



MRCC
Midwestern Regional Climate Center
<http://mrcc.isws.illinois.edu>

2204 Griffith Drive
Champaign, IL 61820
Telephone: (217) 244-8226
Fax: (217) 244-0220
Email:
mrcc@isws.illinois.edu

Record-Setting Precipitation Totals in the Midwest

Contact: Steve Hilberg
217-333-8495
Email: hberg@uiuc.edu

Mike Palecki
217-333-8506
Email: palecki@uiuc.edu

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The substantial flooding in the Midwest this June was caused by heavy precipitation falling over two time scales: the first half of the year and the month of June. Examining the daily precipitation data from the National Weather Service Cooperative Observer Network, the NOAA Midwestern Regional Climate Center (MRCC) found 286 real time reporting stations with nearly complete records that experienced a top 5 ranking precipitation total from January through the end of June (Fig. 1). “Over 100 individual stations tied or exceeded their January through June precipitation records in the Midwest region this year, which is an extraordinary 11% of stations with observations available”, explained MRCC Regional Climatologist Mike Palecki. He went on to mention that only a third as many Midwest stations achieved their current record in 1993, another year of great floods.

“In 1993, record precipitation during the first half of the year was largely confined in the Midwest to states surrounding Iowa”, says Steve Hilberg, Director of the MRCC. The early 2008 precipitation pattern made heavy flooding possible both in and around Iowa and in the Ohio River Valley. Fortunately, top 5 ranking rains in June were less common in the Ohio Valley (Fig. 2), and not found at all over the southern tributaries to the Ohio River. “The tremendous flooding resulting in Southern Indiana from a small area of

intense rainfall indicates what could have happened more broadly in the Ohio Valley if the precipitation pattern set up further east during June”, Palecki added.

The June 2008 top 5 precipitation total stations (Fig. 2) are clustered in an area similar to that impacted in June 1993, although oriented differently. The June 1993 pattern (not shown) had a northwest-southeast tilt across the region centered on eastern Iowa, while the June 2008 pattern stretches from southwest to northeast. “This may indicate that the June weather patterns triggering the two great floods were similar, but not exactly the same”, says Palecki, who added that a study of these differences was underway. “While we are pleased that the last week of June heralded much drier conditions, we will continue to closely monitor the situation,” concludes Hilberg.

The current status of precipitation, temperature, and other climate conditions can be monitored on the MRCC’s “Midwest Climate Watch” web page,

<http://mrcc.sws.uiuc.edu/cliwatch/watch.htm>

The Midwestern Regional Climate Center is a cooperative program of the Illinois State Water Survey and the National Climatic Data Center (National Oceanic and Atmospheric Administration, U.S, Department of Commerce).

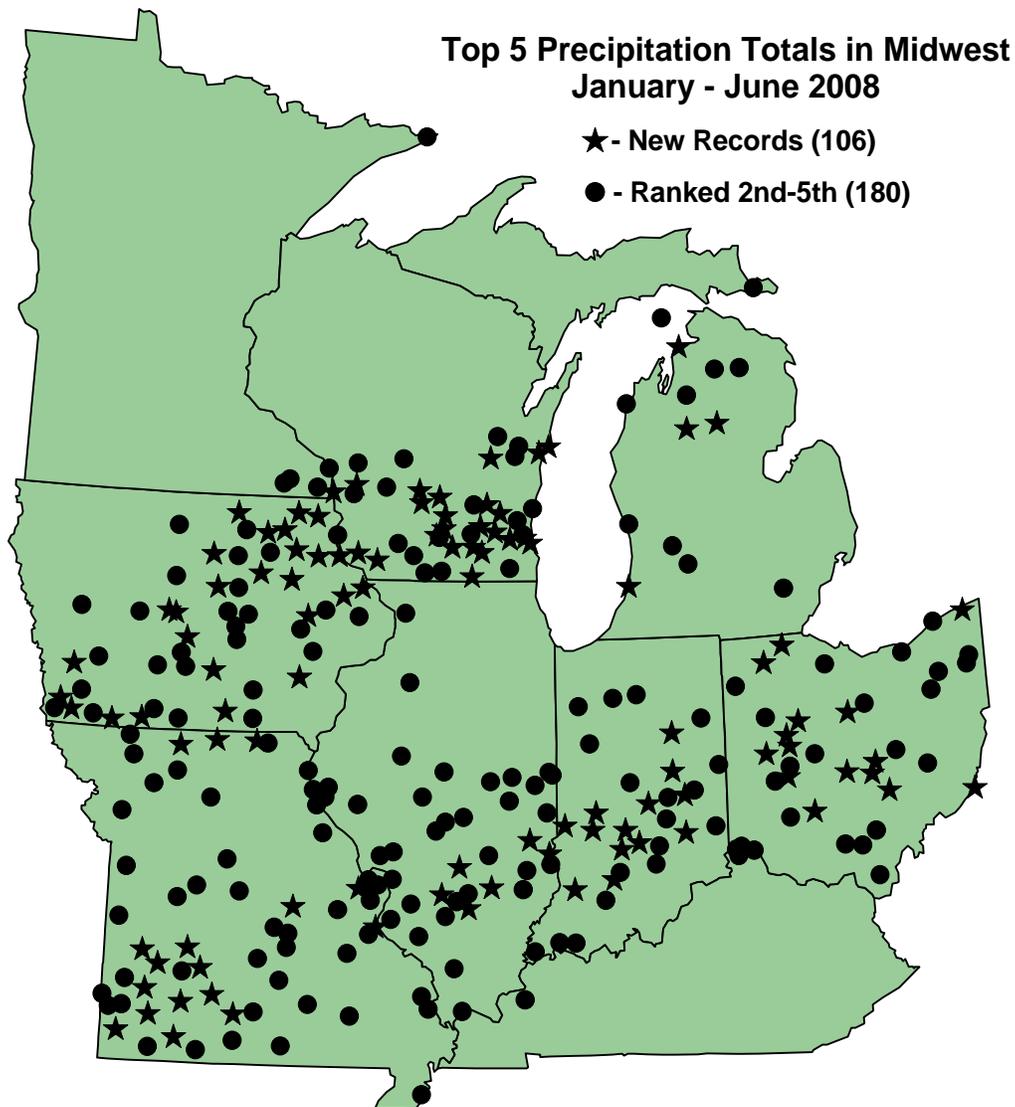


Figure 1. National Weather Service Cooperative Observer Network precipitation stations having a Top 5 precipitation total for January – June 2008. The locations with stars tied or exceed previous records, while the locations with dots are ranked second to fifth wettest. All stations reported at least 90% of the time, had 30 years or more of records, and were compared to all station data since 1895.

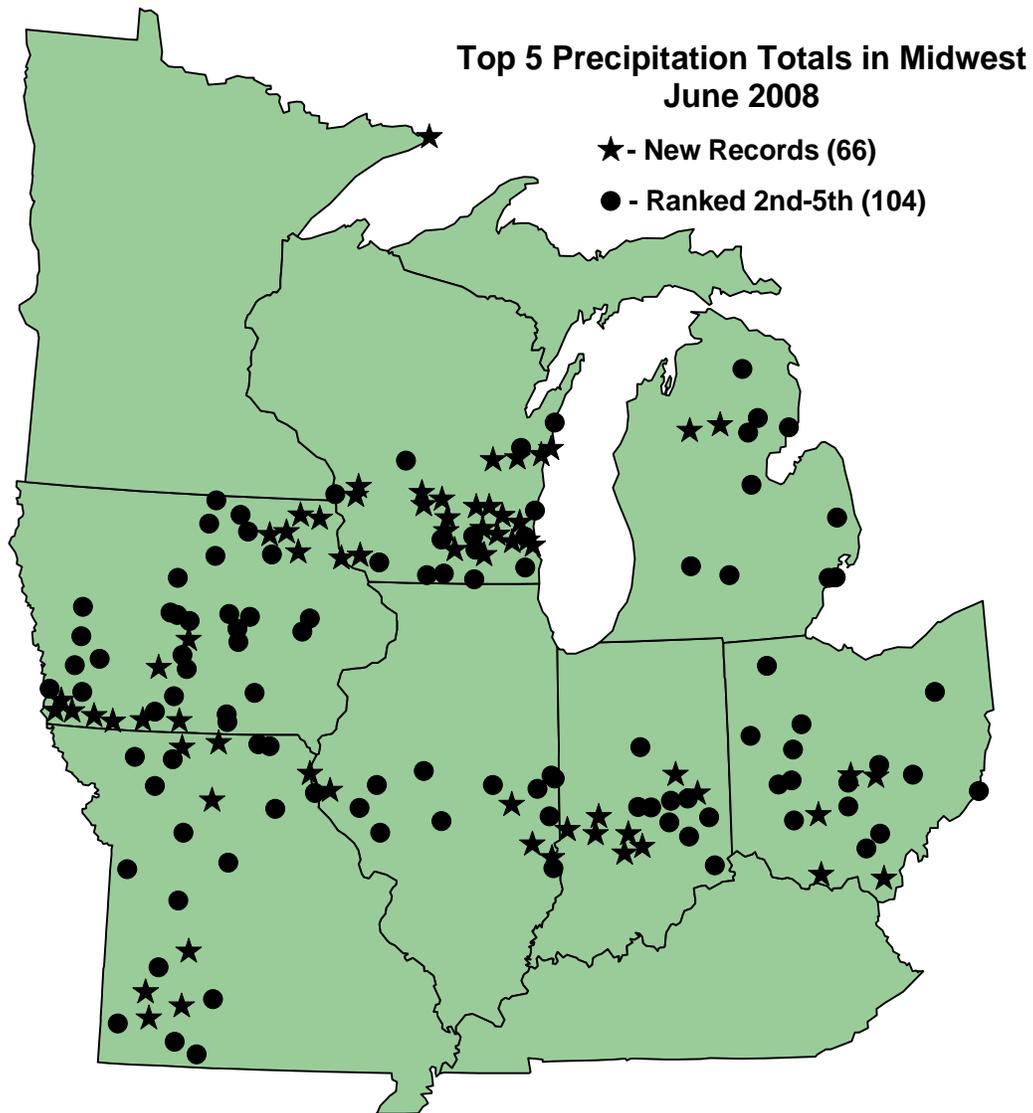


Figure 2. National Weather Service Cooperative Observer Network precipitation stations having a Top 5 precipitation total for June 2008. The locations with stars tied or exceed previous records, while the locations with dots are ranked second to fifth wettest. All stations reported at least 75% of the time, had 30 years or more of records, and were compared to all station data since 1895.