

Weather and Climate Outlook

Dr. Becky Bolinger
Assistant State Climatologist

Livestock and Forage Grower Update
March 2, 2023



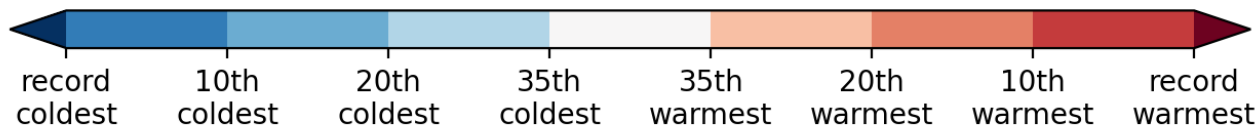
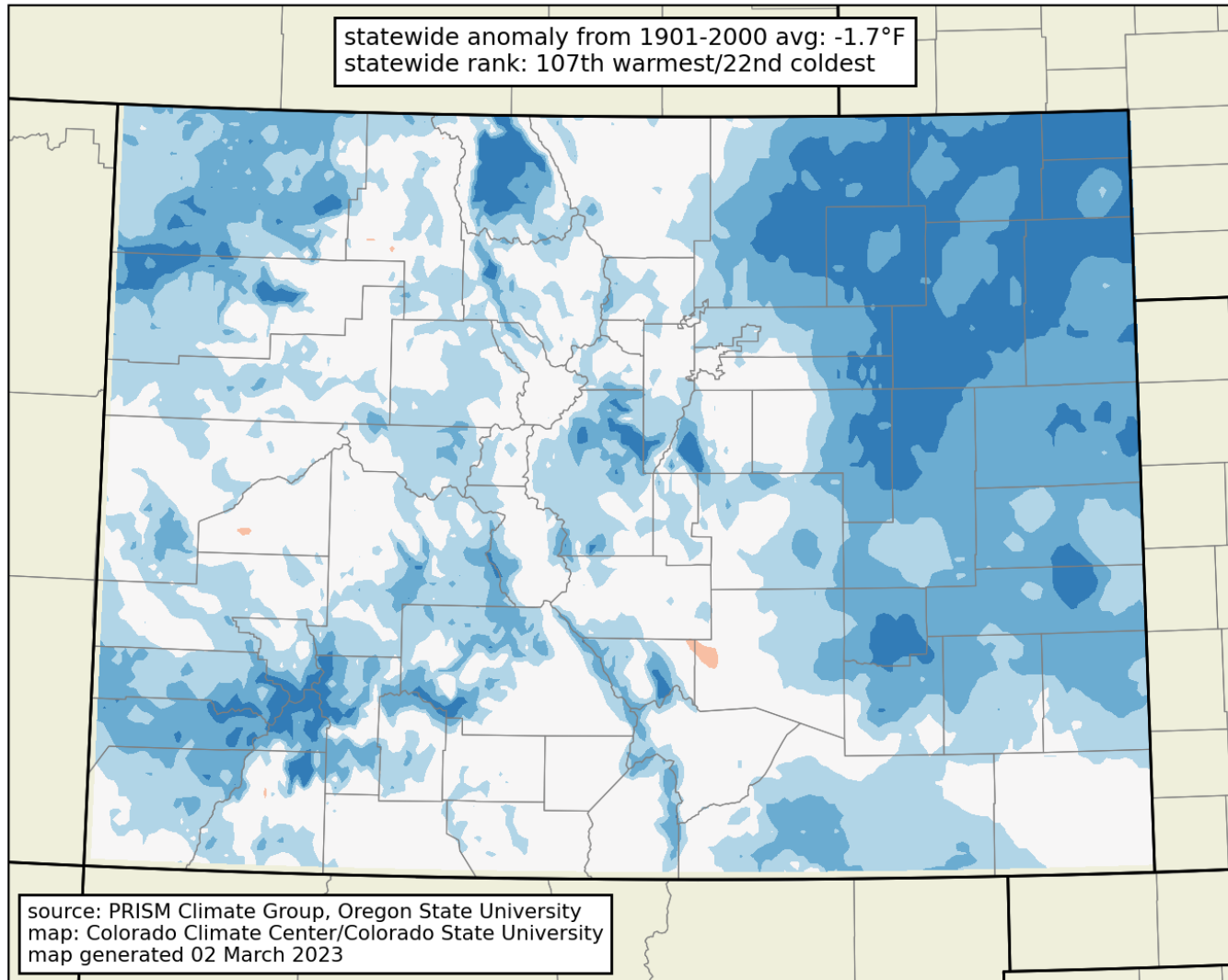
COLORADO
CLIMATE
CENTER



ATMOSPHERIC SCIENCE
COLORADO STATE UNIVERSITY

Where are we now?

temperature rank (preliminary PRISM data): 5 months ending February 2023 (Oct-Feb)

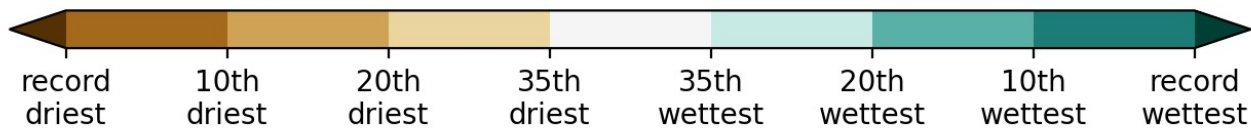
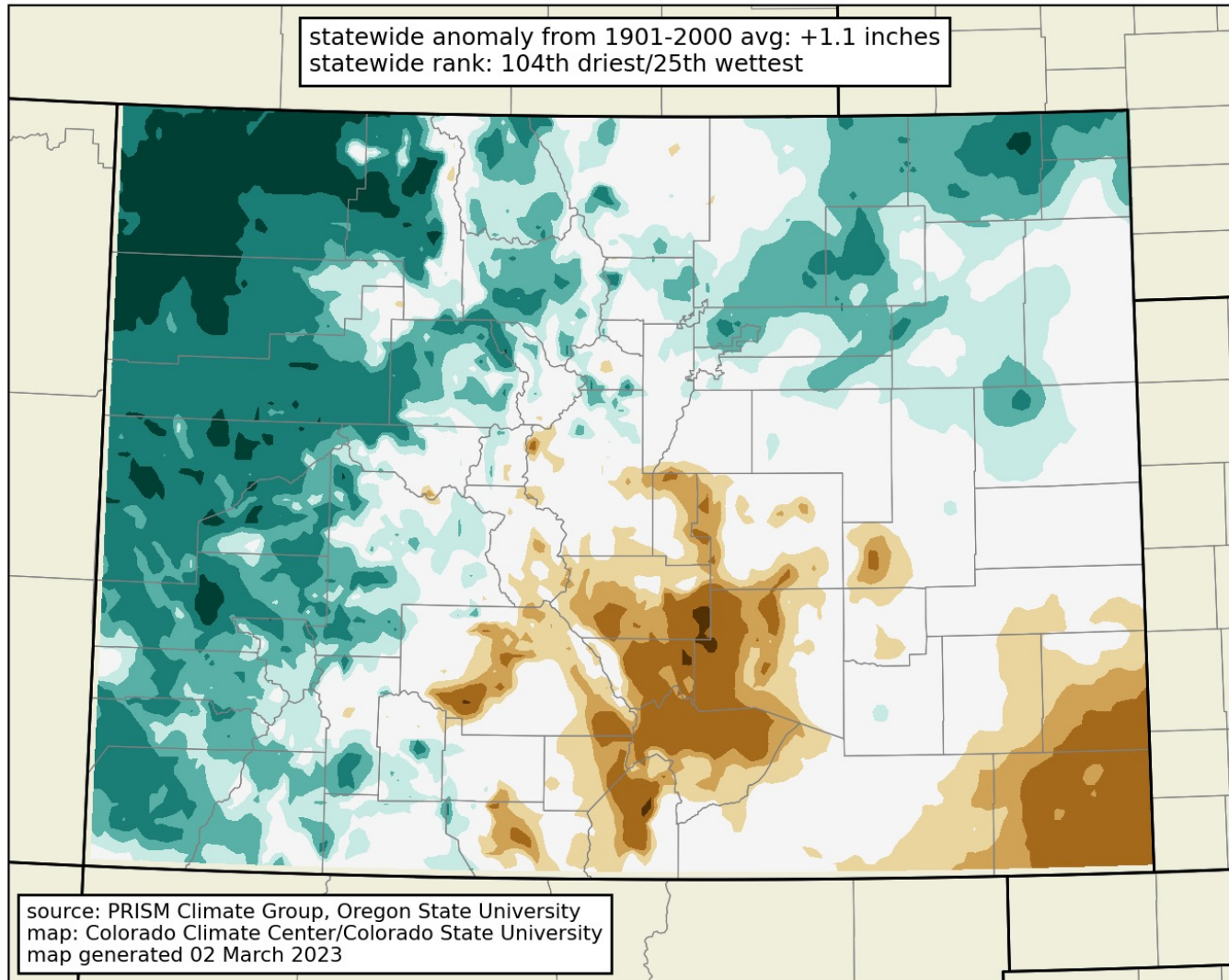


temperature rank out of 128 years (1896-2023)



Where are we now?

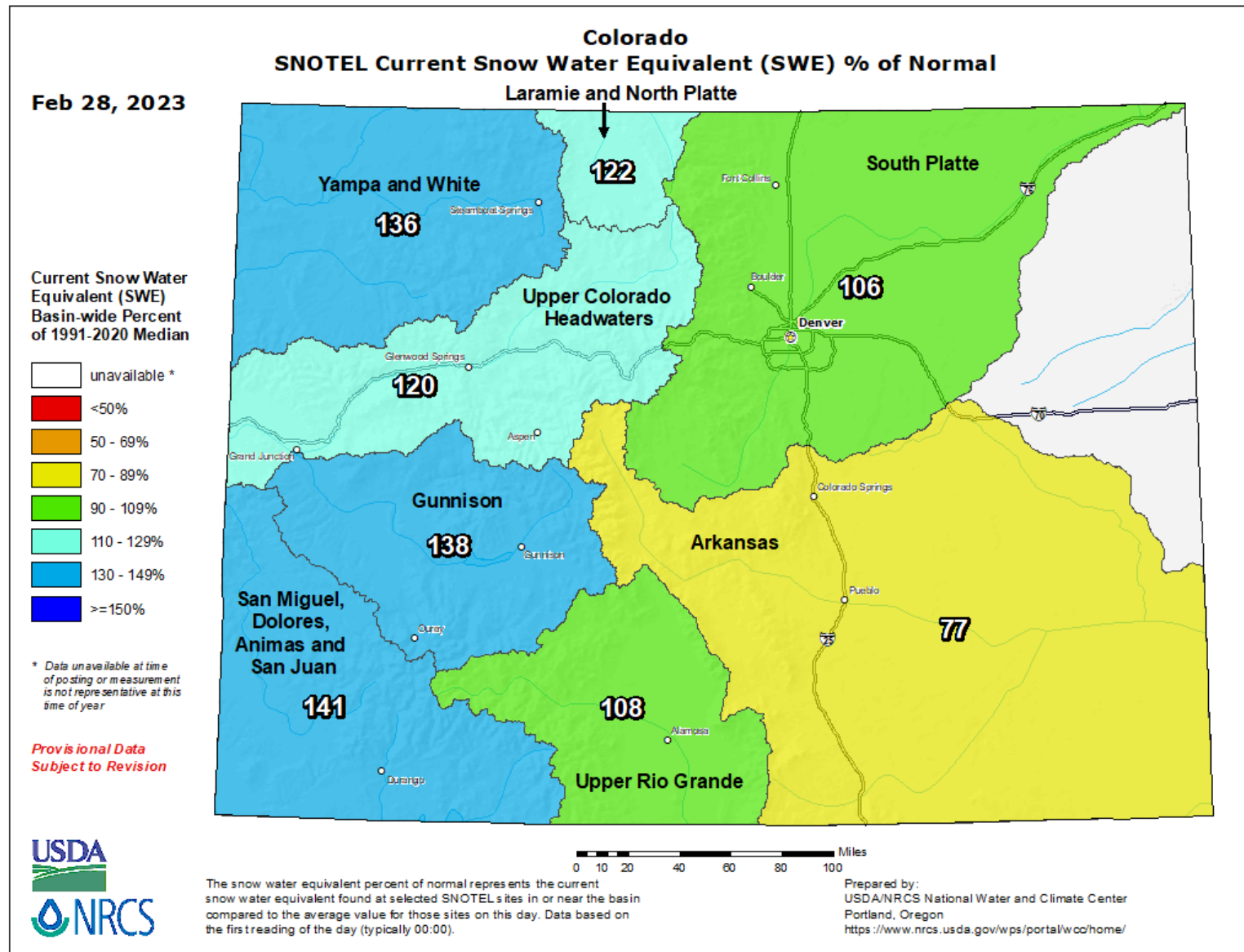
precipitation rank (preliminary PRISM data): 5 months ending February 2023 (Oct-Feb)



precipitation rank out of 128 years (1896-2023)



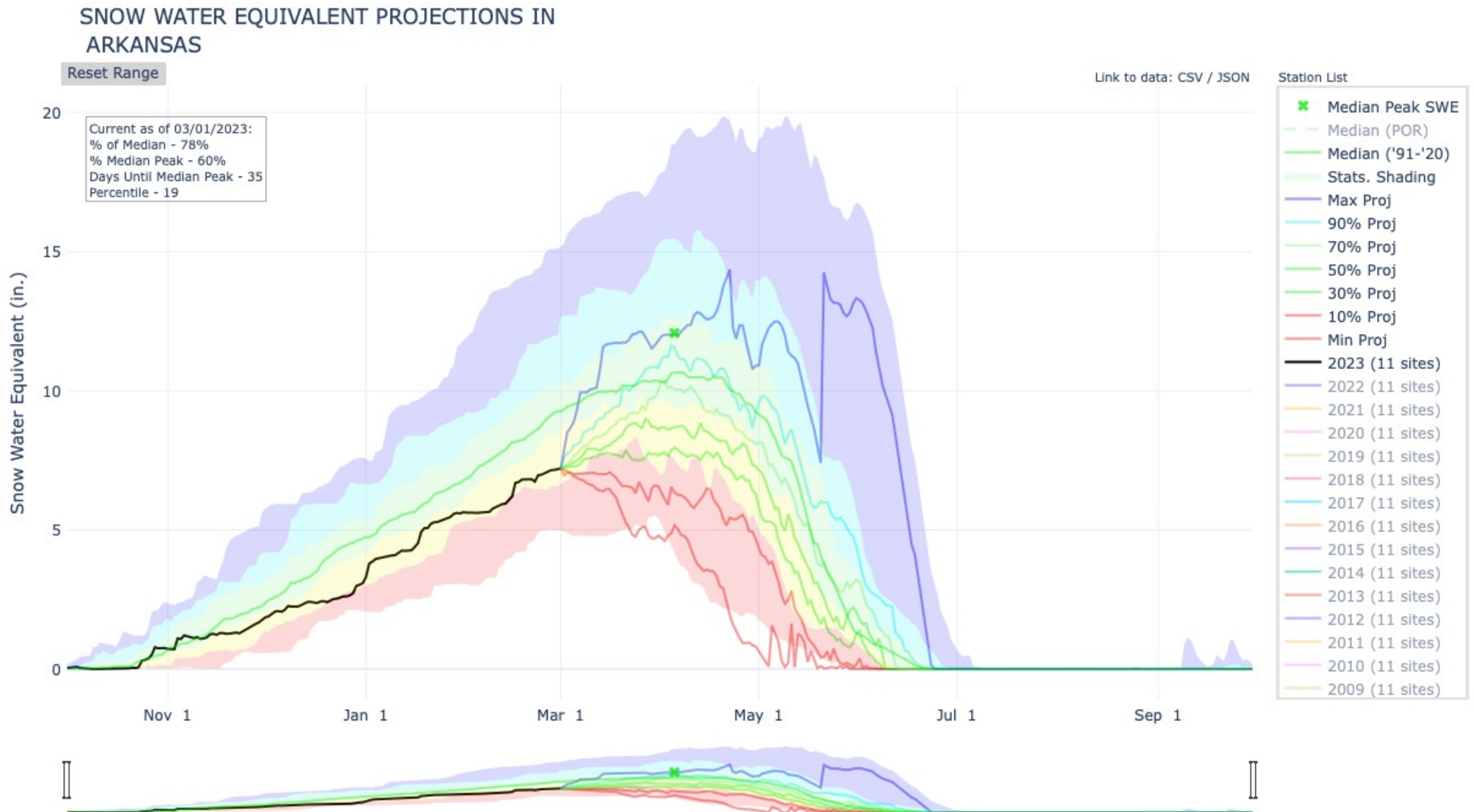
Current Snowpack



<https://tinyurl.com/COsnowsurvey>



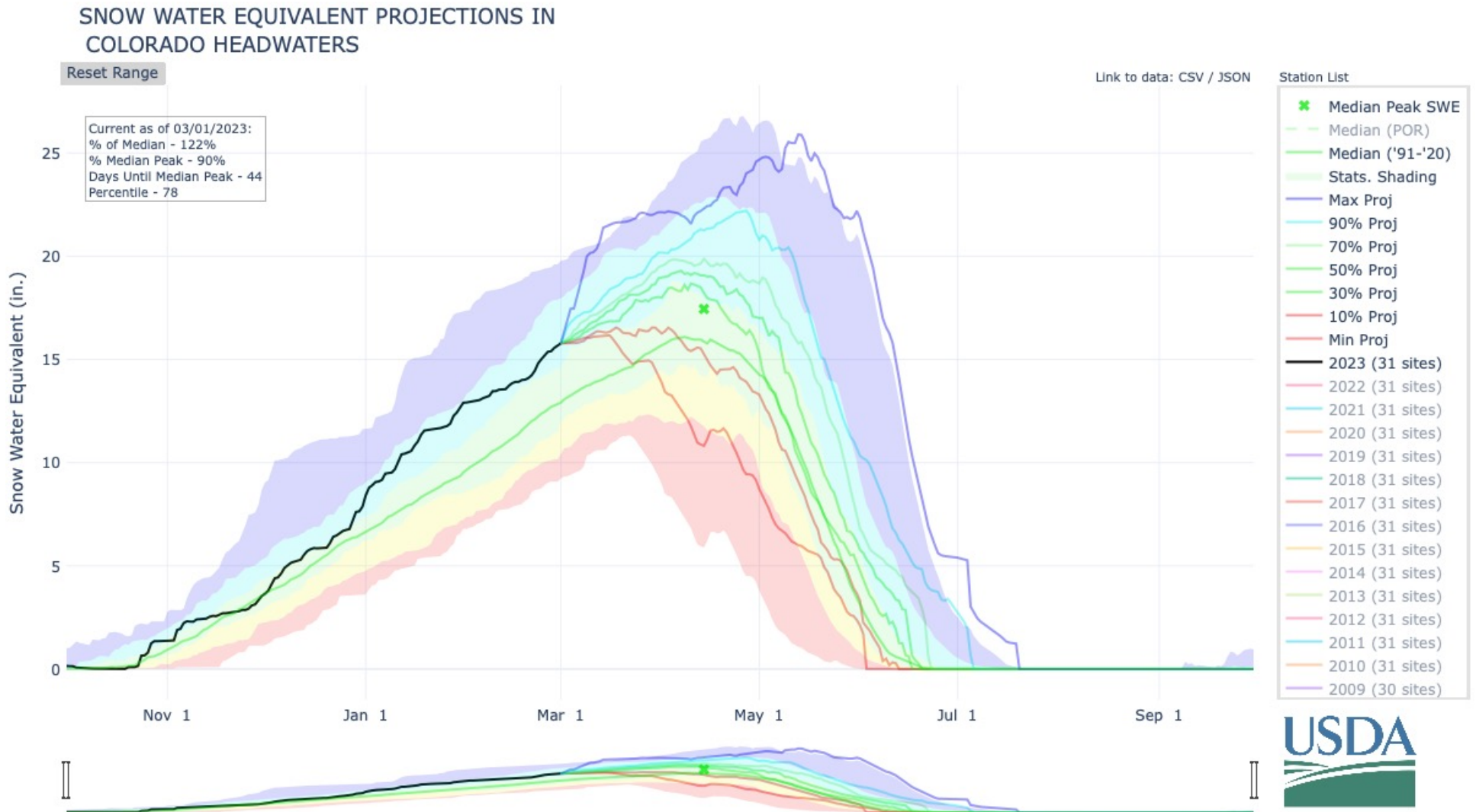
Projecting from current snowpack



The Arkansas basin is leaning toward a lower than average snowpack season



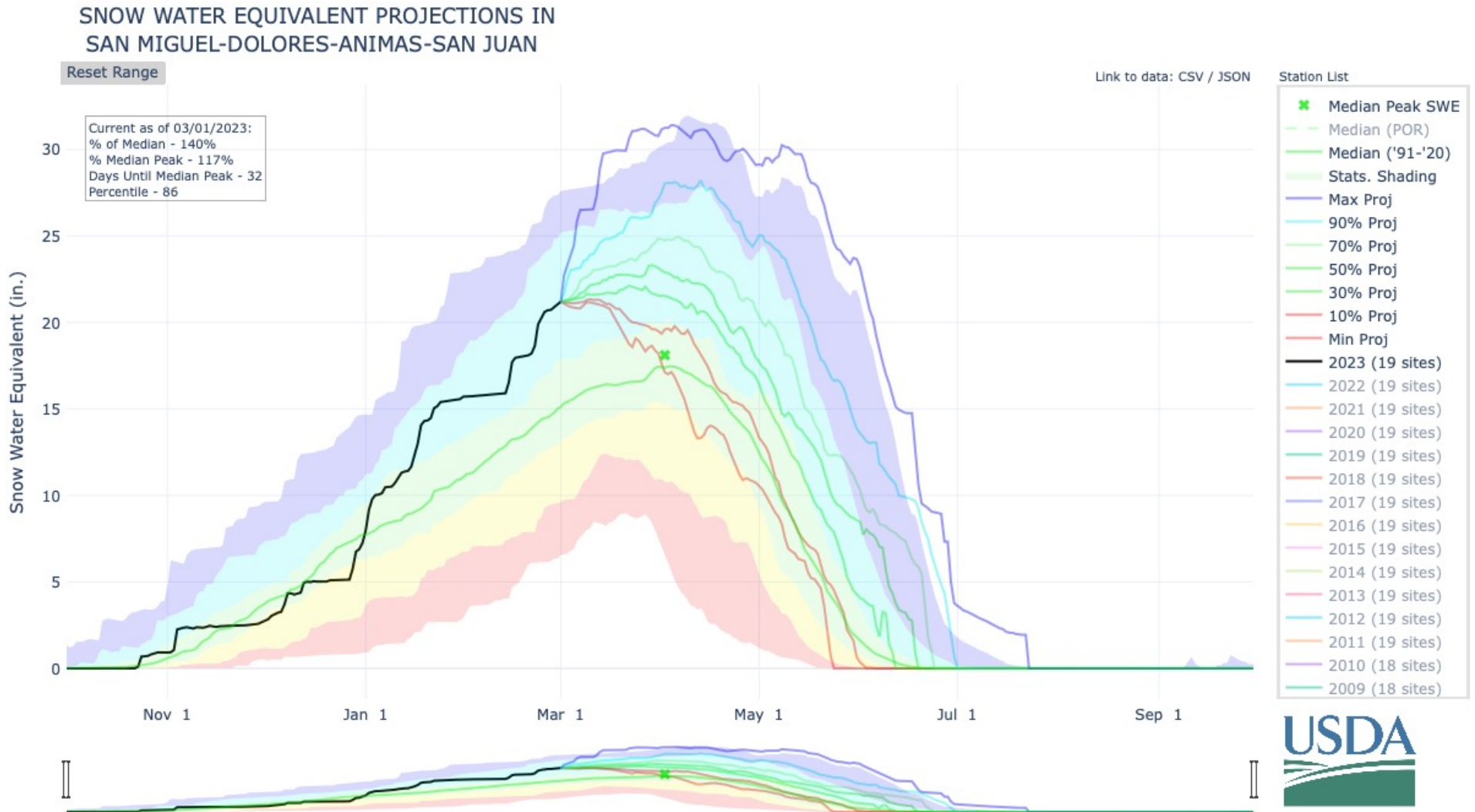
Projecting from current snowpack



The Colorado mainstem could possibly end season with above average snowpack



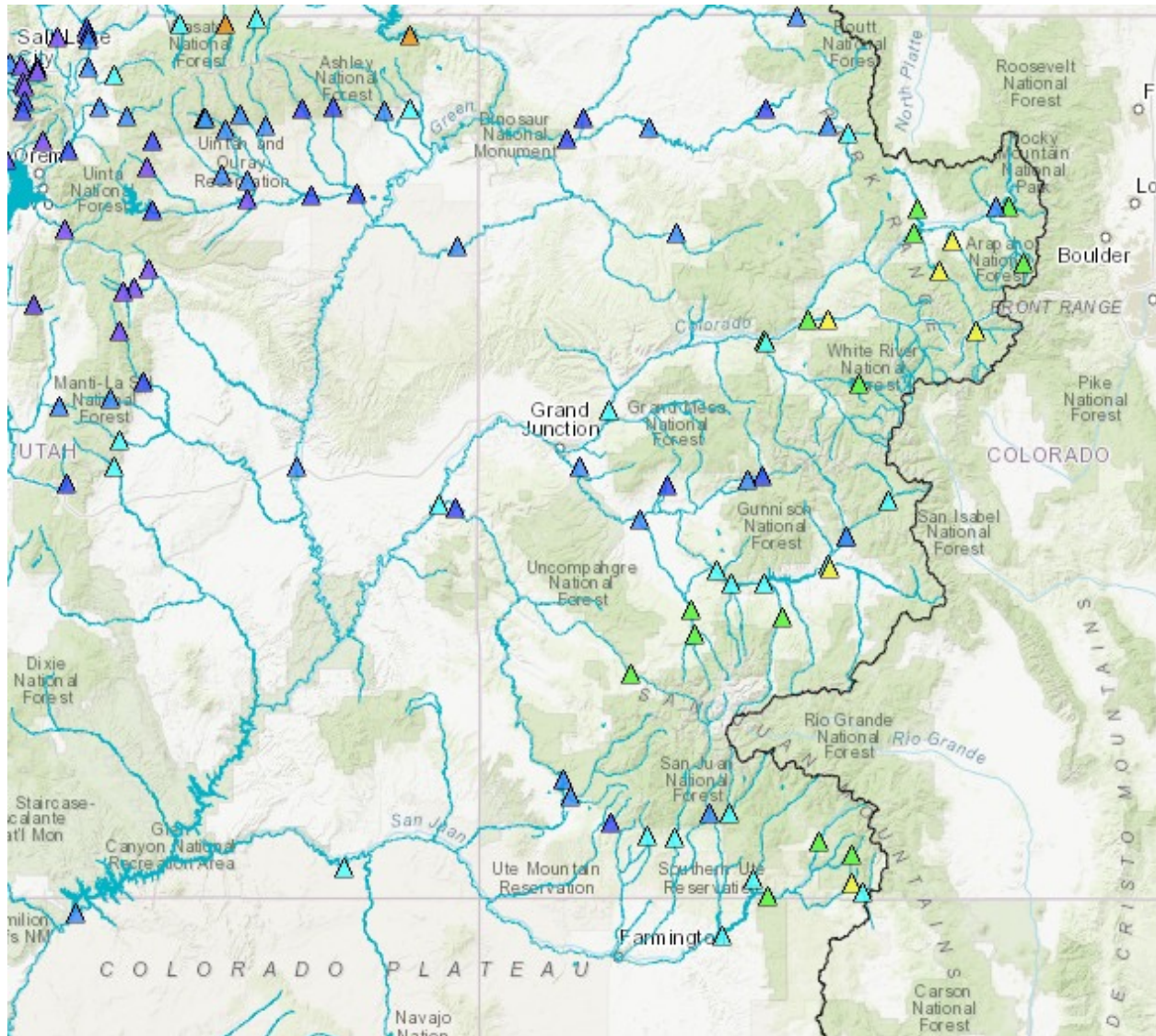
Projecting from current snowpack



The San Juans could have below average for the rest of the season and still get a near average peak!



Water supply forecasts



Water Supply Forecasts

First of Month Forecast Date: 2023-03-01 [Help](#)

Latest Model Run Date: 2023-03-01

Show [Hide Other Types](#)

- First of Month Forecast Percent Average
- First of Month Forecast Percent Median
- Latest Model Guidance Percent Average
- Latest Model Guidance Percent Median

- ▲ < 30%
- ▲ 30-50%
- ▲ 50-70%
- ▲ 70-90%
- ▲ 90-100%
- ▲ 100-110%
- ▲ 110-130%
- ▲ 130-150%
- ▲ 150-200%
- ▲ 200-300%
- ▲ 300-500
- ▲ >500%
- ▲ Regulated
- △ No Forecast

cbrfc.noaa.gov



Antecedent soil moisture

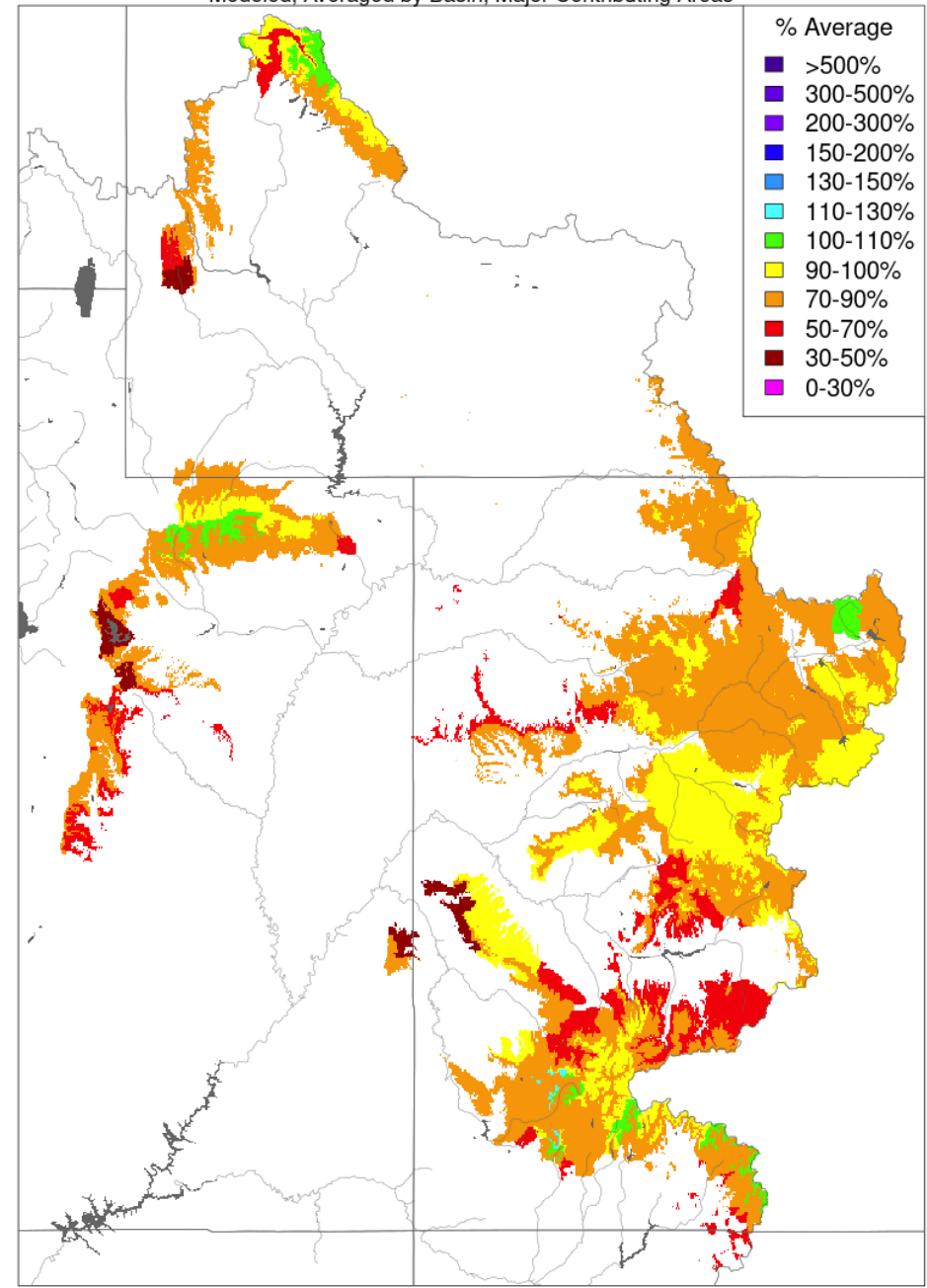
cbrfc.noaa.gov

Near normal to slightly below normal soil moisture at the beginning of the cold season.

This is MUCH better looking than the last 4 years!

Soil Moisture - Fall - 2022 (November 02)

Modeled, Averaged by Basin, Major Contributing Areas



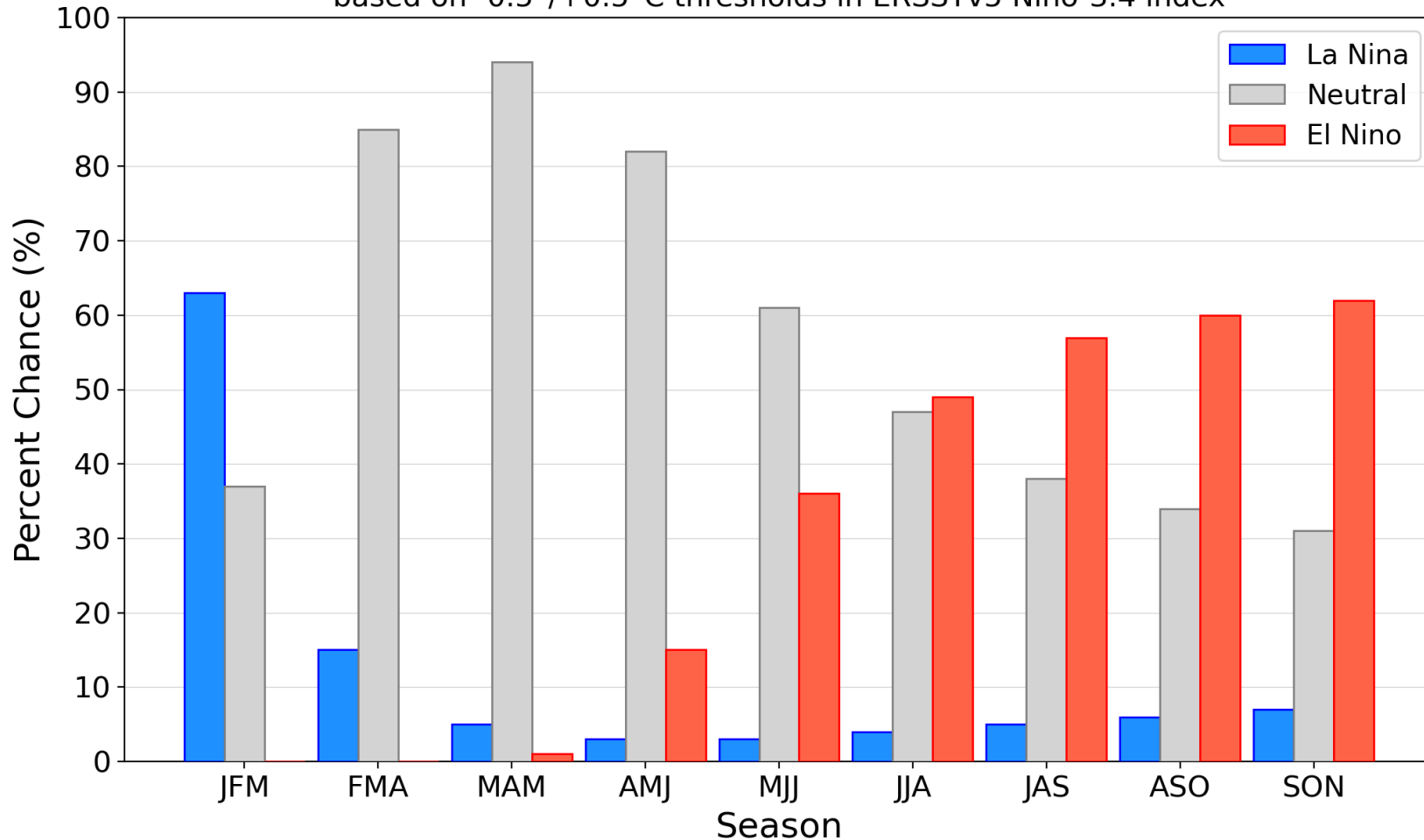
Prepared by NOAA, Colorado Basin River Forecast Center
Salt Lake City, Utah, www.cbrfc.noaa.gov



Say goodbye to La Niña

Official NOAA CPC ENSO Probabilities (issued Feb. 2023)

based on $-0.5^{\circ}/+0.5^{\circ}\text{C}$ thresholds in ERSSTv5 Niño-3.4 index

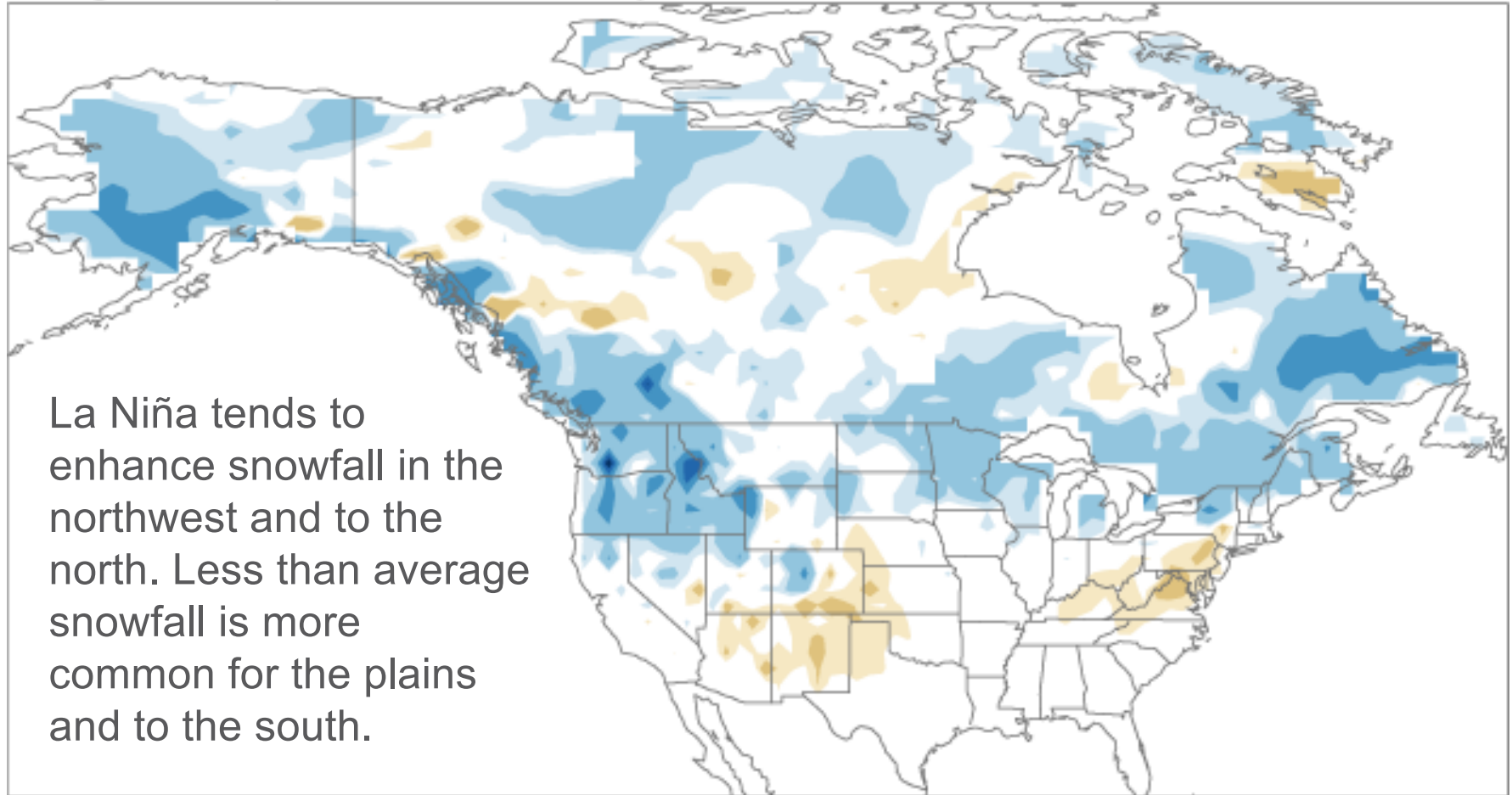


Neutral conditions will likely take over in the spring. El Niño may make an entrance?

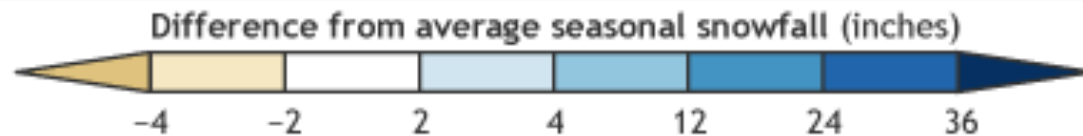


La Niña snow...

Average snowfall patterns for all La Niña years



October-April
1950-51 to 2008-09



NOAA Climate.gov
Data: Rutgers GSL

An exiting La Niña will be better news for the southern mountains.

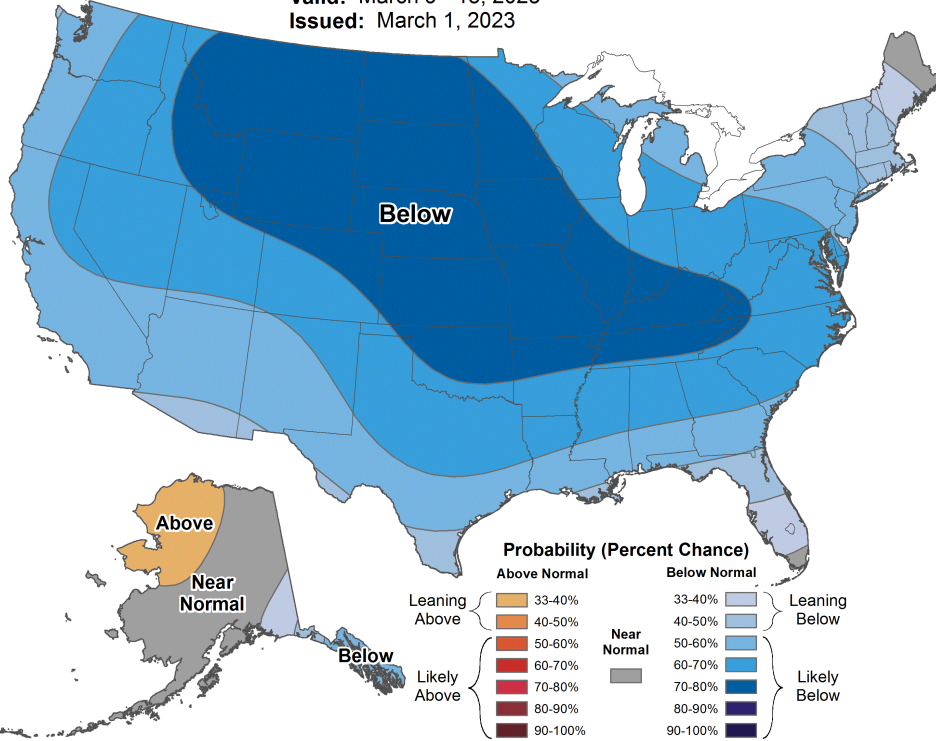


Climate Prediction Center outlooks



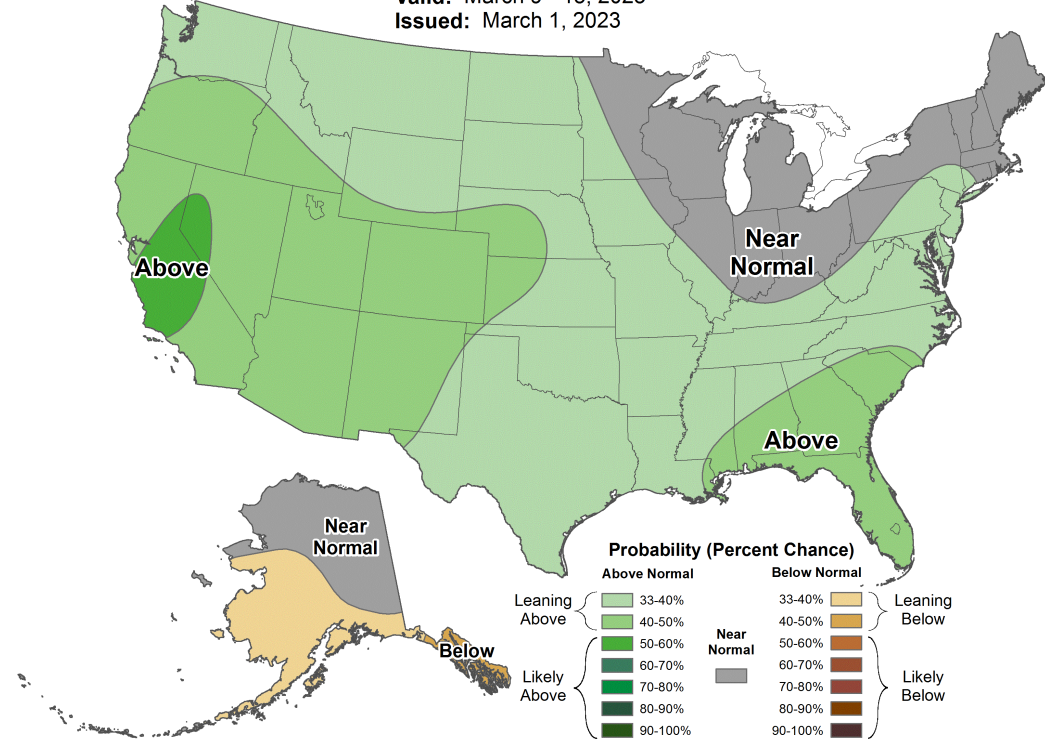
8-14 Day Temperature Outlook

Valid: March 9 - 15, 2023
 Issued: March 1, 2023



8-14 Day Precipitation Outlook

Valid: March 9 - 15, 2023
 Issued: March 1, 2023

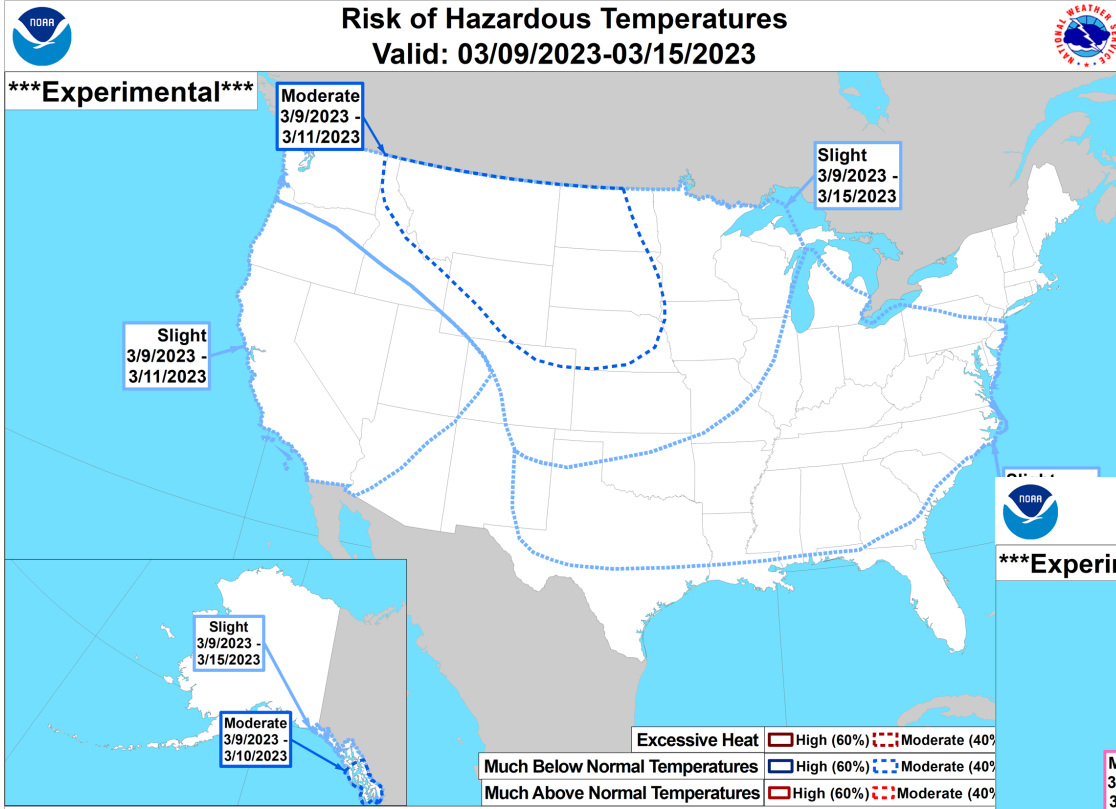


cpc.ncep.noaa.gov



Near-term Hazards

Risk of Hazardous Temperatures Valid: 03/09/2023-03/15/2023

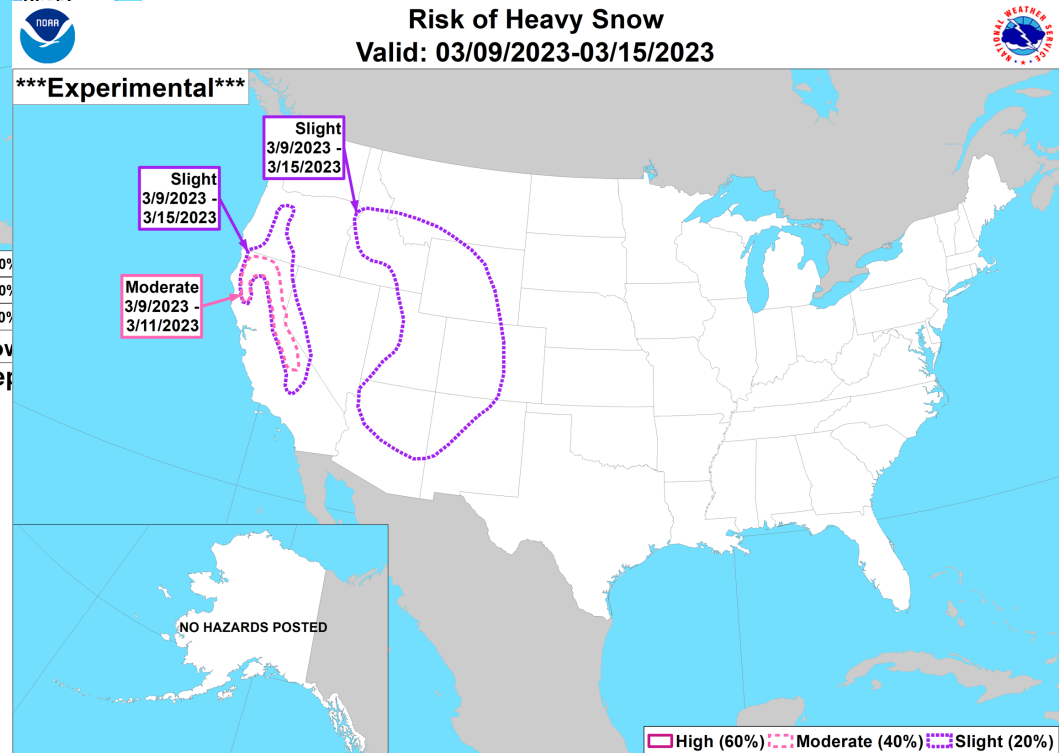


Climate Prediction Center
Made: 03/01/2023 3PM EST

Follow
www.cpc.ncep.noaa.gov

cpc.ncep.noaa.gov

Risk of Heavy Snow Valid: 03/09/2023-03/15/2023



Climate Prediction Center
Made: 03/01/2023 3PM EST

Follow us:
www.cpc.ncep.noaa.gov

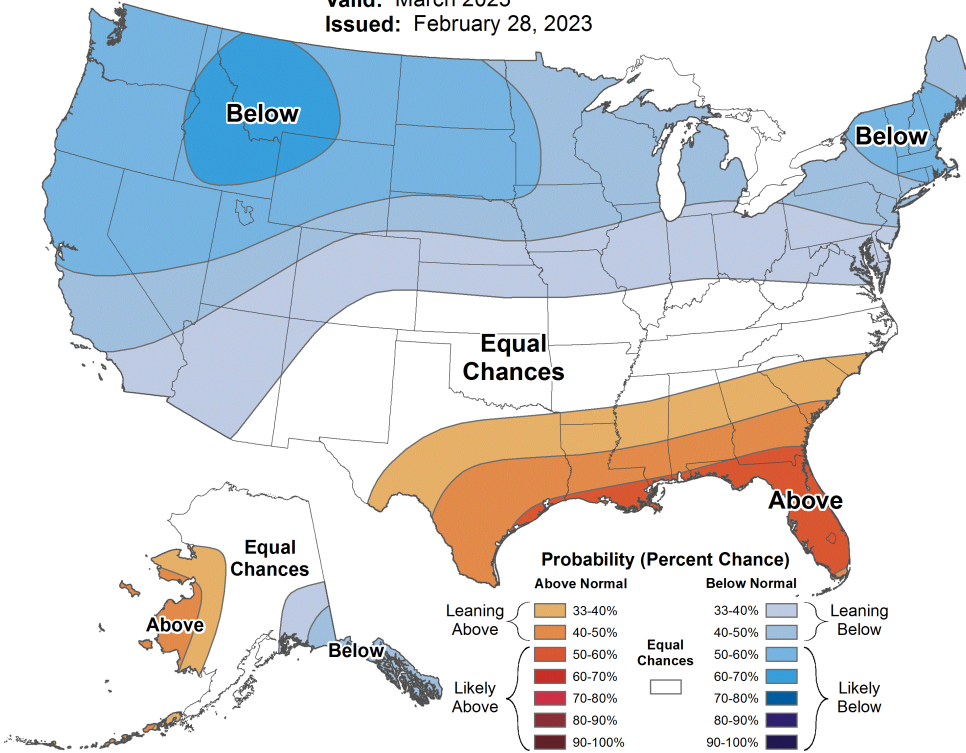


March Outlook



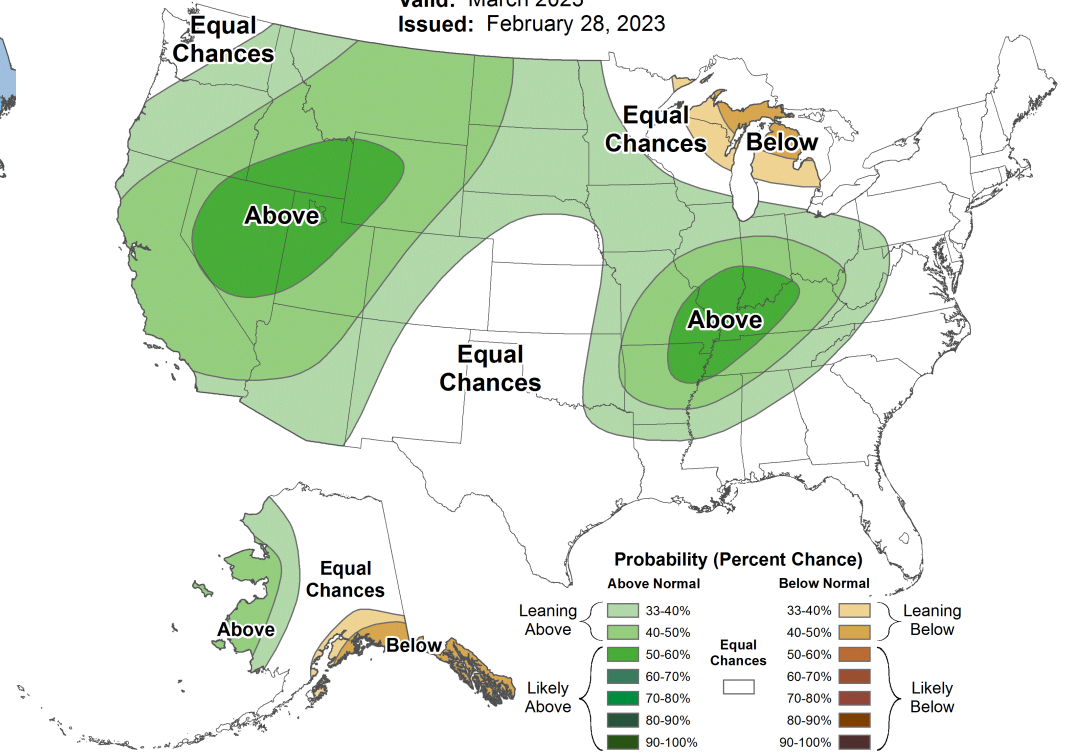
Monthly Temperature Outlook

Valid: March 2023
 Issued: February 28, 2023



Monthly Precipitation Outlook

Valid: March 2023
 Issued: February 28, 2023



cpc.ncep.noaa.gov



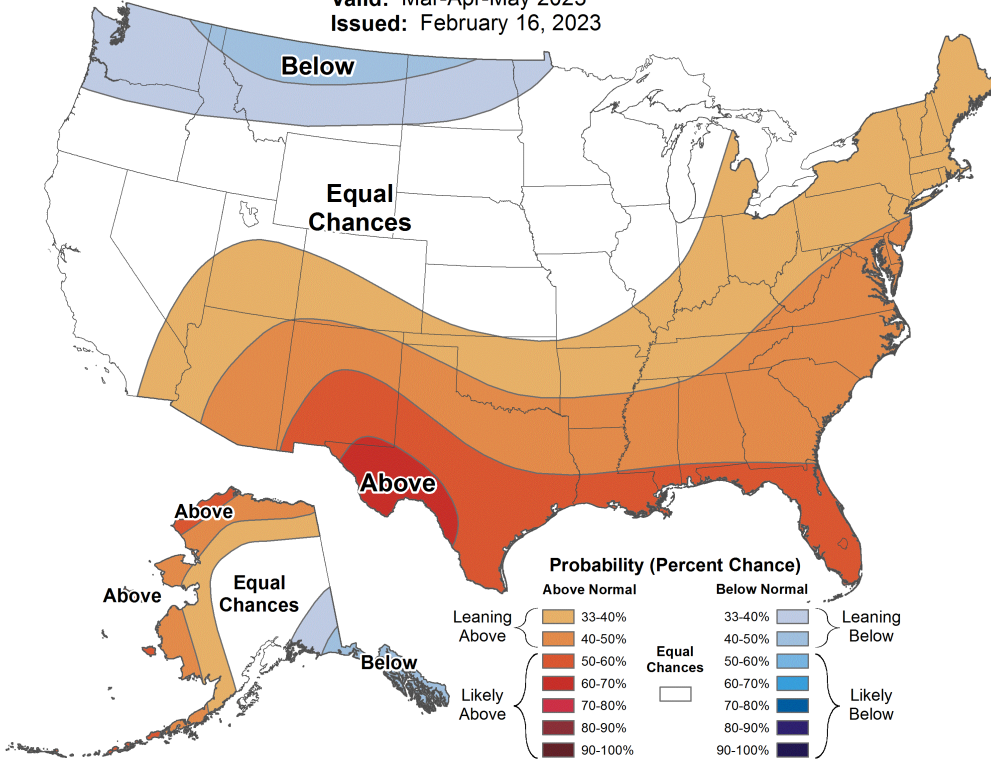
Spring Outlook



Seasonal Temperature Outlook



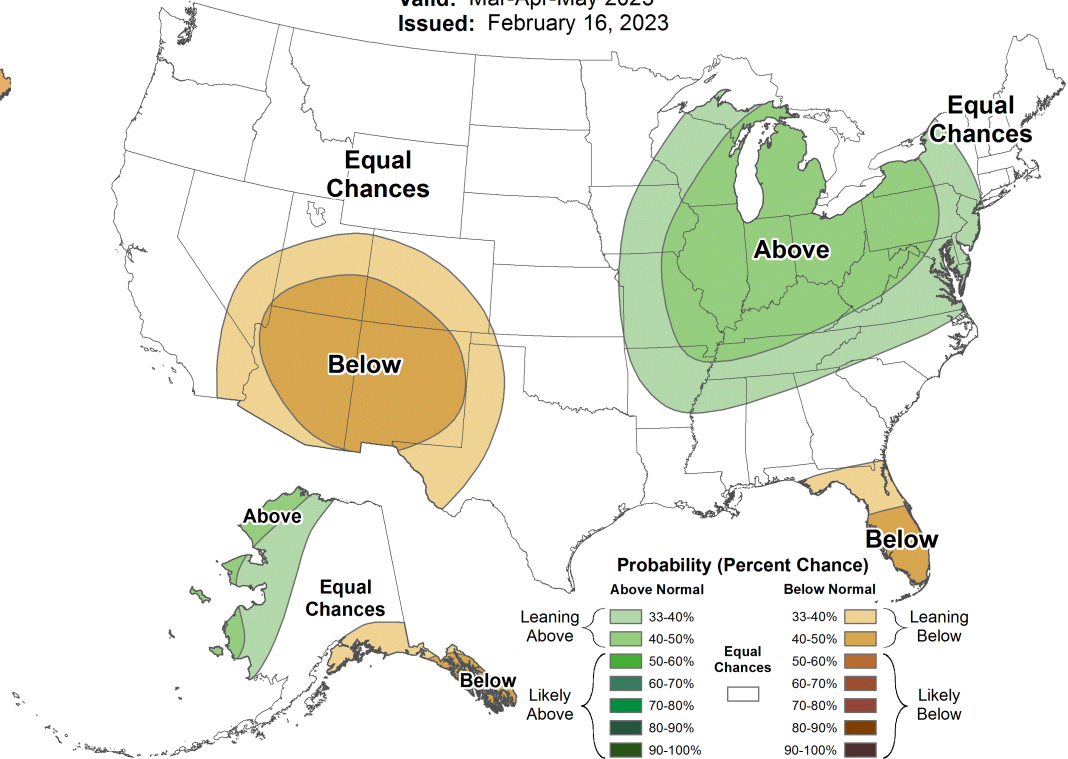
Valid: Mar-Apr-May 2023
 Issued: February 16, 2023



Seasonal Precipitation Outlook



Valid: Mar-Apr-May 2023
 Issued: February 16, 2023



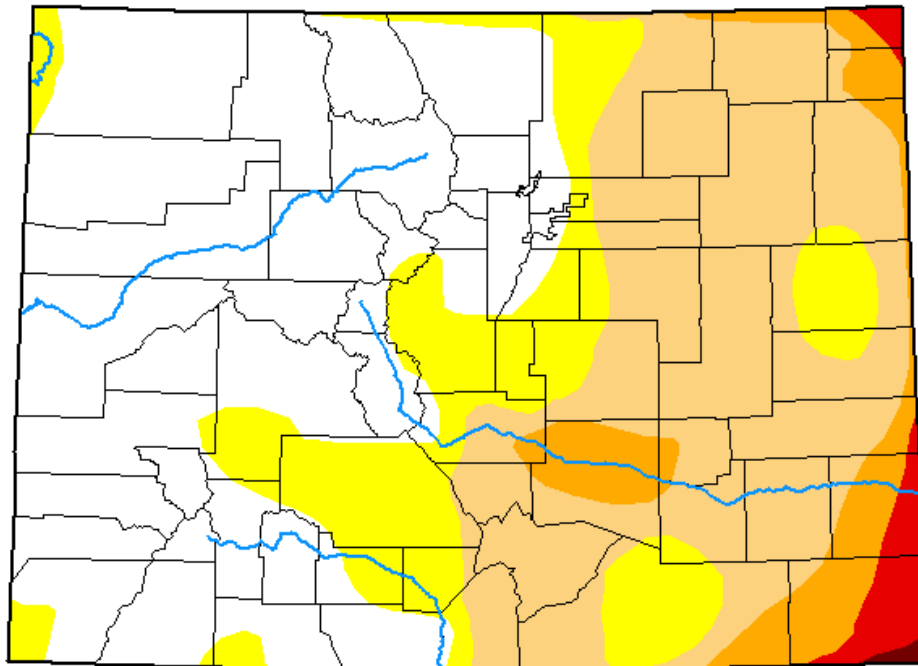
cpc.ncep.noaa.gov



What might happen with drought...

U.S. Drought Monitor Colorado

February 28, 2023
(Released Thursday, Mar. 2, 2023)
Valid 7 a.m. EST



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	45.67	54.33	37.42	7.94	2.00	0.16
Last Week 02-21-2023	44.81	55.19	37.42	7.94	2.00	0.16
3 Months Ago 11-29-2022	16.25	83.75	47.20	23.68	4.34	0.57
Start of Calendar Year 01-03-2023	39.97	60.03	33.83	12.28	1.91	0.01
Start of Water Year 09-27-2022	15.46	84.54	45.65	15.47	3.73	0.57
One Year Ago 03-01-2022	0.00	100.00	91.57	57.26	8.27	0.09

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:

Richard Heim
NCEI/NOAA

Here's where we are right now



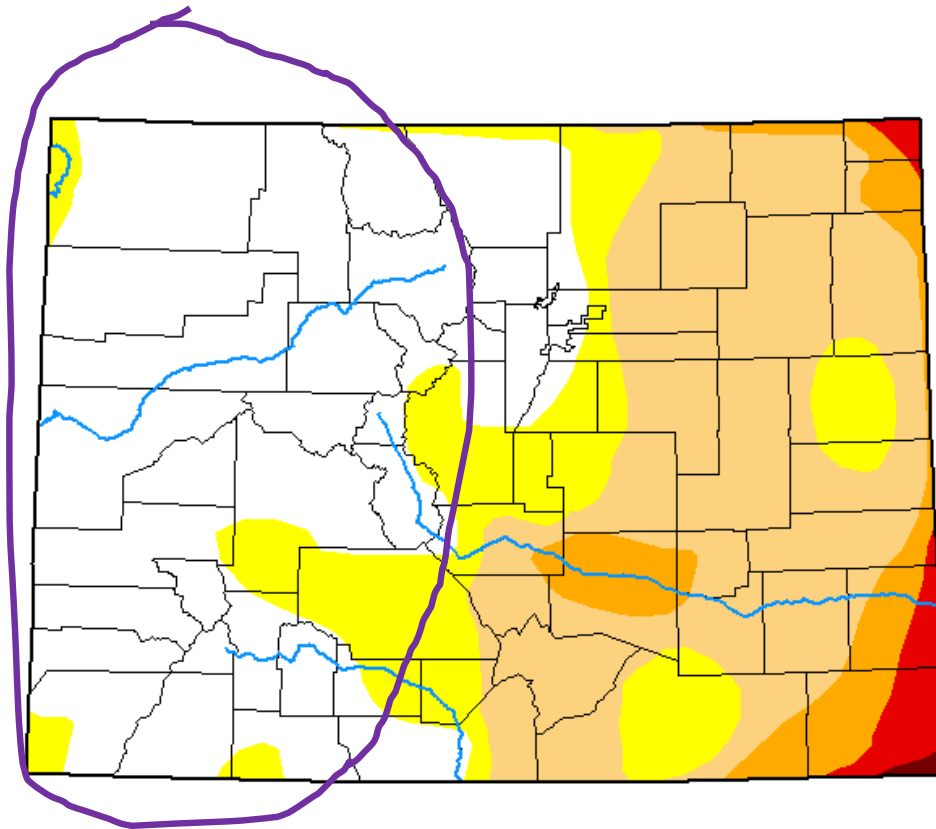
droughtmonitor.unl.edu



What might happen with drought...

U.S. Drought Monitor Colorado

February 28, 2023
(Released Thursday, Mar. 2, 2023)
Valid 7 a.m. EST



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	45.67	54.33	37.42	7.94	2.00	0.16
Last Week <i>02-21-2023</i>	44.81	55.19	37.42	7.94	2.00	0.16
3 Months Ago <i>11-29-2022</i>	16.25	83.75	47.20	23.68	4.34	0.57
Start of Calendar Year <i>01-03-2023</i>	39.97	60.03	33.83	12.28	1.91	0.01
Start of Water Year <i>09-27-2022</i>	15.46	84.54	45.65	15.47	3.73	0.57
One Year Ago <i>03-01-2022</i>	0.00	100.00	91.57	57.26	8.27	0.09

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:

Richard Heim
NCEI/NOAA

Drought-free conditions likely to continue



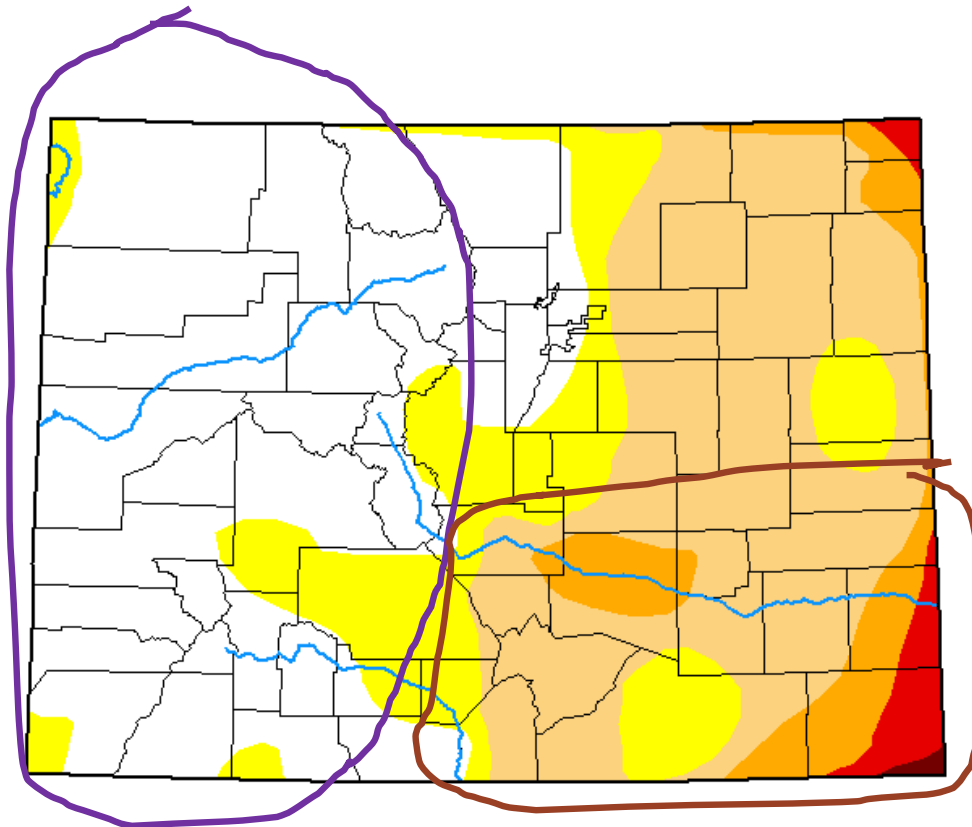
droughtmonitor.unl.edu



What might happen with drought...

U.S. Drought Monitor Colorado

February 28, 2023
(Released Thursday, Mar. 2, 2023)
Valid 7 a.m. EST



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	45.67	54.33	37.42	7.94	2.00	0.16
Last Week <i>02-21-2023</i>	44.81	55.19	37.42	7.94	2.00	0.16
3 Months Ago <i>11-29-2022</i>	16.25	83.75	47.20	23.68	4.34	0.57
Start of Calendar Year <i>01-03-2023</i>	39.97	60.03	33.83	12.28	1.91	0.01
Start of Water Year <i>09-27-2022</i>	15.46	84.54	45.65	15.47	3.73	0.57
One Year Ago <i>03-01-2022</i>	0.00	100.00	91.57	57.26	8.27	0.09

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:

Richard Heim
NCEI/NOAA

Drought-free conditions likely to continue

Drought severity will increase unless there is a strong showing of spring moisture



droughtmonitor.unl.edu

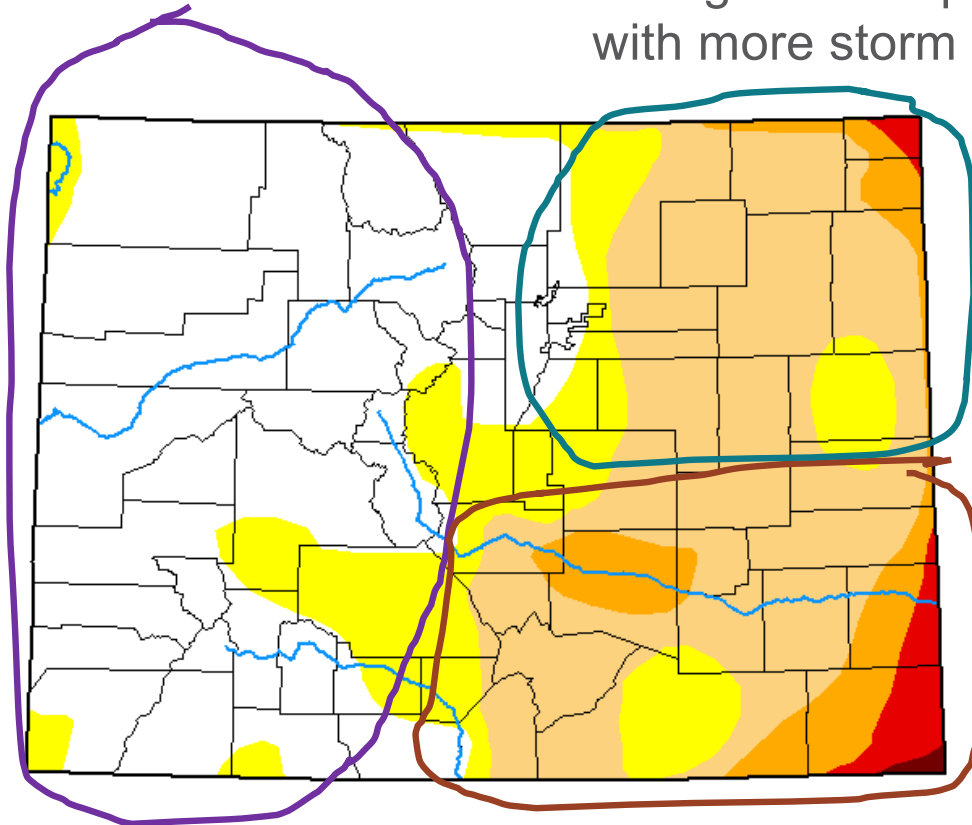


What might happen with drought...

U.S. Drought Monitor Colorado

February 28, 2023
(Released Thursday, Mar. 2, 2023)
Valid 7 a.m. EST

Drought can improve
with more storm activity



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
02-21-2023	45.67	54.33	37.42	7.94	2.00	0.16
3 Months Ago 11-29-2022	44.81	55.19	37.42	7.94	2.00	0.16
Start of Calendar Year 01-03-2023	16.25	83.75	47.20	23.68	4.34	0.57
Start of Water Year 09-27-2022	39.97	60.03	33.83	12.28	1.91	0.01
One Year Ago 03-01-2022	15.46	84.54	45.65	15.47	3.73	0.57
One Year Ago 03-01-2022	0.00	100.00	91.57	57.26	8.27	0.09

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:

Richard Heim
NCEI/NOAA

Drought-free conditions
likely to continue

Drought severity will increase
unless there is a strong
showing of spring moisture



droughtmonitor.unl.edu



Summary and resources

- ❑ Snowpack in very good condition
- ❑ Good chance for a normal peak date and normal melting
- ❑ It is very likely the Arkansas basin will be below normal
- ❑ Highest risk for continuing and worsening drought remains in the southeast
- ❑ As always, this is Colorado! Things can change quickly!

- ❑ CO Drought Monitoring:
 - ❑ <https://climate.colostate.edu/drought/>
- ❑ CO Temperature and Precipitation Rank Maps:
 - ❑ https://climate.colostate.edu/co_cag/rank_maps.html



Becky.Bolinger@colostate.edu

 @ClimateBecky

climate.colostate.edu

Thank you



ATMOSPHERIC SCIENCE
COLORADO STATE UNIVERSITY