

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	
TO: Hydrometeorological Information Center, W/OH2 NOAA / National Weather Service 1325 East West Highway, Room 7230 Silver Spring, MD 20910-3283		REPORT FOR: MONTH April YEAR 2009
		SIGNATURE Steven F. Piltz (Meteorologist-in-Charge)
		DATE May 5, 2009

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)

While the beginning of the April 2009 started off relatively dry, several rounds of precipitation brought widespread heavy rainfall during the middle and through the end of the month. Flooding along the Neosho River near Commerce occurred at the end of March 2009, with the river falling below flood stage early on April 1, 2009. Other minor and moderate river flooding occurred this month, in addition to flash flooding. Overall, this April brought above normal rainfall to northeast and southeast Oklahoma, with near to below normal rainfall to east central Oklahoma and northwest Arkansas. Normal precipitation for the month of April ranges from 3.1 inches in Pawnee County to 4.7 inches in Latimer County. The Ozark region of northwest Arkansas averages 4.3 inches for the month.

Summary of Rain Events

April 1-10:

A strong upper low moved across the southern plains on April 2, with a surface low that tracked across the central portion of the HSA. Scattered showers and thunderstorms developed across the region, bringing around 0.1 to around 0.5 inches of rain to a large portion of eastern OK and northwest AR. Southern Le Flore County had the greatest rainfall, with around 1 inch of rain. A cold front moved through the region on April 4th, though a lack of moisture kept light rainfall confined to east central OK and northwest and west central AR.

A strong spring storm system developed over the southern plains on April 9th. As a warm front moved north during the morning and into the early afternoon hours, scattered showers developed across the warm sector, bringing around one tenth of an inch or less of rain to the HSA. A dryline then pushed east across OK, where severe thunderstorms developed during the afternoon hours. Several tornadoes developed from these storms, in addition to large hail and high winds; however, due to the fast storm movement, no flooding resulted from this storm system. Rainfall totals were generally around one tenth to around one half inch, with isolated higher amounts to near one inch.

April 11-20:

The next low pressure system affected the region over Easter weekend, April 11-12, bringing some much needed rainfall to the area. Steady, widespread showers with isolated thunderstorms began late on the 11th and continued into the early morning hours of the 13th. The 2-day rainfall totals were 1 to 2 inches across all of eastern OK and northwest AR, with isolated locations receiving around 2.5 inches of rain. Dry antecedent soil moisture conditions combined with the slow, steady rain precluded flash flooding and only led to minor rises on area rivers. The exception, however, was along the Poteau River near Panama, where minor flooding occurred (please refer to the E-3 report for details). The Illinois River near Tahlequah rose above action stage, causing recreational floating along the river to cease, but the river remained below flood stage.

A cut-off upper low remained to the west of the Tulsa HSA for several days, causing rainfall to affect the region on April 17-19. The heaviest rainfall occurred on the 18th as several lines of severe thunderstorms moved across the area. Widespread rainfall totals of around one quarter to around one inch occurred on the 17th through 18th, with isolated higher amounts of around 2 inches. Cherokee County received the most rainfall, around 3 inches on the 18th, leading to flash flooding in the county. Multiple water rescues were required in Tahlequah. The rivers across eastern OK saw some rises due to the rainfall; however only the Neosho River

near Commerce went into minor flood (please refer to the E-3 report for details). The heavy rainfall in Cherokee County also contributed to rises along the Illinois River near Tahlequah, which again rose above action stage (but remained below flood stage), causing recreational floating along the river to cease.

April 21-30:

After a brief respite from the rain, active upper-level flow and very moist lower levels brought several rounds of precipitation the region beginning on the evening April 26th. Thunderstorms initiated along a slow moving cold front to the west of the HSA and moved east into northeast OK through the night of the 26th. This initial activity brought 1 to 2 inches of rain to primarily Osage Co., with rainfall totals generally over one quarter of an inch to locations along and northwest of an Okfuskee Co. to Delaware Co. line. The cold front then moved into the HSA on the 27th, bringing one quarter to around one inch of rain to locations northwest of I44 and southeast of a McAlester, OK to Berryville, AR line. Isolated areas in Osage and Choctaw Counties received between 1 and 2 inches of rain. As the front returned north as a warm front on the 29th, heavy rain affected northeast and east central OK, where locations from McIntosh to Craig Counties and west received 1 to 2 inches of rainfall (see Fig. 1). A large portion of Creek and Okfuskee Counties, as well as portions of Osage County, had 2 to 4 inches of rain. An MCS developed across western OK and moved through southeast OK on the 29th bringing significant, widespread rain accumulations of 1 to 4 inches south of I40, leading to flash flooding across Choctaw County. Finally, a left-over outflow boundary from the MCS provided a focus for additional rain on the last day of the month, leading to flash flooding across Osage County. Rainfall totals on April 30th into the morning of May 1st were generally around one tenth to one quarter of an inch across a large portion of the HSA. However, locations north of Hwy 412 received between 0.5 and 1.5 inches of rain. Even higher amounts of 2 to 4 inches affected large portions of Mayes, Delaware, and Ottawa Counties. Very heavy rain would continue across this same region on May 1st, leading to very significant flash flooding.

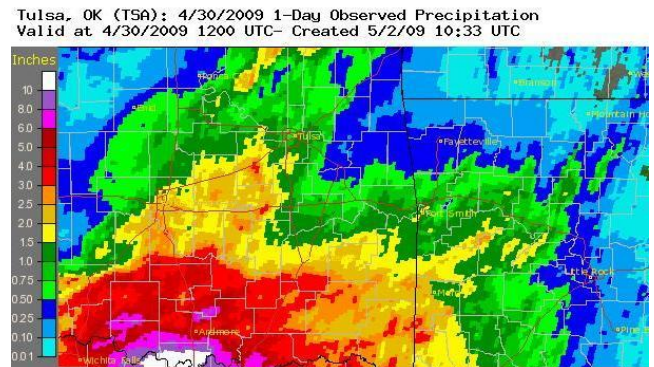


Fig. 1. 24-hour rainfall from 7am April 29 through 7am April 30, 2009

Area rivers experienced rises due to all of the rainfall at the end of the month. The Neosho River near Commerce and the Verdigris River near Lenapah exceeded moderate flood stage, and the Caney River near Collinsville exceeded minor flood stage during the last days of April. Several other rivers went into flood during the first few days of May. Please refer to the April E3 report for further information.

Monthly Summary

Using the radar-derived observed precipitation from the RFCs (Fig. 2a.), much of the Tulsa HSA received rainfall totals of 3 to 8 inches in April 2009, with some locations receiving 8 to 10 inches. Northeast and southeast OK generally received between 100% and 150% of the normal April rainfall (Fig. 2b.), with some locations receiving 150% to 300% of normal. On the other hand, locations across east central OK and northwest AR had below normal precipitation this month, with some locations receiving only 50% to 80% of normal.

Tulsa, OK (TSA): April, 2009 Monthly Observed Precipitation
Valid at 5/1/2009 1200 UTC- Created 5/1/09 22:44 UTC

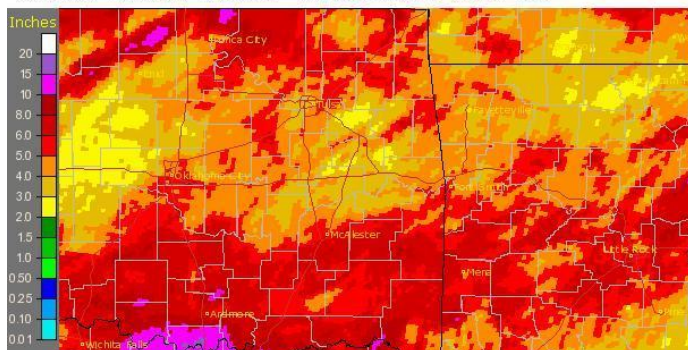
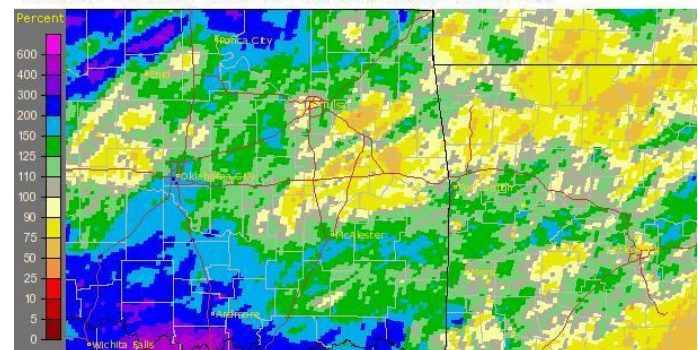


Fig. 2a. Observed Precipitation for Apr. 2009

Tulsa, OK (TSA): April, 2009 Monthly Percent of Normal Precipitation
Valid at 5/1/2009 1200 UTC- Created 5/1/09 22:49 UTC



2b. Percent of Normal Precipitation for Apr. 2009

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

Tuskahoma, OK (coop)	7.44	Burbank, OK (meso)	6.99	Foraker, OK (meso)	6.85
Hugo, OK (meso)	6.47	Ashland, OK (coop)	6.42	Clayton, OK (meso)	6.15
Wilburton, OK (meso)	6.08	Cloudy, OK (meso)	6.05	McAlester, OK (ASOS)	5.96

According to statistics from the Oklahoma Climatological Survey (OCS), northeast OK ranked as the 30th wettest April since records began in 1921, receiving 118% of its normal rainfall. Due to the wet period during the first half of 2008, the past 12 months rank as the 11th wettest for northeast OK. However, due to drier conditions during the second half of 2008, northeast OK ranks as the 43rd driest water year so far (Oct 1-Apr 30). East central OK was the 34th wettest April on record, ending the month with 108% of normal April rain, and ranked as the 35th driest for the past 12 months and the 11th driest water year. Finally, southeast OK was the 26th wettest March, receiving 135% of normal rainfall, and was the 26th driest for the past 12 month period. For the water year-to-date, southeast OK ranks as the 18th driest.

According to the U.S. Drought Monitor (USDM) issued April 28th, no drought or abnormally dry conditions exist across the HSA.

The major reservoirs in the HSA were at 100% of their conservation pools by May 4, 2009, with most area reservoirs reporting levels over 20% of their flood control pools. The reservoirs utilizing the highest percentage of their flood control pools as of April 1 were as follows: Hudson Lake 70%, Ft. Gibson Lake 61%, Copan Lake 55%, Oologah Lake 54%, Pensacola Lake 53%, Hulah Lake 44%, and Kaw Lake 41%.

The Climate Prediction Center (CPC) outlook for May 2009 (issued April 30, 2009) indicates an equal chance of above, near, and below normal temperatures across the HSA. The May 2009 outlook for precipitation shows a 50% chance for above normal, 33% for near normal, and 17% chance for below normal rainfall across all of eastern OK and northwest AR. For the 3-month period May-Jun-Jul 2009, CPC is outlooking an equal chance for above, near, and below normal temperatures and precipitation (outlook issued April 16, 2009). Sea-surface temperatures in the equatorial Pacific indicate that the La Niña had dissipated, and ENSO-neutral conditions are expected this May.

Nicole M^cGavock,
Service Hydrologist
WFO Tulsa

Products issued:

- 7 River Flood Warnings
- 34 River Flood Statements
- 32 River Statements
- 1 Hydrologic Outlooks
- 0 Drought Information Statements