Winter Grain Market and Climate Outlook Meetings

January 22, 2021

Ben Brown & Aaron Wilson
University of Missouri/The Ohio State University

Photo Courtesy of Mary Griffith

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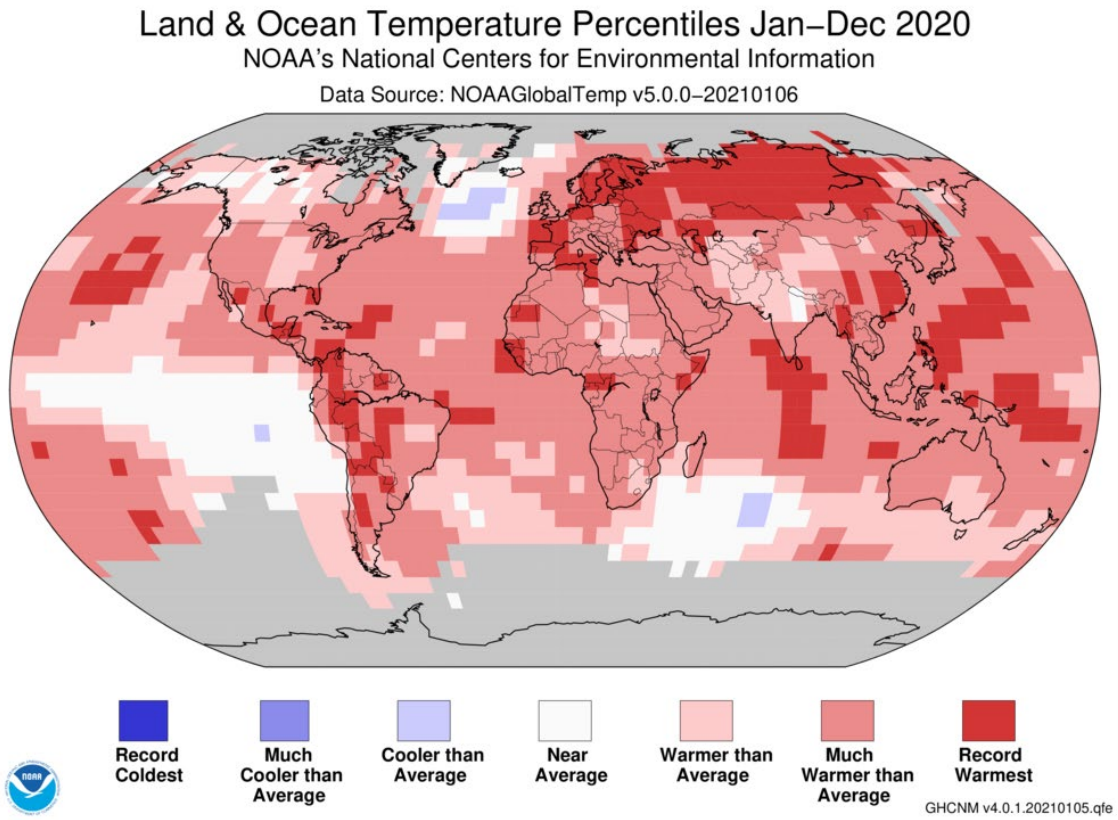
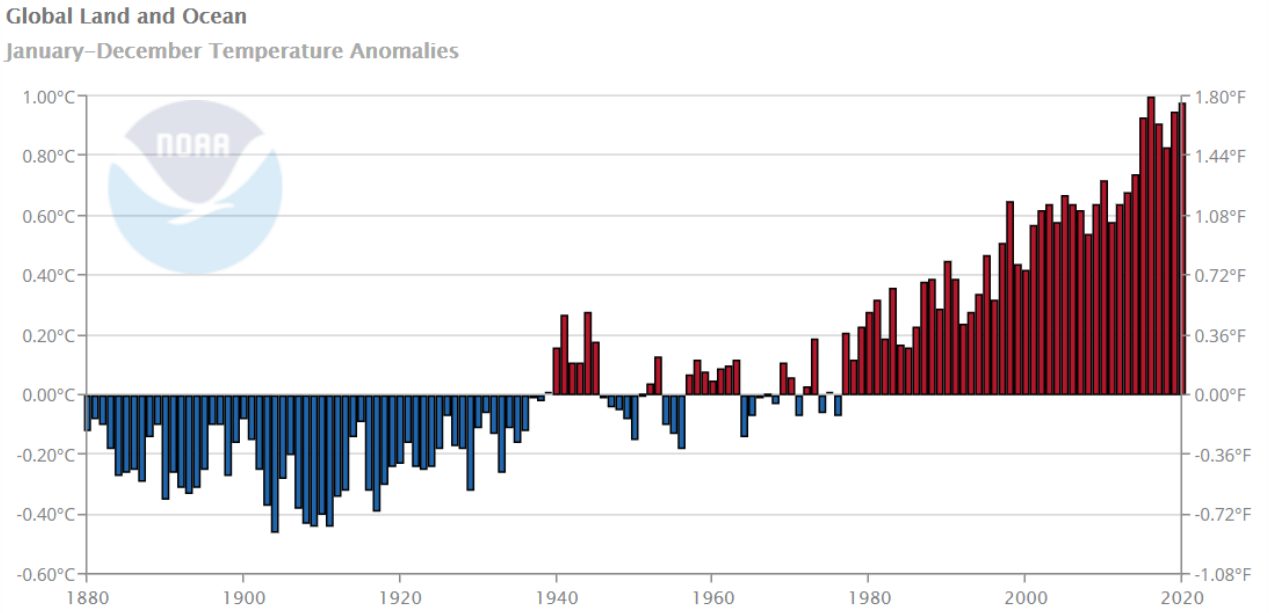
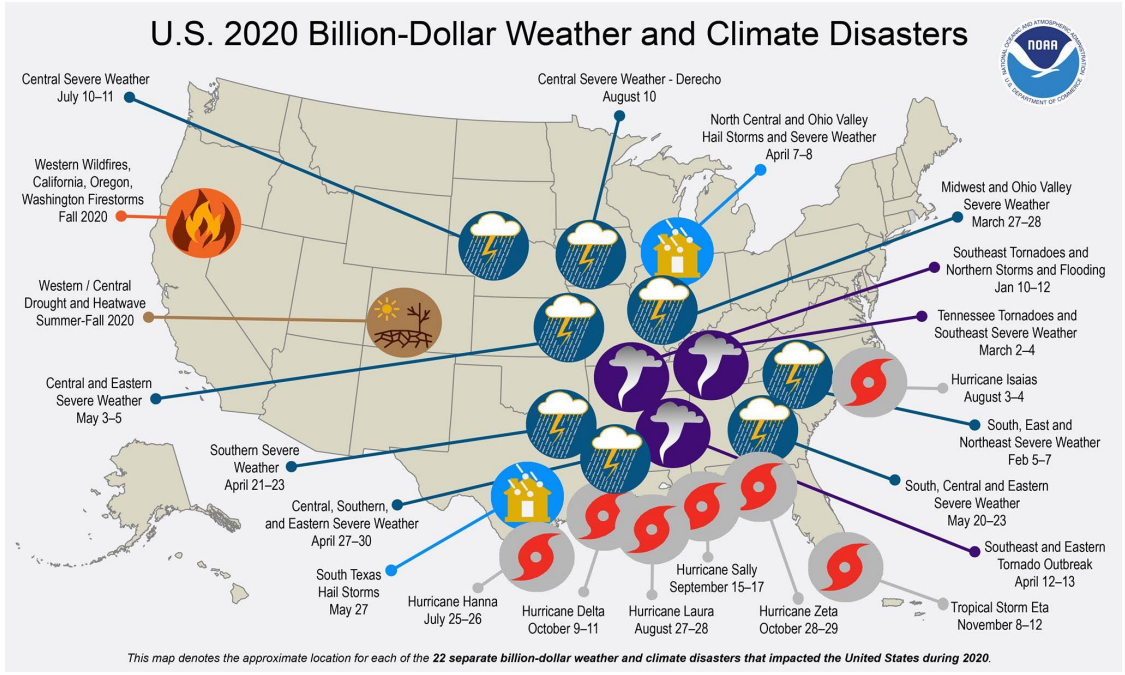
GLOBAL ASSESSMENT

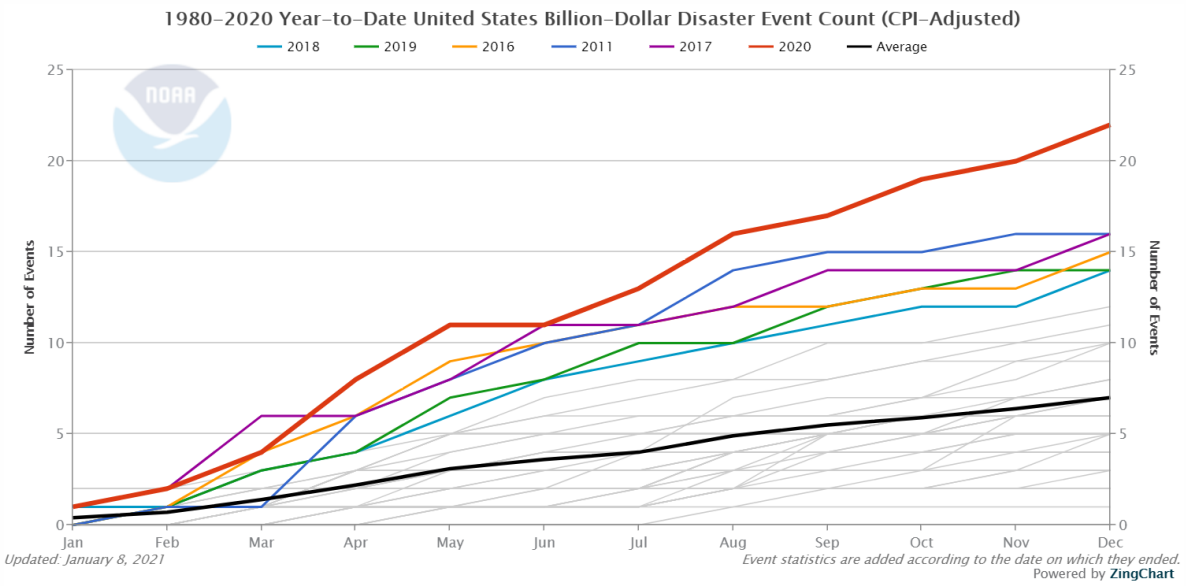




- 2020 is now 2nd Warmest since 1880 (behind 2016 by 0.04 deg F); 2019 is 3rd warmest
- Top 10 warmest years have occurred since 2005
- If you were born after February 1985, you have never experienced a cooler than average month for the planet!

BILLION DOLLAR DISASTERS





National Weather Service Mission

2008-2017 Natural Disasters in Ohio

- Flash flooding: $178,548,000
- Flooding: $54,551,000
- Hurricanes: $0
- Heavy rain: $126,000
- Heavy snow: $4,860,000
- Tornadoes: $196,559,000
- Tsunamis: $0
- Wildfires: $0
- >$200 million on rain related disasters

https://www.ncdc.noaa.gov/billions/

Building a Weather-Ready Nation

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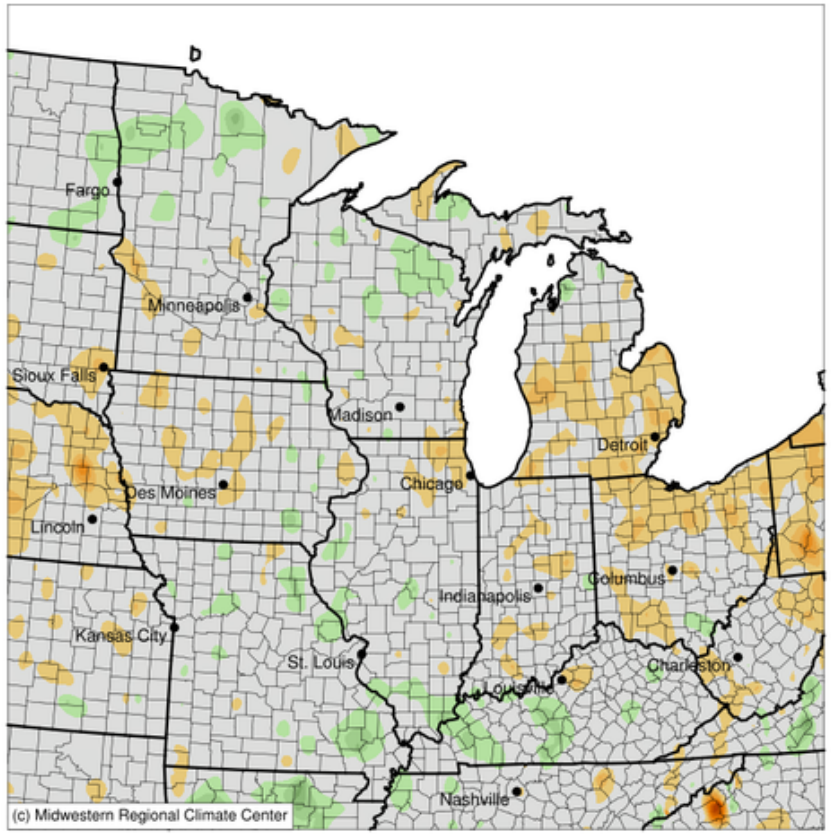
2020 Midwest Growing Season Climate

- Warmer than average across Ohio/Michigan back through Iowa
- Hot summer (July)

Average Maximum Temperature (°F): Departure from 1981-2010 Normals

March 01, 2020 to November 30, 2020



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: 1/3/2021 8:17:28 AM CST

Average Minimum Temperature (°F): Departure from 1981-2010 Normals

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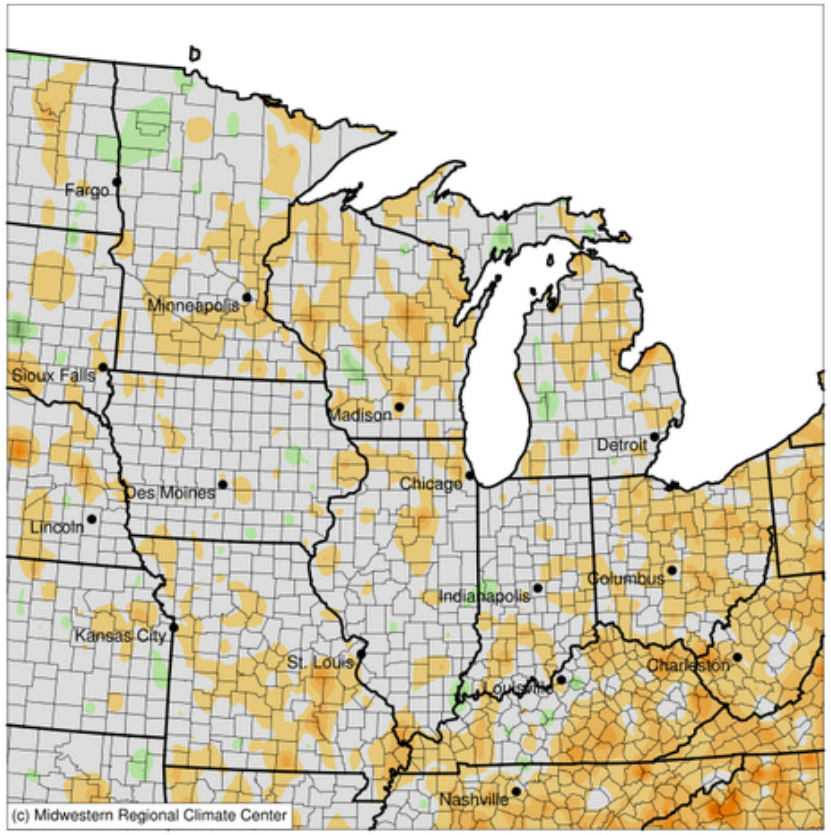

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Midwestern Regional Climate Center
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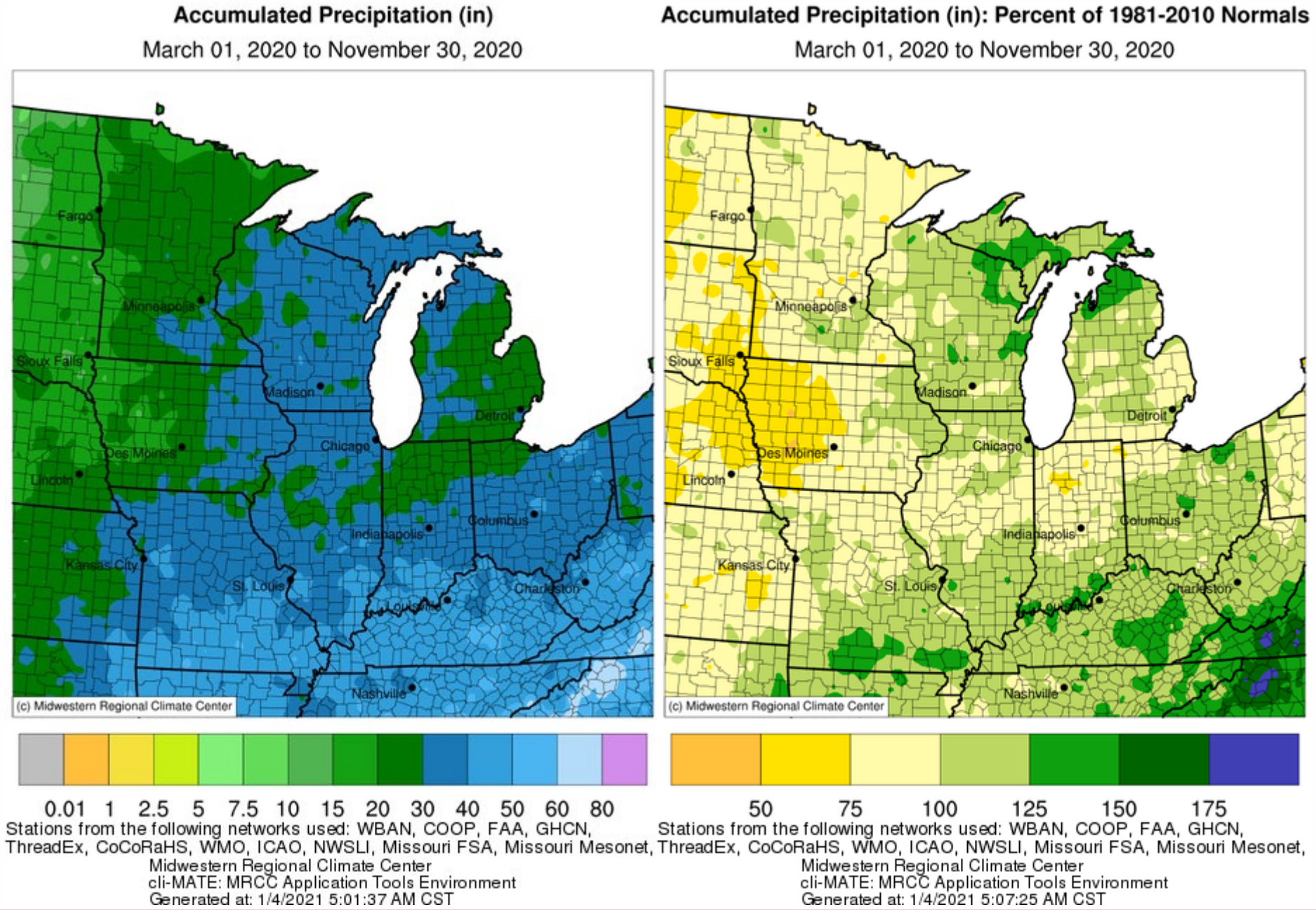
2020 Midwest Growing Season Climate

- Precipitation deficits from Great Plains, through Iowa, N. Missouri, Central Illinois, N. Indiana, and N. Ohio



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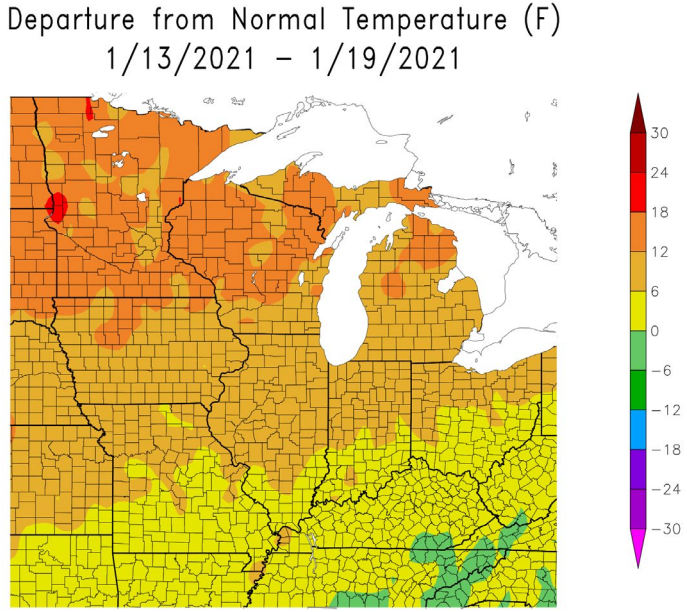
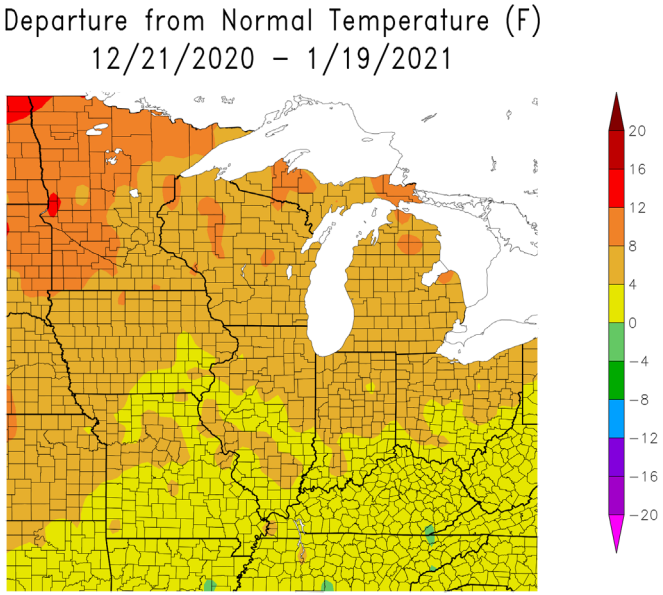
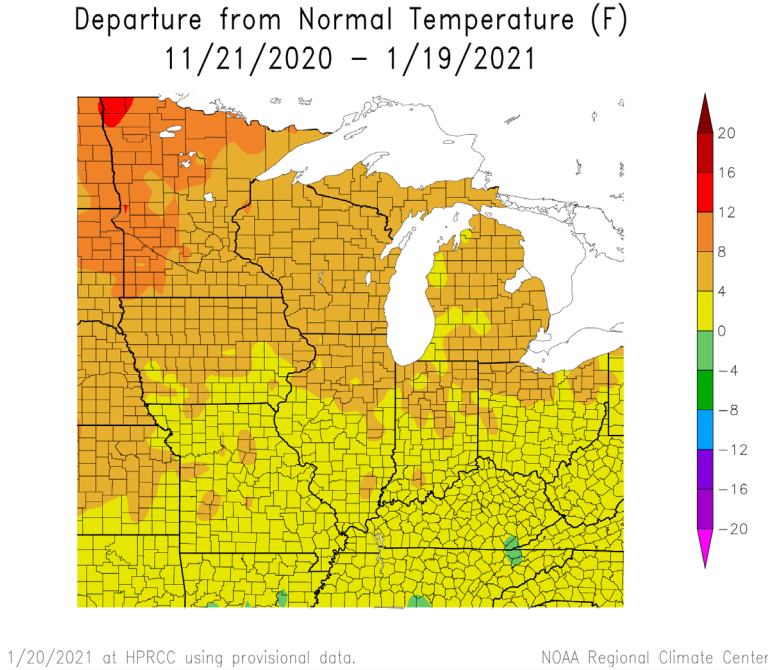
Temperature Differences Compared to Average (1981-2010)



7-Day

30-Day





60-Day

https://www.hrpcc.unl.edu

NATIONAL INTEGRATED DROUGHT INFORMATION SYSTEM
NIDIS Drought.gov U.S. Drought Portal

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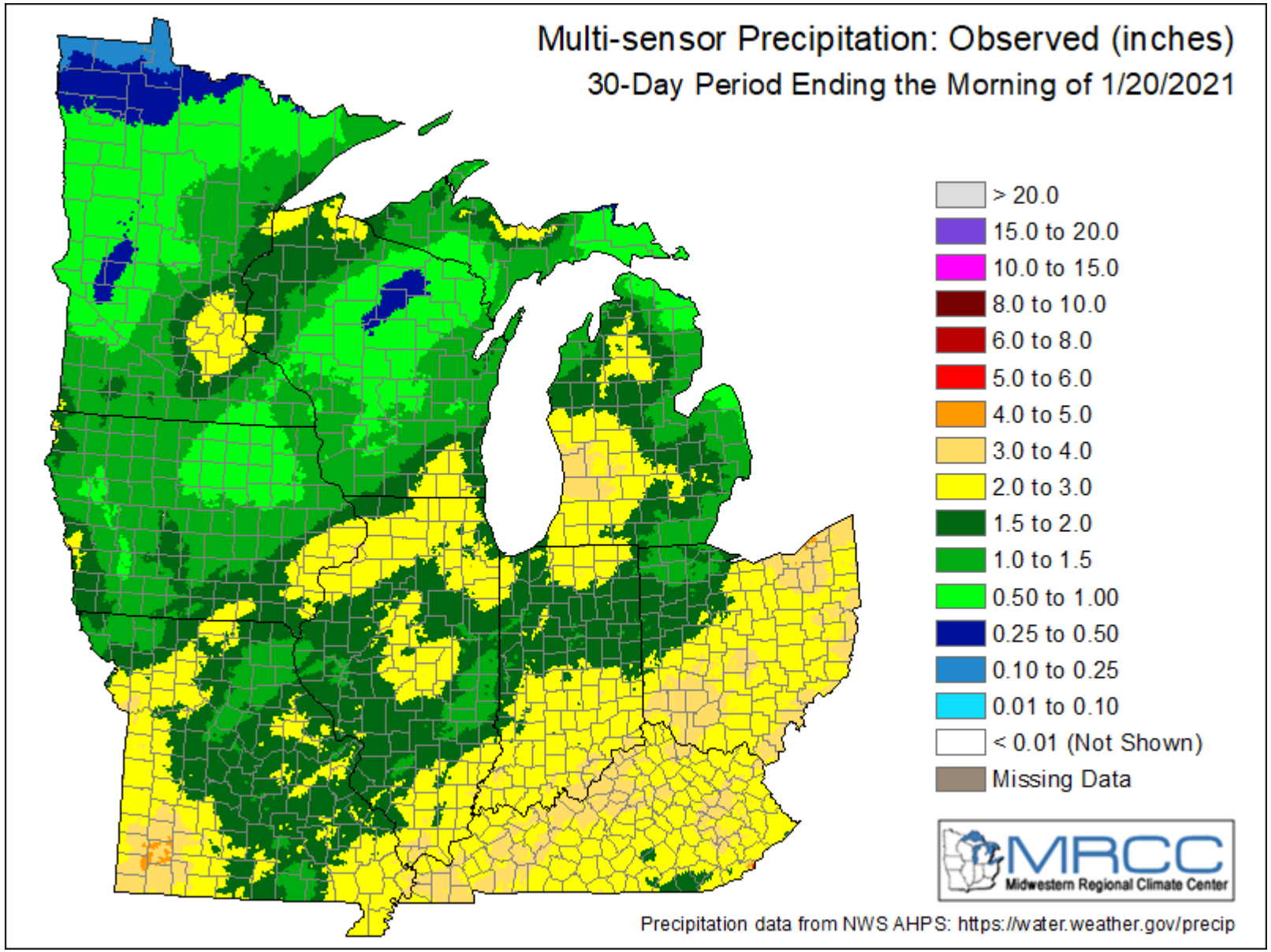
Previous 30-day Precipitation



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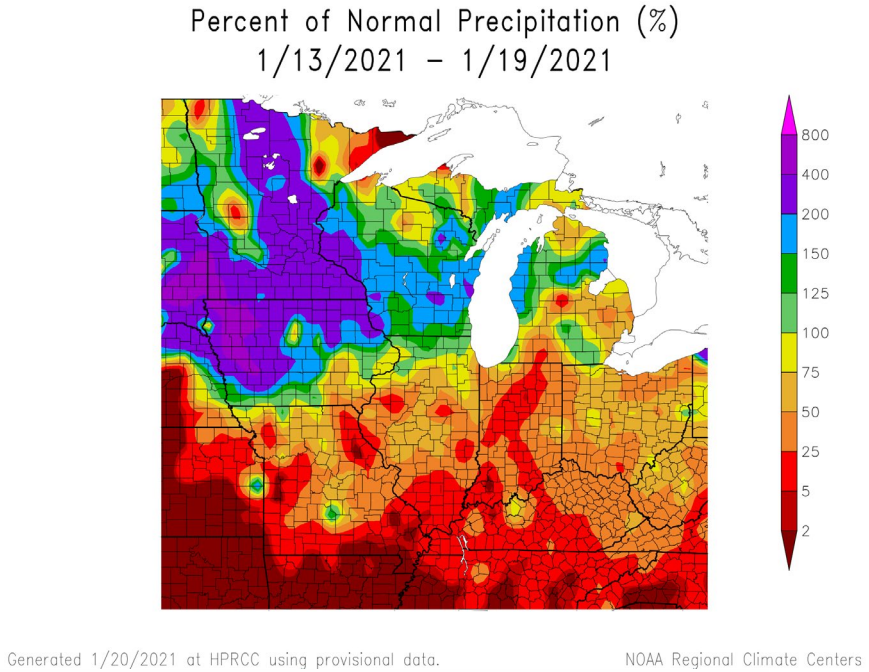
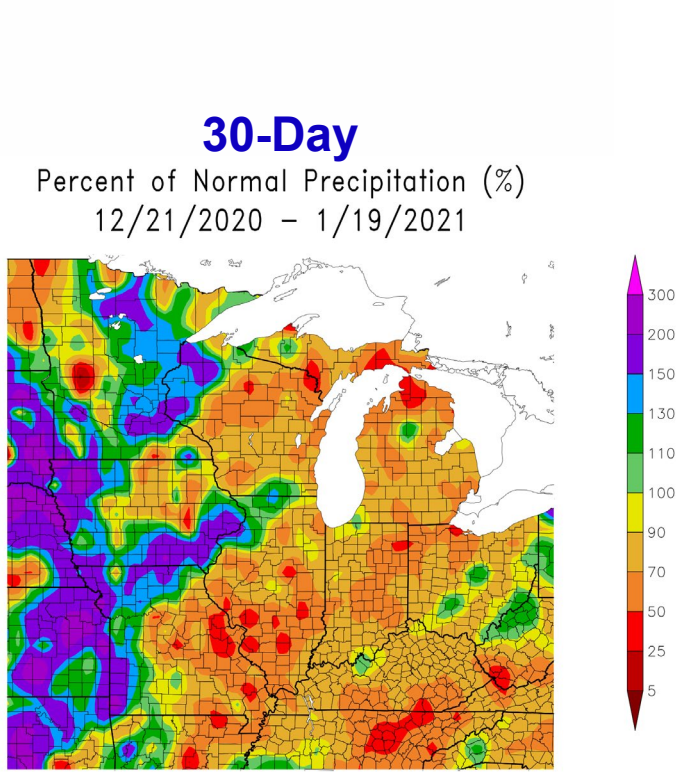
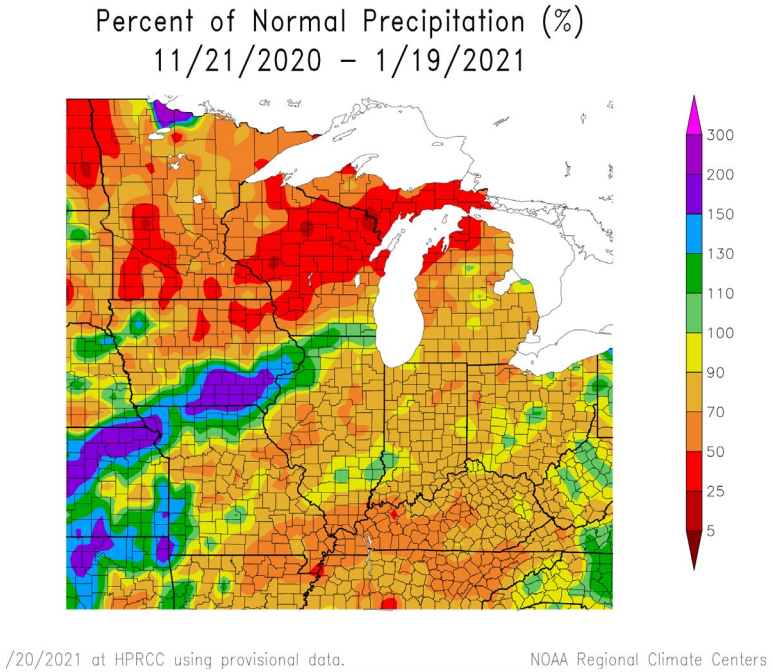
Precipitation Differences Compared to Average (1981-2010)



7-Day

30-Day





60-Day

https://www.drought.gov/drought/dews/midwest/current-conditions

NATIONAL INTEGRATED DROUGHT INFORMATION SYSTEM
NIDIS Drought.gov
U.S. Drought Portal

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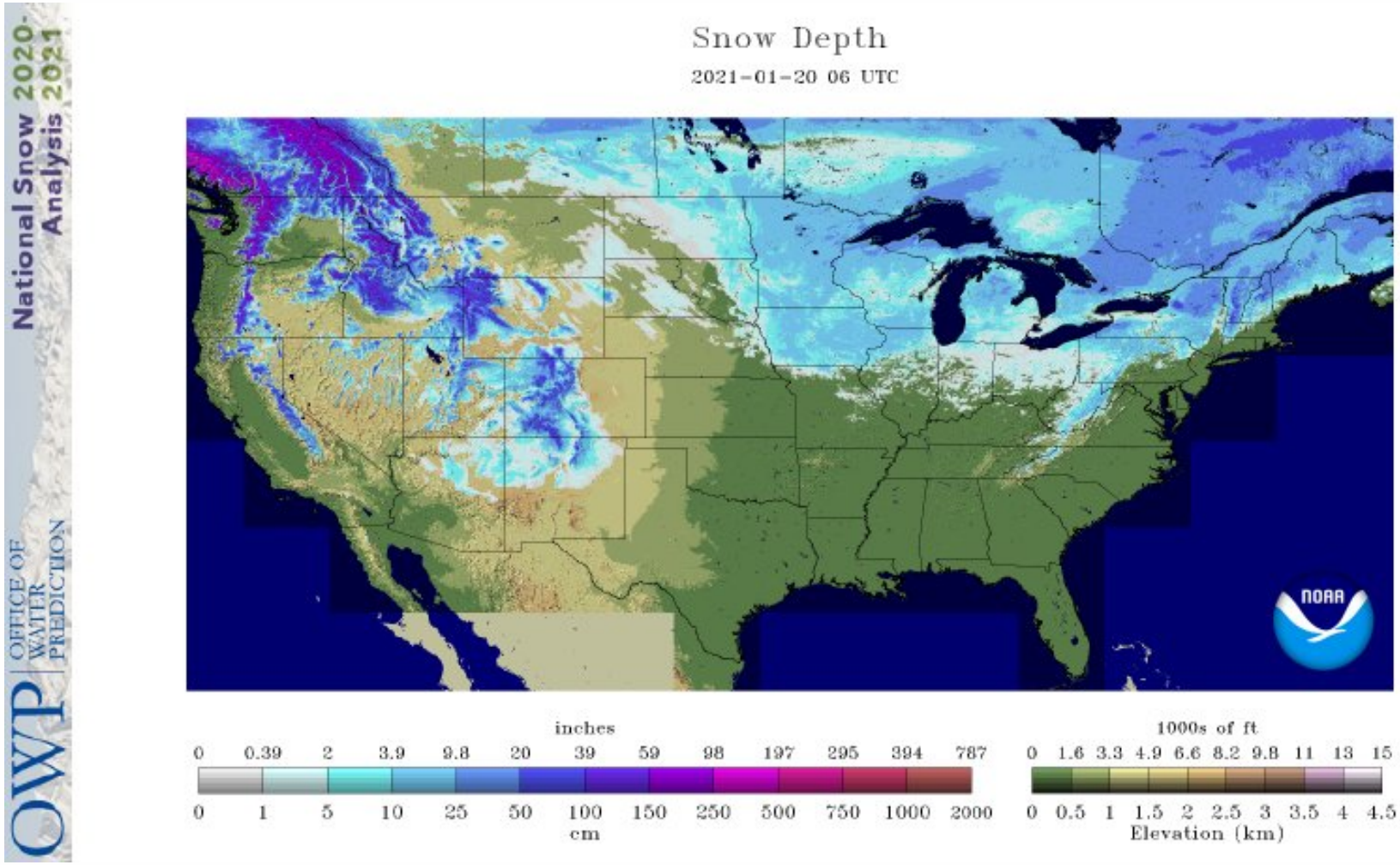
Snow Analysis



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

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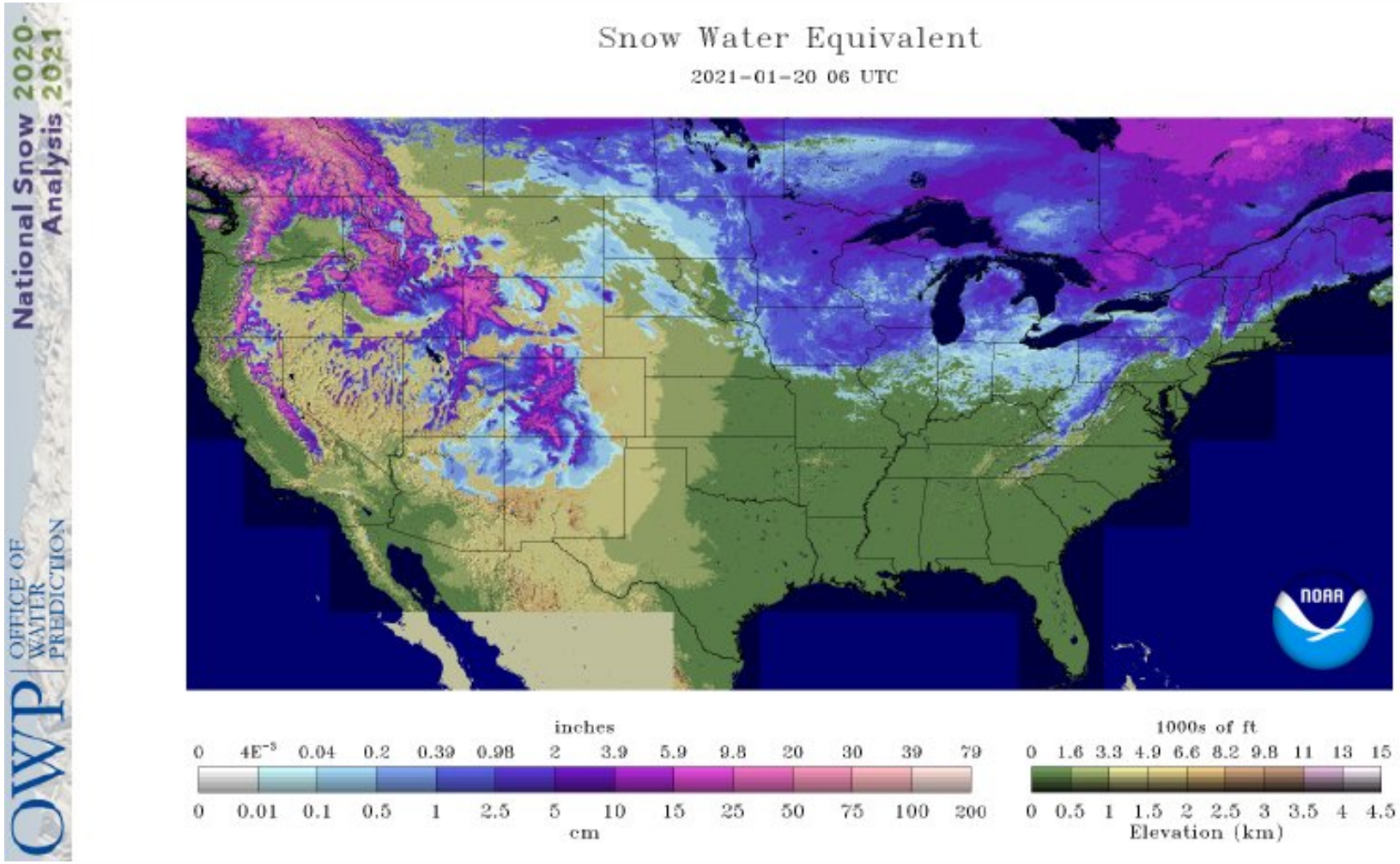
Snow Analysis



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

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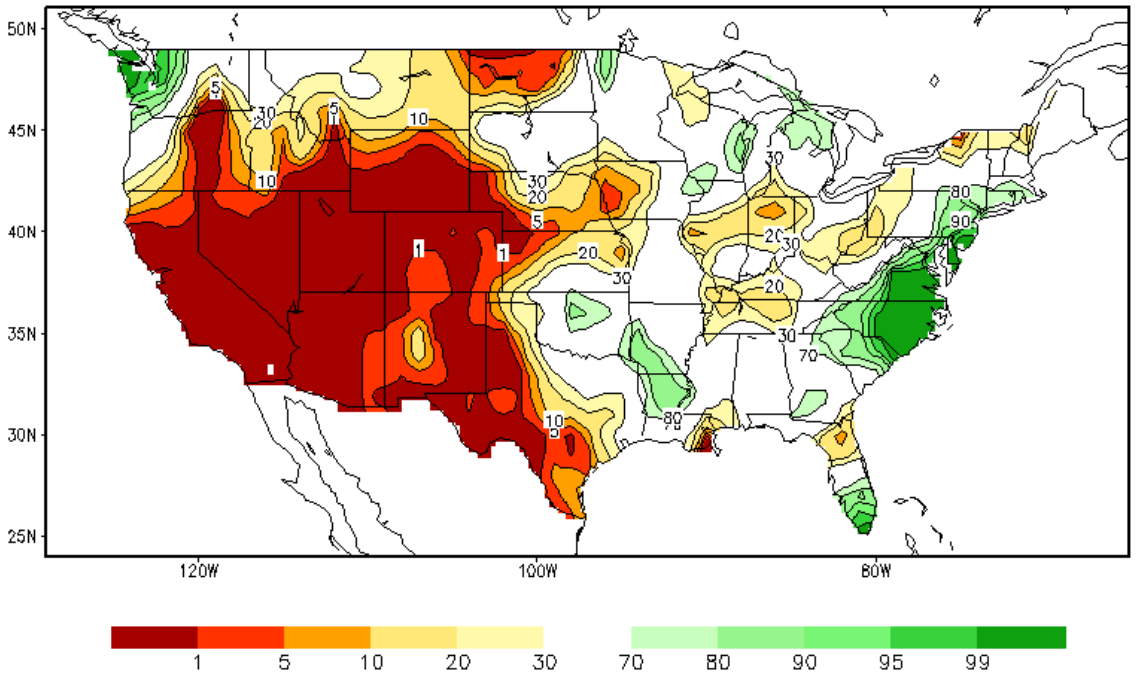
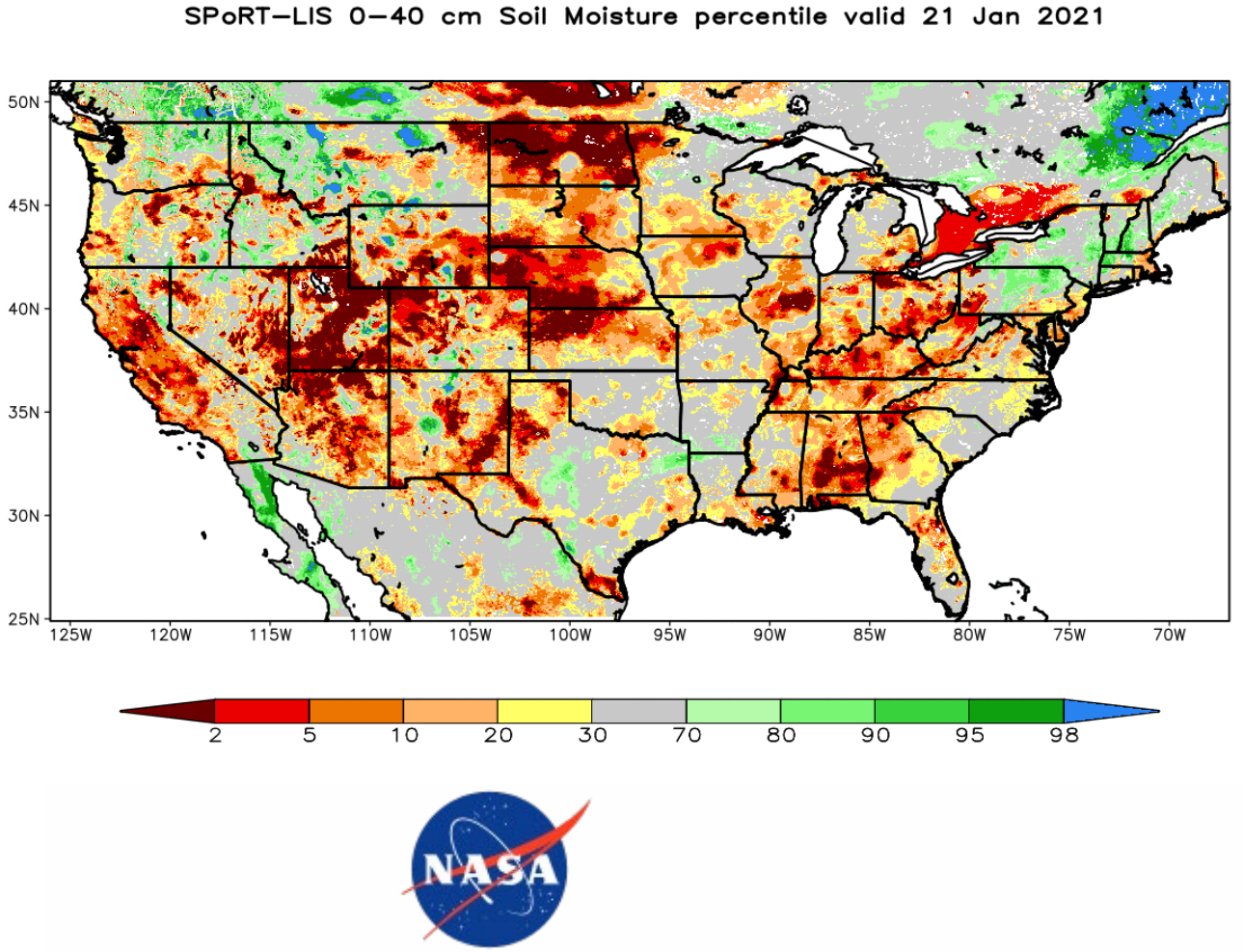
Current Soil Moisture

https://www.cpc.ncep.noaa.gov/products/Soilmst_Monitoring/US/Soilmst/Soilmst.shtml#





https://weather.msfc.nasa.gov/sport/case_studies/lis_IN.html

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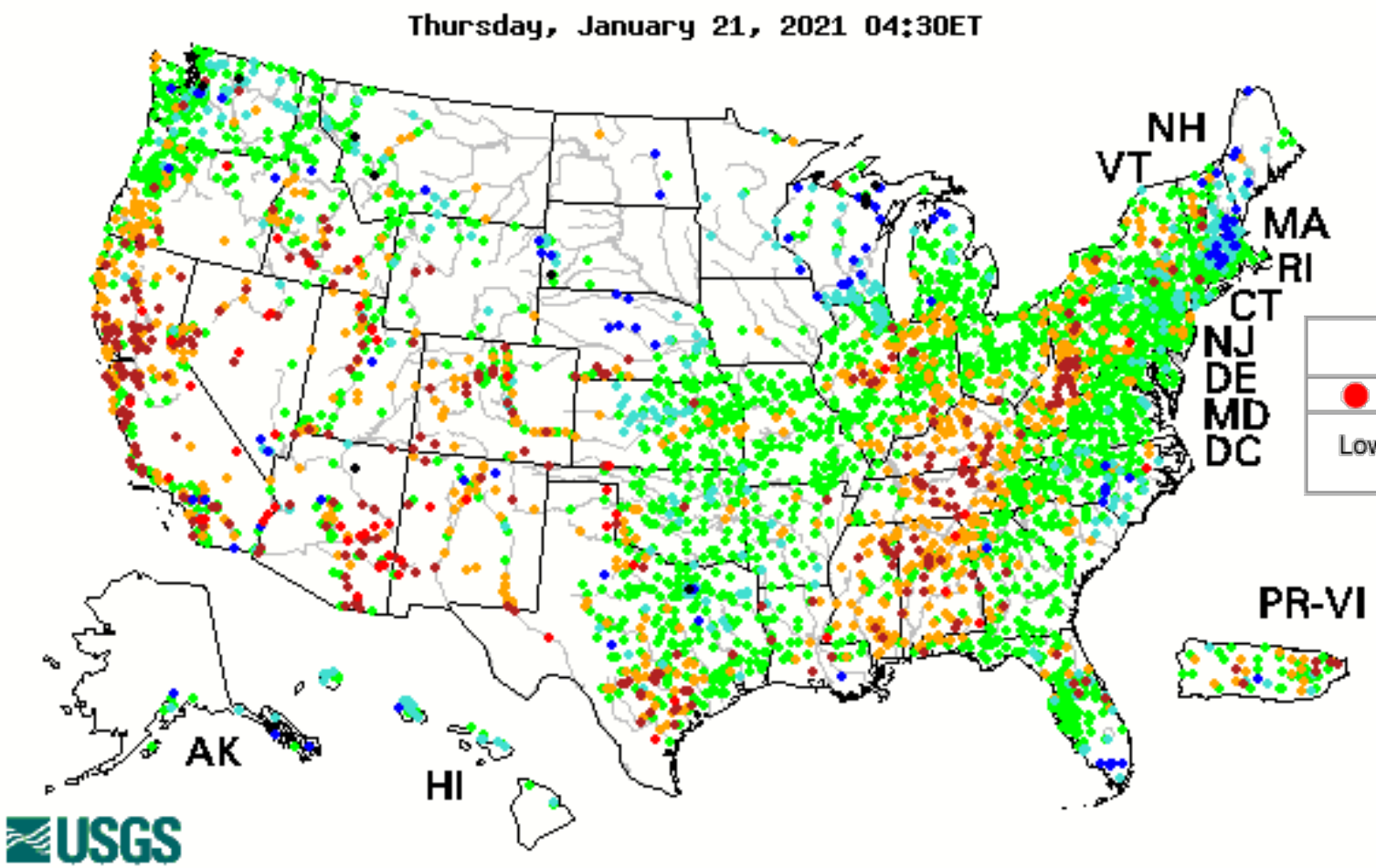
Current Stream Flows



Explanation - Percentile classes							
Low	<10 Much below normal	10-24 Below normal	25-75 Normal	76-90 Above normal	>90 Much above normal	High	Not-ranked

Real-time streamflow compared to historical streamflow

USGS science for a changing world

https://waterwatch.usgs.gov/index.php

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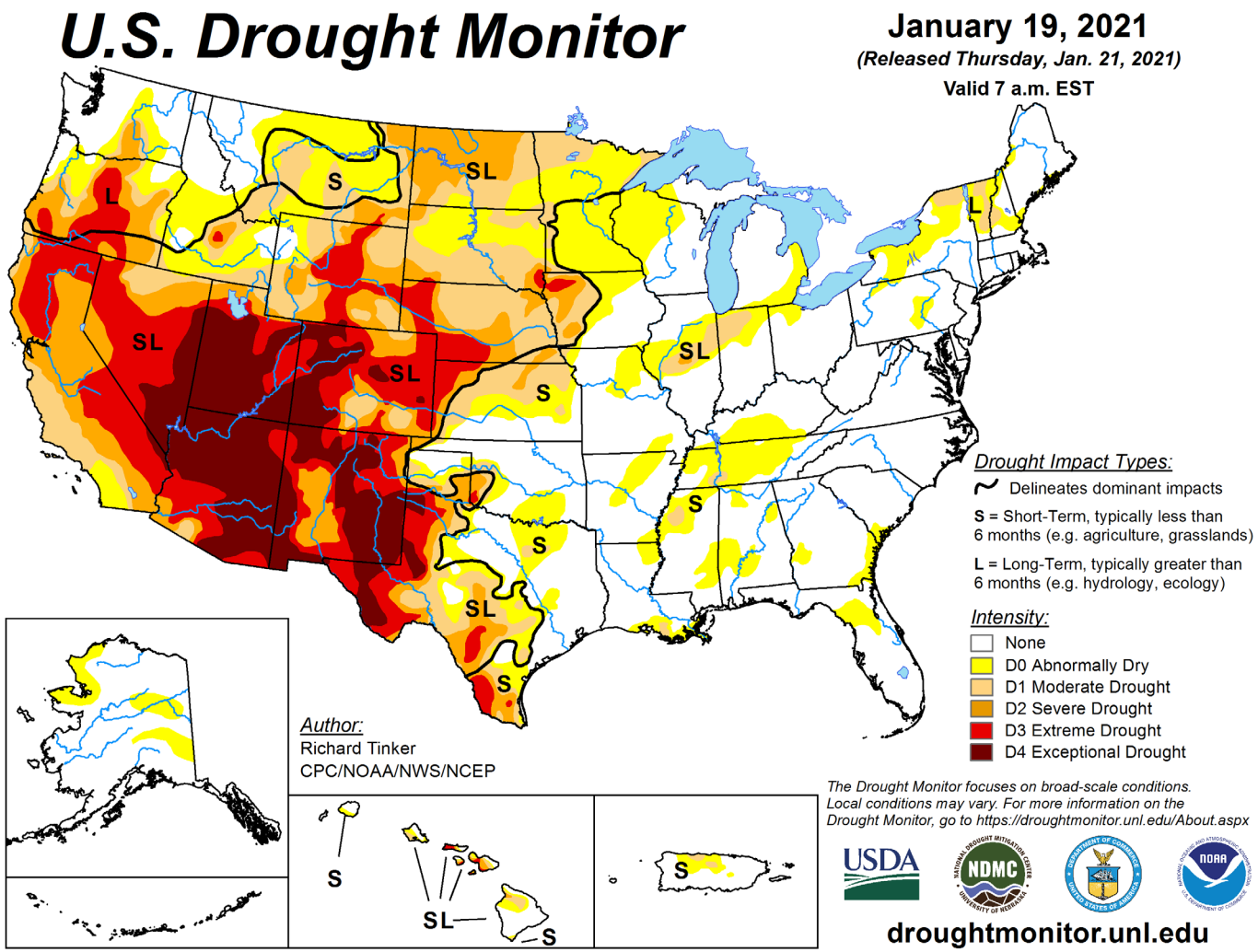
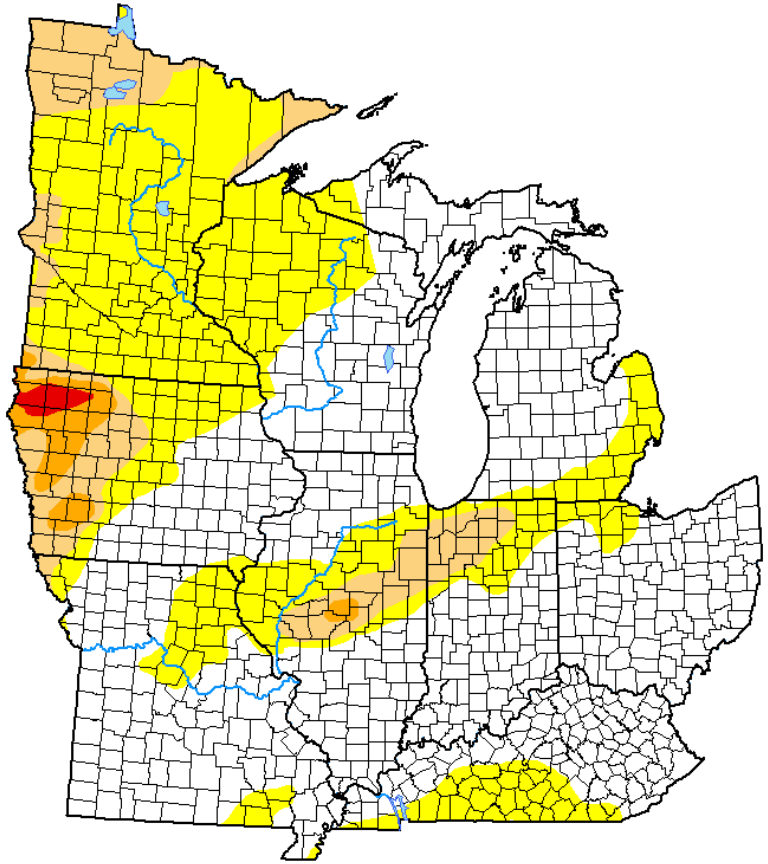
Current US Drought Monitor





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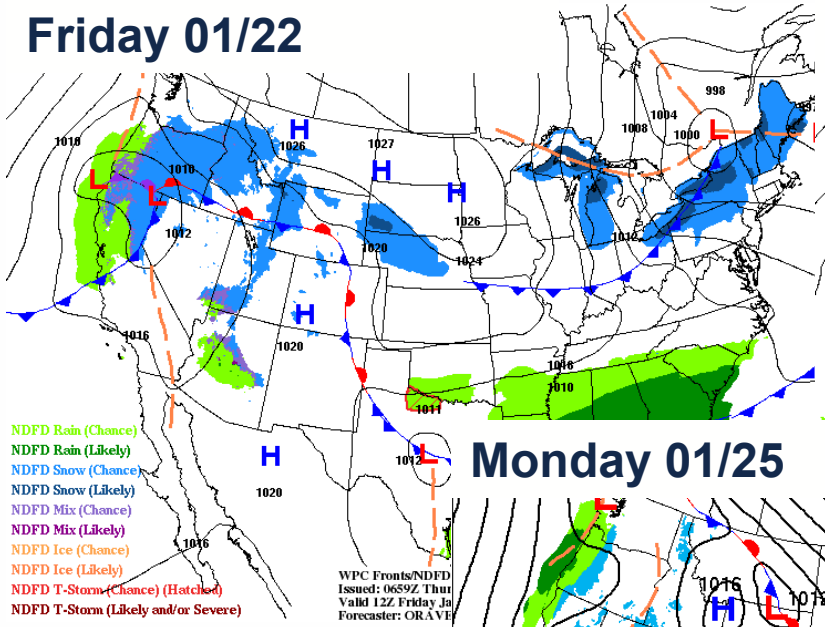
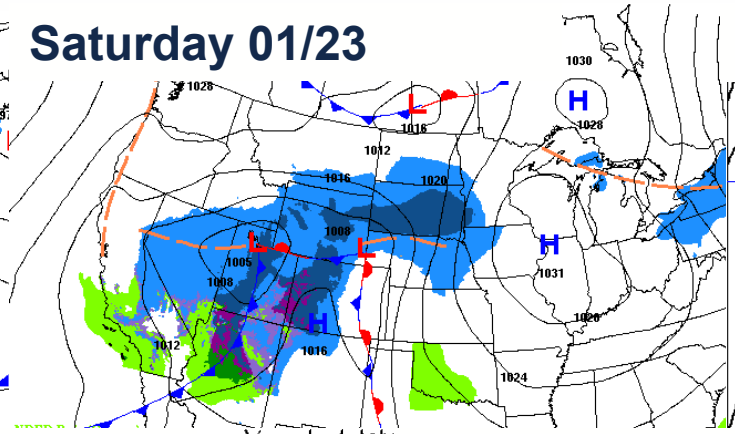
Weather for the Week Ahead

https://www.wpc.ncep.noaa.gov/#

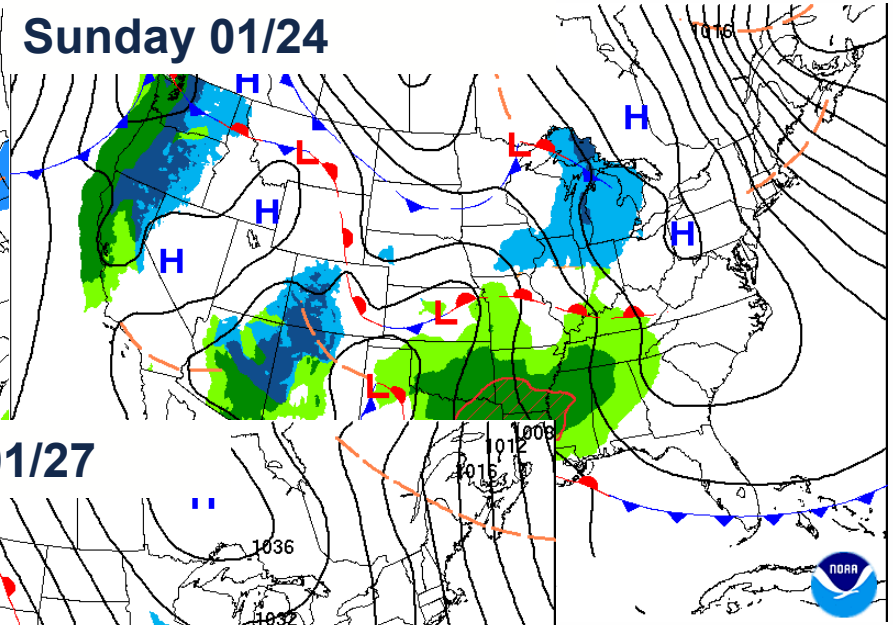
Friday 01/22



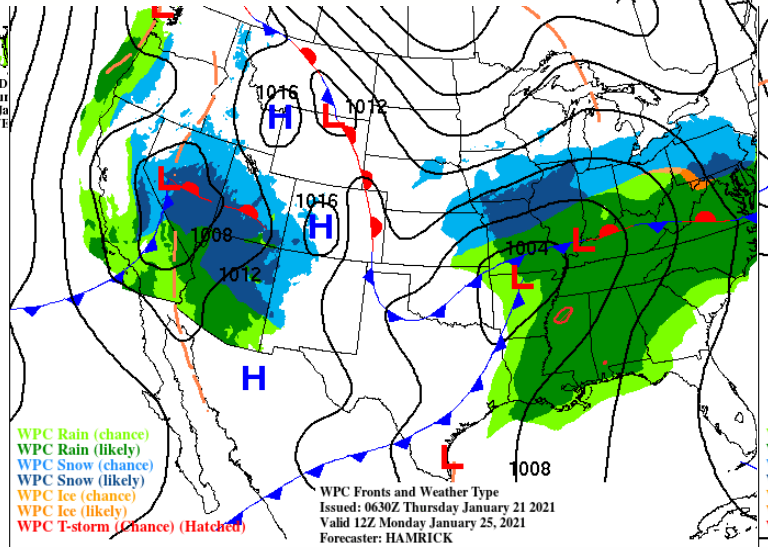
Saturday 01/23



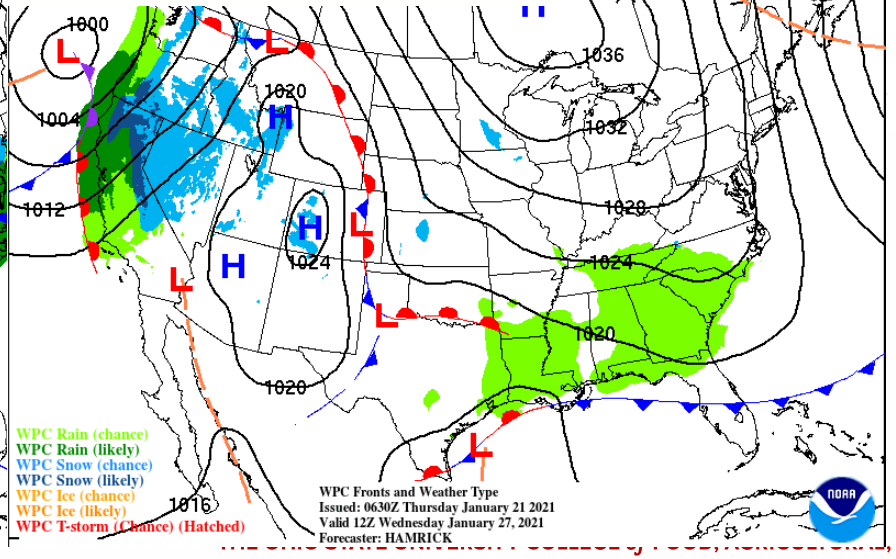
Sunday 01/24



Monday 01/25



Wednesday 01/27



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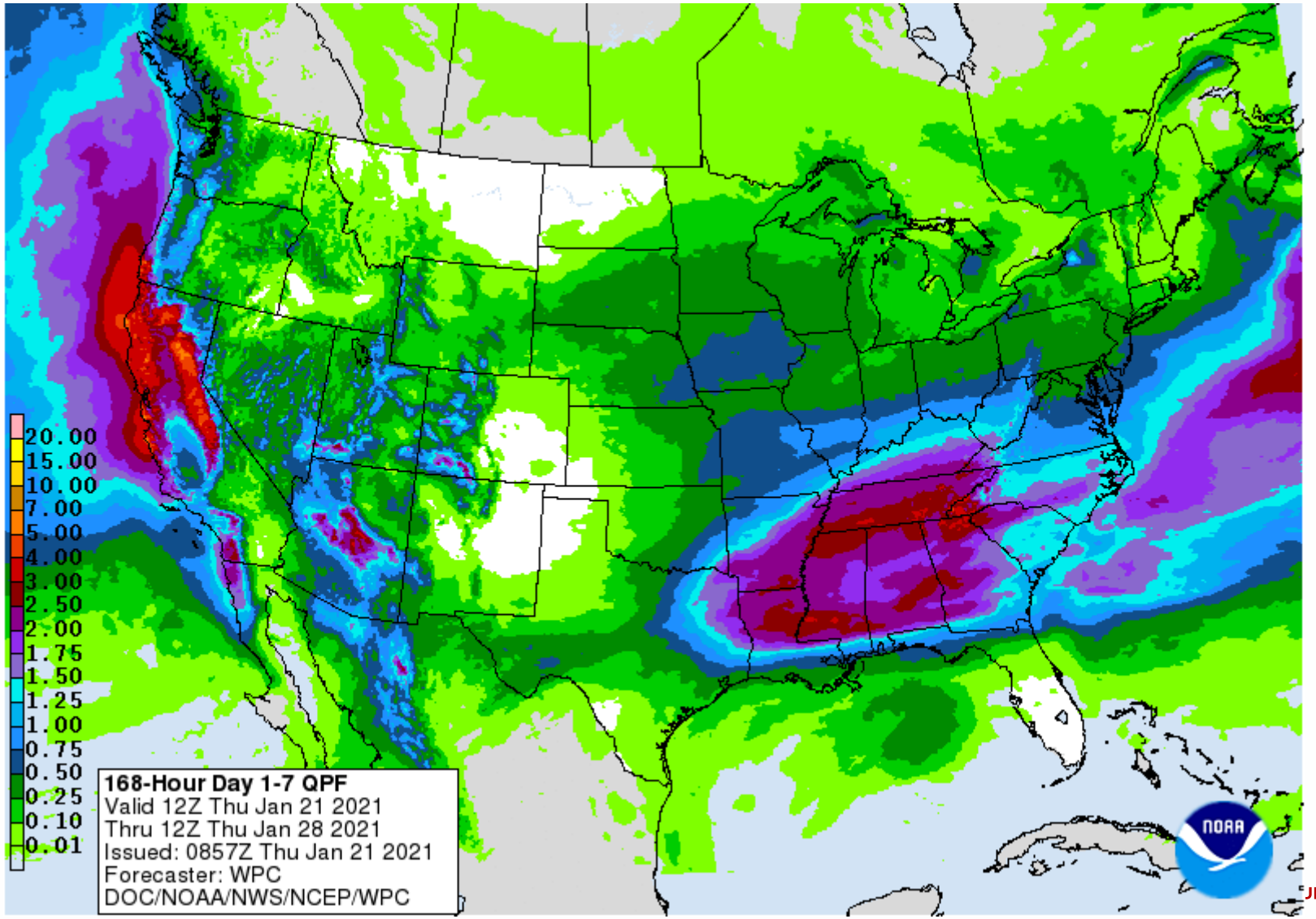
https://www.wpc.ncep.noaa.gov/#

7-Day Precipitation Forecast



JRAL, *and* ENVIRONMENTAL SCIENCES

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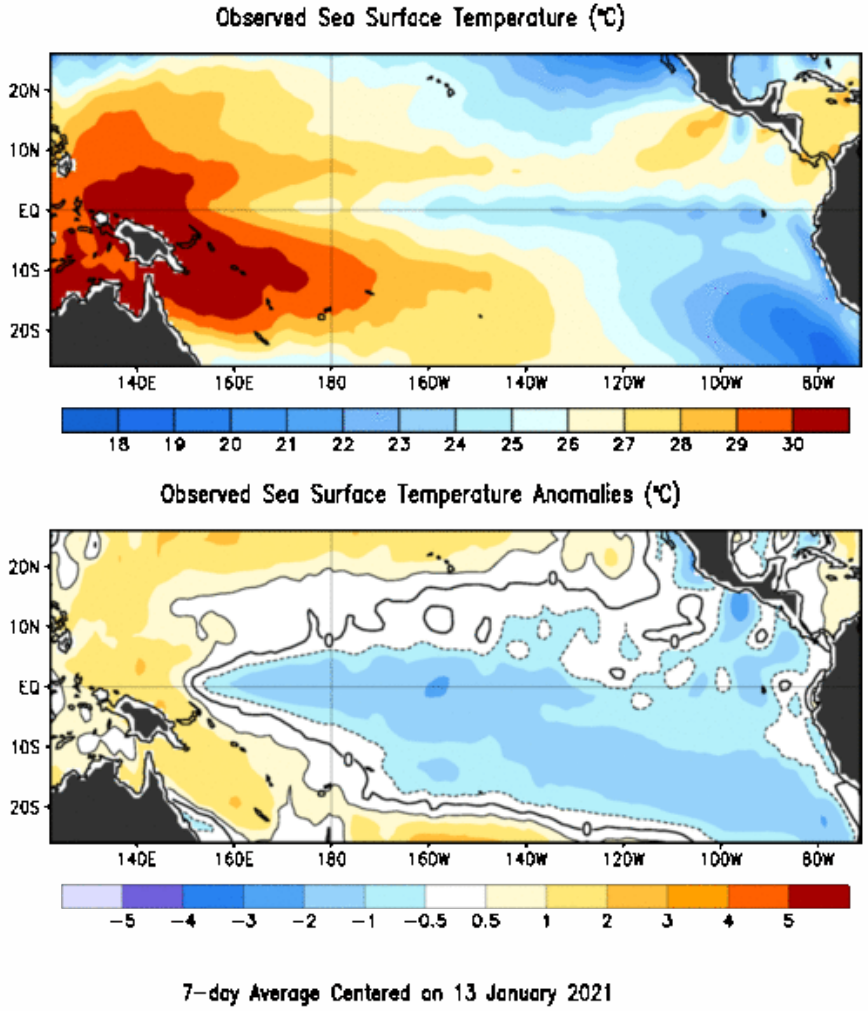
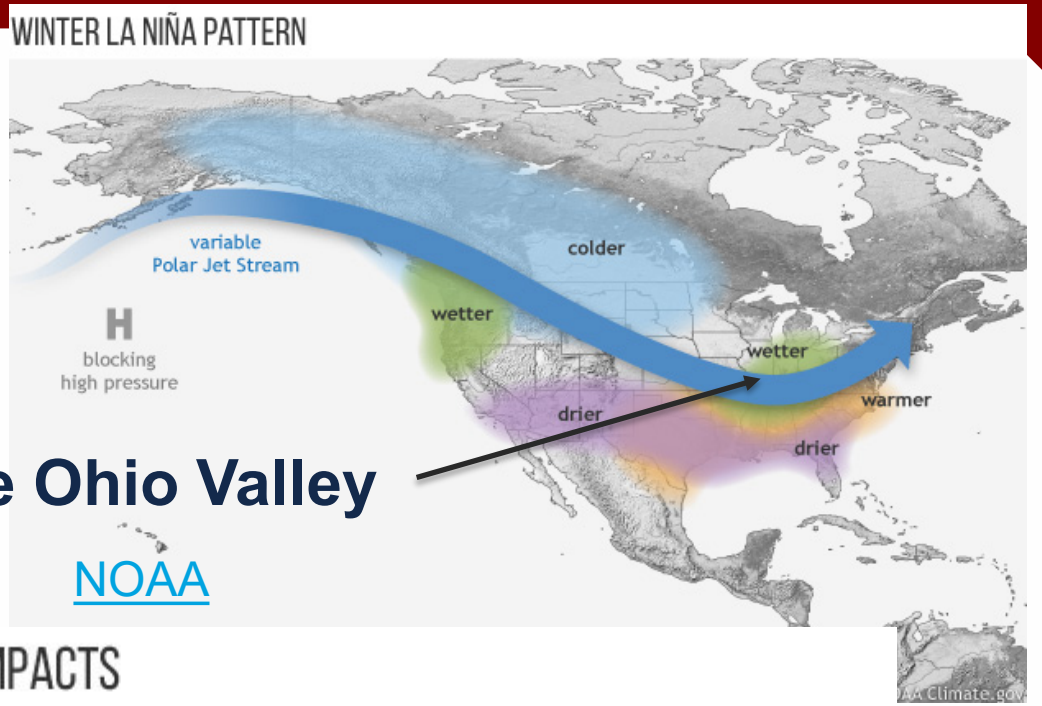
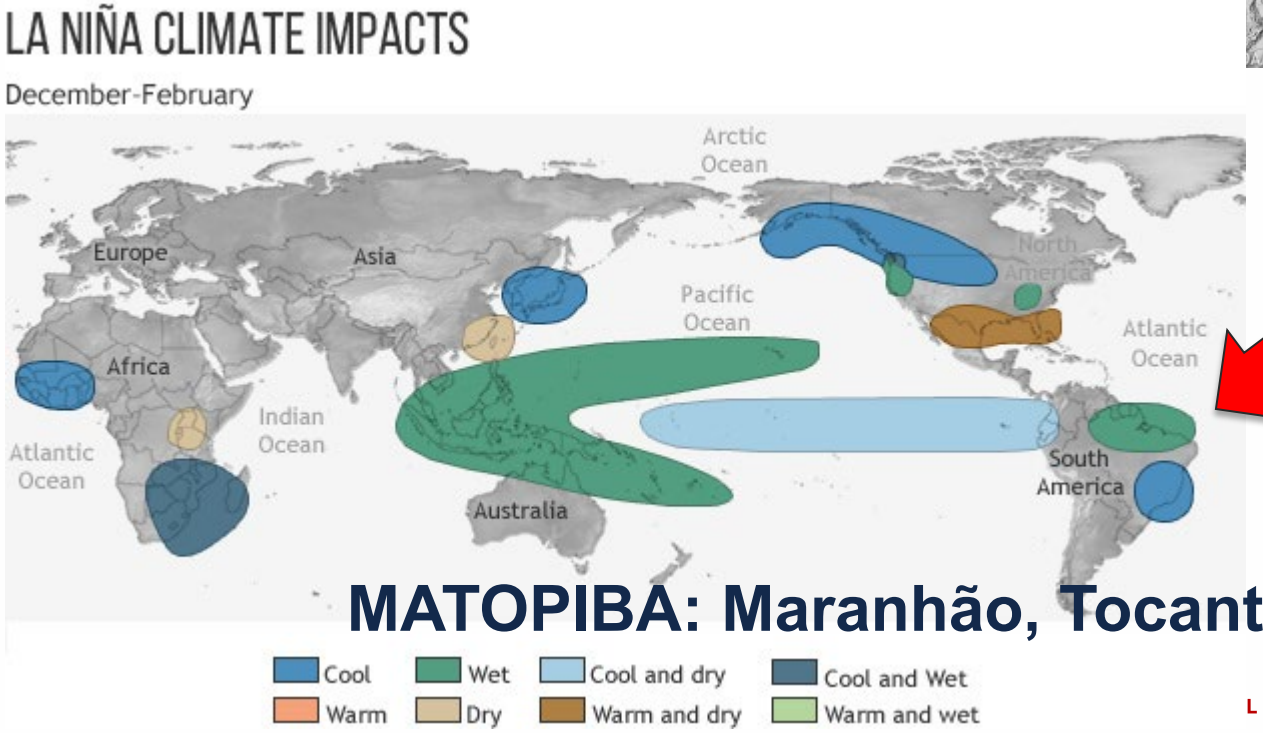
La Niña – What does it Mean?





Wet in the Ohio Valley

NOAA



MATOPIBA: Maranhão, Tocantins

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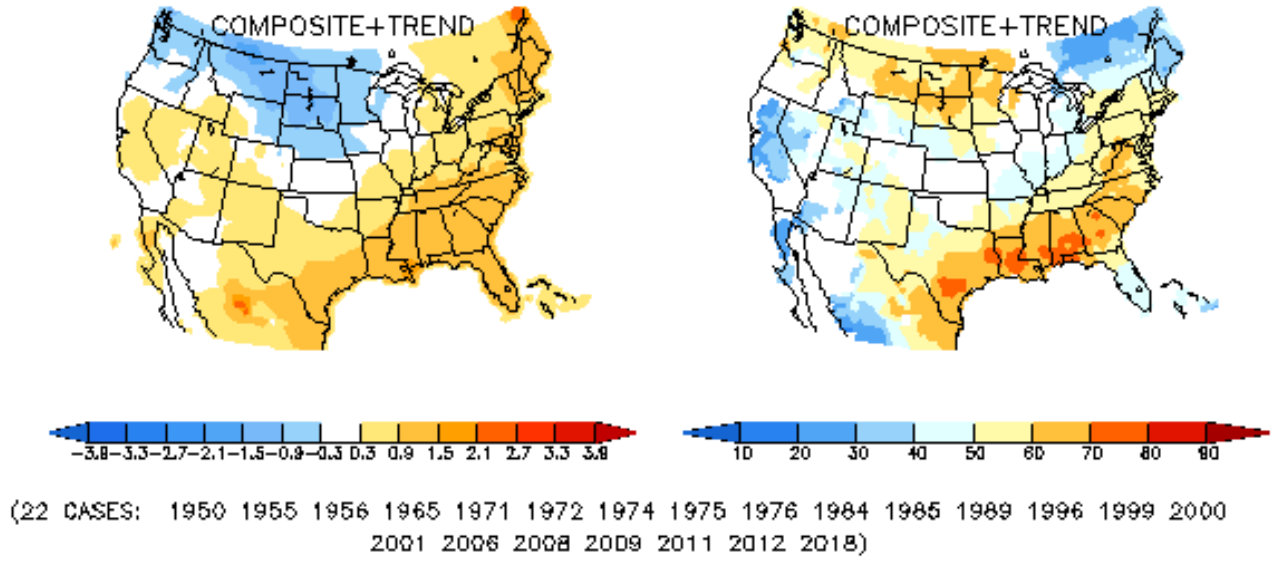
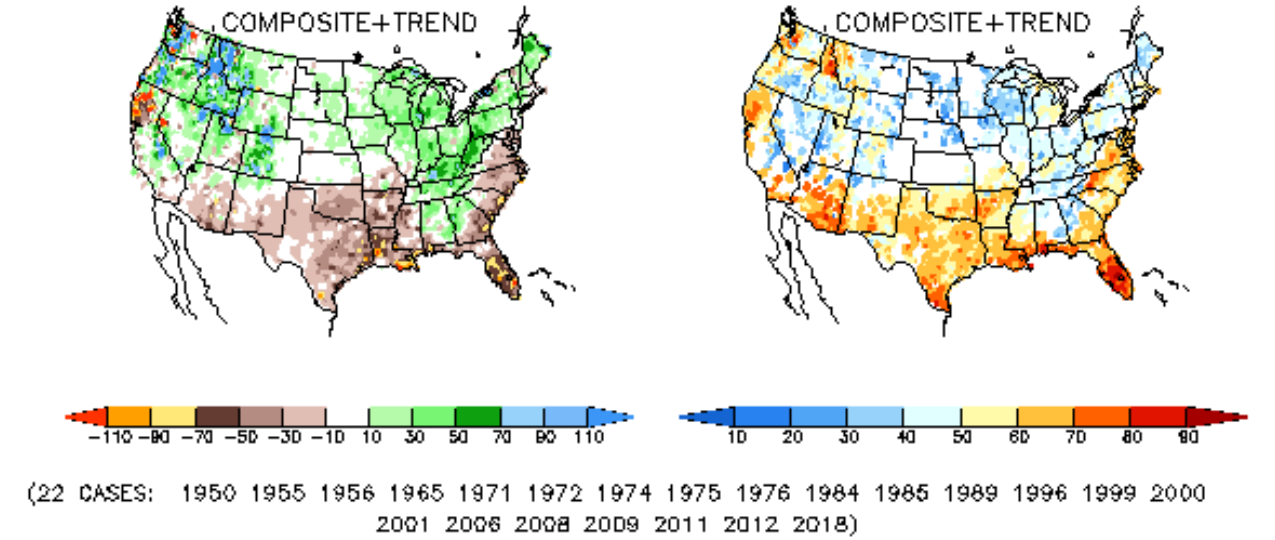
La Niña – What does it Mean?

- Combination of past events and trends reveals that during La Nina conditions:
  - Temperatures tend to be warmer (Arctic is also at play) and temperatures are increasing
  - Precipitation tends to be greater and is increasing
  - Snow? – Perhaps

- I expect soil moisture to recover well throughout the winter





https://www.weather.gov/iwx/la_nina

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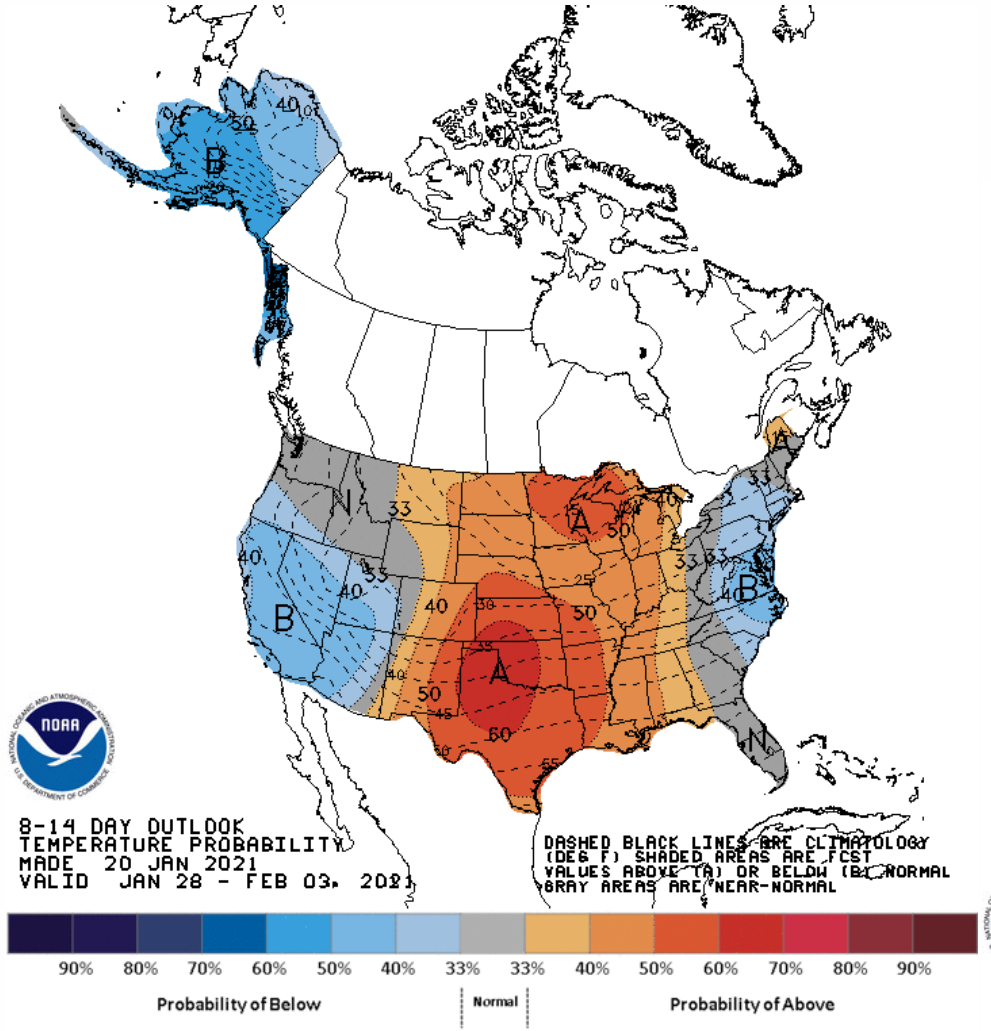
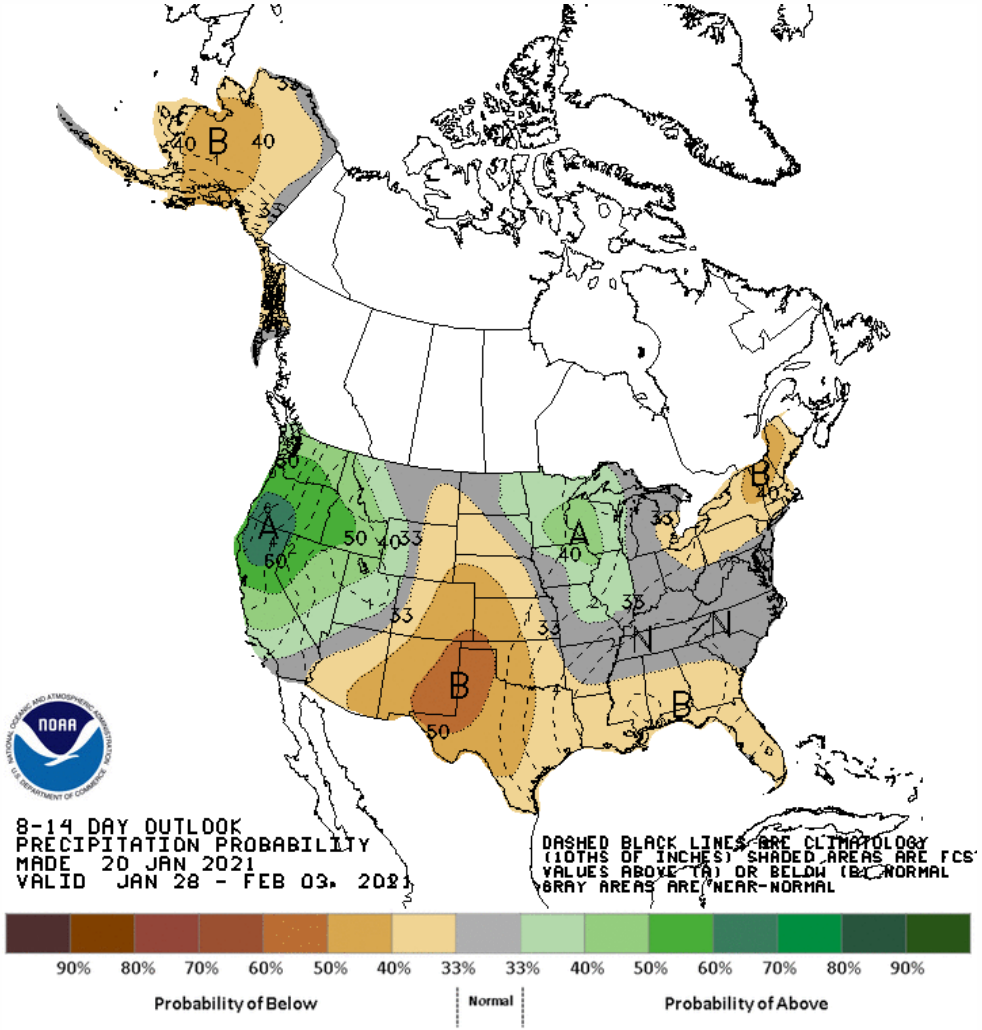
8-14 Day Outlook





- Higher probability of warmer than average temperatures
- Elevated probability of below average precipitation (NE Ohio)

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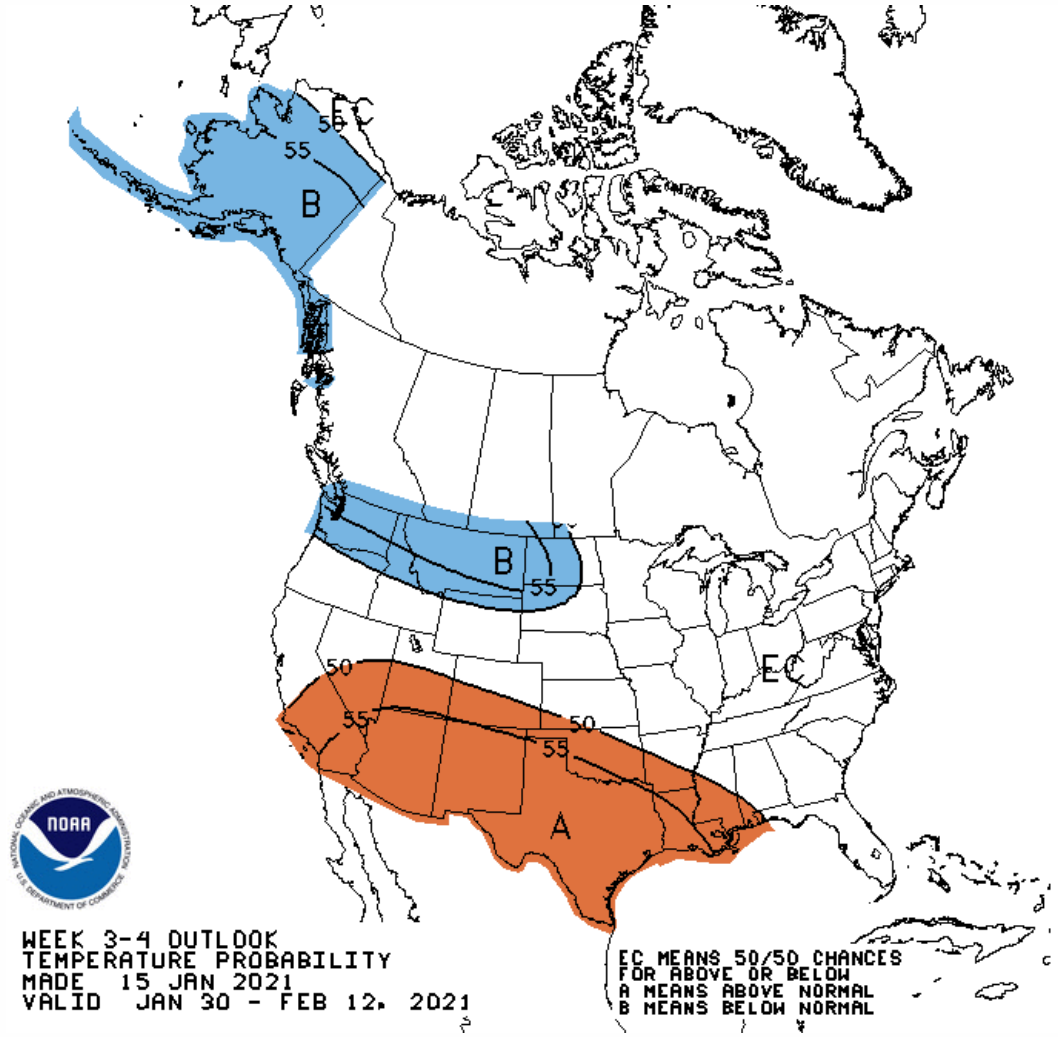
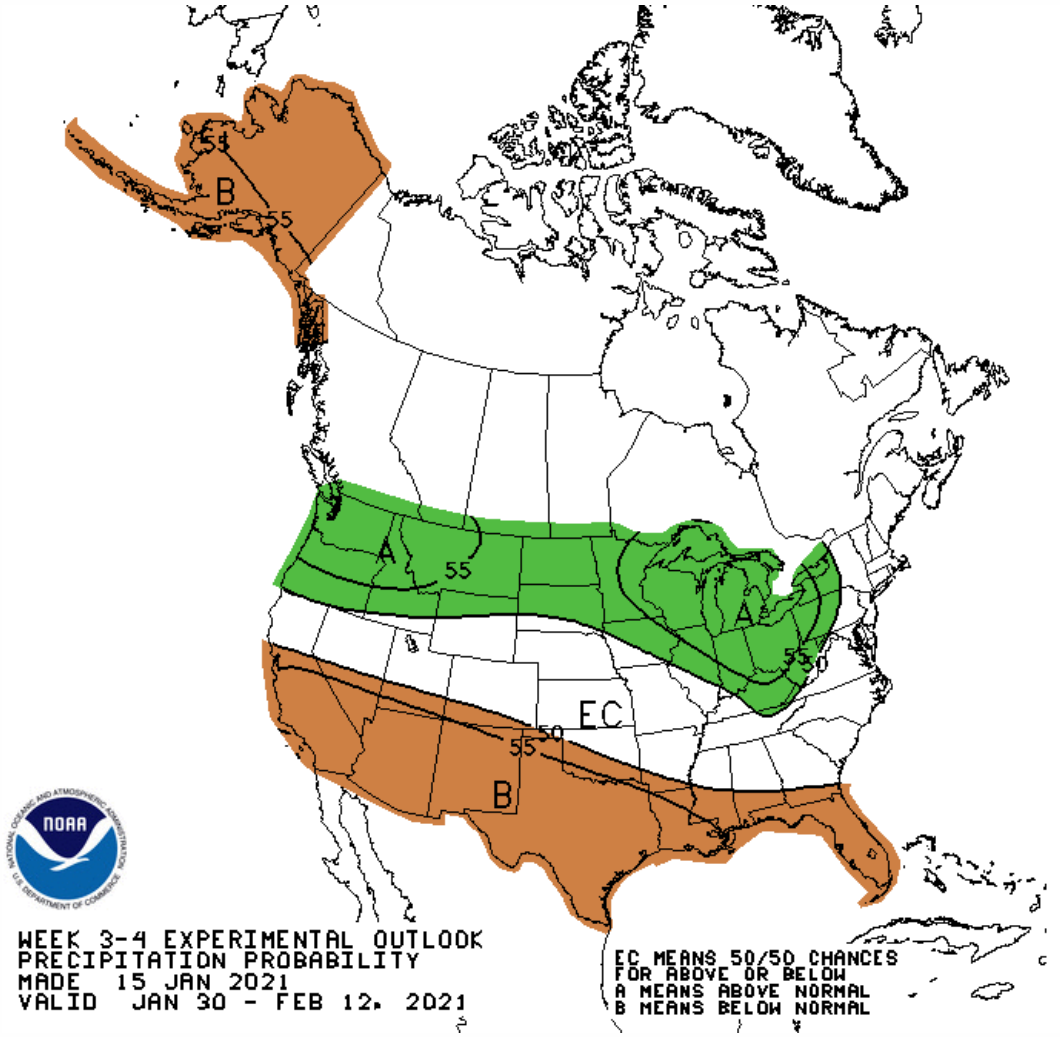
3-4 Week Outlook





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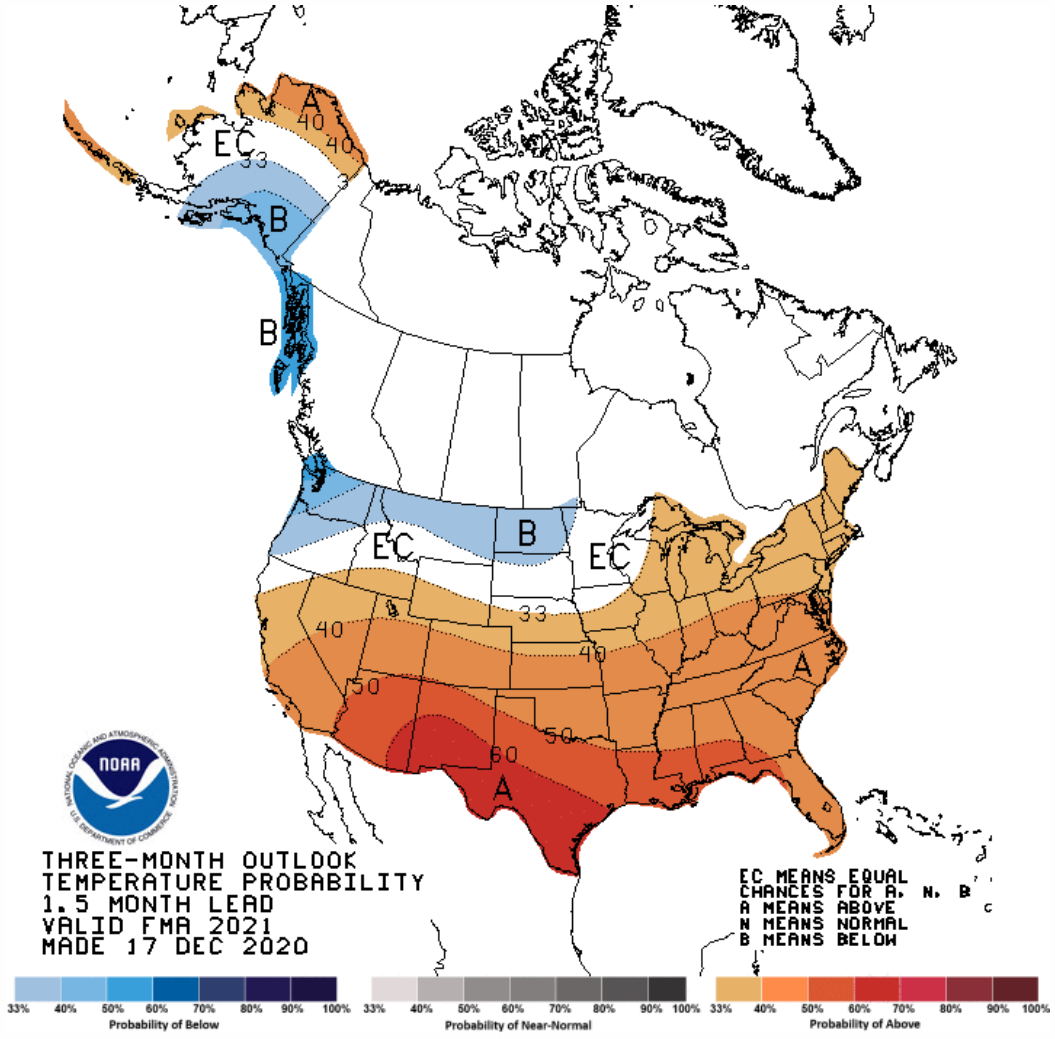
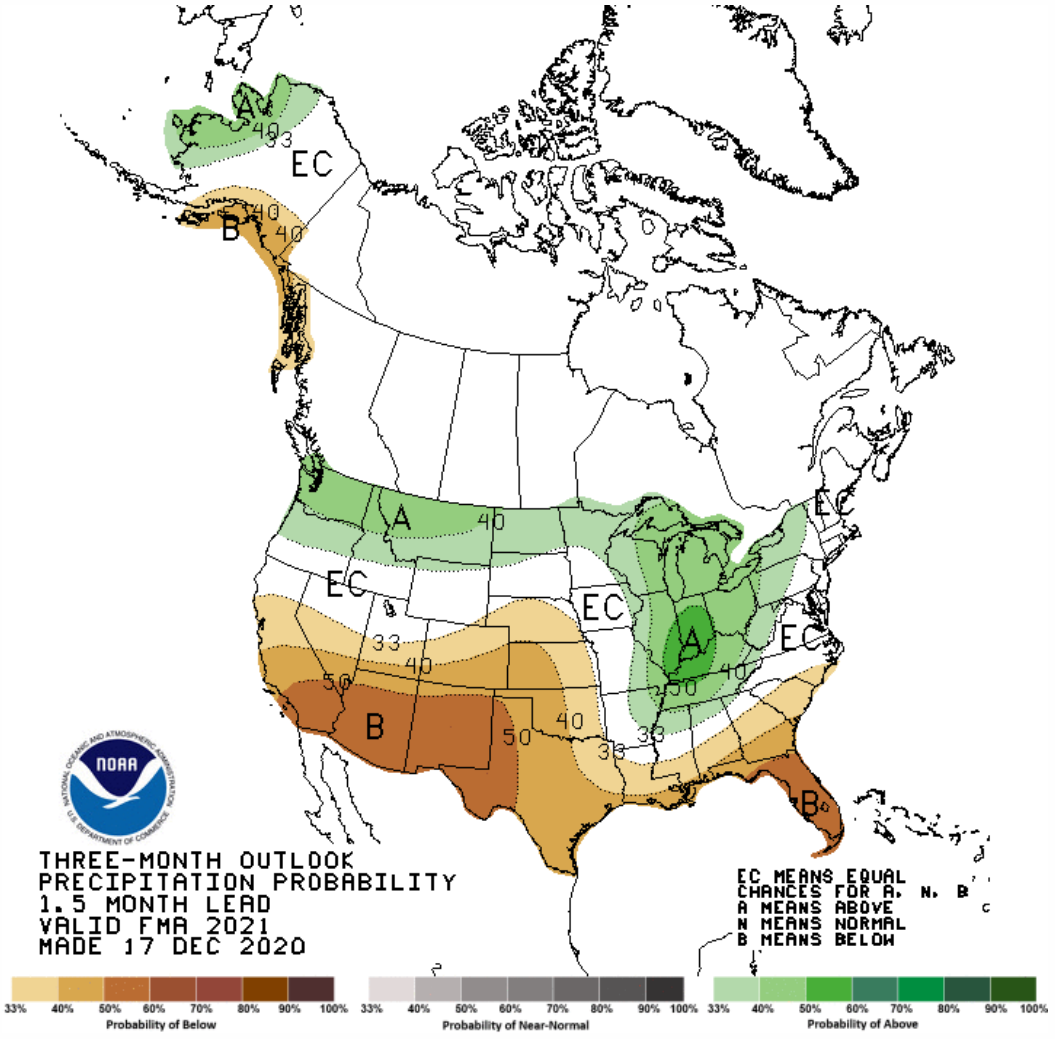
February – April Outlook (CPC Update Coming 1-21)





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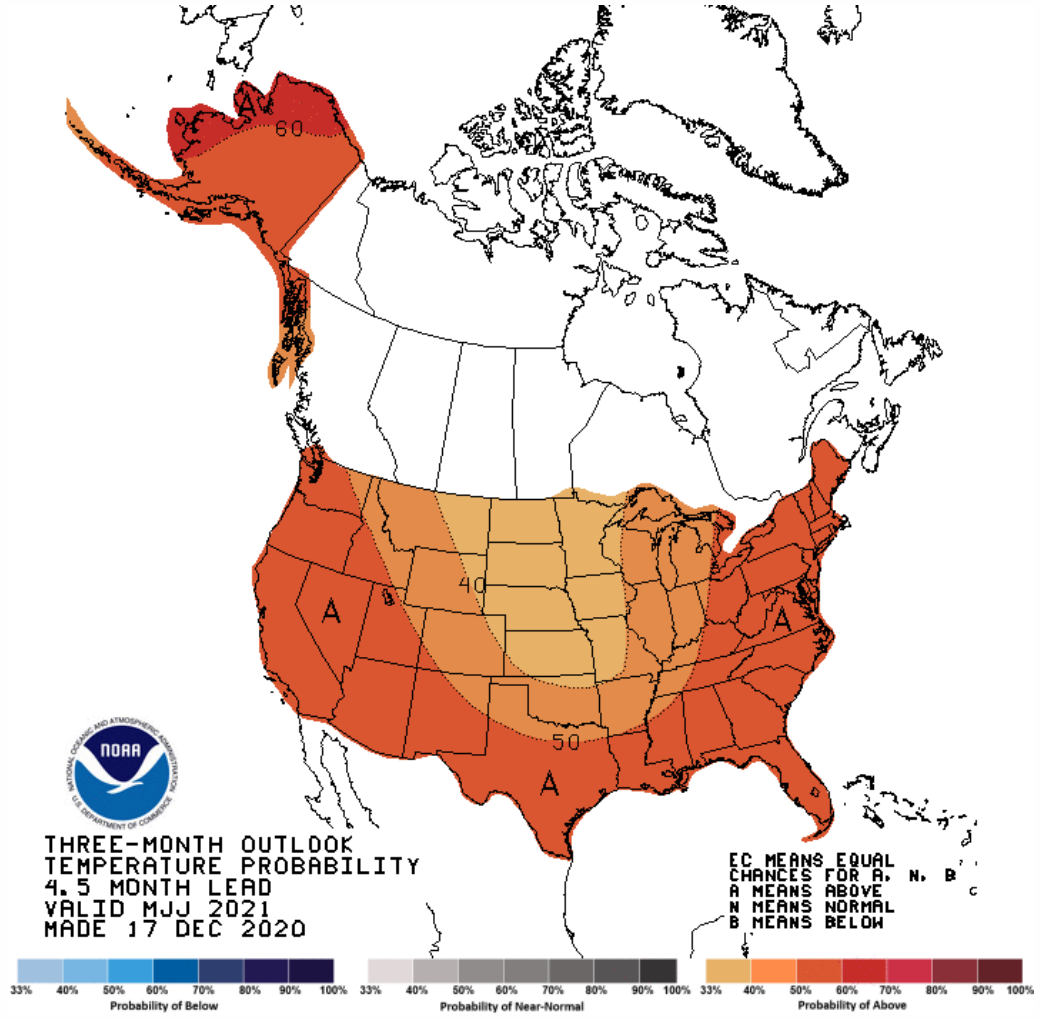
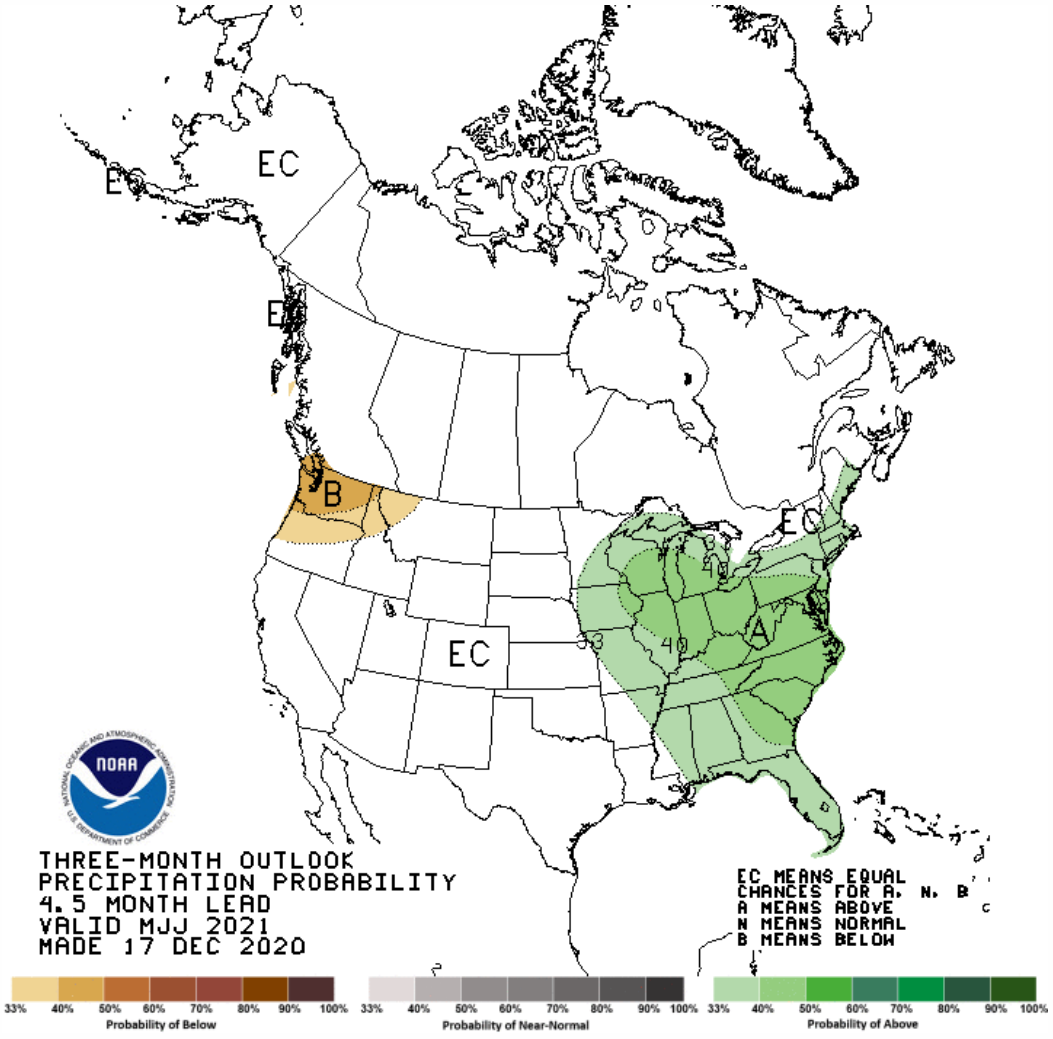
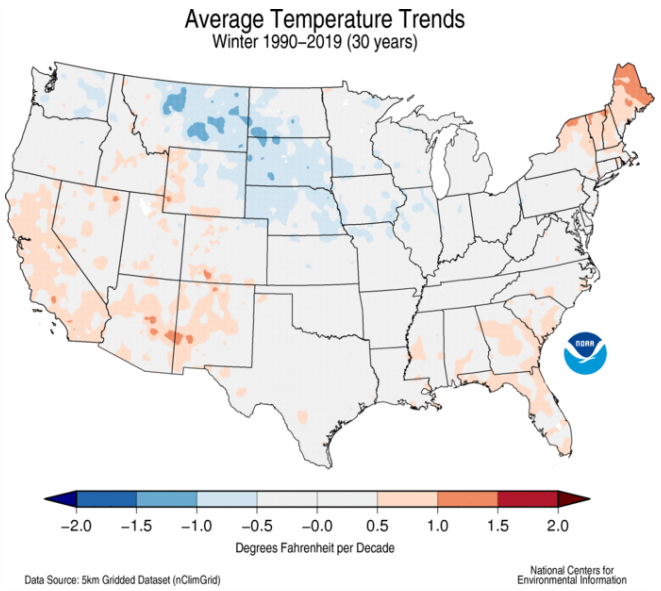
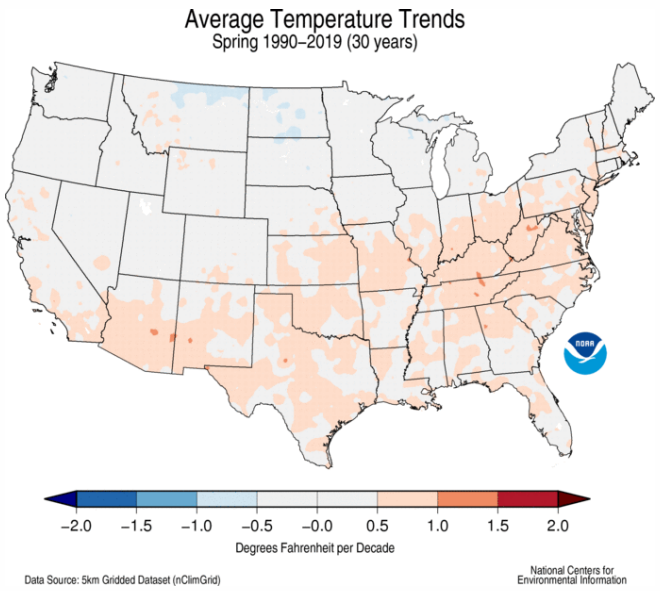
May – July Outlook (CPC Update Coming 1-21)

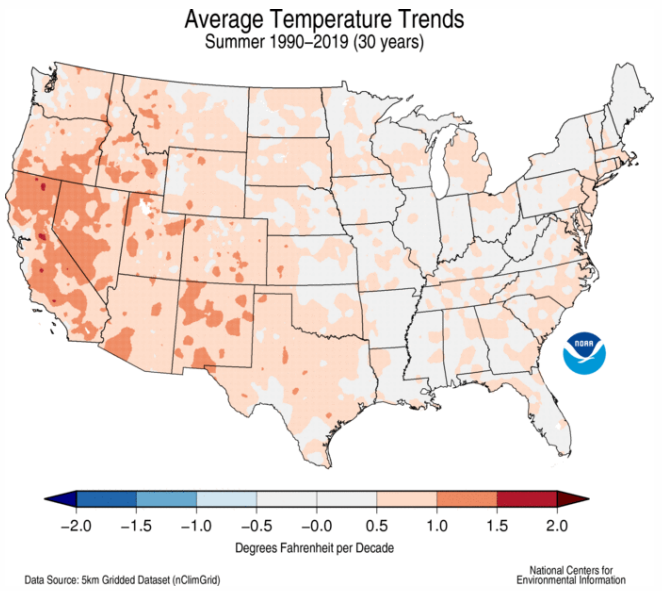


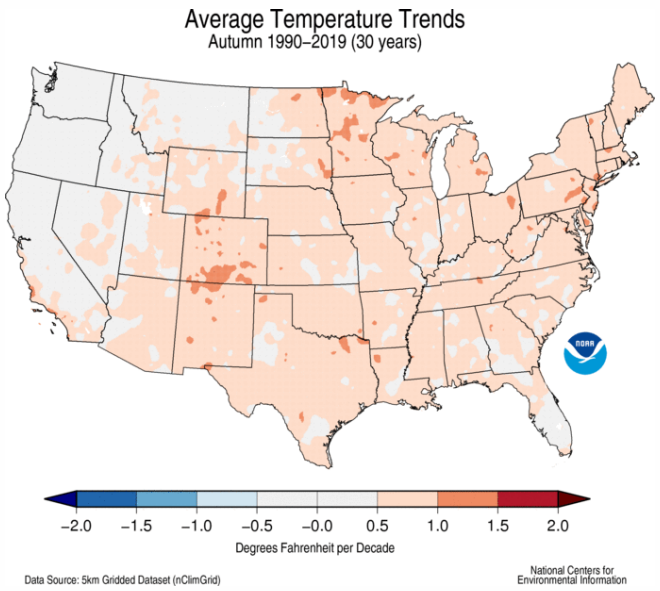


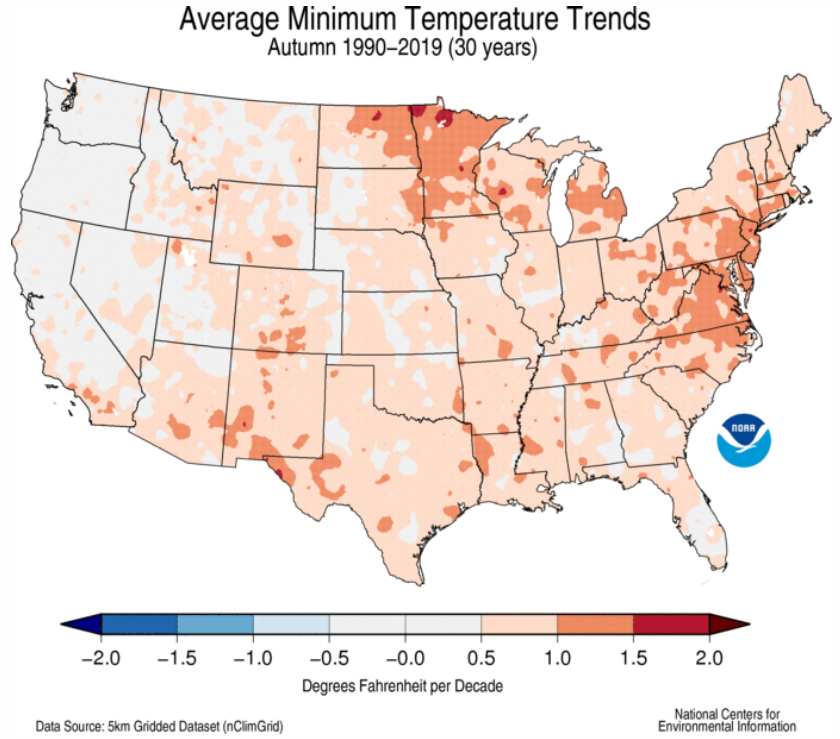
CHANGES IN MEAN SEASONAL TEMPERATURES





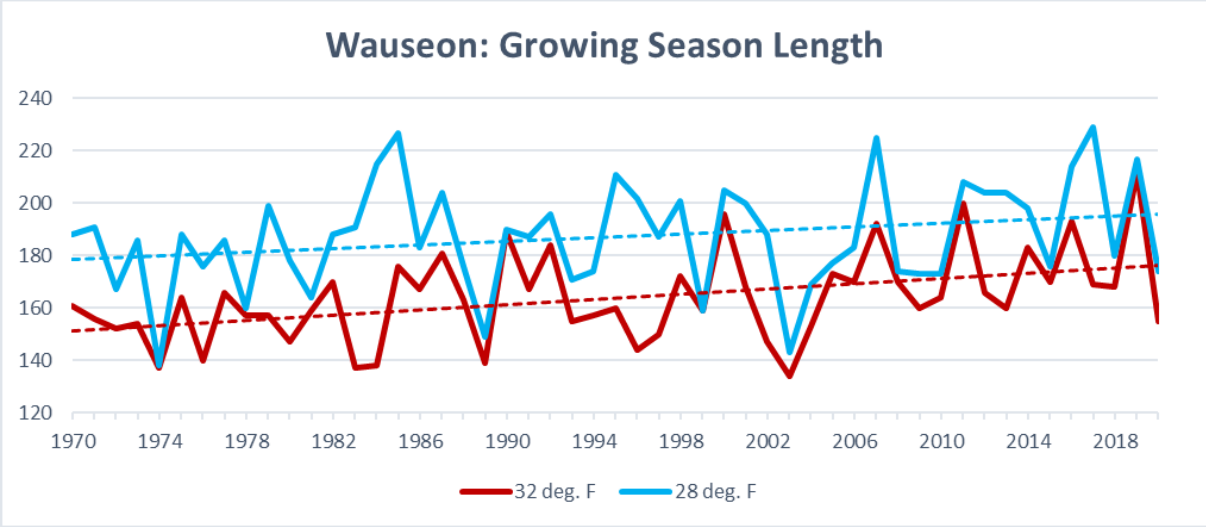




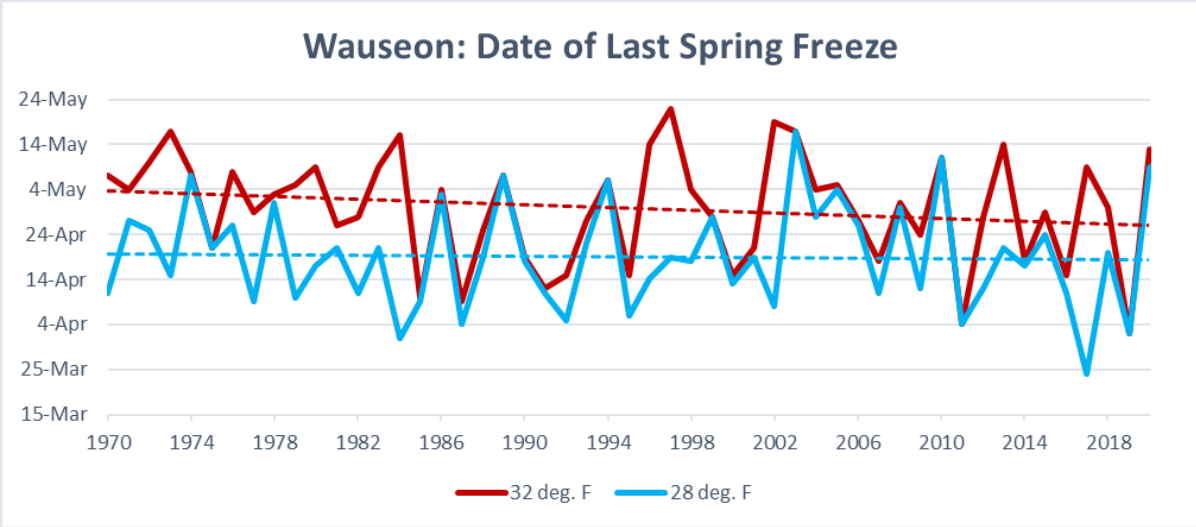


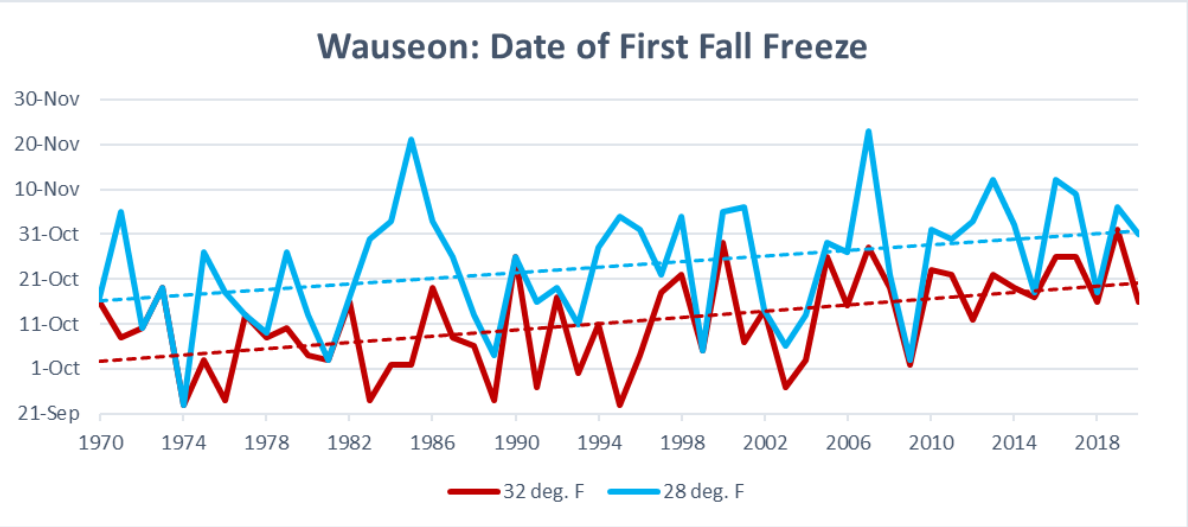
https://www.ncdc.noaa.gov/temp-and-precip/us-trends/

Growing Season Considerations (NW Ohio Example)

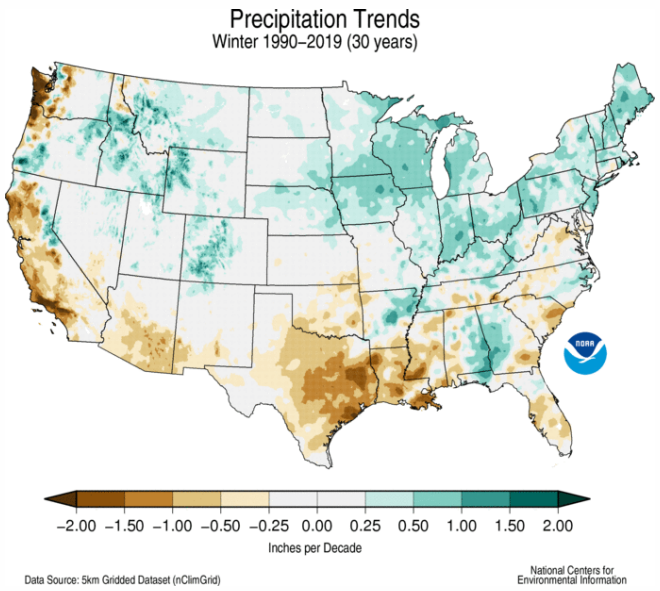


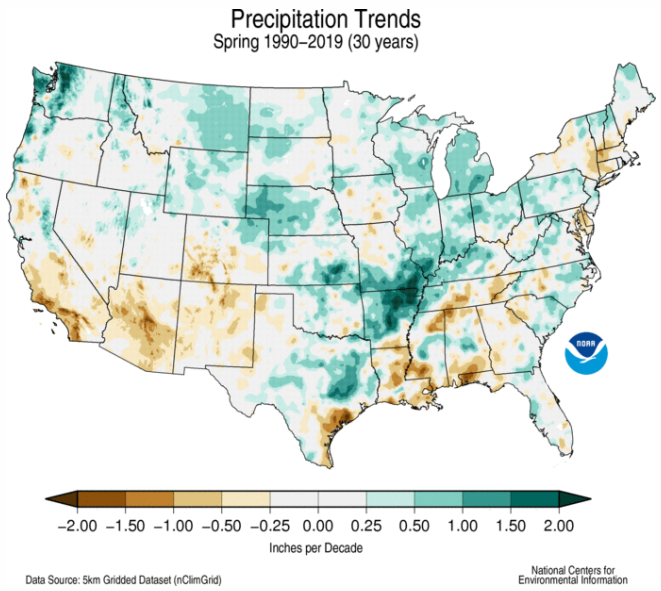
- Growing Season is Longer
- Date of Last Spring Freeze is Earlier
- Date of First Fall Freeze is Later

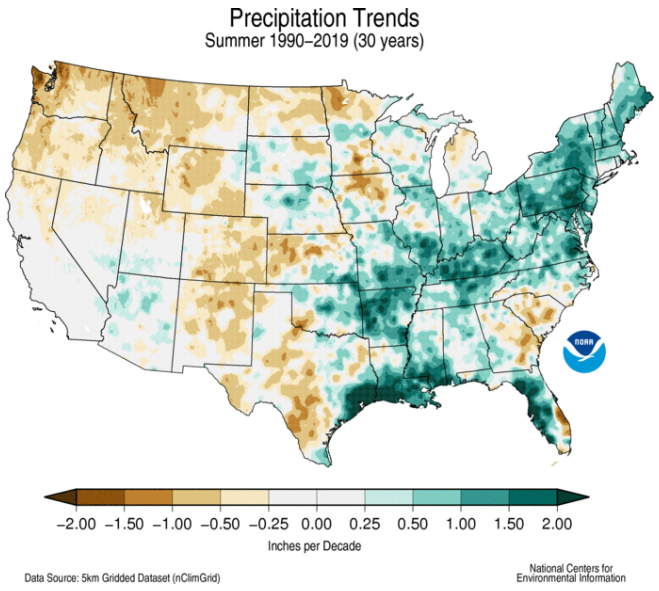


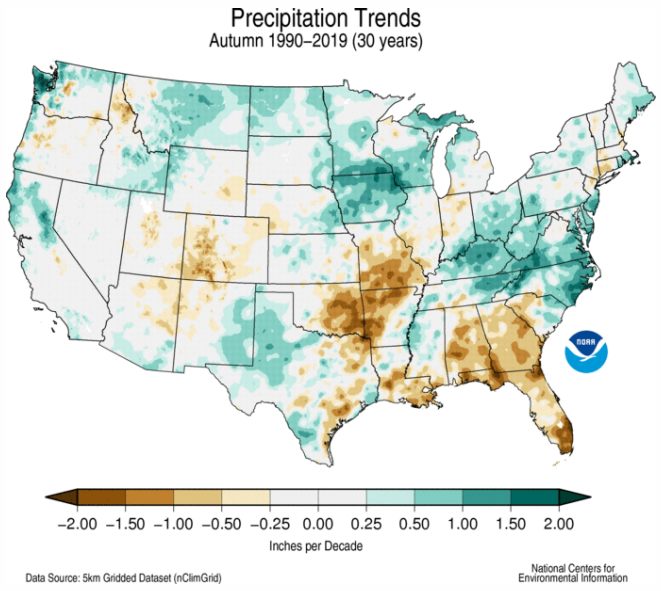


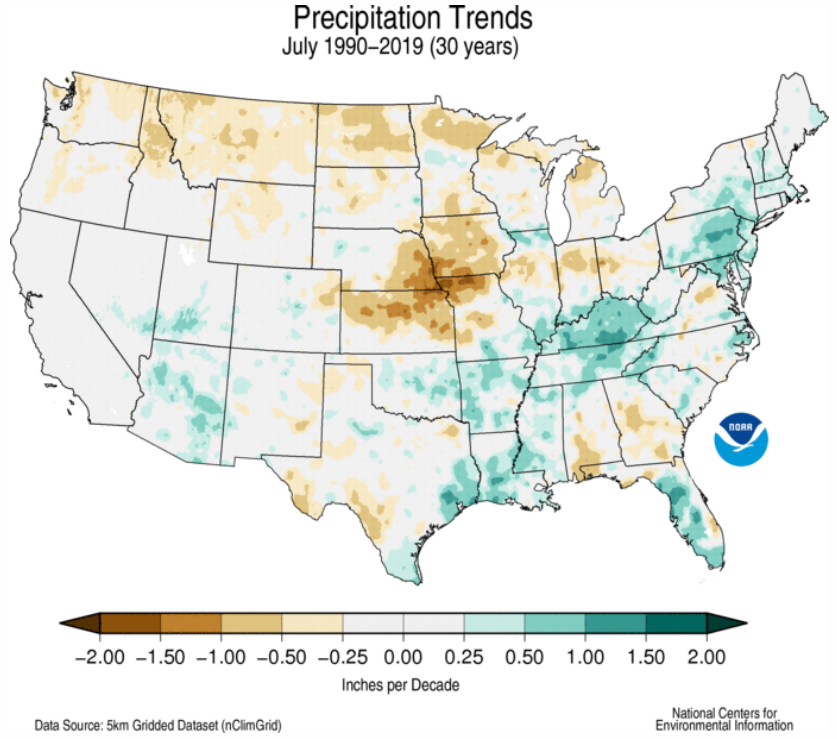
CHANGES IN MEAN SEASONAL PRECIPITATION





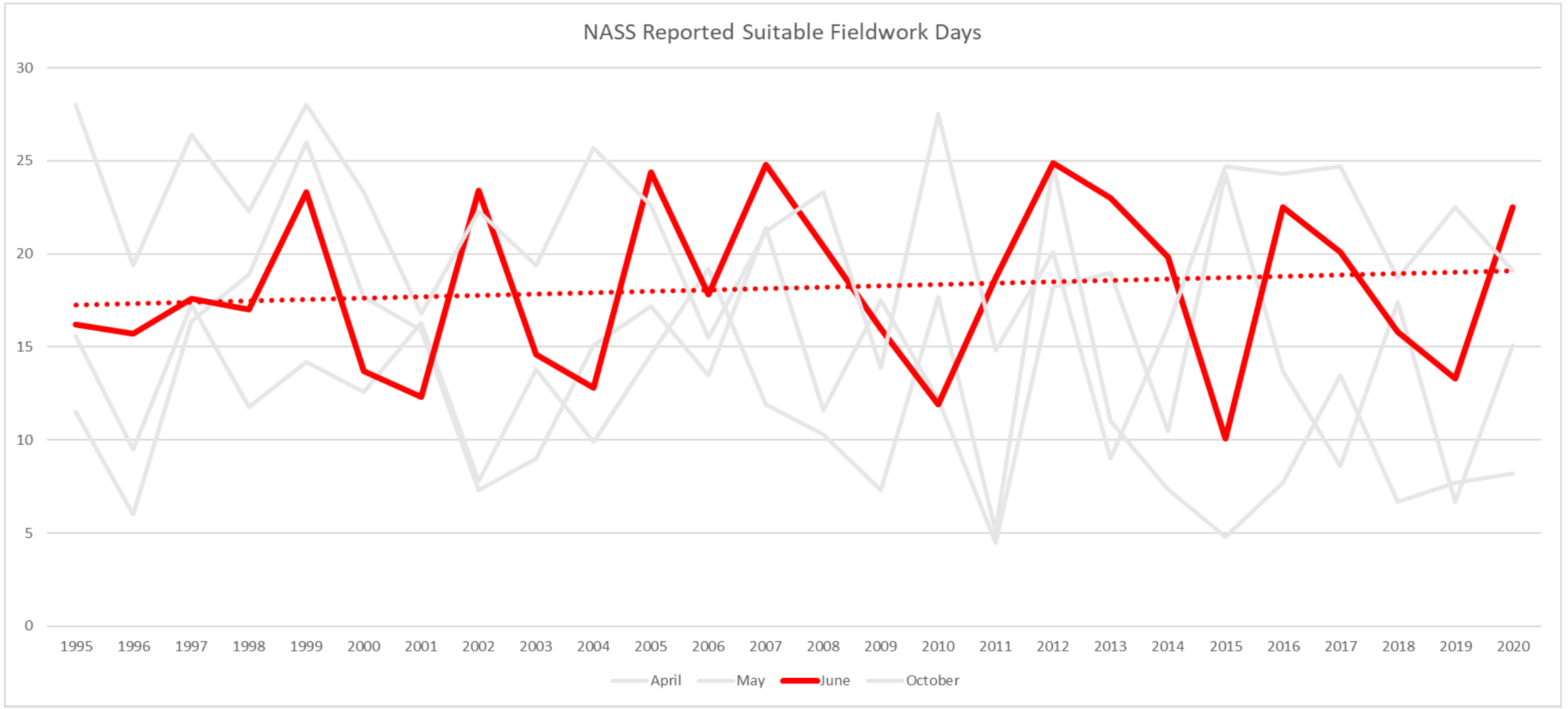






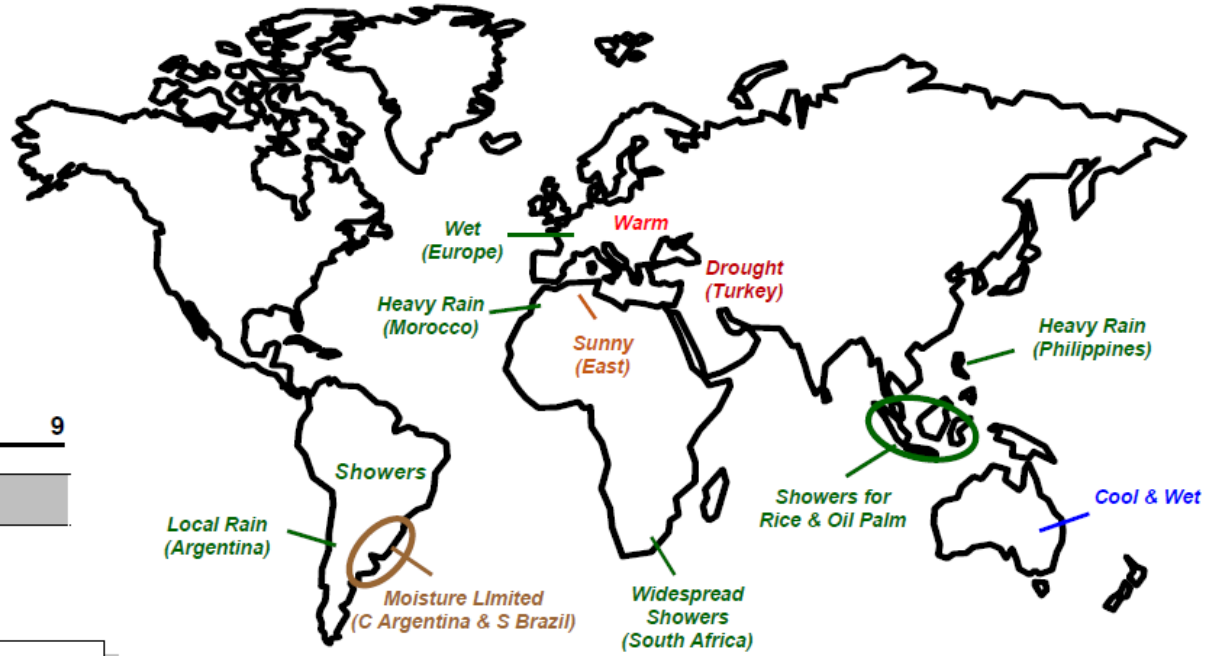
https://www.ncdc.noaa.gov/temp-and-precip/us-trends/

Suitable Fieldwork Conditions: Ohio



CFAES

International Look-in



International Weather and Crop Summary

January 3-9, 2021

International Weather and Crop Highlights and Summaries provided by USDA/WAOB

HIGHLIGHTS

EUROPE: Wet weather prevailed across much of the continent, with below-normal temperatures in western Europe contrasting with abnormal warmth in eastern crop areas.

MIDDLE EAST: Warm, dry weather maintained moderate to severe drought across much of Turkey, though much-needed rain approached from the west.

NORTHWESTERN AFRICA: Heavy rain alleviated drought in Morocco, while sunny skies favored winter grain development in eastern growing areas.

SOUTHEAST ASIA: Heavy showers sustained ample moisture supplies for rice and oil palm in the Philippines, Malaysia, and Indonesia.

AUSTRALIA: Soaking rain and cooler-than-normal weather further benefited summer crops.

SOUTH AFRICA: Showers maintained favorable conditions for corn, sugarcane, and other rain-fed summer crops.

ARGENTINA: Rain returned to western and southern farming regions, but dryness persisted for corn and soybeans over much of central Argentina.

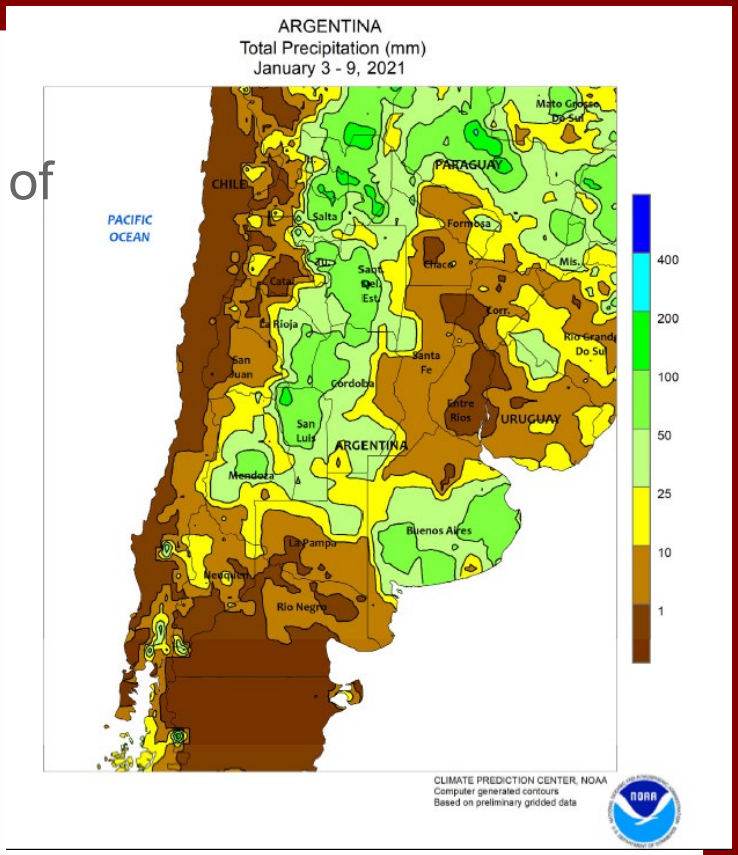
BRAZIL: Scattered showers benefited summer crops throughout much of Brazil, although dryness remained a concern for some southern crops.

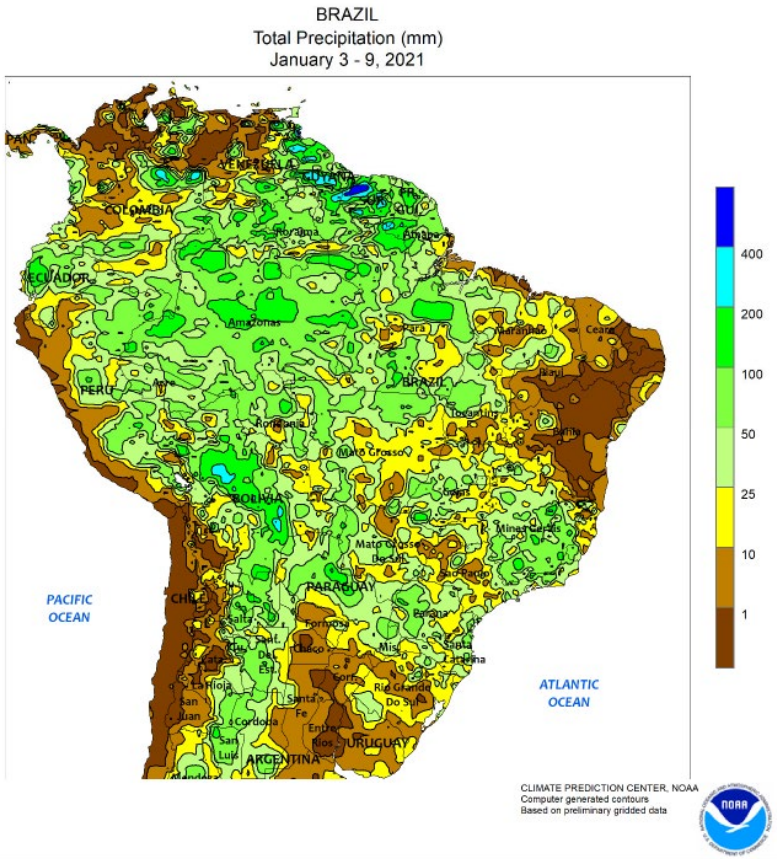
https://www.usda.gov/oce/weather-drought-monitor

CFAES

South America

- Argentina
  - Unseasonable dryness has dominated a key farming region of central Argentina.
  - The dryness and occasional warmth have maintained stress summer crops
  - Showers intensified over Argentina's





- Brazil
  - Scattered showers overspread major farming regions of central and southern Brazil
  - Many locations continued to receive below-normal amounts of rainfall
  - Pockets of dryness also lingered over Sao Paulo and Mato Grosso and portions of the northeastern interior


THANK YOU!
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