



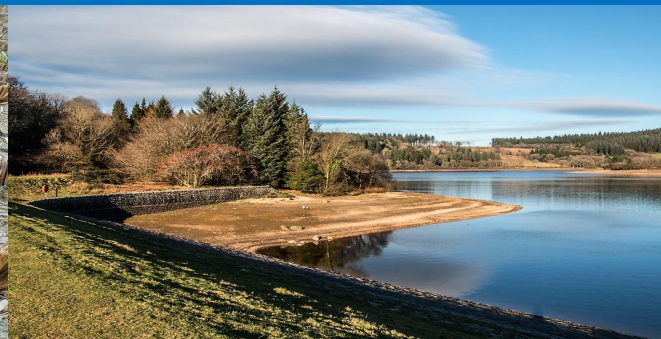
# Drought Information Statement for Southern Indiana and Central Kentucky

Valid January 4, 2024

Issued By: WFO Louisville KY

Contact Information: [nws.louisville@noaa.gov](mailto:nws.louisville@noaa.gov)

- This product will be updated at least once a month or when drought conditions change significantly.
- Please see all currently available products at <https://drought.gov/drought-information-statements>.
- You may visit <https://www.weather.gov/lmk/DroughtInformationStatement> for previous statements.

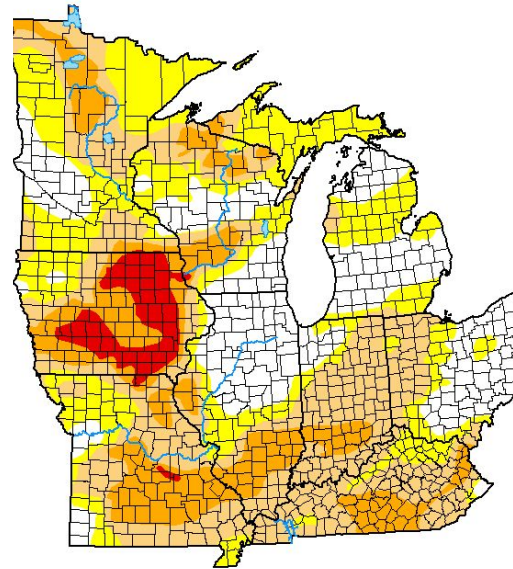




# U.S. Drought Monitor

- Drought conditions are present across almost all of southern Indiana and central Kentucky.
- Severe drought now extends from the Lake Cumberland region northwestward to around Rough River Lake and Barren River Lake, including Mammoth Cave National Park.
- Severe drought is also affecting Hoosier National Forest and points east in southern Indiana.
- Moderate drought envelops most of the rest of the region.

## U.S. Drought Monitor Midwest



**January 2, 2024**  
(Released Thursday, Jan. 4, 2024)  
Valid 7 a.m. EST

	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	22.92	77.08	50.25	20.76	4.20	0.00
<b>Last Week</b> 12-26-2023	23.27	76.73	46.55	20.52	4.20	0.00
<b>3 Months Ago</b> 10-03-2023	14.48	85.52	55.96	22.83	6.40	0.35
<b>Start of Calendar Year</b> 01-02-2024	22.92	77.08	50.25	20.76	4.20	0.00
<b>Start of Water Year</b> 09-26-2023	16.82	83.18	54.98	23.81	6.21	0.13
<b>One Year Ago</b> 01-03-2023	43.26	56.74	28.01	7.67	1.00	0.06

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>*

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National Drought Mitigation Center



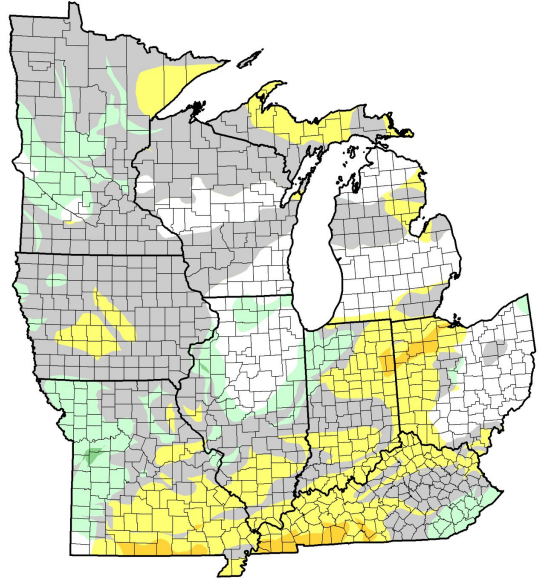
[droughtmonitor.unl.edu](https://droughtmonitor.unl.edu)



# Recent Change in Drought Intensity

- Four Week Drought Monitor Class Change
  - Since early December, drought has worsened by two categories over parts of south central Kentucky generally from Russellville to Tompkinsville.
  - Drought has deepened by one category over much of the rest of the region.
  - There has been no drought improvement in southern Indiana or central Kentucky compared to one month ago.

U.S. Drought Monitor Class Change - Midwest Climate Region  
4 Week



January 2, 2024  
compared to  
December 5, 2023

[droughtmonitor.unl.edu](http://droughtmonitor.unl.edu)

Dark Brown	5 Class Degradation
Brown	4 Class Degradation
Orange	3 Class Degradation
Yellow-Orange	2 Class Degradation
Yellow	1 Class Degradation
Light Gray	No Change
Light Green	1 Class Improvement
Green	2 Class Improvement
Dark Green	3 Class Improvement
Teal	4 Class Improvement
Dark Blue	5 Class Improvement



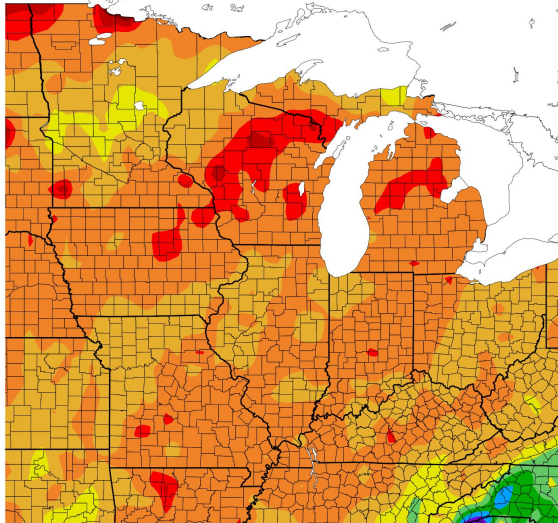


# Precipitation

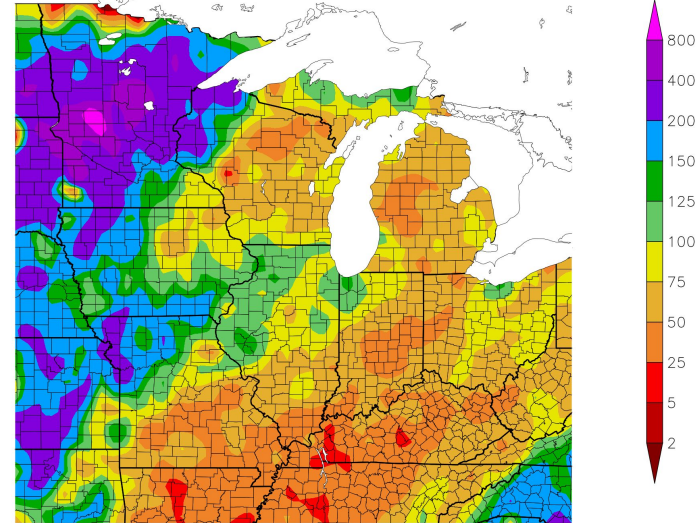
Precipitation has been below normal over the past 30 days throughout the region.

Deficits have been particularly severe in central Kentucky. Some spots from around Greensburg to the Bowling Green area have received only 20-25% of their normal precipitation.

Precipitation (in)  
12/5/2023 – 1/3/2024



Percent of Normal Precipitation (%)  
12/5/2023 – 1/3/2024



Kentucky experienced four straight months of below normal precipitation September-December 2023. 2023 was Kentucky's driest year since 2007.

Data Courtesy Midwest Regional Climate Center.



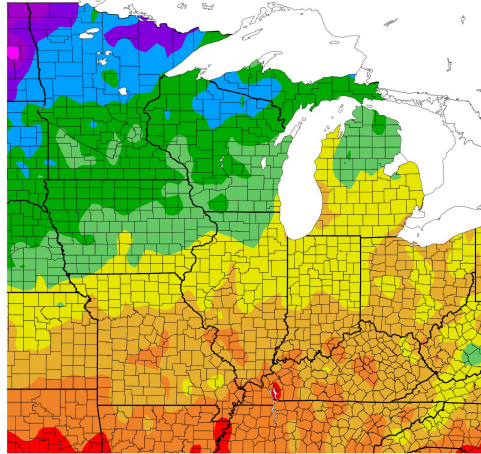




# Temperature

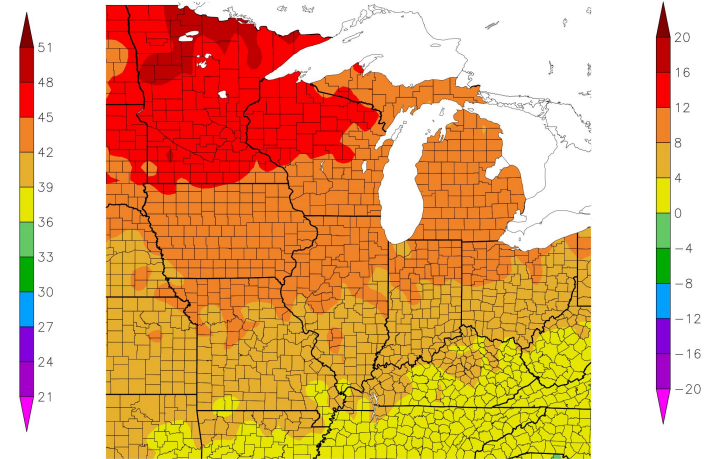
- Temperatures have averaged above normal over the past month.
- During the period October 1 through January 3, Lexington had their 4th fewest number of days with freezing temperatures on record, and Louisville the 5th fewest for that period.

Temperature (F)  
12/5/2023 – 1/3/2024



Generated 1/4/2024 at HPRCC using provisional data.

Departure from Normal Temperature (F)  
12/5/2023 – 1/3/2024



NOAA Regional Climate Centers<sup>24</sup> at HPRCC using provisional data.

NOAA Regional Climate Centers

Data Courtesy Midwest Regional Climate Center.





# Summary of Impacts

## Hydrologic Impacts

- Streamflows and many farm ponds are much below normal.

## Agricultural Impacts

- Agricultural impacts are relatively few at this time of year, but a dry winter can have serious impacts on agricultural activities in the following spring.

## Fire Hazard Impacts

- No current fire hazards.

## Other Impacts

- A state of emergency has been declared in Stanford, KY where residents have been asked to reduce water usage by 20%. A water shortage advisory is in effect in Berea, KY with voluntary water restrictions.

## Mitigation Actions

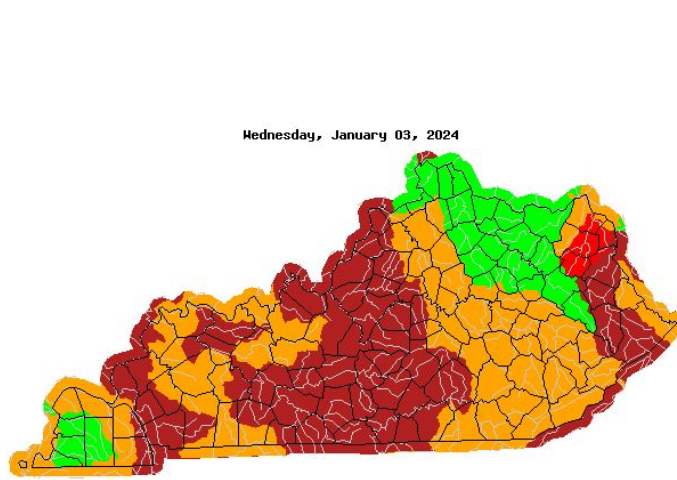
- Please refer to your municipality, water provider, or extension office for mitigation information.





# Hydrologic Conditions and Impacts

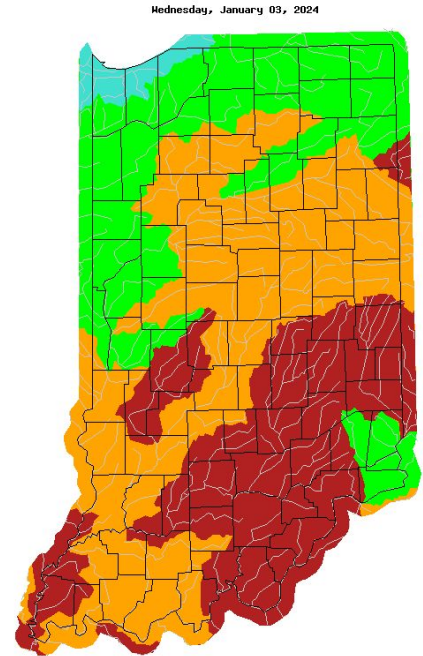
- Streamflows are much below normal.
- The Barren River at Bowling Green has equalled the lowest stage recorded during the Summer 1988 drought.
- Lake Cumberland is more than three feet below its normal pool at Wolf Creek Dam.
- Kentucky is experiencing the most widespread much below normal streamflows in the state since 2007.



Explanation - Percentile classes

Low	<10	10-24	25-75	76-90	>90	High	No Data
	Much below normal	Below normal	Normal	Above normal	Much above normal		

USGS 7 day average streamflow HUC map



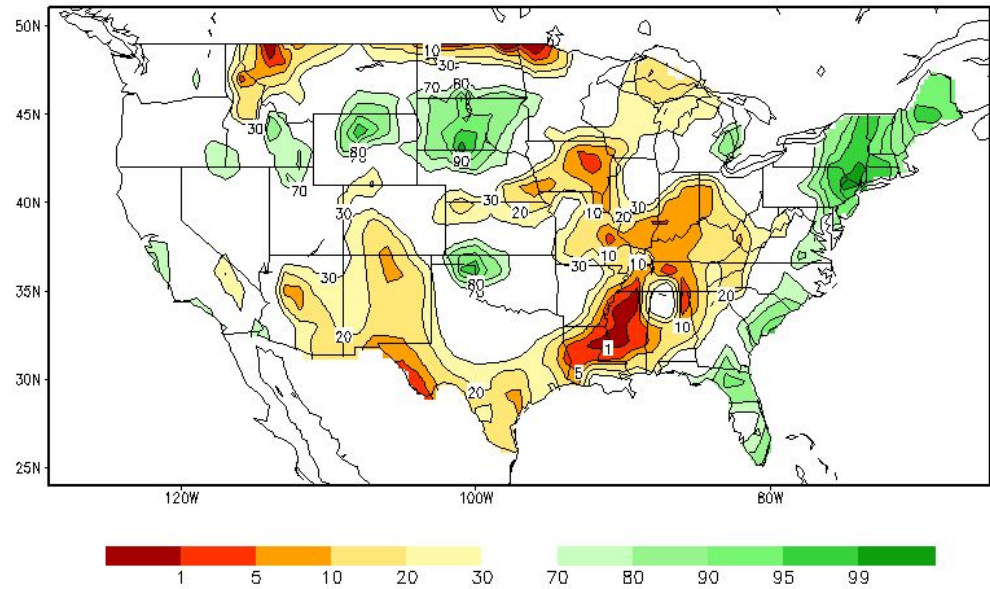




# Agricultural Impacts

- Soil moisture is low throughout the Ohio Valley.
- 3-day average 2" and 4" soil moisture via the Kentucky Mesonet shows the driest soils reaching from the Lake Cumberland region northward to the Ohio River.
- Reservoirs, lakes, and farm ponds are being negatively affected by the extended dry conditions.

Calculated Soil Moisture Ranking Percentile  
JAN 03, 2024

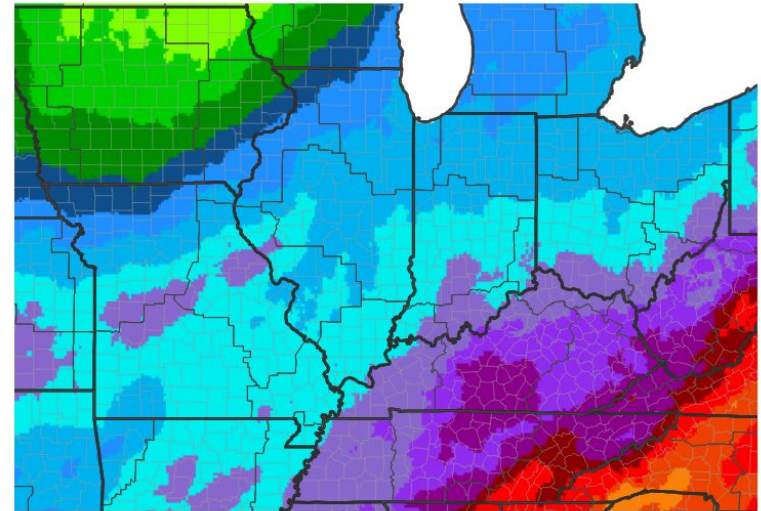




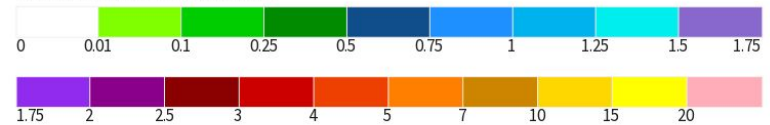
# Seven Day Precipitation Forecast

- A weak system is expected to bring light rain and snow to the region this weekend (January 6-7). Liquid equivalent amounts should be in the 0.25-0.75" range.
- A much more widespread rain event will push through the region January 8-9. One to one and a half inches of rain will be possible with this system.

## 7-Day Quantitative Precipitation Forecast



Predicted Inches of Precipitation



Source(s): National Weather Service Weather Prediction Center; image courtesy of Drought.gov

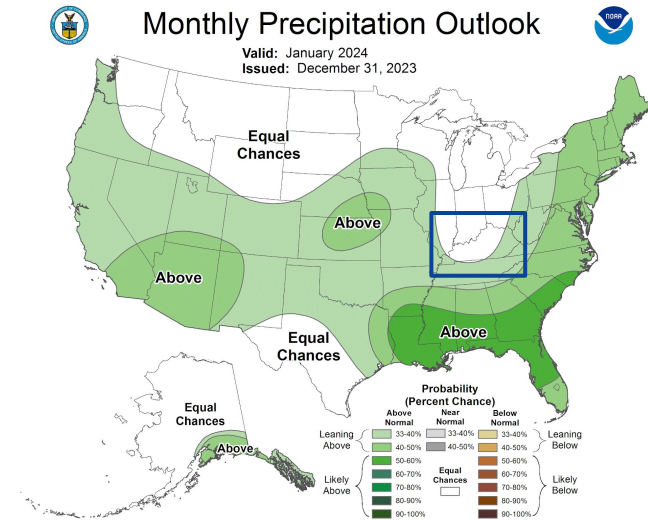
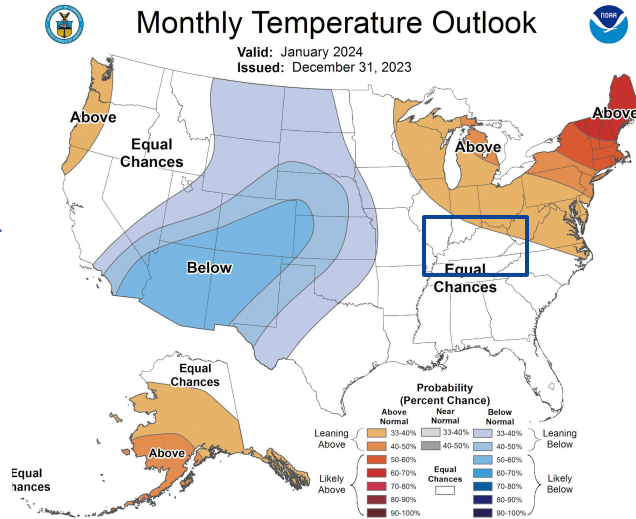
Data Valid: 01/04/24





# Long-Range Outlooks

- As a whole, there's no clear signal for temperature or precipitation departures for January in most of southern Indiana and central Kentucky.
- El Niño tends to favor drier than normal wintertime conditions in the Ohio Valley. However, seasonal outlooks suggest that the mid-January through mid-February period may be more active compared to the first part of the winter.



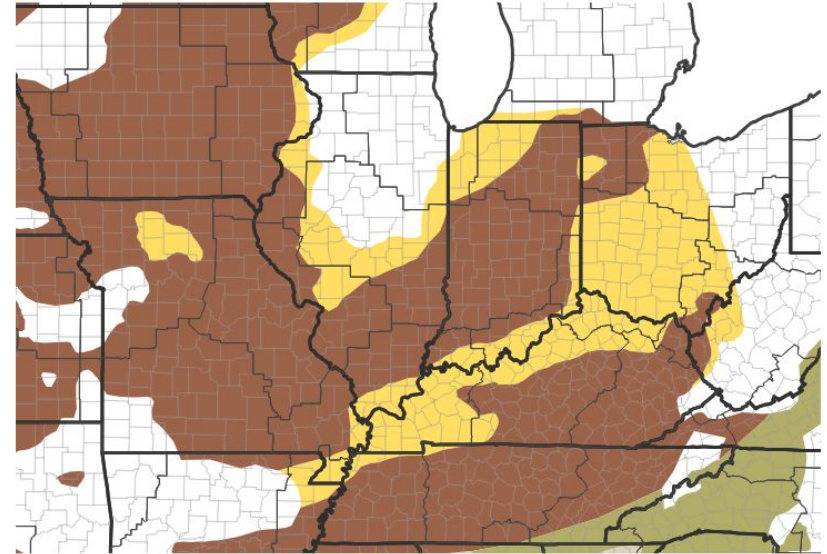




# Drought Outlook

- El Niño tends to favor dry conditions in the Ohio Valley, suggesting that drought conditions may continue through the winter. This is reflected in the 3-month drought outlook, with drought development and persistence throughout the region.

## Seasonal (3-Month) Drought Outlook



### Drought Is Predicted To...



Source(s): Climate Prediction Center; image courtesy of Drought.gov

Data Valid: 12/21/23

