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



October 3, 2007

# PRECIPITATION

Preliminary Statewide Precipitation								
	Cool Growing Season September 1—October 2, 2007				Water Year October 1, 2006—October 2, 2007			
Climate Division (#)	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	0.87"	-1.11"	44%	16th driest	19.00"	-2.20"	90%	38th driest
North Central	3.18"	-0.12"	96%	40th wettest	38.78"	+6.96"	122%	7th wettest
Northeast	5.85"	+0.83"	117%	25th wettest	47.74"	+5.53"	113%	15th wettest
West Central	3.54"	+0.34"	111%	30th wettest	40.20"	+10.94"	137%	2nd wettest
Central	3.03"	-1.31"	70%	37th driest	53.90"	+15.67"	141%	1st wettest
East Central	6.48"	+1.24"	124%	22nd wettest	53.24"	+6.87"	115%	12th wettest
Southwest	2.17"	-1.41"	61%	35th driest	42.85"	+11.86"	138%	3rd wettest
South Central	1.82"	-2.79"	39%	21st driest	49.68"	+8.45"	120%	11th wettest
Southeast	4.60"	-0.29"	94%	36th wettest	58.22"	+6.96"	114%	14th wettest
Statewide	3.45"	-0.58"	86%	41st wettest	44.92"	+8.01"	122%	7th wettest



## SOIL MOISTURE

### Fractional Water Index<sup>1</sup> October 1, 2007

25 CM (~10 INCHES)



<sup>&</sup>lt;sup>1</sup> 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 <sup>1</sup>					Standardized Precipitation Index <sup>2</sup> Through August 2007			
Climate Division (#)	Current Status 9/29/2007	VA 9/29	lue 9/1	Change In Value	3-Month	6-Month	9-Month	12-Month
Northwest (1)	MOIST SPELL	1.80	1.39	0.41	NEAR NORMAL	NEAR NORMAL	VERY WET	MODERATELY WET
North Central (2)	VERY MOIST SPELL	3.73	3.39	0.34	MODERATELY WET	EXTREMELY WET	EXTREMELY WET	MODERATELY WET
Northeast (3)	MOIST SPELL	1.95	1.11	0.84	VERY WET	VERY WET	VERY WET	MODERATELY WET
West Central (4)	EXTREME MOIST SPELL	5.45	4.92	0.53	EXTREMELY WET	EXCEPTIONALLY WET	EXCEPTIONALLY WET	EXTREMELY WET
Central (5)	EXTREME MOIST SPELL	5.52	5.54	-0.02	EXTREMELY WET	EXCEPTIONALLY WET	EXTREMELY WET	EXTREMELY WET
East Central (6)	UNUSUAL MOIST SPELL	2.72	1.99	0.73	EXTREMELY WET	VERY WET	VERY WET	VERY WET
Southwest (7)	EXTREME MOIST SPELL	5.63	5.73	-0.10	VERY WET	EXTREMELY WET	VERY WET	VERY WET
South Central (8)	VERY MOIST SPELL	3.33	3.80	-0.47	MODERATELY WET	VERY WET	VERY WET	VERY WET
Southeast (9)	UNUSUAL MOIST SPELL	2.51	1.36	1.15	MODERATELY WET	NEAR NORMAL	MODERATELY WET	VERY WET

• No climate divisions are currently experiencing drought conditions, according to the PDSI.

• Three climate divisions have undergone PDSI moisture decreases since September 1.

#### Keetch-Byram Drought Fire Index<sup>3</sup>

Mesonet Station	COUNTY	Climate Division	Current Value 10/1/2007
Buffalo	Harper	Northwest	644
Antlers	Pushmataha	Southeast	628
Waurika	Jefferson	South Central	593

- Stations currently above 600 (October 1) = 2
- Stations above 600 on September 4 = 2



#### Statewide Wildfire Preparedness

There is no ban on outdoor burning for any counties in Oklahoma. However, citizens are encouraged to use caution. Dry, grassy fuels will ignite easily when the humidity is low and the temperature and winds are high.



<sup>&</sup>lt;sup>1</sup> 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.

<sup>&</sup>lt;sup>2</sup> 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.

<sup>&</sup>lt;sup>3</sup> 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 October 9-15, 2007



U.S. Drought Monitor

October 2, 2007





#### Drought Summary & Outlook:

8-14 DAY OUTLOOK PRECIPITATION PROBABILITY MADE 1 OCT 2007 VALID OCT 09 - 15. 2007

October 2-In the Plains, much of the Dakotas received little or no precipitation during the past week, and precipitation totals for the past two to three months remained below average in many areas. Deteriorating conditions were reflected by an extension of D0(A) conditions from northeastern North Dakota to northwest South Dakota. There was also an expansion of D1(A) in western and extreme northeastern North Dakota and an introduction of D2(A) along the Canadian border. Elsewhere from South Dakota to Kansas there was no change in drought conditions. Heavier precipitation fell in central Nebraska, but rainfall in the drought-affected areas of western Nebraska and eastern Wyoming was generally less than 0.25 inch, and no change was made to the drought designations in this area. The National Weather Service outlook for October 8-12 indicates the persistence of a ridge of high pressure over the central and eastern U.S., providing for above-normal temperatures from the central and southern Plains to the East Coast.

Precipitation

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According to the latest Drought Outlook, little change is anticipated in the West. Improvement is expected in the Northwest and northern Plains, but drought should persist in the Southwest where medium range and seasonal forecasts look dry. In the Upper Midwest, improvement is expected to continue from Minnesota to Michigan. To the south, however, drought should persist from the Maryland-Delaware area into northern portions of Georgia and Alabama. Tropical rains should lead to improvement along the Gulf and Southeast Coasts, with more limited improvement expected in other portions of the drought region.

### **CROP REPORT**

October 1—Temperatures cooled off as a cold front moved through the state near the beginning of last week. Spotty showers continued falling across Oklahoma, slowing small grain planting in some areas. Other locations were forced to halt planting activities due to lack of moisture. There were 5.8 days suitable for fieldwork.

Producers were holding off planting wheat for pasture in a few areas due to high seed costs and abundant forage. Armyworm infestations have been reported, particularly in emerging wheat fields with some fields experiencing significant damage. Wheat seedbed preparation at 92 percent, was running slightly behind the five-year average. Wheat seedings increased 16 points from the previous week to reach 41 percent complete, but were still 15 percentage points behind normal. Rye seedbed preparation was 93 percent complete, a 10-point jump from the previous week. Rye planted was two-third's complete, a 27 point increase from the previous week, but 9 points behind the five-year average. Oat seedbed preparation was 76 percent complete with 26 percent of the crop planted by week's end.

Additional cases of soybean rust were reported this past week in areas with warm and moist conditions. Thirty percent of soybeans were mature with 10 percent harvested by week's end. Ninety-six percent of the state's corn acreage had reached maturity, the same level as the five-year average. Corn harvest continued to progress quickly with 84 percent of the crop harvested by Sunday, a jump of 11 points from the previous week. Fifty-eight percent of grain sorghum had reached maturity with 21 percent of the harvest completed. Just over two-third's of the state's peanuts were mature with 14 percent of the crop dug. Bolls were opening on 71 of the cotton acreage and producers were preparing to harvest the crop.

Armyworms were spotted in freshly planted alfalfa fields in a few isolated areas. Growers had 77 percent of other hay second cuttings completed by the end of the week, 4 points behind normal. Ninety-three percent of the fourth cutting of alfalfa was complete, and producers had completed just over half of the fifth cutting. Nineteen percent of the sixth cutting of alfalfa was completed by week's end, 13 points ahead of normal. Alfalfa and other hay conditions remained mostly in the good to fair range.

Livestock conditions were rated mostly in the good to fair range. Producers continued to prepare wheat pastures for livestock grazing. Livestock marketings remained average last week. Pasture and range conditions were rated mostly in the good to fair range. Weed populations were increasing in some pastures.



### **R**ESERVOIR **S**TORAGE

- 0.3 percent decrease in total storage (97.8%) from that recorded on September 4 (98.1%)
- 16 reservoirs have experienced lake level decreases
- 5 reservoirs are currently operating at less than full capacity (compared to 5 four weeks ago)
- 1 reservoir—Lugert-Altus—is below 80 percent of total conservation storage

Storage in Selected Oklahoma Lakes & Reservoirs						
Climate Division	Conservation	Present	Percent of			
Lake or Reservoir	Storage	Storage	Conservation Storage			
	(acre-feet)	(acre-feet)				
North Central						
Fort Supply	13,900	13,900	100.0			
Great Salt Plains	31,420	31,420	100.0			
Kaw*	375,160	375,160	100.0			
Regional Totals/Averages	420,480	420,480	100.0			
Northeast						
Birch	19,225	19,225	100.0			
Copan	34,634	34,634	100.0			
Fort Gibson	365,200	365,200	100.0			
Grand	1,672,000	1,531,410	91.6			
Hudson	200,300	200,300	100.0			
Hulah	22,565	22,565	100.0			
Keystone	510,059	510,059	100.0			
Oologah	552,219	552,219	100.0			
Skiatook	322,700	322,700	100.0			
Regional Totals/Averages	3,698,902	3,558,312	96.2			
West Central						
Canton	111,310	111,310	100.0			
Foss	165,480	165,079	99.8			
Regional Totals/Averages	276,790	276,389	99.9			
Central						
Arcadia	27,520	27,520	100.0			
Heyburn	7,105	7,105	100.0			
Thunderbird	119,600	119,600	100.0			
Regional Totals/Averages	154,225	154,225	100.0			
East Central						
Eufaula*	2,314,583	2,314,583	100.0			
Tenkiller	654,100	643,620	98.4			
Regional Totals/Averages	2,968,683	2,958,203	99.6			
Southwest						
Fort Cobb	80,010	80,010	100.0			
Lugert-Altus	132,830	86,012	64.8			
Tom Steed	88,970	88,970	100.0			
Regional Totals/Averages	301,810	254,992	84.5			
South Central						
Arbuckle	72,400	72,400	100.0			
McGee Creek	113,930	113,930	100.0			
Texoma*	2,548,034	2,548,034	100.0			
Waurika*	190,200	190,200	100.0			
Regional Totals/Averages	2,924,564	2,924,564	100.0			
Southeast						
Broken Bow*	955,510	885,091	92.6			
Hugo*	158,617	158,617	100.0			
Pine Creek*	53,750	53.750	100.0			
Sardis	274,330	274,330	100.0			
Wister	60,162	60.162	100.0			
Regional Totals/Averages	1.502.369	1,431,950	95.3			
State Totals	12,247,823	11,979.115	97.8			



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** <u>www.owrb.state.ok.us</u> and <u>http://www.mesonet.ou.edu/public</u>.