Quarterly Climate Impacts and Outlook

Midwest Region

December 2023

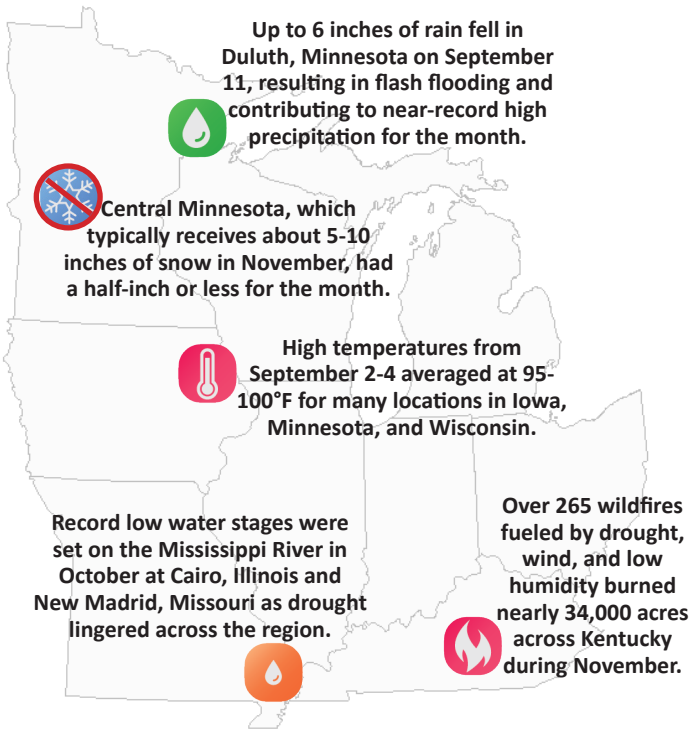
Midwest Significant Events – *September - November 2023*

Record warmth blanketed the western and upper Midwest in early September, with high temperatures reaching into the 90s. The warmth persisted through the month, and St. Louis had a record-setting number of September days with temperatures at or above 80°F.

Extremely dry weather dominated in September, with few storm systems affecting the region. The Duluth area in northern Minnesota was the exception, with multiple rounds of heavy rainfall.

Unseasonable warmth returned in early October, with near-record warmth in the upper Midwest. A strong cold front traversed the region October 27-29, dropping daytime temperatures by 30°F. Many lower Midwest places had a top five coldest Halloween. This storm system also brought the first widespread snowfall of the season to the upper Midwest, with totals ranging from less than 1 inch to as much as 11 inches.

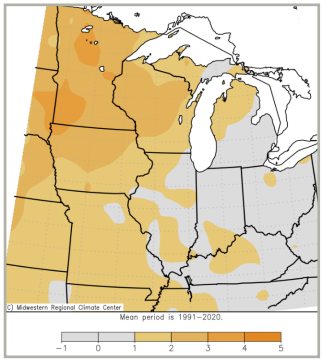
A late November storm system dropped 3-6 inches of snow along a swath from northwest Missouri to Michigan, with a foot or more falling in lake-effected areas. Otherwise, November precipitation was lacking.



Regional Climate Overview – *September - November 2023*

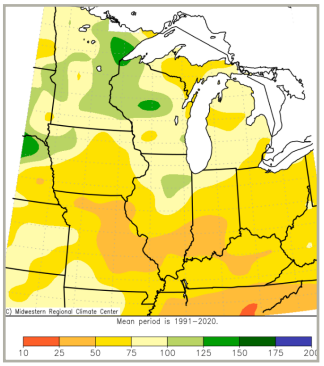
Fall Temperature

Departure from Normal (°F)



Fall Precipitation

% of Normal



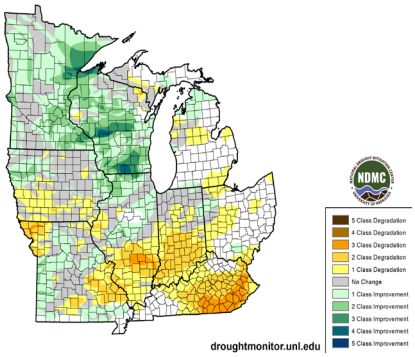
Fall temperatures were near normal in the east, with temperatures 1-3°F above normal in the west. Month-to-month, temperatures were near or above normal, with no notable areas of cooler temperatures. Minnesota had its 2nd warmest September since 1895. Minnesota, Wisconsin, and Michigan had the 5th, 5th, and 6th warmest minimum temperatures for fall, respectively.

Fall precipitation was 70 percent of normal for the Midwest. Deficits of 4-8 inches were widespread across the lower Midwest, while areas around the Minnesota-Wisconsin border were up to 4 inches above normal for fall. September and November were notably dry for most of the region. Ohio had its 5th driest September. Indiana and the Midwest region had the 3rd and 4th driest November, respectively. A handful of counties in southern Illinois, southern Minnesota, and western Wisconsin had a record dry November. October, conversely, was near normal for the region, with ample wetness across the upper Midwest.

Drought conditions improved in the north and declined in the south during fall while persisting in Iowa. There were widespread 1-2 category improvements (green colors on the map to the right) on the US Drought Monitor map in Minnesota and Wisconsin, with areas of 3-4 category improvements. Conversely, the lower Midwest had 1-2 category degradations (yellow and orange colors on the map to the right), with 3 category degradations in parts of Kentucky, Illinois, and. Missouri.

Midwest Drought

Change from Sep 5 to Nov 28



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Regional Impacts – *September - November 2023*

Agriculture

Fall harvest was ahead of schedule in the western and central Corn Belt. Harvest was slightly delayed in the east due to slow crop development early in the season, which subsequently delayed winter wheat planting during the fall. Corn and soybean yields were down slightly from the previous year in the west but were generally better than expected despite the drought. Limited heat stress and drought-tolerant hybrids were important factors in limiting yield reductions.

Dry creek in Missouri in September 2023 (credit: CMOR/NDMC)

Indiana and Ohio could have record-high corn and soybean yields. Limited forage availability for livestock was reported across the lower Midwest, from Iowa and Missouri eastward through Kentucky.

Drought and Water Supply

Drought affected water availability across the Midwest. Streamflows were below normal. Dredging was ongoing on the Mississippi River south of St. Louis by late fall. Stock ponds for livestock were low. Soil moisture was below normal along and west of the Mississippi River and across the Ohio River Valley. Municipal water supply was negatively affected by the drought in Iowa, Missouri, and Ohio. Osceola, Iowa, had to reconfigure its water intake to avoid water shortages. Other Iowa cities implemented water conservation measures.

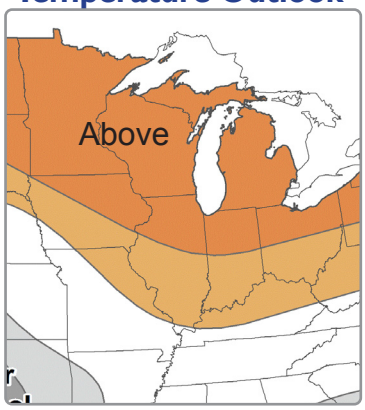
Crews battle wildfire in Pike County, KY (credit: KY Division of Forestry)

Kentucky Wildfires

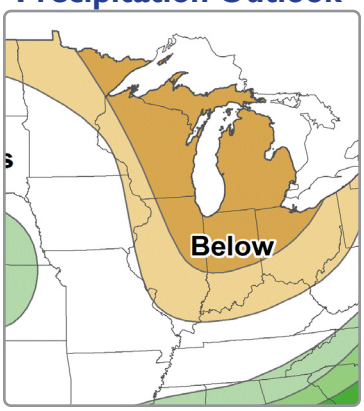
Drought, wind, and low humidity ignited over 265 wildfires in November, burning over 34,000 acres and claiming the lives of two volunteer firefighters. Kentucky's Governor declared a state of emergency early in the month to help increase fire fighting capacity. Over 100 firefighters from 9 states provided support during the weeks-long effort.

Regional Outlook – *January - March 2024*

Temperature Outlook



Precipitation Outlook



NOAA forecasters are predicting increased chances of above-normal temperatures for the central and upper Midwest, with equal chances of above-, below-, and near-normal temperatures in southern and western Missouri and southern Kentucky

The precipitation outlook shows a chance of below-normal precipitation in areas east of the Mississippi River and north of the Ohio River. The western Midwest and extreme lower Midwest have equal chances of above-, below-, or near-normal precipitation.

Strong El Niño conditions are present in the equatorial Pacific and expected to continue through winter. Below-average snowfall is typical across the Midwest during strong El Niño events (graphic to the right).

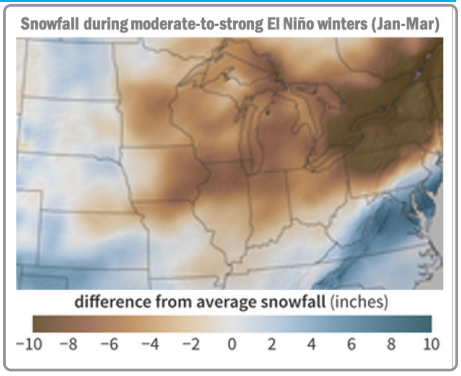
Concerns for winter and early spring include:

-Ice jam risk on rivers

-Lake ice quality and quantity

-Winter recreation

-Enhanced fire risk



Source: NOAA ENSO Blog

Midwest Partners

Midwestern Regional Climate Center

American Association of State Climatologists

National Integrated Drought Information System

USDA Midwest Climate Hub

National Drought Mitigation Center

NWS Climate Predication Center

NWS Central Region Headquarters

North Central River Forecast Center

Ohio River Forecast Center

National Centers for Enviro. Info

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