Hydrologic and Climate Assessment

November 2, 2018
U.S. Drought Monitor

October 30, 2018
(Released Thursday, Nov. 1, 2018)
Valid 8 a.m. EDT

Drought Impact Types:

- Delineates dominant impacts
- S = Short-Term, typically less than 6 months (e.g. agriculture, grasslands)
- L = Long-Term, typically greater than 6 months (e.g. hydrology, ecology)

Intensity:

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

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

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National Drought Mitigation Center

http://droughtmonitor.unl.edu/
Temperature Differences Compared to Average (1981-2010)

7-Day

Departure from Normal Temperature (F)
10/26/2018 - 11/1/2018

Generated 11/2/2018 at HFRCC using provisional data. NOAA Regional Climate Centers
Temperature Differences Compared to Average (1981-2010)

30-Day
Departure from Normal Temperature (°F)
10/3/2018 – 11/1/2018

60-Day
Departure from Normal Temperature (°F)
9/3/2018 – 11/1/2018
CoCoRaHS Observed Precipitation:
November 2

http://cocorahs.com/
Previous 7-Day Precipitation: Total
Previous 7-Day Precipitation: Percent of Normal
30/60-Day: Percent of Normal

30-Day

60-Day
Soil Moisture

Calculated Soil Moisture Anomaly (mm)
NOV 01, 2018
Average streamflow compared to historical streamflow for the day of the year.
Weather for the Week Ahead
6-10 Day Outlook

Highs: 56-61°F; Lows: 38-41°F; Precip: 0.75-1.00” (per week)
November Outlook

ONE-MONTH OUTLOOK
TEMPERATURE PROBABILITY
0.0 MONTH LEAD
VALID NOV 2018
MADE 31 OCT 2018

ONE-MONTH OUTLOOK
PRECIPITATION PROBABILITY
0.0 MONTH LEAD
VALID NOV 2018
MADE 31 OCT 2018
El Niño Update

El Niño Impacts and Outlook

Midwest October 2018

Typical El Niño Winter Pattern

Highlights for the Midwest

An El Niño develops when sea surface temperatures are warmer than average in the equatorial Pacific for an extended time. This is important to North America because El Niño can impact our weather patterns, especially in the Midwest.

Although each El Niño is different, there are some general patterns that are predictable. For instance, the polar jet stream is typically farther north than usual, while the Pacific jet stream remains across the southern U.S. This pattern brings enhanced chances of above-normal temperatures to the upper Midwest. Cold weather will still occur, but extreme cold weather may be milder or less frequent. Enhanced chance of dry weather in the Ohio Valley is also associated with El Niño winters.

Image courtesy of the National Oceanic and Atmospheric Administration.

Winter Outlook

Valid for December 2018 - February 2019

As of October, the winter precipitation outlook shows that below-normal precipitation is favored near the Great Lakes, while there are equal chances for the rest of the region. The temperature outlook shows an increased chance of above-normal temperatures in the northern and western Midwest and equal chances for much of the southern Midwest. If this outlook comes to pass, it could have implications for many sectors, some positive (fewer construction delays, reduced highway snow removal costs, and reduced heating costs) and some negative (reduced snow and ice repellent in much of the Midwest, overwintering of pests, and reduced soil moisture going into spring).

Potential Winter Impacts

Agriculture

Grapes in Michigan. Image: Matthew Kandale, via Flickr - CC

Winter El Niño impacts in the Midwest are often beneficial. Milder weather can benefit wheat, forage, and cover crops as well as fruit plants. However, El Niño winters can have reduced snowpack, exposing the crops to harsh winds and cold air outbreaks. Milder temperatures should be beneficial for livestock producers by reducing operating costs, reducing stress for animals, and better production. Commodity prices may increase due to negative impacts internationally.

Winter construction in Michigan. Image: MSU/IFT - via Flickr - CC

Economy

Mild and dry winters with decreased snowfall can have a significant positive overall impact on the Midwest economy. The largest positive impacts are reductions in heating costs and increased retail sales. Construction and home sales also benefit from mild winter conditions. Economic losses from a mild winter include salting, towning, snow removal, winter sports, and other businesses that are dependent on typical winter temperatures and snowfall.

Transportation

Highway 146 in Kentucky. Image: Du-Frost

Transportation systems are vulnerable to extreme weather and climate conditions. The anticipation of warmer and drier conditions in parts of the Midwest may positively affect the sector. Precipitation in an active storm track across the southern U.S. pose a risk of heavy snow events impacting the southern Midwest. For the central and northern parts of the region, an expected overall decrease in snowfall could reduce costs associated with snow and ice treatment on roads.

Comparisons and Limitations

Winter Conditions During Past El Niños

The maps to the left illustrate the conditions during the most recent week to moderate strength El Niño from the winter of 2014-15. Much of the Midwest was cooler than average (top image). Percentage of normal precipitation (lower image) showed that most of the region fell short of normal for the winter. Please note that each El Niño is different and other factors also impact the winter conditions, such as antecedent conditions or the Arctic Oscillation, which trumped the El Niño during the winter of 2009/10.

While past El Niño events can help inform forecasters about certain conditions, there are limitations. For one, the El Niño event may not develop as forecast. Additionally in the Midwest, El Niño is not known to impact: 1) potential for ice storms or blizzards, 2) the track or intensity of any single weather system, 3) early and late freeze events in the fall and spring, or 4) potential for drought or flooding to develop in the spring.

Midwestern Regional Climate Center
www.mccc.illinois.edu
State Climatologist
www.ofcc.illinois.edu
National Oceanic and Atmospheric Administration
www.noaa.gov
NWS Climate Prediction Center
www.cpc.ncep.noaa.gov
National Centers for Environmental Information
www.ncdc.noaa.gov
National Weather Service Central Region
www.region6.noaa.gov
North Central River Forecast Center
www.weather.gov/ncl
Ohio River Forecast Center
www.weather.gov/ohi
National Drought Mitigation Center
drought.unl.edu
National Integrated Drought Information System
www.drought.gov
USDA Midwest Climate Hub
www.climatehub.usda.gov/midwest

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Ag Highlights

- 4.8 days suitable for work (through Oct. 28)
- Corn harvest above 5-year average; Soybean still below 5-year average; This week’s rainfall likely to stall harvest for many
- Wheat planting and emergence also behind

NASS: Cheryl Turner –
Summary of Conditions

Drought Monitor: No worries on drought

Climate Recap: Cool, rainy this past week.

The week ahead: Generally staying below average on temperatures and an active storm pattern means above average precipitation

Back Cover Photo Credit: Kat Bledsoe katscanx(Instagram)