TEAM KENTUCKY
ENERGY AND ENVIRONMENT CABINET

MONTHLY WATER RESOURCE REPORT

Kentucky Division of Water
Water Supply Section

March 2025

Precipitation

Precipitation levels across Kentucky in March were varied, with much of the state experiencing above-average rainfall, while western and eastern regions saw below-normal amounts. The first half of the month was relatively dry, offering a much-needed break after the flooding that occurred in February. The first significant rainfall event took place on March 14th and 15th, bringing 1.5" to 3.5" of rain to central Kentucky, with lighter amounts in the east and west. The second half of the month saw a few smaller rainfall events, culminating in heavy precipitation from severe storms at the month's end.

The March 25th edition of the US Drought Monitor (USDM) depicted Kentucky as being entirely free of drought or abnormally dry conditions.

Preliminary data estimates that the average precipitation during March was 4.40" (0.17" below normal) for the state. This would make it the 59th driest March, out of 131, on record. According to the Kentucky Mesonet, the highest precipitation amount was in Clinton County, 7.7", and the lowest was in Lawrence County, 1.76".

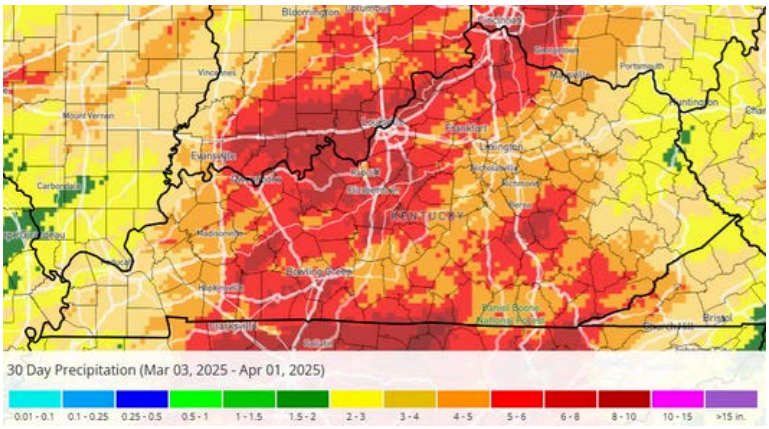

Figure 1. *Monthly precipitation map.*

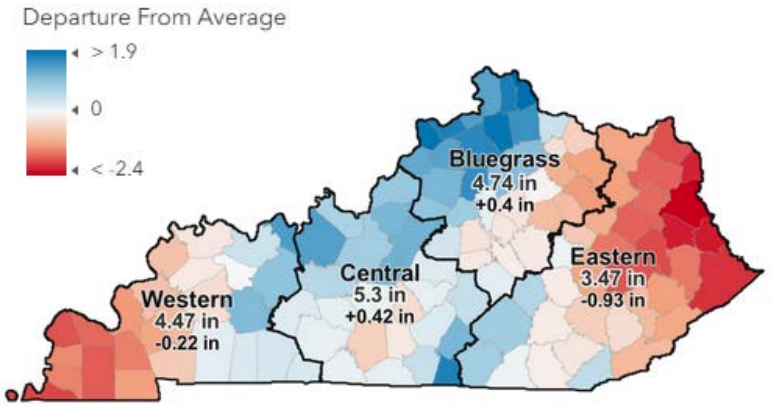

Figure 2. *Departure from normal precipitation by county and climate division.*

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	-0.22	3.64	4.70	5.80	16.26	3.16
Central	0.42	5.45	6.04	4.65	12.10	2.62
Bluegrass	0.40	4.61	4.72	3.30	5.38	0.71
Eastern	-0.93	4.60	5.00	2.95	6.17	1.06

*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)

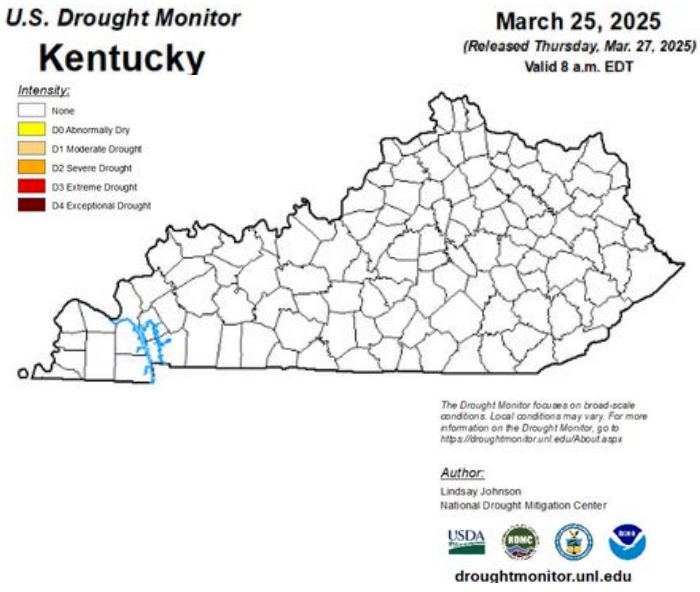

Figure 3. *Current US Drought Monitor Map.*

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Streamflow

Streamflow conditions in March were generally varied throughout the month. The month began with streamflow levels at or above normal, though a downward trend followed the February flooding. However, mid-month precipitation caused streamflows to rise across much of the state. Flows in the eastern regions, particularly in the Big Sandy watershed, remained below normal due to lower rainfall in eastern Kentucky. By month's end, streamflows had largely returned to normal across most of the state, though some areas in eastern Kentucky continued to experience below-normal flows.

Flow in the Ohio River remained low mainly due to drier conditions upstream in West Virginia and Ohio.

There are currently no concerns regarding streamflow in the state.

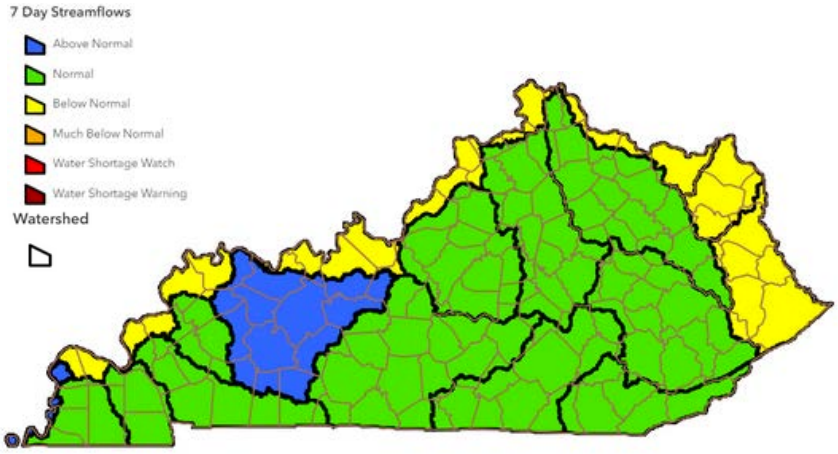

Figure 5. *Average streamflow by watershed over the past 7-days (March 25-31).*

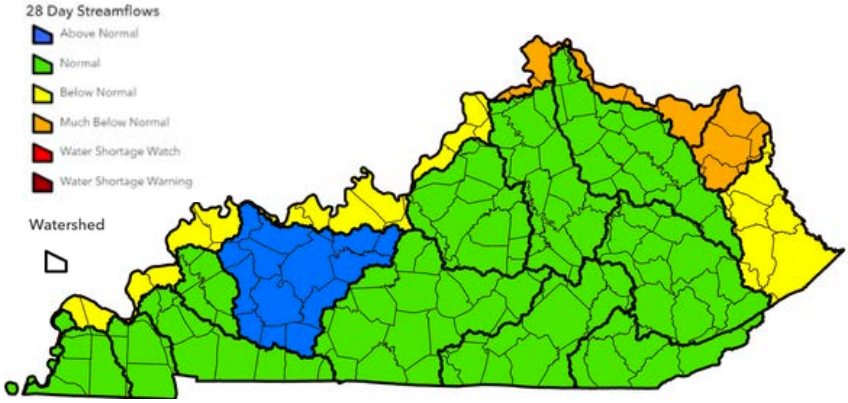

Figure 6. *Average streamflow by watershed over the past 28-days (February 1-28).*

Table 2. *Mean Stream Discharge select stream gages.*

River and Location	Drainage Area (mi2)	7 Day		28 Day	
		Average Flow (cfs)	% of Normal*	Average Flow (cfs)	% of Normal*
Levisa Fork at Pikeville	2144	1284	114	1424	115
Little Sandy River near Grayson	400	323	89	239	58
North Fork Licking River nr Mt Olivet	226	403	167	310	115
Kentucky River at Lock 14	2657	4683	153	5953	175
Kentucky River at Lock 2	6180	10178	154	13757	187
Cumberland River at Cumberland Falls	1977	4298	167	5731	208
Beaver Creek near Monticello	43	92	225	126	278
Beech Fork at Bardstown	669	803	99	1800	208
Barren River at Bowling Green	1849	4571	215	4989	224
Green River at Calhoun	7566	26538	305	31262	333
Tradewater River at Olney	255	295	112	563	195
Clarks River at Almo	134	113	76	174	113
Bayou De Chien near Clinton	69	86	100	93	104
Ohio River at Greenup Dam	62000	57413	79	71714	92
Ohio River at Cannelton Dam	97000	1275588	117	148362	126
Mississippi River @ Thebes, IL	713200	173750	69	163510	64

* Base Period 1980-2023

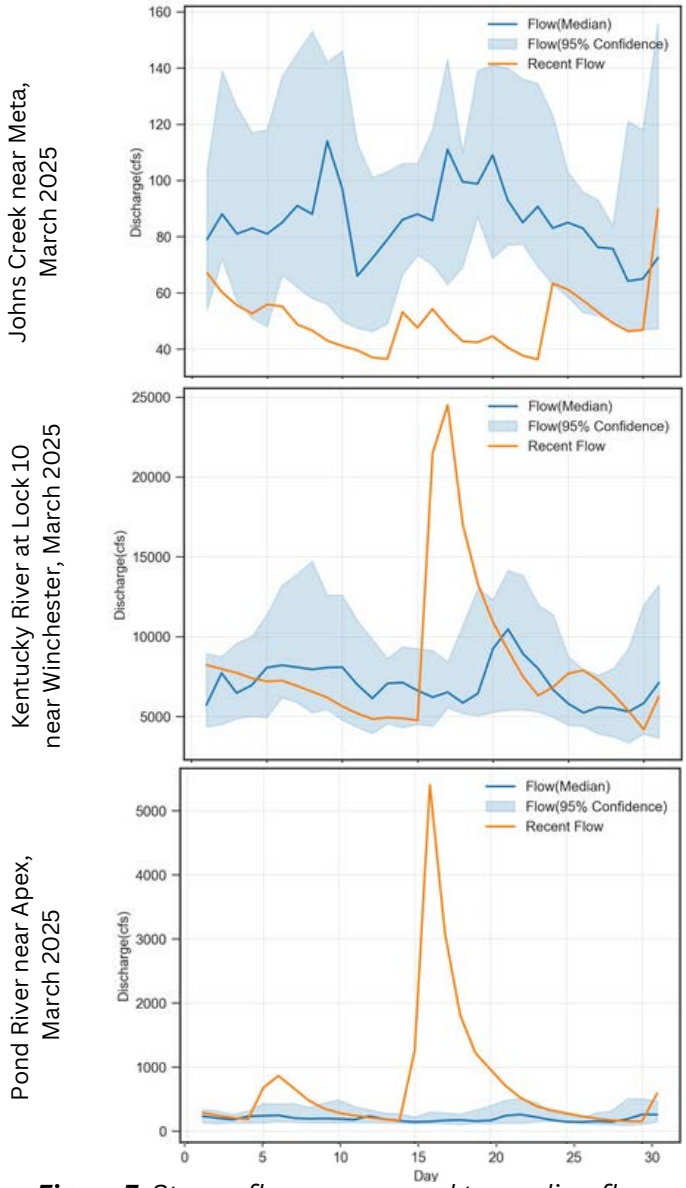

Figure 7. *Streamflows compared to median flows for the month.*

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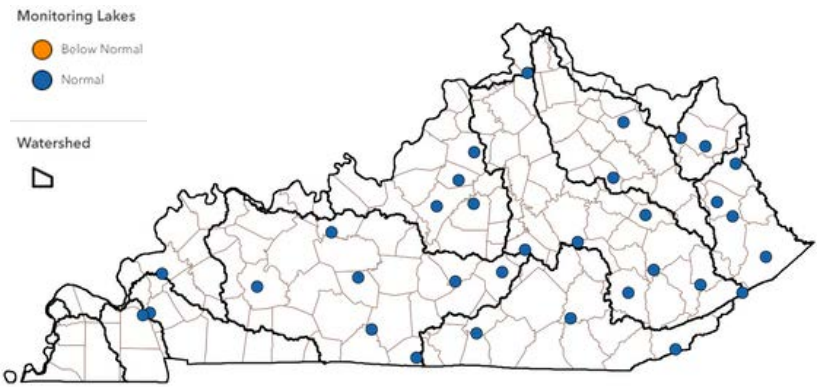
Reservoir Storage

Reservoir storage for water supply lakes remain normal for the entire state.

We are currently in the time of year where reservoirs refill. Reservoirs were already at or above pool at the start of the month and remained there through the month.

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



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 remained at or above the reference median across the month. A peak flow above 90 cfs was observed in response to mid-month rainfall. Spring discharge and groundwater levels are expected to continue to be at or above median values as seasonal recharge continues into early spring.

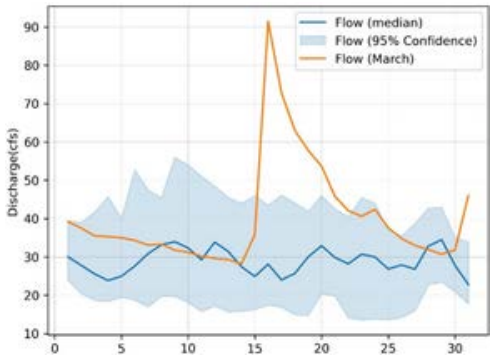
Jackson Purchase: Water levels in the Viola Well (Graves Co.) remained above the reference median by 2- to 1.5 feet. This is consistent with both the seasonal recharge period and an observed increasing trend across the reference period. Groundwater levels are expected to remain above the median and may increase as the seasonal recharge period continues into spring.

Middlesboro: Groundwater levels within the Middlesboro well (Bell Co.) began the month below the median reference until rising to the median in the middle of the month. Levels followed the reference median the rest of the month.

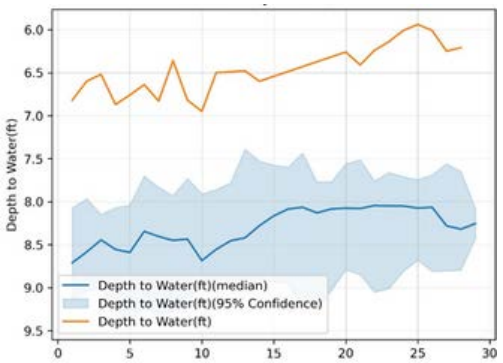
Additional data can be found at:
https://www.uky.edu/KGS/water/water-groundwater-monitoring.php

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

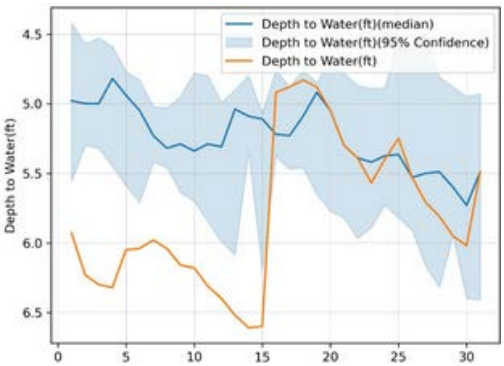
Royal Springs at Georgetown



Viola Well, Graves Co., Claibourne Aquifer



K25A0041 - Middlesboro



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Forecast

The Climate Prediction Center (CPC) is currently predicting increased chances for above normal precipitation in Kentucky during April as well as April through June. The darker green indicates a higher amount of confidence in above normal precipitation. Short term forecasts are predicting above normal precipitation and above normal temperatures for the first half of April, indicating the potential for additional flooding and severe weather in Kentucky.

The current U.S. Monthly Drought Outlook shows no drought is expected to develop in Kentucky during the month of April.

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

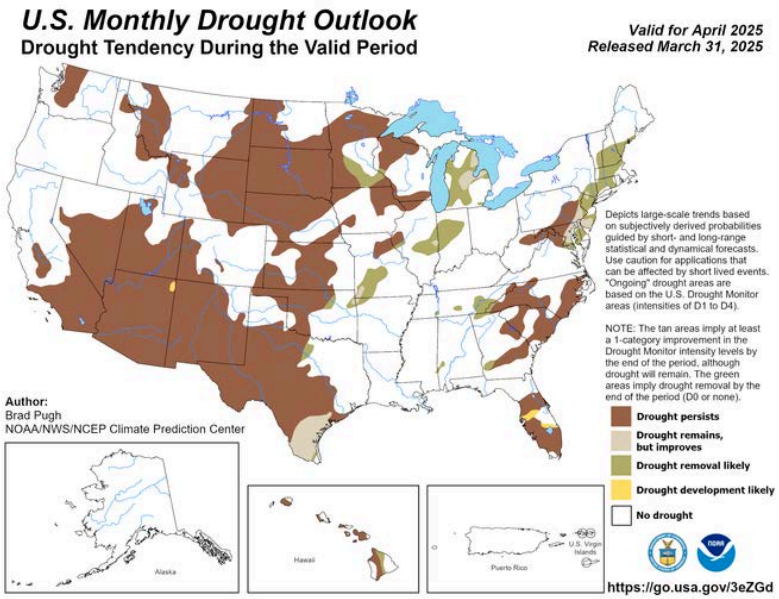

Figure 10. *Monthly drought outlook.*

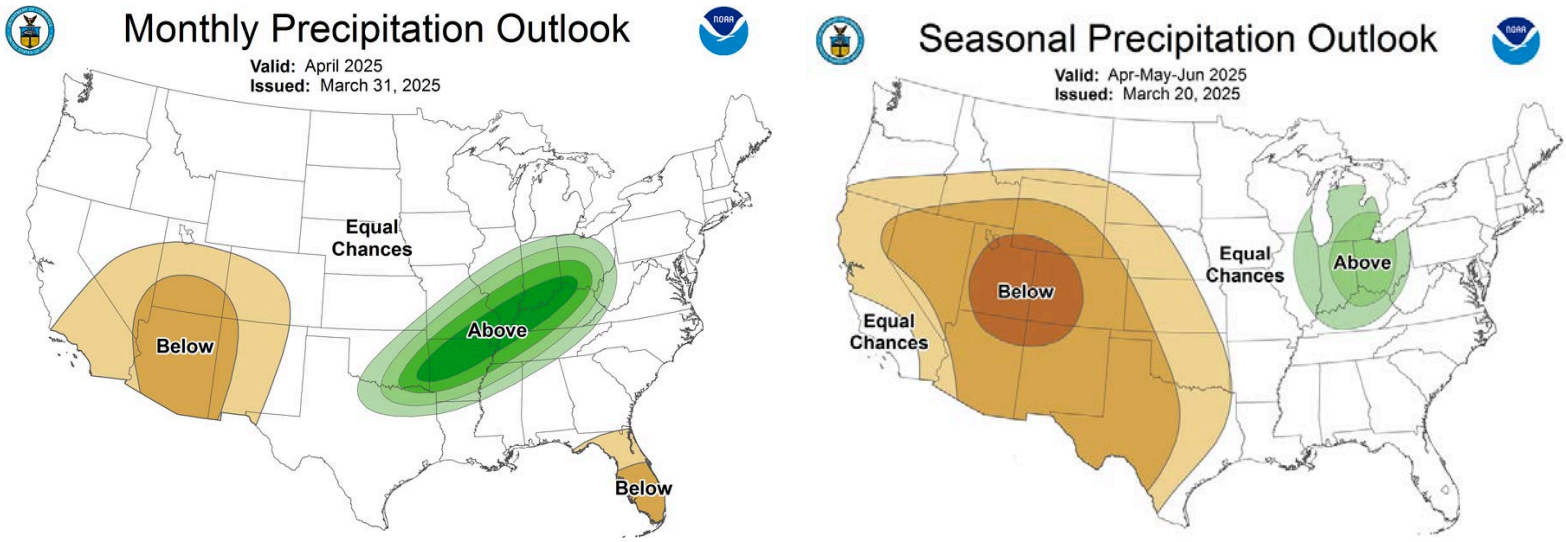

Figure 11. *Monthly and seasonal precipitation outlooks.*

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.