

# Colorado's Climate in 10 Slides

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Dr. Becky Bolinger  
Assistant State Climatologist

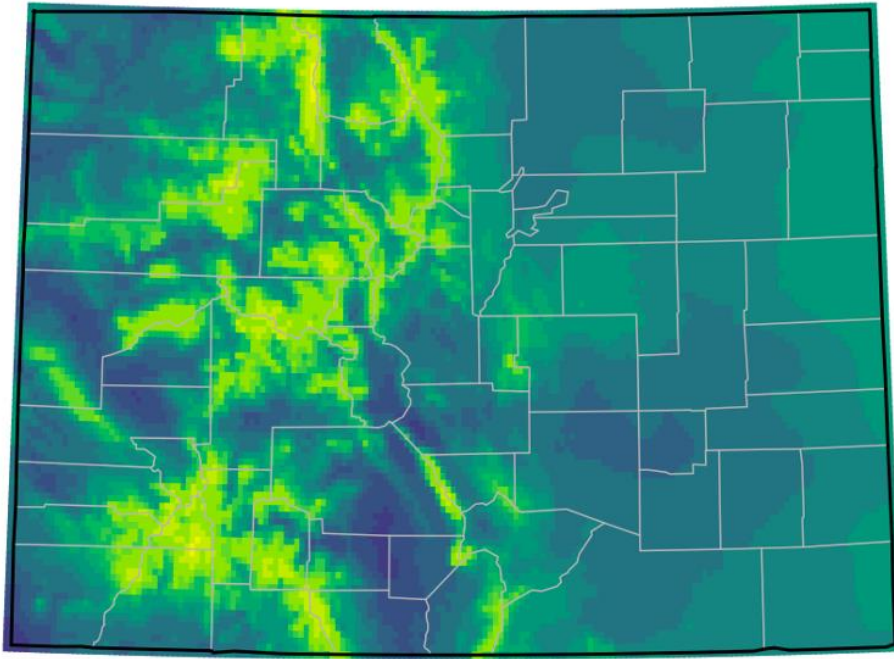
SWCD Annual Water Seminar

April 1, 2022



ATMOSPHERIC SCIENCE  
COLORADO STATE UNIVERSITY

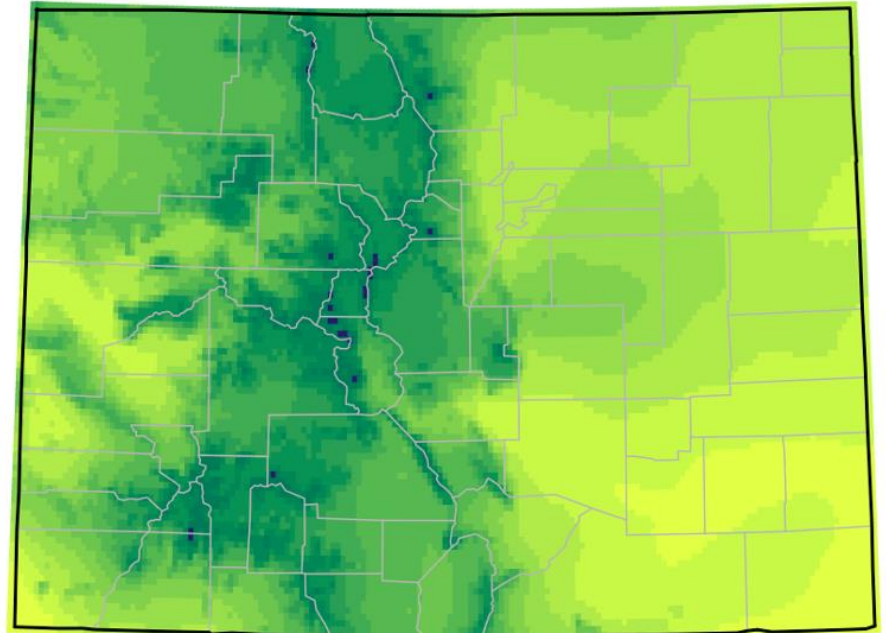
### annual average precipitation



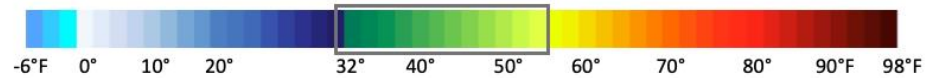
Map by Colorado Climate Center, NOAA NCEI Gridded Normals, 1991-2020



### annual average temperature



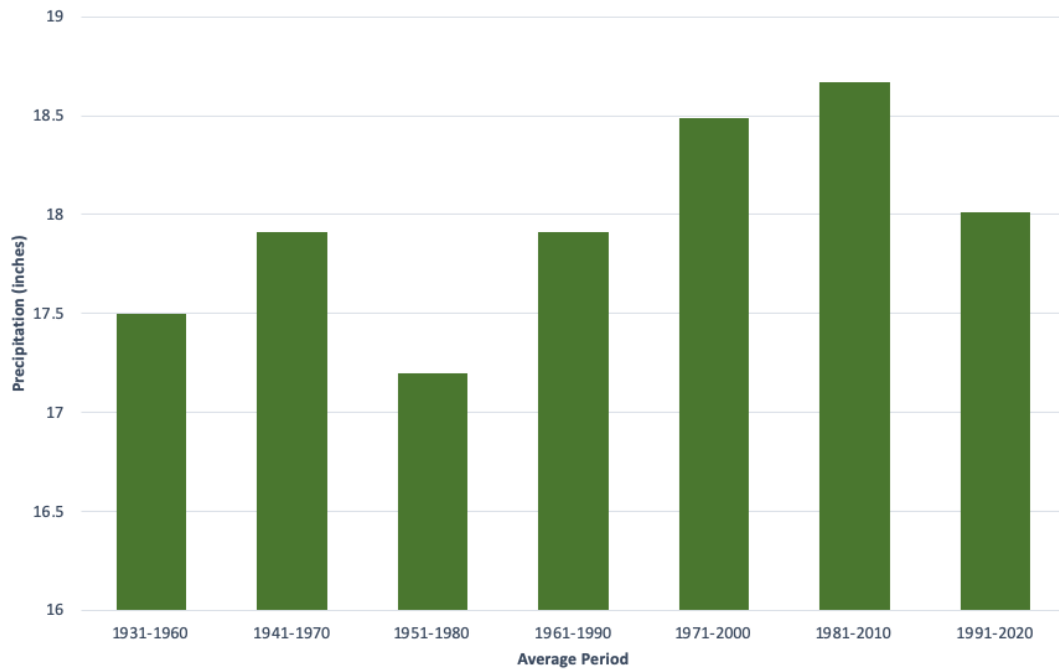
Map by Colorado Climate Center, NOAA NCEI Gridded Normals, 1991-2020



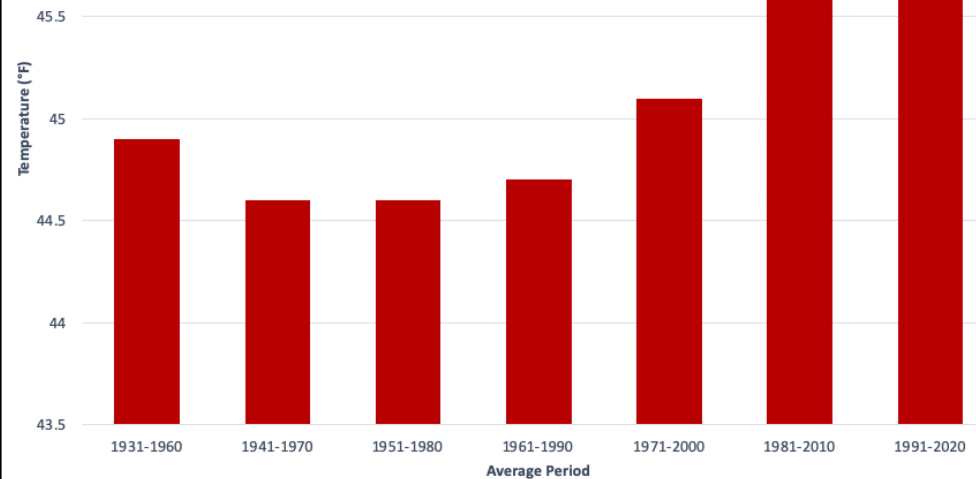
[https://climate.colostate.edu/normals\\_maps.html](https://climate.colostate.edu/normals_maps.html)



**Average Annual Precipitation for Colorado**  
Source: NOAA National Centers for Environmental Information



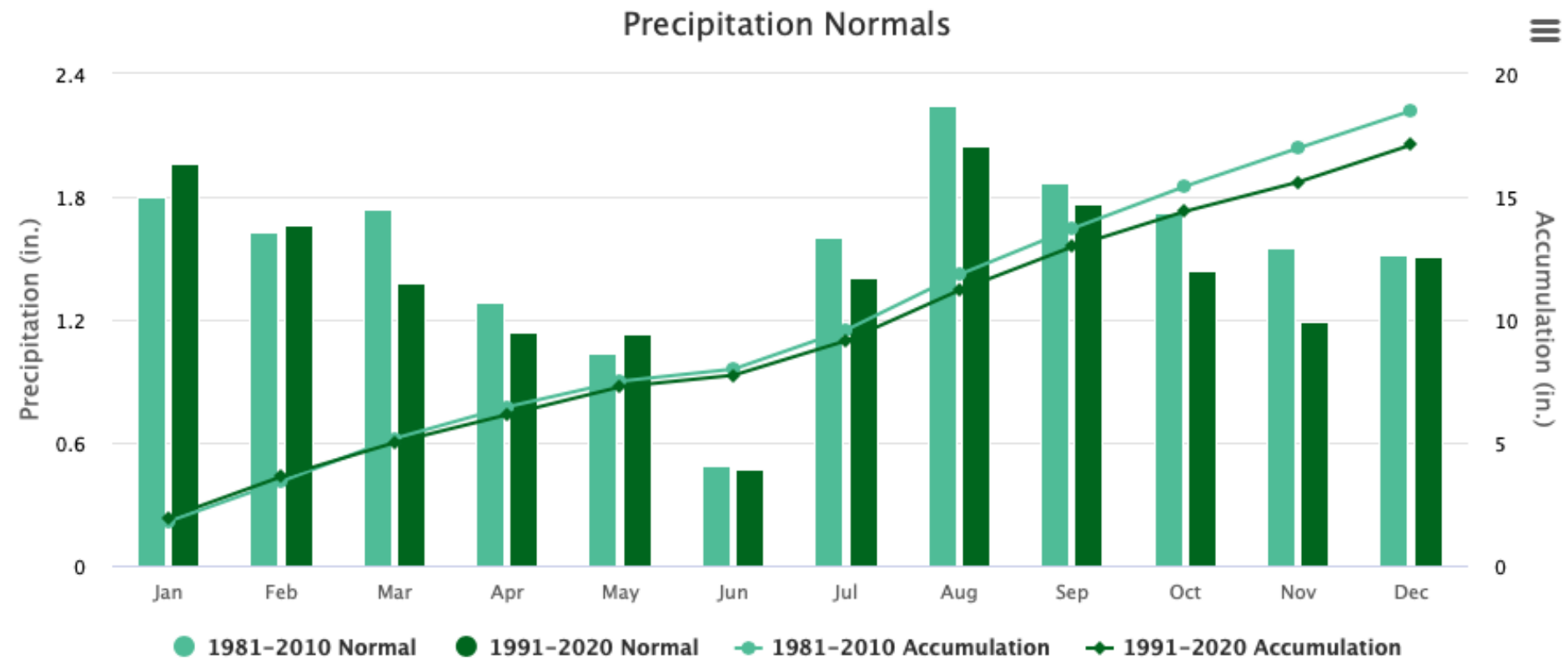
**Average Annual Temperature for Colorado**  
Source: NOAA National Centers for Environmental Information



Precipitation has been variable over the past 100 years, but temperatures have undeniably warmed



# Normal Precipitation at Mesa Verde NP

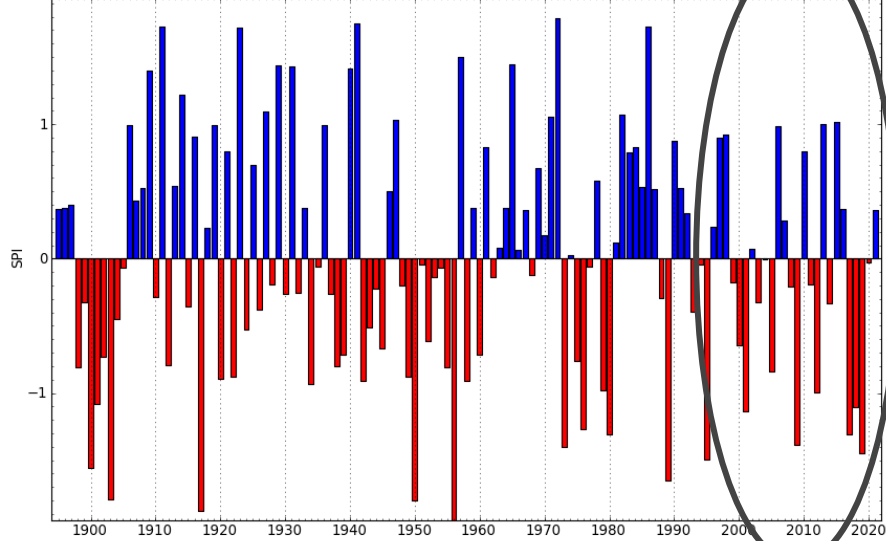


Highcharts.com

[https://climate.colostate.edu/normals\\_maps.html](https://climate.colostate.edu/normals_maps.html)



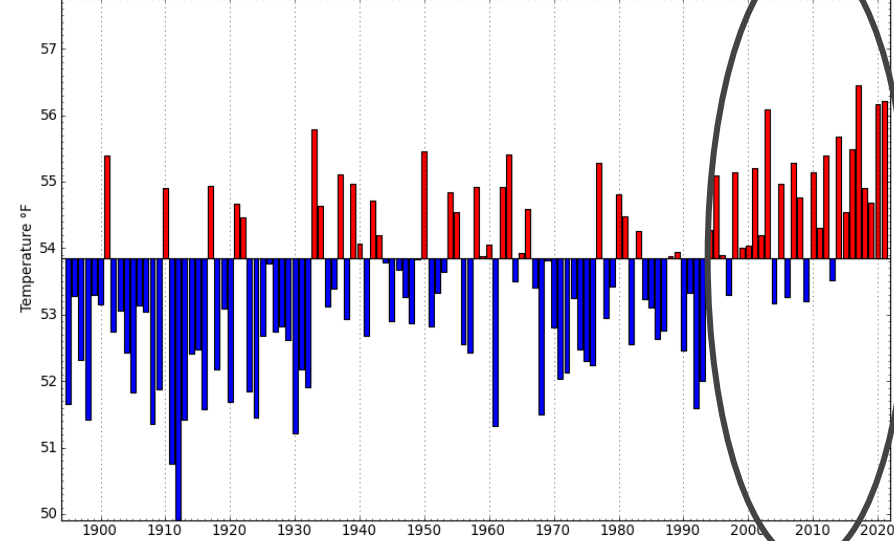
Standardized Precipitation Index, 6-Months Ending in December  
Lower San Juan



Data Source: WRCC/UI, Created: 3-28-2022

+

Mean Temperature, 6-Months Ending in December  
Lower San Juan



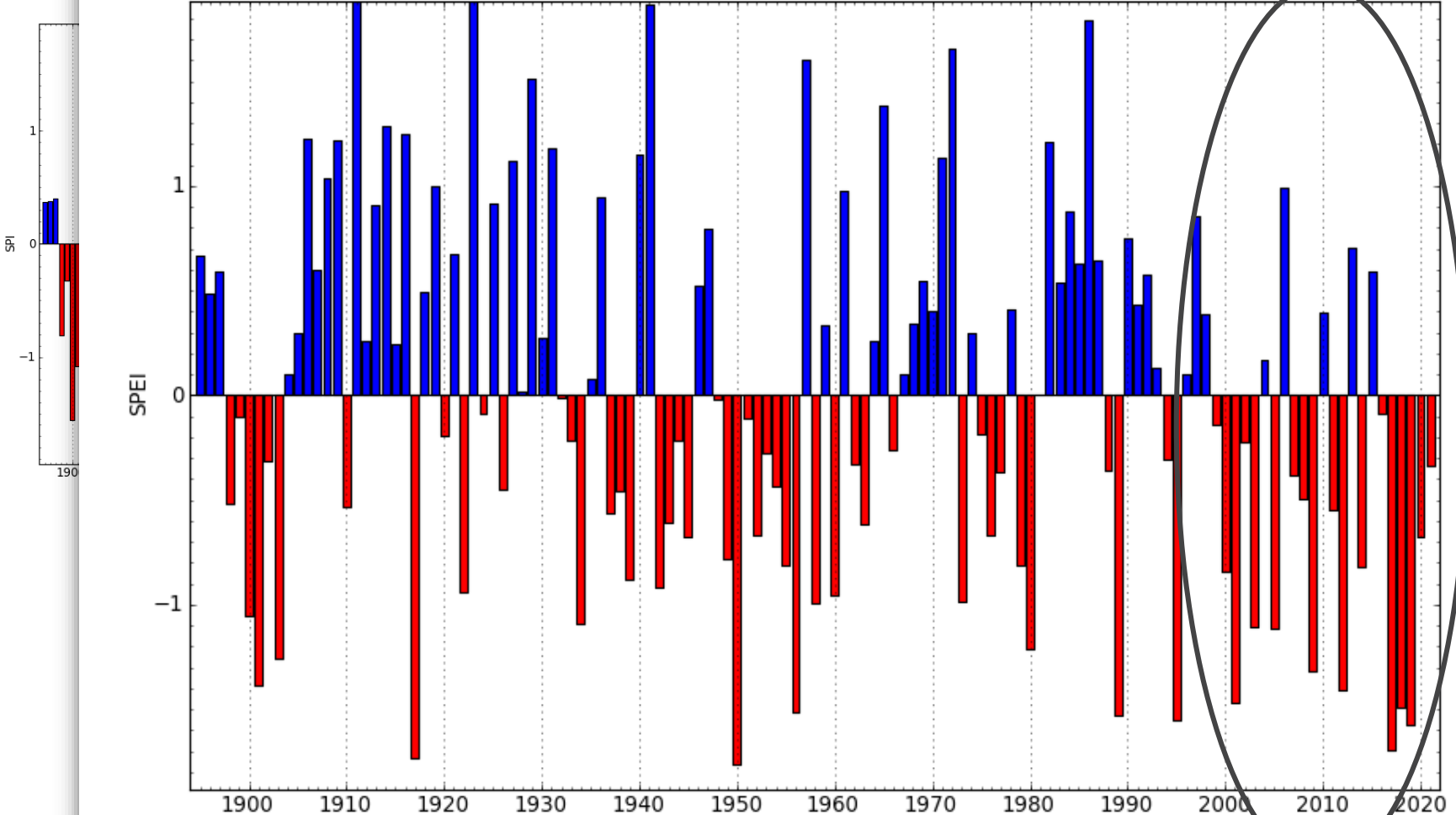
— Normal Period: 1981-2010

Data Source: WRCC/UI, Created: 3-28-2022

add together variable precipitation  
and warming temperatures

<https://wrcc.dri.edu/wwdt/>

# Standardized Precipitation-Evapotranspiration Index, 6-Months Ending in December Lower San Juan



ed: 3-28-2022

Data Source: WRCC/UI, Created: 3-28-2022

<https://wrcc.dri.edu/wwdt/>



*Warmer temperatures...*

*Shortens the snow accumulating season*

*Snowmelt is faster and earlier*

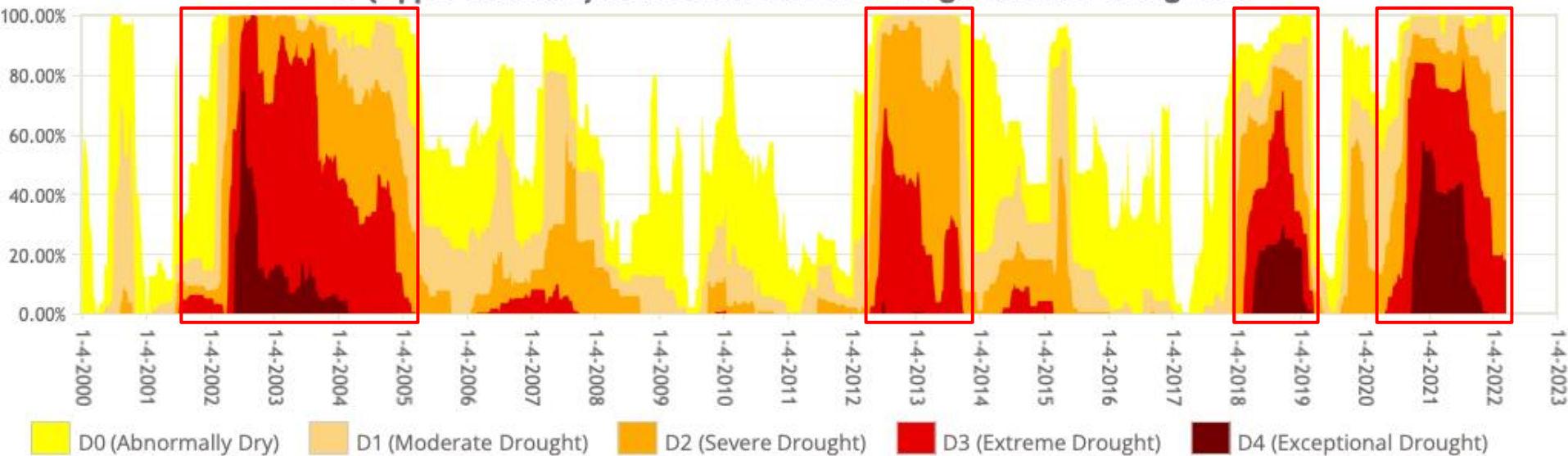
*Results in a drier atmosphere*

*Increases evaporative losses*

*Dries out soils faster*



## 14 (Upper Colorado) Percent Area in U.S. Drought Monitor Categories



D3 is a 1-in-20 to 1-in-50 year extreme event

D4 is a 1-in-50 to 1-in-100 year extreme event

The Upper Colorado River Basin has experienced 4 significant drought events in 20 years

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





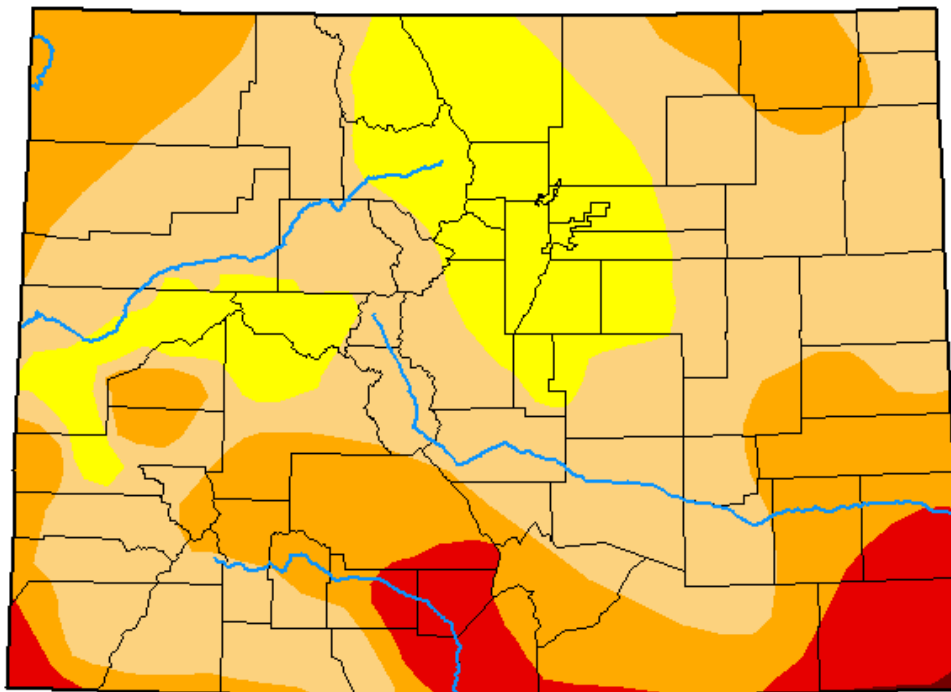
# U.S. Drought Monitor

## Colorado

**March 22, 2022**  
 (Released Thursday, Mar. 24, 2022)  
 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	82.83	33.50	7.11	0.13
<b>Last Week</b> 03-15-2022	0.00	100.00	91.57	56.87	8.30	0.13
<b>3 Months Ago</b> 12-21-2021	0.00	100.00	99.83	76.97	22.00	0.00
<b>Start of Calendar Year</b> 01-04-2022	0.00	100.00	95.49	67.08	22.25	0.00
<b>Start of Water Year</b> 09-28-2021	12.72	87.28	46.42	26.30	15.05	3.91
<b>One Year Ago</b> 03-23-2021	0.00	100.00	92.62	62.13	32.13	15.10



### 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:

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 NOAA/NWS/NCEP/CPC



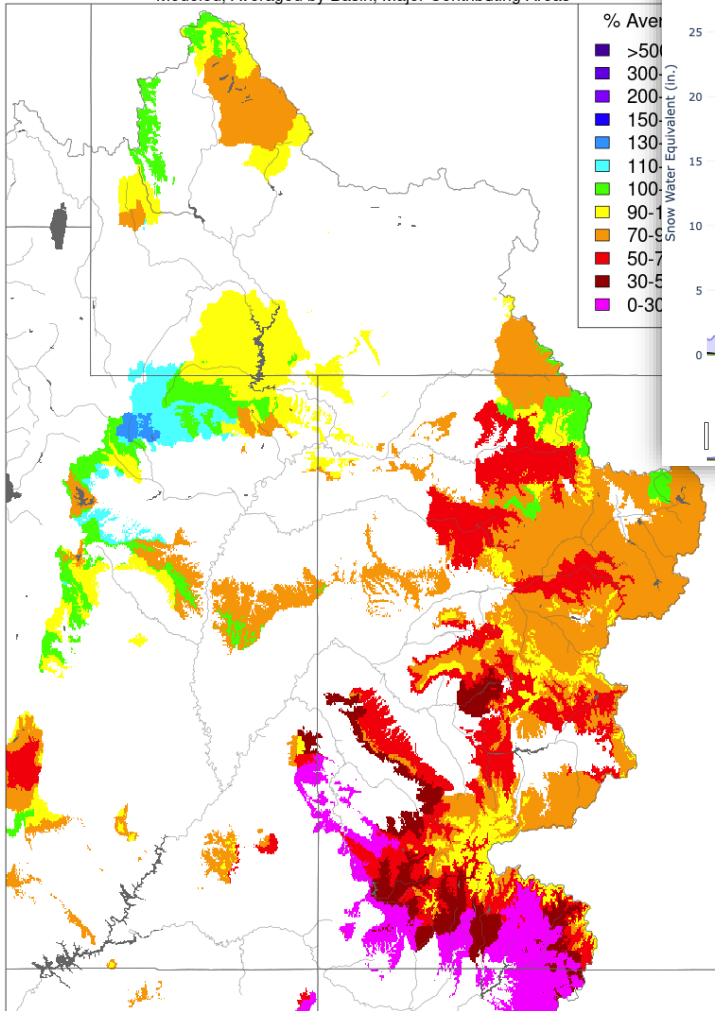
[droughtmonitor.unl.edu](https://droughtmonitor.unl.edu)



# Where are we today?

## Soil Moisture - Fall - 2021 (November 15)

Modeled, Averaged by Basin, Major Contributing Areas



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

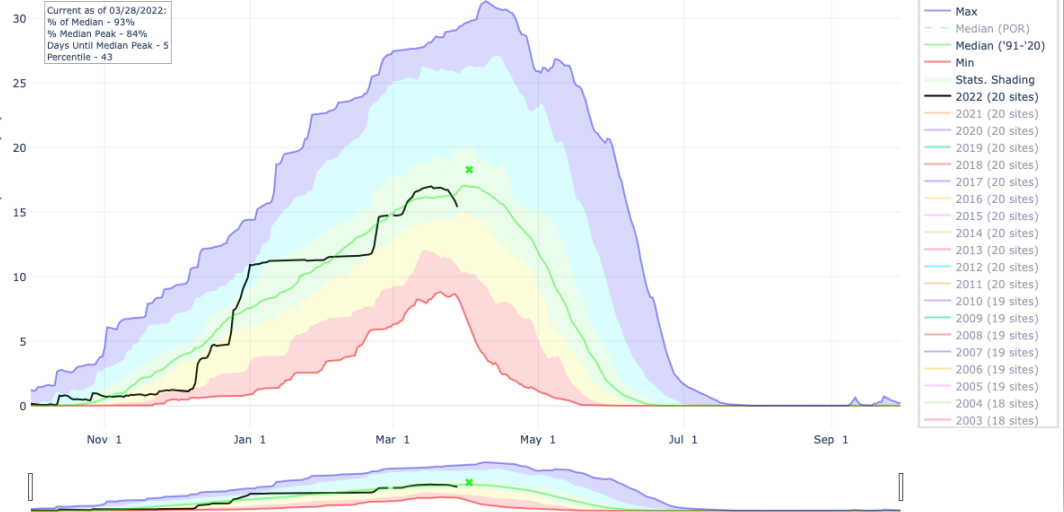
## SNOW WATER EQUIVALENT IN SAN MIGUEL-DOLORES-ANIMAS-SAN JUAN

Reset Range

Link to data: CSV / JSON

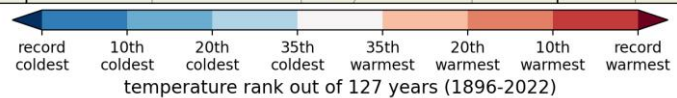
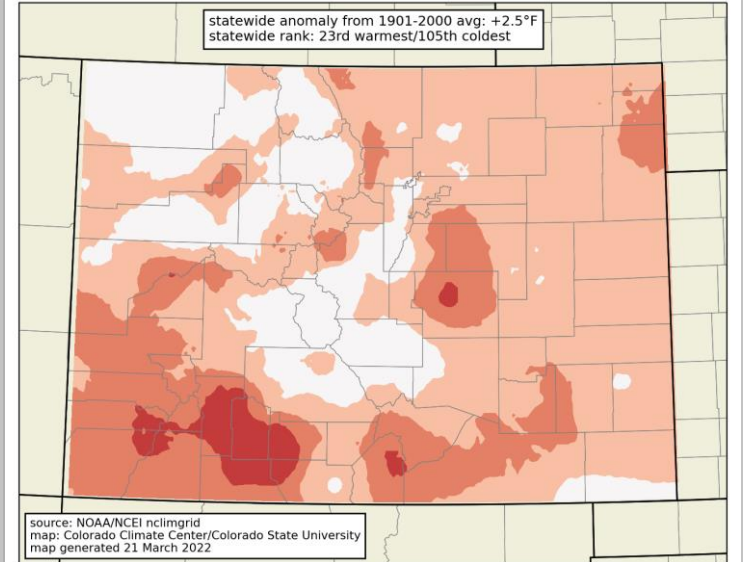
Station List

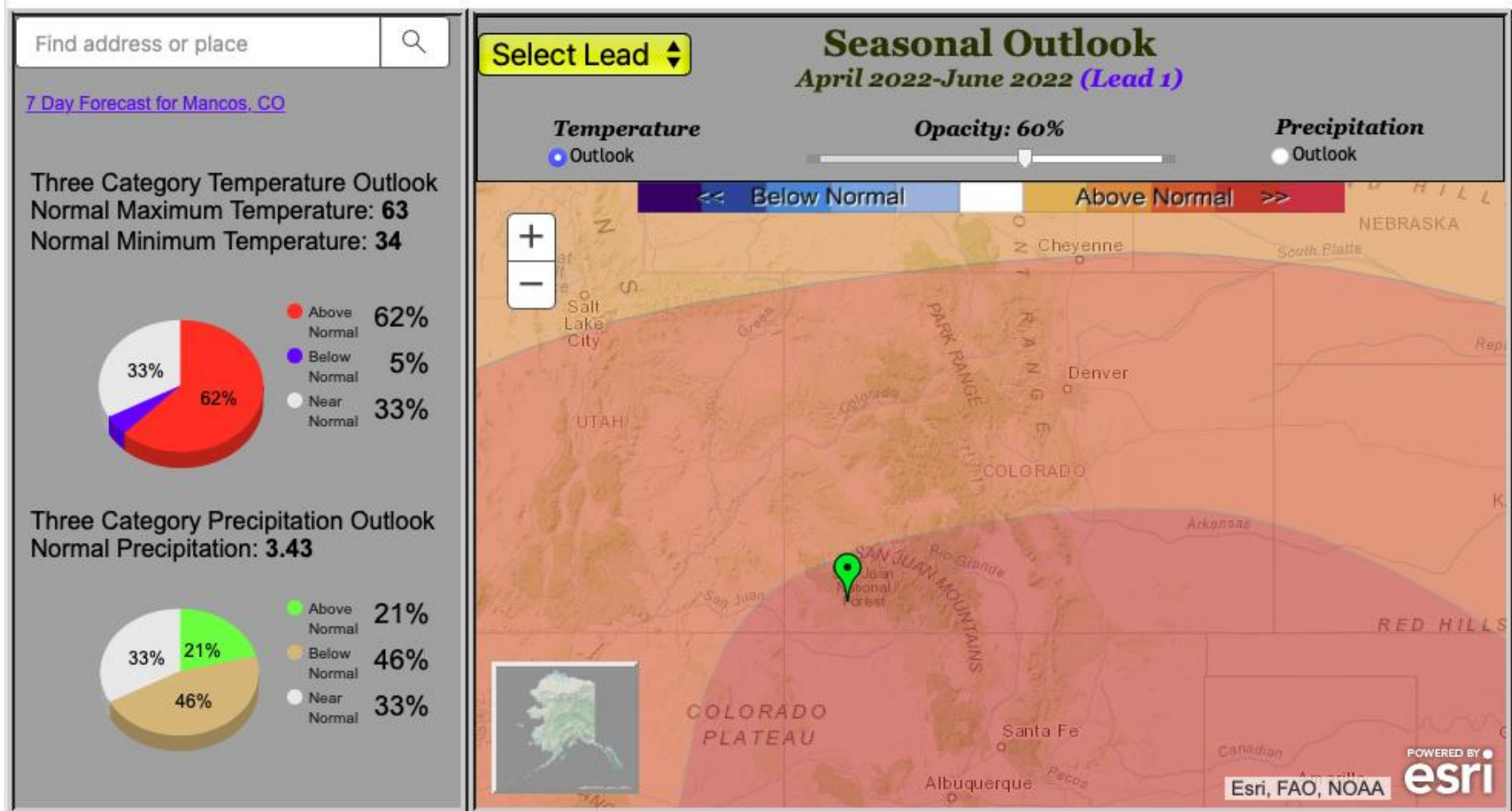
Current as of 03/28/2022:  
% of Median - 93%  
% Median Peak - 84%  
Days Until Median Peak - 5  
Percentile - 43



## average temperature rank: 3 months ending February 2022 (Dec-Feb)

statewide anomaly from 1901-2000 avg: +2.5°F  
statewide rank: 23rd warmest/105th coldest





Our summers are getting warmer, monsoon season is less reliable, soils are generally drier. With this forecast, it's difficult to get a head start for the next snowpack season. With no changes to snowpack, we still have a new normal when it comes to our water.





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Thank you

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