

Oklahoma Water Resources Bulletin & Summary of Current Conditions

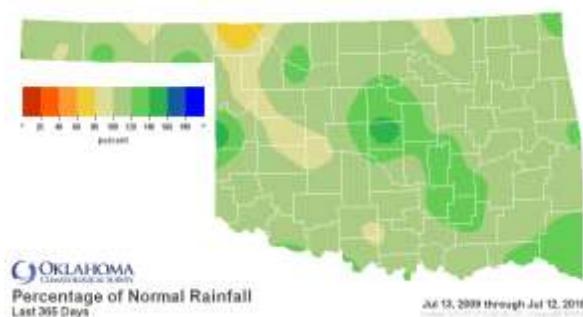
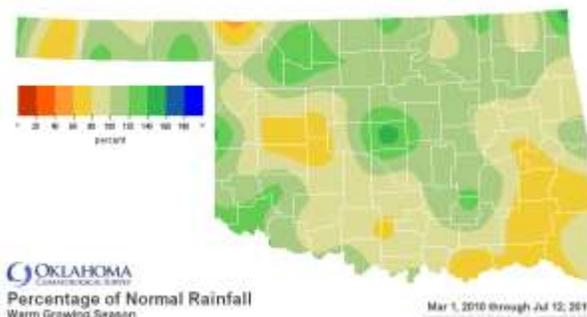


July 15, 2010

PRECIPITATION

Statewide Precipitation

CLIMATE DIVISION	Warm Growing Season March 1 – July 12, 2010				Last 365 Days July 13, 2009 – July 12, 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	10.44"	-0.32"	97%	37th wettest	21.11"	+0.01"	100%	37th wettest
North Central	17.25"	+1.79"	112%	18th wettest	33.68"	+2.03"	106%	24th wettest
Northeast	20.27"	+1.28"	107%	26th wettest	47.41"	+5.44"	113%	20th wettest
West Central	12.59"	-1.99"	86%	42nd driest	30.63"	+1.54"	105%	20th wettest
Central	20.03"	+2.07"	112%	19th wettest	45.66"	+7.67"	120%	8th wettest
East Central	18.98"	-1.35"	93%	45th wettest	50.89"	+4.80"	110%	19th wettest
Southwest	15.01"	+0.10"	101%	36th wettest	33.34"	+2.54"	108%	15th wettest
South Central	17.34"	-1.19"	94%	42nd wettest	45.82"	+4.86"	112%	16th wettest
Southeast	16.10"	-5.32"	75%	20th driest	58.86"	+7.92"	116%	14th wettest
Statewide	16.70"	-0.30"	98%	37th wettest	40.91"	+4.22"	111%	18th wettest

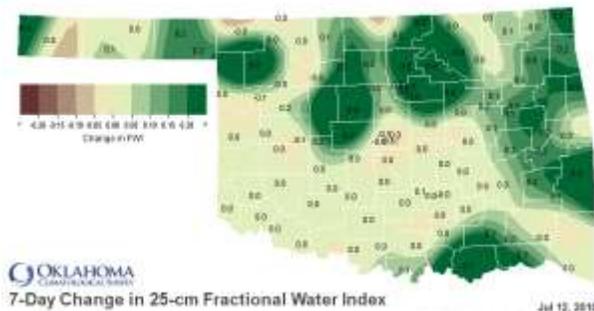
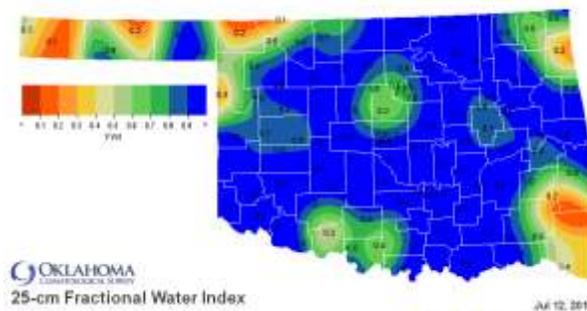


SOIL MOISTURE

Fractional Water Index¹

July 12, 2010

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.

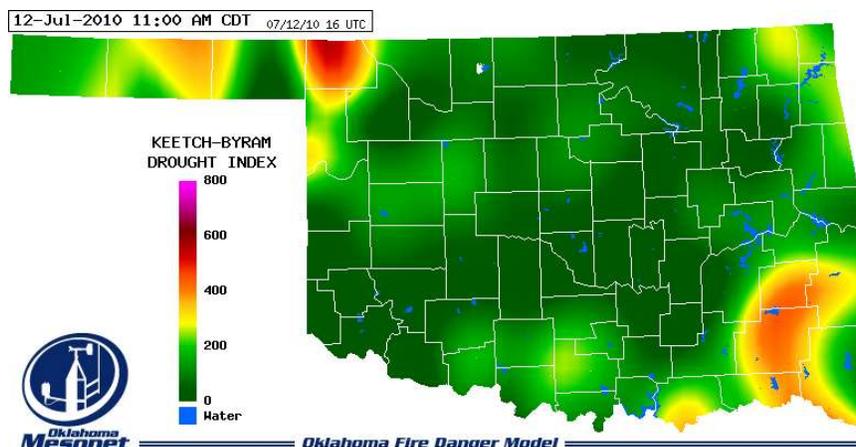
DROUGHT INDICES

Palmer Drought Severity Index ¹					Standardized Precipitation Index ² Through June 2010			
CLIMATE DIVISION	CURRENT STATUS 7/10/2010	VALUE		CHANGE IN VALUE	3-MONTH	6-MONTH	9-MONTH	12-MONTH
		7/10	6/12					
Northwest	MOIST SPELL	1.49	1.81	-0.32	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
North Central	VERY MOIST SPELL	3.09	2.26	0.83	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
Northeast	INCIPIENT MOIST SPELL	0.94	0.31	0.63	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	MODERATELY WET
West Central	INCIPIENT MOIST SPELL	0.91	0.30	0.61	MODERATELY DRY	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
Central	UNUSUAL MOIST SPELL	2.39	0.40	1.99	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	MODERATELY WET
East Central	NEAR NORMAL	-0.10	-1.18	1.08	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
Southwest	MOIST SPELL	1.52	-1.38	2.90	MODERATELY DRY	MODERATELY DRY	MODERATELY DRY	NEAR NORMAL
South Central	NEAR NORMAL	-0.08	-0.58	0.50	MODERATELY DRY	MODERATELY DRY	NEAR NORMAL	NEAR NORMAL
Southeast	MILD DROUGHT	-1.23	-0.56	-0.67	MODERATELY DRY	NEAR NORMAL	NEAR NORMAL	MODERATELY WET

- One climate division is currently experiencing drought conditions, according to the PDSI.
- Two climate divisions have undergone PDSI moisture decreases since June 12.
- Four climate divisions are experiencing near long-term dry conditions, according to the SPI.

Keetch-Byram Drought Fire Index³

MESONET STATION	COUNTY	CLIMATE DIVISION	CURRENT VALUE 7/12/2010	
Buffalo	Harper	Northwest	514	<ul style="list-style-type: none"> • Stations currently at or above 600 (July 12) = 0 • Stations above 600 on June 14 = 0
Talihina	LeFlore	Southeast	497	
Cloudy	Pushmataha	Southeast	447	



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.

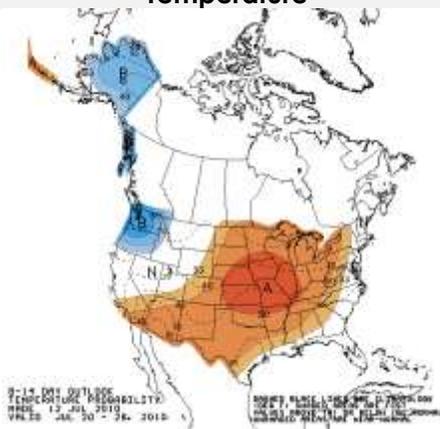
² The Standardized Precipitation Index, more sensitive than the PDSI, provides a comparison of precipitation over a specified period with precipitation totals from that same period for all years included in the historical record. The 3-month SPI provides a seasonal estimation of precipitation while the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

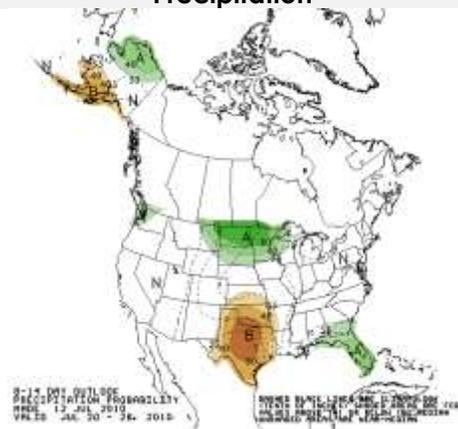
WEATHER/DROUGHT FORECAST

8- to 14-Day Outlook July 20 – 26, 2010

Temperature



Precipitation

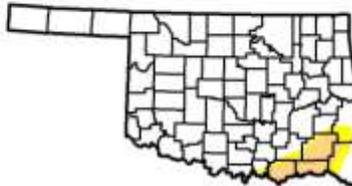


Regional Drought Summary & Outlook

U.S. Drought Monitor Oklahoma

July 13, 2010
Valid 7 a.m. EST

	Drought Conditions (Percent Area)					
	None	D1-D4	D1-D4	D2-D4	D3-D4	D4
Current	92.8	7.2	4.7	0.0	0.0	0.0
Last Week (20/06/2010 map)	92.8	7.2	4.7	0.0	0.0	0.0
3 Months Ago (04/03/2010 map)	92.0	8.0	0.0	0.0	0.0	0.0
Start of Calendar Year (01/01/2010 map)	100.0	0.0	0.0	0.0	0.0	0.0
Start of Water Year (11/01/2009 map)	96.0	2.0	0.0	0.0	0.0	0.0
One Year Ago (07/14/2009 map)	15.9	84.1	38.5	0.0	0.0	0.0



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

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

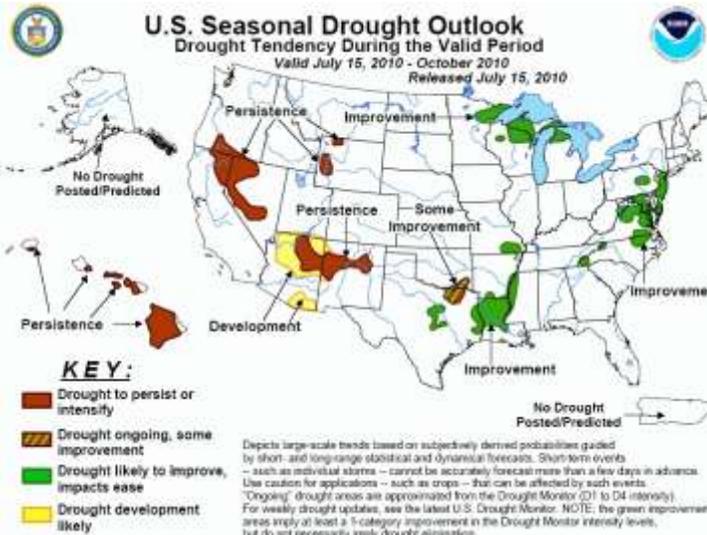
<http://drought.unl.edu/dm>

USDA
 Released Thursday, July 15, 2010
 Author: A. Artus, CPC/NOAA

July 13 – The latest U.S. Drought Monitor reports that during the past week heavy rain (2 inches or more) fell across much of eastern and southern Oklahoma, northern, central, and southeastern Texas, northern Arkansas, and portions of Louisiana. Even with this beneficial rainfall, it is unclear as to what significant improvements can be made in the drought depiction at this time, and a reassessment of conditions will be made next week for possible modifications. In the west, only light shower activity was reported over portions of the northern and central Rockies. No changes have been made to the regional drought depiction this week. Light to moderate showers (up to an inch) fell over central and southeastern Arizona, with a few spotty locations receiving between 1.5 and 2.5 inches of precipitation. Monsoonal showers and thunderstorms are gradually increasing in coverage across both Arizona and New Mexico. About a dozen sites in New Mexico, mostly in the southern part of the state, reported rainfall amounts in excess of 2 inches.

According to the Drought Outlook (July 15), hot, dry weather has led to drought development for the lower Mississippi Valley and parts of northern Texas. Improvement is forecast by the end October, but no relief is expected during the latter half of July. Since the beginning of June, major drought improvement has occurred across the upper Mississippi Valley and Great Lakes region. Improvement is likely to continue. The southwest monsoon that typically peaks during August has started weakly. Most tools on the monthly and seasonal time scales indicate a tilt in the odds for below median rainfall. Therefore, persistence or development is forecast for Arizona and New Mexico.

U.S. Seasonal Drought Outlook Drought Tendency During the Valid Period Valid July 15, 2010 - October 2010 Released July 15, 2010



CROP REPORT

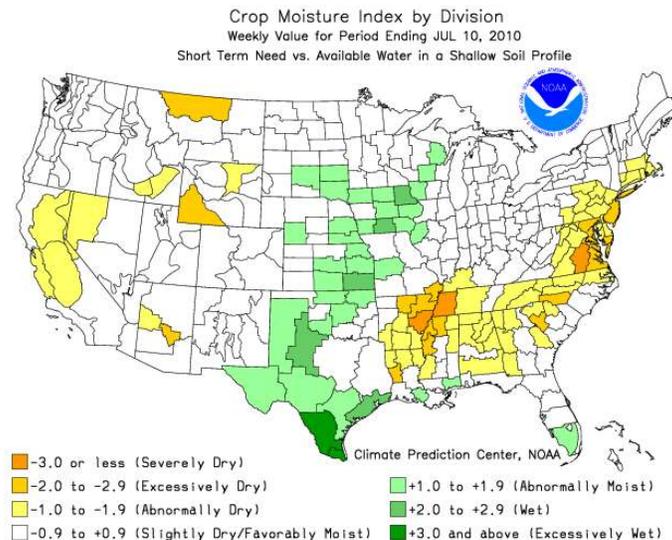
July 12, 2010 – Heavy rains and flash flooding returned to Oklahoma this week, providing needed moisture for most of the state, but resulting in dangerous conditions in some areas. Hobart received 10.94 inches of rain for the week, most of which fell on Monday. Despite extensive rainfall in some areas of the state, there were still parts of the Panhandle and southeast in need of additional moisture. Flood damage to crops was reported for 17 percent of the state, with 11 percent light and six percent moderate damage. Topsoil and subsoil conditions were rated in the adequate to surplus range with 32 percent of topsoil conditions rated surplus and 20 percent of subsoil conditions rated surplus. Average temperatures remained in the mid-to high-70's. Rainfall allowed only 2.5 days suitable for field work.

Rainfall limited field work and slowed the completion of wheat harvest. Wheat harvested reached 92 percent complete, an increase of only two points from the previous week, and two points behind normal. Sixty percent of wheat ground was plowed by week's end. Oats harvested was virtually complete by week's end. Sixty percent of both rye and oats were plowed by Sunday.

Crop conditions improved slightly from the week prior due to the ample rainfall which also provided for considerable crop progress. Corn silking reached 82 percent complete, a 29 point increase from the week prior and nineteen points ahead of normal. Virtually all sorghum was emerged by Sunday, 19 points ahead of the five-year average. Sorghum headed reached 16 percent complete, seven points ahead of normal. Virtually all soybeans were emerged by week's end, 15 points ahead of normal, while 21 percent of the crop had bloomed, a 14 point increase from the week prior. Peanuts pegging reached 60 percent complete by week's end and 18 percent of the plants were setting pods. Cotton squaring increased substantially to reach 74 percent complete, 23 points ahead of the five-year average. Eighteen percent of the cotton crop was setting bolls by week's end. Ninety-four percent of watermelons were setting fruit by week's end, six points ahead of normal. Harvest began with five percent complete, well behind the five-year average.

Both alfalfa and other hay conditions continue to be rated mostly in the good to fair range, however, rainfall limited the cutting of hay and little progress was made. A third cutting of alfalfa was 42 percent complete by week's end. First cuttings of other hay remained at 77 percent complete.

Pasture and range conditions were rated mostly in the good to fair range, with 14 percent rated excellent. Livestock conditions rated mostly in the good to fair range with 11 percent rated excellent.



RESERVOIR STORAGE

- 7 reservoirs are currently operating at less than full capacity (compared to 10 four weeks ago).
- 14 reservoirs have experienced lake level decreases.

Storage in Selected Oklahoma Lakes & Reservoirs					
July 13, 2010					
Lake or Reservoir	Normal Pool Elevation (feet)	Previous Elevation 06/16/2010 (feet)	Current Elevation 07/13/2010 (feet)	Change in Elevation (feet)	Current Flood Control Storage (acre-feet)
North Central					
Fort Supply	2004.00	2004.53	2005.18	0.65	2,237
Great Salt Plains	1125.00	1126.91	1126.40	(0.51)	12,194
Kaw*	1013.00	1025.55	1022.17	(3.38)	191,293
Northeast					
Birch	750.50	755.76	751.22	(4.54)	832
Copan	710.00	714.69	717.94	3.25	47,972
Fort Gibson	554.00	552.65	557.37	4.72	68,192
Grand*	744.00	744.97	745.70	0.73	78,901
Hudson	619.00	620.71	621.72	1.01	30,900
Hulah	733.00	743.40	740.80	(2.60)	40,469
Keystone*	723.00	733.49	725.27	(8.22)	43,969
Oologah*	638.00	645.26	646.24	0.98	292,679
Skiatook	714.00	717.78	715.51	(2.27)	16,519
West Central					
Canton	1615.40	1615.74	1616.00	0.26	5,589
Foss	1642.00	1641.90	1642.10	0.20	690
Central					
Arcadia	1006.00	1022.28	1006.56	(15.72)	1,042
Heyburn	761.50	769.62	762.24	(7.38)	713
Thunderbird	1039.00	1039.79	1040.46	0.67	9,090
East Central					
Eufaula*	585.00	586.97	588.55	1.58	361,882
Tenkiller	632.00	632.81	633.24	0.43	16,244
Southwest					
Fort Cobb	1342.00	1341.98	1343.60	1.62	6,333
Lugert-Altus	1559.00	1553.37	1555.03	1.66	(23,419)
Tom Steed	1411.00	1406.75	1410.62	3.87	(2,383)
South Central					
Arbuckle	872.00	873.76	872.84	(0.92)	1,999
McGee Creek**	175.90	176.00	176.53	0.53	8,130
Texoma*	619.00	618.29	618.69	0.40	(23,837)
Waurika*	951.40	951.93	952.29	0.36	9,126
Southeast					
Broken Bow*	602.50	602.03	600.74	(1.29)	(25,513)
Hugo*	406.00	405.03	404.46	(0.57)	(30,296)
Pine Creek*	438.00	437.97	437.01	(0.96)	(3,613)
Sardis	599.00	598.94	598.70	(0.24)	(4,017)
Wister	478.00	478.16	478.09	(0.07)	569

* indicates seasonal pool operation

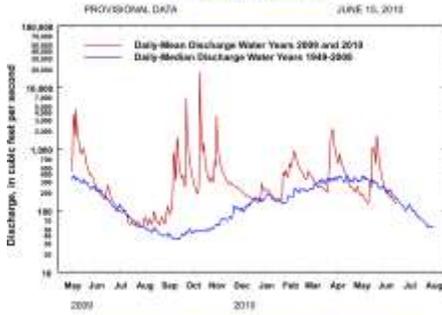
** elevation in meters

negative numbers in red, parentheses

STREAMFLOW CONDITIONS

Baron Fork at Eldon

Baron Fork at Eldon, Oklahoma
 Station No. 07207500 Northeast Oklahoma
 Drainage Area 387 square miles

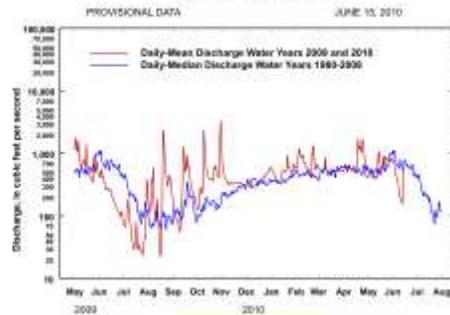


Comparison of daily discharges for water years 2009 and 2010 and period of record

Data from U.S. Geological Survey

Canadian River at Purcell

Canadian River at Purcell, Oklahoma
 Station No. 07220200 Central Oklahoma
 Drainage Area 25,538 square miles



Comparison of daily discharges for water years 2009 and 2010 and period of record

Data from U.S. Geological Survey

Cimarron River near Waynoka

Cimarron River near Waynoka, Oklahoma
 Station No. 07158000 Northeast Oklahoma
 Drainage Area 73,334 square miles

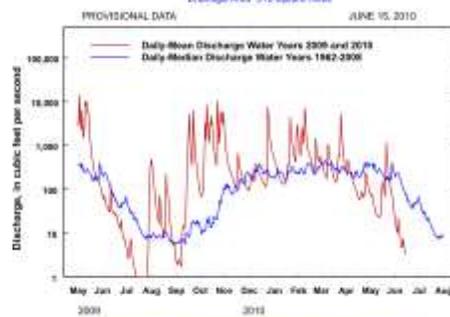


Comparison of daily discharges for water years 2009 and 2010 and period of record

Data from U.S. Geological Survey

Glover River near Glover

Glover River near Glover, Oklahoma
 Station No. 07375000 Southeast Oklahoma
 Drainage Area 315 square miles



Comparison of daily discharges for water years 2009 and 2010 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. 07057000 Southwest Oklahoma
 Drainage Area 2,337 square miles

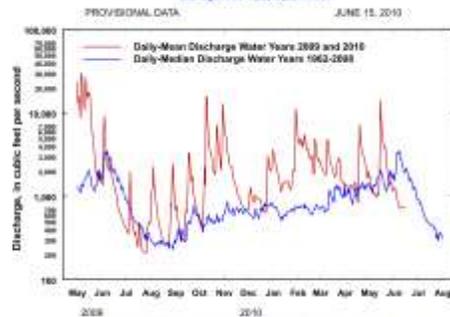


Comparison of daily discharges for water years 2009 and 2010 and period of record

Data from U.S. Geological Survey

Washita River near Dickson

Washita River near Dickson, Oklahoma
 Station No. 07531000 South-Central Oklahoma
 Drainage Area 7,010 square miles



Comparison of daily discharges for water years 2009 and 2010 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.