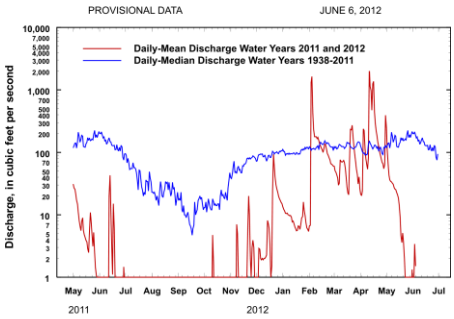
*Canadian River at Purcell, Oklahoma*
*Station No. 07229200 Central Oklahoma*
*Drainage Area 25,939 square miles*




*Comparison of daily discharges for water years 2011 and 2012*
*and period of record*
*Data from U.S. Geological Survey*

## Cimarron River near Waynoka

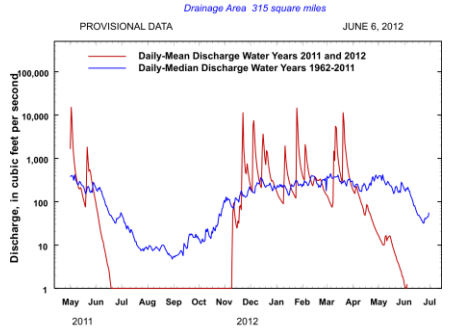
*Cimarron River near Waynoka, Oklahoma*
*Station No. 07158000 Northwest Oklahoma*
*Drainage Area 13,334 square miles*




*Comparison of daily discharges for water years 2011 and 2012*
*and period of record*
*Data from U.S. Geological Survey*

## Glover River near Glover

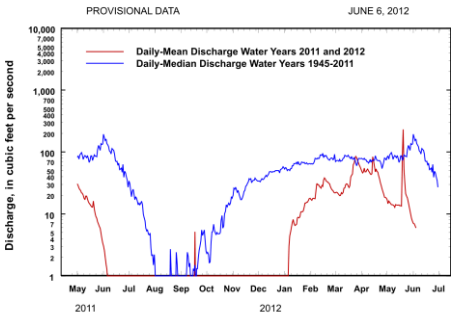
*Glover River near Glover, Oklahoma*
*Station No. 07337900 Southeast Oklahoma*
*Drainage Area 315 square miles*




*Comparison of daily discharges for water years 2011 and 2012*
*and period of record*
*Data from U.S. Geological Survey*

## North Fork of the Red River near Carter

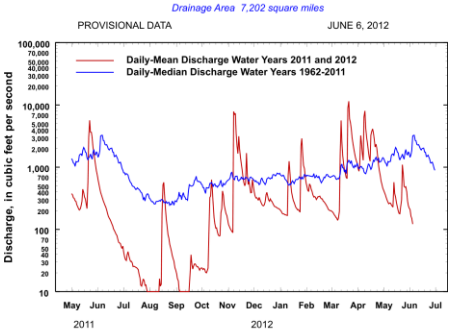
*North Fork of the Red River near Carter, Oklahoma*
*Station No. 07301500 Southwest Oklahoma*
*Drainage Area 2,337 square miles*




*Comparison of daily discharges for water years 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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