TEAM KENTUCKY
ENERGY AND ENVIRONMENT CABINET

MONTHLY WATER RESOURCE REPORT

Kentucky Division of Water
Water Supply Section

June 2025

Precipitation

June brought above-average precipitation to most of Kentucky. The month began relatively quiet, with only isolated showers reported in some areas. However, the weather pattern shifted mid-month, bringing several days of widespread, heavy rainfall that led to localized flash flooding across the state.

The heaviest precipitation totals were observed in western and southern Kentucky, while northern parts of the state saw comparatively lighter amounts. As the wet pattern subsided, Kentucky experienced its first heat wave of the summer, accompanied by a period of dry and hot conditions. The month concluded with several days of scattered showers and storms.

As of July 1st update from the U.S. Drought Monitor (USDM), Kentucky was completely free of drought and abnormally dry conditions.

The state averaged 5.47 inches of precipitation in June-1.18 inches above the climatological norm-ranking as the 20th wettest June on record. For the year to date, Kentucky has received an average of 37.98 inches of precipitation, which is 12.37 inches above normal and marks the wettest January through June period on record in the past 131 years. Some locations in western Kentucky have already surpassed the normal precipitation amount for the entire year.

According to data from the Kentucky Mesonet, Green County recorded the highest rainfall total at 10.95 inches, while Pike County had the lowest at 2.34 inches.

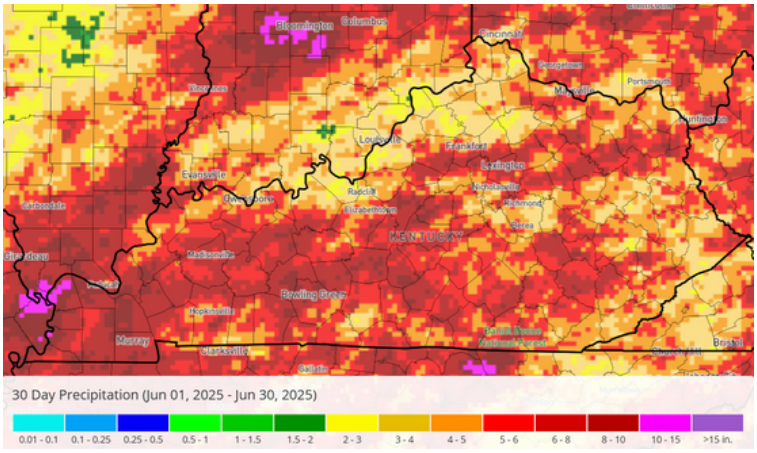

Figure 1. *Monthly precipitation map.*

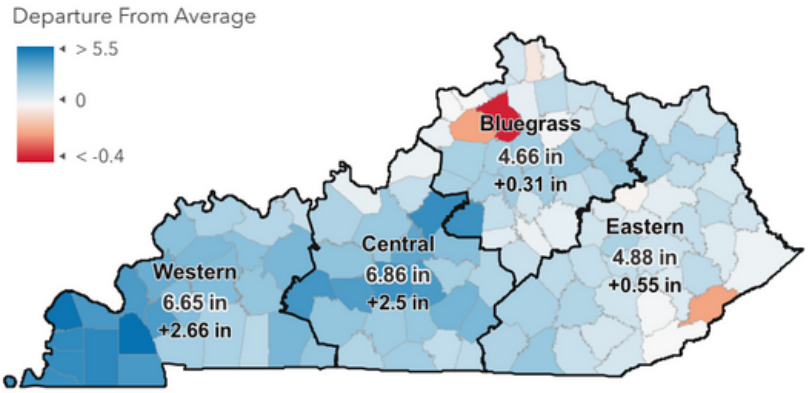

Figure 2. *Departure from normal precipitation by county and climate division.*

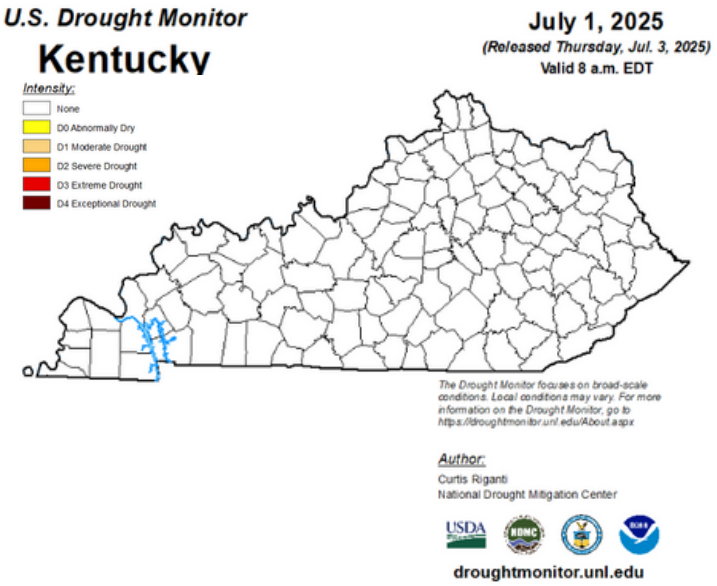

Figure 3. *Current US Drought Monitor Map.*

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	2.66	4.17	13.50	16.19	21.60	5.16
Central	2.50	5.43	13.82	18.75	21.02	4.85
Bluegrass	0.31	2.45	13.15	12.60	12.94	3.39
Eastern	0.55	2.86	13.00	9.81	11.18	2.48

*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)

Streamflow

Streamflows in June were generally at or above normal across the state. Base flows across most streams and rivers remain elevated for this time of year thanks to the above normal precipitation the state has received this year. Heavy precipitation during the middle of the month resulted in large spikes in flow statewide. Smaller spikes in flow were also noted through out the month in watersheds where scattered convective thunderstorms occurred.

Flow in the Ohio River remains normal.

There are currently no concerns regarding streamflow in the state.

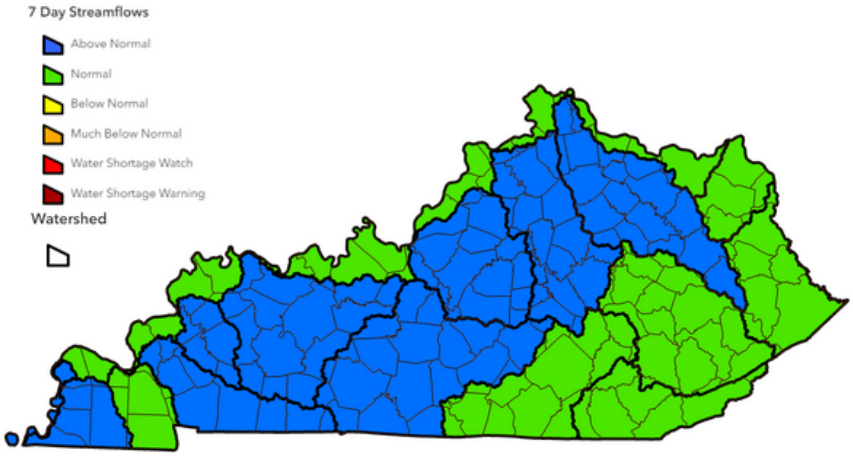

Figure 5. *Average streamflow by watershed over the past 7-days (June 24-30).*

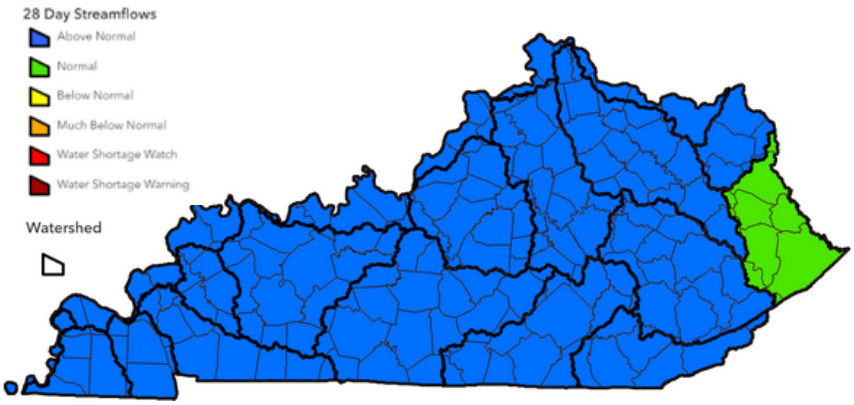

Figure 6. *Average streamflow by watershed over the past 28-days (June 3-30).*

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	504	66	1080	131
Little Sandy River near Grayson	400	252	103	559	213
North Fork Licking River nr Mt Olivet	226	126	80	304	174
Kentucky River at Lock 14	2657	1895.7	96	4066	188
Kentucky River at Lock 2	6180	7220	162	12153	250
Cumberland River at Cumberland Falls	1977	1697	93	3194	166
Beaver Creek near Monticello	43	48	180	71	249
Beech Fork at Bardstown	669	662	111	2346	383
Barren River at Bowling Green	1849	4783	249	4854	249
Green River at Calhoun	7566	23600	352	24252	342
Tradewater River at Olney	255	468	270	863	482
Clarks River at Almo	134	75.6	64	239	197
Bayou De Chien near Clinton	69	54	74	248	329
Ohio River at Greenup Dam	62000	72575	139	107738	197
Ohio River at Cannelton Dam	97000	131138	171	172339	211
Mississippi River @ Thebes, IL	713200	245125	119	261345	119

* Base Period 1980-

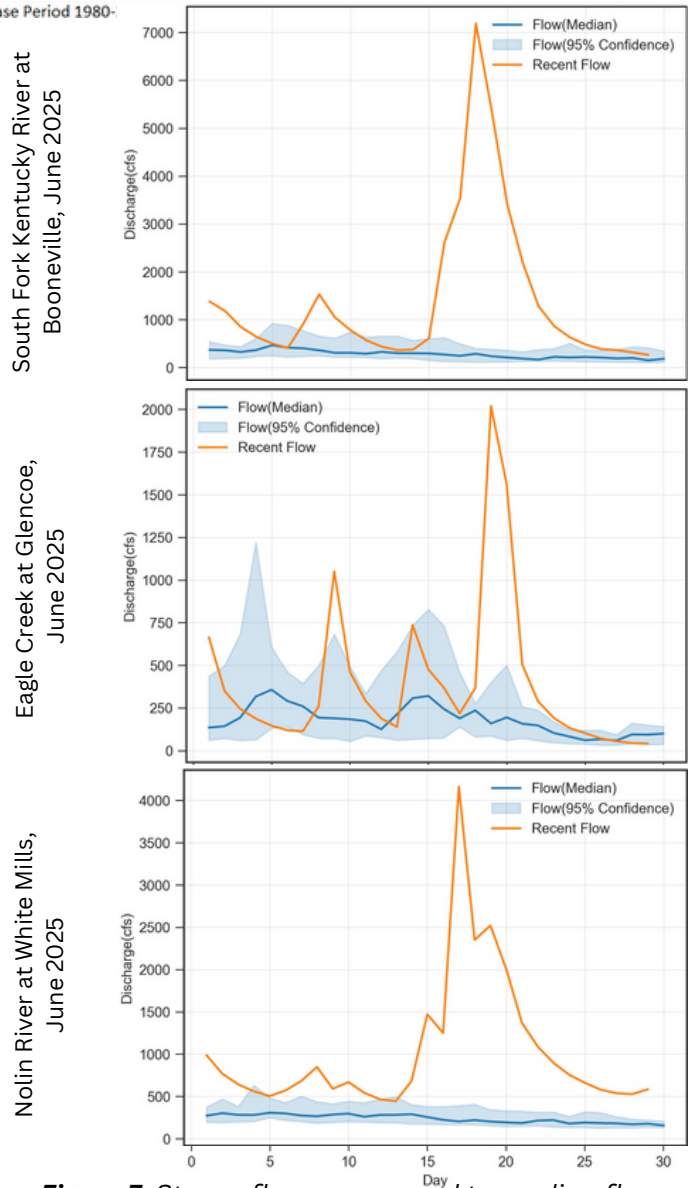

Figure 7. *Streamflows compared to median flows for the month.*

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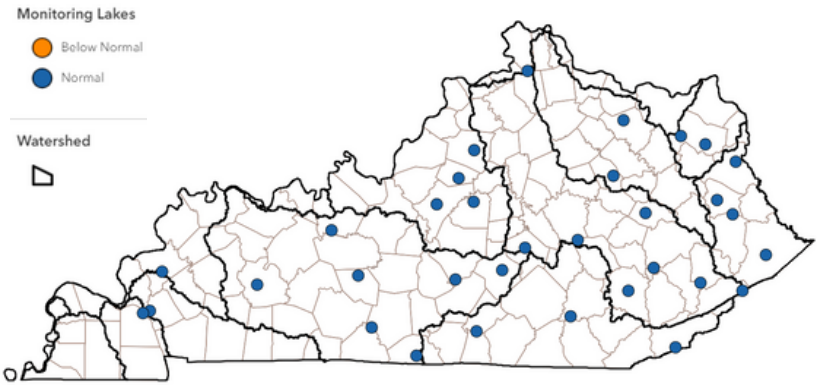
Reservoir Storage

Reservoir storage for water supply lakes remain normal to above normal for the entire state. Barren and Rough River lakes remain over 12 feet above normal summer pool.

Most water supply lakes have started to be drawn down, as withdrawals outpace inflow. This is normal for this time of year. There are no concerns with reservoir water supplies and currently, none are expected to develop.

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.

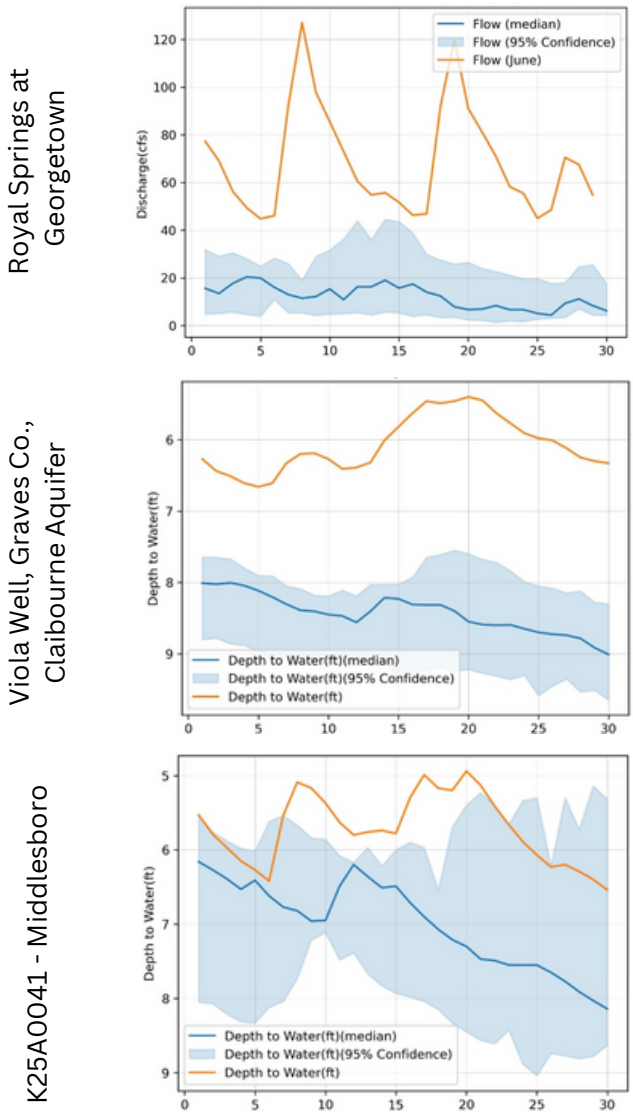
Inner Bluegrass: Regular rainfall has kept flow at Royal Springs (Scott Co.) above the confidence interval for the reference period and well above the median. With increased flows during storm response being elevated by additional storms before the recession could return to median values. Groundwater levels are expected to be at or above seasonal levels with continuing consistent rainfall. As Summer advances, groundwater levels will likely decline in response to higher evapotranspiration.

Jackson Purchase: Water levels in the Viola Well (Graves Co.) were well above median values for the month of June. Groundwater levels are expected to trend lower over the summer seeking an equilibrium between recharge from rainfall and the influence of evapotranspiration and locally, pumping for irrigation.

Middlesboro: Water levels within the Middlesboro well (Bell Co.) were above the median of the reference period across almost all of June peaking on June 20th. Across June, the observed water levels were strikingly similar to the trend in median water level. While continued above average rainfall may keep groundwater levels elevated, groundwater levels are expected to fall to seasonal levels as summer advances and evapotranspiration increases.

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.*



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Forecast

The Climate Prediction Center (CPC) is currently predicting increased chances for above normal precipitation for the majority of Kentucky during July and for the three-month period of July through September. The darker green indicates a higher amount of confidence in above normal precipitation. The short-term forecasts are predicting above normal precipitation for the first half of July. Much of this will be in the form of "hit-or-miss" convective thunderstorms so precipitation will not be evenly distributed.

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

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

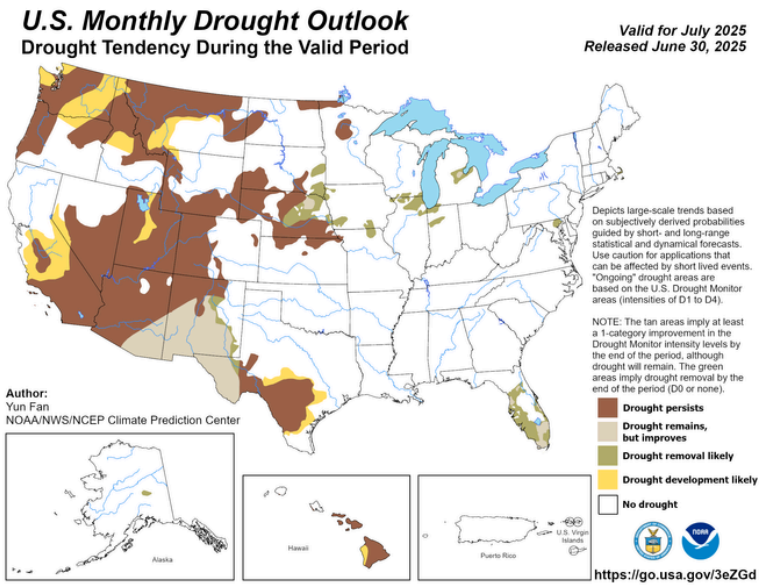

Figure 10. *Monthly drought outlook.*

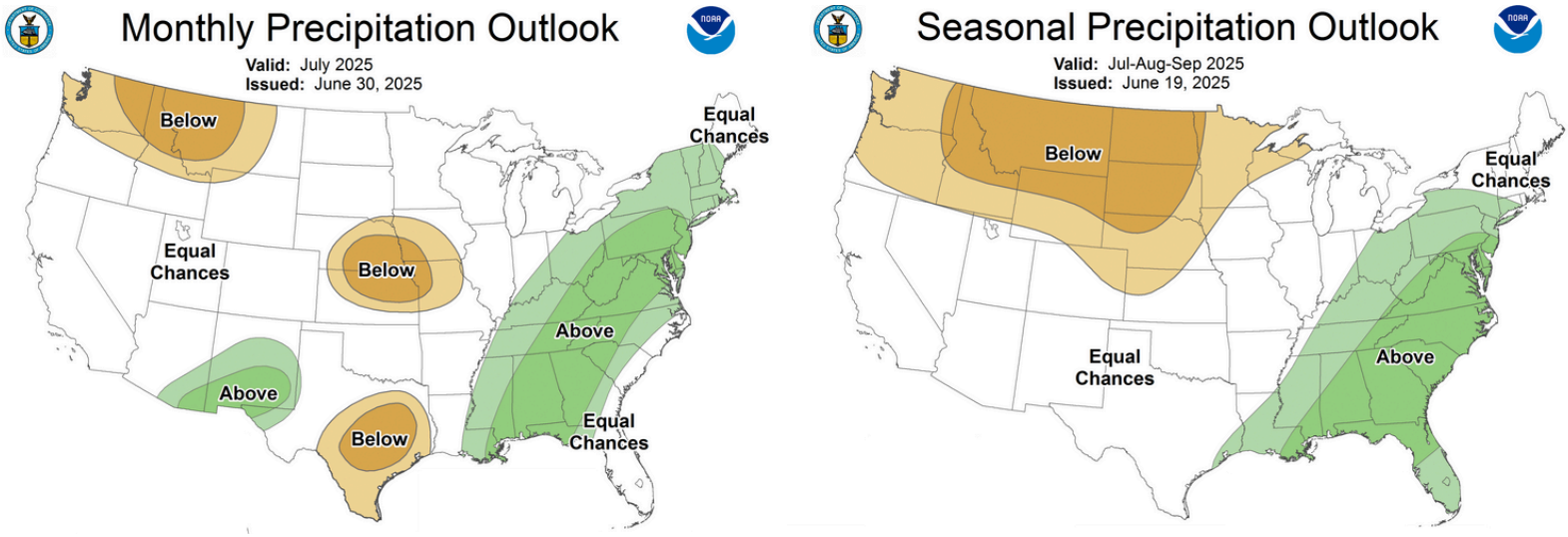

Figure 11. *Monthly and seasonal precipitation outlooks.*

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.