

Climate Center Update

Colorado Water
Conditions
Monitoring
Committee 4/23

Peter Goble
Colorado
Climate Center



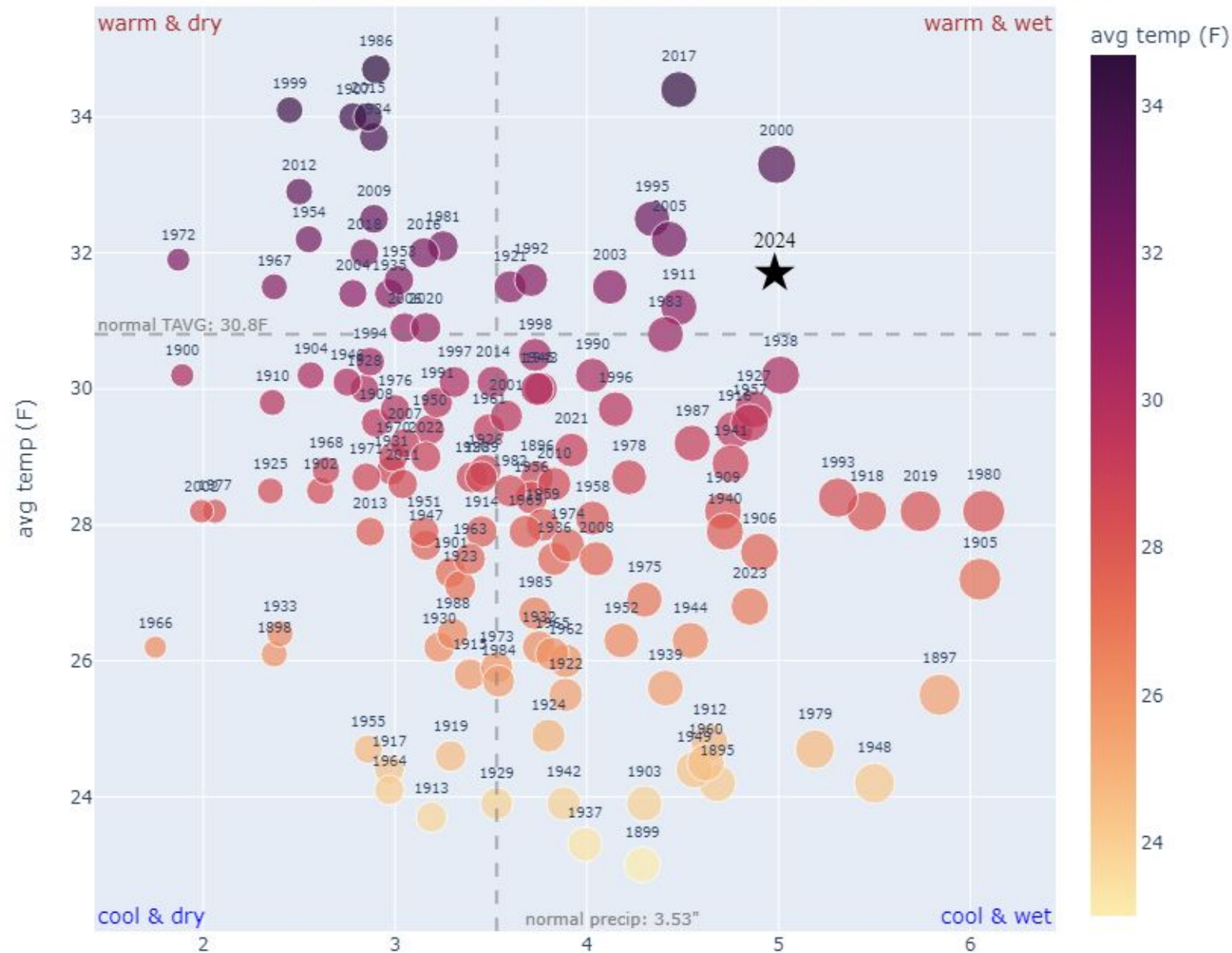
ATMOSPHERIC SCIENCE
COLORADO STATE UNIVERSITY

Agenda

- Current seasonal climate conditions update
- Drought update
- Seasonal Forecast info (What can we expect this summer?)

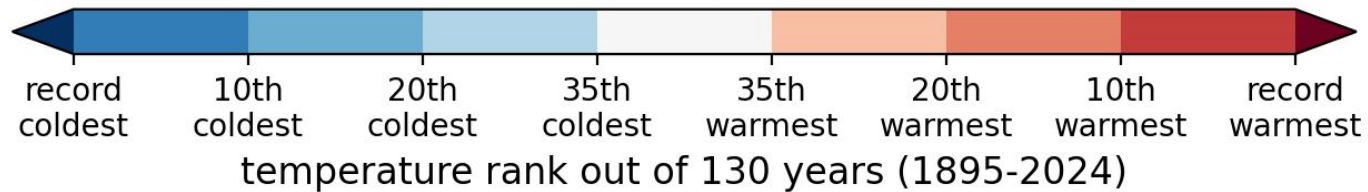
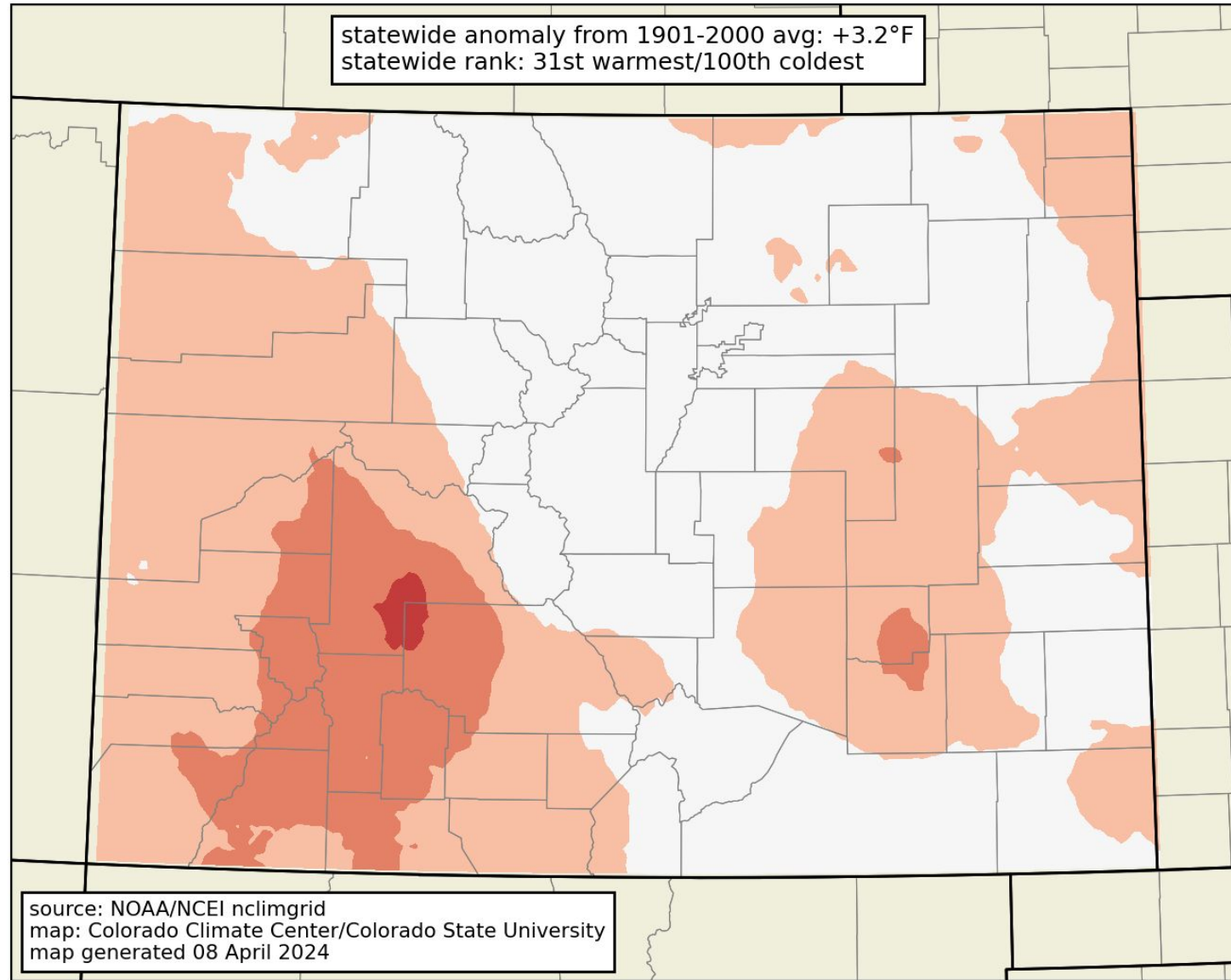


Colorado statewide average temperature and precipitation, January - March



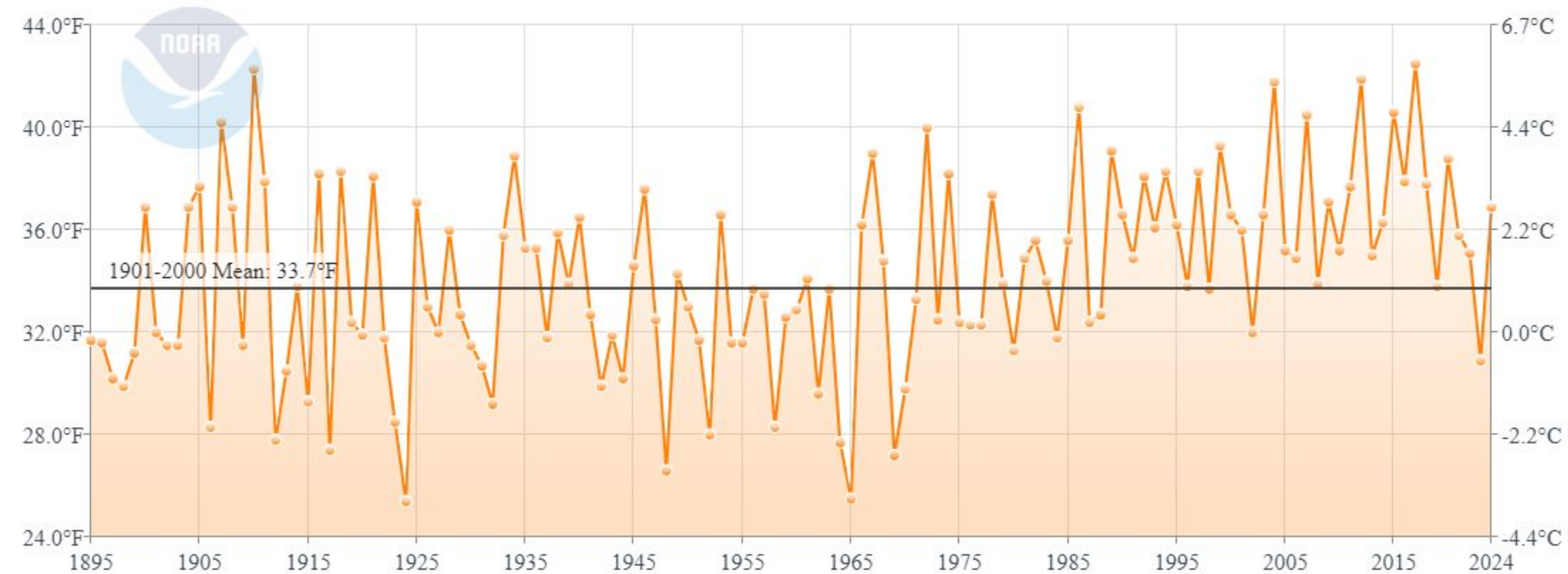
average temperature rank: March 2024

statewide anomaly from 1901-2000 avg: +3.2°F
statewide rank: 31st warmest/100th coldest



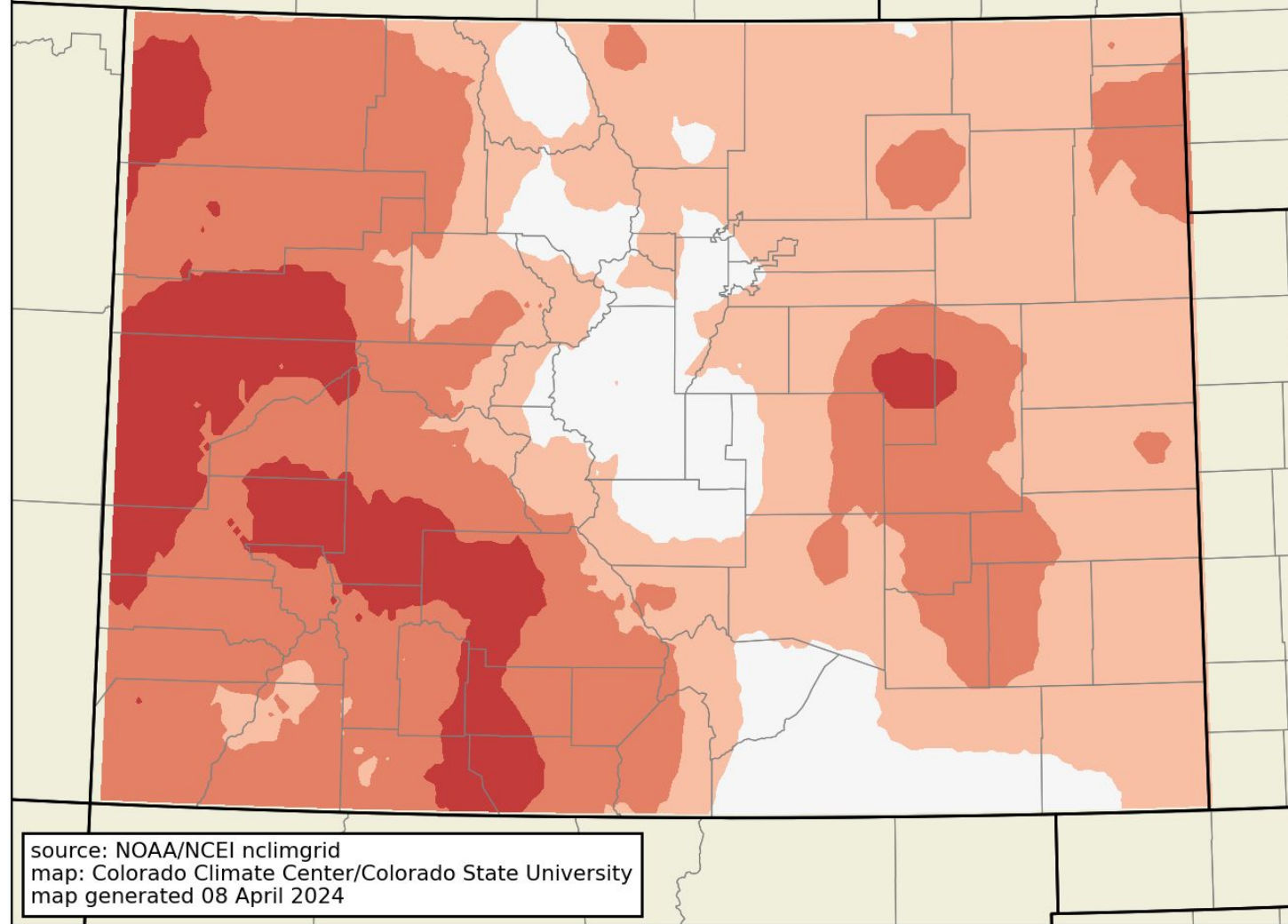
Colorado Average Temperature

March

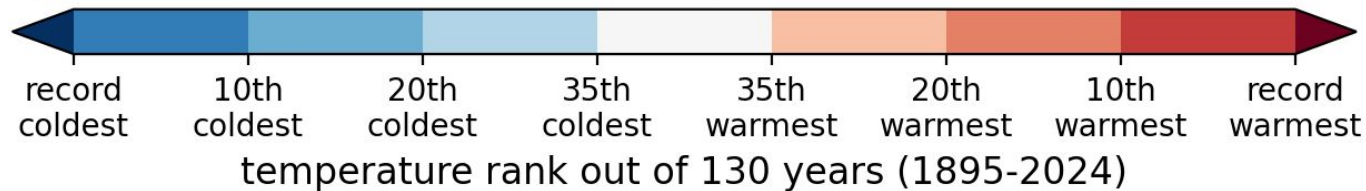


average temperature rank: 3 months ending March 2024 (Jan-Mar)

statewide anomaly from 1901-2000 avg: +3.4°F
statewide rank: 17th warmest/114th coldest

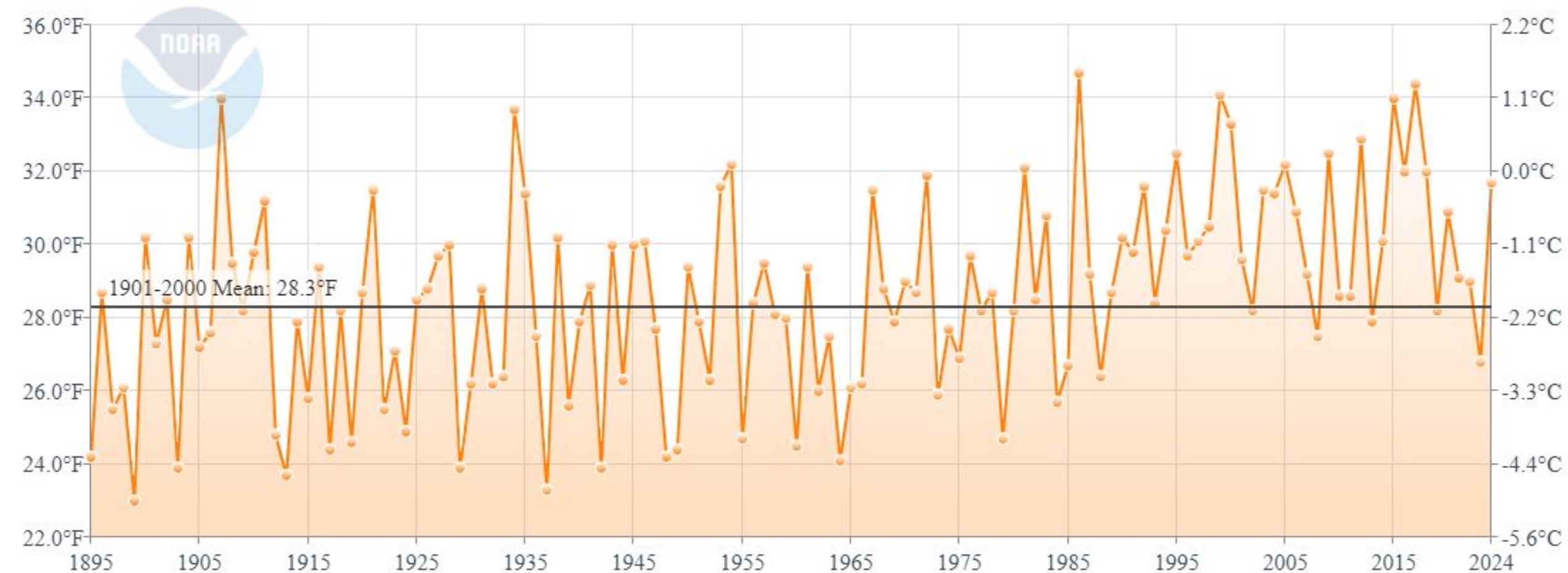


source: NOAA/NCEI nclimgrid
map: Colorado Climate Center/Colorado State University
map generated 08 April 2024



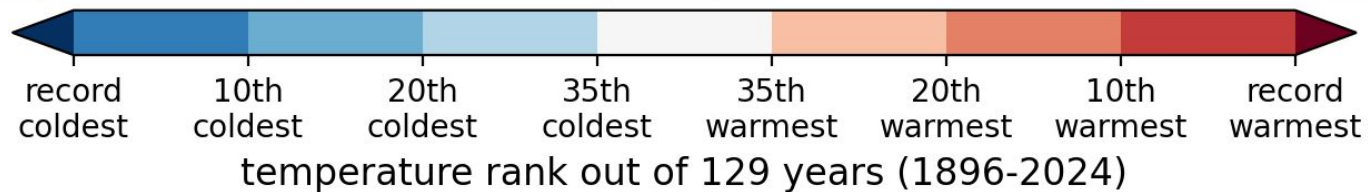
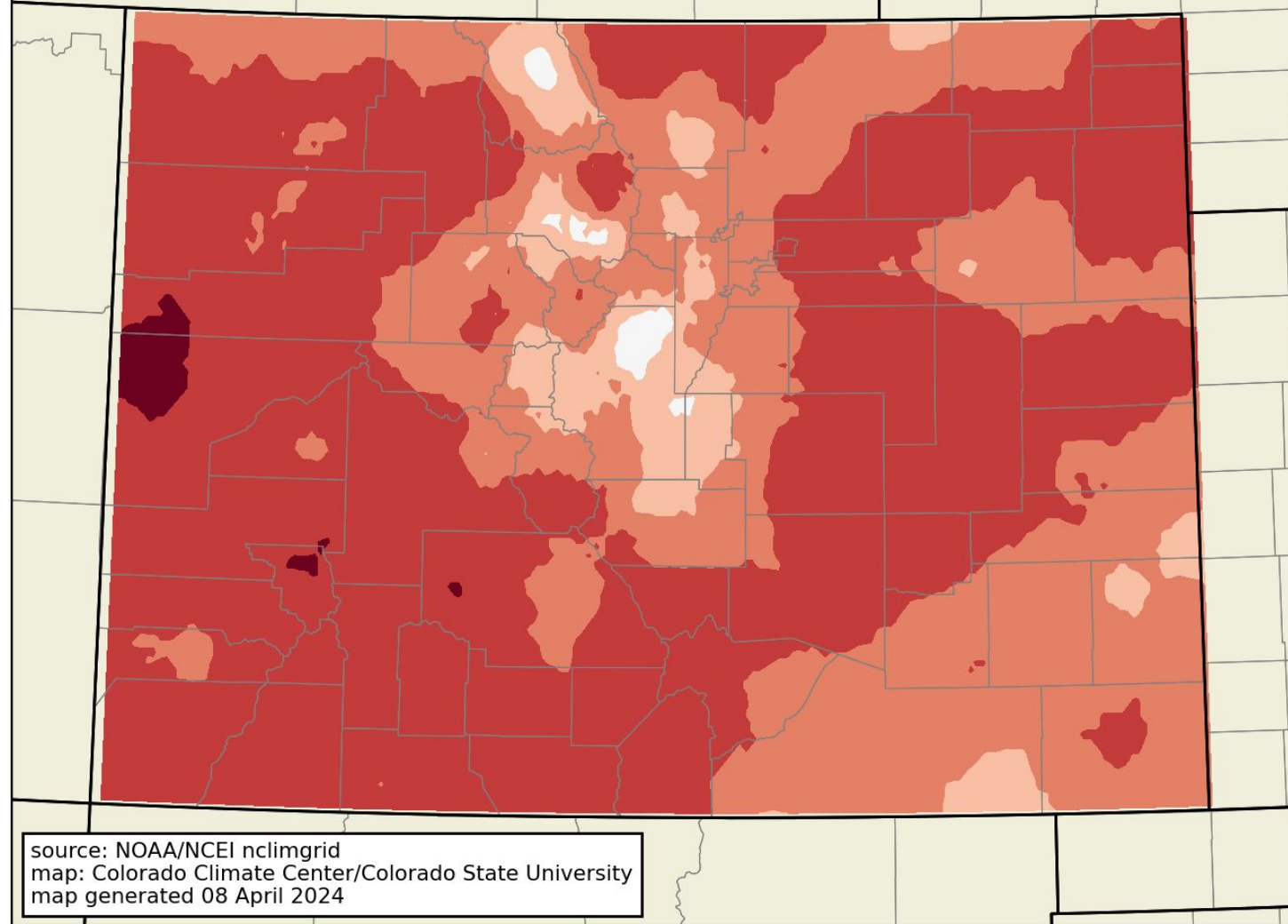
Colorado Average Temperature

January-March



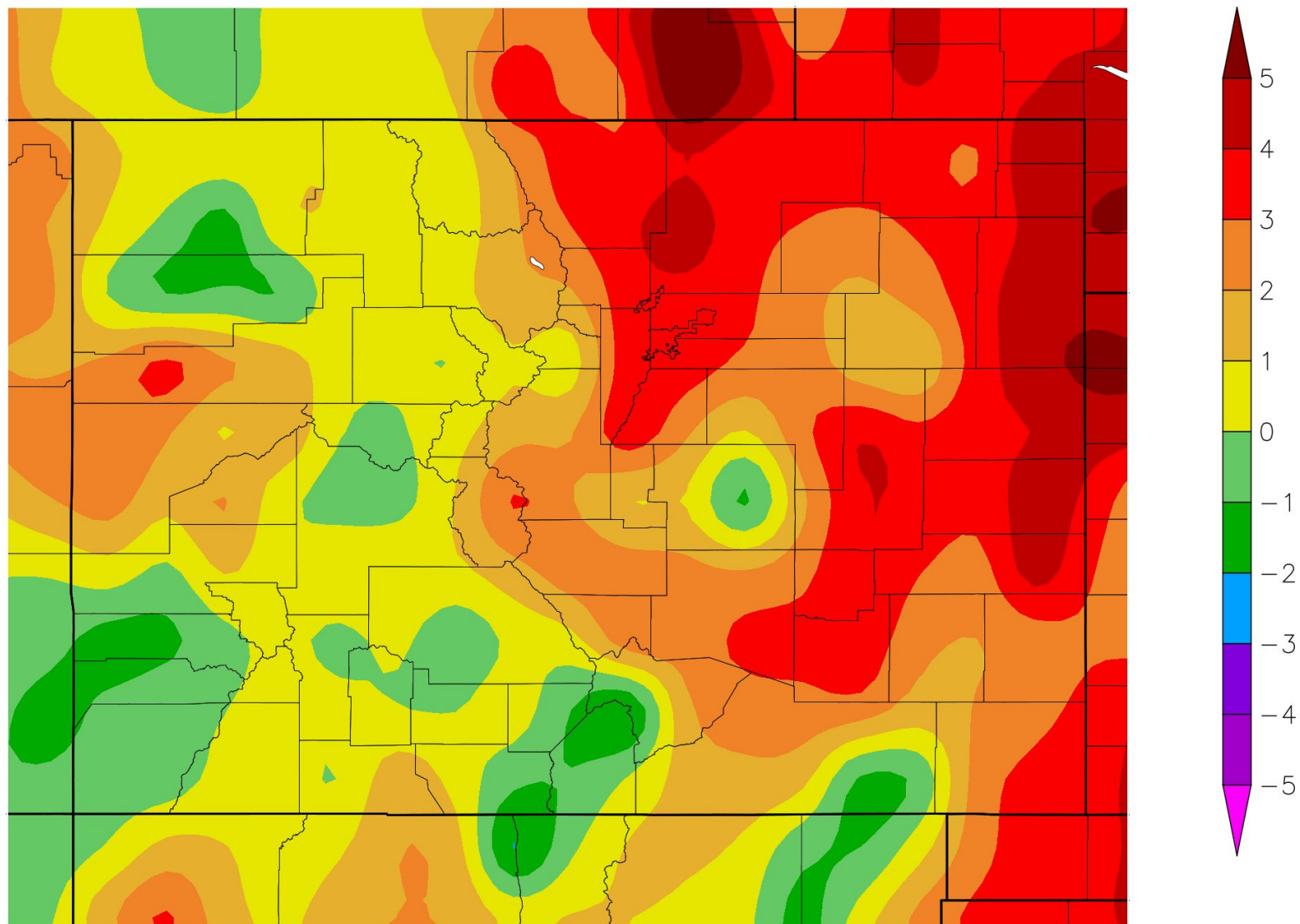
average temperature rank: 12 months ending March 2024 (Apr-Mar)

statewide anomaly from 1901-2000 avg: +2.5°F
statewide rank: 7th warmest/123rd coldest



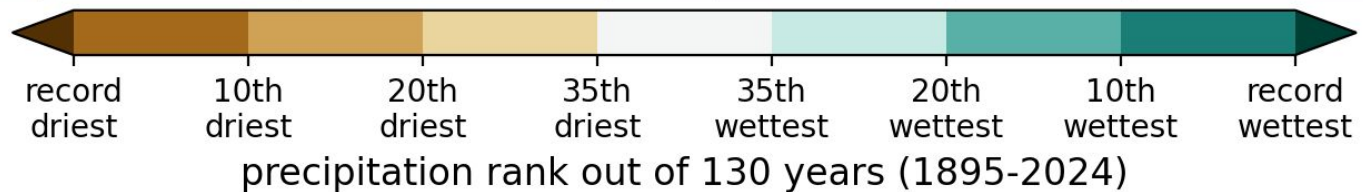
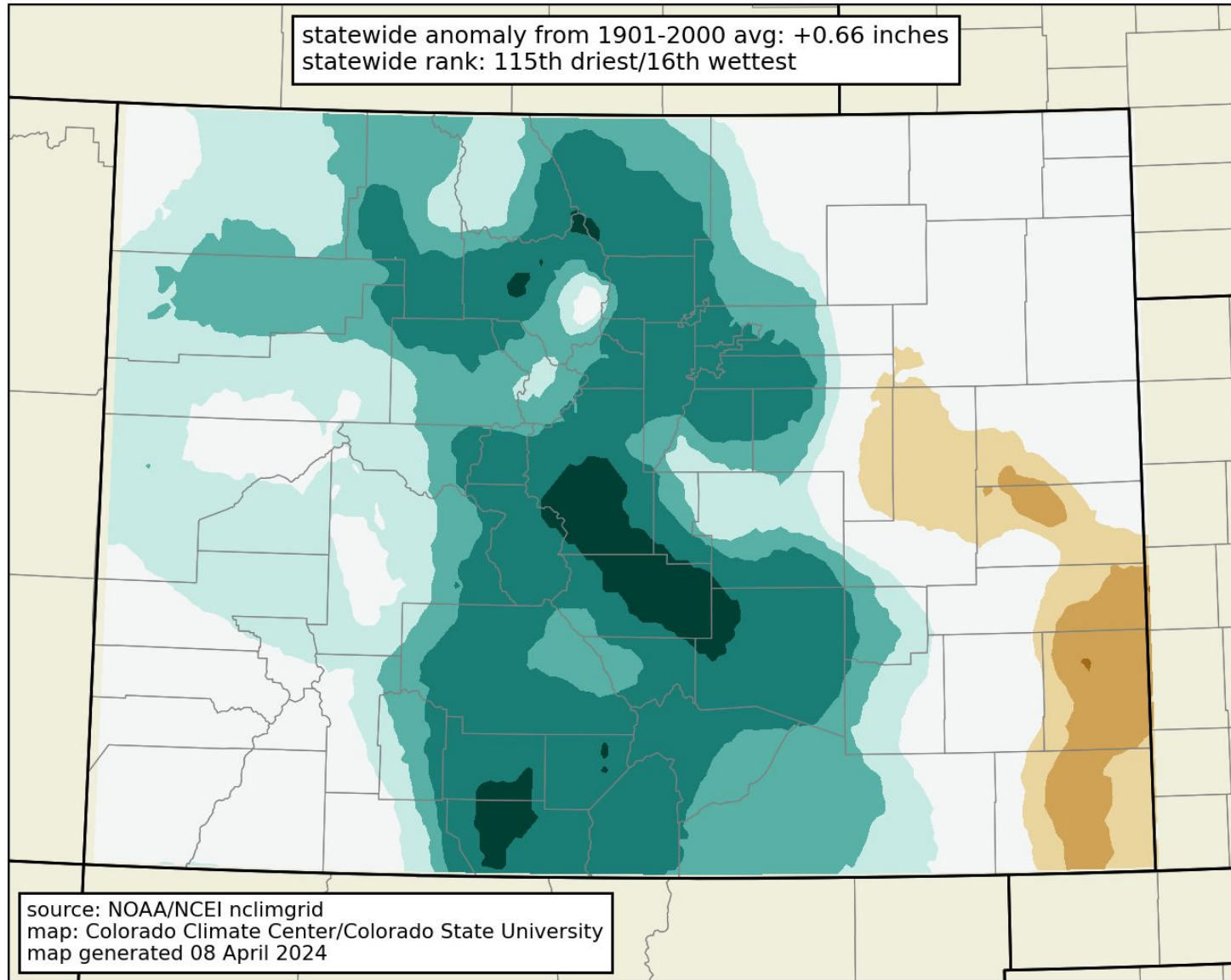
Departure from Normal Temperature (F)

4/1/2024 – 4/19/2024



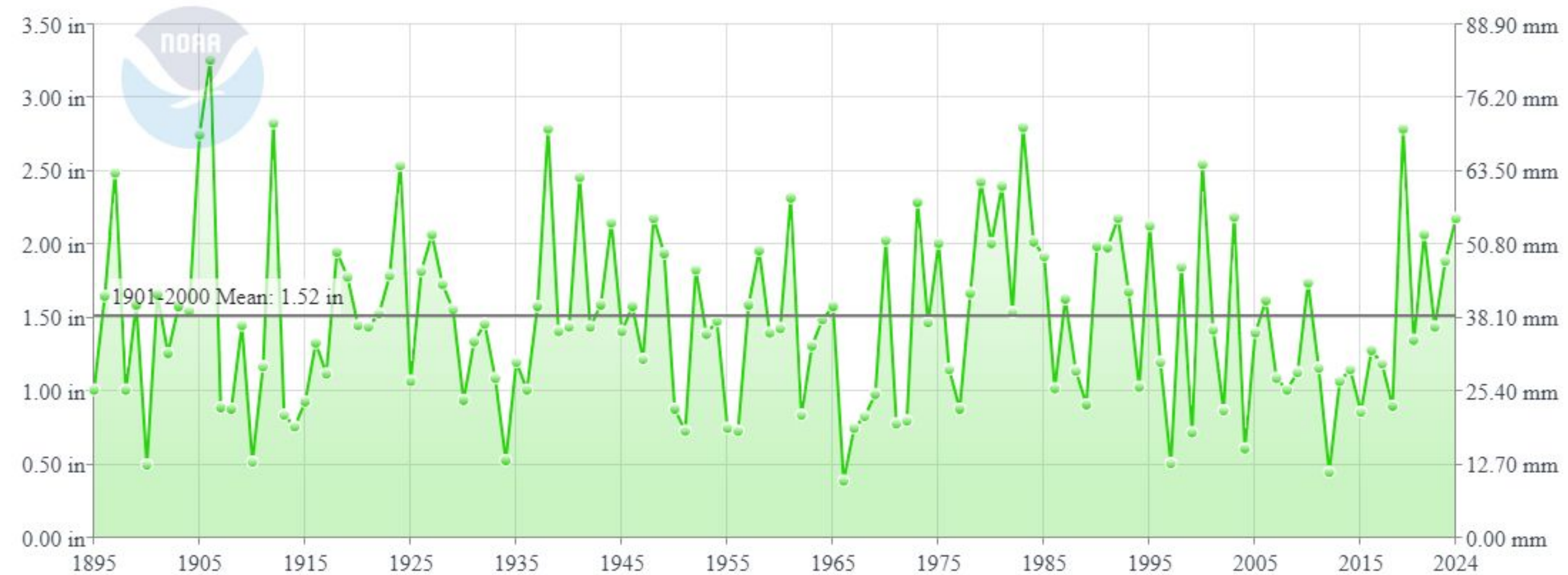
precipitation rank: March 2024

statewide anomaly from 1901-2000 avg: +0.66 inches
statewide rank: 115th driest/16th wettest



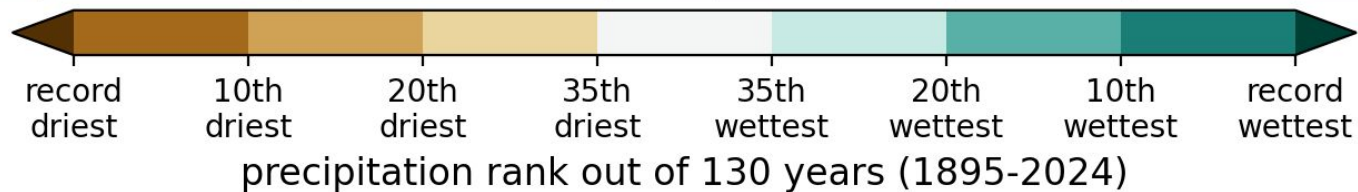
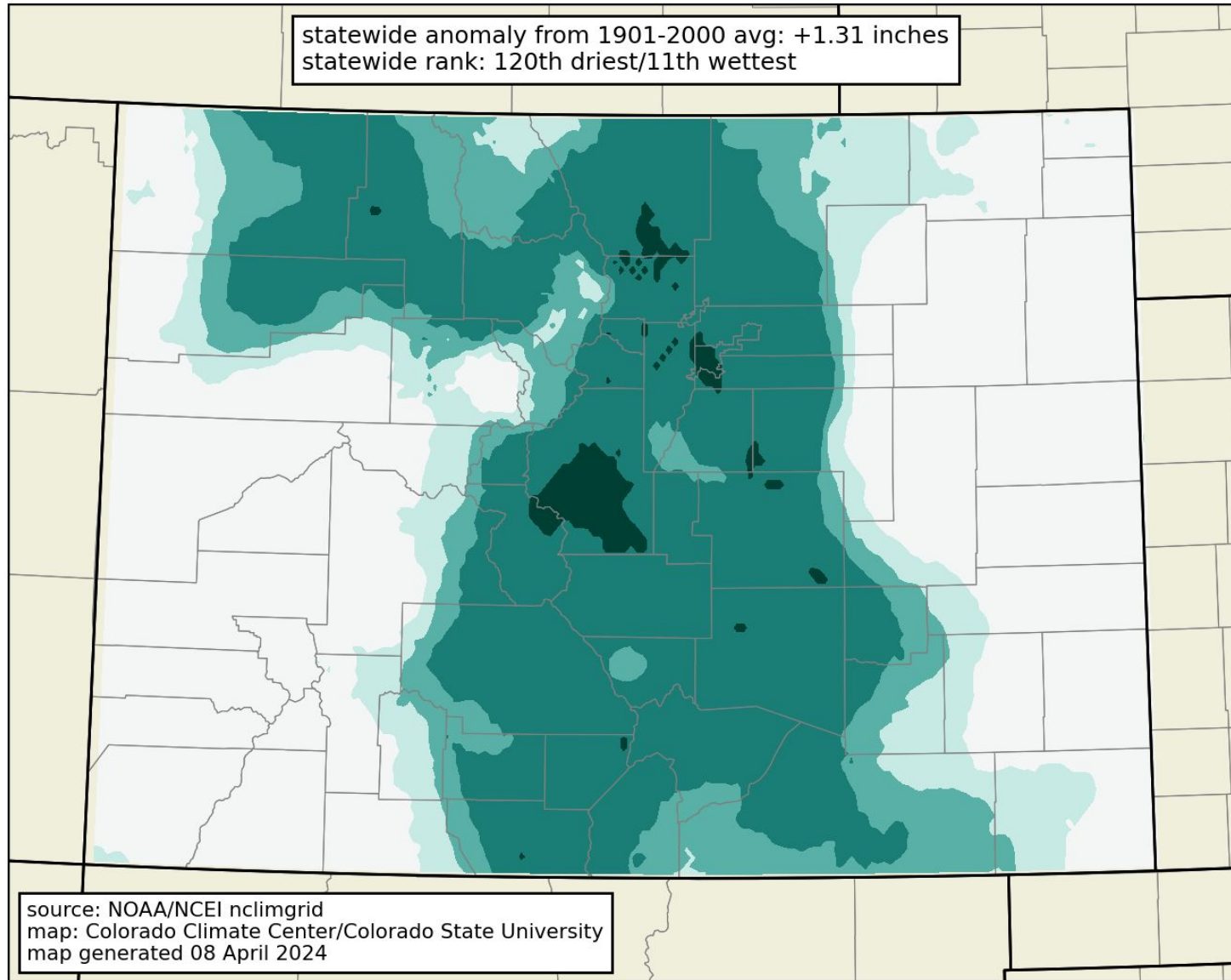
Colorado Precipitation

March



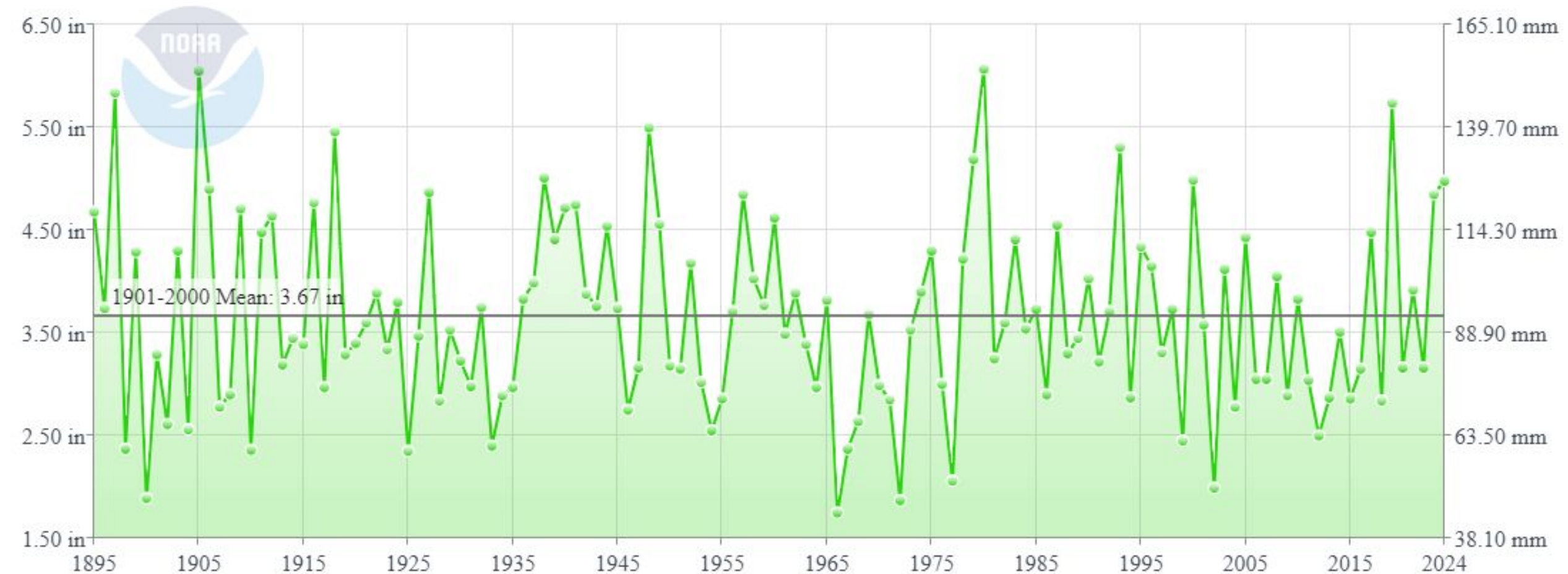
precipitation rank: 3 months ending March 2024 (Jan-Mar)

statewide anomaly from 1901-2000 avg: +1.31 inches
statewide rank: 120th driest/11th wettest



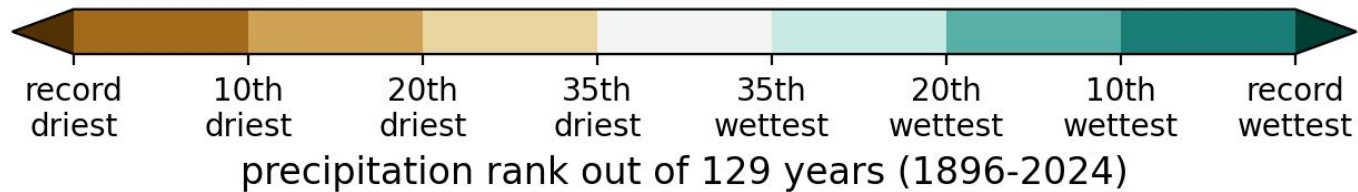
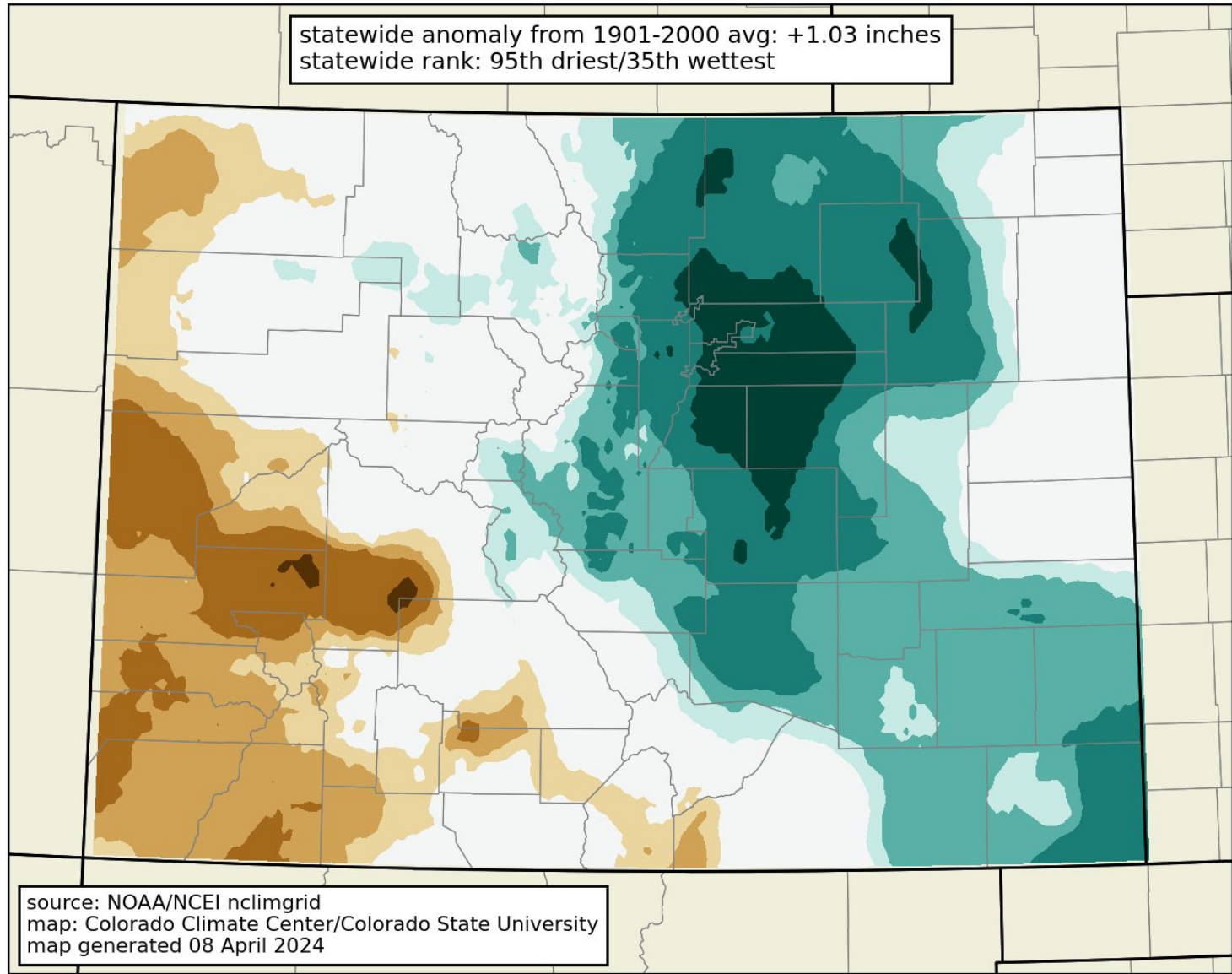
Colorado Precipitation

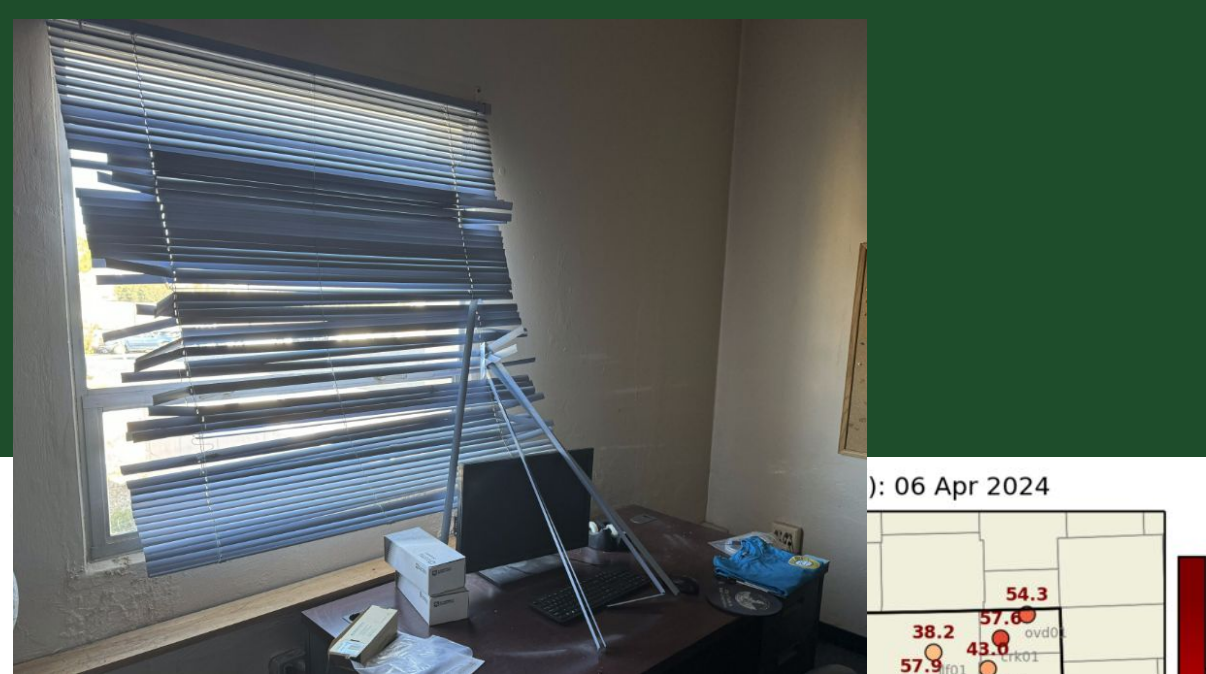
January-March



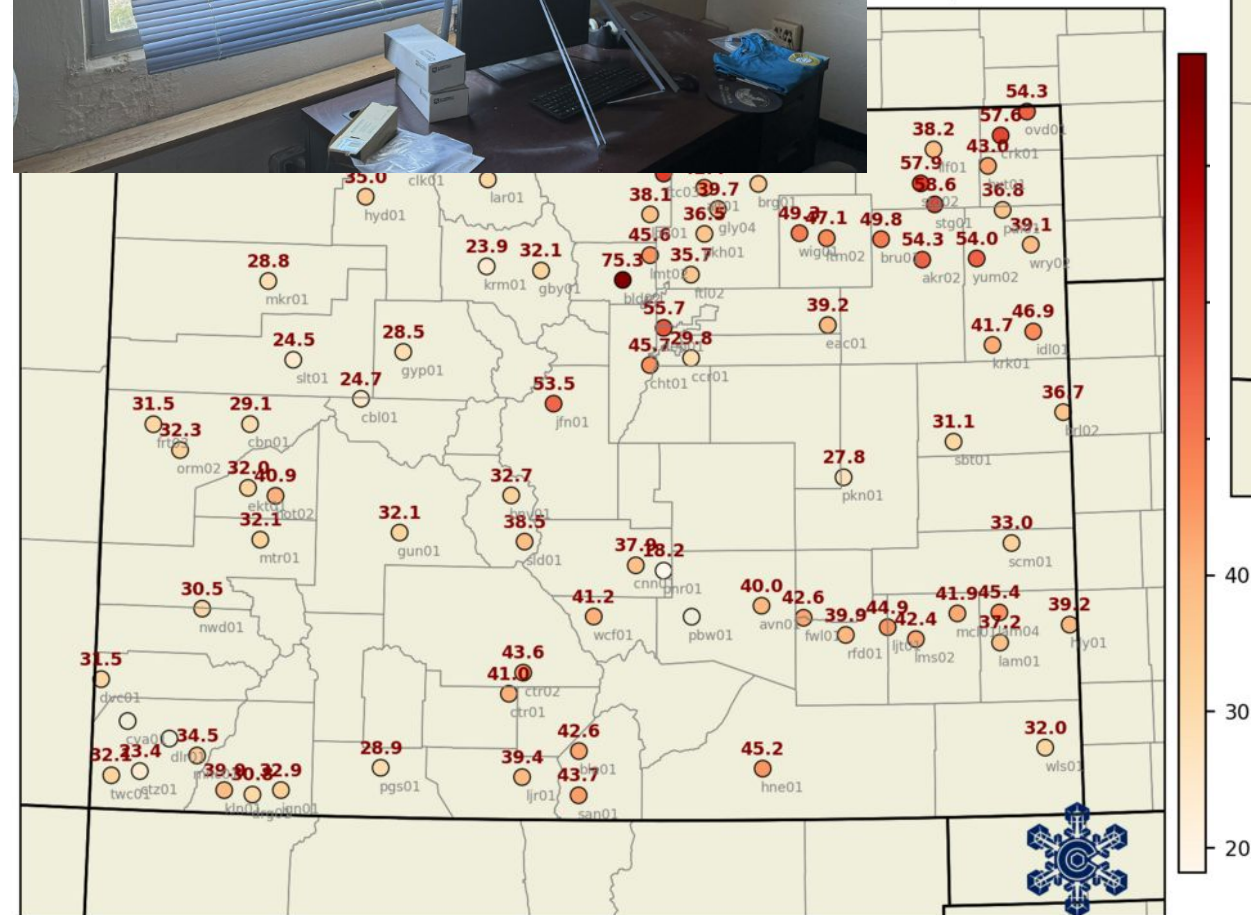
precipitation rank: 12 months ending March 2024 (Apr-Mar)

statewide anomaly from 1901-2000 avg: +1.03 inches
statewide rank: 95th driest/35th wettest

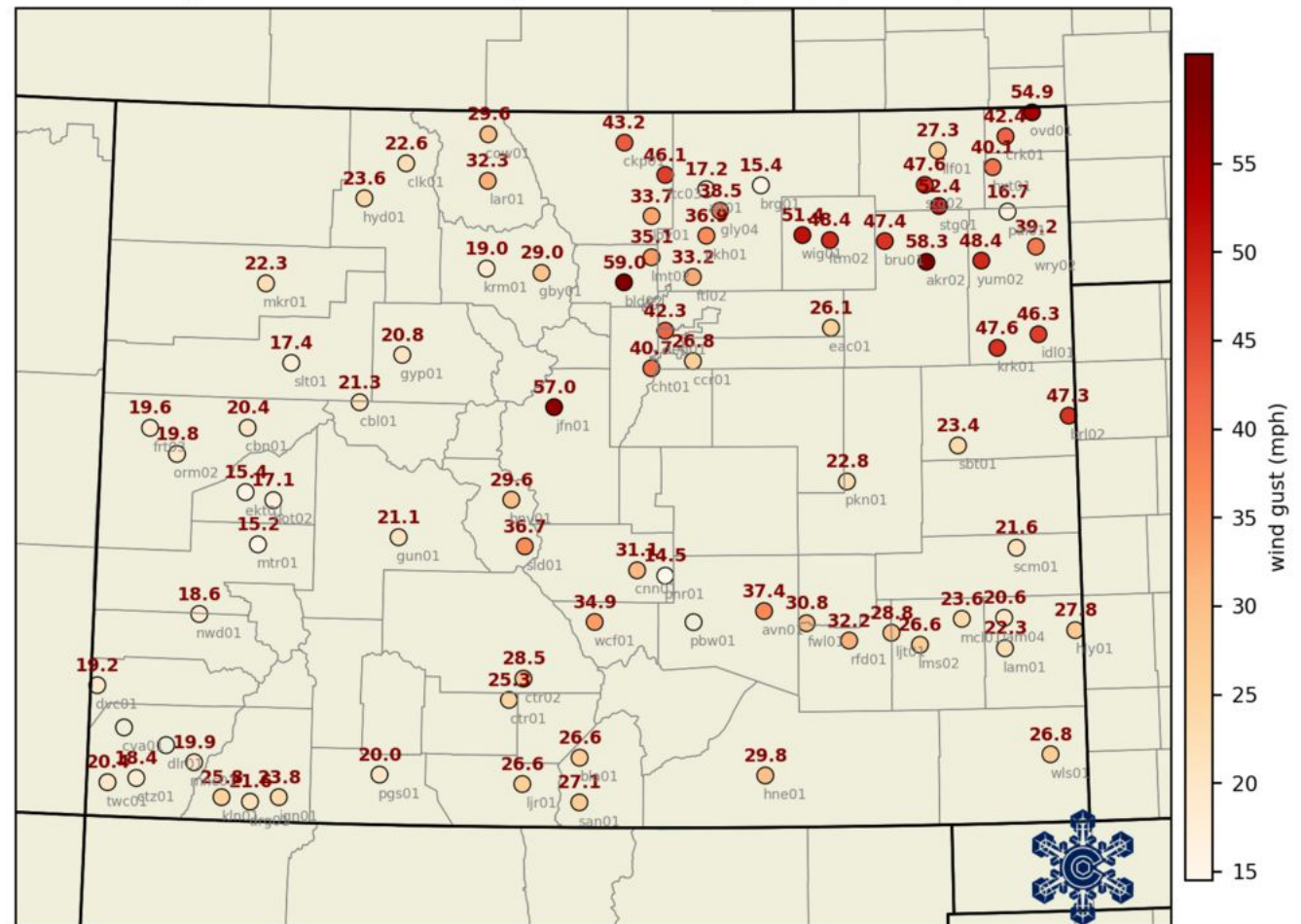




06 Apr 2024

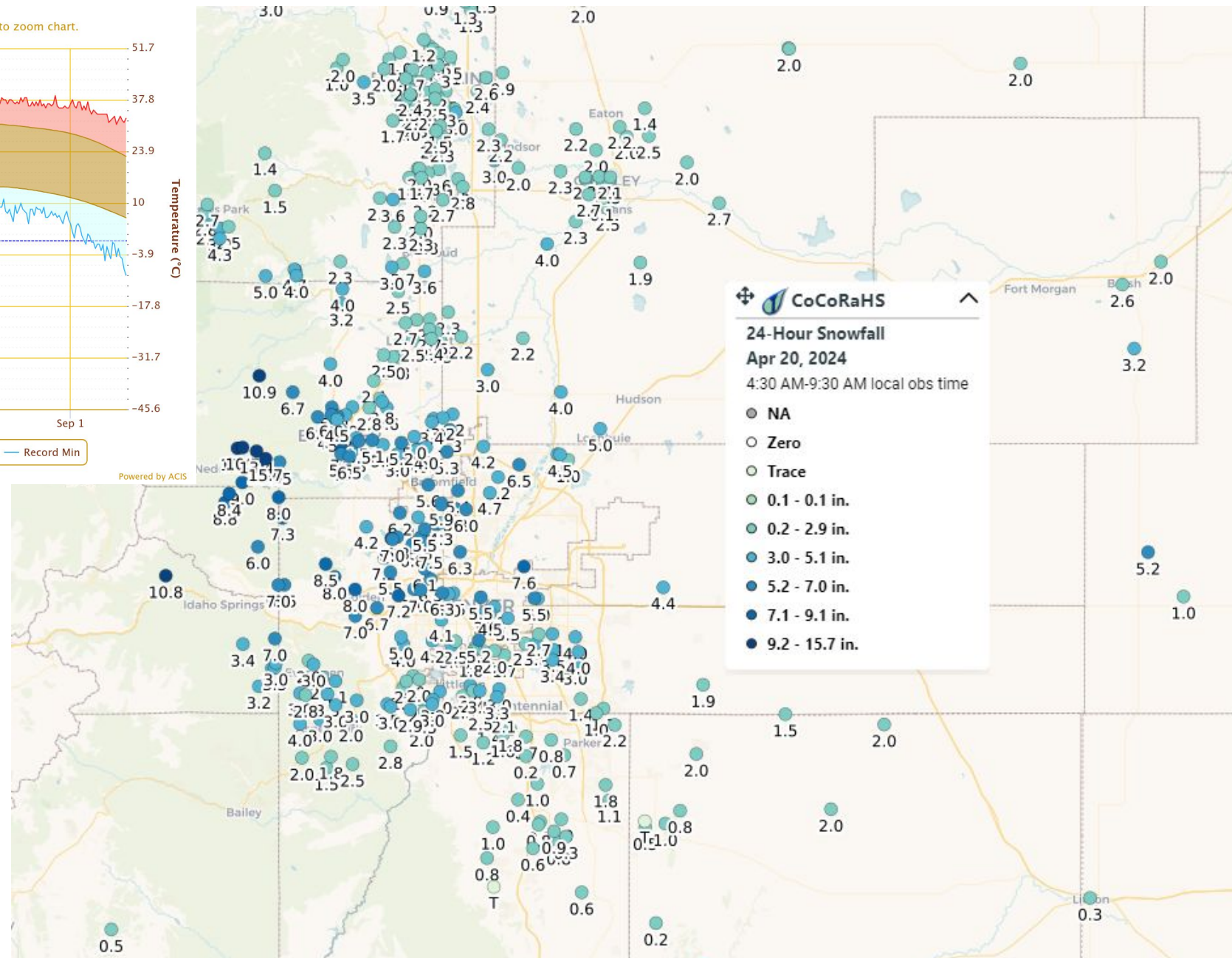
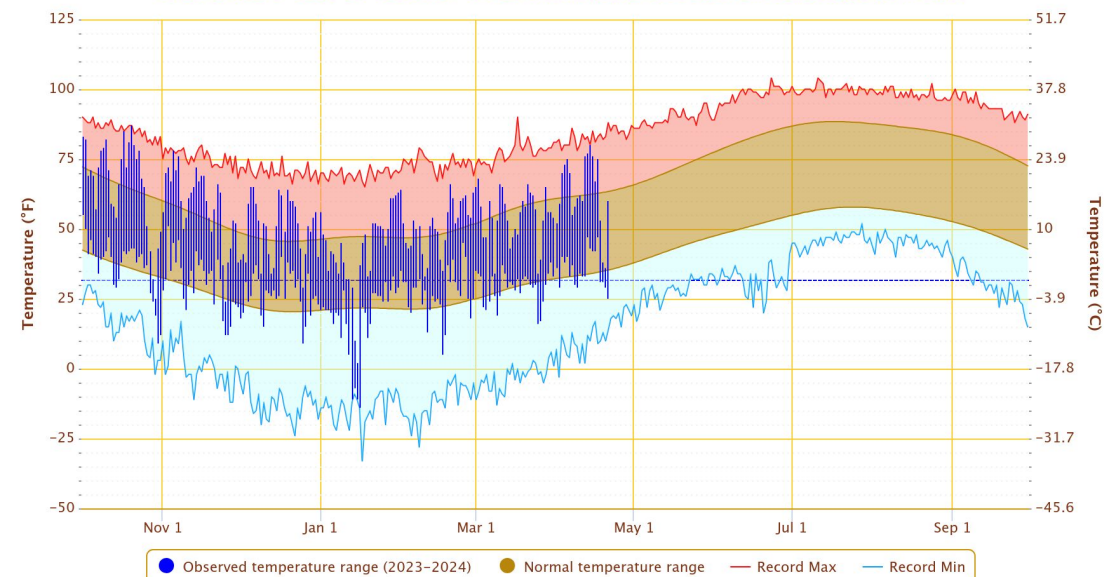


CoAgMET/Northern Water daily maximum wind gust (mph): 07 Apr 2024



Daily Temperature Data – BOULDER, CO

Period of Record – 1893–10–01 to 2024–04–21. Normals period: 1991–2020. Click and drag to zoom chart.



No major April blizzards, but some nice totals in the foothills last weekend

Much below temperatures over the weekend

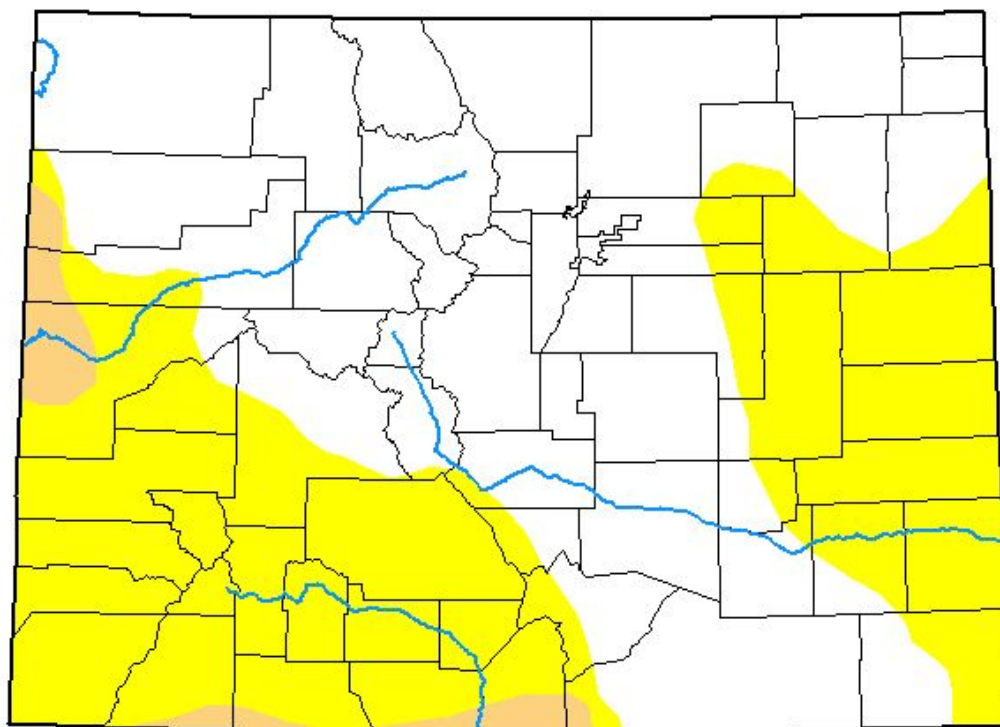


Drought Update

- Long-term wet conditions from 2023's snowpack and wet spring, but drier conditions recently
- Snowpack much below normal at the beginning of January, but closer to normal now



U.S. Drought Monitor Colorado



April 16, 2024

(Released Thursday, Apr. 18, 2024)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	57.31	42.69	2.77	0.00	0.00	0.00
Last Week <i>04-09-2024</i>	65.46	34.54	2.77	0.00	0.00	0.00
3 Months Ago <i>01-16-2024</i>	38.12	61.88	27.83	6.72	2.05	0.00
Start of Calendar Year <i>01-02-2024</i>	34.65	65.35	29.59	8.85	2.05	0.00
Start of Water Year <i>09-26-2023</i>	65.71	34.29	17.43	2.77	0.00	0.00
One Year Ago <i>04-18-2023</i>	44.07	55.93	44.01	14.50	4.52	0.43

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>

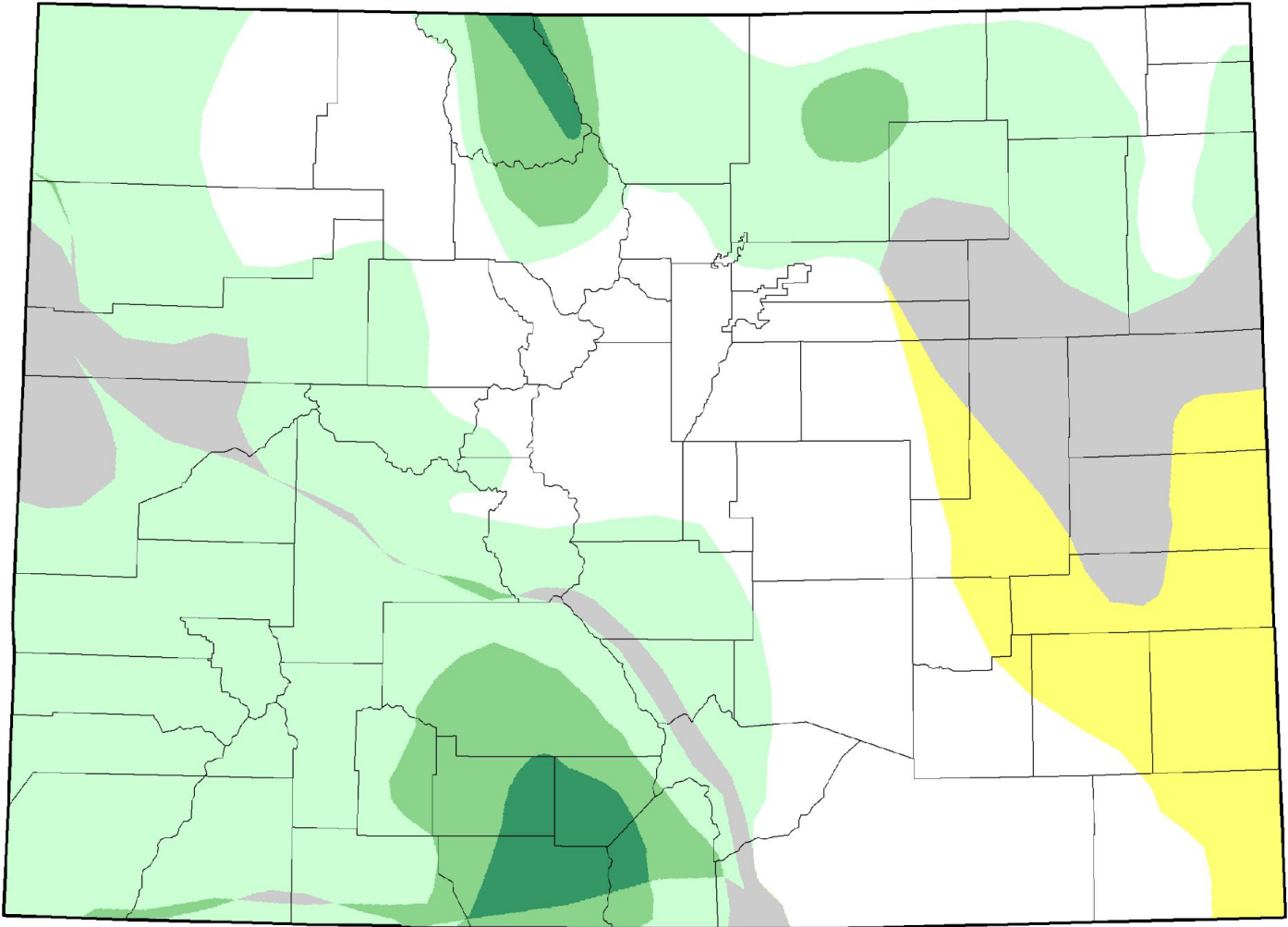
Author:

Lindsay Johnson
National Drought Mitigation Center



droughtmonitor.unl.edu

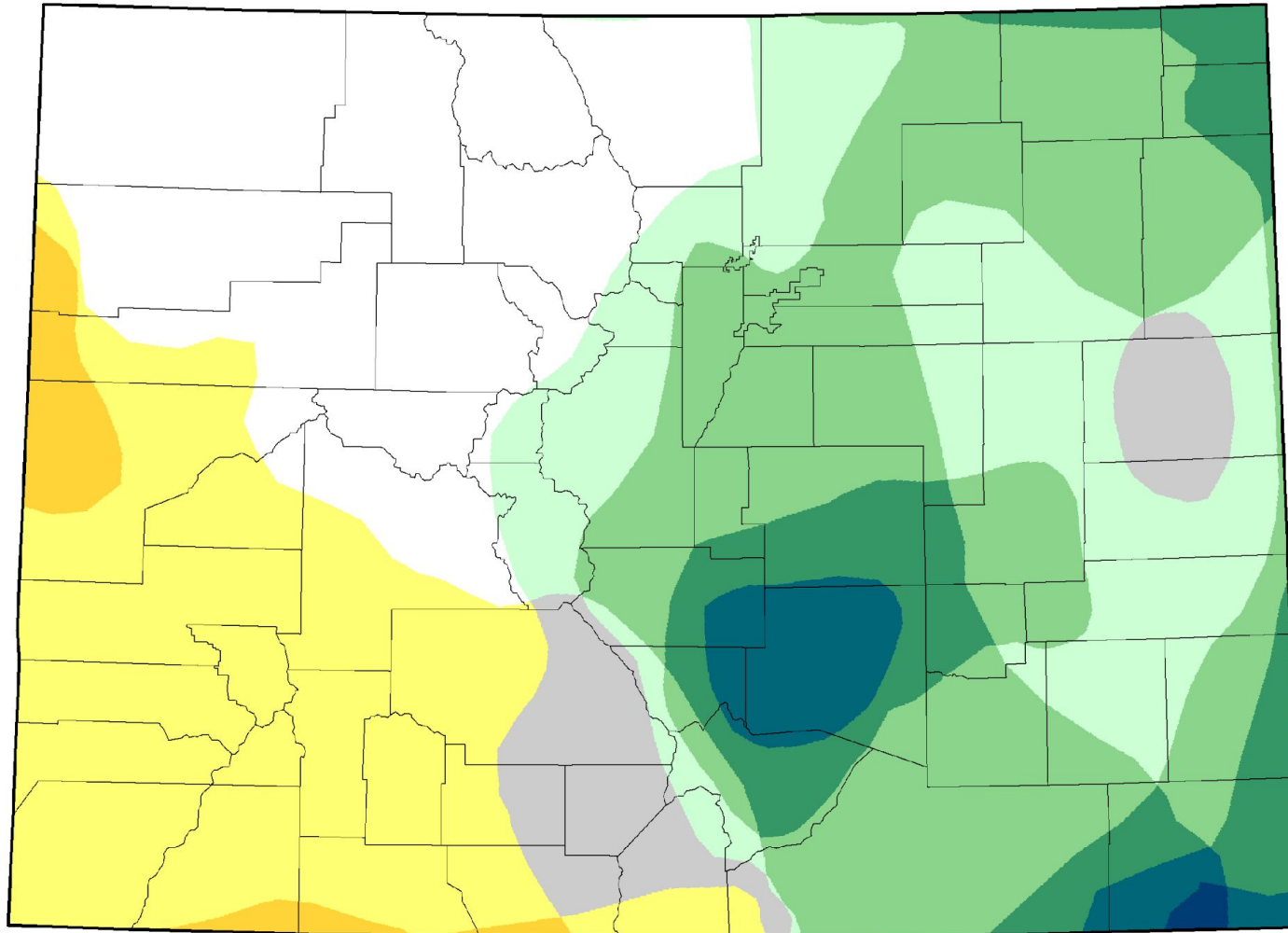
U.S. Drought Monitor Class Change - Colorado
12 Week



April 16, 2024
compared to
January 23, 2024

droughtmonitor.unl.edu

U.S. Drought Monitor Class Change - Colorado 52 Week

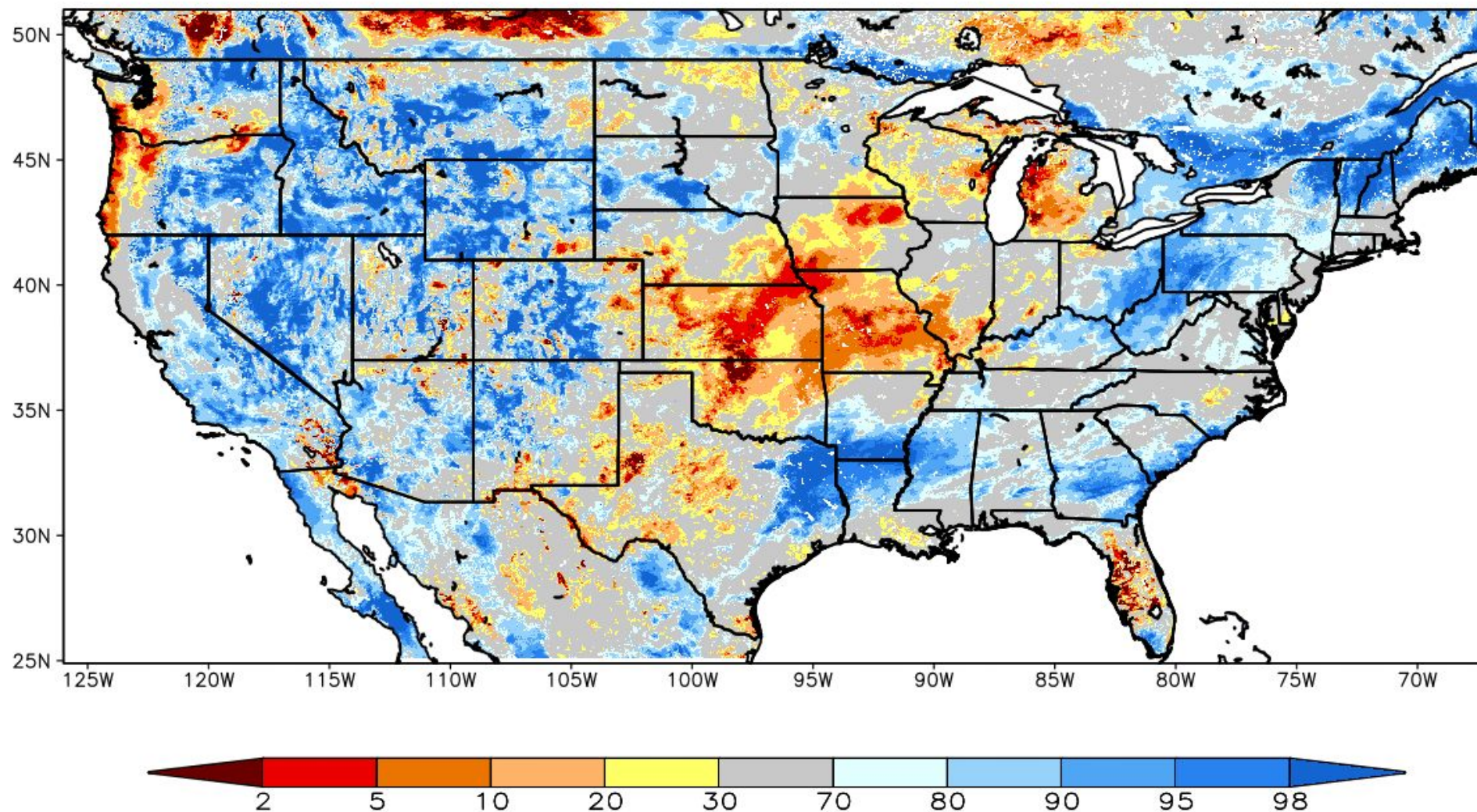


April 16, 2024
compared to
April 18, 2023

droughtmonitor.unl.edu

- 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

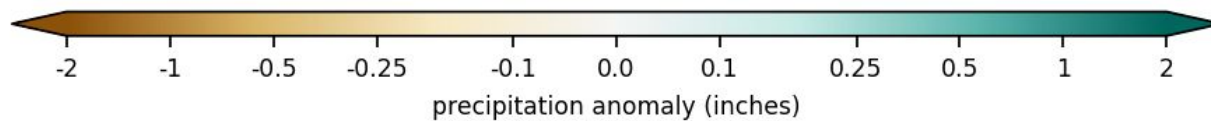
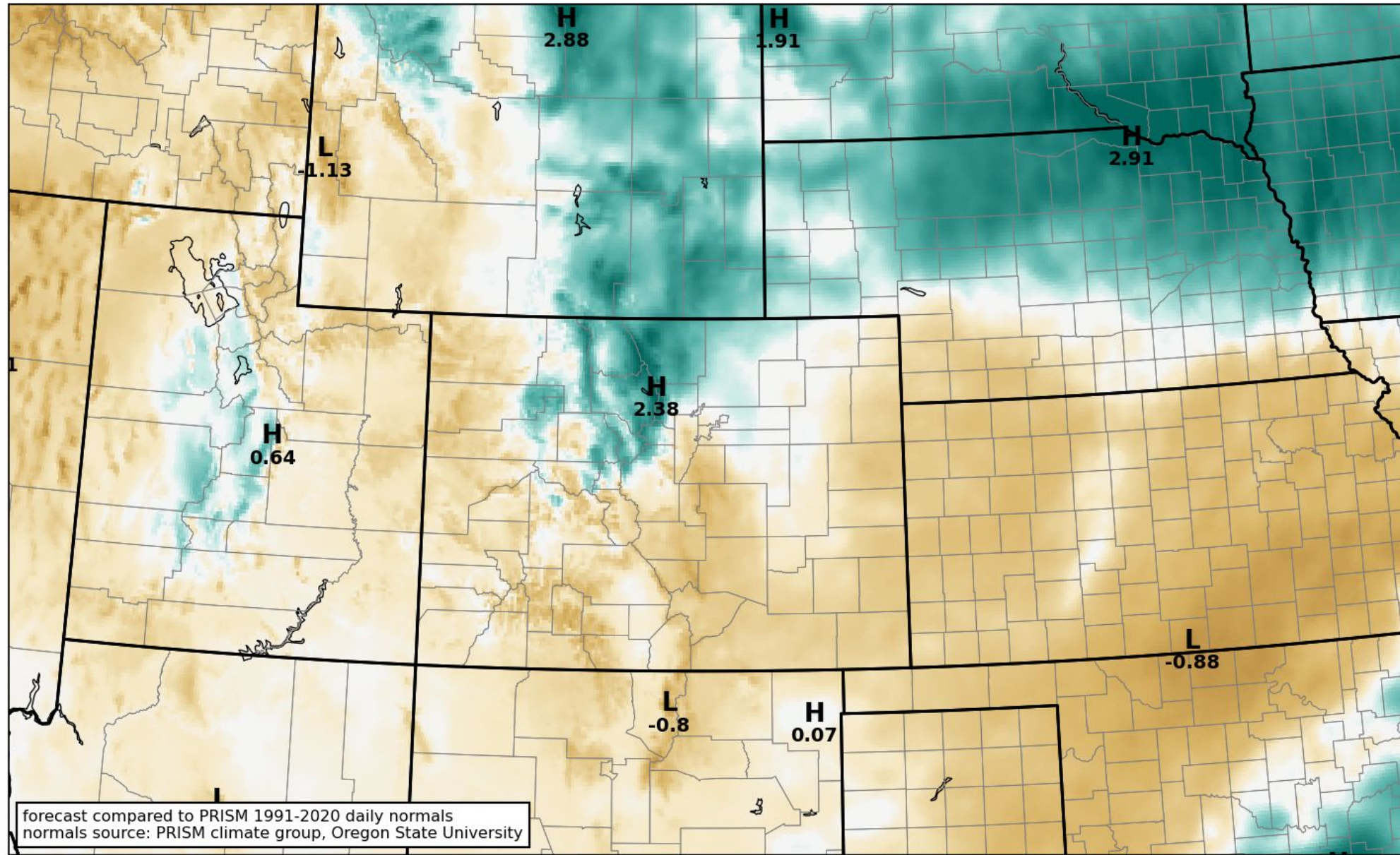
SPoRT-LIS 0-200 cm Soil Moisture percentile valid 22 Apr 2024



****NOTE****
****Experimental****

Spring/Summer Outlook

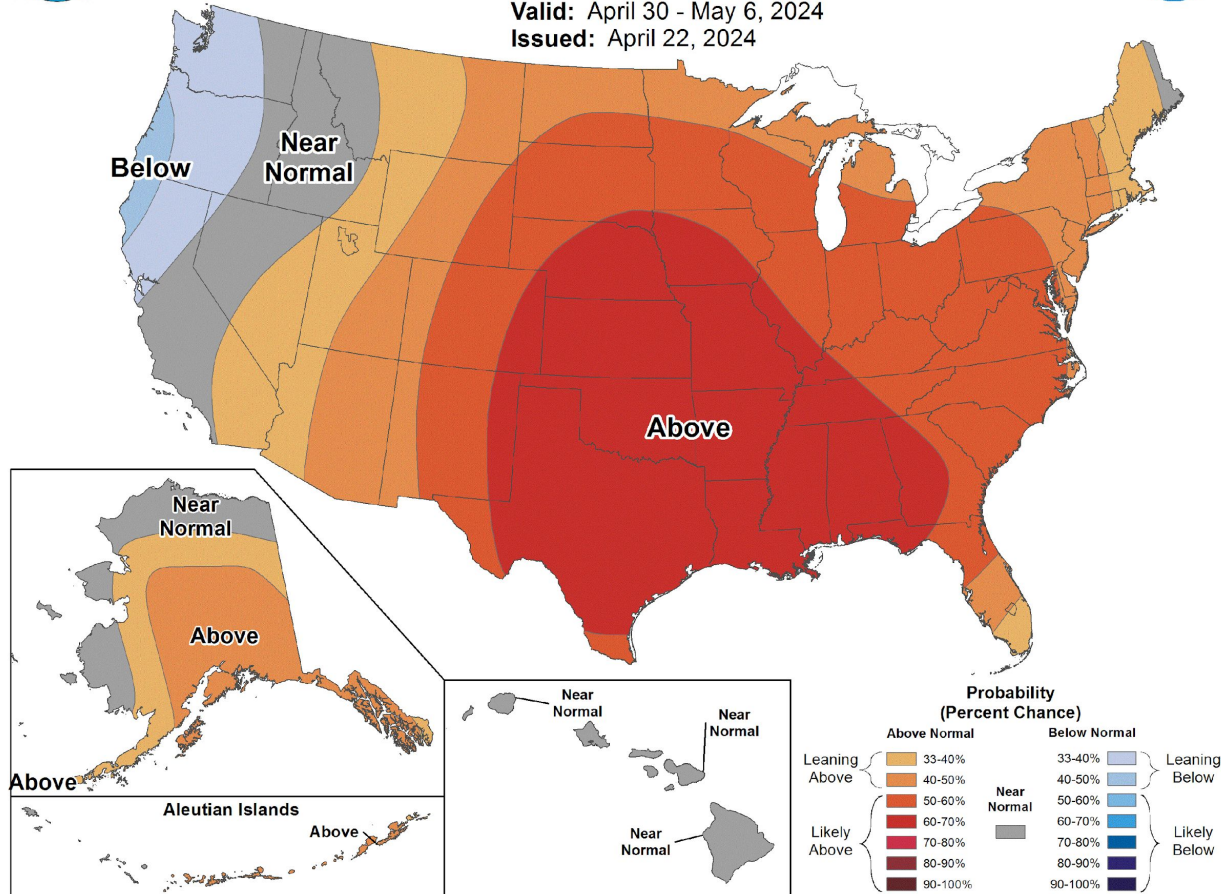






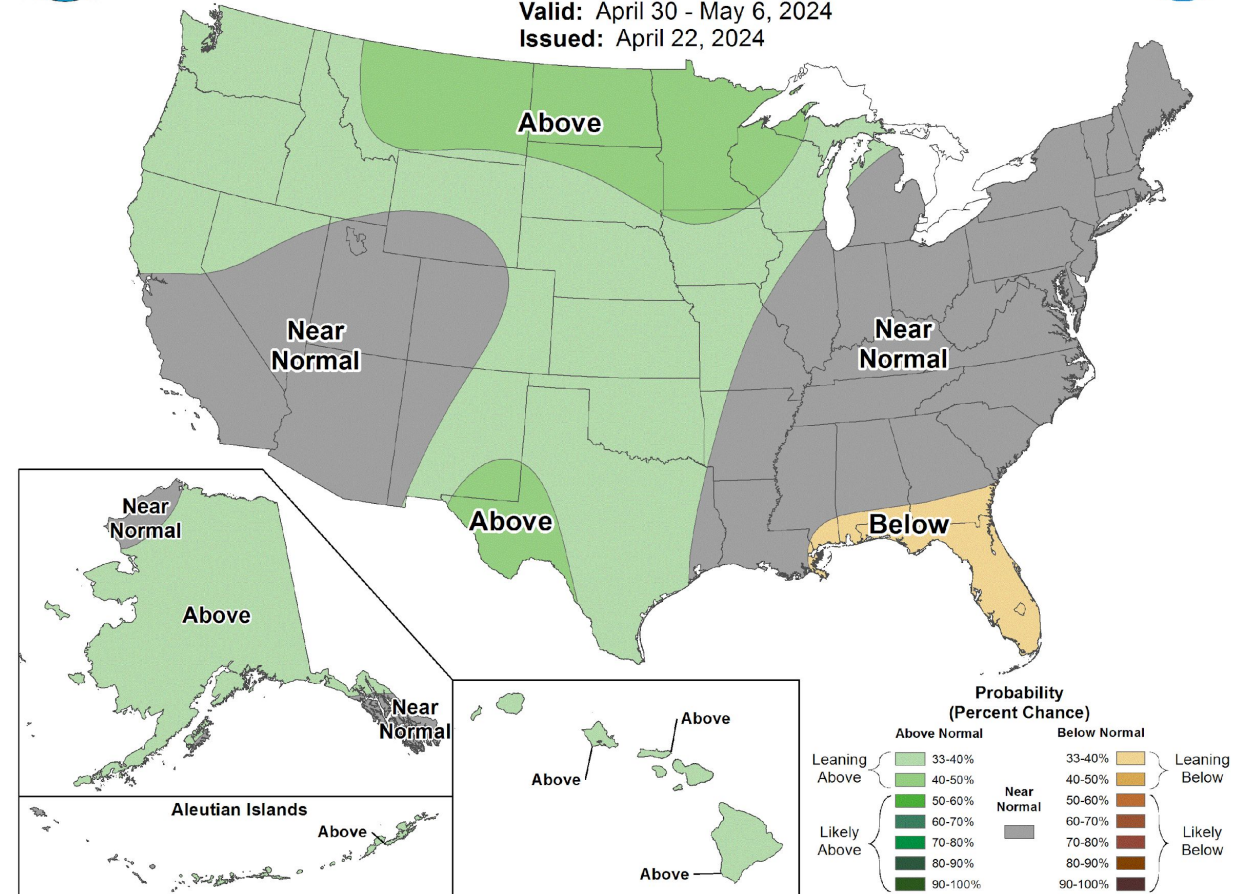
8-14 Day Temperature Outlook

Valid: April 30 - May 6, 2024
Issued: April 22, 2024



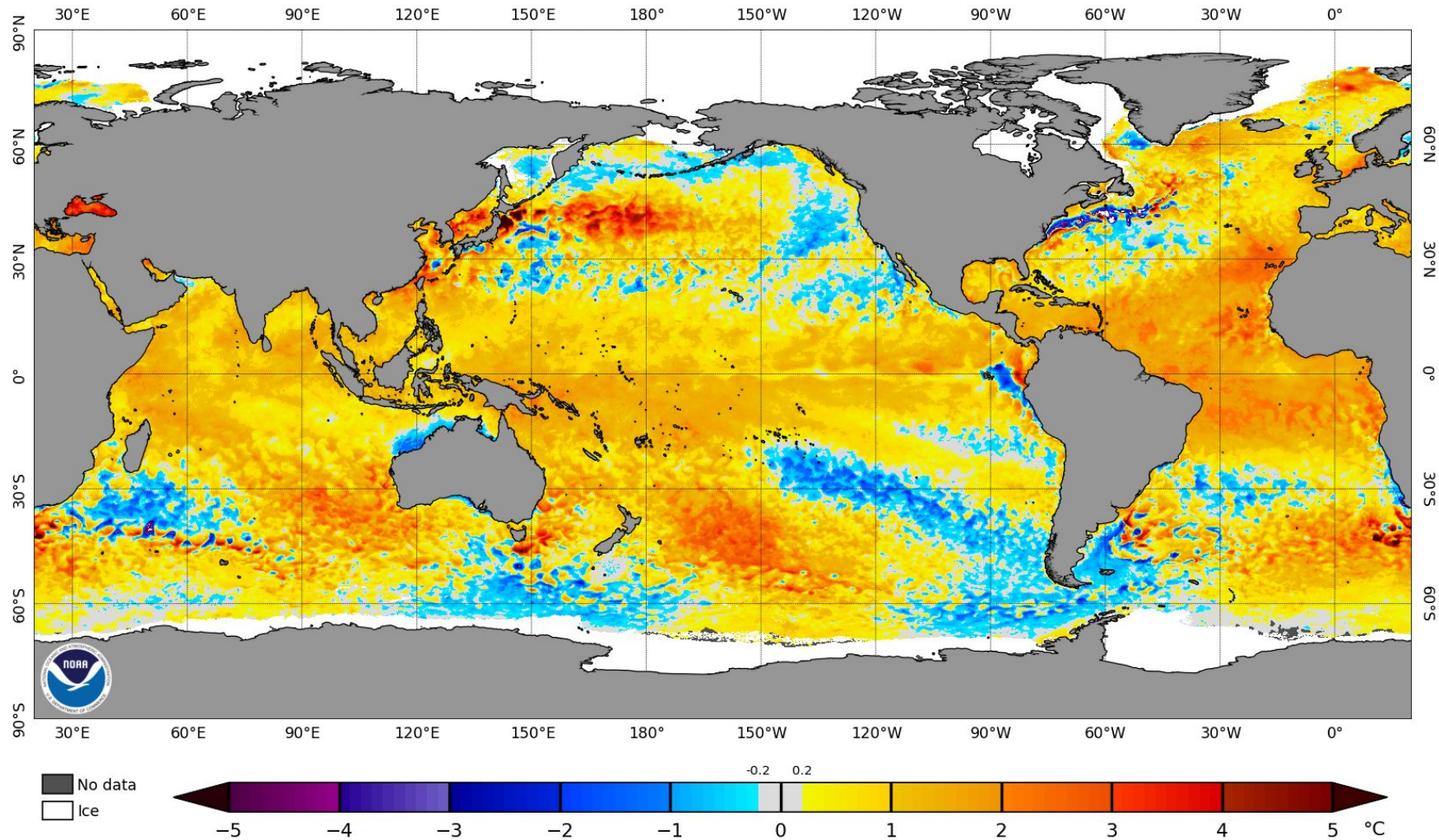
8-14 Day Precipitation Outlook

Valid: April 30 - May 6, 2024
Issued: April 22, 2024

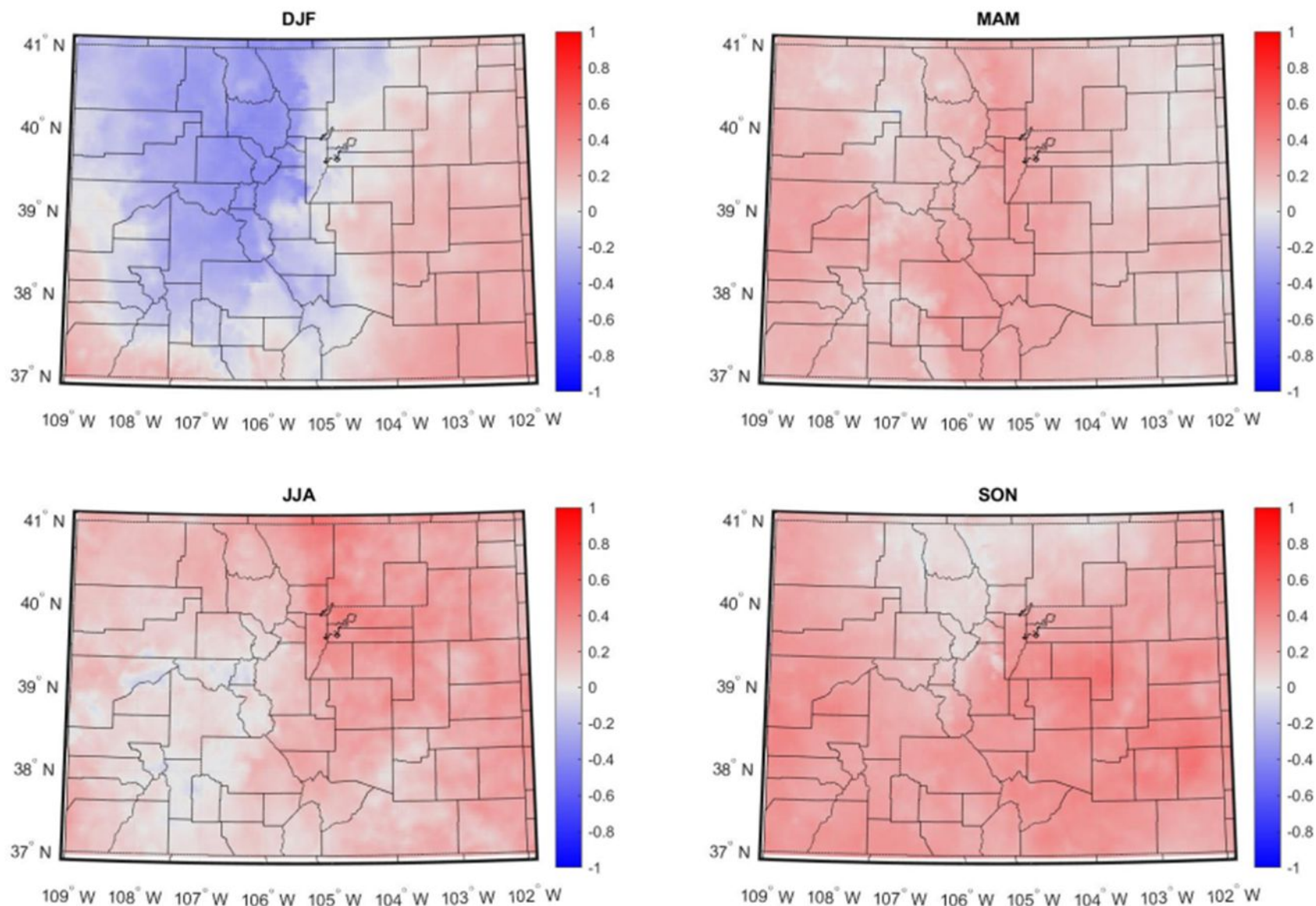


Beyond the Forecast (El Niño/La Niña)

NOAA Coral Reef Watch Daily 5km SST Anomalies (v3.1) 21 Apr 2024



Correlation Between ENSO ONI and Seasonal Precipitation in Colorado (1951-2020)

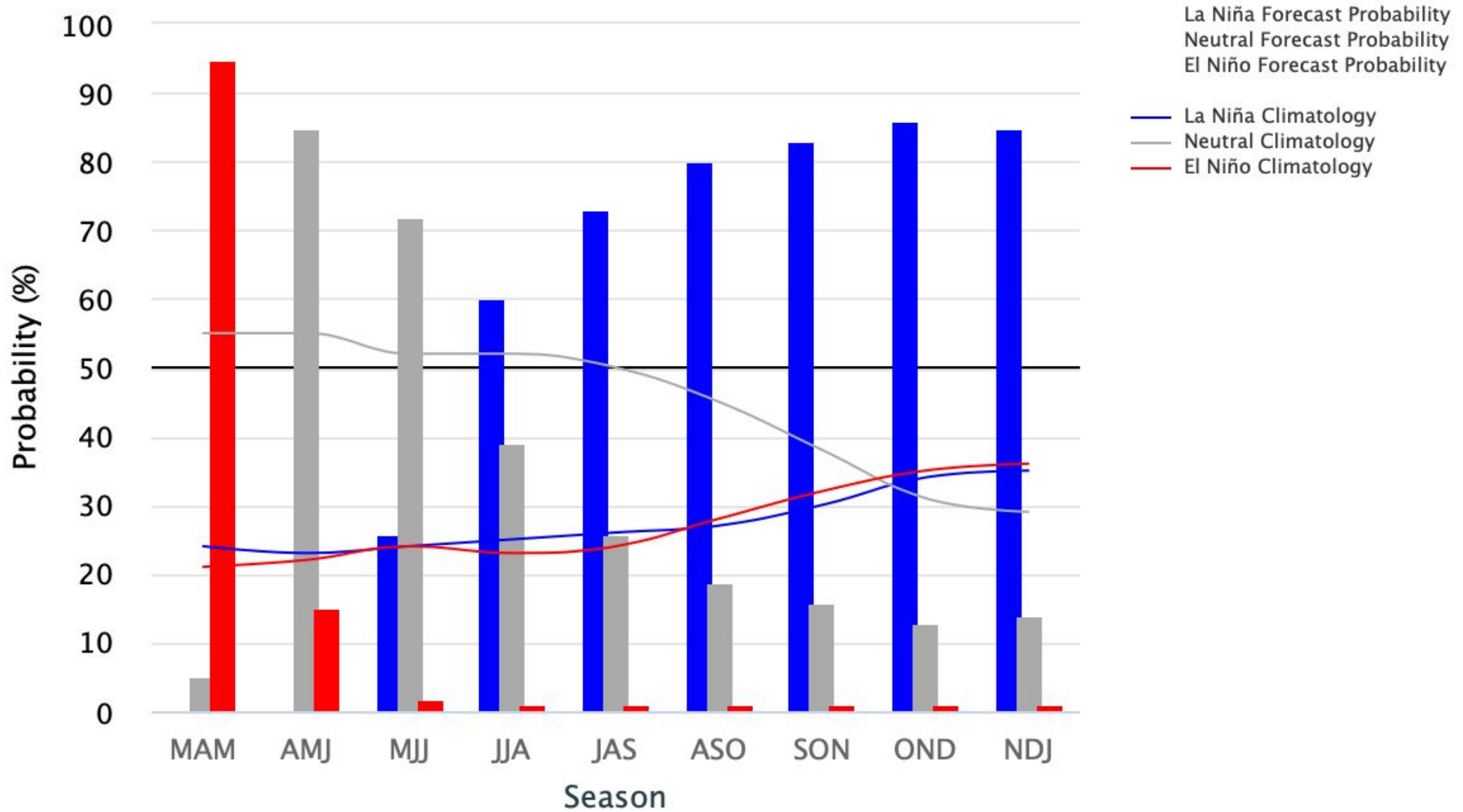


Blue = La Niña wetter Red = El Niño wetter

Early-April 2024 CPC Official Probabilistic ENSO Forecasts

ENSO state based on NINO3.4 SST Anomaly

Neutral ENSO: -0.5°C to 0.5°C

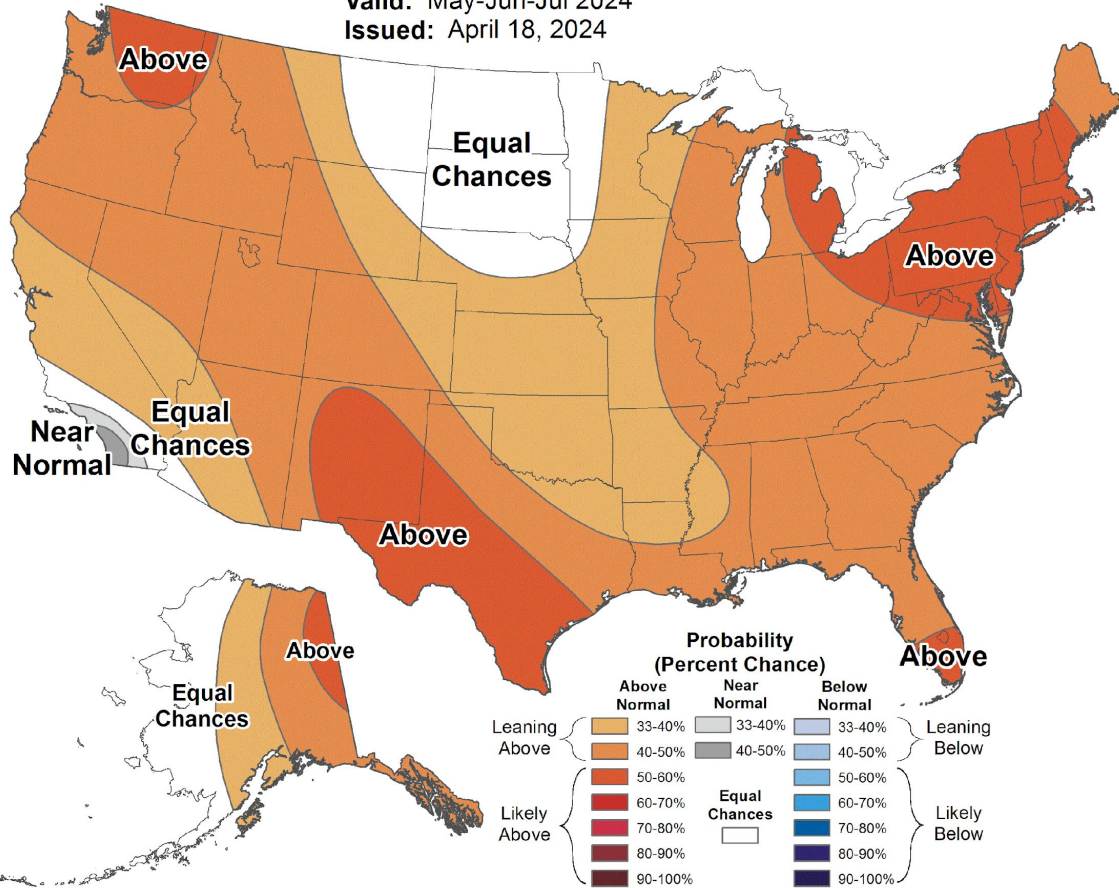




Seasonal Temperature Outlook



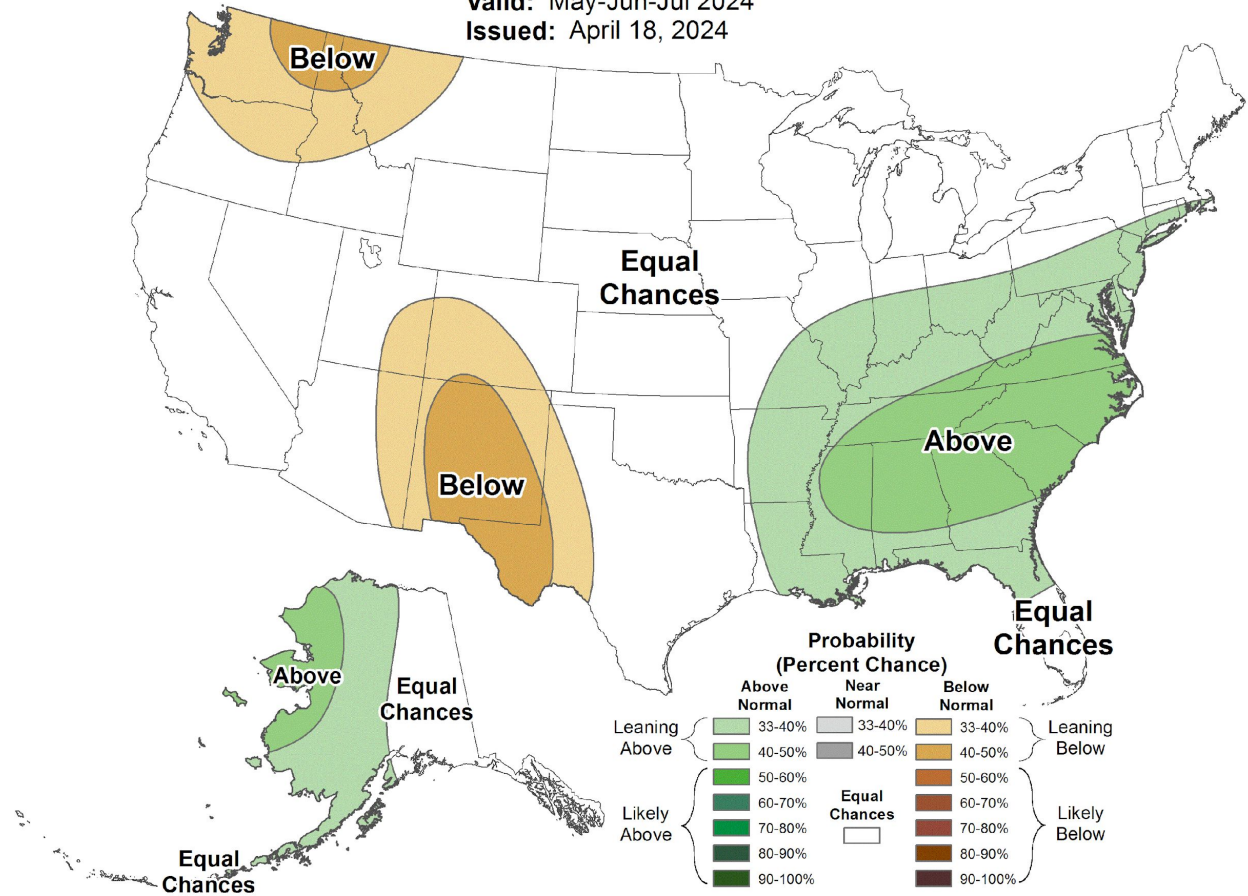
Valid: May-Jun-Jul 2024
Issued: April 18, 2024



Seasonal Precipitation Outlook



Valid: May-Jun-Jul 2024
Issued: April 18, 2024

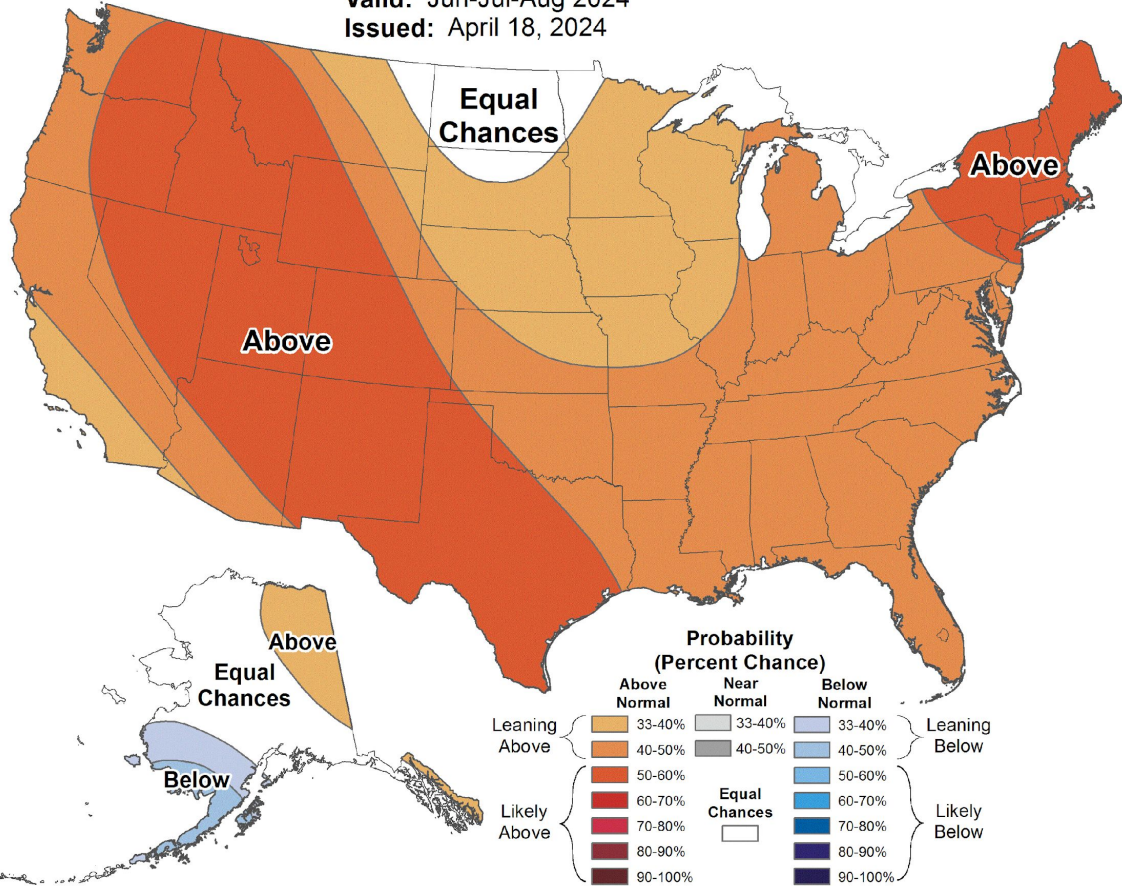




Seasonal Temperature Outlook



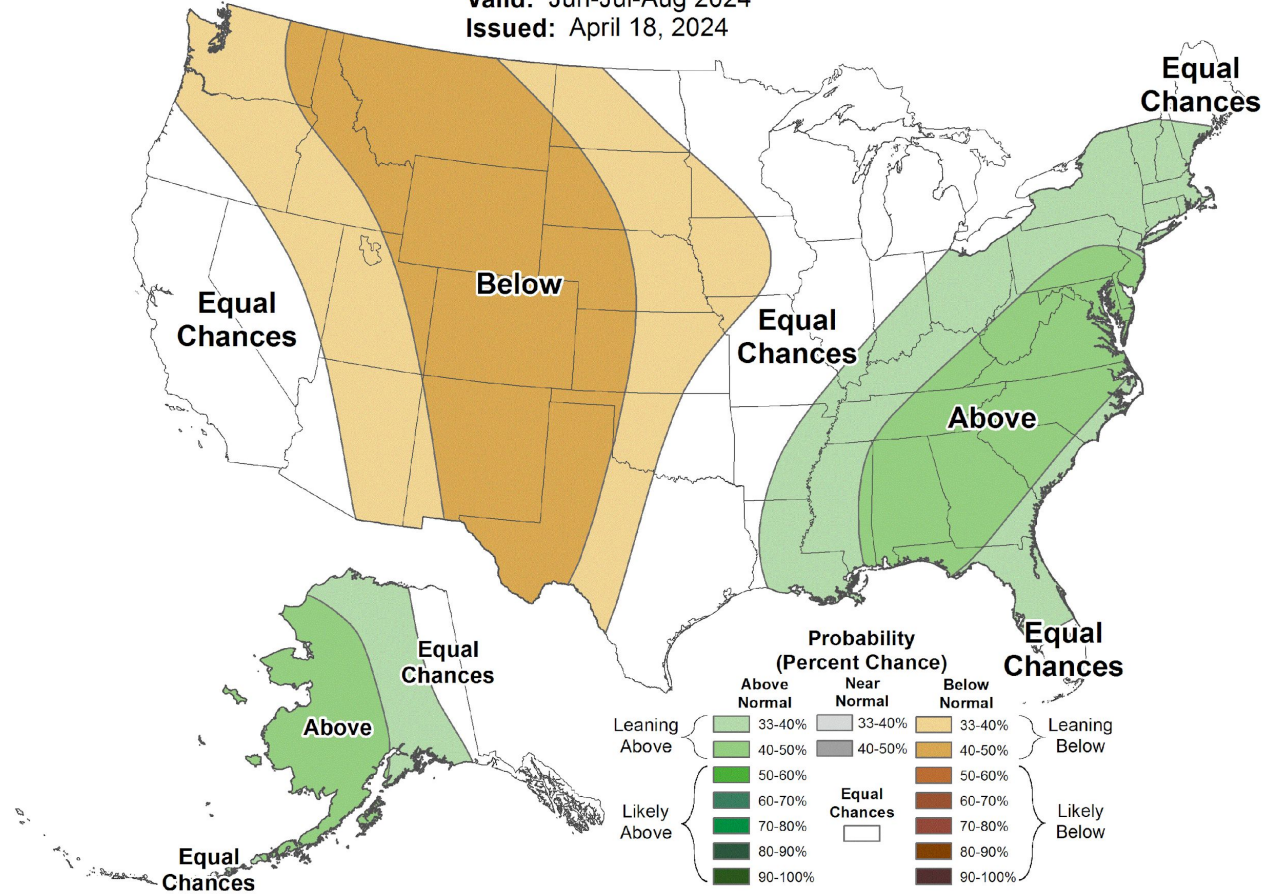
Valid: Jun-Jul-Aug 2024
Issued: April 18, 2024



Seasonal Precipitation Outlook



Valid: Jun-Jul-Aug 2024
Issued: April 18, 2024

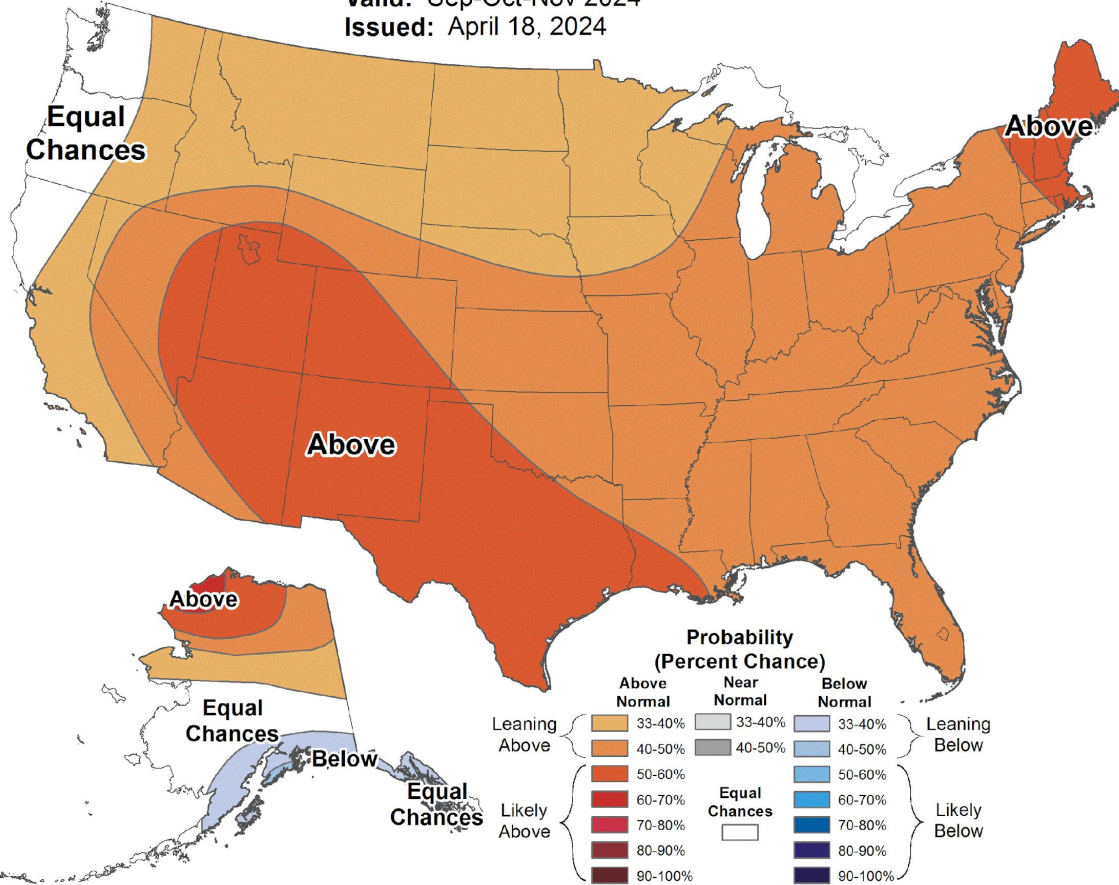




Seasonal Temperature Outlook



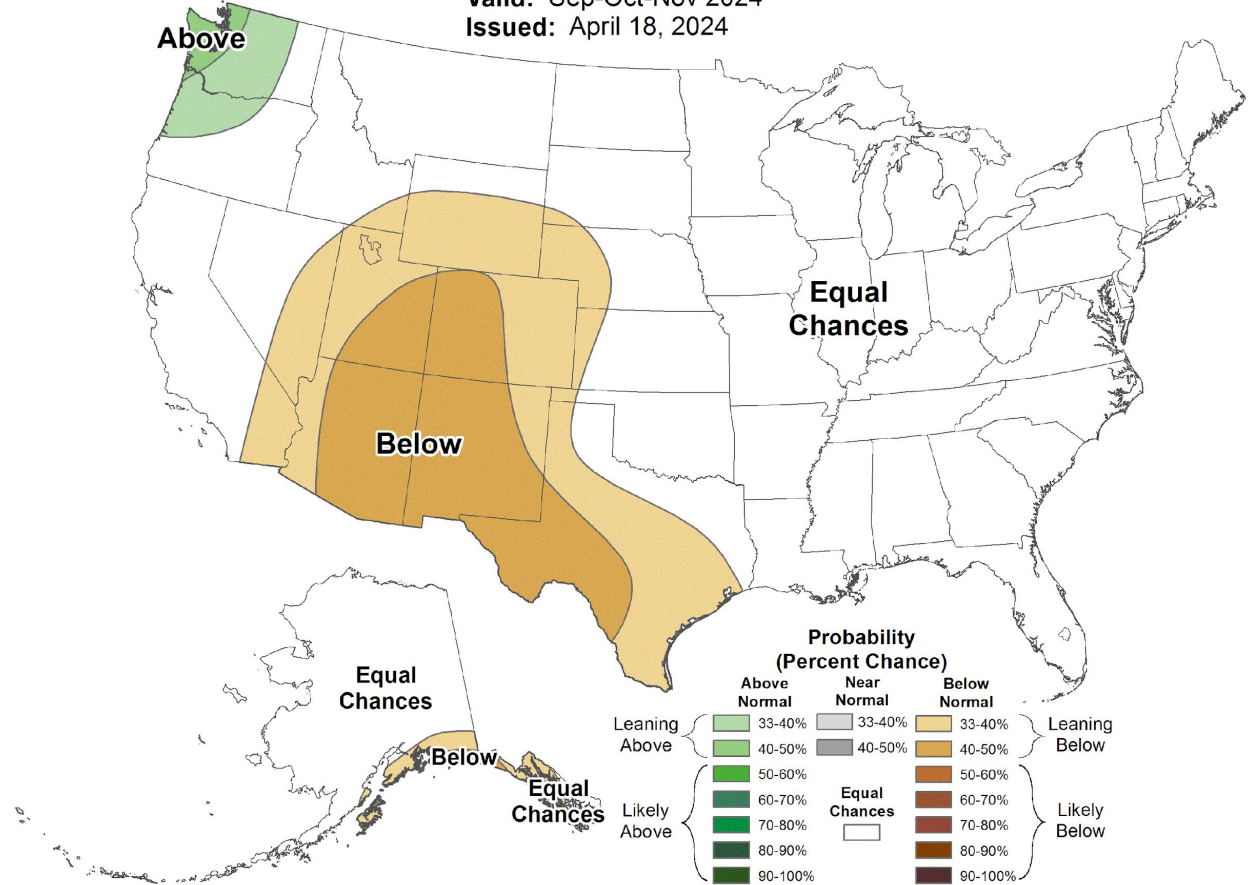
Valid: Sep-Oct-Nov 2024
Issued: April 18, 2024



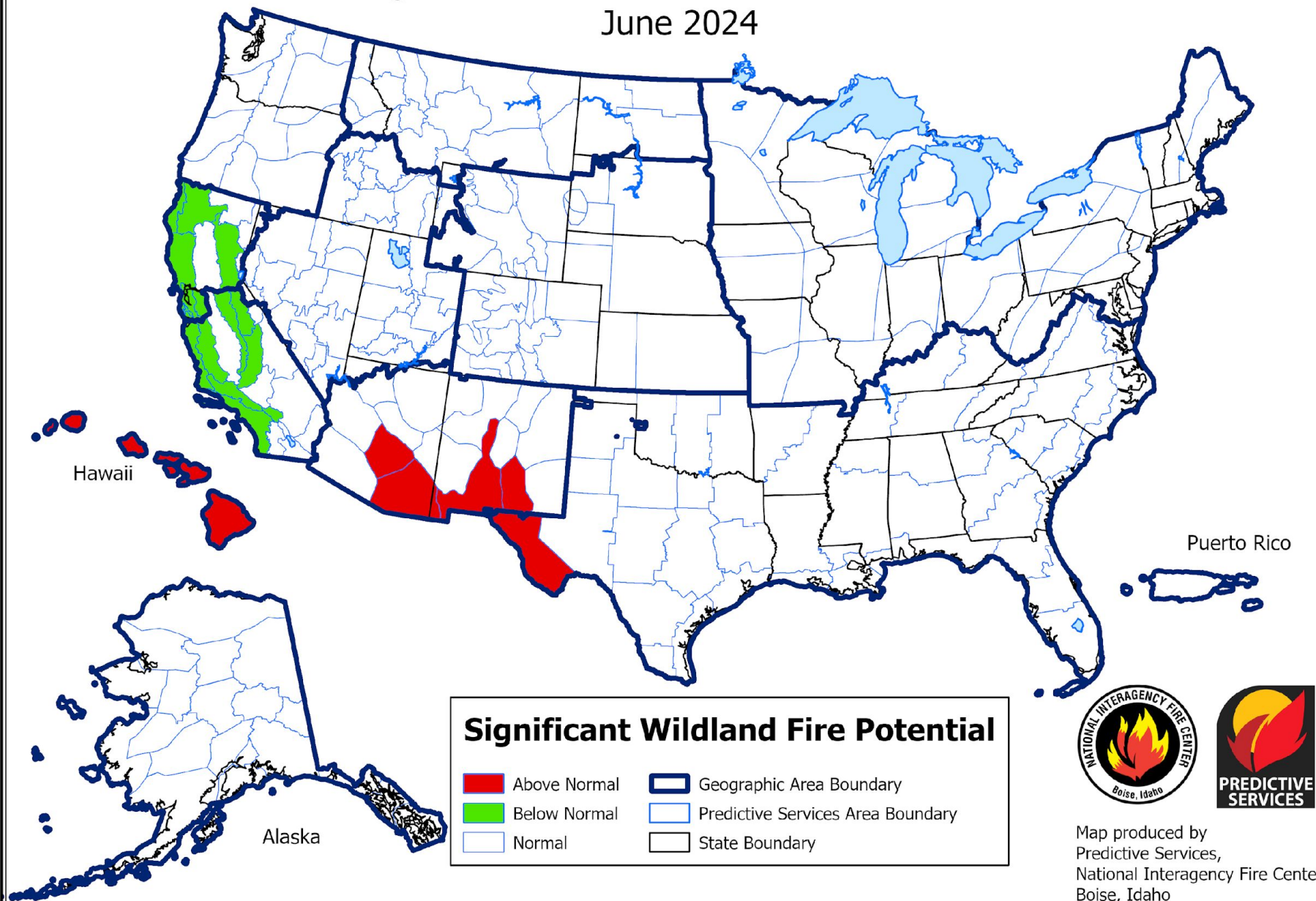
Seasonal Precipitation Outlook



Valid: Sep-Oct-Nov 2024
Issued: April 18, 2024



Significant Wildland Fire Potential Outlook June 2024



Above normal significant wildland fire potential indicates a greater than usual likelihood that significant wildland fires will occur.
Significant wildland fires should be expected at typical times and intervals during normal significant wildland fire potential conditions.
Significant wildland fires are still possible but less likely than usual during forecasted below normal periods.

Takeaways

- Our cool season this year was milder than normal, but also wetter than normal statewide
- Long-term precipitation anomalies are generally positive. Soil moisture across much of the state is above average due to a combination of a wet spring and early snowmelt up high
- Seasonal forecast models suggest we are more likely than normal to endure a warm/dry summer; long-term positive moisture anomalies have left our water supplies in better than normal shape
- These models are based on 1. Shift to La Niña. 2. Climate change. 3. Dynamical models showing a weaker monsoon this year
- The last year with a rapid shift to La Niña in spring with near-to-above average April water resources followed by a hot summer was 2020. Let's hope things go differently this time!



Colorado Climate Center (Contact Us)

Thanks, and let's keep in touch!

Peter Goble – peter.goble@colostate.edu

Russ Schumacher – russ.schumacher@colostate.edu

Becky Bolinger – becky.bolinger@colostate.edu

Viewing this, and previous WATF Briefings:

http://climate.colostate.edu/ccc_archive.html

Thank you



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