North Central U.S. Climate Summary and Outlook Webinar
July 18, 2019

Stuart Foster
State Climatologist for Kentucky
Department of Geography and Geology
Western Kentucky University
stuart.foster@wku.edu
270.745.5983
General Information

- Regional climate services for the North Central U.S., including the Great Plains and Midwest, are provided through collaboration among federal, regional, and state partners:
  - NOAA: NCEI/NWS/OAR/NIDIS
  - State Climatologists/American Association of State Climatologists
  - Midwestern Regional Climate Center and High Plains Regional Climate Center
  - USDA Climate Hubs
  - National Drought Mitigation Center

- Next webinar
  - August 15, 2019, presented by Aaron Wilson, State Climate Office of Ohio

- Archive of past webinars
  - [http://mrcc.isws.illinois.edu/multimedia/webinars.jsp](http://mrcc.isws.illinois.edu/multimedia/webinars.jsp)
  - [http://www.hprcc.unl.edu/webinars.php](http://www.hprcc.unl.edu/webinars.php)
  - [https://www.drought.gov/drought/calendar/webinars](https://www.drought.gov/drought/calendar/webinars)
Planting Dates Varied Due to Field Conditions

April 4, 2019

May 9, 2019

July 17, 2019

July 17, 2019

Photos from Fulton and Henderson counties in Kentucky. Photos courtesy of the Kentucky Mesonet.
Agenda

• Current climate conditions in historical context
• Current and prospective climate impacts
• Climate outlooks
• Questions, answers, and further discussion
Recent Climate Conditions

Statewide Ranks
12-month

Statewide Average Temperature Ranks
July 2018–June 2019
Period: 1895–2019

Statewide Precipitation Ranks
July 2018–June 2019
Period: 1895–2019

Statewide Ranks
3-month

Statewide Average Temperature Ranks
April–June 2019
Period: 1895–2019

Statewide Precipitation Ranks
April–June 2019
Period: 1895–2019

Statewide Ranks
1-month

Statewide Average Temperature Ranks
June 2019
Period: 1895-2019

Statewide Precipitation Ranks
June 2019
Period: 1895-2019

Average Temperature Departure from Mean

Past 30 Days

Average Temperature (°F): Departure from Mean
June 18, 2019 to July 17, 2019

(C) Midwestern Regional Climate Center
Mean period is 1981–2010.

Midwestern Regional Climate Center
Illinois State Water Survey, Prairie Research Institute
University of Illinois at Urbana–Champaign
Average Temperature Departure from Maximum and Minimum Past 30 Days

Average Maximum Temp. (°F): Departure from Mean June 18, 2019 to July 17, 2019

Average Minimum Temp. (°F): Departure from Mean June 18, 2019 to July 17, 2019

(C) Midwestern Regional Climate Center
Illinois State Water Survey, Prairie Research Institute
University of Illinois at Urbana–Champaign
Windows on Precipitation

- Unusually wet conditions over much of the Central Region year-to-date.
- Recent shift to drier conditions across portions of the Midwest with wet conditions across much of the northern Great Plains.
7-day Average Streamflow in Historical Context for Date

https://waterwatch.usgs.gov/?m=pa07d_nwc
Current Flooding

The Missouri River Basin mountain snowpack normally peaks near April 15. On July 8, the mountain Snow Water Equivalent (SWE) in the “Total above Fort Peck” reach has melted. The “Total above Fort Peck” reach peaked at 17.2” on April 18, 105% of the normal April 15 peak. On July 8, the mountain Snow Water Equivalent (SWE) in the “Total Fort Peck to Garrison” reach has melted. The snowpack in the “Total Fort Peck to Garrison” reach peaked at 14.9” on April 17, 104% of the normal April 15 peak.

*Generally considered the high and low year of the last 20-year period, respectively

Provisional data. Subject to revision.
The North and South Platte River Basin mountain snowpacks normally peak near April 15 and the end of April, respectively. As of July 16, 2019, the mountain snowpack SWE in the "Total North Platte" reach peaked at 21.8" and currently has 0% of the peak SWE remaining. The mountain snowpack SWE in the "Total South Platte" reach peaked at 15.7" and currently has 0% of the peak SWE remaining.

Source: USDA, Natural Resource Conservation Service

Provisional Data. Subject to Revision
Lake Superior, Lake St. Clair, Lake Erie, and Lake Ontario set record high water levels for the month of June, with levels 31-35 inches above monthly averages.

Lake Michigan-Huron rose to within one inch of the record high water level for the month of June, with level 14 inches above monthly average.

Great Lakes Water Levels
Impacts of High Water Levels

- Coastal erosion
- Damage to property and infrastructure
- Economic impacts to tourism
- While lake levels are projected to drop, wind-related flooding concerns will remain
HAB Forecast

- Forecast for harmful algae bloom on western Lake Erie

U.S. Drought Monitor
NWS Central Region

July 16, 2019
(Released Thursday, Jul. 18, 2019)
Valid 8 a.m. EDT

Drought Conditions (Percent Area)

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<th>None</th>
<th>D0-D4</th>
<th>D1-D4</th>
<th>D2-D4</th>
<th>D3-D4</th>
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<tr>
<td>Current</td>
<td>95.54</td>
<td>4.46</td>
<td>0.70</td>
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<td>Last Week</td>
<td>93.72</td>
<td>6.28</td>
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<td>3 Months Ago</td>
<td>95.40</td>
<td>4.60</td>
<td>0.77</td>
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<td>Start of Year</td>
<td>85.98</td>
<td>14.02</td>
<td>8.17</td>
<td>5.23</td>
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<td>Start of Water Year</td>
<td>64.00</td>
<td>36.00</td>
<td>17.93</td>
<td>9.15</td>
<td>5.03</td>
<td>1.49</td>
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<td>One Year Ago</td>
<td>71.92</td>
<td>28.08</td>
<td>16.48</td>
<td>8.98</td>
<td>4.70</td>
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Intensity:
- None
- 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.

Author:
Brad Rippey
U.S. Department of Agriculture

droughtmonitor.unl.edu
Impacts: Corn

- Condition of corn is significantly related to planting date
- Wet conditions have resulted in poorly developed root systems in many areas, making plants particularly vulnerable to rapid depletion of near-surface soil moisture
- Late-planted corn will have an elevated risk of frost damage in the fall
Impacts: Soybeans

- Late-planted soybeans are not canopying, resulting in issues with weeds.
- Freeze risk is less of a concern with beans compared with corn.
Impacts: Wheat

- Progressed was slowed by cool spring weather.
- Some delays in harvest due to wet conditions and late planting dates last fall.
- Impacts from hail in Kansas.
Prosper, Cass County (East Central ND), North Dakota, July 15 (Photo: Darin Eisinger, NDSU Crop and Pest Report, provided courtesy of Adnan Akyuz, NDSCO). “Even if flooding does not kill the plant, it may have a long-term negative impact on crop performance.” According to Hans Kandel, NDSU Plant Scientist.

Yellow clover in western South Dakota. Photo courtesy of Laura Edwards, SDSCO.

Flooding in south central Nebraska from 10-15 inches of rain in early July impacted communities along the Platte and Republican rivers. Harlan County Reservoir (photo courtesy of Al Dutcher). This highlights challenges faced by the Army Corps of Engineers in managing river systems under stress from extreme precipitation over an extended period.

Selected Impacts of Extraordinarily Wet Conditions
Outlooks

7-day Quantitative Precipitation Forecast
8-14 Day Outlook
Jul 25 – Jul 31
Climate Prediction Center

http://www.cpc.ncep.noaa.gov/products/predictions/814day/
Probabilistic ENSO Forecast

ENSO Event Tendencies

- Develop during the Apr-Jun period
- Peak during the Oct-Feb period
- Persist 9-12 months
- Recur every 2-7 years

https://iri.columbia.edu/our-expertise/climate/forecasts/enso/current/?enso_tab=enso-quicklook
Seasonal Outlook for Aug-Sep-Oct
Climate Prediction Center

[Seasonal outlook maps for temperature and precipitation with probability distributions and color-coded areas indicating likelihood of being above, near, or below normal.]
Outlook for Drought and Wildland Fire

U.S. Seasonal Drought Outlook
Drought Tendency During the Valid Period
Valid for July 18 - October 31, 2019
Released July 18

Significant Wildland Fire Potential Outlook
August 2019

http://go.usa.gov/3eZ73

Above normal significant wildland fire potential indicates a greater than usual likelihood that significant wildland fires will occur. Significant wildland fires should be expected at typical times and intervals during normal significant wildland fire potential conditions. Significant wildland fires are still possible but less likely than usual during forecasted below normal periods.

https://www.cpc.ncep.noaa.gov/products/expert_assessment/season_drought.png
https://www.predictiveservices.nifc.gov/outlooks/month2_outlook.png
Summary

• The effects of extraordinarily wet conditions across much of the region continue to be felt.

• With elevated soil moisture and stream flows, vulnerability to flooding and flash flooding remains.

• Pockets of dryness are becoming noticeable in some areas, though improvement in drought conditions are evident across the northern tier.

• El Niño is likely to diminish with a return to neutral conditions likely.

• Wet conditions are favored over the next month and season, particularly in the Great Plains, but crops have heightened vulnerability to flash drought.
Additional Information

- Today’s and Past Recorded Presentations and
  - http://mrcc.isws.illinois.edu/multimedia/webinars.jsp
  - http://www.hprcc.unl.edu/webinars.php

- NOAA’s National Centers for Environmental Information: https://www.ncei.noaa.gov/


- NOAA’s Climate Prediction Center: www.cpc.ncep.noaa.gov

- Climate Portal: www.climate.gov


- National Drought Mitigation Center: http://drought.unl.edu/

- American Association of State Climatologists: http://www.stateclimate.org

- Regional Climate Centers serving the Central Region
  - Midwestern RCC http://mrcc.isws.illinois.edu
  - High Plains RCC http://www.hprcc.unl.edu

Thank you for your participation!