

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 January YEAR 2012
		SIGNATURE Steven F. Piltz (Meteorologist-in-Charge)
		DATE February 2, 2012

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)

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

There was a sharp gradient in rainfall across the hydrologic service area (HSA) this month due to a heavy rain event near the end of the month. Locations near the OK/KS border only received a few hundredths of an inch of rain, while southeast OK and west central AR ended January 2012 well above normal with over 6" of rain. Normal precipitation for January ranges from 1.2 inches in Pawnee County to 2.2 inches in Haskell County. In the Ozark region of northwest Arkansas, precipitation averages 2.2 inches for the month.

Monthly Summary

Using the radar-derived estimated observed precipitation from the RFCs (Fig. 1a), rainfall totals for January 2012 ranged from only a few hundredths of an inch in northern Osage and northern Washington Counties in northeast OK to around 7" in southeast OK and west central AR. Locations southeast of an Okmulgee, OK to Bentonville, AR line generally received 2"-5" of rain, which corresponds to 110%-300% of the normal January rainfall. However, north of this line, less than 2" fell this month. This means that this area received less than 75% of the normal January rain, with locations near the OK/KS state line only seeing 0%-25% of the normal January rainfall (Fig. 1b).

Tulsa, OK (TSA): January, 2012 Monthly Observed Precipitation
 Valid at 2/1/2012 1200 UTC- Created 2/1/12 17:41 UTC

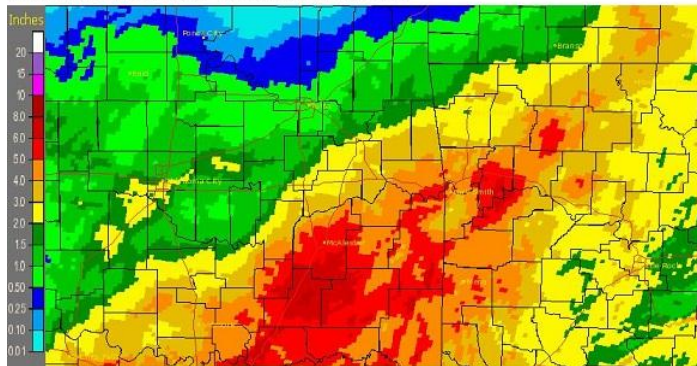


Fig. 1a. Estimated Observed Rainfall for January 2012

Tulsa, OK (TSA): January, 2012 Monthly Percent of Normal Precipitation
 Valid at 2/1/2012 1200 UTC- Created 2/1/12 17:45 UTC

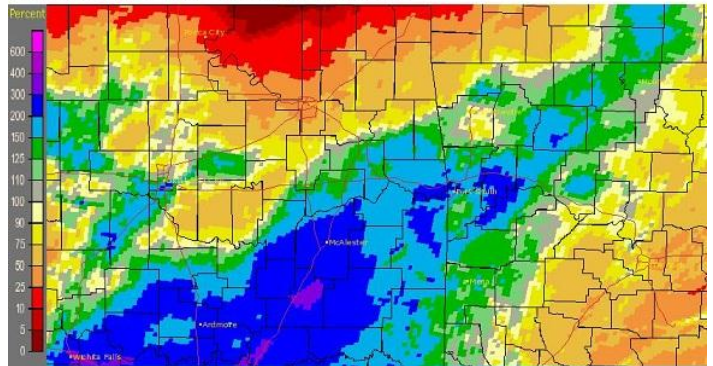


Fig. 1b. Estimated % of Normal Rainfall for January 2012

In Tulsa, OK, January 2012 ranked as the 7th warmest January (44.2°F, tied with 1914; since records began in 1905), the 24th driest January (0.61"; since records began in 1888), and the 35th least snowiest (0.5", tied with 1907, 1935; since records began in 1900). Fort Smith, AR, was the 8th warmest January (45.8°F, since records began in 1883), the 17th wettest January (4.42"; since records began in 1883), and the 29th least snowiest (trace, tied with 13 other years; since records began in 1884).

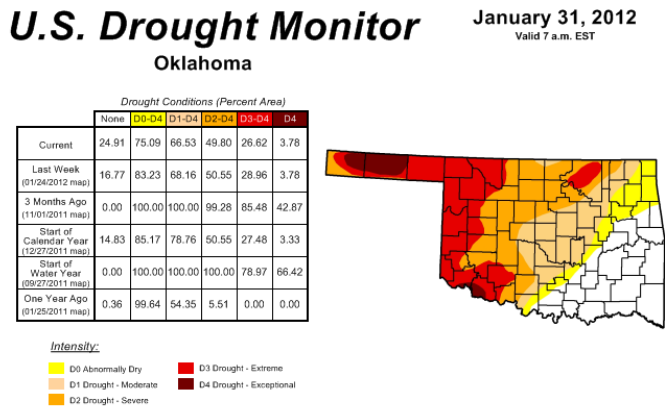
Some of the larger precipitation reports (in inches) for January 2012 included:

Hugo, OK (meso)	5.77	Clayton 14WNW, OK (coop)	5.73	Cloudy, OK (meso)	5.59
Antlers, OK (meso)	5.57	Clayton, OK (meso)	5.57	Antlers, OK (coop)	5.36
McAlester, OK (meso)	5.36	McAlester, OK (ASOS)	5.33	Ozark, AR (coop)	5.31

Some of the lowest precipitation reports (in inches) for January 2012 included:

Foraker, OK (meso)	0.01	Copan, OK (meso)	0.03	Bartlesville, OK (ASOS)	0.15
Burbank, OK (meso)	0.17	Ralston, OK (coop)	0.25	Nowata, OK (meso)	0.26
Skiatook, OK (meso)	0.26	Wynona, OK (meso)	0.29	Miami, OK (coop)	0.35

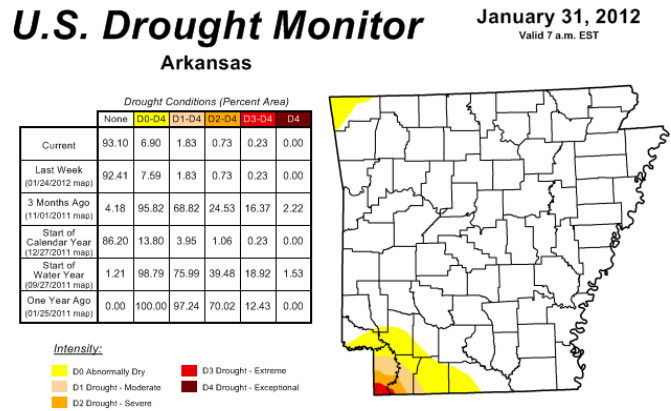
According to the [U.S. Drought Monitor](#) (USDM) from January 31, 2012, extreme drought (D3) conditions encompassed a large portion of Osage County. Severe drought (D2) conditions stretched across most of Pawnee, Osage, Washington, and northwest Nowata Counties in eastern OK. Moderate drought (D1) conditions were found across portions of Craig, Nowata, Rogers, Washington, Tulsa, Creek, and Okfuskee Counties in eastern OK (see Figs. 2 & 3). Abnormally Dry (D0) conditions affected portions of Ottawa, Delaware, Craig, Mayes, Rogers, Wagoner, Okmulgee, and northern Cherokee Counties in eastern OK, and Benton County in northwest AR.



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

<http://droughtmonitor.unl.edu>

Fig. 2. Drought Monitor for Oklahoma



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<http://droughtmonitor.unl.edu>

Fig. 3. Drought Monitor for Arkansas

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

Rank since 1921 ("Last XX days" ending January 31, 2012)	January 2012	Cool Growing Season (Sep 1, 2011 – Jan 31, 2012)	Water Year (Oct 1, 2011 – Jan 31, 2012)	Winter-to-Date (Dec 1, 2011 – Jan 31, 2012)	Last 120 Days (Oct 4, 2011 – Jan 31, 2012)	Last 90 days (Nov 3, 2011 – Jan 31, 2012)
Northeast OK	12 th driest	35 th driest	39 th wettest	29 th driest	36 th wettest	20 th wettest
East Central OK	22 nd wettest	37 th wettest	24 th wettest	32 nd wettest	22 nd wettest	14 th wettest
Southeast OK	13 th wettest	28 th wettest	13 th wettest	10 th wettest	12 th wettest	5 th wettest
Statewide	32 nd wettest	37 th wettest	20 th wettest	23 rd wettest	18 th wettest	11 th driest

Most of the major reservoirs in the Tulsa HSA were within $\pm 3\%$ of the top of their conservation pools as of February 1, 2012. However, the heavier rains at the end of January led to flood control operations at several dams in southeast and east central OK: Wister 34%, Hugo 14%, Sardis 14%, Eufaula 6%, and Tenkiller 4% of flood pools in use. The following reservoirs were reporting conservation pool deficits below 97% as of February 1, 2012: Birch Lake 47% and Skiatook Lake 62%. These two lakes are reporting the lowest lake levels since they were initially constructed and filled.

Outlooks

The [Climate Prediction Center](#) (CPC) outlook for February 2012 (issued January 31, 2012) indicates a strongly enhanced chance for above normal temperatures across eastern OK and northwest AR. This outlook also indicates a slightly enhanced chance for above median precipitation across northwest AR and equal chances for above, near, and below median precipitation elsewhere. This outlook was based primarily on short-term

dynamical computer models with La Niña impacts considered. For the 3-month period Jan-Feb-Mar 2012, CPC is forecasting an enhanced chance for above average temperatures and equal chances for above, near, and below median precipitation across all of eastern OK and northwest AR (outlook issued January 19, 2012). This outlook is consistent with a La Niña pattern. According to CPC, moderate La Niña conditions remained in place at the end of January. La Niña conditions are forecast to continue through Spring 2012, with a transition to ENSO-neutral conditions expected during the summer.

Summary of Precipitation Events

January 1 – 31:

A large precipitation shield developed across north TX on the 9th when an upper-level low became cut off as it moved slowly eastward. This rainfall made it just across the state line into OK early on the 9th, affecting southern Pushmataha and Choctaw Counties. Rainfall totals were 0.10" to near 0.75". As the cut-off low drifted east into northeast TX, additional showers and isolated thunderstorms moved further north into eastern OK and northwest AR on the 10th. Dry air across northeast OK kept the rain shield southeast of I-44. The highest totals of 1" to around 2" occurred across much of east central and southeast OK and west central AR, along and southeast of a McAlester to Sallisaw to Prairie Grove line (Fig. 4).

Tulsa, OK (TSA): Current 7-Day Observed Precipitation
Valid at 1/11/2012 1200 UTC- Created 1/11/12 15:55 UTC

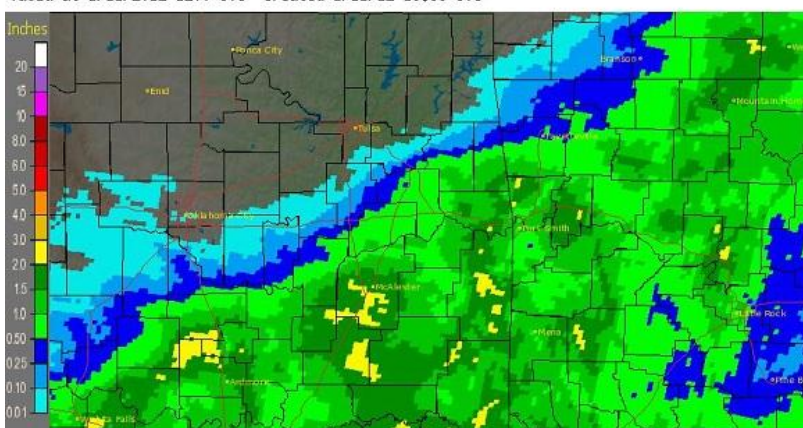
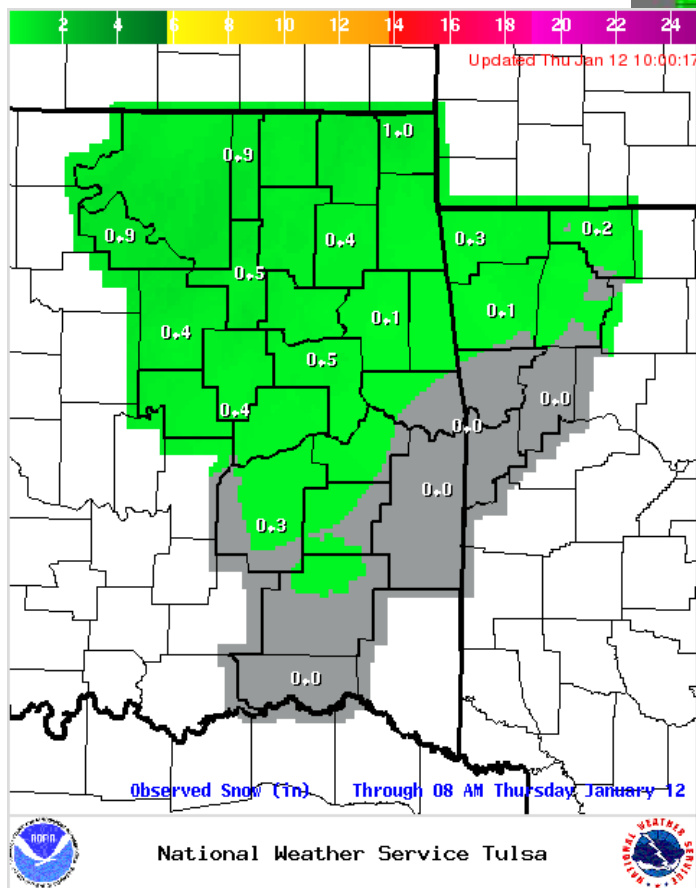


Fig. 4 (right).
Estimated Observed Rainfall for
the 7 days ending 6am CST
1/11/2012.

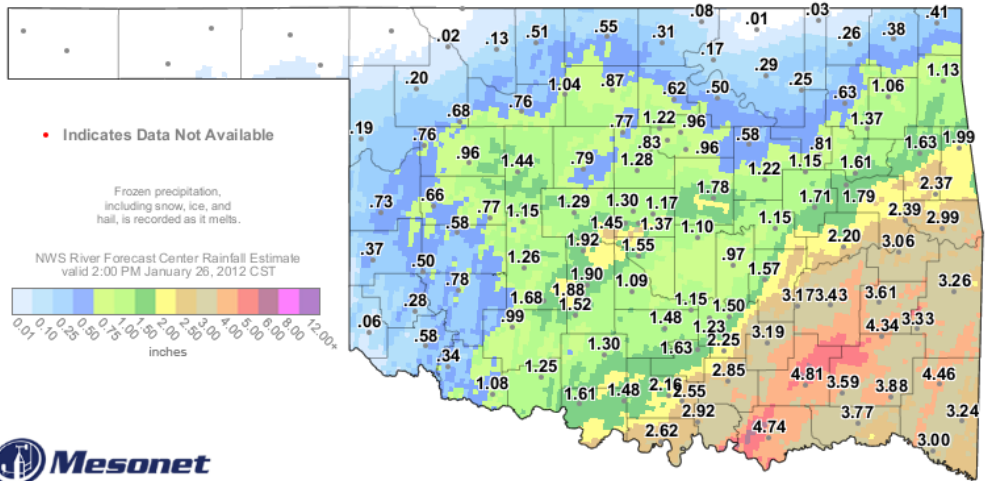
Fig. 5 (below).
Estimated/Measured snow for
1/11/2012.



A strong cold front swept through the HSA on the 11th, bringing much colder temperatures (after a much warmer than normal January thus far) and gusty northwest winds. A brief window of strong lift occurred during the evening and early morning hours due to a wave associated with a mid-level closed low that was moving into the Mississippi Valley. A band of light snow developed within this area of lift, bringing a dusting to near 1" of accumulation to locations primarily north of I-40 (see Fig. 5). The overall lack of moisture kept the accumulations low and minimized travel impacts. A few flurries persisted during the morning hours of the 12th, with no additional accumulation.

A significant rain event occurred across the area beginning on the evening of the 24th and continuing through the 25th. As a strong upper-level low moved across TX on the 24th and 25th, a large influx of gulf moisture advected into the HSA. Widespread rainfall totals of 3"-4" occurred across southeast and east central OK, as well as west central AR, with some locations receiving 4"-6" of rain (see Figs. 6, 7). However, northwest of I-44, less than 0.75" of rain fell, with portions of Osage and Washington Counties near the OK/KS state line only receiving a few hundredths of

an inch or less of rain. The following is a list of some of the highest measured rainfall totals: 4ENE of Daisy, OK 5.28"; Clayton, OK 4.34"; 4NNE Clayton 4.28"; 14WNW of Clayton 4.07"; and 1SE Clayton 4.04". All of this rainfall led to some flash flooding and river flooding in southeast OK and west central AR. Moderate flood stage was exceeded along the Poteau River near Panama, with minor flooding along the Poteau River near Poteau and the Kiamichi River near Antlers (refer to the E3 report for specific details; preliminary hydrographs available at the end of this document).



Mesonet
2-Day Rainfall (inches)
 2:55 PM January 26, 2012 CST
 Created 2:59:17 PM January 26, 2012 CST. © Copyright 2012

Fig. 6. 2-Day Rainfall totals from the Oklahoma Mesonet ending at 2:55pm CST 01/26/2012.

Tulsa, OK (TSA): Current 7-Day Observed Precipitation
 Valid at 1/26/2012 1200 UTC- Created 1/26/12 19:56 UTC

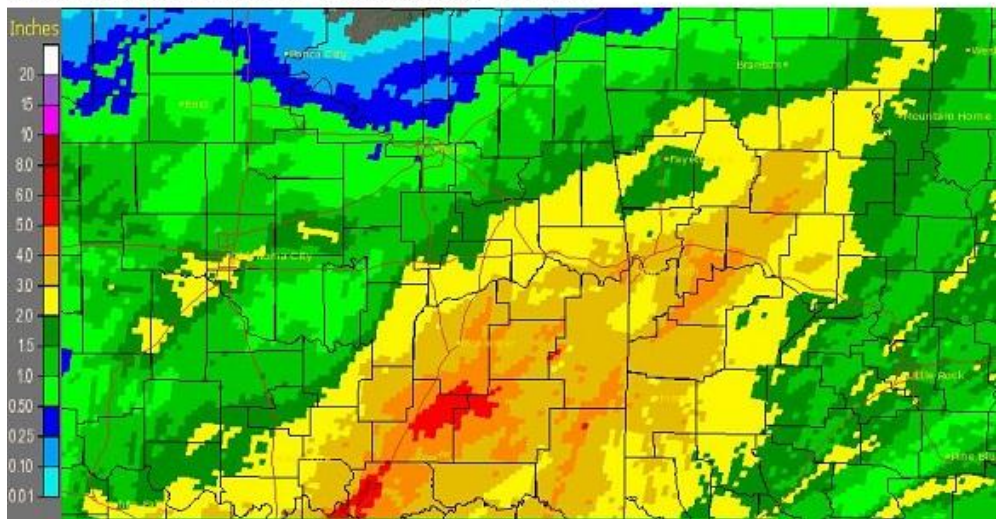
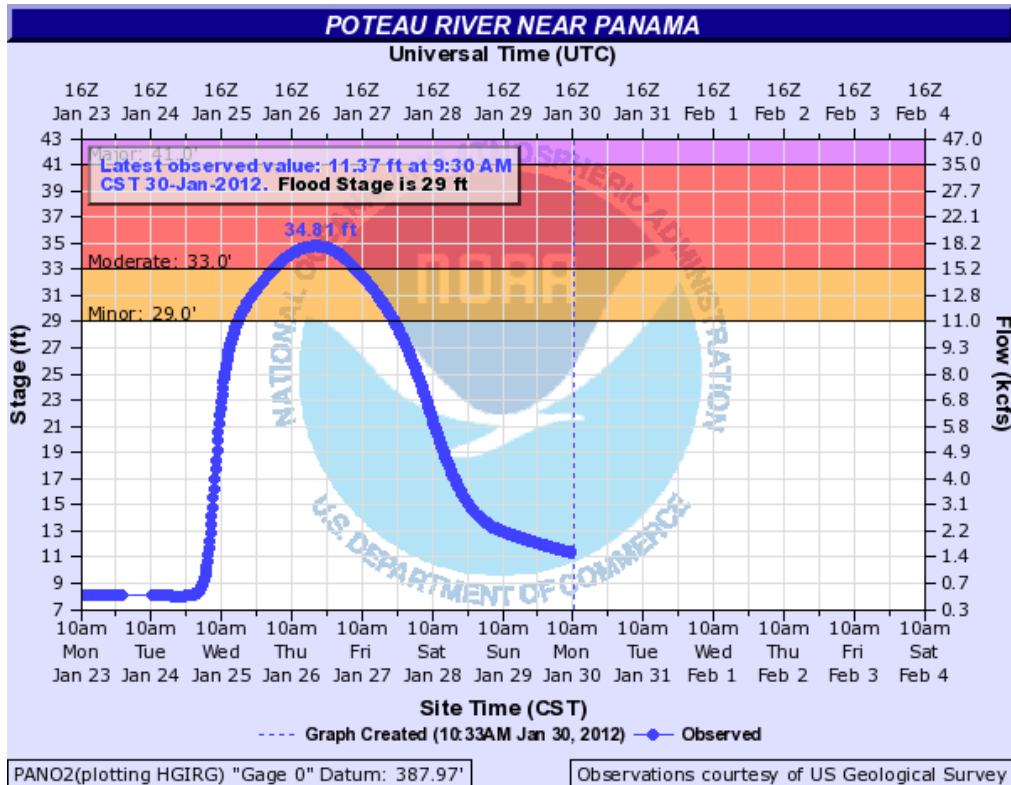
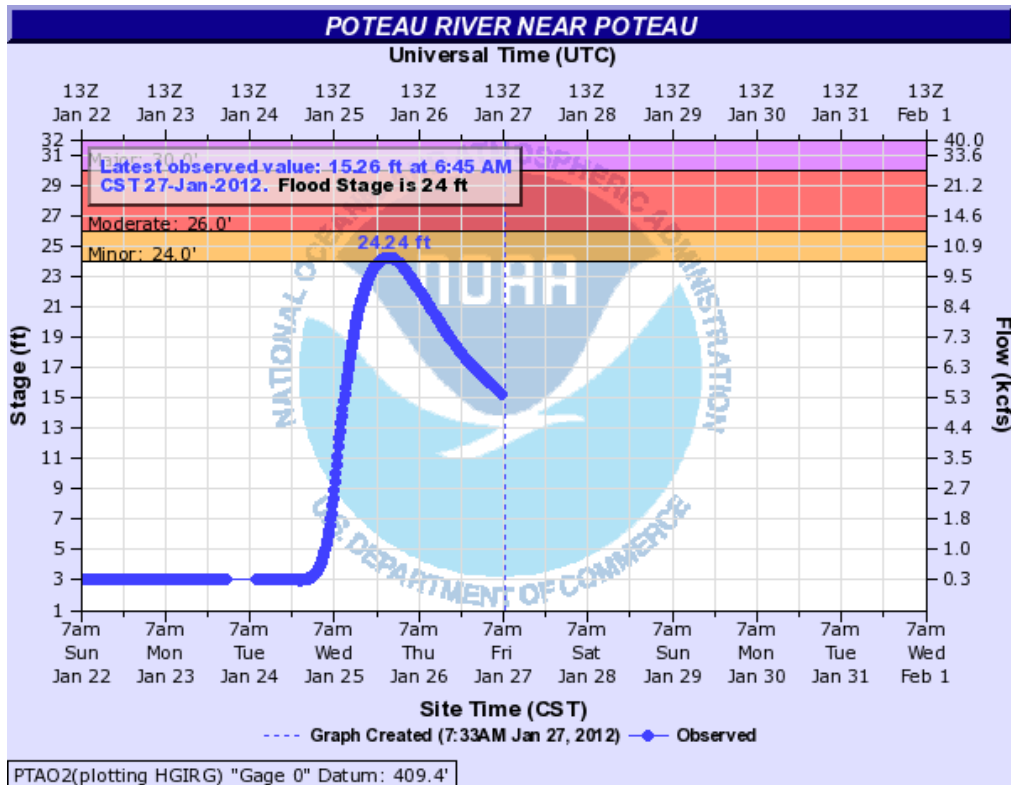


Fig. 7. Radar estimated rainfall totals ending 6am CST 01/26/2012.

Written by:
 Nicole McGavock
 Service Hydrologist
 WFO Tulsa

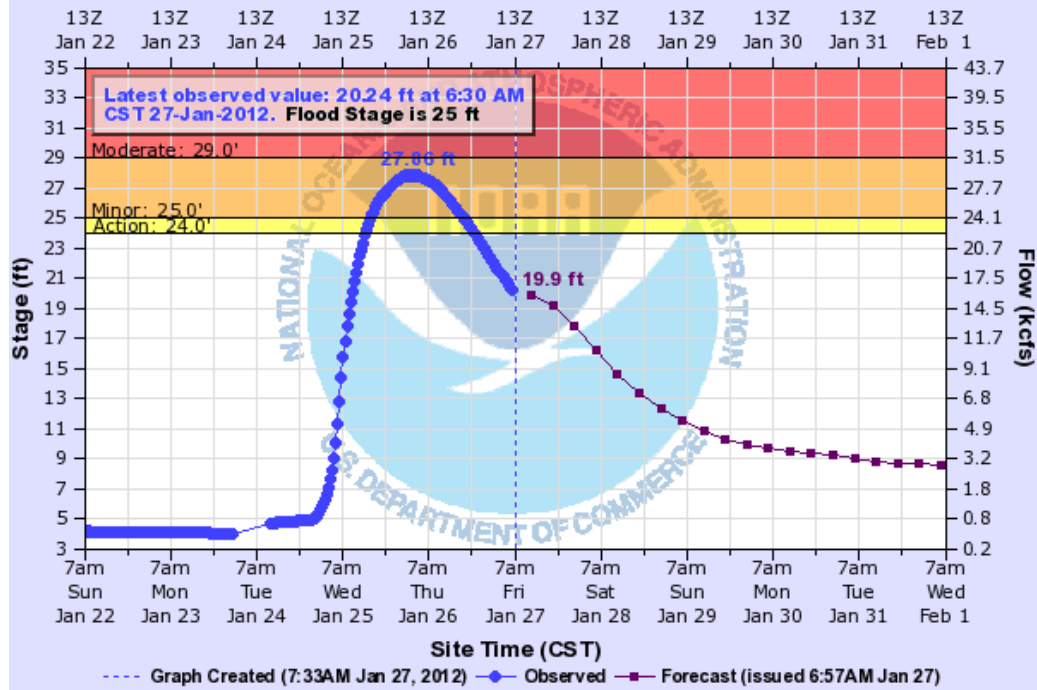
- Products issued:
- 3 River Flood Warnings (FLW)
 - 20 River Flood Statements (FLS)
 - 1 River Flood Advisories (FLS) (3 Advisory FLS CON/EXT/CAN)
 - 0 River Flood Watches (FFA) (0 Watch FFA CON/EXT/CAN)
 - 0 River Statements (RVS)
 - 0 Hydrologic Outlooks (ESF)
 - 2 Drought Information Statements (DGT)

Preliminary Hydrographs:



KIAMICHI RIVER NEAR ANTLERS

Universal Time (UTC)



ANTO2(plotting HGIRG) "Gage 0" Datum: 419.82'

Observations courtesy of US Geological Survey