Nebraska Drought Conditions: CARC Update

July 26, 2024

Brian Fuchs
National Drought Mitigation Center
University of Nebraska-Lincoln
School of Natural Resources

NDMC

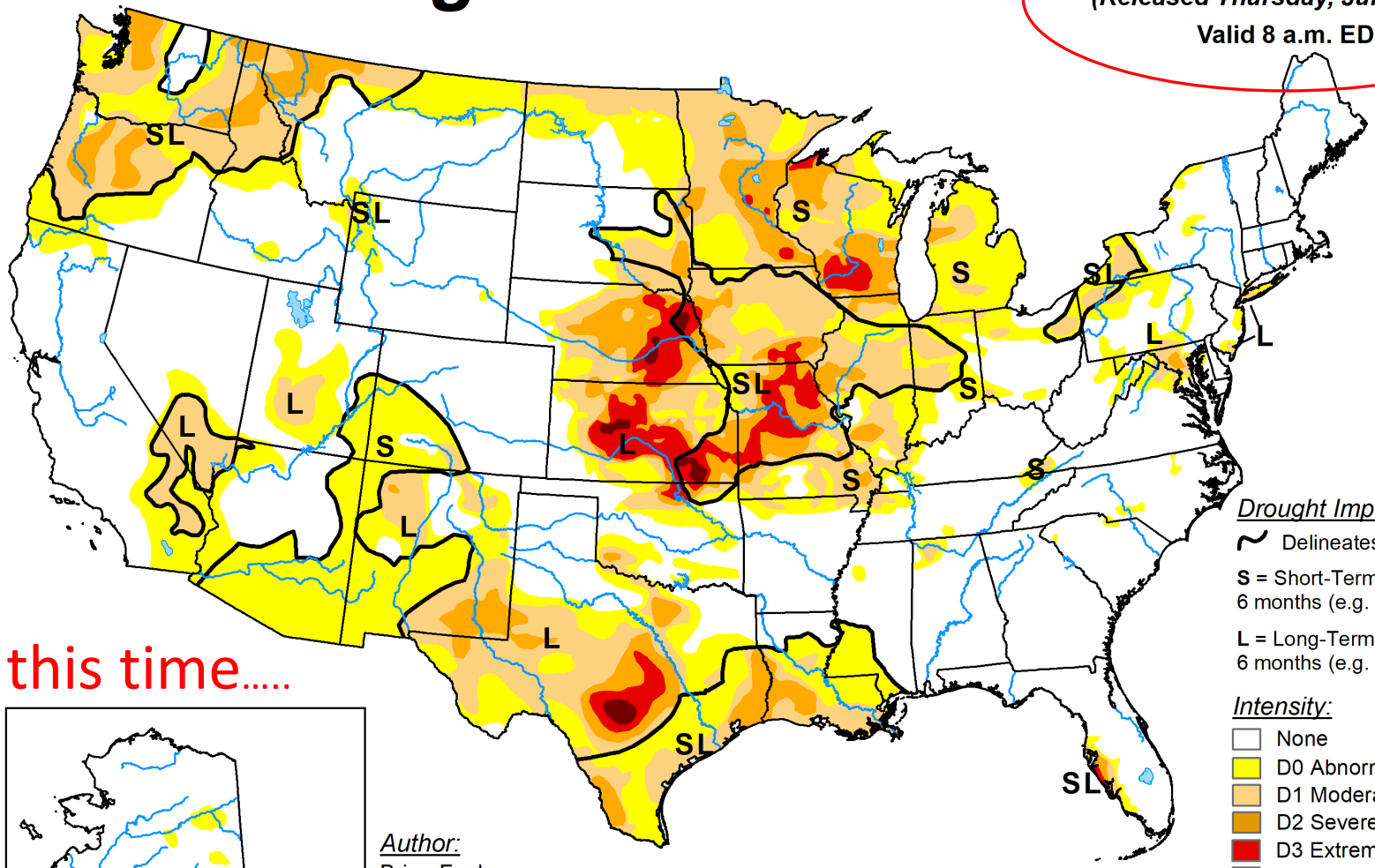
NATIONAL DROUGHT MITIGATION CENTER

UNIVERSITY OF NEBRASKA

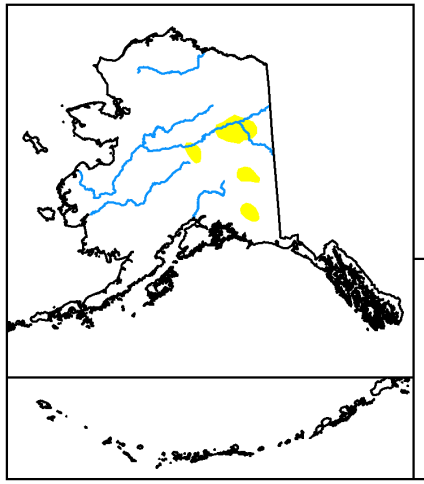
Regional Climatic and Drought Conditions…

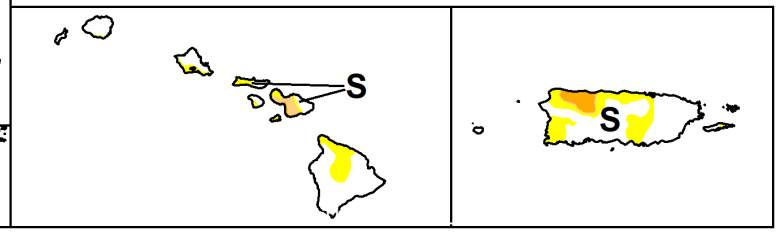
U.S. Drought Monitor

July 25, 2023
(Released Thursday, Jul. 27, 2023)
Valid 8 a.m. EDT



Last year at this time…..





Author:
Brian Fuchs
National Drought Mitigation Center

Drought Impact Types:

~ Delineates dominant impacts

S = Short-Term, typically less than 6 months (e.g. agriculture, grasslands)

L = Long-Term, typically greater than 6 months (e.g. hydrology, ecology)

Intensity:

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

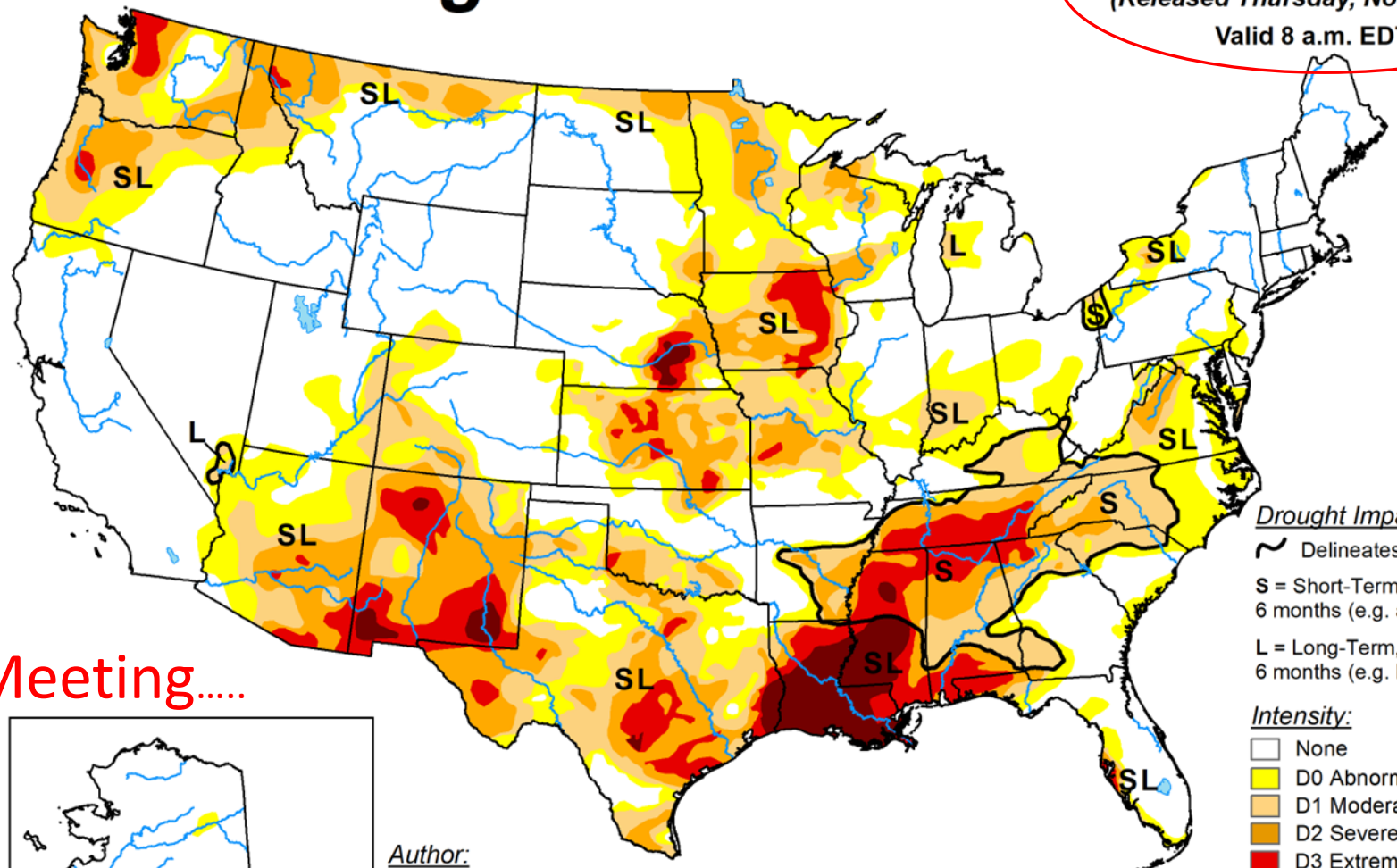
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to https://droughtmonitor.unl.edu/About.aspx

USDA NDMC NOAA

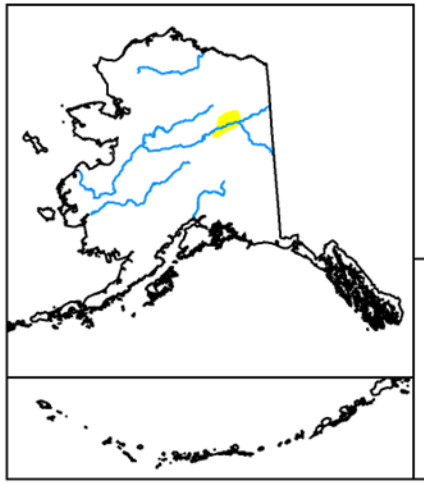
droughtmonitor.unl.edu

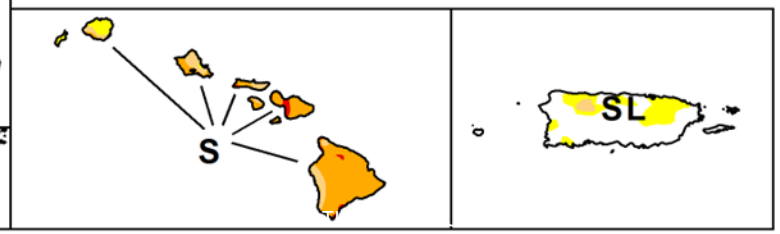
U.S. Drought Monitor

October 31, 2023
(Released Thursday, Nov. 2, 2023)
Valid 8 a.m. EDT



Last CARC Meeting…..





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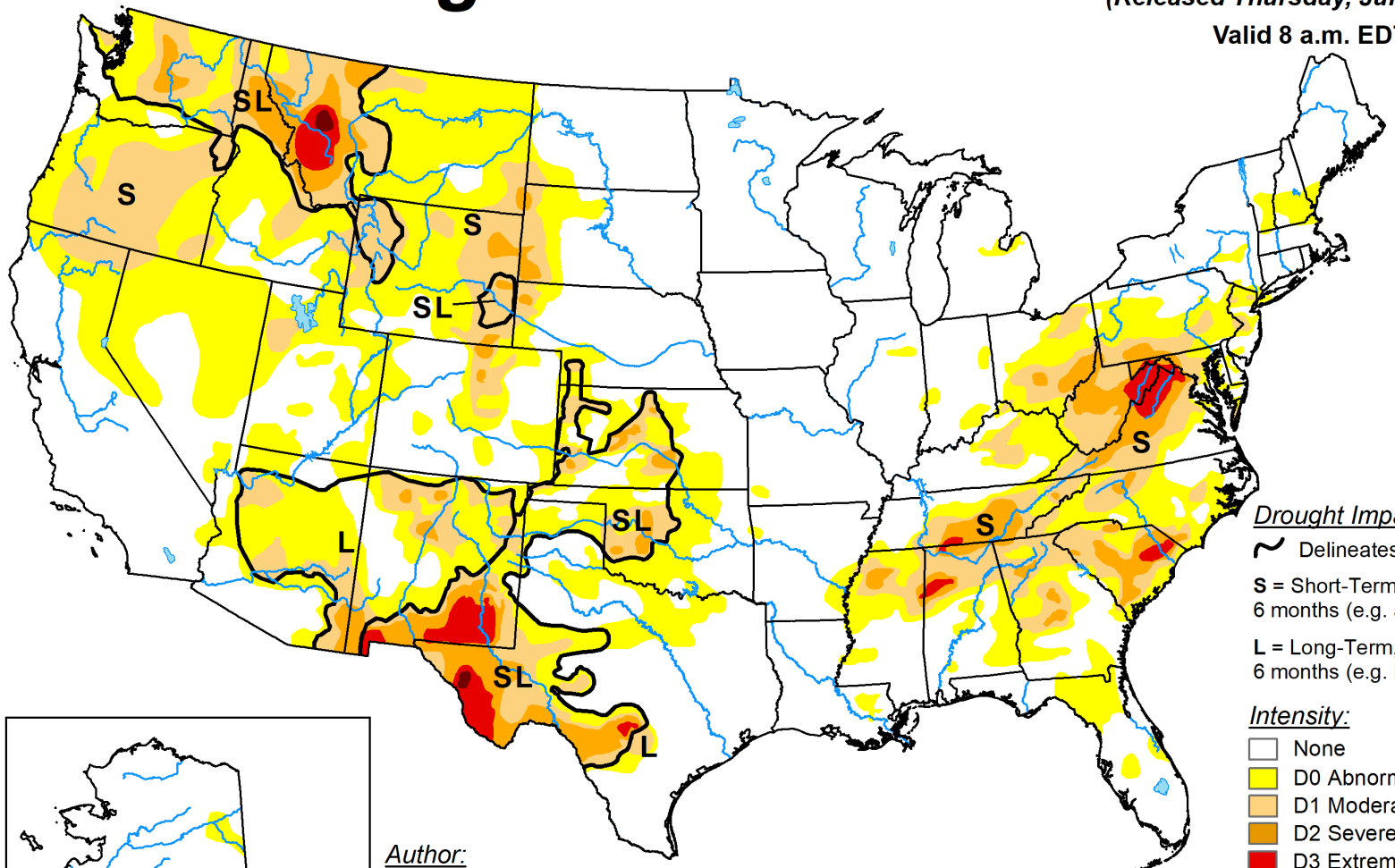
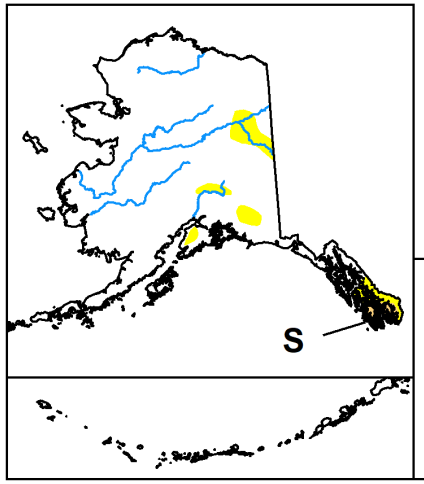
U.S. Drought Monitor

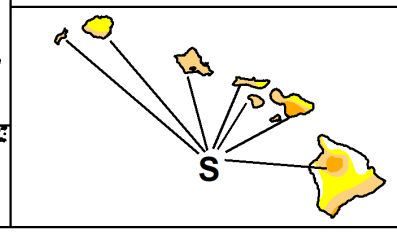
July 23, 2024

(Released Thursday, Jul. 25, 2024)

Valid 8 a.m. EDT







Author:
Rocky Bilotta
NCEI/NOAA

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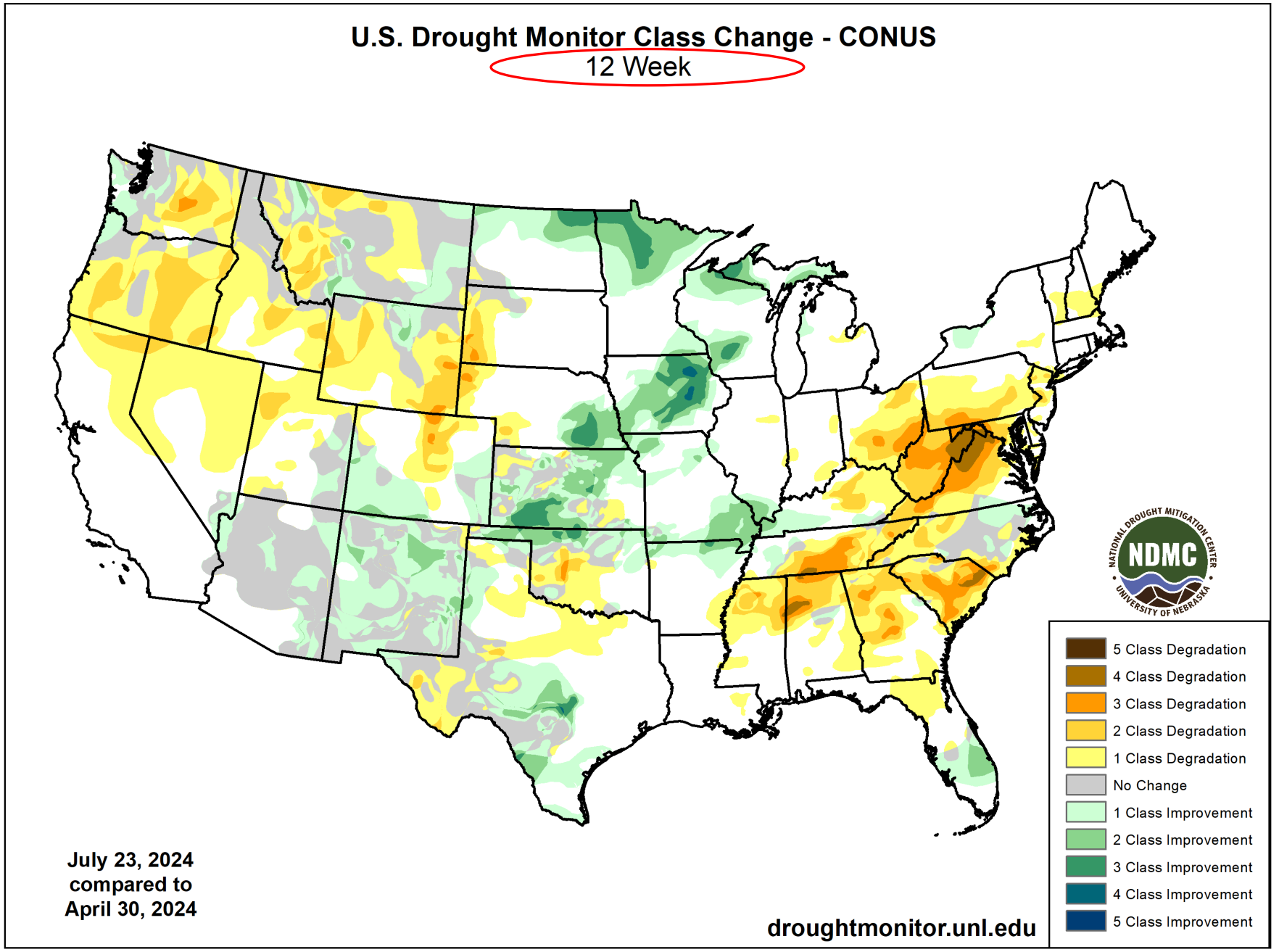
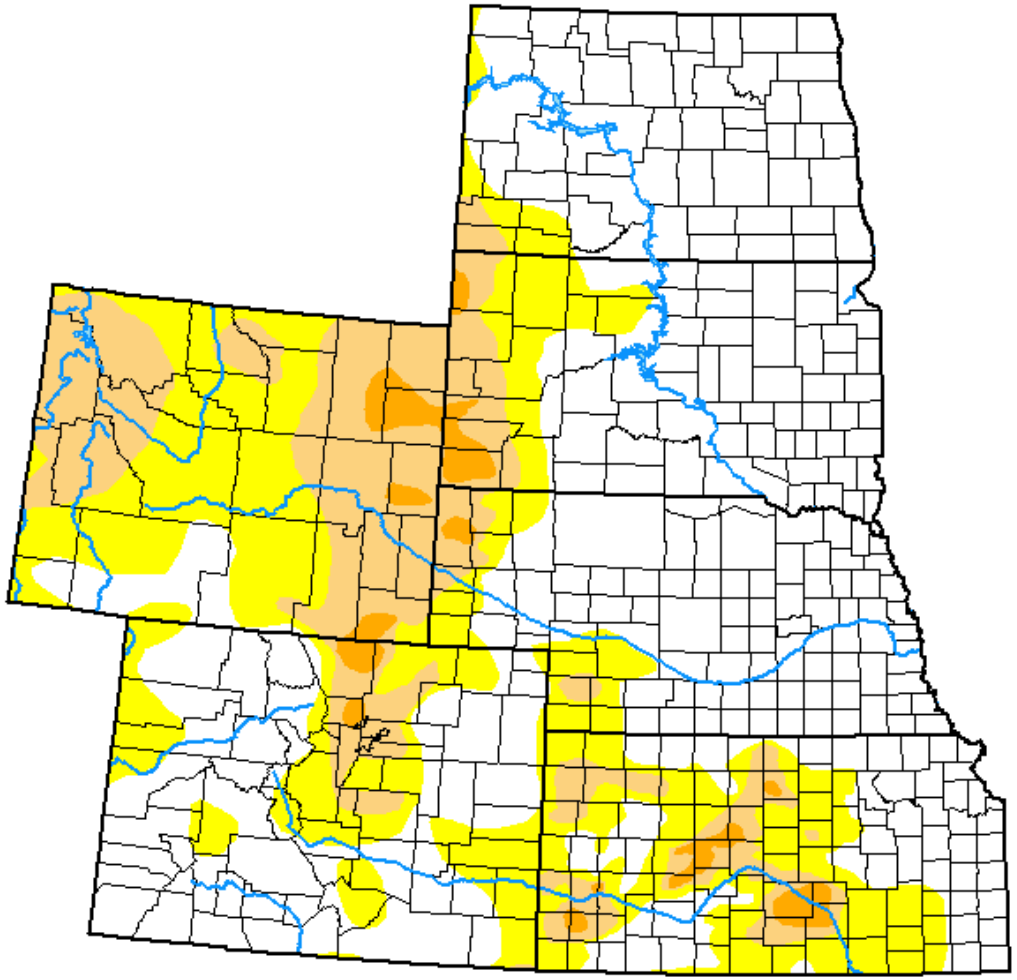

U.S. Drought Monitor Class Change - CONUS
12 Week
July 23, 2024
compared to
April 30, 2024
droughtmonitor.unl.edu
NATIONAL DROUGHT MITIGATION CENTER
NDMC
UNIVERSITY OF NEBRASKA
5 Class Degradation
4 Class Degradation
3 Class Degradation
2 Class Degradation
1 Class Degradation
No Change
1 Class Improvement
2 Class Improvement
3 Class Improvement
4 Class Improvement
5 Class Improvement

U.S. Drought Monitor

High Plains



July 23, 2024

(Released Thursday, Jul. 25, 2024)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	57.55	42.45	17.23	2.30	0.00	0.00
Last Week *07-16-2024*	57.69	42.31	16.58	1.35	0.00	0.00
3 Months Ago *04-23-2024*	53.04	46.96	21.49	4.90	0.00	0.00
Start of Calendar Year *01-02-2024*	54.96	45.04	22.00	8.80	1.97	0.03
Start of Water Year *09-26-2023*	57.69	42.31	26.84	15.07	5.46	0.97
One Year Ago *07-25-2023*	52.82	47.18	29.04	15.49	7.64	0.99

Intensity:

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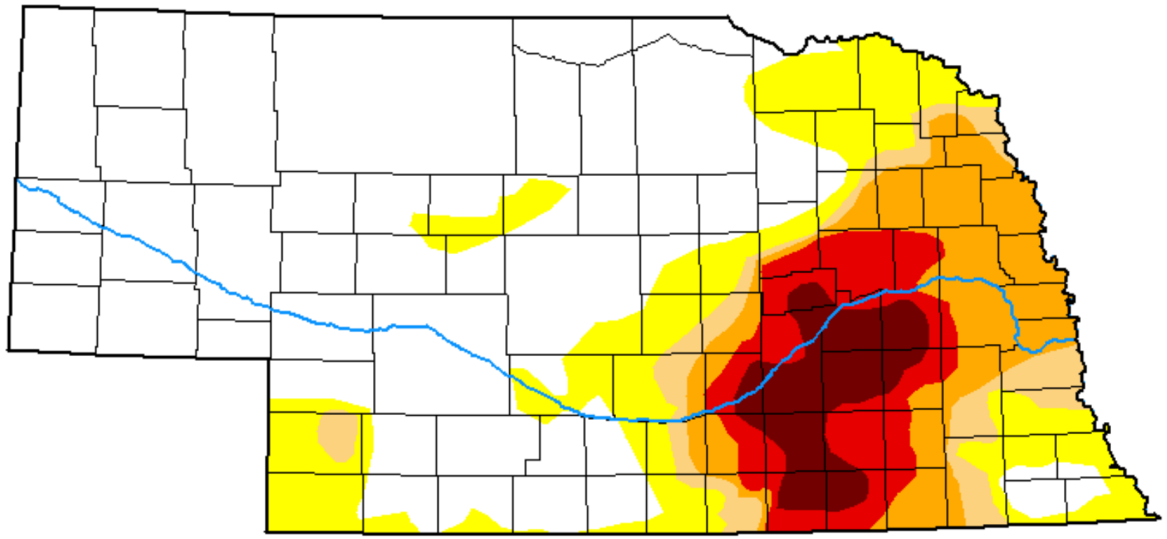
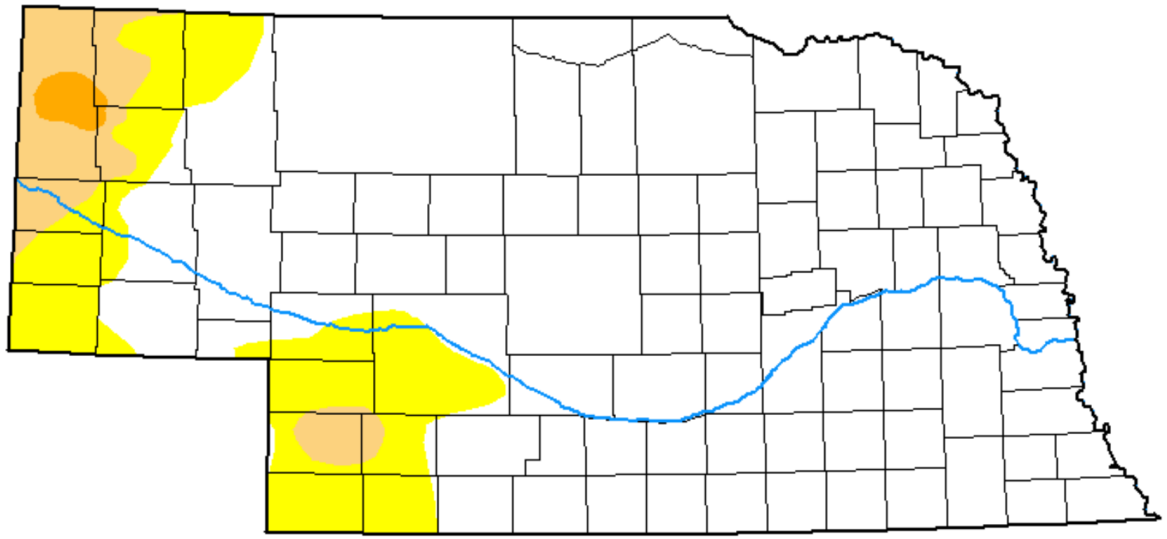


October 31, 2023

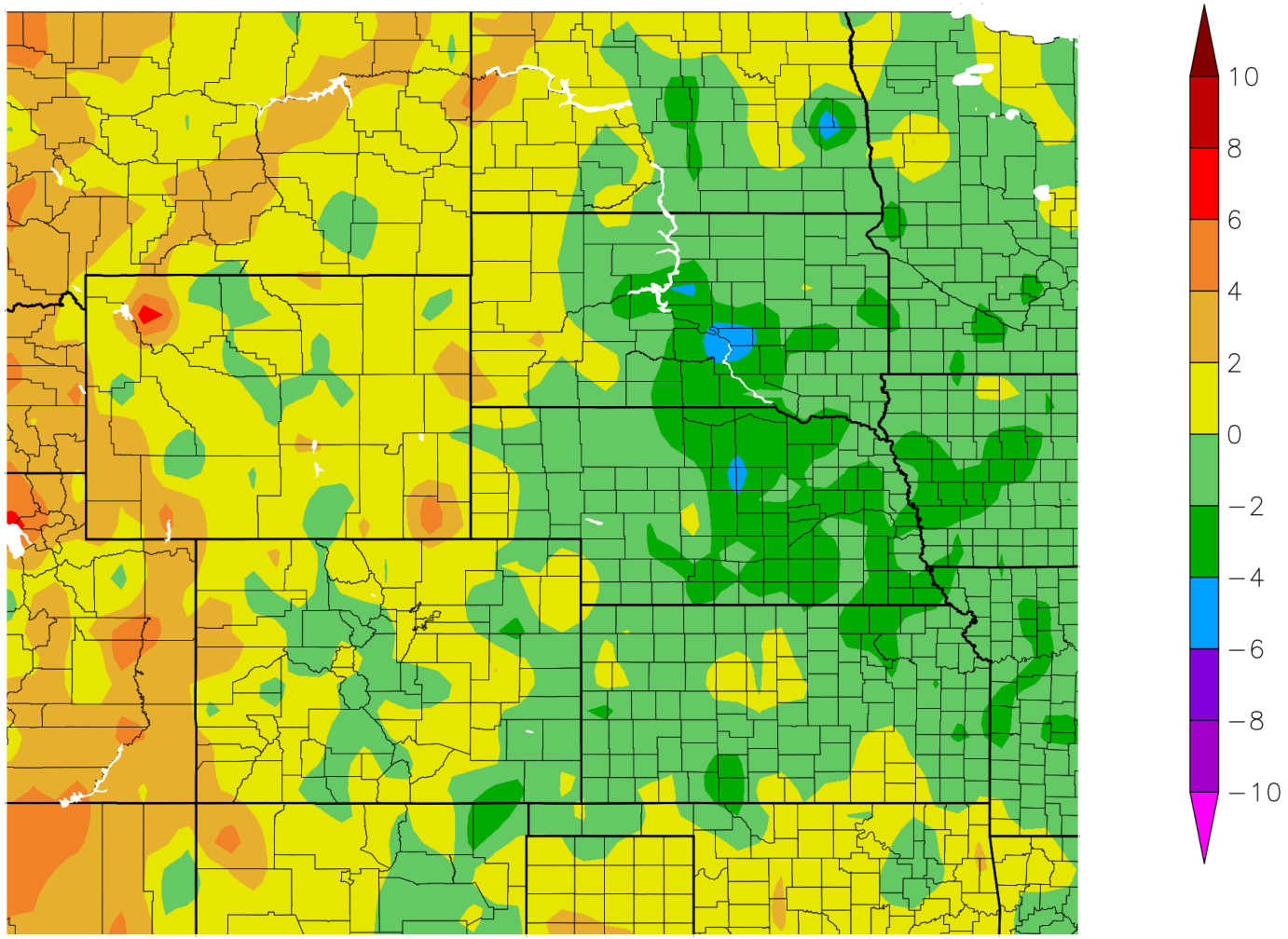


July 23, 2024

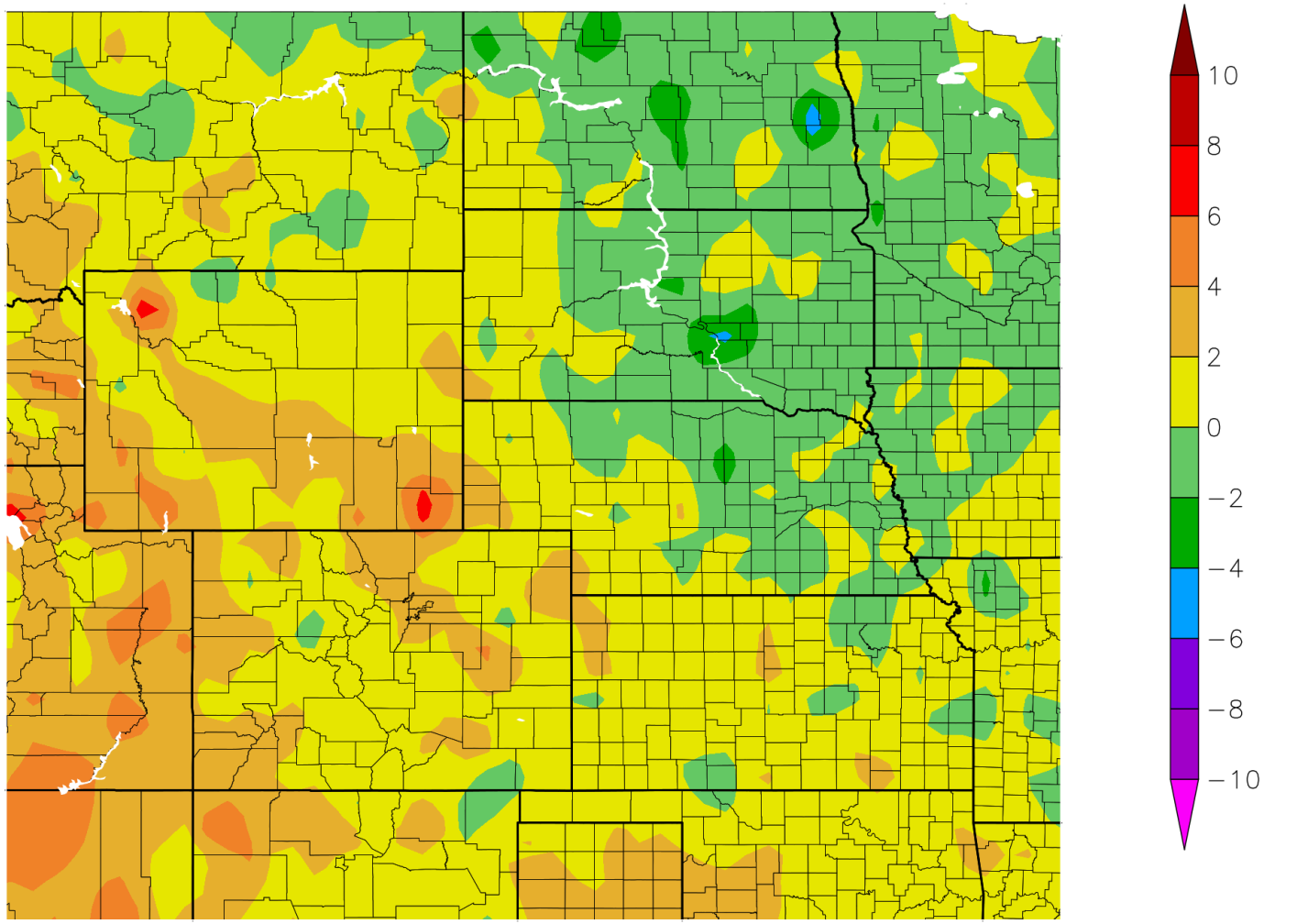
Statistics Comparison

Week	None	D0-D4	D1-D4	D2-D4	D3-D4	D4	DSCI
2023-10-31	59.83	40.17	24.81	20.36	10.90	4.65	101
2024-07-23	81.45	18.55	5.61	0.67	0.00	0.00	25
Change	21.62	-21.62	-19.20	-19.69	-10.90	-4.65	-76

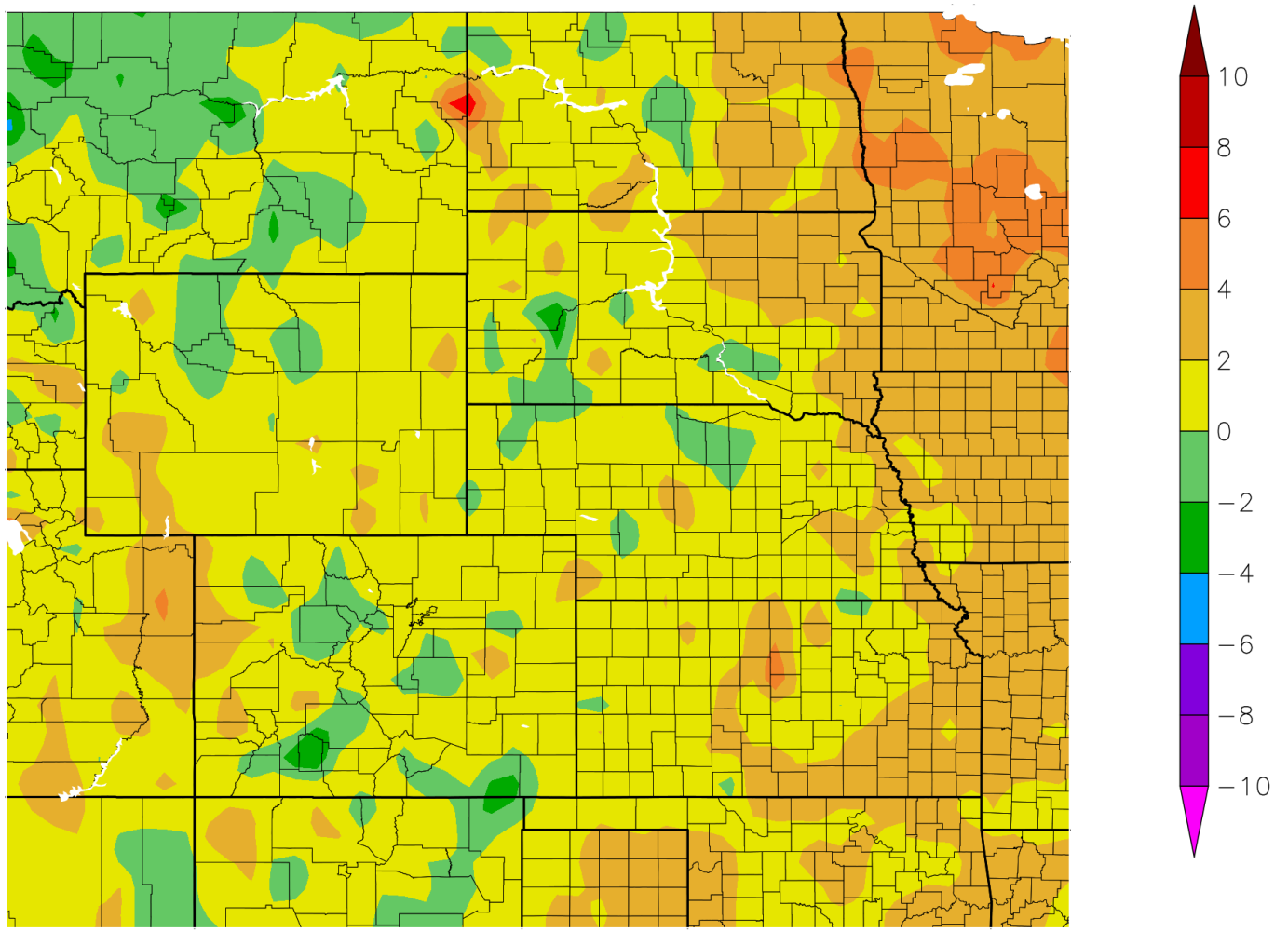
Departure from Normal Temperatures over the last 30 days



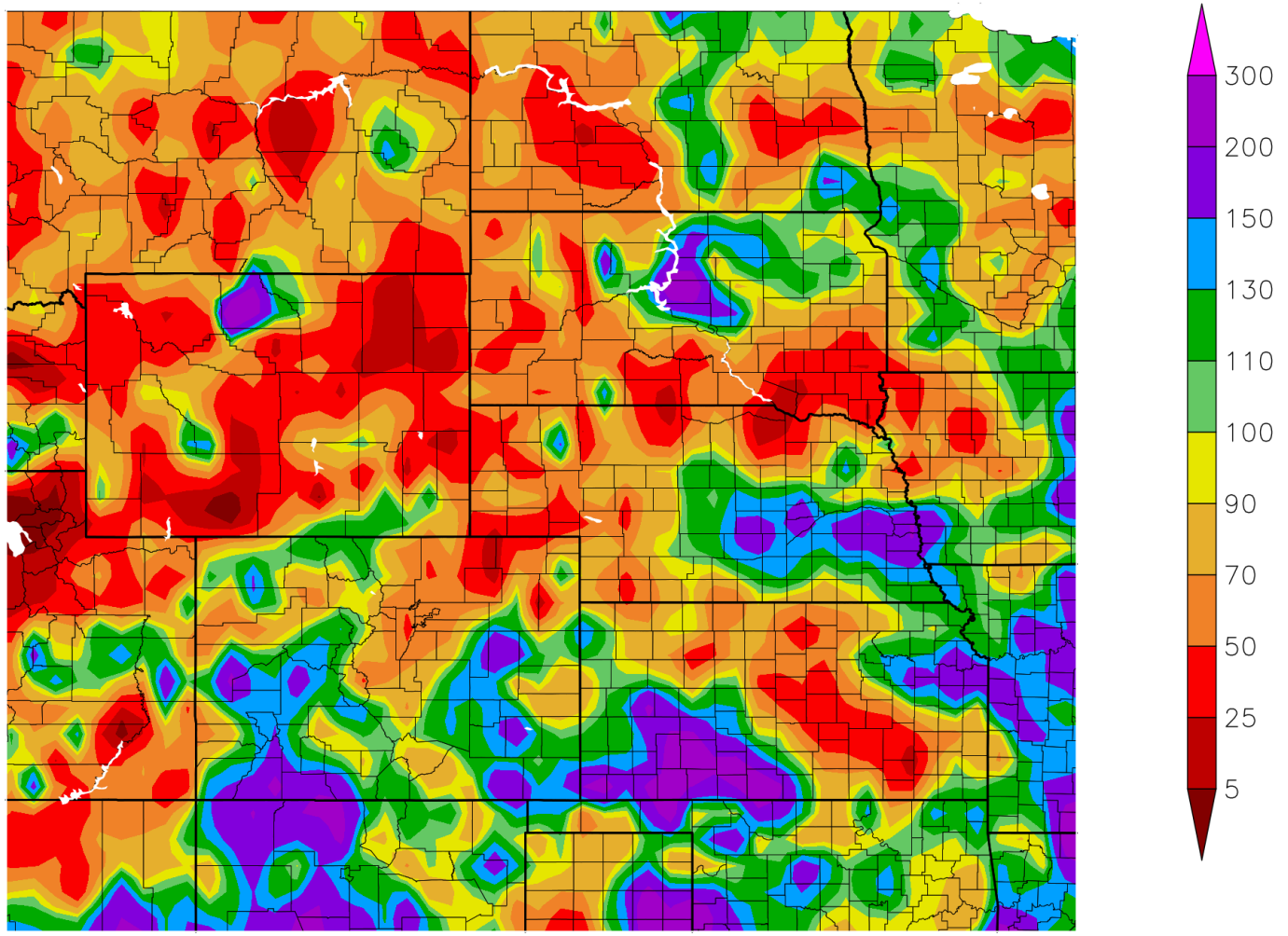
Departure from Normal Temperatures over the last 60 days



Departure from Normal Temperatures for the Calendar Year



Percent of Normal Precipitation over the last 30 days



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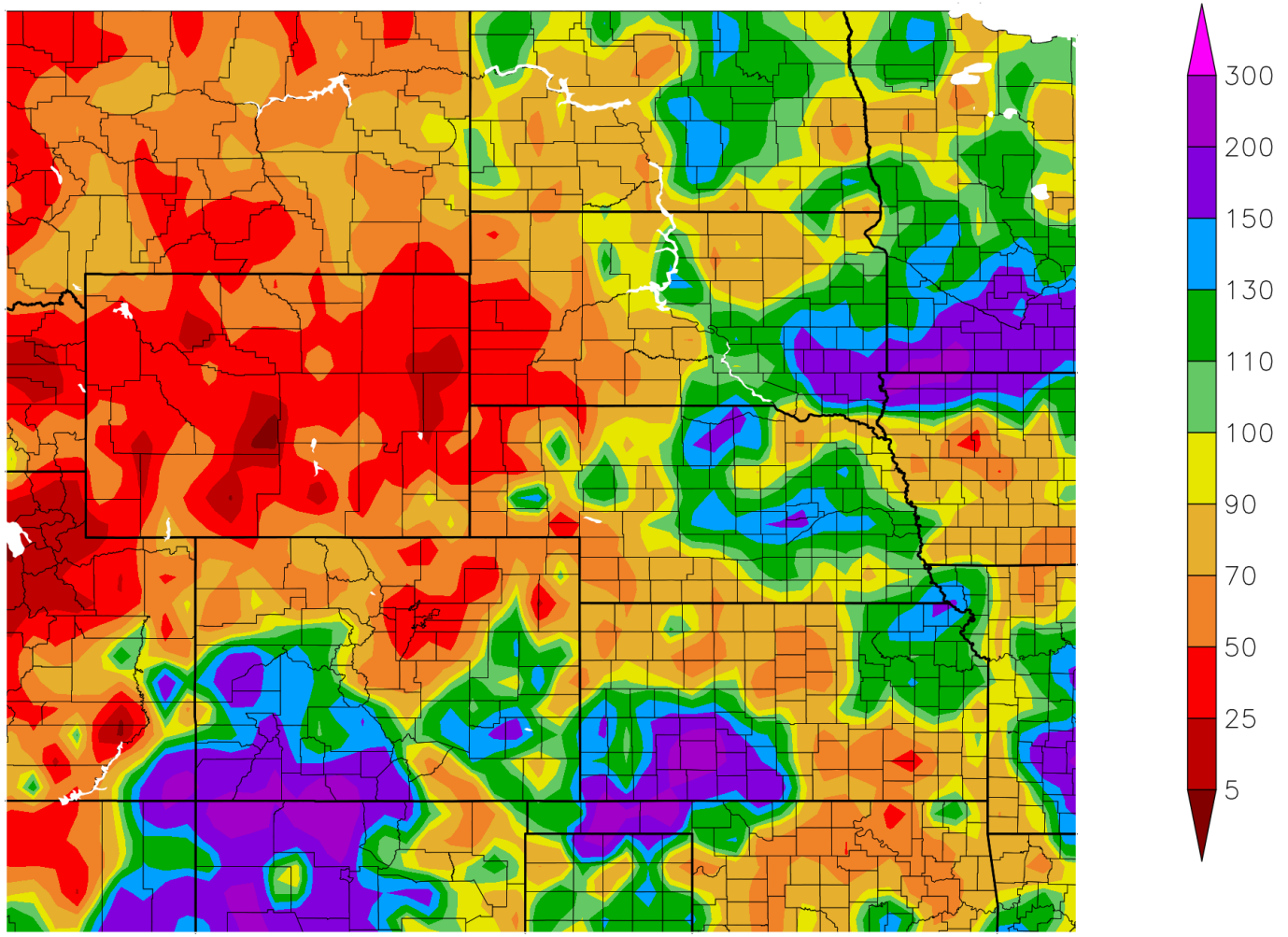
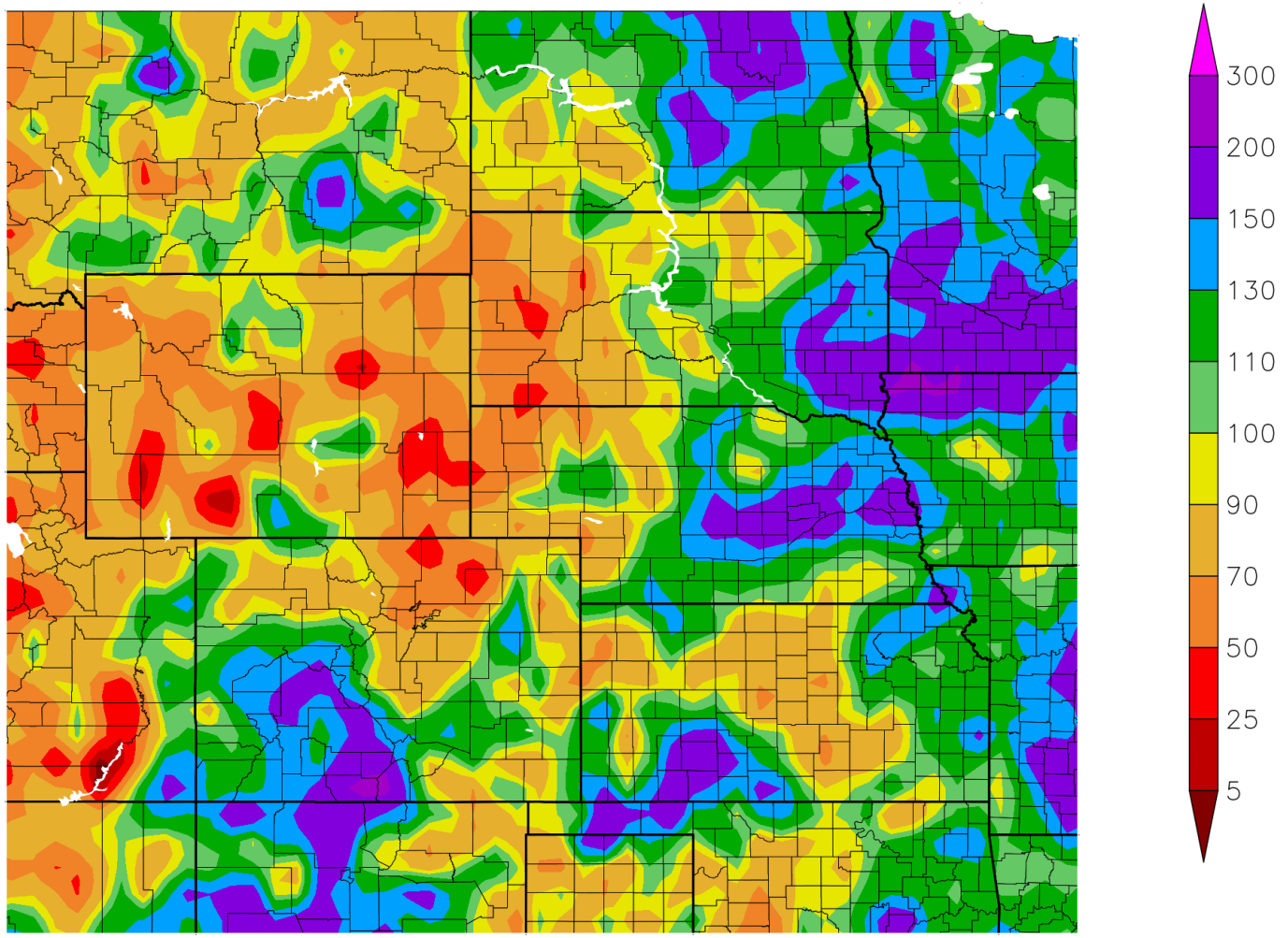
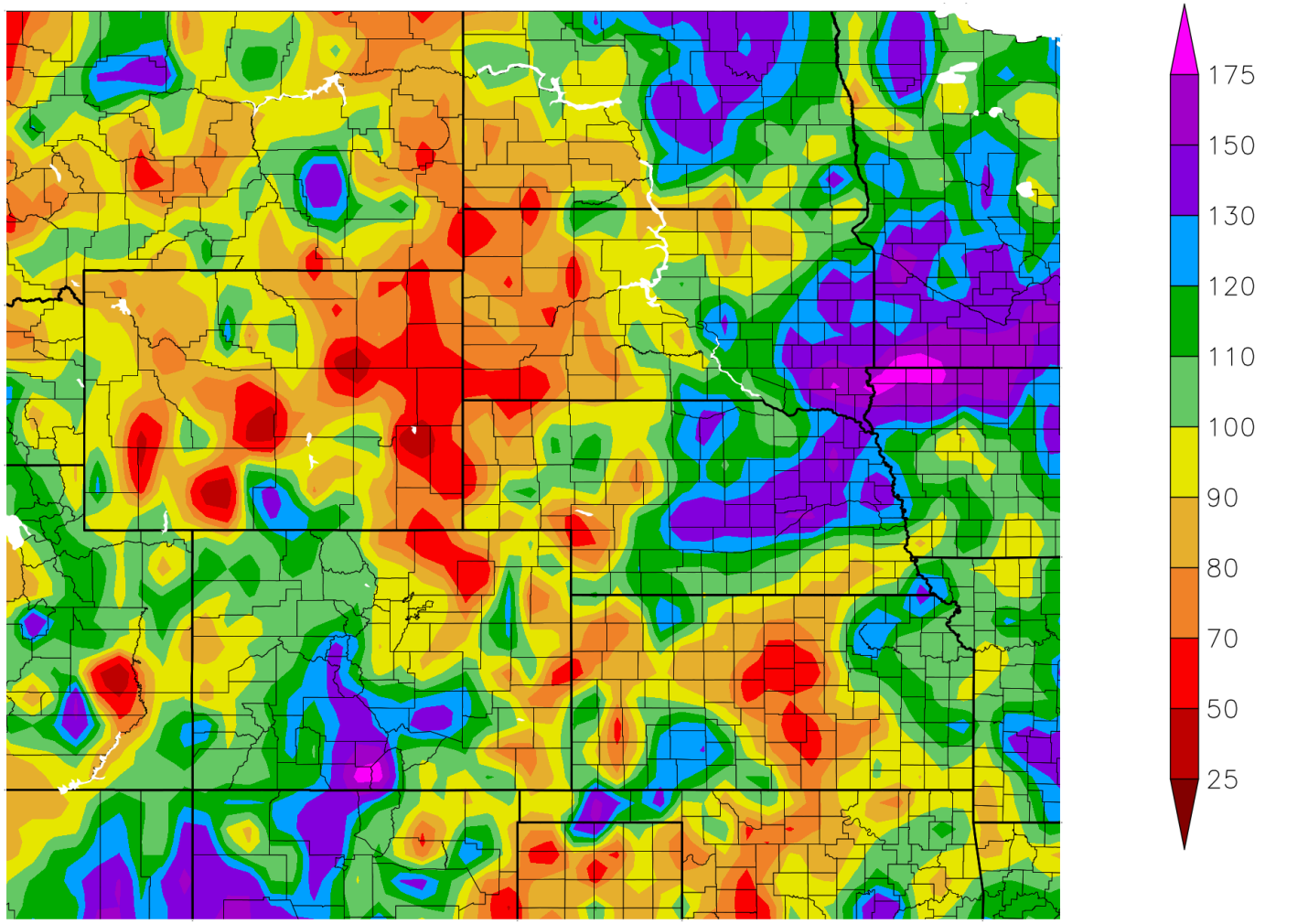


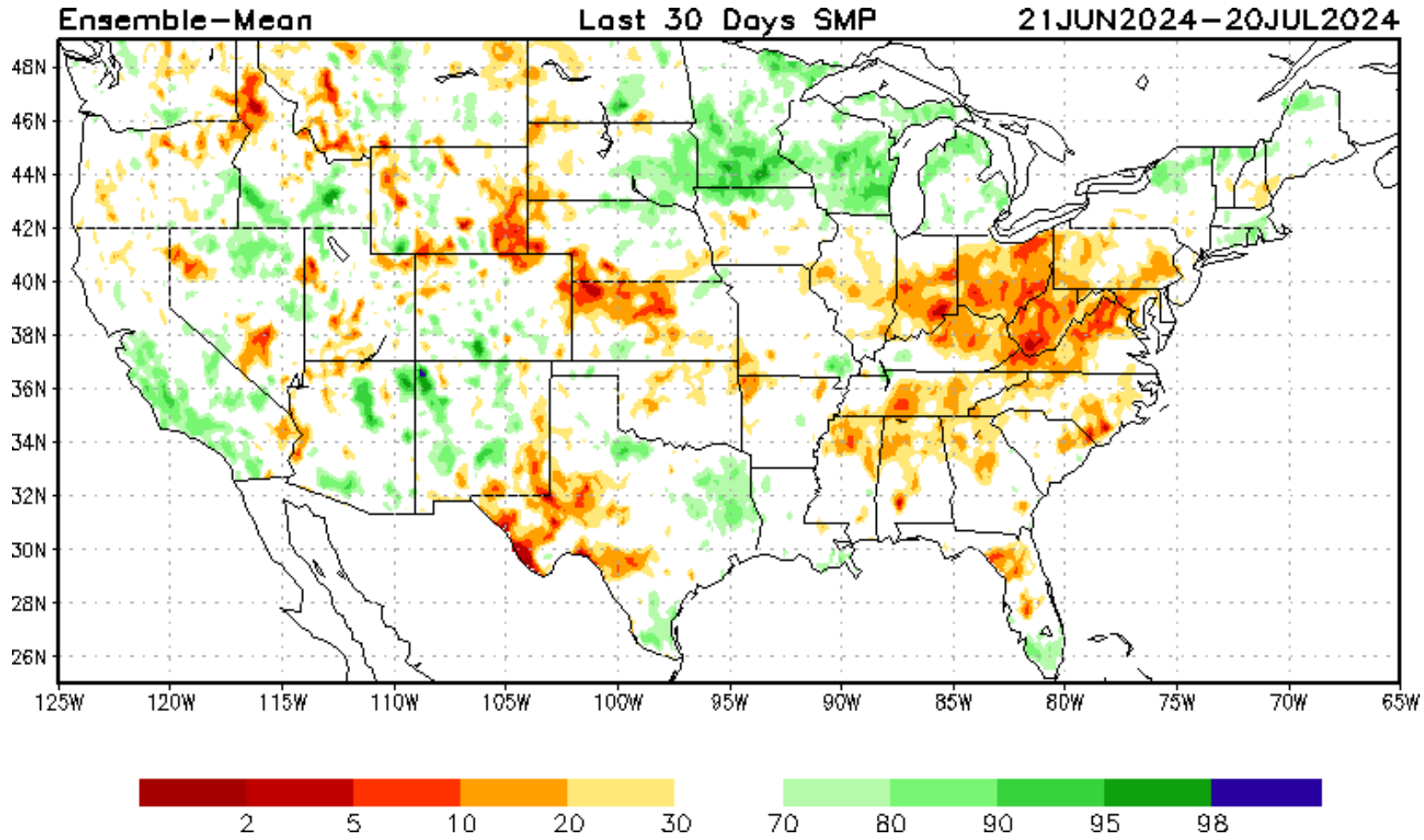
Percent of Normal Precipitation over the last 90 days

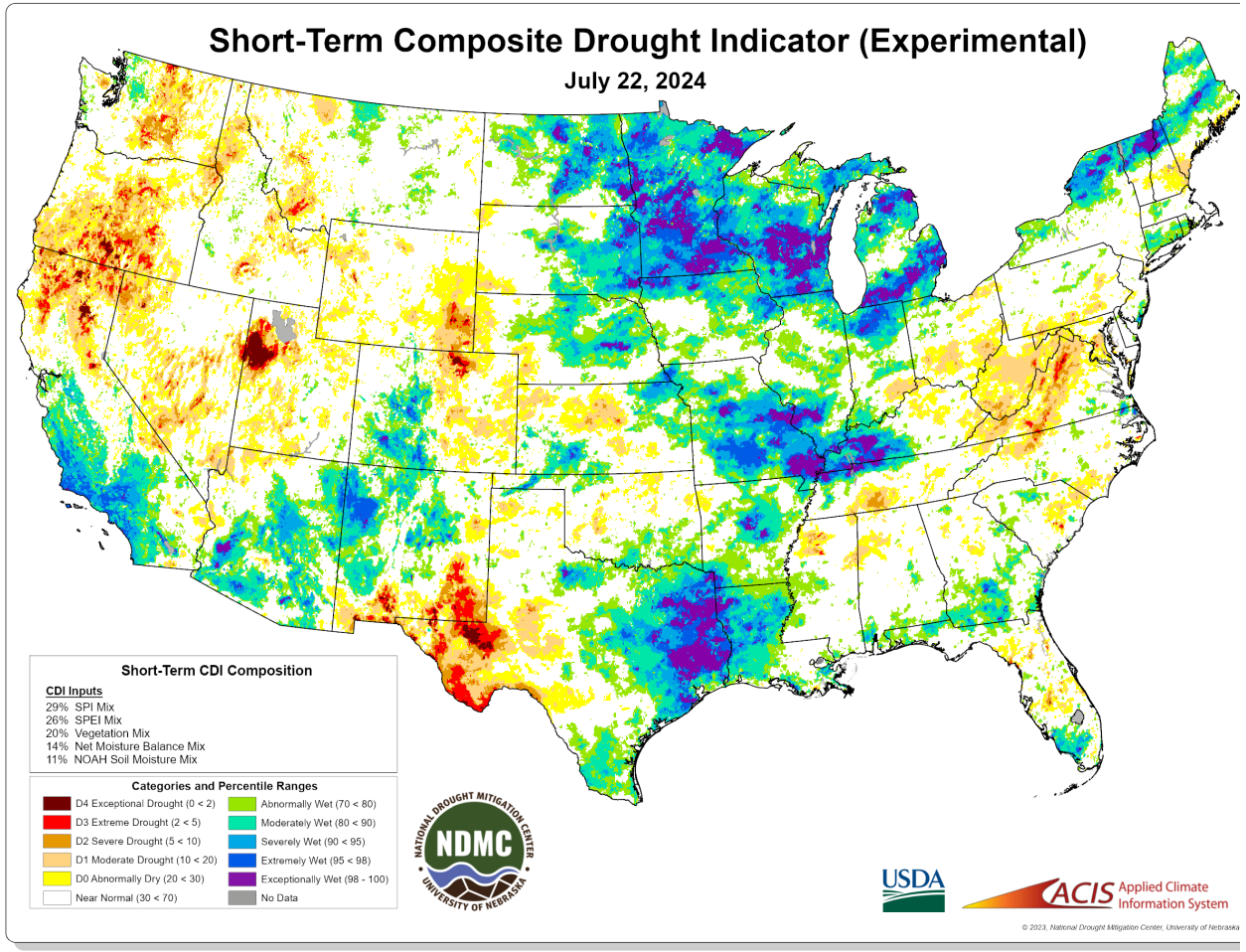


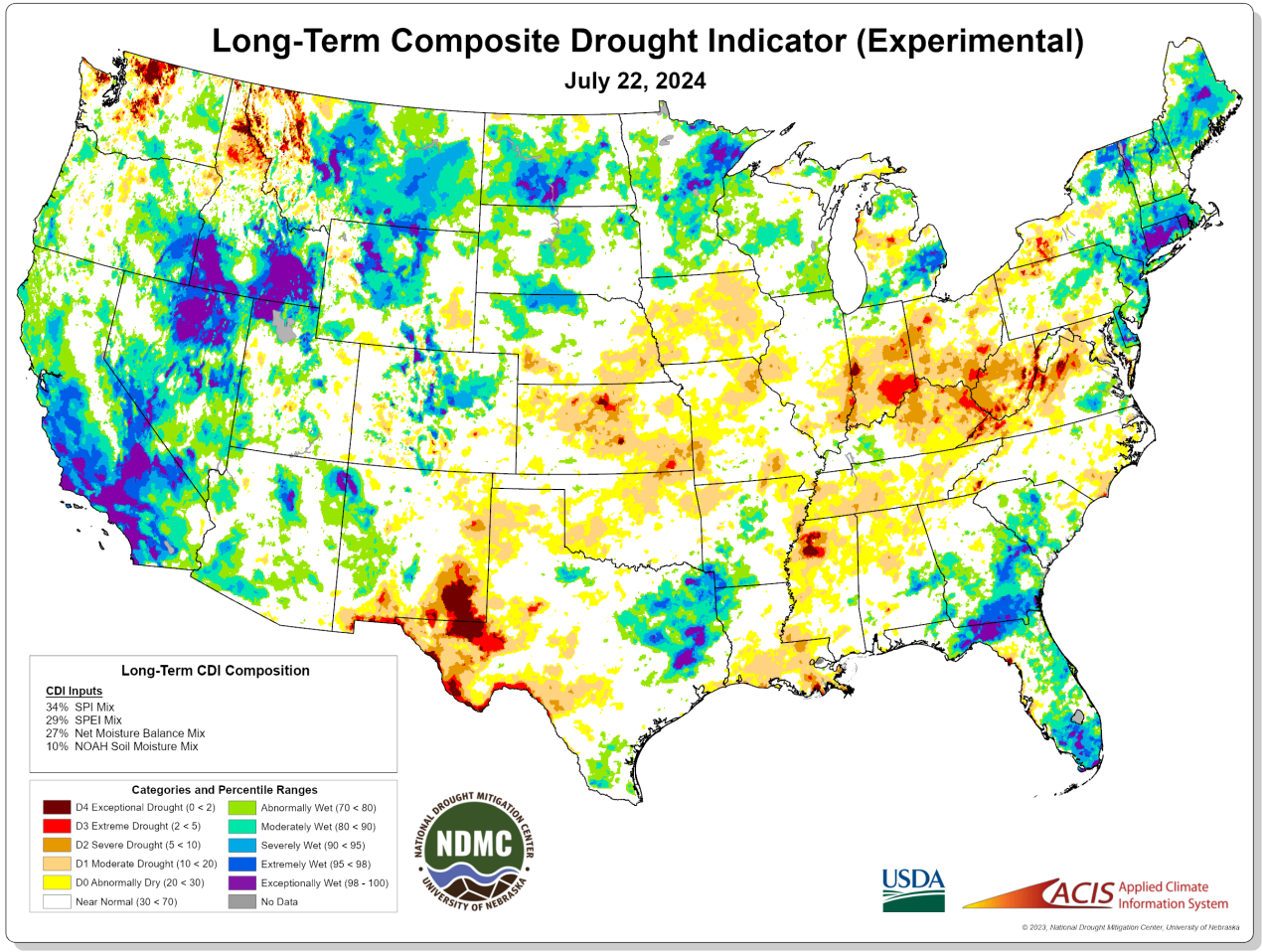
Percent of Normal Precipitation for the calendar year



NLDAS Soil Moisture Model: Current Soil Moisture Anomaly



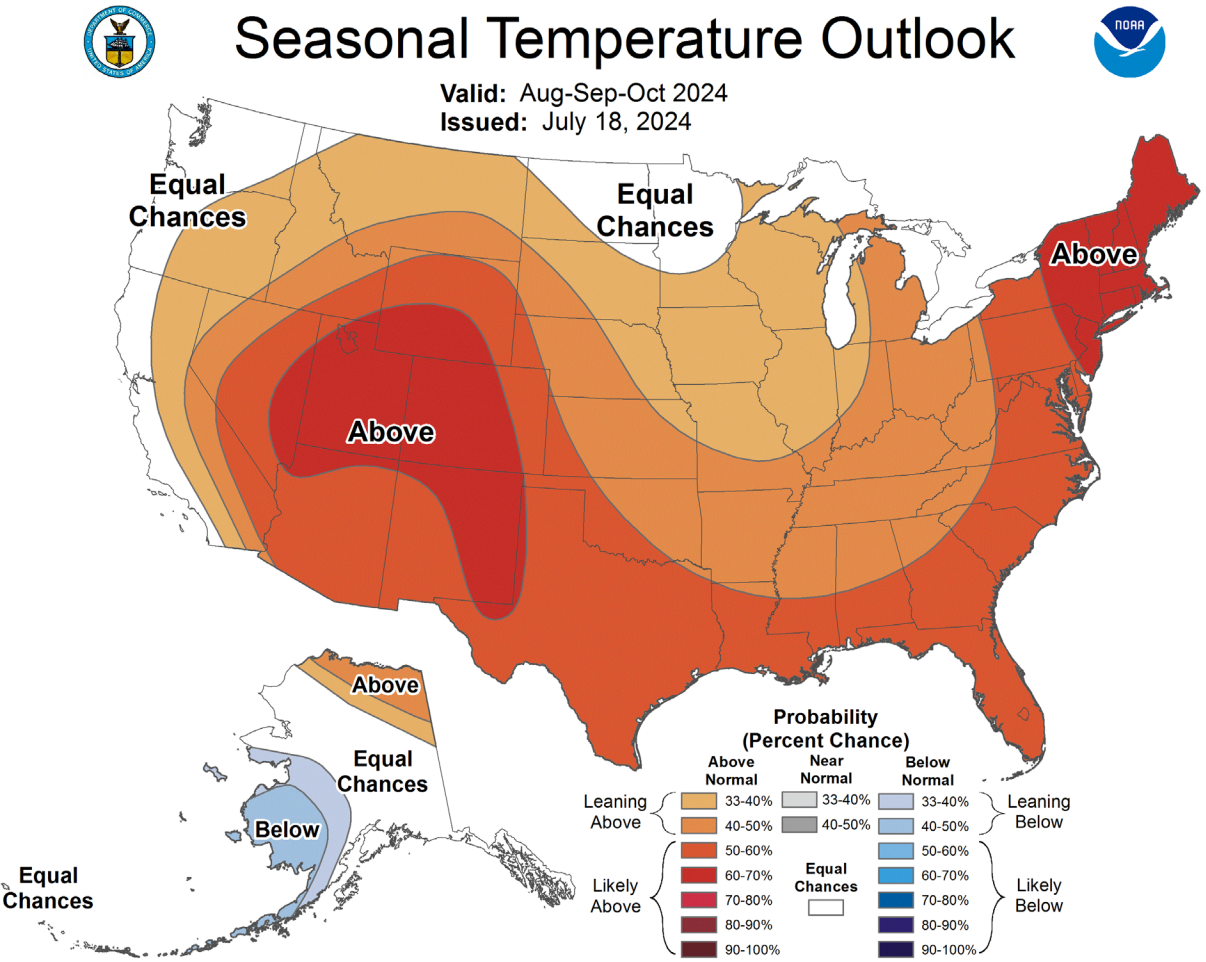


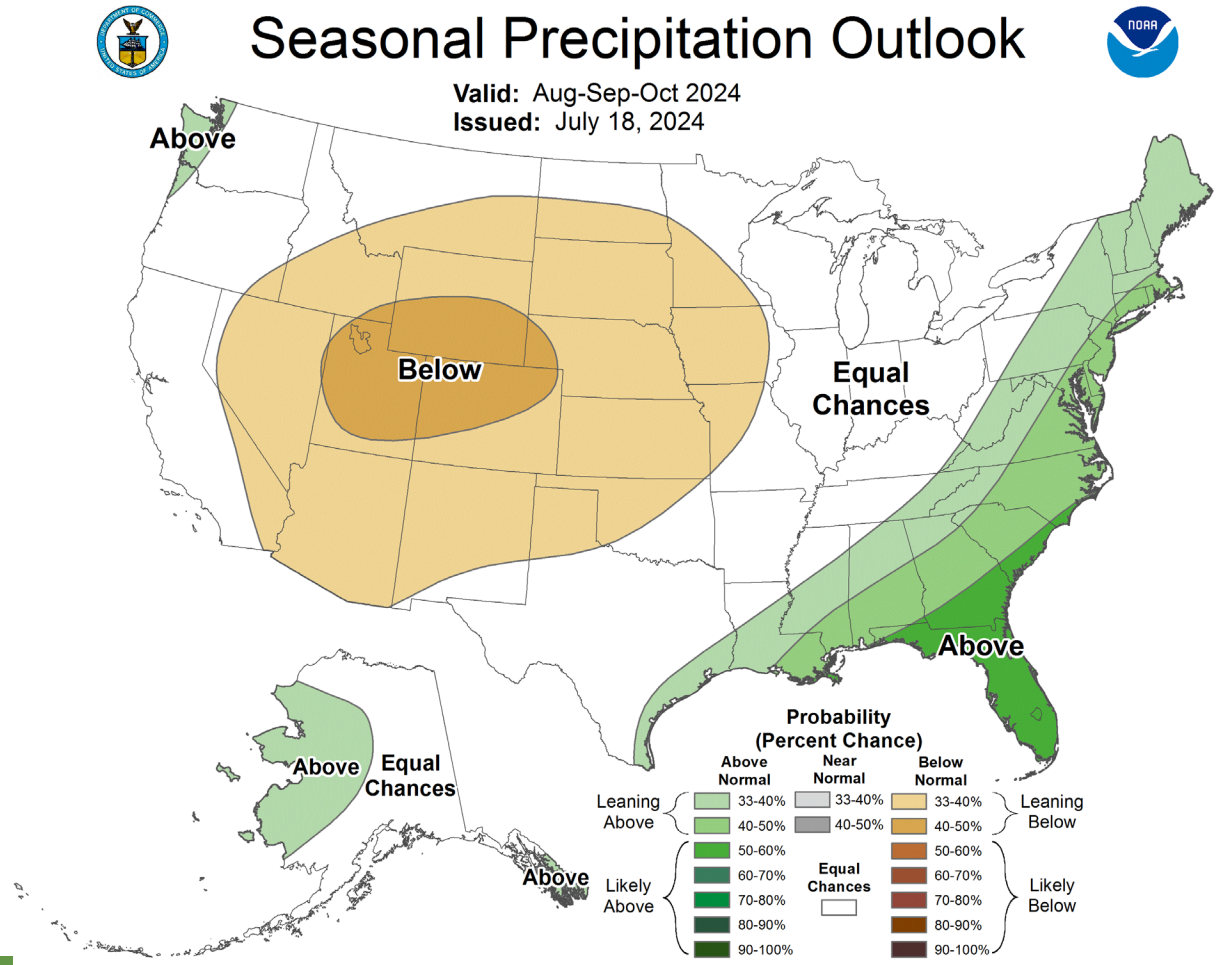


https://ndmcblends.unl.edu/

NDMC'S WEEKLY COMPOSITE DROUGHT INDICATORS (CDI'S) FOR BOTH SHORT-TERM AND LONG-TERM DROUGHT

NOAA's Official 3-Month Outlook

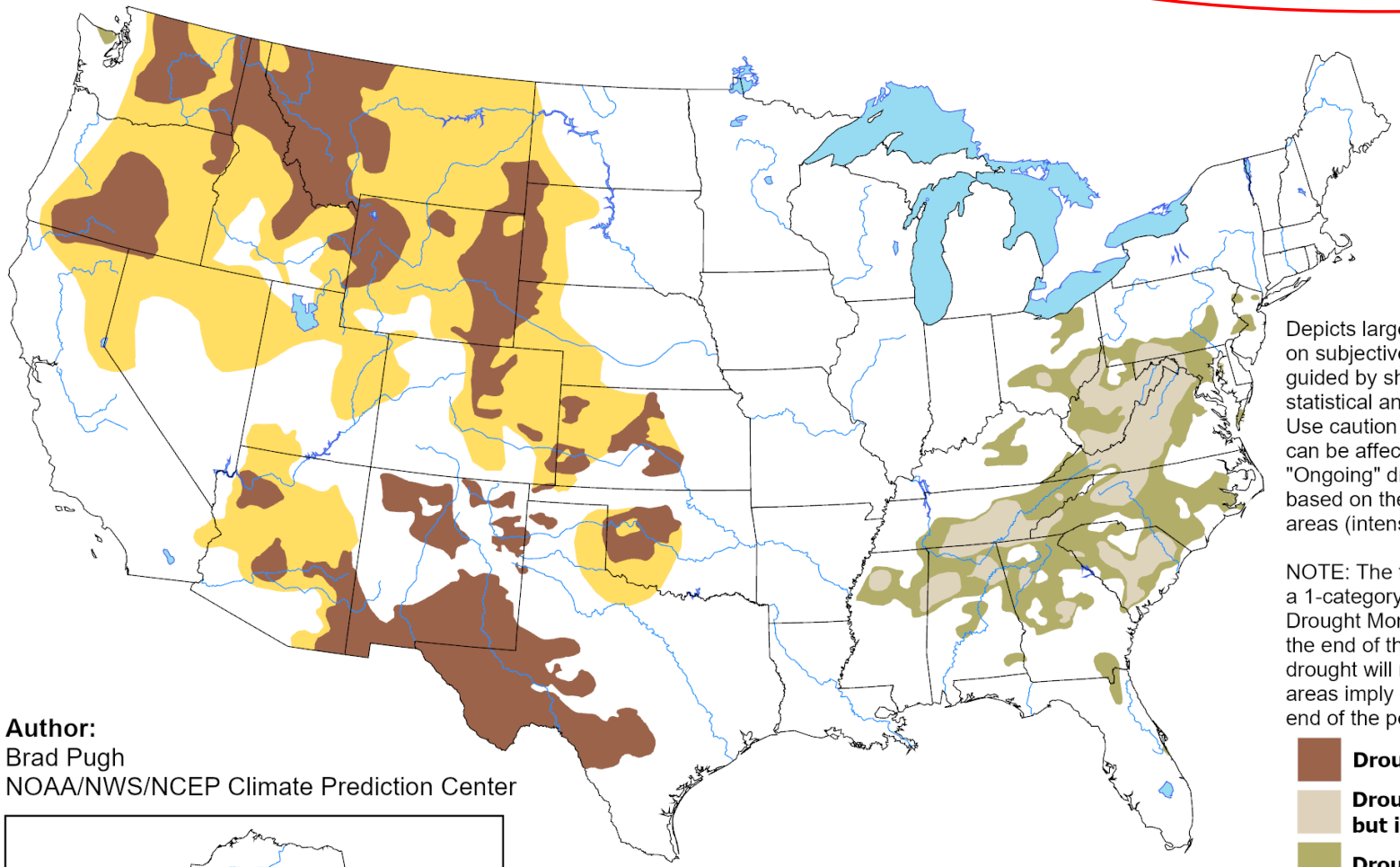




U.S. Seasonal Drought Outlook

Drought Tendency During the Valid Period

Valid for July 18 - October 31, 2024
Released July 18, 2024

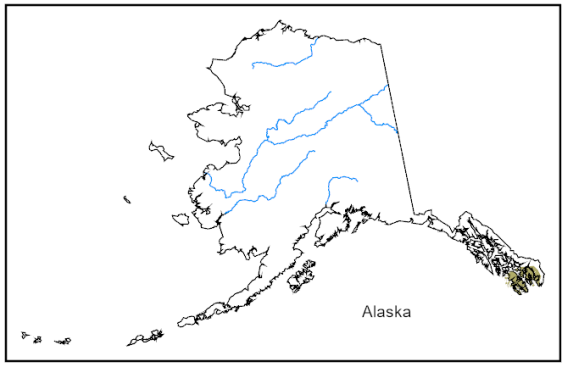


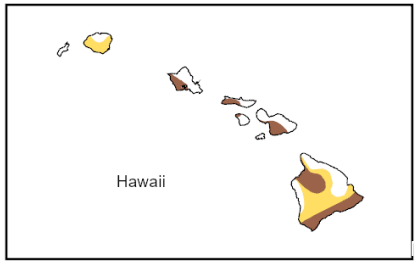
Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Use caution for applications that can be affected by short lived events. "Ongoing" drought areas are based on the U.S. Drought Monitor areas (intensities of D1 to D4).

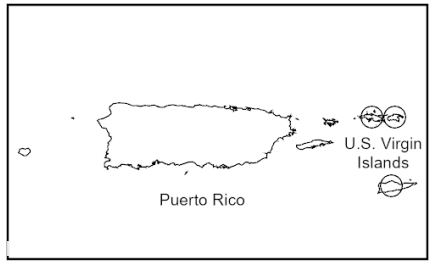
NOTE: The tan areas imply at least a 1-category improvement in the Drought Monitor intensity levels by the end of the period, although drought will remain. The green areas imply drought removal by the end of the period (D0 or none).

- **Drought persists**
- **Drought remains, but improves**
- **Drought removal likely**
- **Drought development likely**
- **No drought**

Author:
Brad Pugh
NOAA/NWS/NCEP Climate Prediction Center







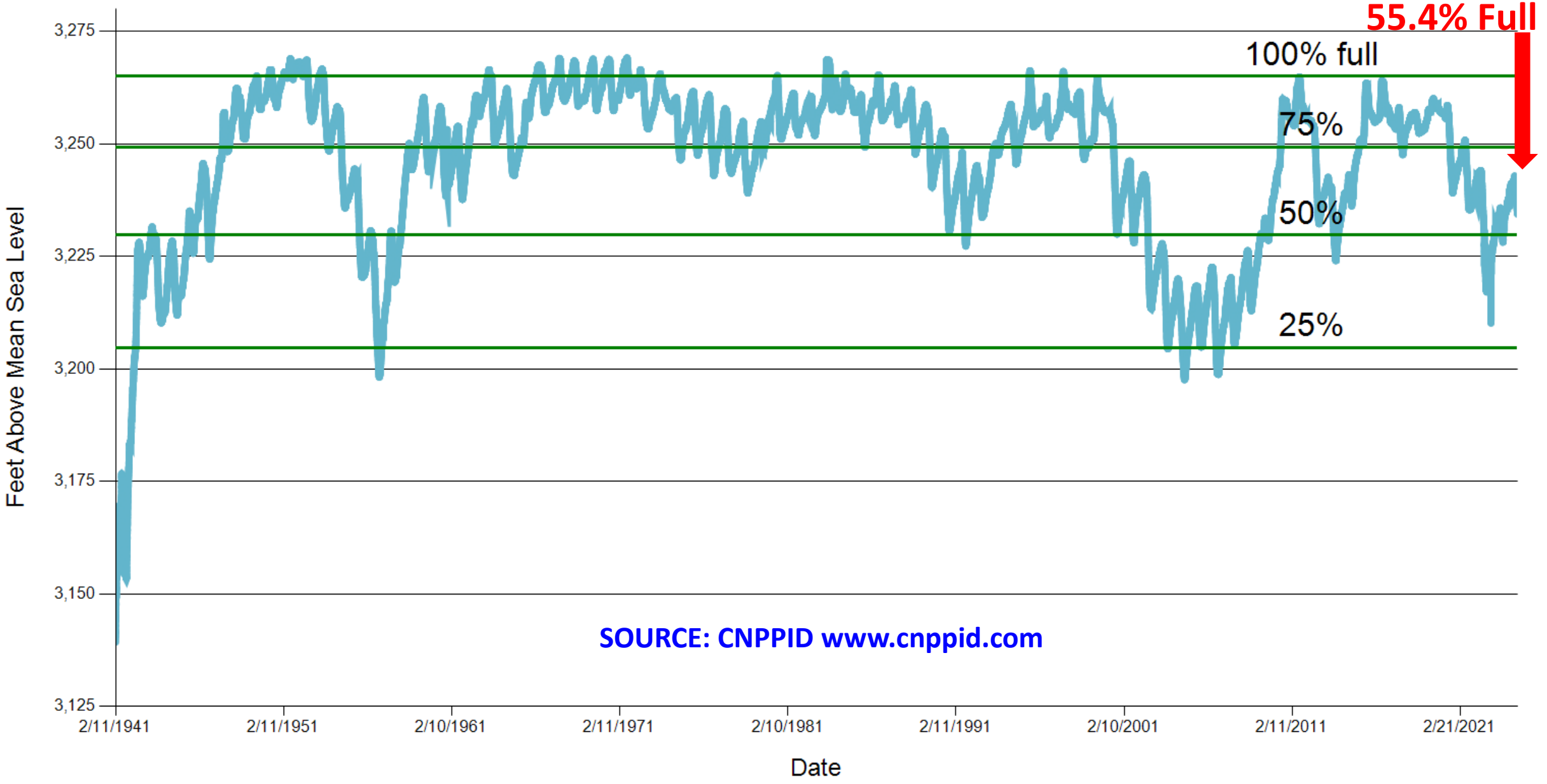
https://go.usa.gov/3eZ73

Climate/Drought Summary

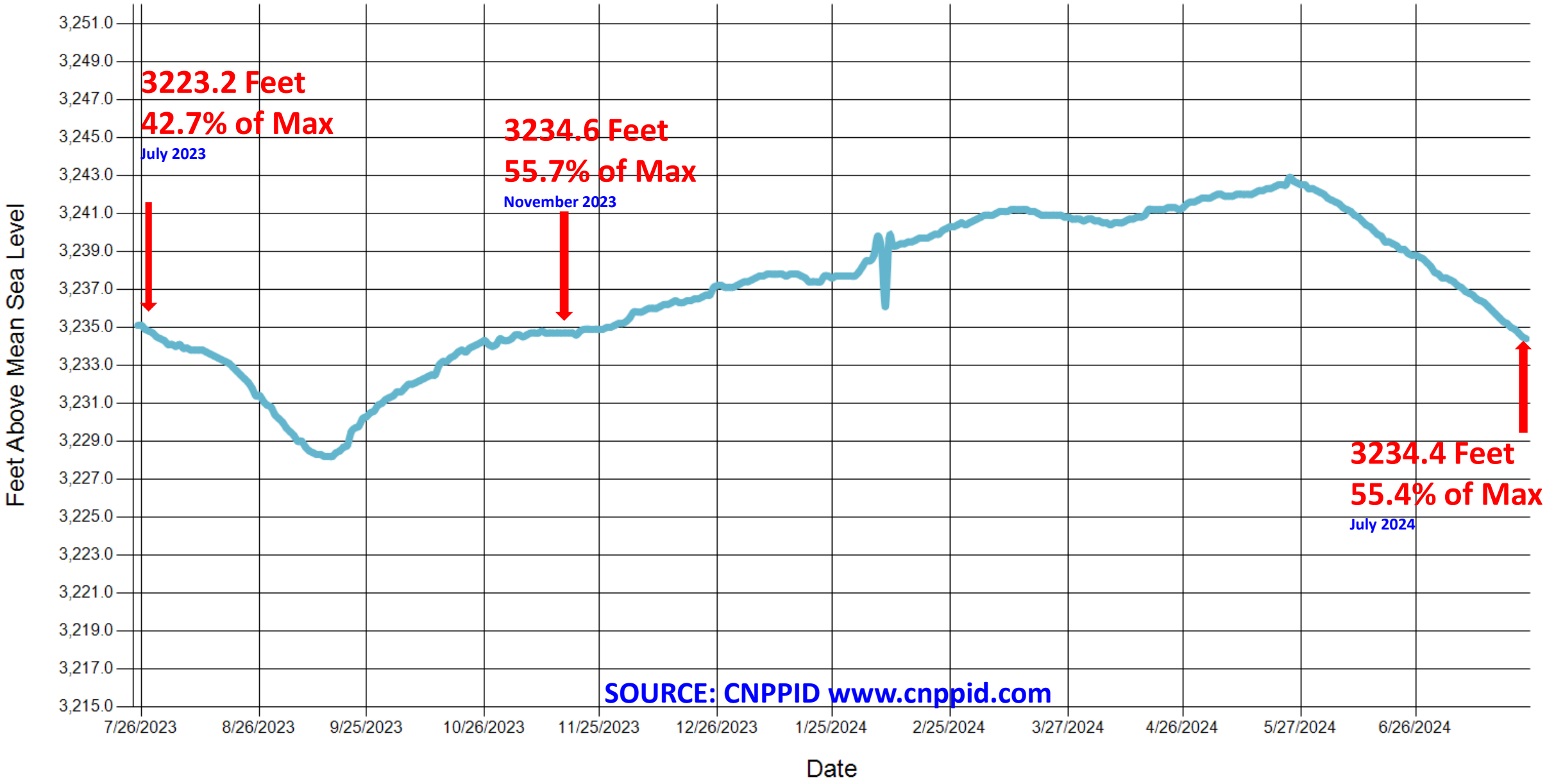
- Temperatures have been cooler to near normal throughout the northern to central High Plains over the last 60-days and warmer than normal in the western portions of the region and warmer than normal for most all of the region for the calendar year.
- Precipitation over the last 60 days has been mixed in the region with portions of southwest and northeastern Kansas, northern and central Nebraska, southeast South Dakota and eastern North Dakota well above normal during the period.
- Nebraska is currently showing 5.61 percent of the state in drought with just under 1% in severe drought. Areas of the eastern into central Nebraska have had drought conditions eliminated with the recent wetter pattern.
- The seasonal drought outlook that goes through the end of October 2024 has the current drought situation holding status quo with maybe further development across the western areas of the region.

Nebraska Water Supply Update…

Lake McConaughy Elevation since 1941



Lake McConaughy Elevation (One Year)



July 2023CARC Meeting

Station	Today (Cubic Feet per Second)	1 Week Ago	1 Month Ago	1 Year Ago
Inflows to McConaughy	900	371	1,320	895
Total Outflows from McConaughy	2,296	2,295	2,132	1,867
North Platte at Keystone	586	585	422	407
Keystone Diversion	1,710	1,710	1,710	1,460
North Platte at North Platte	412	347	980	284
South Platte at Roscoe	14.3	9.36	75.6	536
South Platte at North Platte	141	217	293	655
Supply Canal Diversion	1,939	1,913	2,286	2,280
Platte at Overton	1,850	1,830	2,150	2,110
Platte at Kearney	182	493	1930	376
Platte at Grand Island	829	867	1920	763

SOURCE: CNPPID
www.cnppid.com

Lake McConaughy

Civil Engineer Tyler Thulin reported that Lake McConaughy's elevation was at 3237.9 feet on Monday (59.9% capacity). Inflows are around 800 cubic feet per second (cfs) and outflows are about 2,220 cfs which is down 500 cfs from last week with the Environmental Account release ending on June 30.

SOURCE: CNPPID News Release July 1, 2024

www.cnppid.com

Republican River Basin

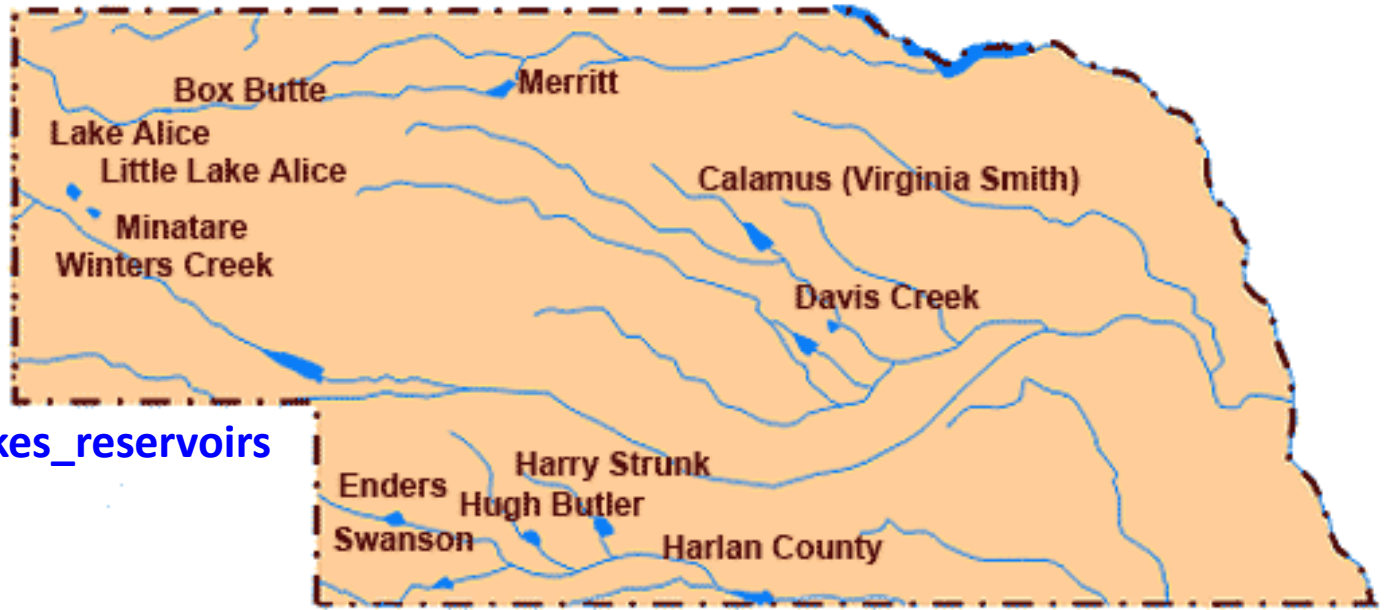
Hugh Butler: 43.2% (43.7%) of conservation pool

Enders: 19.1% (17.6%) of conservation pool

Harry Strunk: 84.9% (74.5%) of conservation pool

Swanson: 55.4% (47.2%) of conservation pool

*values in red are from the last CARC meeting



Source: BOR http://www.usbr.gov/gp/lakes_reservoirs

Republican River Basin

Harlan County Current Conditions

*values in red are from the last CARC meeting

✓Conservation Pool is 82.3% full (67.3%)

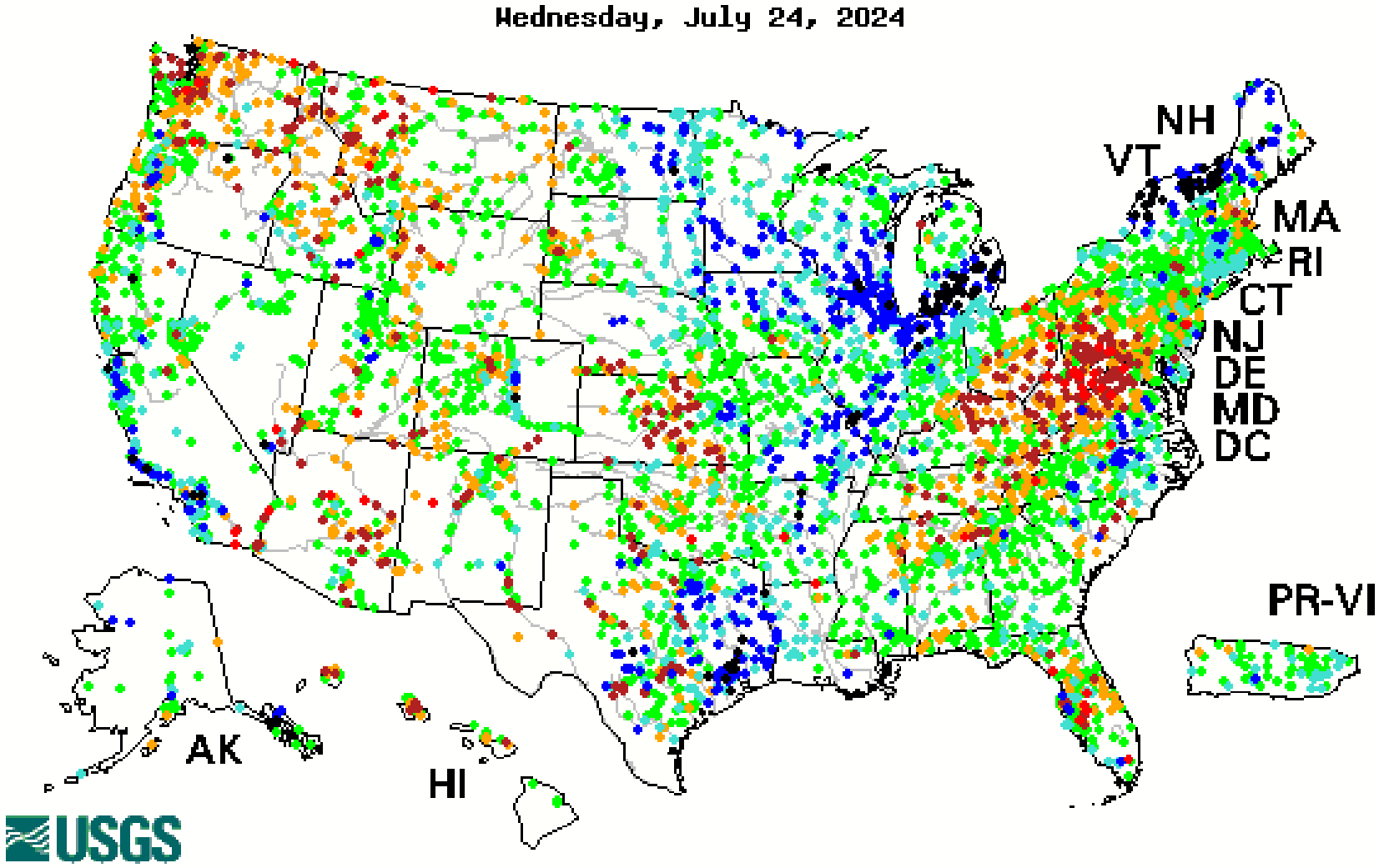
✓258,440 Acre-Feet currently in storage compared to 211,453 Acre-Feet (AF) of water in storage during November 2023

✓Last year at this time, 240,679 AF was in storage (July 2023)

✓Historical average storage for this time of the year is 268,143 AF

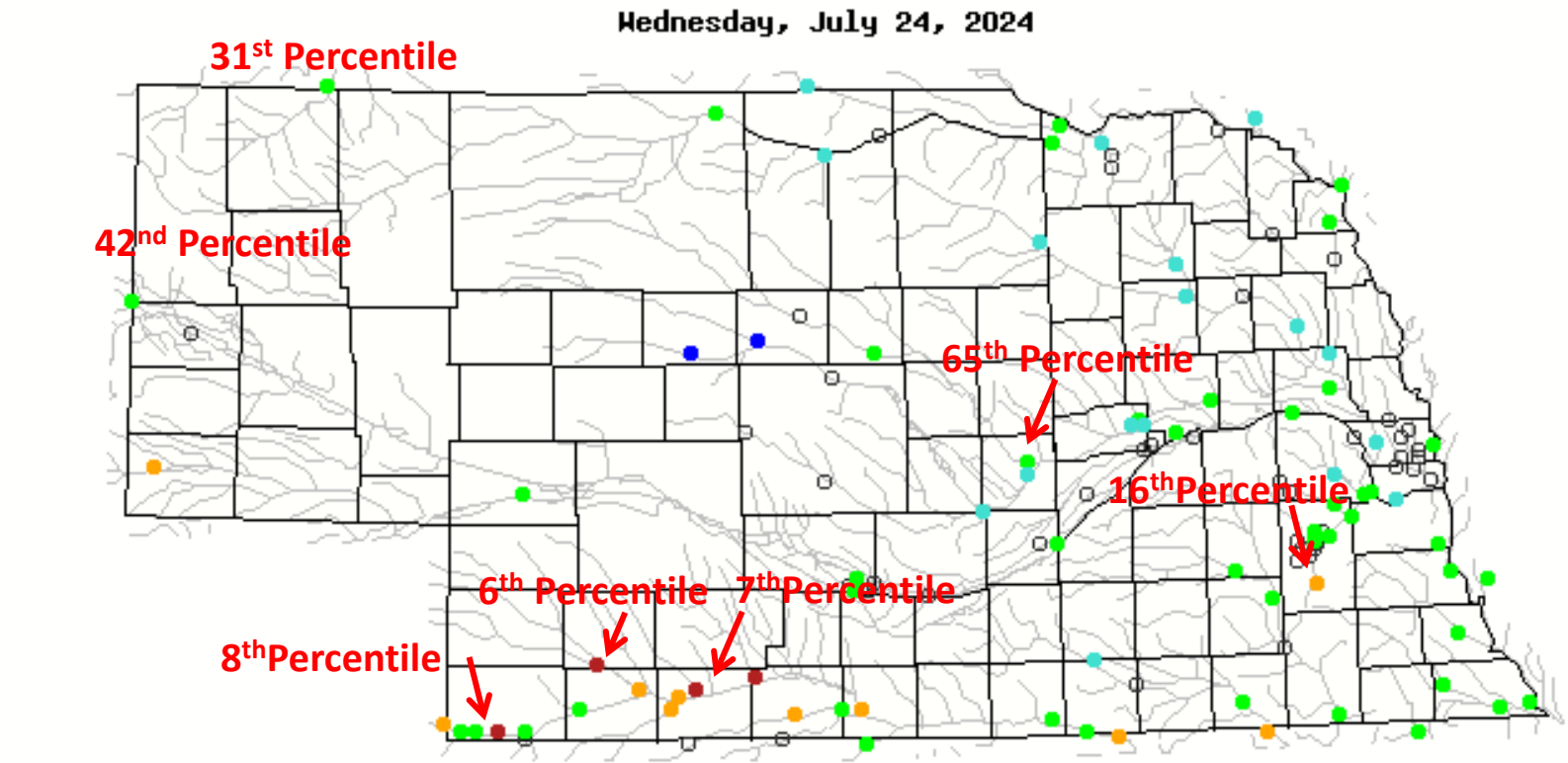
Source: BOR http://www.usbr.gov/gp/lakes_reservoirs/

14-day average streamflow compared to historical streamflow for the day of year



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

14-day average streamflow compared to historical streamflow for the day of year



USGS

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Water Supply Summary

- Lake McConaughy is currently 55.4 percent of capacity and has been slowly rising as inflows have held steady.
- The Republican River basin reservoirs all have more water in storage than in October during the last CARC meeting as the irrigation season has been quiet as wetter than normal conditions have helped reduce irrigation demand.
- Harlan County Reservoir is holding about 47,000 acre-feet more water now than in October and is also holding about 10,000 acre-feet less than the historical average for this time of year.

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