

Climate and Drought Update for the Yampa Basin

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Assistant State Climatologist

Yampa State of the River

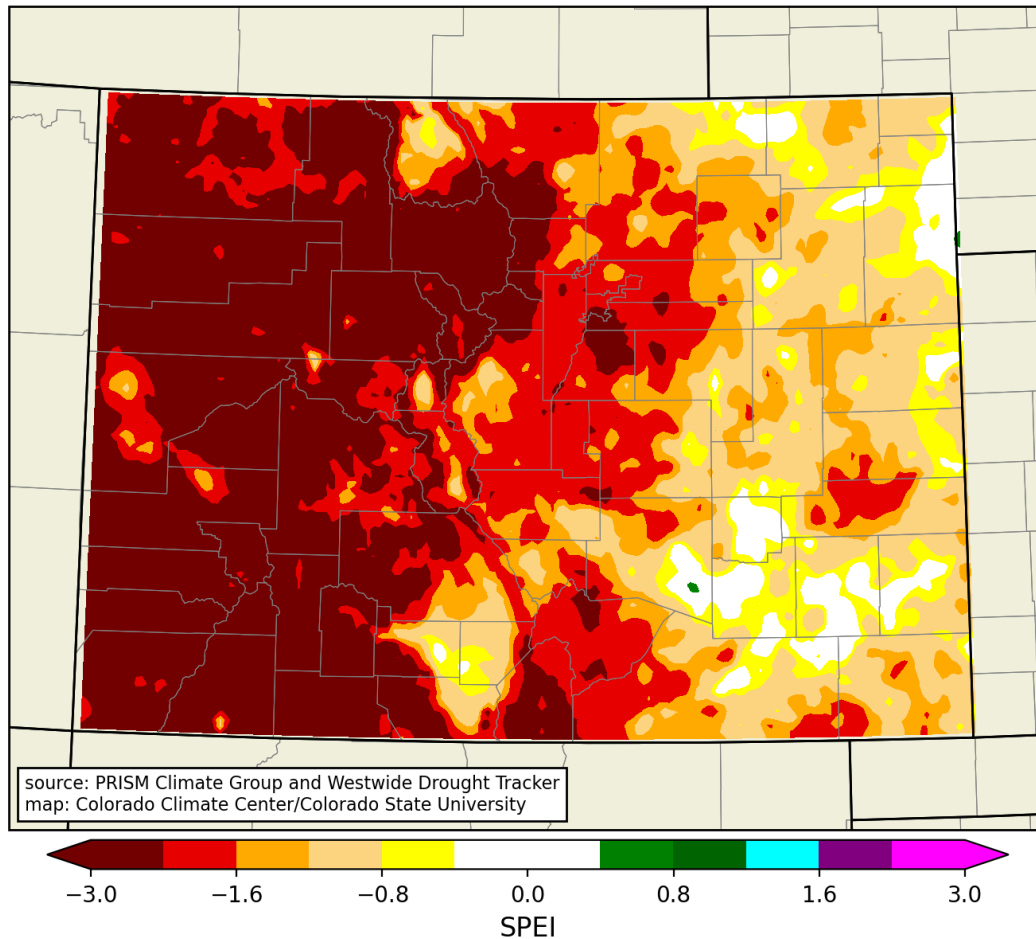
May 19, 2021



ATMOSPHERIC SCIENCE
COLORADO STATE UNIVERSITY

How it started... how it's
going... where it's headed.

6-month SPEI from Westwide Drought Tracker, October 2020

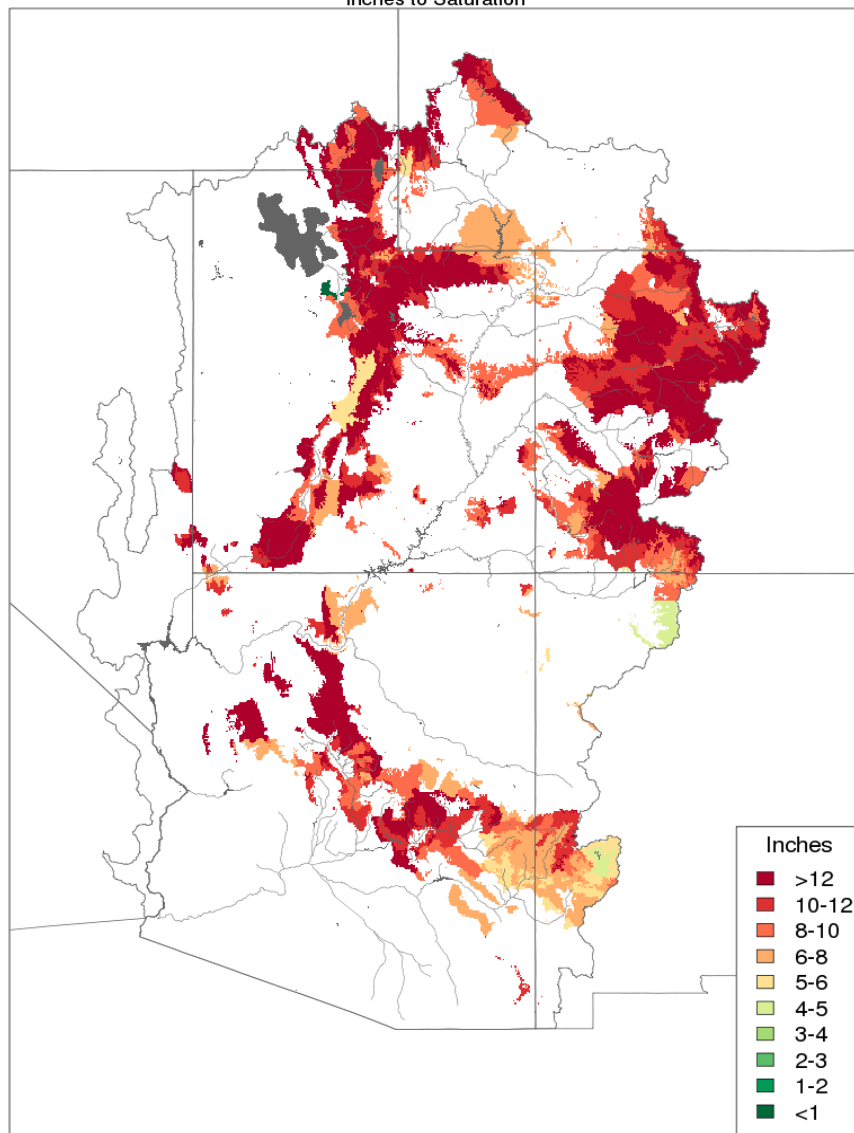


May-Oct temperature and precipitation set the stage before heading into the cold season.

https://climate.colostate.edu/spi_monthly_maps.html

Soil Moisture - November 15 2020

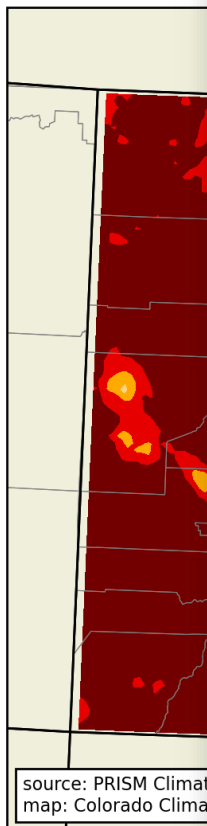
Inches to Saturation



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

The soil moisture in mid-November is “locked in” for the cold season. This is a deficit that will need to be made up

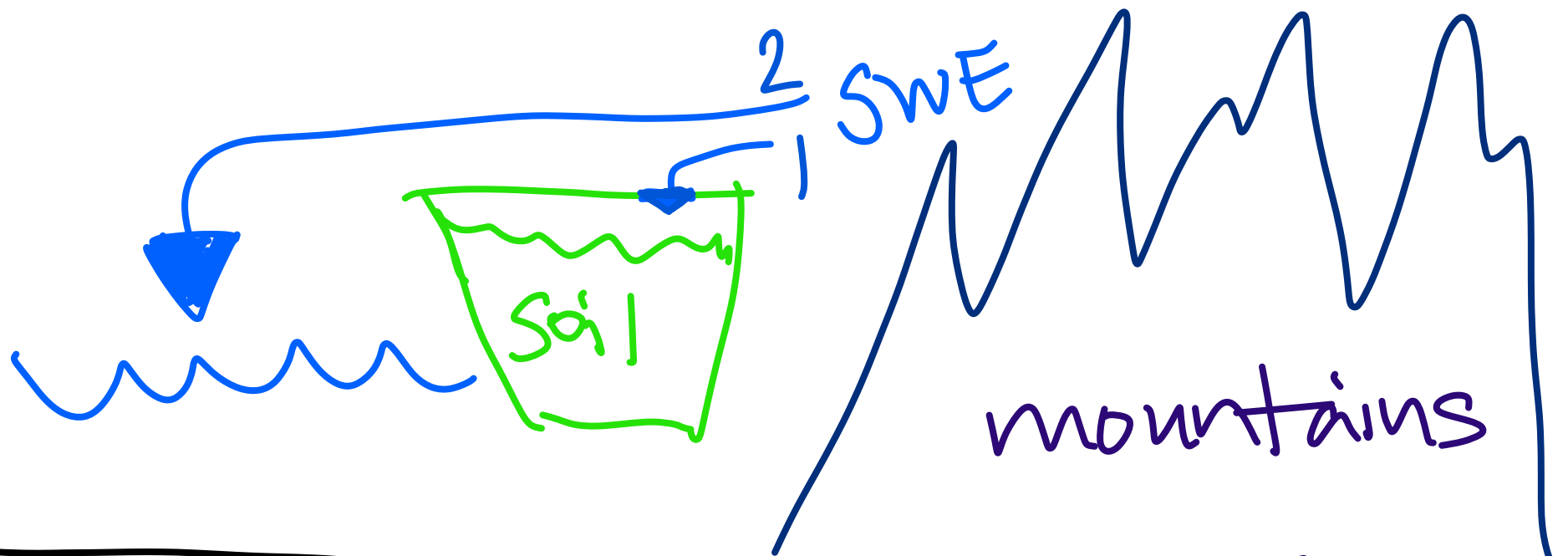
6-month S



-3.0

May-Oct
stage be

<https://www.cbrfc.noaa.gov/rmap/grid800/index.php?type=soilsat>

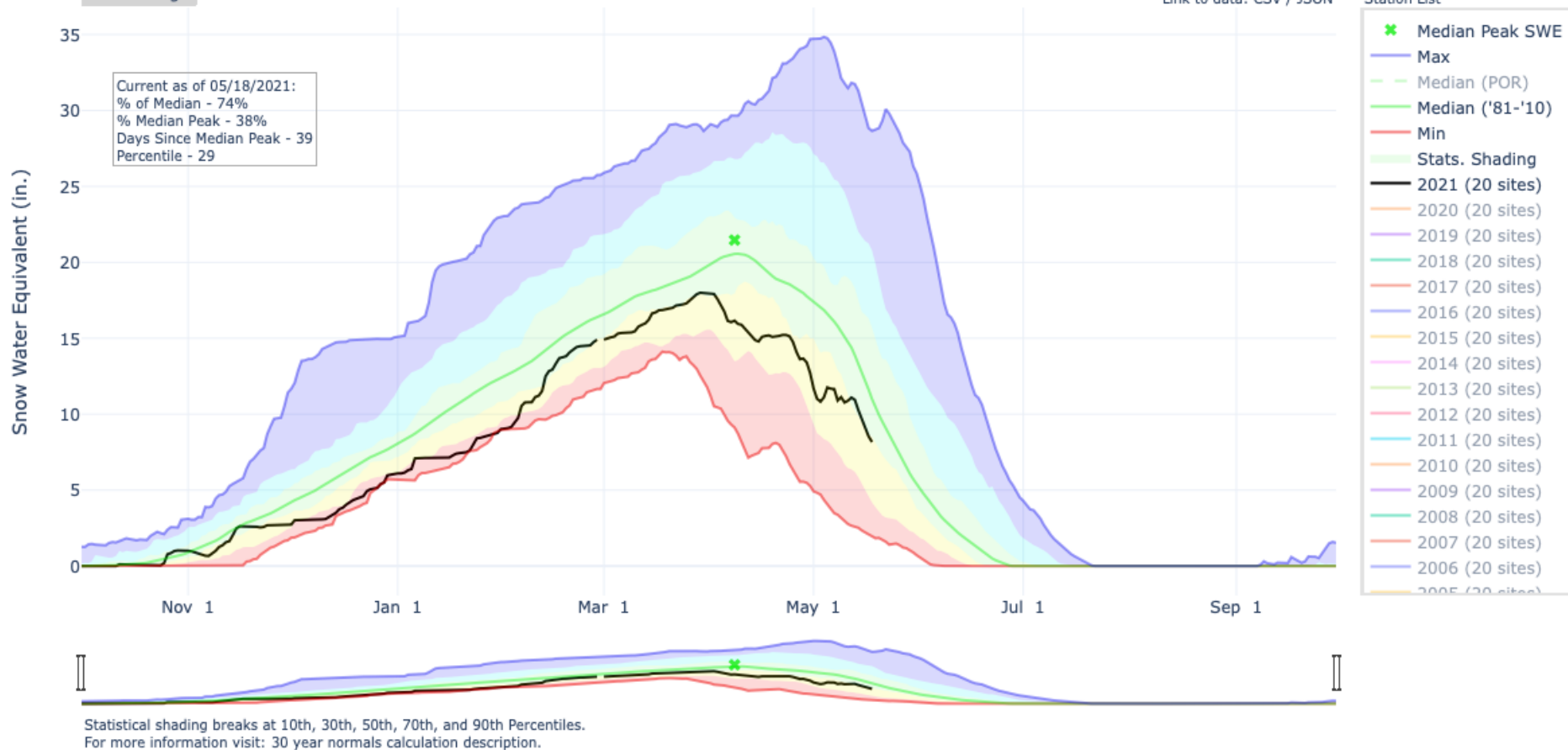


SNOW WATER EQUIVALENT IN YAMPA-WHITE-LITTLE SNAKE

Reset Range

Link to data: CSV / JSON

Station List

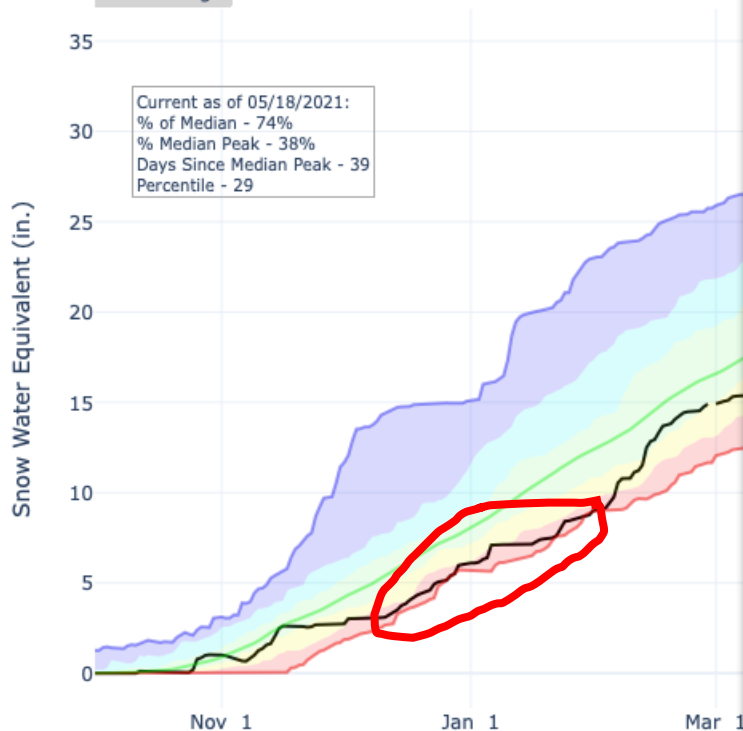


<https://www.nrcs.usda.gov/wps/portal/nrcs/detail/co/snow/products/?cid=nrcseprd1432263>

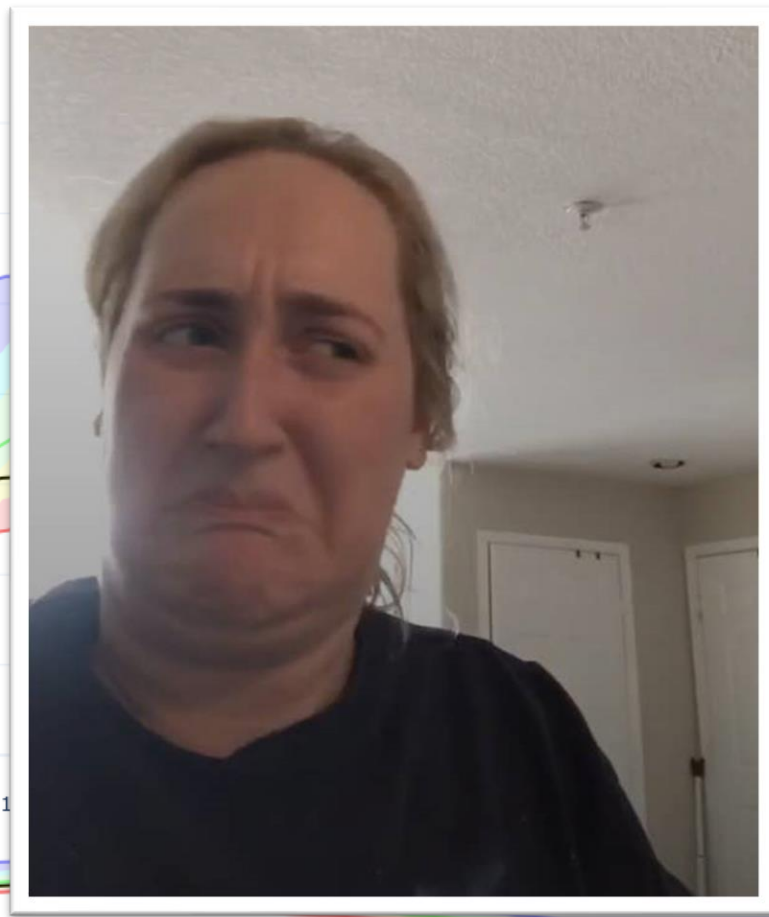


SNOW WATER EQUIVALENT IN YAMPA-WHITE-LITTLE SNAKE

Reset Range



Statistical shading breaks at 10th, 30th, 50th, 70th, and 90th Percentiles.
For more information visit: [30 year normals calculation description](#).



V / JSON

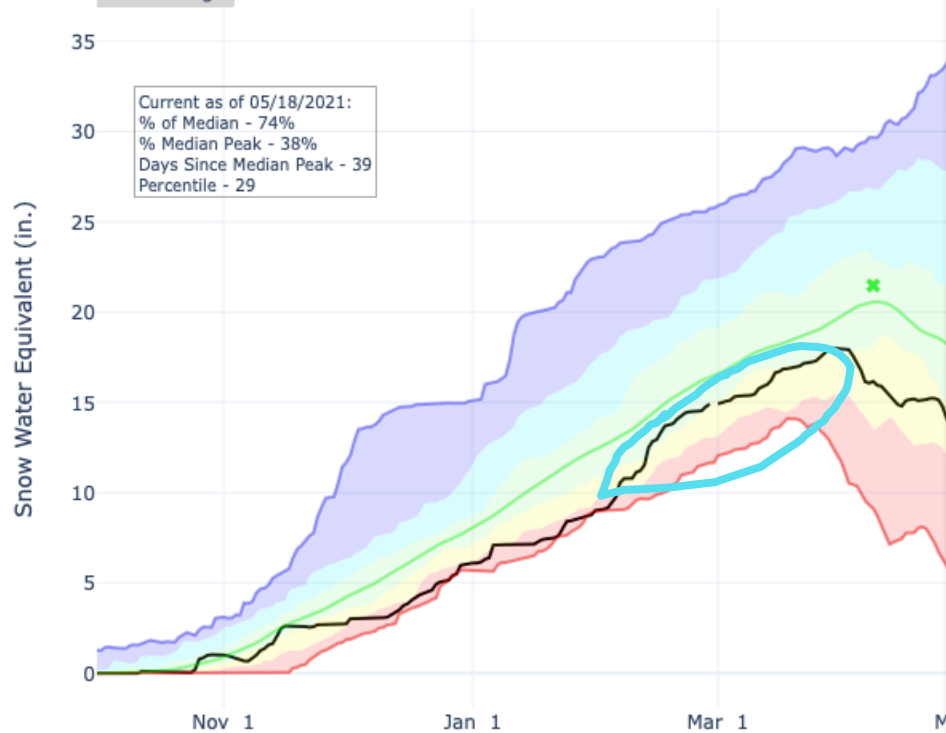
Station List

- ✱ Median Peak SWE
- Max
- Median (POR)
- Median ('81-'10)
- Min
- Stats. Shading
- 2021 (20 sites)
- 2020 (20 sites)
- 2019 (20 sites)
- 2018 (20 sites)
- 2017 (20 sites)
- 2016 (20 sites)
- 2015 (20 sites)
- 2014 (20 sites)
- 2013 (20 sites)
- 2012 (20 sites)
- 2011 (20 sites)
- 2010 (20 sites)
- 2009 (20 sites)
- 2008 (20 sites)
- 2007 (20 sites)
- 2006 (20 sites)
- 2005 (20 sites)



SNOW WATER EQUIVALENT IN YAMPA-WHITE-LITTLE SNAKE

Reset Range



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Peak SWE

(POR)
 ('81-'10)

hading

0 sites)

0 sites)

0 sites)

0 sites)

0 sites)

0 sites)

0 sites)

0 sites)

0 sites)

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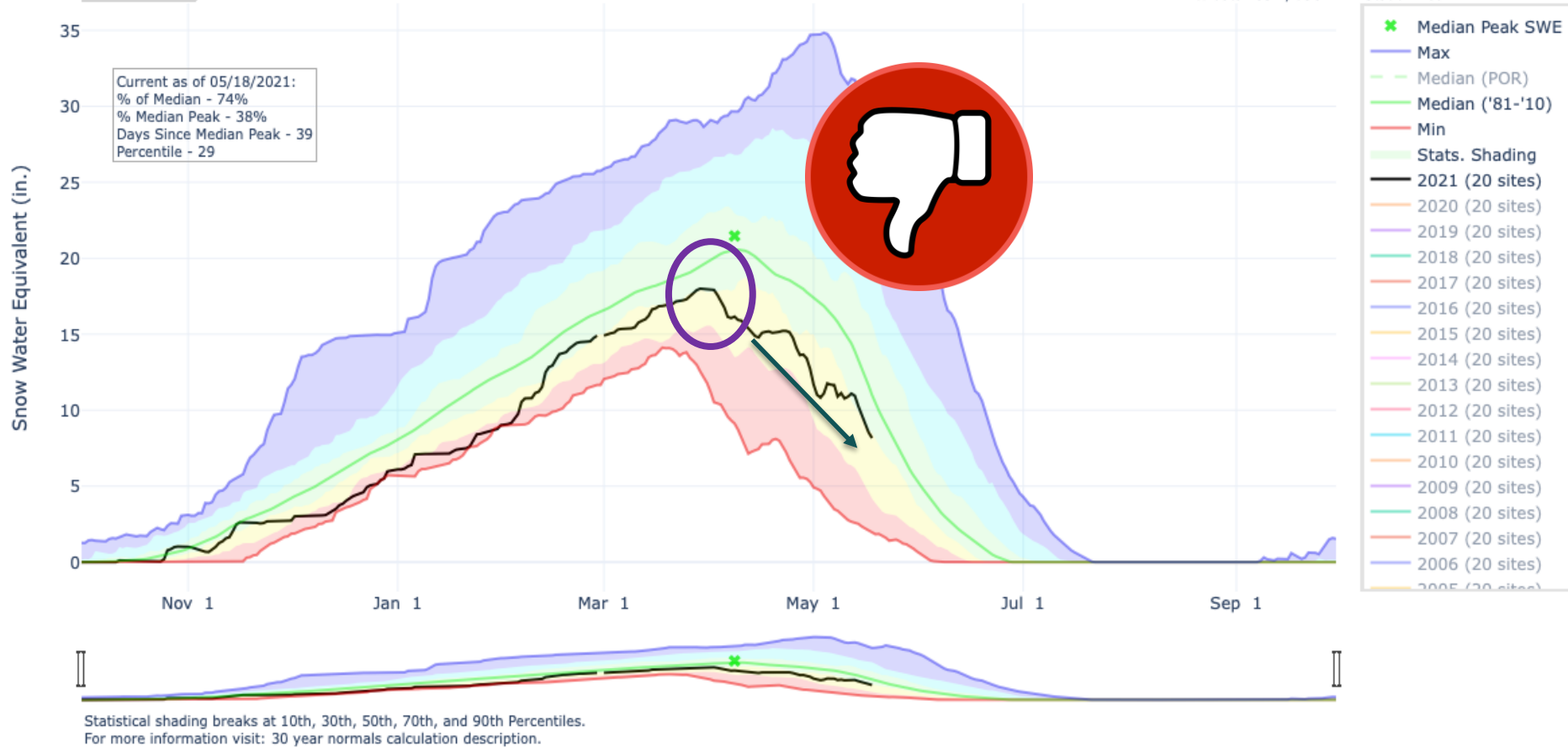
Peaked too low and too early.
Melting has been more gradual.

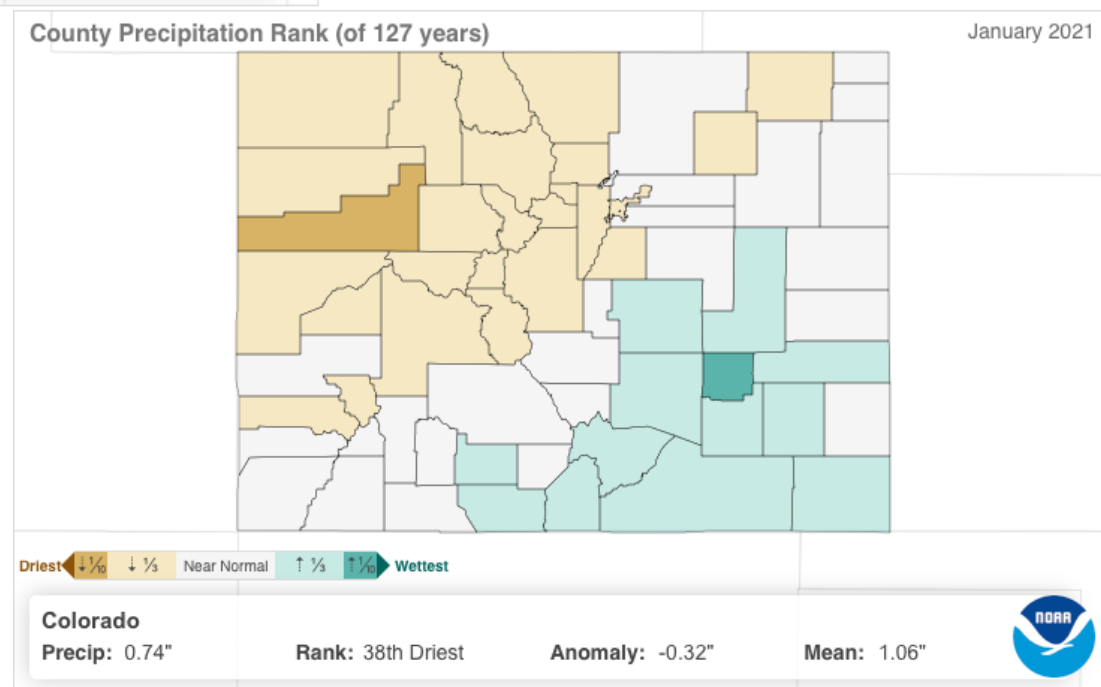
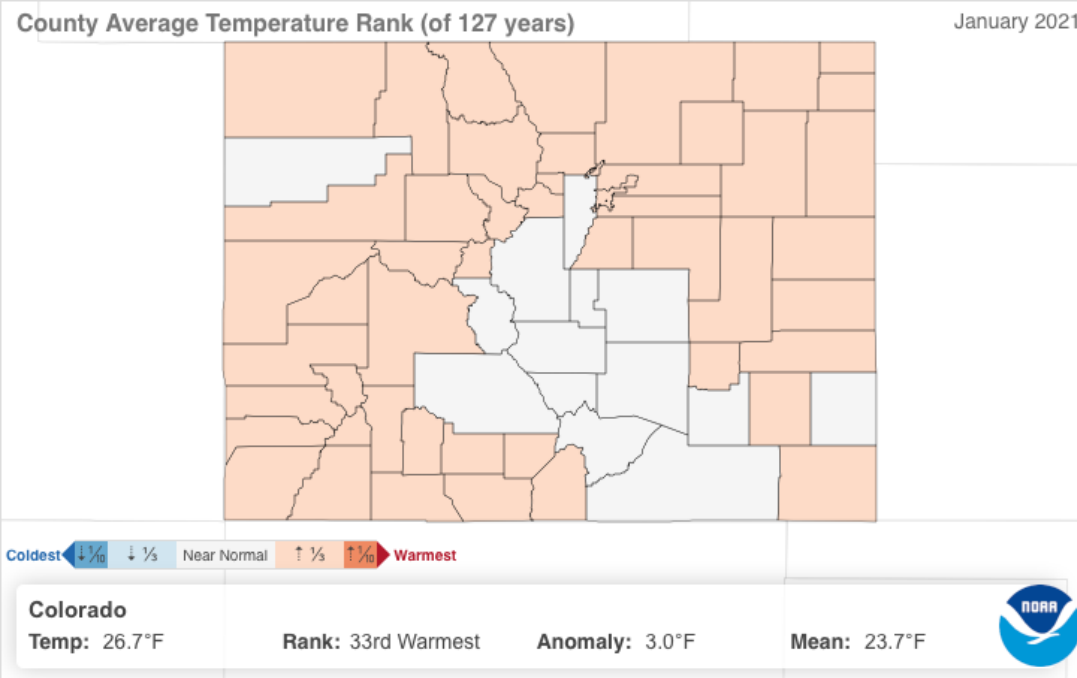
SNOW WATER EQUIVALENT IN YAMPA-WHITE-LITTLE SNAKE

Reset Range

[Link to data: CSV / JSON](#)

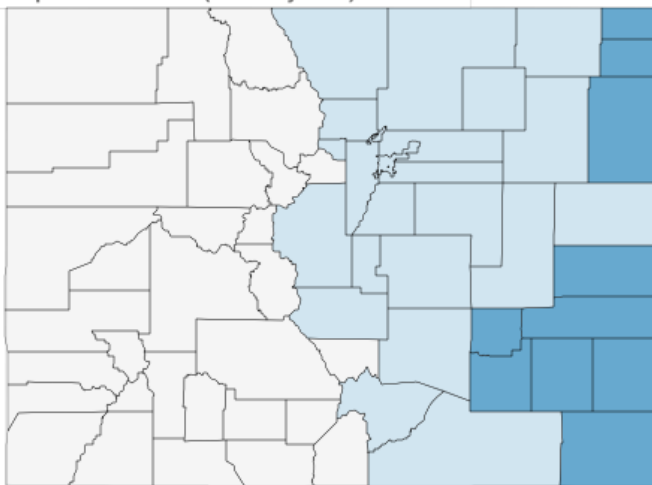
Station List





County Average Temperature Rank (of 127 years)

February 2021



Coldest Near Normal Warmest

Colorado

Temp: 24.8°F

Rank: 28th Coldest

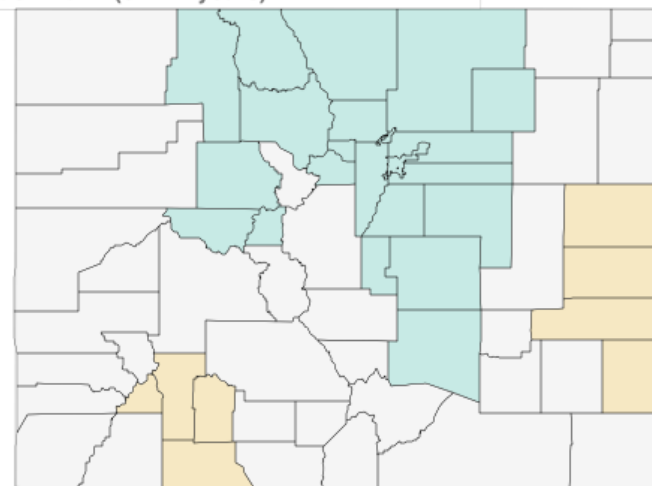
Anomaly: -2.6°F

Mean: 27.4°F



County Precipitation Rank (of 127 years)

February 2021



Driest Near Normal Wettest

Colorado

Precip: 1.10"

Rank: 58th Wettest

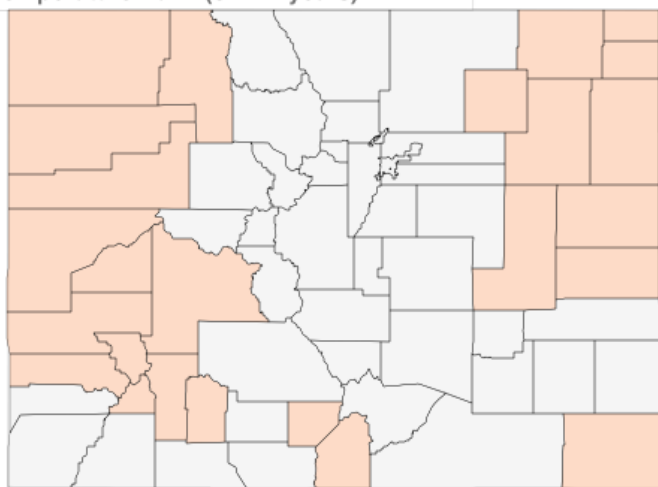
Anomaly: 0.01"

Mean: 1.09"



County Average Temperature Rank (of 127 years)

March 2021



Coldest Near Normal Warmest

Colorado

Temp: 35.8°F

Rank: 46th Warmest

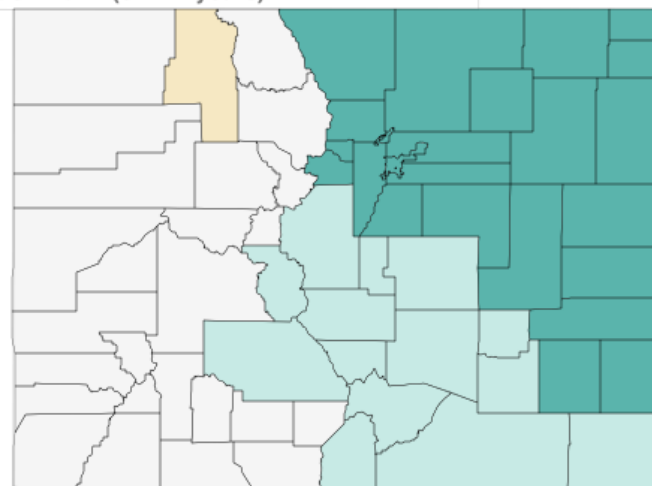
Anomaly: 2.1°F

Mean: 33.7°F



County Precipitation Rank (of 127 years)

March 2021



Driest Near Normal Wettest

Colorado

Precip: 2.02"

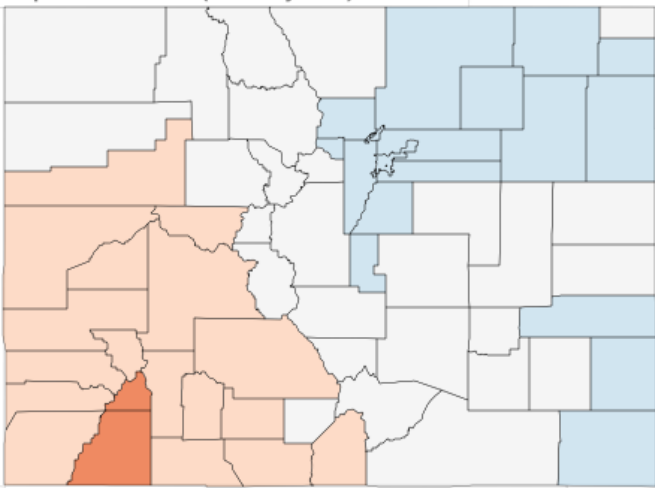
Rank: 22nd Wettest

Anomaly: 0.50"

Mean: 1.52"



County Average Temperature Rank (of 127 years) April 2021



Coldest Near Normal Warmest

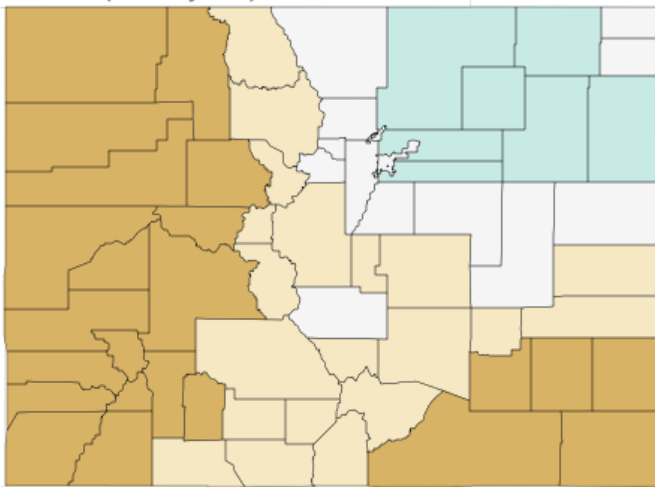
Colorado
Temp: 43.2°F

Rank: 62nd Warmest

Anomaly: 0.7°F

Mean: 42.5°F

County Precipitation Rank (of 127 years) April 2021



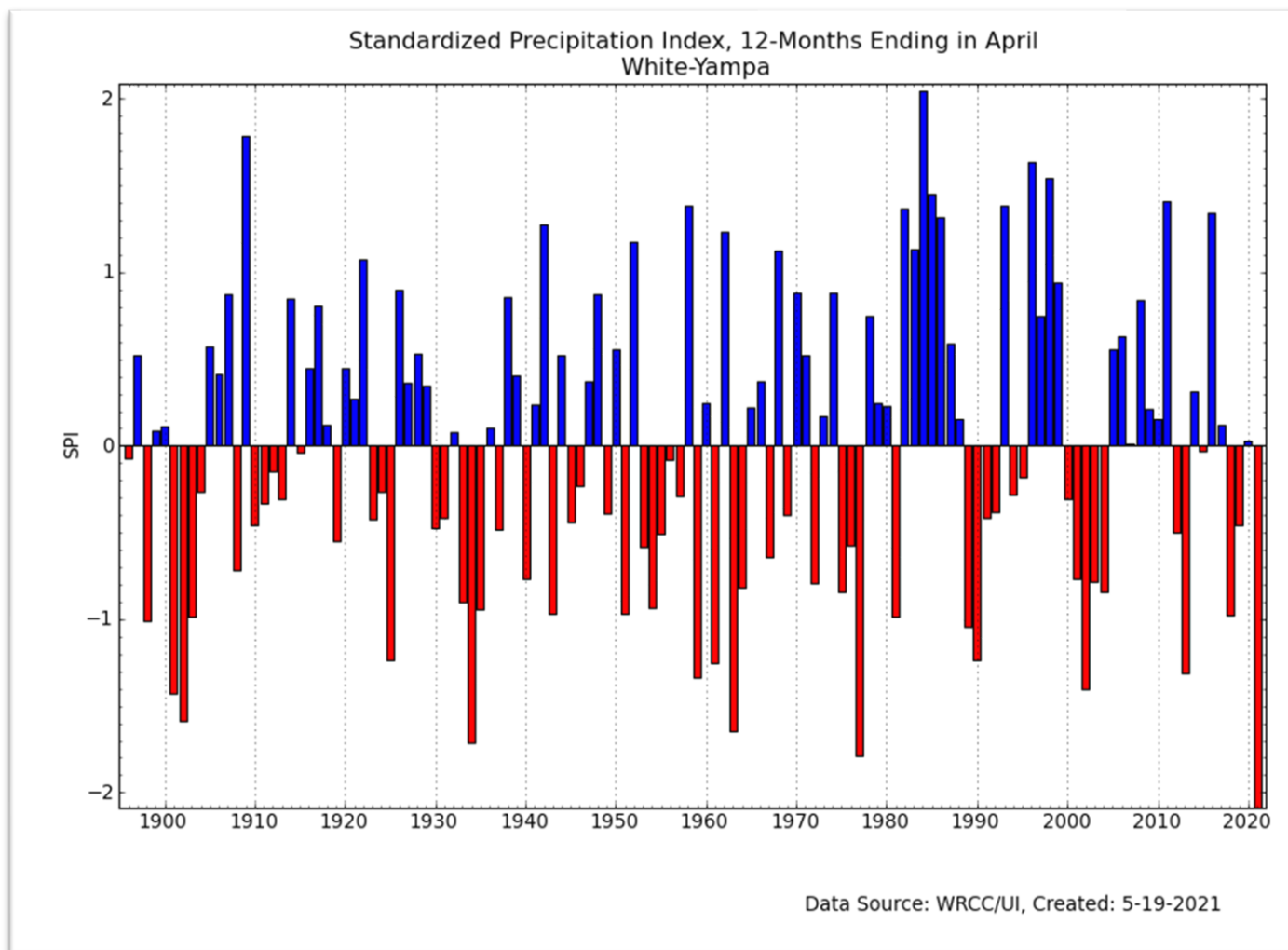
Driest Near Normal Wettest

Colorado
Precip: 1.02"

Rank: 18th Driest

Anomaly: -0.82"

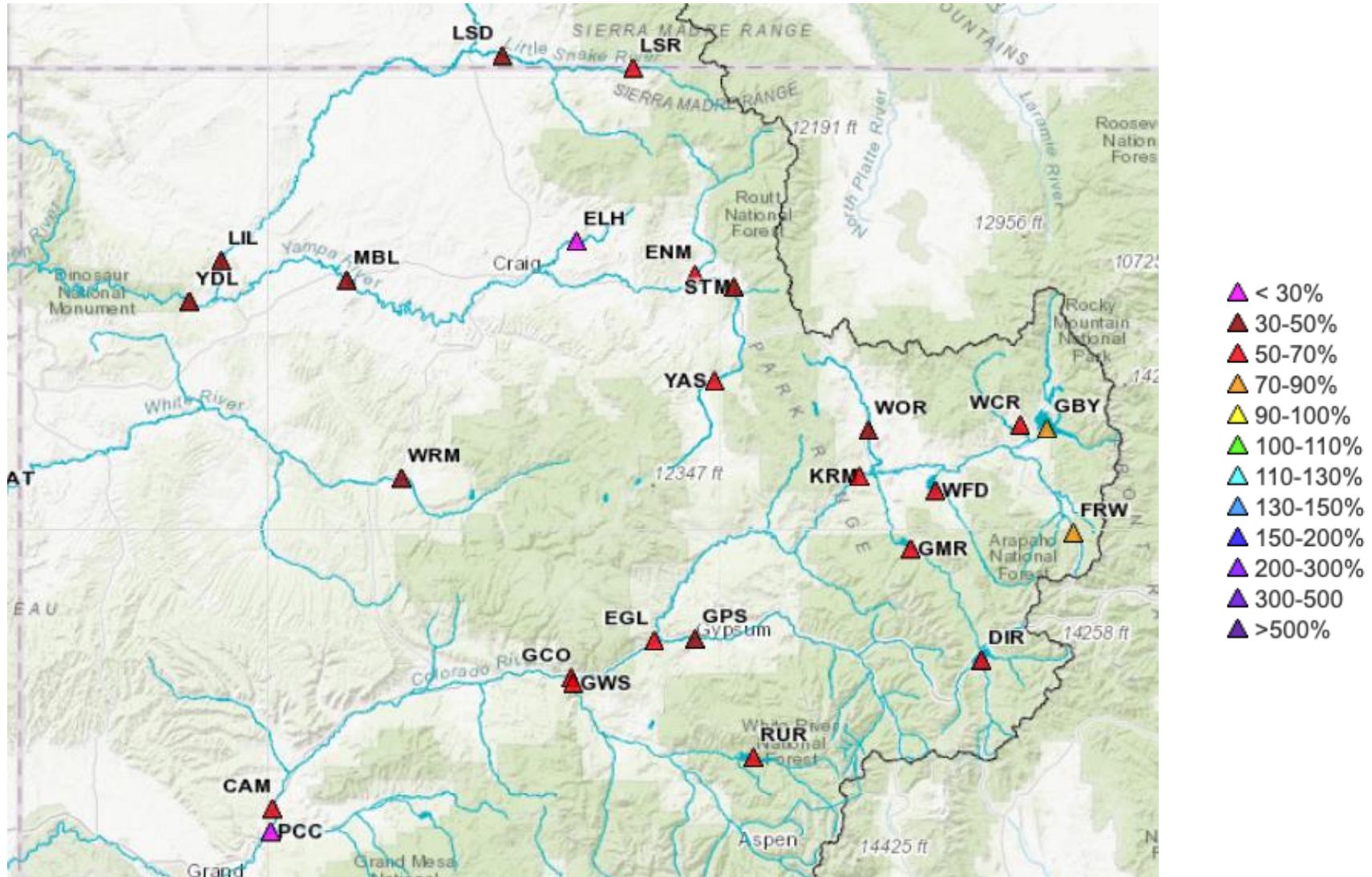
Mean: 1.84"



The Yampa Basin has experienced its driest May-April period on record.



What this all translates to for water supply



<https://www.cbrfc.noaa.gov>



COLORADO CLIMATE CENTER



Yampa - Maybell, Nr (MBLC2)

Period: Apr-Jul, Official 50% Forecast (2021-05-01): 365 kaf (39% Average, 41% Median)

ESP is Unregulated and No Precipitation Forecast Included

2021/05/18:

Max 2011: 2024.15

Min 1977: 260.59

Average: 935

Median: 895

Observed

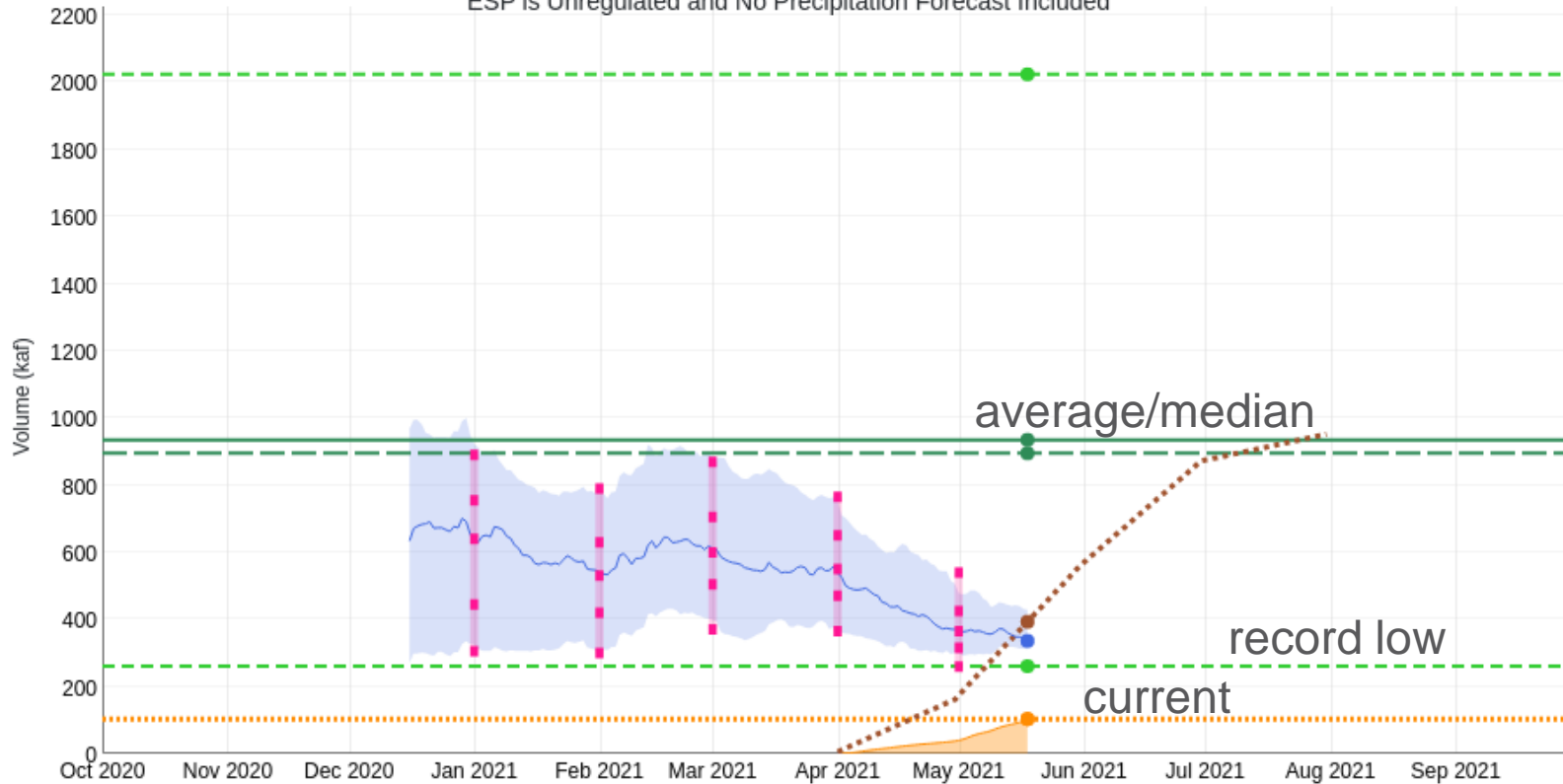
Accumulation: 103

Observed Total: 103

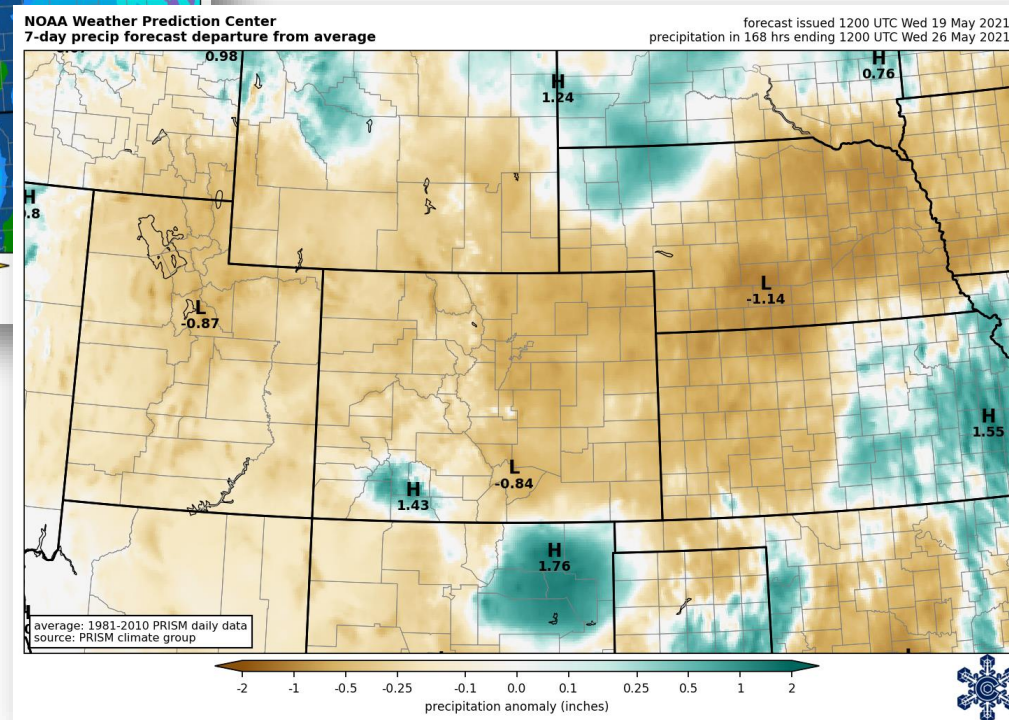
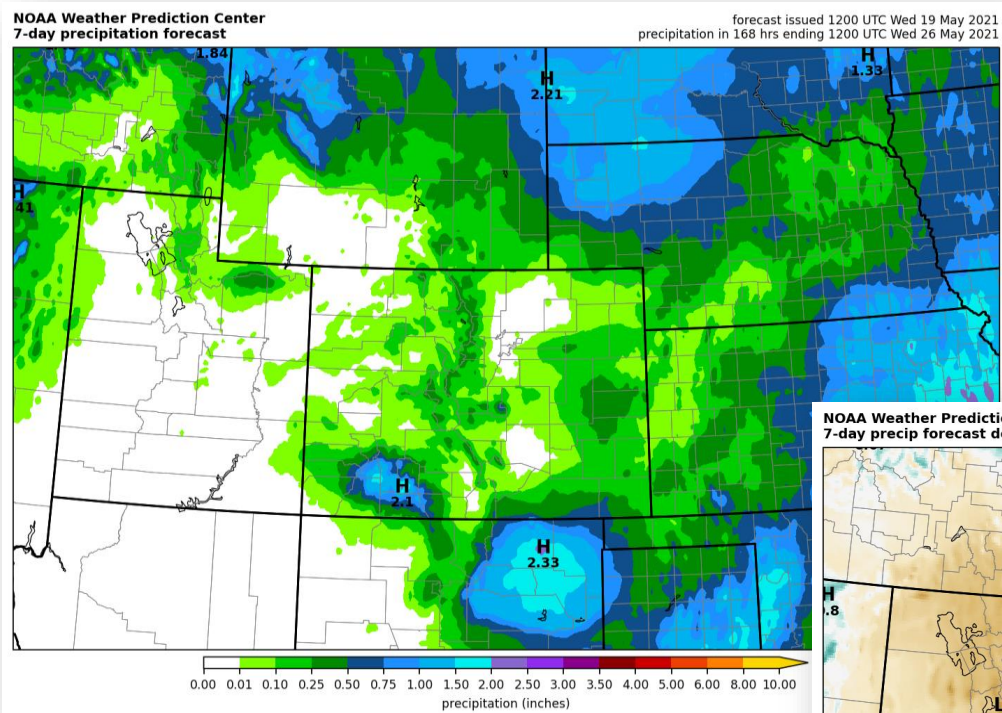
Normal

Accumulation: 393

ESP: 336



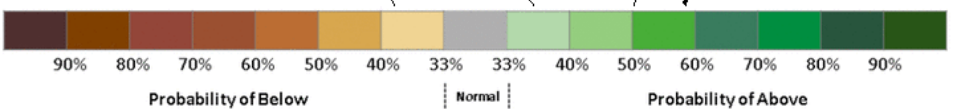
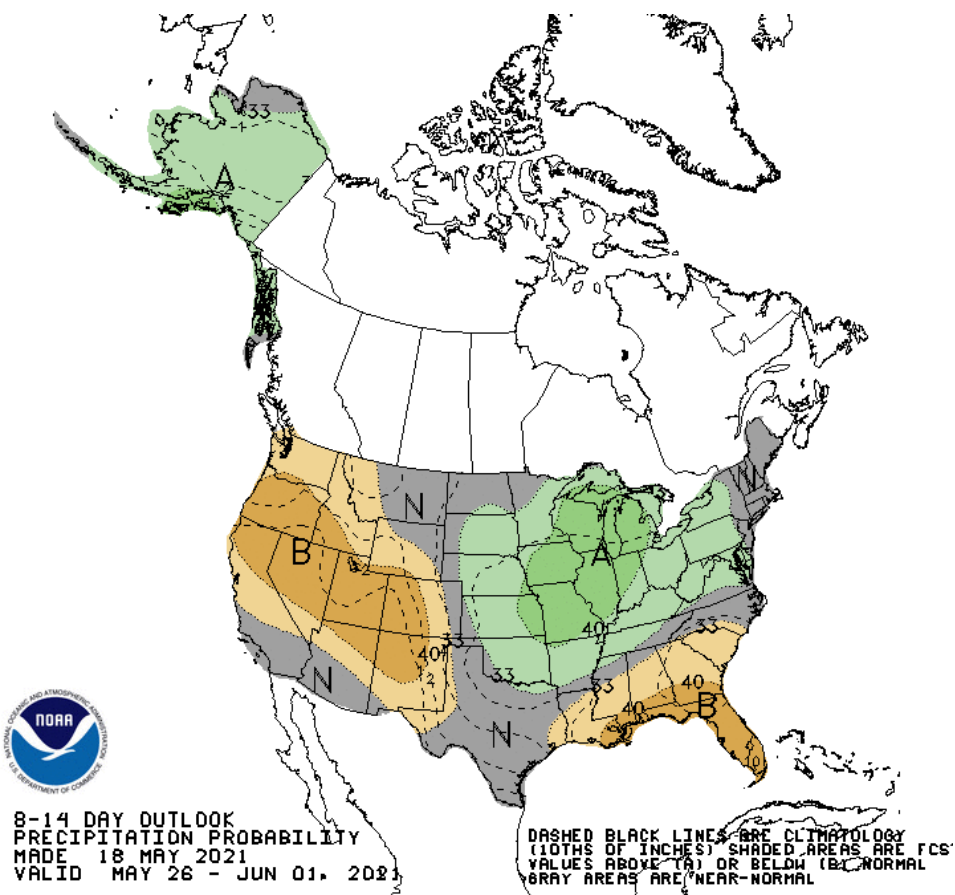
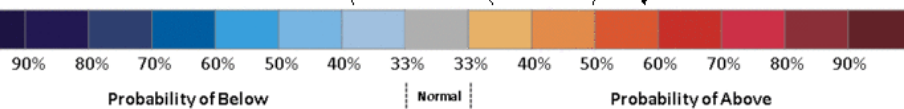
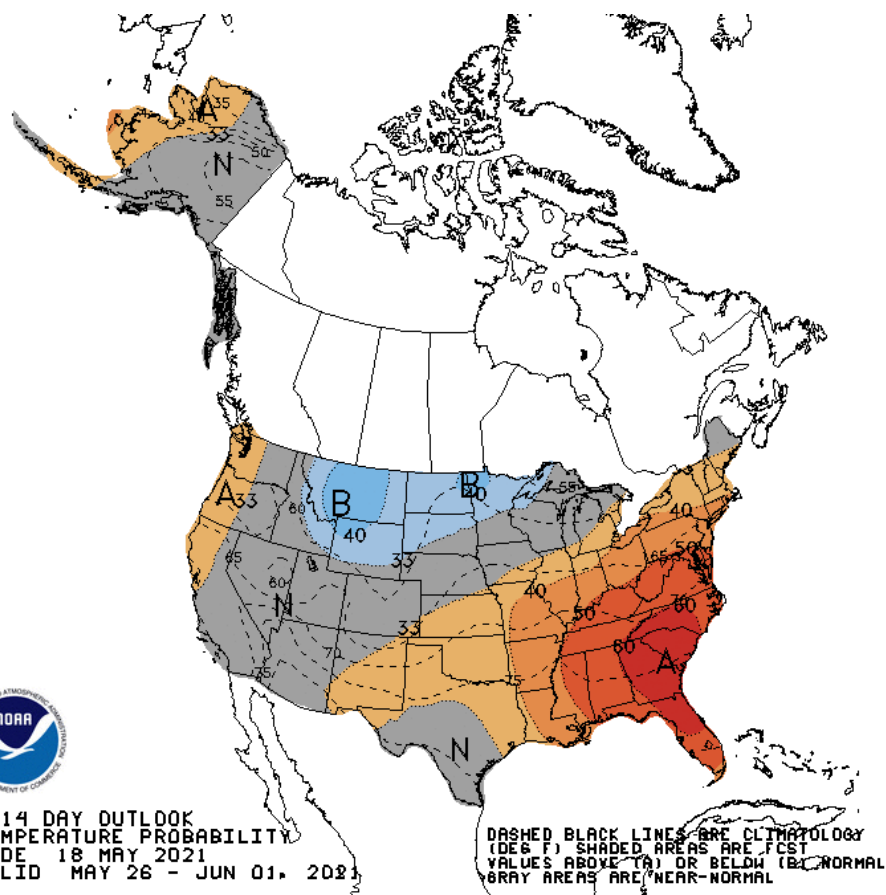
Short-term Outlook



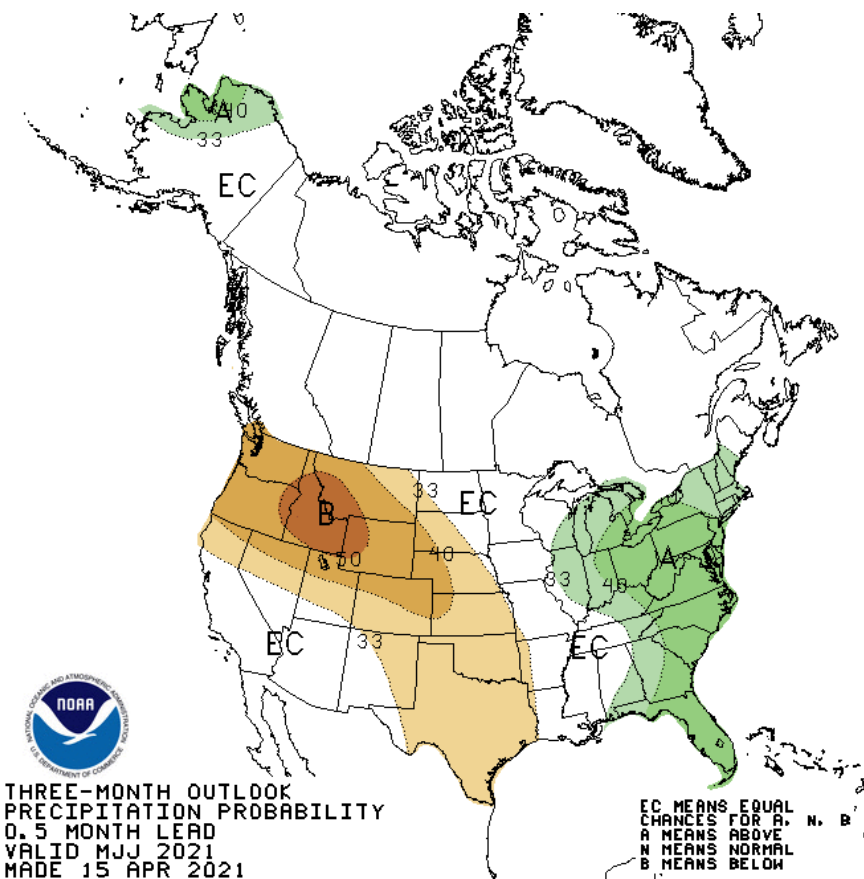
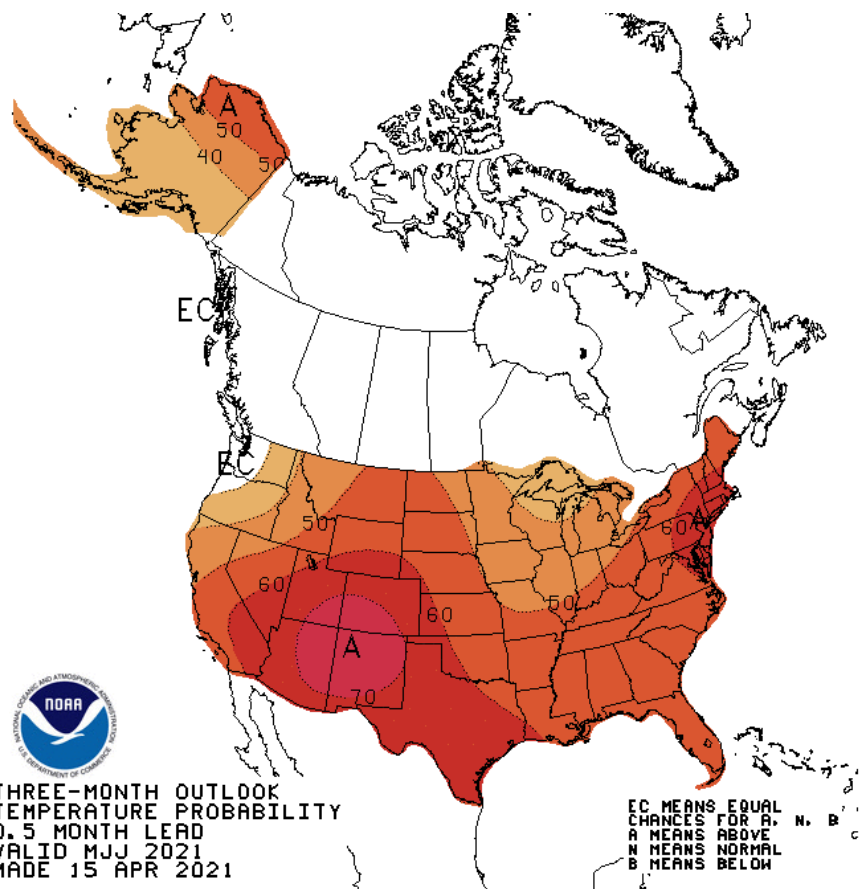
climate.colostate.edu/drought



Short-term Outlook



Long-term Outlook



Key Points

- ❑ Hot and dry summer and fall started the drought and dried the soils
- ❑ Poor start to snowpack accumulation, couldn't make up the early deficit
- ❑ Early peak, low peak
- ❑ All combine for a very poor water supply outlook for the basin
- ❑ Dry pattern looking to emerge
- ❑ Summer is expected to be hot and dry again
- ❑ Late summer precipitation and an early start to cool and snow could help recharge the soils
- ❑ A strong snowpack season next year would help with recovery



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climate.colostate.edu

Thank you



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