

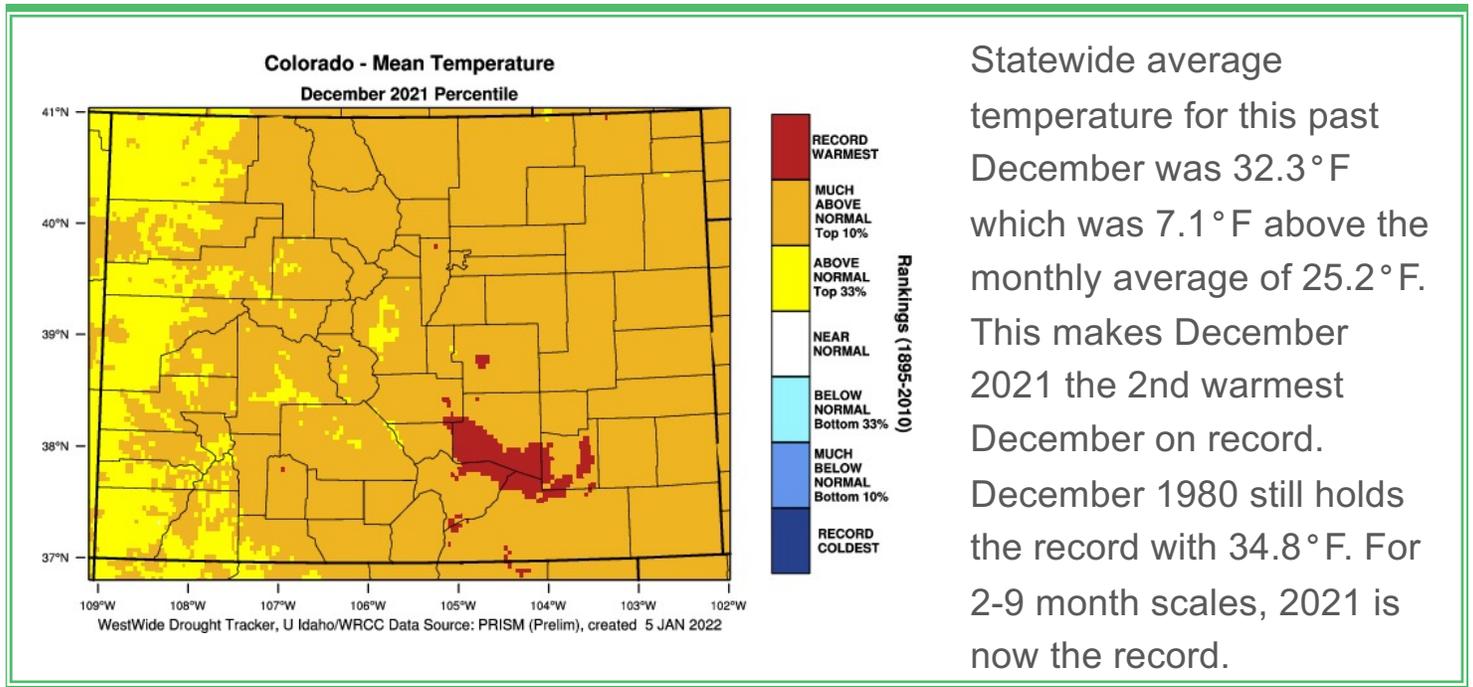


December 2021 Colorado Monthly Climate Summary



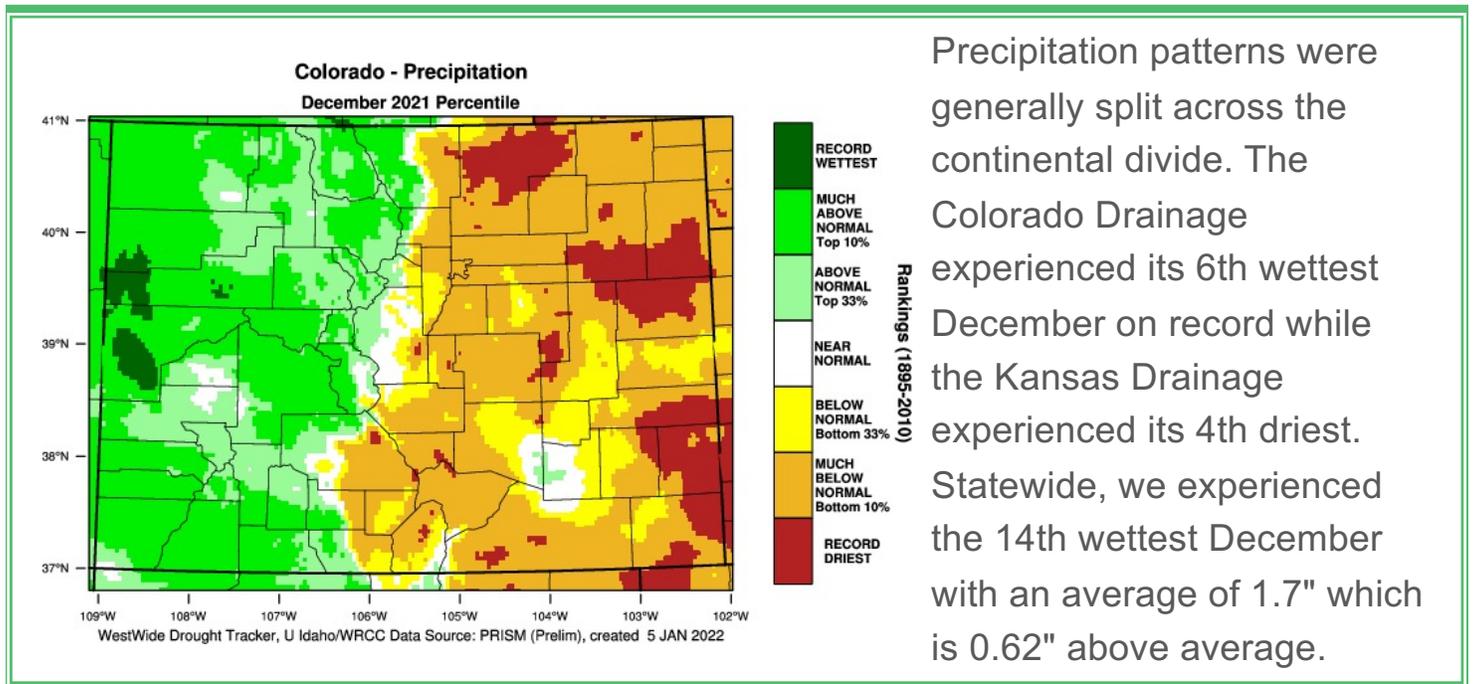
ATMOSPHERIC SCIENCE
COLORADO STATE UNIVERSITY

temperature



Statewide average temperature for this past December was 32.3°F which was 7.1°F above the monthly average of 25.2°F. This makes December 2021 the 2nd warmest December on record. December 1980 still holds the record with 34.8°F. For 2-9 month scales, 2021 is now the record.

precipitation



Precipitation patterns were generally split across the continental divide. The Colorado Drainage experienced its 6th wettest December on record while the Kansas Drainage experienced its 4th driest. Statewide, we experienced the 14th wettest December with an average of 1.7" which is 0.62" above average.

quadrant charts

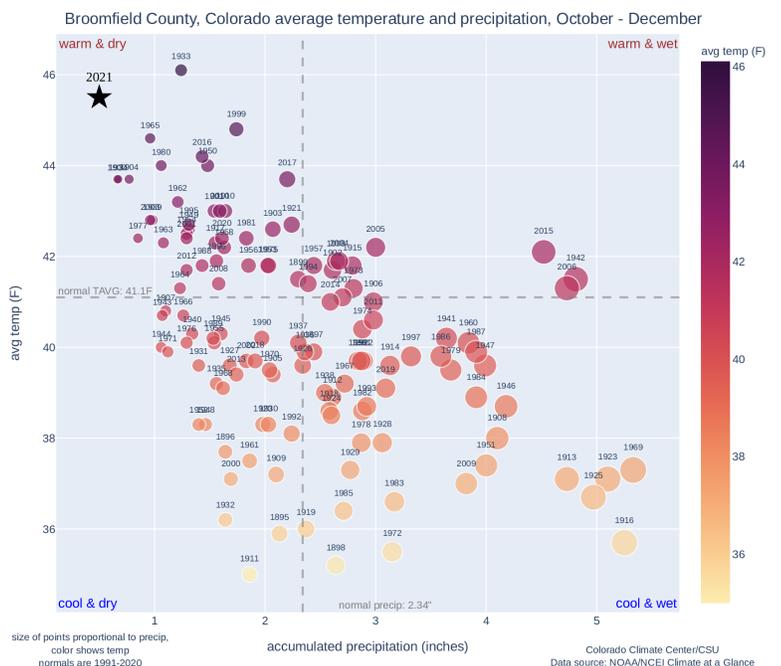
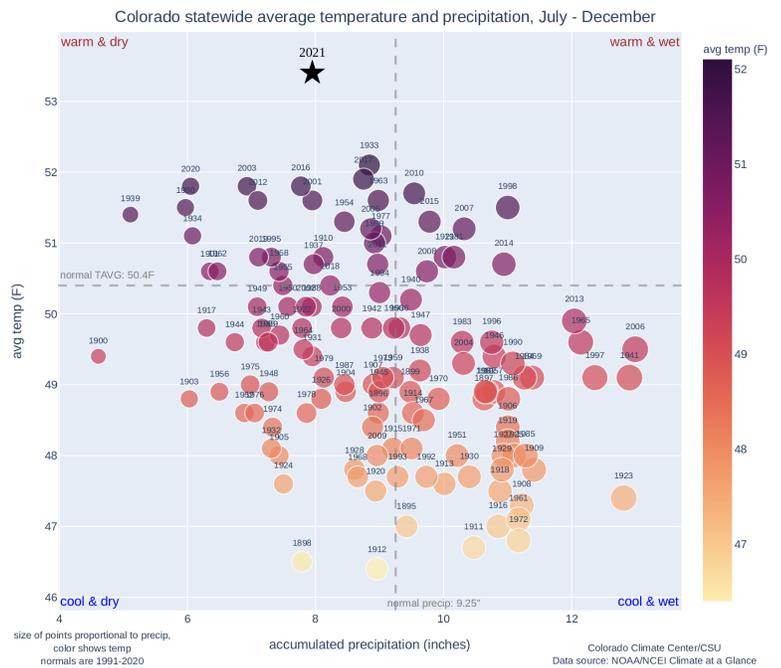
Each dot plots the precipitation on the x-axis and the temperature on the y-axis. Dots are colored based on temperature and size is based on precipitation. The current year is denoted with a star. Long-term averages are denoted by the dashed lines.

The upper right quadrant chart shows that Colorado observed its warmest Jul-Dec on record in 2021, far beating out the previous record from 1933. It also ranked as 39th driest.

In the lower right quadrant chart for Broomfield County, the last 3 months ranked as the driest and second warmest on record. These underlying long-term conditions provided the ingredients for a higher risk of wildfires becoming out of control quickly, which was the unfortunate scenario we saw on December 30, 2021.

Colorado's monthly quadrant chart for December (not shown here) highlights the rare occurrence of a warm and wet ranked month.

[view all quadrant charts](#)

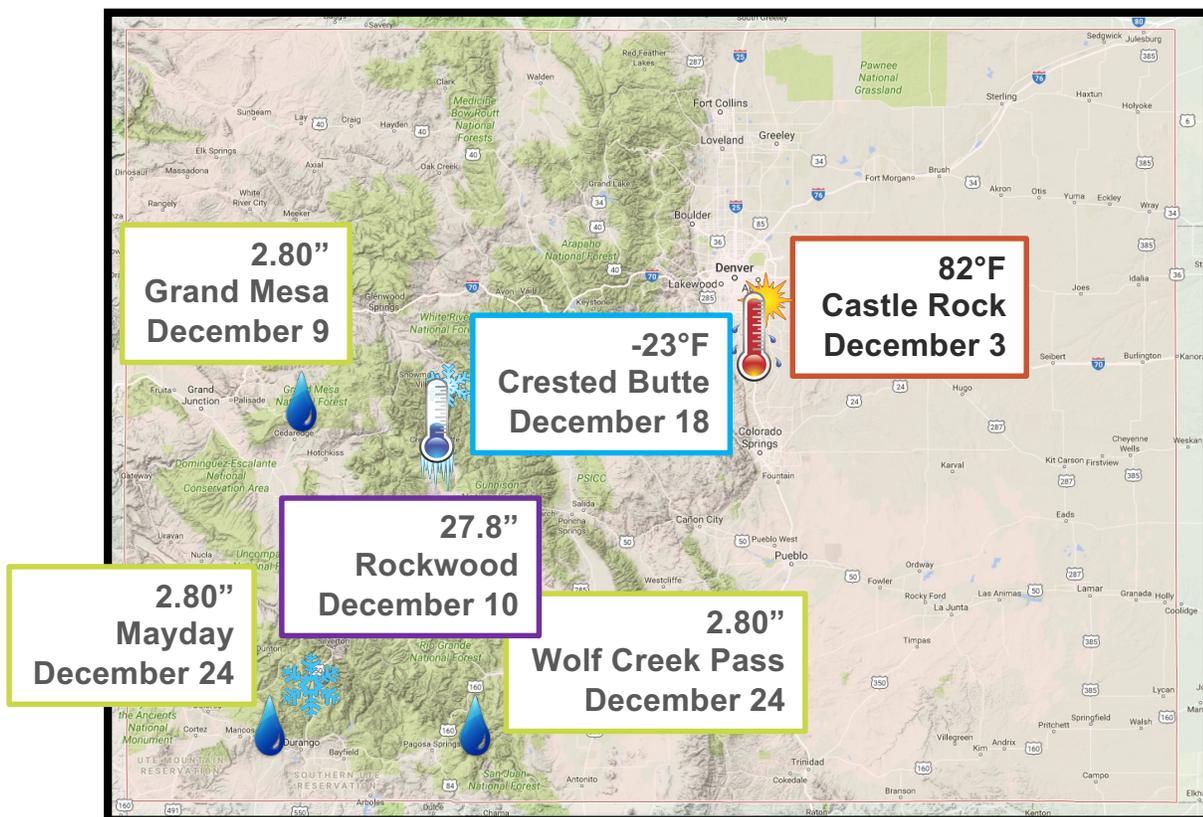


records tied and broken

	High Max	Low Max	High Min	Low Min	Precip	Snow
Daily	49/360	1/4	50/358	2/12	40/184	5/9
Monthly	12/68	0/0	10/29	0/0	1/3	0/0
All-time	0/0	0/0	0/0	0/0	0/0	0/0

Tied/**Broken**, from NOAA National Centers for Environmental Information

state extremes

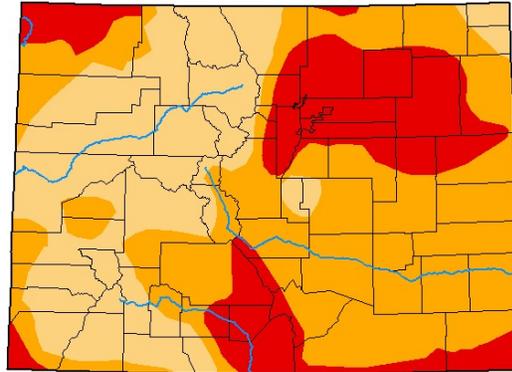


drought

U.S. Drought Monitor Colorado

December 28, 2021
(Released Thursday, Dec. 30, 2021)
Valid 7 a.m. EST

In December 2021, 100% of Colorado became covered by a drought category (D1-D3). Over 22% of the state experienced extreme drought (D3) conditions.



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	100.00	67.27	22.21	0.00
Last Week 12-21-2021	0.00	100.00	99.83	76.97	22.00	0.00
3 Months Ago 09-28-2021	12.72	87.28	46.42	26.30	15.05	3.91
Start of Calendar Year 12-29-2020	0.00	100.00	100.00	93.73	76.17	27.60
Start of Water Year 09-28-2021	12.72	87.28	46.42	26.30	15.05	3.91
One Year Ago 12-29-2020	0.00	100.00	100.00	93.73	76.17	27.60

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>

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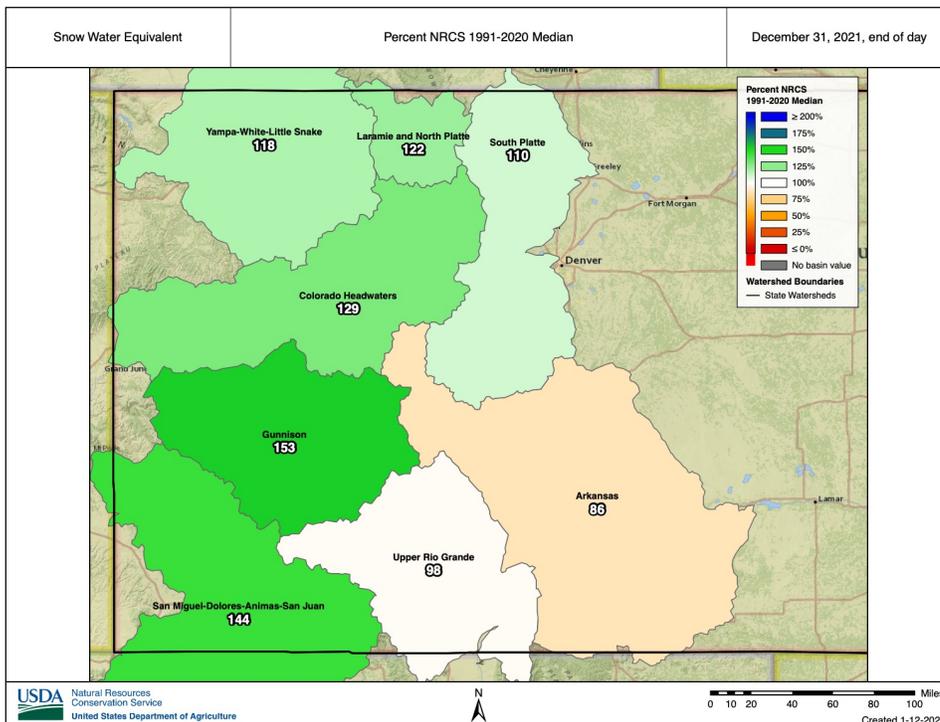


droughtmonitor.unl.edu

Widespread deteriorations occurred in eastern CO, with some improvements made in the west.

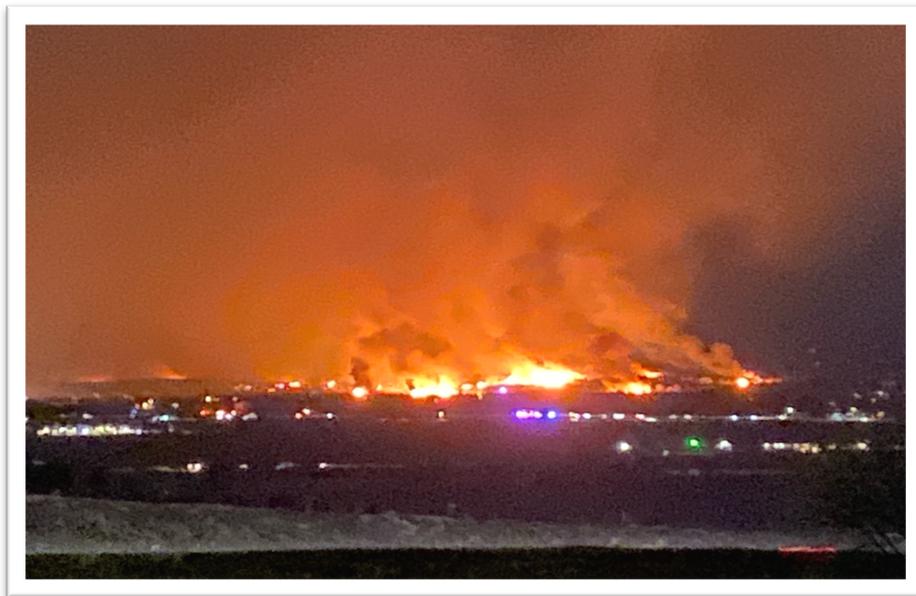
[Colorado Drought Update Page](#)

snowpack



Snowpack improved dramatically after December 10 with the passage of several major storms. The San Juan basin increased from 27% of normal on Dec. 5 to 144% of normal on Dec. 31.

significant events



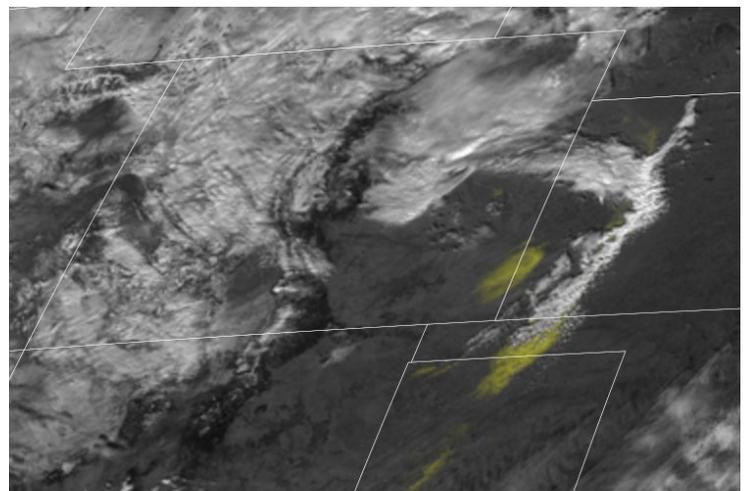
The Marshall Fire became CO's most destructive fire on record on Dec. 30, 2021. It destroyed over 1000 homes in Boulder County.

Photo:
NWS Boulder

Underlying climate conditions of drought, record warmth over the previous 6 months, and near record dry air and high energy release component (a fire metric) provided all the ingredients. On December 30, winds picked up across the Boulder area with gusts over 100mph. Once the fire started, it quickly spread out of control. For a comprehensive analysis, see the [NWS Boulder Analysis of the Marshall Fire](#).

On Dec. 15, 2021 a major wind event swept across CO. Lamar reported a wind gust of 107mph. Due to drought, a major dust cloud (in yellow) moved across the southern plains, resulting in zero visibility and dark skies. The storm also resulted in snow squalls in Nebraska, a wildfire in Kansas, and tornadoes in Iowa and Minnesota.

December 15 wind and dust



CCC in the news

- ❑ [Can you see climate change? Mapping tools turn millions of data points into visual representations](#)
 - Durango Herald, December 13, Russ Schumacher
- ❑ [Colorado high wind warning: Batten down the Christmas lights as hurricane-force wind approaches](#)
 - The Coloradoan, December 14, Russ Schumacher
- ❑ [High Country snowpack lags, but it's early](#)
 - Summit Daily, December 14, Becky Bolinger
- ❑ [Warm Winter Persists as Second La Nina Year is Predicted](#)
 - North Forty News, December 17, Peter Goble
- ❑ [Climatologists review questionable Denver snow records from the 1880s](#)
 - 9News, December 17, Russ Schumacher
- ❑ [Denver is experiencing an 'extreme' drought. What does that mean, exactly?](#)
 - Denverite, December 21, Peter Goble
- ❑ [Western Slope snowpack rises above average but forecast for Eastern Plains remains "bleak"](#)
 - Denver Post, December 27, Becky Bolinger
- ❑ [Colorado's Marshall fire: Climate change and growing population led to disaster in Boulder County, scientists say](#)
 - Daily Camera, December 31, Becky Bolinger
- ❑ [Climate changes linked to Colorado's fire disaster](#)
 - Axios, December 31, Russ Schumacher
- ❑ [Record-setting Colorado fires destroyed more than 500 homes](#)
 - Seattle Times, December 31, Peter Goble

