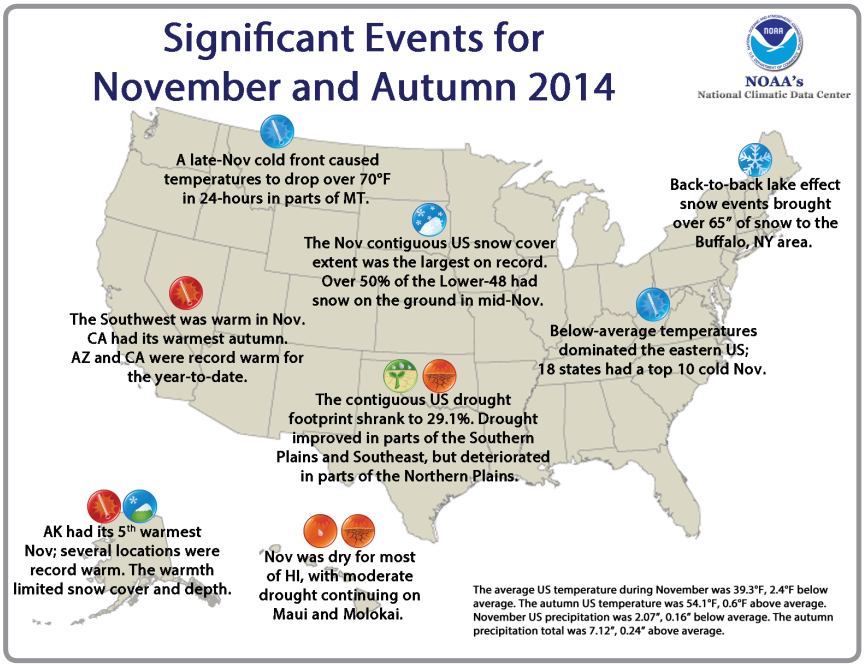
Quarterly Climate Impacts and Outlook

Midwest Region

December 2014

National - *Significant Events for September–November 2014*



Highlights for the Midwest

A Halloween storm produced cold, snow, and high winds across much of the region. Trees and power lines were downed in northern Illinois and Indiana by winds gusting to more than 60 mph. A 69-mph gust was recorded at the Gary, Indiana airport. Waves in Lake Michigan reached a height of 21.7 feet at the NOAA mid-lake buoy east of Kenosha, Wisconsin, the second highest since 1981.

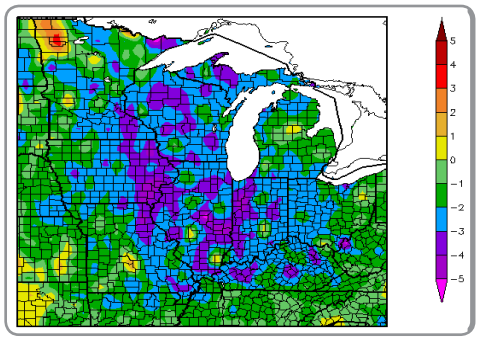
November was unusually cold, with the average temperature for the region 7°F below normal. During the month, 1,327 low maximum and 981 low minimum temperature records were tied or broken. The coldest record was –17°F on November 15 and 16 at Stambaugh, Michigan.

Much of the Midwest received its first measurable snow in mid-November following an Arctic air outbreak. Lake-effect snow resulted in record amounts in lower Michigan. Grand Rapids received 31.0 inches, a new November record. Gaylord, Michigan received 65.1 inches of snow, 45.5 inches above normal. Heavy snowfall occurred across most of the Upper Peninsula as well. South Bend, Indiana recorded its sixth snowiest November on record with 19.1 inches of snow.

Regional - *Climate Overview for September–November 2014*

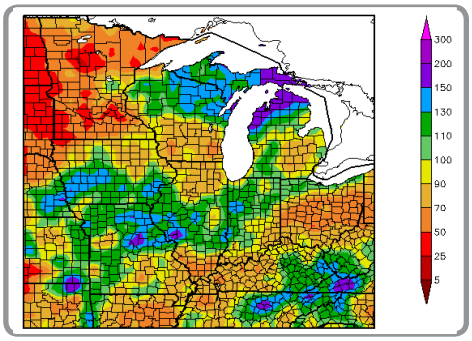
Temperature and Precipitation Anomalies

Departure from Normal Temperature (° F)
9/1/2014–11/30/2014



September temperature departures ranged from 2°F to 3°F below normal over the central Midwest to near normal around the periphery. The pattern in October was similar, though departures were one to two degrees warmer. A sharply colder November overwhelmed the moderate weather of the first two months. November temperature departures ranged from 6°F to more than 10°F below normal. The greatest departures occurred across southern Minnesota and northern Wisconsin, with an area of departures of –9°F from northeastern Iowa into central Illinois.

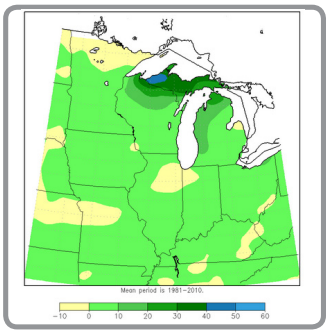
Percent of Normal Precipitation (%)
9/1/2014–11/30/2014



In September and October precipitation was above normal from southern Iowa through much of Missouri, the central third of Illinois, the northwestern two thirds of Indiana, and the eastern half of Kentucky. It was much above normal in northern Wisconsin, the Michigan Upper Peninsula, and the northern third of lower Michigan. Precipitation was much below normal across the western half of Minnesota. Precipitation in November was below normal across the entire region with the exception of northern Wisconsin and Michigan, where heavy lake-effect snow contributed to the high precipitation amounts.

Early Season Snowfall

Departure from Mean Accumulated Snowfall (inches) 11/1/2014–11/30/2014



The snowfall for November was above average throughout the Midwest, and the first measurable snow occurred several weeks early in the central and southern portions of the region. Most of the snow fell following the arrival of Arctic air the second week of November. Snow fell across the entire Midwest region with amounts ranging from near 5 inches across the southern portion of the region to more than 65 inches in lake-effect areas in Michigan. A number of locations in Michigan received double their normal monthly snowfall.

Contact: Doug Kluck (doug.kluck@noaa.gov)

Regional Impacts *for September–November 2014*

Agriculture

An early September hail storm in central Minnesota completely destroyed fruit on 38,000 apple trees and also damaged zucchini and pumpkin fields.

Corn yield and production is expected to be the highest on record at a forecast 14.4 billion bushels. Below-normal autumn precipitation and moderate temperatures created favorable harvest conditions for the northern half of the region. Harvest in some northern areas was significantly delayed due to late planting and the cool growing season. Early freezing weather caused some yield losses. Above-normal precipitation and cooler temperatures delayed harvest in southern locations causing some losses.

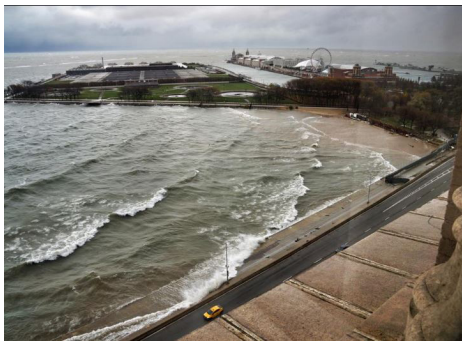
Environment

The city of Des Moines, Iowa, is dealing with unprecedented levels of nitrates in its drinking water from the Des Moines and Raccoon rivers. The high levels are attributed to runoff following heavy rains in the late summer and fall. Normally, high nitrate levels are a spring season problem.

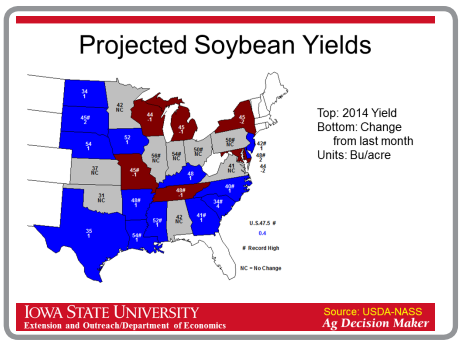
Transportation and Infrastructure

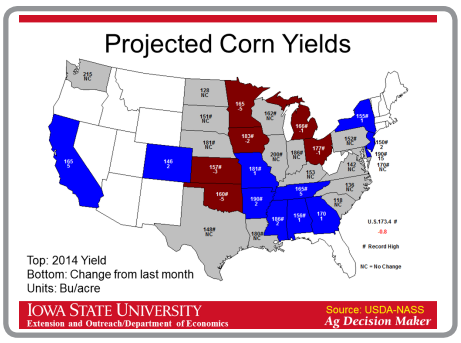
The unusually cold November caused early closures of the upper Mississippi River for navigation due to ice on the river. Combined with the late spring openings, this resulted in a reduced water transportation season.

The high winds, rain, and snow with the Halloween storm resulted in the cancellation of more than 700 flights at Chicago's O'Hare International Airport. Strong waves pushed the waters of Lake Michigan onto the northbound lane of Lake Shore Drive, disrupting the evening commute.



Waves break over Lake Shore Drive in Chicago on October 31
Photo by Todd Arkenbauer via WGN Weather Blog.





USDA 2014 Corn and soybean yield projections at the end of November.

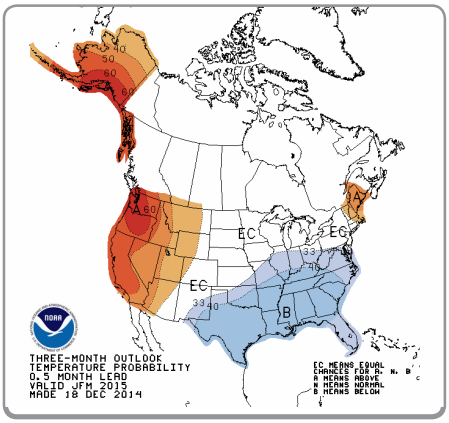
Regional Outlook - *for Winter 2014–2015*

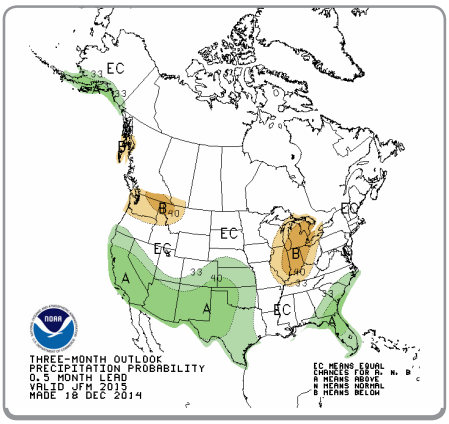
Weak El Niño Still Possible

The Climate Prediction Center outlook indicates there is a 65% chance of an El Niño occurring during the winter months. However, despite movement toward El Niño from early November, the combined atmospheric and oceanic state remains ENSO-neutral. An El Niño typically is associated with drier than normal conditions across the Ohio River Basin. It is likely the other features of the Northern Hemispheric circulation will dominate effects from a weak El Niño.

Colder Novembers have little to no association with the temperature characteristics of the upcoming winter season. The three-month outlook from the Climate Prediction Center indicates an increased probability of colder than normal weather for the southern half of the Midwest. There is an increased probability of below-normal precipitation across the eastern half of the Midwest and central Great Lakes.

Abnormally dry conditions in Minnesota due to a dry late summer and autumn are not expected to persist through the winter. The U.S. Drought Outlook indicates that the Midwest is likely to remain drought free through the winter months.





Midwest Region Partners

Climate Science Program, Iowa State University
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Midwestern Regional Climate Center
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