NWS FORM E-5 (11-88) (PRES. by NWS Instruction 10-924)	**U.S. DEPARTMENT OF COMMERCE** NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL WEATHER SERVICE	HYDROLOGIC SERVICE AREA (HSA) **Tulsa, Oklahoma (TSA)**
MONTHLY REPORT OF RIVER AND FLOOD CONDITIONS		REPORT FOR: MONTH **May** YEAR **2014**
TO: Hydrometeorological Information Center, W/OH2 **NOAA / National Weather Service** 1325 East West Highway, Room 7230 Silver Spring, MD 20910-3283		SIGNATURE **Steven F. Piltz** **(Meteorologist-in-Charge)** DATE **June 3, 2014**

When no flooding occurs, include miscellaneous river conditions, such as significant rises, record low stages, ice conditions, snow cover, droughts, and hydrologic products issued (NWS Instruction 10-924)

[X] An "X" in the box indicates no flood stages were reached in this Hydrologic Service Area (HSA) during the month above.

A few spots across southeast Oklahoma received above normal precipitation this month. However, most of the HSA once again recorded below normal rainfall during May 2014. Normal precipitation values climatologically rank May as the wettest month of the year. These averages range from 5.0 - 5.5 inches across northeast Oklahoma to 5.5 - 6.0 inches across southeast Oklahoma. The Ozark region of northwest Arkansas averages 5.8 inches for the month.

Monthly Summary

Using the radar-derived estimated observed precipitation from the RFCs (Fig. 1a), rainfall totals for May 2014 ranged from 2 to 3 inches across portions of western Osage County to around 6.5 inches across parts of Pushmataha and southern LeFlore counties in southeast Oklahoma and also much Crawford, Sebastian and Franklin counties in west central Arkansas. The remainder of the HSA received 3"- 5" of rain this month. While this is an improvement over April, much of the HSA only received 50% to 75% normal rainfall for May. Portions of northeast Oklahoma to the north of Interstate 44 reached 25%-50% of normal (Fig. 1b). Isolated areas southeast of interstate 44 received amounts in the125% to 150% range of normal May precipitation.

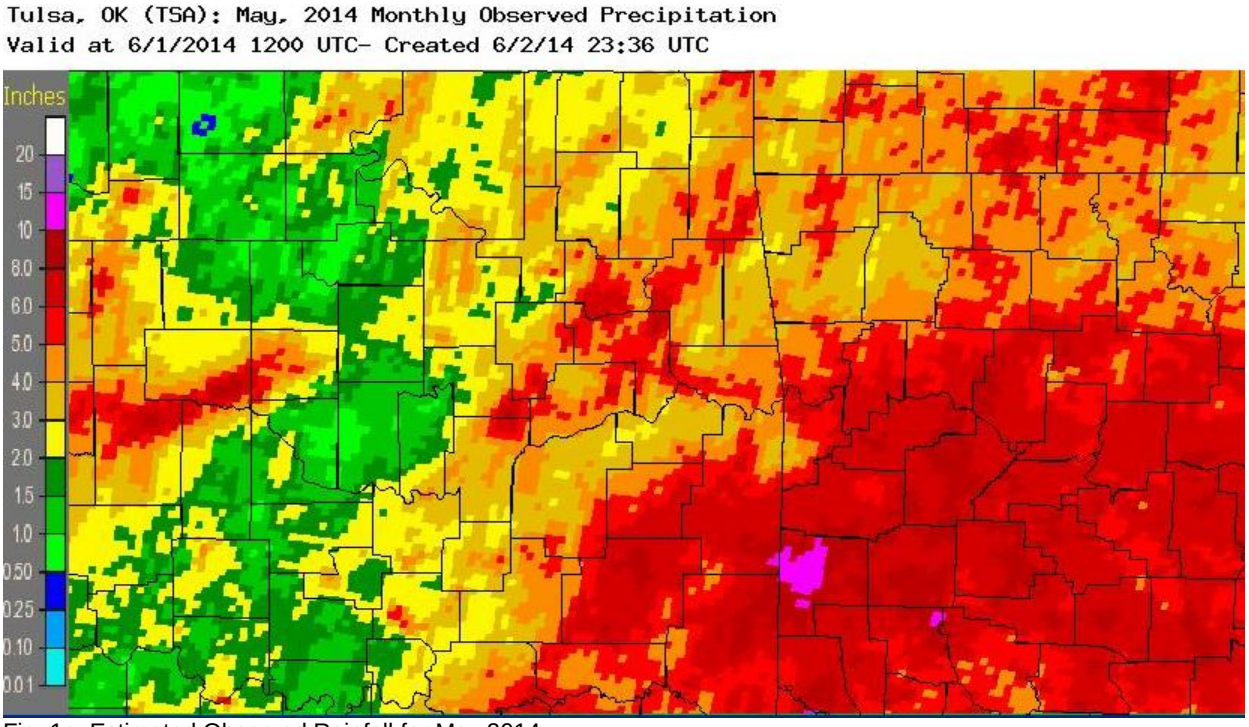

Fig. 1a. Estimated Observed Rainfall for May 2014

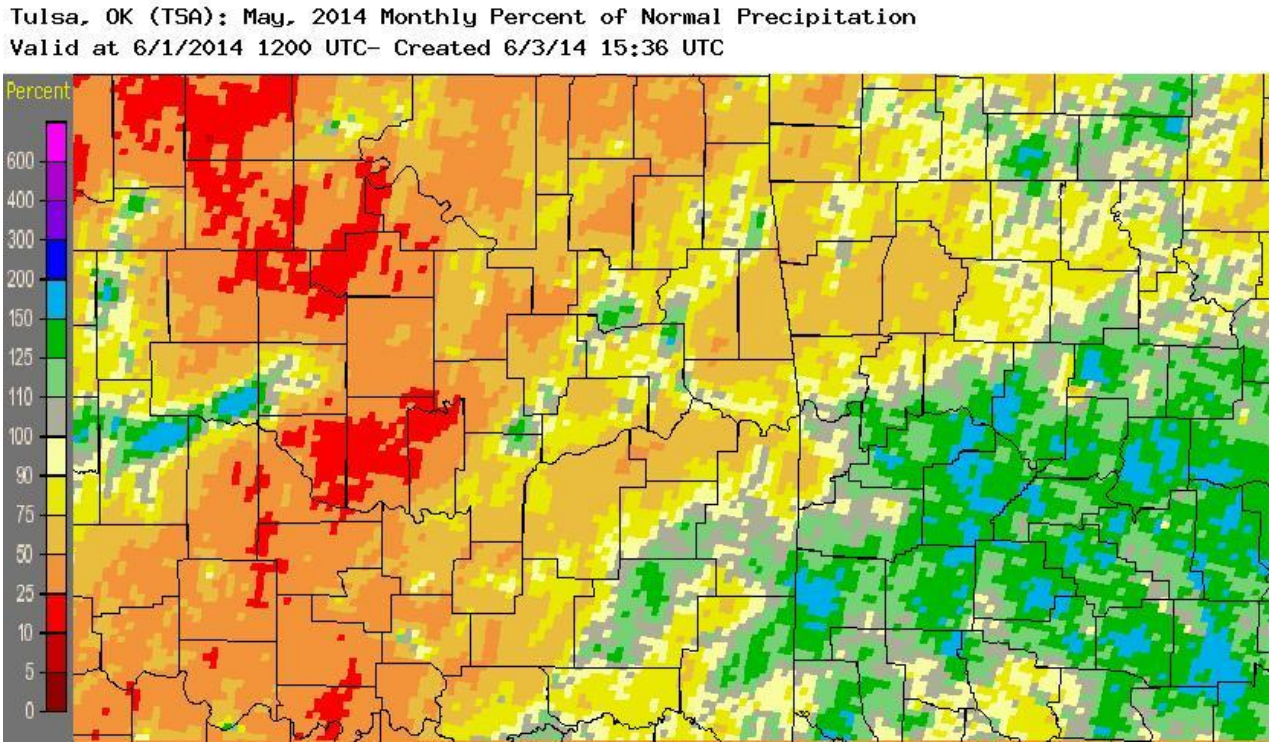

Fig. 1b. Estimated % of Normal Rainfall for May 2014

In Tulsa, OK, April 2014 tied for the 36th warmest May (70.5°F, last tied 2001; since records began in 1906) and the 35th driest May (3.51", since records began in 1894). Fort Smith, AR tied for the 58th warmest May (70.2°F, tied 1982; since records began in 1883) and the 39th wettest May (6.18"; since records began in 1883). Fayetteville, AR tied for the 34th warmest May (65.4°F) and was the 13th driest May (3.43") since records began in 1950.

Some of the larger precipitation reports (in inches) for May 2014 included:

Ozark 2 (coop)	8.61	Talihina 4 SE, OK (meso)	6.92	Natural Dam 5 S, AR (coop)	5.04
Clayton 4 NNE, OK (meso)	7.16	Cloudy 6 SSE, OK (meso)	6.05	Wister 3 ENE, OK (meso)	6.01
Antlers 3 WNW, OK (meso)	6.64	Hugo 2 NW, OK (meso)	5.71	Sallisaw 2 SSW, OK (meso)	4.67

Some of the lowest precipitation reports (in inches) for May 2014 included:

Burbank, OK (meso)	3.41	Oilton 6 ESE, OK (meso)	3.47	Okemah 3 E, OK (meso)	2.93
Foraker, OK	2.71	Vinita 10 NNW OK (meso)	2.27	Copan 2 ENE, OK (meso)	2.26
Wynona 2 S, OK (meso)	2.20	Bristow 4 SE, OK (meso)	1.80	Pawnee 3 ENE OK (meso)	1.75

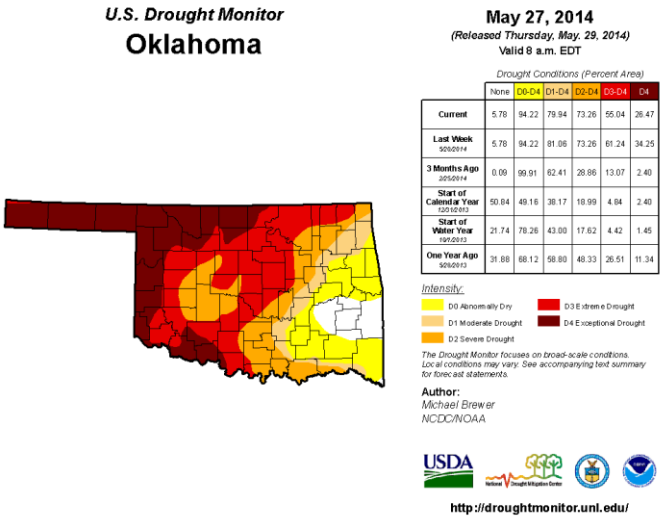

Fig. 2. Drought Monitor for Oklahoma

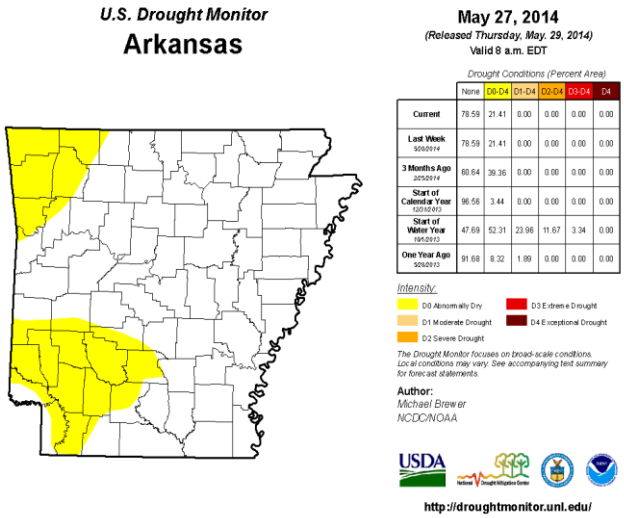

Fig. 3. Drought Monitor for Arkansas

According to the U.S. Drought Monitor (USDM) from May 27, 2014 (Figs 2, 3), Extreme Drought (D3) conditions were present across portions of northeast Oklahoma to the north of the Interstate 44 corridor, including most of Osage, Pawnee, Washington, Nowata, and Craig counties...and portions of Creek county. Severe Drought (D2) conditions were affecting southeastern Osage, southern Washington, southern Craig, Ottawa, Rogers, Tulsa, eastern Creek, northwest Okmulgee and Okfuskee counties. Moderate (D1), and abnormally Dry (D0), conditions impacted much of eastern Oklahoma, and northwest Arkansas. Portions of southeast Oklahoma, including most of Pittsburg county, southern Haskell, Latimer, LeFlore, and far northern Pushmataha counties were removed from drought status. Sebastian and most of Franklin counties in west central Arkansas were also removed from drought status.

According to the USACE, the major reservoirs in the HSA were operating at the top of their conservation pools as of 6/3/2014.

According to statistics from the Oklahoma Climatological Survey (OCS):

Rank since 1921	Last 30 Days (May 3 – Jun 1)	Last 60 Days (Apr 3 – Jun 1)	Year-to-Date (Jan 1 – Jun 1)	Last 120 Days (Feb 2 – Jun 1)	Water Year-to-Date (Oct 1 – Jun 1)	Last 365 Days (Jun 2, 2013 – Jun 1, 2014)
Northeast OK	28th driest	5th driest	2nd driest	3rd driest	6th driest	12th driest
East Central OK	35th driest	14th driest	5th driest	8th driest	17th driest	16th driest
Southeast OK	36th wettest	39th driest	13th driest	26th driest	30th driest	28th driest
Statewide	26th driest	3rd driest	2nd driest	2nd driest	3rd driest	13th driest

Outlooks

The Climate Prediction Center (CPC) outlook for June 2014 (issued May 31, 2014) indicates an equal chances for above, normal, or below temperatures across all of eastern Oklahoma and northwest Arkansas. This outlook also indicates a slightly enhanced chance for above median rainfall across far northeast Oklahoma and far northwest Arkansas, as well as equal chances for above, near, and below median rainfall across the rest of eastern Oklahoma and west central Arkansas. This outlook is based on short-range forecasts of expected weather conditions.

For the 3-month period May-June-July 2014, CPC is forecasting a slightly enhanced chance for above normal temperatures across most of eastern Oklahoma and all of northwest and west central Arkansas. Higher probabilities for above normal temperatures exist across far southeast Oklahoma. Equal chances for above, near, and below median rainfall is forecast across all of eastern Oklahoma and northwest Arkansas (outlook issued May 15, 2014). According to CPC, ENSO neutral conditions remained through May. ENSO neutral conditions are expected to continue through the remainder of Spring 2014. However, an El Niño Watch has been issued indicating conditions are favorable for El Niño development within the next 6 months. Therefore, this outlook is based on both statistical and dynamical forecast tools, as well as antecedent soil moisture, under ENSO neutral conditions.

Summary of Precipitation Events

May 1-15

Several systems impacted the HAS during the first half of May. Notable events include moderate to heavy rainfall that occurred across far southeast Oklahoma- where amounts between 3 and 4 inches were recorded on May 8th. Severe weather events were minimal, with a just a few severe thunderstorm warnings issued for the first half of the month. A slow moving system impacted eastern Oklahoma, northwest, and west central Arkansas, mostly on May 12th. Rainfall amounts between one half and one and one half inches were common across the HSA. Amounts approaching 2 inches fell across parts of east central Oklahoma and west central

Arkansas.

May 16-30

Mostly dry conditions began the second half of the month. A very slow moving closed upper level low moved into the Southern Plains region, with initial impacts occurring Memorial Day Weekend. Areas of rainfall…some moderate to heavy wrapped around the system as it moved slowly along the Red river. One to three inches of rain occurred across parts of northeast Oklahoma on the 25th and 26th. Much of the rainfall in this same area occurred on Memorial Day, where local amounts of 4 inches resulted in flash flooding. Several residences and an apartment complex were flooded in Muskogee county along with several reports of submerged vehicles.

A tornado developed in association with this system on the 27th. Numerous trees were damaged along with a mobile home in Okmulgee county.

Written by:
Bart Haake
Forecaster
WFO Tulsa

Products issued in May 2014:

*MLBA4 and OZGA4 transferred to NWS Tulsa HSA February 5, 2014
*Mixed case River Flood products began July 31, 2013

3 Flash Flood Warnings (FFW)
0 Flash Flood Statements (FFS)
1 Flash/Areal Flood Watches (FFA) (3 Watch FFA CON/EXT/CAN)
3 Urban and Small Stream Advisories (FLS)
0 Areal Flood Warnings (FLW)
0 Areal Flood Statements (FLS)
0 River Flood Warnings (FLW)
3 River Flood Statements (FLS)
1 River Flood Advisories (FLS) (4 Advisory FLS CON/EXT/CAN)
0 River Flood Watches (FFA) (0 Watch FFA CON/EXT/CAN)
0 River Statements (RVS)
0 Hydrologic Outlooks (ESF)
5 Drought Information Statements (DGT)