

MAC-T Monthly Call

Midwest Agriculture and Climate Team

January 4, 2023

For more information:

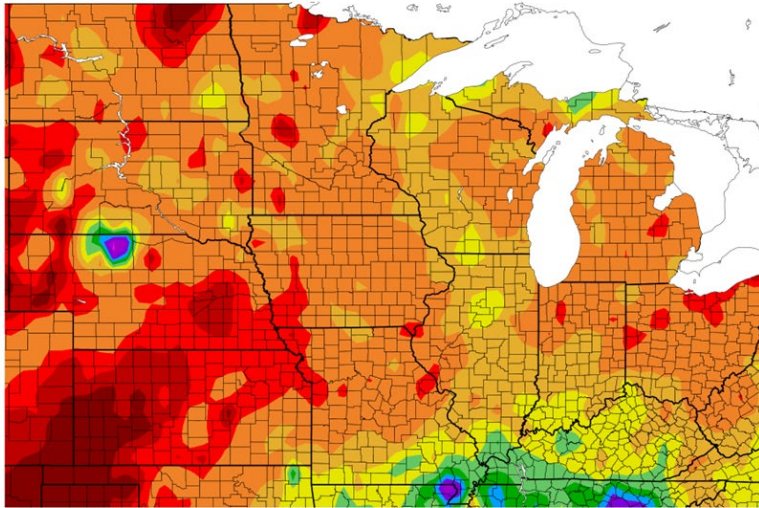
Dennis.todey@usda.gov



Midwest Climate Hub
U.S. DEPARTMENT OF AGRICULTURE



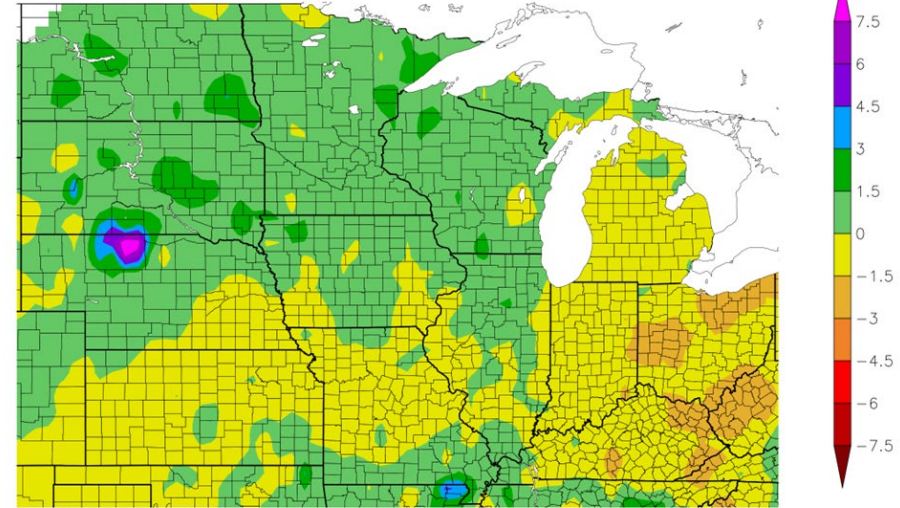
Precipitation (in)
12/4/2022 – 1/2/2023



Generated 1/3/2023 at HPRCC using provisional data.

NOAA Regional Climate Centers

Departure from Normal Precipitation (in)
12/4/2022 – 1/2/2023



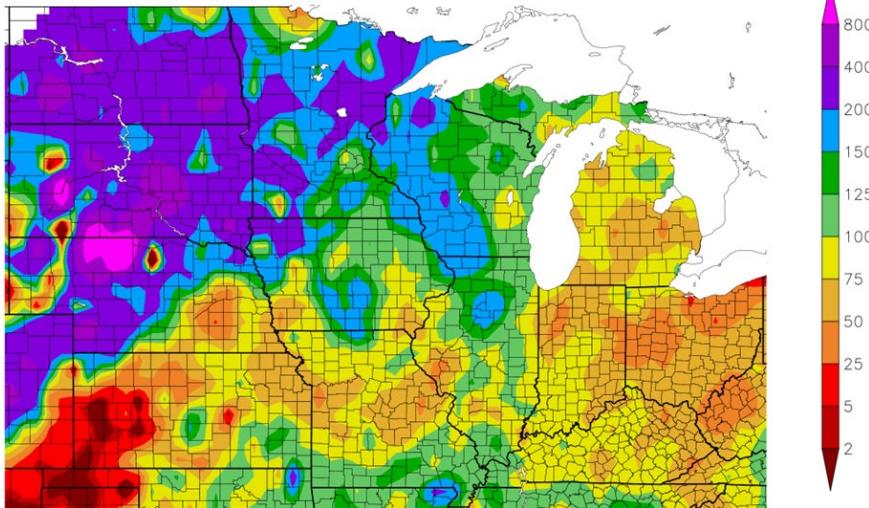
Generated 1/3/2023 at HPRCC using provisional data.

NOAA Regional Climate Centers

Generated 1/3/2023 at HPRCC using provisional data.

NOAA Regional Climate Centers

Percent of Normal Precipitation (%)
12/4/2022 – 1/2/2023



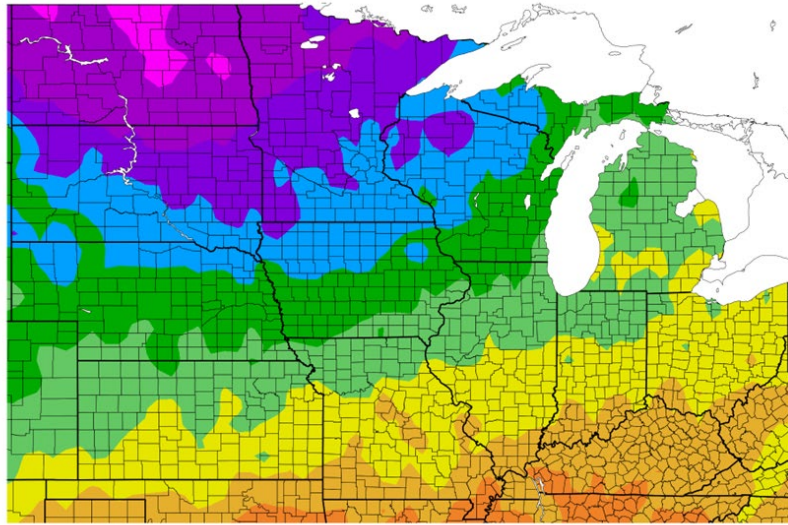
Generated 1/3/2023 at HPRCC using provisional data.

NOAA Regional Climate Centers

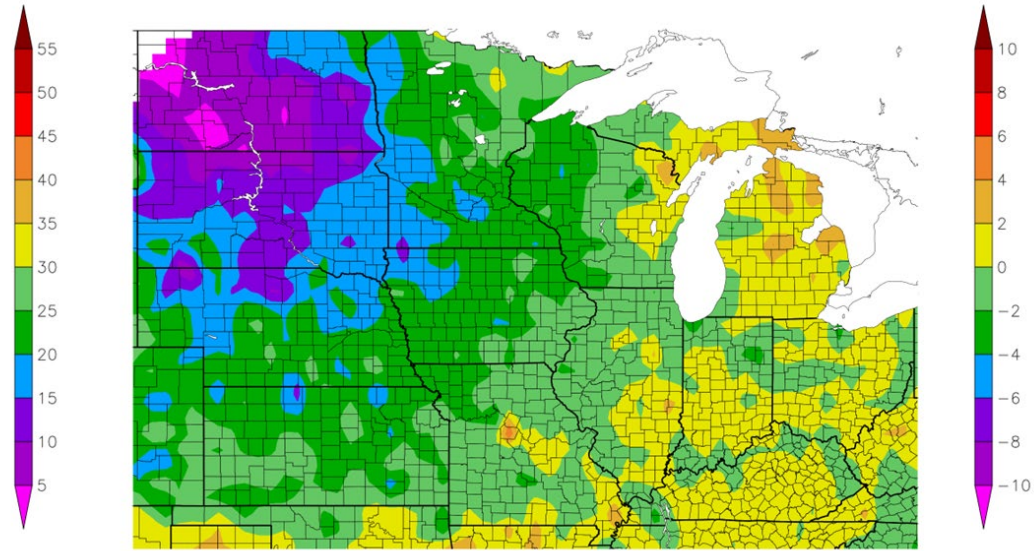
- IN, OH, MI, and MO had below-average precipitation. Much of other states had above-average precip.
- Large areas 50% average and other areas 200%.
- Some parts of MN, Dakotas, and NE had 400-800% of normal
- Western KS remarkably low precip
- Above avg. precip in western areas good but limited drought help.

<https://hprcc.unl.edu/maps.php?map=ACISClimateMaps>

Temperature (F)
12/4/2022 – 1/2/2023



Departure from Normal Temperature (F)
12/4/2022 – 1/2/2023



Generated 1/3/2023 at HPRCC using provisional data.

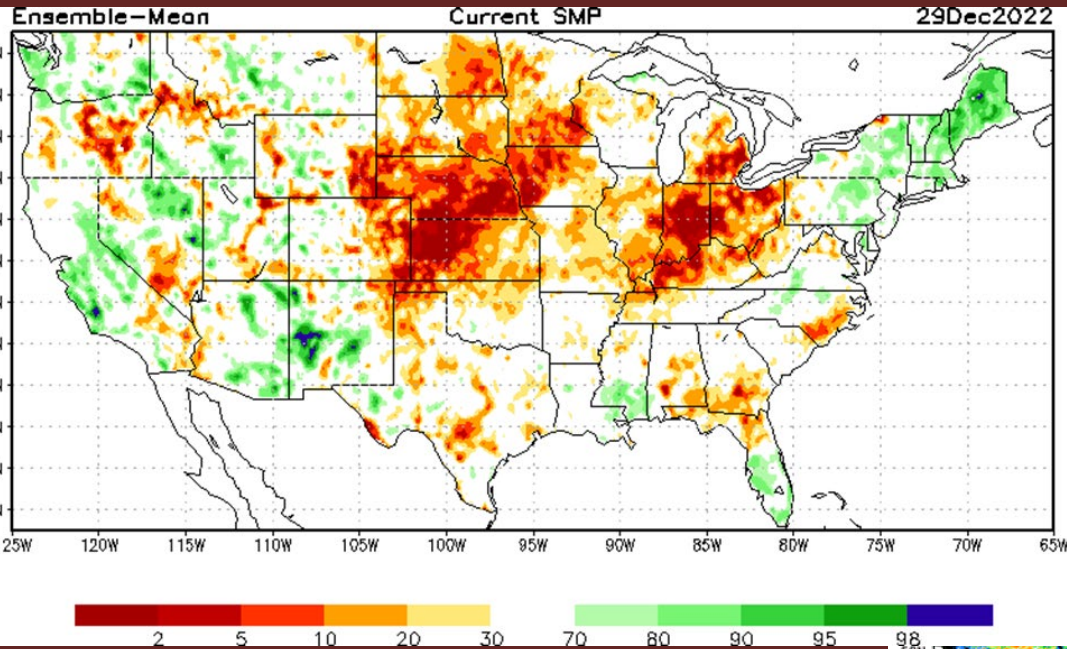
NOAA Regional Climate Centers Generated 1/3/2023 at HPRCC using provisional data.

NOAA Regional Climate Centers

- Average temperature around 40 F south to <10 F north
- Most of the region had near-average temperatures for the month (factoring in the major cold storm just before Christmas), and the Dakotas were 4-10 F degrees colder than average.
- Cold outbreaks and snow helped keep areas colder.

Soil Moisture

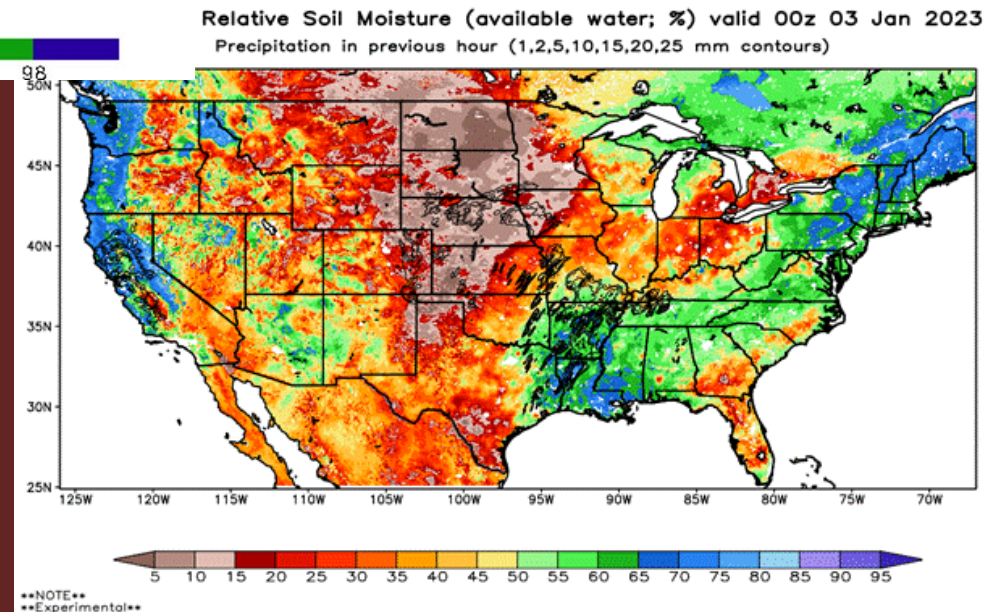
https://www.cpc.ncep.noaa.gov/products/Drought/Monitoring/smp_new.shtml#



- Very dry soils in Plains, western Iowa, and southern MN. Also IN, OH, northern KY, and southern MI.
- Very dry soils at a dry soil time of year.

Both percentile maps

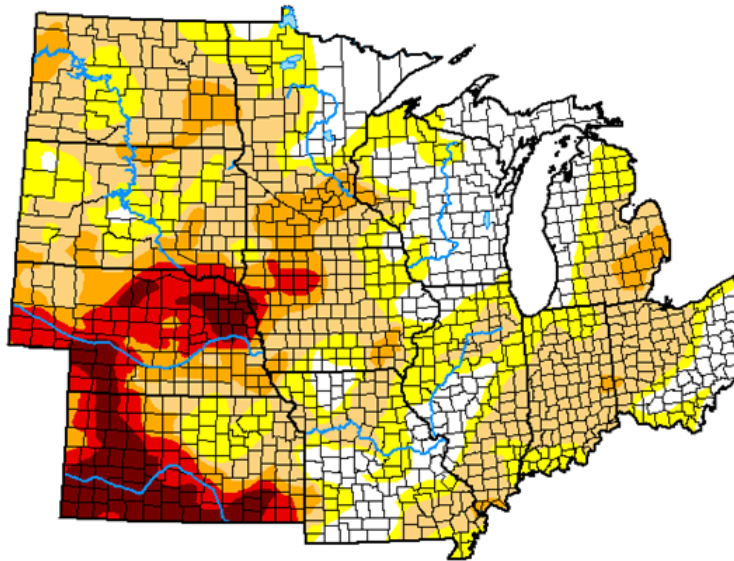
- Upper – whole profile
- Lower – top 100 cm (~40")



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

Drought in the Midwest

U.S. Drought Monitor North Central States



December 27, 2022

(Released Thursday, Dec. 29, 2022)

Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	19.75	80.25	56.96	24.56	12.85	5.73
Last Week 12-20-2022	21.21	78.79	54.71	24.56	12.85	5.73
3 Months Ago 09-27-2022	32.06	67.94	43.99	21.51	9.92	4.04
Start of Calendar Year 01-04-2022	44.51	55.49	27.55	7.10	1.31	0.00
Start of Water Year 09-27-2022	32.06	67.94	43.99	21.51	9.92	4.04
One Year Ago 12-28-2021	42.28	57.72	27.89	7.91	1.16	0.00

Intensity:

None	D2 Severe Drought
D0 Abnormally Dry	D3 Extreme Drought
D1 Moderate Drought	D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

Author:

Richard Heim
NCEI/NOAA



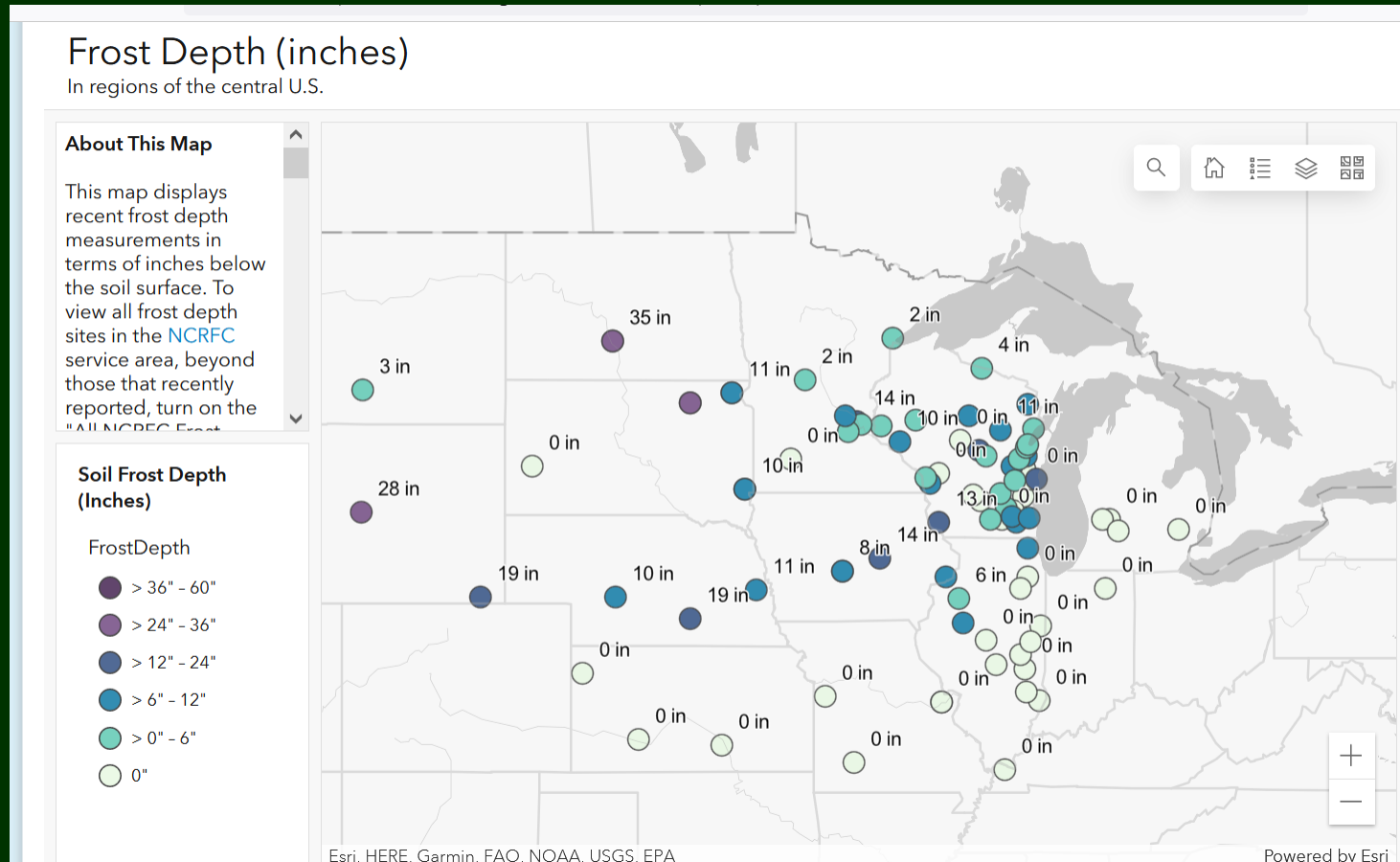
droughtmonitor.unl.edu

- A little improvement in places with large winter precipitation. Also some worsening.
- Over 80% coverage with D0 or more. 57% in drought (D1+).
- Worst over Plains with large areas of D3-D4
- Some D3 in IA, also.

<http://droughtmonitor.unl.edu/>

Frost Depths

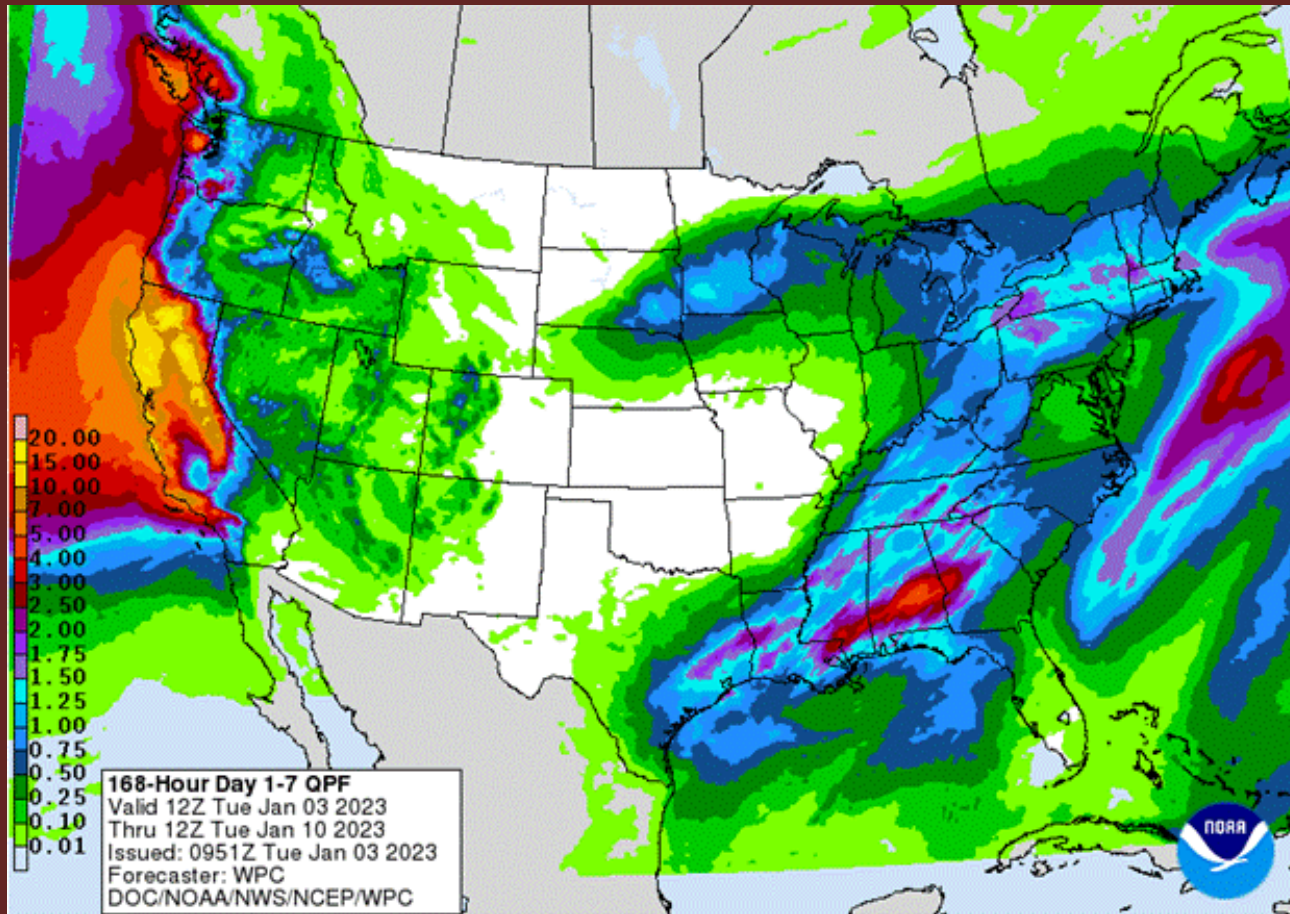
Moderate frost depths over northern states. No frost depth south.



Assorted AG Issues

- Several snow events in Plains.
- Major blizzard before Christmas – main impact livestock and transportation.

1-7 Day Precip

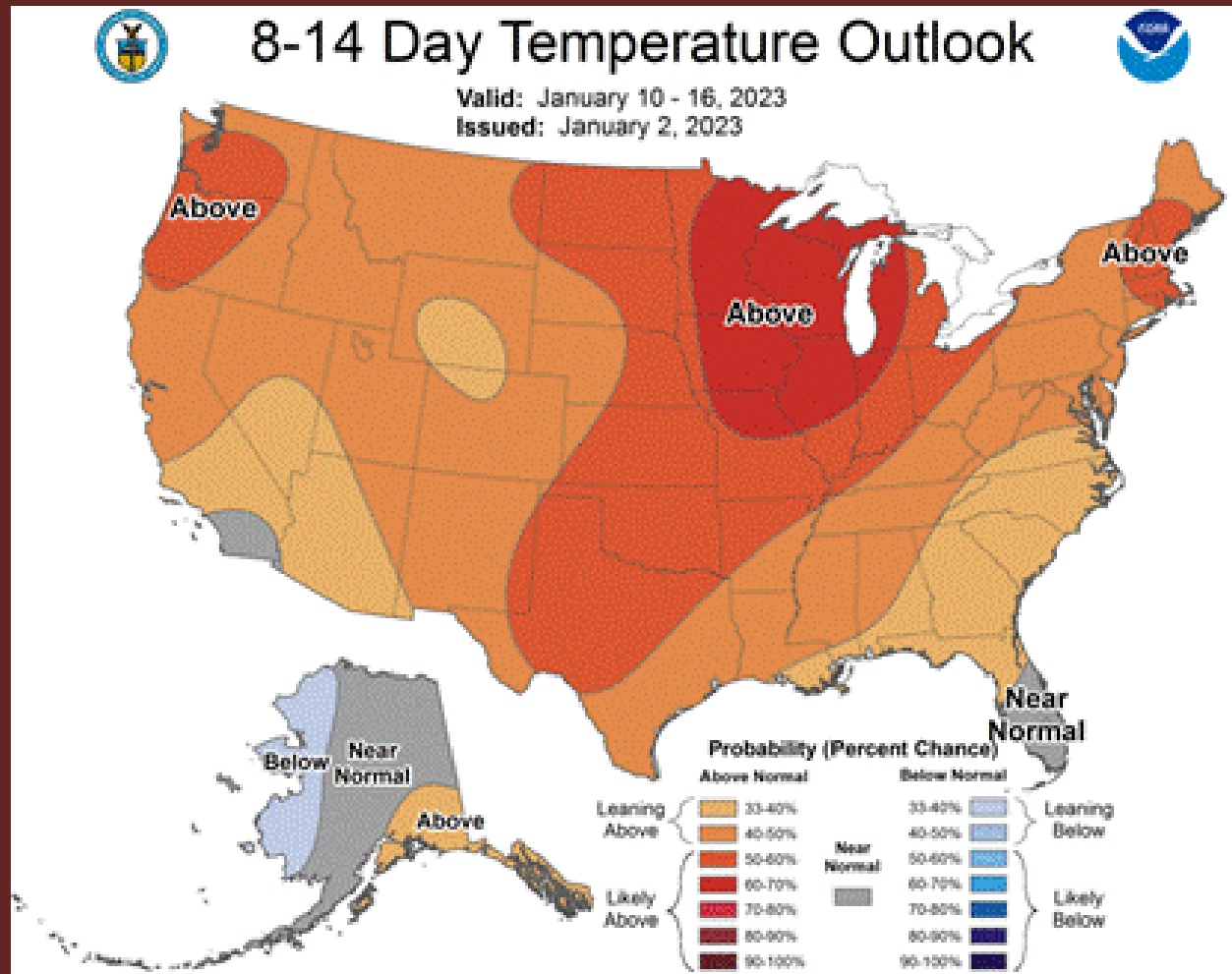


Next 7 days (Including 12/15 storms)

- More active in MN, and central US from TX/LA to Great Lakes, and East coast. Some decent rains may occur in some of these areas.
- Beneficial for some moisture
- Not a drought fix

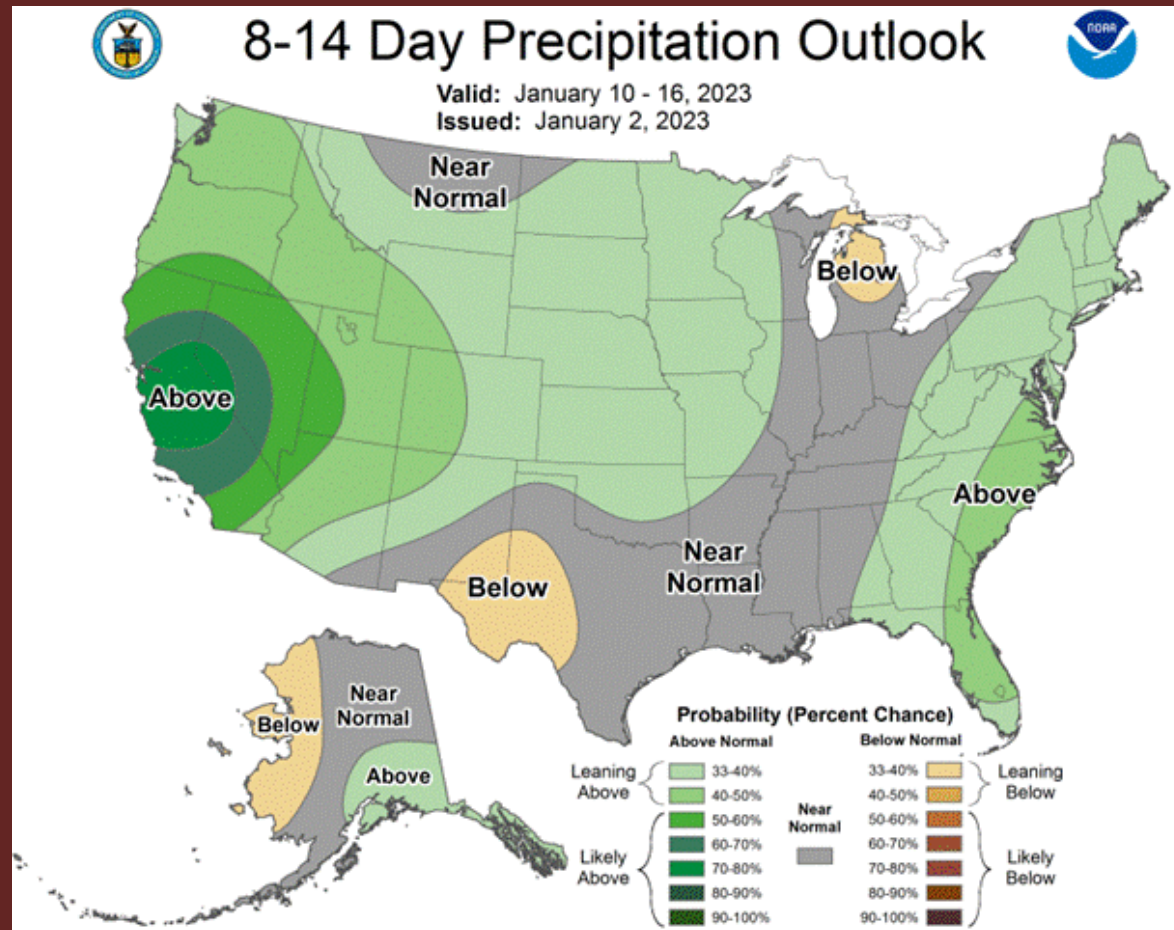
Temperature Outlook

- Likely warmer-than-average conditions throughout the country, with highest likelihood in the Midwest.
- Not seeing any major cold in near-term.



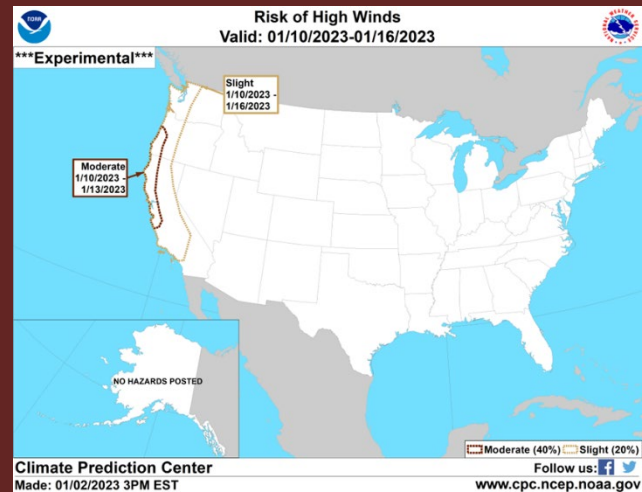
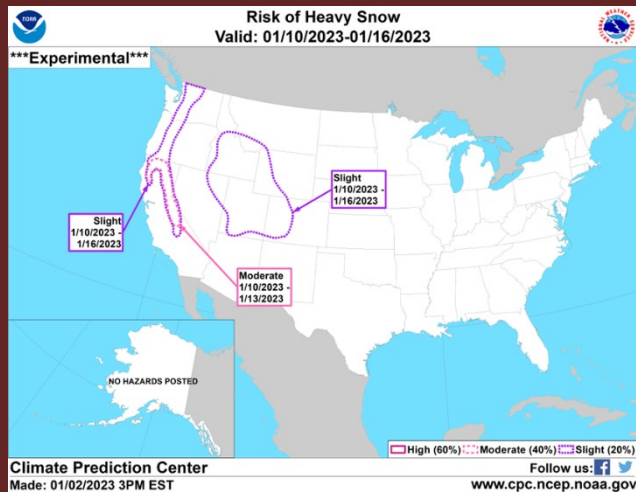
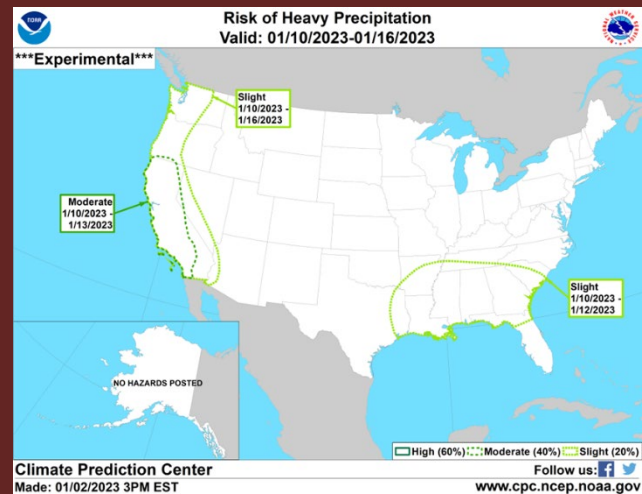
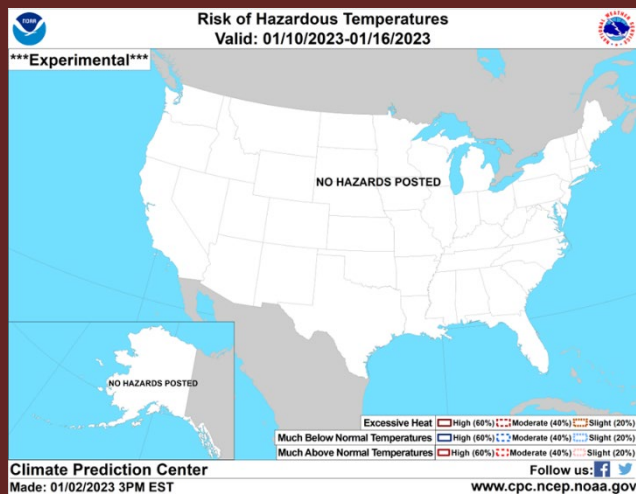
Precipitation Outlook

- For US North Central, slightly more likely *wetter* north/west
- Slightly more likely *drier* in MI
- Near normal elsewhere.
- Reminder climatology is dry in January and February – above normal precip may still not be that wet.

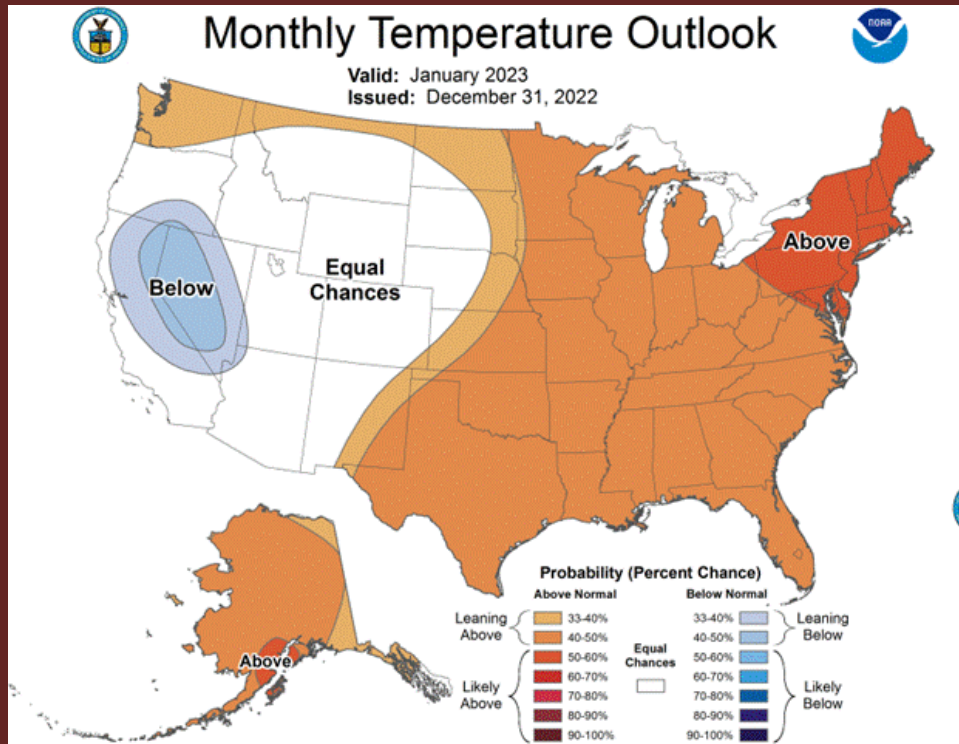


Other Risks

- No major risks of hazardous weather in the Midwest for the coming week.

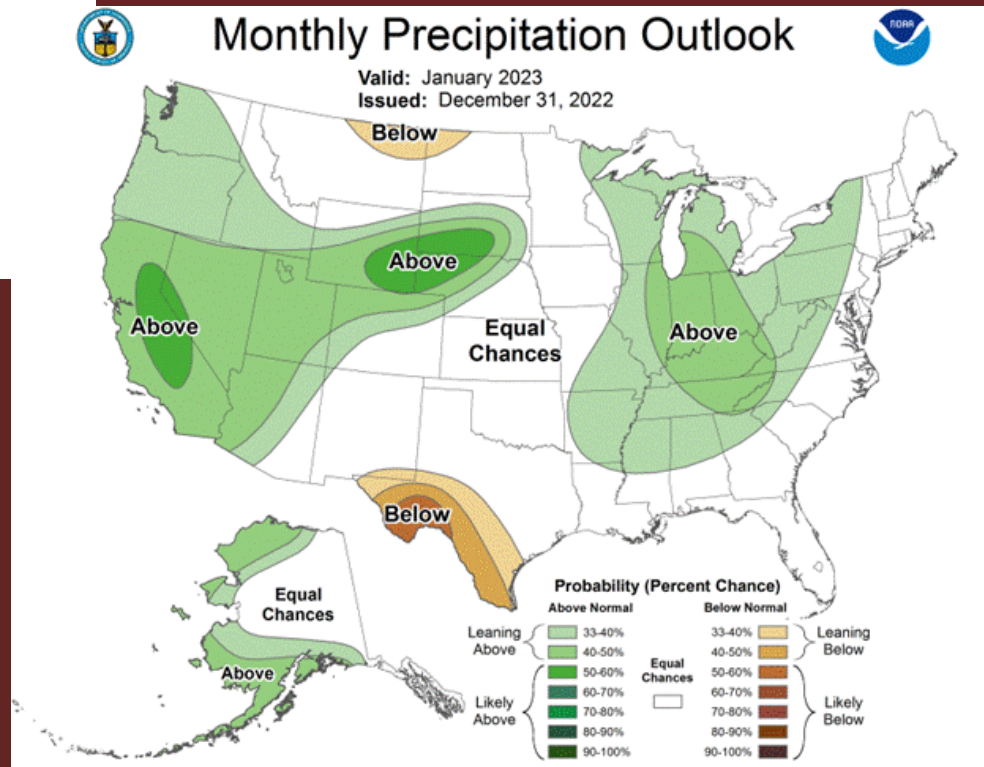


1-Month Outlook

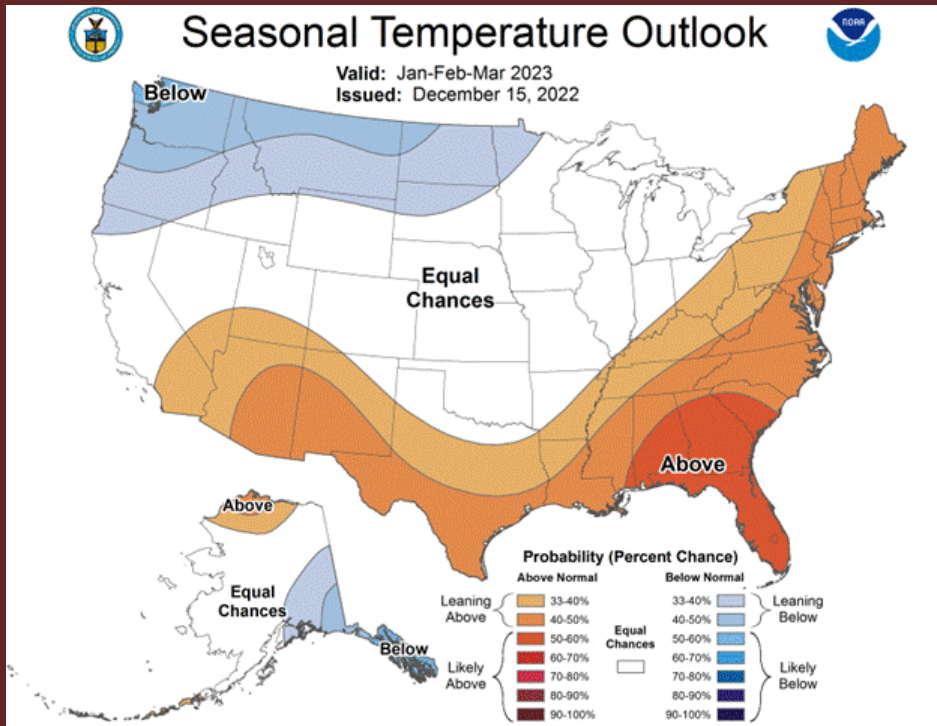


January Monthly Outlook

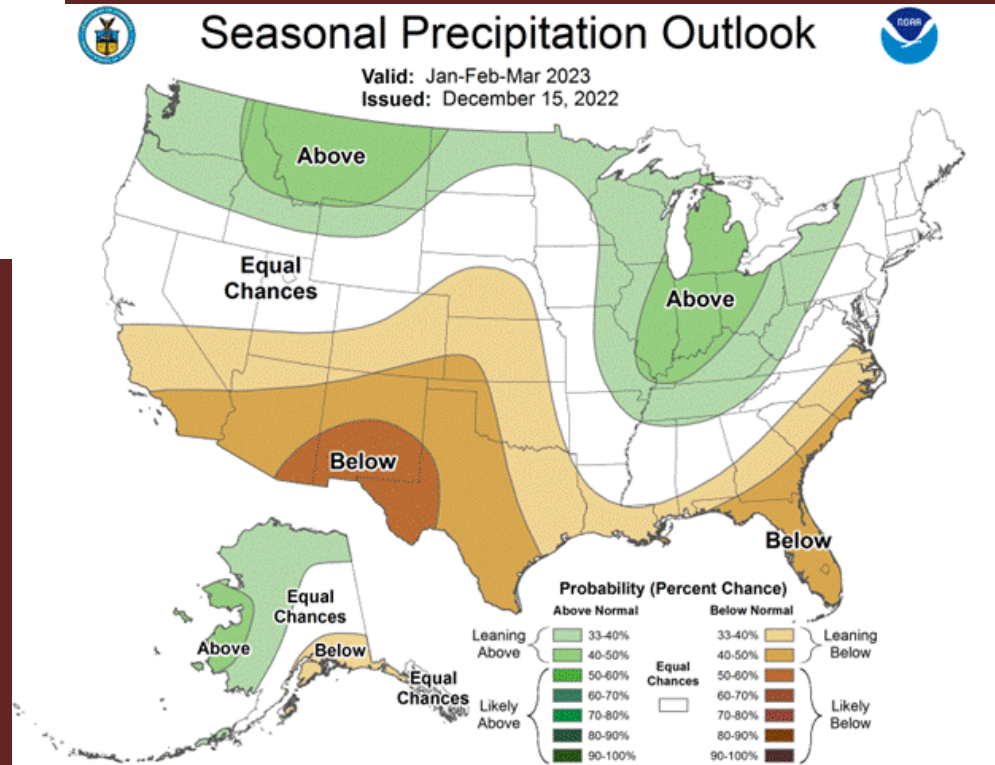
- More likely warmer in most of US north central region, and equal chances in parts of the plains.
- Equal chances for precipitation in western Midwest, with above normal precip likely in eastern corn belt, KY, MI, WI, and ND.



January-March Outlook



- Still La Niña pattern – also soil moisture and computer model influence
- Possible above-normal precip in winter months for much of region, but with equal chances in western MO/IA/MN and northern Plains. Below-normal in KS/NE.

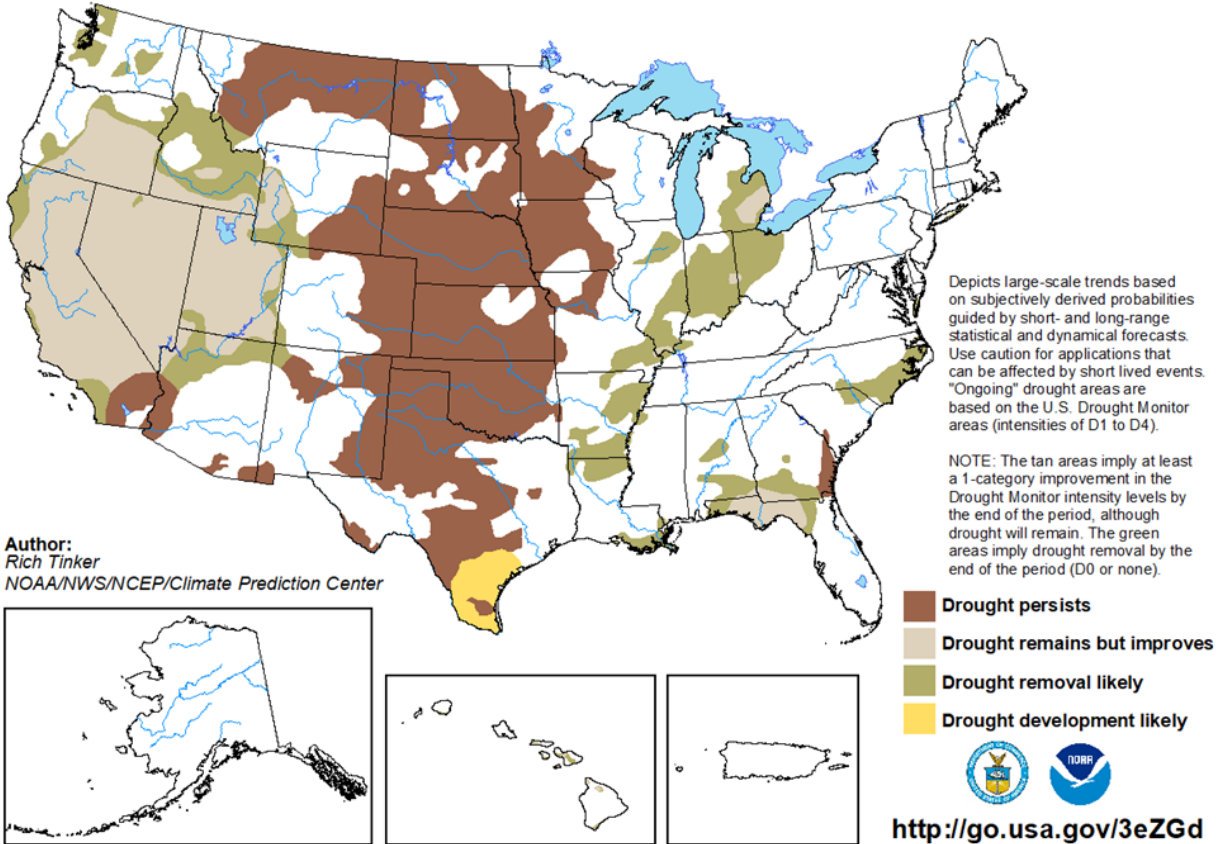


- Drought in Plains likely to remain

Drought in the Midwest/Plains

U.S. Monthly Drought Outlook Drought Tendency During the Valid Period

Valid for January 2023
Released December 31, 2022



- January 2023 outlook
- Mostly persistence
- Some possible improvement in eastern corn belt and MI.

Summary

- Early winter precipitation on non-frozen soils did help a bit with current dryness and drought. But drought conditions persist.
- Dryness and drought are still a substantial challenge in NW Iowa, NE, and KS. Recovery unlikely during the winter. Early spring rains will be needed.
- La Niña influence through winter – likely weakening into spring.
- Soil moisture recovery likely still somewhat limited with frozen soils.
- Mississippi River shipping issues easing.

Next MAC-T Monthly Call

Next Slides
February 1, 2023

Next Call (Tentative)
February 1, 2023, 9-10am CT