

May 2024

Precipitation

May was a stormy month, featuring multiple rounds of severe weather and heavy rainfall. The state averaged above normal precipitation every week during the month. Two major precipitation events, May 5th through the 9th and May 22nd through the 26th, brought significant amounts of precipitation, along with severe weather. Storms on May 26th also resulted in 14 tornados across the state.

The average precipitation for the state was 7.88", 2.89" above normal, making it the 6th wettest May on record for Kentucky. Regional averages ranged from 10.51" (5.52" above normal) for the Western Region to 5.68" (0.77" above normal) for the Bluegrass Region. According to the Kentucky Mesonet, the greatest amount of precipitation in May was reported in Trigg County, 14.02", and Morgan County reported the least, 3.50".

Precipitation deficits, both short- and long-term, have been all but erased. The Western Region went from a 6.67" deficit over the past 6 months to a 2.01" surplus, in just one month. The Bluegrass and Eastern regions are still slightly below normal for the 12 month period. It is safe to say that any lingering dryness from last fall/winter have been nullified. This is verified by the US Drought Monitor which shows no drought or dryness in the state, as of May 28th.

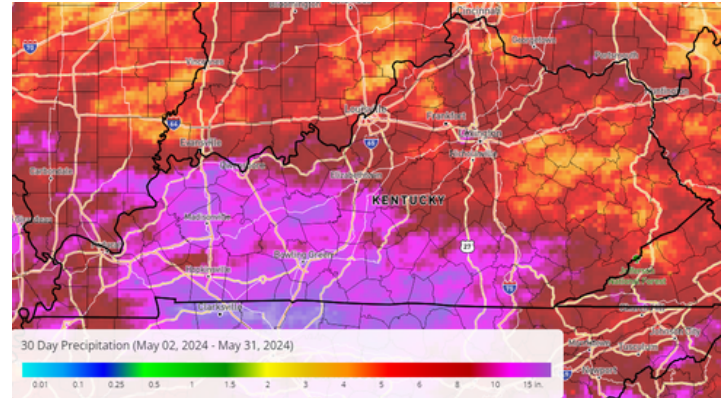


Figure 1. Monthly Precipitation Map.

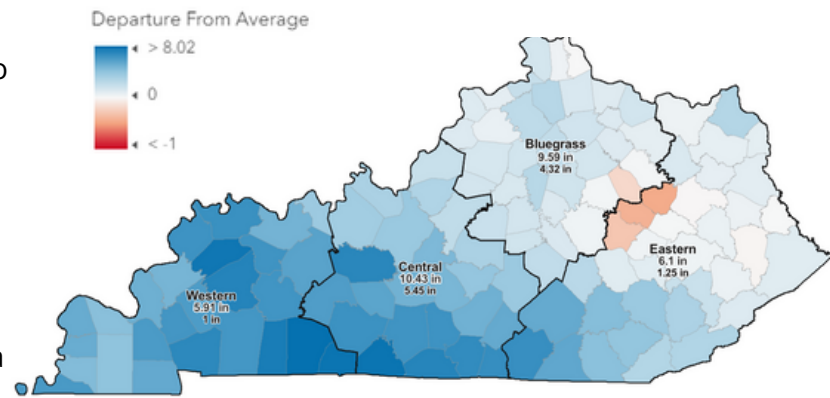


Figure 2. Departure from Normal precipitation by County and Climate Division.

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	5.45	5.69	3.09	1.93	1.37	2.53
Central	4.32	5.38	3.18	3.43	0.83	2.05
Bluegrass	1	2.32	1.21	2.25	-1.17	1.18
Eastern	1.25	1.18	-0.35	1.2	-1.89	1.64

*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)

U.S. Drought Monitor
Kentucky

May 28, 2024
(Released Thursday, May 30, 2024)
Valid 8 a.m. EDT

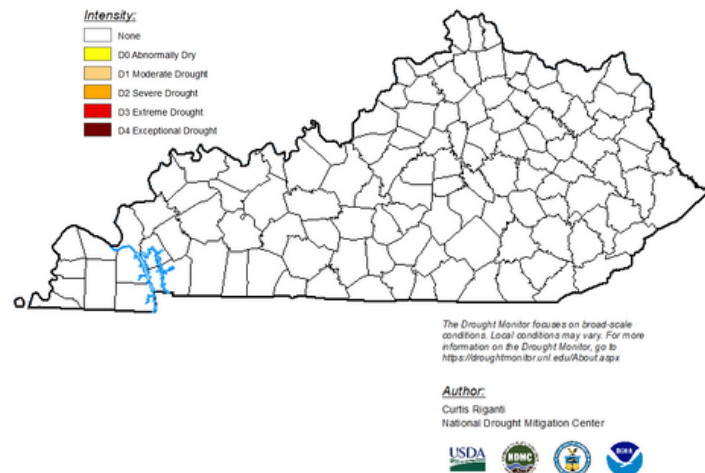


Figure 3. Current US Drought Monitor Map.

May 2024

Streamflow

Streamflow during May was normal to above normal in most of the state with large peaks associated with heavy rains. These high flows even lead to some minor flooding issues, especially in western and southern Kentucky. As a result, flows were well above normal. Over the last 28 days in May (May 4 - 31) Beaver Creek near Monticello and the Tradewater River at Olney were 628 and 583 percent of normal, respectively. Further east, the Levisa Fork at Pikeville was a more modest 141% of normal.

Flows at the beginning of May were typically at or below normal but that quickly changed. Significant precipitation events during the first and last weeks of the month resulted in large spikes in flow across many streams and rivers. Even in locations that missed out on the high end precipitation amounts enjoyed multiple rounds of precipitation through the month, resulting in normal streamflows. The month ended with average 7-day streamflow above normal across most of the state with only the Licking River, Big Sandy, Tygarts/Little Sandy, and Middle and Lower Ohio River watersheds at normal flow. There were no watersheds with below normal flow to end the month.

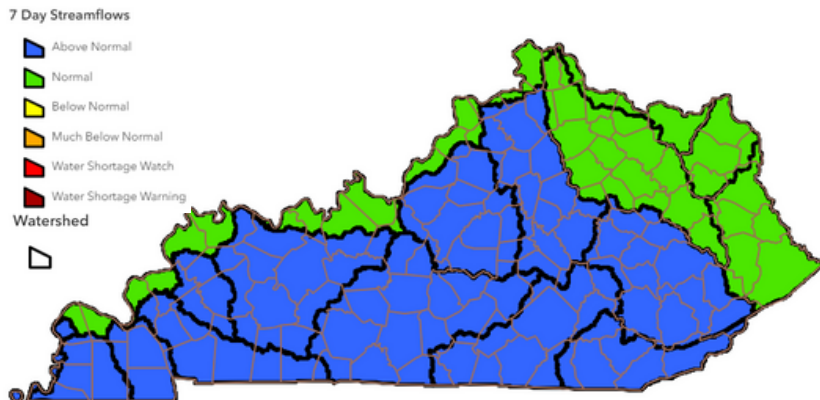


Figure 5. Average streamflow by watershed over the past 7-days (May 25-31).

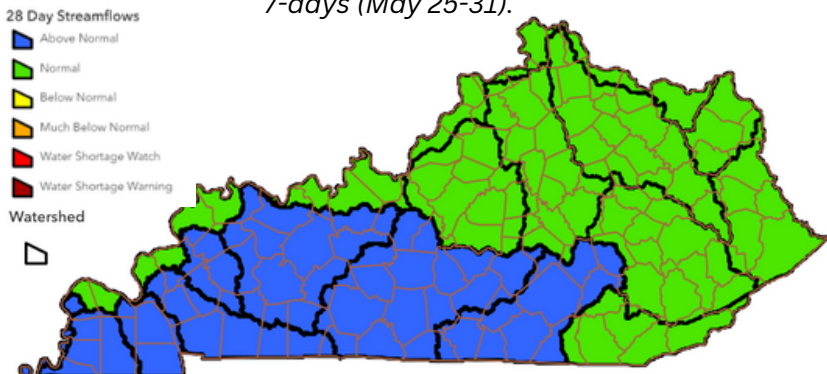


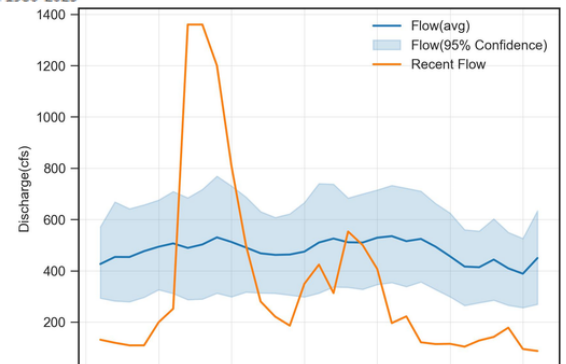
Figure 6. Average streamflow by watershed over the past 28-days (May 4-31).

Table 2. Mean Stream Discharge select stream gages.

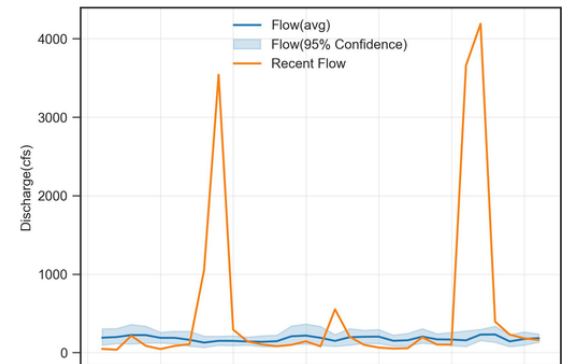
River and Location	Drainage Area (mi ²)	7 Day		28 Day	
		Average Flow (cfs)	% of Normal*	Average Flow	% of Normal*
Levisa Fork at Pikeville	1232	1005	120	1108	141
Little Sandy River near Grayson	400	112	42	365	141
North Fork Licking River nr Mt Olivet	226	112	69	328	193
Kentucky River at Lock 14	2657	5806	262	4426	217
Kentucky River at Lock 2	6180	11013	222	7861	169
Cumberland River at Cumberland Falls	1977	7444	384	6106	313
Beaver Creek near Monticello	43	167	573	188	628
Beech Fork at Maud	436	1607	439	793	223
Barren River at Bowling Green	1849	8115	415	6372	322
Green River at Calhoun	7566	42186	585	29950	427
Tradewater River at Olney	255	1778	987	1066	583
Clarks River at Almo	134	1151	937	565	439
Bayou De Chien near Clinton	69	580	750	280	363
Ohio River at Greenup Dam	62000	50086	90	70525	132
Ohio River at Cannelton Dam	97000	98488	118	124735	161
Mississippi River @ Thebes, IL	713200	442000	198	470308	250

* Base Period 1980-2023

Little Sandy River near Grayson, May-2024



Clarks River at Almo, KY, May 2024



Beech Fork at Maud, KY, May 2024

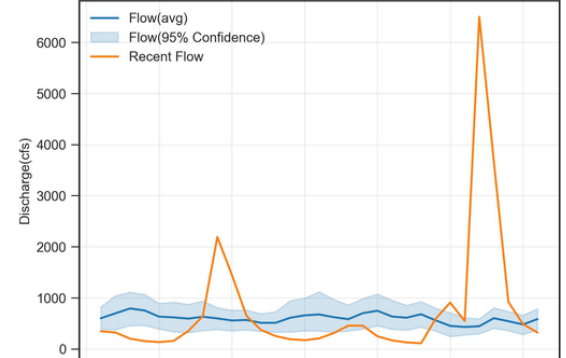


Figure 7. Streamflows compared to average flows for the month.

May 2024

Reservoir Storage

Reservoir storage for water supply lakes improved statewide during May.

By the end of May, all water supply lakes have returned to normal pool. This is a good sign as typically the draw down season for these lakes begins sometime between May and July, depending on precipitation patterns. The later summer draw down begins, the lower the risk for water shortages later in the year.

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 periods (1980 - 2010) or the longest available period of data.

Groundwater resources across the state should be at or above normal for the past month outside of areas of below normal precipitation. Karst basin discharge, with local variability, have likely been above or at normal for most of the month with duration of above locally normal flow determined by the specific conditions within the basins. Portions of southeastern Kentucky may be seeing reduced groundwater resources with the onset of summer pending available storage and total water withdrawal within utilized aquifers.

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.

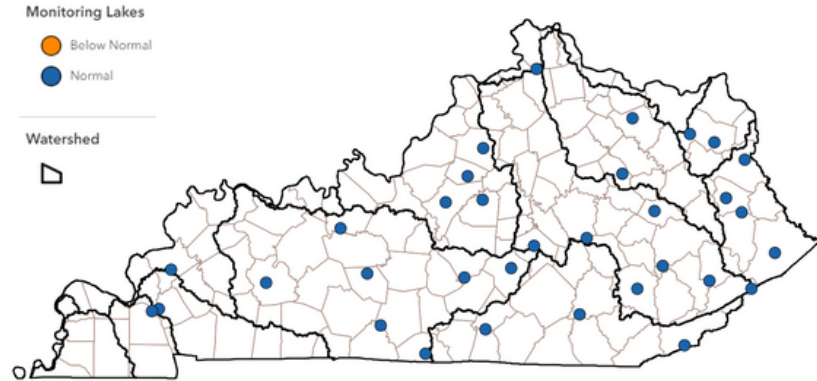
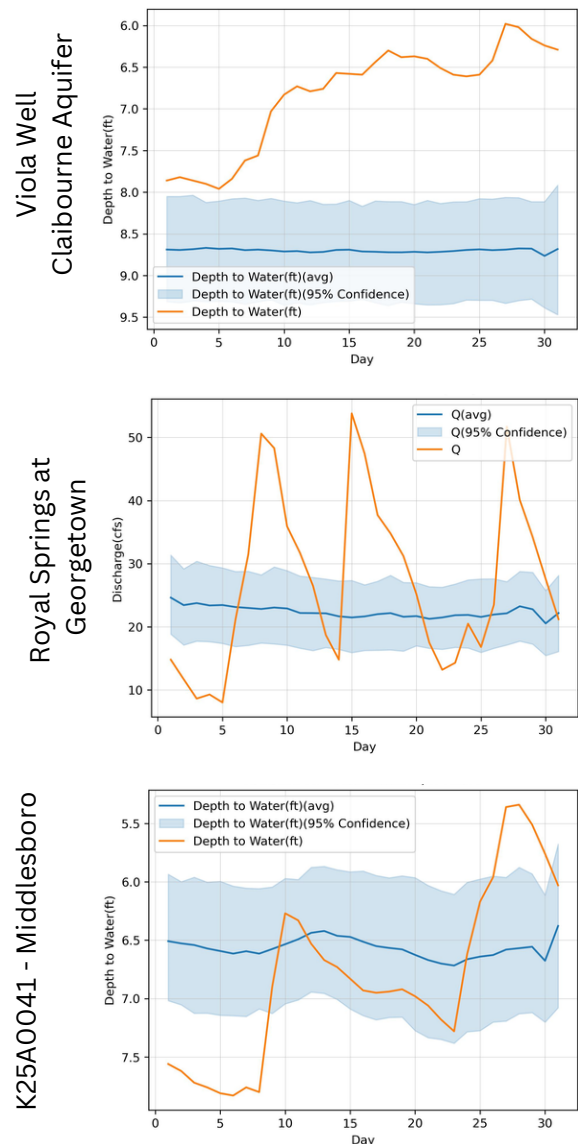


Figure 9. Groundwater observations compared to normal for the month.



May 2024

Forecast

The Climate Prediction Center (CPC) is currently predicting equal chances for above or below normal precipitation for Kentucky during the month of June. Increased probability of above normal precipitation exists just south of the Commonwealth across the Lower Mississippi Valley.

The CPC is also predicting a slightly higher probability of above normal precipitation for Kentucky for June through August, with an increased probability across the southeastern US. Above normal precipitation for the summer would be beneficial to water resources in the state.

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 June 2024
Released May 31, 2024

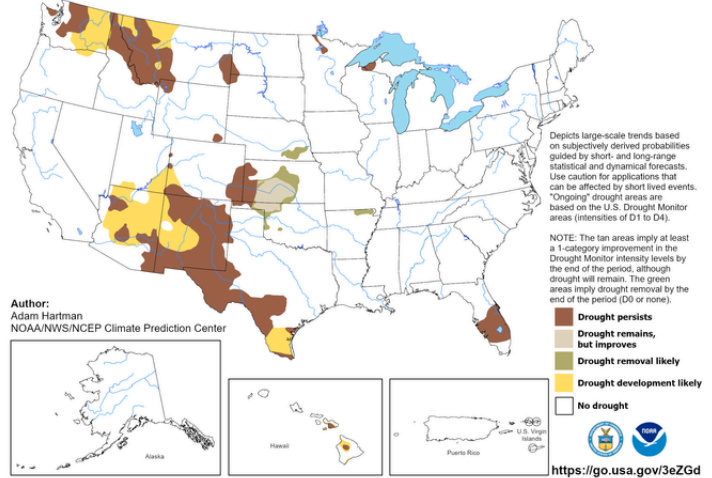


Figure 10. The monthly drought outlook.

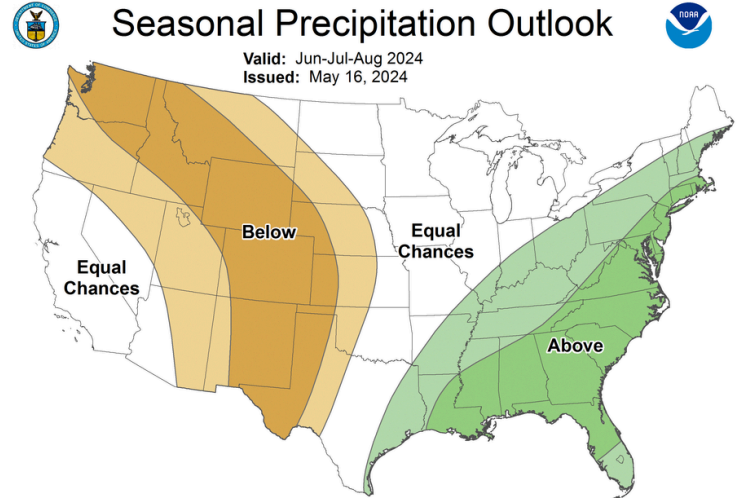
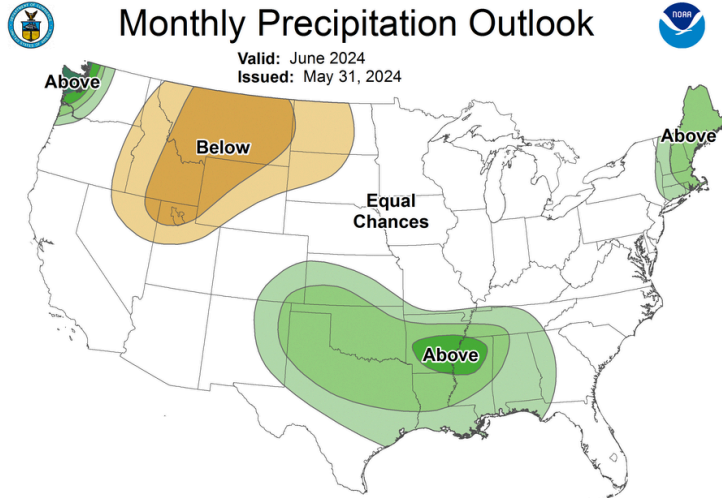


Figure 11. The monthly and seasonal precipitation outlooks.

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.