

Climate Center Update

Colorado Water
Conditions
Monitoring
Committee 4/23

Peter Goble
Colorado
Climate Center



COLORADO
CLIMATE
CENTER



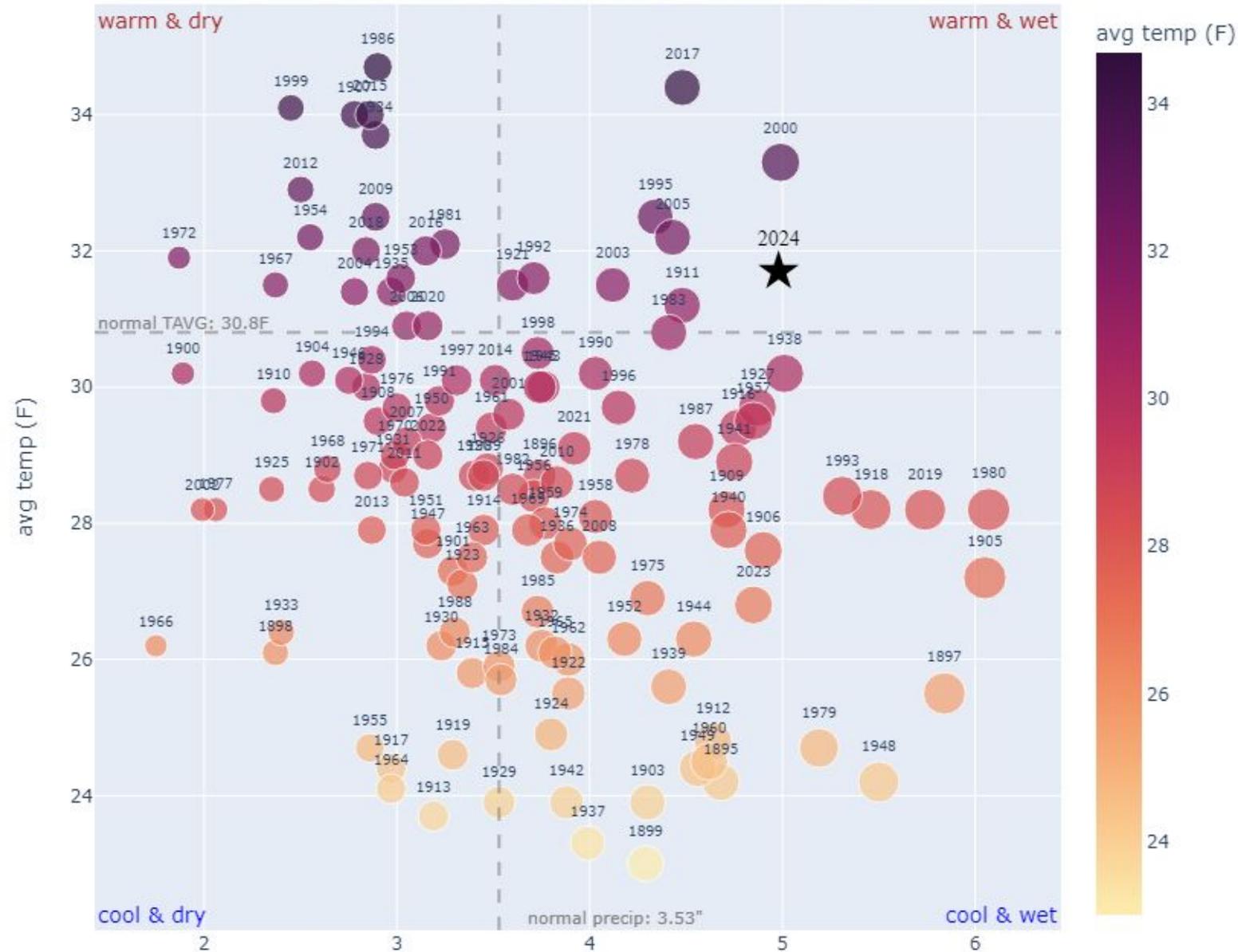
ATMOSPHERIC SCIENCE
COLORADO STATE UNIVERSITY

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

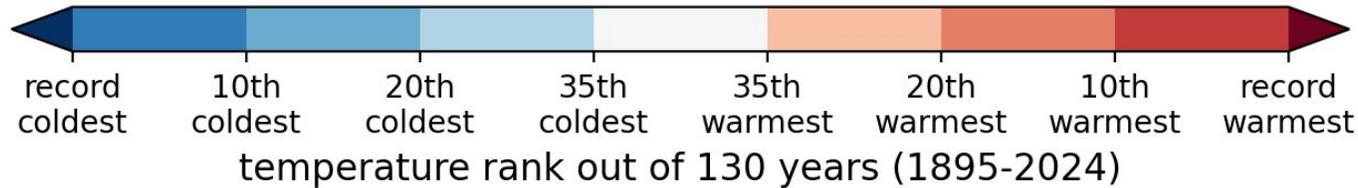
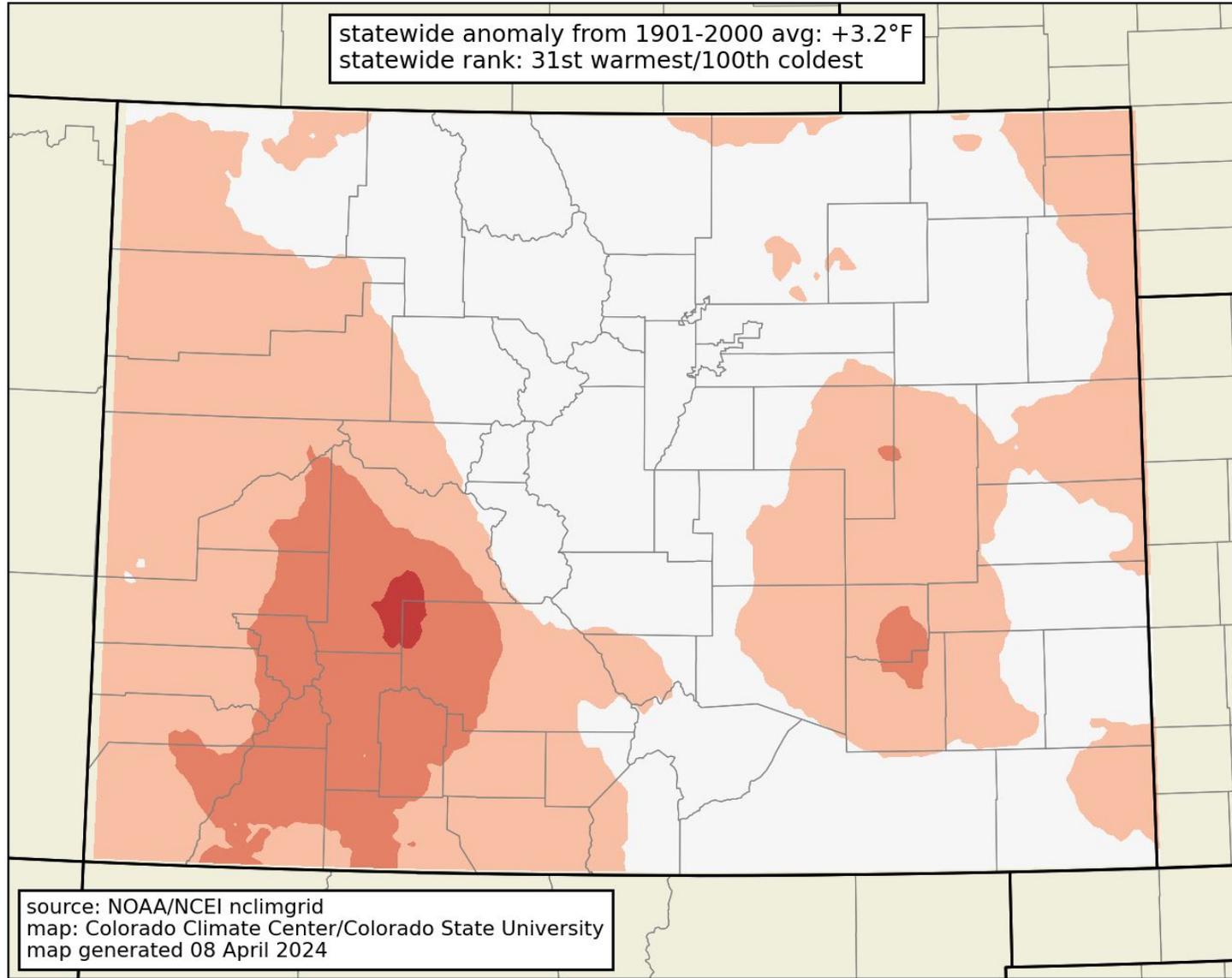


Colorado Climate Center/CSU
Data source: NOAA/NCEI Climate at a Glance



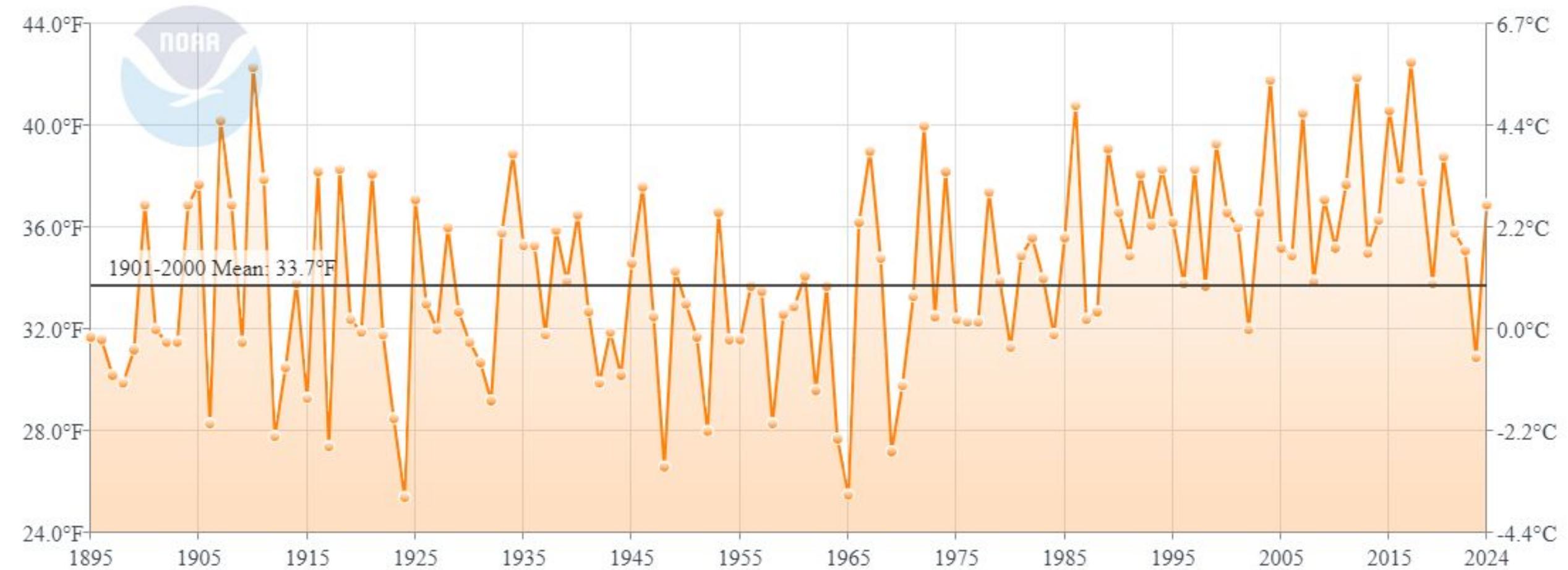
average temperature rank: March 2024

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



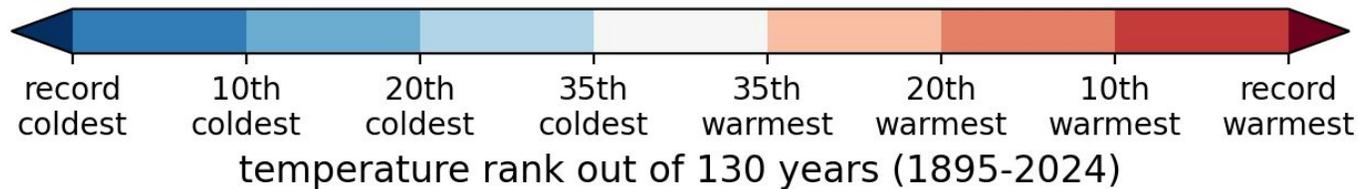
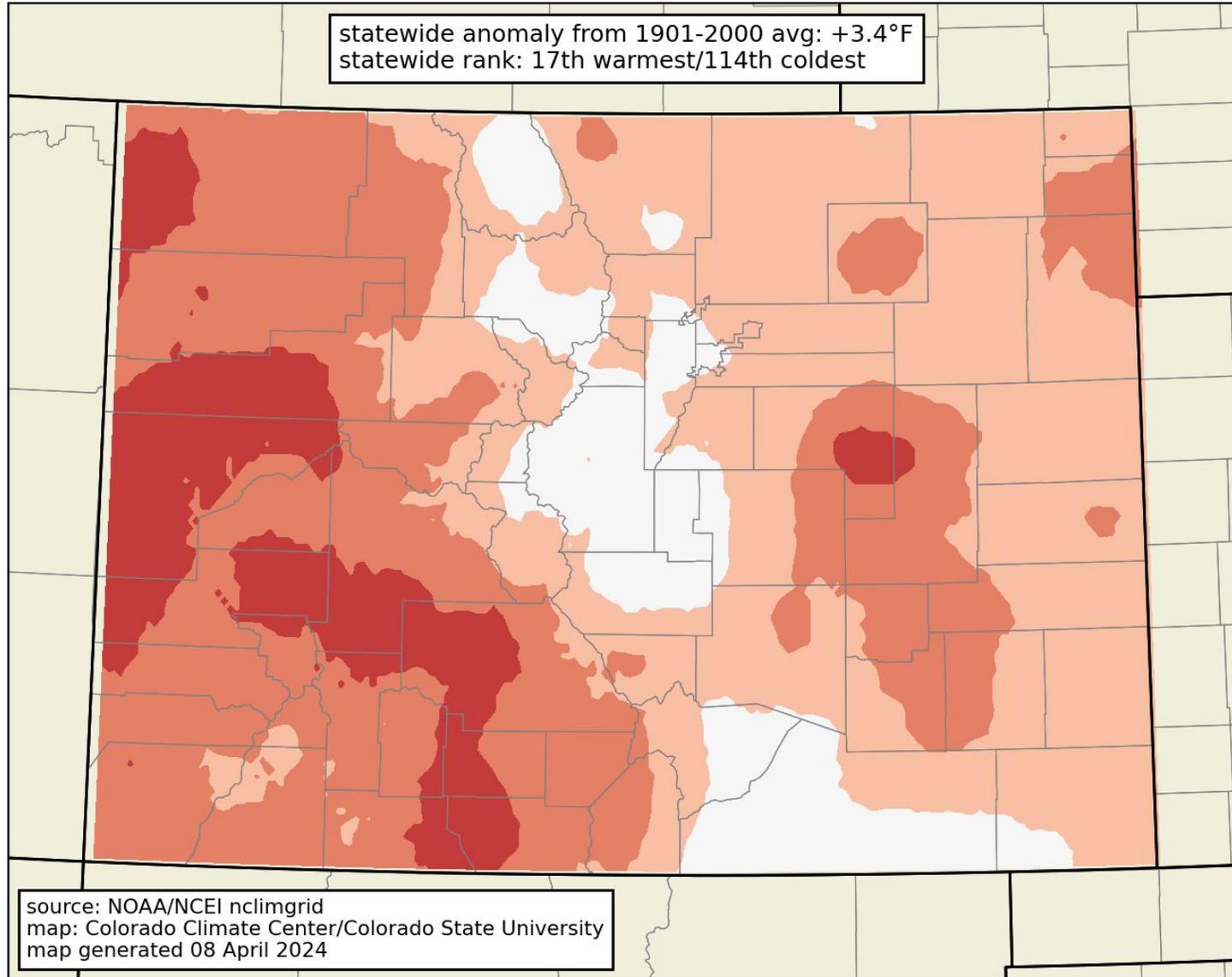
Colorado Average Temperature

March



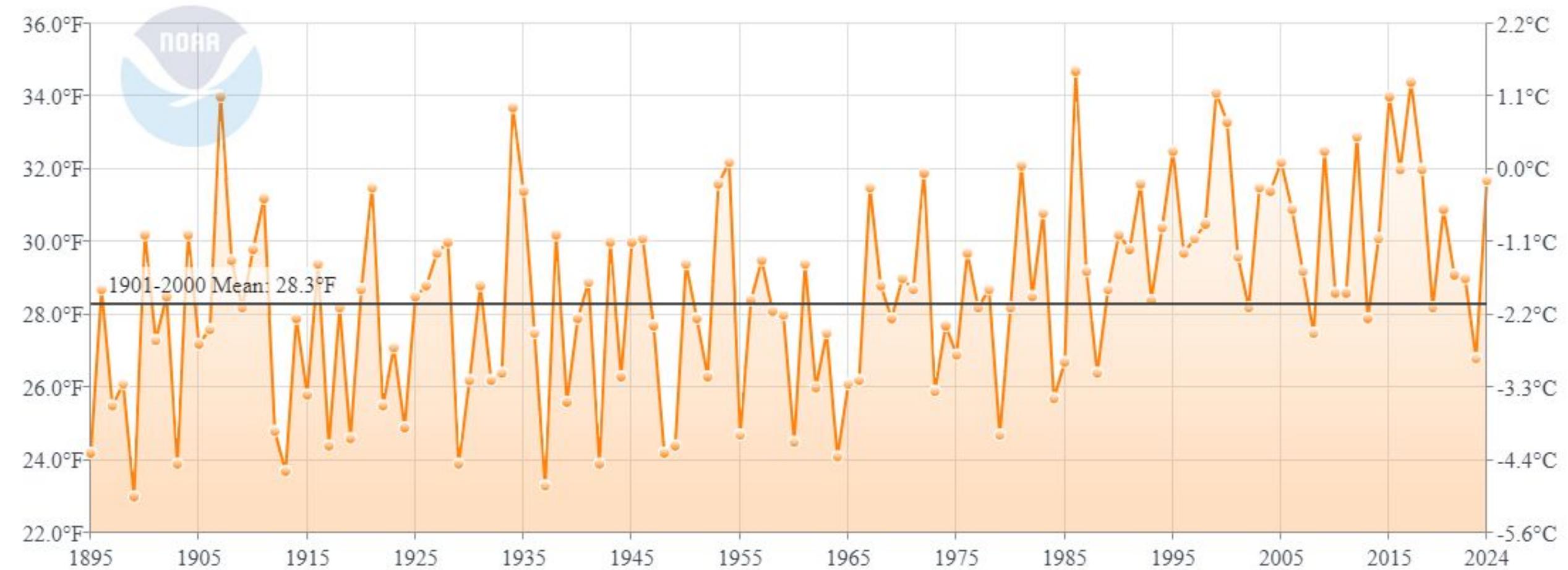
average temperature rank: 3 months ending March 2024 (Jan-Mar)

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



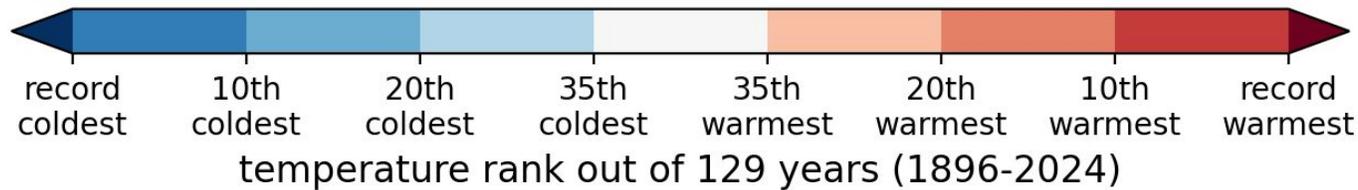
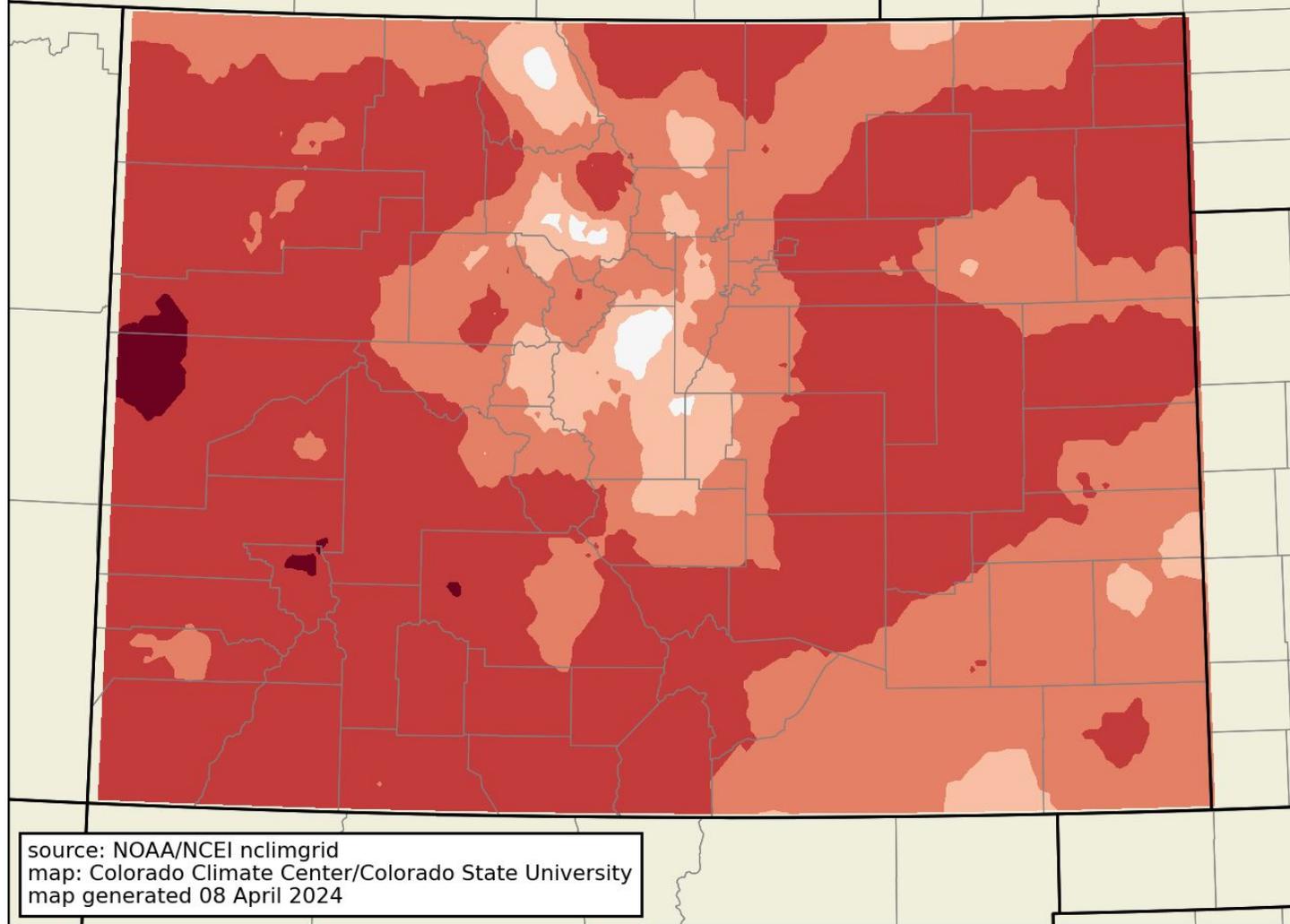
Colorado Average Temperature

January-March



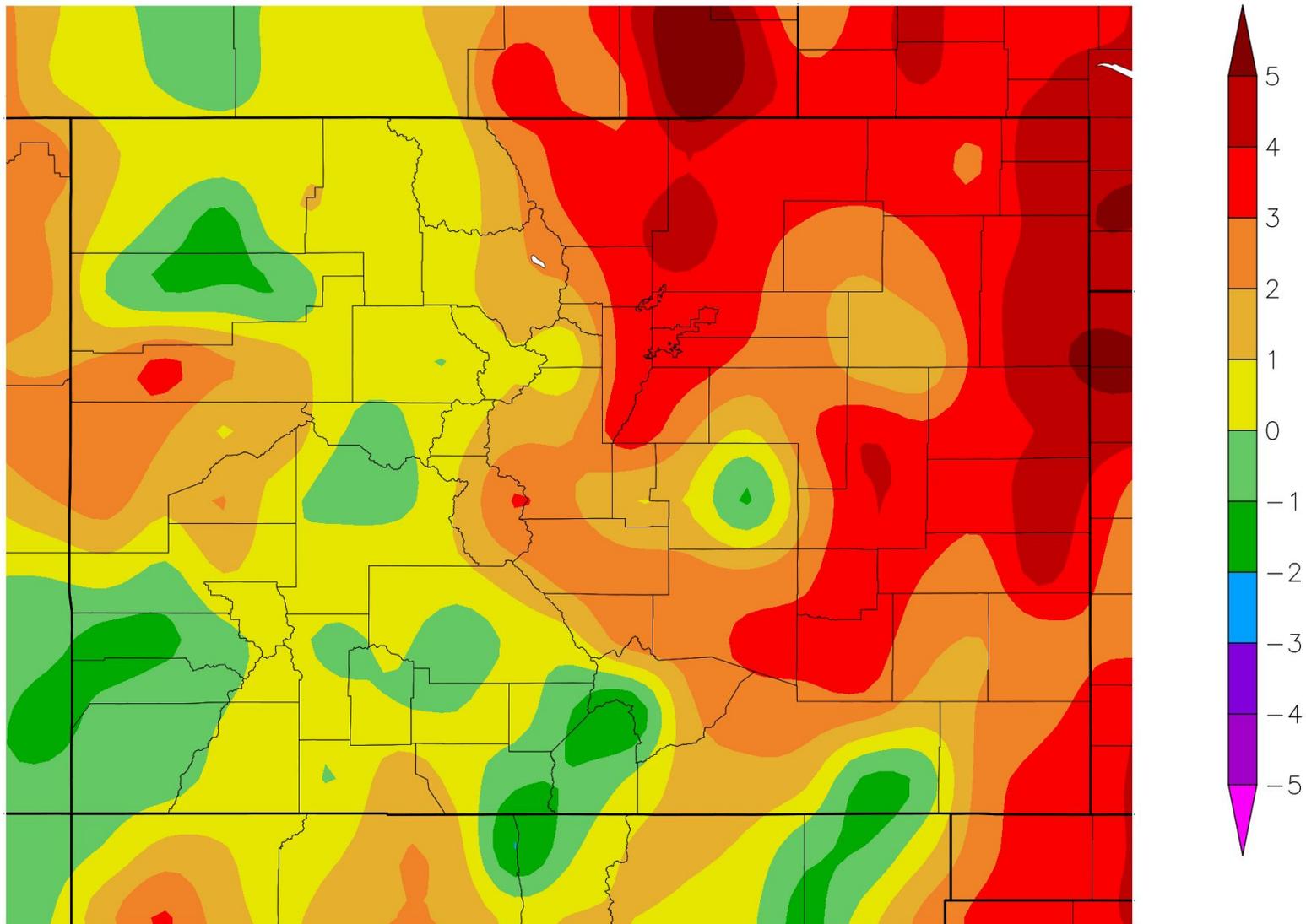
average temperature rank: 12 months ending March 2024 (Apr-Mar)

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



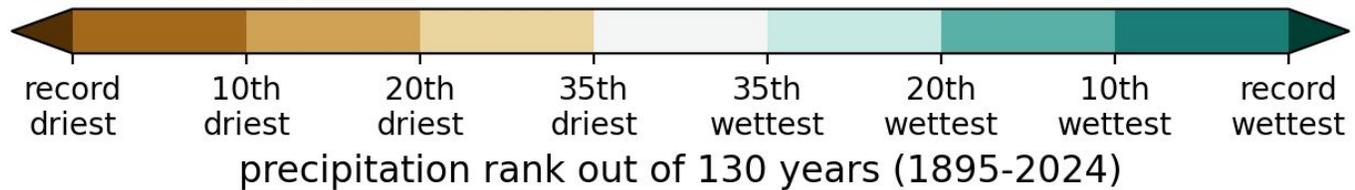
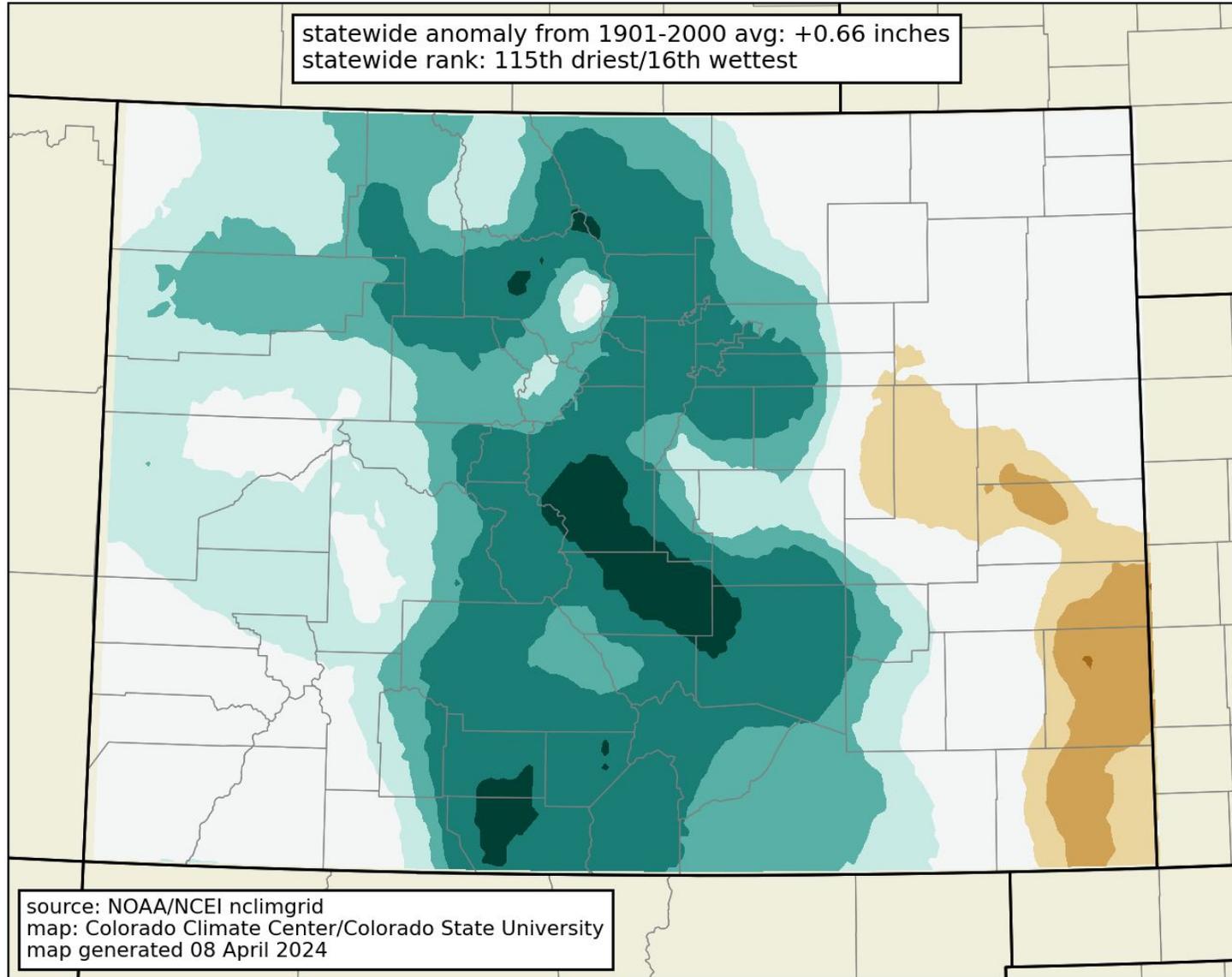
Departure from Normal Temperature (F)

4/1/2024 – 4/19/2024



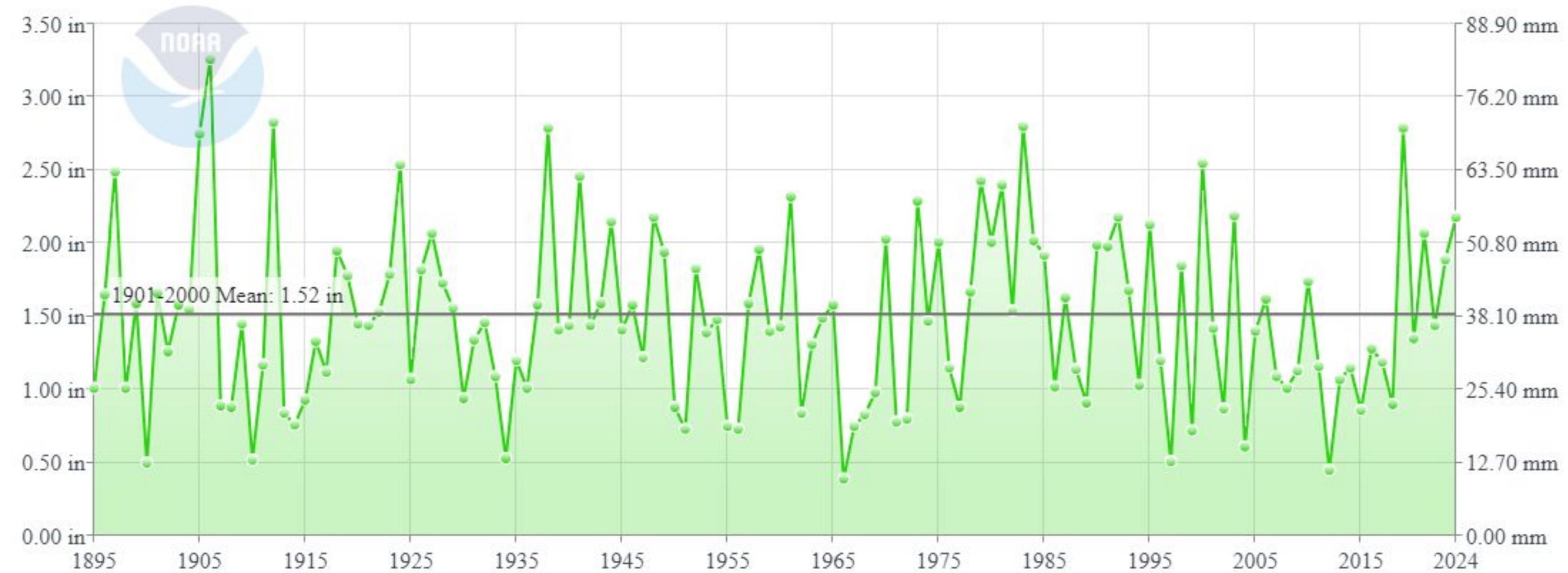
precipitation rank: March 2024

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



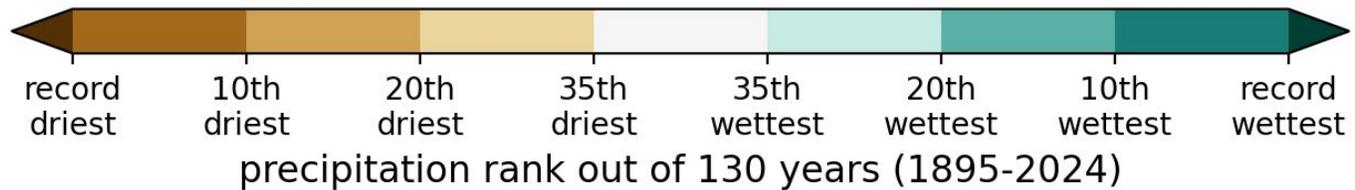
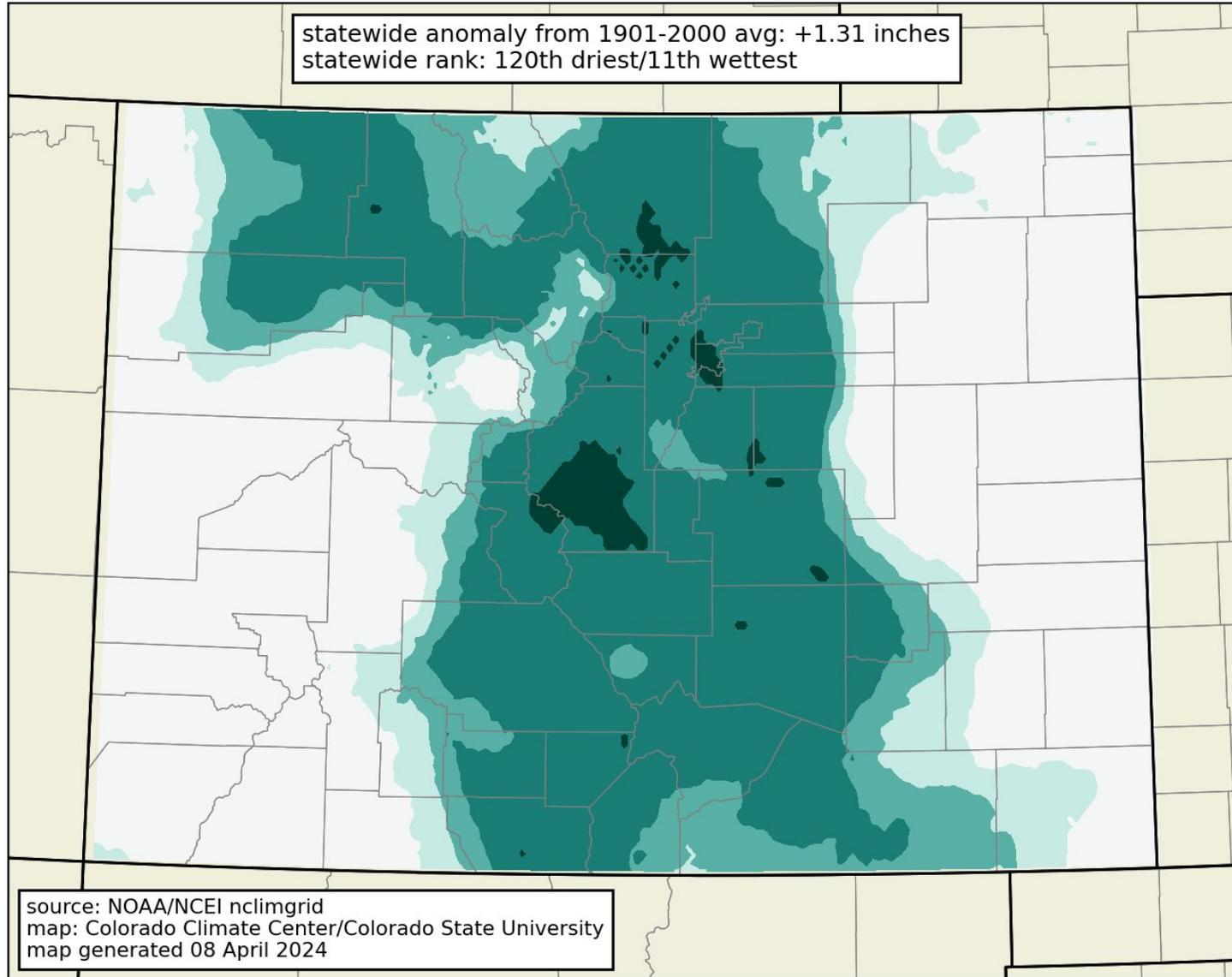
Colorado Precipitation

March



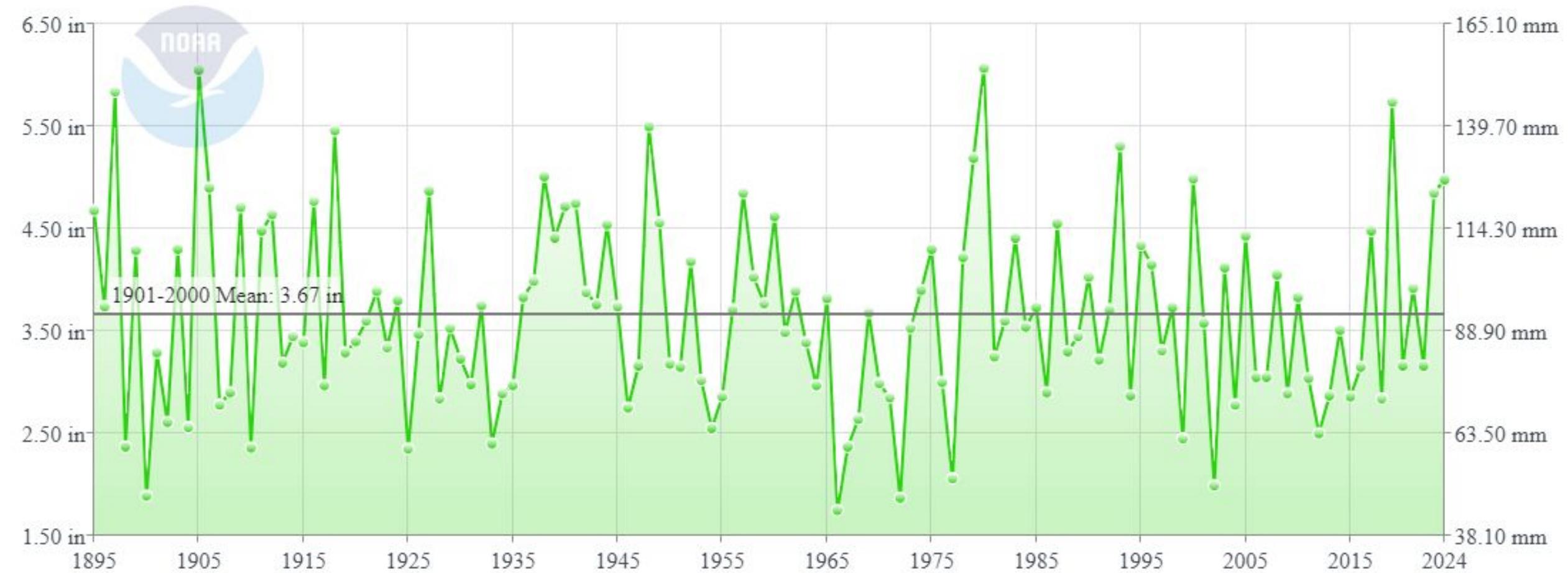
precipitation rank: 3 months ending March 2024 (Jan-Mar)

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



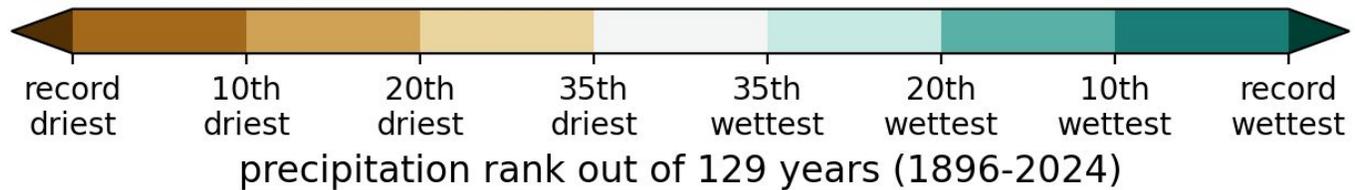
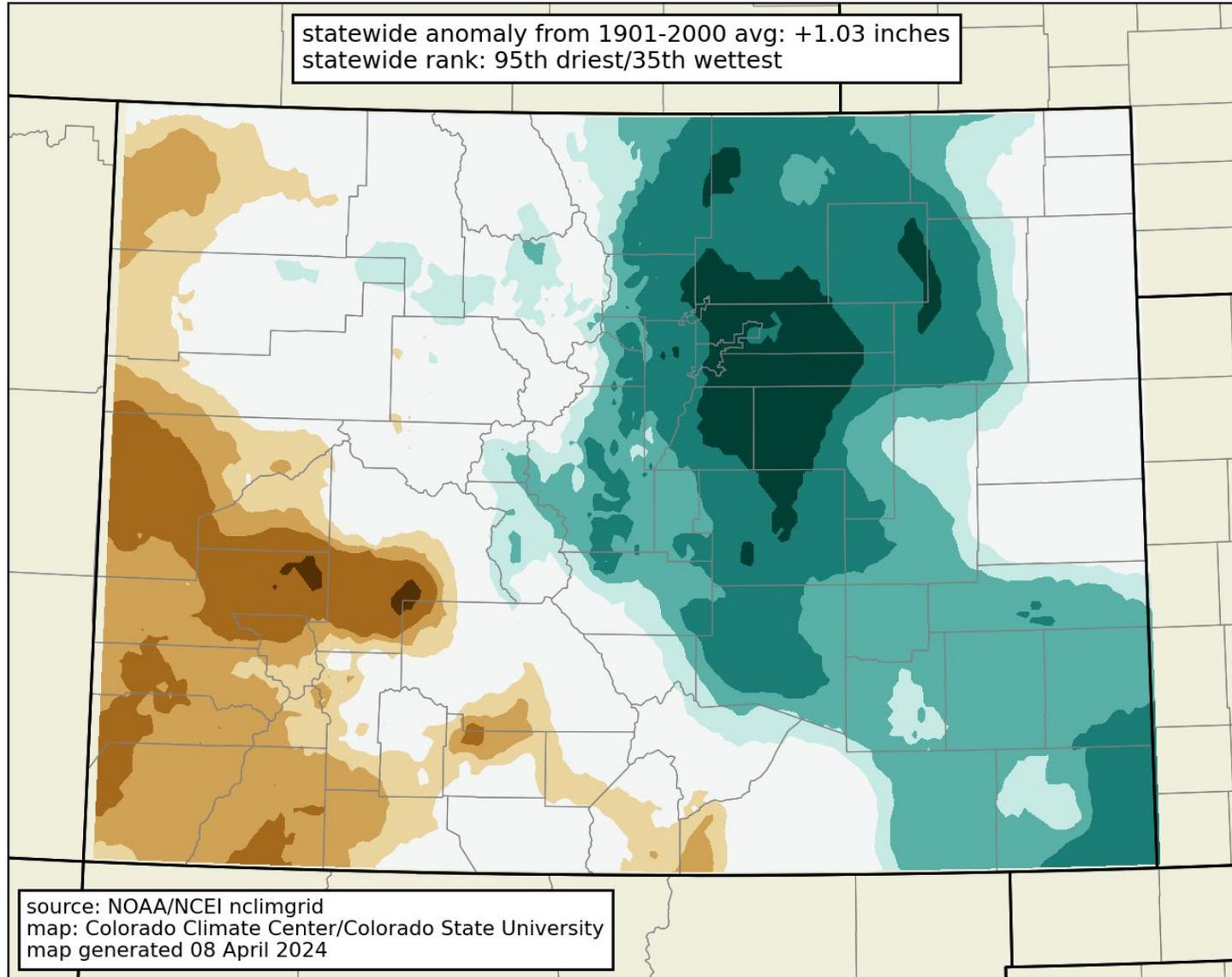
Colorado Precipitation

January-March

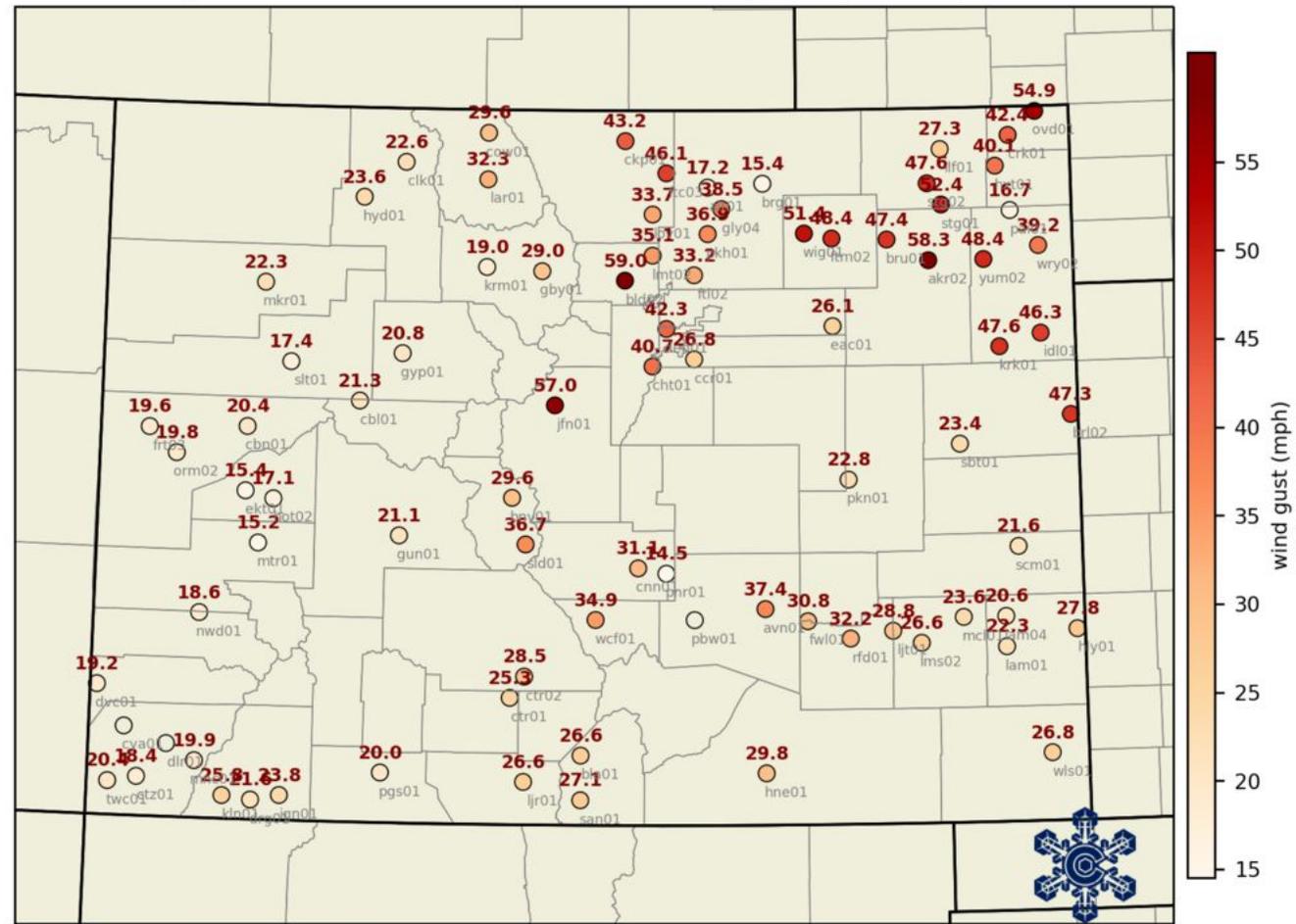


precipitation rank: 12 months ending March 2024 (Apr-Mar)

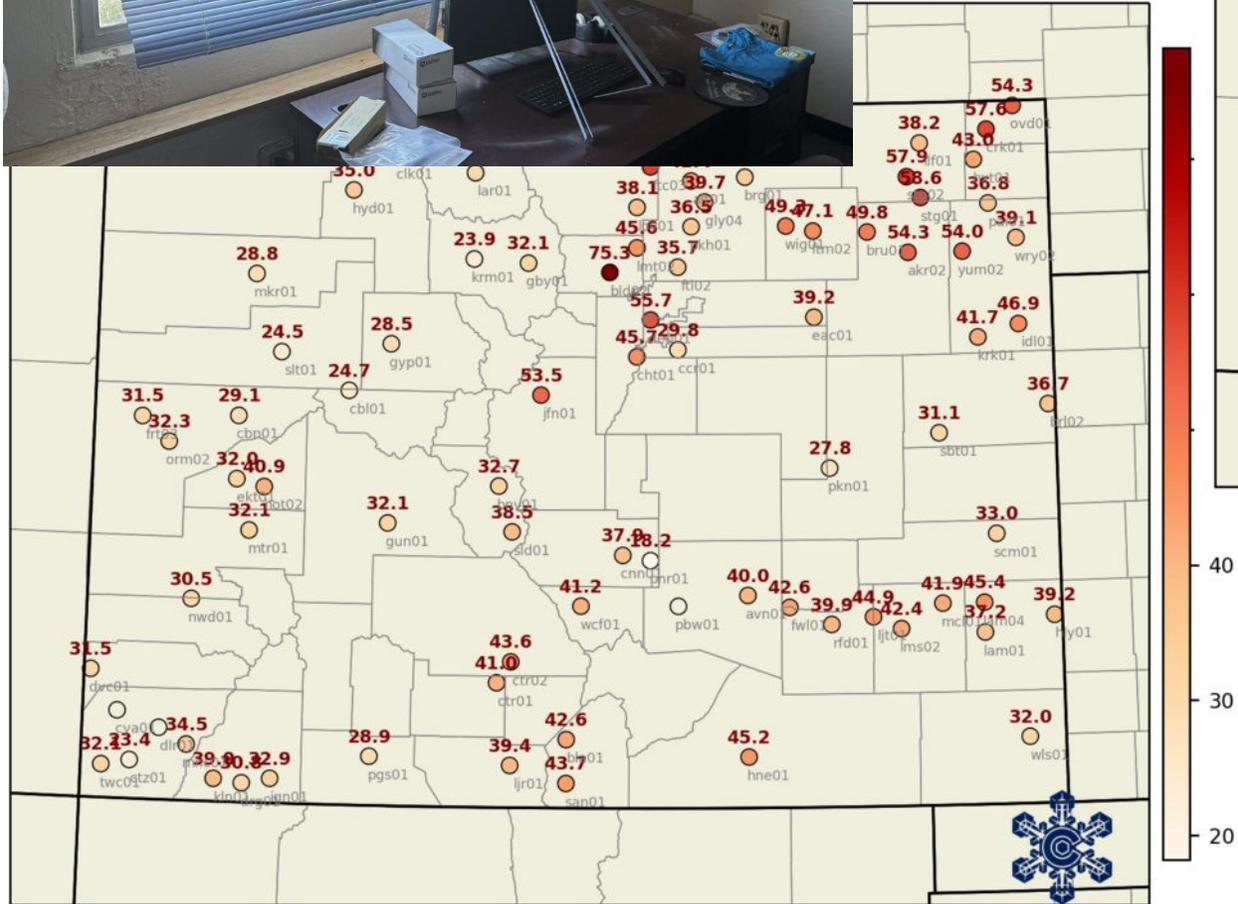
statewide anomaly from 1901-2000 avg: +1.03 inches
statewide rank: 95th driest/35th wettest



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

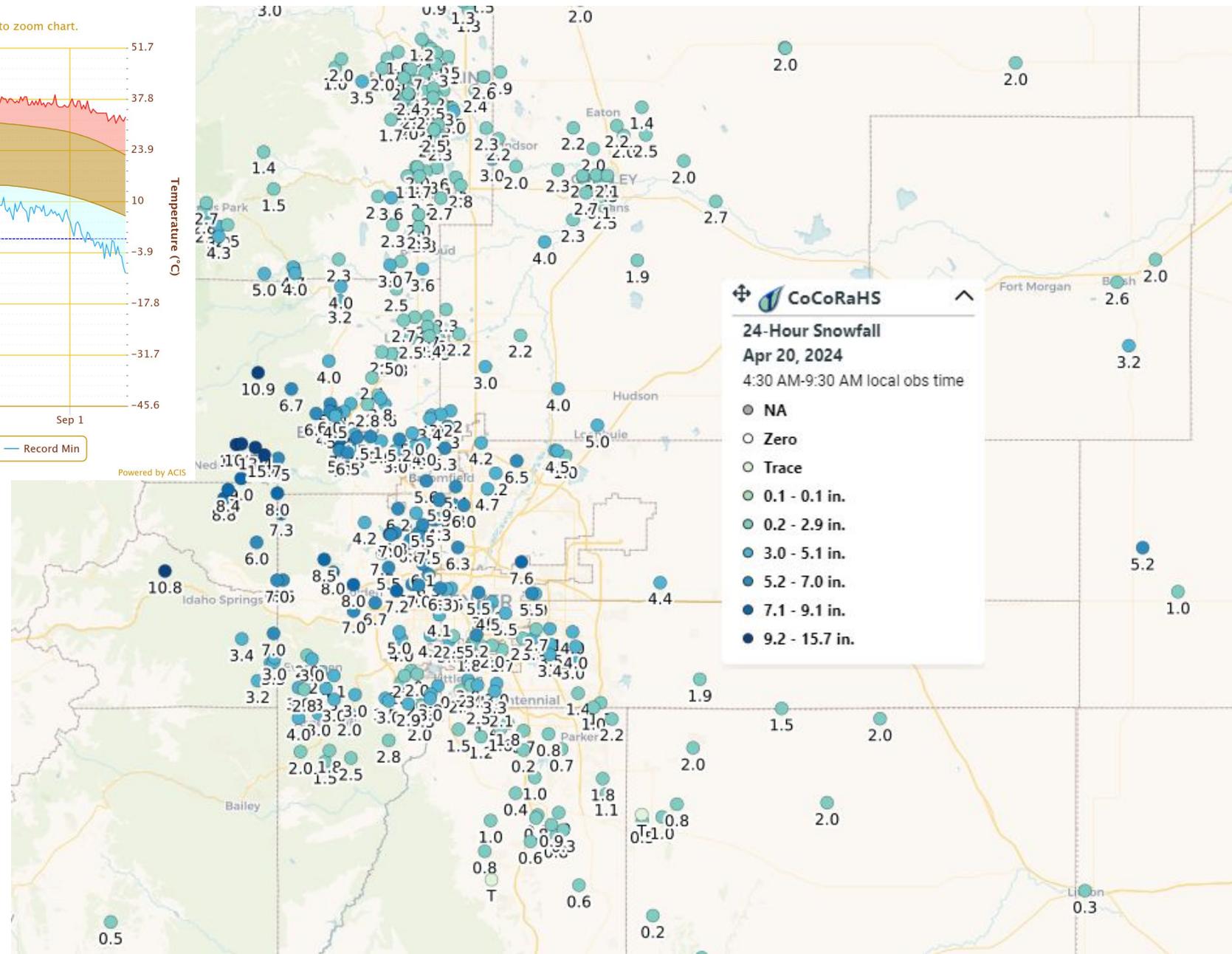
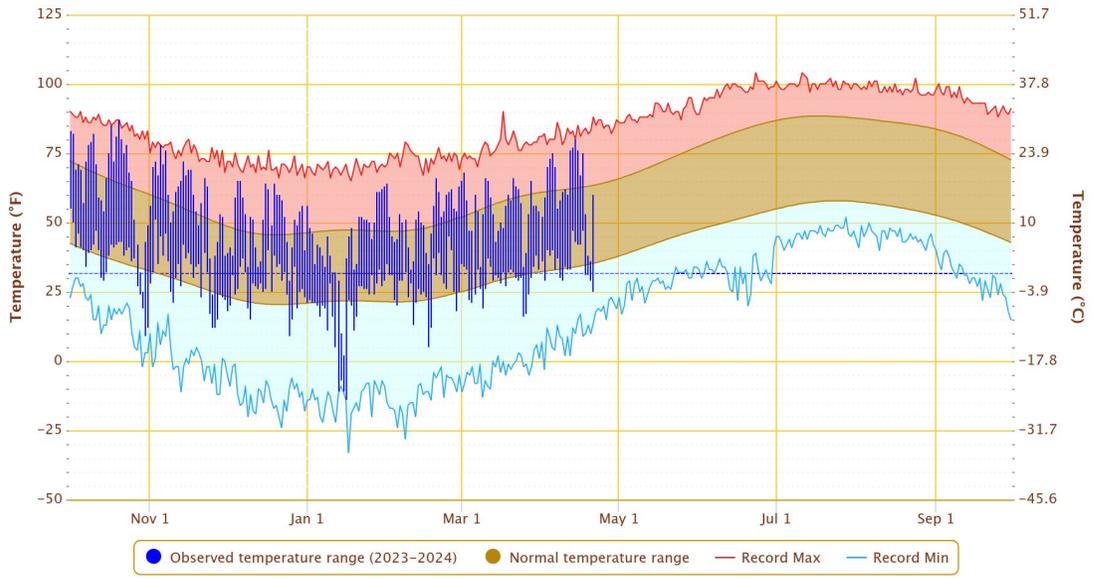


CoAgMET/Northern Water daily maximum wind gust (mph): 06 Apr 2024



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



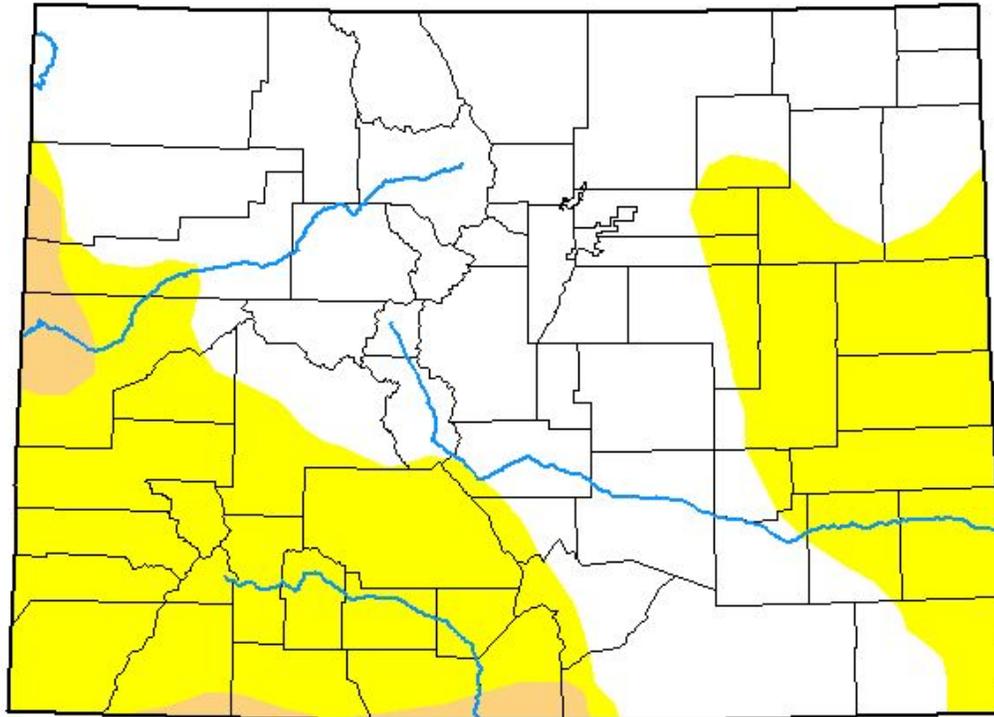
Drought Update

- 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
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

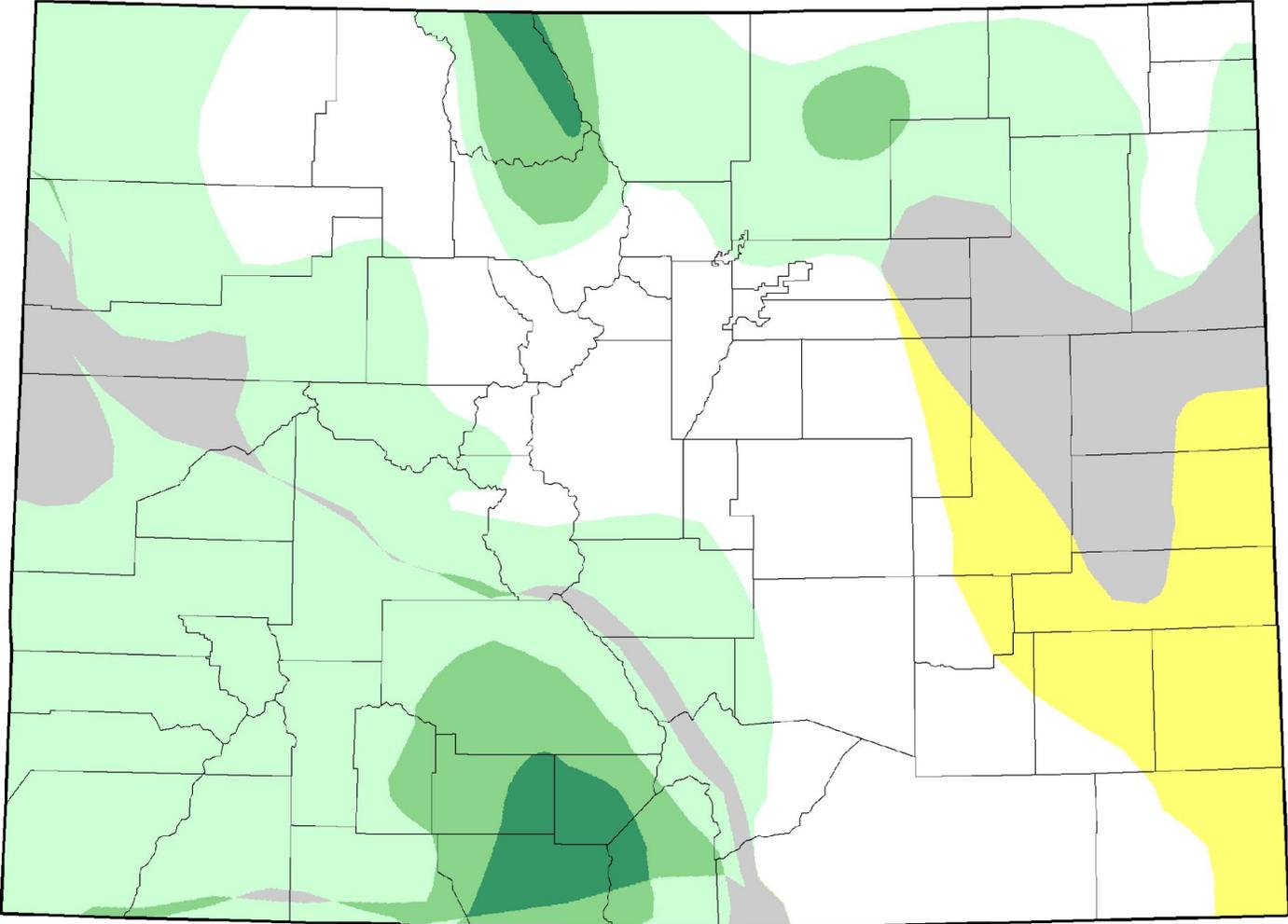
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

Author:

Lindsay Johnson
National Drought Mitigation Center



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

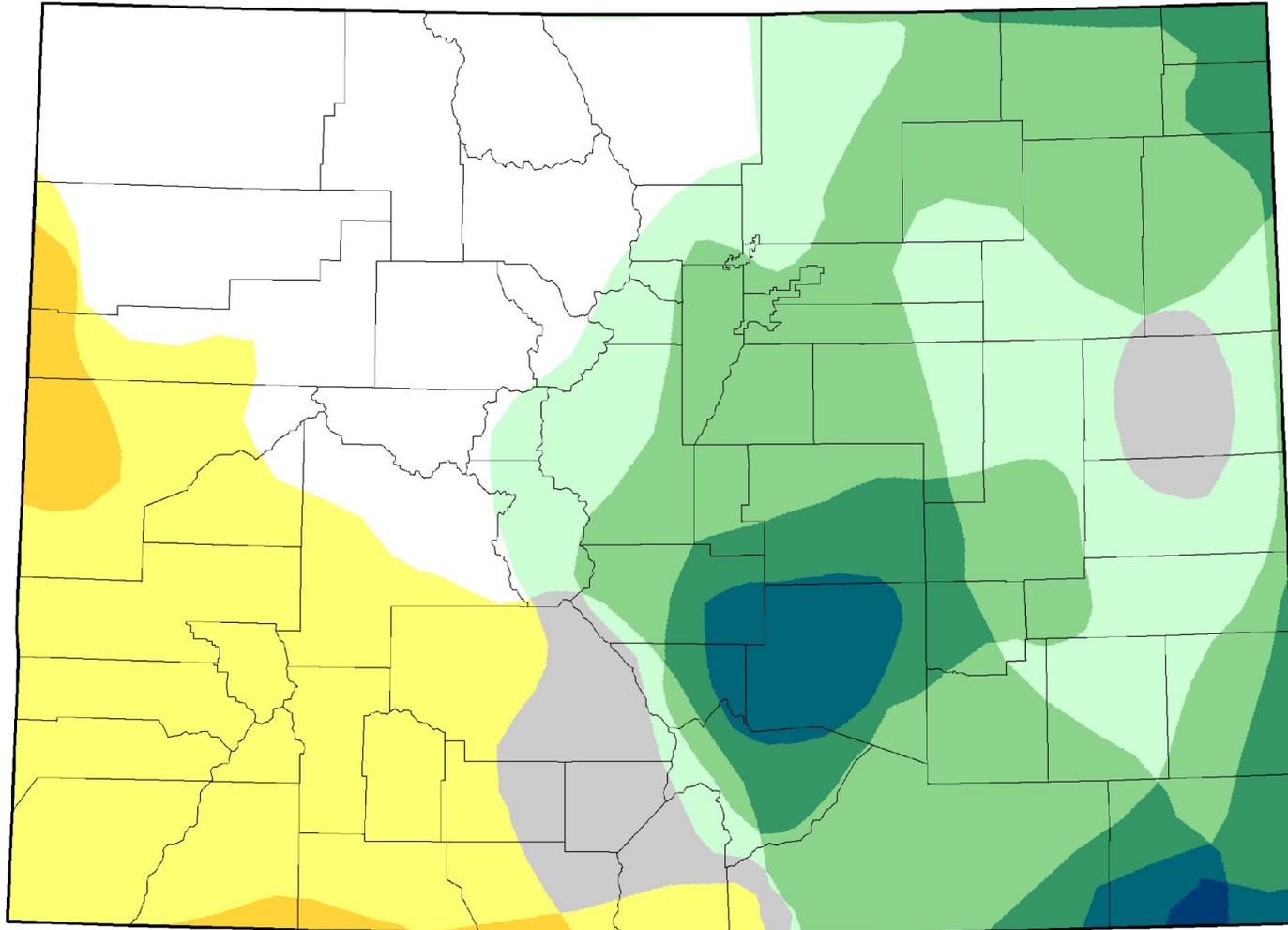


April 16, 2024
compared to
January 23, 2024

droughtmonitor.unl.edu

U.S. Drought Monitor Class Change - Colorado

52 Week

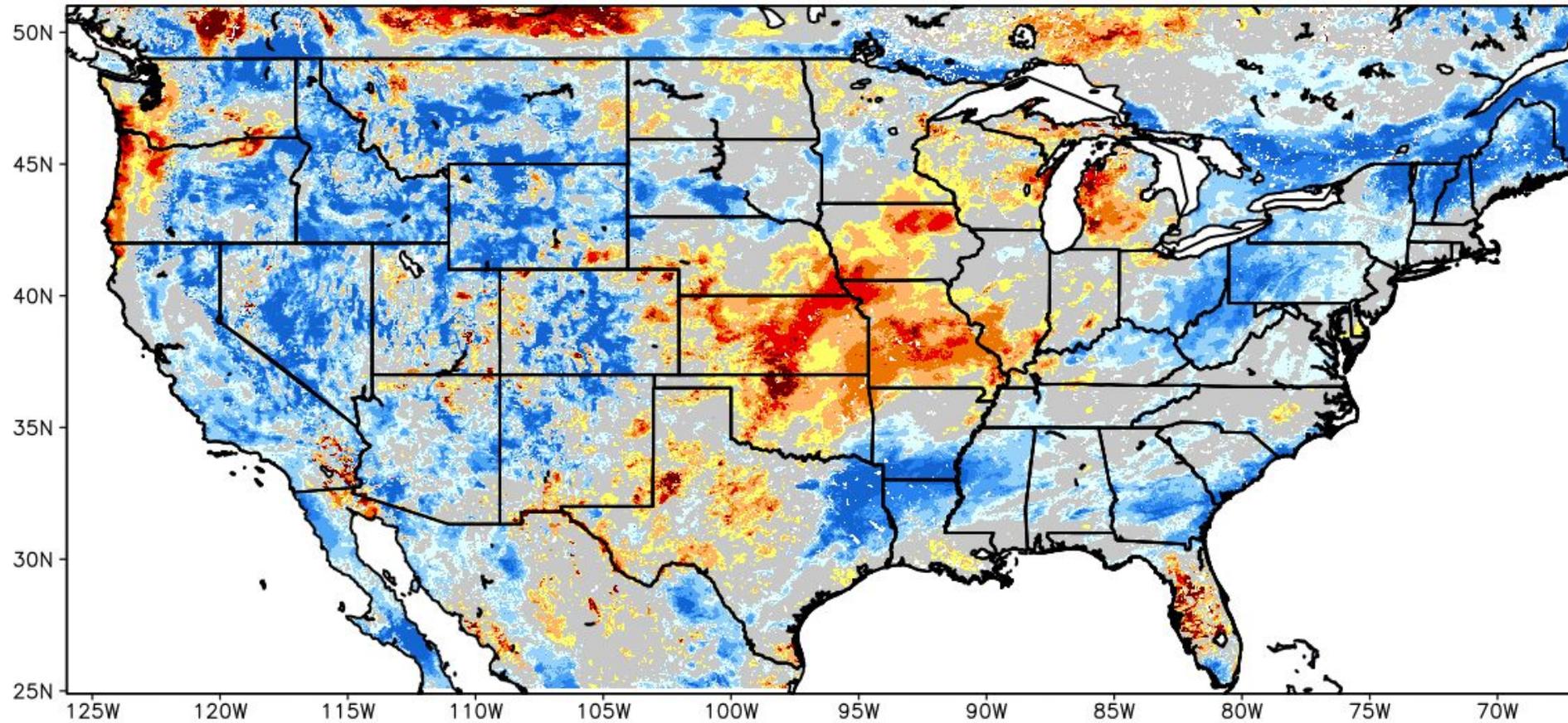


- 5 Class Degradation
- 4 Class Degradation
- 3 Class Degradation
- 2 Class Degradation
- 1 Class Degradation
- No Change
- 1 Class Improvement
- 2 Class Improvement
- 3 Class Improvement
- 4 Class Improvement
- 5 Class Improvement

April 16, 2024
compared to
April 18, 2023

droughtmonitor.unl.edu

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



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

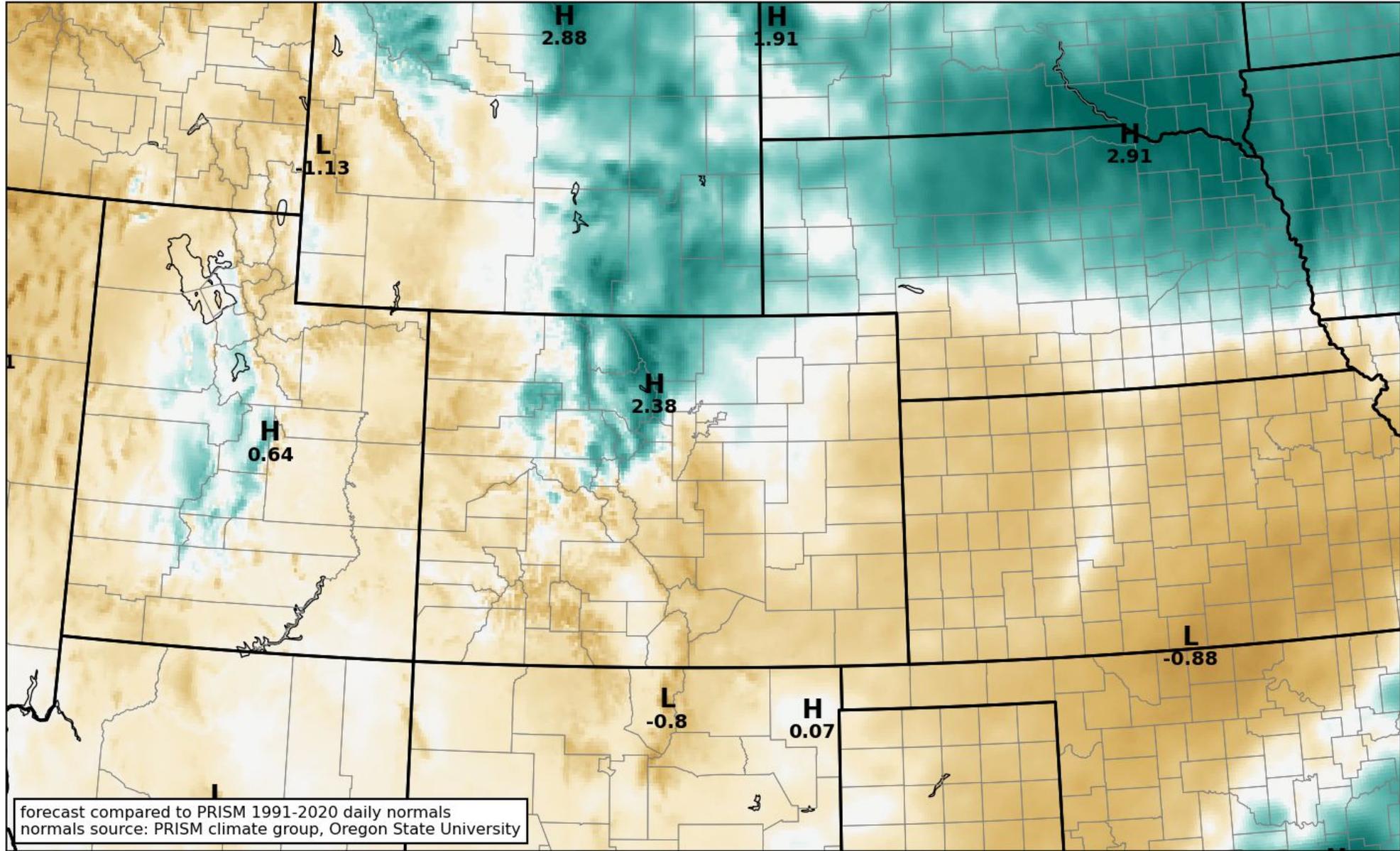


Spring/Summer Outlook

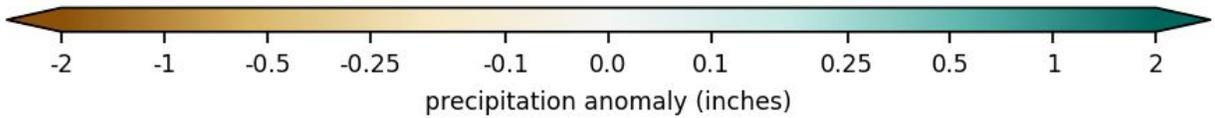


NOAA Weather Prediction Center
7-day precip forecast departure from average

forecast issued 1200 UTC Mon 15 Apr 2024
precipitation in 168 hrs ending 1200 UTC Mon 22 Apr 2024



forecast compared to PRISM 1991-2020 daily normals
normals source: PRISM climate group, Oregon State University

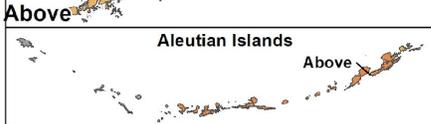
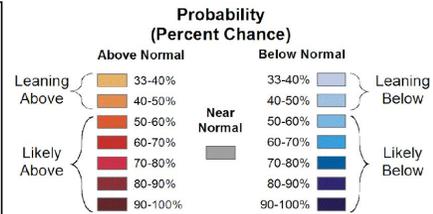
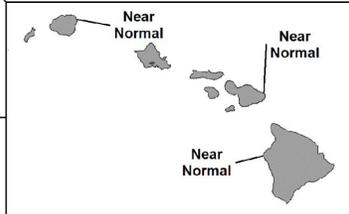
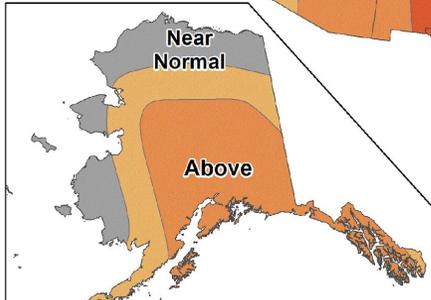
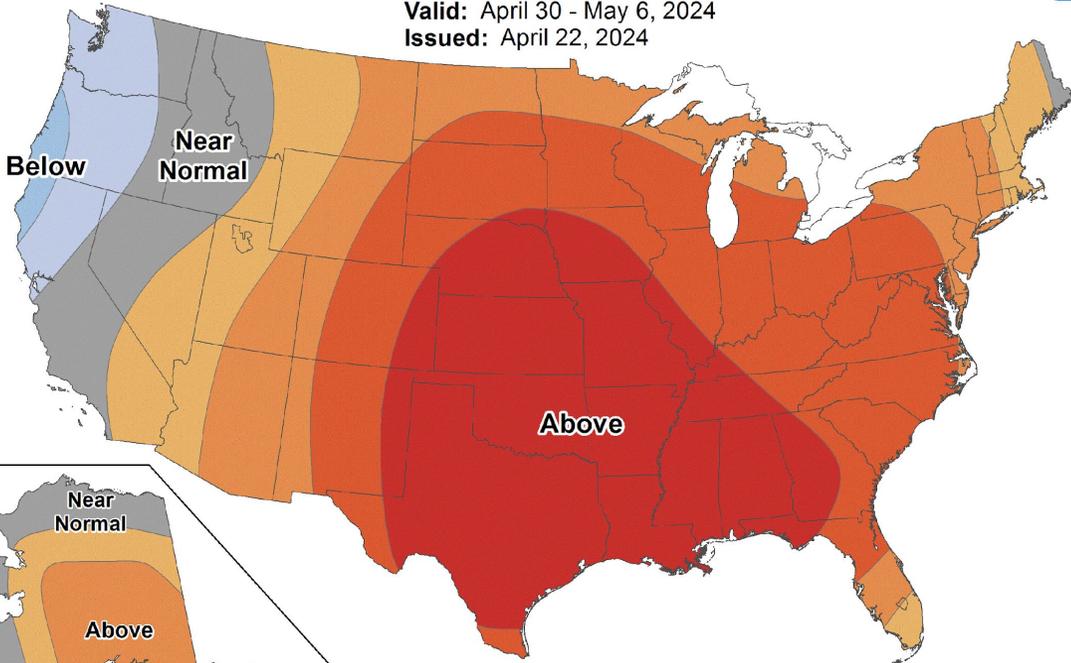




8-14 Day Temperature Outlook



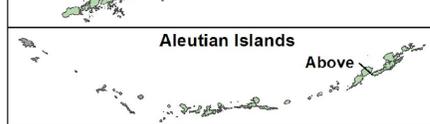
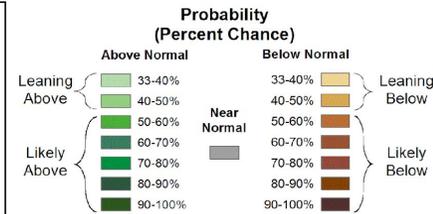
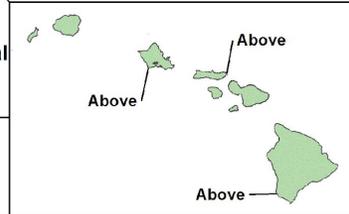
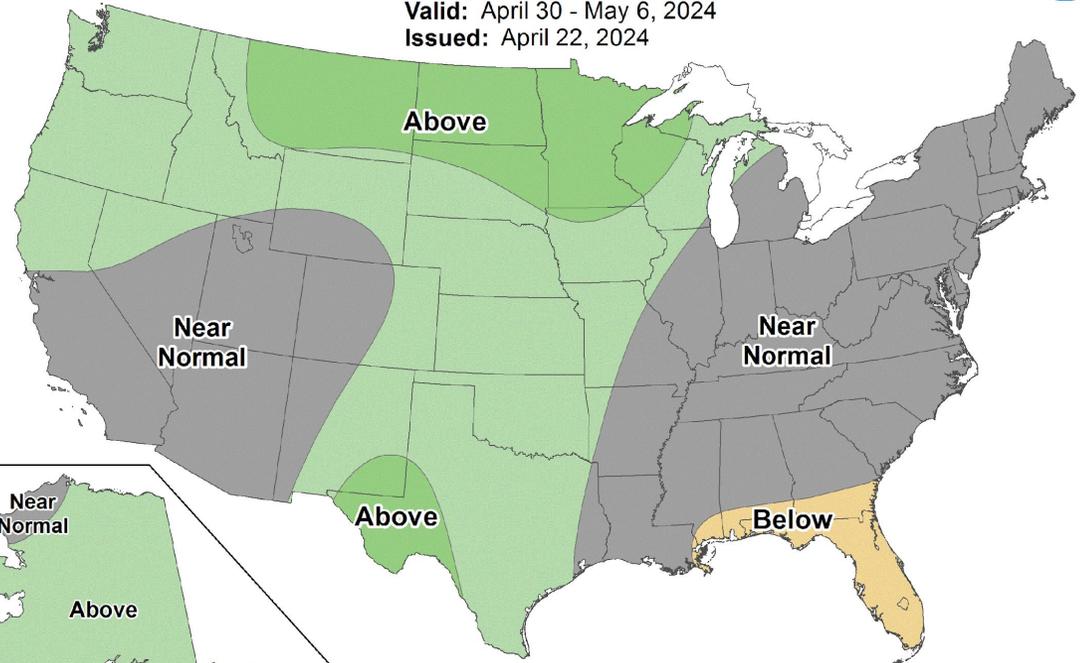
Valid: April 30 - May 6, 2024
Issued: April 22, 2024



8-14 Day Precipitation Outlook

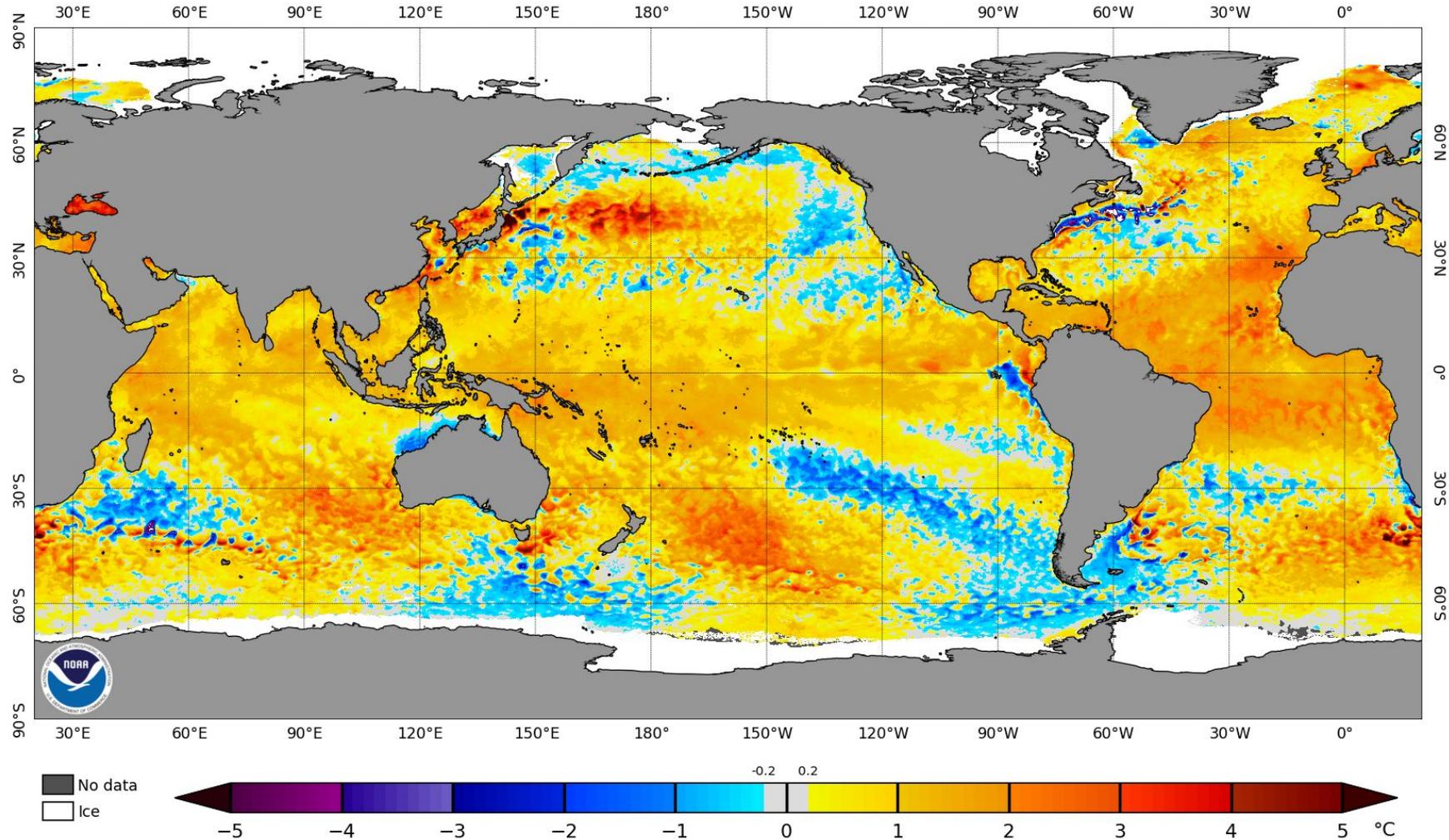


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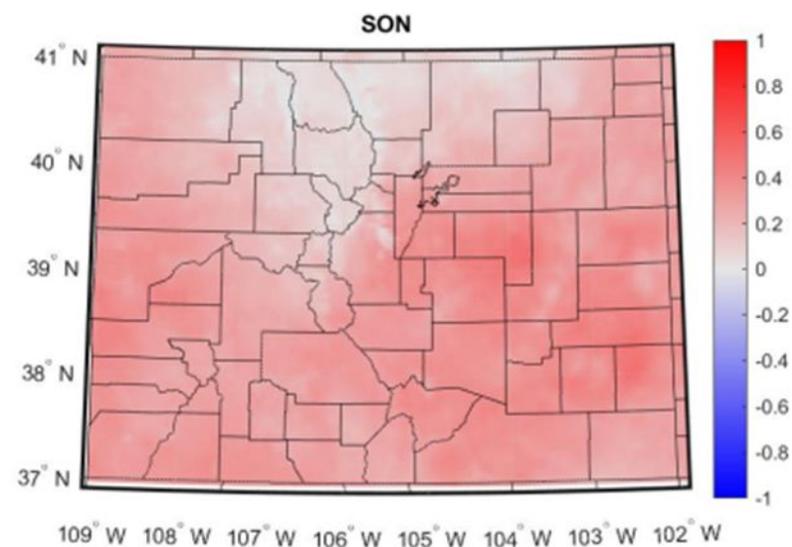
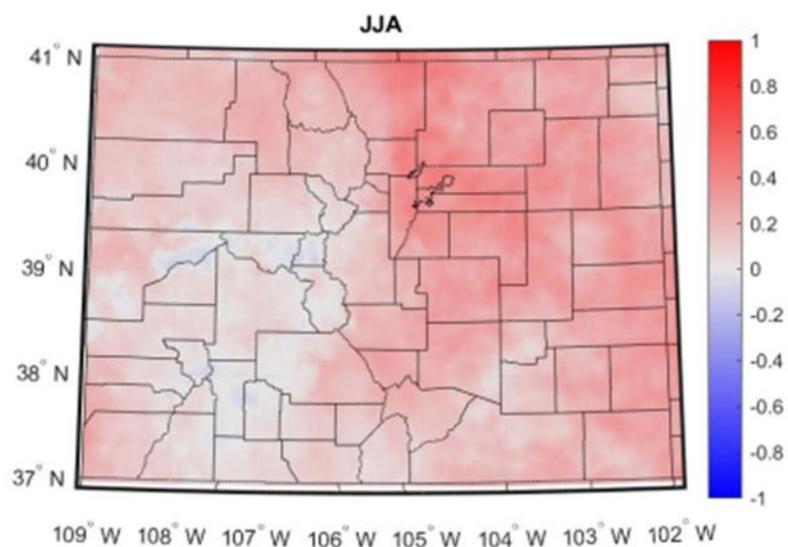
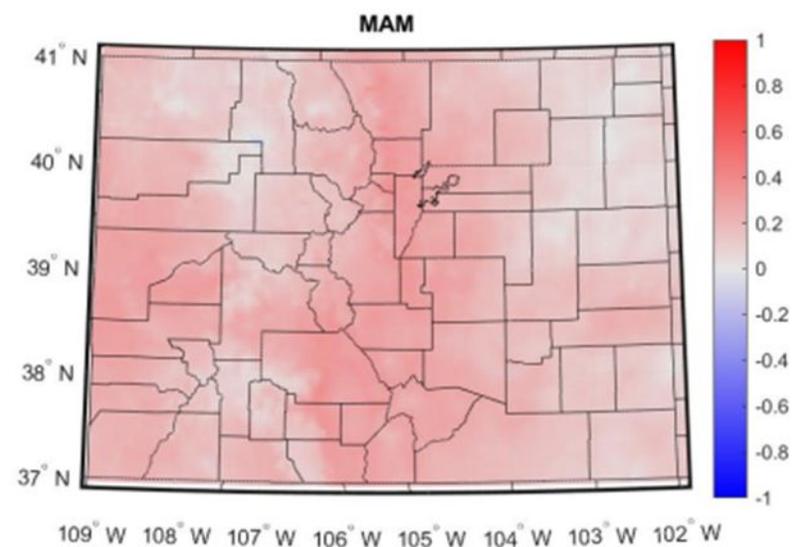
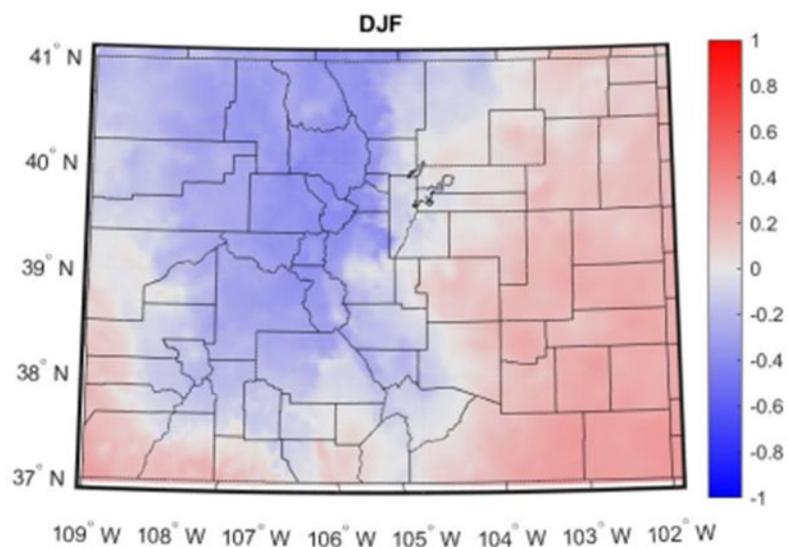


Beyond the Forecast (El Niño/La Niña)

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



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

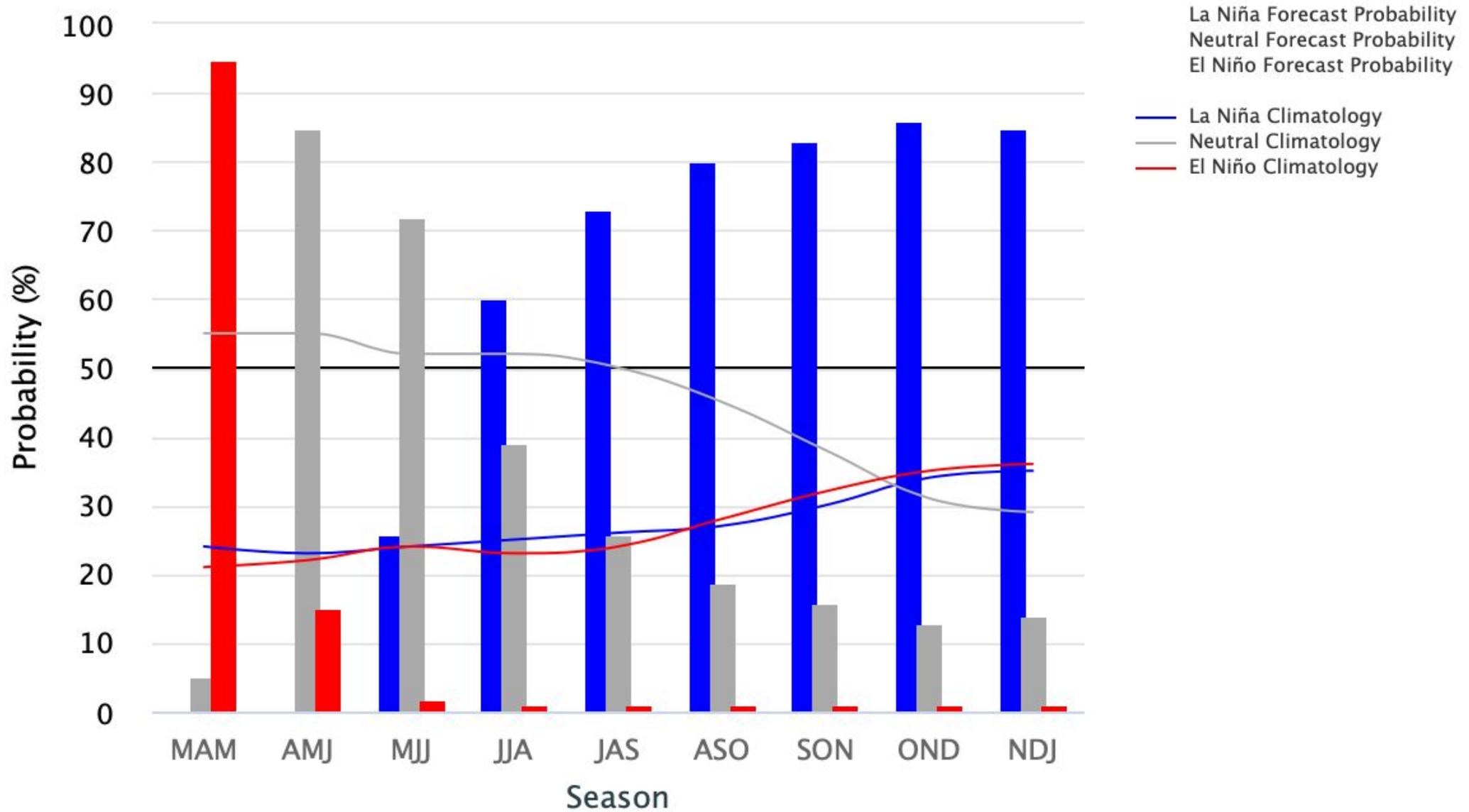


Blue = La Niña wetter Red = El Niño wetter

Early-April 2024 CPC Official Probabilistic ENSO Forecasts

ENSO state based on NINO3.4 SST Anomaly

Neutral ENSO: $-0.5\text{ }^{\circ}\text{C}$ to $0.5\text{ }^{\circ}\text{C}$

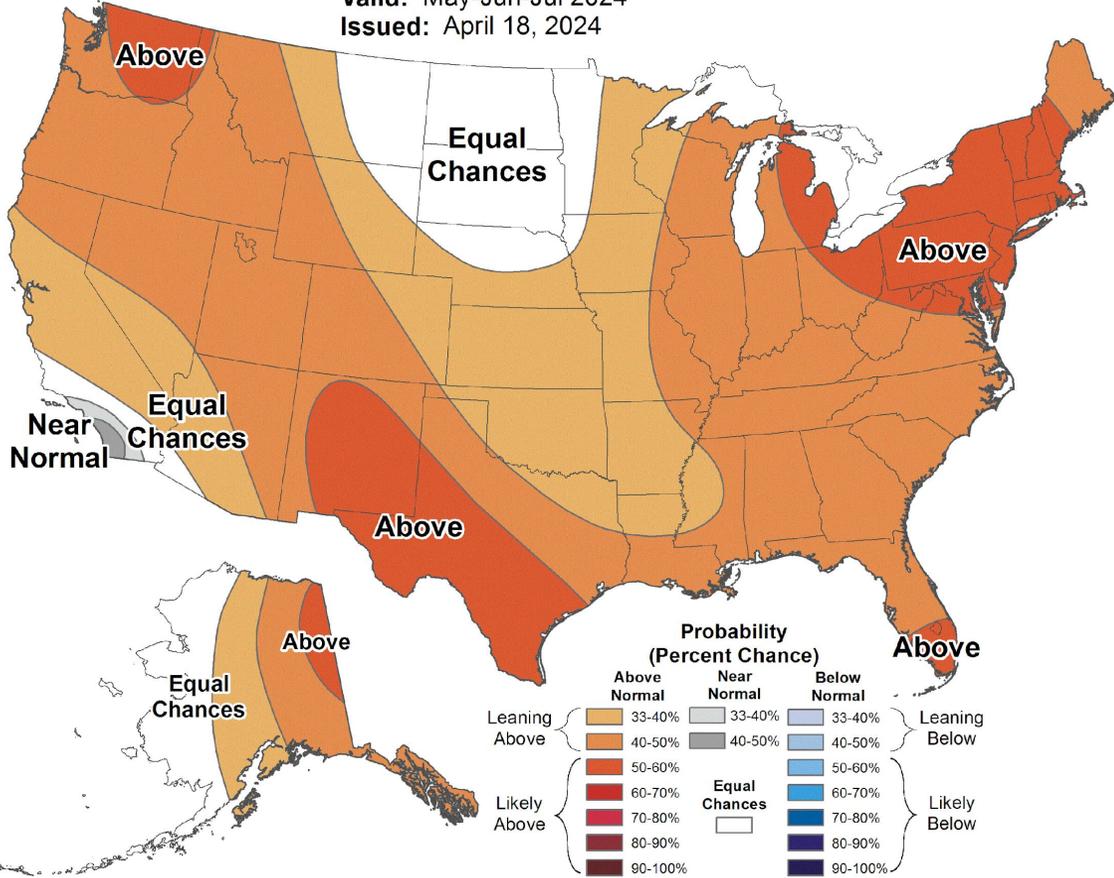




Seasonal Temperature Outlook



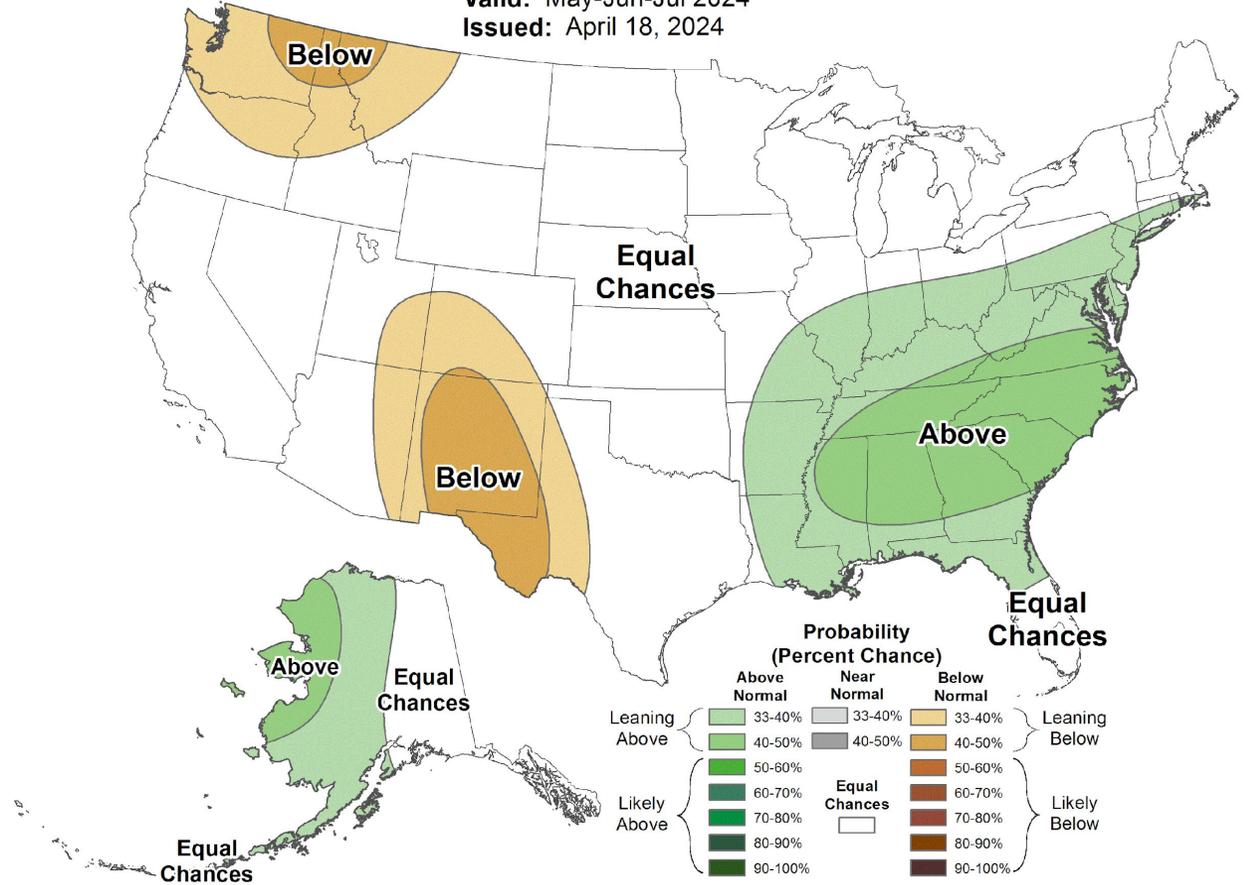
Valid: May-Jun-Jul 2024
Issued: April 18, 2024



Seasonal Precipitation Outlook



Valid: May-Jun-Jul 2024
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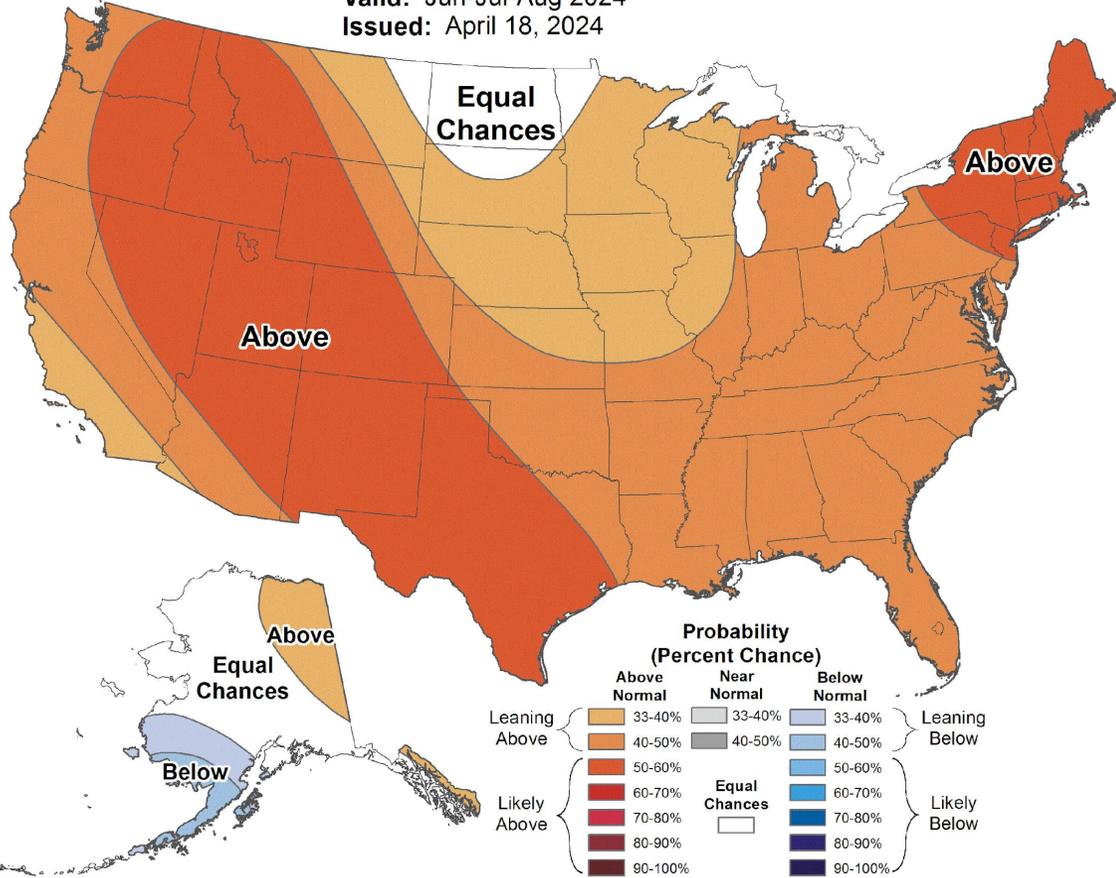




Seasonal Temperature Outlook



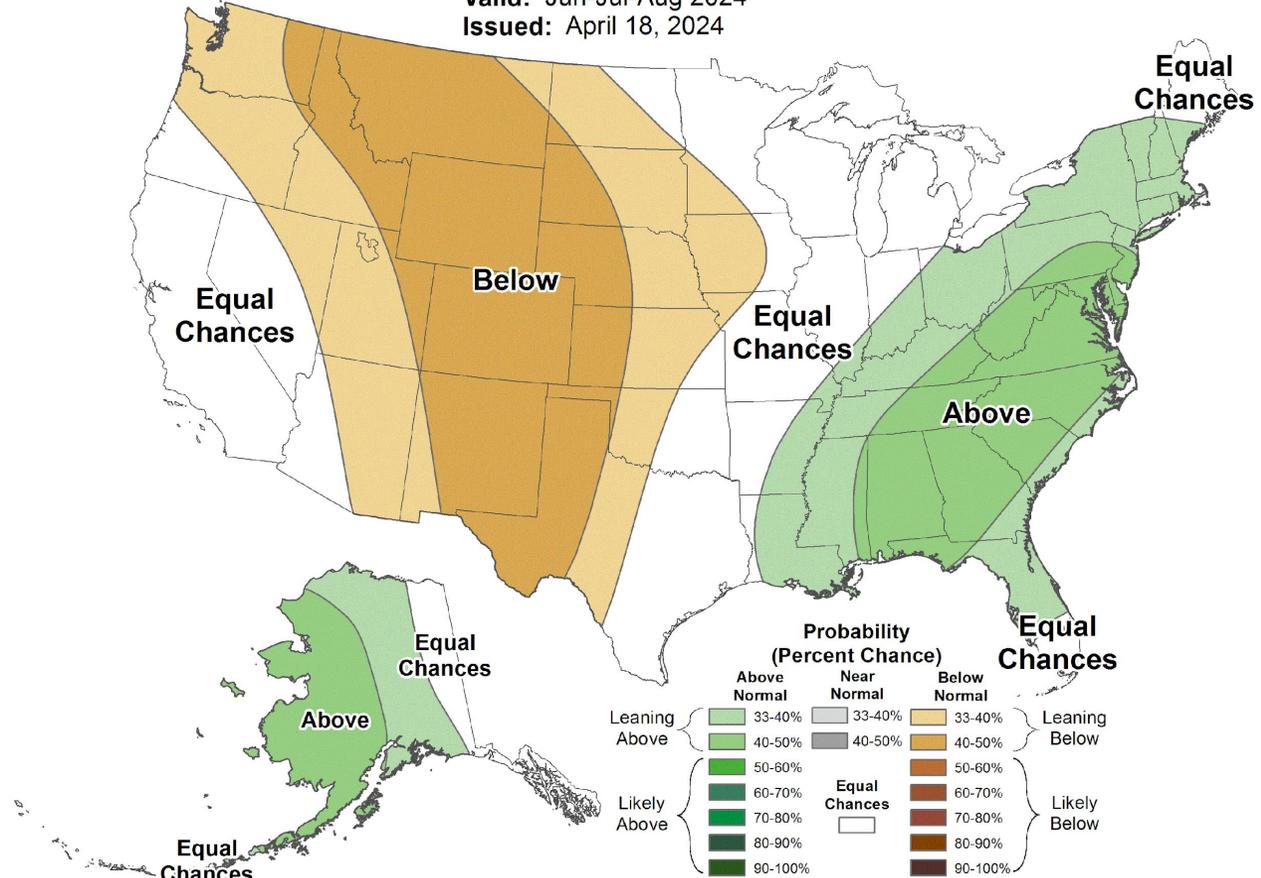
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Seasonal Precipitation Outlook



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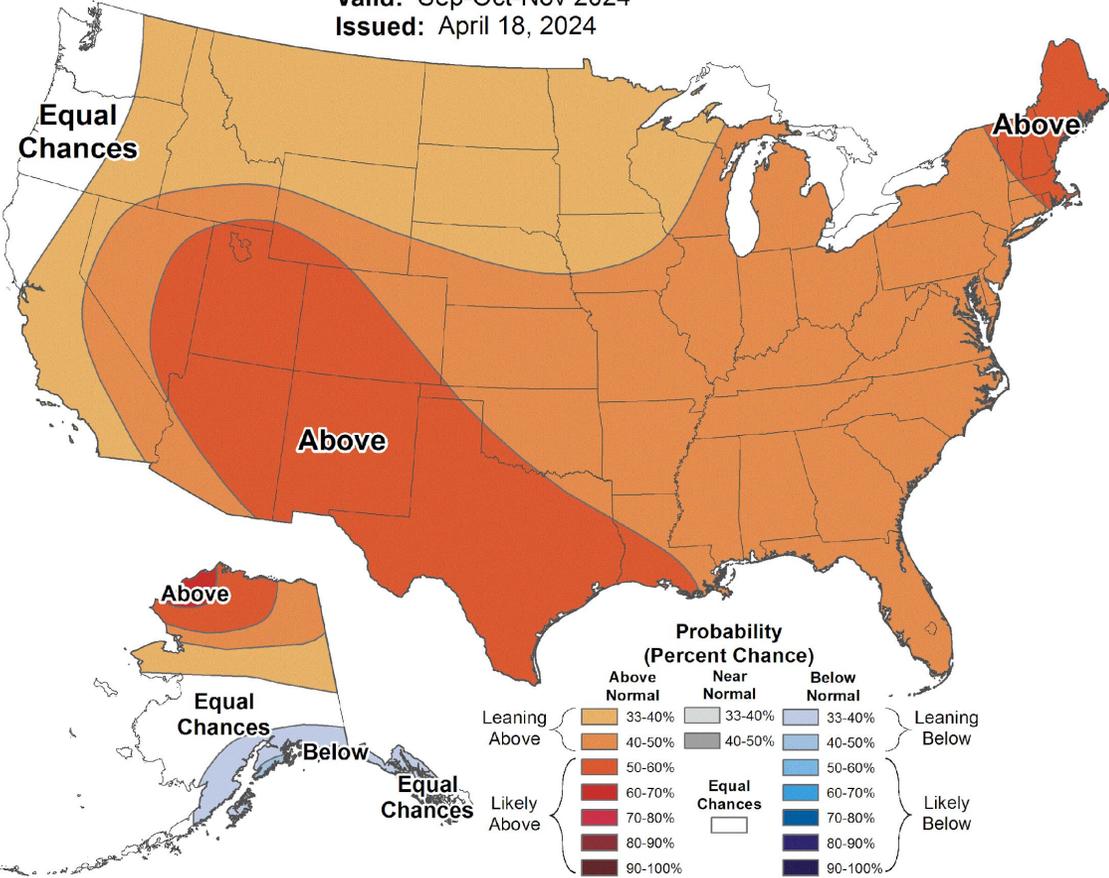




Seasonal Temperature Outlook



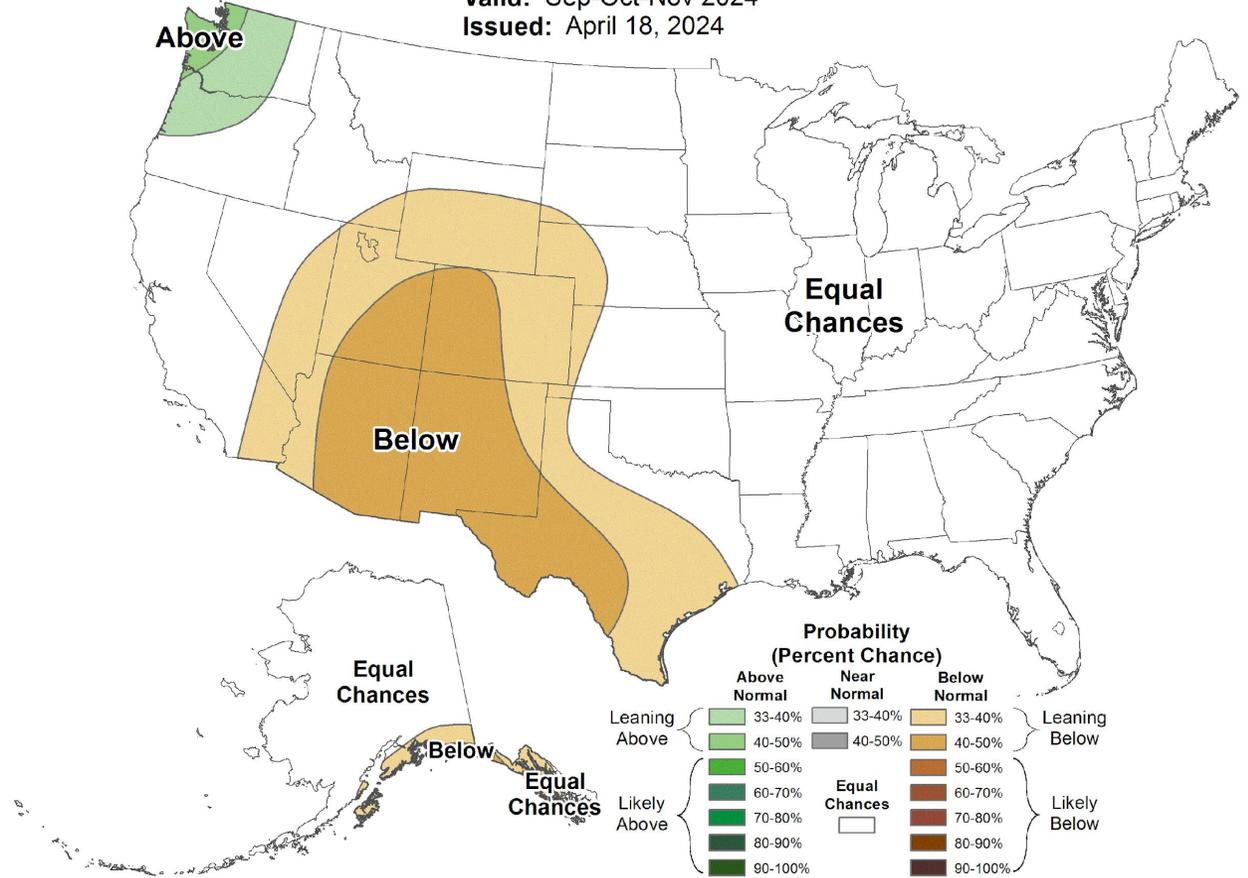
Valid: Sep-Oct-Nov 2024
Issued: April 18, 2024



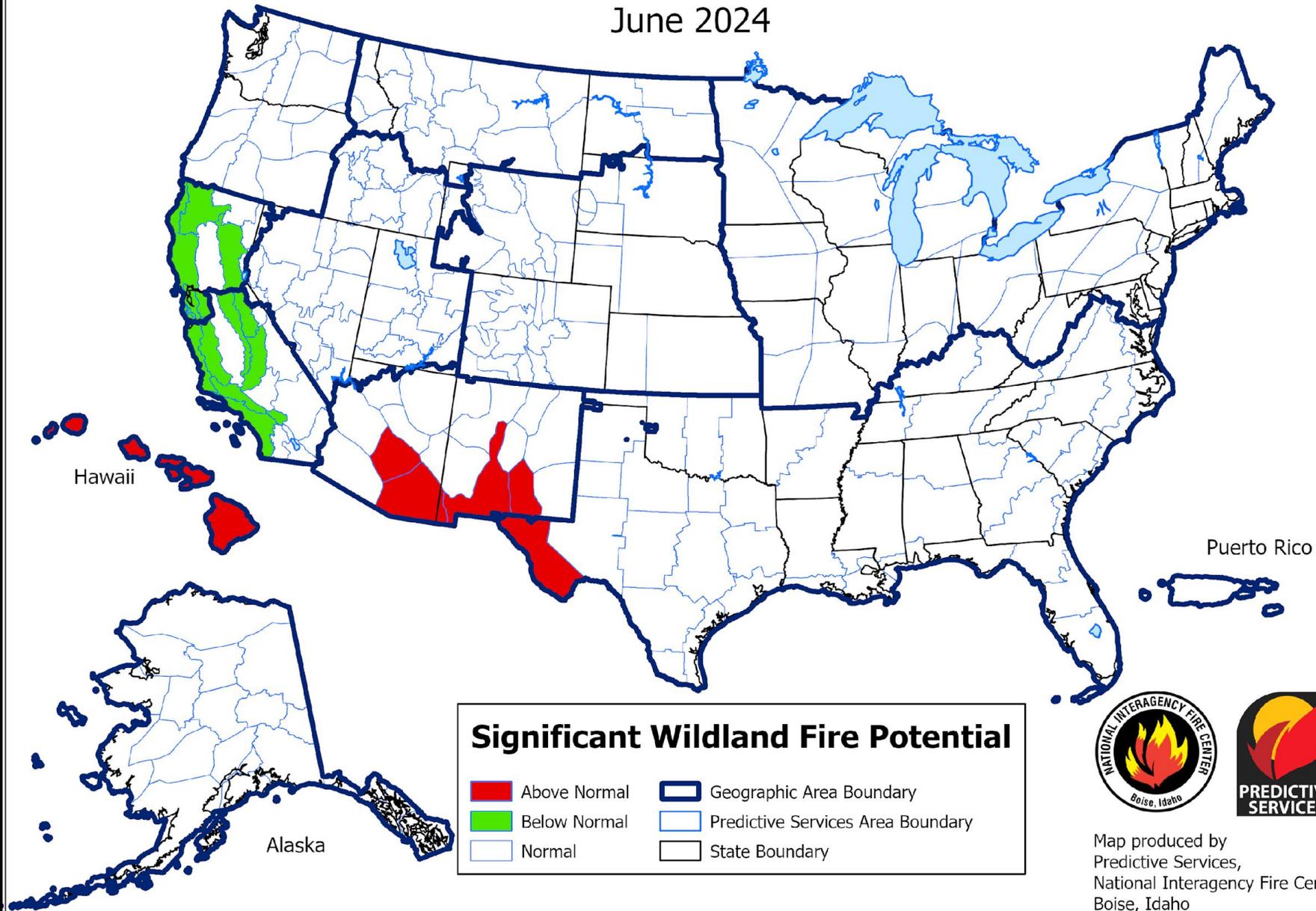
Seasonal Precipitation Outlook



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



Significant Wildland Fire Potential Outlook June 2024



Map produced by
Predictive Services,
National Interagency Fire Center
Boise, Idaho
Issued April 1, 2024
Next issuance May 1, 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!

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Viewing this, and previous WATF Briefings:

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

Thank you



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