

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 February	YEAR 2018
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 March 14, 2018	

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.

After an extended period of dryness, most of eastern Oklahoma and northwest Arkansas received heavy rain at the end of the month, with major flooding occurring along the Illinois River basin. Normal precipitation across the Hydrologic Service Area (HSA) in February ranges from 1.8 inches in Osage County to 3.2 inches in Choctaw County. In the Ozark region of northwest Arkansas, the normal monthly precipitation is 2.9 inches. This report, past E-5 reports, and monthly hydrology and climatology summaries can be found at <http://www.weather.gov/tsa/hydro-monthly-summary>.

Monthly Summary

There was a large rainfall gradient from northwest to southeast across eastern OK and northwest AR this month, primarily due to the heavy rainfall the last 2 weeks of February. Using the radar-derived estimated observed precipitation from the RFCs (Fig. 1a), rainfall totals for February 2018 ranged from around 1.5" in eastern Kay/northwest Osage Counties to around 12" in southeast OK. This corresponds to near normal to 25% below the normal February rainfall in eastern Kay and northwest Osage Counties, and 150% to around 400% of the normal February rainfall for the remainder of the area (Fig. 1b).

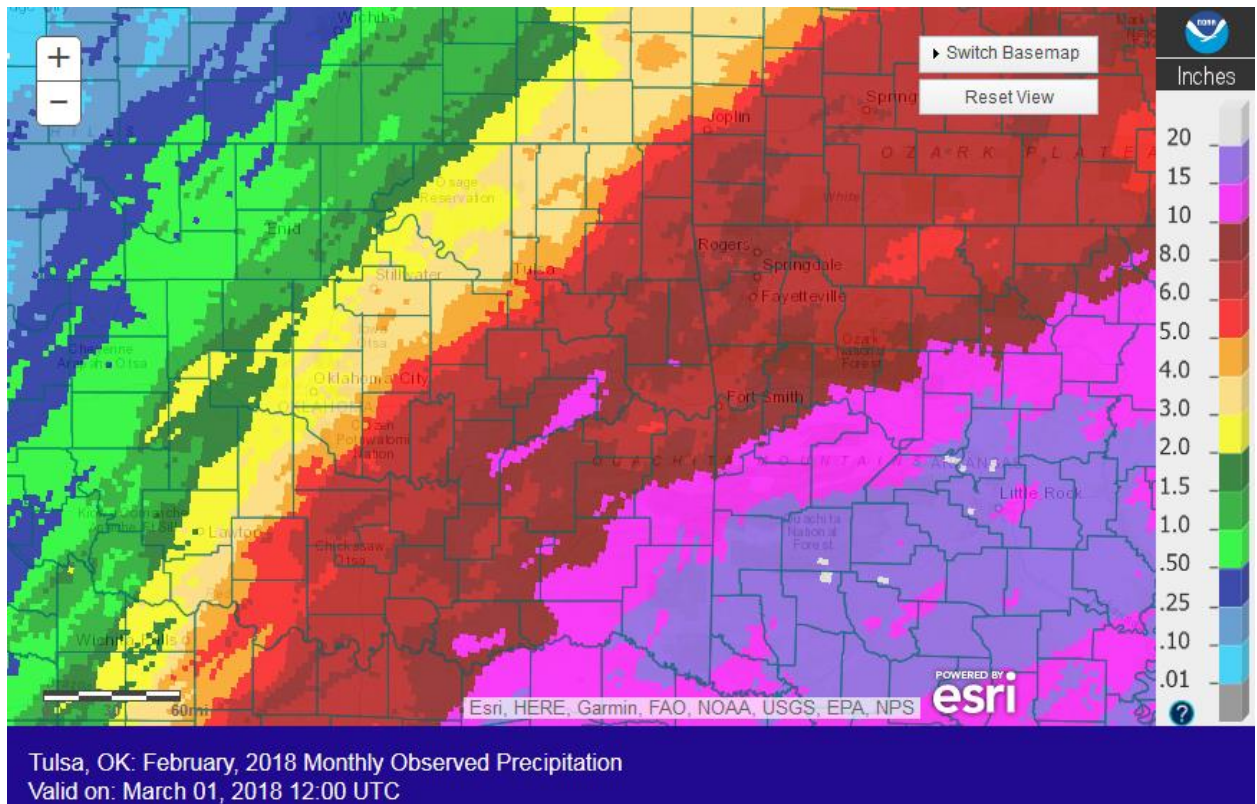


Fig. 1a. Estimated Observed Rainfall for February 2018

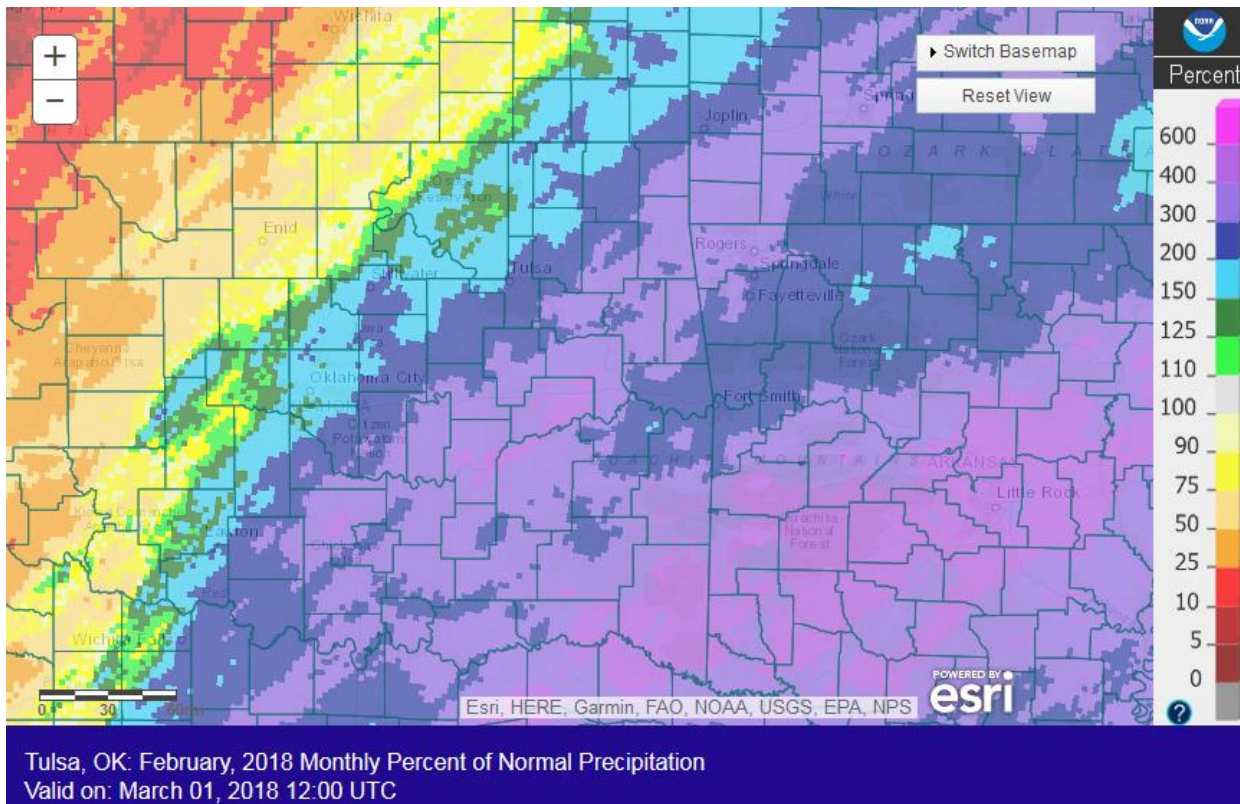


Fig. 1b. Estimated % of Normal Rainfall for February 2018

In Tulsa, OK, February 2018 ranked as the 54th warmest February (42.0°F; since records began in 1905), the 5th wettest February (4.82"; since records began in 1888), and the 20th least snowy February (Trace, tied 17 other years; since records began in 1900). Fort Smith, AR had the 40th warmest February (45.7°F; since records began in 1883), the 6th wettest February (7.03"; since records began in 1883), and the 37th least snowy February (Trace, tied 21 other years; since records began in 1884). Fayetteville, AR had the 22nd warmest (42.3°F, tied 1974), the 3rd wettest (7.91"), and the 10th least snowy (Trace, tied 13 other years) February since records began in 1950.

Some of the larger precipitation reports (in inches) for February 2018 included:

Cloudy, OK (meso)	12.95	Hugo, OK (meso)	12.16	Eufaula 4.6ENE, OK (coco)	12.13
Talihina, OK (meso)	11.16	Antlers, OK (meso)	10.37	Eufaula, OK (meso)	10.29
Clayton, OK (meso)	9.88	Stuart, OK (meso)	9.78	Upper Spavinaw Port, OK (coop)	9.48

Some of the lowest precipitation reports (in inches) for February 2018 included:

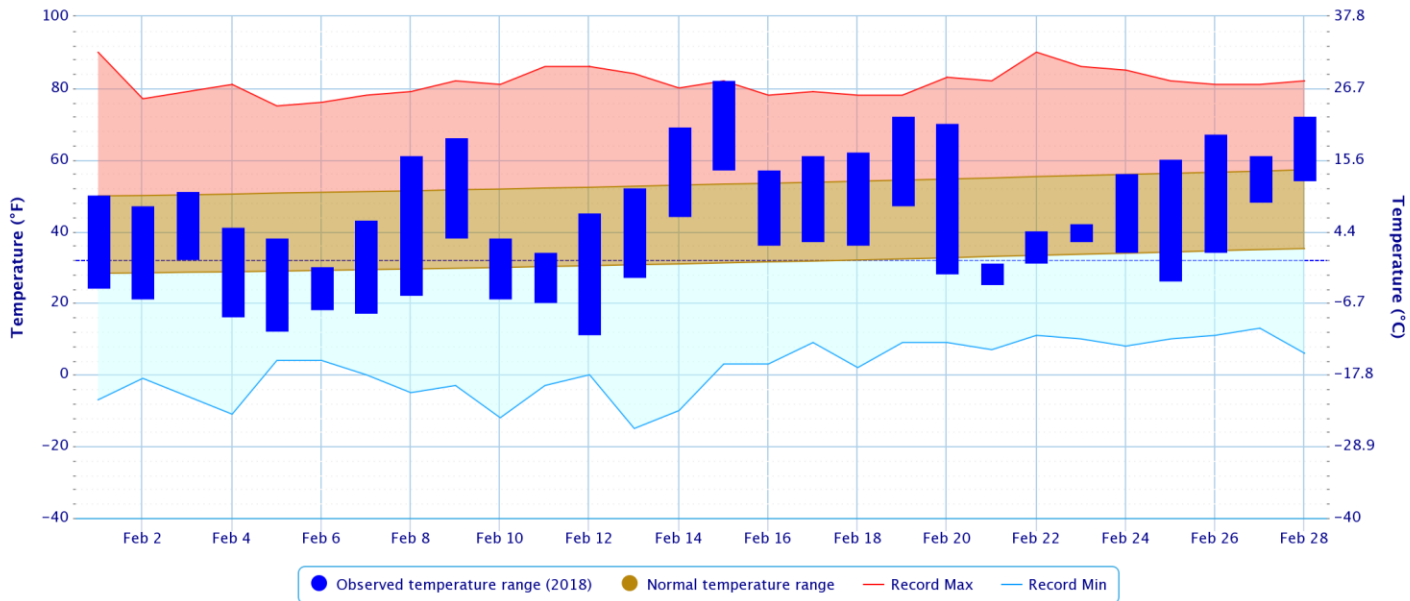
Burbank, OK (meso)	1.88	Foraker, OK (meso)	2.39	Pawnee, OK (coop)	2.91
Wynona, OK (meso)	3.14	Bartlesville, OK (ASOS)	3.31	Ochelata 5.6N, OK (coco)	3.38
Sperry 6.7WNW, OK (coco)	3.58	Talala, OK (meso)	3.79	Drumright 0.6SW, OK (coco)	3.84

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

Rank since 1921	Last 30 Days (Jan 31 – Mar 1)	Year-to-Date (Jan 1 – Mar 1)	Winter-to-Date (Dec 1- Mar 1)	Last 120 Days (Nov 2 – Mar 1)	Water-Year-to-Date (Oct 1– Mar 1)	Cool Growing Season (Sep 1 – Mar 1)	Last 365 Days (Mar 2, 2017 – Mar 1, 2018)
Northeast OK	3rd wettest	15 th wettest	31 st wettest	37 th driest	33 rd wettest	46 th driest	14 th wettest
East Central OK	2nd wettest	4th wettest	9 th wettest	31 st wettest	41 st wettest	40 th driest	10th wettest
Southeast OK	1st wettest	3rd wettest	2nd wettest	15 th wettest	20 th wettest	42 nd wettest	14 th wettest
Statewide	2nd wettest	14 th wettest	28 th wettest	38 th driest	46 th wettest	35 th driest	20 th wettest

Daily Temperature Data – Tulsa Area, OK (ThreadEx)

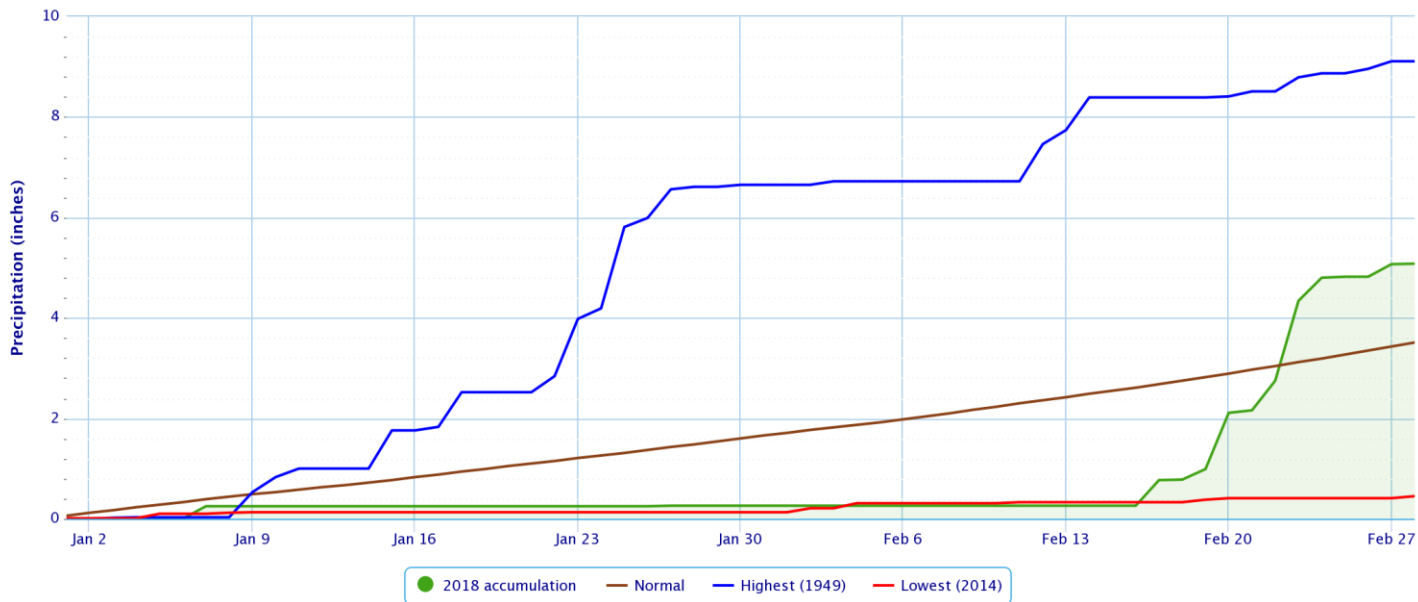
Period of Record – 1905-01-06 to 2018-03-01. Normals period: 1981-2010. Click and drag to zoom chart.



Powered by ACIS

Accumulated Precipitation – Tulsa Area, OK (ThreadEx)

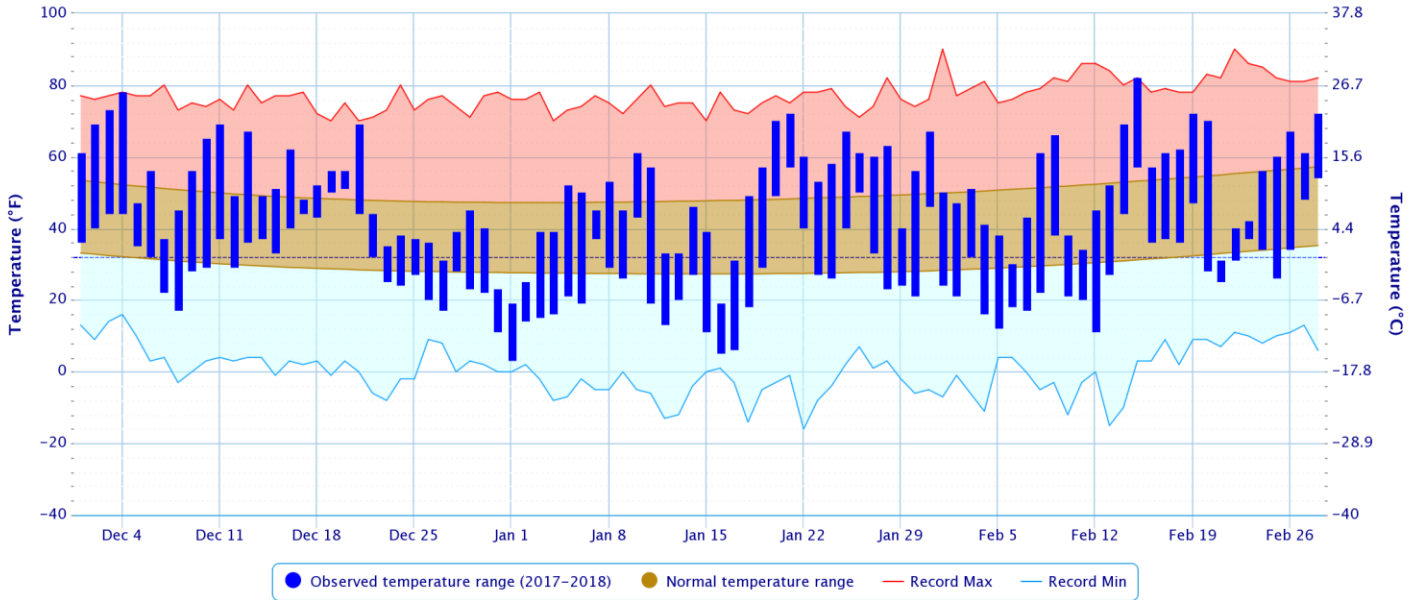
Click and drag to zoom to a shorter time interval; green/black diamonds represent subsequent/missing values



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Daily Temperature Data – Tulsa Area, OK (ThreadEx)

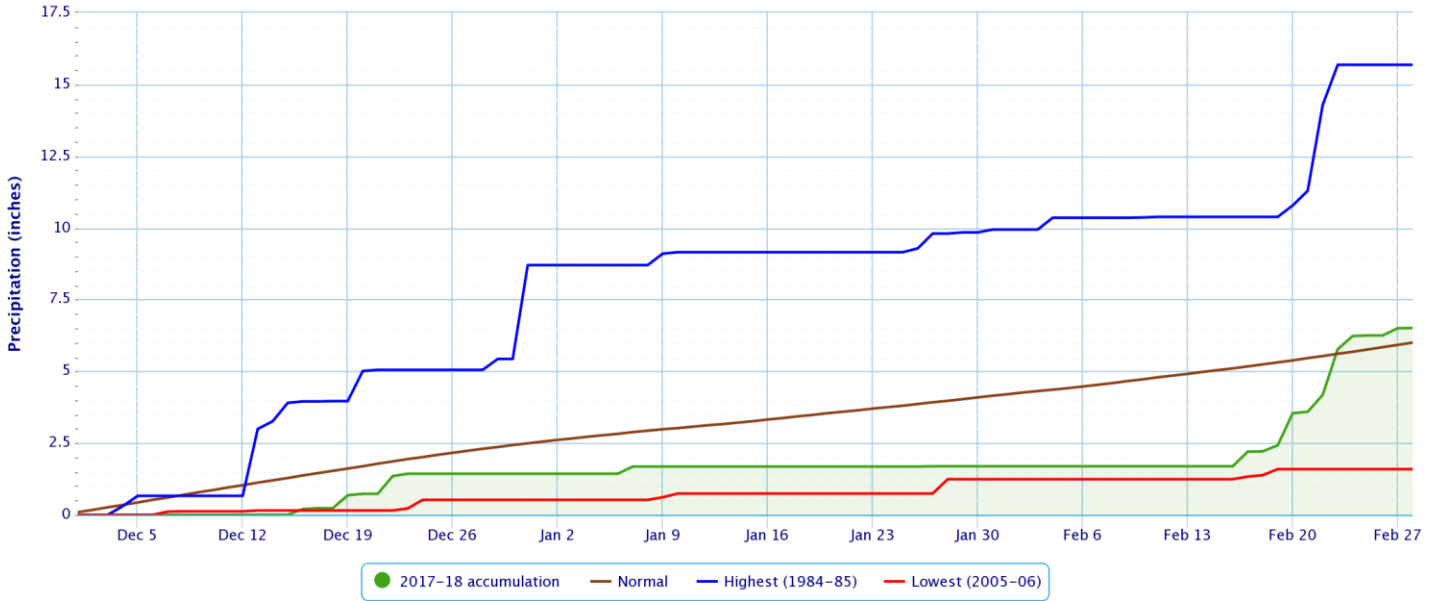
Period of Record – 1905-01-06 to 2018-03-01. Normals period: 1981-2010. Click and drag to zoom chart.



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Accumulated Precipitation – Tulsa Area, OK (ThreadEx)

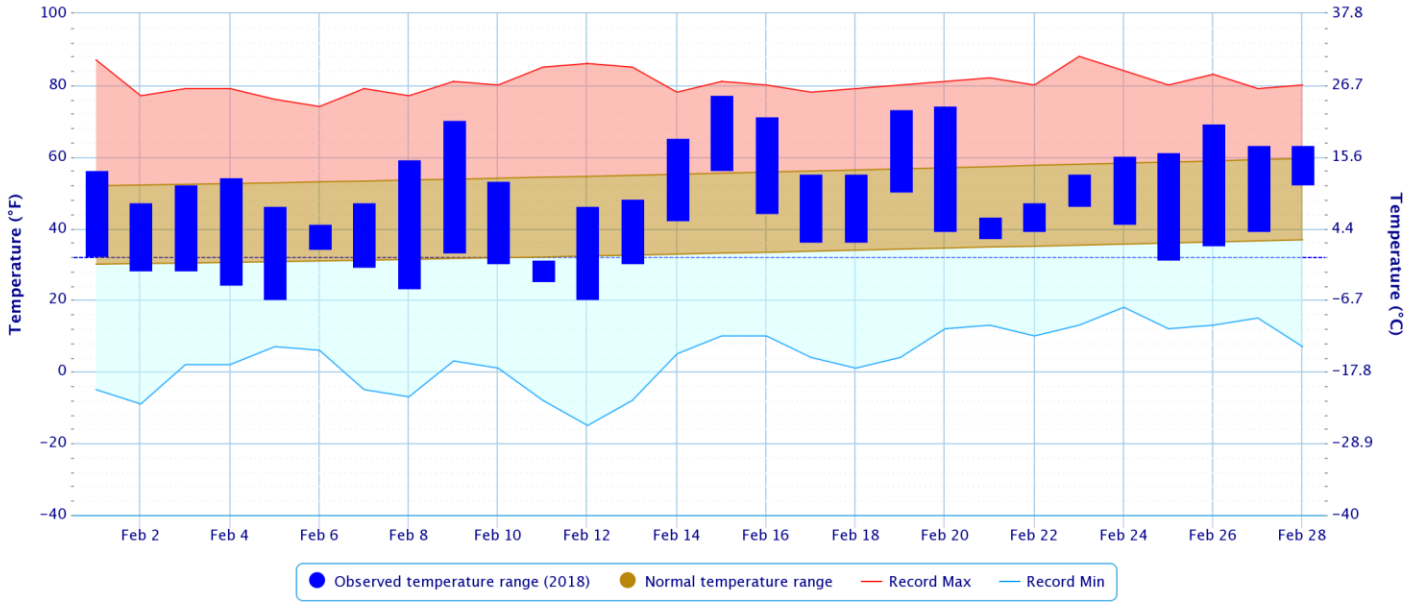
Click and drag to zoom to a shorter time interval; green/black diamonds represent subsequent/missing values



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Daily Temperature Data – Fort Smith Area, AR (ThreadEx)

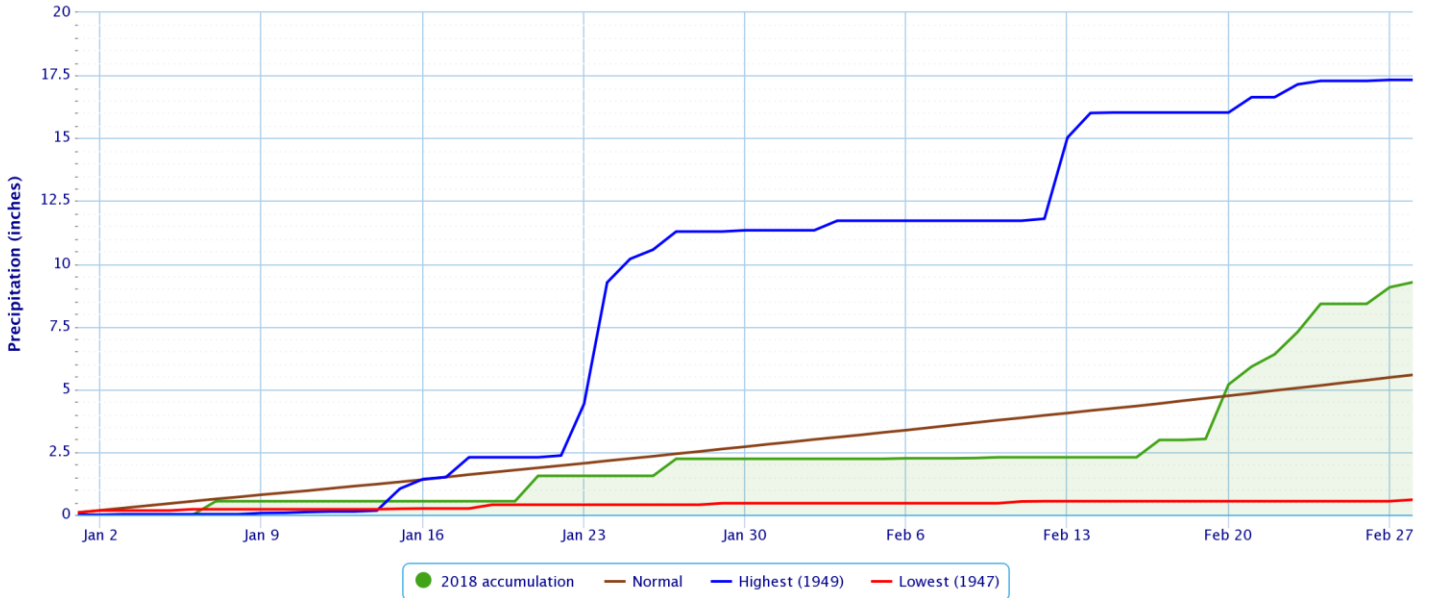
Period of Record – 1882-06-01 to 2018-03-01. Normals period: 1981-2010. Click and drag to zoom chart.



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Accumulated Precipitation – Fort Smith Area, AR (ThreadEx)

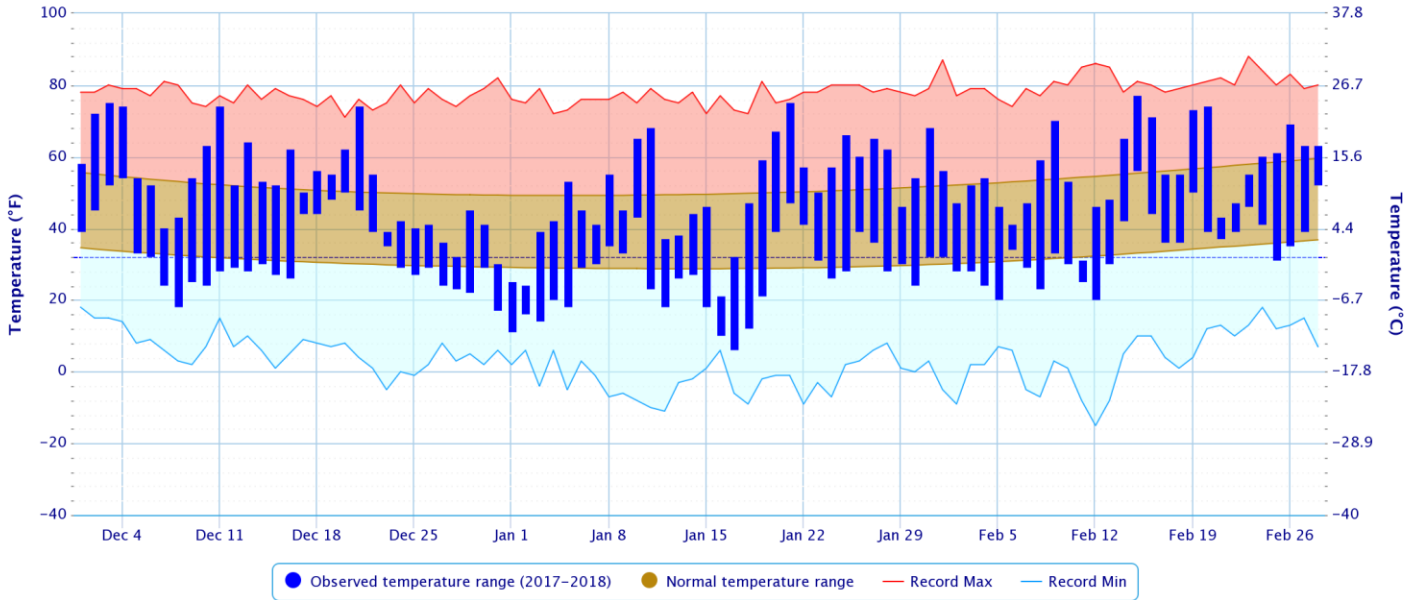
Click and drag to zoom to a shorter time interval; green/black diamonds represent subsequent/missing values



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Daily Temperature Data – Fort Smith Area, AR (ThreadEx)

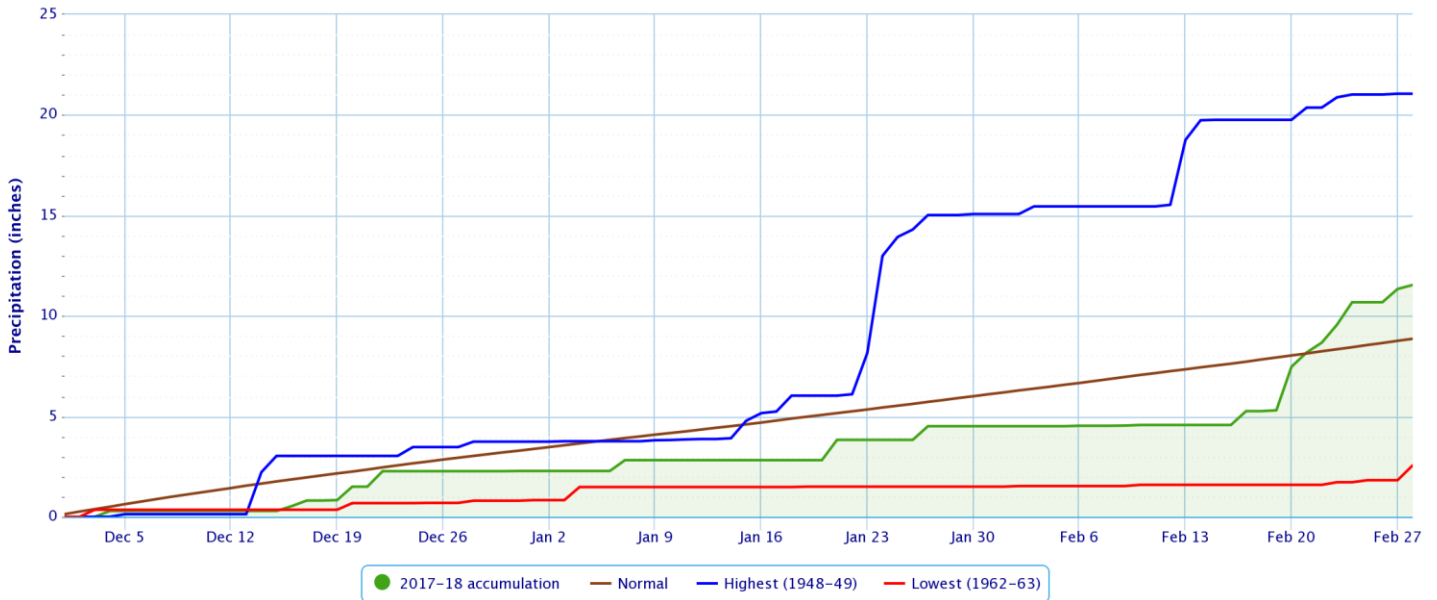
Period of Record – 1882-06-01 to 2018-03-01. Normals period: 1981-2010. Click and drag to zoom chart.



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Accumulated Precipitation – Fort Smith Area, AR (ThreadEx)

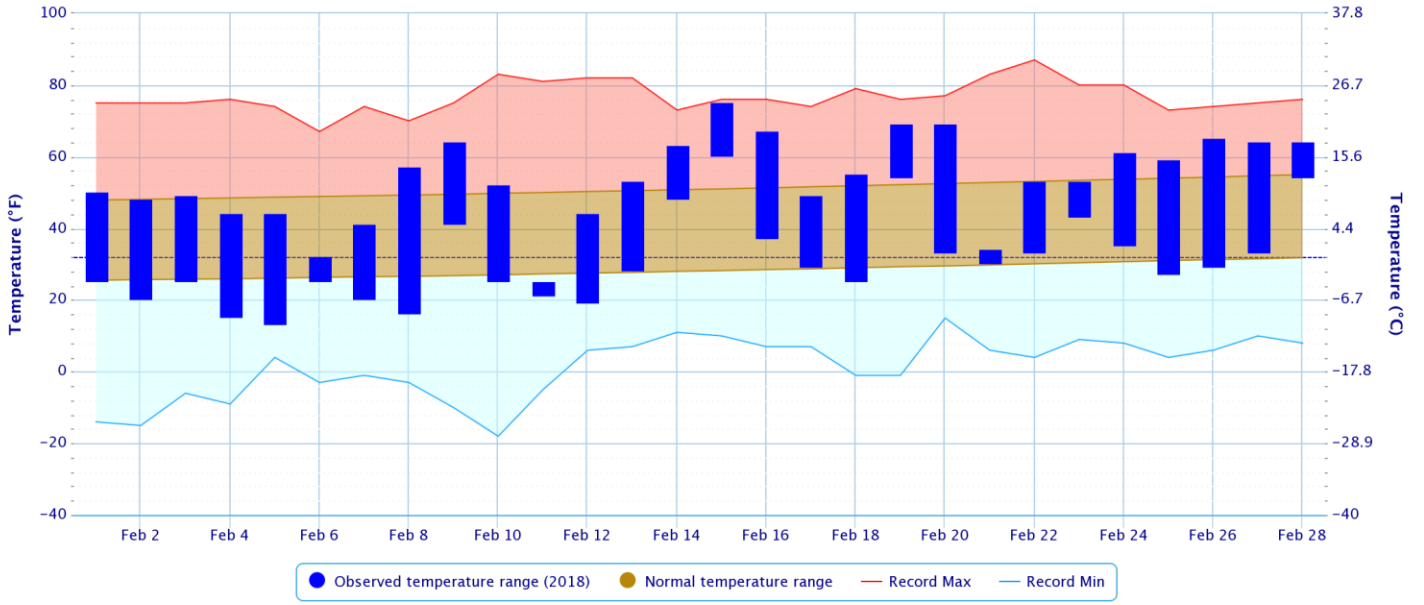
Click and drag to zoom to a shorter time interval; green/black diamonds represent subsequent/missing values



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Daily Temperature Data – FAYETTEVILLE DRAKE FIELD, AR

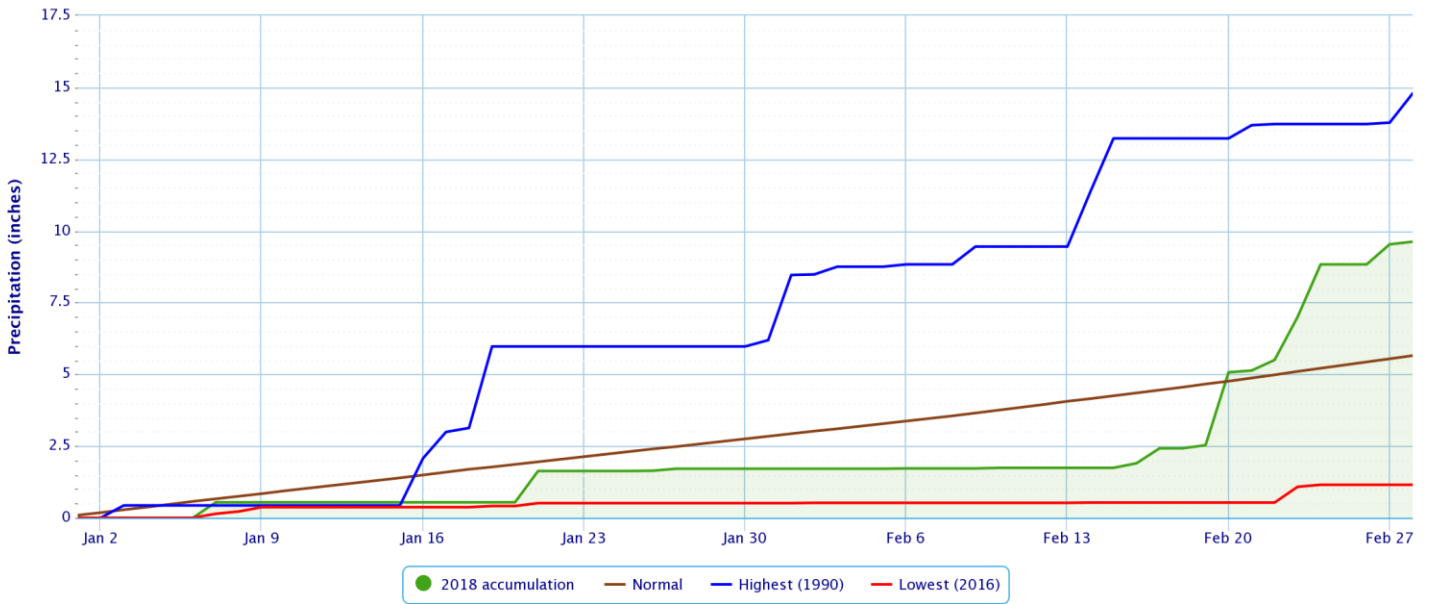
Period of Record – 1949-07-14 to 2018-03-01. Normals period: 1981-2010. Click and drag to zoom chart.



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Accumulated Precipitation – FAYETTEVILLE DRAKE FIELD, AR

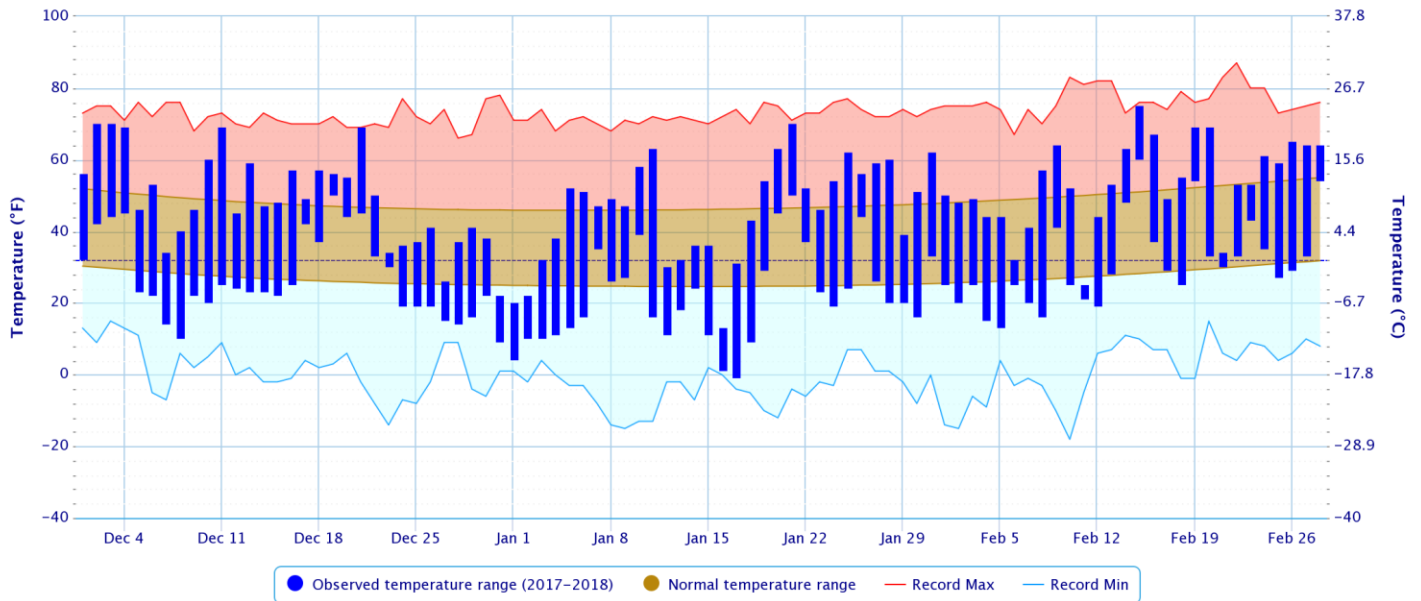
Click and drag to zoom to a shorter time interval. green/black diamonds represent subsequent/missing values



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Daily Temperature Data – FAYETTEVILLE DRAKE FIELD, AR

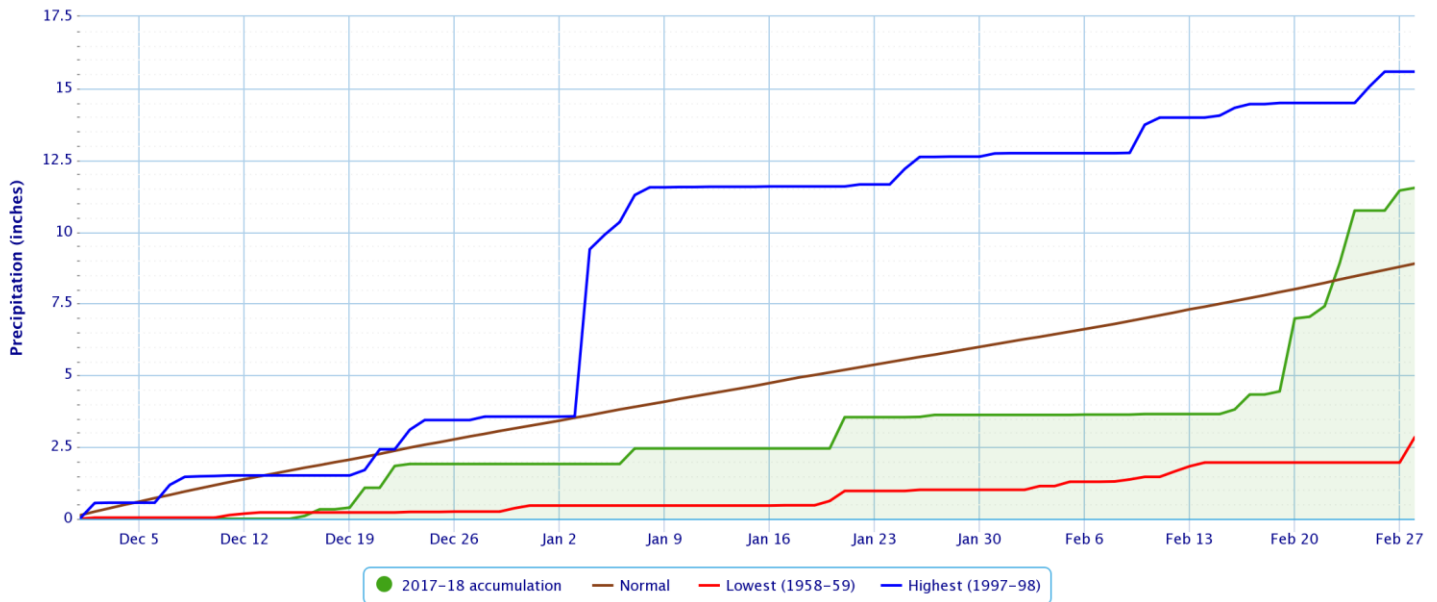
Period of Record – 1949-07-14 to 2018-03-01. Normals period: 1981-2010. Click and drag to zoom chart.



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Accumulated Precipitation – FAYETTEVILLE DRAKE FIELD, AR

Click and drag to zoom to a shorter time interval; green/black diamonds represent subsequent/missing values



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Winter (Dec-Jan-Feb) 2017-18 Summary

There was a significant rainfall gradient from northwest to southeast across eastern OK and northwest AR for Winter 2017-18, primarily due to the heavy rainfall at the end of February. Using the radar-derived estimated observed precipitation from the RFCs (Fig. 2a), rainfall totals for Winter (December-February) 2017-18 ranged from around 1” in eastern Kay/far western Osage County to near 25” in southeast OK. This corresponds to around 40% to around 200% of the normal Winter rainfall (Fig. 2b) from northwest to southeast across eastern OK and northwest AR.

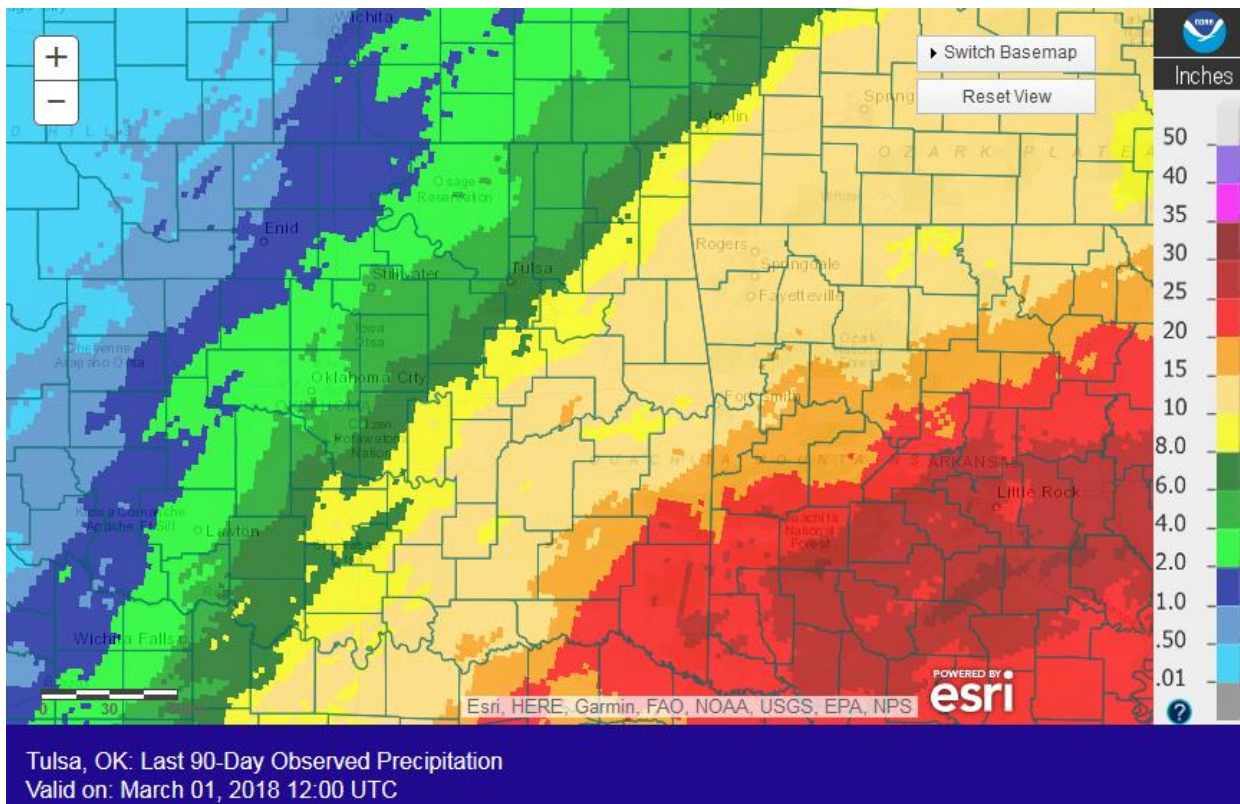


Fig. 2a. Estimated Observed Rainfall for Winter 2017-18

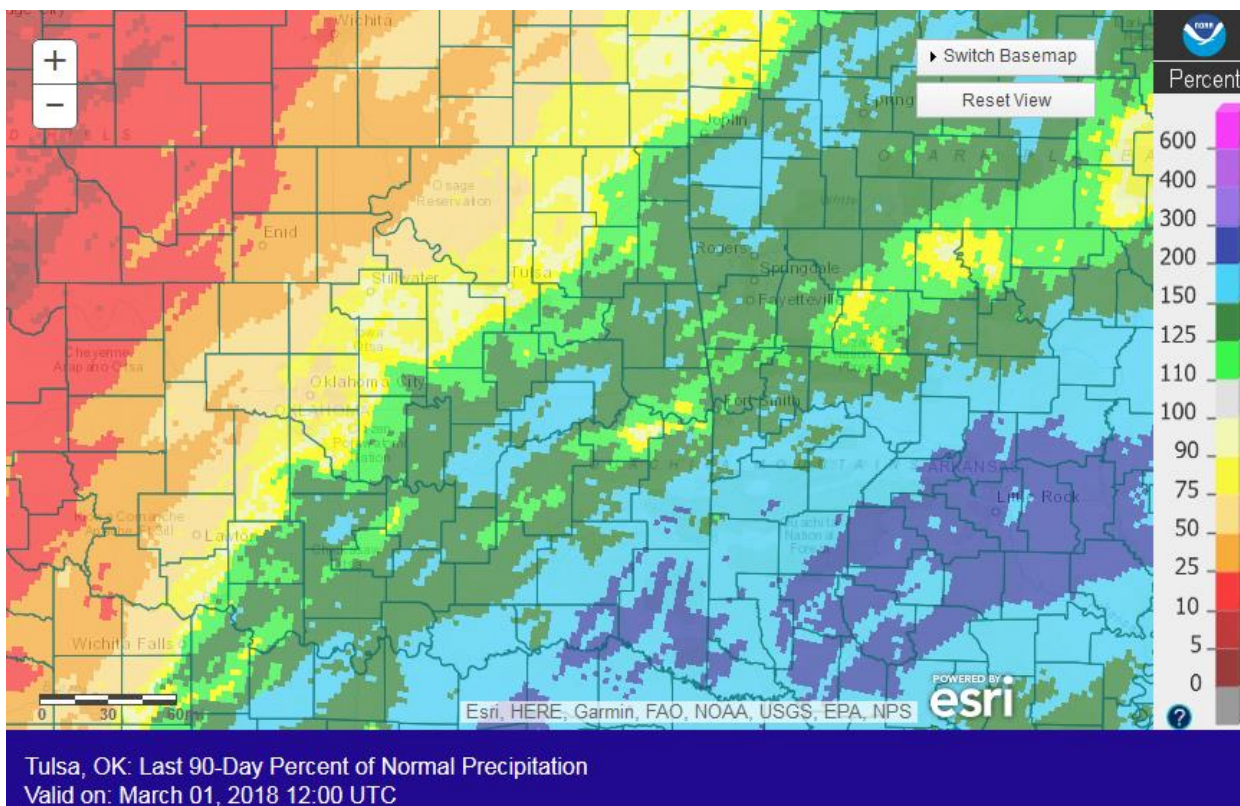


Fig. 2b. Estimated % of Normal Rainfall for Winter 2017-18

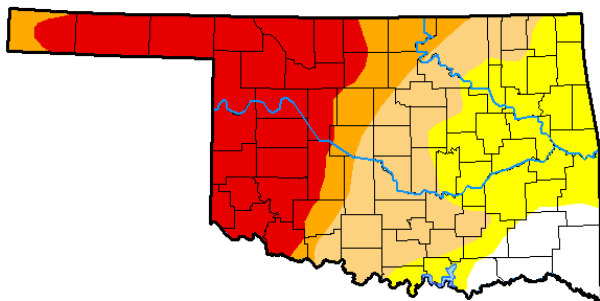
In Tulsa, OK, Winter 2017-18 ranked as the 46th warmest Winter (40.3°F; since records began in 1905-06) and the 36th wettest Winter (6.51"; since records began in 1888-89). Fort Smith, AR had the 58th warmest Winter (42.1°F, tied 1982-83; since records began in 1882-83) and the 17th wettest Winter (11.54", tied 1927-28; since records began in 1882-83). Fayetteville, AR had the 28th coldest (37.9°F, tied 2006-07, 1995-96, 1993-94) and the 11th wettest (11.53") Winter since records began in 1949-50.

Drought

According to the [U.S. Drought Monitor](#) (USDM) from February 27, 2018 (Figs. 3, 4), Severe (D2) Drought conditions were impacting northwest Osage County and eastern Kay County in eastern OK. Moderate (D1) drought conditions were present across portions of Osage, Washington, Nowata, Craig, Rogers, Pawnee, and Creek Counties in eastern OK. Abnormally Dry (D0) but not in drought conditions encompassed the remainder of eastern Oklahoma and northwest Arkansas, with the exception of Choctaw, Pushmataha, and southern Le Flore Counties where no dry conditions remain.

**U.S. Drought Monitor
Oklahoma**

February 27, 2018
(Released Thursday, Mar. 1, 2018)
Valid 7 a.m. EST



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	7.72	92.28	66.20	43.87	32.91	0.00
Last Week 02-20-2018	0.00	100.00	99.92	88.91	37.80	0.00
3 Months Ago 11-28-2017	27.12	72.88	39.90	20.80	0.78	0.00
Start of Calendar Year 01-02-2018	0.00	100.00	77.15	38.76	0.00	0.00
Start of Water Year 09-26-2017	64.46	35.54	0.77	0.00	0.00	0.00
One Year Ago 02-28-2017	12.64	87.36	73.14	28.77	0.18	0.00

Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

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

Author:

Deborah Bathke
National Drought Mitigation Center

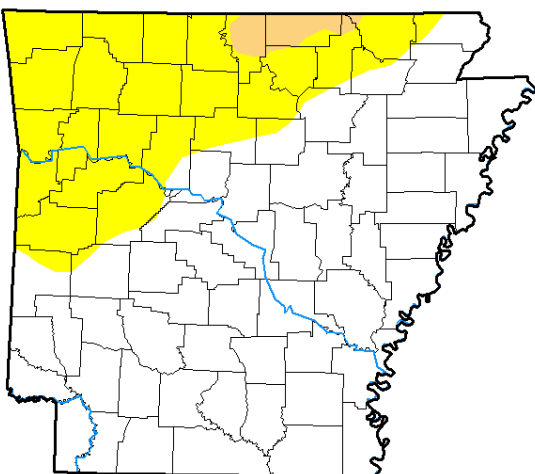


<http://droughtmonitor.unl.edu/>

Fig. 3. Drought Monitor for Oklahoma

**U.S. Drought Monitor
Arkansas**

February 27, 2018
(Released Thursday, Mar. 1, 2018)
Valid 7 a.m. EST



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	68.86	31.14	1.91	0.00	0.00	0.00
Last Week 02-20-2018	40.29	59.71	42.71	26.31	1.91	0.00
3 Months Ago 11-28-2017	1.39	98.61	85.20	61.27	14.66	0.00
Start of Calendar Year 01-02-2018	8.22	91.78	71.27	32.01	2.37	0.00
Start of Water Year 09-26-2017	39.57	60.43	0.46	0.00	0.00	0.00
One Year Ago 02-28-2017	23.31	76.69	34.06	18.29	2.00	0.00

Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

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

Author:

Deborah Bathke
National Drought Mitigation Center



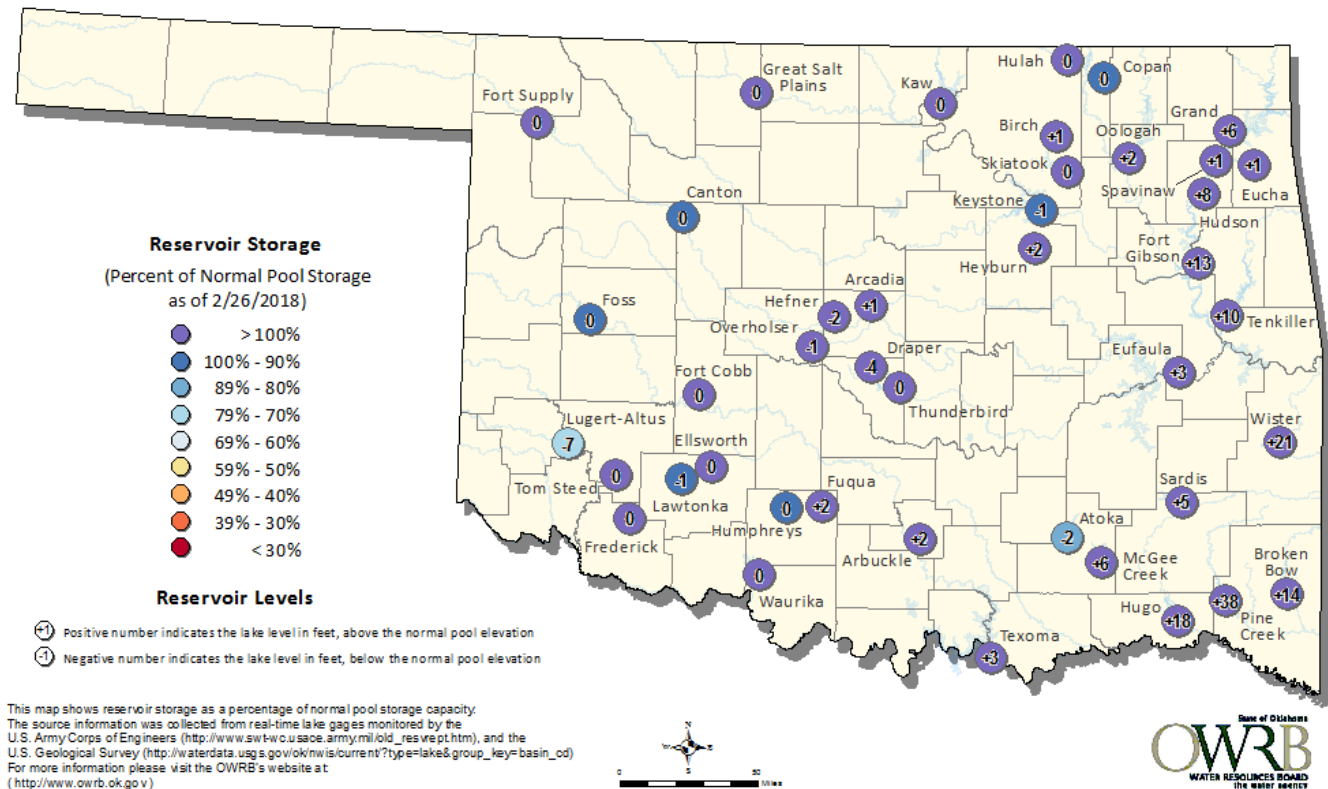
<http://droughtmonitor.unl.edu/>

Fig.4. Drought Monitor for Arkansas

Reservoirs

Oklahoma Surface Water Resources

Reservoir Levels and Storage as of 2/26/2018



According to the USACE, several of the lakes in the HSA were well into their flood pools due to heavy rain at the end of the month. Keystone Lake was the only reservoir more than 3% below its conservation level at 96%. Reservoirs above 3% of their flood pool storage as of 2/27/2018: Wister Lake 89%, Sardis Lake 57%, Hugo Lake 47%, Pensacola Lake 32%, Ft. Gibson 32%, Tenkiller Lake 28%, Eufaula Lake 27%, Hudson Lake 26%, Beaver Lake 9%, and Oologah Lake 7%.

Outlooks

The [Climate Prediction Center](#) (CPC) outlook for March 2018 (issued February 28, 2018) indicates an enhanced chance for above normal temperatures across all of eastern OK and northwest AR. This outlook also indicates a slightly enhanced chance for above median precipitation across southeast and east central OK, and northwest and west central AR, with equal chances for above, near, and below median precipitation across northeast OK. This outlook takes into account weather conditions forecast over the next 1-2 weeks, sub-seasonal climate signals, including the Madden-Julian Oscillation (MJO), and influence from the weak La Niña. The MJO state would favor a warming trend over the central U.S. by the end of the month.

For the 3-month period March-April-May 2018, CPC is forecasting an enhanced chance for above normal temperatures and an equal chance for above, near, and below median precipitation across all of eastern OK and northwest AR (outlook issued February 15, 2018). This outlook is based on both statistical and dynamical forecast tools and decadal timescale climate trends, as well as impacts from La Niña and the MJO. According to CPC, La Niña conditions continued in February. La Niña conditions are predicted to decay rapidly and transition to ENSO neutral conditions during spring. ENSO neutral conditions are favored to persist through the summer. The CPC La Niña Advisory remains in effect.

Summary of Heavy Precipitation Events Daily quality controlled rainfall maps can be found at: http://water.weather.gov/precip/index.php?location_type=wfo&location_name=tsa

A band of post-frontal snow dropped southeast across southeast KS, far northeast OK, and southwest MO, bringing minor accumulation to far northeast OK. 0.3" was measured 5 miles west northwest of Vinita, OK, with estimates of a trace to around 3/4" in locations that saw the snow (Fig. 5). The liquid equivalent for this snow was less than 0.10".

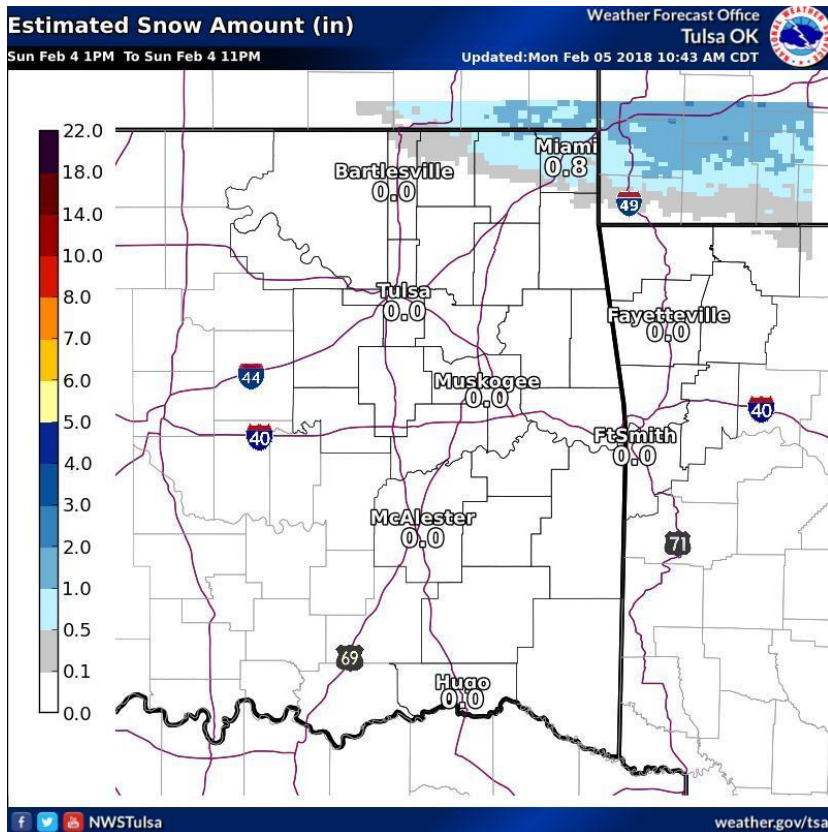
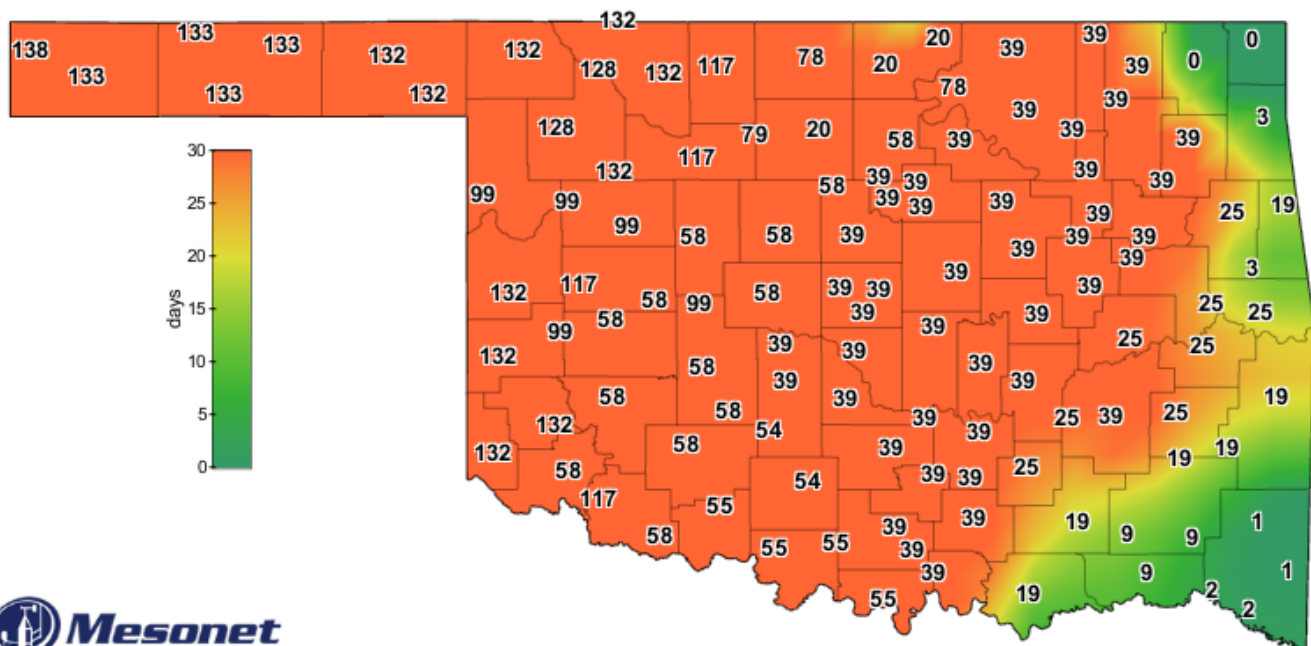


Fig. 5. Estimated snowfall totals from 1pm CST 2/04/2018 through 11pm CST 2/04/2018.

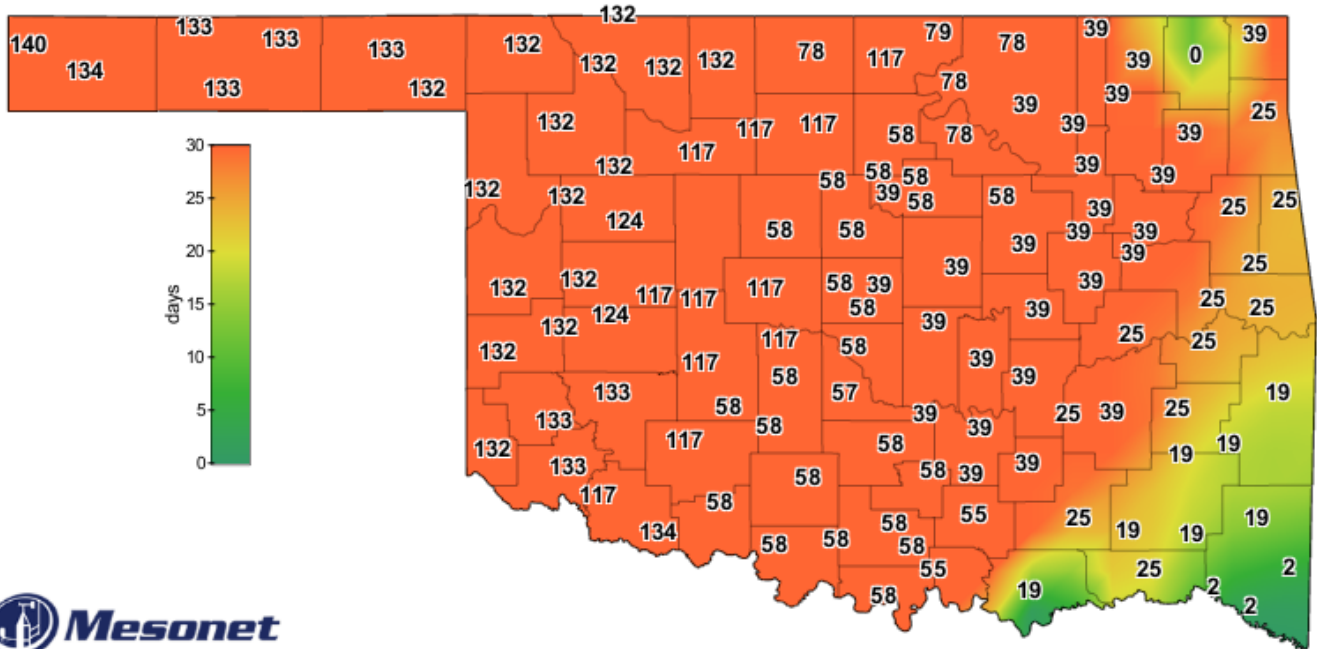


Consecutive Days With Less Than 0.10" of Rainfall

February 15, 2018

Created 7:15:03 AM February 16, 2018 CST. © Copyright 2018

Fig. 6. OK Mesonet consecutive days with less than 0.10" of rain through Feb. 15, 2018.



Mesonet
Consecutive Days With Less Than 0.25" Rainfall

February 15, 2018

Created 7:15:03 AM February 16, 2018 CST. © Copyright 2018

Fig. 7. OK Mesonet consecutive days with less than 0.25" of rain through Feb. 15, 2018.

After a long stretch of little to no rain across the area (Figs. 6, 7), the upper-level pattern changed, bringing active weather to the region starting on the 16th. Several days of more significant rainfall occurred a few days later as a deep plume of moisture with sub-tropical origins surged north into the region on the 19th and remained over the area. Precipitable water values were nearly 1.5", very high for this time of year. Showers and thunderstorms expanded across eastern OK and northwest AR on the 19th, bringing a few hundredths to around 1.5 inches of rain (Fig. 8). Temperatures were very warm on the 19th, but that quickly came to an end as a strong cold front pushed south on the 20th. Temperatures dropped precipitously as the front moved through. Temperatures dropped over 20° in one hour, with a 20°-35° drop in temperature over a 3-hour period (Fig. 9). Ahead of the front, widespread showers and thunderstorms developed in the warm, moist airmass on the 20th, and continued for much of the day and through the night. 2"-5" of rain fell across southeast through east central OK and northwest AR southeast of a McIntosh County to Delaware County line (Fig. 10). This resulted in minor to moderate river flooding along the portions of the Illinois and Poteau Rivers (see preliminary hydrographs at the end of this report and refer to the E3 for specific details). Elsewhere, rainfall totals were around 0.50" to near 2". On the afternoon of the 21st, a 53-year old man drove across a flooded low water crossing three miles west of Stilwell and drowned. Temperatures continued to fall to below freezing behind the front, resulting in freezing rain/freezing drizzle across northeast OK and northwest AR starting on the afternoon of the 20th and continuing through the night. Ice accumulations ranged from a glaze to around 0.25" (Fig. 11).

24-hour rainfall totals >3.5" ending at 6 am CST 2/21/2018:

Hanobia, 1S, OK	4.62	Eufaula 4.6ENE, OK	4.61	Cloudy 5ENE, OK	4.50
Cloudy 6SSE, OK	4.25	Hugo 2NW, OK	4.19	Clayton 4NNE, OK	3.87
Panama 2E, OK	3.83	Talihina 4SE, OK	3.76	Tahlequah 2ENE, OK	3.72
Antlers 1W, OK	3.70	Daisy 4ENE, OK	3.58	Antlers 5W, OK	3.56
Clayton 1SE, OK	3.56	West Siloam Springs, OK	3.51		

The active southwesterly flow continued, bringing additional periods of showers and thunderstorms from the 21st through the 25th. A shortwave lifted northeast across TX and into eastern OK on the 23rd, interacting with an area of warm air advection of the region. This resulted in widespread showers and thunderstorms over eastern OK and northwest AR during the day and again overnight into the 24th. By 6am CST on the 24th, most of eastern OK and northwest AR south of I-44 had received 0.75" to 2" of rain, with a heavier rain axis of 2" to around 4" of rain from McIntosh northeast into far northwest AR (Fig. 14). The rain continued until the afternoon of the 24th, bringing an additional 0.50"-2" of rain to much of the area (Fig. 15).

24-hour rainfall totals >3.0" ending at 6 am CST 2/24/2018:

Eufaula 4.6ENE, OK	3.76	Eufaula 5W, OK	3.75	Little Frock 2NNE, AR	3.30
Muskogee 6S, OK	3.22	Tahlequah 2ENE, OK	3.14	Westville 5WNW, OK	3.10
Eldon, OK	3.05	Prairie Grove, AR	3.05	Springdale, AR	3.03

The 7-day rainfall total ending 2/26/18 ranged from 4" to around 10" from I-44 southeast (Figs. 18-19). Most of area received 5"-8", while locations northwest of I-44 had 1"-4". The rain on the 23rd-24th, on top of wetted soils, resulted in both flash flooding and mainstem river flooding. Major flooding occurred along the Illinois River, with Minor to Moderate flooding along the Spring River, Poteau River, lower Arkansas River, Lee Creek, and Kiamichi River (see preliminary hydrographs at the end of this report and refer to the E3 for specific details). Wister Lake (along the Poteau River in southeast OK) utilized up to around 88% of its flood control pool during the event.

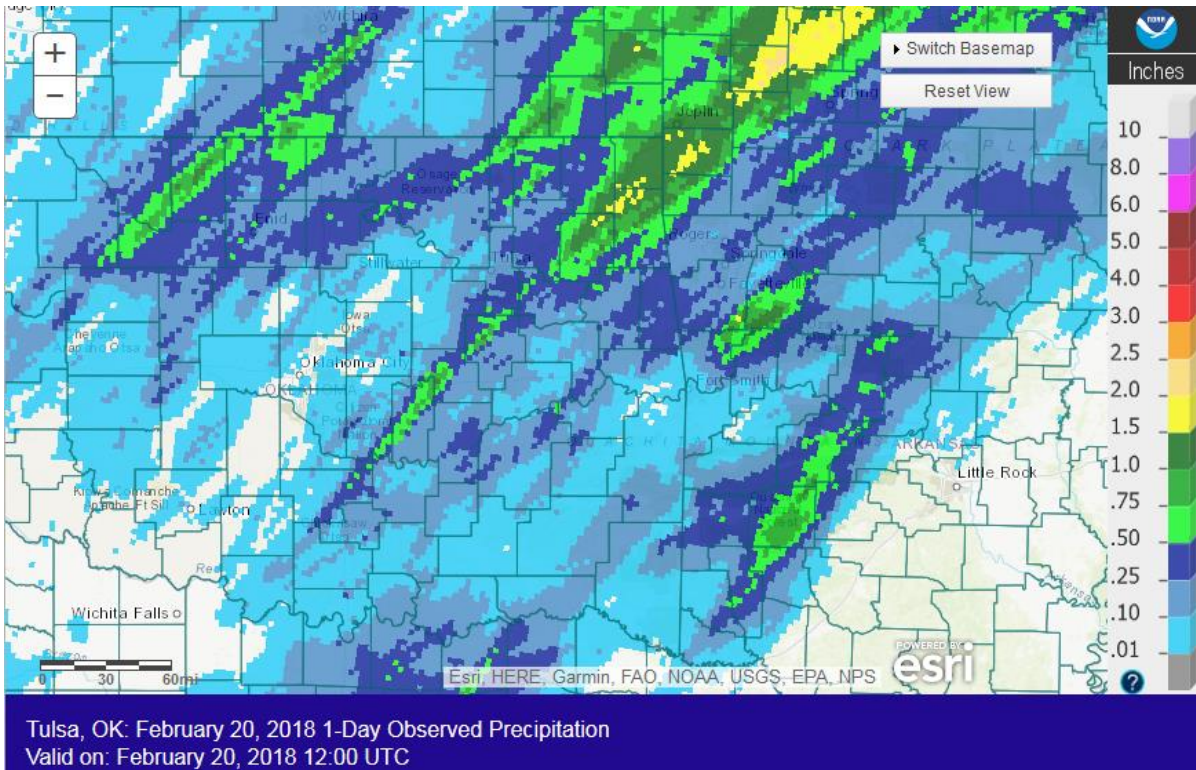
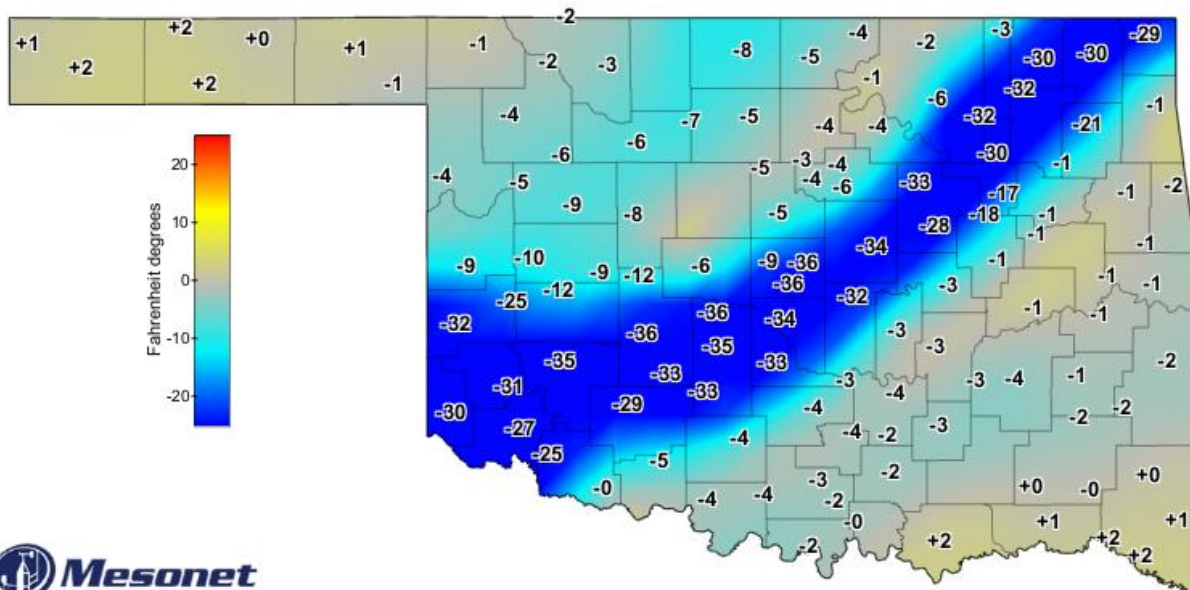
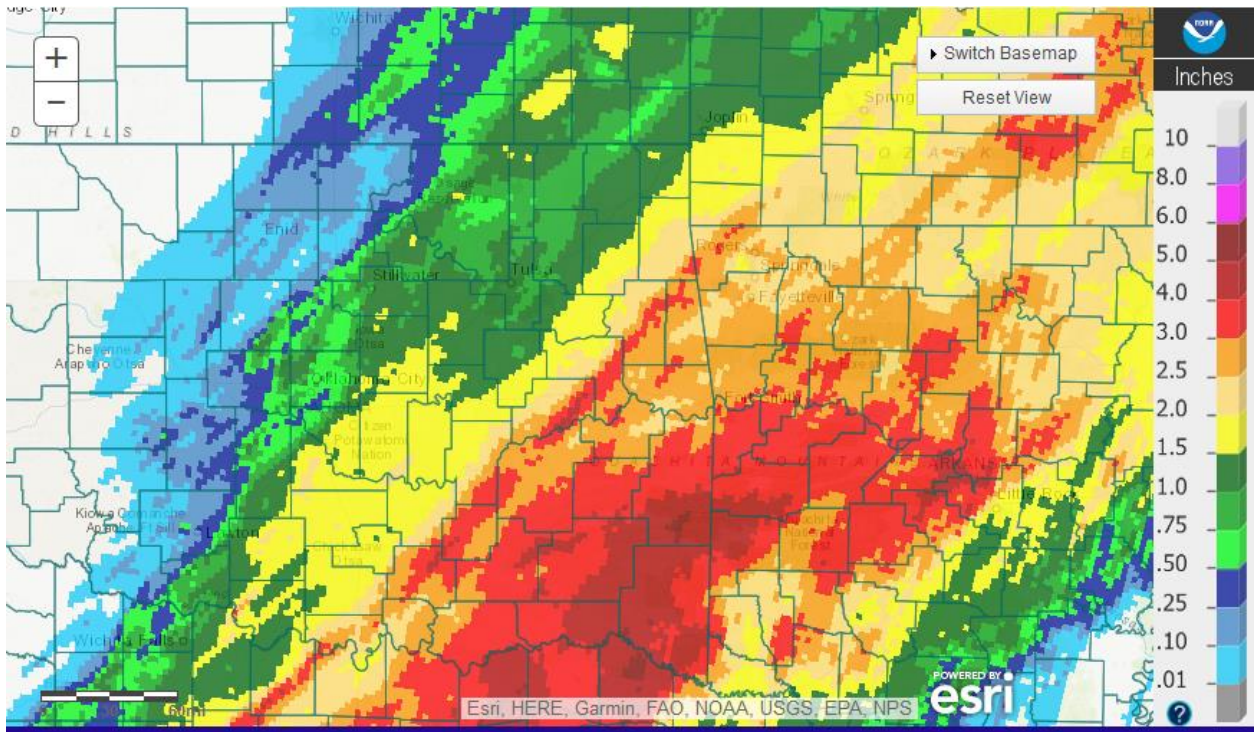


Fig. 8. 24-hour Estimated Observed Rainfall ending at 6am CST 2/20/2018.



Mesonet
3-Hour Air Temperature Change (°F)
9:25 AM February 20, 2018 CST
Created 9:29:21 AM February 20, 2018 CST. © Copyright 2018

Fig. 9. OK Mesonet 3-hour temperature change ending at 9:25am 2/20/2018.



Tulsa, OK: Current 1-Day Observed Precipitation
 Valid on: February 21, 2018 12:00 UTC

Fig. 10. 24-hour Estimated Observed Rainfall ending at 6am CST 2/21/2018.

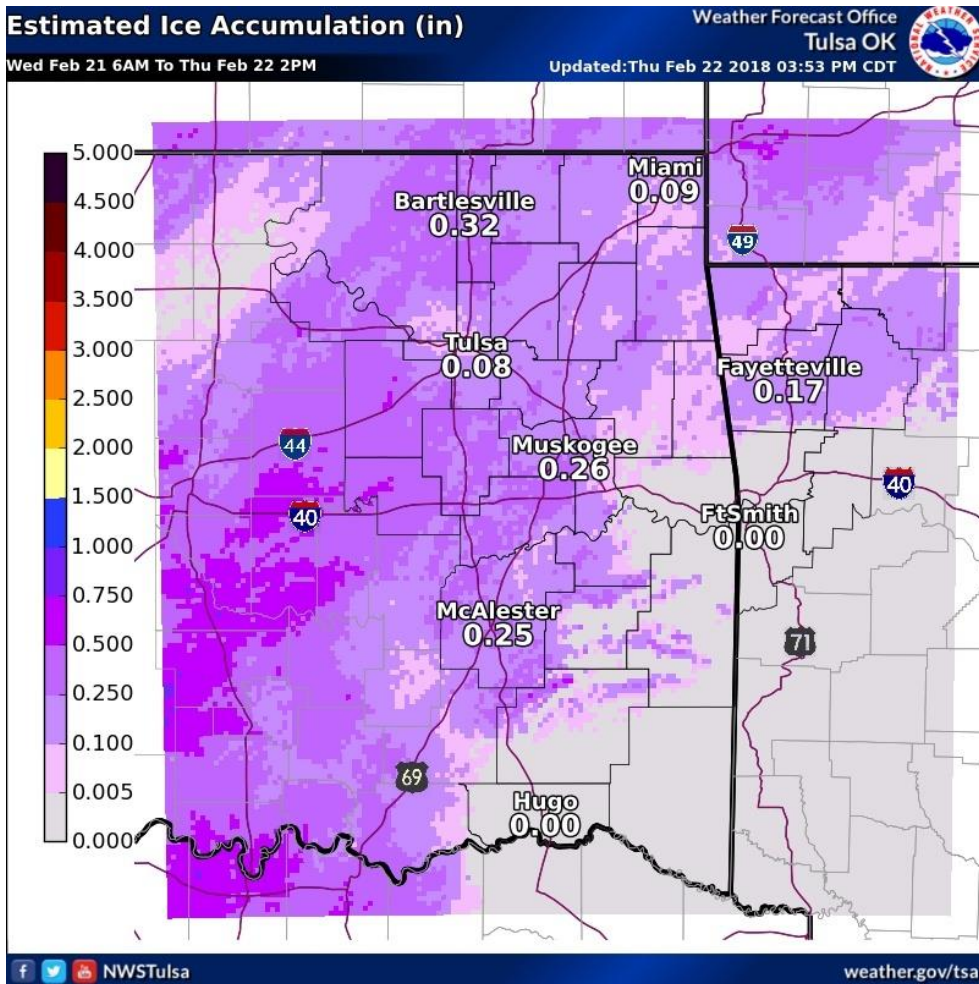


Fig. 11. Estimated ice accumulation from 6am CST 02/21/2018 through 2pm CST 02/22/2018.

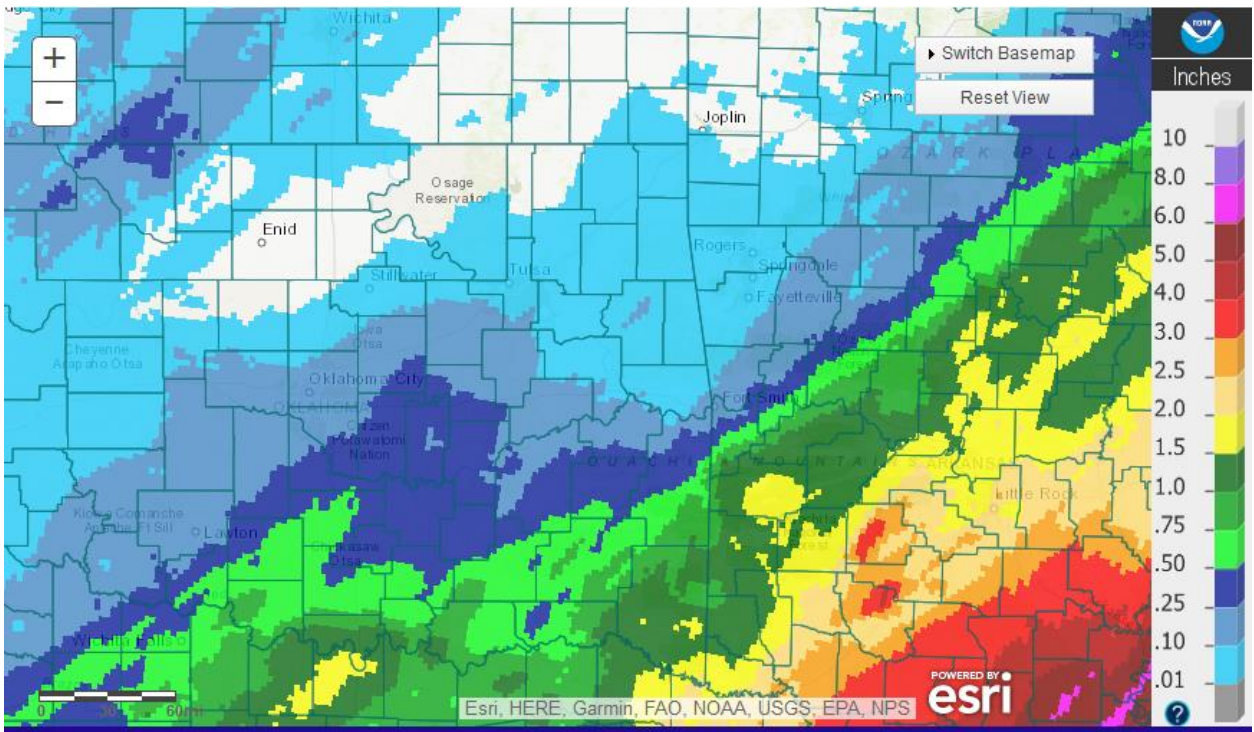


Fig. 12. 24-hour Estimated Observed Rainfall ending at 6am CST 2/22/2018.

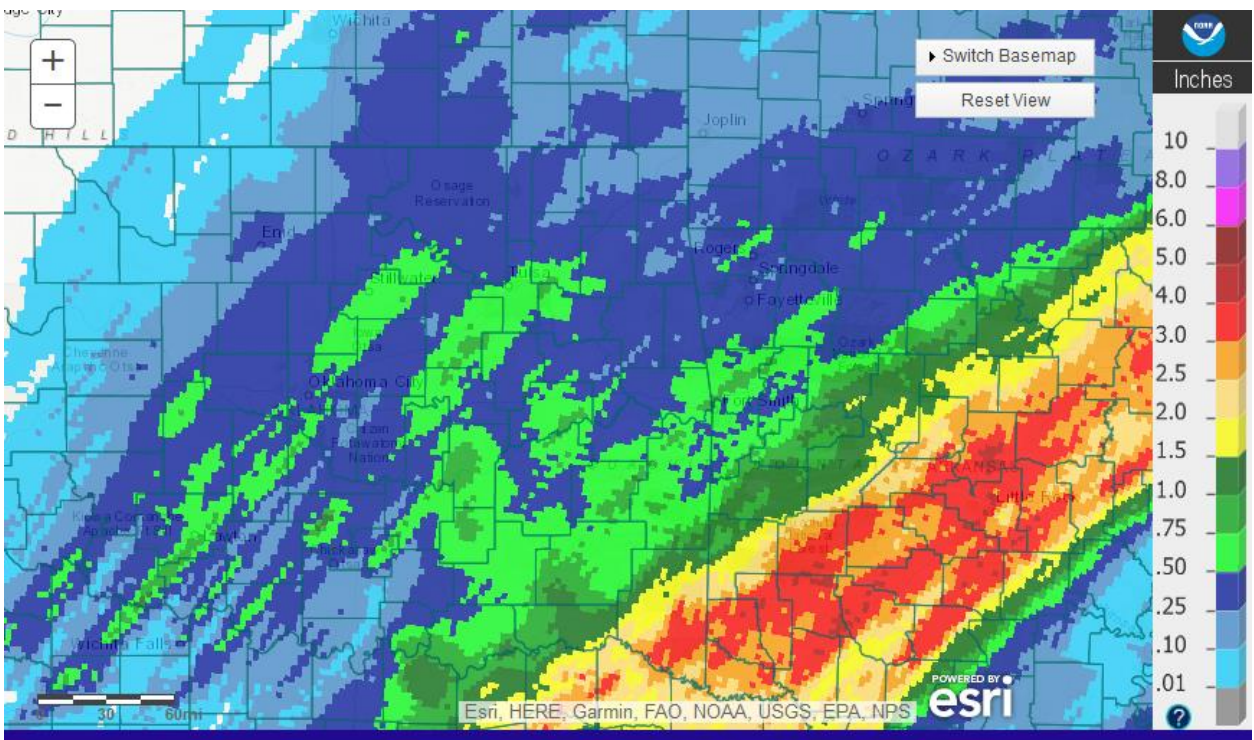
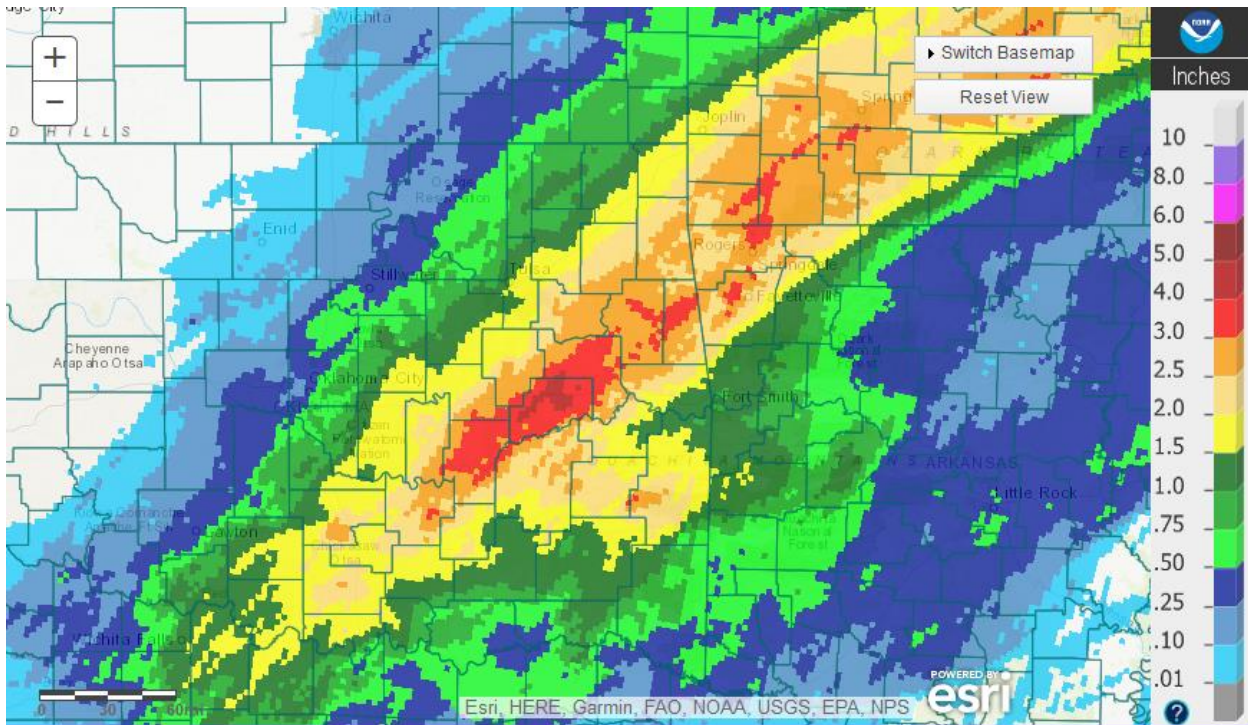
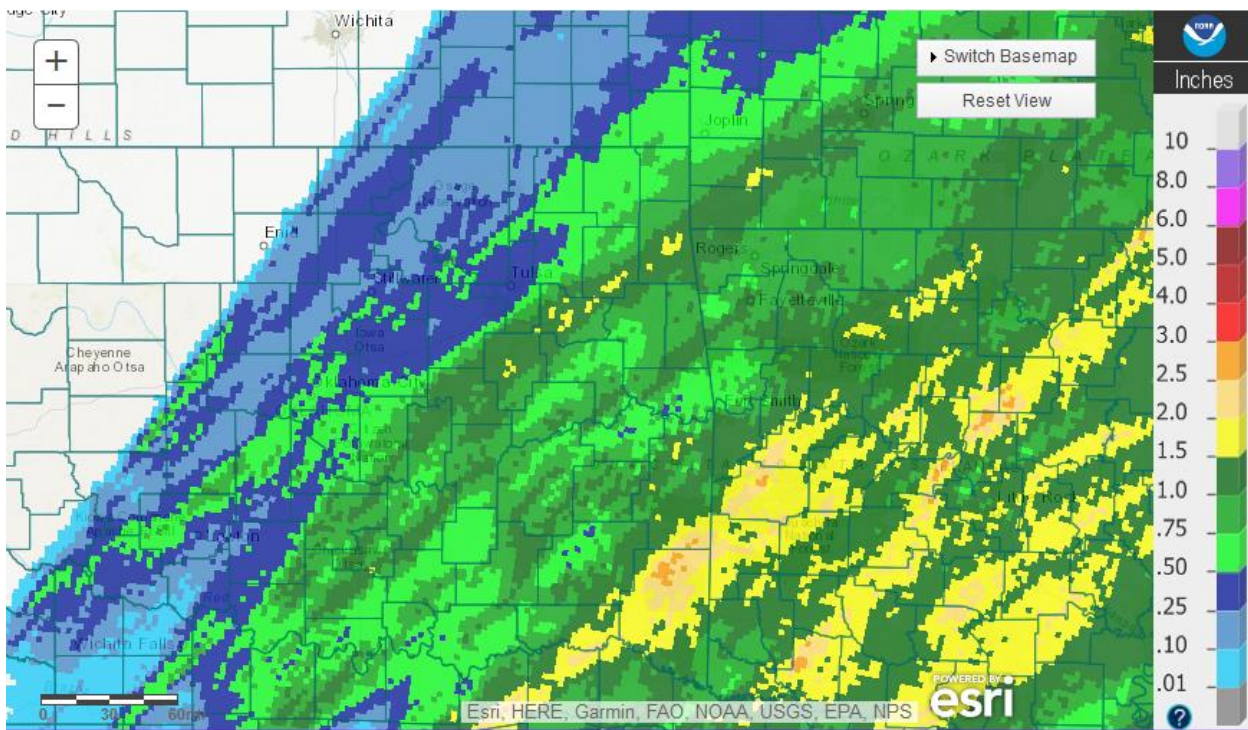


Fig. 13. 24-hour Estimated Observed Rainfall ending at 6am CST 2/23/2018.



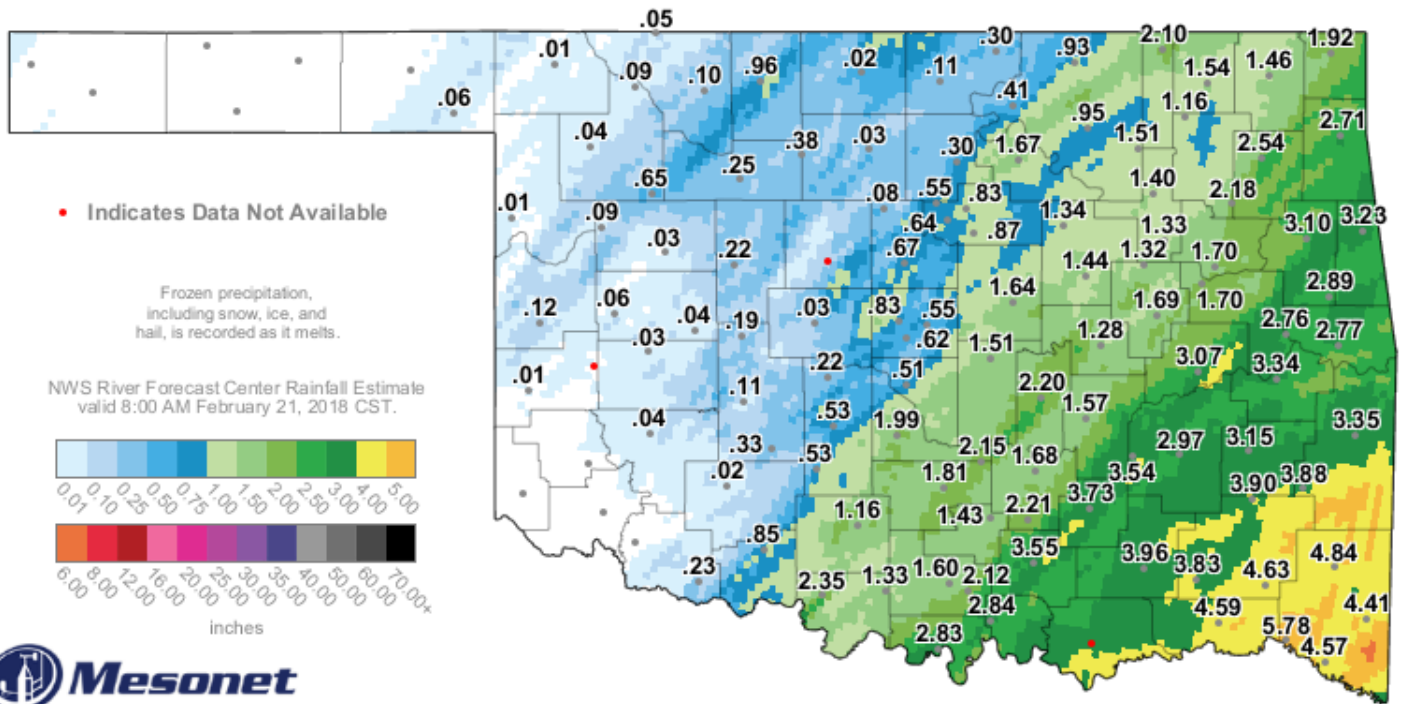
Tulsa, OK: February 24, 2018 1-Day Observed Precipitation
 Valid on: February 24, 2018 12:00 UTC

Fig. 14. 24-hour Estimated Observed Rainfall ending at 6am CST 2/24/2018.



Tulsa, OK: February 25, 2018 1-Day Observed Precipitation
 Valid on: February 25, 2018 12:00 UTC

Fig. 15. 24-hour Estimated Observed Rainfall ending at 6am CST 2/25/2018.

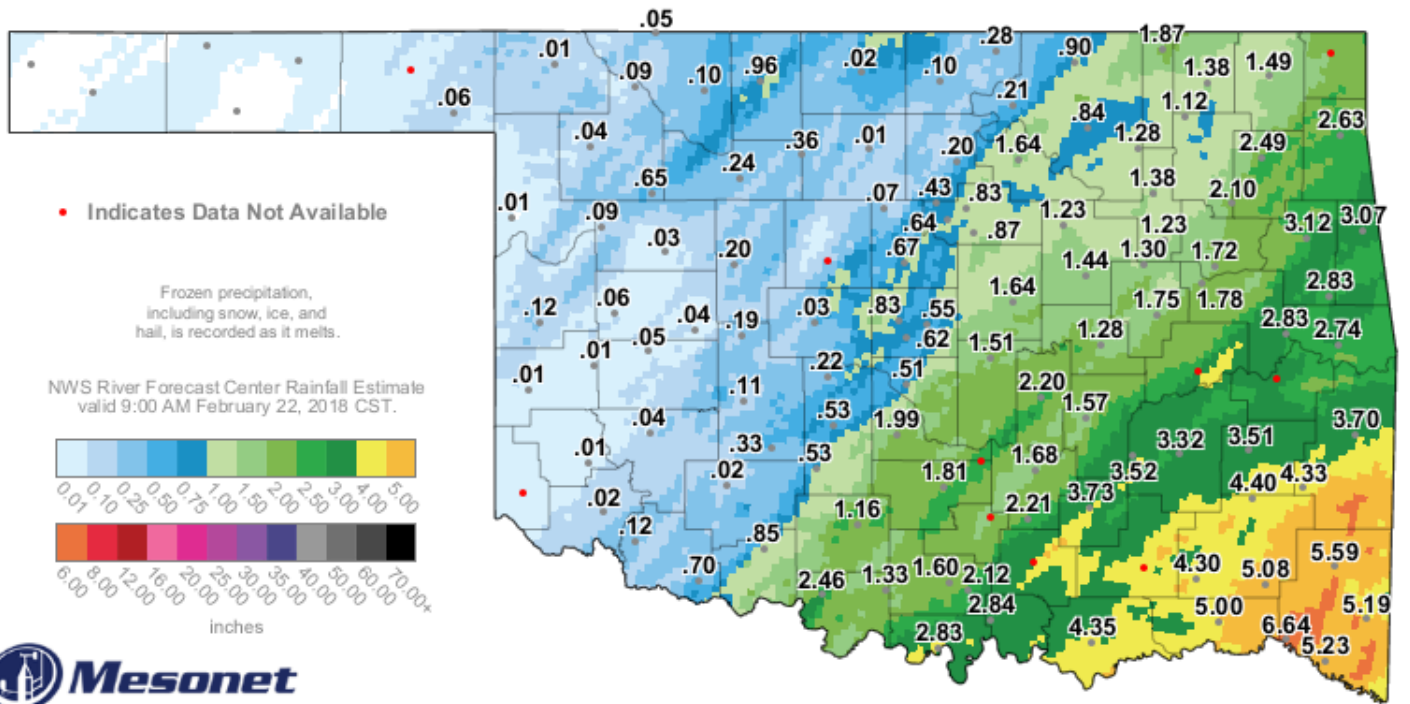


2-Day Rainfall Accumulation (inches)

9:15 AM February 21, 2018 CST

Created 9:20:42 AM February 21, 2018 CST. © Copyright 2018

Fig. 16. 48-hour Estimated Observed Rainfall (image) and OK Mesonet measurements ending at 9:15 am CST 2/21/2018.



3-Day Rainfall Accumulation (inches)

10:00 AM February 22, 2018 CST

Created 10:05:52 AM February 22, 2018 CST. © Copyright 2018

Fig. 17. 3-day Estimated Observed Rainfall (image) and OK Mesonet measurements ending at 10:00 am CST 2/22/2018.

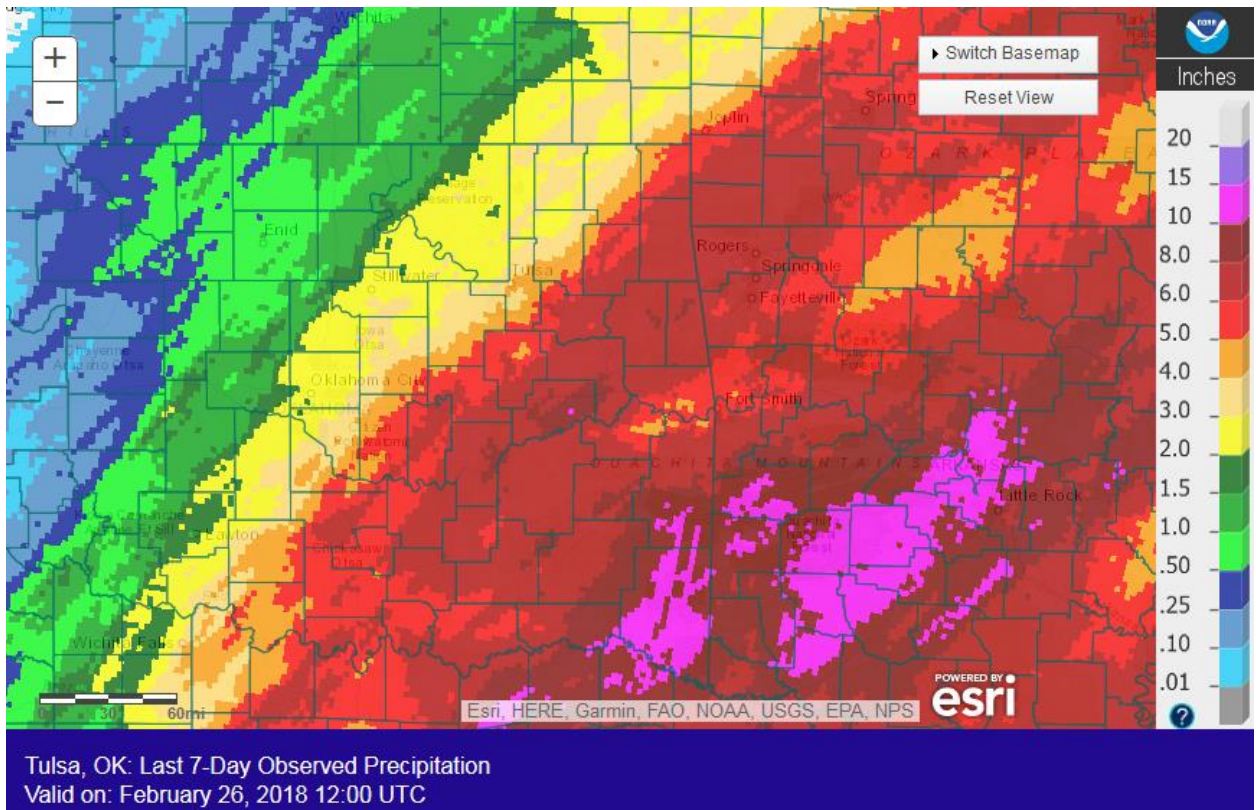


Fig. 18. 7-day Estimated Observed Rainfall ending at 6am CST 2/26/2018.

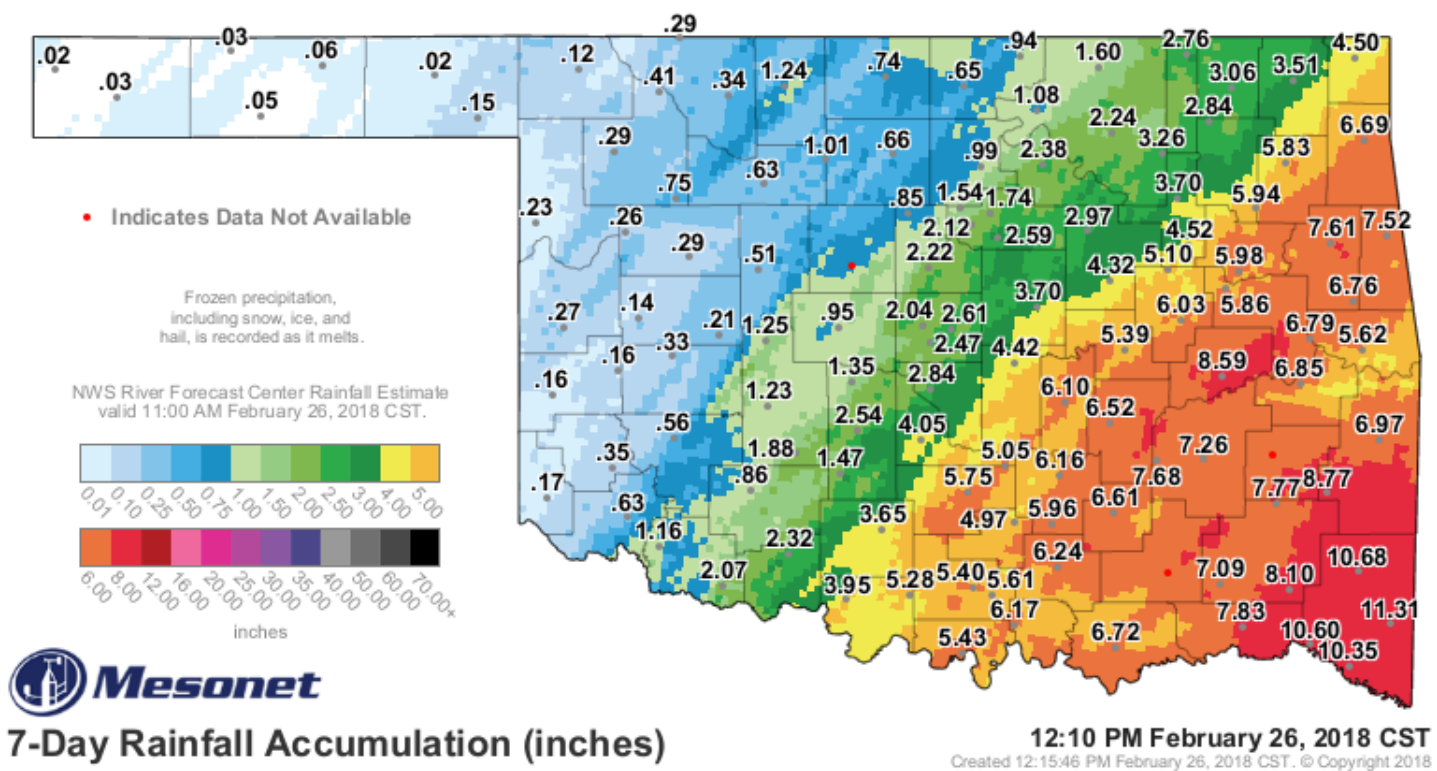


Fig. 19. 7-day Estimated Observed Rainfall (image) and OK Mesonet measurements ending at 12:10 am CST 2/26/2018.

With deep layer moisture overhead, widespread showers and thunderstorms again affected the area on the 27th, before tapering off from west to east during the evening hours. Rainfall totals ranged from 0.10" to around 2.5", with the heaviest amounts of 1"-2.5" once again affecting southeast and east central OK (Fig. 20). However, no additional flooding occurred.

The final round of rain affected southeast OK through northwest AR on the 28th as a cold front moved through the region. Southeast OK through northwest AR received another 0.25" to near 3" of rain (Fig. 21).

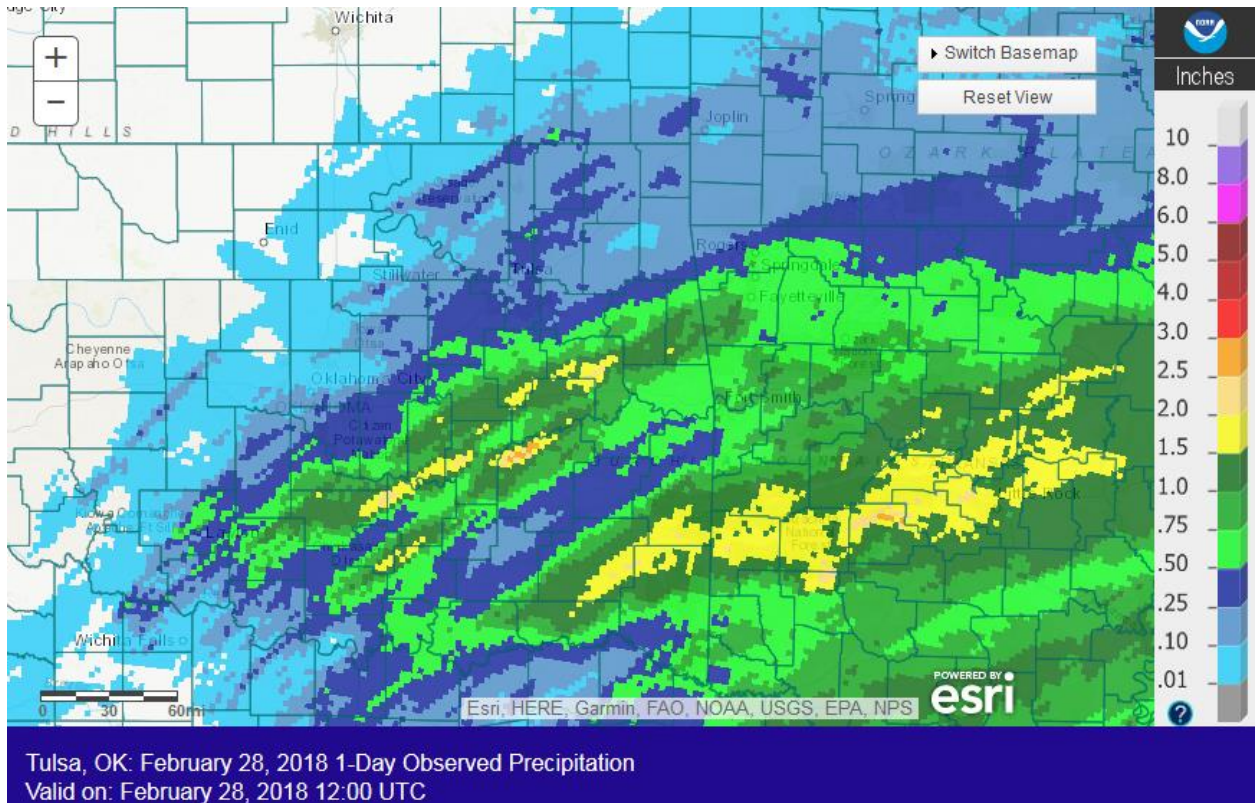


Fig. 20. 24-hour Estimated Observed Rainfall ending at 6am CST 2/28/2018.

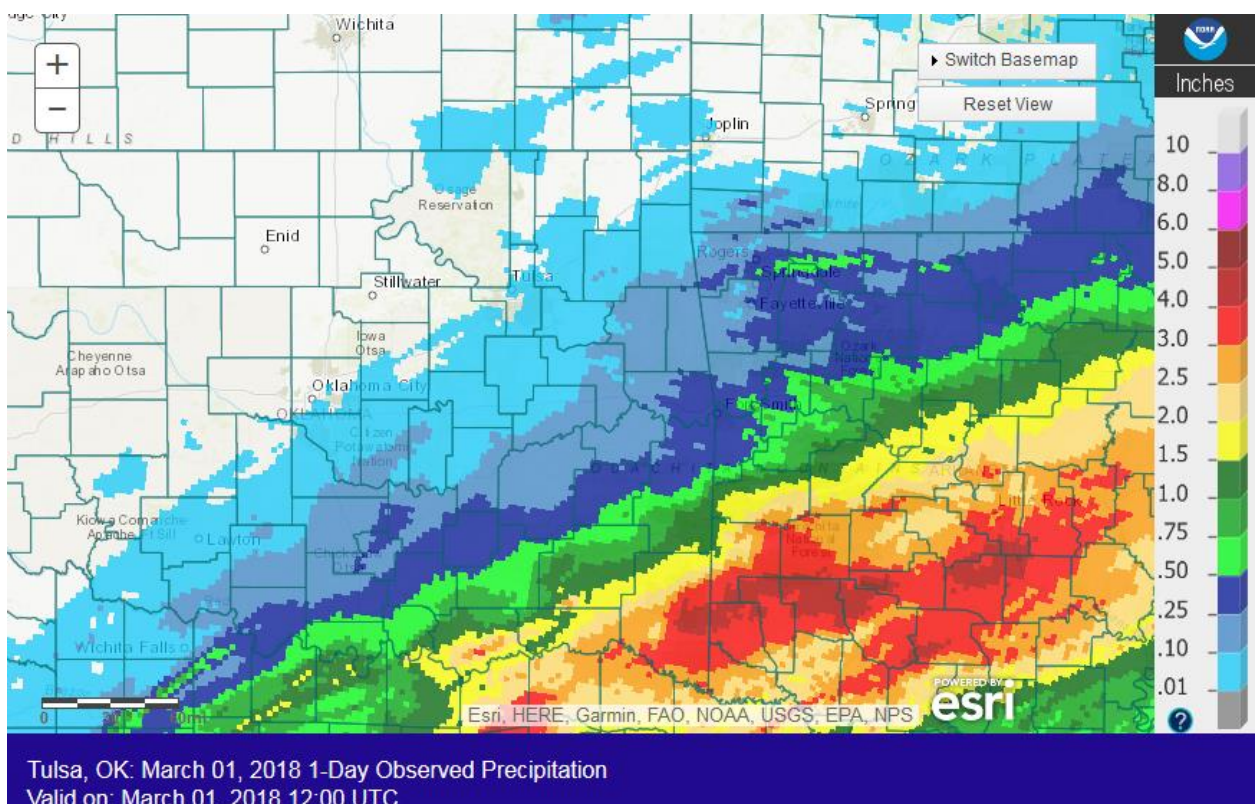


Fig. 21. 24-hour Estimated Observed Rainfall ending at 6am CST 3/01/2018.

Written by:

Nicole McGavock
Service Hydrologist
WFO Tulsa

Products issued in February 2018:

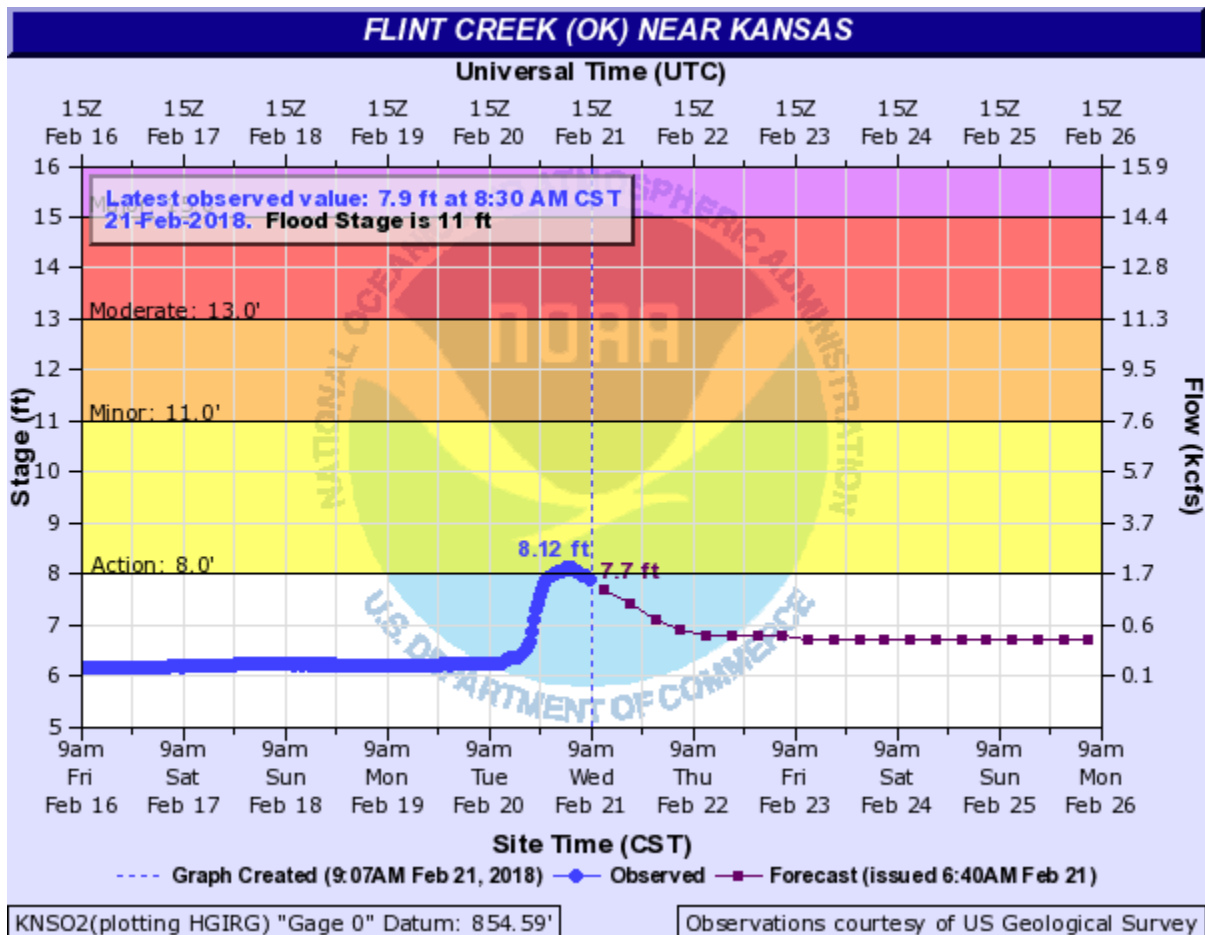
*CWYO2 became a daily river forecast point September 7, 2016

*MLBA4 and OZGA4 transferred to NWS Tulsa HSA February 5, 2014

*Mixed case River Flood products began July 31, 2013

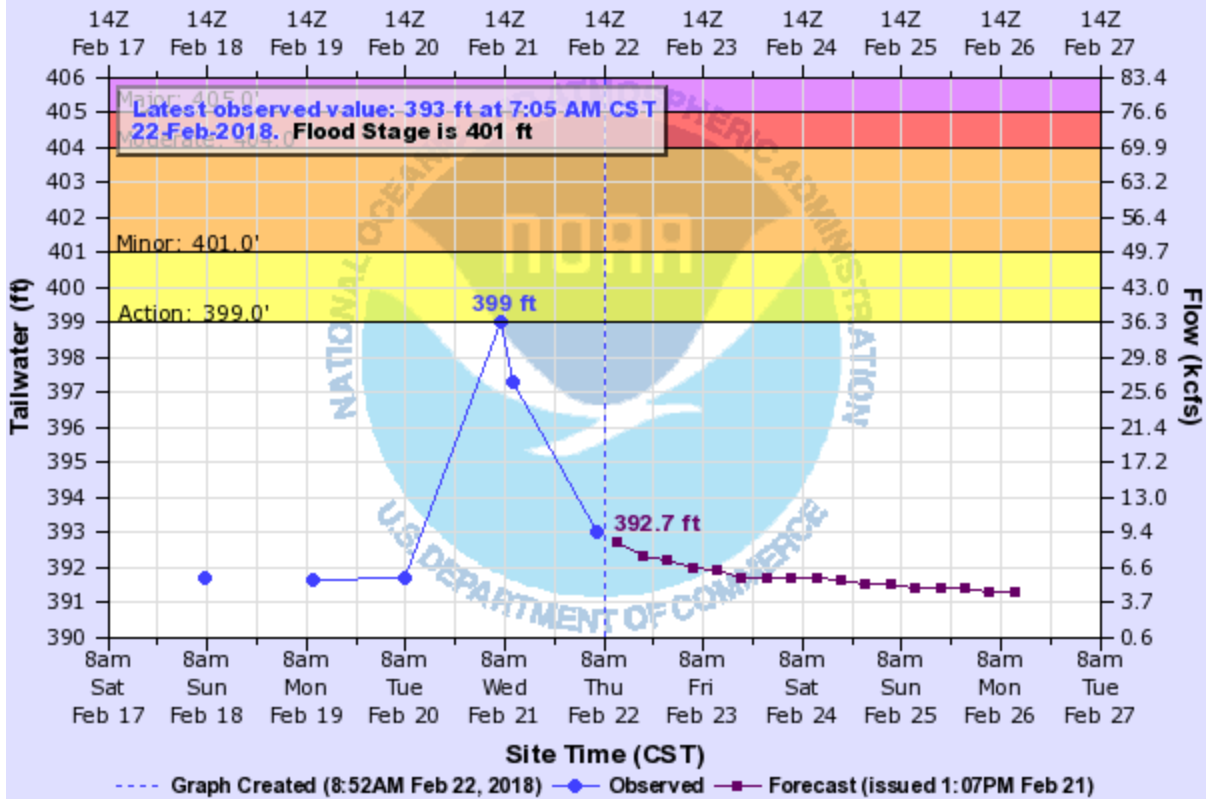
- 4 Flash Flood Warnings (FFW)
- 1 Flash Flood Statements (FFS)
- 2 Flash/Areal Flood Watches (FFA) (11 Watch FFA CON/EXT/EXA/EXB/CAN)
- 7 Urban and Small Stream Advisories (FLS)
- 7 Areal Flood Warnings (FLW)
- 2 Areal Flood Statements (FLS)
- 25 River Flood Warnings (FLW) (includes category increases)
- 109 River Flood Statements (FLS)
- 11 River Flood Advisories (FLS) (48 Advisory FLS CON/EXT/CAN)
- 0 River Flood Watches (FFA) (0 Watch FFA CON/EXT/CAN)
- 0 River Statements (RVS)
- 1 Hydrologic Outlooks (ESF)
- 1 Drought Information Statements (DGT)

Preliminary Hydrographs:



LEE CREEK NEAR VAN BUREN LCR

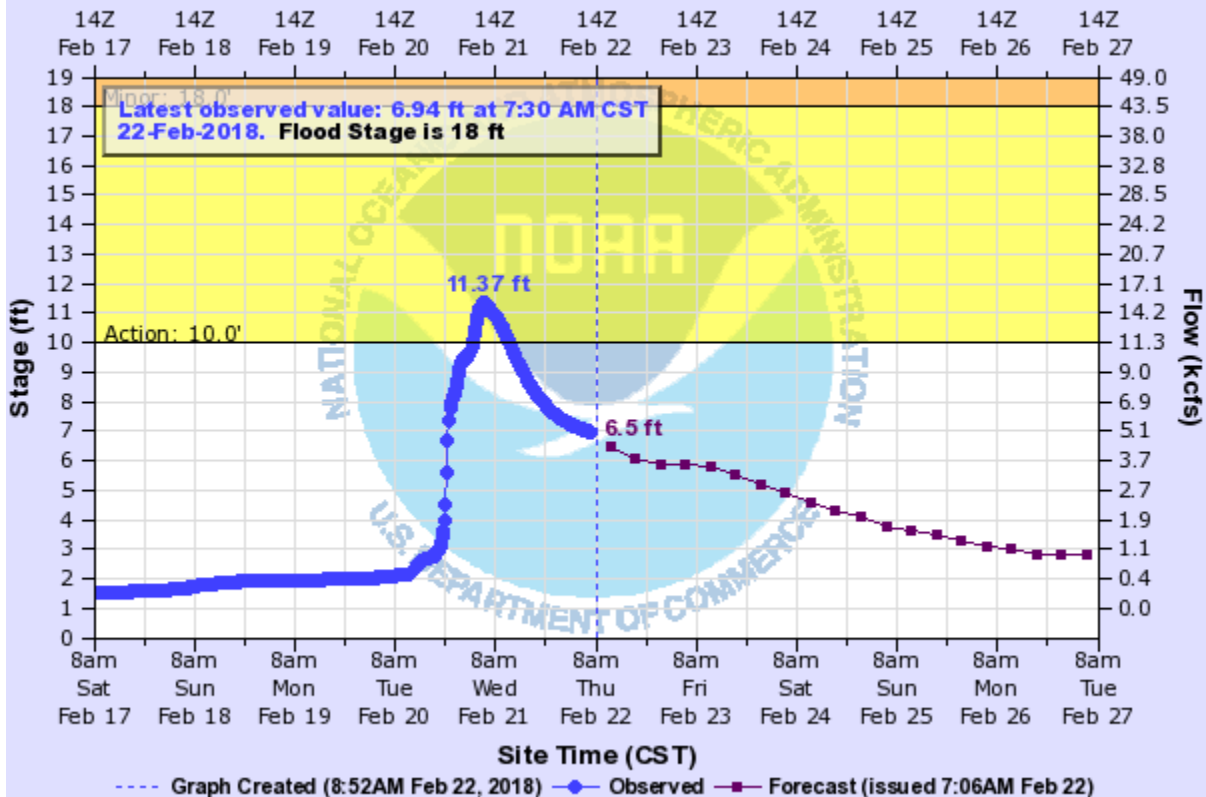
Universal Time (UTC)



VBRA4(plotting HTIRZ) "Gage 0" Datum: 0'

MULBERRY RIVER (AR) NEAR MULBERRY

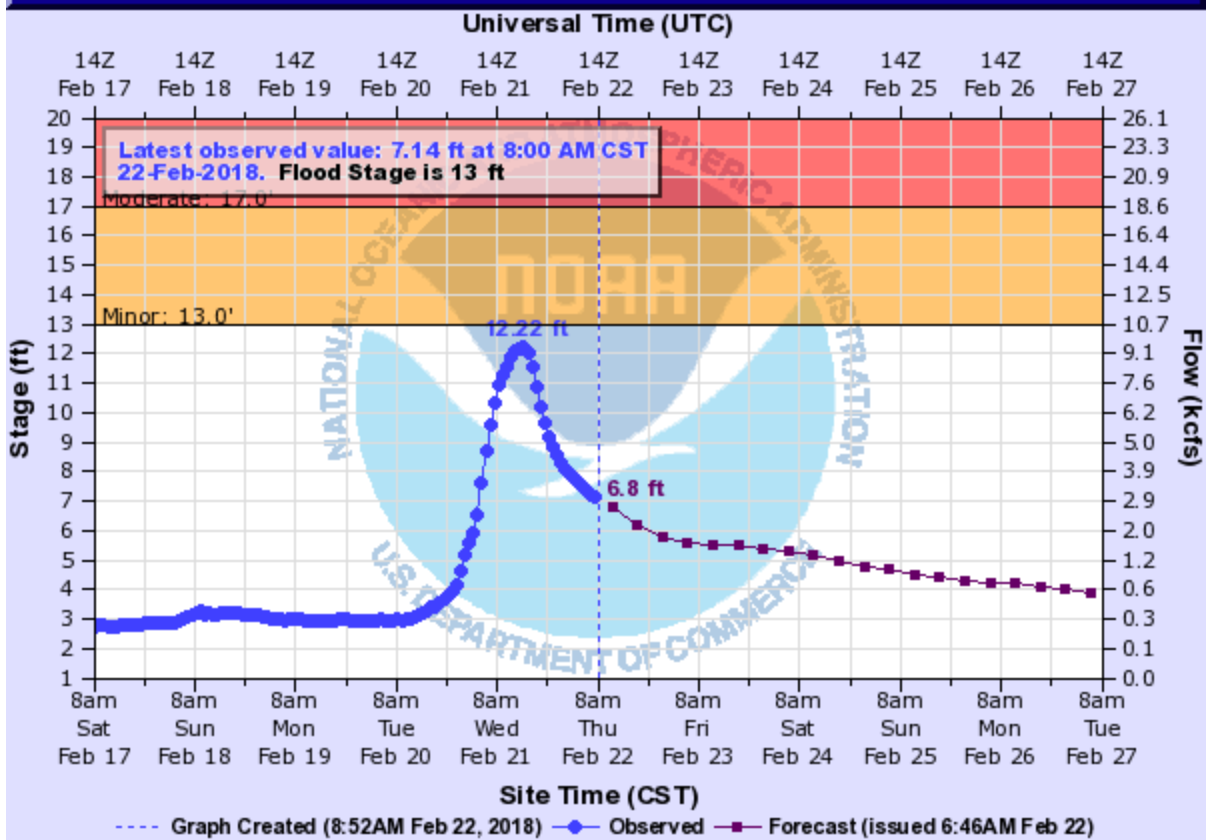
Universal Time (UTC)



MLBA4(plotting HGIRG) "Gage 0" Datum: 432.75'

Observations courtesy of USGS/USACE/ADEQ

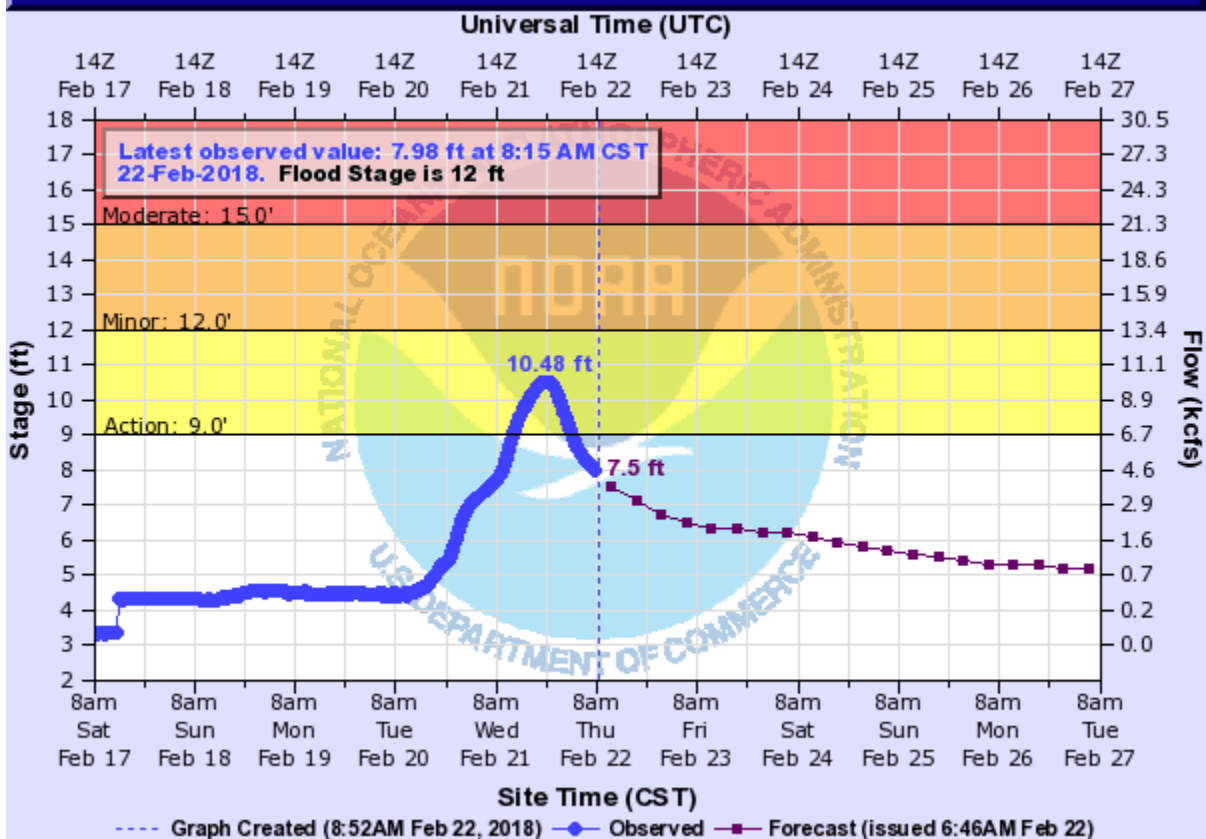
ILLINOIS RIVER (AR OK) NEAR WATTS



WT02(plotting HGIRG) "Gage 0" Datum: 893.77'

Observations courtesy of US Geological Survey

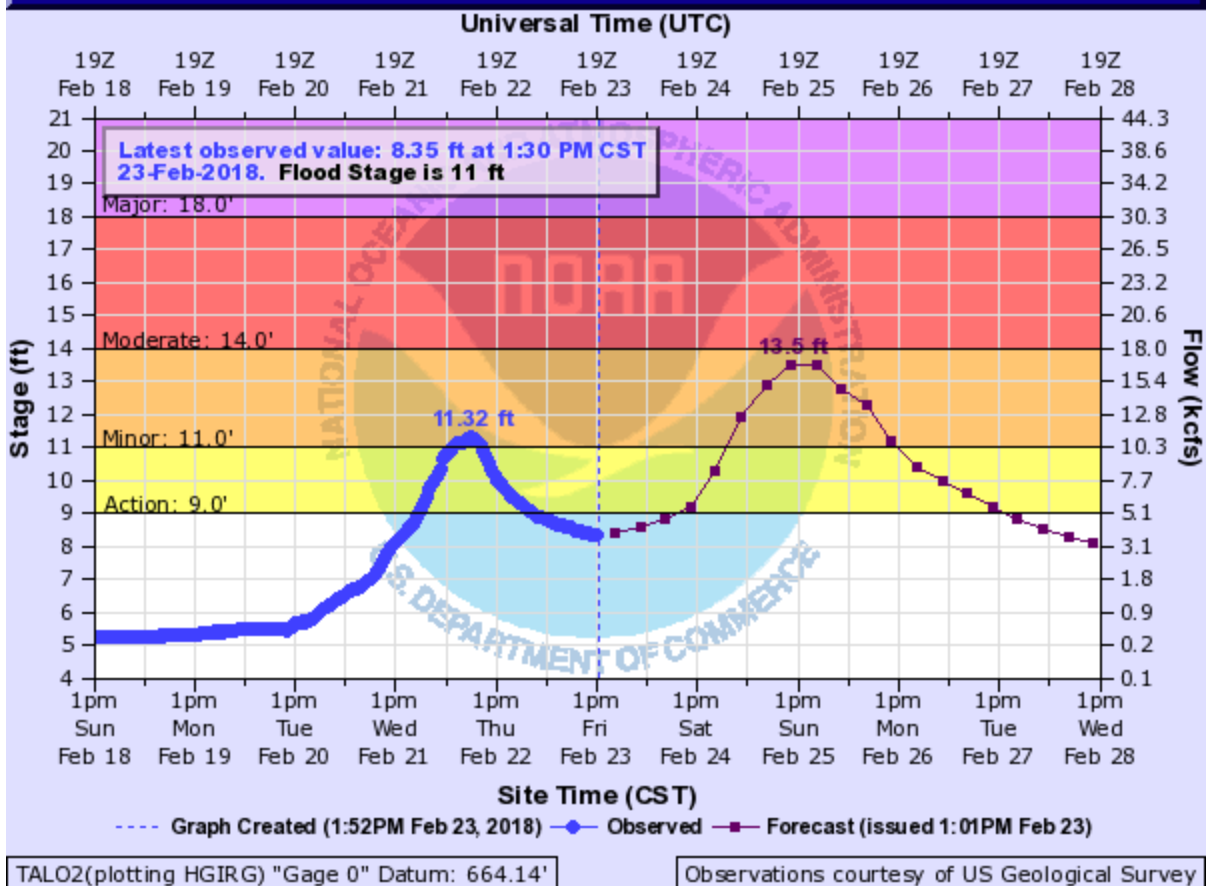
ILLINOIS RIVER (AR OK) AT CHEWEY



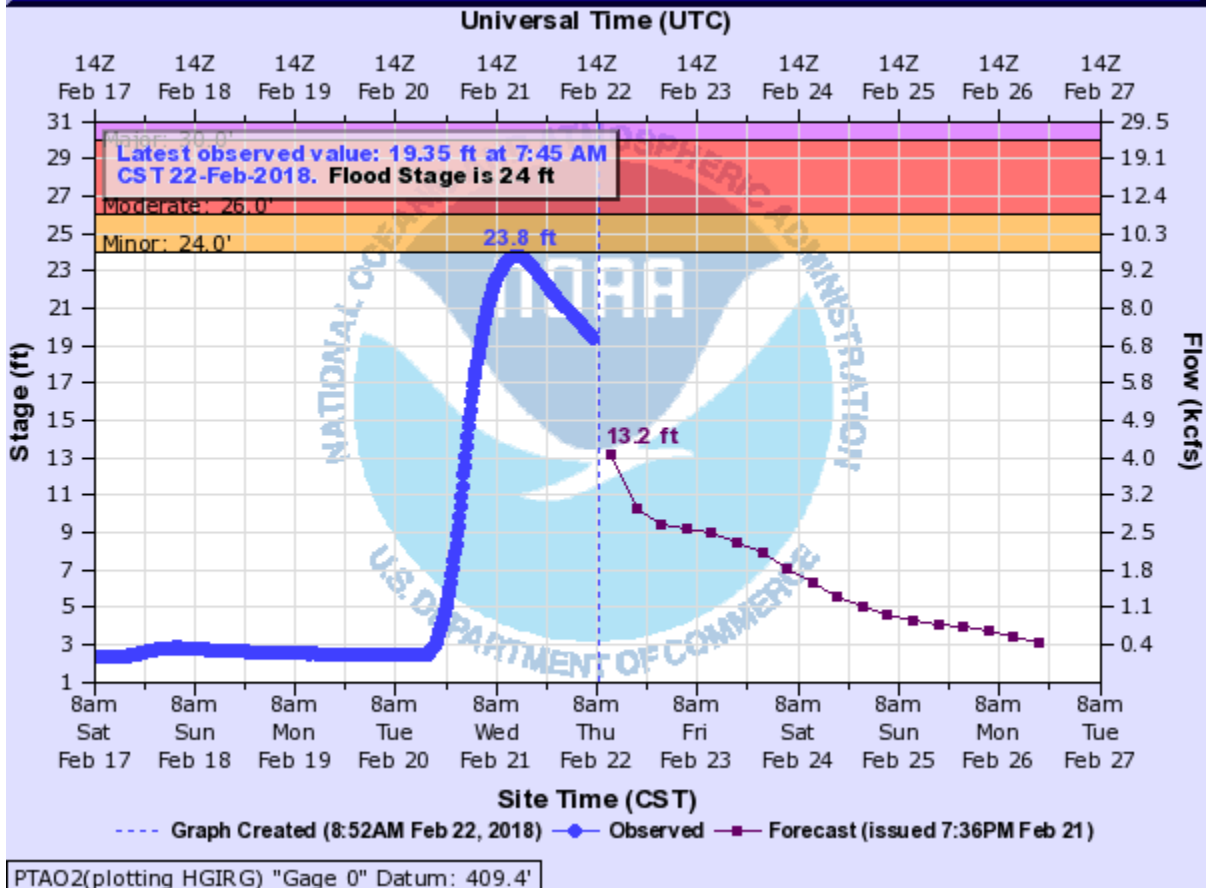
CWYO2(plotting HGIRG) "Gage 0" Datum: 800.88'

Observations courtesy of US Geological Survey

ILLINOIS RIVER (AR OK) NEAR TAHLEQUAH

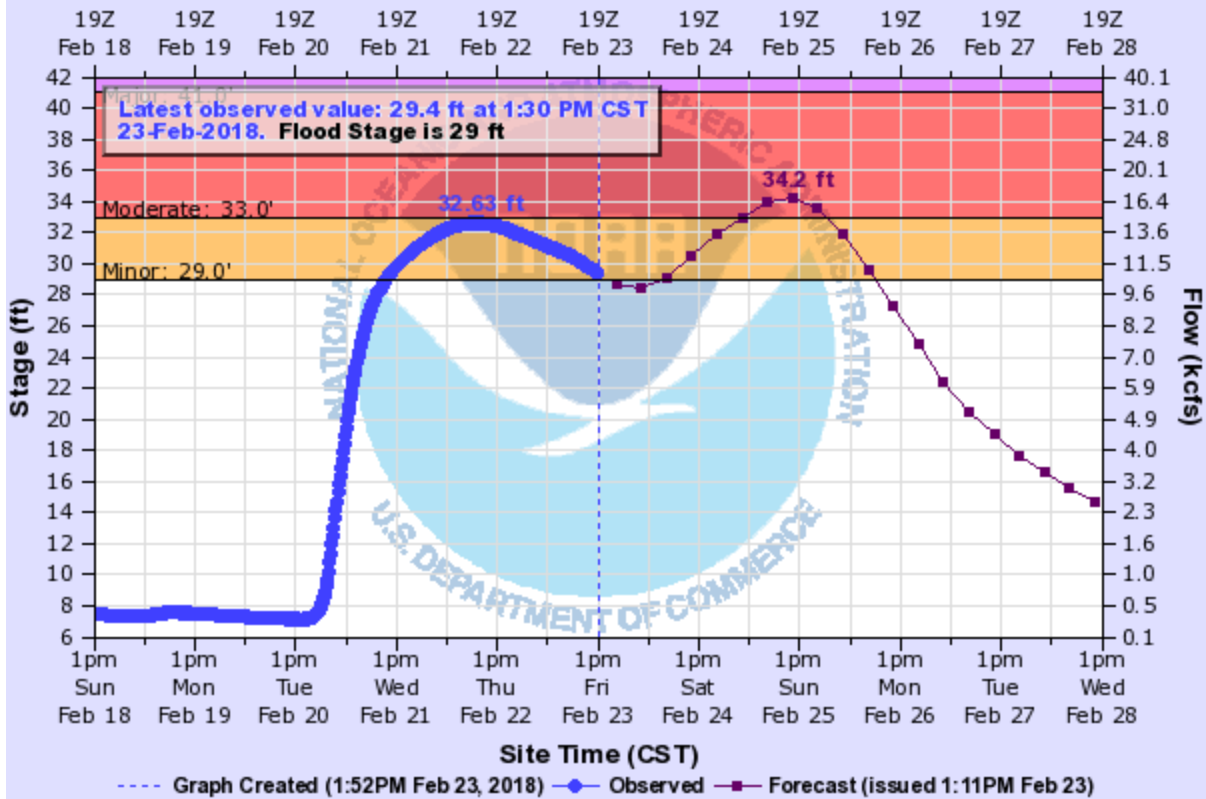


POTEAU RIVER NEAR POTEAU



POTEAU RIVER NEAR PANAMA

Universal Time (UTC)

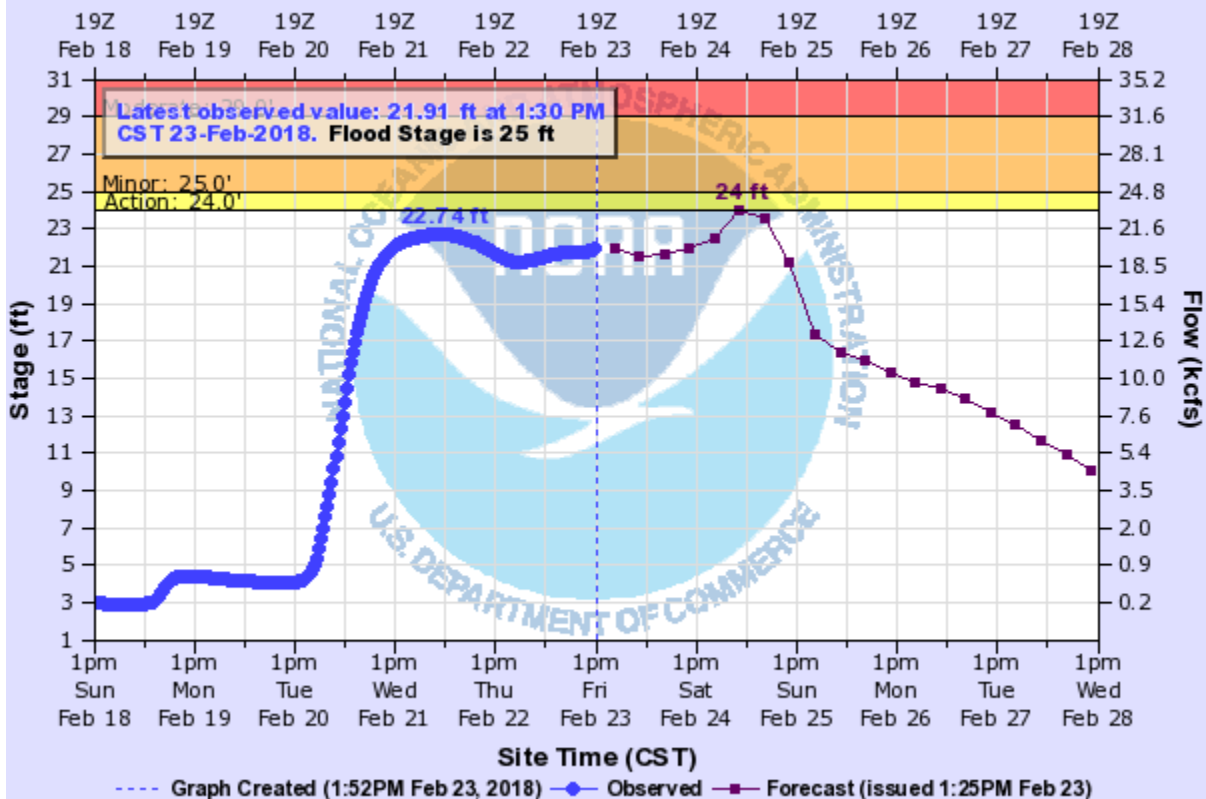


PANO2(plotting HGIRG) "Gage 0" Datum: 387.96'

Observations courtesy of US Geological Survey

KIAMICHI RIVER NEAR ANTLERS

Universal Time (UTC)

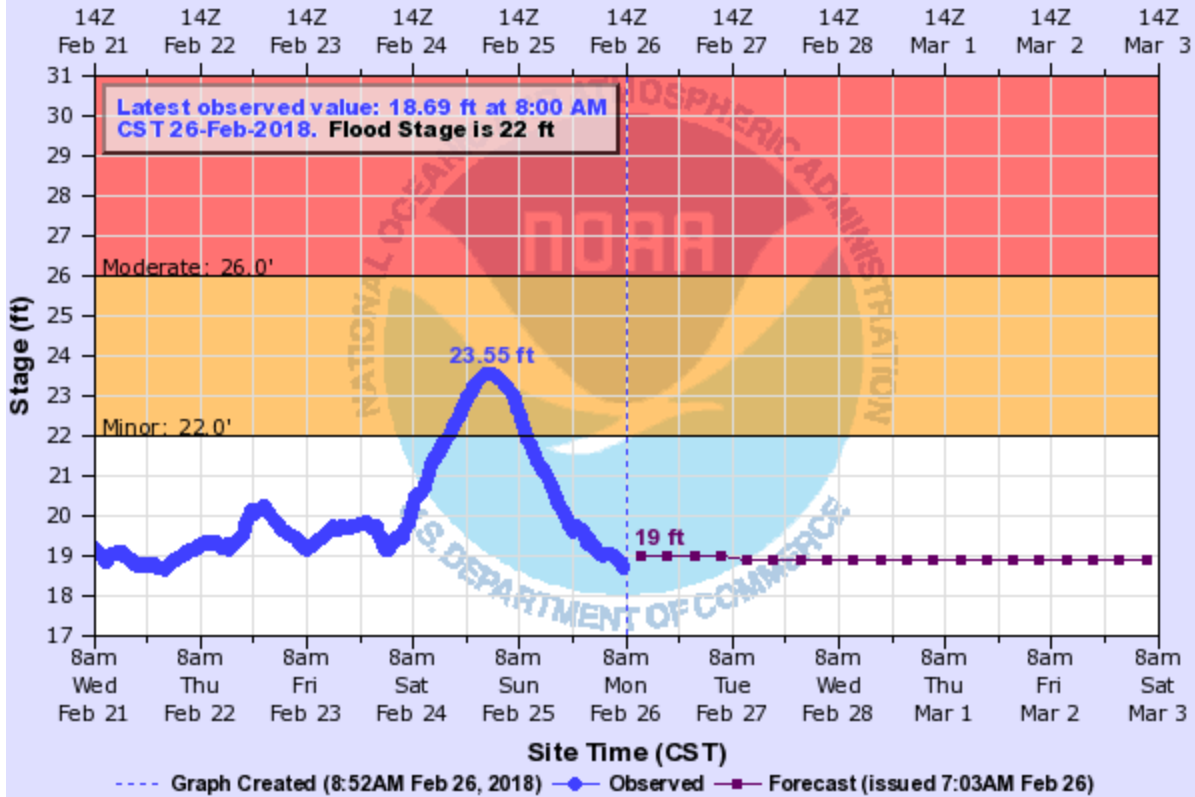


ANTO2(plotting HGIRG) "Gage 0" Datum: 419.82'

Observations courtesy of US Geological Survey

ARKANSAS RIVER AT VAN BUREN

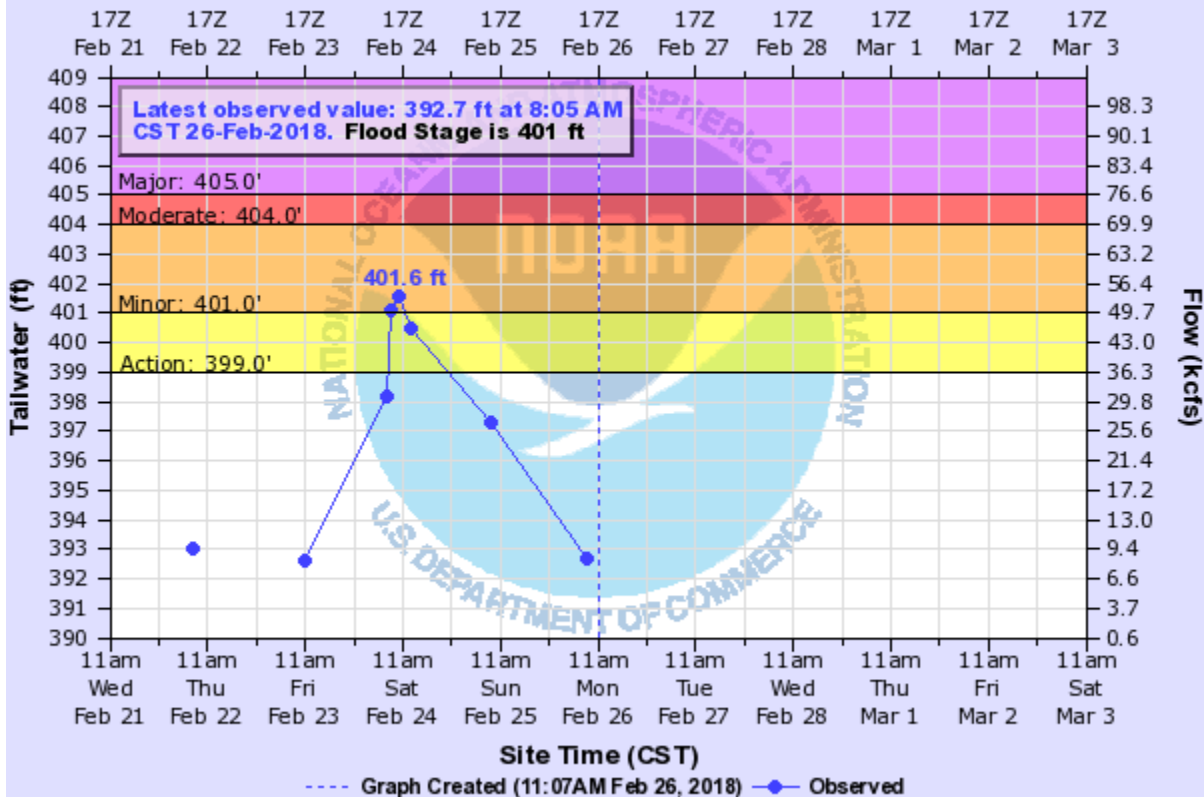
Universal Time (UTC)



VBUA4(plotting HGIRG) "Gage 0" Datum: 372.36'

LEE CREEK NEAR VAN BUREN LCR

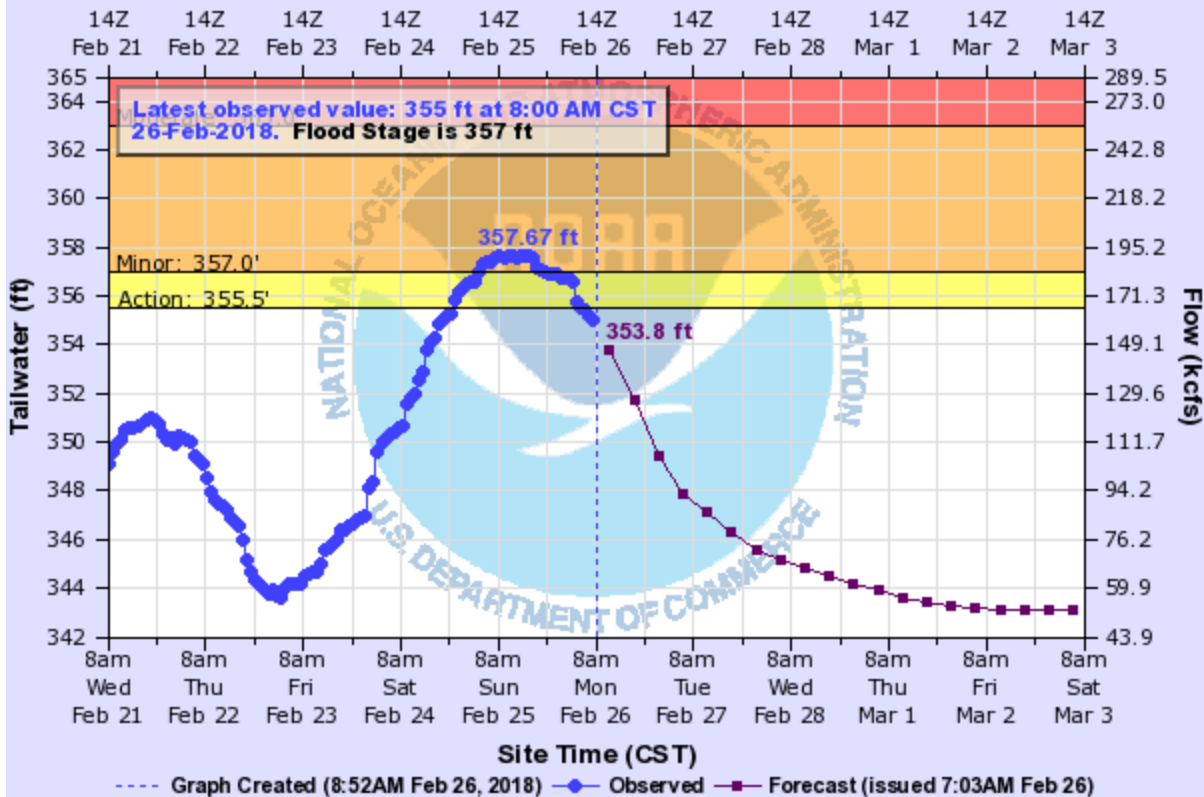
Universal Time (UTC)



VBRA4(plotting HTIRZ) "Gage 0" Datum: 0'

ARKANSAS RIVER AT OZARK L/D TAILWATER

Universal Time (UTC)

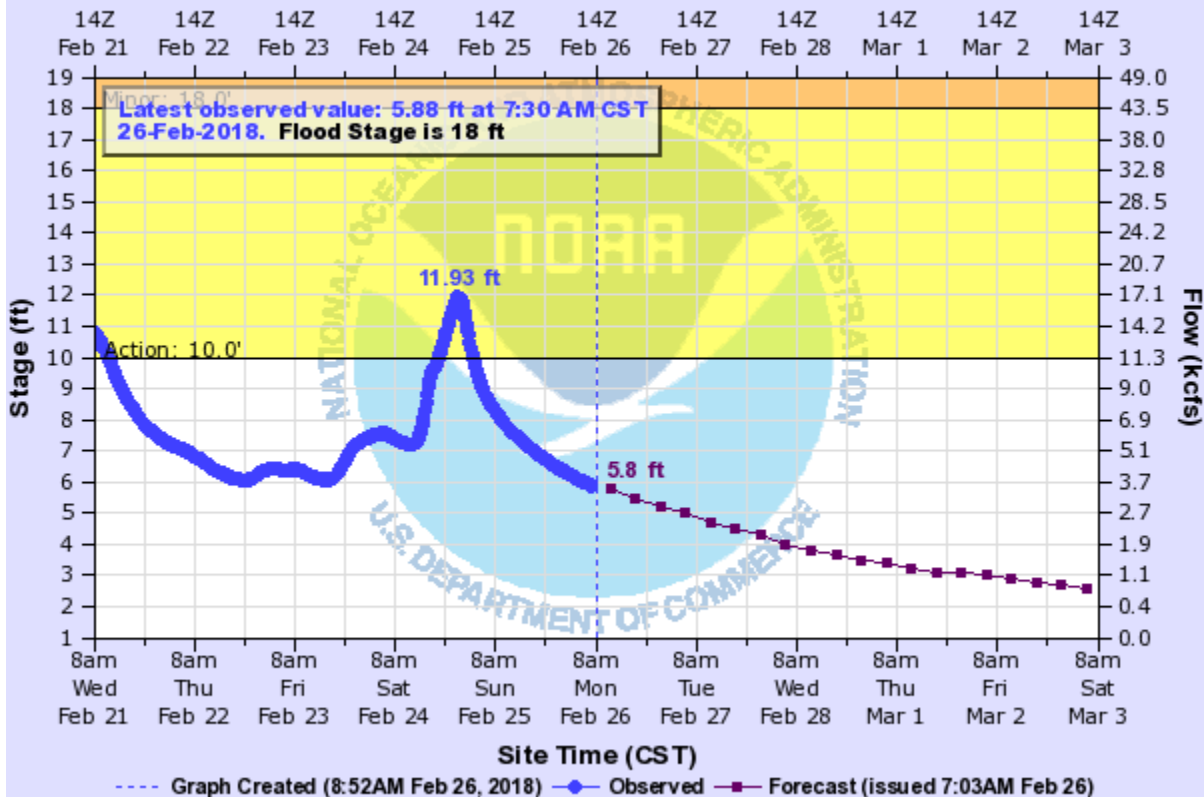


0ZGA4(plotting HTIRG) "Gage 0" Datum: 0'

Observations courtesy of US Army Corps of Engineers - LRD

MULBERRY RIVER (AR) NEAR MULBERRY

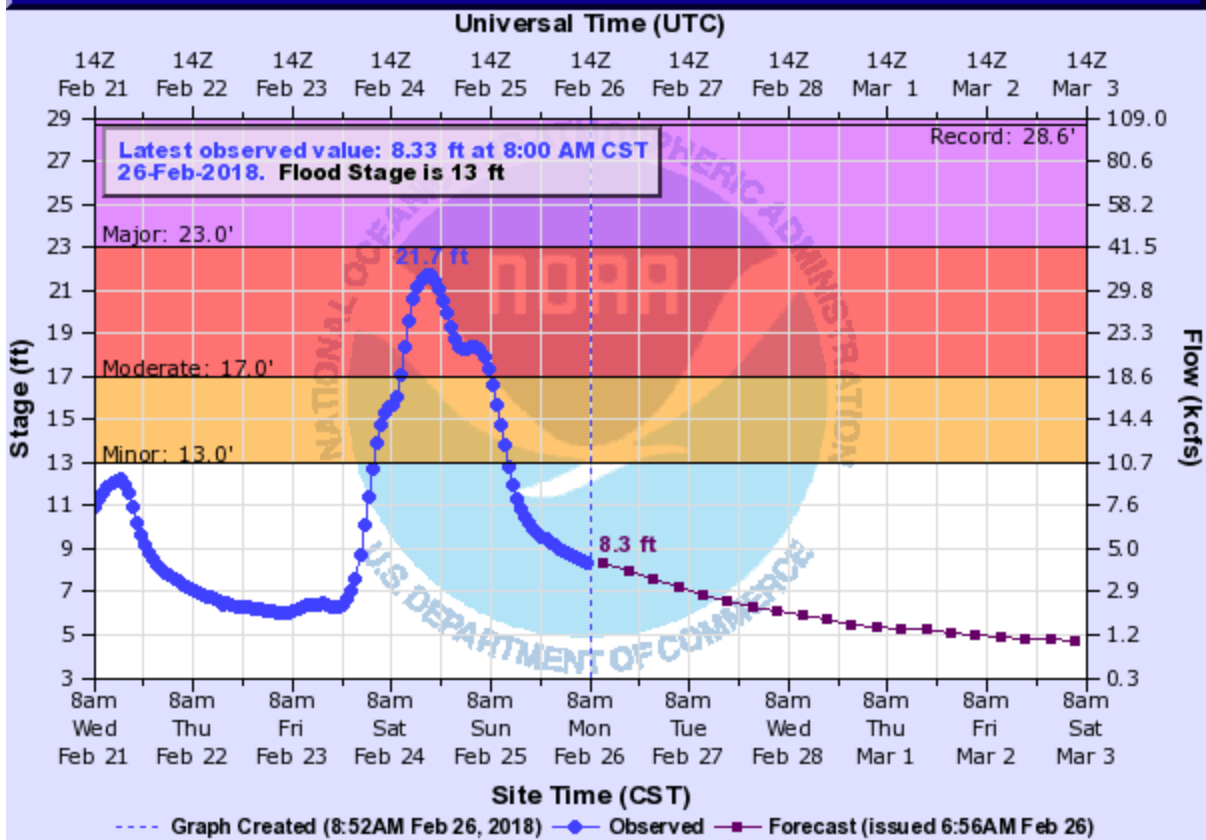
Universal Time (UTC)



MLBA4(plotting HGIRG) "Gage 0" Datum: 432.75'

Observations courtesy of USGS/USACE/ADEQ

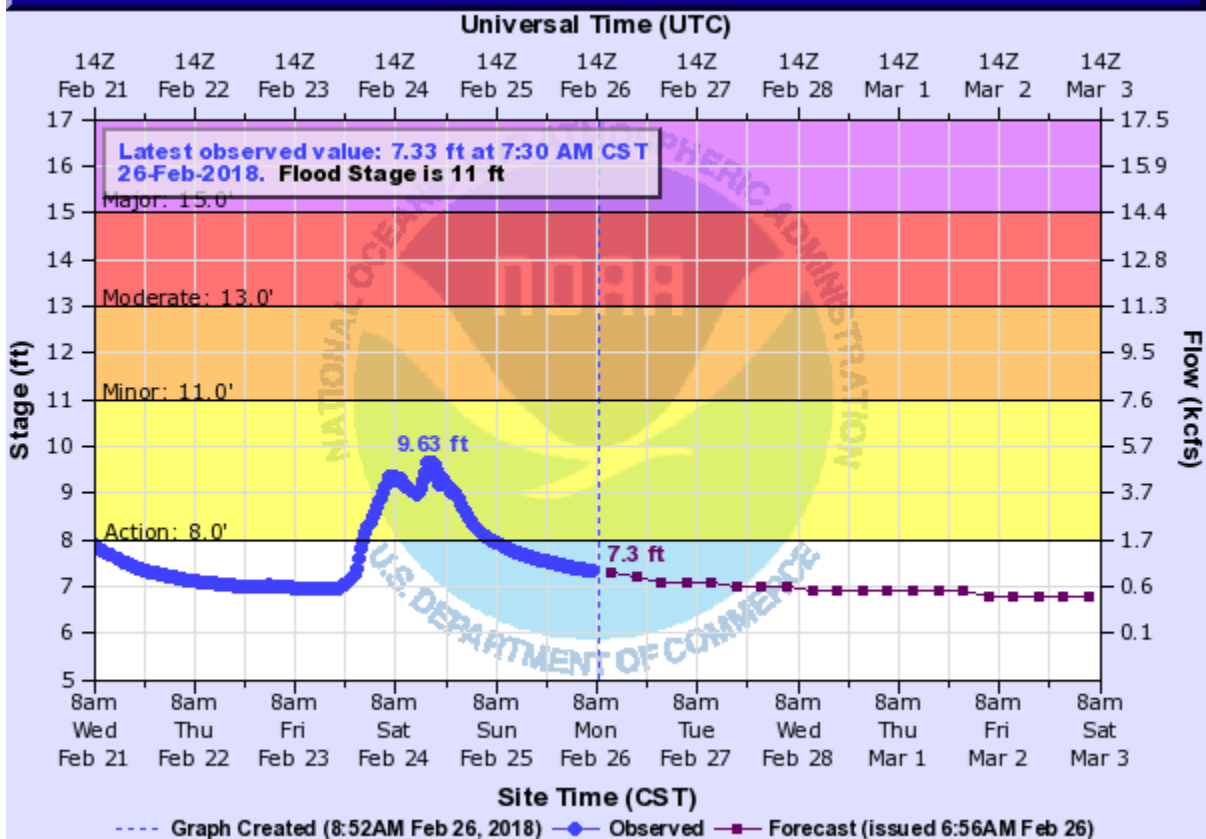
ILLINOIS RIVER (AR OK) NEAR WATTS



WT02(plotting HGIRG) "Gage 0" Datum: 893.77'

Observations courtesy of US Geological Survey

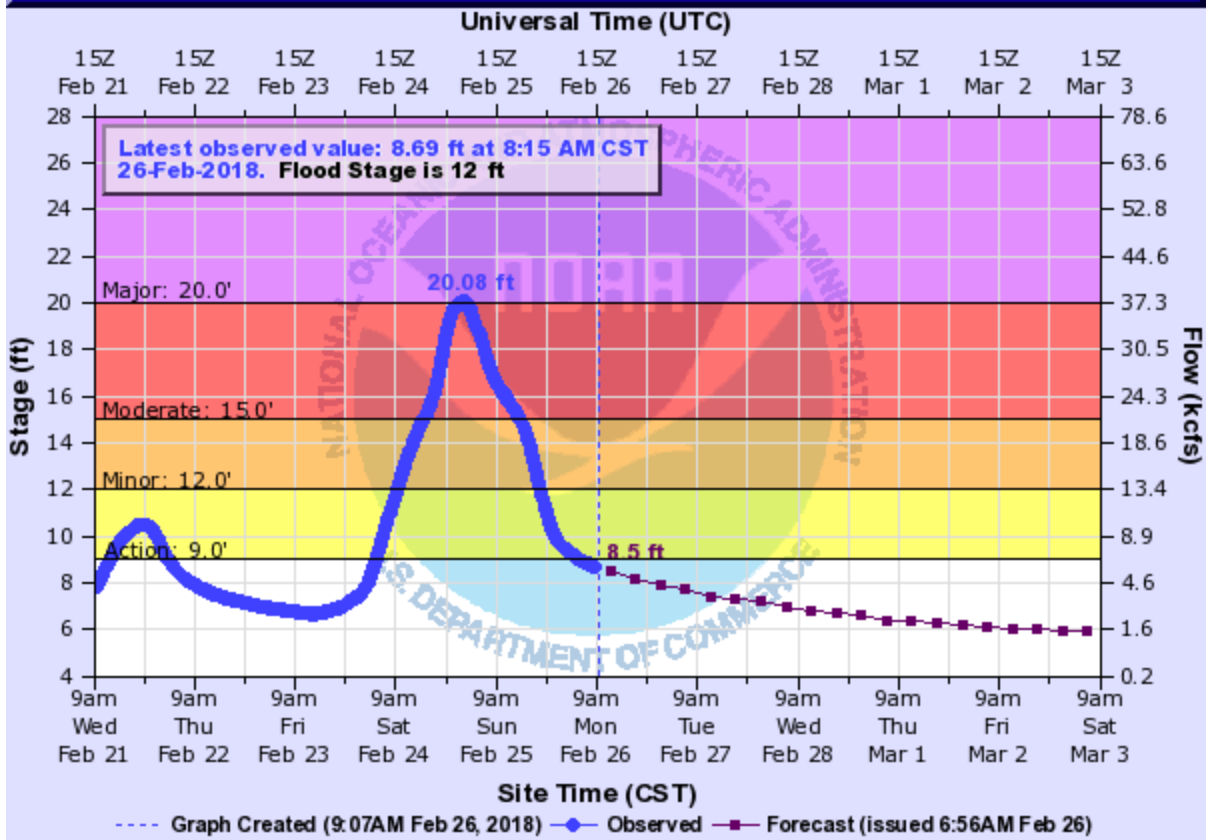
FLINT CREEK (OK) NEAR KANSAS



KNSO2(plotting HGIRG) "Gage 0" Datum: 854.59'

Observations courtesy of US Geological Survey

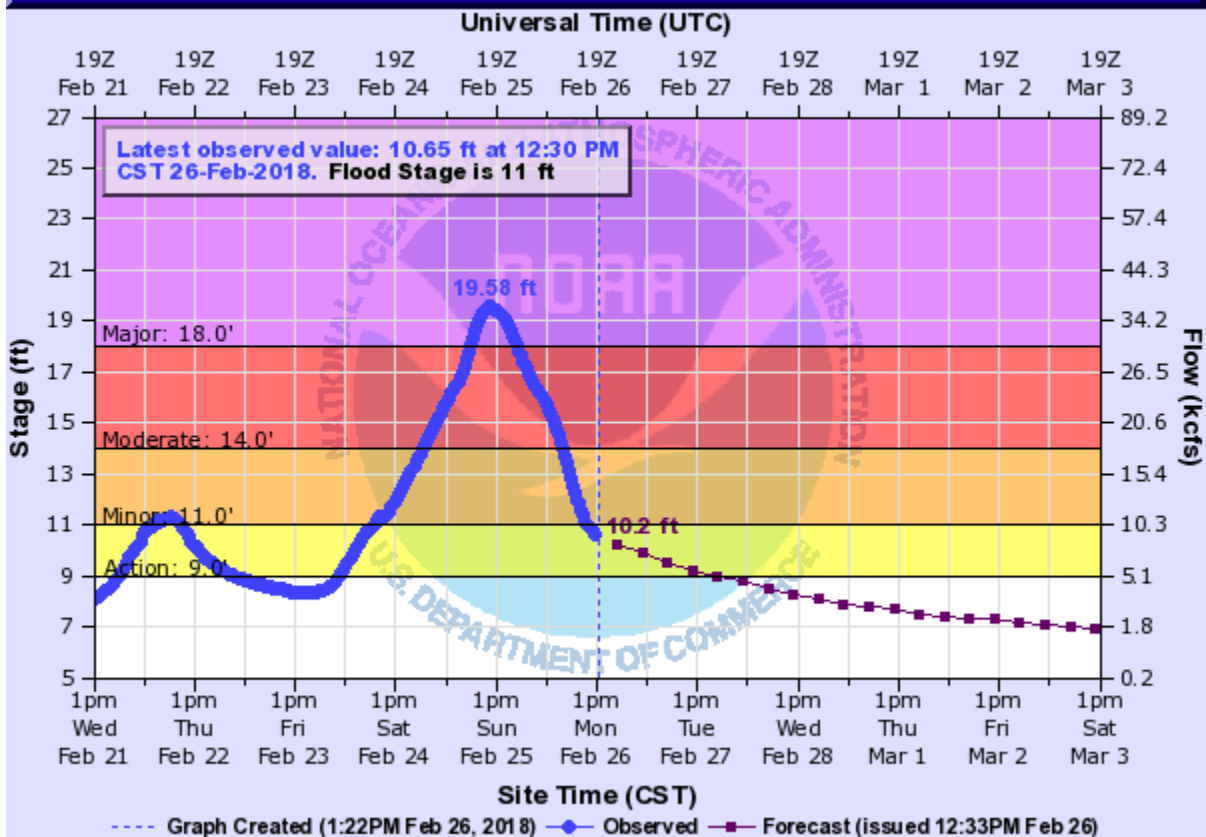
ILLINOIS RIVER (AR OK) AT CHEWEY



CWY02(plotting HGIRG) "Gage 0" Datum: 800.88'

Observations courtesy of US Geological Survey

ILLINOIS RIVER (AR OK) NEAR TAHLEQUAH

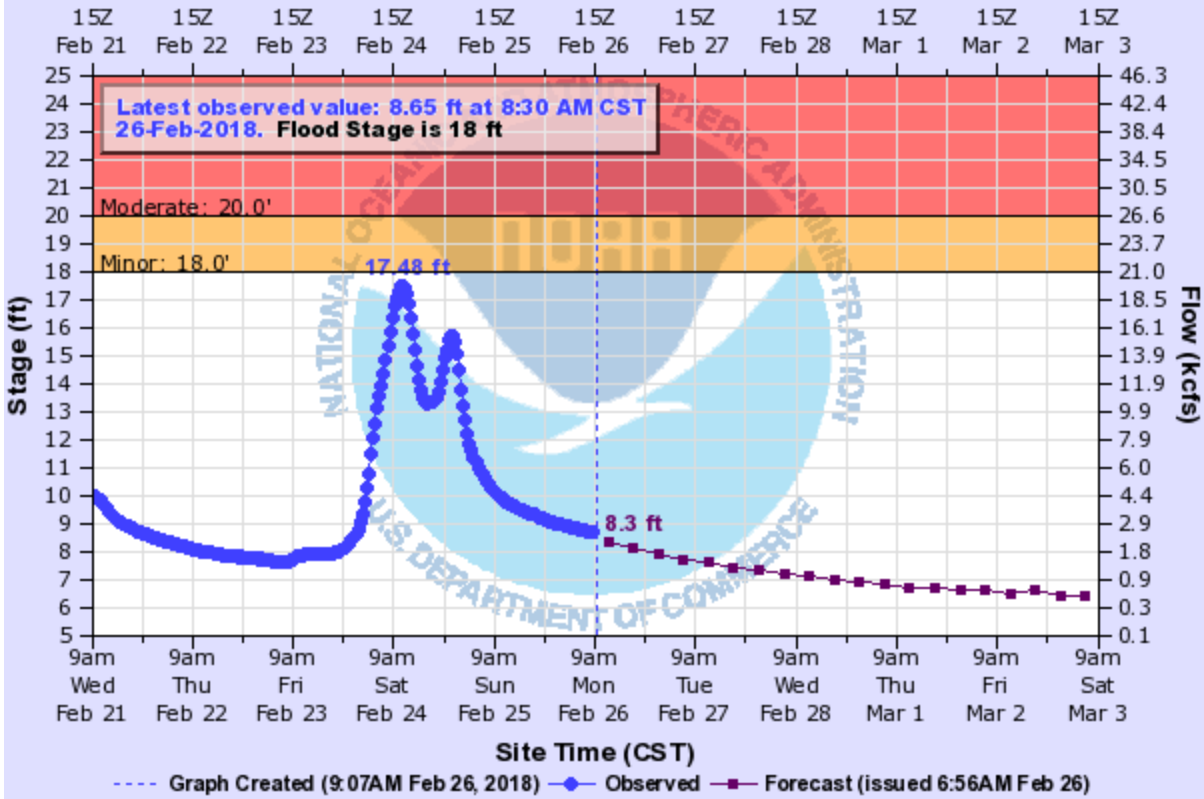


TALO2(plotting HGIRG) "Gage 0" Datum: 664.14'

Observations courtesy of US Geological Survey

BARON FORK AT ELDON

Universal Time (UTC)

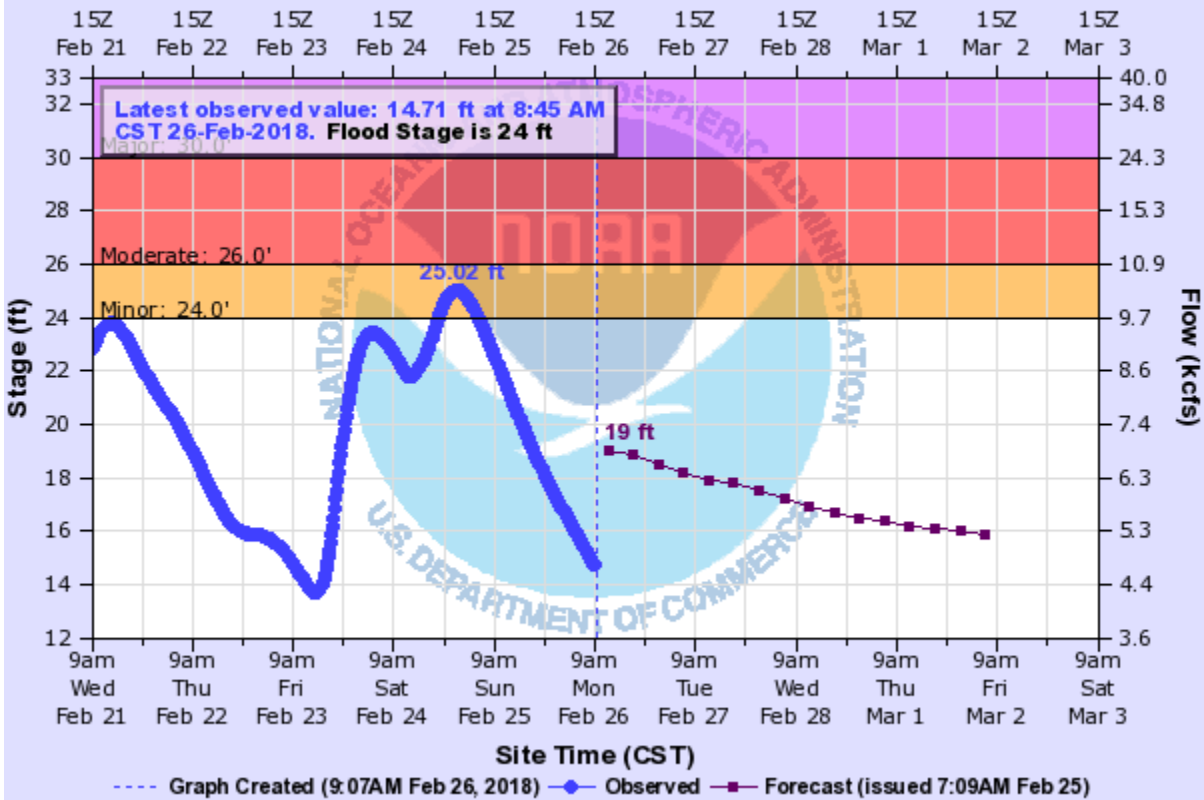


ELD02(plotting HGIRG) "Gage 0" Datum: 701.14'

Observations courtesy of US Geological Survey

POTEAU RIVER NEAR POTEAU

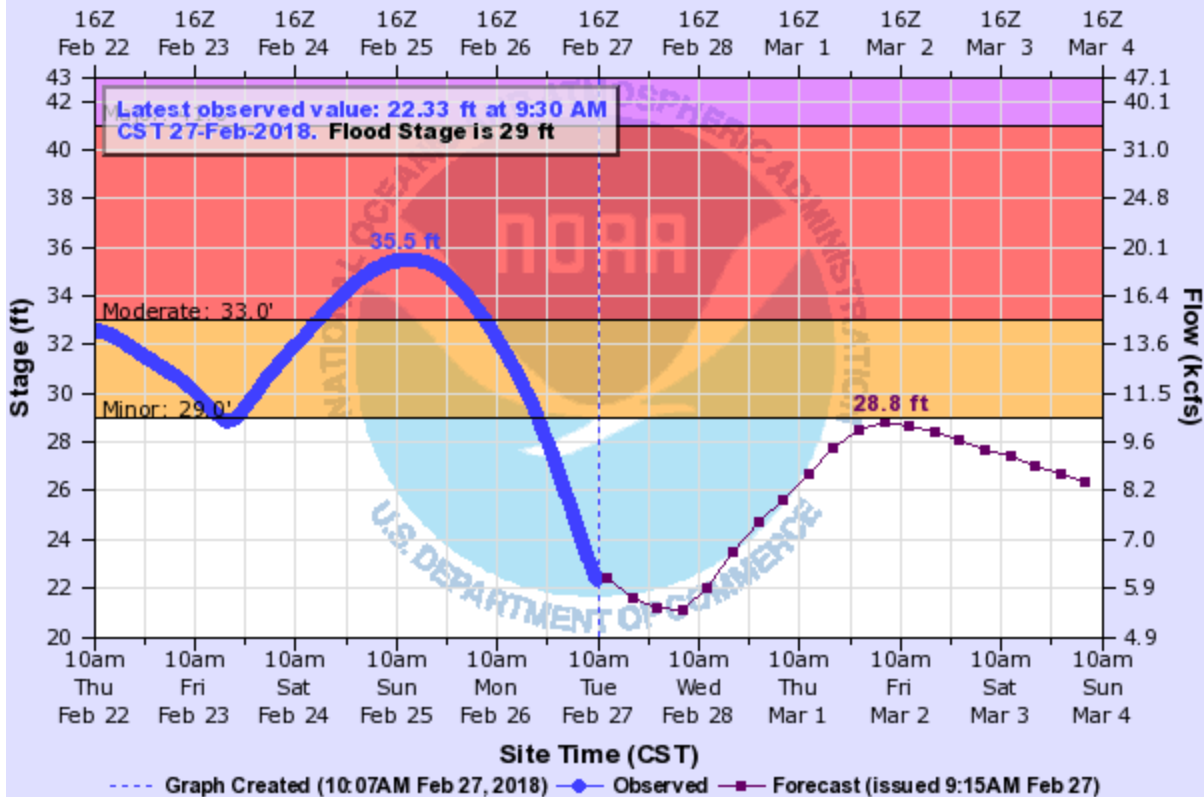
Universal Time (UTC)



PTA02(plotting HGIRG) "Gage 0" Datum: 409.4'

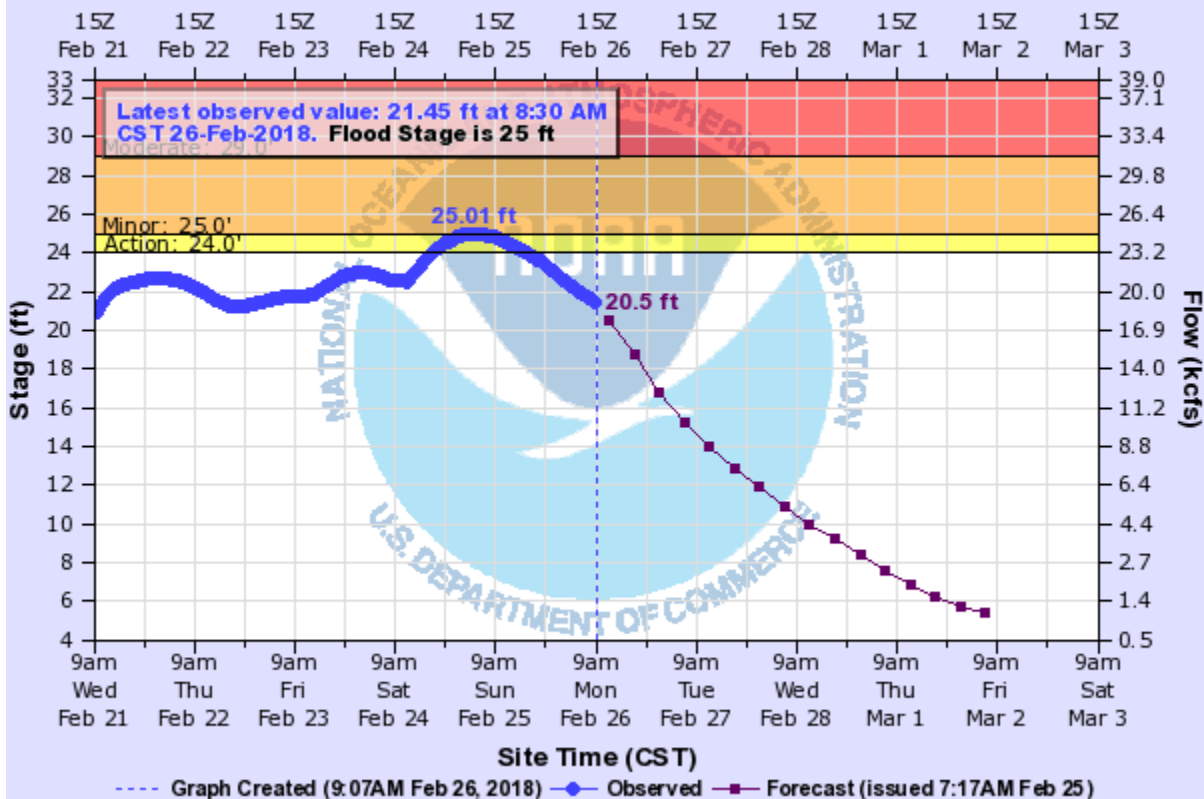
POTEAU RIVER NEAR PANAMA

Universal Time (UTC)



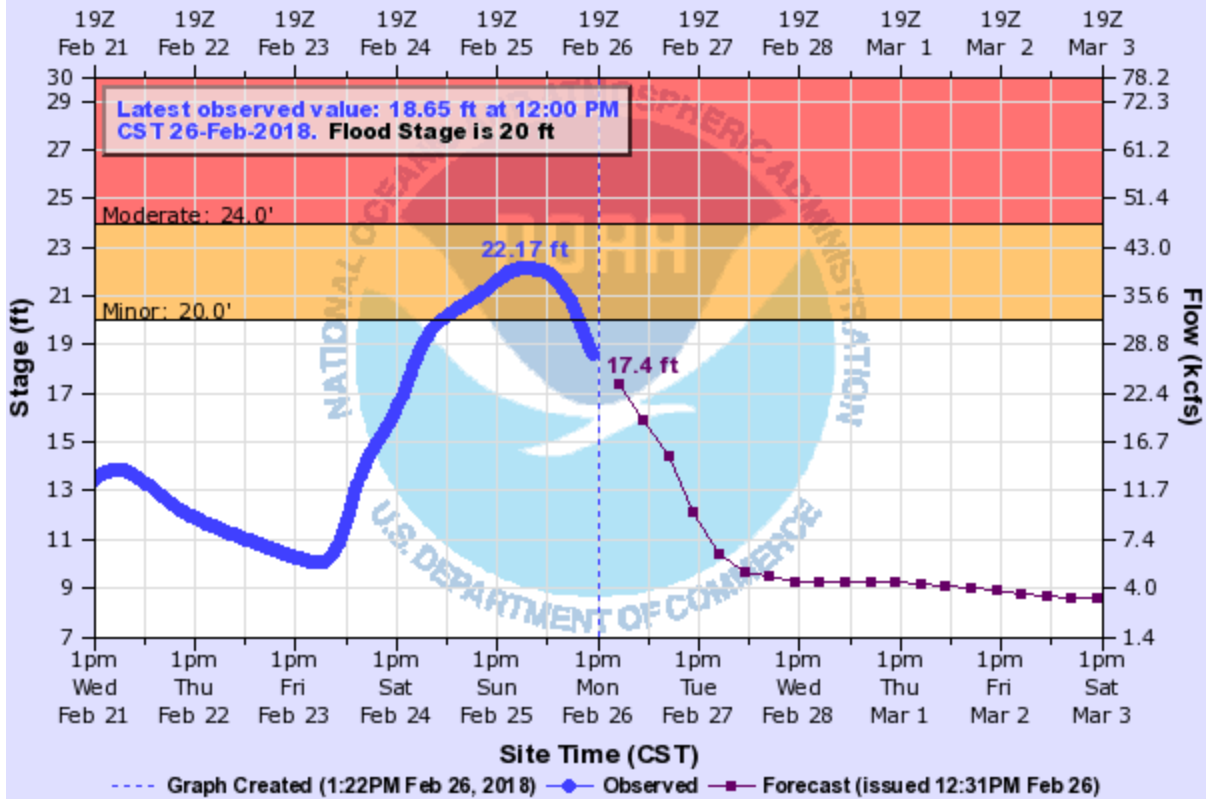
KIAMICHI RIVER NEAR ANTLERS

Universal Time (UTC)



SPRING RIVER NEAR QUAPAW

Universal Time (UTC)

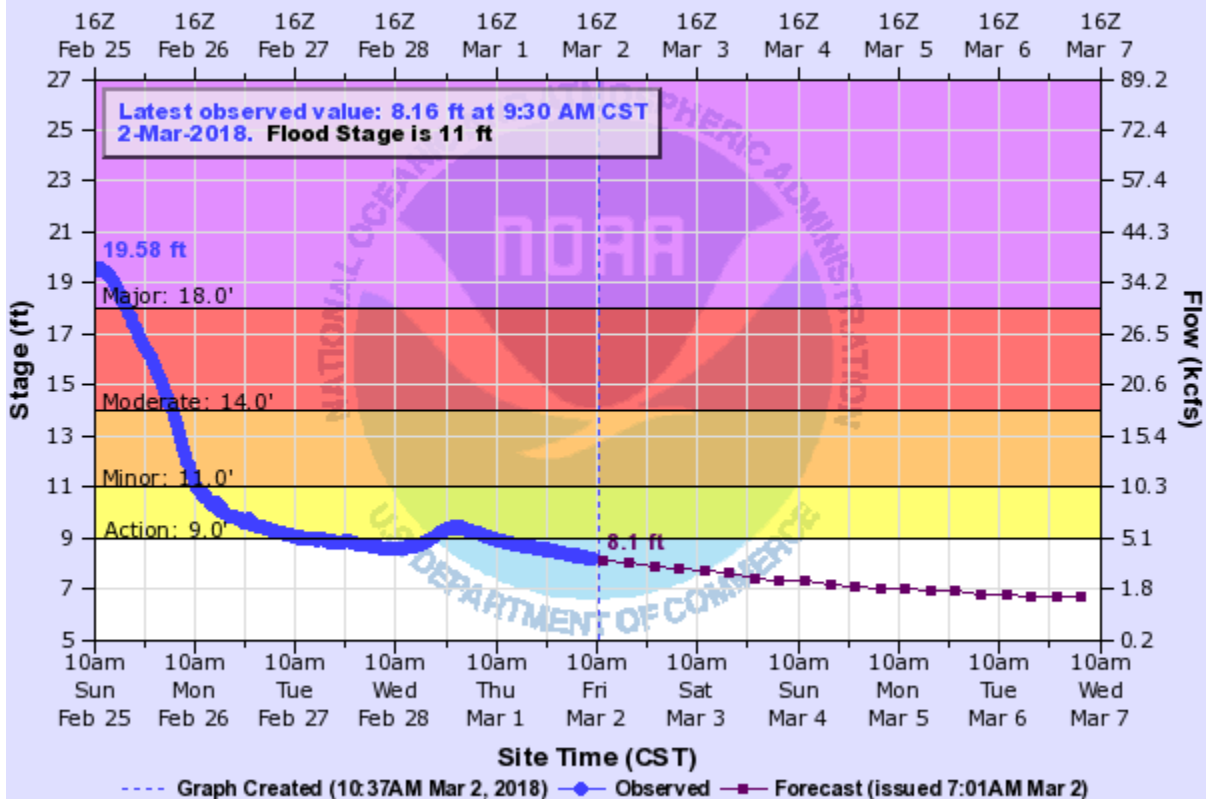


QUAO2(plotting HGIRG) "Gage 0" Datum: 746.25'

Observations courtesy of US Geological Survey

ILLINOIS RIVER (AR OK) NEAR TAHLEQUAH

Universal Time (UTC)



TALO2(plotting HGIRG) "Gage 0" Datum: 664.14'

Observations courtesy of US Geological Survey