

# Colorado Climate Center – *WATF Climate Update*

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**Becky Bolinger, Assistant State Climatologist**

**Water Availability Task Force**

**March 18, 2021**



**ATMOSPHERIC SCIENCE**  
**COLORADO STATE UNIVERSITY**



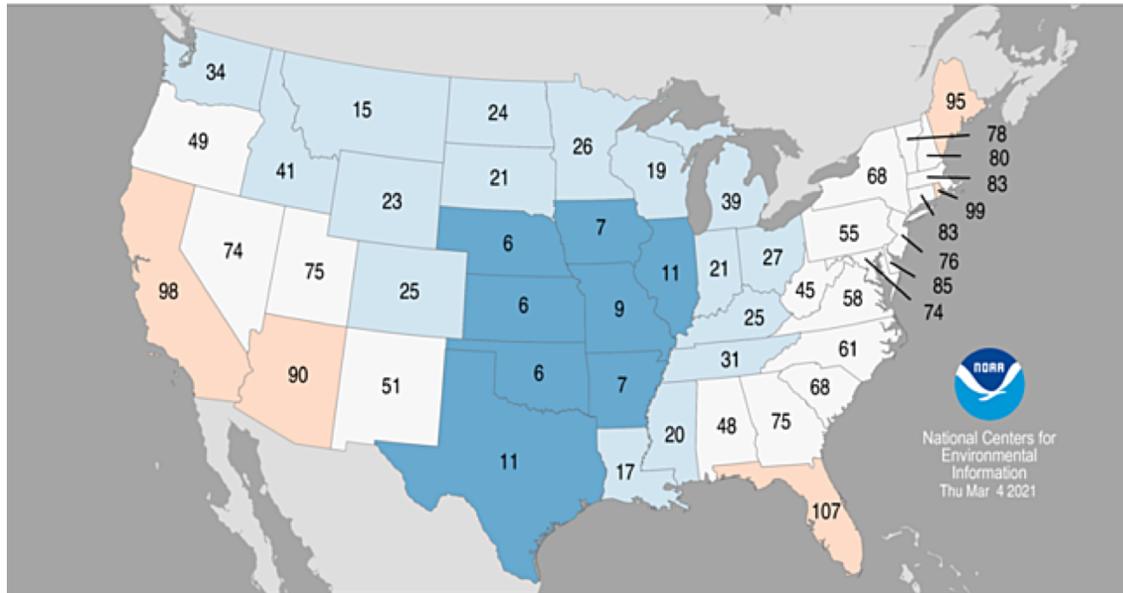
## 2021 Water Year To Date

temperature, precipitation,  
evaporative demand



## Statewide Average Temperature Ranks

February 2021  
Period: 1895–2021



National Centers for Environmental Information  
Thu Mar 4 2021

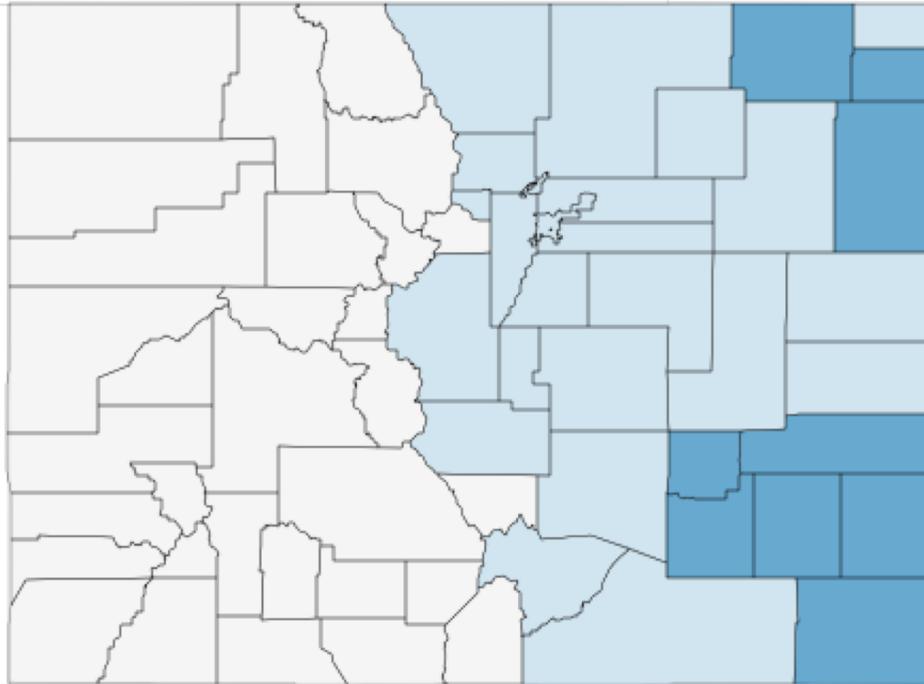
First below average month since October 2019

Month	T Rank (of 127 years)	Above, below, or near avg?
Oct	52 <sup>nd</sup> warmest	average
Nov	7 <sup>th</sup> warmest	much above
Dec	42 <sup>nd</sup> warmest	above
Jan	32 <sup>nd</sup> warmest	above
Feb	25 <sup>th</sup> coolest	below
Mar		
Apr		
May		
June		
July		
August		



# County Average Temperature Rank (of 127 years)

February 2021



Coldest  $\downarrow \frac{1}{10}$   $\downarrow \frac{1}{5}$  Near Normal  $\uparrow \frac{1}{5}$   $\uparrow \frac{1}{10}$  Warmest

## Colorado

Temp: 24.6°F

Rank: 25th Coldest

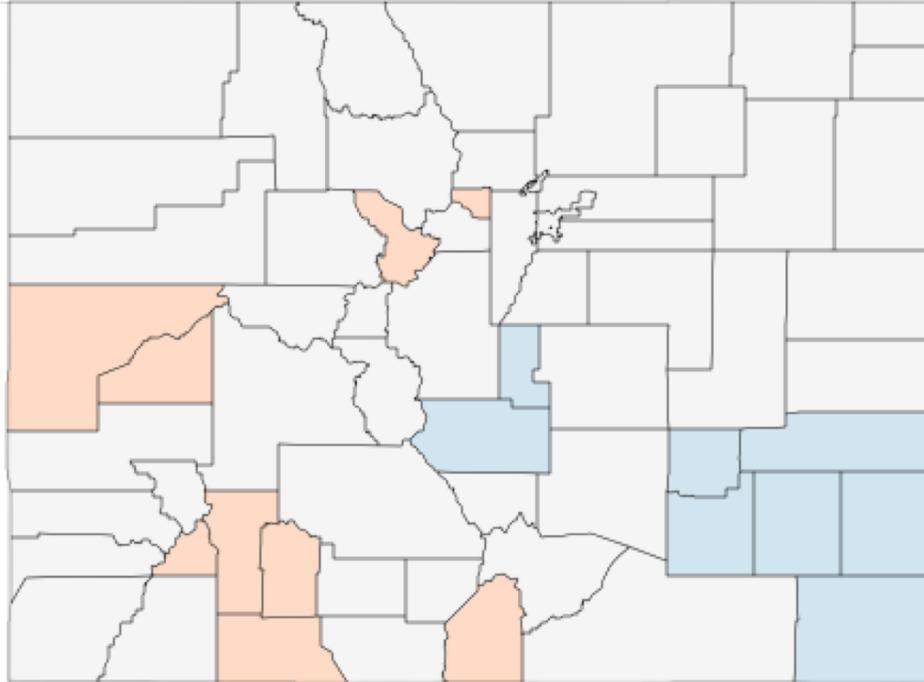
Anomaly: -2.8°F

Mean: 27.4°F



County Average Temperature Rank (of 127 years)

December 2020 - February 2021



Colest  $\downarrow \frac{1}{10}$   $\downarrow \frac{1}{5}$  Near Normal  $\uparrow \frac{1}{5}$   $\uparrow \frac{1}{10}$  Warmest

Colorado

Temp: 26.1°F

Rank: 61st Warmest

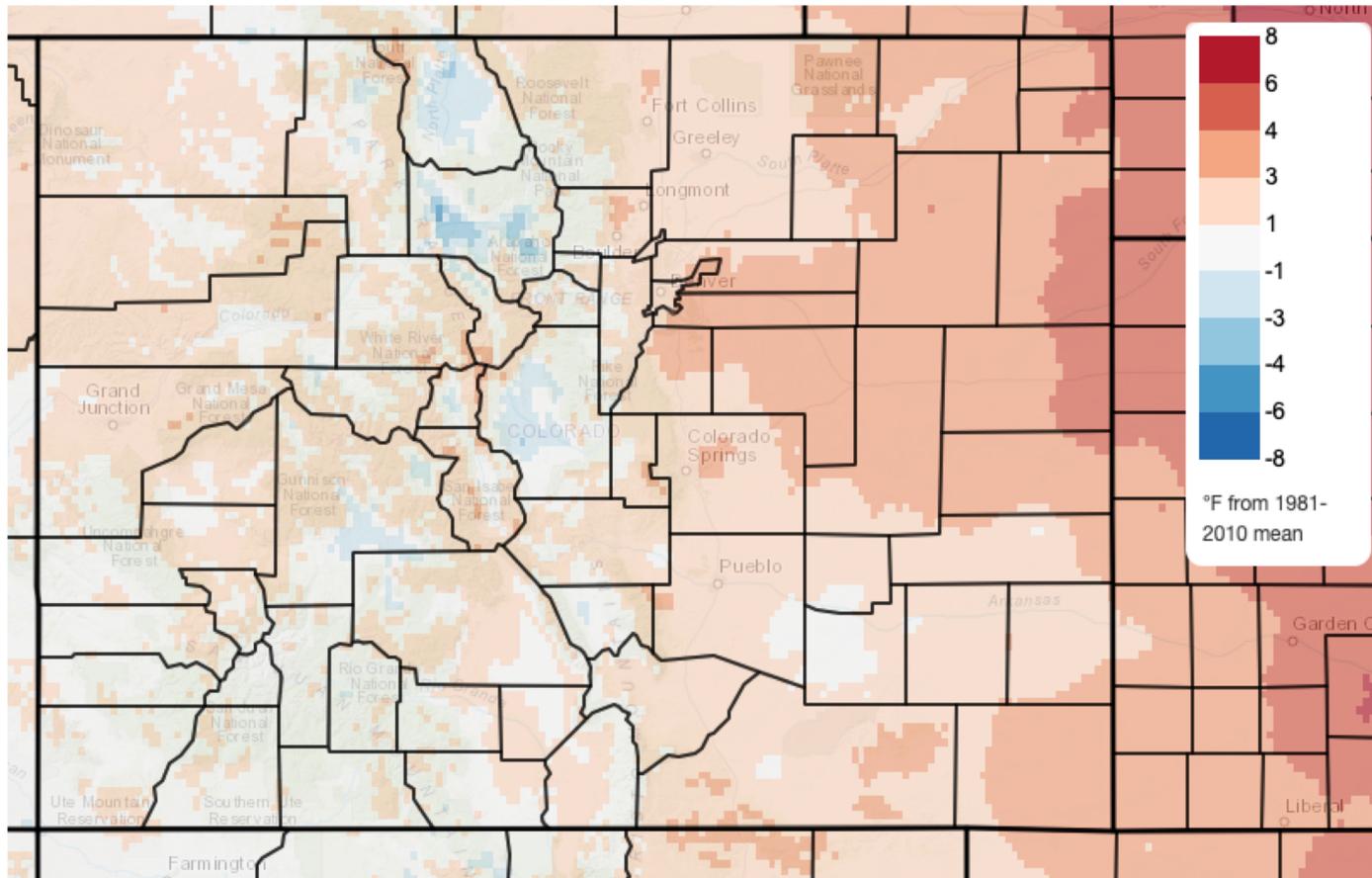
Anomaly: 0.6°F

Mean: 25.5°F

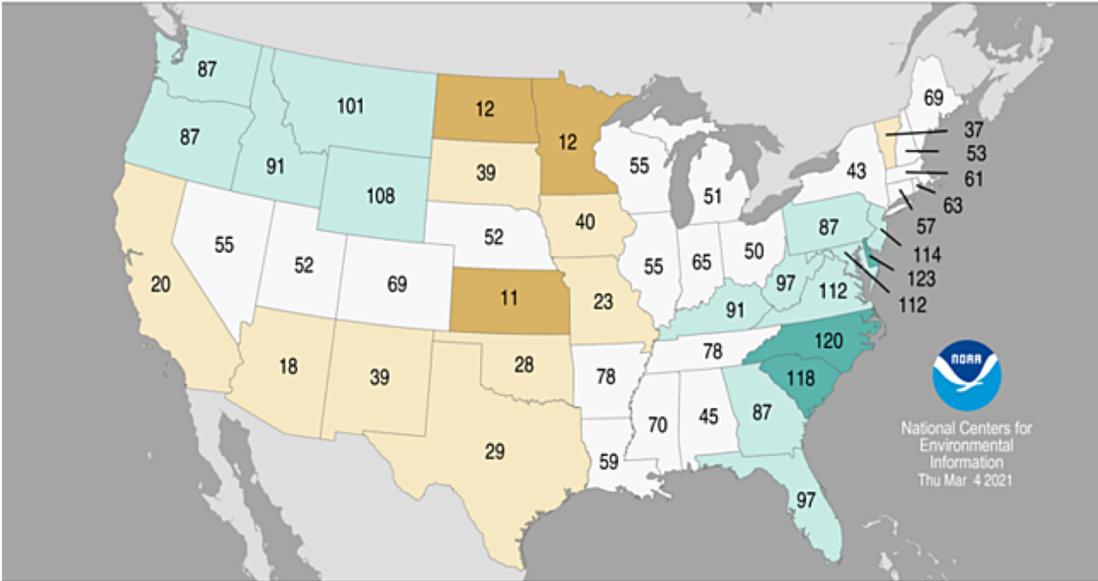


# Mean Daily Temperature Anomaly, Last 15 Days

2021/03/01 - 2021/03/15



Statewide Precipitation Ranks  
February 2021  
Period: 1895–2021



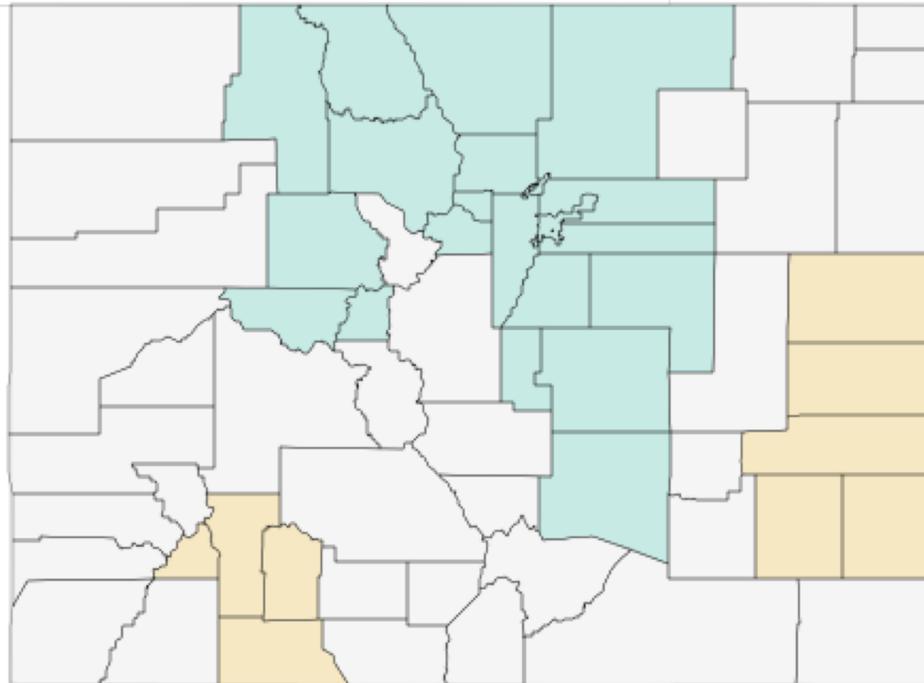
Apr 2020-Feb 2021 driest on record

Month	P Rank (of 127 years)	Above, below, or near avg?
Oct	16 <sup>th</sup> driest	below
Nov	44 <sup>th</sup> driest	average
Dec	60 <sup>th</sup> driest	average
Jan	38 <sup>th</sup> driest	below
Feb	59 <sup>th</sup> wettest	average
Mar		
Apr		
May		
June		
July		
August		



# County Precipitation Rank (of 127 years)

February 2021



Driest ← ↓ 1/10 ↓ 1/5 Near Normal ↑ 1/5 ↑ 1/10 Wettest

**Colorado**

**Precip: 1.08"**

**Rank: 59th Wettest**

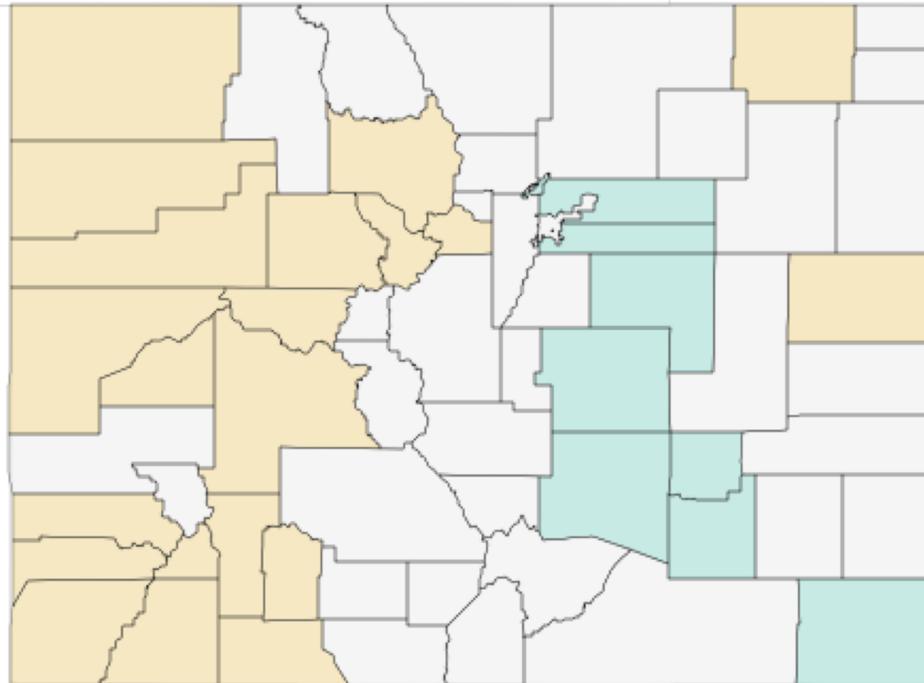
**Anomaly: -0.01"**

**Mean: 1.09"**



County Precipitation Rank (of 127 years)

December 2020 - February 2021



Driest ← ↓ 1/10 ↓ 1/5 Near Normal ↑ 1/5 ↑ 1/10 Wettest →

Colorado

Precip: 2.80"

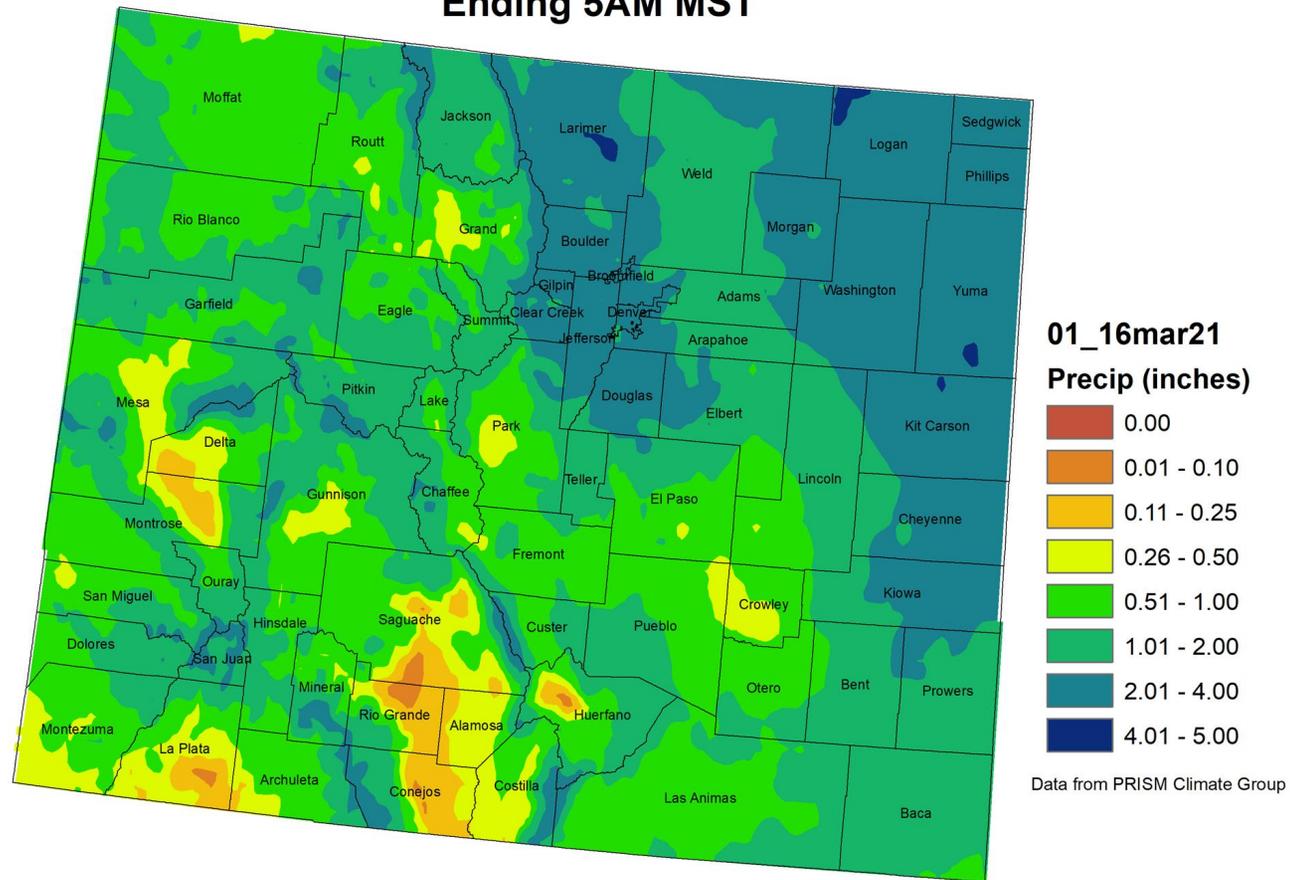
Rank: 40th Driest

Anomaly: -0.42"

Mean: 3.22"

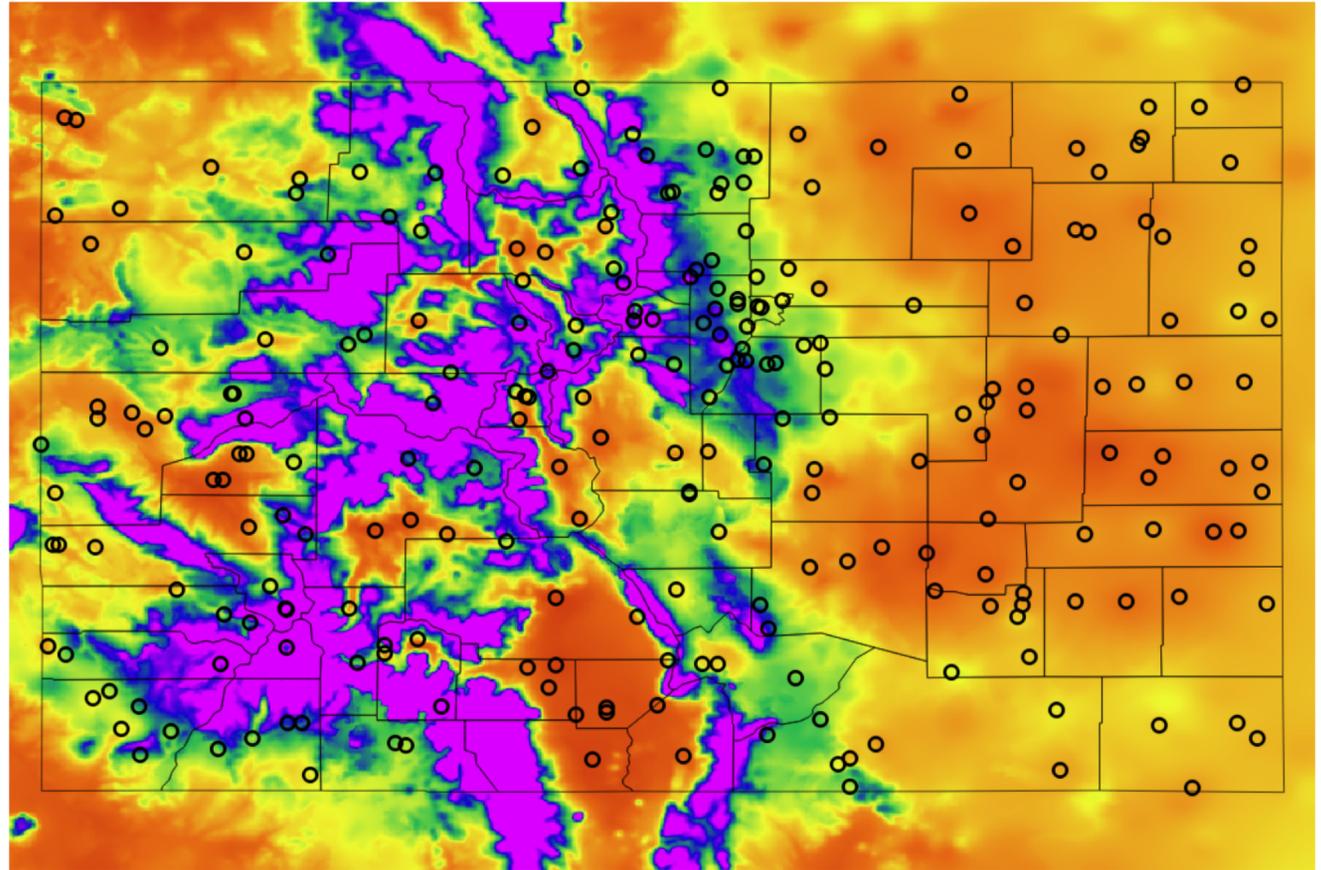


# Colorado Month to Date Precipitation 1 - 16 March 2021 Ending 5AM MST



## March Average Precipitation

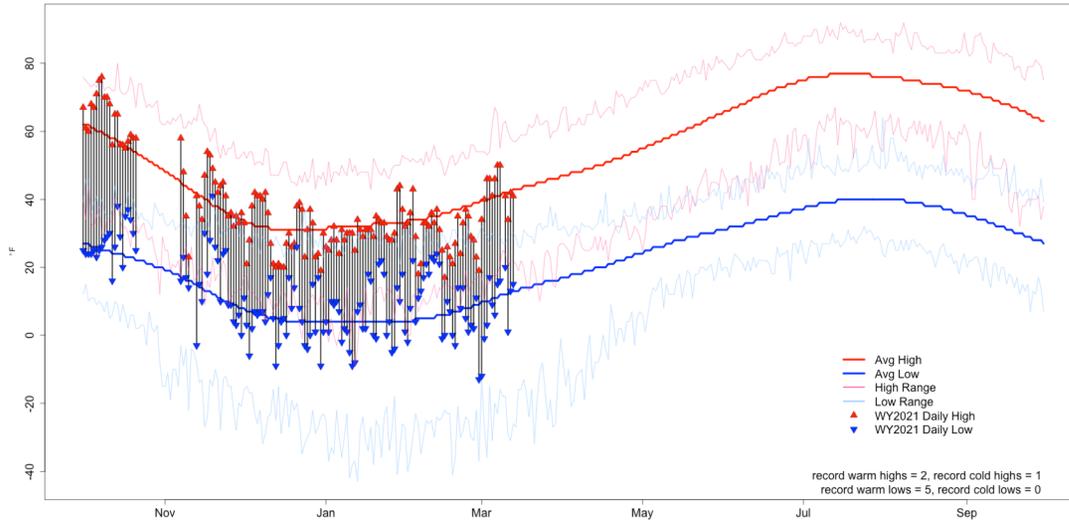
Visit our website to select a station and view specific monthly averages



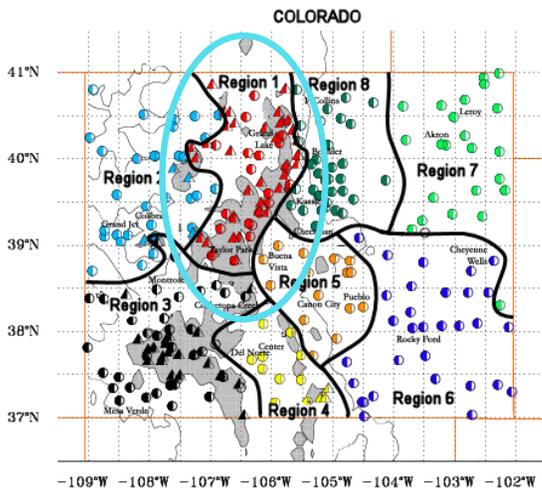
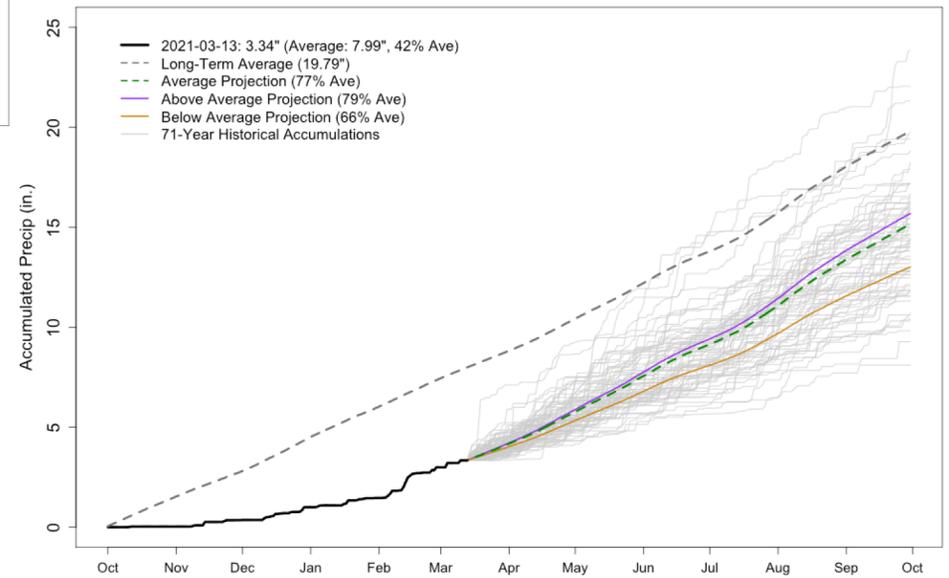
[http://climate.colostate.edu/normals/p\\_mar\\_norm.html](http://climate.colostate.edu/normals/p_mar_norm.html)



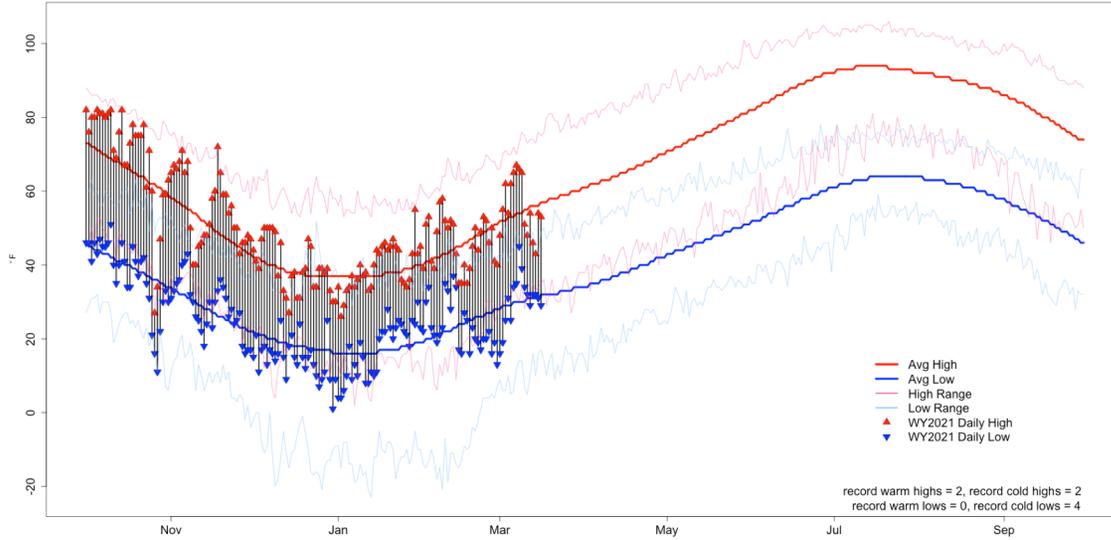
GRAND LAKE 1 NW Daily Temperature for Water Year 2021



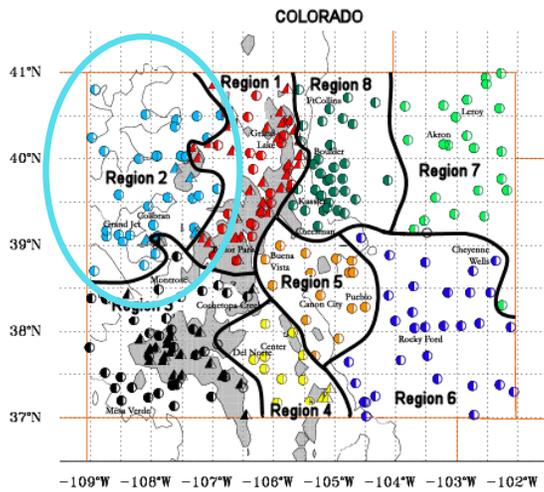
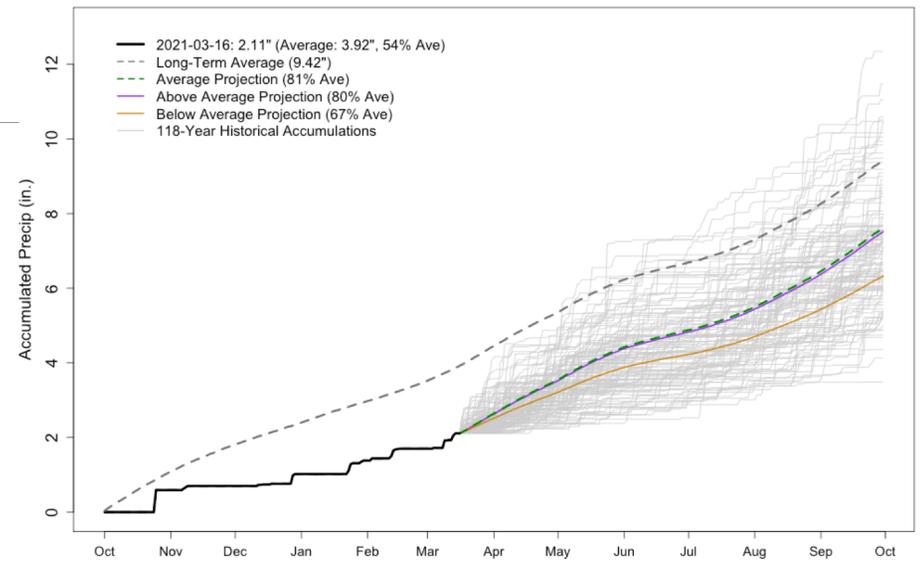
GRAND LAKE 1 NW WY2021 Precipitation Projections



GRAND JUNCTION WALKER FIELD Daily Temperature for Water Year 2021



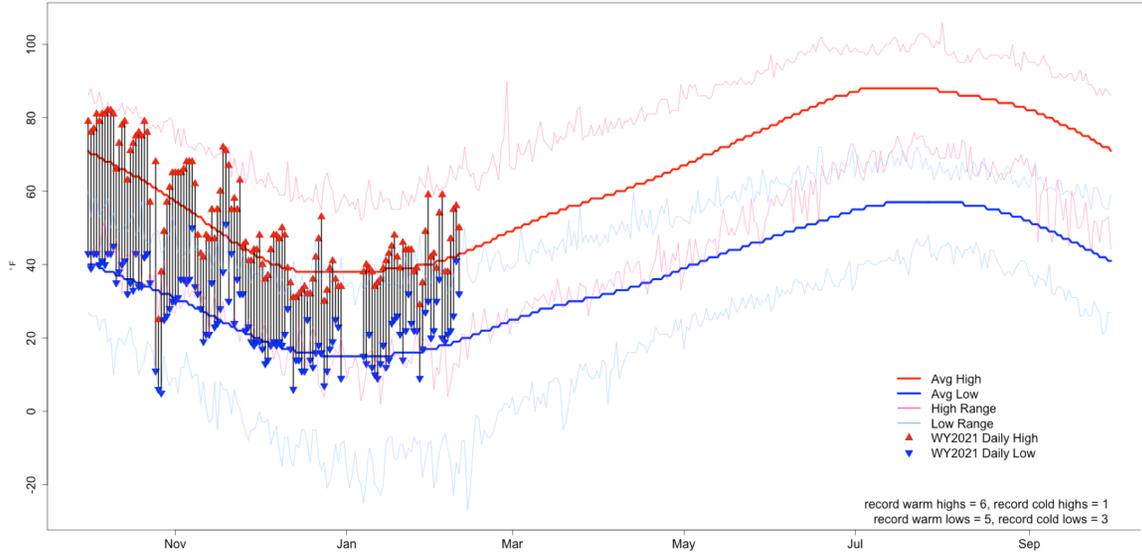
GRAND JUNCTION WALKER FIELD WY2021 Precipitation Projections



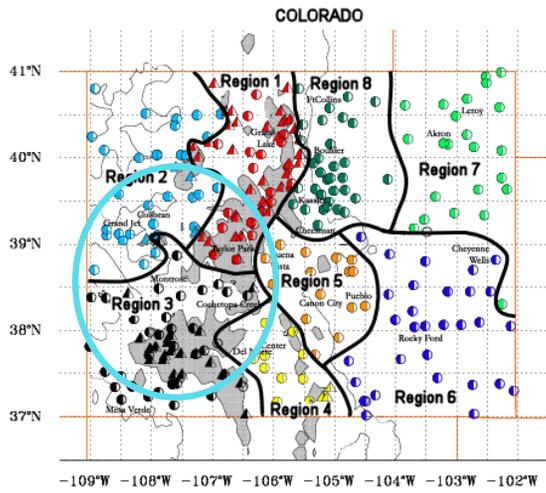
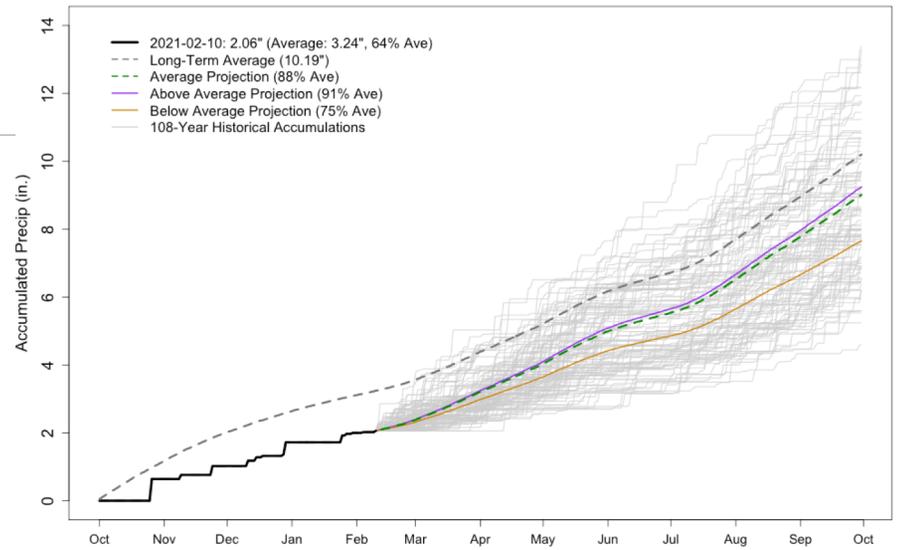
ENTER



MONTROSE #2 Daily Temperature for Water Year 2021



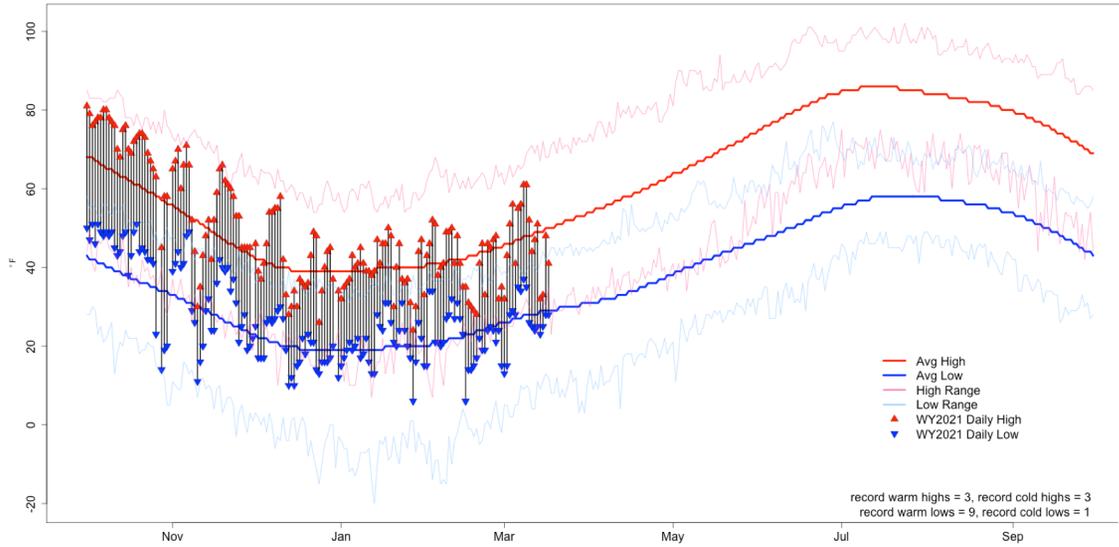
MONTROSE NO 2 WY2021 Precipitation Projections



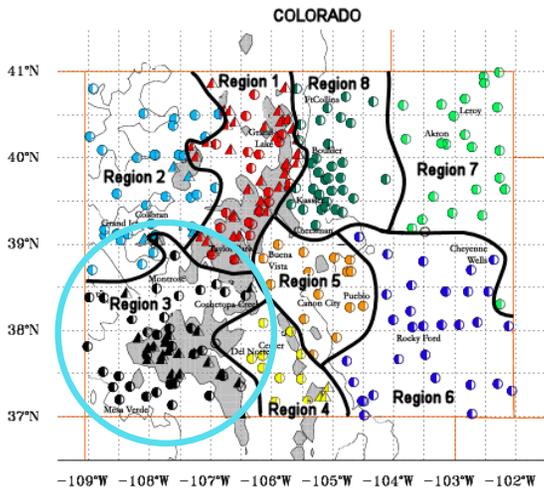
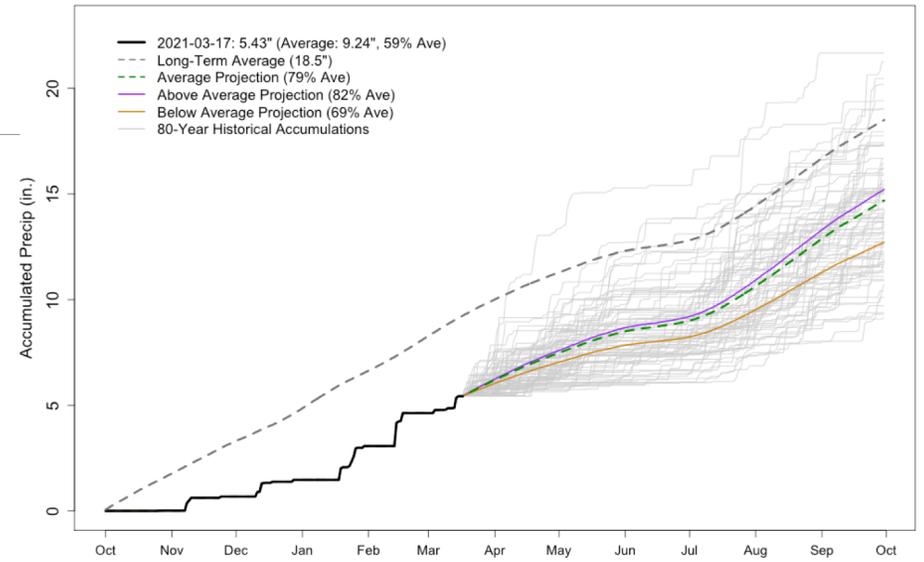
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MESA VERDE NP Daily Temperature for Water Year 2021



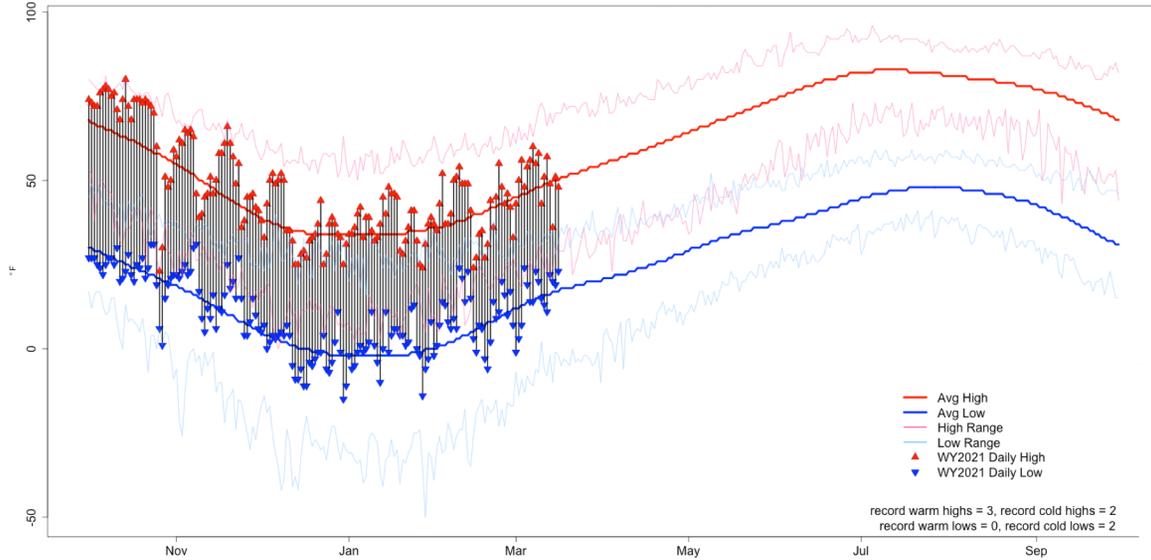
MESA VERDE NP WY2021 Precipitation Projections



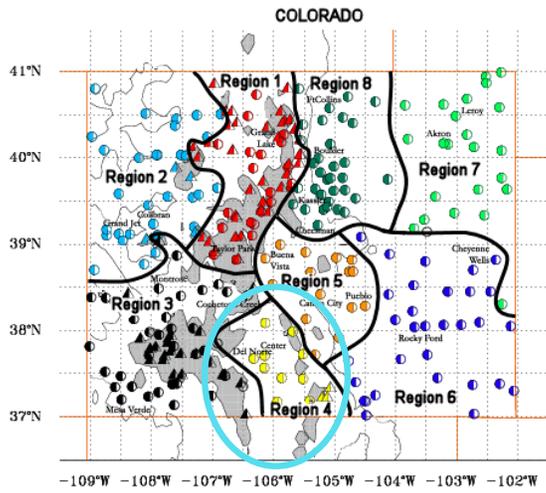
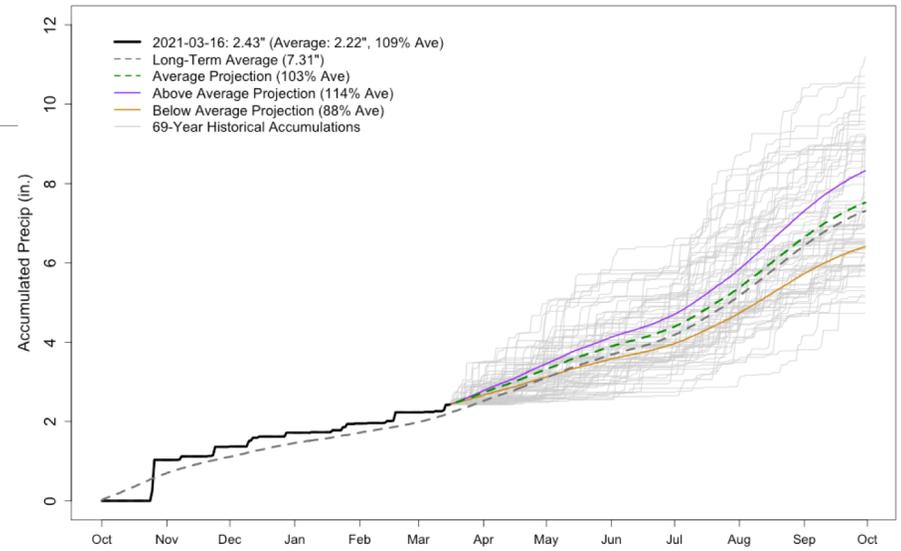
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ALAMOSA SAN LUIS VALLEY REGIONAL AP Daily Temperature for Water Year 2021



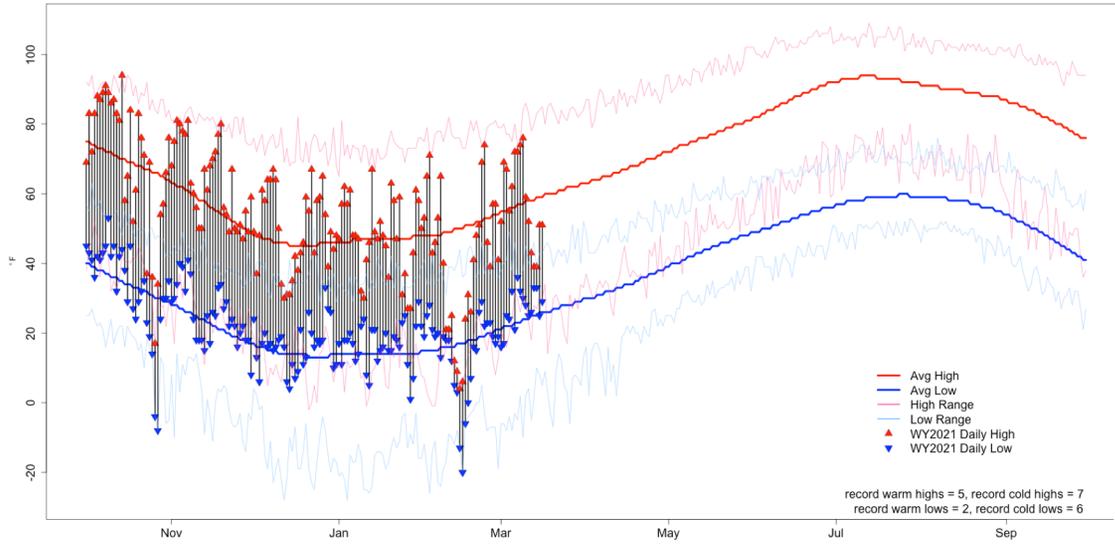
ALAMOSA-BERGMAN FIELD WY2021 Precipitation Projections



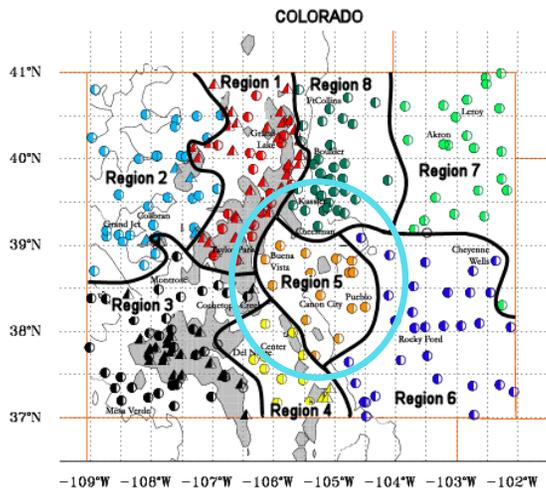
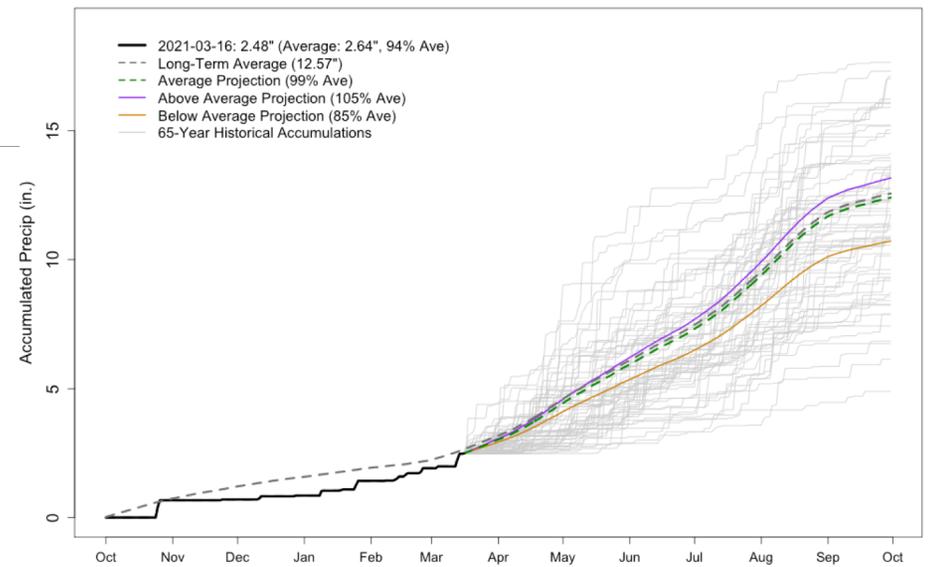
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PUEBLO MEMORIAL AP Daily Temperature for Water Year 2021



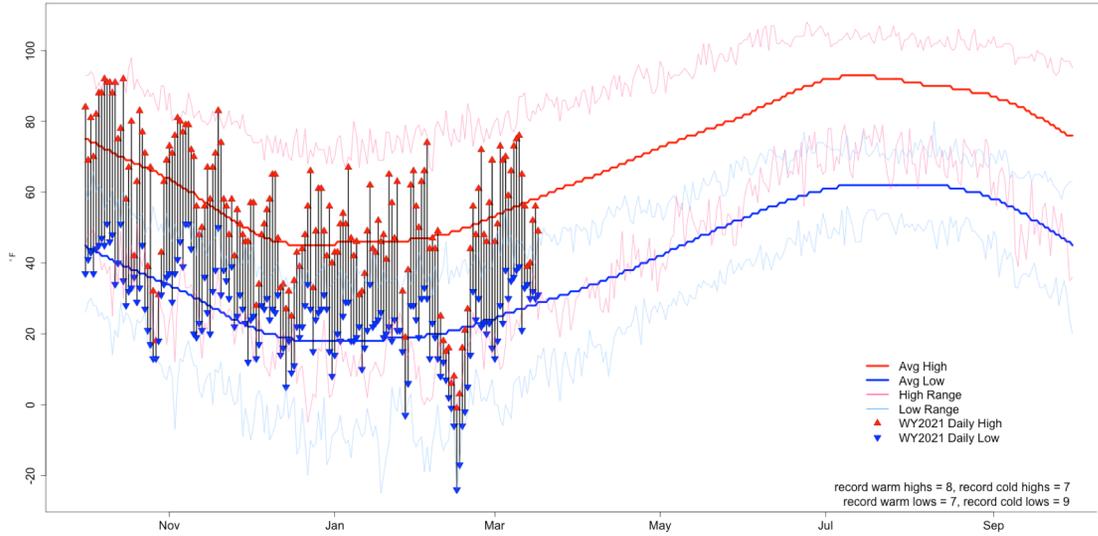
PUEBLO MEMORIAL AIRPORT WY2021 Precipitation Projections



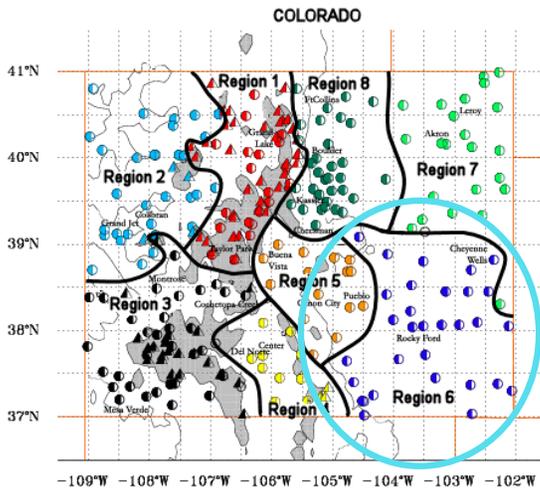
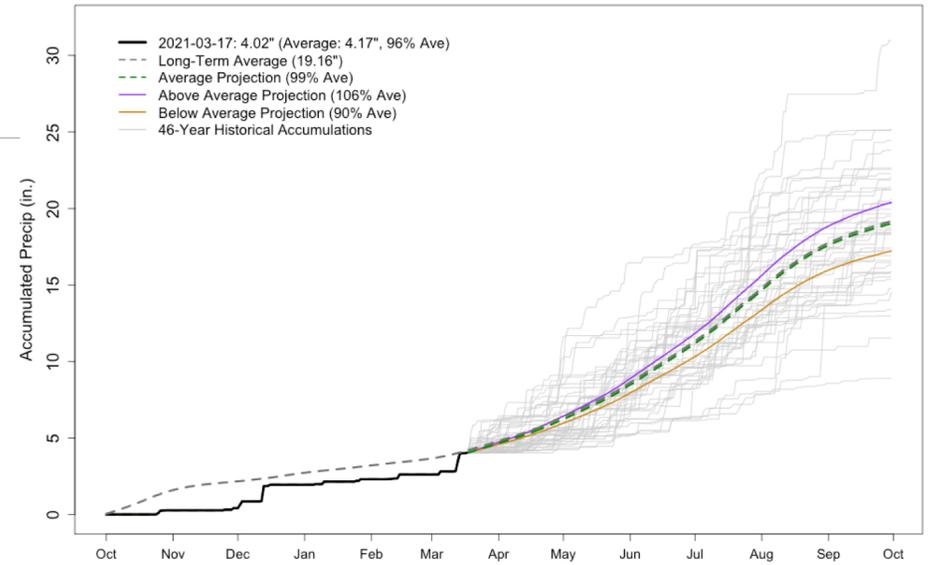
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WALSH 1 W Daily Temperature for Water Year 2021



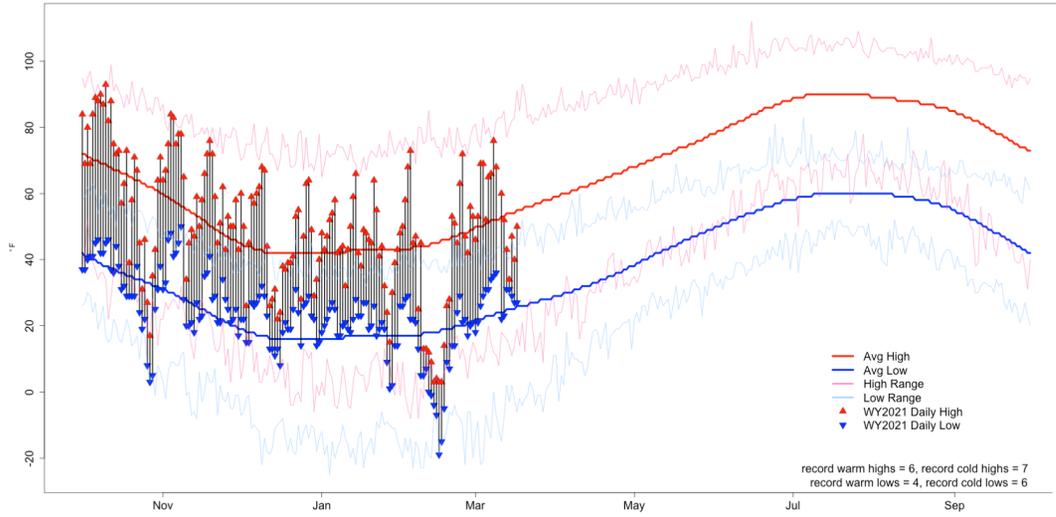
WALSH 1 W WY2021 Precipitation Projections



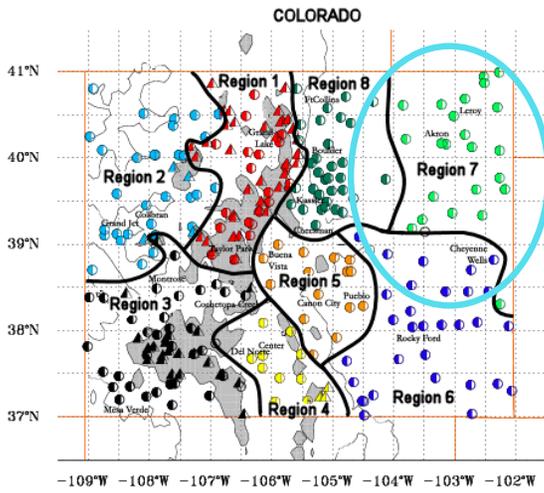
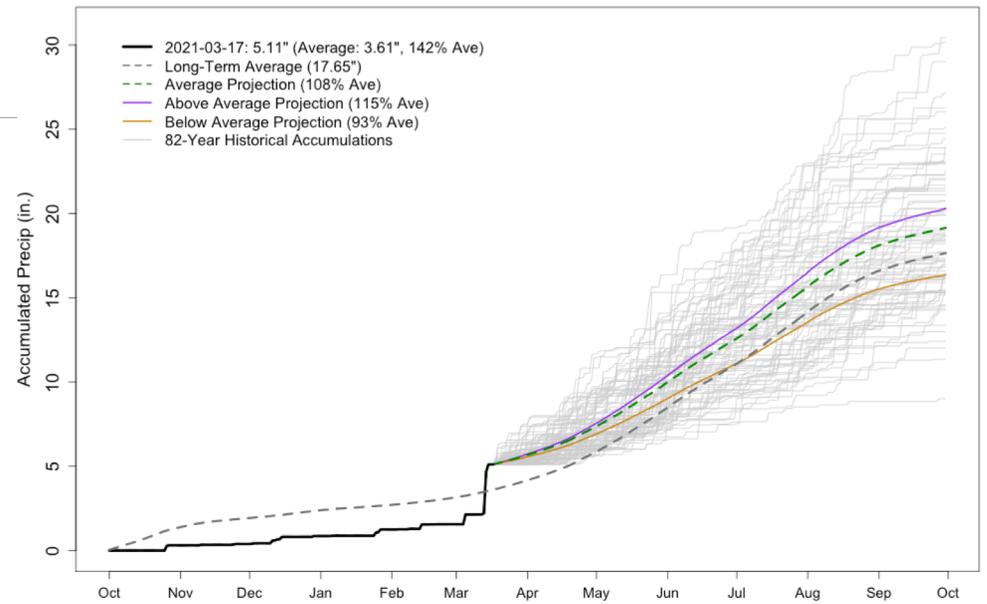
ENTER



BURLINGTON Daily Temperature for Water Year 2021



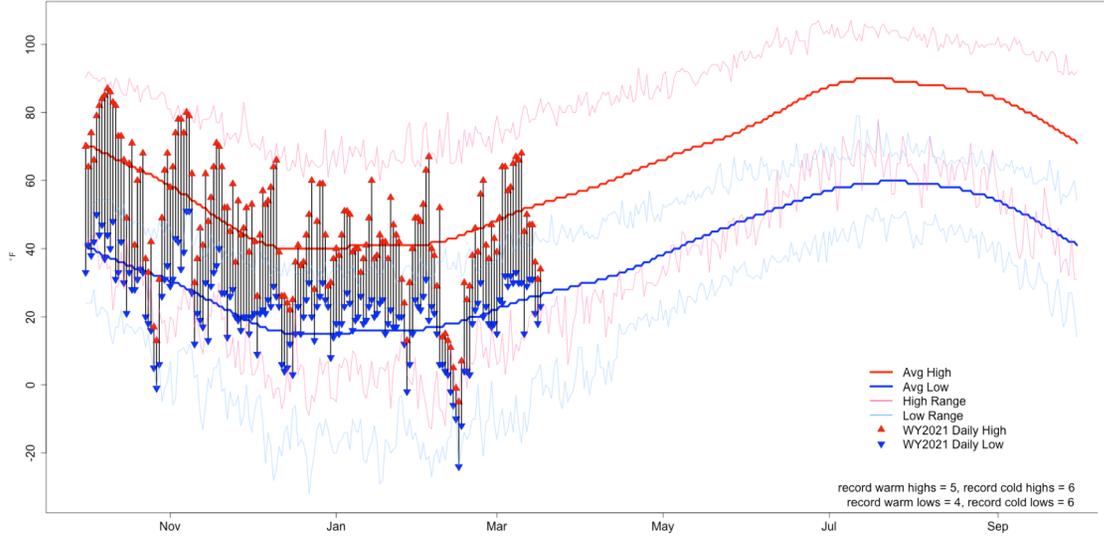
BURLINGTON WY2021 Precipitation Projections



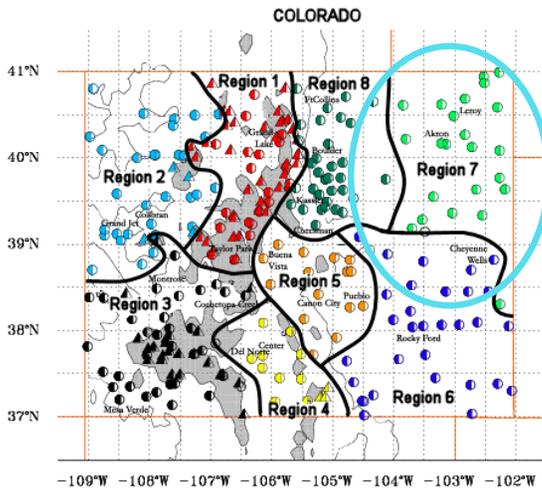
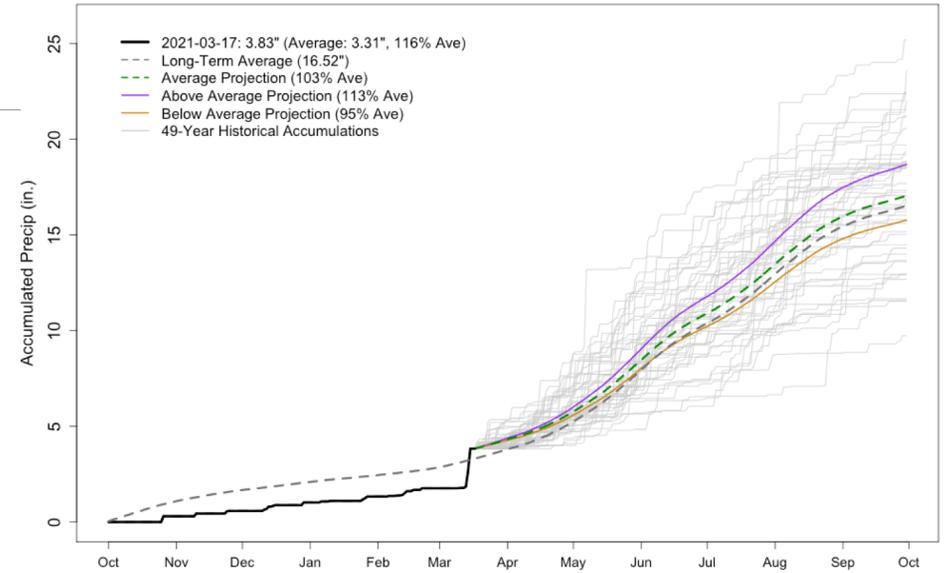
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AKRON 4 E Daily Temperature for Water Year 2021



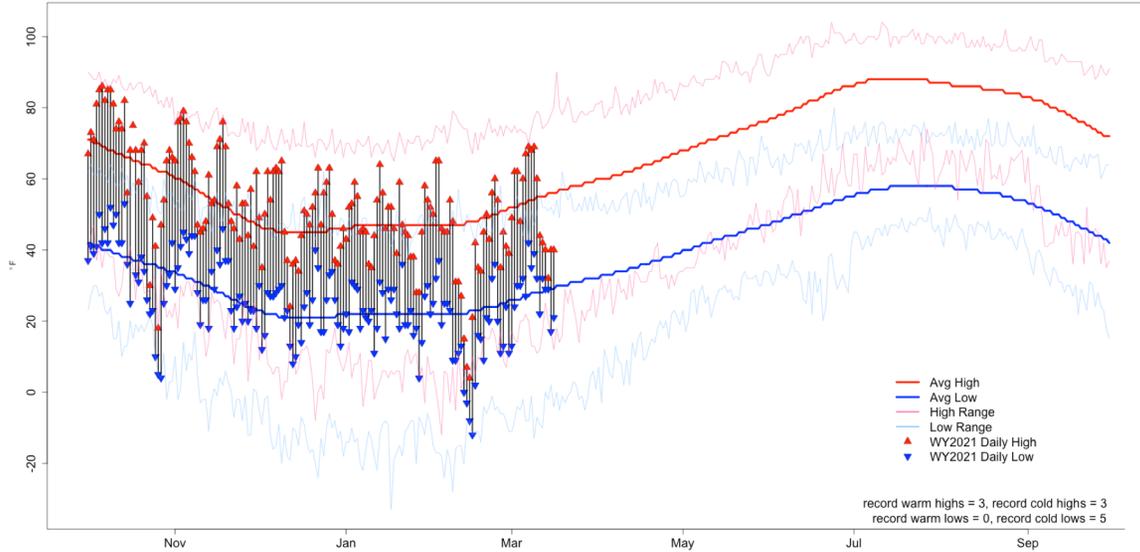
AKRON 4 E WY2021 Precipitation Projections



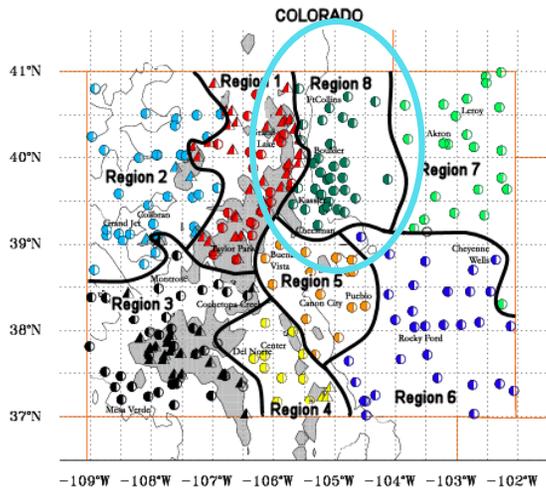
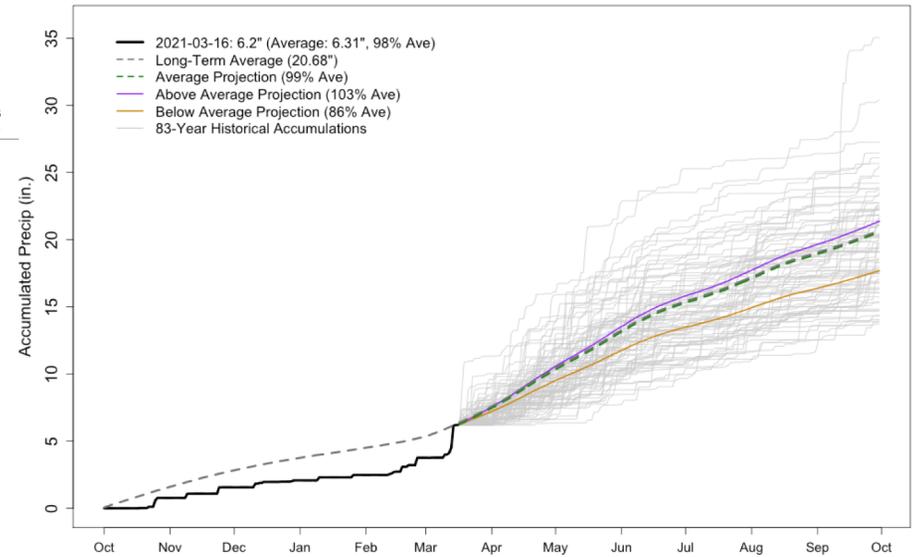
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BOULDER Daily Temperature for Water Year 2021



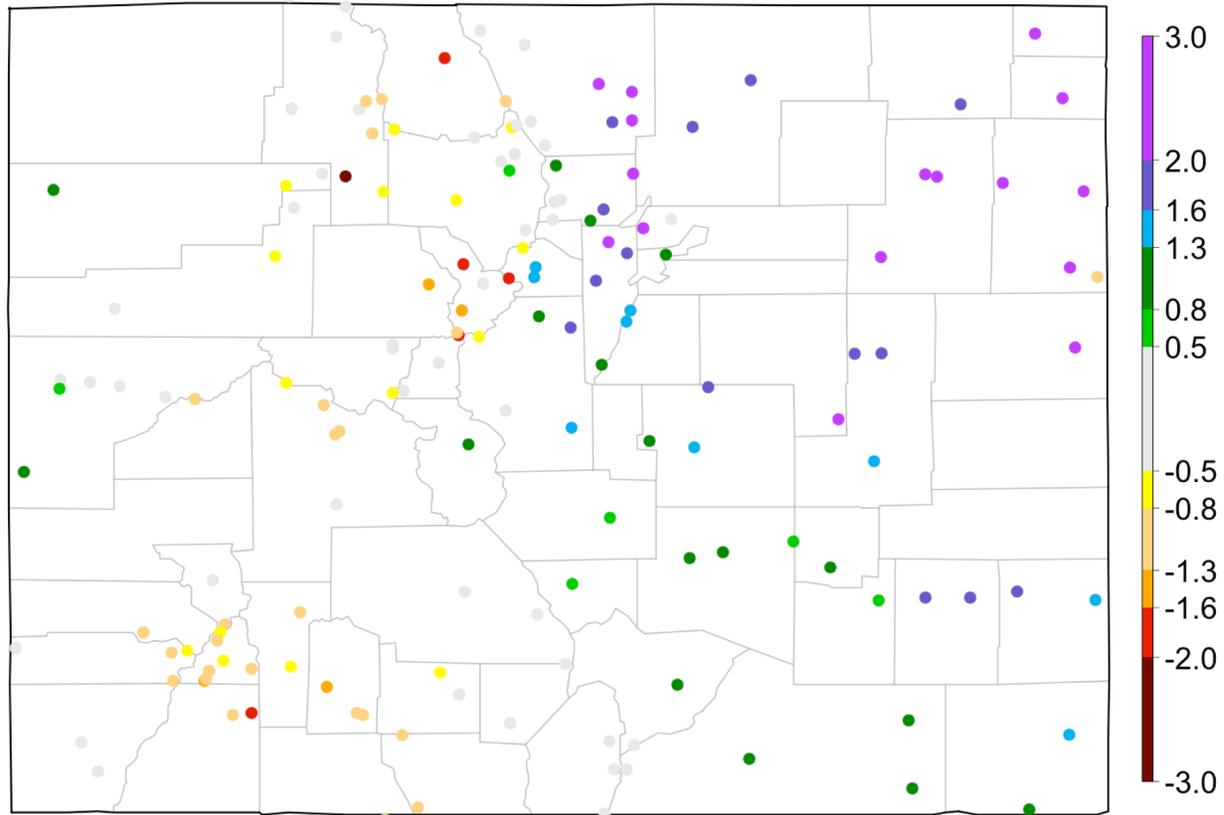
BOULDER WY2021 Precipitation Projections



ENTER



30-day SPI: 2021/02/13 - 2021/03/15

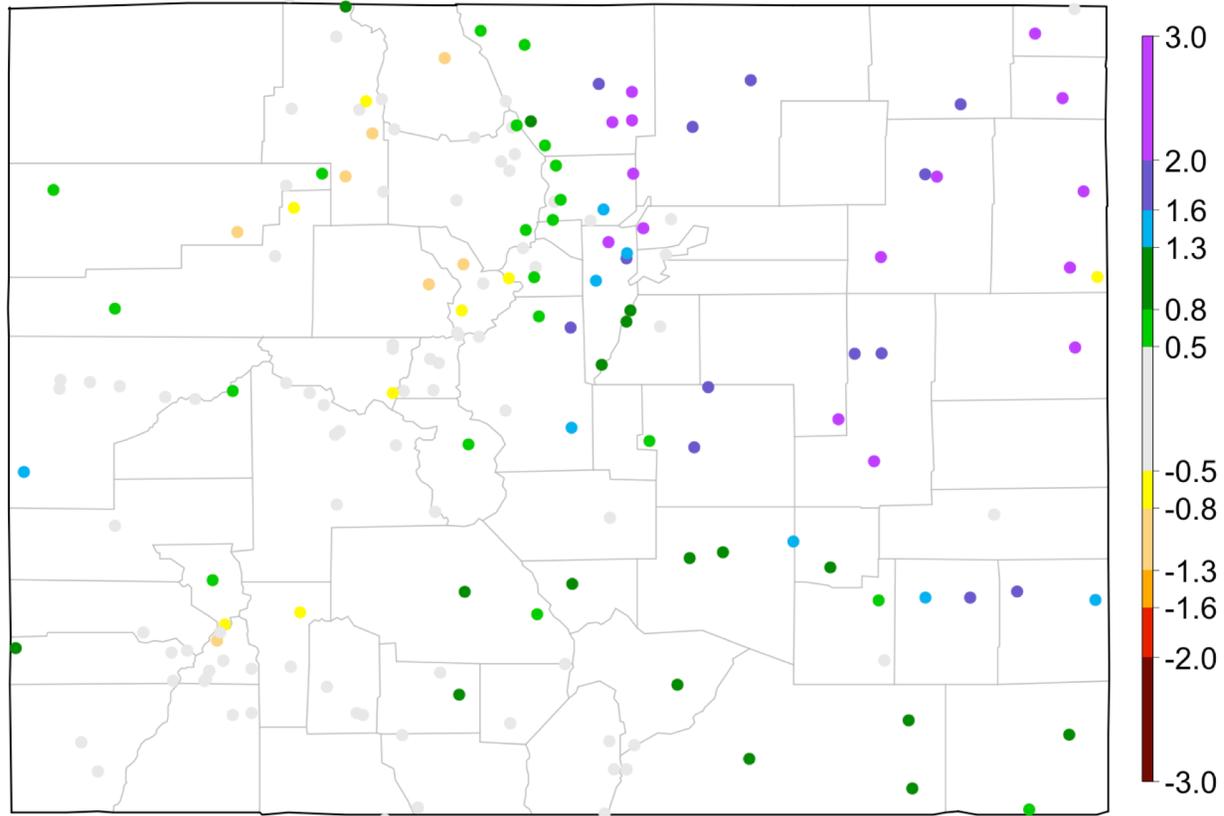


Data from High Plains Regional Climate Center and ACIS

<http://climate.colostate.edu/~drought/spi.html>



60-day SPI: 2021/01/14 - 2021/03/15

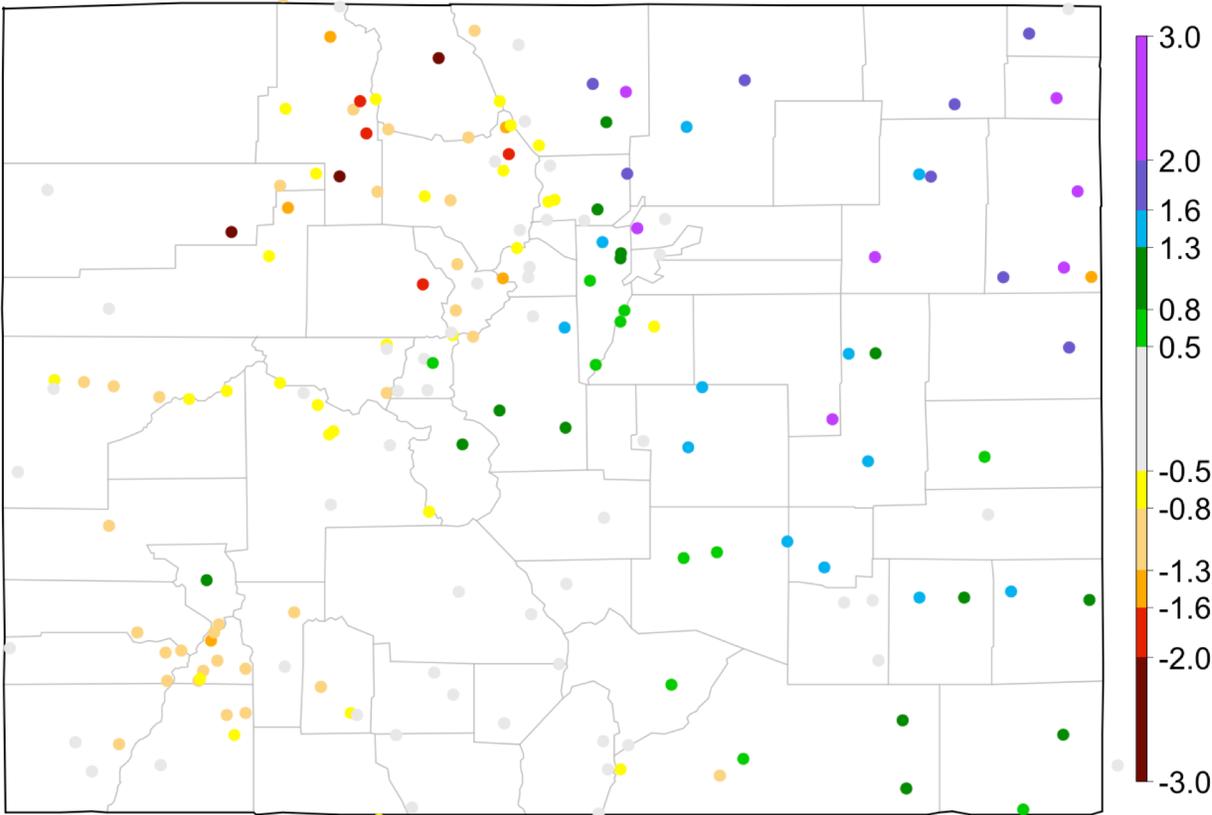


Data from High Plains Regional Climate Center and ACIS

<http://climate.colostate.edu/~drought/spi.html>



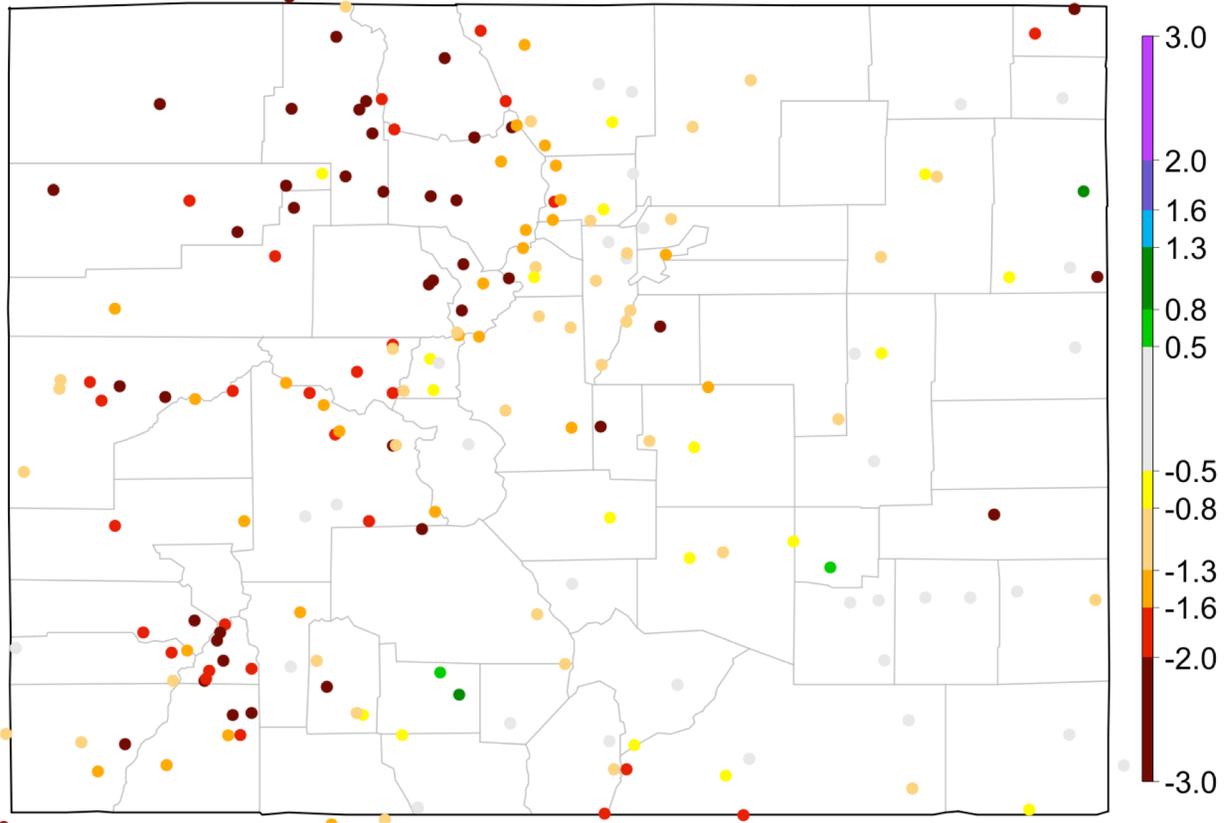
120-day SPI: 2020/11/15 - 2021/03/15



Data from High Plains Regional Climate Center and ACIS

<http://climate.colostate.edu/~drought/spi.html>

9-month SPI: 2020/06/16 - 2021/03/15

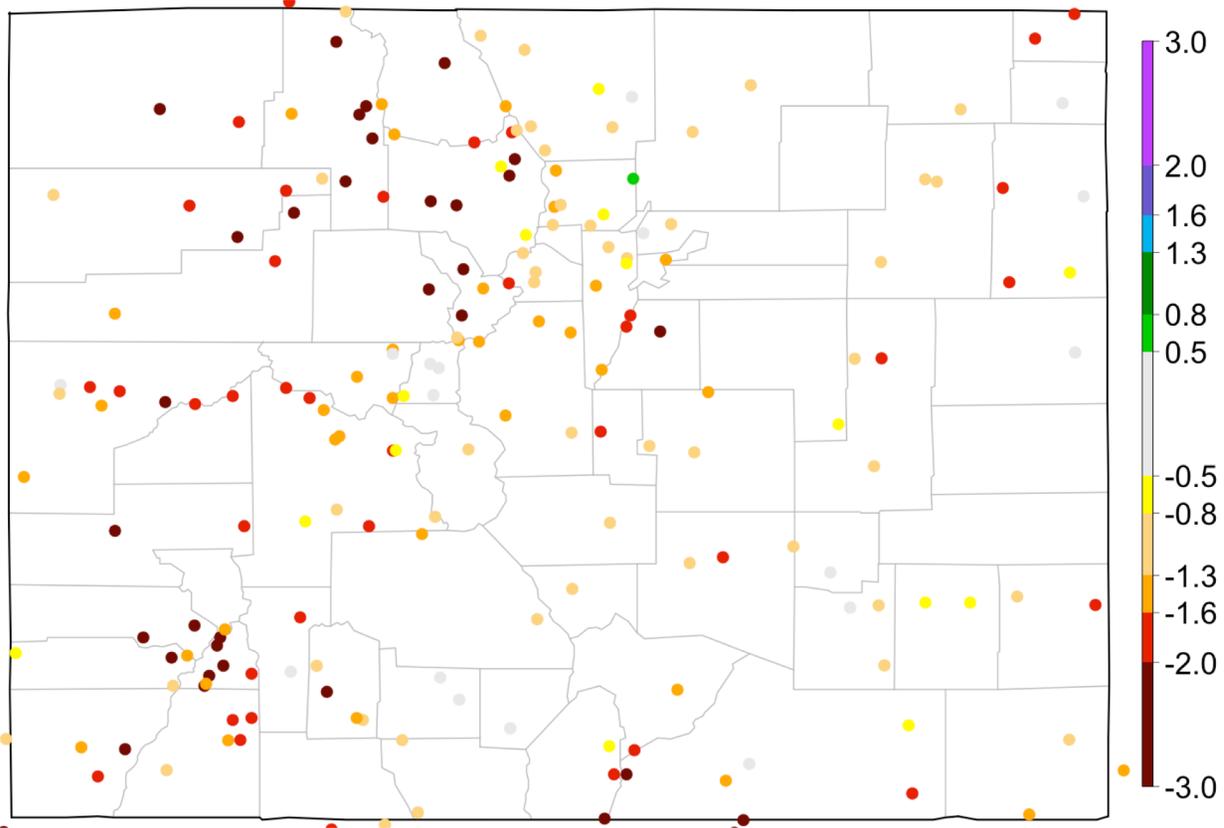


Data from High Plains Regional Climate Center and ACIS

<http://climate.colostate.edu/~drought/spi.html>



12-month SPI: 2020/03/16 - 2021/03/15



Data from High Plains Regional Climate Center and ACIS

<http://climate.colostate.edu/~drought/spi.html>



COLORADO CLIMATE CENTER





# Drought

National Drought

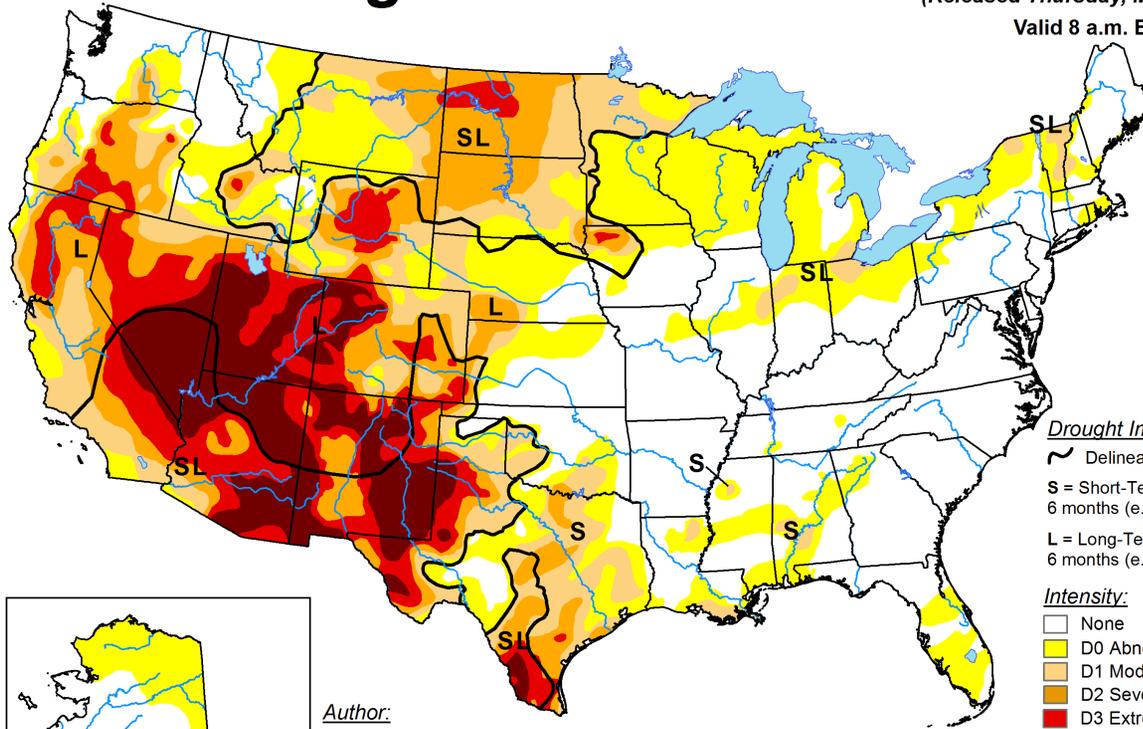
Colorado Drought

Colorado Drought Facts



# U.S. Drought Monitor

**March 16, 2021**  
 (Released Thursday, Mar. 18, 2021)  
 Valid 8 a.m. EDT

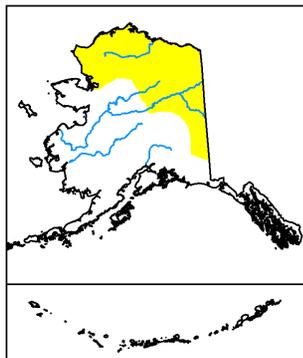


**Drought Impact Types:**

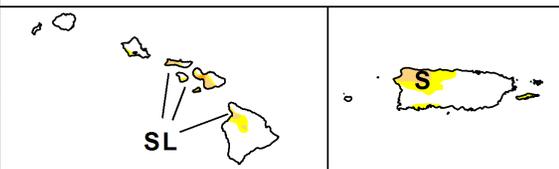
- ~ Delineates dominant impacts
- S = Short-Term, typically less than 6 months (e.g. agriculture, grasslands)
- L = Long-Term, typically greater than 6 months (e.g. hydrology, ecology)

**Intensity:**

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



*Author:*  
 Brad Pugh  
 CPC/NOAA



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>

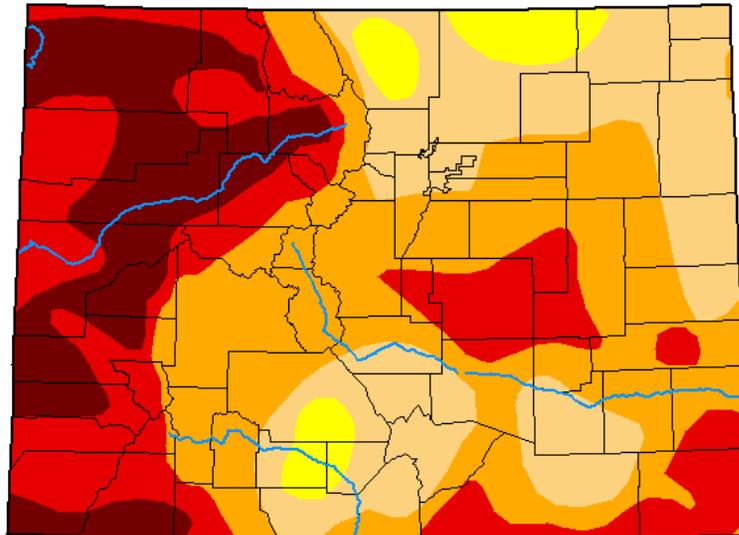


[droughtmonitor.unl.edu](https://droughtmonitor.unl.edu)



# U.S. Drought Monitor Colorado

**March 16, 2021**  
(Released Thursday, Mar. 18, 2021)  
Valid 8 a.m. EDT



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	0.00	100.00	95.76	71.47	38.64	15.10
<b>Last Week</b> <i>03-09-2021</i>	0.00	100.00	98.57	88.76	56.64	15.89
<b>3 Months Ago</b> <i>12-15-2020</i>	0.00	100.00	100.00	93.73	76.17	27.60
<b>Start of Calendar Year</b> <i>12-29-2020</i>	0.00	100.00	100.00	93.73	76.17	27.60
<b>Start of Water Year</b> <i>09-29-2020</i>	0.00	100.00	99.29	89.35	52.88	2.64
<b>One Year Ago</b> <i>03-17-2020</i>	30.09	69.91	46.88	3.30	0.00	0.00

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:  
Brad Pugh  
CPC/NOAA

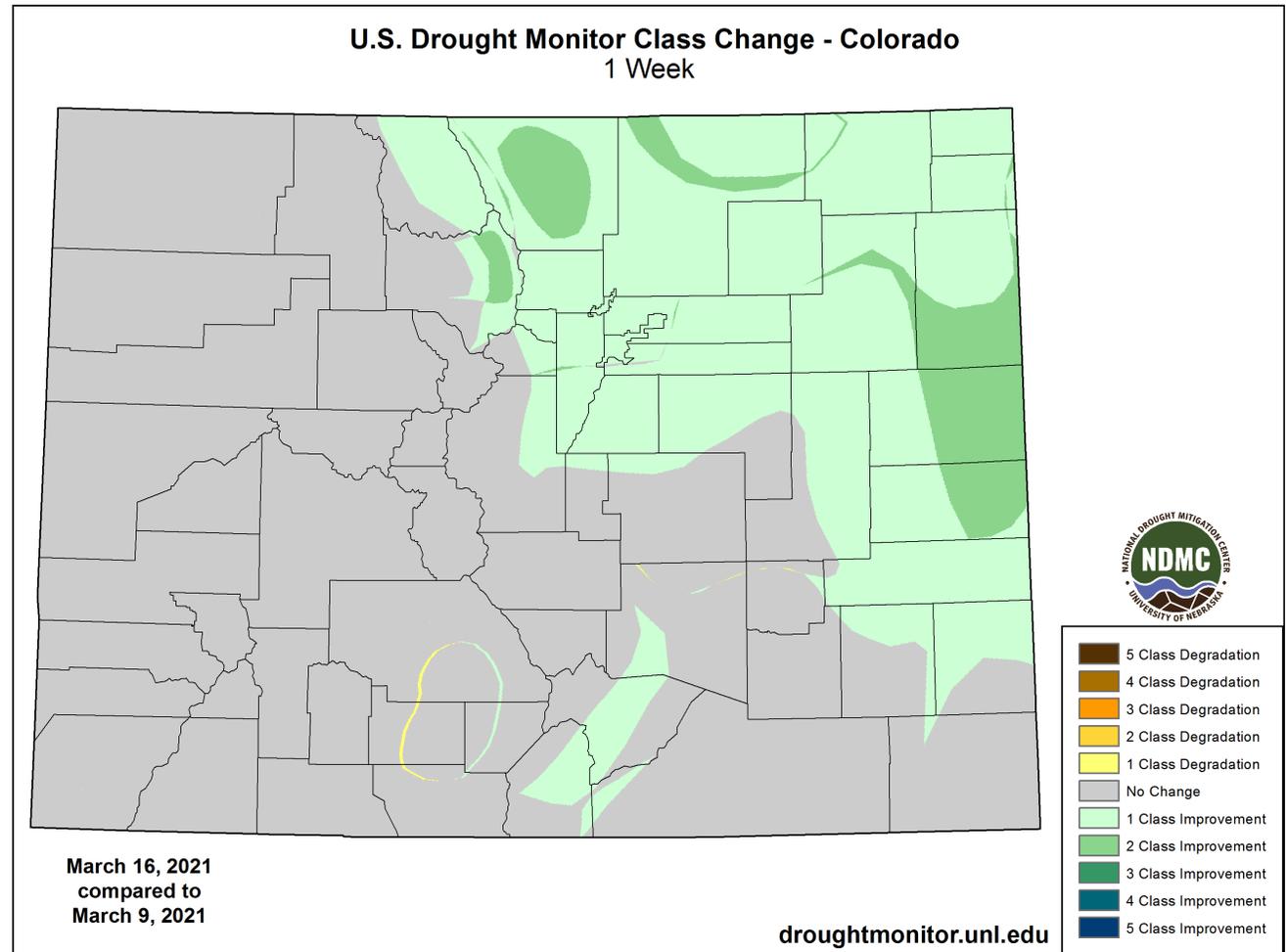


[droughtmonitor.unl.edu](https://droughtmonitor.unl.edu)

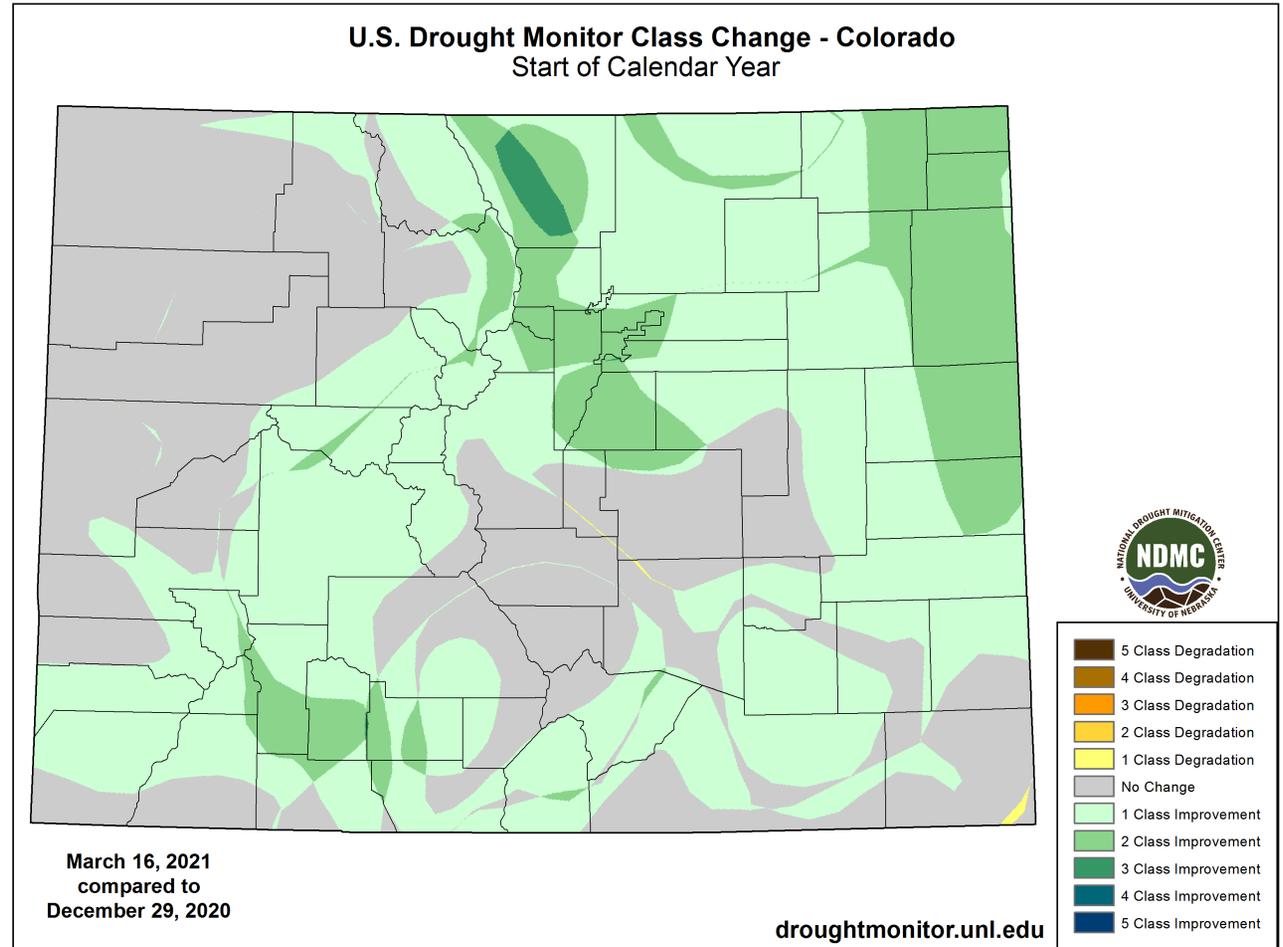


A 2-category change in a one week period is a big deal! Usually only reserved for a very large amount of moisture.

Our last 2-category improvement was with the September 2013 floods.



Mainly improvements since the beginning of the calendar year.



## Outlook

Next 7 days

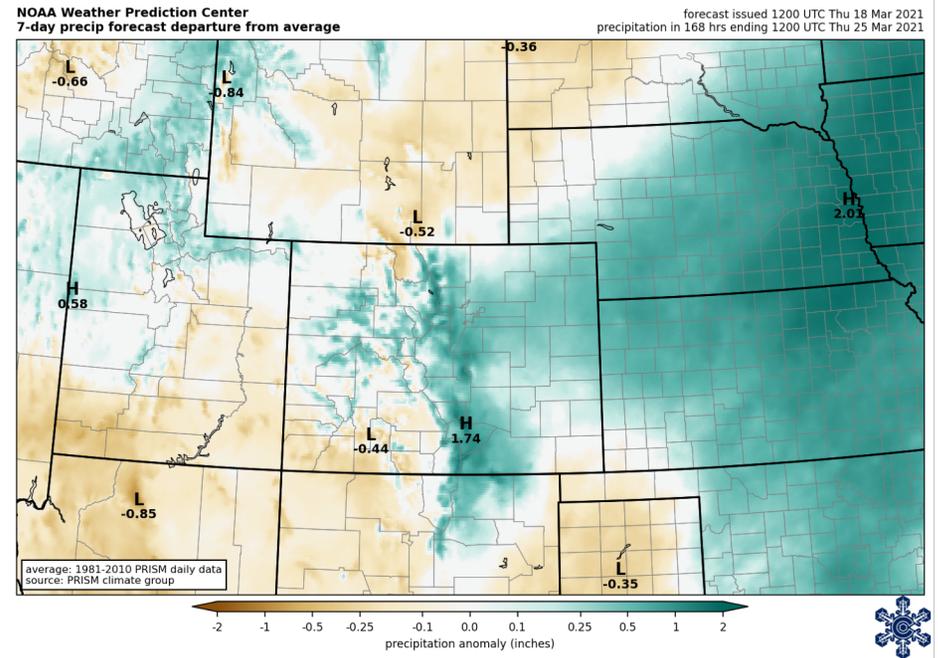
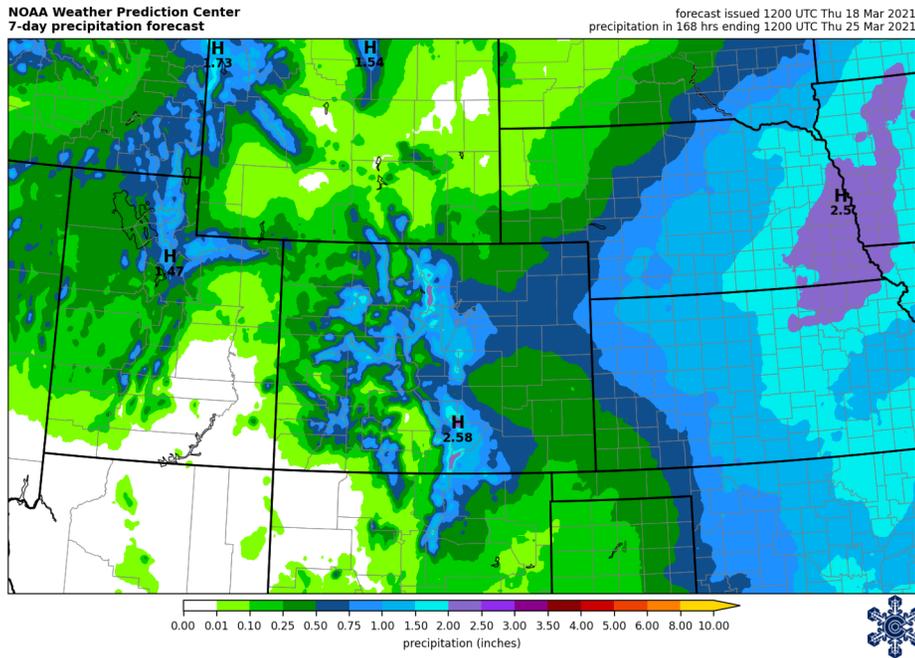
8-14 day Outlook

CPC Outlooks

Weakening La Niña



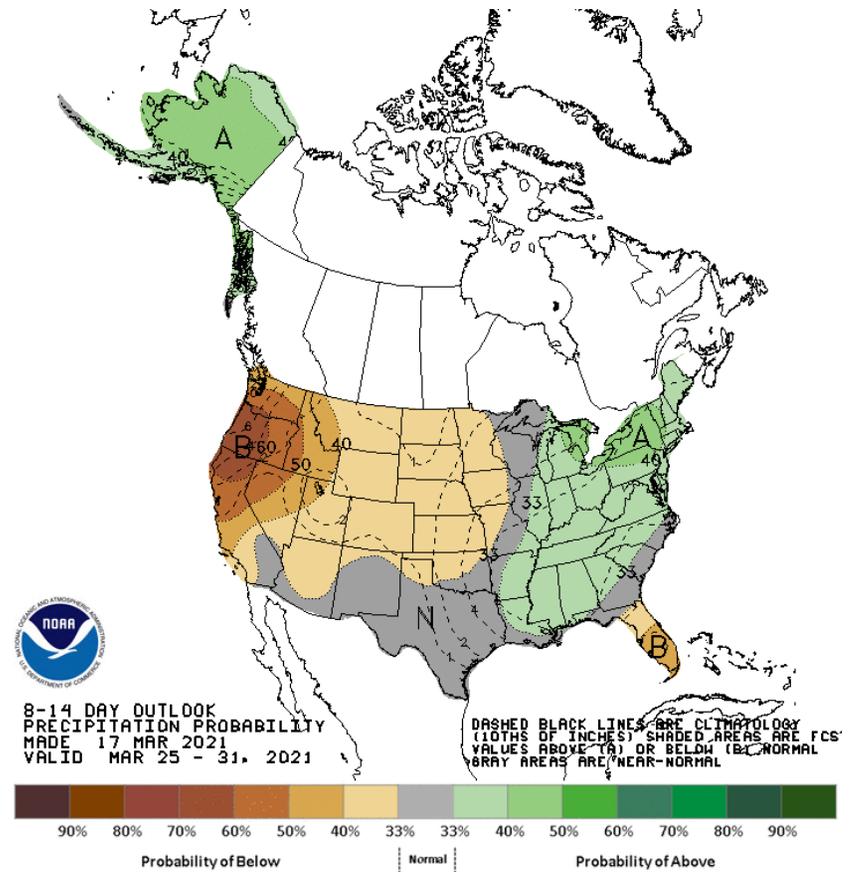
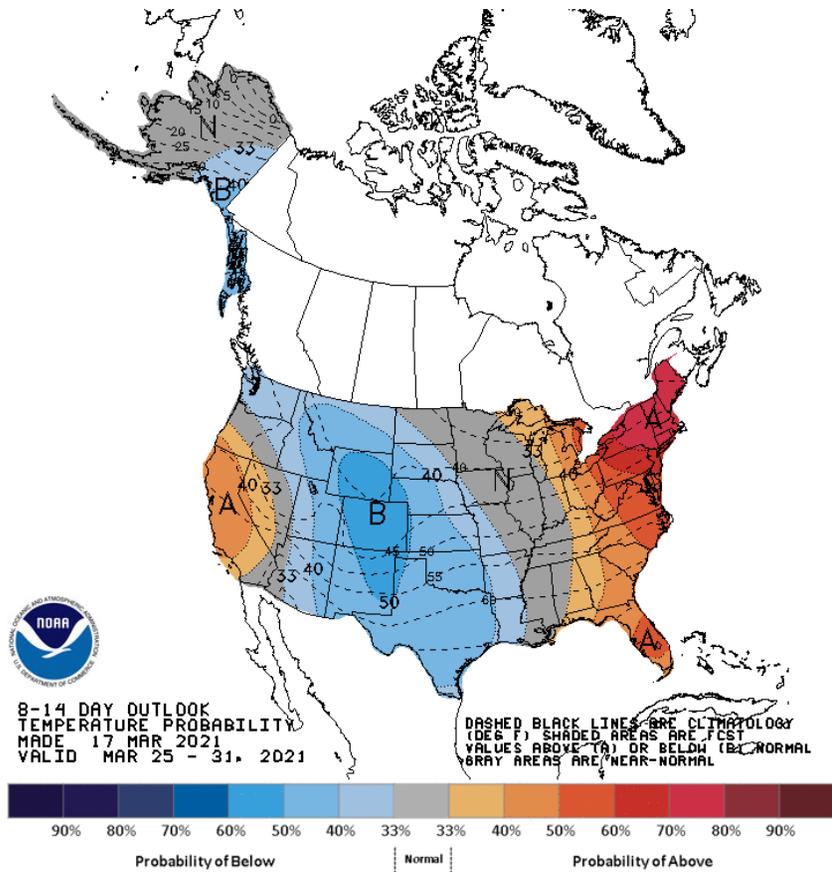
# NOAA 7-day precip forecast



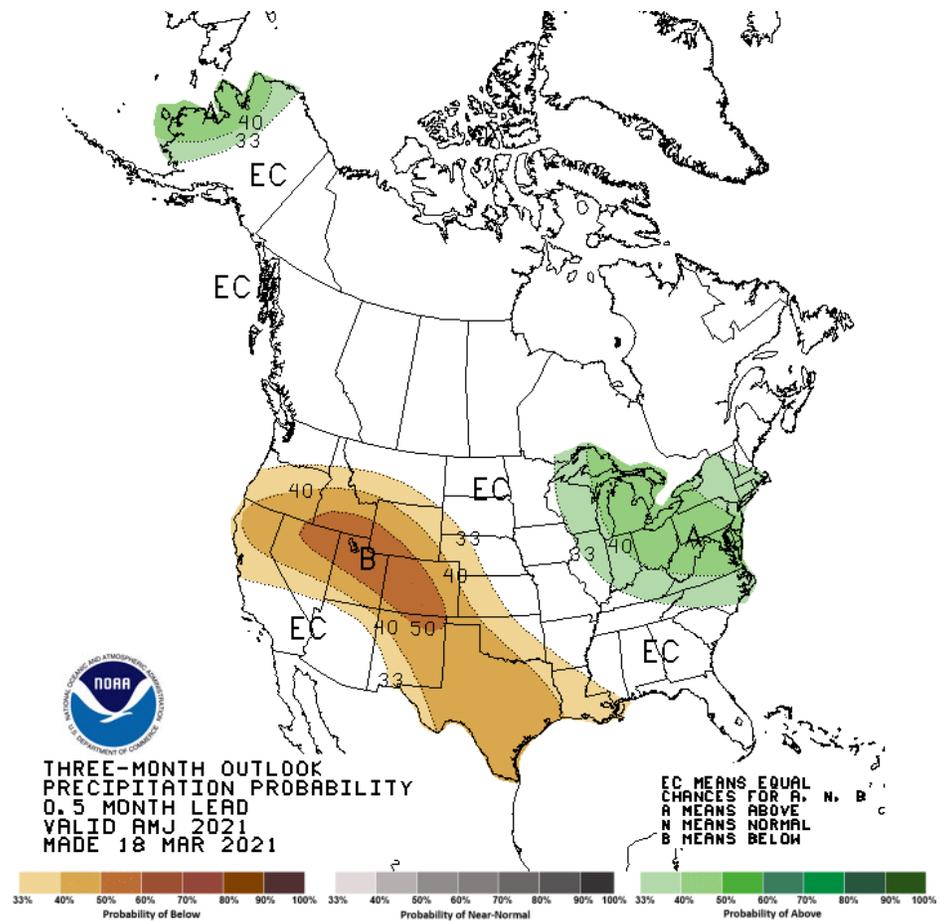
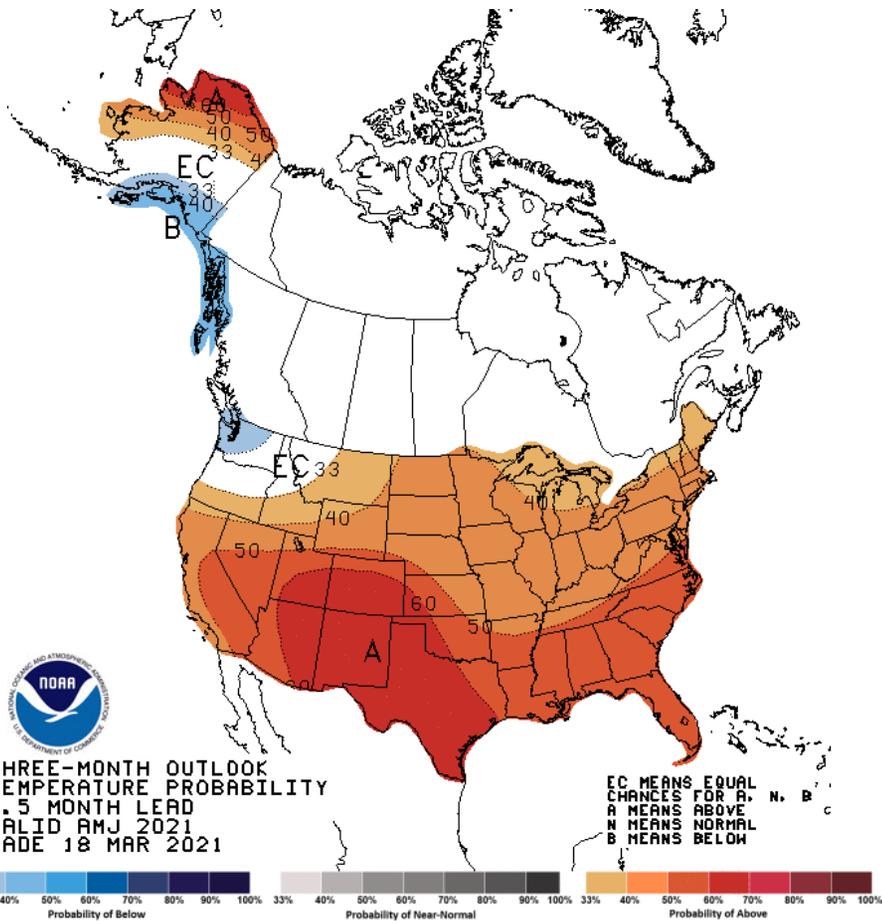
<http://schumacher.atmos.colostate.edu/weather/>



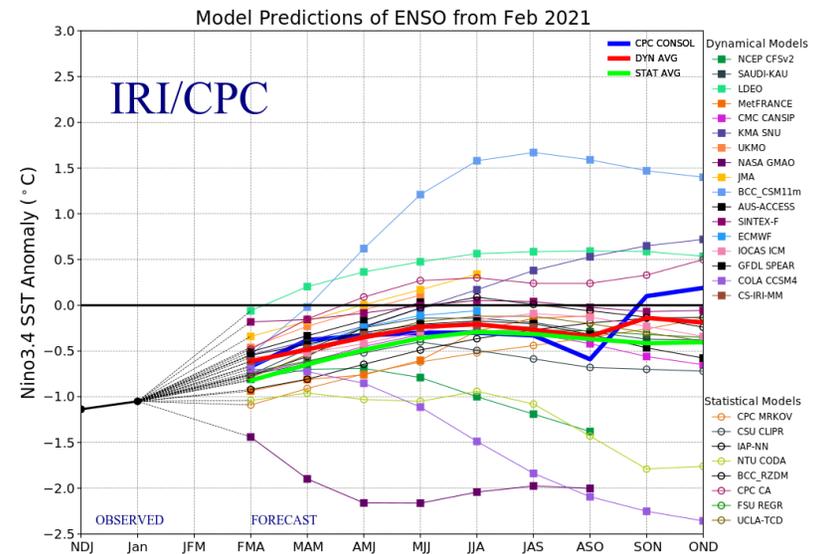
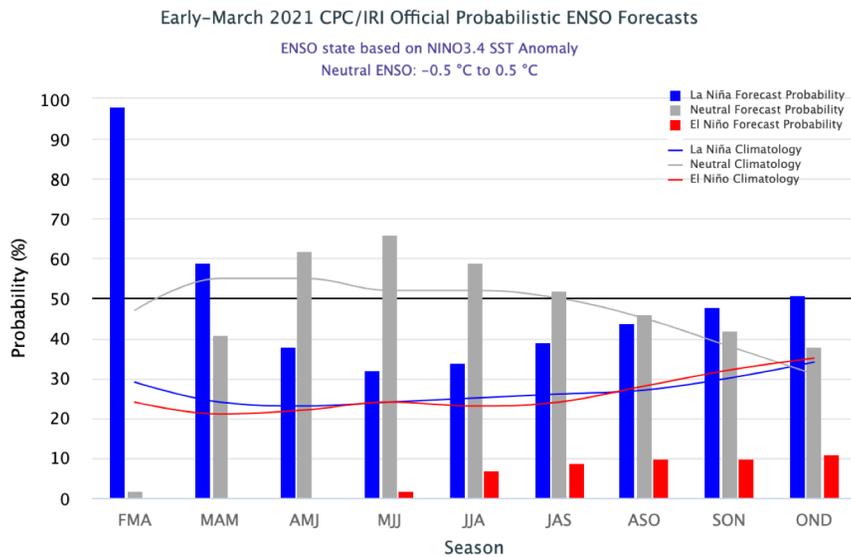
# 8-14 day outlook



# Seasonal outlook



# What's the El Niño forecast?

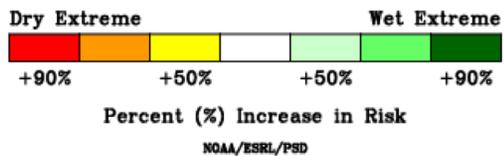
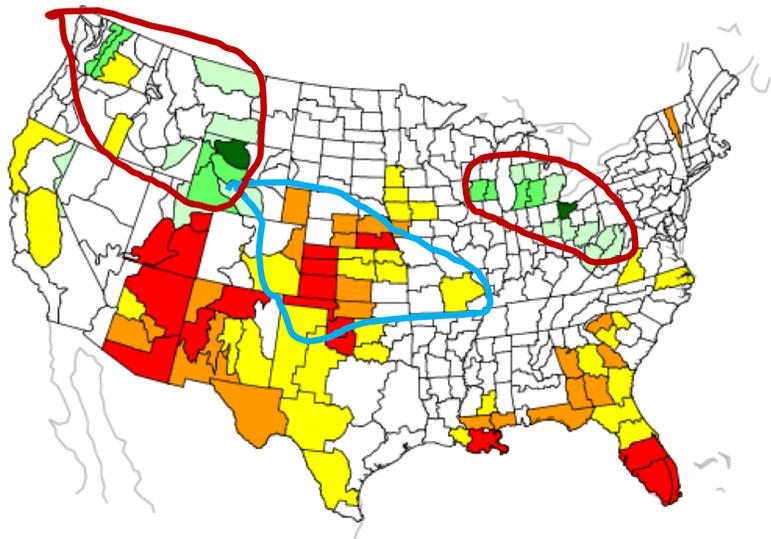


Sea surface temperatures and the atmospheric variables continue to exhibit La Niña conditions. La Niña is expected to continue through the spring with an increasing chance of neutral conditions in the summer.

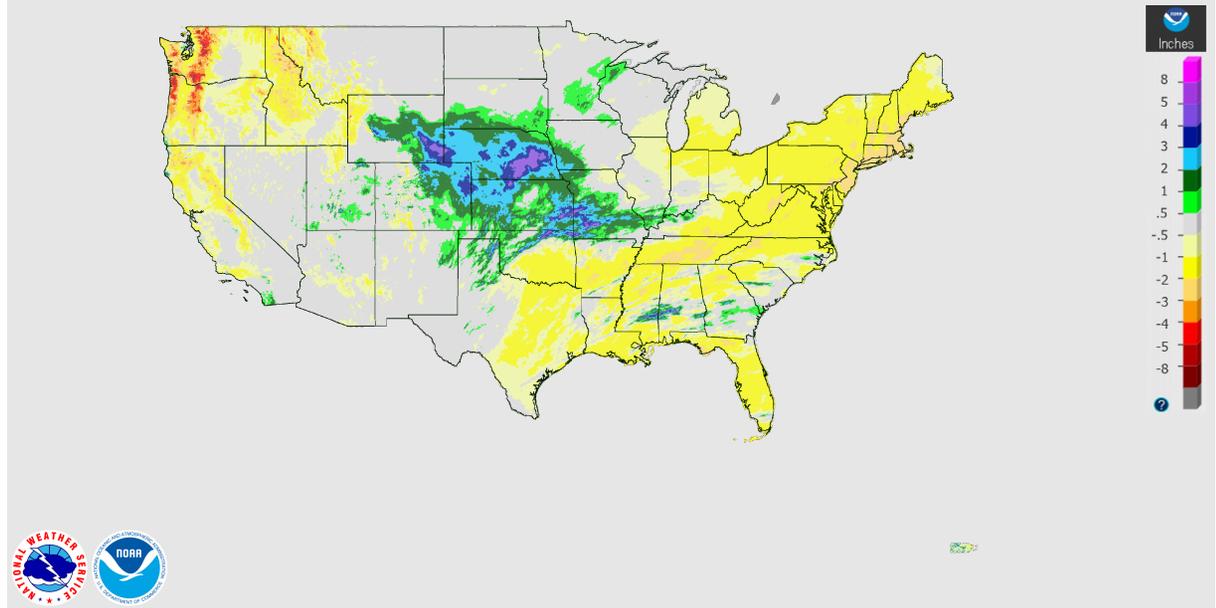


# La Niña?? Not always a perfect relationship...

MAM Precipitation During La Nina  
Increased Risk of Wet or Dry Extremes



March 17, 2021 Month to Date Departure Precipitation  
Created on: March 17, 2021 - 21:02 UTC  
Valid on: March 17, 2021 12:00 UTC



# Summary points

- A warmer and drier pattern has continued this winter.
- So why have we seen improvements? Conditions are not as severe as they were in the fall.
- The recent snow storm definitely boosted moisture east of the Divide.
- West of the Divide, this was not a drought buster.
- Seasonal outlook shows confidence in our area experiencing warmer than average conditions for April-May-June.
- There is a tilt to higher chances of drier than average for April-May-June
- March proves it is hard to forecast beyond 2 weeks!



To view this and other presentations:  
[http://climate.colostate.edu/ccc\\_archive.html](http://climate.colostate.edu/ccc_archive.html)

[Becky.Bolinger@colostate.edu](mailto:Becky.Bolinger@colostate.edu)

Thank you!

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ATMOSPHERIC SCIENCE  
COLORADO STATE UNIVERSITY