

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 2024
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 10, 2024

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 dry period and drought, November 2024 brought record breaking rainfall to the region, which resulted in some flooding. However, due to the antecedent dry conditions, the flooding was minimal for the amount of rain that fell. Normal precipitation for November ranges from 2.6” in Pawnee County to 4.4” in Haskell County. Normal precipitation for the Ozark region of northwest Arkansas averages 4.2”. This report, past E-5 reports, and monthly hydrology and climatology summaries can be found at https://www.weather.gov/tsa/climo_summary_e5list.

Monthly Summary

Using the radar-derived estimated observed precipitation from the RFCs (Fig. 1a), rainfall totals for November 2024 ranged from 2.5” to 20” across eastern OK and northwest AR, with much of the area receiving 6”-10”. These rainfall totals correspond to 65% to 500% of the normal November rainfall, with most of the area receiving 150%-300% of normal for the month (Fig. 1b). The state of Oklahoma set a new November record rainfall with a statewide average of 7.61” (according to NCEI). Additionally, the preliminary 31 tornadoes that occurred in Oklahoma set a new November record, exceeding the previous record of 12 set in 1958.

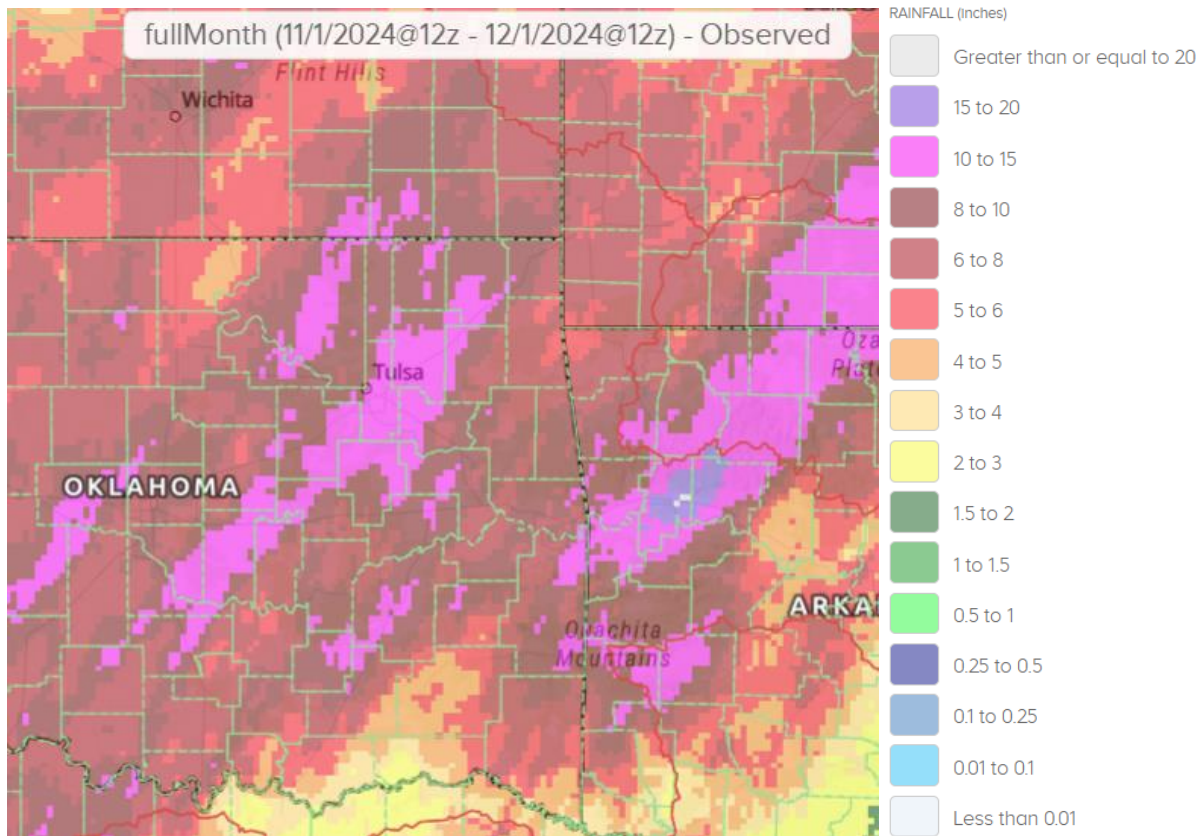


Fig. 1a. Estimated Observed Rainfall for November 2024

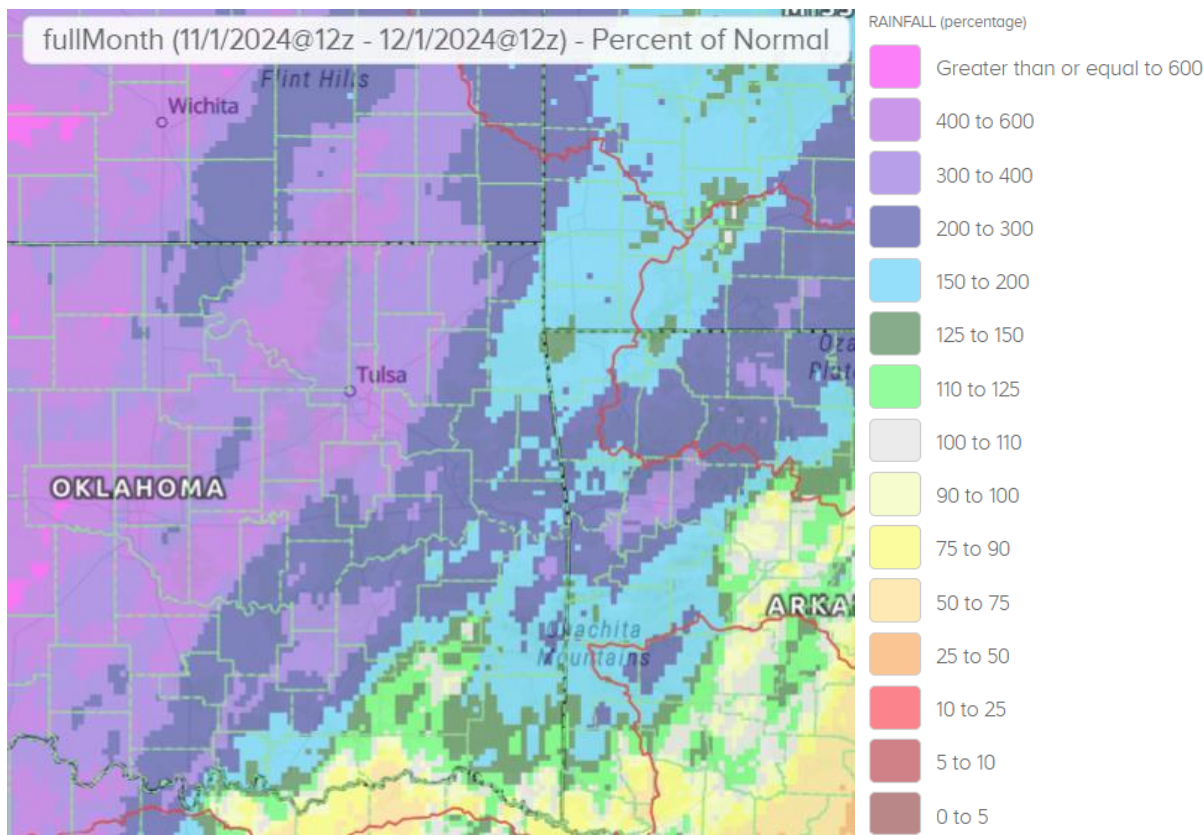


Fig. 1b. Estimated % of Normal Rainfall for November 2024

In Tulsa, OK, November 2024 ranked as the 14th warmest November (54.1°F, tied 1934; since records began in 1905) and the Record wettest November (12.44", previous record 8.29" in 1931; since records began in 1888). Fort Smith, AR had the 6th warmest November (56.8°F; since records began in 1882) and the 3rd wettest November (11.02"; since records began in 1882). Fayetteville, AR had the Record warmest (53.5°F, tied 1973) and the 3rd wettest (9.36") November since records began in 1949.

Some of the larger precipitation reports (in inches) for November 2024 included:

Ozark 4.6S, AR (coco)	15.44	Broken Arrow 2.2SW, OK (coco)	13.80	Riverdale 4.2E, AR (coco)	13.37
Broken Arrow 4.6SSW, OK (coco)	13.36	Sperry 0.7WSW, OK (coco)	13.28	Greenwood 0.9S, AR (coco)	13.05
Owasso 1.4NNW, OK (coco)	12.93	Wister 3.0NNE, OK (coco)	12.60	Tulsa 8.4ESE, OK (coco)	12.55

Some of the lowest precipitation reports (in inches) for November 2024 included:

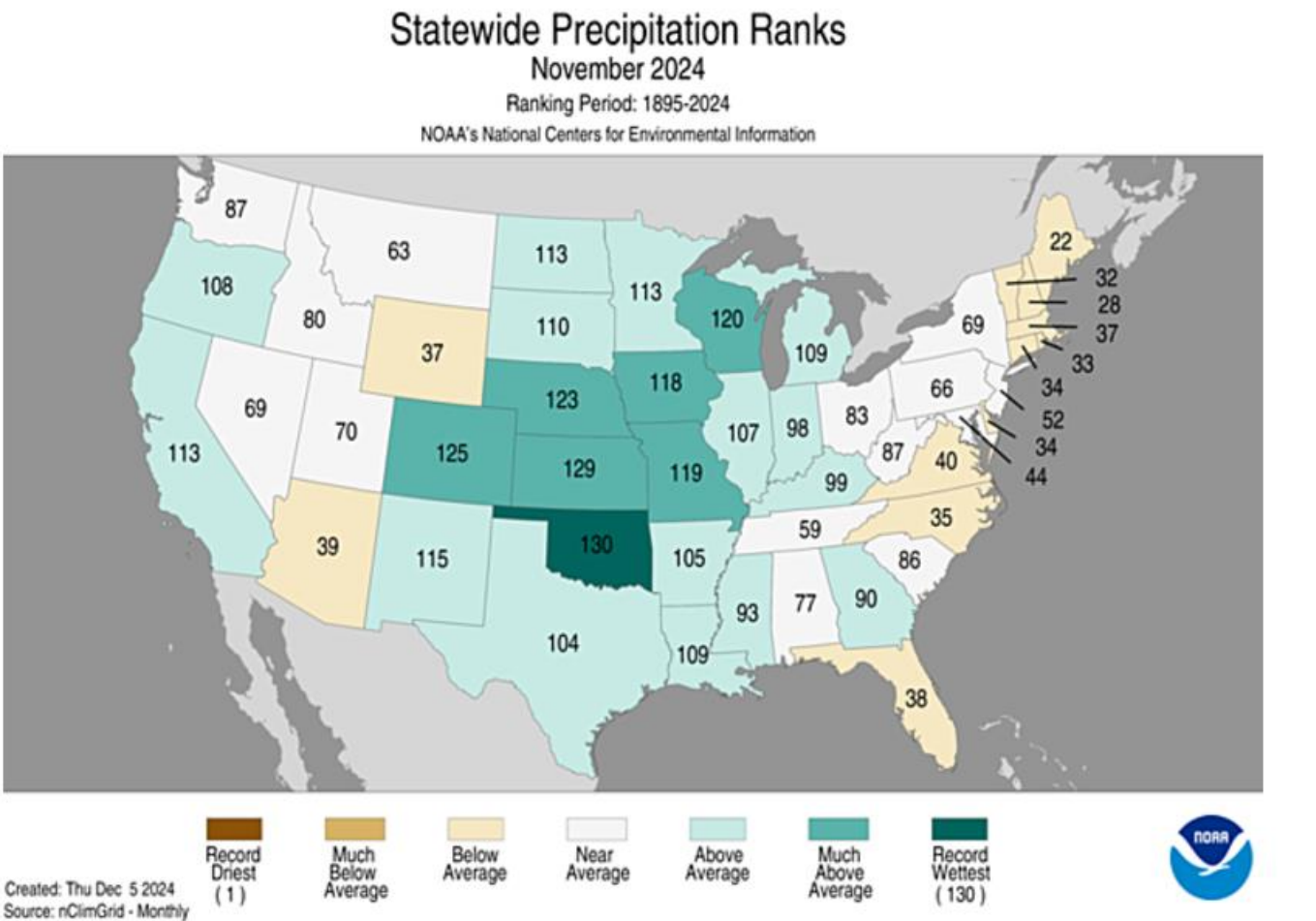
Hugo, OK (meso)	4.41	Antlers 5NW, OK (coop)	4.74	Gravette, AR (coop)	4.98
Clayton, OK (meso)	5.19	Antlers 6.3SE, OK (coco)	5.25	Cloudy, OK (meso)	6.06
Talihina, OK (meso)	6.62	Stigler, OK (meso)	6.64	Jay, OK (meso)	6.91

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

Rank since 1921	November 2024	Autumn 2024 (Sep 1 – Nov 30)	Last 120 Days (Aug 3 – Nov 30)	Water Year 2024 (Oct 1, 2024 – Nov 30, 2024)	Year-to-Date (Jan 1 – Nov 30)	Last 180 Days (Jun 4 – Nov 30)	Last 365 Days (Dec 2, 2023 – Nov 30, 2024)
Northeast OK	1st wettest	35 th wettest	39 th wettest	8th wettest	47 th wettest	45 th driest	43 rd wettest
East Central OK	3rd wettest	48 th wettest	26 th wettest	22 nd wettest	28 th wettest	39 th wettest	24 th wettest
Southeast OK	18 th wettest	36 th driest	30 th driest	48 th driest	48 th driest	24 th driest	40 th driest
Statewide	1st wettest	35 th wettest	31 st wettest	14 th wettest	47 th wettest	52 nd wettest	37 th wettest

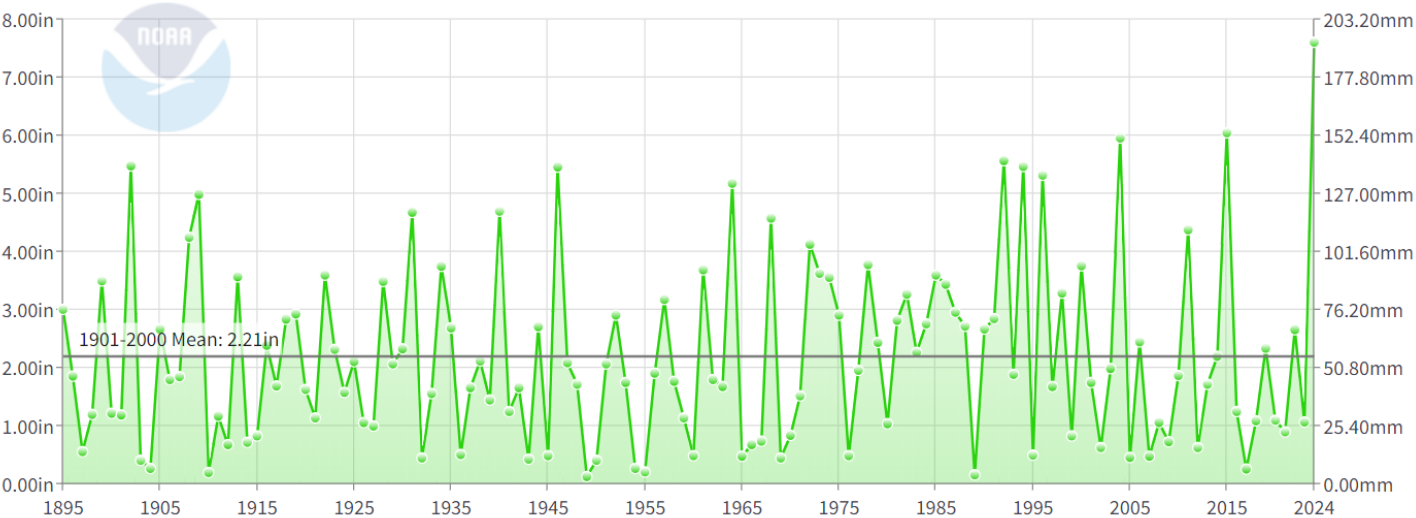
The state of Oklahoma set a new November record rainfall with a statewide average of 7.61" (NCEI). This breaks the previous record of 6.05" from November 2015.

November 2024 Statewide Precipitation Ranks



Oklahoma Precipitation

November



Several climate divisions and counties also had record November rainfall in November 2024.

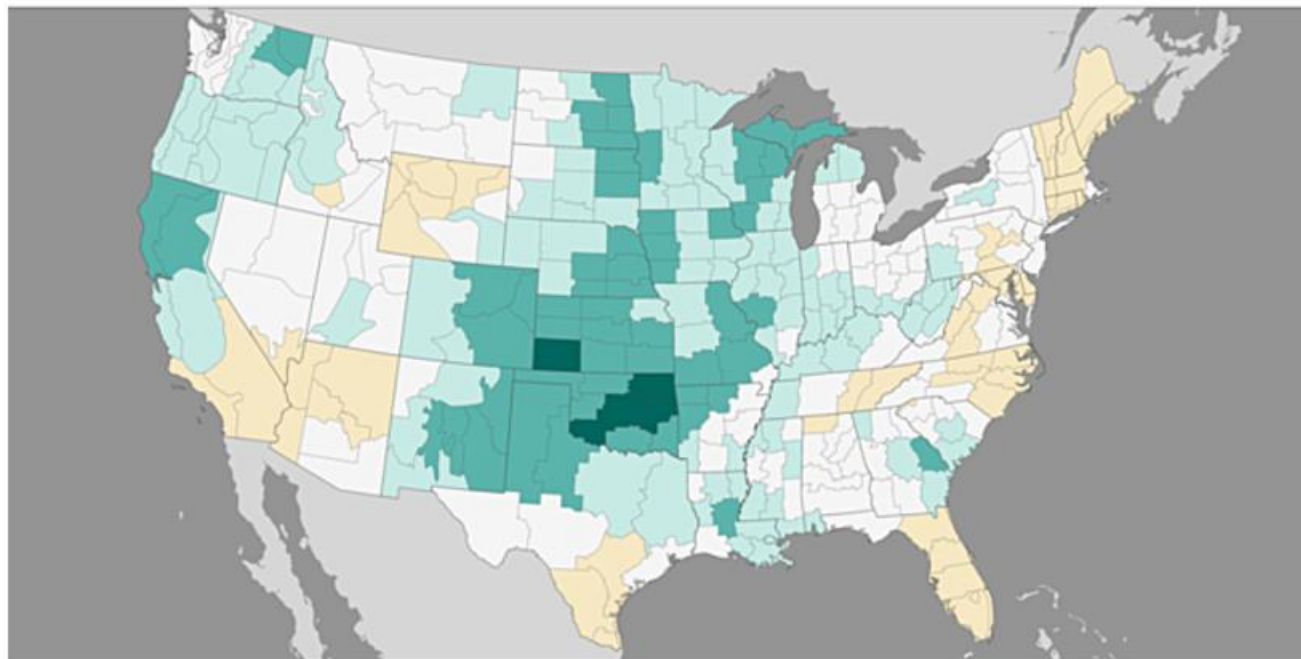
November 2024 Divisional Precipitation Ranks

Divisional Precipitation Ranks

November 2024

Ranking Period: 1895-2024

NOAA's National Centers for Environmental Information



Record
Driest

Much
Below
Average

Below
Average

Near
Average

Above
Average

Much
Above
Average

Record
Wettest



Created: Thu Dec 5 2024
Source: nClimGrid - Monthly

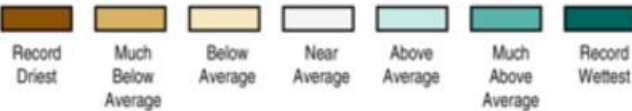
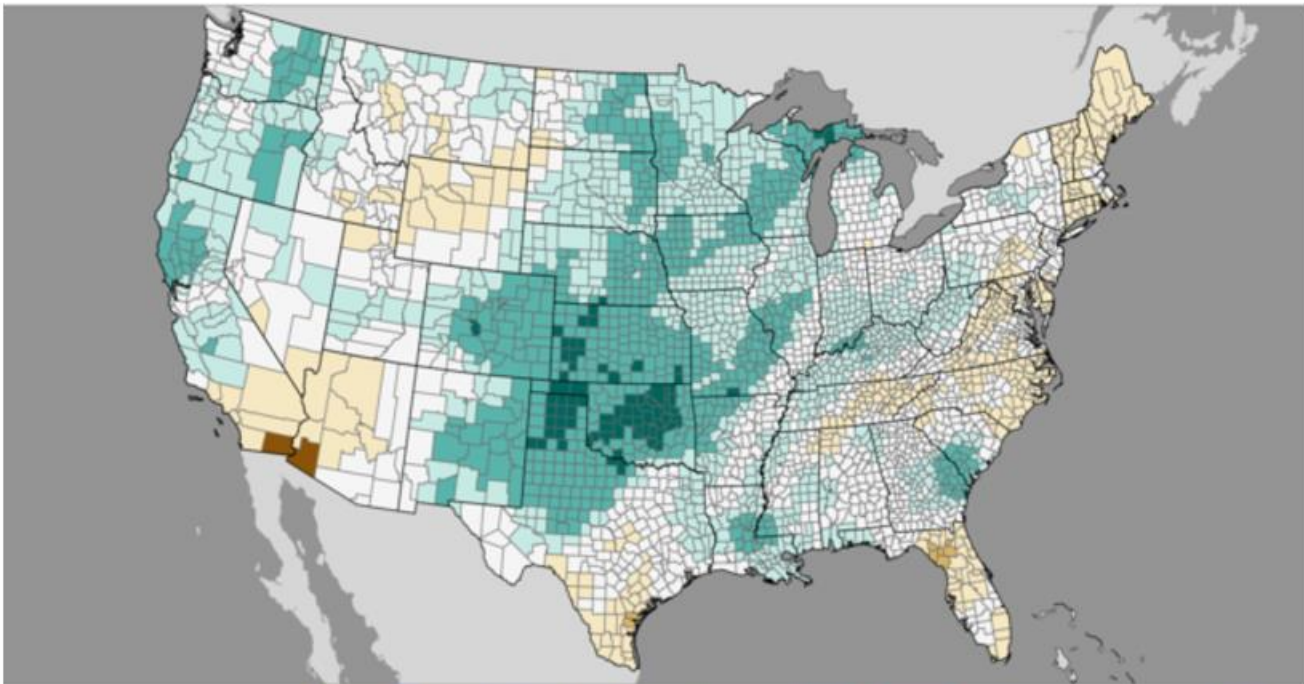
November 2024 County Precipitation Ranks

County Precipitation Ranks

November 2024

Ranking Period: 1895-2024

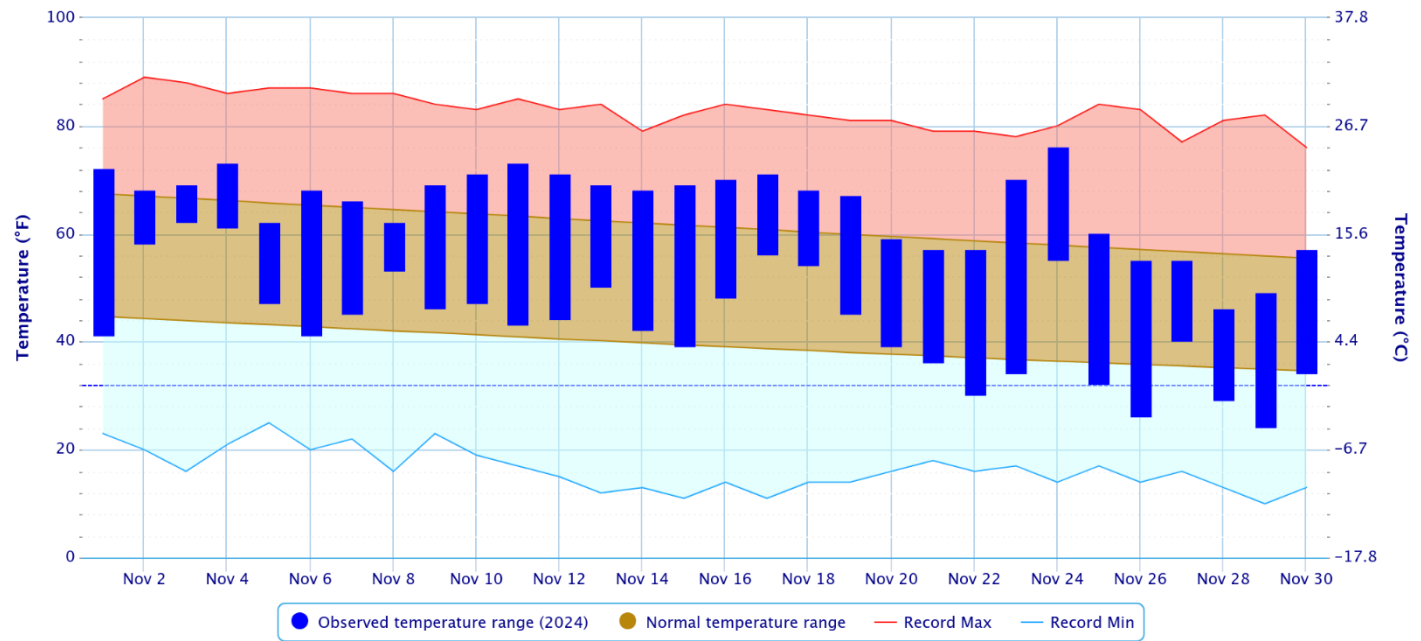
NOAA's National Centers for Environmental Information



Created: Thu Dec 05 2024
Source: nClimGrid-Monthly

Daily Temperature Data – Tulsa Area, OK (ThreadEx)

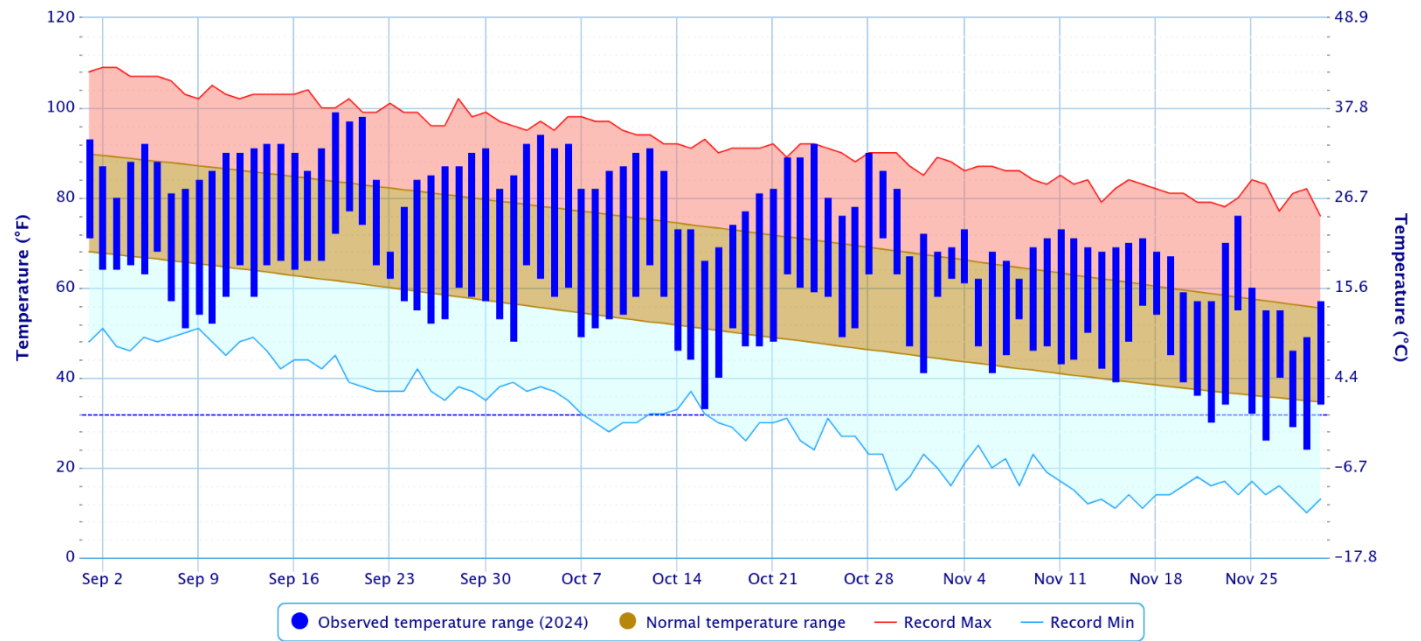
Period of Record – 1905-01-06 to 2024-12-01. Normals period: 1991-2020. Click and drag to zoom chart.



Powered by ACIS

Daily Temperature Data – Tulsa Area, OK (ThreadEx)

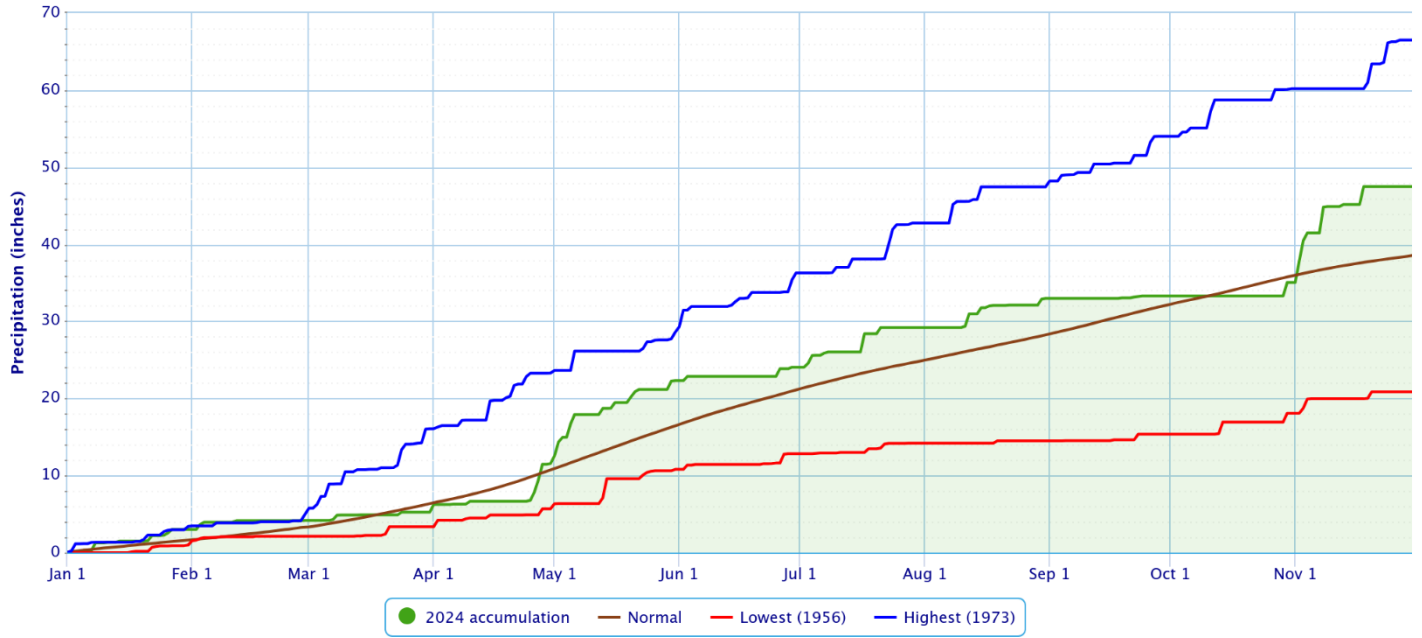
Period of Record – 1905-01-06 to 2024-12-01. Normals period: 1991-2020. Click and drag to zoom chart.



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Accumulated Precipitation – Tulsa Area, OK (ThreadEx)

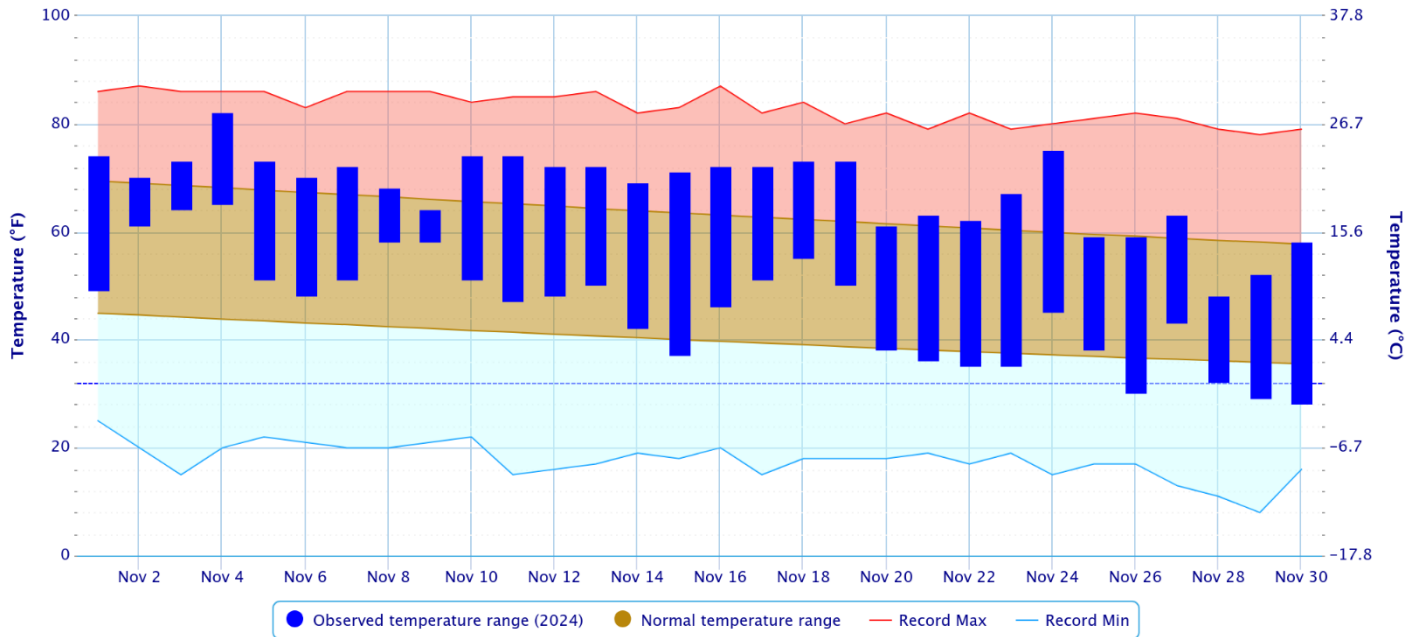
Click and drag to zoom to a shorter time interval; green/black diamonds represent subsequent/missing values



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

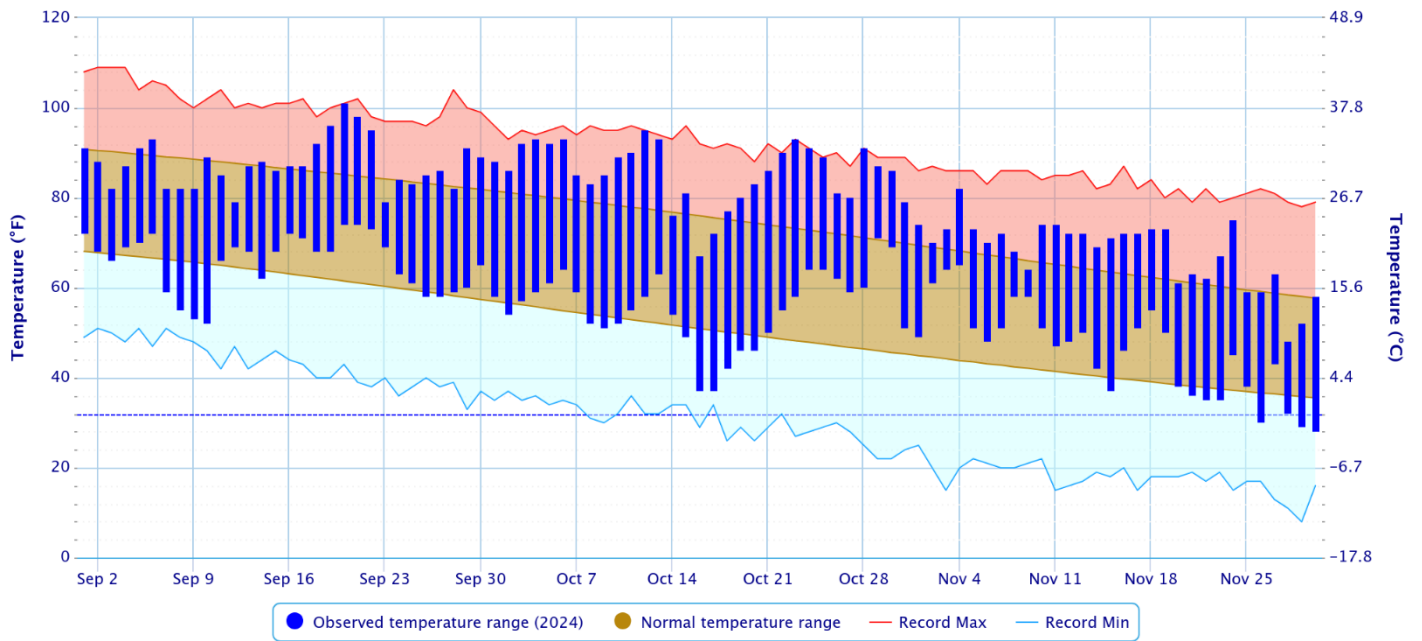
Period of Record – 1882–06–01 to 2024–12–01. Normals period: 1991–2020. Click and drag to zoom chart.



Powered by ACIS

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

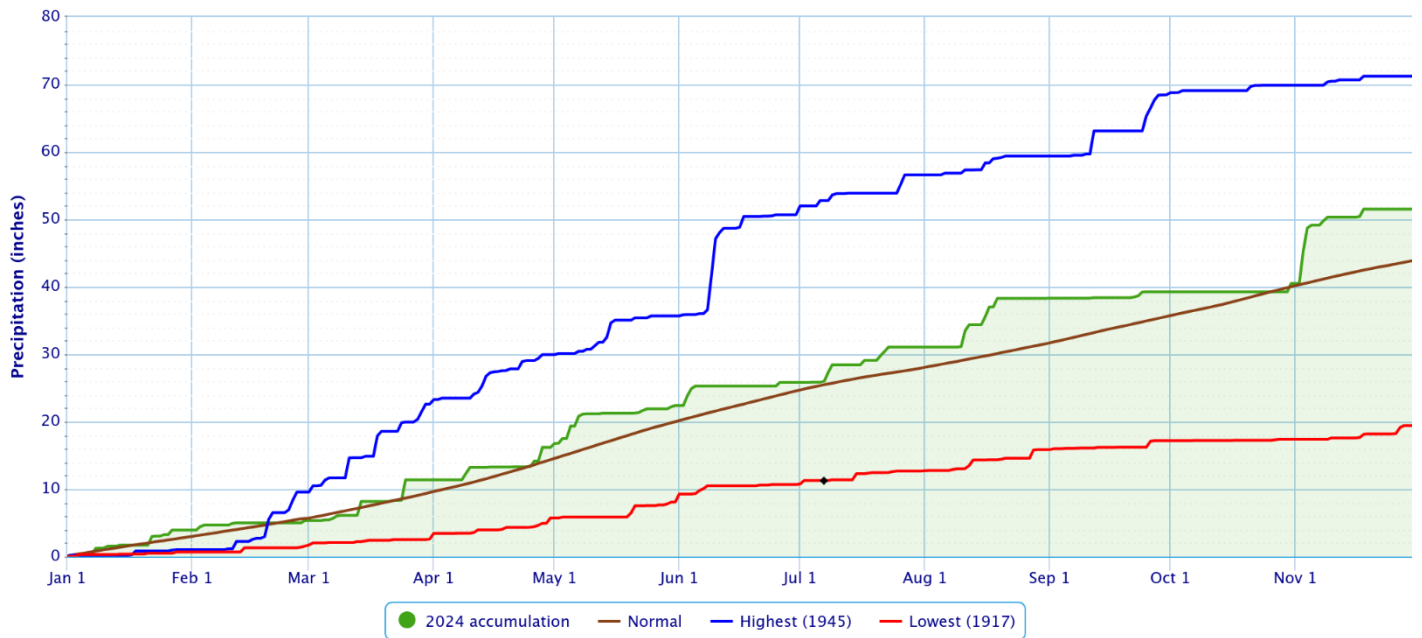
Period of Record – 1882-06-01 to 2024-12-01. Normals period: 1991-2020. Click and drag to zoom chart.



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Accumulated Precipitation – Fort Smith Area, AR (ThreadEx)

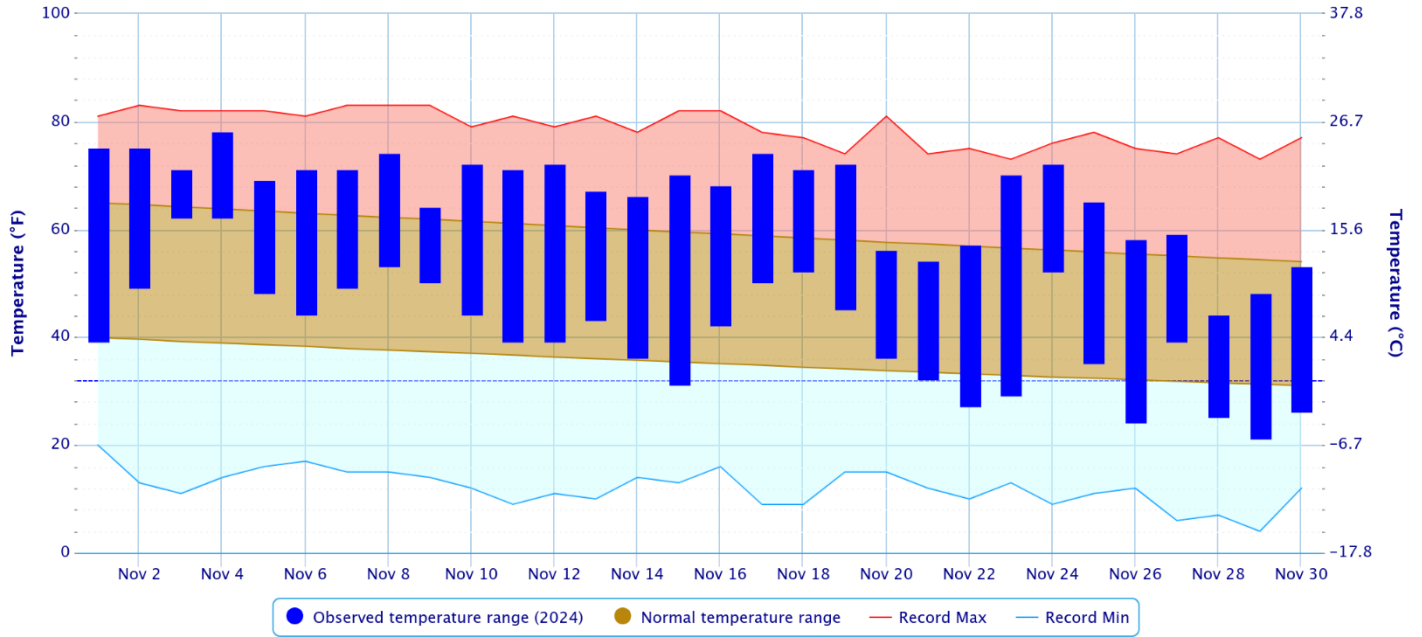
Click and drag to zoom to a shorter time interval; green/black diamonds represent subsequent/missing values



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Daily Temperature Data – FAYETTEVILLE DRAKE FIELD, AR

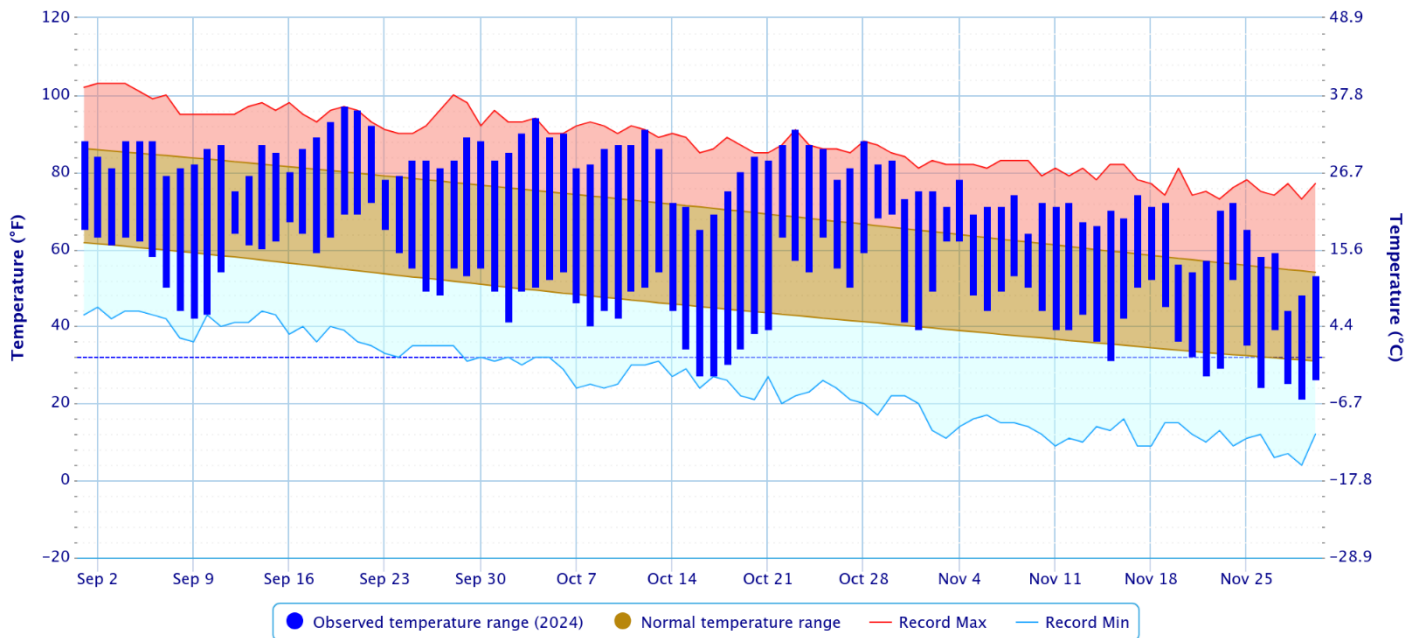
Period of Record – 1949–07–14 to 2024–12–01. Normals period: 1991–2020. Click and drag to zoom chart.



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Daily Temperature Data – FAYETTEVILLE DRAKE FIELD, AR

Period of Record – 1949–07–14 to 2024–12–01. Normals period: 1991–2020. Click and drag to zoom chart.



Powered by ACIS

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



Oklahoma Reservoir Levels and Storage as of 12/2/2024

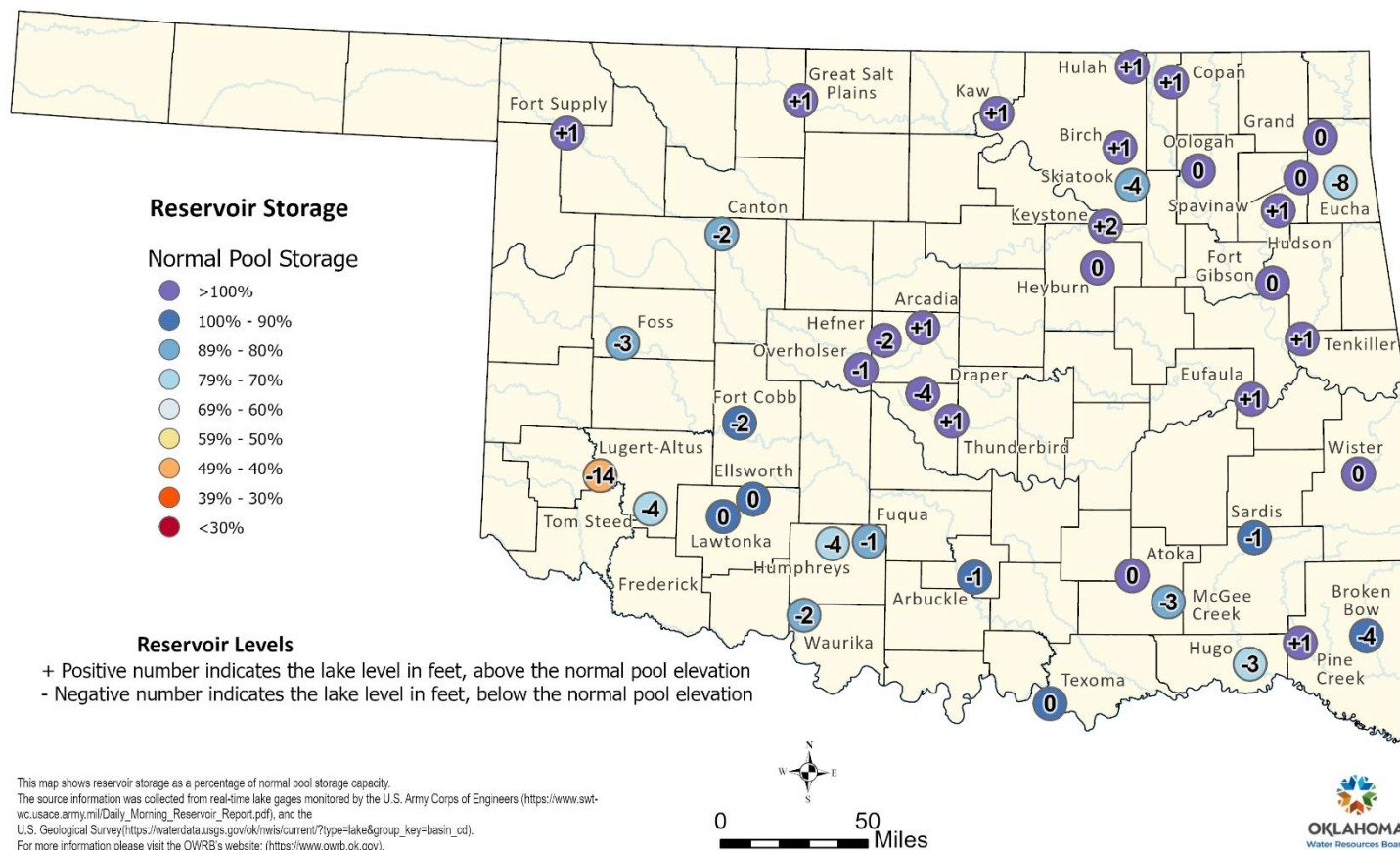
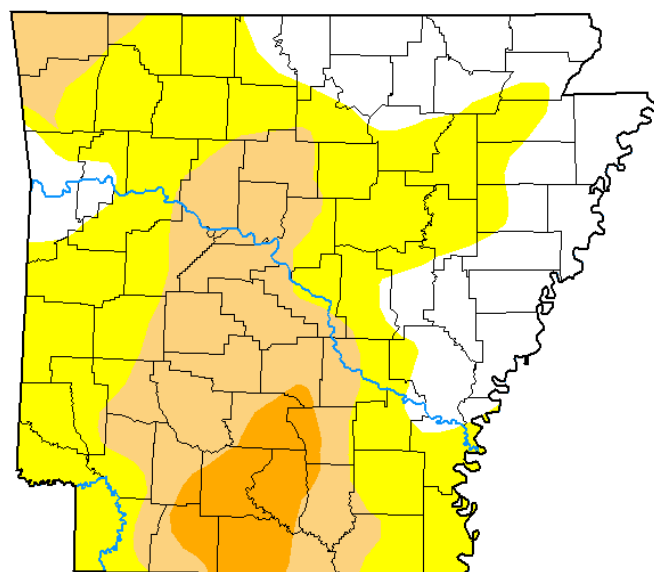


Fig. 2. Drought Monitor for Oklahoma

U.S. Drought Monitor Arkansas

December 3, 2024
(Released Thursday, Dec. 5, 2024)
Valid 7 a.m. EST



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	25.19	74.81	31.53	6.26	0.00	0.00
Last Week 11-26-2024	40.15	59.85	33.52	2.08	0.00	0.00
3 Months Ago 09-03-2024	21.77	78.23	22.85	3.48	0.00	0.00
Start of Calendar Year 01-02-2024	15.06	84.94	44.54	23.39	13.71	0.79
Start of Water Year 10-01-2024	27.93	72.07	38.75	5.49	0.00	0.00
One Year Ago 12-05-2023	55.34	44.66	32.69	15.70	2.21	0.00

Intensity:

None	D2 Severe Drought
D0 Abnormally Dry	D3 Extreme Drought
D1 Moderate Drought	D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

Author:

David Simeral
Western Regional Climate Center



droughtmonitor.unl.edu

Fig. 3. Drought Monitor for Arkansas

Autumn (September-October-November) Summary

Using the radar-derived estimated observed precipitation from the RFCs (Fig. 4a), rainfall totals for Autumn 2024 ranged from around 4" to around 22" across eastern OK and northwest AR, with much of the area receiving 8"-15". These rainfall totals correspond to 30% to 170% of the normal Autumn rainfall, with most of the area receiving 80%-110% of normal for the season (Fig. 4b). By the end of October, widespread Extreme (D3) Drought encompassed a large portion of eastern OK and northwest AR due to a prolonged period of dry and warm conditions in September and October. Then, heavy rain impacted most of the area the beginning of November, with warmer than normal temperatures continuing. There were 3 tornadoes that occurred in October and 6 tornadoes in November, for a total of 9 tornadoes this autumn across eastern OK and northwest AR.

In Tulsa, OK, Autumn 2024 ranked as the 5th warmest Autumn (65.8°F; since records began in 1905) and the 21st wettest Autumn (14.51"; since records began in 1888). Fort Smith, AR had the 3rd warmest Autumn (68.0°F; since records began in 1882) and the 36th wettest Autumn (13.23"; since records began in 1882). Fayetteville, AR had the Record warmest (63.5°F, previous record 62.2°F in 2016) and the 31st driest (10.89", tied 1978) Autumn since records began in 1949.

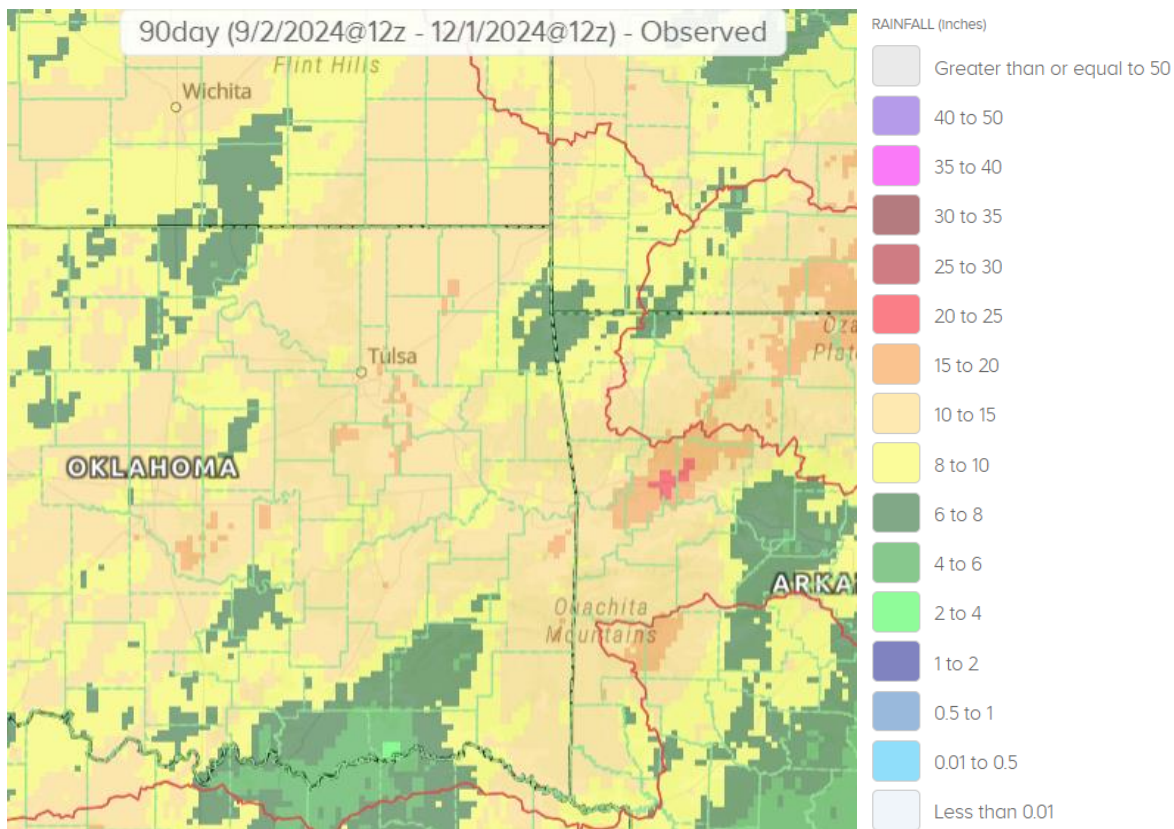


Fig. 4a. Estimated Observed Rainfall for Autumn 2024

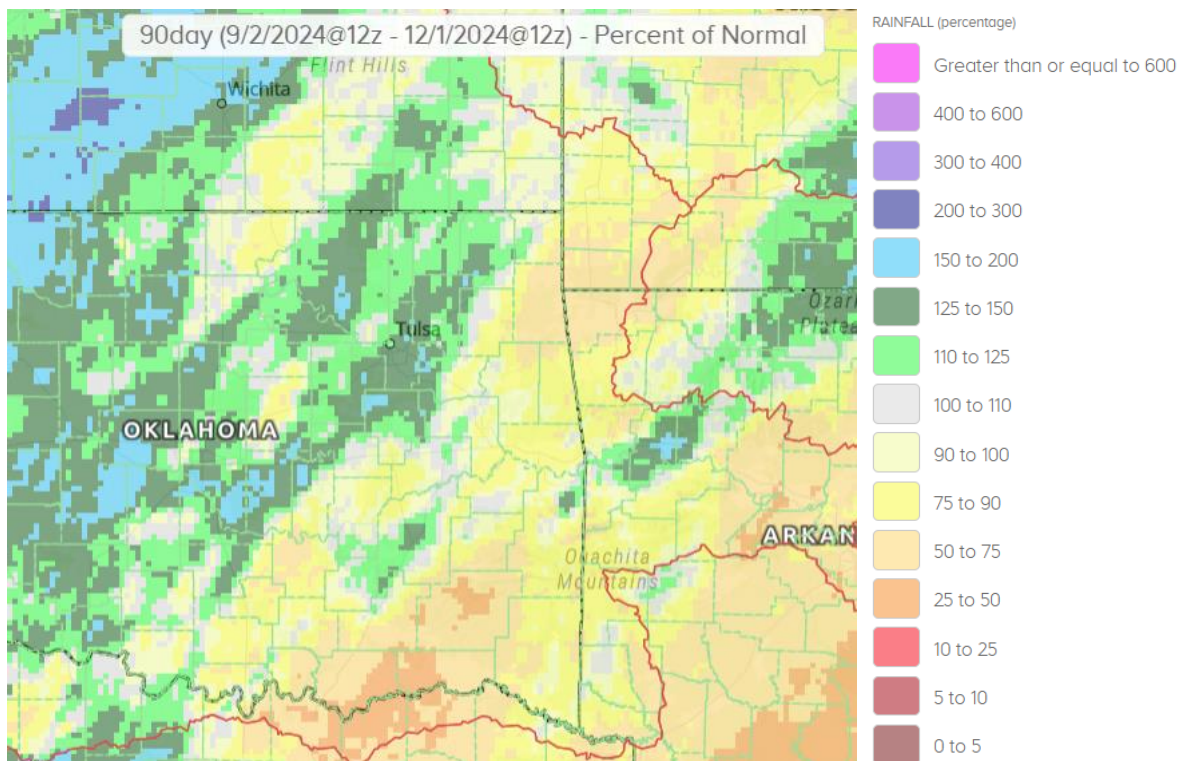


Fig. 4b. Estimated % of Normal Rainfall for Autumn 2024

Outlooks

The [Climate Prediction Center](#) (CPC) outlook for December 2024 (issued November 30, 2024) indicates an equal chance for above, near, and below normal temperatures and precipitation across all of eastern OK and northwest AR. This outlook was based on dynamical and statistical model output along with long-term trends.

For the 3-month period December-January-February 2024-25, CPC is forecasting an enhanced chance for below median precipitation south of I-40 in southeast OK and west central AR and an equal chance for above, near, and below median precipitation for northeast OK and northwest AR north of I-40. This outlook also calls for an increased chance of above normal temperatures across far southeast OK, and an equal chance for above, near, and below normal temperatures for the majority of eastern OK and northwest AR (outlook issued November 21, 2024). This outlook is based on long-term trends, ENSO state, and incorporates a suite of statistical and dynamical forecast tools. According to CPC, “La Niña is most likely to emerge in October-December 2024 (57% chance) and is expected to persist through January-March 2025.” CPC continues the La Niña Watch.

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

After an extended period of drought through October, there was a change in the weather pattern at the beginning of November. This pattern was characterized by a deep trough in the desert southwest and ridge centered in the northeastern U.S. This resulted in persistent warm and humid southwesterly flow over eastern OK and northwest AR, with periodic upper-level waves, that brought near record amounts of specific humidity, precipitable water (PWAT), and integrated vapor transport for this time of year. Additionally, the strength of the upper-level system provided plenty of lift, instability, and wind shear for thunderstorms.

Showers and thunderstorms first began during the evening of the 2nd over northeast OK. Then, a wide band of showers and thunderstorms oriented southwest to northeast from central OK into northeast OK set up and led to a period of training storms through the evening into the overnight hours. Around 3 am on the 3rd, a quasi-linear convective system (QLCS) developed and moved into eastern OK from the west. The QLCS produced damaging winds and an EF-0 tornado (see <https://arcg.is/0eHLf0> for details) as it advanced eastward across a large portion of eastern OK and northwest AR through the early morning hours. Rain then continued for the remainder of the morning southeast of I-44 in the wake of the QLCS. Through 6 am on the 3rd, the 24-hour rainfall totals were 2"-7" along and northwest of an Okemah to Pryor to Miami line in northeast OK, with a few hundredths of an inch to 2.5" elsewhere (Figs. 5-7). Scattered convection developed and persisted across eastern OK and northwest AR during the afternoon. Very moist southwesterly flow remained in place with near record PWAT values for this time of year (above the 99th percentile for early November) as periodic waves of showers and thunderstorms continued to rotate through the area. Widespread showers and thunderstorms moved east across eastern OK and northwest AR during the evening, bringing another 0.5"-3" of rain to the region (Fig. 8). By late evening, a warm front began lifting north from the Red River, resulting in new convection along and north of the front, with the most persistent rain occurring along and north of I-40 through the overnight hours. A large portion of Sebastian and Franklin Counties received 8"-11" of rain during this time as several rounds of heavy rain moved across that area. At 6 am on the 4th, the 24-hour rainfall totals ranged from around 0.1" to 11", with most locations receiving 1"-4" of rain (Figs. 10-12). This brought the 2-day rainfall total to 3"-11" across all but far southeast OK (Fig. 13). The official observing station in Tulsa, OK (KTUL) set a new 24-hour record rainfall for November with 5.25" on Nov. 2-3, 2024 (previous record was 5.14).

Scattered showers and thunderstorms continued through the morning of the 4th, with another line of storms moving in from the west around noon. This large line of strong to severe storms affected all of eastern OK and northwest AR as it slowly marched eastward through midnight. PWAT and integrated moisture transport values remained near the climatological maximum for this time of year, resulting in more heavy rain. This line of storms also produced 5 tornadoes, include two EF2 tornadoes, one of which had a path length of 32.8 miles (see <https://arcg.is/0eHLf0> for details). While the storms generally ended from west to east as the line progressed, widespread heavy rain continued behind the leading edge of the line from southeast OK through northwest AR until sunrise of the 5th. This brought another 3"-6" of rain to Sebastian and Franklin Counties in west central AR. A bridge was washed out on Chickadee Lane early on the 5th in the Watalula community in Franklin County AR, causing 4 residences to be isolated. Highway 23 was under water north of the Mulberry

River bridge at Turners Bend near Cass. High water rescues were also reported across Madison County AR, including locations of Huntsville, Kingston, and Witter, on the evening of the 4th. 24-hour rainfall totals through 6 am on the 5th ranged from 0.50"-6" (Figs. 14, 15). The last of the showers finally shifted east of the area by late morning of the 5th.

In total, the three days of active weather brought 2"-17" of rain to eastern OK and northwest AR, with a large portion of this area receiving 4"-7" (Figs. 17-20). Due to the widespread severe drought prior to the start of the rain, there was not as much river flooding as would typically occur with these rainfall magnitudes. However, by the third day of rain, the soil moisture was replenished enough the moderate flooding occurred along the Mulberry River, and minor flooding occurred along the Illinois River and lower Poteau River (see E3 and preliminary hydrographs at the end of this report).

Showers and thunderstorms began to move east into eastern OK around sunrise on the 8th as a strong closed upper-level low over New Mexico lifted north-northeast to near the Colorado/Kansas/Nebraska border area. These storms remained persistent across eastern OK during the morning and afternoon hours. At early evening, this activity began to spread east into northwest AR. The rain then ended from west to east across the area during the overnight hours as a cold front moved through. PWAT values were 1.5"-1.75", which is above the climatological 99th percentile for early November. Rainfall totals ranged from 0.5" to 4" across eastern OK and northwest AR (Figs. 21, 22). The official observing station in Tulsa, OK set a new record rainfall for the month of November on the 9th at 4:22 pm. Tulsa had received 2.45" by that time (and it was still raining), surpassing the previous record rainfall for the month of November of 8.29" in 1931. This rain event brought the rainfall total for the month so far to 4"-19" across most of eastern OK and northwest AR (Fig. 23).

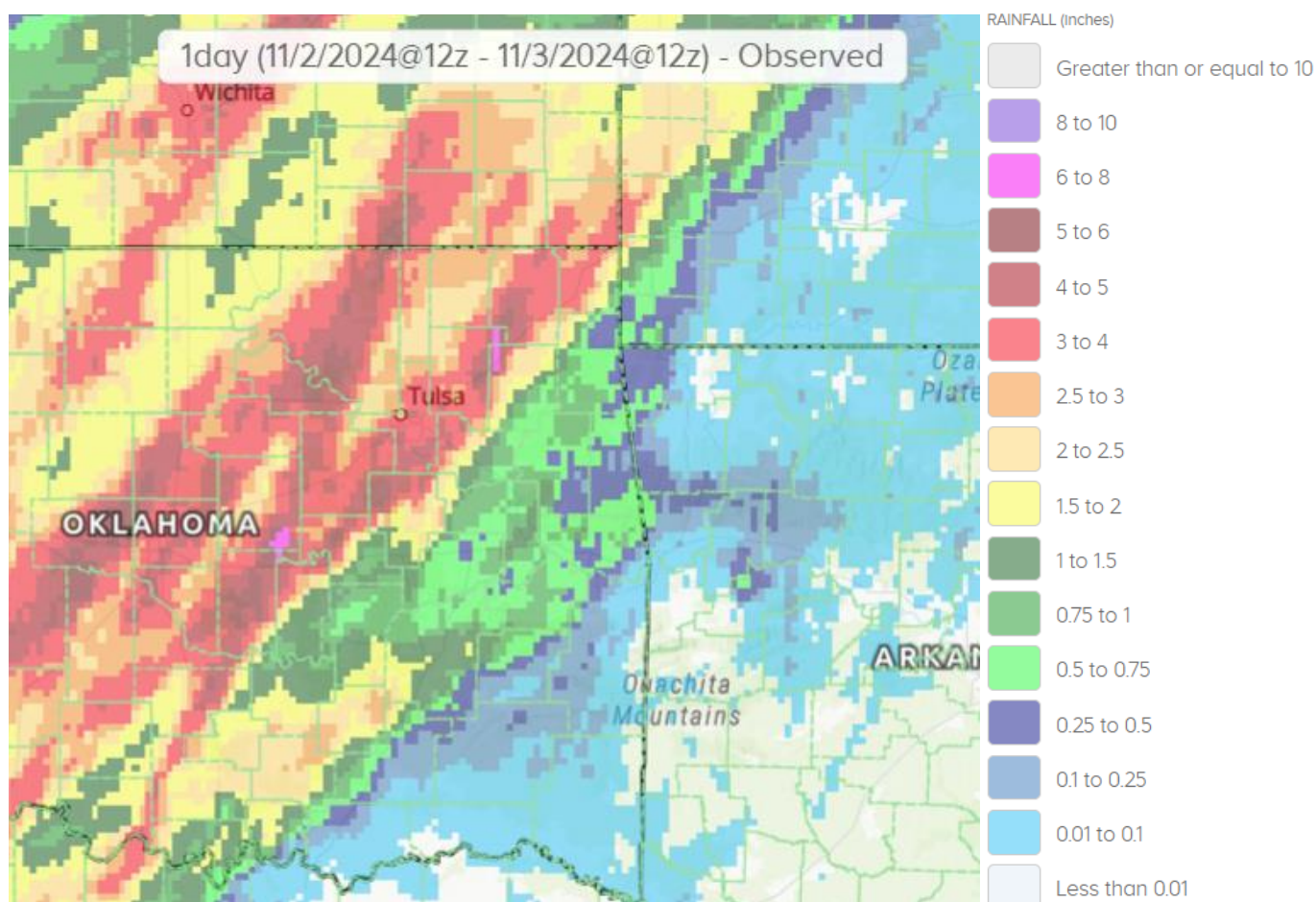


Fig. 5. 24-hour Estimated Observed Rainfall ending at 6am CST 11/03/2024.

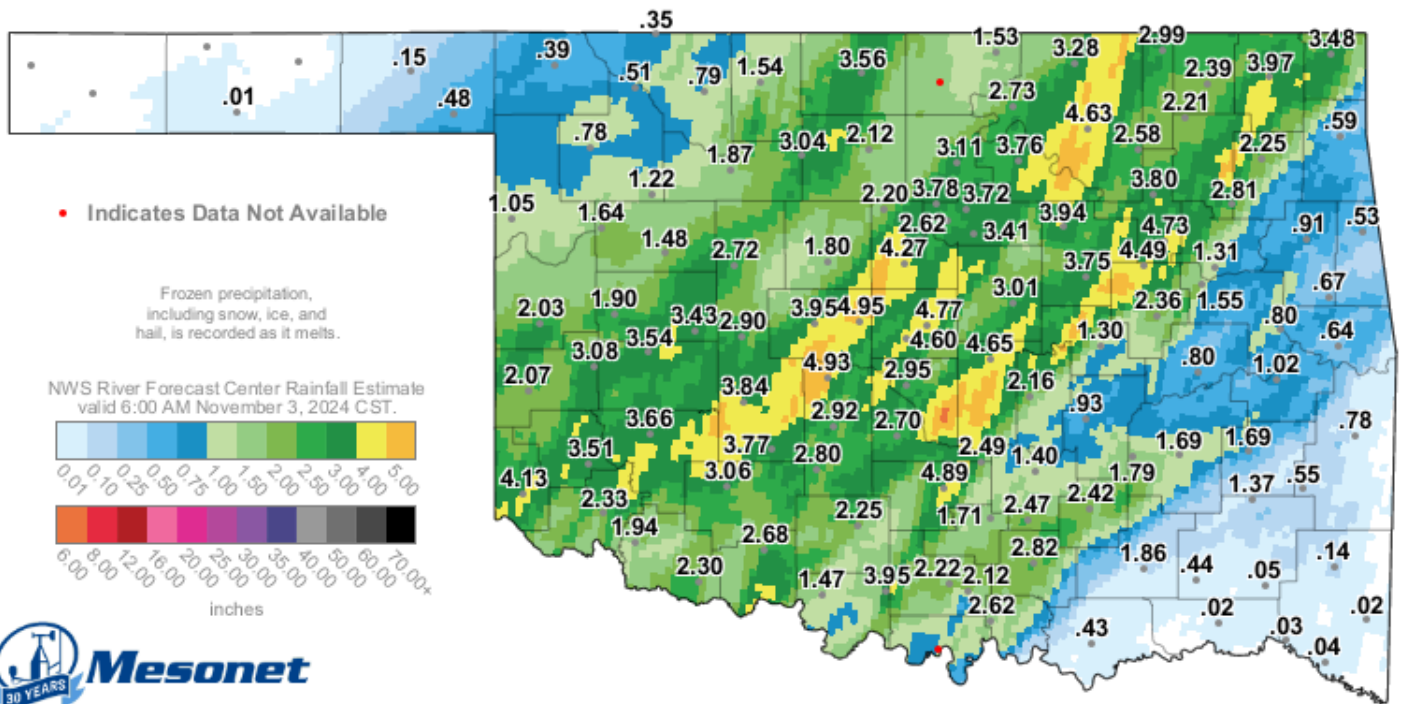


Fig. 6. OK Mesonet (values) and NWS RFC rainfall estimate (image) 24-hour rainfall ending at 7:35 am CST 11/03/2024.

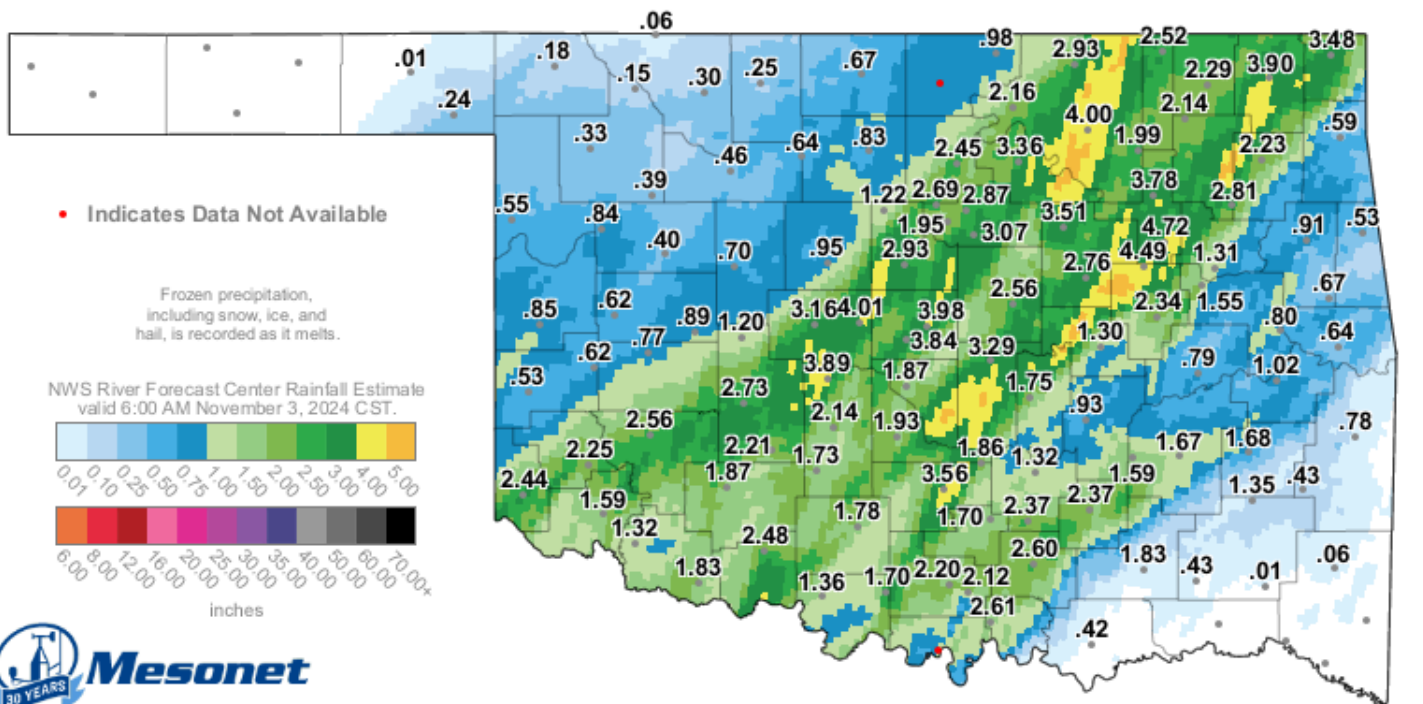
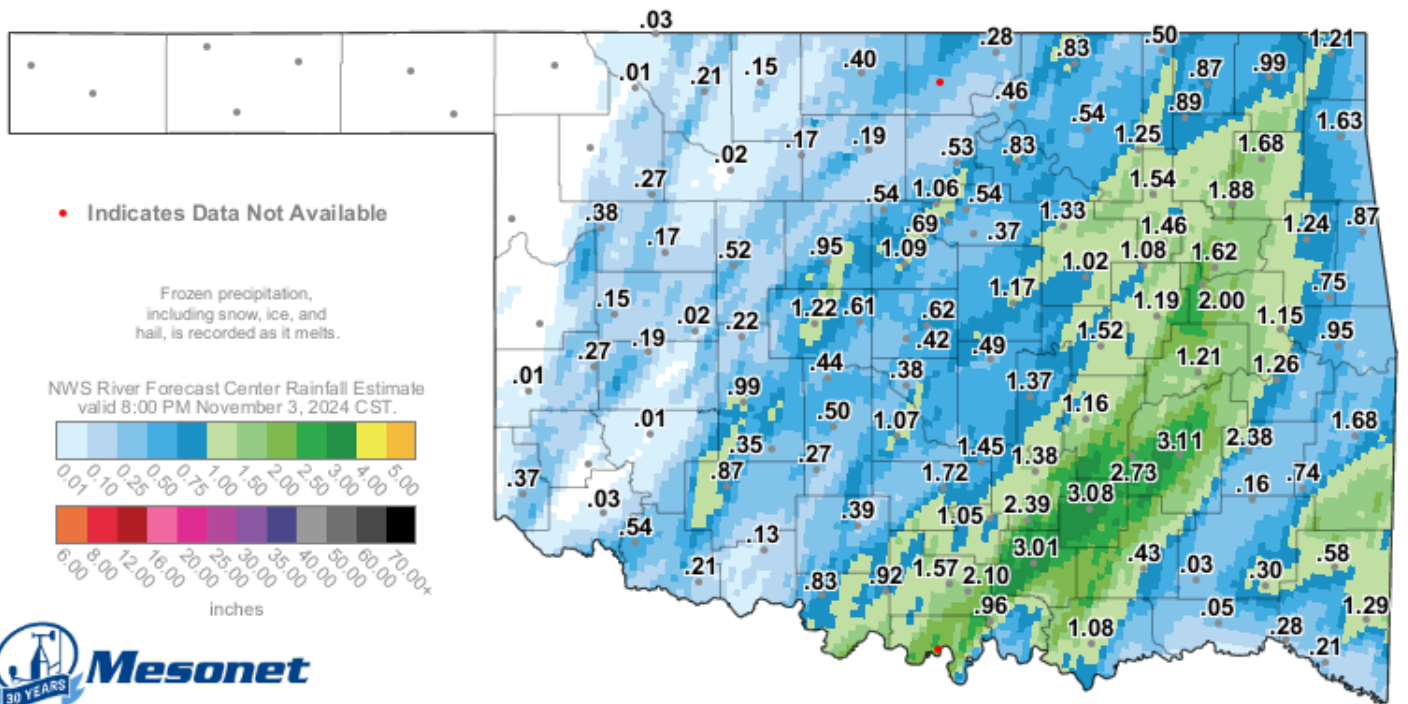
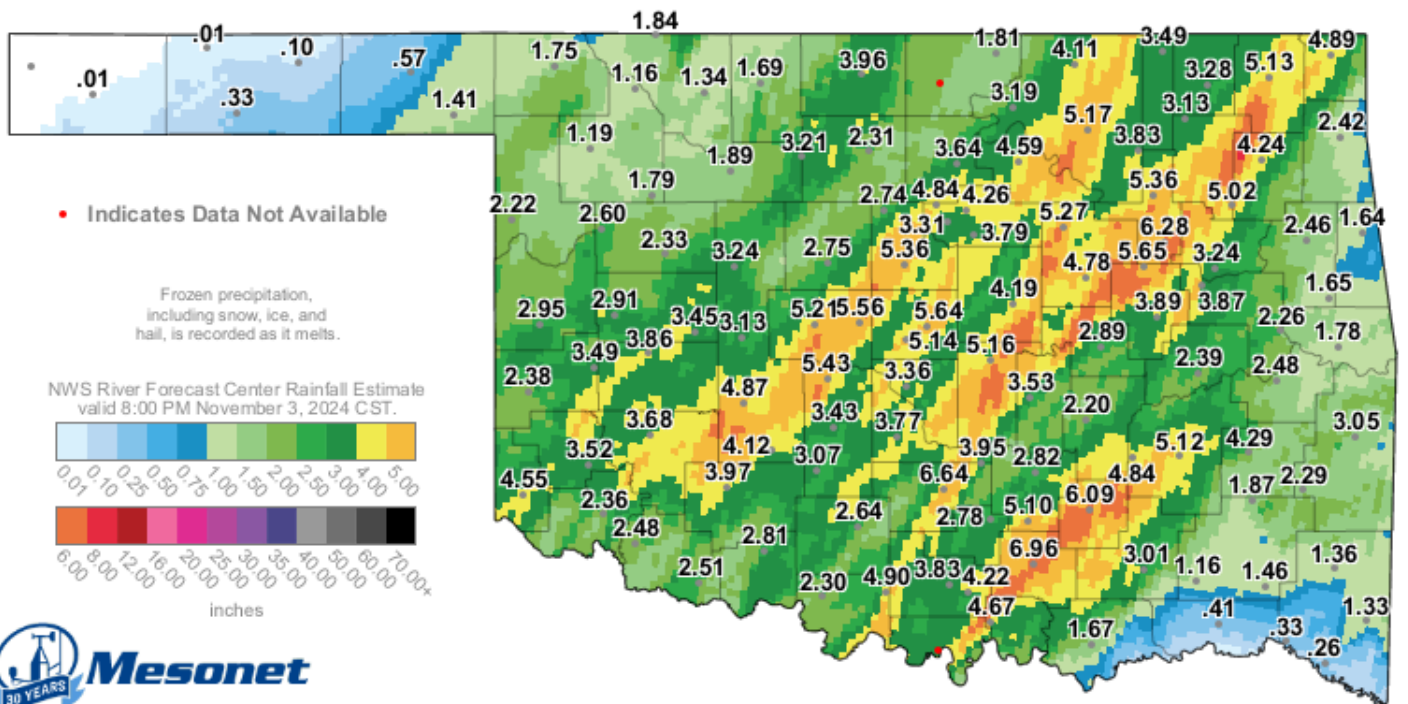


Fig. 7. OK Mesonet (values) and NWS RFC rainfall estimate (image) 12-hour rainfall ending at 7:35 am CST 11/03/2024.



12-Hour Rainfall Accumulation (inches)

Fig. 8. OK Mesonet (values) and NWS RFC rainfall estimate (image) 12-hour rainfall ending at 9:30 pm CST 11/03/2024.



2-Day Rainfall Accumulation (inches)

Fig. 9. OK Mesonet (values) and NWS RFC rainfall estimate (image) 48-hour rainfall ending at 9:30 pm CST 11/03/2024.

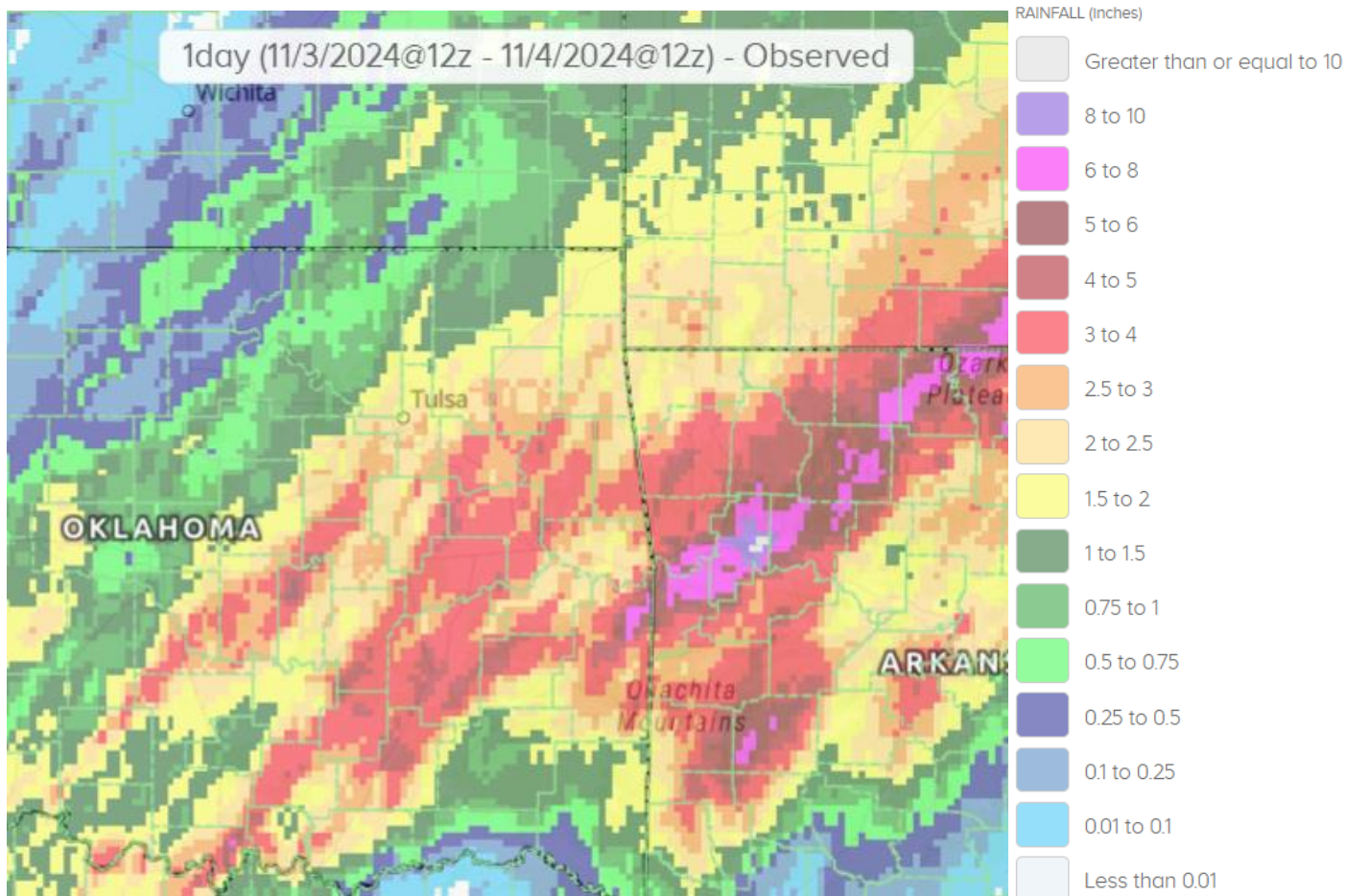


Fig. 10. 24-hour Estimated Observed Rainfall ending at 6am CST 11/04/2024.

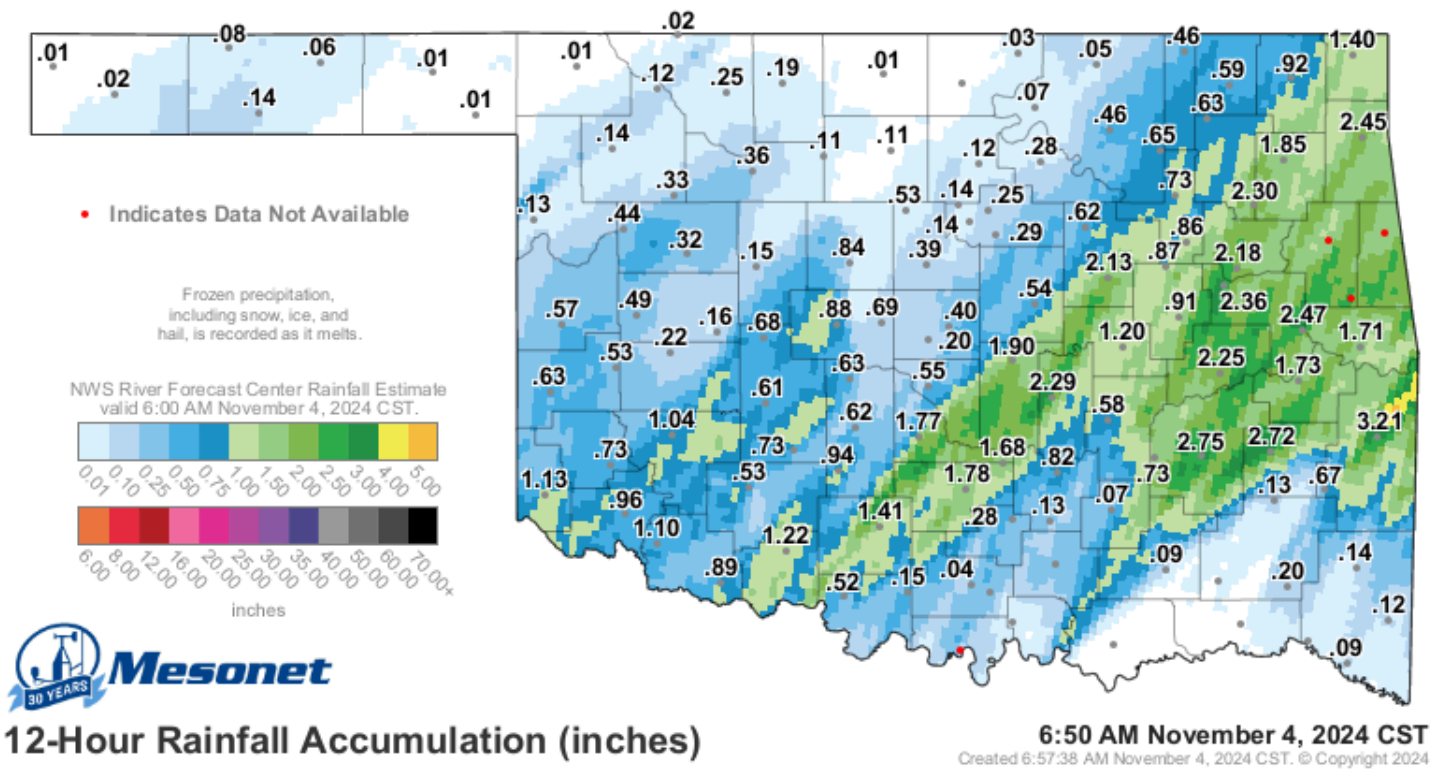


Fig. 11. OK Mesonet (values) and NWS RFC rainfall estimate (image) 12-hour rainfall ending at 6:50 am CST 11/04/2024.

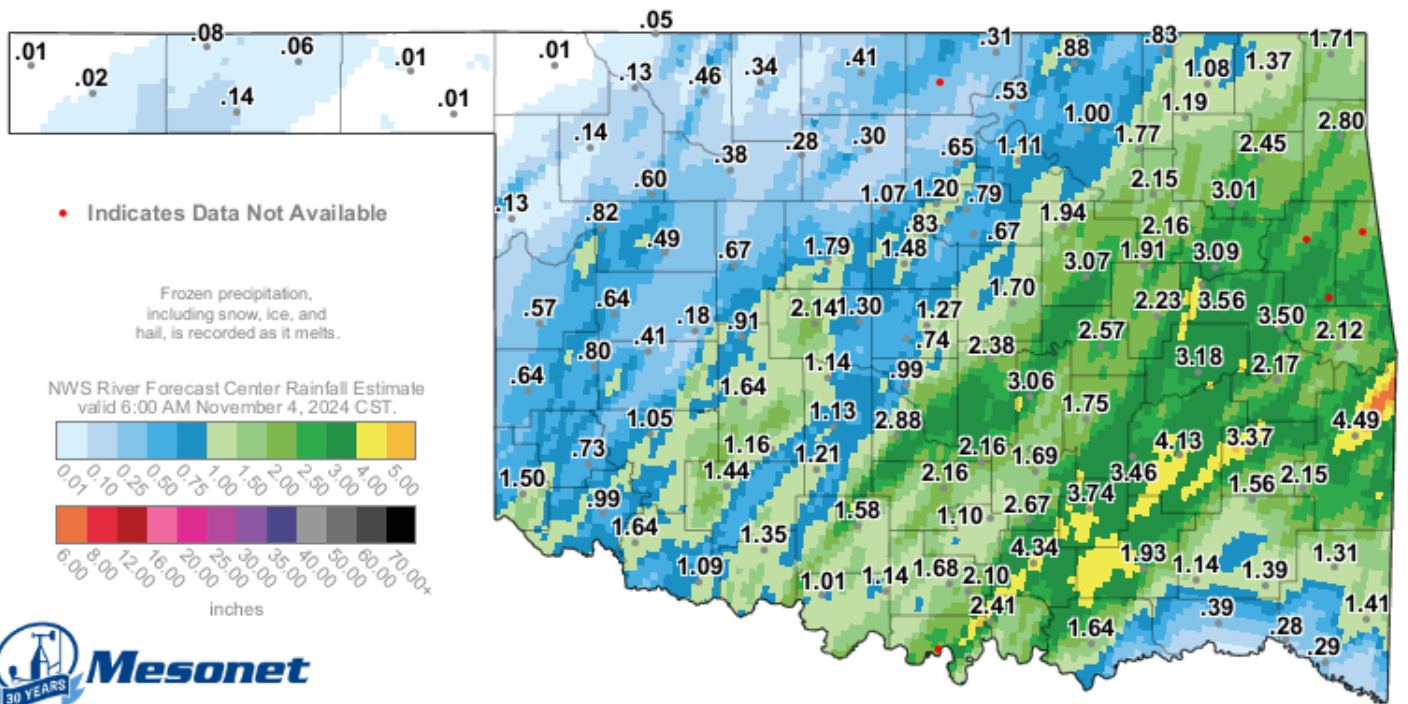


Fig. 12. OK Mesonet (values) and NWS RFC rainfall estimate (image) 24-hour rainfall ending at 6:50 am CST 11/04/2024.

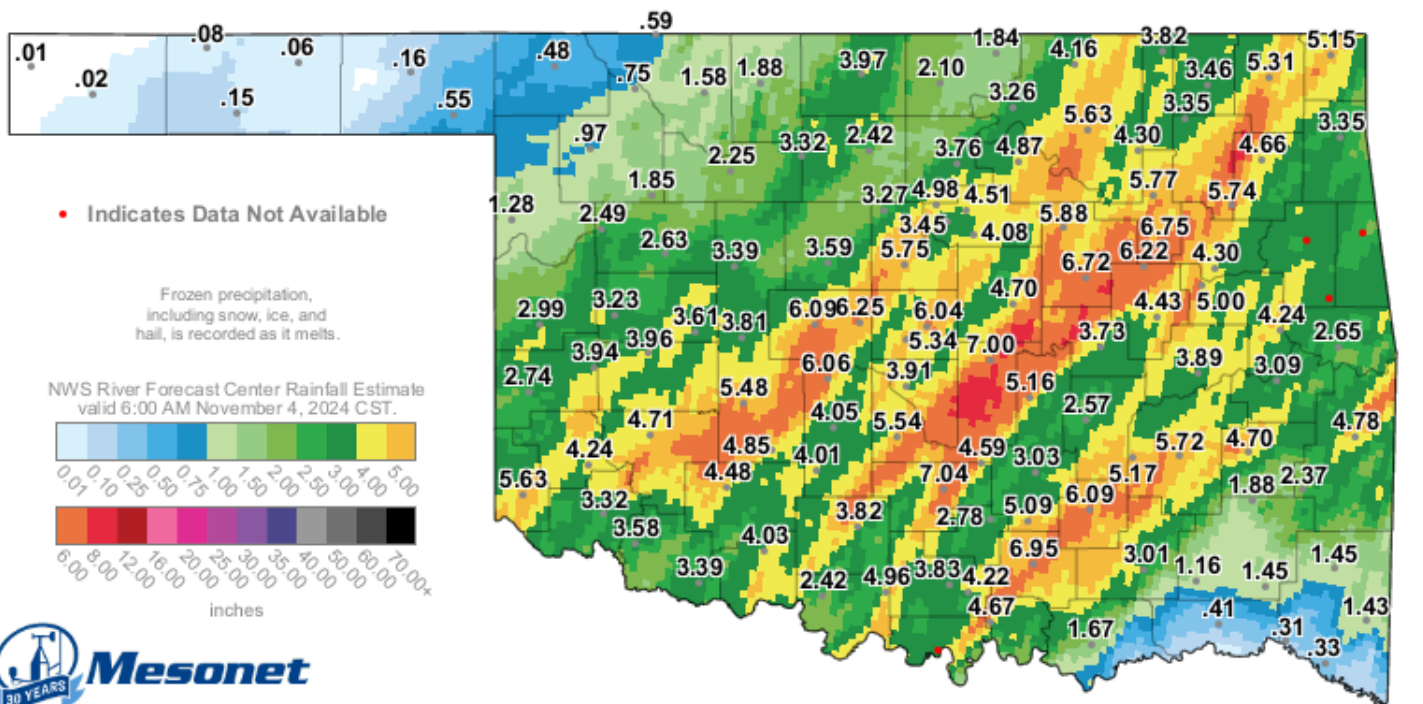


Fig. 13. OK Mesonet (values) and NWS RFC rainfall estimate (image) 2-day rainfall ending at 6:50 am CST 11/04/2024.

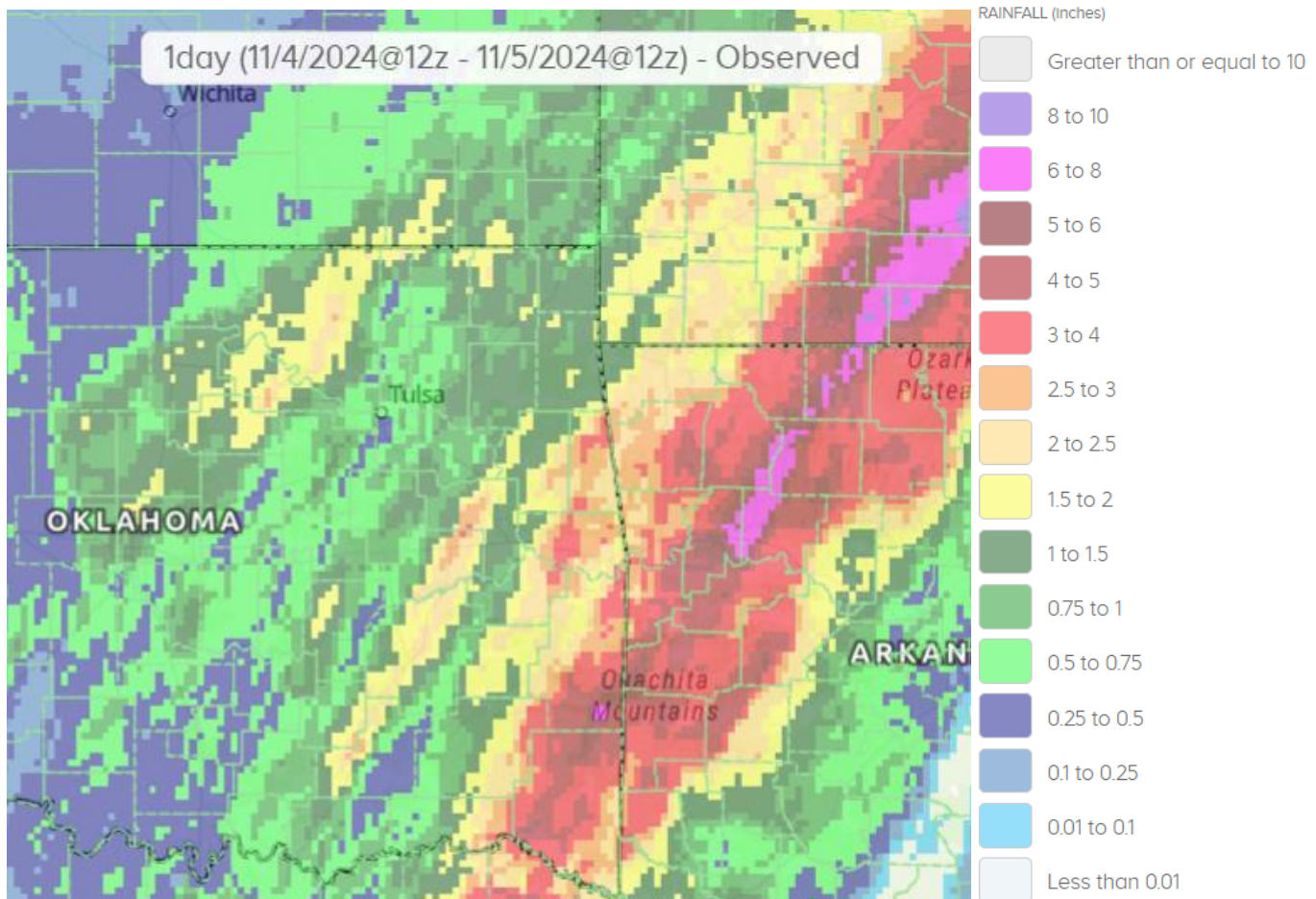


Fig. 14. 24-hour Estimated Observed Rainfall ending at 6am CST 11/05/2024.

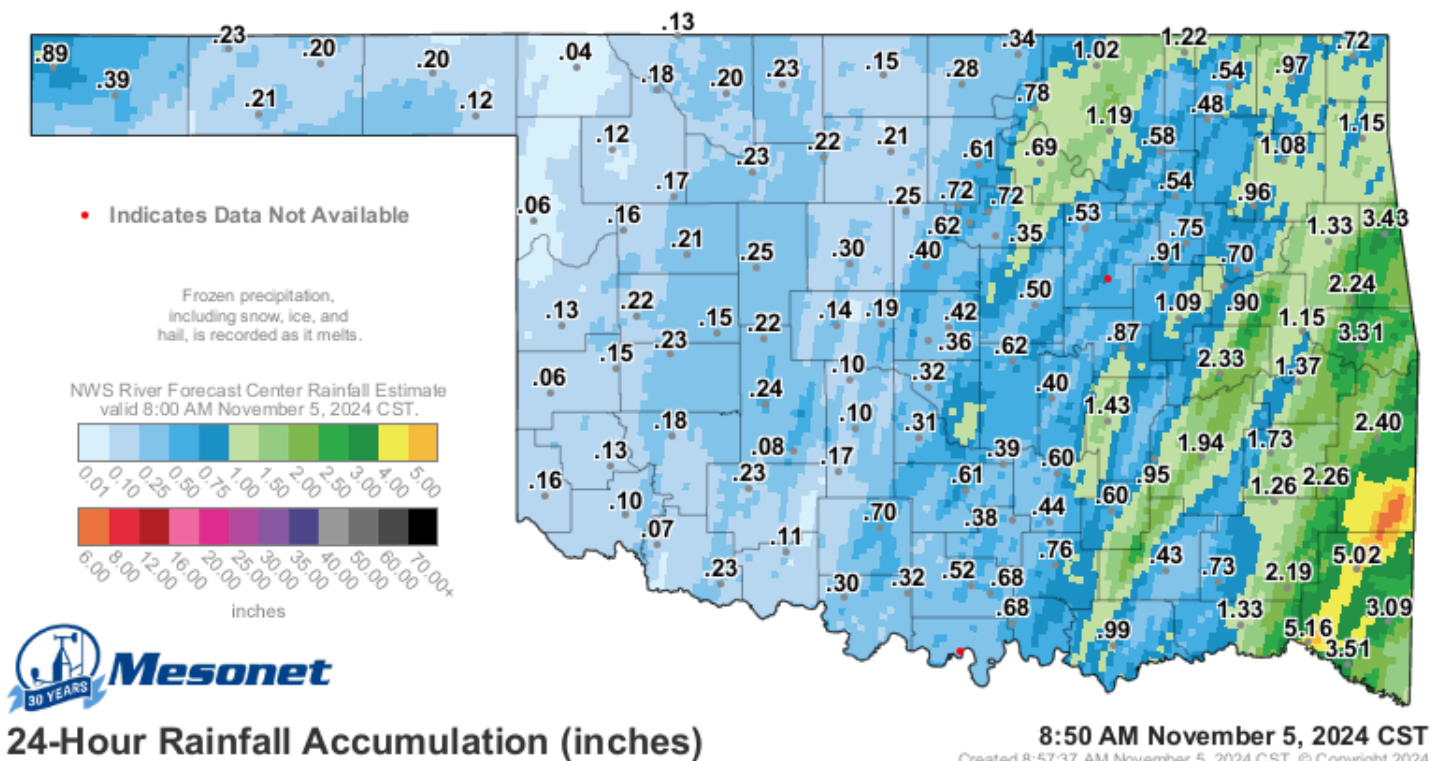


Fig. 15. OK Mesonet (values) and NWS RFC rainfall estimate (image) 24-hour rainfall ending at 8:50 am CST 11/05/2024.

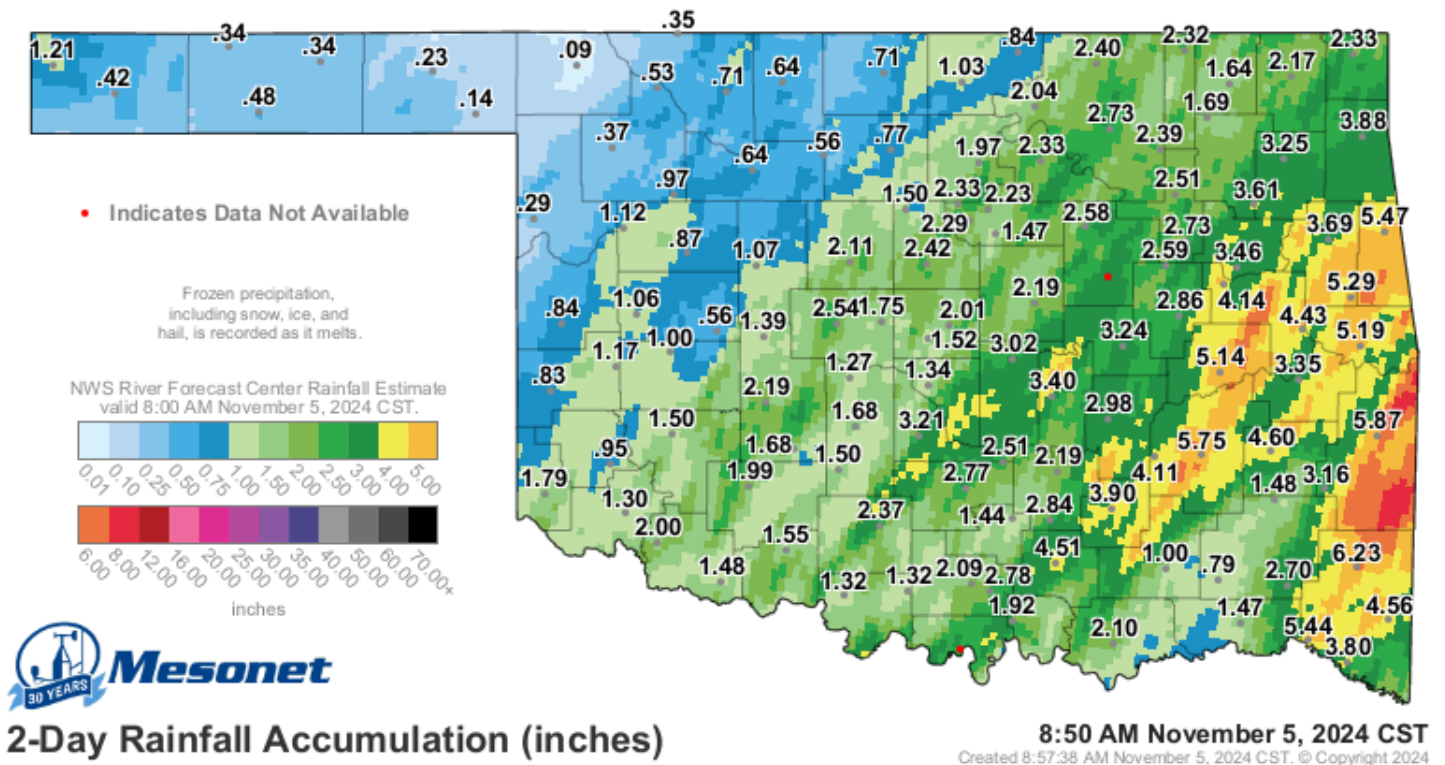


Fig. 16. OK Mesonet (values) and NWS RFC rainfall estimate (image) 2-day rainfall ending at 8:50 am CST 11/05/2024.

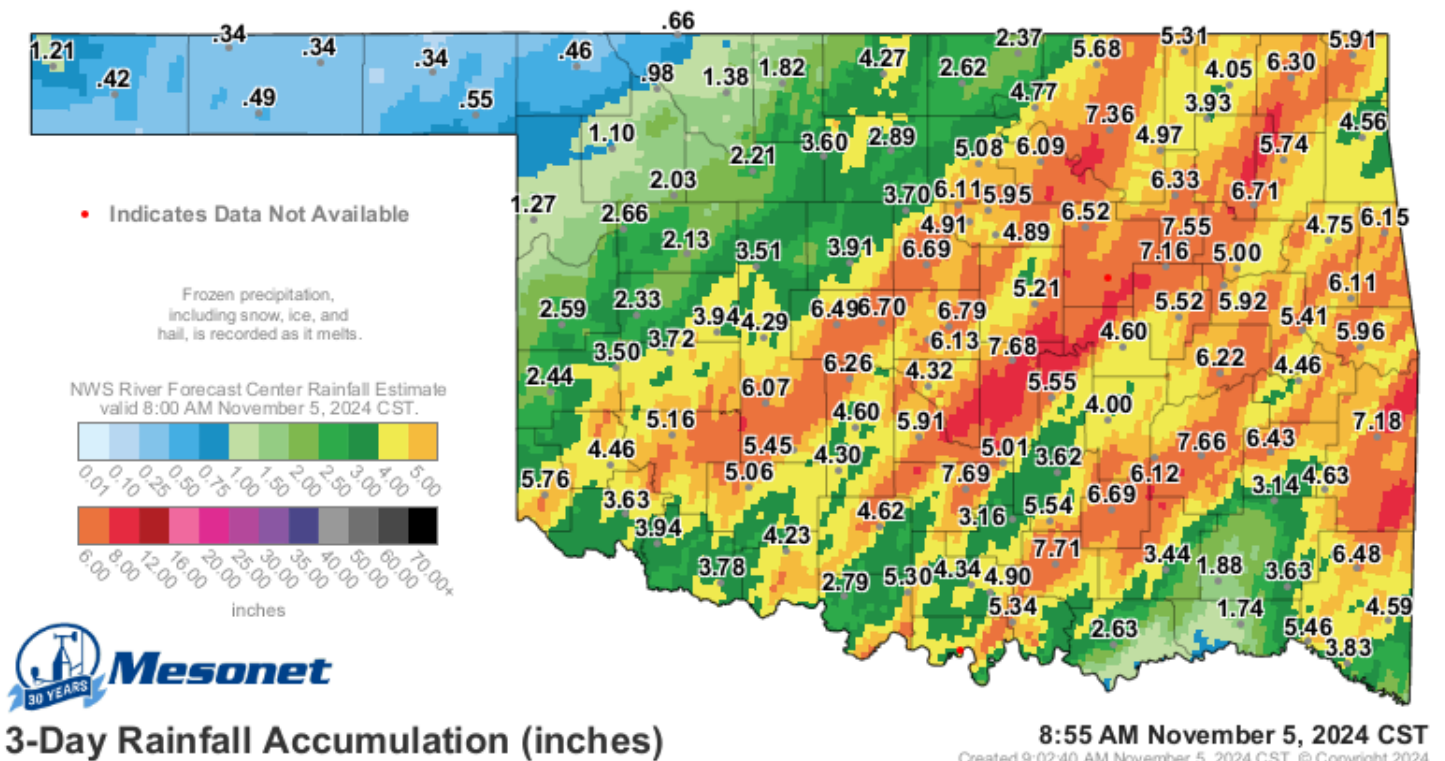


Fig. 17. OK Mesonet (values) and NWS RFC rainfall estimate (image) 3-day rainfall ending at 8:55 am CST 11/05/2024.

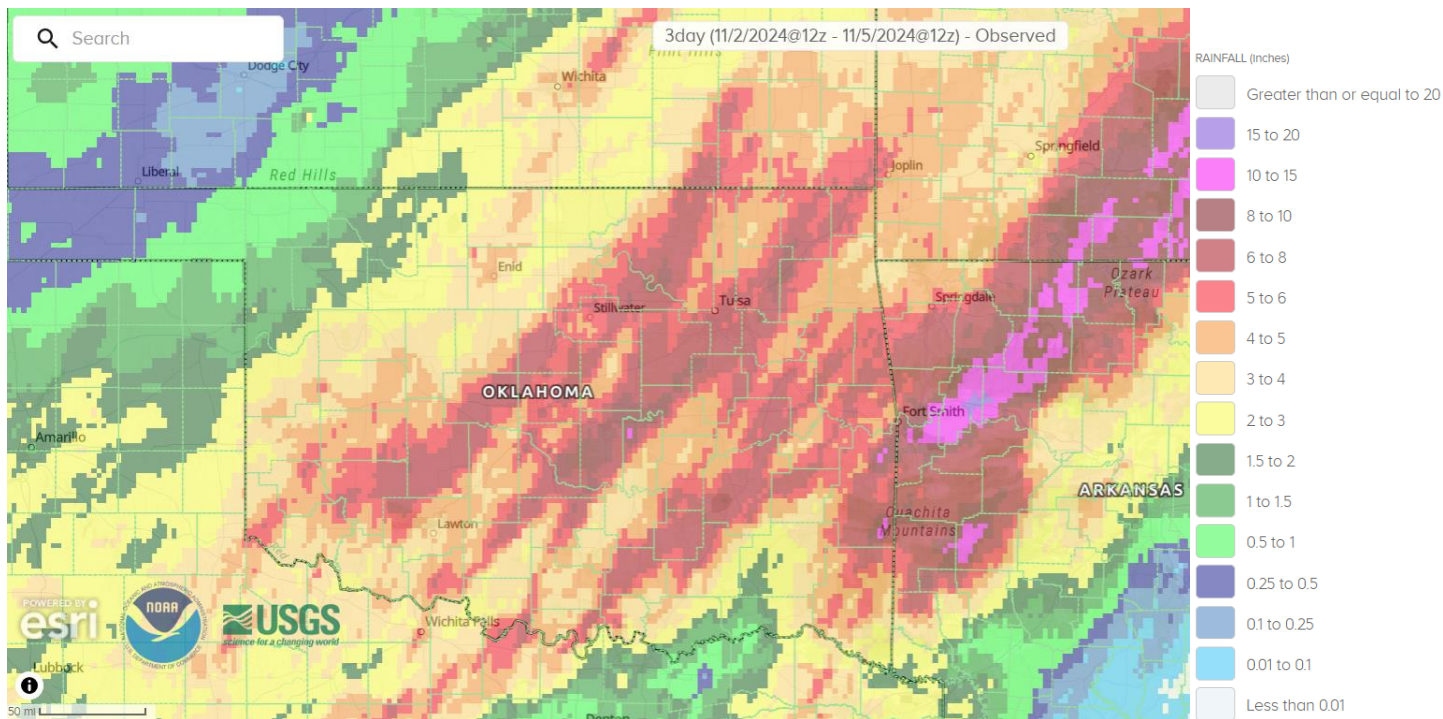


Fig. 18. 3-day Estimated Observed Rainfall ending at 6am CST 11/05/2024.

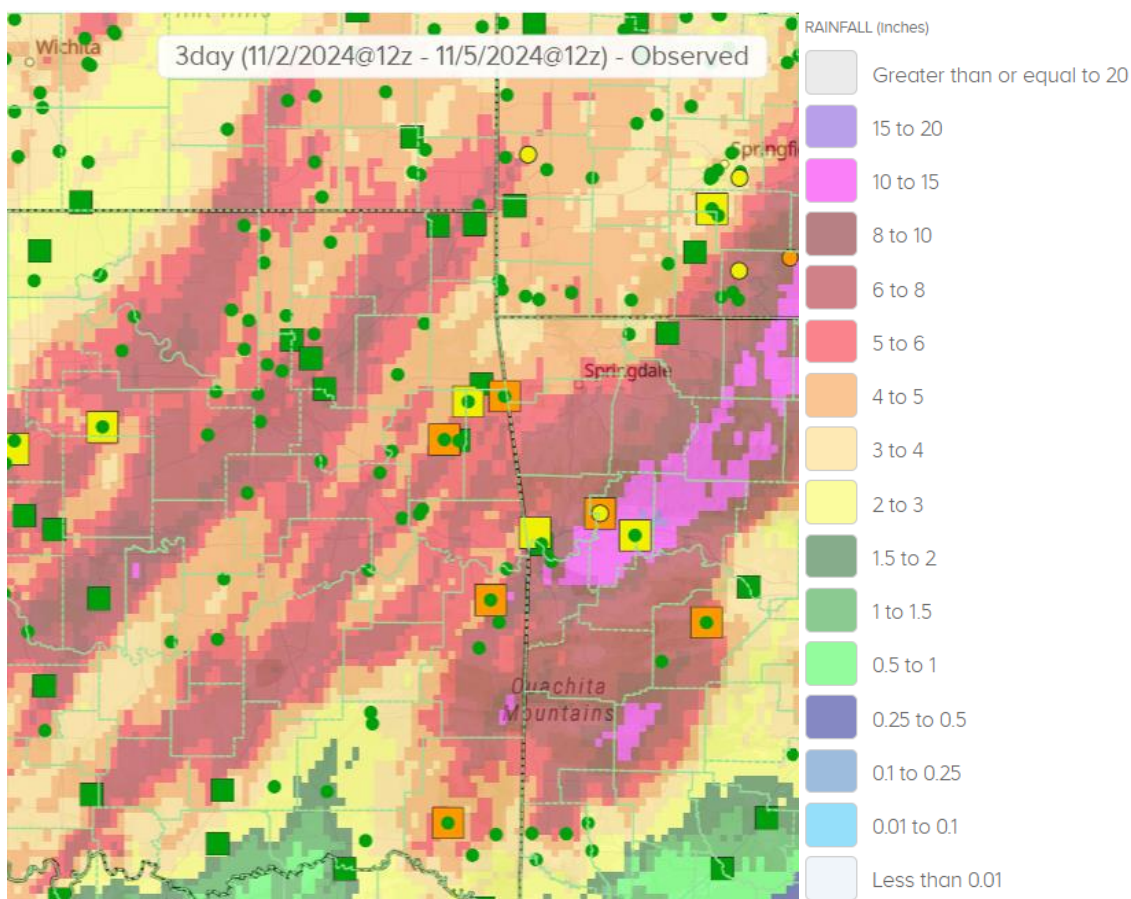


Fig. 19. 3-day Estimated Observed Rainfall ending at 6am CST 11/05/2024 and River Forecast Point observation (inner circle) and forecast (outer square) status at 8:30 am CST 11/05/2024.

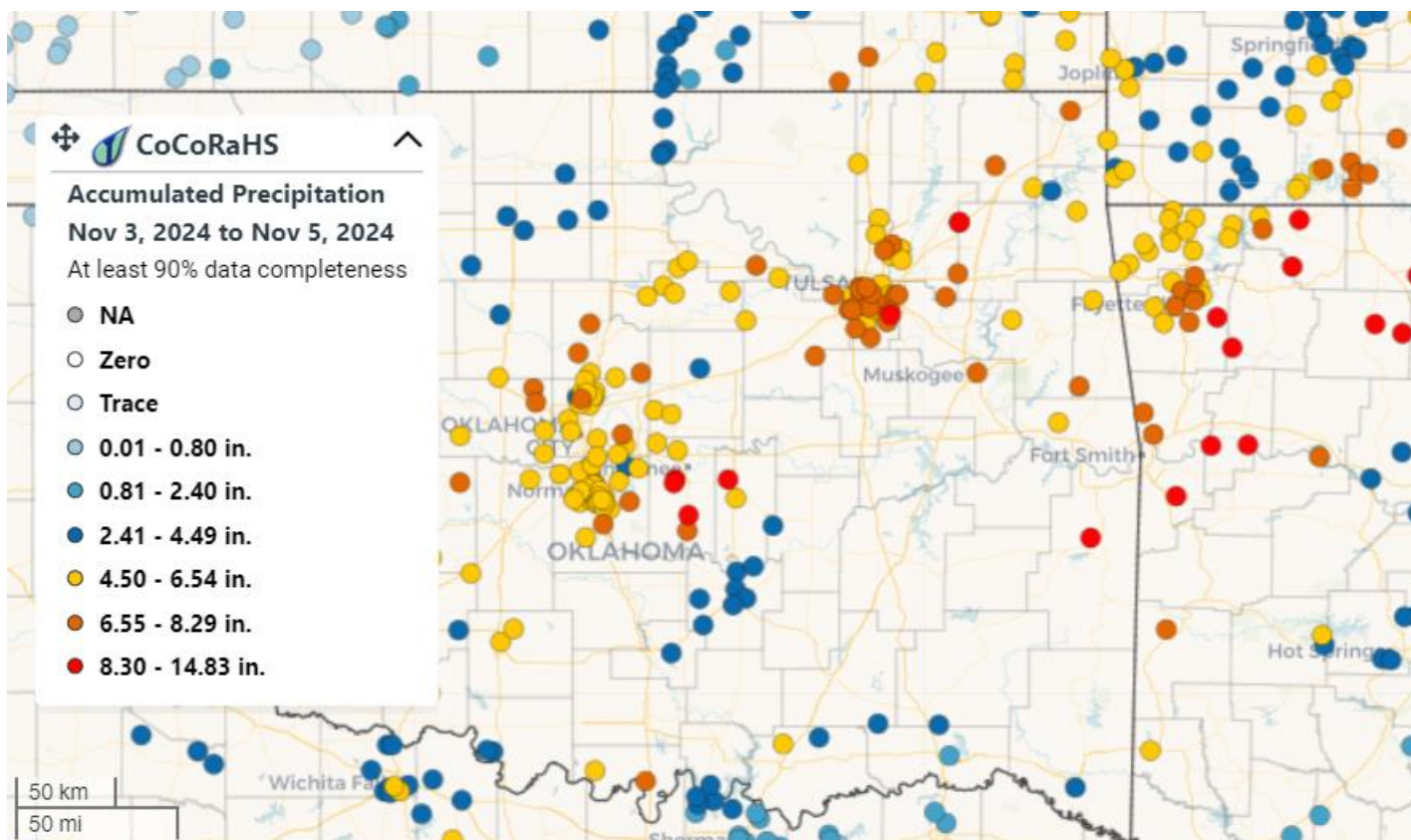


Fig. 20. CoCoRaHS accumulated rainfall measurements valid November 3-5, 2024.

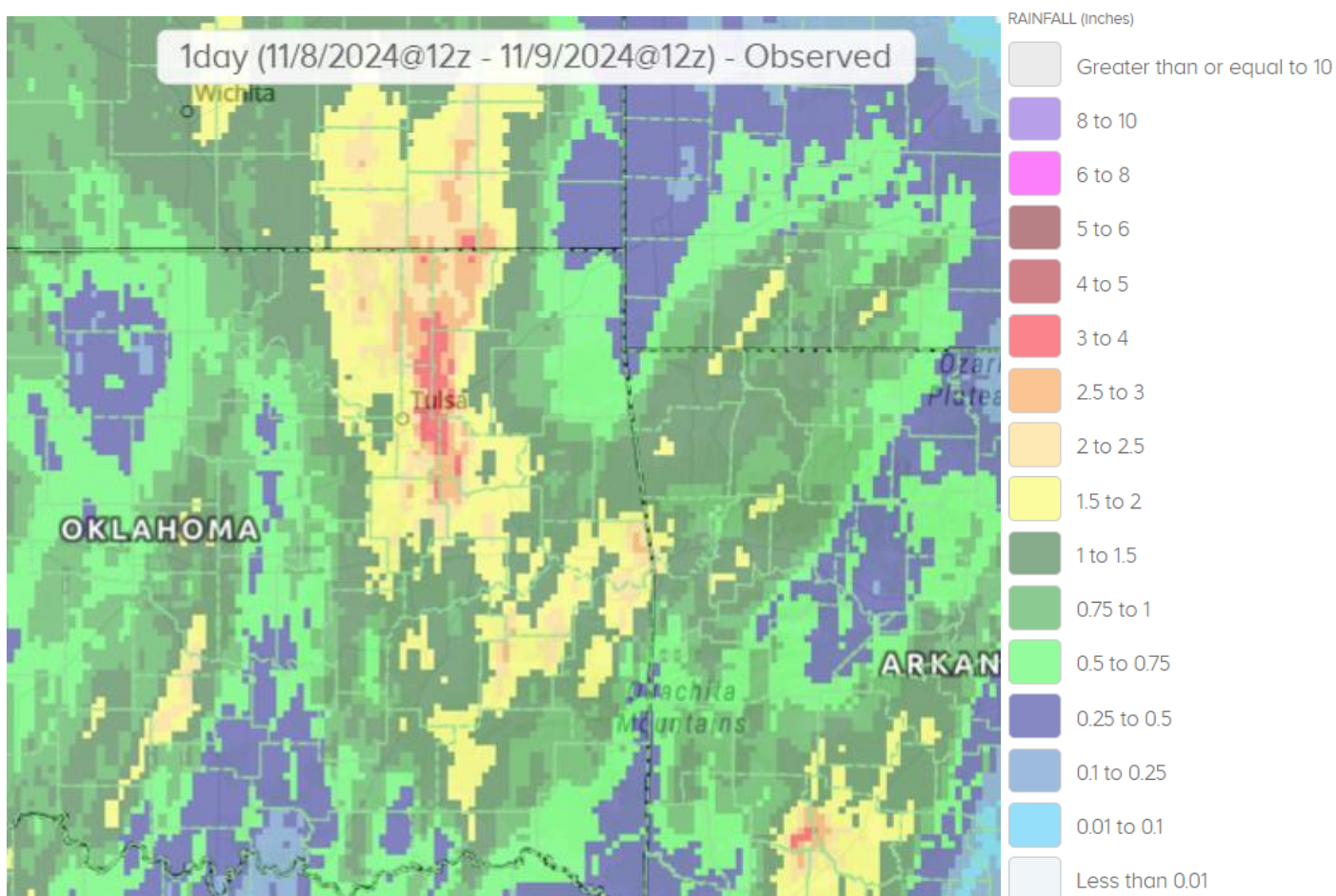
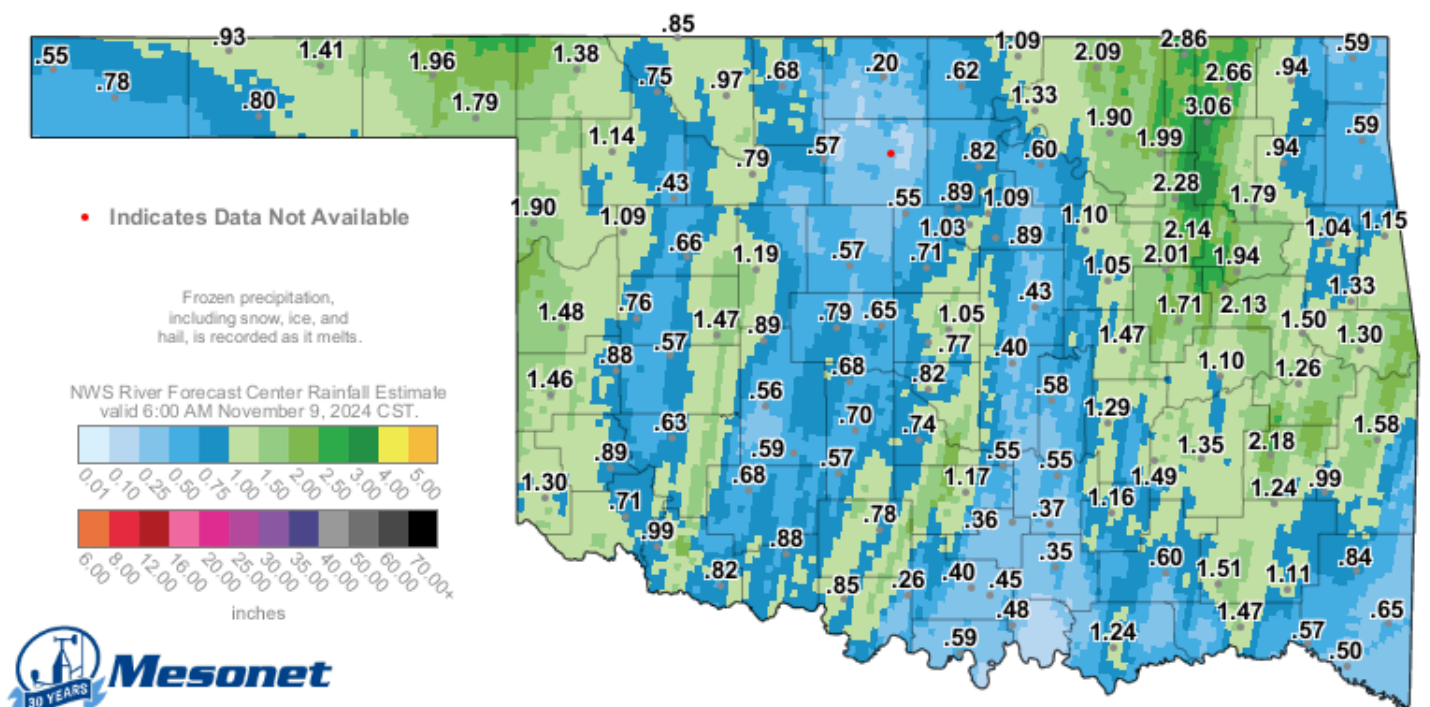


Fig. 21. 24-hour Estimated Observed Rainfall ending at 6am CST 11/09/2024.

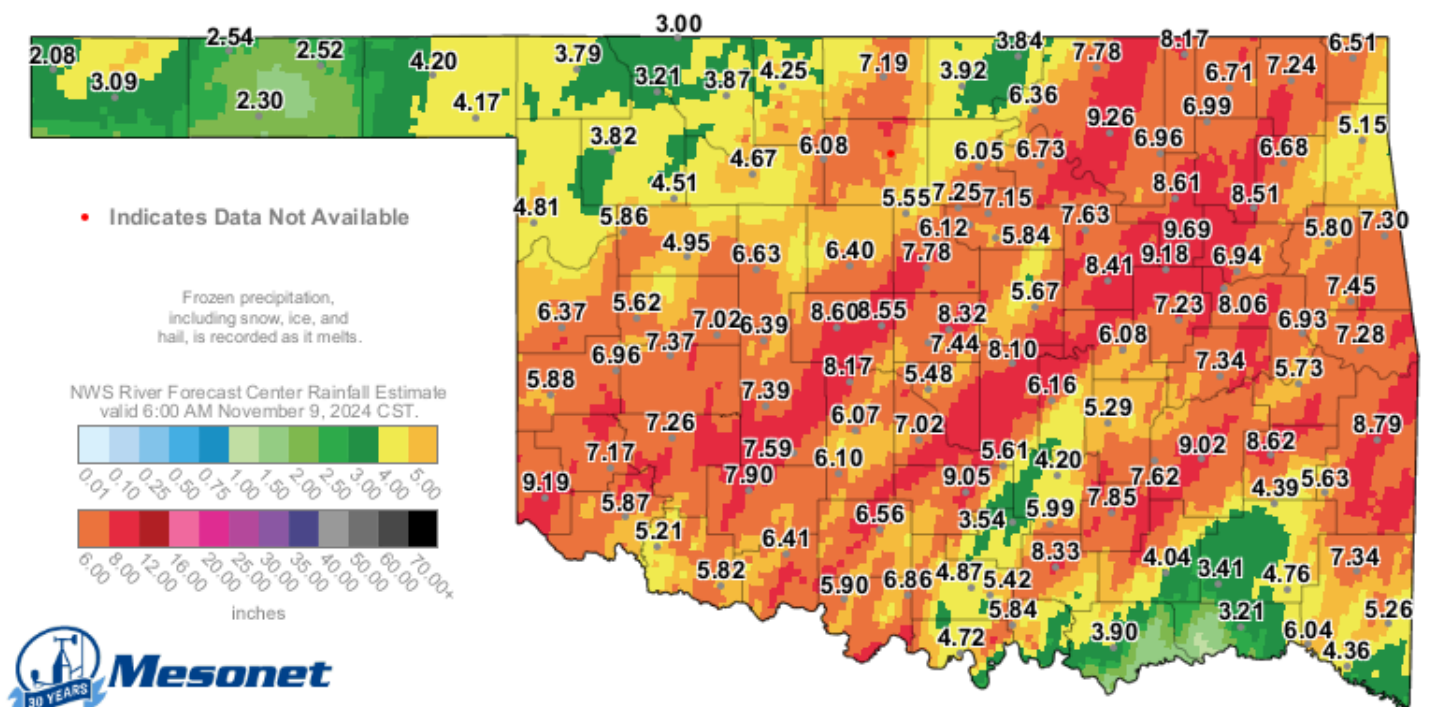


24-Hour Rainfall Accumulation (inches)

7:20 AM November 9, 2024 CST

Created 7:27:37 AM November 9, 2024 CST. © Copyright 2024

Fig. 22. OK Mesonet (values) and NWS RFC rainfall estimate (image) 24-hour rainfall ending at 7:20 am CST 11/09/2024.



7-Day Rainfall Accumulation (inches)

7:20 AM November 9, 2024 CST

Created 7:27:38 AM November 9, 2024 CST. © Copyright 2024

Fig. 23. OK Mesonet (values) and NWS RFC rainfall estimate (image) 7-day rainfall ending at 7:20 am CST 11/09/2024.

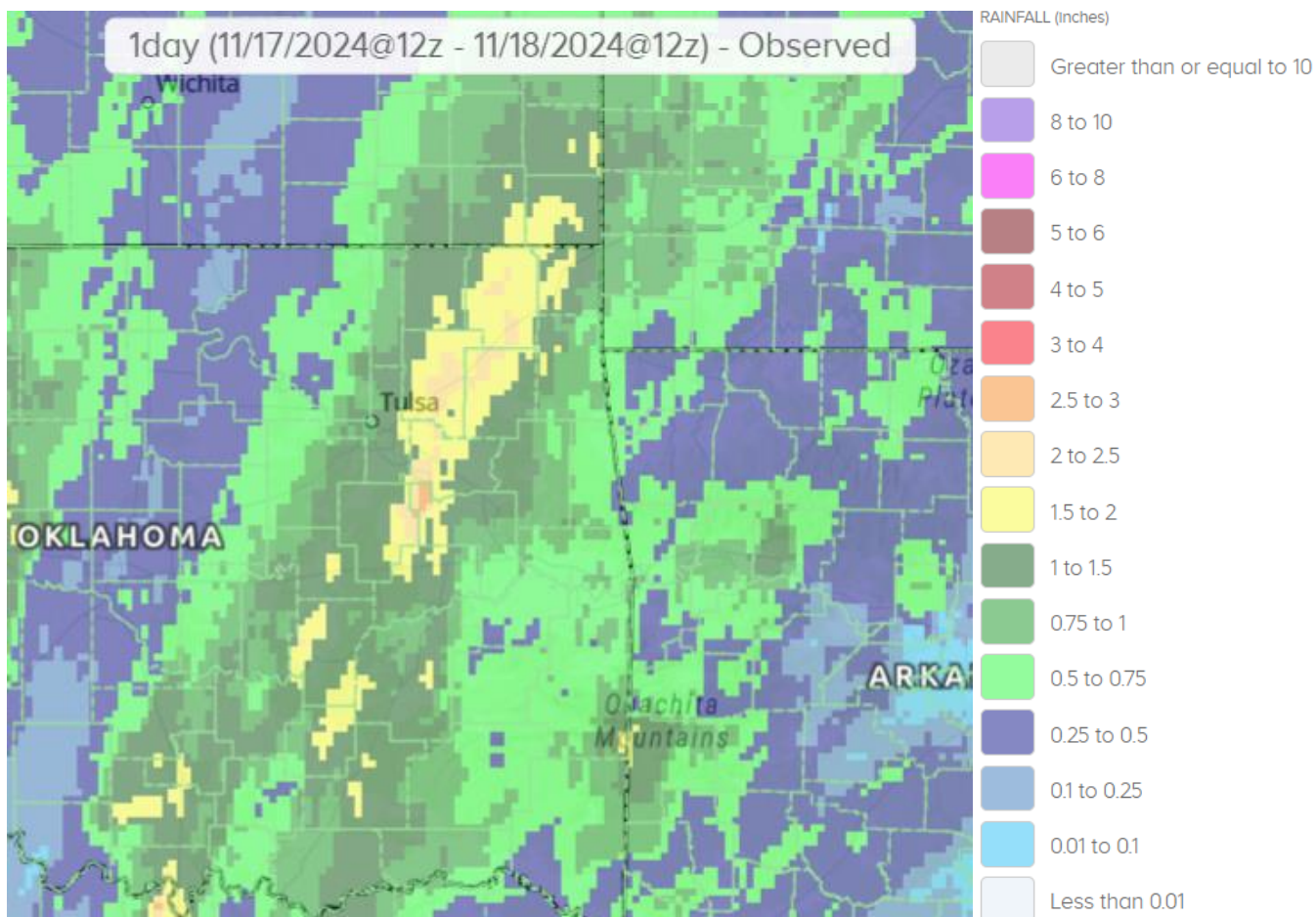


Fig. 24. 24-hour Estimated Observed Rainfall ending at 6am CST 11/18/2024.

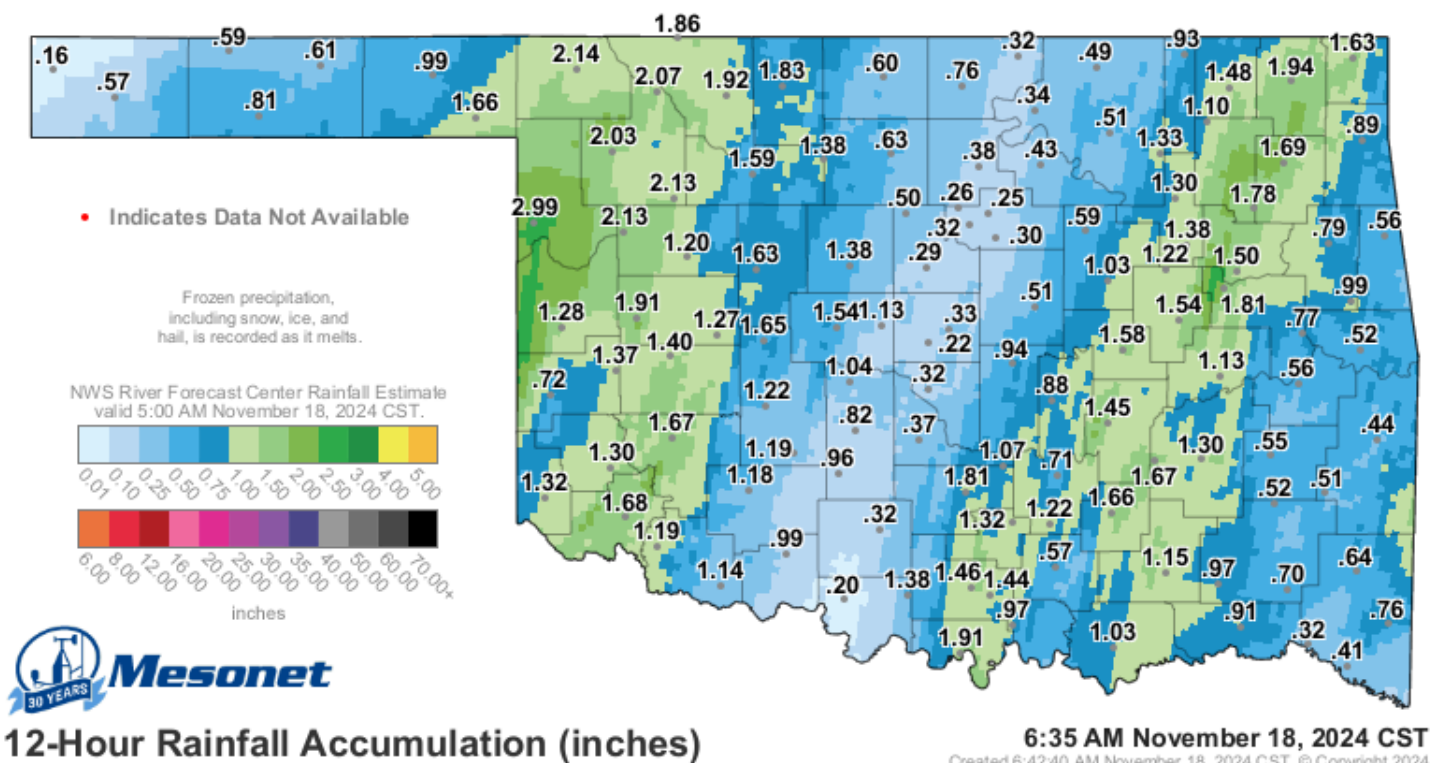


Fig. 25. OK Mesonet (values) and NWS RFC rainfall estimate (image) 12-hour rainfall ending at 6:35 am CST 11/18/2024.

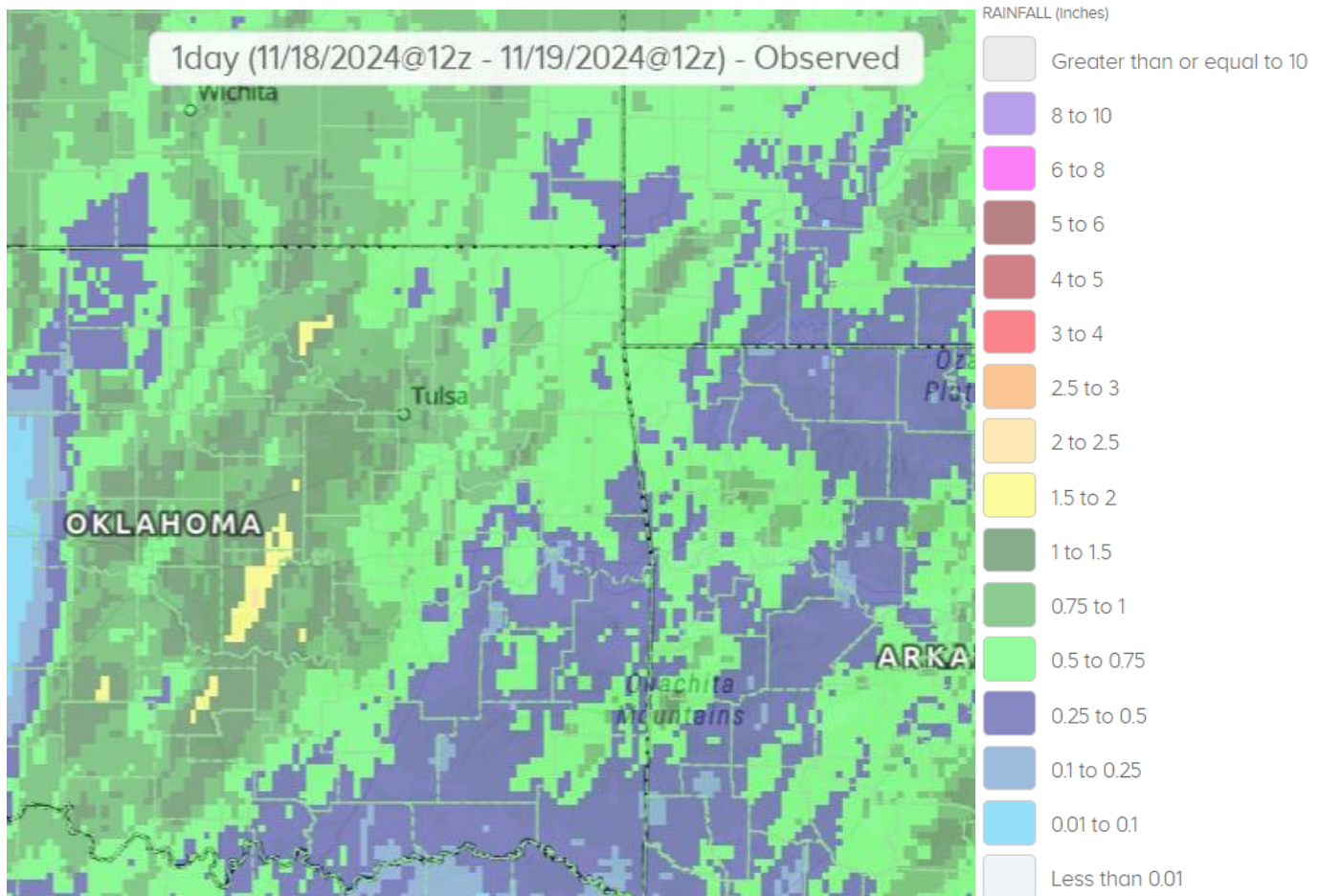
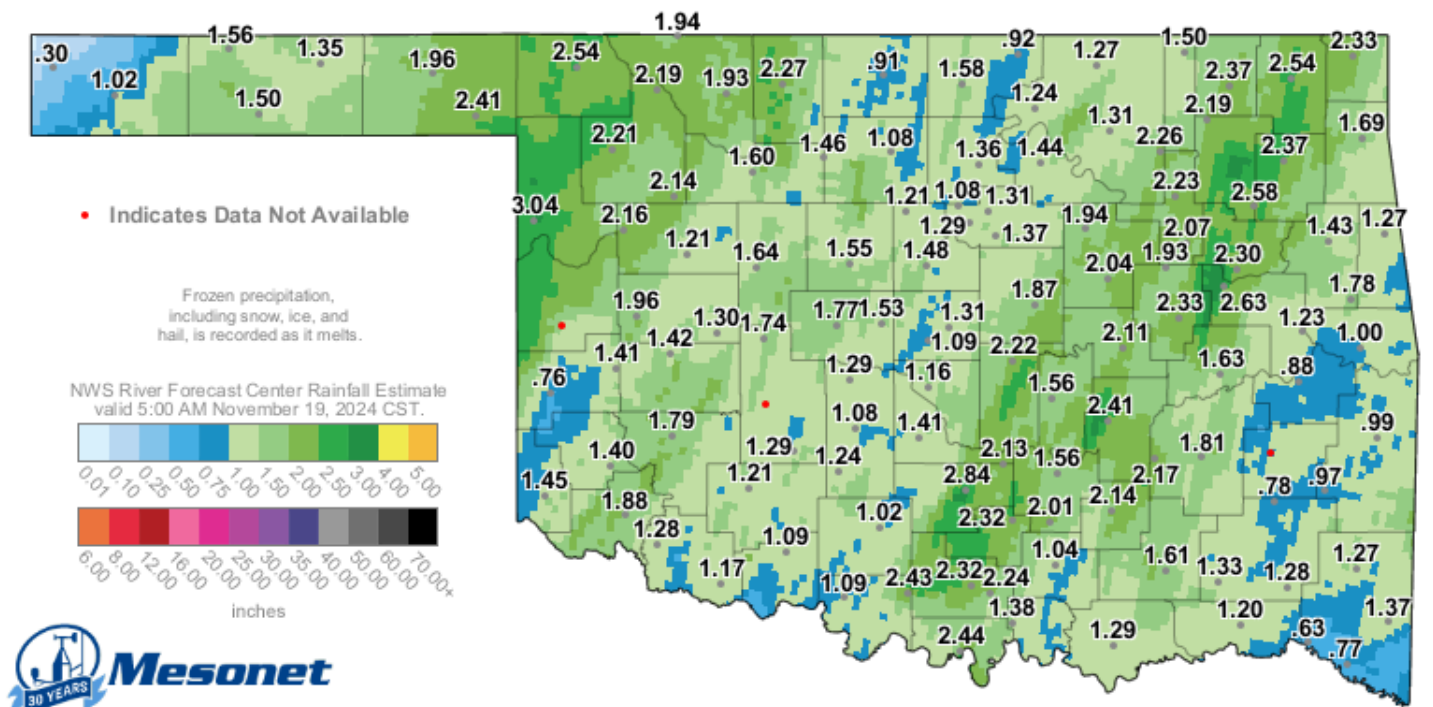


Fig. 26. 24-hour Estimated Observed Rainfall ending at 6am CST 11/19/2024.



2-Day Rainfall Accumulation (inches)

6:10 AM November 19, 2024 CST

Created 6:17:41 AM November 19, 2024 CST. © Copyright 2024

Fig. 27. OK Mesonet (values) and NWS RFC rainfall estimate (image) 2-day rainfall ending at 6:10 am CST 11/19/2024.

Showers and thunderstorms spread north out of TX and into southeast OK and west central AR during the late evening hours of the 17th as a mid-level trough over northern Mexico lifted northeast into far west Texas. This activity became more widespread with an increasing 850 mb low-level jet and lifted north across all of eastern OK and northwest AR through the overnight hours. While a few showers lingered, the main area of precipitation moved north out of the area by sunrise of the 18th. Rainfall totals were 0.30"-3" (Figs. 24, 25). A weakening line of storms then moved into eastern OK from the west shortly after sunrise. This line continued to progress eastward through the morning and afternoon hours as the associated upper-level low lifted out of the TX/OK area to the northeast. This activity brought around 0.25"-1.5" of additional rain to the area (Fig. 26).

Written by:

Nicole McGavock
Service Hydrologist
WFO Tulsa

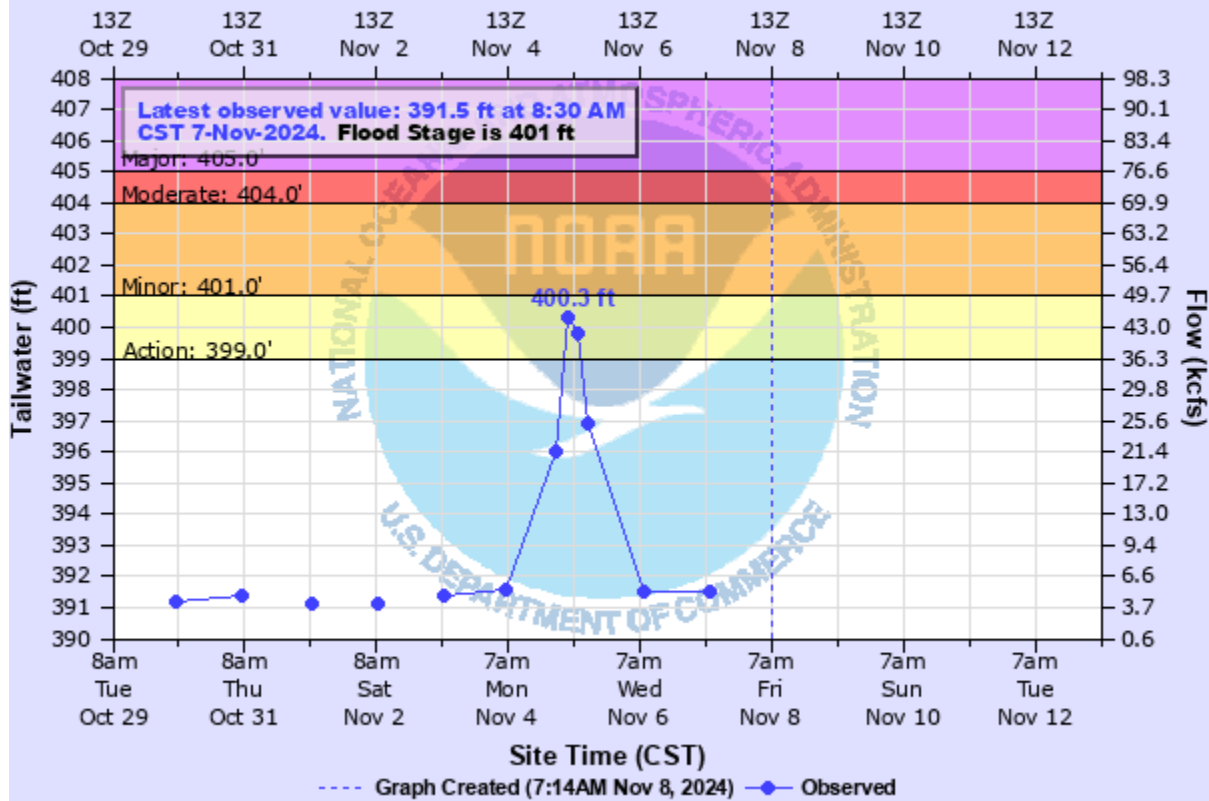
Products issued in November 2024:

- 9 Flash Flood Warnings (FFW)
- 12 Flash Flood Statements (FFS)
- 2 Flash/Areal Flood Watches (FFA) (14 Watch FFA CON/EXT/EXA/EXB/CAN)
- 20 Urban and Small Stream Advisories (FLS)
- 10 Areal Flood Warnings (FLW)
- 7 Areal Flood Statements (FLS)
- 8 River Flood Warnings (FLW) (includes category increases)
- 32 River Flood Statements (FLS)
- 5 River Flood Advisories (FLS) (20 Advisory FLS CON/EXT/CAN)
- 0 River Flood Watches (FFA) (0 Watch FFA CON/EXT/CAN)
- 0 River Statements (RVS)
- 0 Hydrologic Outlooks (ESF)
- 1 Drought Information Statements (DGT)

Preliminary Hydrographs:

LEE CREEK NEAR VAN BUREN LCR

Universal Time (UTC)

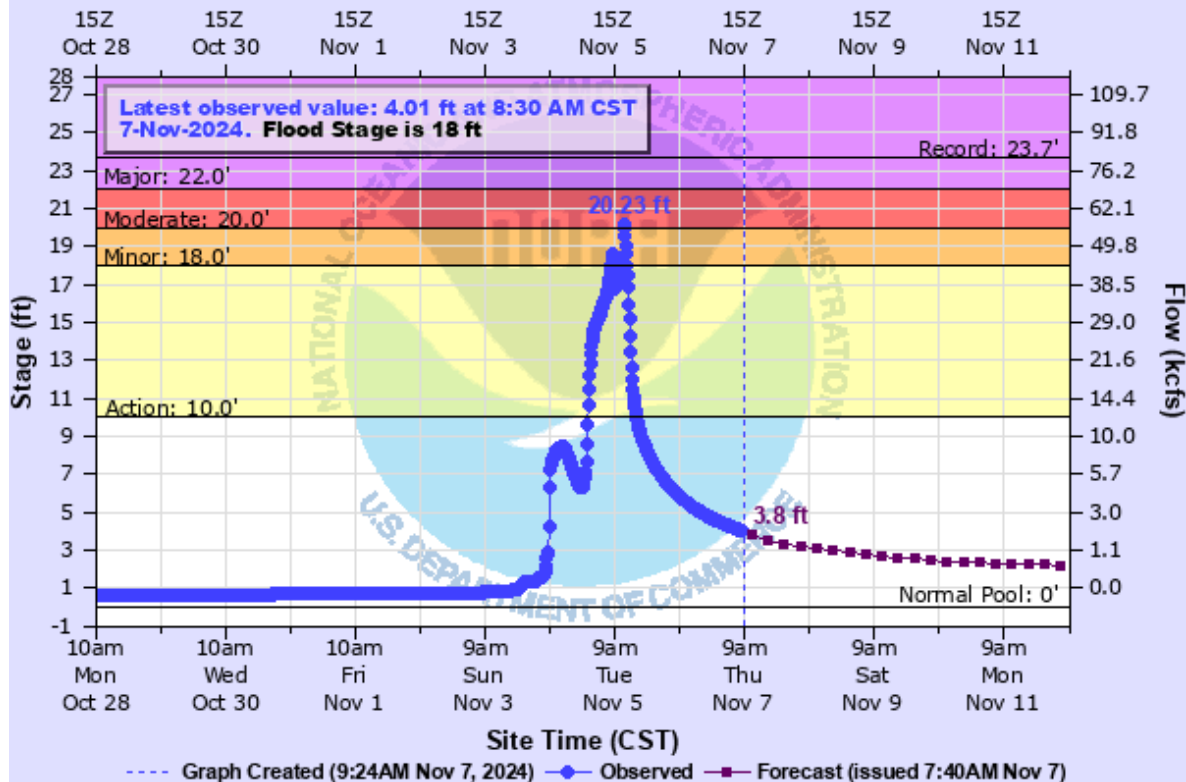


VBRA4(plotting HTIRZ) "Gage 0" Datum: 0'

Observations courtesy of U.S. Geological Survey

MULBERRY RIVER (AR) NEAR MULBERRY

Universal Time (UTC)



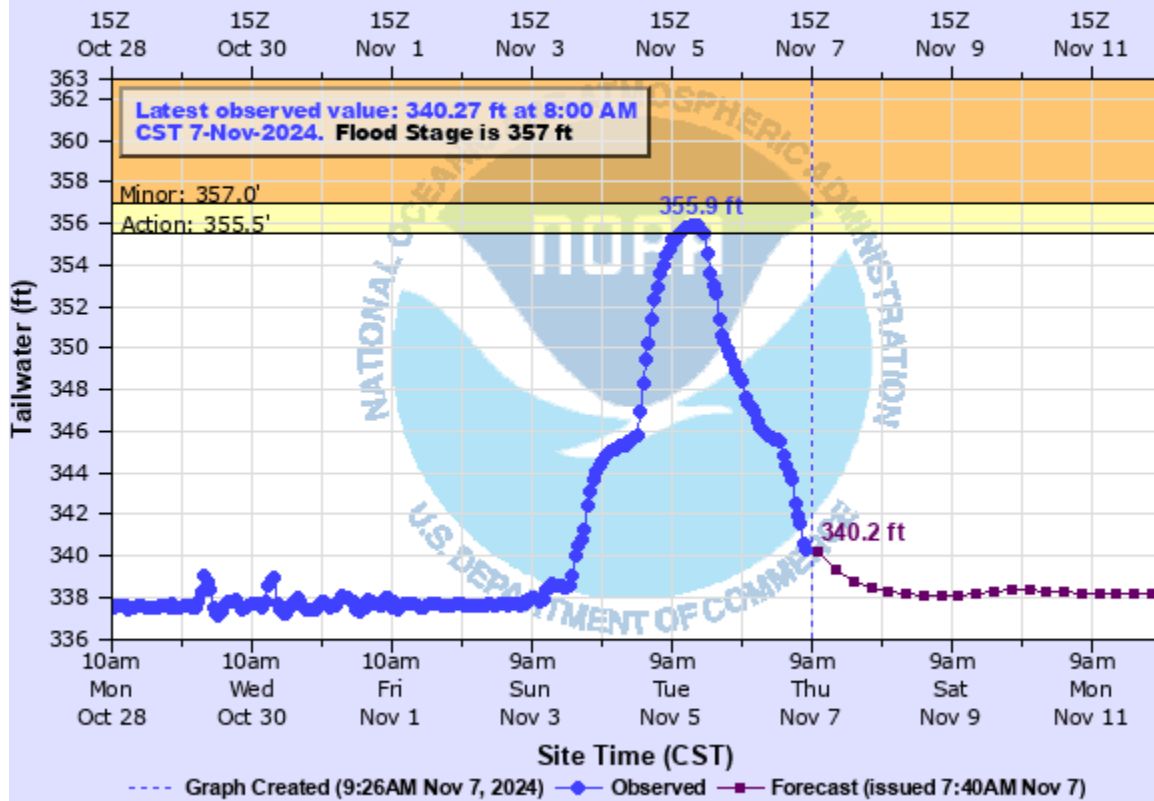
MLBA4(plotting HGIRG) "Gage 0" Datum: 433'

Observations courtesy of USGS/USACE/ADEQ

Bad data...USGS crest 20.66' 11:15am CST Nov 5, 2024

ARKANSAS RIVER AT OZARK L/D TAILWATER

Universal Time (UTC)

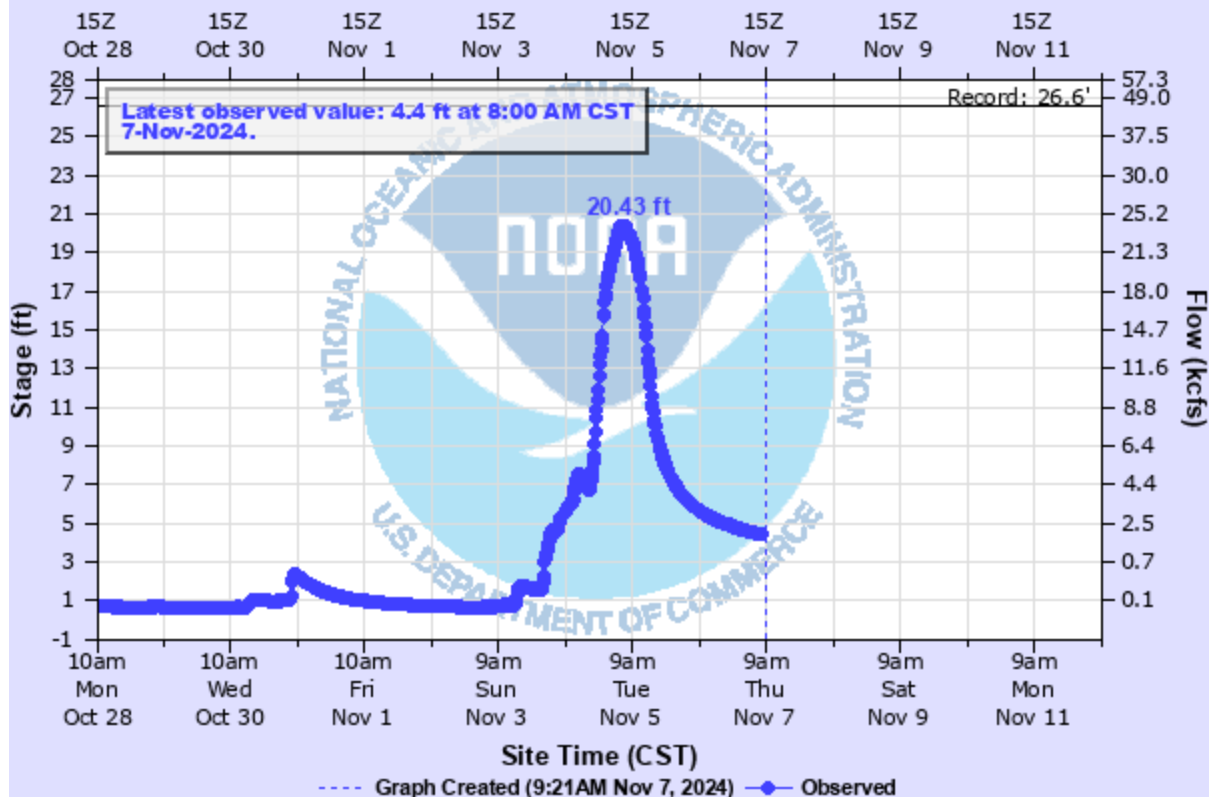


OZGA4(plotting HTIRG) "Gage 0" Datum: 0'

Observations courtesy of US Army Corps of Engineers - LRD

WHITE RIVER NEAR FAYETTEVILLE

Universal Time (UTC)

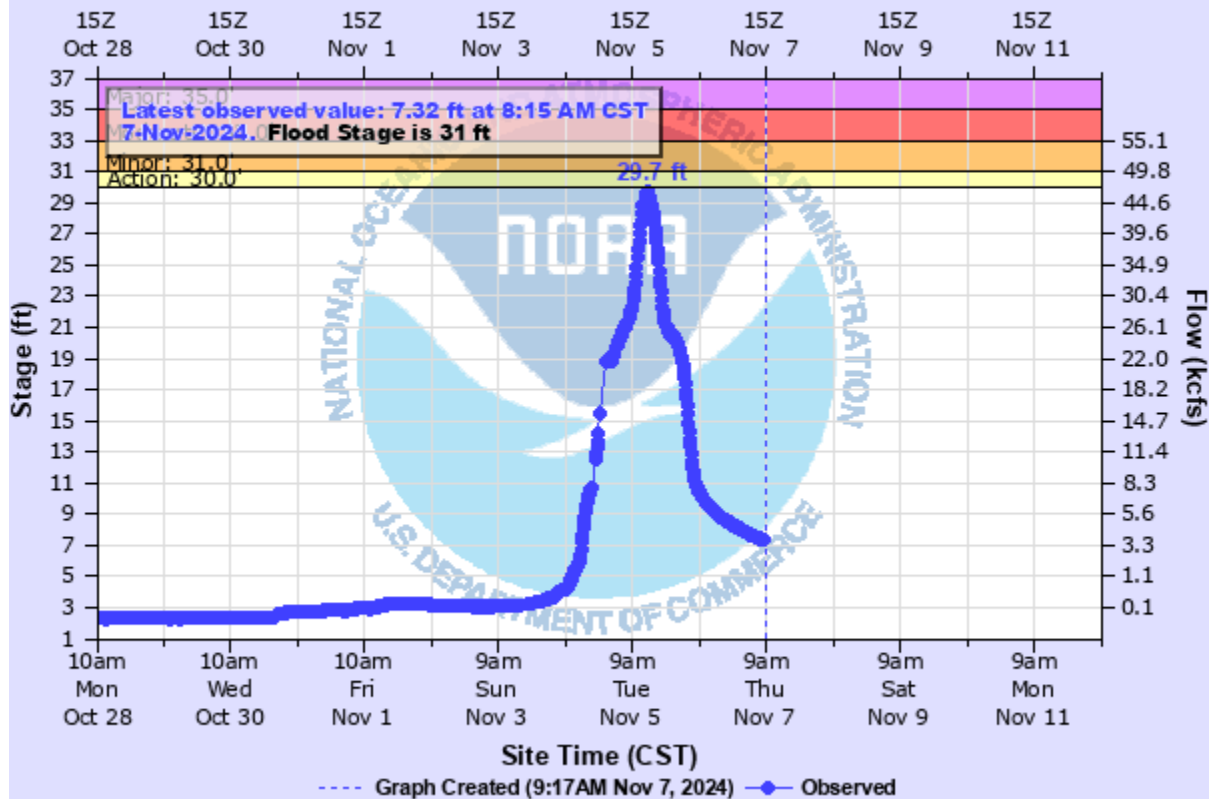


FYGA4(plotting HGIRG) "Gage 0" Datum: 1138.6'

Observations courtesy of US Geological Survey

KINGS RIVER NEAR BERRYVILLE

Universal Time (UTC)

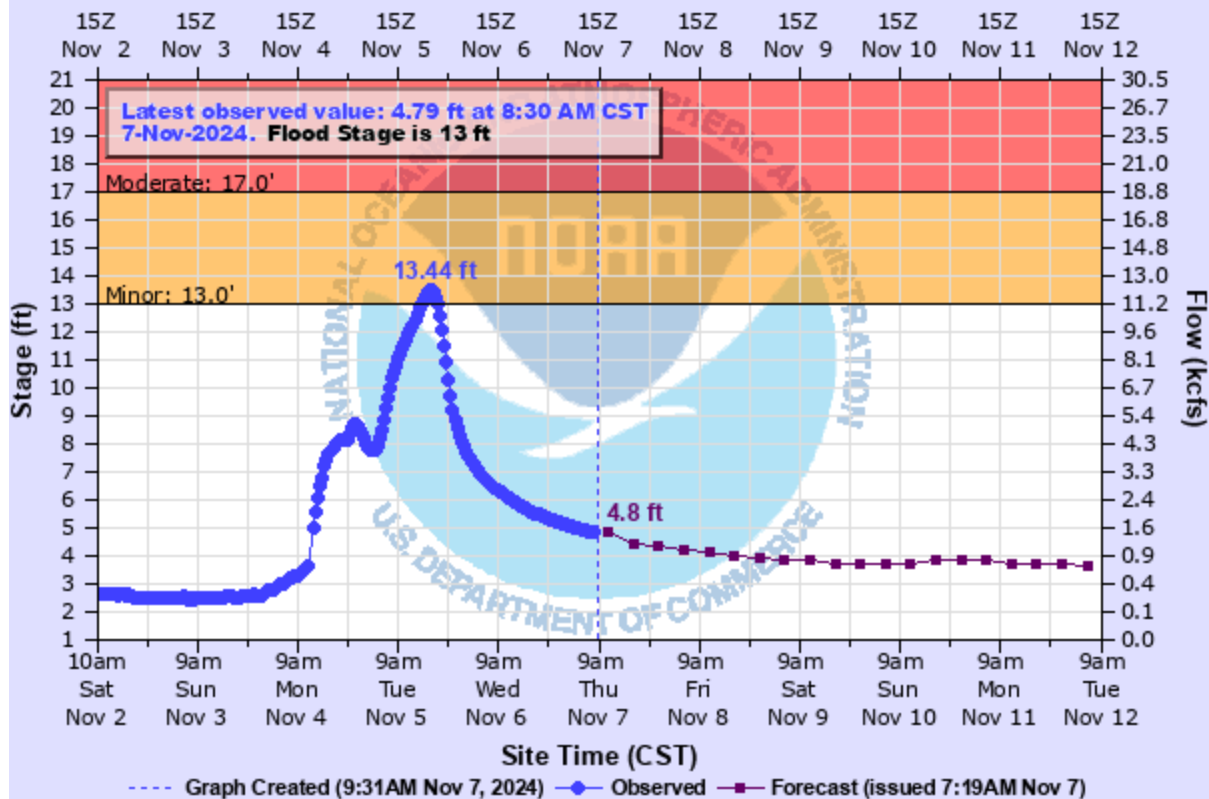


BRYA4(plotting HGIRG) "Gage 0" Datum: 963.66'

Observations courtesy of US Geological Survey

ILLINOIS RIVER (AR OK) NEAR WATTS

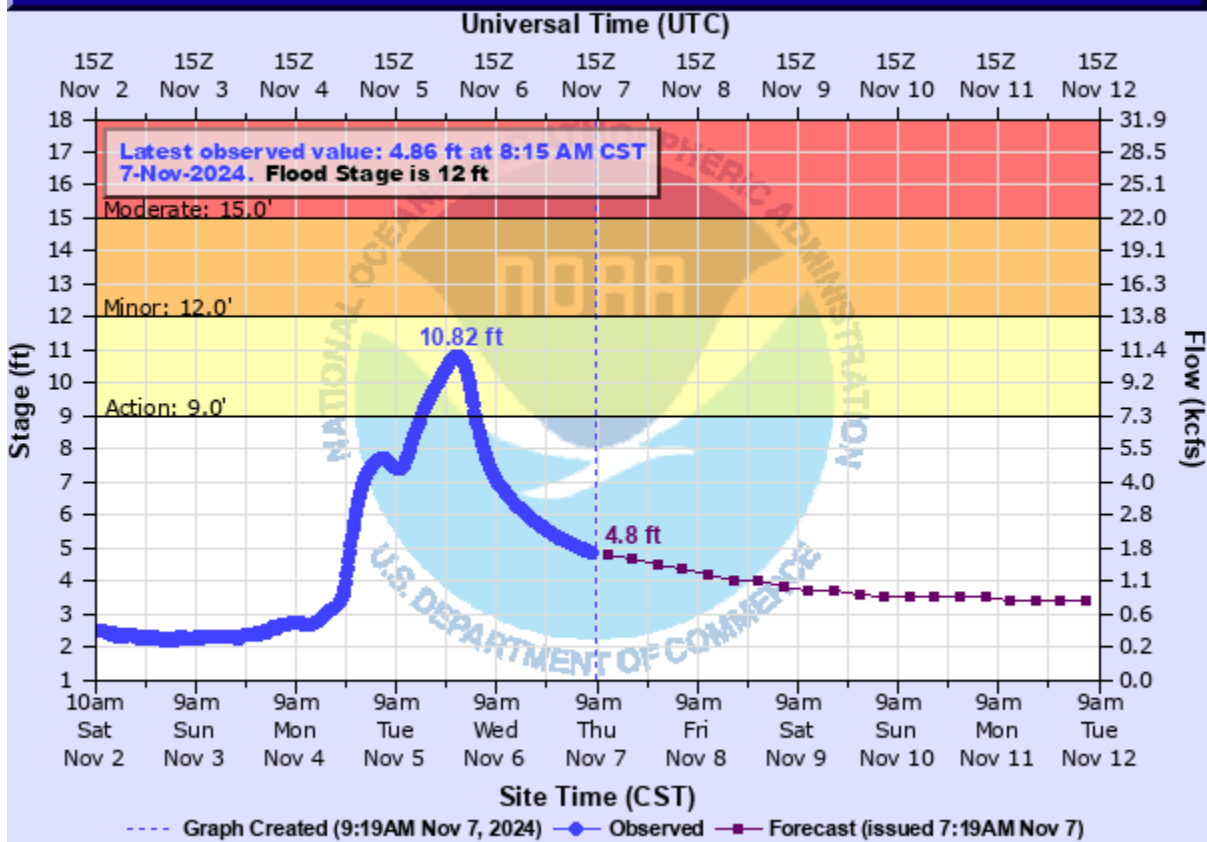
Universal Time (UTC)



WTTO2(plotting HGIRG) "Gage 0" Datum: 894.01'

Observations courtesy of US Geological Survey

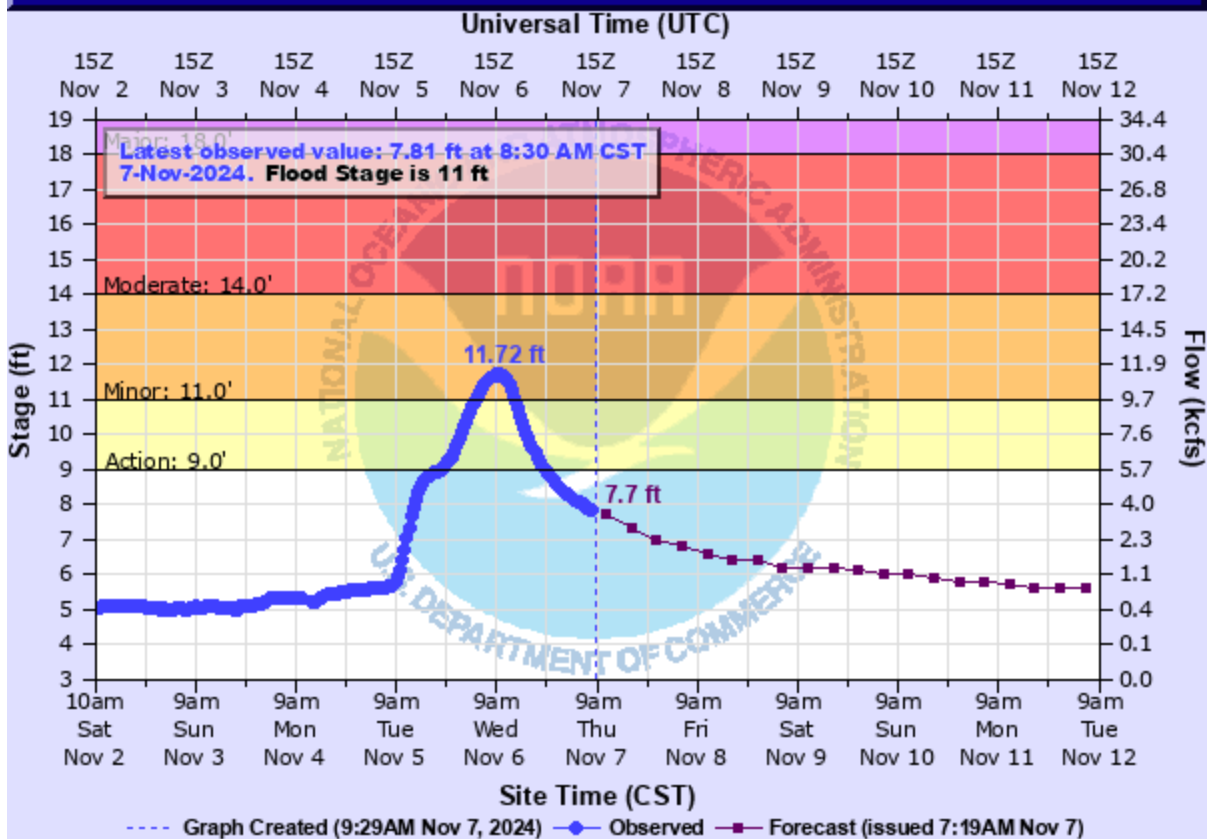
ILLINOIS RIVER (AR OK) AT CHEWEY



CWYO2(plotting HGIRG) "Gage 0" Datum: 800.91'

Observations courtesy of US Geological Survey

ILLINOIS RIVER (AR OK) NEAR TAHLEQUAH

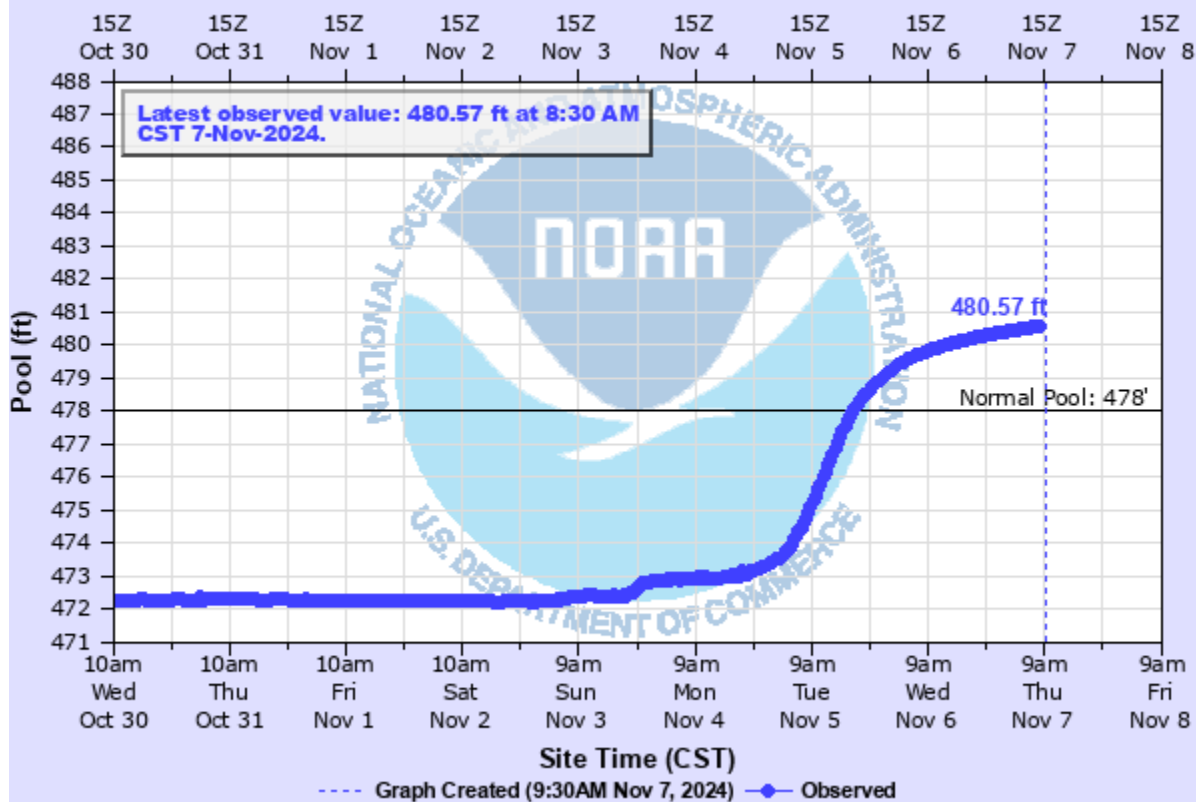


TALO2(plotting HGIRG) "Gage 0" Datum: 665.08'

Observations courtesy of US Geological Survey

EASTERN OKLAHOMA LAKES AT WISTER LAKE

Universal Time (UTC)

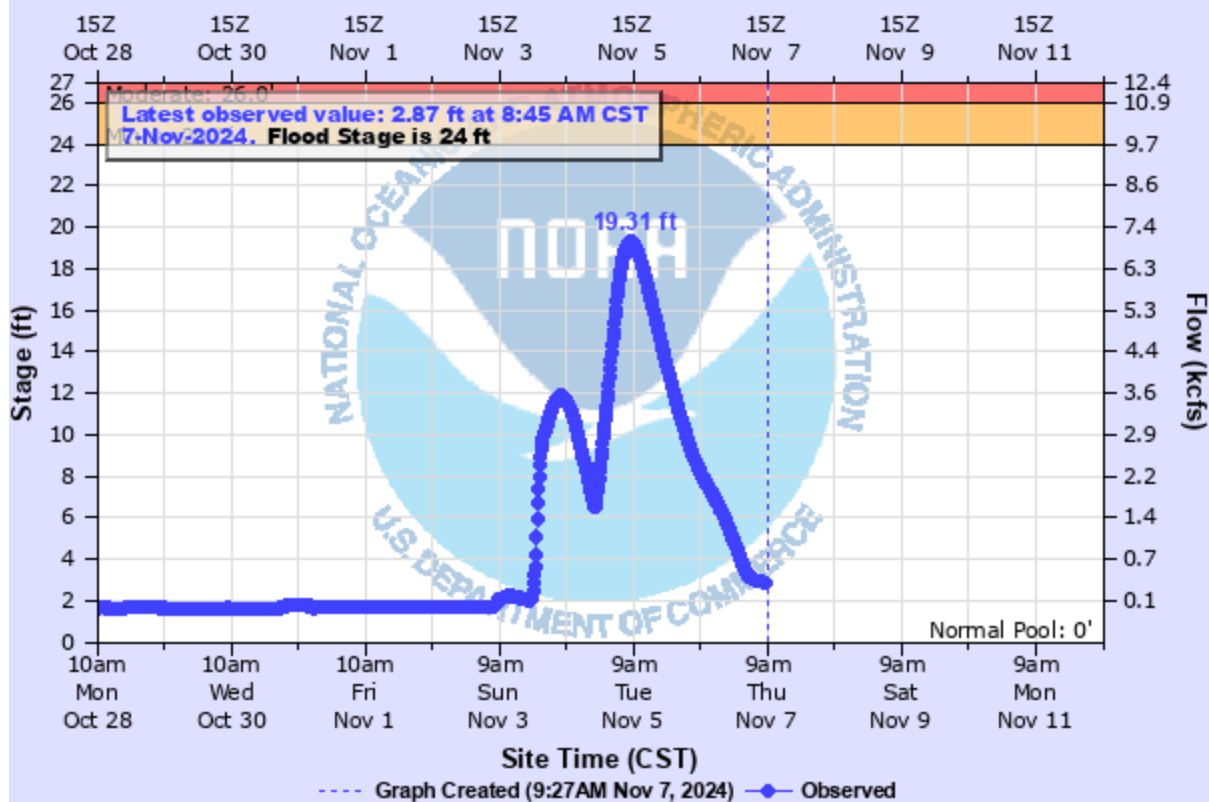


WSLO2(plotting HPIRG) "Gage 0" Datum: n/a

Observations courtesy of US Army Corps of Engineers

POTEAU RIVER NEAR POTEAU

Universal Time (UTC)

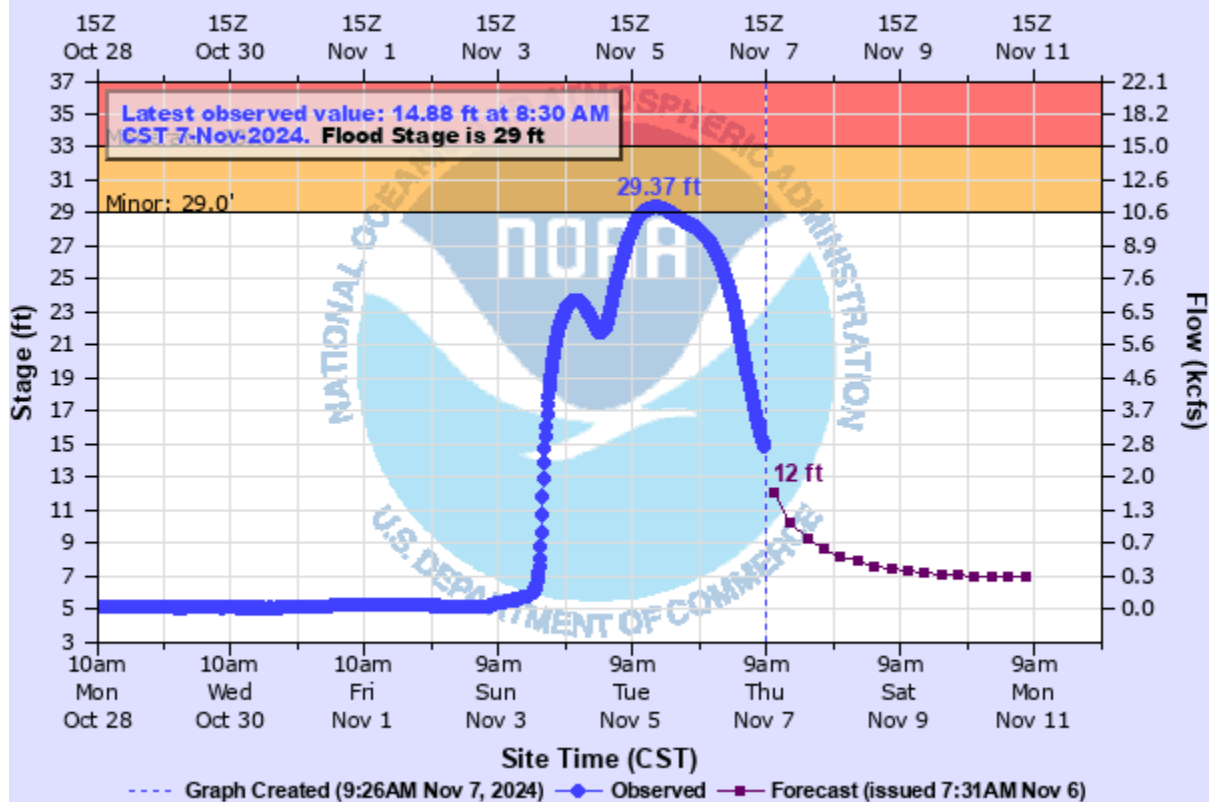


PTAO2(plotting HGIRG) "Gage 0" Datum: 409.4'

Observations courtesy of U.S. Geological Survey

POTEAU RIVER NEAR PANAMA

Universal Time (UTC)

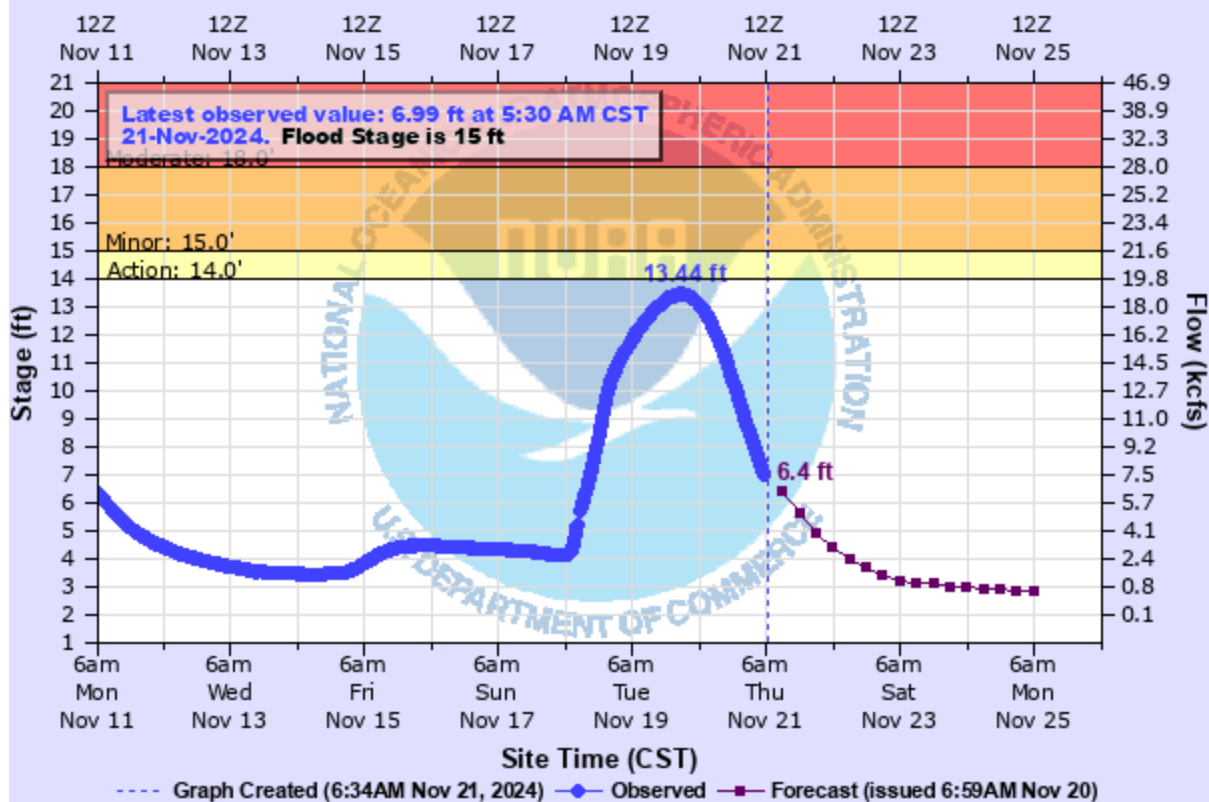


PANO2(plotting HGIRG) "Gage 0" Datum: 388.12'

Observations courtesy of US Geological Survey

NEOSHO RIVER NEAR COMMERCE

Universal Time (UTC)



COMO2(plotting HGIRG) "Gage 0" Datum: 749.1'

Observations courtesy of US Geological Survey