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 **November** YEAR **2008**
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 **December 2, 2008**

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 No flood stages were reached in this HSA during the month above.

November 2007 was dry across most of the Tulsa HSA, with a large portion of the area receiving less than 25 percent of its normal precipitation for the month. Normal precipitation for November ranges from 2.6 inches in Pawnee County to 4.4 inches in Haskell County. Normal precipitation for the Ozark region of northwest Arkansas averages 4.2 inches.

The first round of rainfall this November affected much of the HSA on November 5 as a cold front and dryline moved through the area. Thunderstorms, some of which became severe, initially developed along and ahead of the slow moving cold front, with some training of storms occurring across northeast OK. This lead to rainfall totals of 0.75 inches to over 3 inches north of an Okema, OK to Bentonville, AR line (see Fig. 1). The swath of heaviest precipitation stretched from Pawnee County northeast into Craig County. Elsewhere, rainfall totals were generally less than half an inch. In addition to the rainfall, damaging winds of 60 to 70 mph and hail to the size of golf balls were reported during this event. An EF0 tornado also occurred in Osage County.

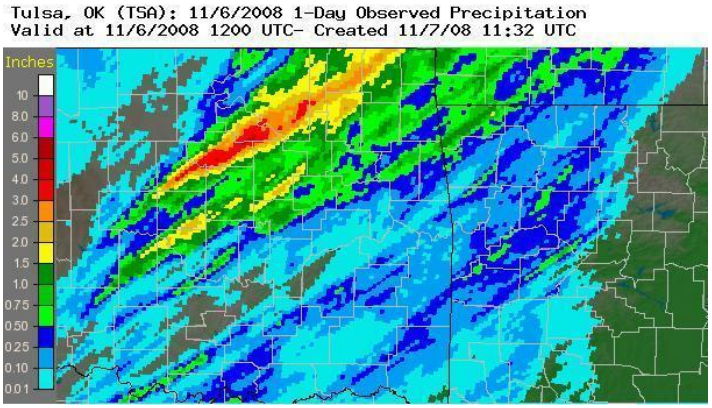


Fig. 1. Observed rainfall on November 5, 2008

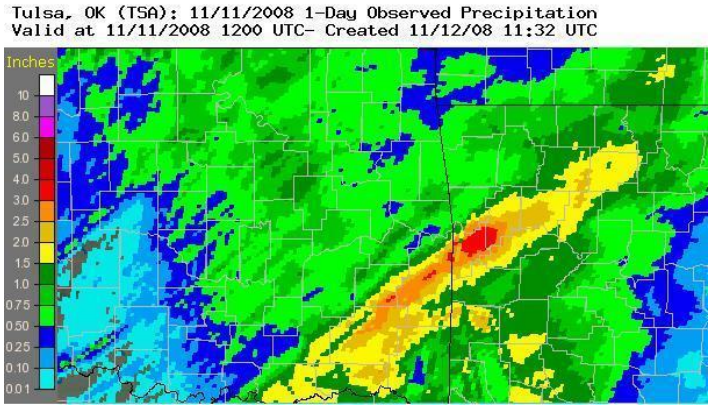


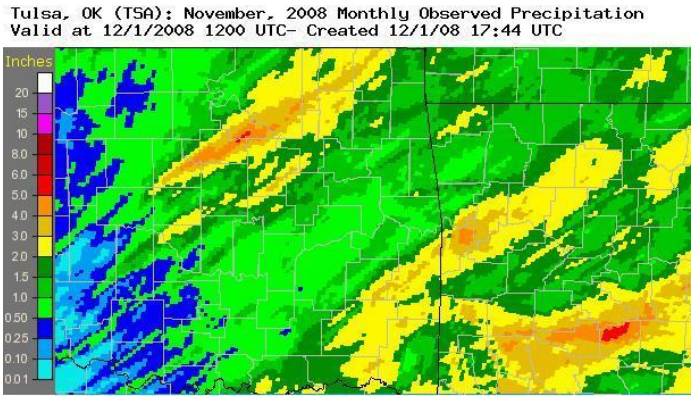
Fig. 2. Observed rainfall on November 10, 2008

A low pressure system brought widespread 0.5" to 1.5" of rainfall to the area beginning late on November 9th and continuing through most of the day on the 10th. A heavier band of rain affected far southeast OK and west central AR, where 1.5" to around 3" fell (see Fig. 2).

Light rain fell in association with a cold frontal passage on November 23rd, affecting far eastern OK and western AR. Most locations received less than 0.10" of rain, with a few pockets of around a half an inch of rain in west central AR. Several systems brought light rain (and even some light snow on the last day of the month) to the area from November 27th – 30th, though generally less than one tenth of an inch of precipitation was reported during this time. Slightly higher amounts nearing half an inch fell along the I44 corridor on the 27th.

Using the observed precipitation (Fig. 3a) and percent of normal (Fig. 3b) graphics from the ABRFC, one can see that the majority of the rainfall this month fell across the northwest and southeast portion of the HSA, with a

large area in the middle that received less than 1 inch of rain during the month. Almost all of the HSA received below normal rainfall this month (Fig. 1b), with the area from near McAlester, OK to Huntsville, AR receiving less than 25 percent of the monthly normal rainfall. While the areas which received the higher rainfall totals this month were near normal overall, the majority of the precipitation fell in one day, with the remainder of the month receiving little rainfall.



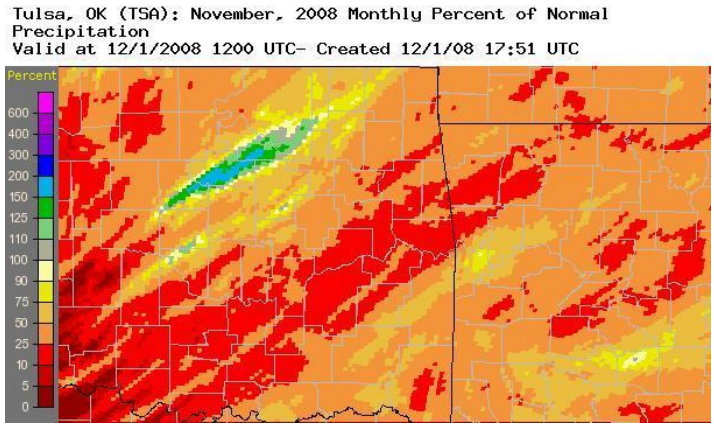


Fig. 3a. November 2008 Observed rainfall (ABRFC) b. November 2008 Percent of Normal rainfall (ABRFC)

The northeast OK climate division ranked as the 30th driest November since records began in 1921; the east central OK climate division ranked as 18th driest; and the southeast OK climate division ranked as 31st driest. So far this autumn, the northeast OK climate division was the 39th driest since records began in 1921; the east central OK climate division was the 20th driest; and the southeast OK climate division ranked as the 30th driest. Due to a second month in a row of drier conditions, the northeast OK climate division slipped from the 2nd wettest to the 4th wettest year-to-date (Jan 1-Nov 30) period since records began in 1921. The east central OK climate division ranks as the 14th wettest year-to-date period, while the southeast OK climate division ranked as 17th wettest.

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

Mannford, OK (coop)	4.01	Hominy, OK (coop)	3.45	Midland, AR (coop)	3.37
Wister, OK (mesonet)	3.25	Skiatook, OK (mesonet)	3.19	Ozark, AR (coop)	3.08
Nowata, OK (mesonet)	2.85	Greenwood, AR (coop)	2.72	Talihina, OK (mesonet)	2.68

At the end of November, all of the major reservoirs were at 95 to 100 percent of their conservation pools, except for Oologah Lake, which was at 90 percent of its conservation pool, and Hulah Lake, which was at 93 percent. Keystone Lake was actually at 3 percent of its flood pool at the end of November.

The U.S. Drought Monitor (USDM) issued November 25, 2008 indicated abnormally dry conditions across a portion of eastern OK south and west of a Tulsa to Muskogee to Hugo line, and moderate drought across a large portion of Pittsburg County. This area is also where less than 25 percent of normal rainfall occurred this past November.

The Climate Prediction Center (CPC) outlook for December (issued Nov 30) indicates an equal chance for above, near, and below normal temperatures for the entire HSA and a slightly enhanced chance for below normal precipitation across the far southern portion of the area along the Red River. The CPC outlook for the Dec-Jan-Feb 3-month period (issued Nov 20) shows an enhanced chance for above normal temperatures and precipitation area-wide. With ENSO neutral conditions expected to continue through the upcoming winter, the CPC winter outlook was based primarily on trends and statistical models.

Products issued:

0 River Flood Warnings
0 River Flood Statements
2 River Statements
0 Hydrologic Outlooks

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