How Coop and CoCoRaHS Observations Impact the National Weather Service

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Manual measurements from Coop and CoCoRaHS observers play a key role in NWS weather, water, and climate services

Volunteer Coop and CoCoRaHS observers provide key weather observations which greatly improve our understanding of the impact of weather on the communities we serve.

Daily Reports include:

- Precipitation (including water equivalent of new snow)
- Snowfall
- Snow Depth
- Snowpack Water Equivalent (SWE)

The observations provide situational awareness which allows the National Weather Service to provide critical decision support services for partners to protect life and property.

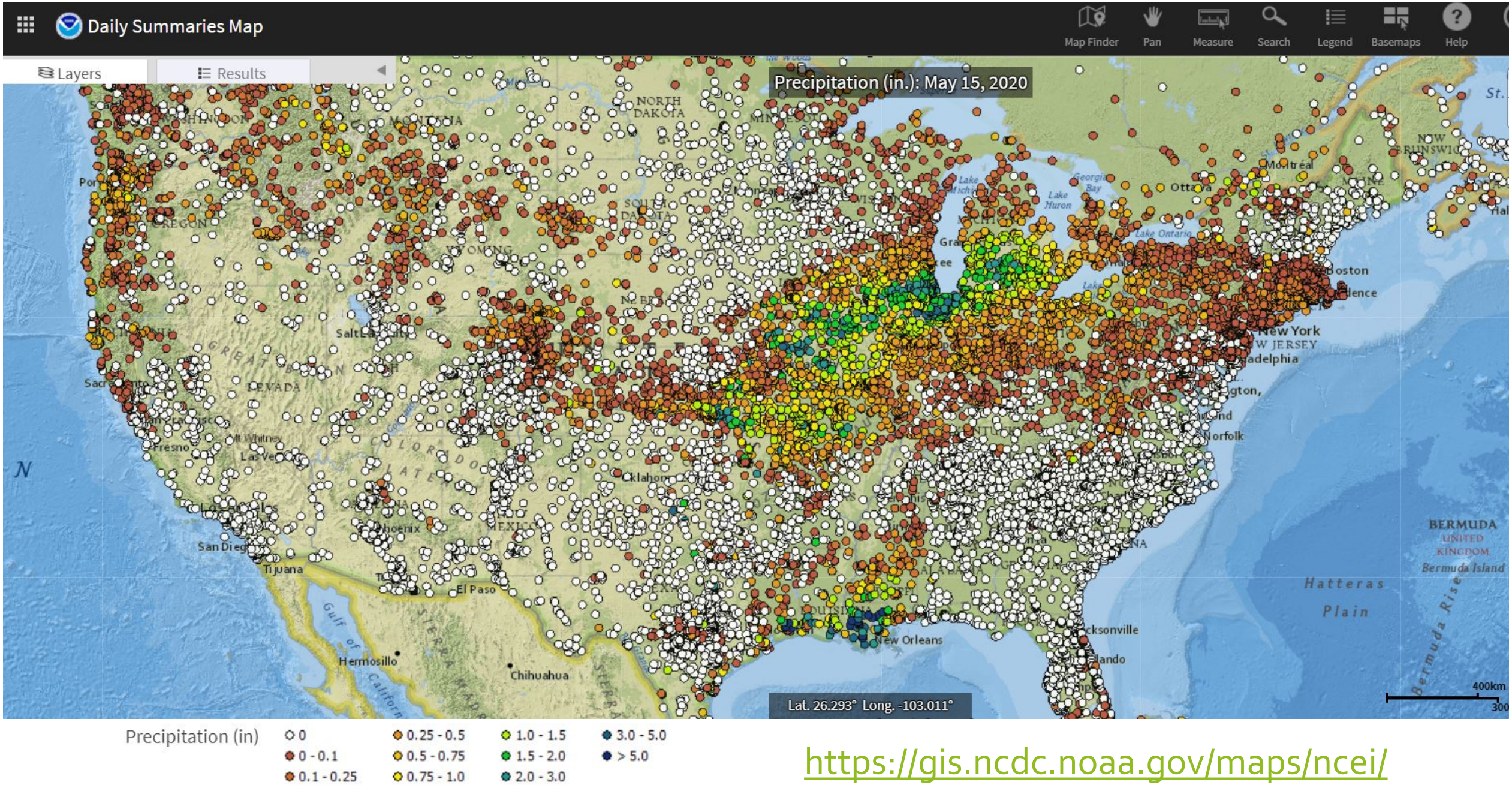
Precipitation

Including Water Equivalent of New Snow

Manual Precipitation Reports are Key to NWS Operations

- Precipitation Maps and Summaries (Daily to Long-Term Totals)
- River Models and Forecasts
- Flood Outlooks and Warnings
- Quality Control for Radar Precipitation Estimates
- Precip Analysis Products such as Multi-Radar/Multi-Sensor (MRMS) and QPE
- Local Storm Reports (LSR's) and Post-Event Reviews
- Climate Reports and Historical Event Documentation
- Backup Precipitation Measurements for Automated Stations (Snow Season)

GHCN-Daily including Coop and CoCoRaHS Observations – CONUS



https://gis.ncdc.noaa.gov/maps/ncei/

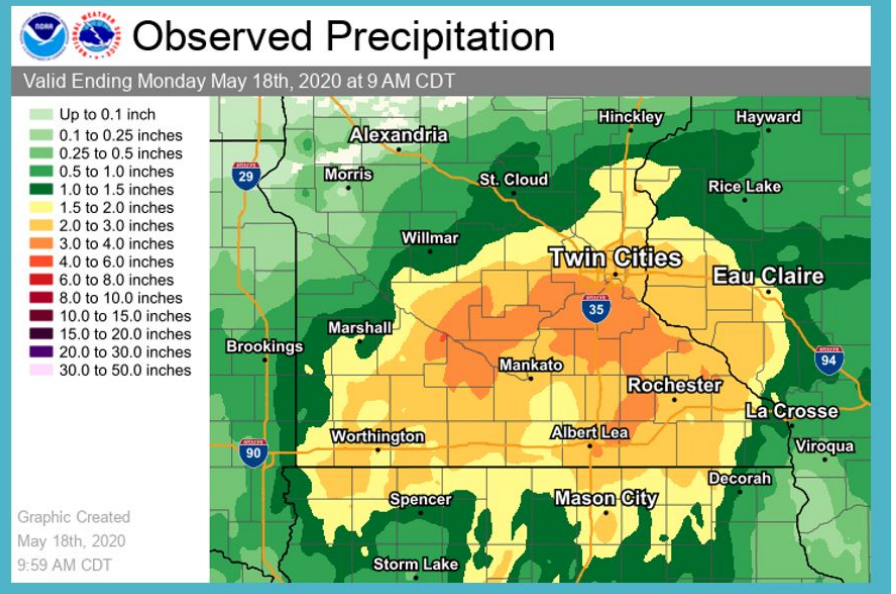
Rainfall Saturday Morning Through Monday Morning

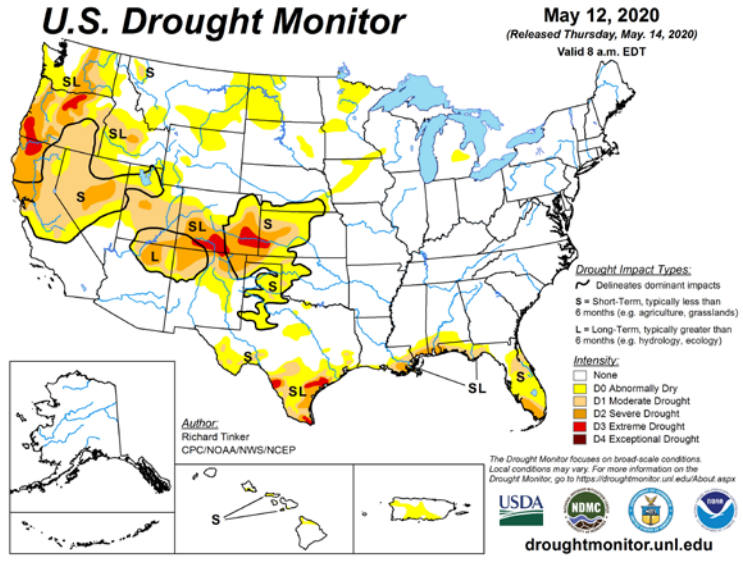
Twin Cities, MN

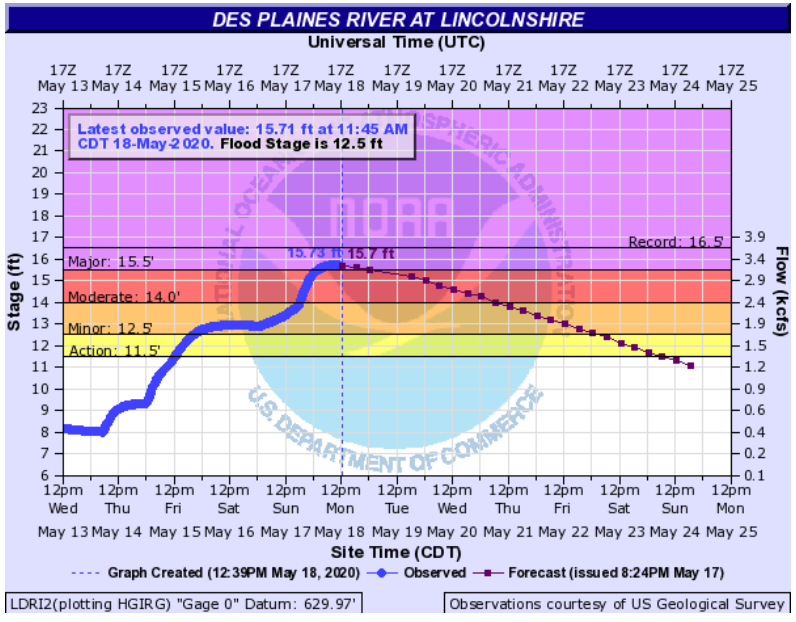
Thank you to our volunteer Coop and CoCoRaHS observers for the precipitation measurements!

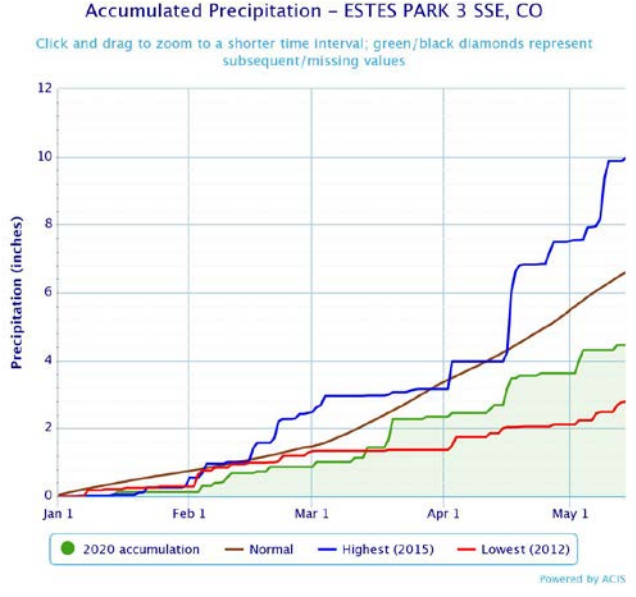
...PRECIPITATION REPORTS...

Location	Amount	Provider
Dennison 2.0 NNE	4.85 in	COCORAHS
Northfield 1.2 ESE	4.78 in	COCORAHS
Dennison 0.4 SSE	4.73 in	COCORAHS
Northfield 1NNW	4.68 in	COCORAHS
Red Wing 3SE	4.53 in	COCORAHS
Northfield 0.8 SE	4.51 in	COCORAHS
Dennison 6E	4.44 in	COCORAHS
Northfield 0.4 NW	4.40 in	COCORAHS
Lakeville 2.7 NNW	4.25 in	COCORAHS
Miesville 2WSW	4.25 in	COCORAHS
Shakopee 1NW	4.12 in	CWOP
Cannon Falls 0.5 SE	4.09 in	COCORAHS
Northfield 2.1 SSW	4.04 in	COCORAHS
7.0 S Cannon Falls	4.03 in	HADS
Carver 1.1 NW	4.01 in	COCORAHS
Prior Lake 1WSW	4.01 in	COCORAHS
Zumbrota 1.6 NNW	3.97 in	COCORAHS
Northfield 3.9 SSW	3.95 in	COCORAHS
Red Wing 4SE	3.90 in	COCORAHS
Eden Prairie 2.7 SE	3.88 in	COCORAHS
Nerstrand 4E	3.87 in	COCORAHS
Northfield	3.87 in	UCOOP
Red Wing	3.87 in	COOP
Rosemount 3WNW	3.85 in	COCORAHS
Pine Island 3.9 ENE	3.82 in	COCORAHS
Lakeville 2.1 N	3.77 in	COCORAHS
Veseli 2E	3.70 in	COCORAHS
Apple Valley 3E	3.69 in	COCORAHS
Vasa 5NNE	3.69 in	COCORAHS
Wanamingo 4SSE	3.68 in	COCORAHS
Montgomery 3E	3.66 in	COCORAHS
Jordan 1SSW	3.63 in	COOP
Farmington	3.62 in	UCOOP





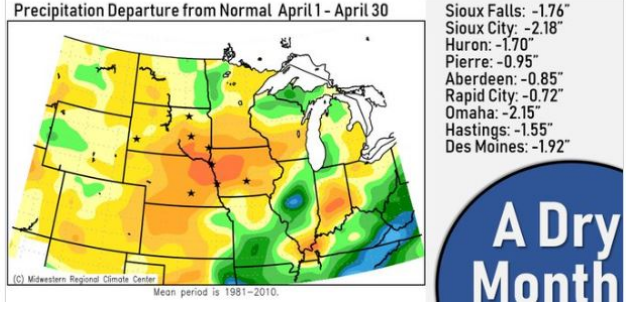




Below normal precipitation in April across much of the region. Precipitation departures from normal include:
MSP Airport: -0.86"
St. Cloud: -1.26"
Eau Claire: -0.19"
Alexandria: -0.77"
Redwood Falls: -1.41"
New Ulm: -1.22"
#mnwx #wiwx

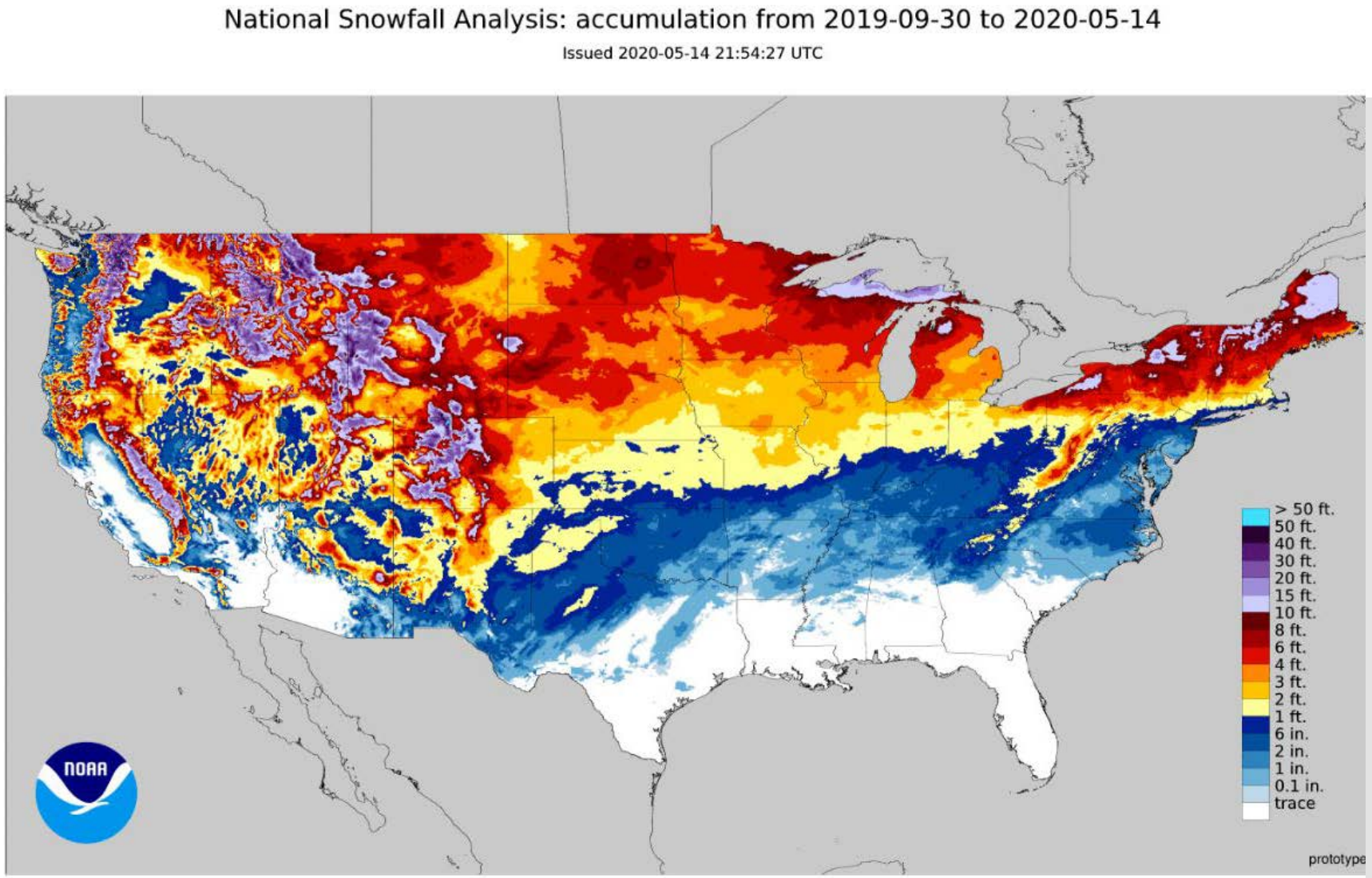
NWS Sioux Falls @NWSSiouxFalls · 4h

April is going to end as a very dry month for most of the northern and central United States. Here's a closer look at the monthly precipitation departures for April.



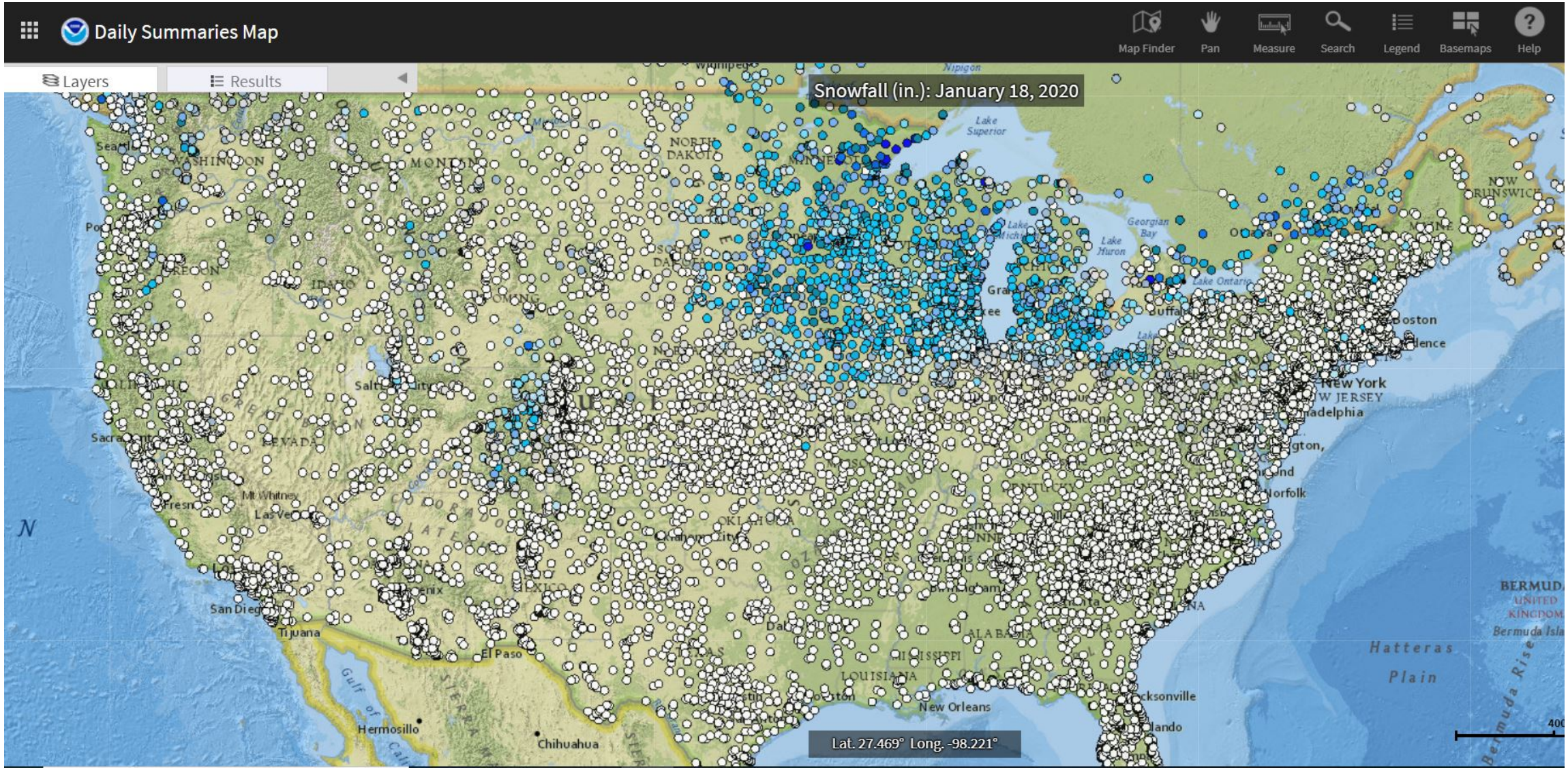
Snowfall

Coop and CoCoRaHS reports are primary source of snow measurements nationwide



"The National Snowfall Analysis relies critically on these observations, which number in the THOUSANDS, for its data assimilation processes. We simply could not perform this analysis without them."
–Greg Fall, NOAA Office of Water Prediction, Chanhassen, MN

https://www.nohrsc.noaa.gov/



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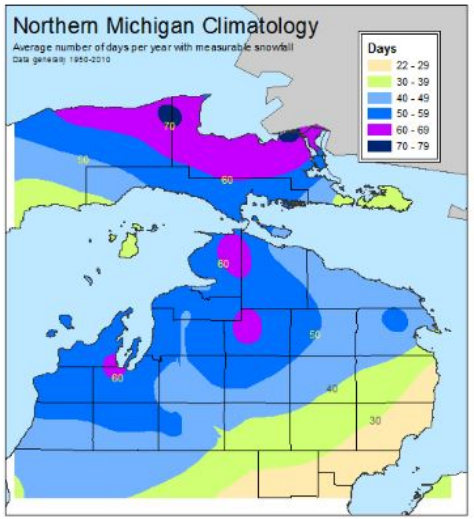
Snowfall Climatology and Documenting High-Impact Events

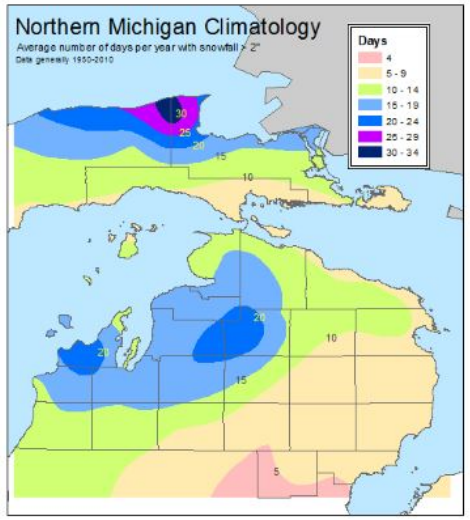
Snowfall

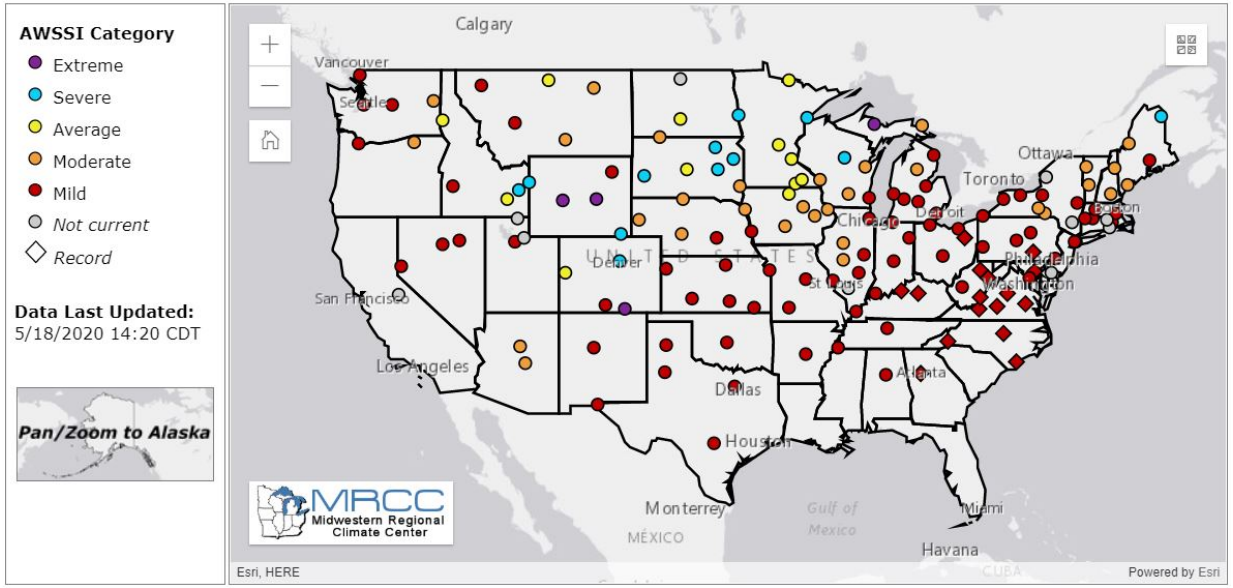
Click on an image to enlarge

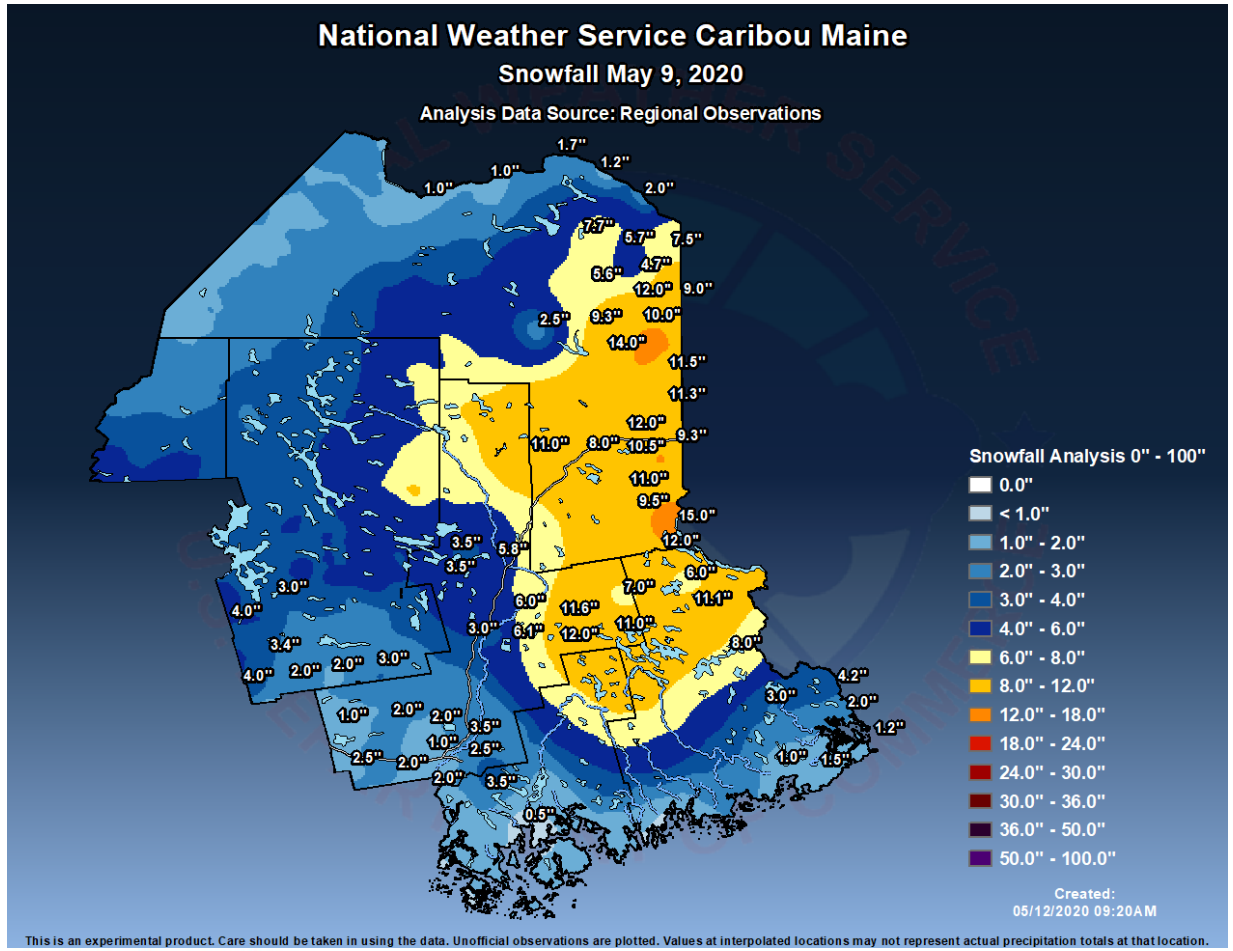
Average days of measurable snowfall



Average days of snowfall greater than 2 inches







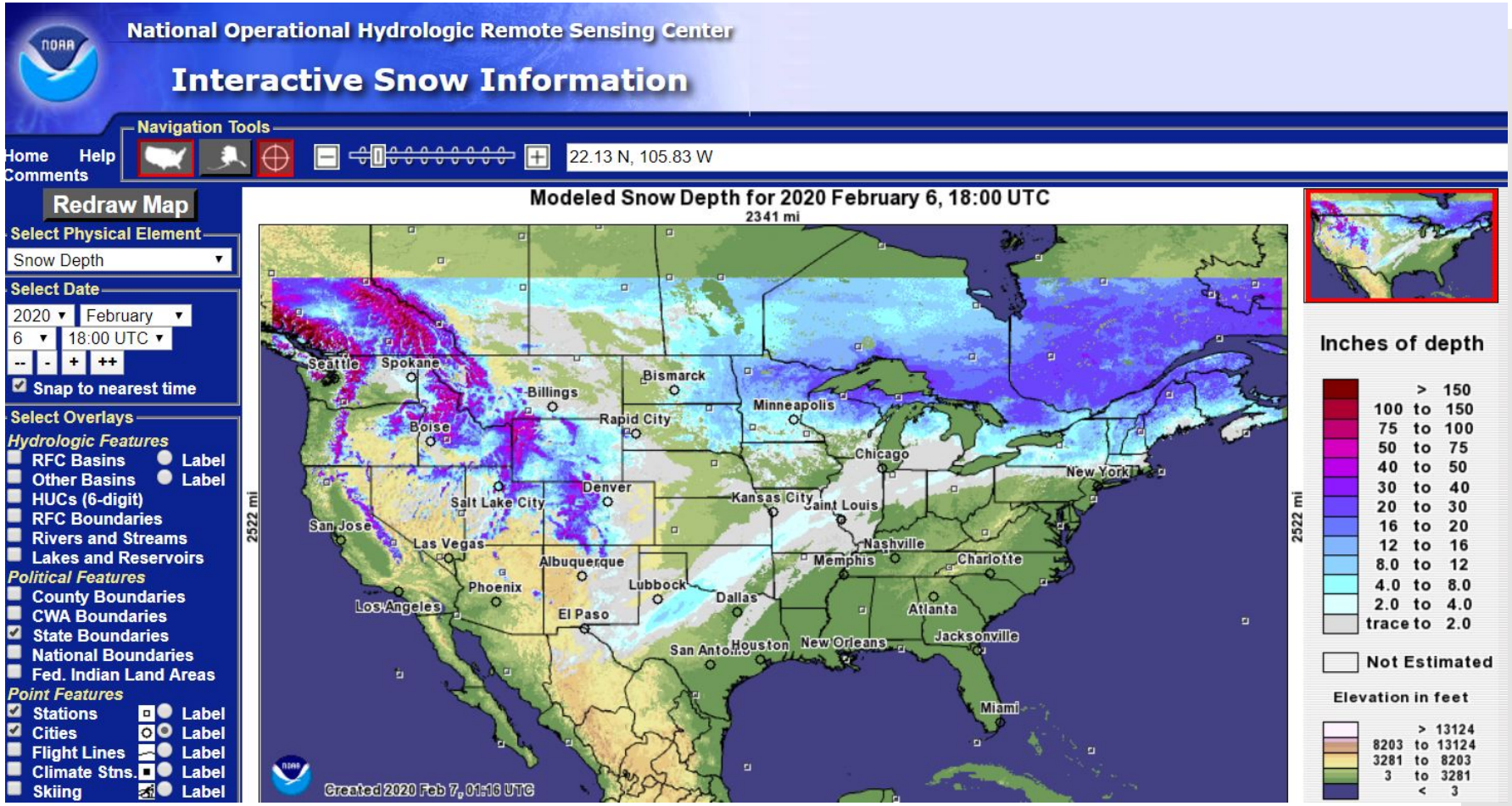
RECORD EVENT REPORT
NATIONAL WEATHER SERVICE CARIBOU, ME
0150 AM EDT SUN MAY 10 2020

...RECORD DAILY MAXIMUM SNOWFALL SET AT CARIBOU ME...

A RECORD SNOWFALL OF 5.5 INCHES WAS SET AT CARIBOU ME YESTERDAY.
THIS BREAKS THE OLD RECORD OF 1.4 SET IN 1967.

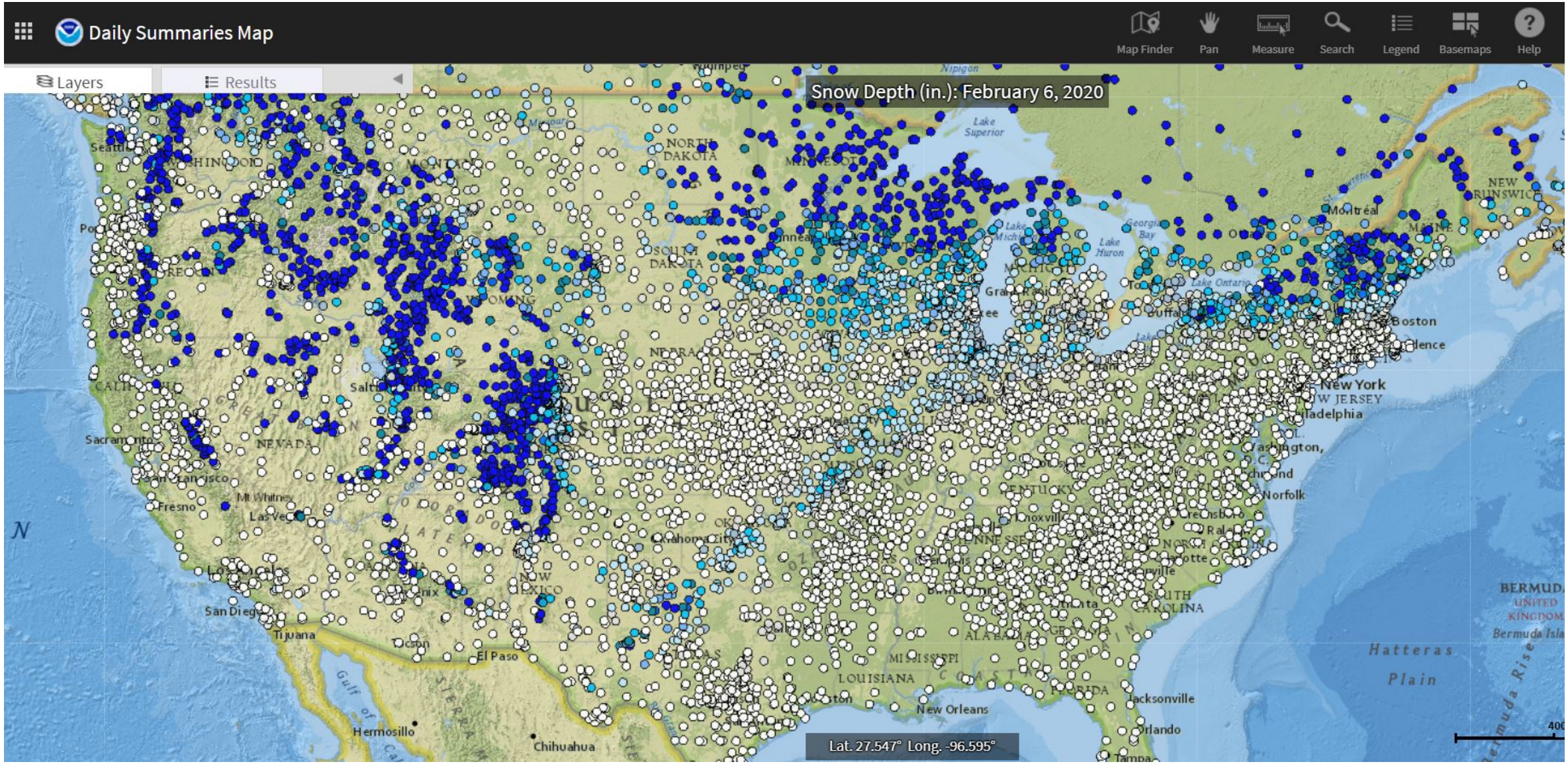
Snow Depth

Vital for Water and Weather Models and Analyses



"Snow and Data Assimilation System, SNODAS, depends upon having adequate and accurate ground based observations of snow depth and snow water equivalent. These observations are a critical input into the SNODAS!"
– Carrie Olheiser, NOAA Office of Water Prediction, Chanhassen, MN

https://www.nohrsc.noaa.gov/



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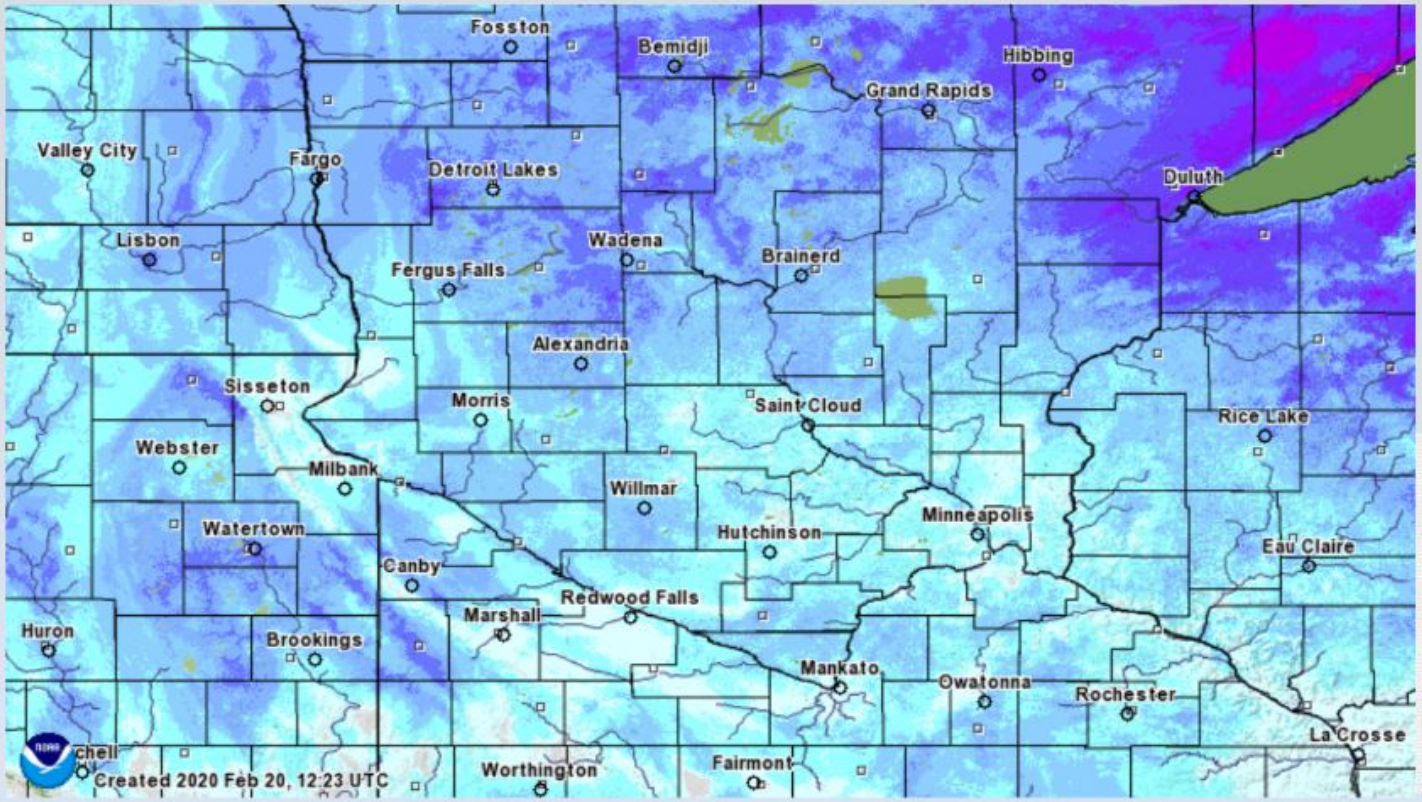
Snowpack Water Equivalent (SWE)

Critical for Spring Flood Outlook and Water Resource Management

Setting up for Spring 2020
Modeled Snow Water Equivalent (SWE)

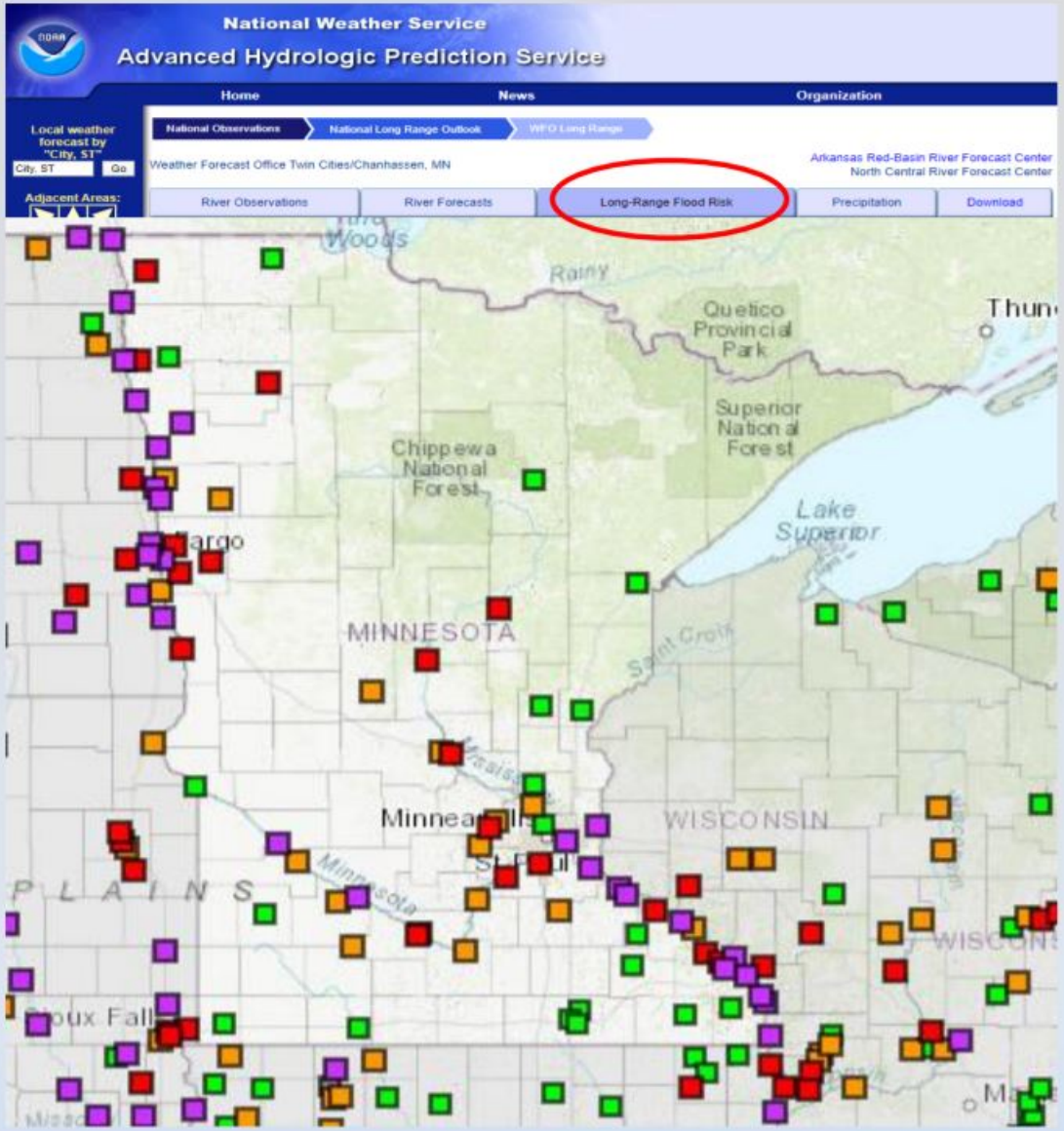


Water content decreasing over past two weeks

National Weather Service
Twin Cities/Chanhassen, MN

Weather-Ready Nation
National Oceanic and Atmospheric Administration

Chance of Exceeding Flood Levels throughout the Spring



For Long Range/Seasonal Planning, use the Long Range Flood Risk tab to evaluate overall threats.

Potential for Moderate or Major flooding remains, but is decreasing with each dry day.

Much will be determined by the temperatures and rain/snow in late March and April. A heavy rain event on top of the saturated soils during/after the melt will lead to significant flooding.

Thank you Coop and CoCoRaHS Observers

Your reports truly make a difference!

Michelle Margraf

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