



# THE CLIMATE OBSERVER

A publication of the *Midwestern Regional Climate Center*

April 2018

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## NOAA's Regional Collaboration Network in the Great Lakes

*Jennifer Day, Great Lakes Regional Collaboration Team, NOAA*



*NOAA Great Lakes Regional Collaboration Team at the annual meeting in Silver Spring, MD, 2017*

When most people think of the National Oceanic and Atmospheric Administration (NOAA), they rightly think of our vast oceans, the fishery or its atmospheric work with weather and climate. But NOAA also has an important fresh water mission in the Great Lakes that involves programs across the agency. NOAA's mission is broad and diverse and divided by Line Offices with very specific national mandates and authorities. How do we bring this diverse work together, with place-based reach, in a region, and support a "one NOAA" agency message? This question was asked a decade ago and the result was the formation of eight NOAA regional teams made up of a cross-section of NOAA employees and partners in the region that seek to improve NOAA's productivity and value to customers by articulating and acting on the broader NOAA goals in terms of priority regional needs and regional contributions.

The Great Lakes Regional Collaboration Team covers the eight states of the Great Lakes region—Minnesota, Wisconsin, Michigan, Illinois, Indiana, Ohio, Pennsylvania and New York—that have a focus on the Great Lakes. While working to coordinate across NOAA,

the team also works with other members of our federal family, states, municipalities and partners representing NOAA's work on the Great Lakes Restoration Initiative and the Great Lakes Water Quality Agreement.

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**On the Road:**

**IN** - Purdue University  
**CO** - WERA Annual Meeting  
**ND** - Climate Prediction  
Application Sciences  
Workshop  
**IL** - Midwest DEWS  
Communications Team  
Workshop  
**NE** - MOISST Workshop  
**WI** - Wisconsin Climate  
Services Summit  
**NE** - AASC Meeting  
**IA** - Midwest Climate  
Services Partners Meeting

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*Winning team of the rain gauge trivia contest at the 2017 NWS Climate Services Workshop, co-sponsored by NOAA, the NOAA Great Lakes Regional Coordination Team, and the MRCC.*

Climate Services is an issue that cuts across all of NOAA and is one focus of the Great Lakes Regional Team. The team has created working groups lending their expertise and time to several efforts addressing climate information and services. The team is developing the regional Great Lakes node on the U.S. Climate Resilience Toolkit webpage. It is co-hosting, with the Midwestern Regional Climate Center, a second Climate Focal Point Workshop. Scheduled for August 21-23, 2018, the workshop will focus on facilitating and building relationships and sharing information across the climate services network of professionals in the Great Lakes region. The team is also participating in state-specific summits to ensure effective climate services at the state level.

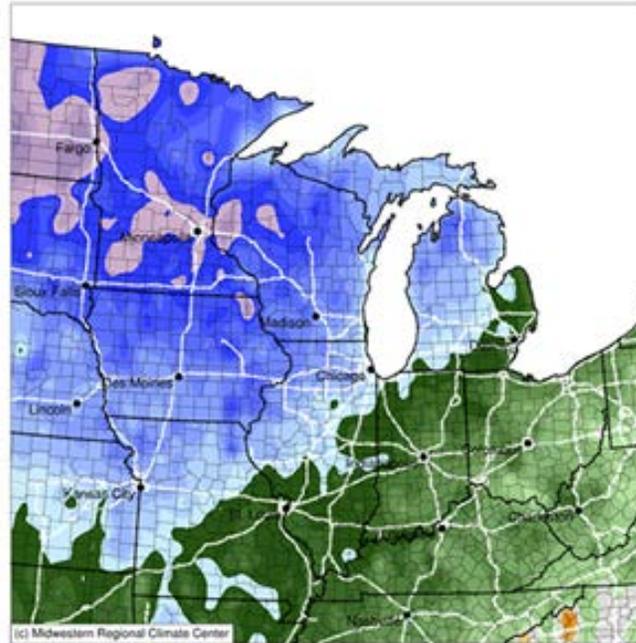
Information and detailed project information can be found on the regional website at <http://www.regions.noaa.gov/great-lakes/>. To help spread the word about what NOAA does in the Great Lakes region, [a video has been created](#) that highlights NOAA's freshwater mission and work within the Great Lakes region.

*For more information on this article or the [NOAA Great Lakes Region](#), please contact [Jennifer Day](#) via email.*

## Prolonged Cold (and Snow) Delays Spring

Steve Hilberg, MRCC Climatologist

Average Temperature (°F): Departure from 1981-2010 Normals  
April 01, 2018 to April 17, 2018



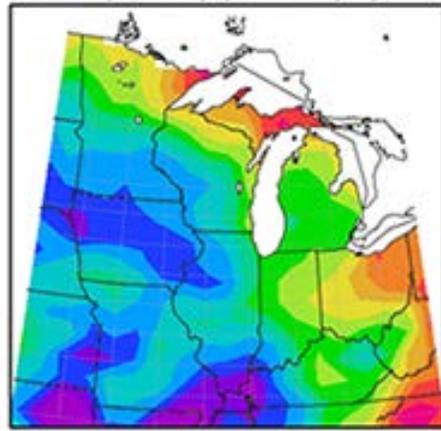
-22 22 -20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 1 2 3 4 5 6 7  
Stations from the following networks used: WBAN, COOP, FAA, GHCN, ThreadEx, CoCoRaHS, WMO, ICAO, NWSLI, Missouri FSA, Missouri Mesonet, Midwestern Regional Climate Center  
cli-MATE: MRCC Application Tools Environment  
Generated at: 4/17/2018 10:37:54 AM CDT

Persistent winter-like weather well into April has delayed the onset of spring for the entire Midwest this year. Heavy rain in March and more rain in April combined with a lack of warm, dry weather has left soils generally wet, pushing back the start of spring planting in many areas.

Average temperatures through mid-April were below normal across the entire region. As shown in the map, right, temperatures ranged from 10 to more than 20 degrees below normal in the northwest two-thirds of the region, and from 3 to 9 degrees below normal in the southeastern third.

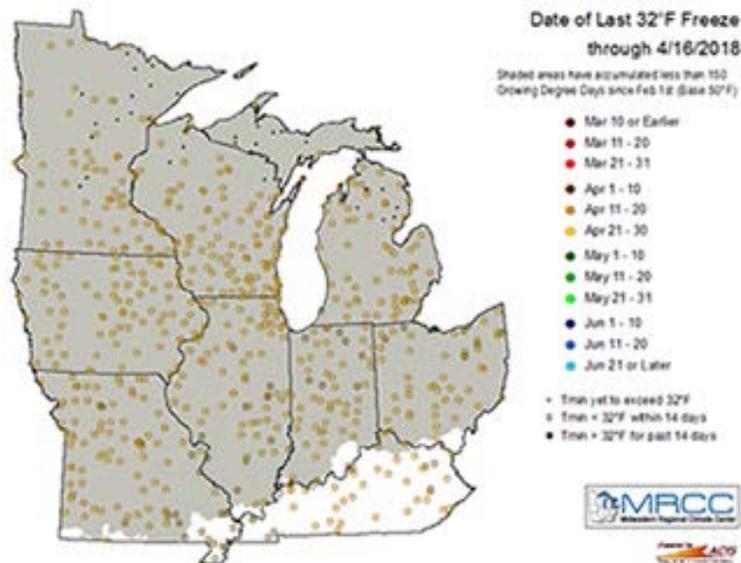
By mid-April, typically much of the Midwest is accumulating growing degree days (GDD) as daytime highs reach the 60s and 70s. Not this year. GDDs have been slow to accumulate, and the entire Midwest is below average on GDD accumulation, ranging from 20 to 40 GDD below average in eastern Ohio to more than 70 GDD below average in southern Missouri, Illinois, and eastern Kentucky. In the central Midwest in mid-April, a typical maximum temperature of 64°F and a low of 42°F would result in only 3 GDD  $((64 + 42)/2 - 50)$ . In Champaign-Urbana, for example, we have accumulated only 37 GDD since April 1. The average for April is 78 GDD. The magnitude and extent of the GDD deficit in the Midwest this year through mid-April is greater than it has been in any of the previous five years.

MGDD Departure, 4/1/2018 to 4/16/2018



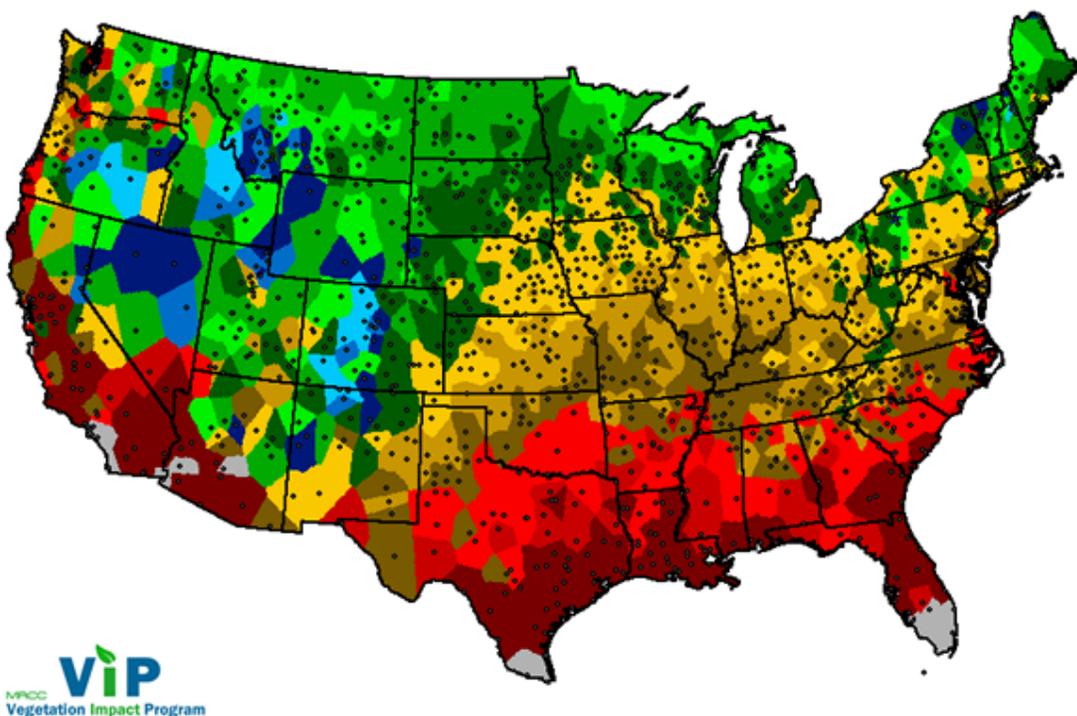
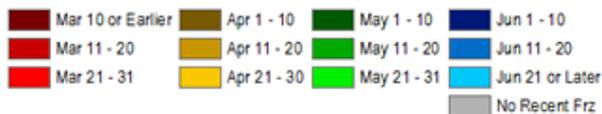
Midwestern Regional Climate Center  
Illinois State Water Survey  
University of Illinois at Urbana-Champaign

At 150 GDD vegetation has usually developed enough to be susceptible to freeze damage. Through mid-month the only area in the Midwest with a GDD accumulation of 150 or more was Kentucky and extreme southern Missouri.



While the cold and wet weather has kept producers out of their fields and gardeners out of their gardens for the most part, it does have a somewhat positive side. It's not unusual to get a period of warm weather in March and April that stimulates the development of vegetation, sometimes ahead of normal, leaving it vulnerable to freezing weather. This spring's cold weather has delayed that development which means that vegetation will be less vulnerable to freezing weather as we approach the point in the season where freezing weather is less and less likely.

Climatological Date of Median Last 32°F Freeze  
For the years from 1980-81 to 2009-10  
Median Defined as 50th Percentile

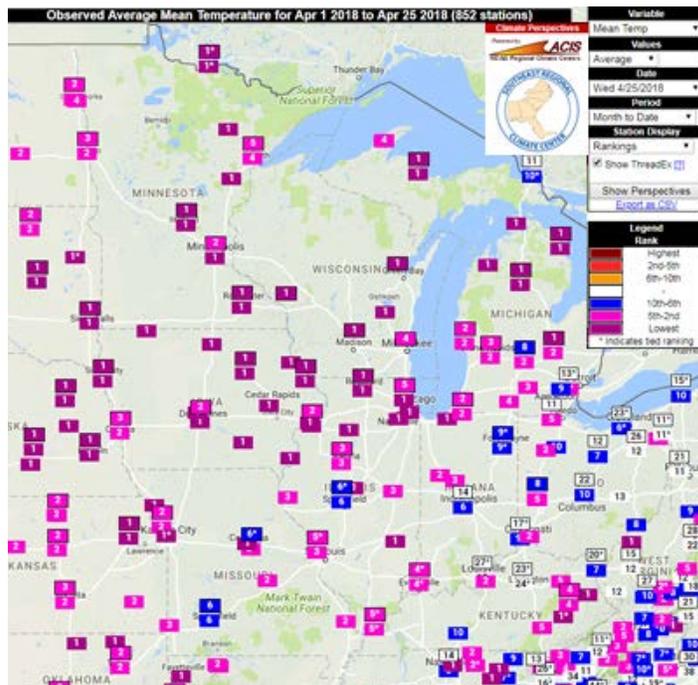


You can follow the progress of the spring freeze and the impact on vegetation on the MRCC [Vegetation Impact program page](#).

For more information on this article, please contact [Steve Hilberg](#).

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## Midwest Climate at a Glance



April was off to a cold and snowy start in 2018. More than 3000 daily record lows (maximum and minimum temperatures) were set in the first 26 days of the month, while less than 100 daily record highs were set over the same period. Daily snowfall records across the Midwest were set over 900 times as well. Most days through the 19th saw significant snow somewhere in the region. Snow was more likely further to the

north but snow as late as the 9th spread as far south as Missouri and Kentucky. Monthly snow totals exceeded 30 inches in parts of Wisconsin and Michigan and totals of 10 or more inches were reported over nearly all of Wisconsin, the northern third of Iowa, the southern two-thirds of Minnesota, the northern half of Lower Michigan, and all of Upper Michigan. A band of 3 to 6 inches also stretched from northern Missouri to central Ohio. Snow totals were well above normal for nearly the entire region with many locations having several times their normal total for April. The cold temperatures have most of the northwestern half of the Midwest ranking as the coldest on record, or among the top-5 coldest. The southeastern half of the region was a mix of top-5 coldest, top-10 coldest, and some top-25 coldest, but with just a few locations ranking as the coldest on record for the month-to-date. [See the Midwest Climate Watch pages for more ...](#)

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## MRCC Product Highlight

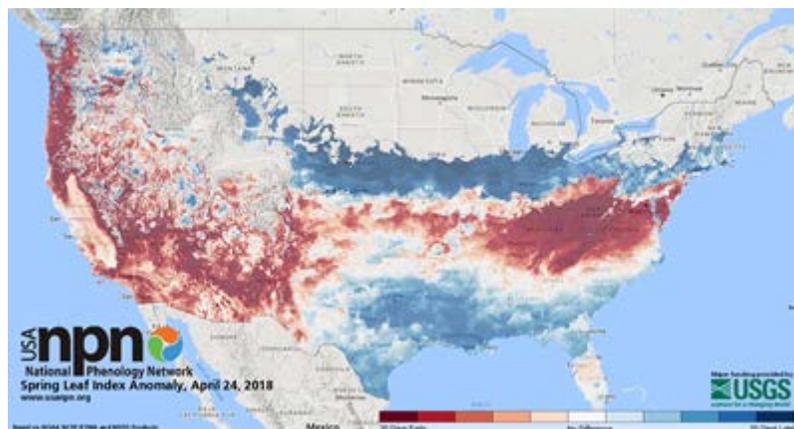
Historical Precipitation Forecasts						
Lat/Lon:40.338424/-88.961922						
Forecast Date:2018-01-11						
Forecast Valid: 2018-01-11, 00:00 (local time)						
	2018-01-11			2018-01-12		
	06:00	12:00	18:00	00:00	06:00	12:00
Quantitative Precipitation Forecast (in)	0.04	0.14	0.09	0.07	0.0	0.0
Probability of Precipitation (%)	47.0		79.0		53.0	
Forecast Valid: 2018-01-11, 12:00 (local time)						
		2018-01-11		2018-01-12		
		18:00	00:00	06:00	12:00	
Quantitative Precipitation Forecast (in)		0.12	0.07	0.0	0.0	
Probability of Precipitation (%)		72.0		57.0		

The new [cli-MATE](#) Historical Precipitation Forecasts tool allows users to access past precipitation forecasts for specific locations across the nation. Users select their location from the map interface as well as the date the forecast was issued to see the quantitative precipitation forecast and the probability of precipitation from the

National Weather Service's [National Digital Forecast Database](#). Both the morning (6Z) and afternoon (18Z) forecasts are issued for that day are returned out 48 hours.

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## Climate Cool Tool



The USA [National Phenology Network](#) consists of a National Coordinating Office (NCO), thousands of volunteer observers and many partners, including research scientists, resource

managers, educators, and policy-makers. Anyone who participates in Nature's Notebook or collaborates with NCO staff to advance the science of phenology or to inform decisions is part of the USA-NPN. The USA-NPN also produces and distributes a growing suite of historical, real-time, and forecasted [phenology map products](#) using gridded temperature data and based on several predictive phenology models, such as the Spring Leaf Index Anomaly, above.

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## MRCC On The Road



### **West Lafayette, IN (May 4) – Purdue University Campus Visit**

Beth Hall will be meeting with several colleagues to discuss opportunities for collaboration and partnership.

### **Estes Park, CO (May 16-18) – Managing and Utilizing Precipitation Observations from Volunteer Networks - WERA**

#### **1012 Annual Meeting**

Steve Hilberg is chair of this year's meeting and will also be giving presentations on the MRCC E-T and Water Balance Maps and on QC of data.

### **Fargo, ND (May 21-25) – Annual Climate Prediction Application Sciences Workshop**

Beth Hall and Zoe Zaloudek will be attending the 16th Annual Climate Prediction Application Sciences Workshop. The MRCC is a co-sponsor of this workshop. Zoe will be giving a presentation, "GIS at the MRCC: A peek behind the curtain."

### **Champaign, IL (May 30-31) – Midwest Drought Early Warning System (DEWS) Communications Team Workshop**

Beth Hall is co-hosting this workshop to identify key communications partners across the Midwest interested in disseminating drought and flood potential information on a regular basis.

### **Lincoln, NE (June 4-7) – MOISST Workshop**

Mike Timlin will be attending the workshop which is focused on "From Soil Moisture Observations to Actionable Decisions."

### **Madison, WI (June 6-7) – Wisconsin Climate Services Summit**

Beth Hall and Bryan Peake will be attending this summit to help solicit climate services needs across the state and share information about resources already available.

### **Nebraska City, NE (June 19-22) – Annual American Association of State Climatologists (AASC) Meeting**

Beth Hall, Mike Timlin, Bryan Peake, and Jonathan Weaver will be attending this annual meeting that convenes state climatologists, regional climate centers, and other key climate services partners. Jonathan Weaver will be giving a presentation on MRCC's latest tools offered online.

## Davenport, IA (July 10-11) – Midwest Climate Services Partners Meeting

Beth Hall will be meeting with partners from the National Weather Service (NOAA), National Centers for Environmental Information (NOAA), Midwest Climate Hub (USDA), and the National Integrated Drought Information System (NOAA, multi-agency) to discuss strategic plans for partnering over the next 1-3 years.

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The MRCC is a partner in a national climate service program that includes the [NOAA National Centers for Environmental Information](#), [Regional Climate Centers](#), and [State Climate Offices](#).

MRCC is based at the Illinois State Water Survey, a division of the Prairie Research Institute

at University of Illinois Urbana-Champaign.

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