

August 2025

Precipitation

Precipitation was scarce across Kentucky in August, with below-normal totals recorded statewide. Conditions were predominantly dry, with only a few days of widely scattered showers and storms. Every county averaged below normal rainfall, and some locations went the entire month without a single event exceeding 0.1 inches.

The wettest areas were in Harlan and Letcher counties, where heavier rainfall occurred early in the month. In contrast, the driest conditions were found in northeastern, south-central, and far western Kentucky.

Ongoing dryness has spread across the Commonwealth, creating widespread impacts from increasingly dry conditions. According to the September 2nd update from the U.S. Drought Monitor, over 57% of the state was in Moderate Drought (D1) and more than 95% was classified as at least Abnormally Dry (D0). Impacts so far have been most notable in agriculture, along with browning lawns and early leaf drop in some trees. This is now the fourth consecutive fall with widespread drought conditions across Kentucky.

Preliminary data shows the state averaged 1.29 inches of precipitation in August, 2.31 inches below the climatological norm- ranking as the driest August on record since 1895. For the year to date, Kentucky has received an average of 43.46 inches, 8.15 inches above normal.

According to data from the Kentucky Mesonet, Harlan County recorded the highest rainfall total at 6.19 inches, while Breckinridge County recorded the lowest at 0.00 inches.

Table 1. Regional precipitation patterns

Climate Region	Departure From Normal (inches)					Palmer Drought Severity Index*
	This Month	Past 2 Mos.	Past 3 Mos	Past 6 Mos	Past 12 Mos	
Western	-2.40	-2.72	0.59	9.14	19.53	4.59
Central	-2.34	-2.98	-0.58	10.07	17.31	4.21
Bluegrass	-2.68	-2.01	-1.34	6.79	12.58	3.14
Eastern	-1.95	0.04	0.62	4.40	10.88	2.44

*4.0 and above (Extremely Moist)
3.0 to 3.9 (Very Moist Spell)
2.0 to 2.9 (Unusual Moist Spell)
-1.9 to 1.9 (Near Normal)
-2.0 to -2.9 (Moderate Drought)
-3.0 to -3.9 (Severe Drought)
-4.0 or less (Extreme Drought)

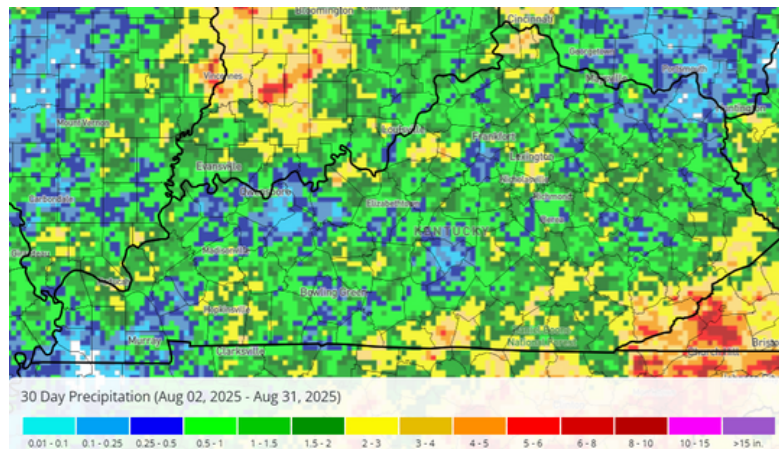


Figure 1. Monthly precipitation map.

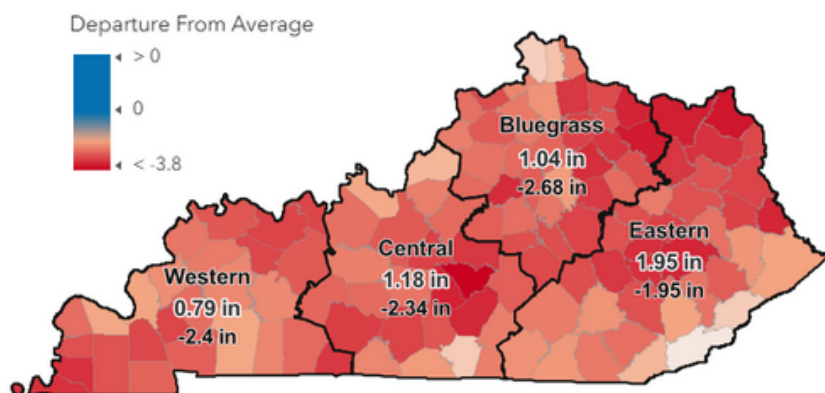
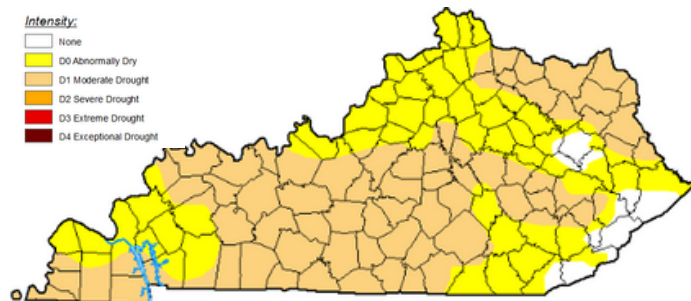


Figure 2. Departure from normal precipitation by county and climate division.

U.S. Drought Monitor Kentucky

September 2, 2025
(Released Thursday, Sep. 4, 2025)
Valid 8 a.m. EDT



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>

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droughtmonitor.unl.edu

Figure 3. Current US Drought Monitor Map.

August 2025

Streamflow

Streamflows in August started the month at or above normal across the state. Flows then generally decreased throughout the month with the dry conditions. Overall, flows in most watersheds remain in good shape, despite the developing drought, thanks to the wet conditions earlier this year. However, baseflows will continue to drop if the dry conditions continue.

The lowest flows are currently Tygarts Creek and North Fork Licking River.

Flow in the Ohio River are low. Higher flows in the Mississippi River are currently helping to prevent navigation issues in the Ohio River below Paducah, but issues could develop without widespread precipitation in the Ohio Valley.

7 Day Streamflows

- Above Normal
- Normal
- Below Normal
- Much Below Normal
- Water Shortage Watch
- Water Shortage Warning

Watershed

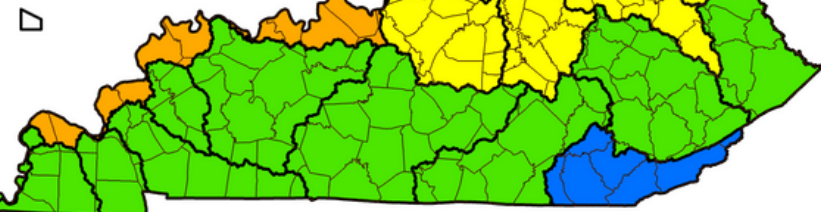


Figure 5. Average streamflow by watershed over the past 7-days (July 25-31).

28 Day Streamflows

- Above Normal
- Normal
- Below Normal
- Much Below Normal
- Water Shortage Watch
- Water Shortage Warning

Watershed

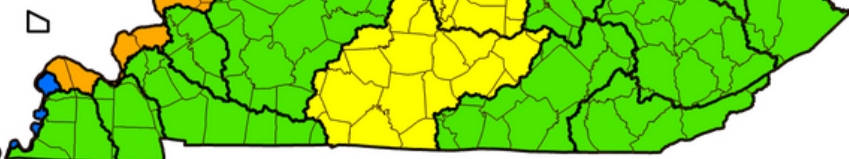


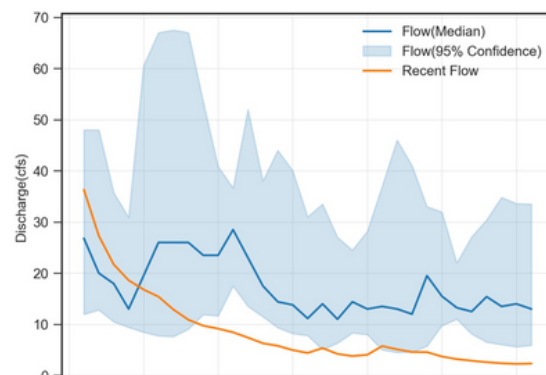
Figure 6. Average streamflow by watershed over the past 28-days (July 4-31).

Table 2. Mean Stream Discharge select stream gages.

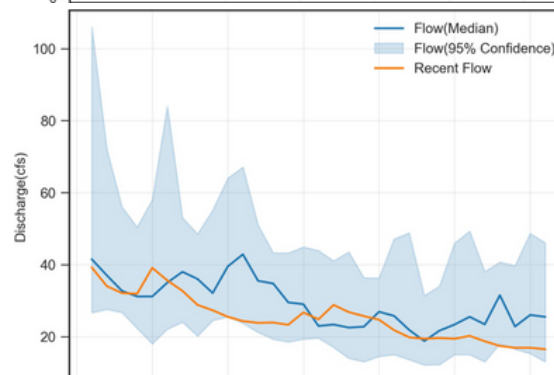
River and Location	Drainage Area (mi ²)	7 Day		28 Day	
		Average Flow (cfs)	% of Normal*	Average Flow (cfs)	% of Normal*
Levisa Fork at Pikeville	2,144	245	29	494	62
Little Sandy River near Grayson	400	40	14	44	17
North Fork Licking River nr Mt Olivet	226	0.8	0.4	7.8	4.7
Kentucky River at Lock 14	2,657	429	19	617	29
Kentucky River at Lock 2	6,180	510	10	1,139	24
Cumberland River at Cumberland Falls	1,977	492	22	676	33
Beaver Creek near Monticello	43	3.0	9.0	3.3	11
Beech Fork at Bardstown	669	6.9	0.9	25	3.6
Barren River at Bowling Green	1,849	223	9.7	571	28
Green River at Calhoun	7,566	969	12	2,133	29
Tradewater River at Olney	255	5.0	2.2	11	5.5
Clarks River at Almo	134	20	14	25	19
Bayou De Chien near Clinton	69	18	21	20	24.7
Ohio River at Greenup Dam	62,000	11,041	19	15,046	28
Ohio River at Cannelton Dam	97,000	14,931	18	20,123	25
Mississippi River @ Thebes, IL	713,200	207,750	115	242,893	133

* Base Period 1980-2023

Tygarts Creek near Greenup,
August 2025



Russell Creek near Columbia,
August 2025



Green River at Calhoun,
August 2025

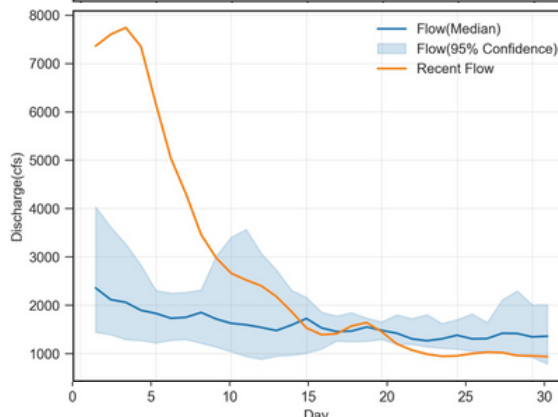


Figure 7. Streamflows compared to median flows for the month.

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Reservoir Storage

Reservoir storage for water supply lakes remain normal for the entire state with the exception of Marion in Crittenden County. This is due to infrastructure issues though the lack of precipitation is not helping the situation.

All water supply lakes are currently in the draw-down stage, as withdrawals and evaporation outpace inflow, resulting in reservoirs that are below normal pool. This is normal for this time of year. There are no other concerns with reservoir water supplies, however, this could change if drought conditions persist into the late fall and winter.

Groundwater

General Statement: Kentucky is a geologically, and hydrogeologically, diverse state. Groundwater data is limited in availability and where available may only be applicable to the immediate area given regional geologic variability. Local conditions may not be accurately reflected by the reference locations selected and local rainfall and surface water conditions may provide additional or more representative information. Current data is compared to a 30-year reference period (1980 – 2010) or the longest available period of continuous data.

Inner Bluegrass: Flow at Royal Springs (Scott Co.) has fallen to below the reference median and outside of the confidence interval for August. This follows high flow associated with response to rainfall early in the month. Barring significant and consistent rainfall, the below median flow is expected to continue into September, and groundwater levels will continue to decline. For the year, flow at Royal Springs has been above normal.

Jackson Purchase: Water levels in the Viola Well (Graves Co.) continue to fall across August while remaining well above median values. The total drop in water level was slightly over 1 foot. Groundwater levels are expected to trend lower seeking an equilibrium between recharge from rainfall and the influence of evapotranspiration and pumping for irrigation.

Middlesboro: Water levels within the Middlesboro well (Bell Co.) rapidly fell below the reference period median across August and have remained below the reference for the entire month. Groundwater levels are expected to continue to fall both with seasonal trends and in response to below average rainfall. For the year, water levels have generally been higher than the reference period.

Additional data can be found at:
<https://www.uky.edu/KGS/water/water-groundwater-monitoring.php>

Figure 8. Locations of reference reservoirs across the state. Status of reservoir levels indicated by color.

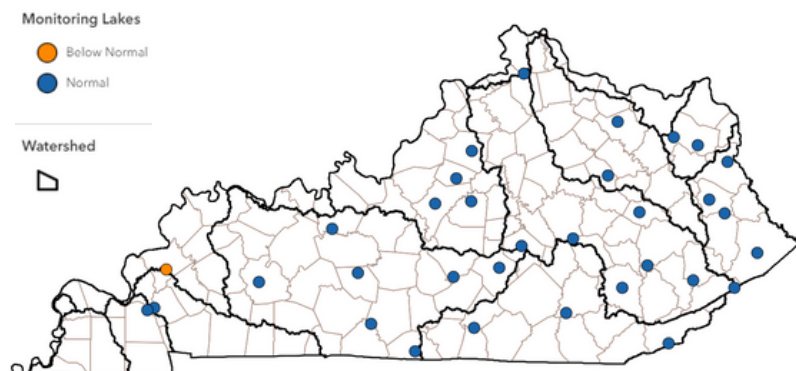
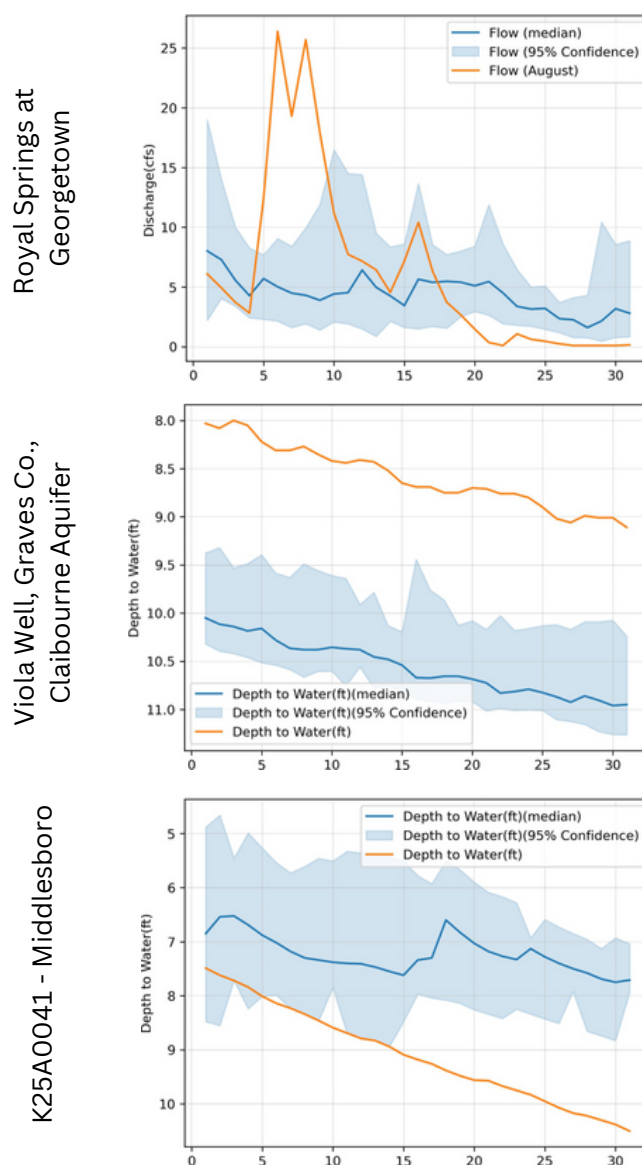


Figure 9. Groundwater observations compared to normal for the month.



August 2025

Forecast

The Climate Prediction Center (CPC) is currently predicting equal chances for above or below normal precipitation for Kentucky during September. The Fall seasonal outlook (September through November) shows equal chances for much of the state with a slightly increased chance for below normal precipitation in parts of western Kentucky. The darker colors a higher amount of confidence. The short-term forecasts are predicting much needed precipitation for the start of September with drier conditions returning through at least mid to late September.

The current U.S. Monthly Drought Outlook shows drought conditions are expected to continue and expand in northern and western Kentucky but potentially improve in the Lake Cumberland area.

Note: these forecasts do not provide the quantity above or below normal, just the probability it will occur.

U.S. Monthly Drought Outlook Drought Tendency During the Valid Period

Valid for September 2025
Released August 31, 2025

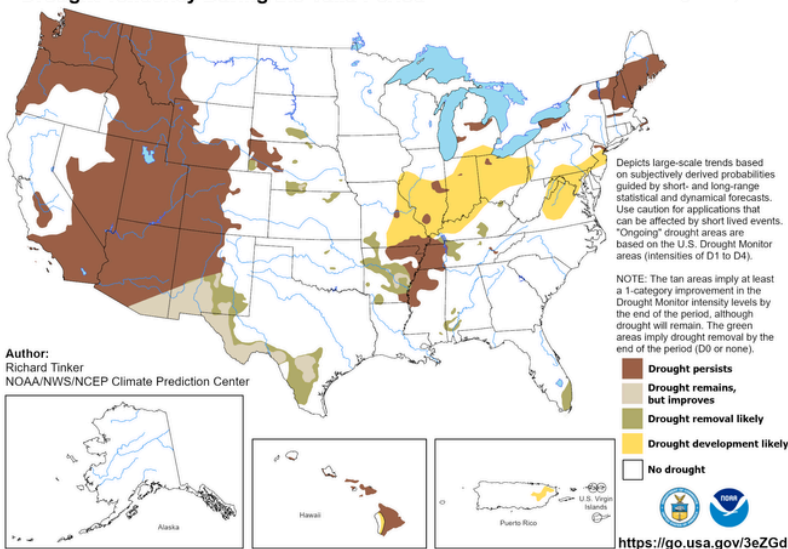


Figure 10. Monthly drought outlook.

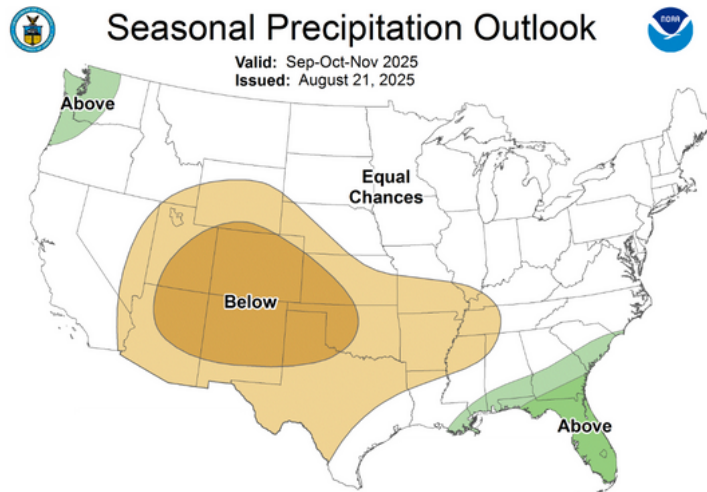
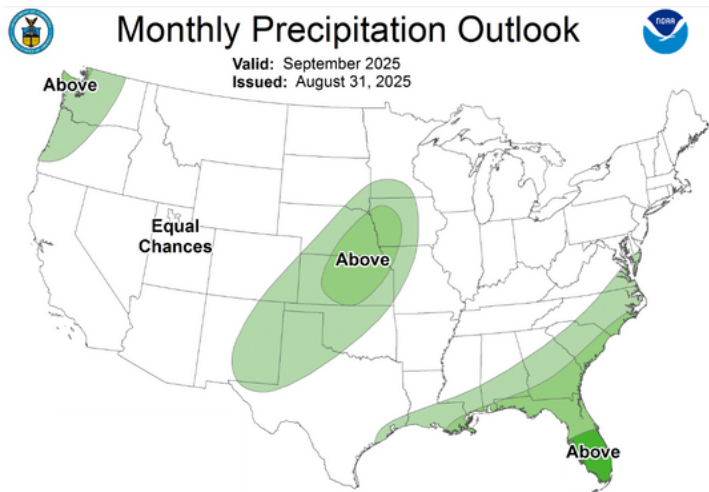


Figure 11. Monthly and seasonal precipitation outlooks.

Contact Us

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Report Drought Conditions



Acknowledgments

Precipitation Data:

U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Centers for Environmental Information; Kentucky Mesonet; Midwest Regional Climate Center; Southern Regional Climate Center.

Streamflow Data:

U.S. Geological Survey, Water Resources Division.

Reservoir Data:

U.S. Army Corps of Engineers, Huntington, Louisville, and Nashville Districts; Kentucky Division of Water, Water Supply Section.

Forecast Data:

U.S. Department of Commerce, National Oceanic and Atmospheric Administration, Climate Prediction Center.