



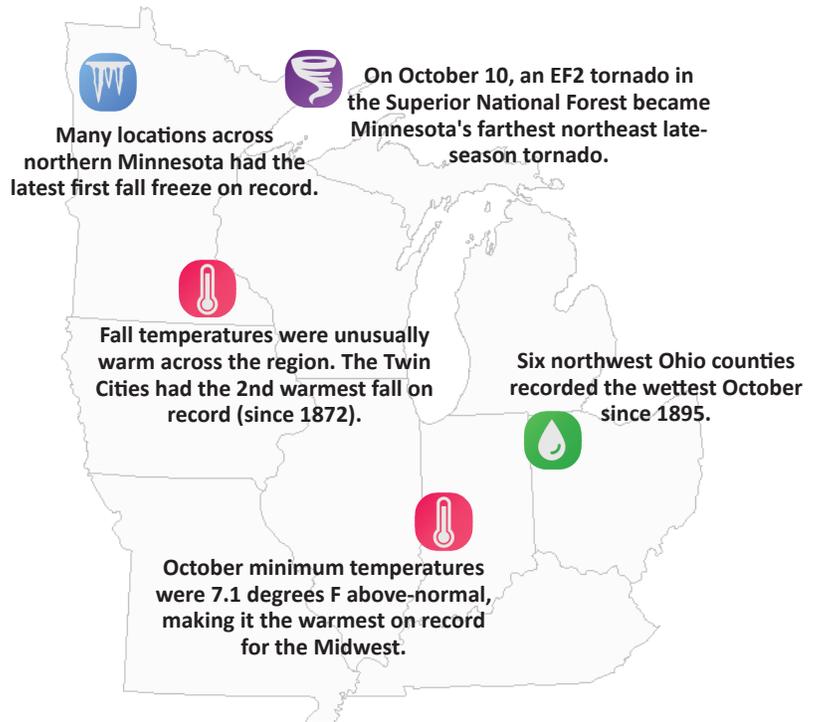
Midwest – Significant Events for September – November 2021

Warm temperatures were a persistent theme across the Midwest throughout the fall. October was unseasonably warm with record-setting high minimum temperatures. From October 1-15, over 800 warm minimum temperature records were broken, and four states recorded the warmest October minimum temperatures since 1895 (Illinois, Indiana, Michigan, and Ohio).

For most, the first fall freeze was 2-4 weeks later than the 1991-2020 normal, with several record-late first fall freezes across the upper Midwest.

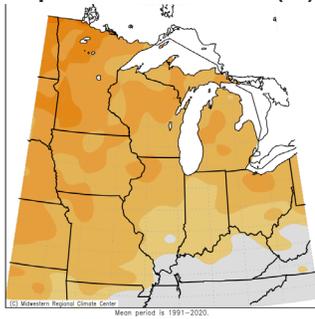
North-central Indiana and northwest Ohio saw a record wet October. Illinois, Indiana, Iowa, and Missouri had a top ten wettest October (since 1895).

On October 24, a strong weather system produced 23 tornadoes across Missouri and Illinois, including two EF3 tornadoes. Over 75 tornadoes were reported across the Midwest during the fall, mostly in October.



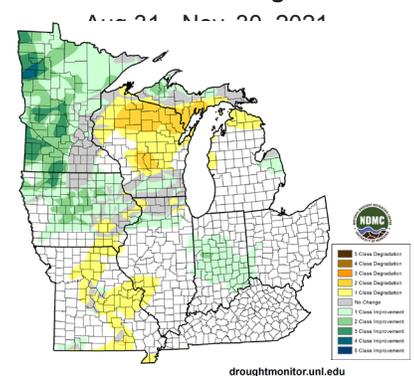
Regional – Climate Overview for September – November 2021

Fall Temperature Departure from Normal (°F)



Above-normal temperatures prevailed across the Midwest during the fall of 2021. Average temperatures were 2.6°F above-normal, ranking the 6th warmest dating back to 1895. Temperatures were 2.3°F and 5.7°F warmer-than-normal during September and October, respectively. October average temperature was the 4th warmest on record regionally, with Illinois (5th, tied), Indiana (5th), Michigan (3rd), Minnesota (5th), Ohio (1st), and Wisconsin (4th) all ranking in the top 5 for warmest Octobers. November temperatures were near- or below-normal for most of the Midwest.

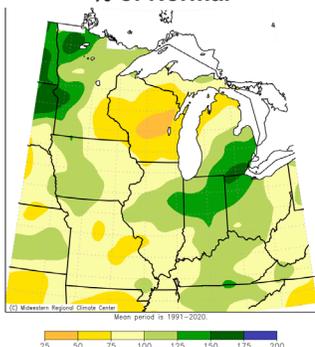
U.S. Drought Monitor 13-week change



Although fall precipitation averaged near-normal for the Midwest as a whole, it was highly variable by region and by month. Below-normal precipitation was widespread in Wisconsin whereas above-normal precipitation was notable in western Minnesota and along the Michigan-Ohio-Indiana border. September had below-normal precipitation, with dry conditions to the west and wet conditions to the east. October ranked the 7th wettest on record (since 1895), and all states except Wisconsin had above-normal precipitation. The faucet turned off in November with all Midwestern states measuring below-normal precipitation. Illinois had its 9th driest November (since 1895).

Despite the November dryness, drought conditions improved during the fall across Minnesota, Iowa, and Indiana. However, drought intensified in Wisconsin and northern Michigan throughout the fall.

Fall Precipitation % of Normal



Regional Impacts – September – November 2021

Agriculture

Unseasonable warmth in September and October resulted in a wide range of agricultural impacts. Corn and soybeans matured rapidly, prompting an early start to harvest. Crops dried quickly in fields, catching farmers by surprise and reducing the demand for drying and propane costs. Normal-to-dry conditions kept corn and soybean harvest ahead of schedule



Gull Lake in northern Minnesota receded 35 ft during the 2021 drought (credit: NDMC/CMOR)

in the northwest whereas harvest was slowed to the southeast due to a persistently wet October.

Fall grain planting was ahead of schedule, and conditions proved favorable for cover crop growth.

Warm summer temperatures fueled a severe fall armyworm outbreak in Ohio, and prolonged fall warmth extended fall armyworm damage



Turf grass damage due to fall armyworms near Mount Vernon, Ohio (credit: Karl Danneberger)

well into October. Experts have characterized it as the worst fall armyworm outbreak in 40 years.

Warmer-than-normal soil temperatures were problematic for farmers doing early fertilizer application. Fertilizers are less effective and at high risk of loss when applied to warm soils.

Drought

The Minnesota Governor signed a \$10M relief package to support farmers. The Minnesota Department of Natural Resources announced a \$13.3M proposal to support community water conservation and address tree seedling mortality.

Energy

Heating demand was the 6th lowest since 1895 (based on heating degree-days) due to warm fall temperatures.

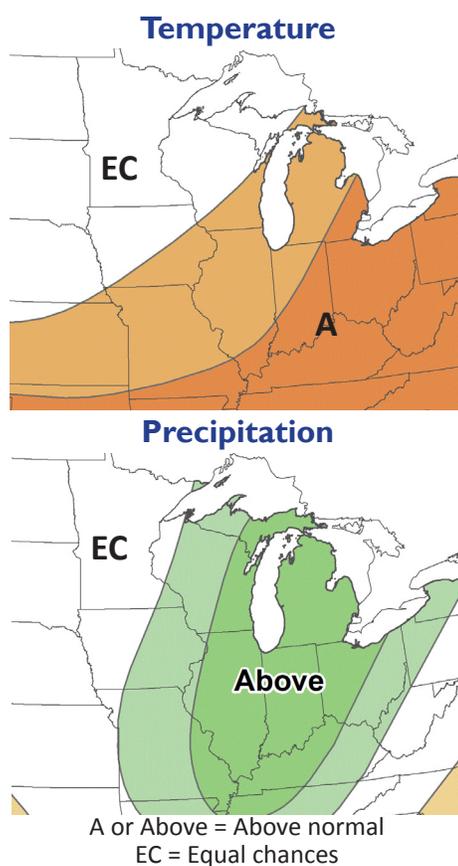
Regional Outlook – January – March 2022

NOAA forecasters [are predicting](#) an increased chance of above-normal temperatures across the southern and eastern portions of the Midwest, with the highest chances of above-normal temperatures to the southeast. The northwestern section of the region has equal chances of above-, below-, or near-normal temperatures.

The precipitation outlook favors an increased chance of above-normal precipitation for most of the Midwest, with the highest chances centered over the region. Equal chances of above-, below-, or near-normal precipitation are predicted for the far northwest areas of the region.

The [seasonal drought outlook](#) predicts drought conditions will improve across the upper Midwest, except in far northwest Minnesota where drought is likely to persist.

A La Niña Advisory is currently in effect, with a 95 percent chance of persisting through March 2022.



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