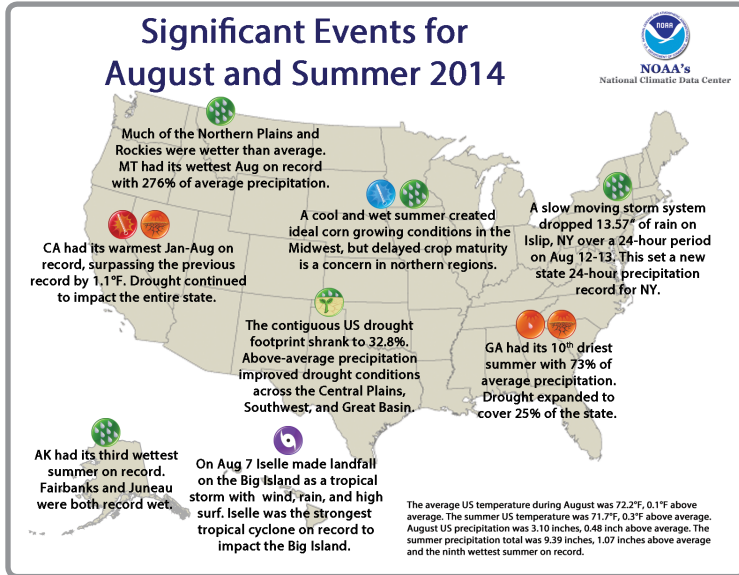


## National - Significant Events for June–August 2014

### Highlights for the Midwest



June was very wet, with Minnesota recording its wettest month on record with 8.03 inches of precipitation. Iowa had its second wettest June on record, Wisconsin its fifth, and Illinois its ninth wettest.

For the nine-state region, it was the second coolest July (1895–2014 period of record), trailing only 2009. Missouri was slightly cooler than in 2009, while the other eight states were the coolest since 2009. Indiana tied for the coolest July statewide, Illinois and Missouri ranked 2nd, Iowa and Ohio 3rd, Kentucky 4th, Michigan 7th, Wisconsin 11th, and Minnesota 27th.

On August 21–22, thunderstorms brought torrential rain to parts of northern and central Indiana. The storms dropped in excess of 5 inches of rain in many counties with an area in eastern Grant and Blackford counties receiving in excess of 10 inches of rain. A majority of this rain fell in a 6 to 8 hour period during the early morning hours of August 22.

The last week of August began with heat advisories and warnings in the central and southwest portions of the Midwest. Temperatures were between 95°F and 105°F in Missouri, and 90°F to 100°F elsewhere in Illinois, southern Iowa, and western Kentucky.

## Regional - Climate Overview for June–August 2014

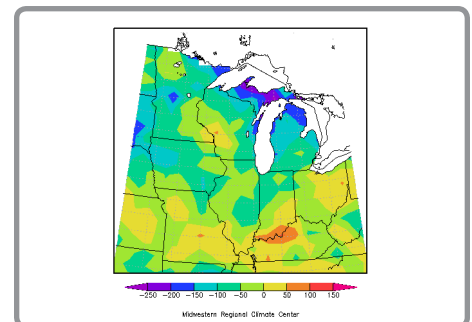
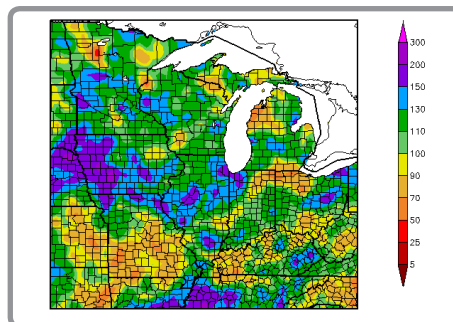
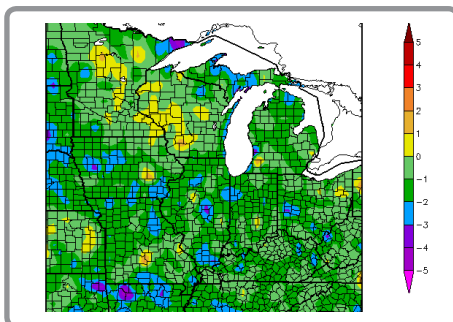
### Temperature and Precipitation Anomalies

Departure from Normal Temperature (°F)  
6/1/2014–8/31/2014

Percent of Normal Precipitation (%)  
6/1/2014–8/31/2014

### Growing Degree Days

MGDD Departure from Average  
5/1/2014–9/1/2014



The record cool July across much of the Midwest was tempered somewhat by near to slightly warmer than normal June and August temperatures. The result for the summer, however, was that temperatures were near to below normal across the region. Cooler areas extended from western Iowa and northern Missouri across Illinois and the northern two-thirds of Indiana, as well as in northeastern Minnesota, the Michigan Upper Peninsula, and lower Michigan.

The summer precipitation pattern was largely defined by heavy rain in August from western Iowa southeast into Kentucky, from northeastern Illinois into north-central Indiana, and from central Minnesota across Wisconsin. June was wet across much of the region except Kentucky and far eastern Michigan. July rainfall was well below normal in much of the region with just a few exceptions. The northern quarter of Minnesota and the southern half of Missouri were notably drier with only 40 to 75 percent of normal precipitation. Portions of southwest Missouri and western Kentucky were in moderate drought at the end of August.

Modified growing degree days (MGDD) since May 1 are below normal across most of the region. MGDDs are running slightly ahead of normal from southern Missouri into the western half of Kentucky. As fall progresses it is less and less likely that the MGDD deficit will be made up. The MGDDs are related to crop development, particularly corn. While the cool weather this summer resulted in less stress on the crops, it also slowed development and maturity. Late maturing crops are more susceptible to an early or even normal occurrence of freezing temperatures.

# Regional Impacts for June–August 2014

## Agriculture

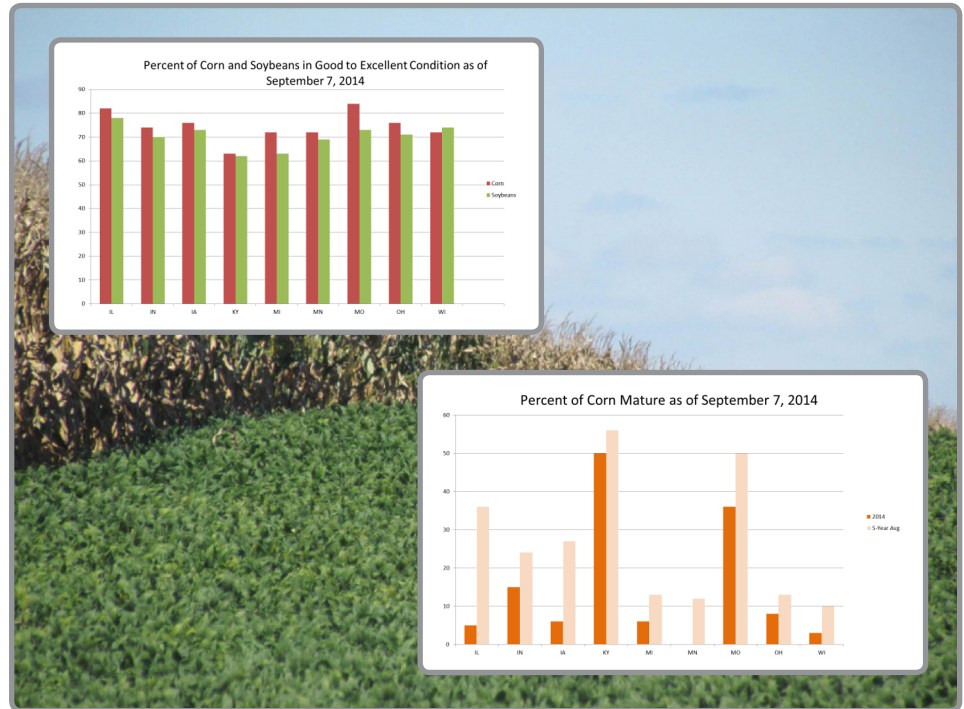
The weather this summer was favorable for corn and soybean development throughout most of the Midwest. The U.S. Department of Agriculture's August forecast is for a record 14.032 billion bushels of corn. Corn rated in good or excellent condition accounted for 74 percent of the crop as of September 7, compared with 54 percent at the same time last year. Soybean harvest is also expected to be at an all-time high.

Mild to moderate drought in far western Kentucky has impacted agriculture and will likely result in some reduction of corn yields in the affected area.

Soybean Sudden Death Syndrome, a fungus that affects soybeans planted early in cool, wet soils and followed by heavy midsummer rains that saturate the soil, is affecting crops in parts of Iowa, Missouri, and west-central Illinois. Affected fields could see losses of 10 to 20 percent.

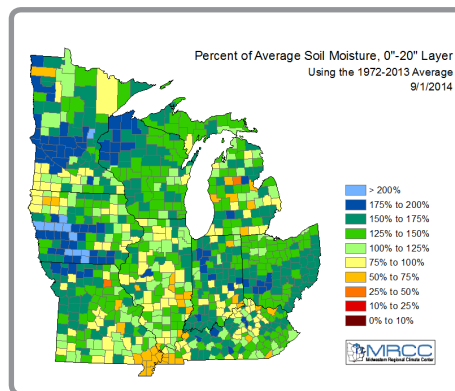
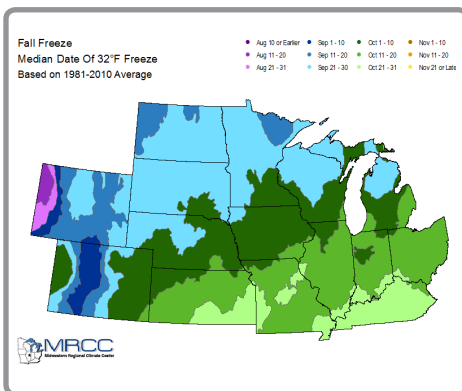
## Environment and Infrastructure

The cooler than normal summer resulted in a reduction in severe weather in much of the region for the second year in a row.



## Regional Outlook - for Fall 2014

### Even Chances on Harvest Weather



The outlook for the three-month period of October, November, and December from NOAA's Climate Prediction Center in slightly higher probability for above-normal temperatures across the Midwest except for Missouri. Planting delays and a cooler than normal growing season have producers concerned about the risk for an early freeze before the crop matures. In some areas, even a "normal" freeze occurrence could have negative impacts. The median date for the first 32°F freeze in the Midwest ranges from mid to late September in the northern Midwest to the last 10 days of October in the Ohio Valley.

Most of the region also has equal chances for above, below, or normal precipitation for the fall. Producers will need extended periods of dry weather for harvest, especially in those areas where soils are very wet due to heavy rain in August.

The Climate Prediction Center indicates a 60 to 65 percent chance of a weak El Niño developing this fall, peaking in late fall into early winter.

## Central Region Partners

- Climate Science Program, Iowa State University  
[climate.engineering.iastate.edu](http://climate.engineering.iastate.edu)
- High Plains Regional Climate Center  
[www.hprcc.unl.edu](http://www.hprcc.unl.edu)
- Midwestern Regional Climate Center  
[mrcc.isws.illinois.edu](http://mrcc.isws.illinois.edu)
- Missouri Basin River Forecast Center  
[www.crh.noaa.gov/mbrfc](http://www.crh.noaa.gov/mbrfc)
- National Climatic Data Center  
[www.ncdc.noaa.gov](http://www.ncdc.noaa.gov)
- National Drought Mitigation Center  
[drought.unl.edu](http://drought.unl.edu)
- National Integrated Drought Information System  
[www.drought.gov](http://www.drought.gov)
- National Weather Service Central Region  
[www.crh.noaa.gov/crh](http://www.crh.noaa.gov/crh)
- North Central River Forecast Center  
[www.crh.noaa.gov/ncrfc](http://www.crh.noaa.gov/ncrfc)
- NWS Climate Prediction Center  
[www.cpc.ncep.noaa.gov](http://www.cpc.ncep.noaa.gov)
- South Dakota State University and SDSU Extension  
[www.igrow.org](http://www.igrow.org)
- State Climatologists  
[www.stateclimate.org](http://www.stateclimate.org)
- WaterSMART Clearinghouse, U.S. Dept. of Interior  
[www.doi.gov/watersmart/html/index.php](http://www.doi.gov/watersmart/html/index.php)
- Western Governors' Association  
[westgov.org](http://westgov.org)