

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 2025	
				SIGNATURE Steven F. Piltz (Meteorologist-in-Charge)	
TO: Hydrometeorological Information Center, W/OH2 NOAA / National Weather Service 1325 East West Highway, Room 7230 Silver Spring, MD 20910-3283				DATE March 14, 2025	

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.

February 2015 brought several snow events to the region, though overall precipitation was below normal for the month. A several day cold snap near the end of the month resulted in a near to below normal average temperature for February. Normal precipitation across the HSA in February ranges from 1.8 inches in Osage County to 3.2 inches in Choctaw County. In the Ozark region of northwest AR, the normal monthly precipitation is 2.9 inches. 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 February 2025 ranged from around 0.3” to 3.5” northwest to southeast across eastern OK and northwest AR. These rainfall totals correspond to 20% to 120% of the normal February rainfall, with most of the area receiving 30%-70% of normal for the month (Fig. 1b).

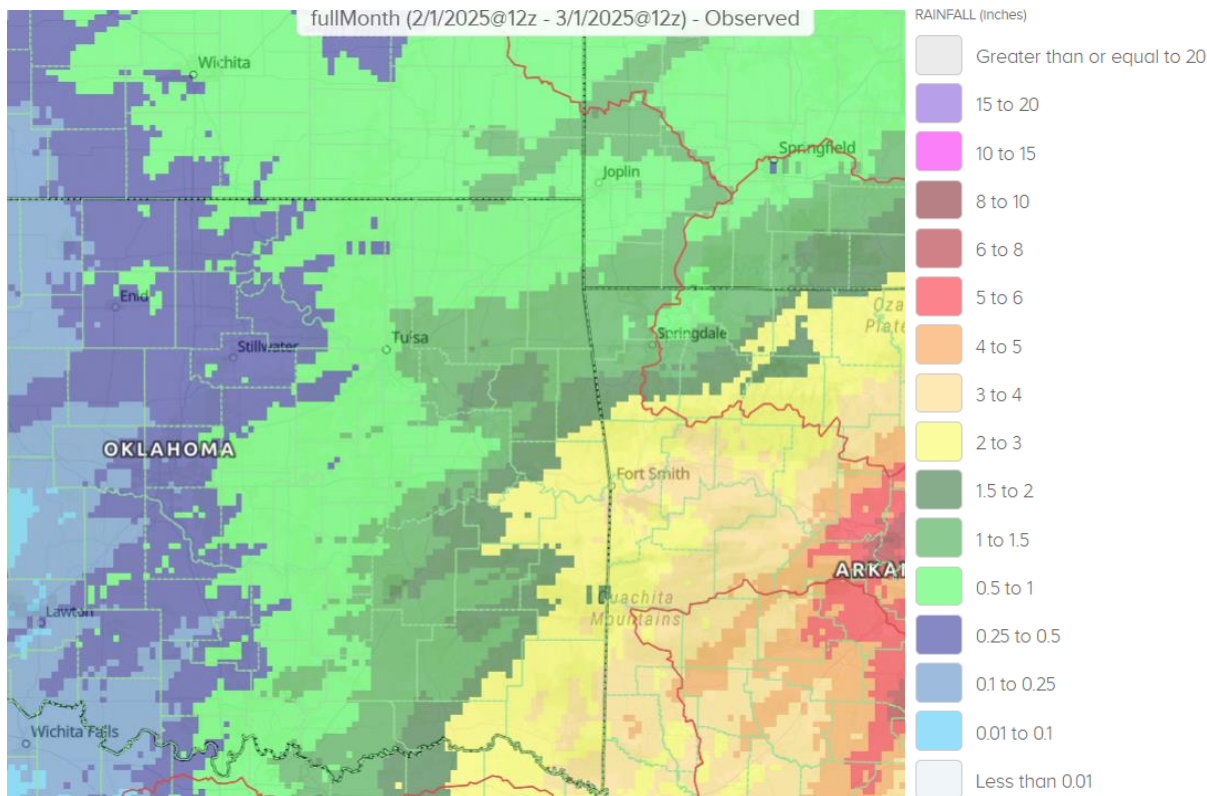


Fig. 1a. Estimated Observed Rainfall for February 2025

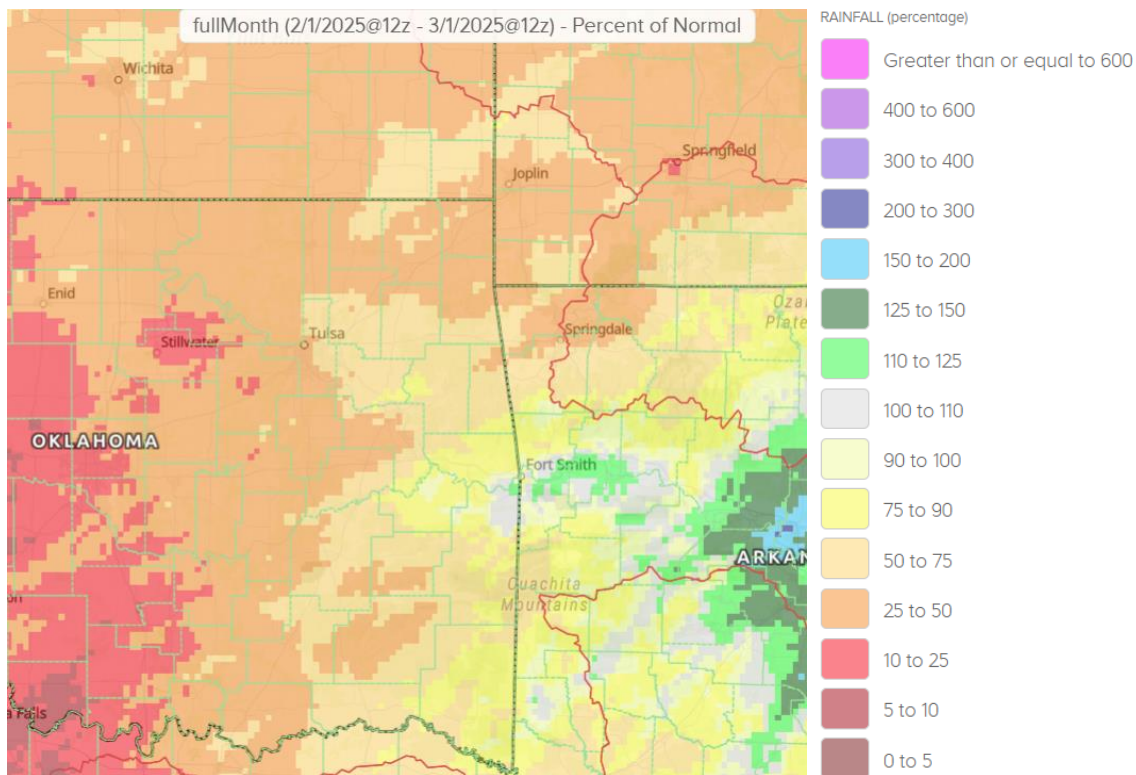


Fig. 1b. Estimated % of Normal Rainfall for February 2025

In Tulsa, OK, February 2025 ranked as the 30th coldest February (38.5°F; since records began in 1905), the 35th driest February (0.86", tied 1958; since records began in 1888), and the 29th snowiest February (3.9", tied 2014; since records began in 1900). Fort Smith, AR had the 66th warmest February (44.1°F; since records began in 1883), the 42nd wettest February (3.18", tied 2011; since records began in 1883), and the 53rd snowiest February (1.0", tied 1983, 1946, 1919, 1899, 1886; since records began in 1884). Fayetteville, AR had the 37th warmest (40.4°F, tied 1977), the 26th driest (1.71", tied 1959), and the 18th snowiest February since records began in 1950.

Some of the larger precipitation reports (in inches) for February 2025 included:

Green Forest 7NNE, AR (coop)	6.91	Rye Hill 1.1 E, AR (coco)	3.53	Fort Smith, AR (ASOS)	3.18
Riverdale 4.2E, AR (coco)	3.17	Greenwood 0.9S, AR (coco)	3.12	Ozark 4.6S, AR (coco)	2.96
Winslow 7NE, AR (coop)	2.66	Ozark, AR (coop)	2.60	Van Buren 0.7SSE, AR (coco)	2.44

Some of the lowest precipitation reports (in inches) for February 2025 included:

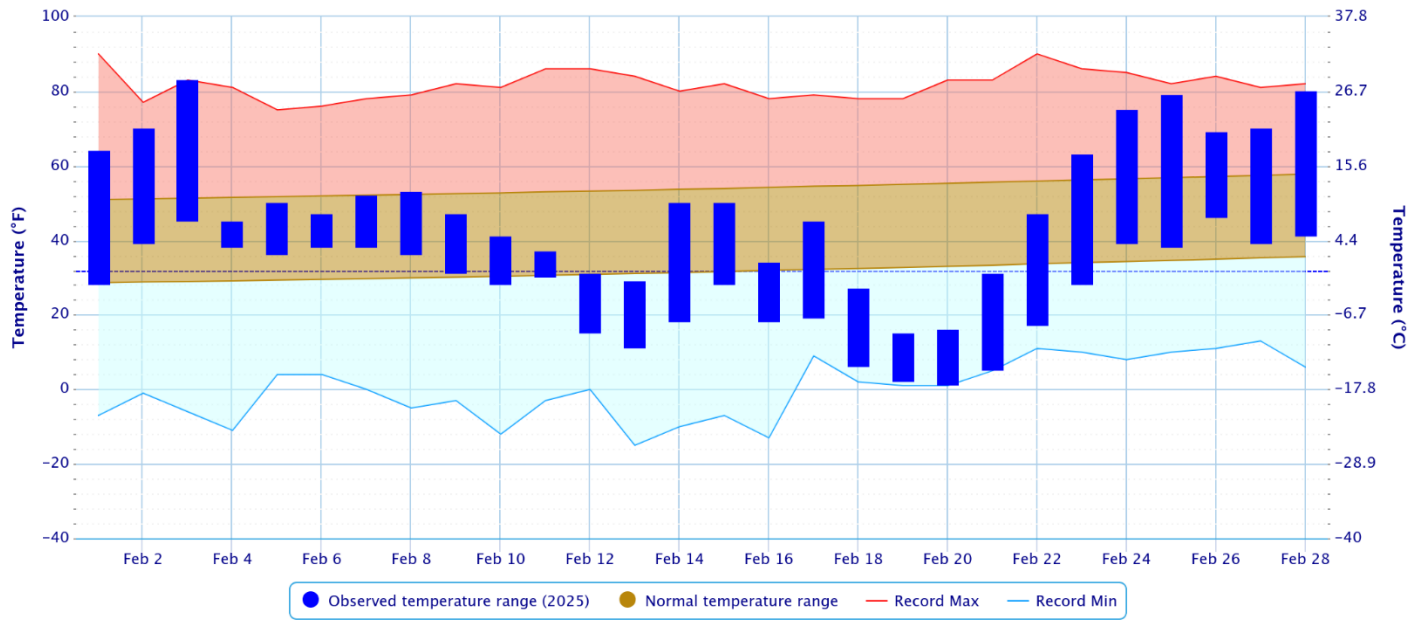
Drumright 0.6, OK (coco)	0.24	Bartlesville, OK (ASOS)	0.31	Terlton 3.7 ESE, OK (coco)	0.36
Bixby 3.4SW, OK (coco)	0.45	Miami 3.7ENE, OK (coco)	0.46	Talala, OK (meso)	0.46
Inola, OK (meso)	0.51	Vinita, OK (meso)	0.52	Okemah, OK (meso)	0.52

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

Rank since 1921	Last 30 Days (Jan 30 – Feb 28)	Winter 2024-25 (Dec 1 – Feb 28)	Last 120 Days (Nov 1 – Feb 28)	Water Year-to-Date (Oct 1, 2024 – Feb 28, 2025)	Year-to-Date (Jan 1 – Feb 28)	Last 365 Days (Mar 1, 2024 – Feb 28, 2025)
Northeast OK	19 th driest	7 th driest	9 th wettest	30 th wettest	16 th driest	44 th driest
East Central OK	39 th driest	42 nd driest	16 th wettest	35 th wettest	37 th driest	33 rd wettest
Southeast OK	33 rd wettest	23 rd wettest	14 th wettest	37 th wettest	43 rd wettest	41 st wettest
Statewide	21 st driest	21 st driest	7 th wettest	31 st wettest	22 nd driest	49 th driest

Daily Temperature Data – Tulsa Area, OK (ThreadEx)

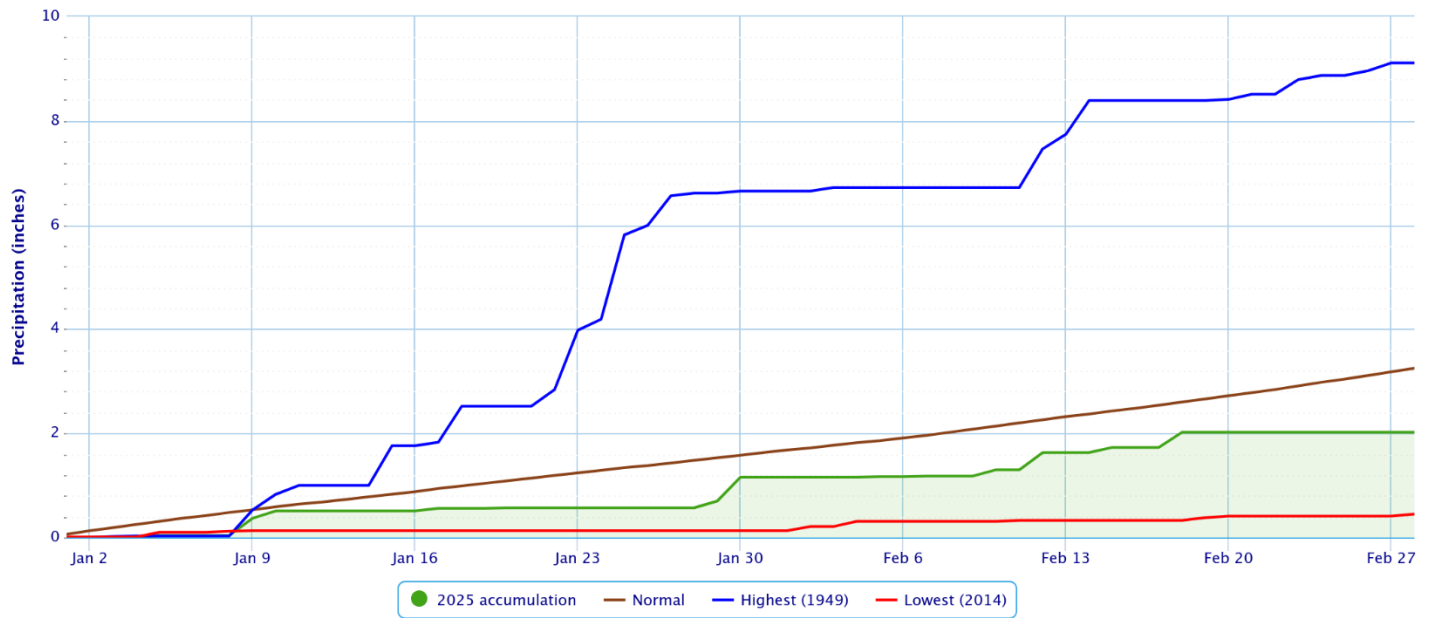
Period of Record – 1905-01-06 to 2025-03-10. Normals period: 1991-2020. Click and drag to zoom chart.



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Accumulated Precipitation – Tulsa Area, OK (ThreadEx)

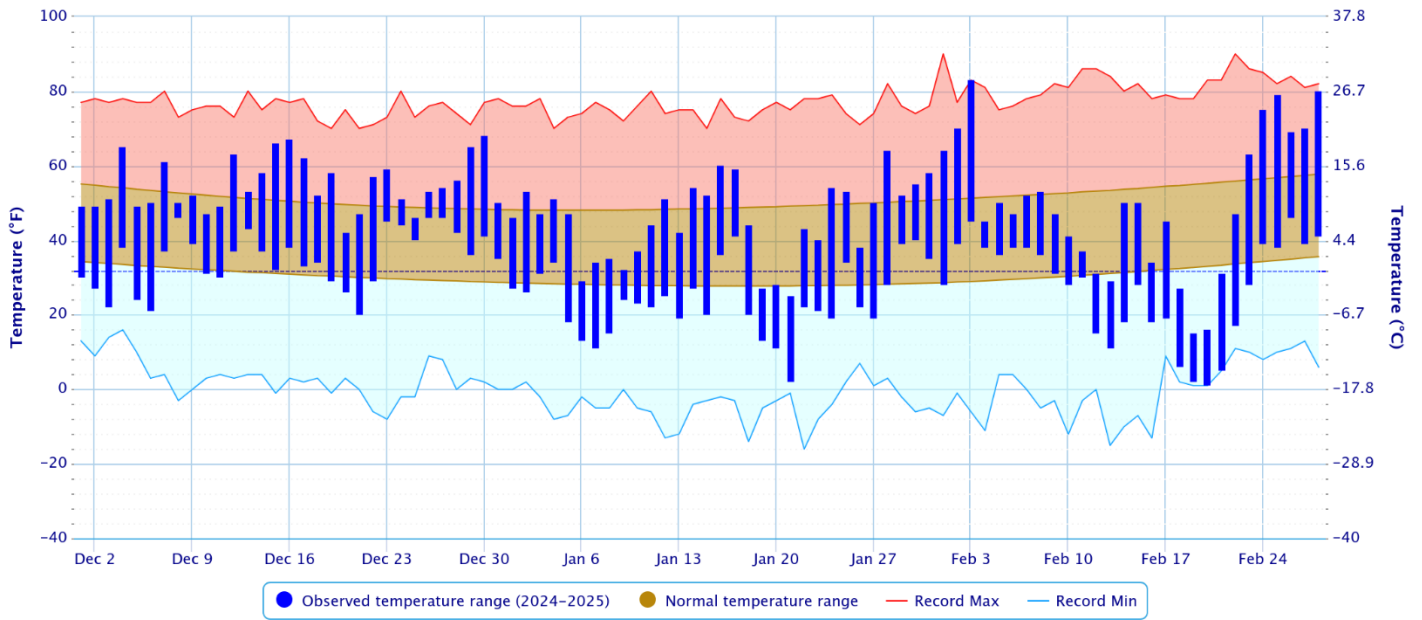
Click and drag to zoom to a shorter time interval; green/black diamonds represent subsequent/missing values



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Daily Temperature Data – Tulsa Area, OK (ThreadEx)

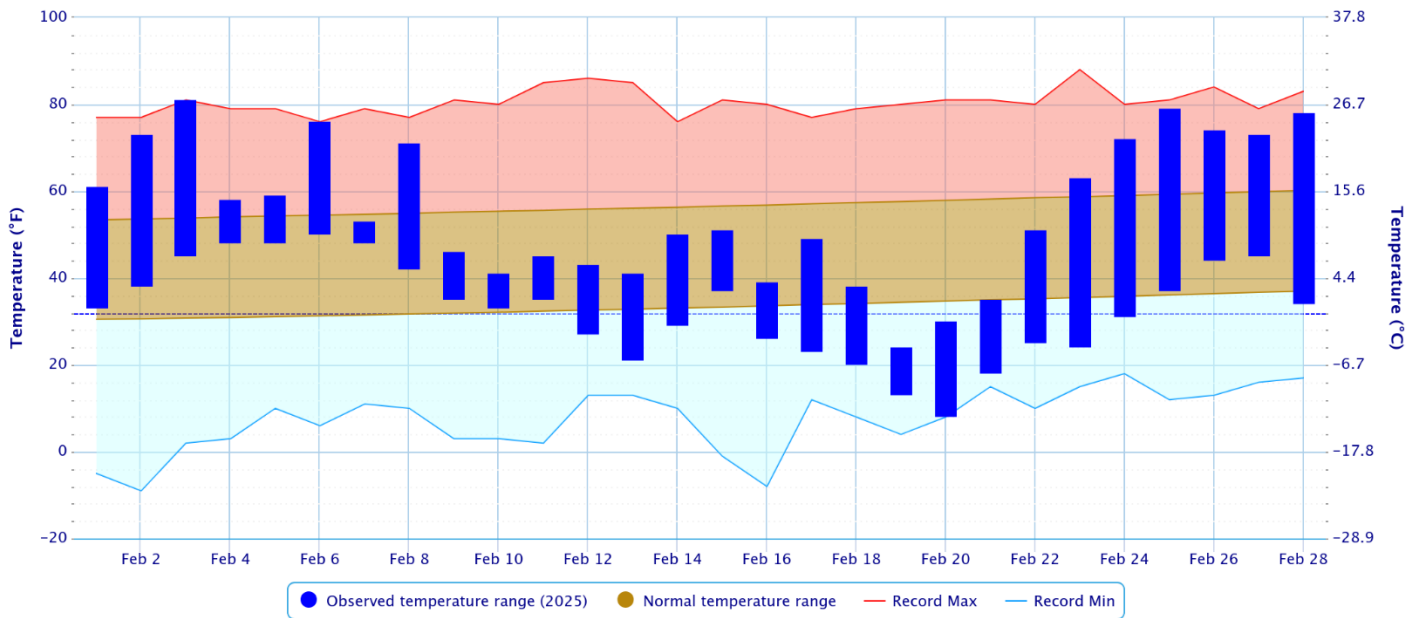
Period of Record – 1905-01-06 to 2025-03-10. Normals period: 1991-2020. Click and drag to zoom chart.



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Daily Temperature Data – FORT SMITH REGIONAL AP, AR

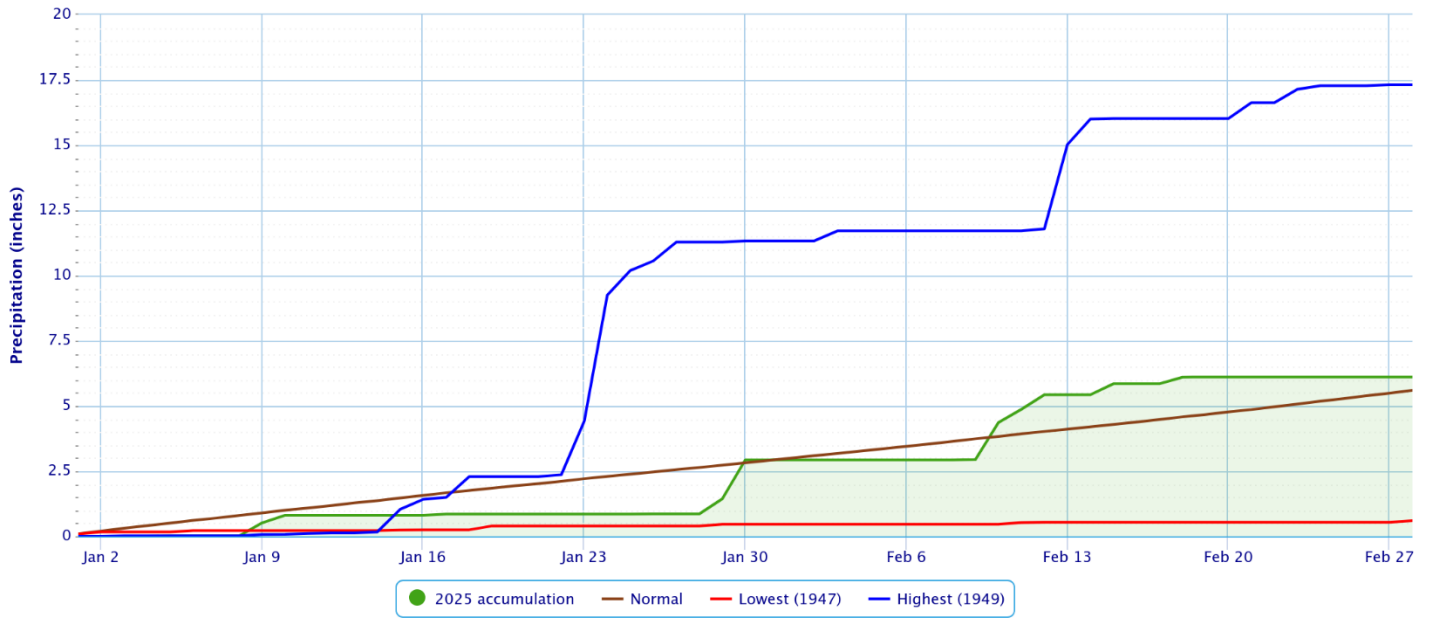
Period of Record – 1945-09-27 to 2025-03-10. Normals period: 1991-2020. Click and drag to zoom chart.



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Accumulated Precipitation – Fort Smith Area, AR (ThreadEx)

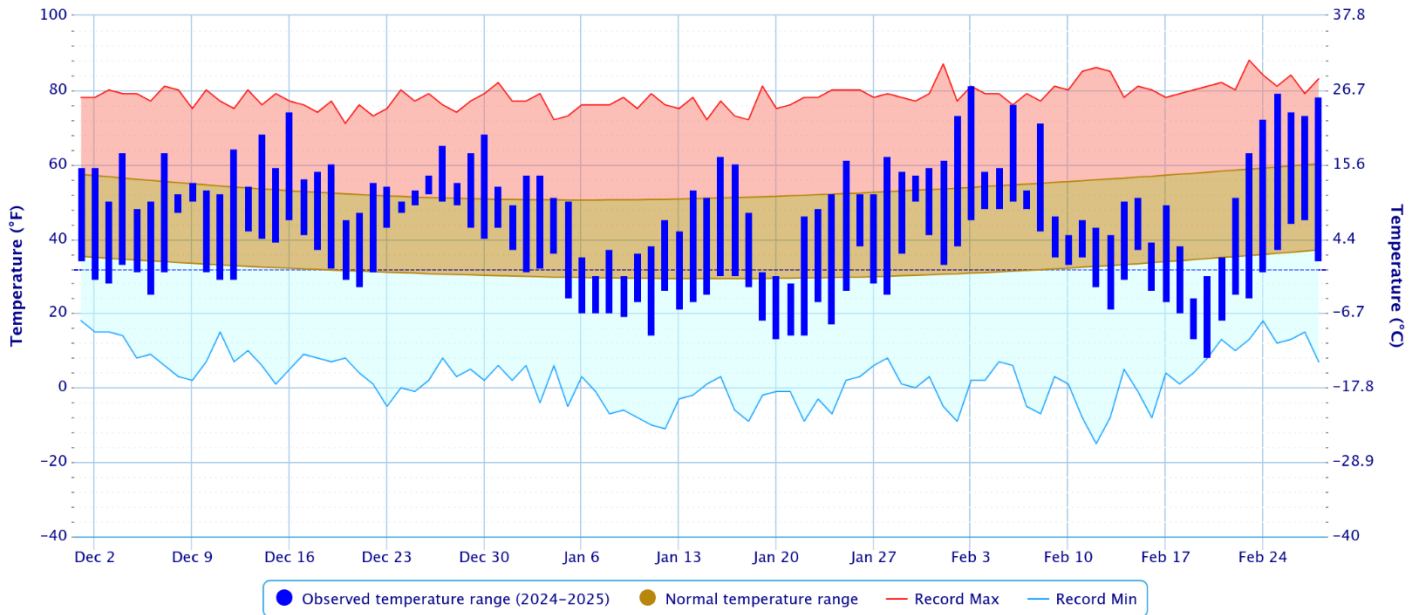
Click and drag to zoom to a shorter time interval; green/black diamonds represent subsequent/missing values



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

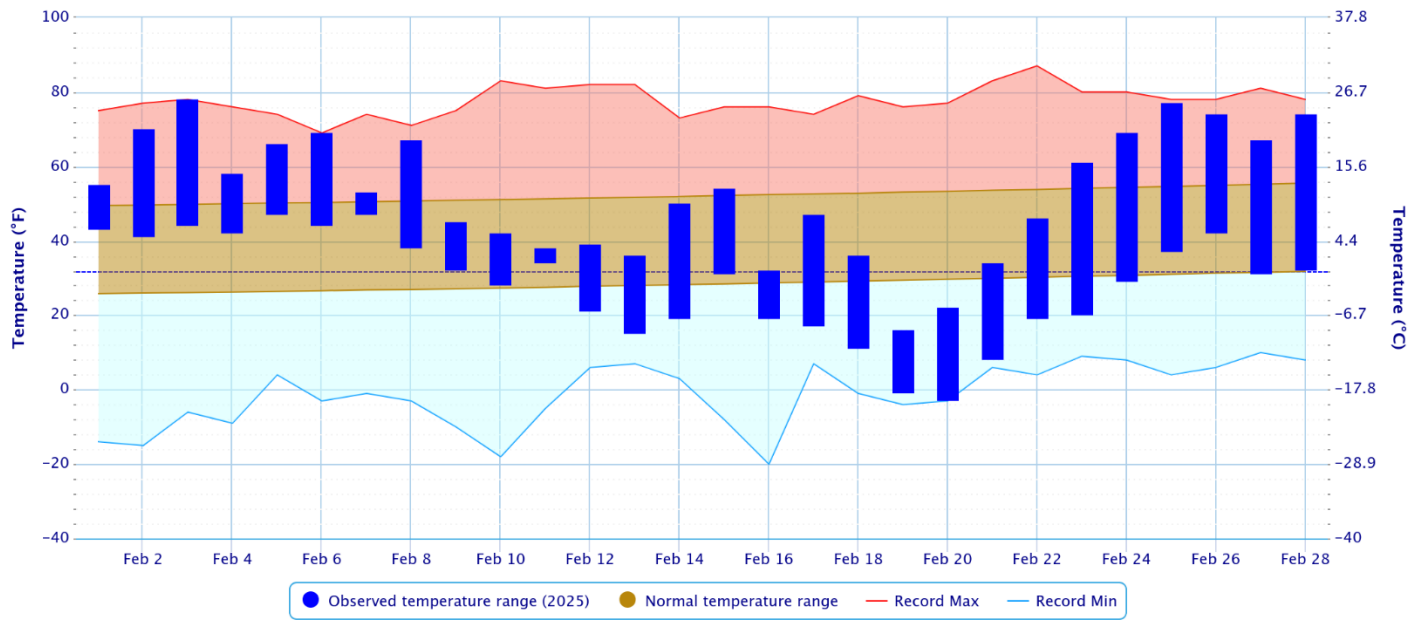
Period of Record – 1882-06-01 to 2025-03-10. Normals period: 1991-2020. Click and drag to zoom chart.



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Daily Temperature Data – FAYETTEVILLE DRAKE FIELD, AR

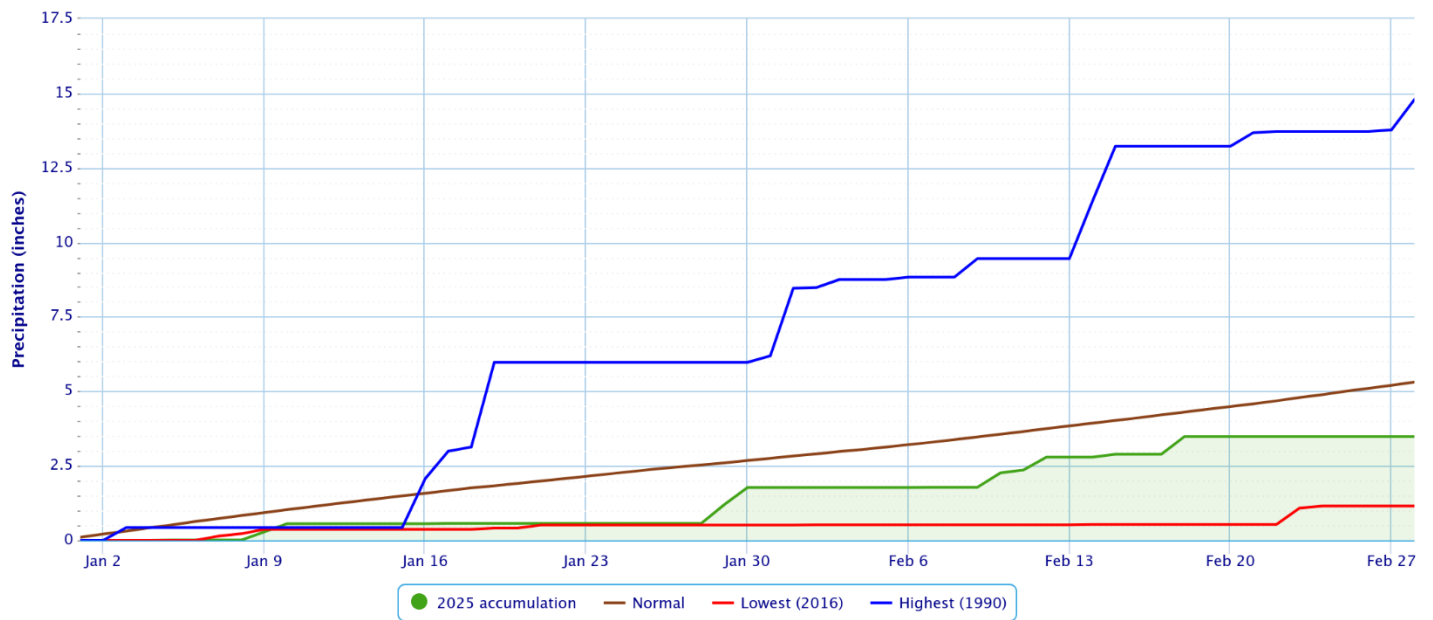
Period of Record – 1949-07-14 to 2025-03-10. Normals period: 1991-2020. Click and drag to zoom chart.



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Accumulated Precipitation – FAYETTEVILLE DRAKE FIELD, AR

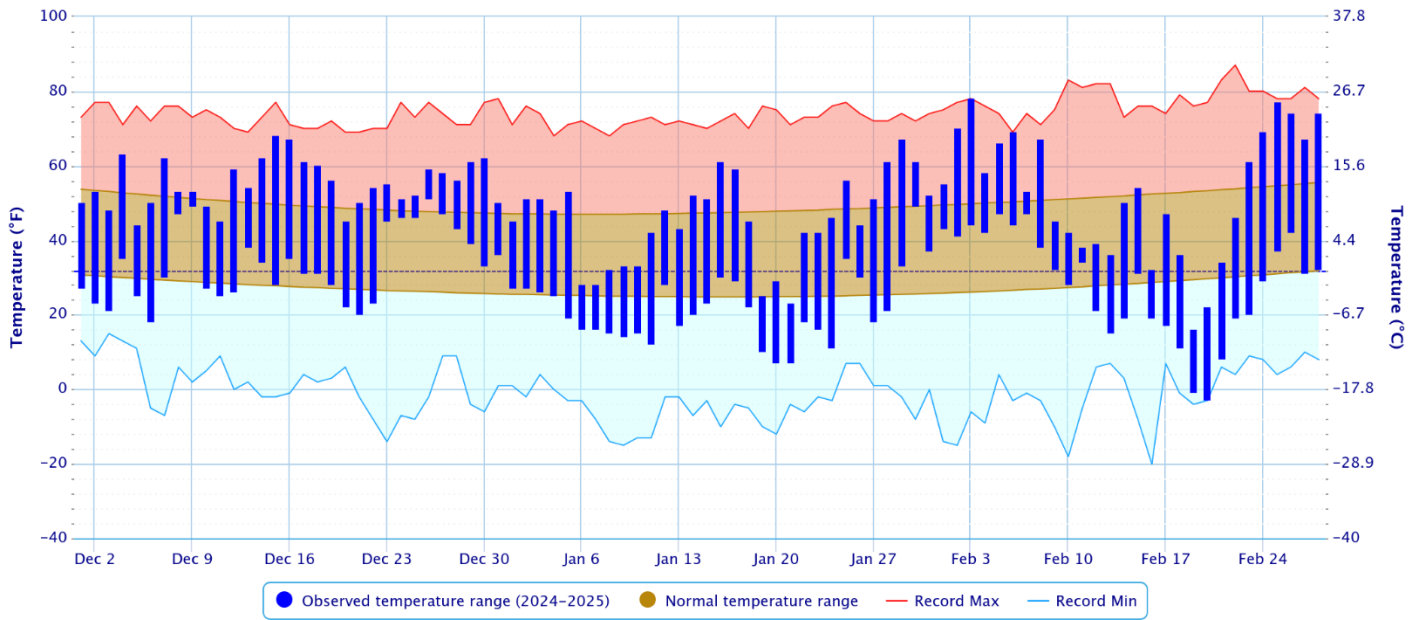
Click and drag to zoom to a shorter time interval; green/black diamonds represent subsequent/missing values



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Daily Temperature Data – FAYETTEVILLE DRAKE FIELD, AR

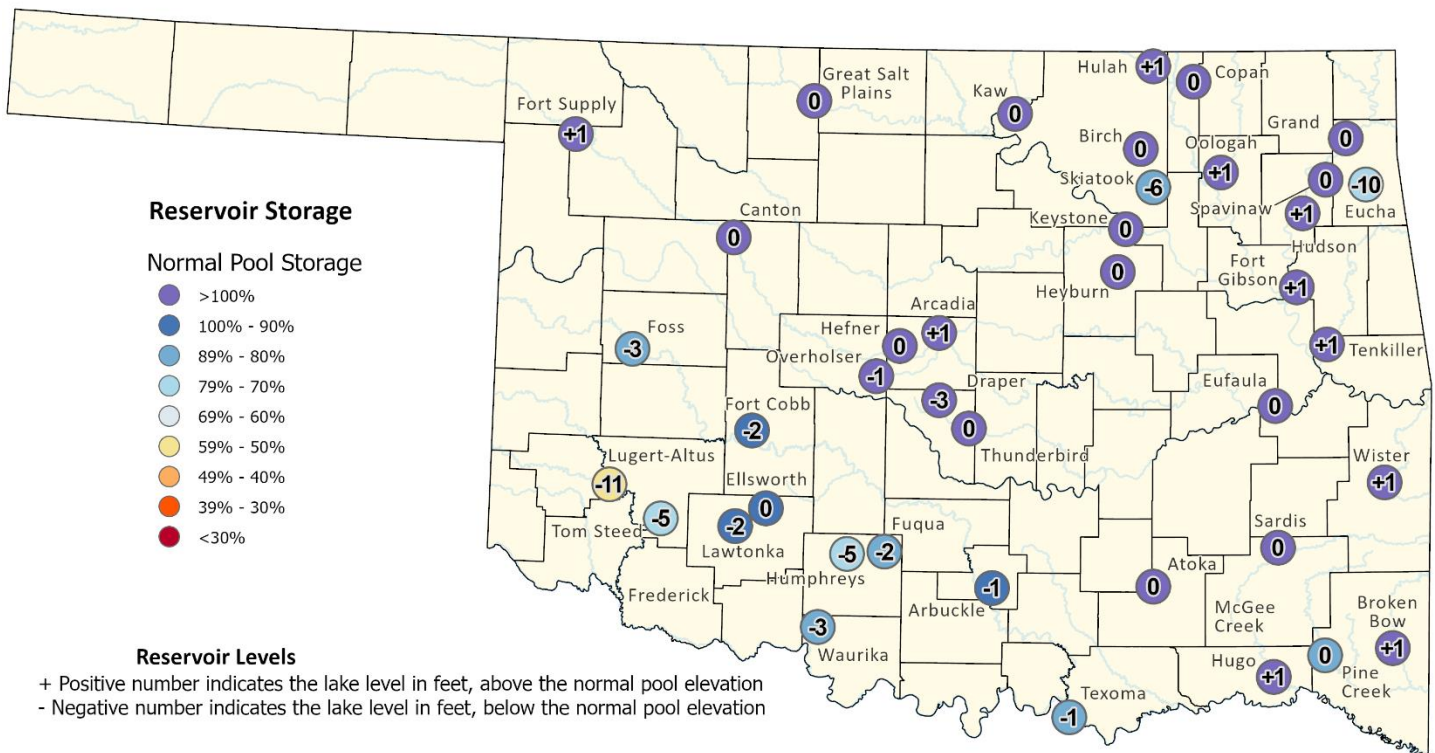
Period of Record – 1949-07-14 to 2025-03-10. Normals period: 1991-2020. Click and drag to zoom chart.



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Reservoirs

Oklahoma Reservoir Levels and Storage as of 3/3/2025



This map shows reservoir storage as a percentage of normal pool storage capacity. The source information was collected from real-time lake gages monitored by the U.S. Army Corps of Engineers (https://www.swt-wc.usace.army.mil/Daily_Morning_Reservoir_Report.pdf), and the U.S. Geological Survey (https://waterdata.usgs.gov/ok/nwis/current/?type=lake&group_key=basin_cd). For more information please visit the OWRB's website: (<https://www.owrb.ok.gov>).



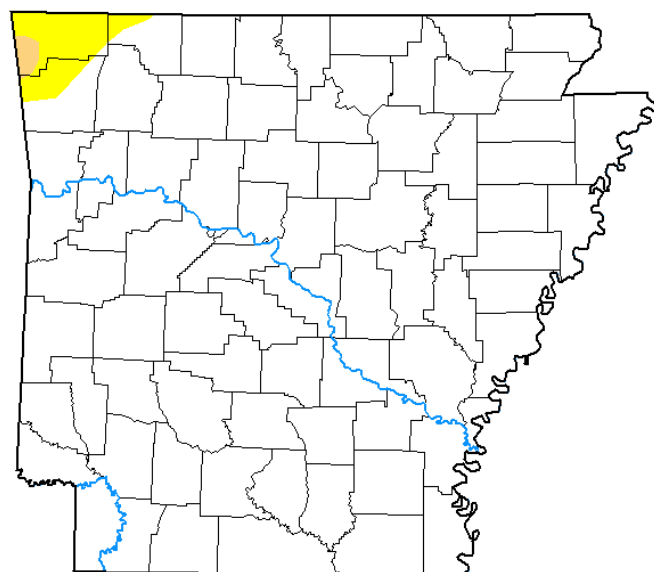
0 50 Miles



Fig. 2. Drought Monitor for Oklahoma

U.S. Drought Monitor Arkansas

February 25, 2025
(Released Thursday, Feb. 27, 2025)
Valid 7 a.m. EST



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	97.55	2.45	0.29	0.00	0.00	0.00
Last Week 02-18-2025	97.55	2.45	0.12	0.00	0.00	0.00
3 Months Ago 11-26-2024	40.15	59.85	33.52	2.08	0.00	0.00
Start of Calendar Year 01-01-2025	86.02	13.98	0.00	0.00	0.00	0.00
Start of Water Year 10-01-2024	27.93	72.07	38.75	5.49	0.00	0.00
One Year Ago 02-27-2024	78.92	21.08	2.74	0.00	0.00	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:

Brian Fuchs
National Drought Mitigation Center



droughtmonitor.unl.edu

Fig. 3. Drought Monitor for Arkansas

Outlooks

The [Climate Prediction Center](#) (CPC) outlook for March 2025 (issued February 28, 2025) indicates an enhanced chance for above normal temperatures across all of eastern OK and northwest AR, with above normal temperatures likely across southeast OK. This outlook also calls for an enhanced chance for below median precipitation in southeast OK, and an equal chance for above, near, and below median precipitation for the remainder of eastern OK and northwest AR. This outlook was based on dynamical and statistical model output along with long-term trends, La Niña, and the Madden-Julian Oscillation (MJO).

For the 3-month period March-April-May 2025, CPC is forecasting equal chances for above, near, and below normal temperatures north of Hwy 412 and an enhanced chance for above normal temperatures south of Hwy 412 in eastern OK and northwest AR (outlook issued February 20, 2025). This outlook also calls for an equal chance for above, near, and below median precipitation for eastern OK and northwest AR. Immediately to the west, the outlook is for an enhanced chance of below median precipitation, while immediately to the east, there is an enhanced chance for above median precipitation. 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 conditions are expected to persist in the near-term, with a transition to ENSO-neutral likely during March-May 2025 (66% chance)." CPC continues the La Niña Advisory.

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

Rain developed during the afternoon of the 10th across eastern OK and northwest AR as warm air overrunning the colder air already in place resulted in isentropic lift. Widespread showers with some embedded thunderstorms continued through the evening hours, primarily along and southeast of I-44. However, some scattered showers occurred just to the northwest of I-44. Freezing rain was also reported in the higher elevations of Carroll and Madison Counties in northwest AR, where up to 0.2" of ice accumulation occurred before the rain ended. By midnight, the area of rain had shifted to the southeast, affecting southeast OK into northwest AR through the overnight hours. Around sunrise, most of the precipitation had moved southeast of the area. Rainfall totals ranged from a few hundredths to 1.75" (Fig. 4).

Strong warm advection and isentropic lift resulted in widespread drizzle through much of the early morning hours of the 12th. Along and north of the I-44 corridor, surface temperatures were below freezing, resulting in freezing drizzle and impacts to roadways. Heavier precipitation then expanded from the west as the main upper-level wave approached the area, with widespread wintry-mixed precipitation across most of eastern OK and northwest AR at sunrise. Areas across the north received sleet and snow, with freezing rain and sleet occurring across the central portion of the area, and mainly rain with some sleet across the southern areas. The upper-level wave moved quickly eastward, with the precipitation ending from west to east through the morning. Rain and liquid equivalent values ranged from around 0.25" to around 1" (Figs. 5, 6). Up to 2" of sleet and snow accumulation was reported in Osage and Washington Counties in OK, with sleet and snow accumulations of around 0.5" or less more common elsewhere across northeast OK and northwest AR. Ice accumulation reports were around 0.1" or less.

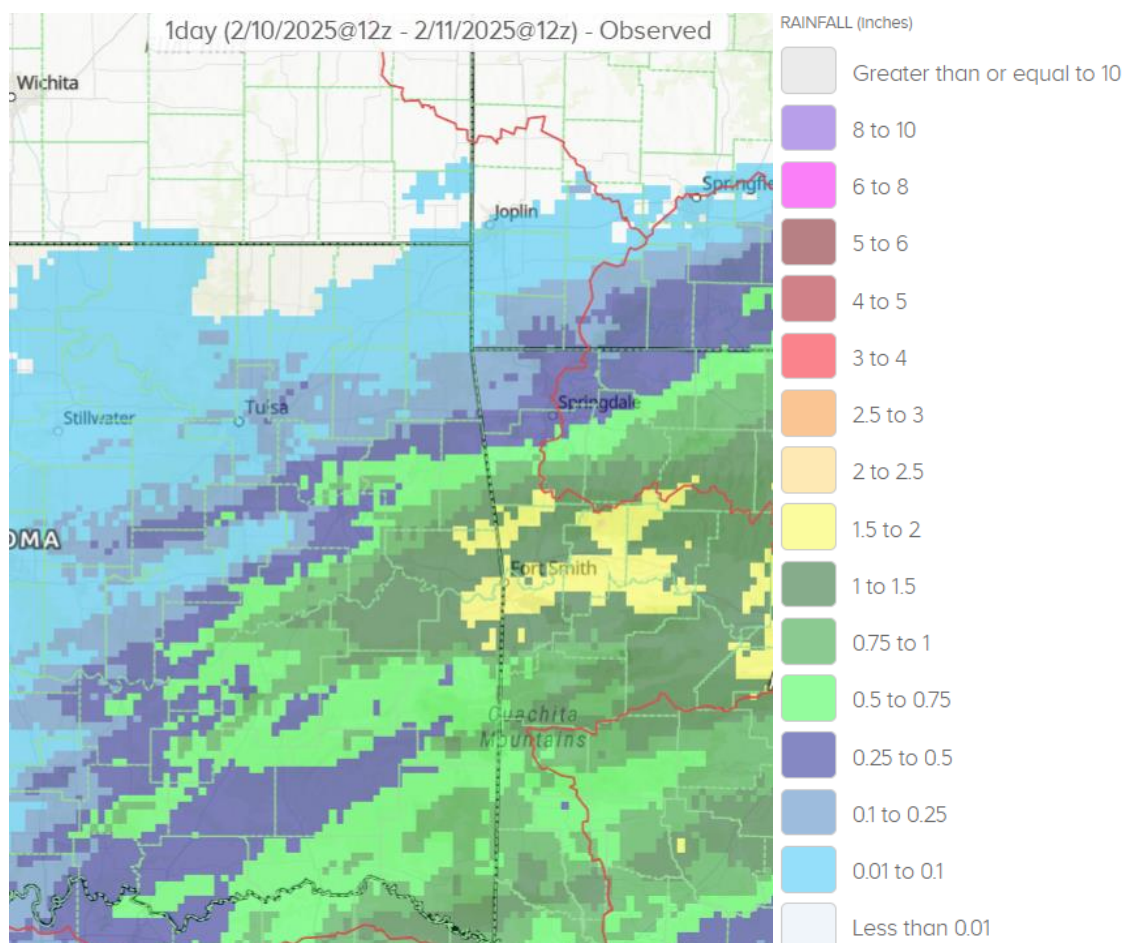


Fig. 4. 24-hour Estimated Observed Rainfall ending at 6am CST 2/11/2025.

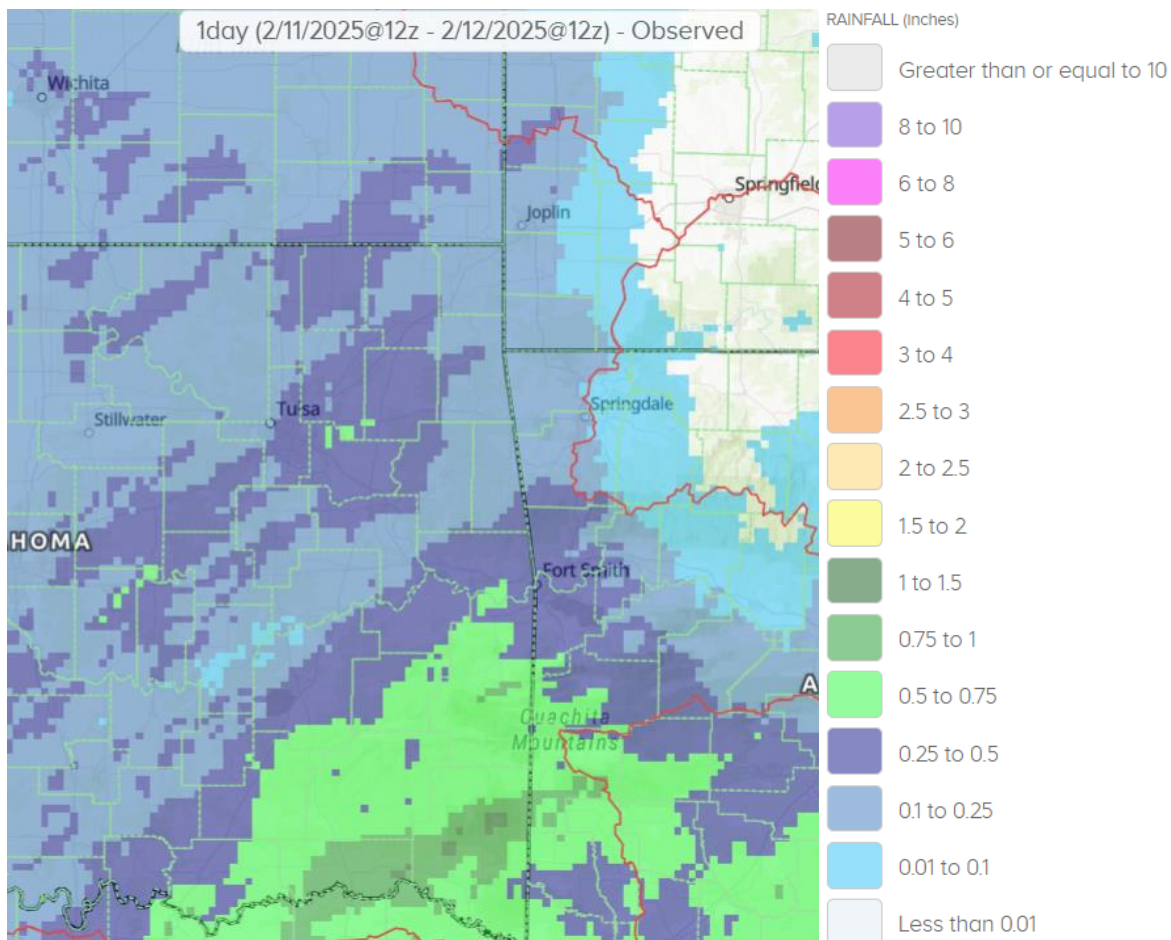


Fig. 5. 24-hour Estimated Observed Rainfall ending at 6am CST 2/12/2025.

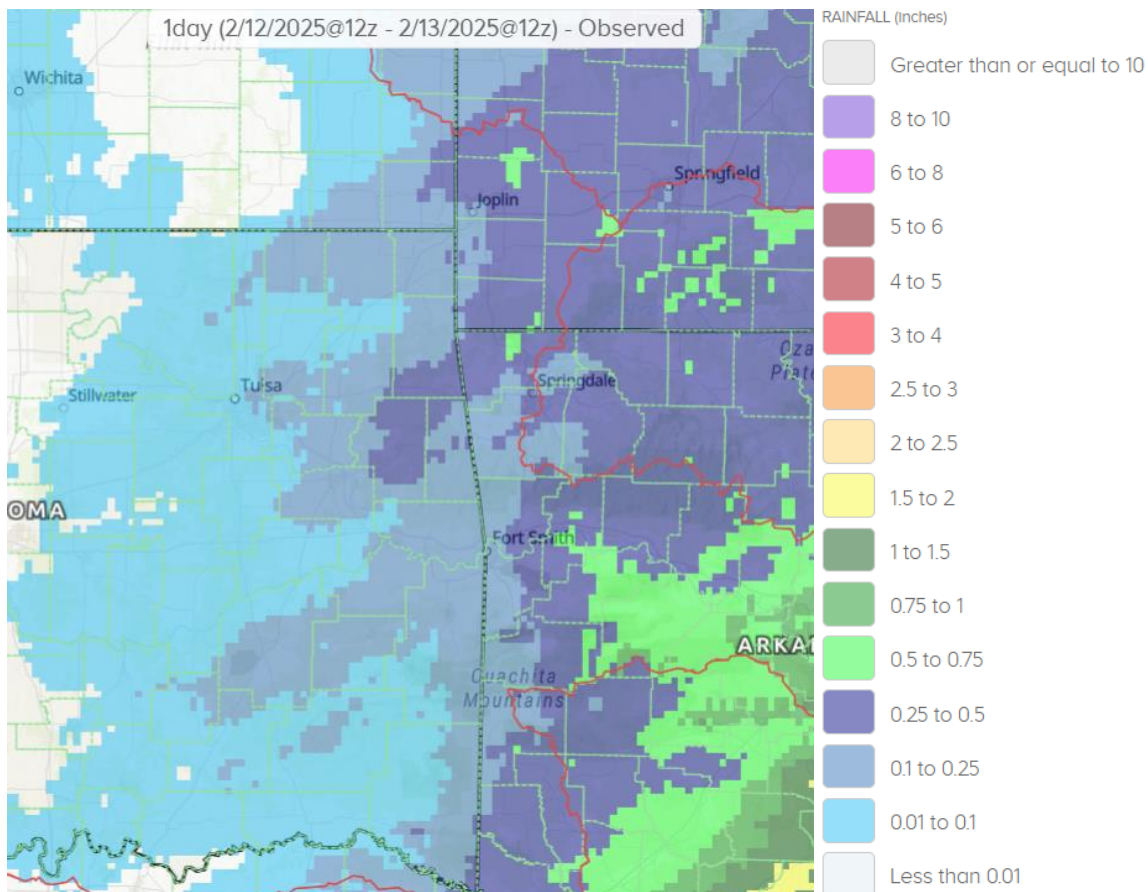


Fig. 6. 24-hour Estimated Observed Rainfall ending at 6am CST 2/13/2025.

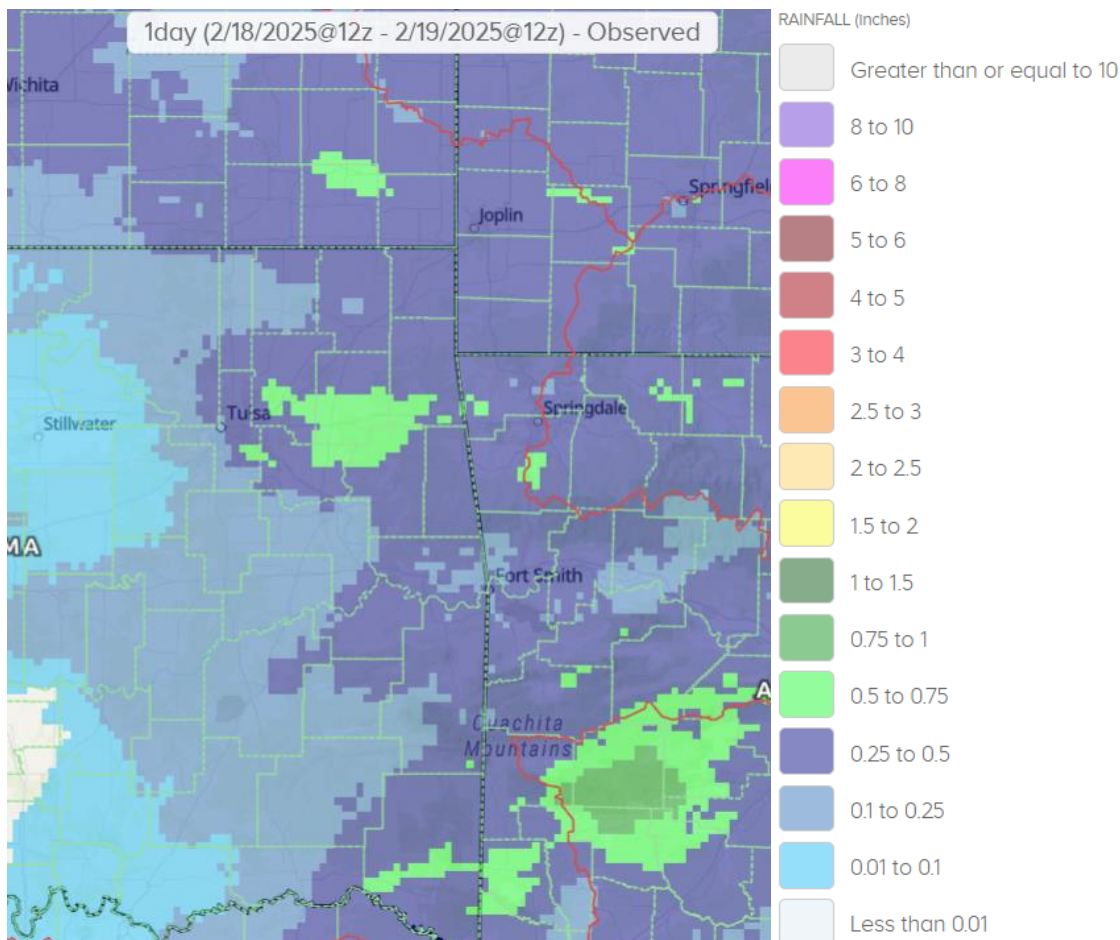


Fig. 7. 24-hour Estimated Observed Rainfall ending at 6am CST 2/19/2025.

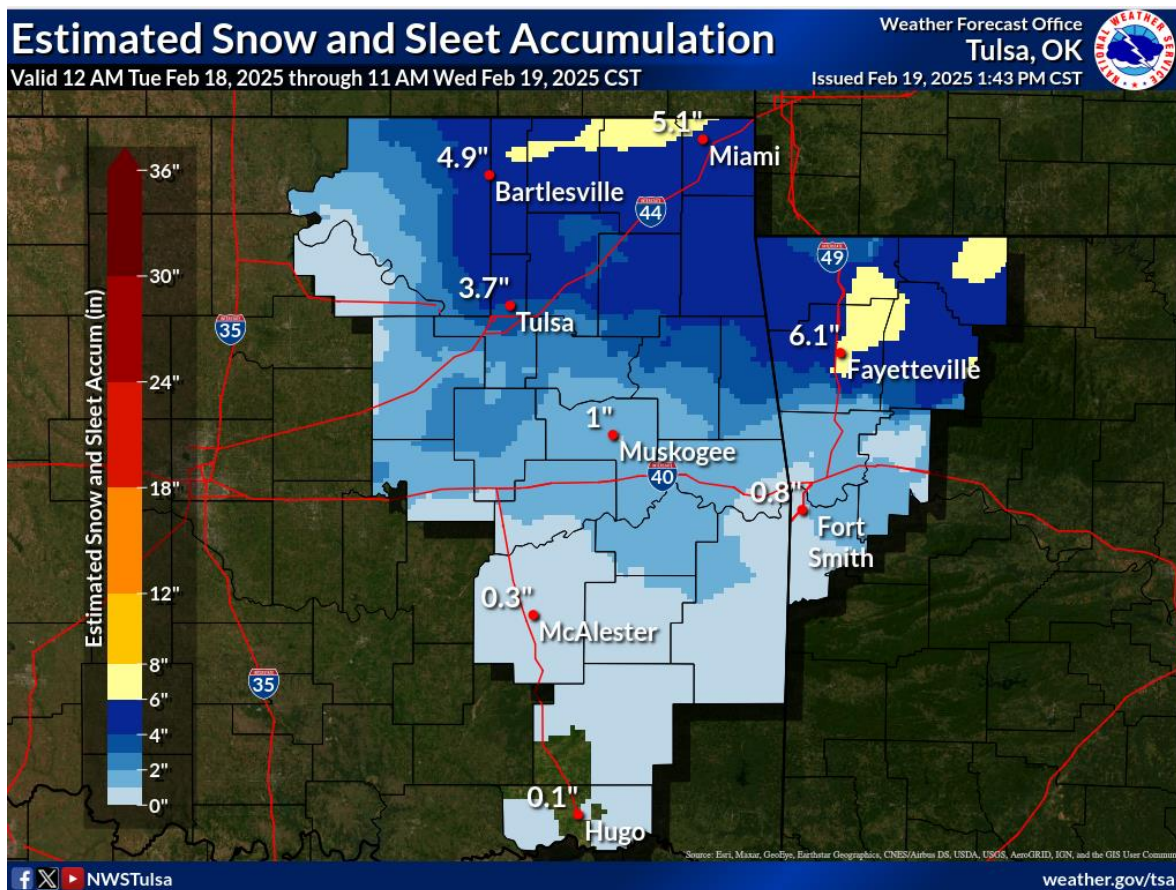


Fig. 8. Estimated snow and sleet accumulation February 18-19, 2025.



Fig. 9. Estimated ice accumulation February 18-19, 2025.

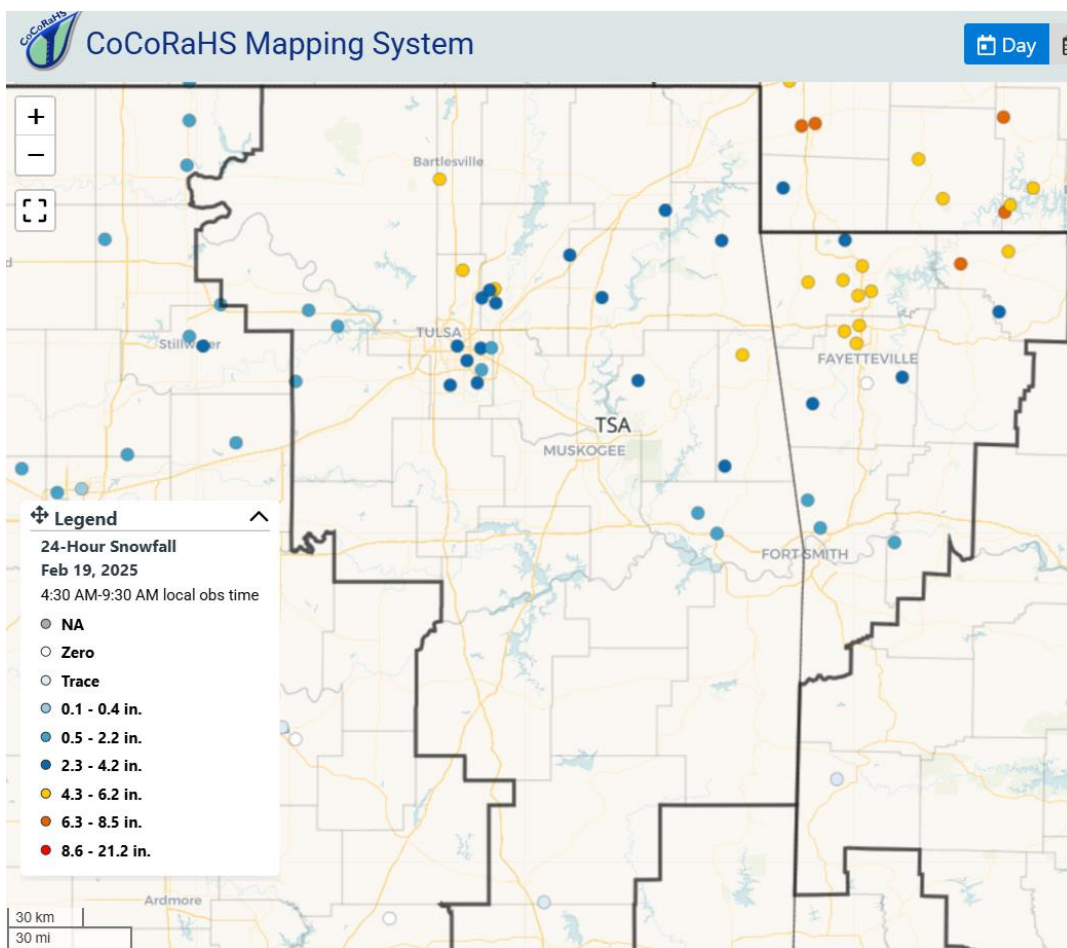


Fig. 10. 24-hour snowfall measurements ending the morning of February 19, 2025 from CoCoRaHS volunteer observers.

A bitterly cold airmass moving into the region, combined with a strong short-wave trough approaching from the west, set the stage for significant winter weather on the 18th. The precipitation first began around dawn and quickly increased by mid-morning from northeast OK into northwest and west central AR. Widespread wintry weather continued across this zone, including bands of moderate to heavy snow, with scattered snow, sleet, and freezing rain elsewhere in eastern OK for much of the day. By evening, the precipitation began to end from west to east, exiting the area around midnight. The rainfall/liquid equivalent total ranged from a few hundredths to around 0.5" (Fig. 7). Snowfall totals ranged from a dusting to near 8" (Figs. 8, 10) and ice accumulation ranged from a glaze to around 0.1" (Fig. 9). Bitterly cold temperatures remained over the region through the 21st, followed by a rapid warm up.

Written by:

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Products issued in February 2025:

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

Preliminary Hydrographs:

None