



Drought Information Statement for Southern Indiana and Central Kentucky

Valid December 21, 2023

Issued By: WFO Louisville KY

Contact Information: 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>.
- Please visit <https://www.weather.gov/lmk/DroughtInformationStatement> for previous statements.

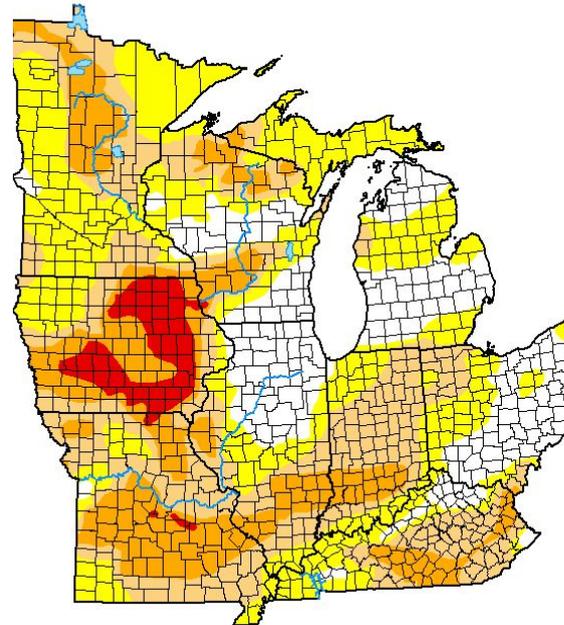




U.S. Drought Monitor

- Drought conditions are present across much of southern Indiana and central Kentucky.
- Severe drought now extends from the Lake Cumberland region northwestward to around Rough River Lake, including Mammoth Cave National Park.
- Severe drought is also affecting Hoosier National Forest and points east in southern Indiana.
- There is a narrow strip of no drought generally along the Ohio River and into the northern Blue Grass.

U.S. Drought Monitor Midwest



December 19, 2023

(Released Thursday, Dec. 21, 2023)

Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	19.20	80.80	49.10	22.83	4.22	0
Last Week 12-12-2023	20.18	79.82	44.48	20.40	3.35	0
3 Months Ago 09-19-2023	21.93	78.07	50.38	30.36	11.53	1
Start of Calendar Year 01-03-2023	43.26	56.74	28.01	7.67	1.00	0
Start of Water Year 09-26-2023	16.02	83.18	54.98	23.81	6.21	0
One Year Ago 12-20-2022	34.89	65.11	33.66	7.93	1.00	0

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>

Author:

Curtis Riganti
National Drought Mitigation Center



droughtmonitor.unl.edu



National Oceanic and
Atmospheric Administration

U.S. Department of Commerce

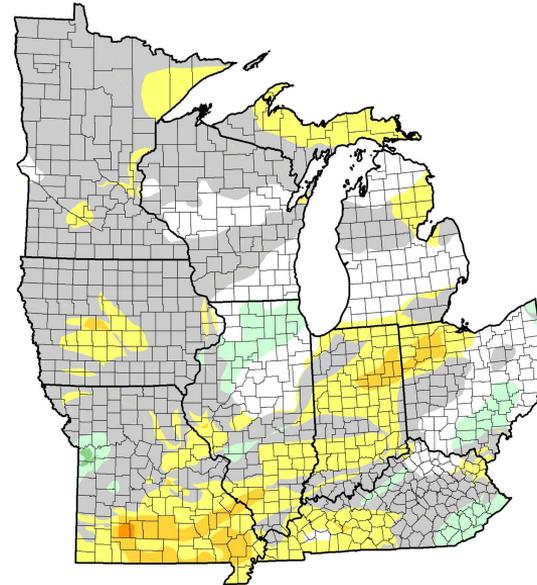
National Weather Service
Louisville



Recent Change in Drought Intensity

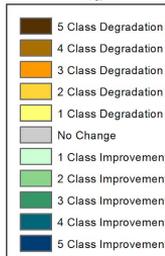
- Four Week Drought Monitor Class Change
 - Since Thanksgiving, drought has worsened by one category over much of south central Kentucky.
 - A similar increase in drought has been observed over south central Indiana.
 - There has been improvement in a very narrow corridor from west of Fort Knox to northwest of Frankfort, thanks in large part to 1 to 2 inches of rain that fell there on December 9.

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



December 19, 2023
compared to
November 21, 2023

droughtmonitor.unl.edu



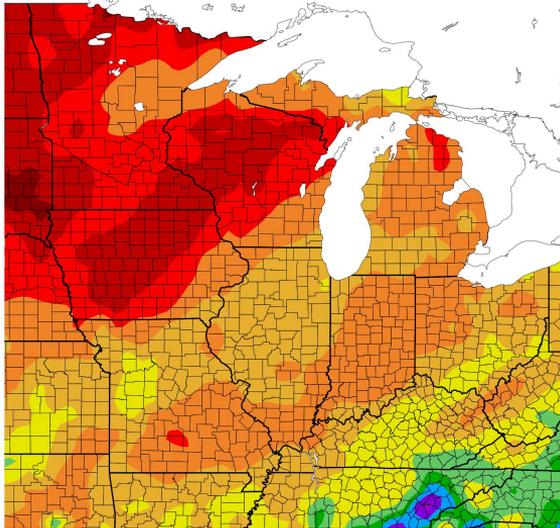


Precipitation

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

Deficits have been particularly severe in southern Indiana.

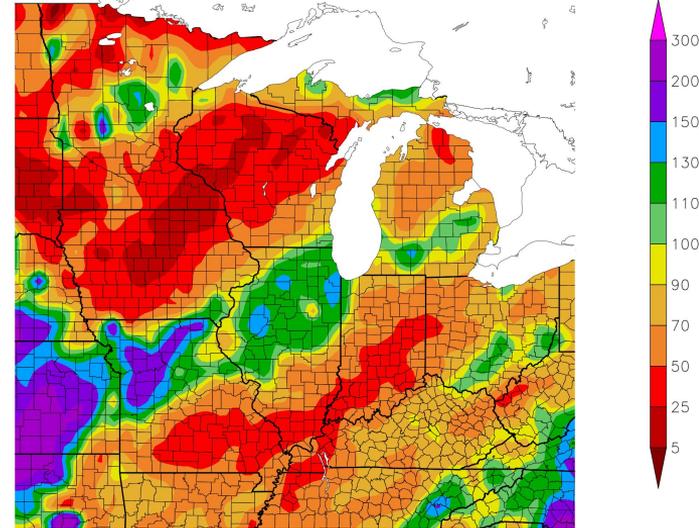
Precipitation (in)
11/20/2023 – 12/19/2023



Generated 12/20/2023 at HPRCC using provisional data.

NOAA Regional Climate Center

Percent of Normal Precipitation (%)
11/20/2023 – 12/19/2023



Generated 12/20/2023 at HPRCC using provisional data.

NOAA Regional Climate Center

Data Courtesy Midwest Regional Climate Center.

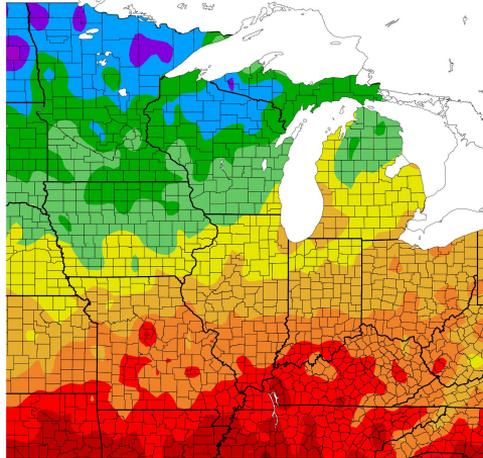




Temperature

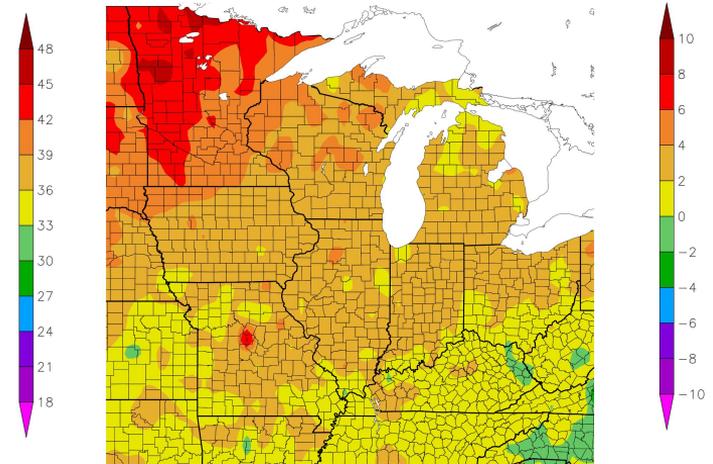
- Temperatures have averaged above normal over the past month.
- Over the period November 20 through December 19, Lexington had their 28th lowest number of heating degree days on record for that period, and Louisville the 22nd fewest on record.

Temperature (F)
11/20/2023 – 12/19/2023



Generated 12/20/2023 at HPRCC using provisional data.

Departure from Normal Temperature (F)
11/20/2023 – 12/19/2023



NOAA Regional Climate Centers 2023 at HPRCC using provisional data.

NOAA Regional Climate Centers

Data Courtesy Midwest Regional Climate Center.





Summary of Impacts

Hydrologic Impacts

- Most streams are running very low, even for this time of year. Farm ponds are likely affected as well.

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

- The official season for prescribed burns has come to a close, but continued dry conditions will still require care to be taken with any outdoor fires.

Other Impacts

- About 36% of the country's livestock is in areas of drought, including major livestock areas of central Kentucky

Mitigation Actions

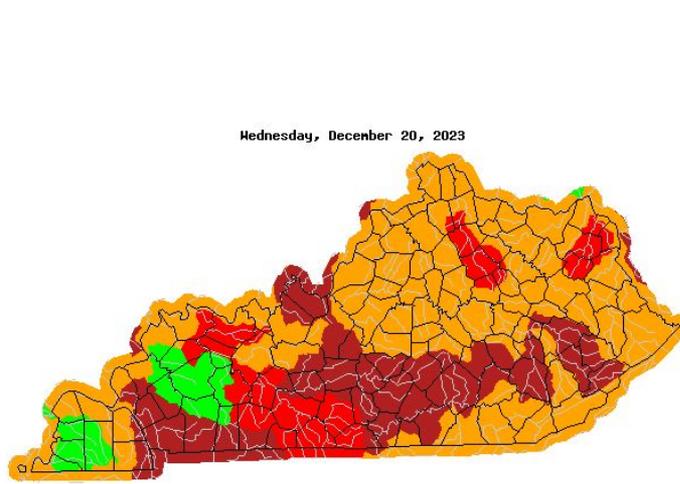
- Please refer to your municipality, water provider, or extension office for mitigation information.





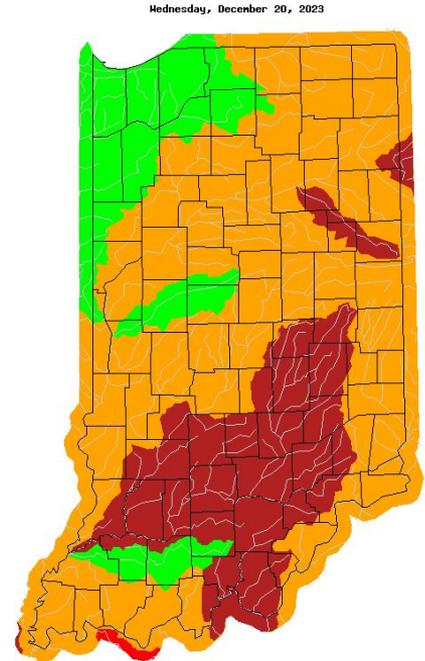
Hydrologic Conditions and Impacts

- Streamflows have deteriorated markedly over the past month. Many streams are much below normal.
- The Barren and Green River basins are especially low. The Barren at Bowling Green is below the lowest stage recorded during the Summer 1988 drought.
- Lake Cumberland is about two and a half feet below its normal pool at Wolf Creek Dam.



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

USGS 7 day average streamflow HUC map

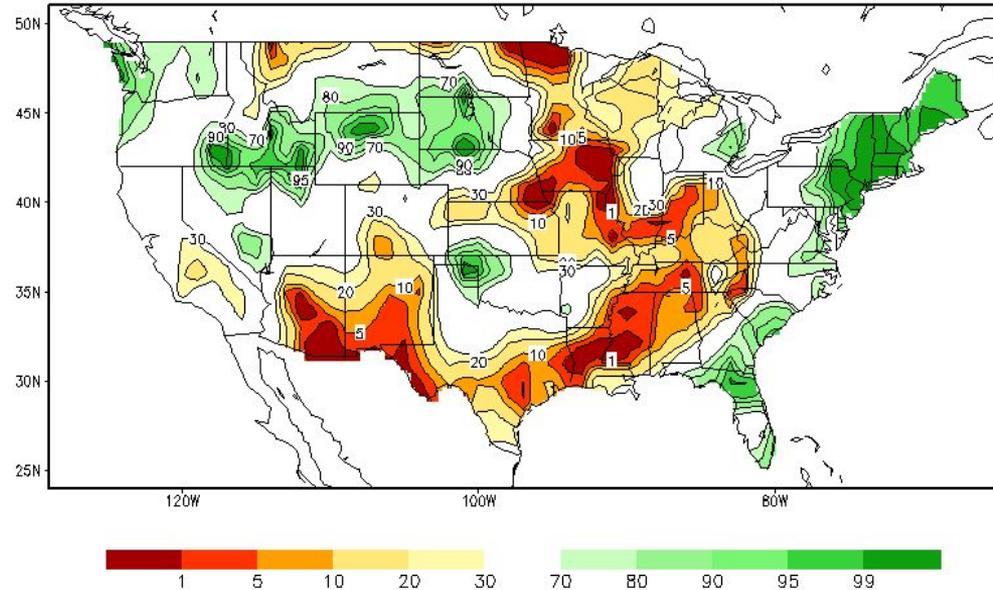




Agricultural Impacts

- Soil moisture has decreased significantly over the past few weeks.
- 3-day average 2" and 4" soil moisture via the Kentucky Mesonet shows the driest soils reaching from between Louisville and Lexington southward to the Lake Cumberland region.
- In southern Indiana, artesian well water levels in Harrison and Clark counties are near record lows.

Calculated Soil Moisture Ranking Percentile
DEC 20, 2023

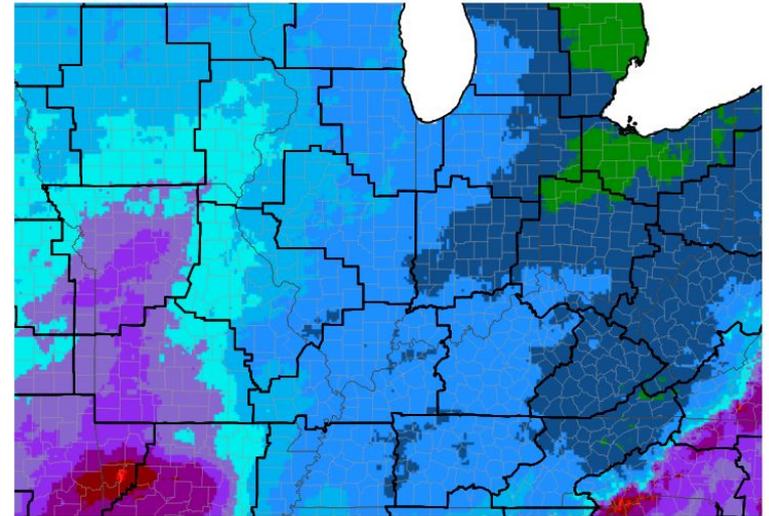




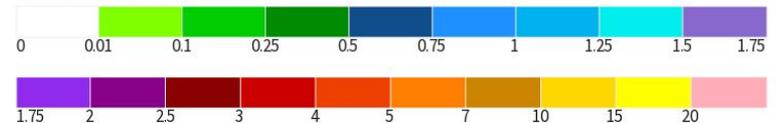
Seven Day Precipitation Forecast

- Scattered light rain showers will be possible Friday and Saturday, December 22-23.
- A much more widespread rain event will push through the region Monday and Monday night, December 25. Most of the precipitation shown on this map will occur during that time.
- Scattered light rain showers will be possible into mid-week, December 26-28.

7-Day Quantitative Precipitation Forecast



Predicted Inches of Precipitation



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

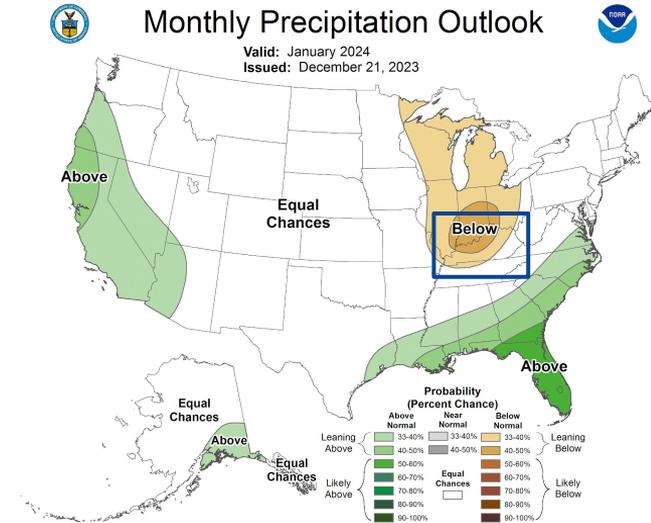
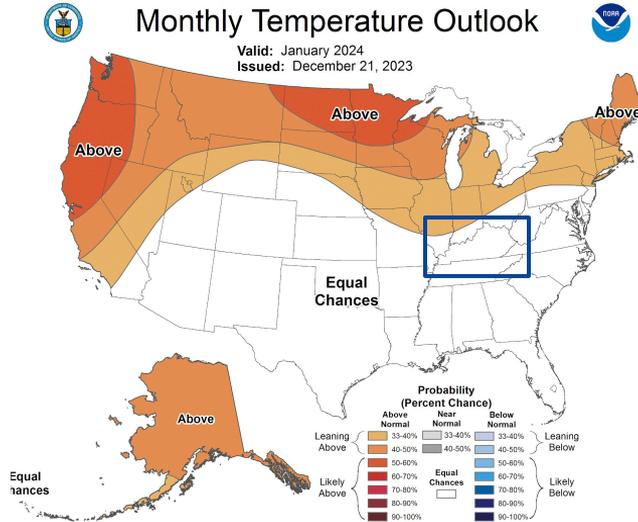
Data Valid: 12/21/23





Long-Range Outlooks

- As a whole, there's no clear signal for temperature departures for the month of January. For the first two weeks, though, odds are tilting toward warmer than normal conditions.
- Chances lean toward below normal liquid equivalent precipitation in January in most of the Ohio Valley. Note that this does *not necessarily* mean below-normal snowfall.

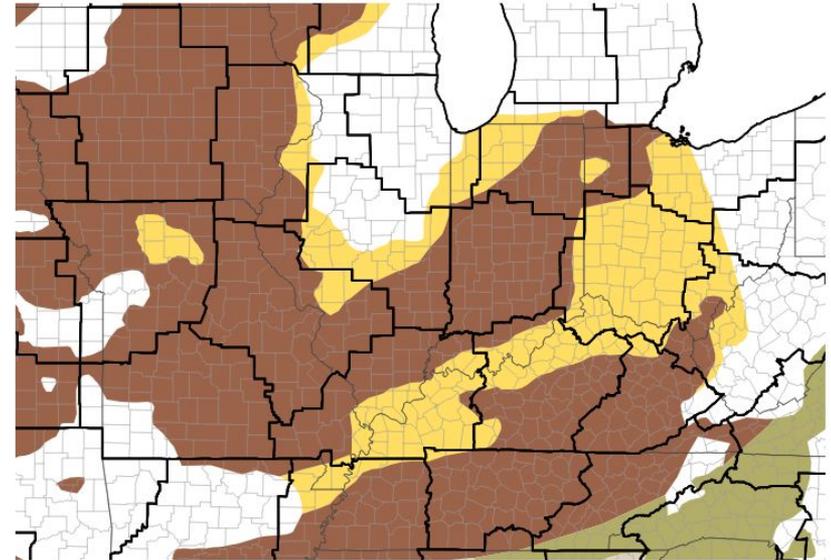




Drought Outlook

- 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 across the region.

Seasonal (3-Month) Drought Outlook



Drought Is Predicted To...



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

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