Fall Outlook

For Southern Indiana and Central Kentucky

September - November 2024
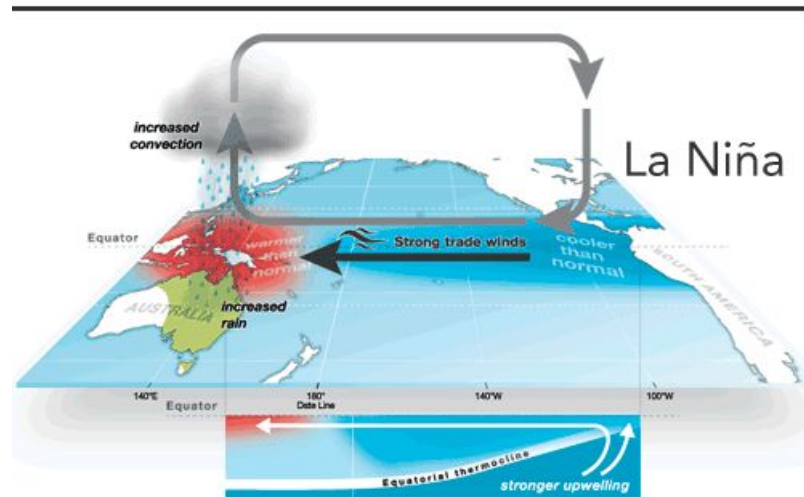
Upfront

- **A weak La Niña is expected to develop. A La Niña Watch is in effect.**

- **Odds are leaning towards a warmer than normal fall in the Ohio Valley.**

- **Precipitation climate signals are weak so there are equal chances for above-, near-, and below-normal precipitation amounts, though La Niña typically favors wetter than normal conditions in the fall.**

Ohio Valley Fall Temperature Outlook

Seasonal Temperature Outlook
Valid: Sep-Oct-Nov 2024
Issued: August 15, 2024

Ohio Valley Fall Precipitation Outlook

Seasonal Precipitation Outlook
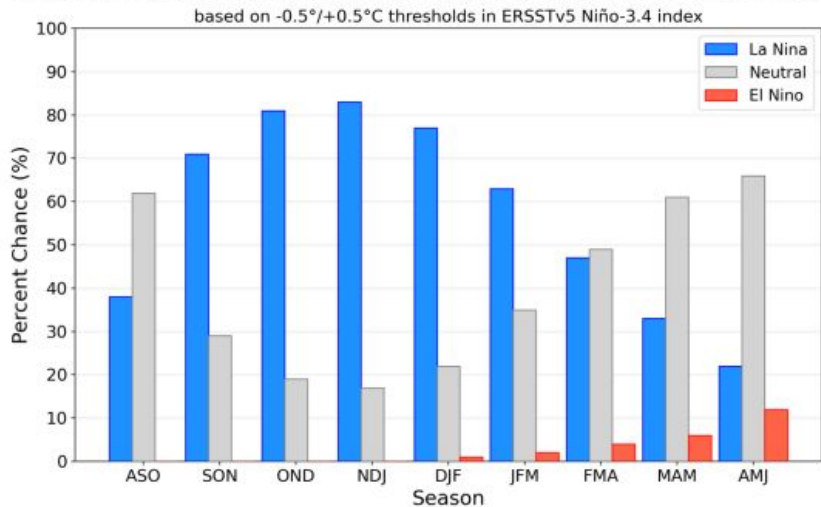Valid: Sep-Oct-Nov 2024
Issued: August 15, 2024

La Niña Watch

The Climate Prediction Center (CPC) expects La Niña conditions are likely (greater than 70% chance) to commence this fall and continue through the winter. As a result, the CPC has issued a La Niña Watch.

Official NOAA CPC ENSO Probabilities (issued September 2024)
based on -0.5°/+0.5°C thresholds in ERSSTv5 Niño-3.4 index

*https://iri.columbia.edu/wp-content/uploads/2014/09/BOM-combo1.gif*

La Niña occurs when central Pacific sea surface temperatures are cooler than normal, changing atmospheric circulation patterns.

Southern Indiana and central Kentucky tend to lean warmer and wetter than normal during fall La Niñas.

La Niña's Effects on the Ohio Valley

When looking back at the past several falls with weak La Niñas, a signal emerges that tends to favor warmer than normal temperatures and wetter than normal precipitation.
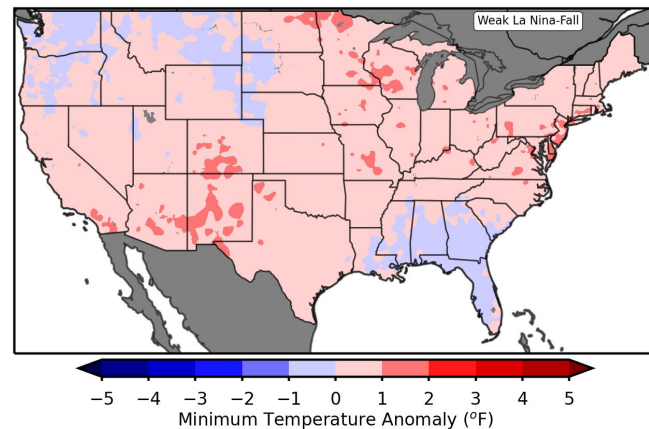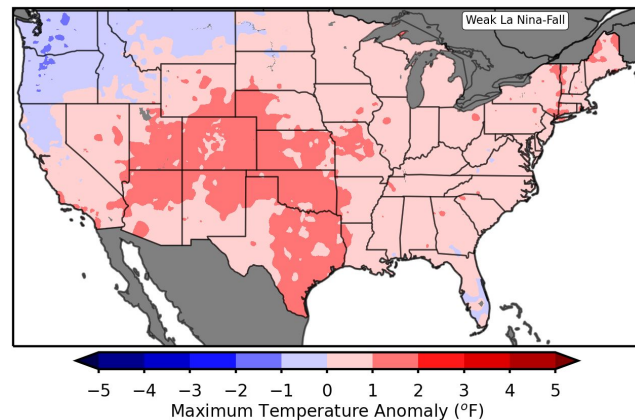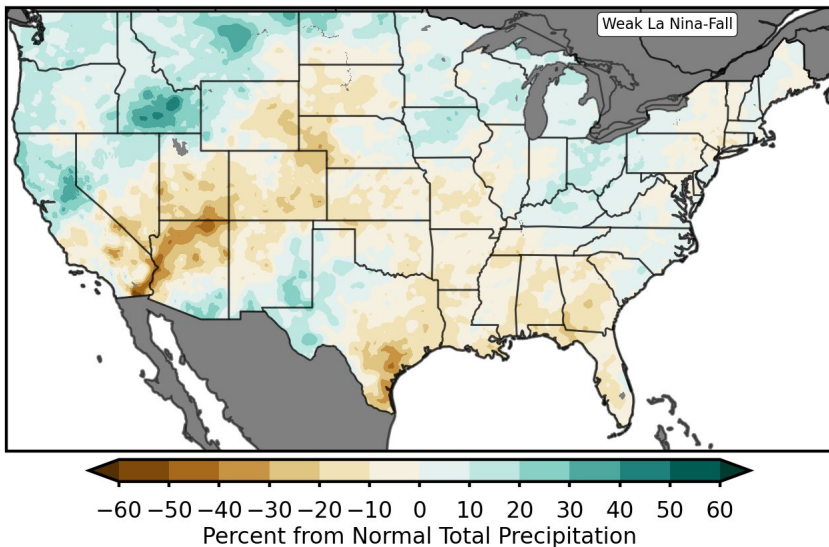
Hurricane Outlook

Hurricane season peaks in the fall, and this season is expected to be particularly active. Remnants of hurricanes and tropical storms occasionally move into the Tennessee and Ohio Valleys, and are often capable of producing widespread rains. The map below shows past tropical systems that have moved in or near Kentucky and southern Indiana since 1950 during La Niña falls.

Historical tropical systems that affected the area during La Niña falls
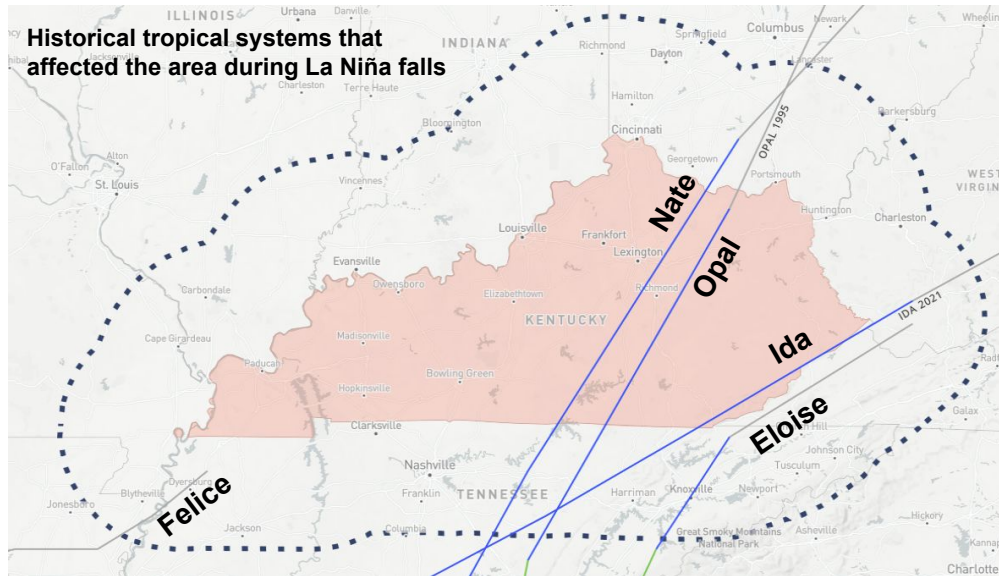
During La Niña falls, tropical systems tend to remain to our south and east. However, some systems have brought us rain:

- Ida (2021) 2-4", locally higher
- Nate (2017) narrow band of 3-5"
- Opal (1995) 3-5"
- Eloise (1975) 1-3"
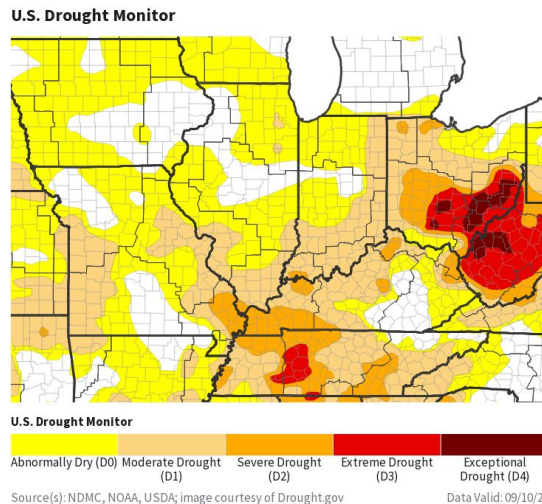- Felice (1970) around an inch

Drought Outlook

Climatologically speaking, La Niña tends to favor wet conditions in the Ohio Valley during the fall months. However, no two La Niñas are the same, and there are many meteorological factors that interact with one another to produce our weather. This season, the Climate Prediction Center is indicating that drought development is likely over much of the Ohio Valley, and model soil moisture outlooks are suggesting drier than average soil moisture levels.
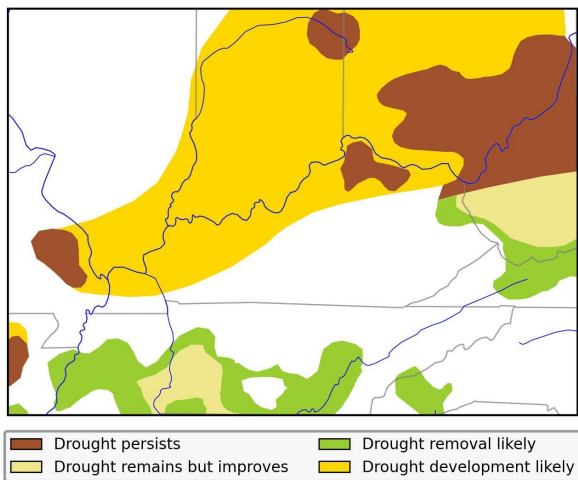
Left: Climate Prediction Center's Seasonal Drought Outlook for September - November (issued August 31).

Right: Drought Monitor as of September 12

Drought persists
Drought remains but improves
Drought removal likely
Drought development likely

U.S. Drought Monitor

Abnormally Dry (D0)   Moderate Drought (D1)   Severe Drought (D2)   Extreme Drought (D3)   Exceptional Drought (D4)

Source(s): NDMC, NOAA, USDA; image courtesy of Drought.gov   Data Valid: 09/10/24

Normal Date of First Freeze

The region's first fall freeze (32°) typically occurs around mid- to late-October. The first hard freeze (28°) normally happens during the last few days of October into the first week of November.
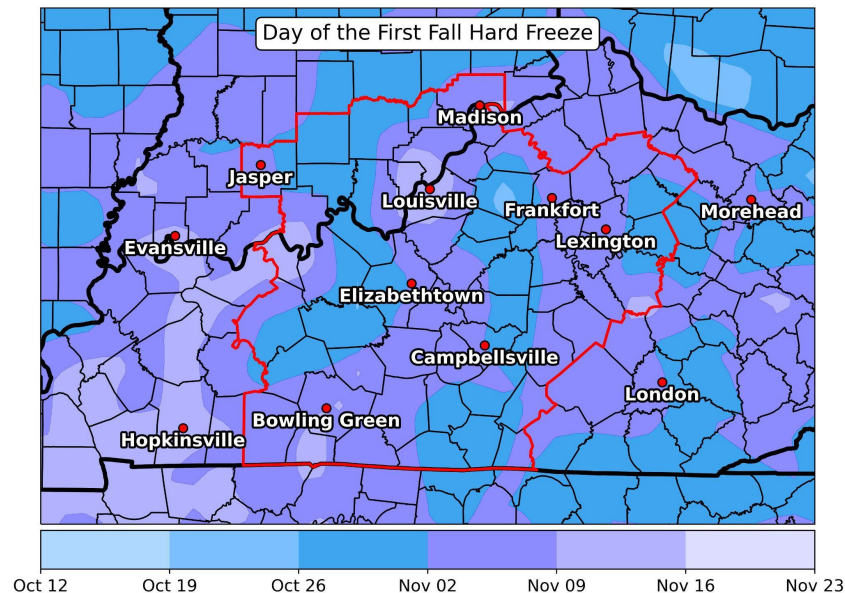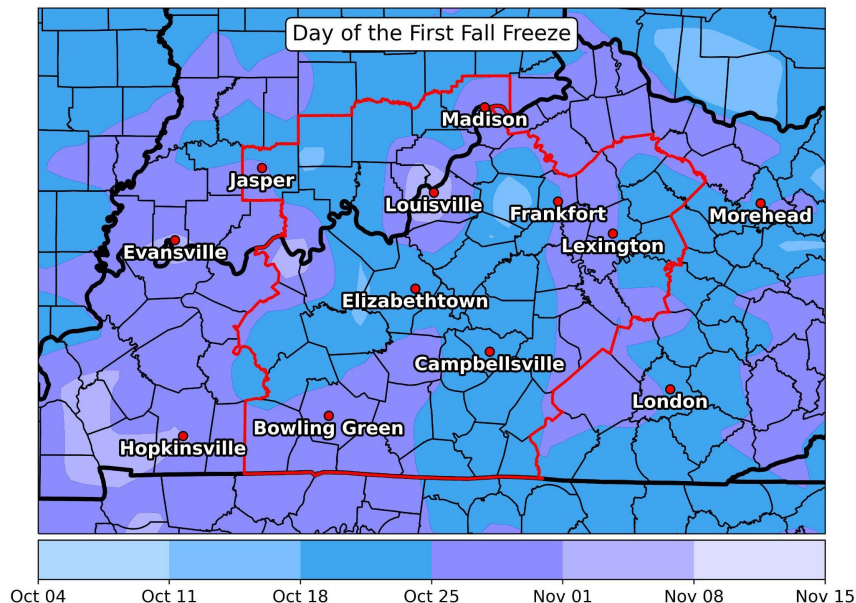
For much more frost and freeze information, see https://www.weather.gov/lmk/climate

Summary

La Niña conditions are expected to develop this fall, with at least a 70% chance of La Niña conditions continuing into the winter, which is when La Niña will have its greatest influence on Ohio Valley weather.

Because La Niña is a large-scale phenomenon that can affect atmospheric circulations across the globe, and is relatively predictable months in advance, it is heavily relied upon when making seasonal outlooks in the fall and especially winter. However, it still is just one of myriad processes in our planet's atmosphere, hydrosphere, and cryosphere that combine to result in the actual weather that we experience.

Atlantic hurricane activity is expected to increase during mid and late September. Occasionally tropical systems can move well inland and bring widespread rain and slightly cooler temperatures to the central and eastern United States. The remnants of former Hurricane Francine are a good example of this. Hurricane season typically peaks in September, with the traditional end of the season on November 30.