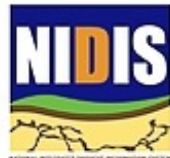


NIDIS and Southwest Climate Hub – Colorado Drought Update

Dr. Becky Bolinger
Assistant State Climatologist

July 9, 2020



Southwest Climate Hub
U.S. DEPARTMENT OF AGRICULTURE



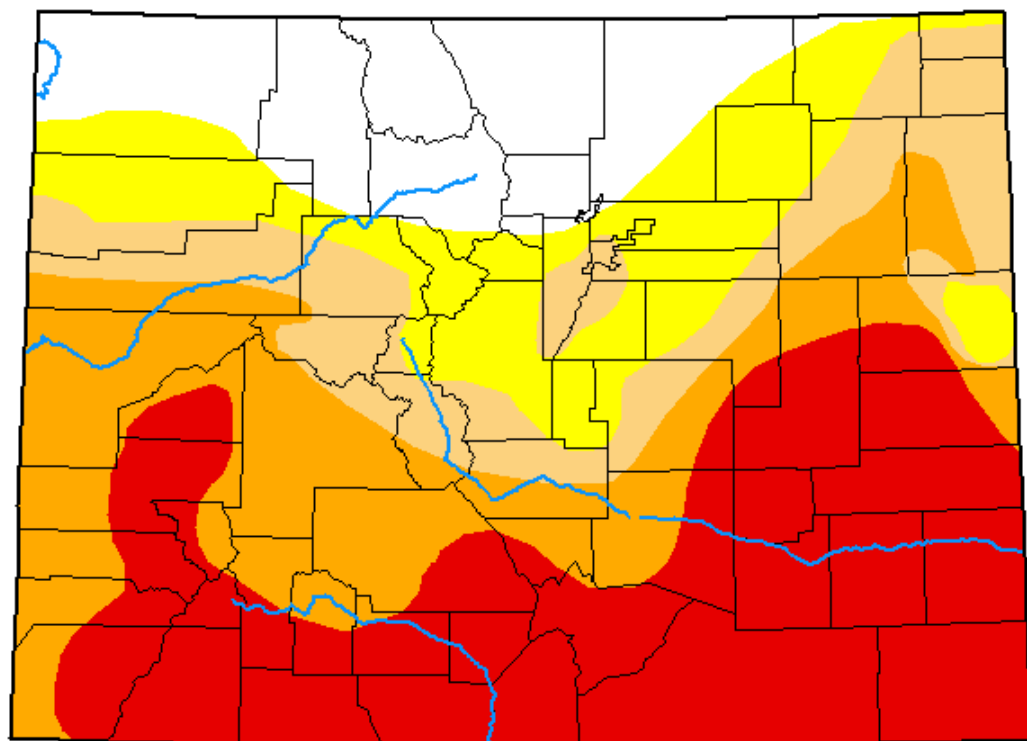
ATMOSPHERIC SCIENCE
COLORADO STATE UNIVERSITY

U.S. Drought Monitor Colorado

July 7, 2020
(Released Thursday, Jul. 9, 2020)
Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	15.67	84.33	69.18	55.41	34.07	0.00
Last Week 06-30-2020	15.67	84.33	67.96	56.23	34.07	1.37
3 Months Ago 04-07-2020	35.36	64.64	47.33	6.50	0.00	0.00
Start of Calendar Year 12-31-2019	31.72	68.28	51.19	20.11	0.00	0.00
Start of Water Year 10-01-2019	30.14	69.86	27.53	0.00	0.00	0.00
One Year Ago 07-09-2019	100.00	0.00	0.00	0.00	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>

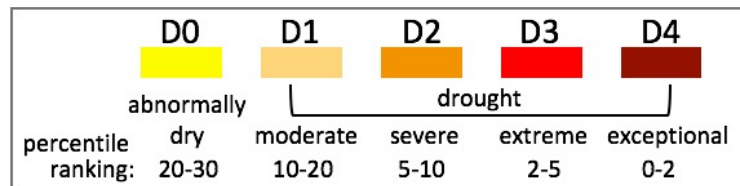
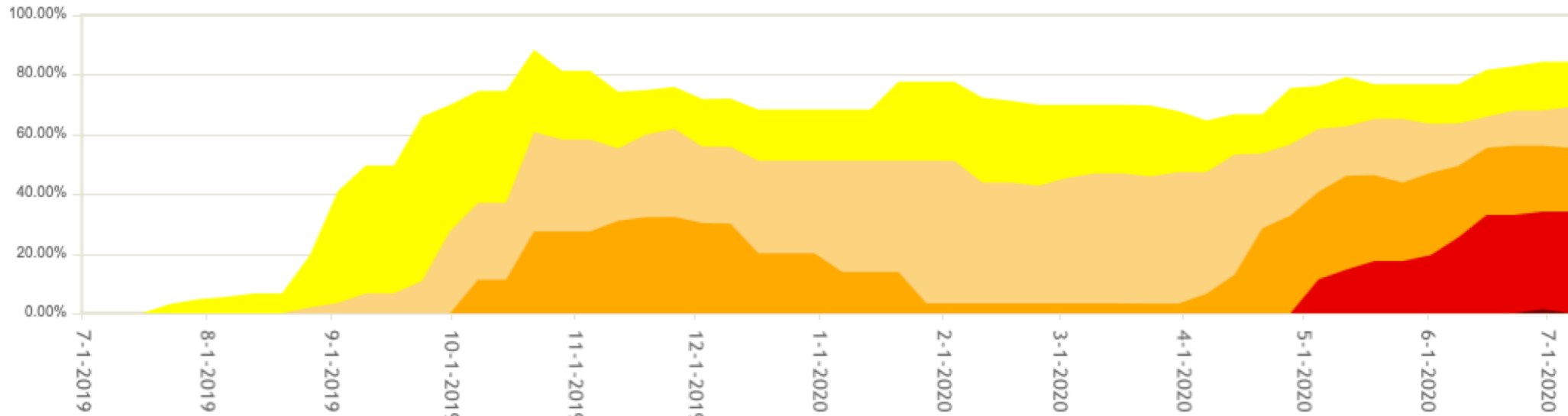
Author:

David Miskus
NOAA/NWS/NCEP/CPC



droughtmonitor.unl.edu

Colorado Percent Area



droughtmonitor.unl.edu/Data/Timeseries.aspx



Drought Timeline:

no monsoon

okay winter

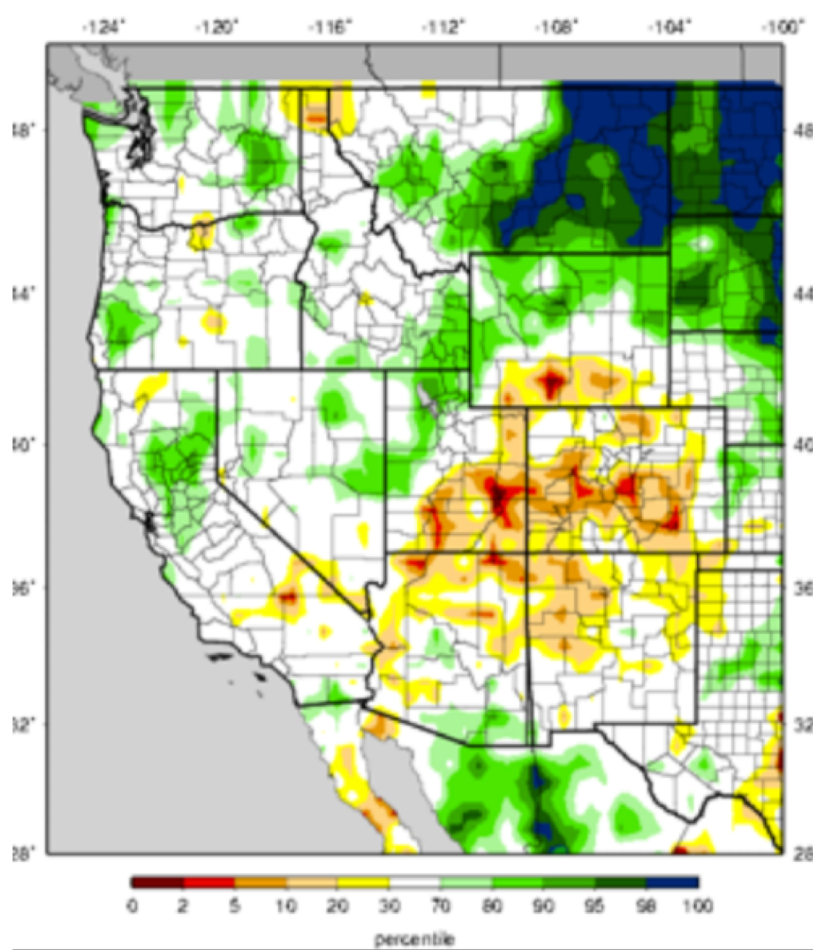
fast snowmelt

warm dry spring

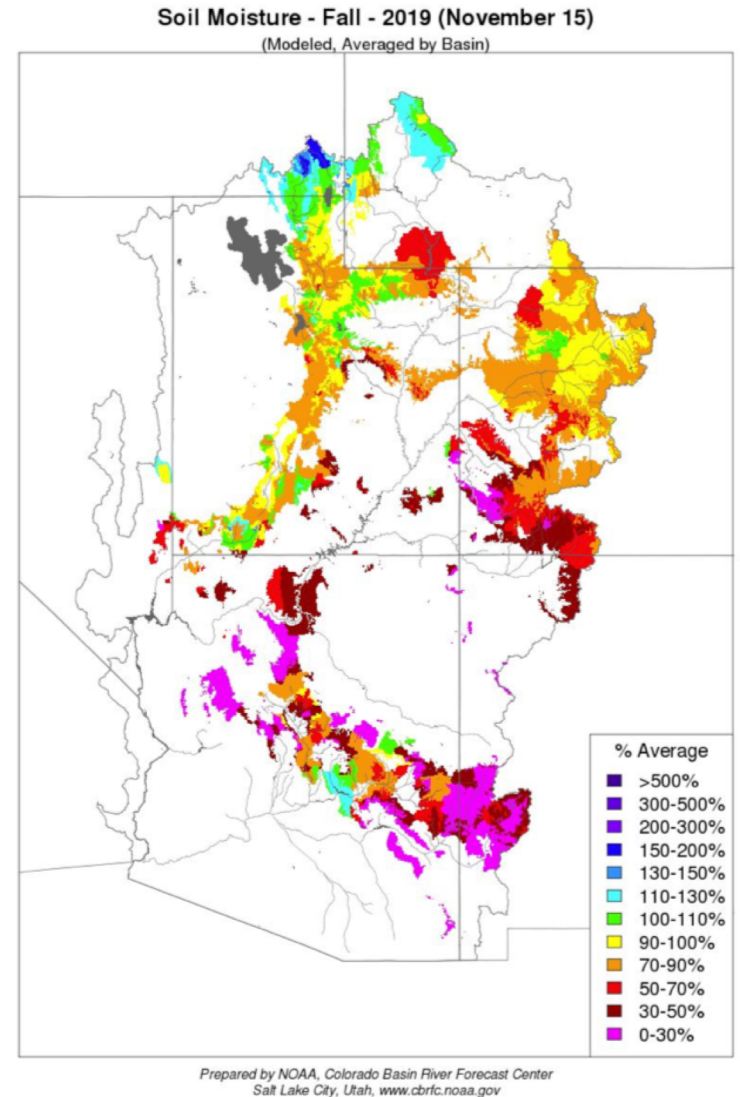
hot windy summer



dry soils at the beginning of the cold season started the deficit early



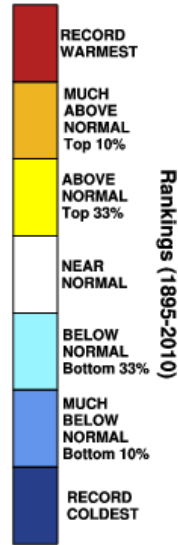
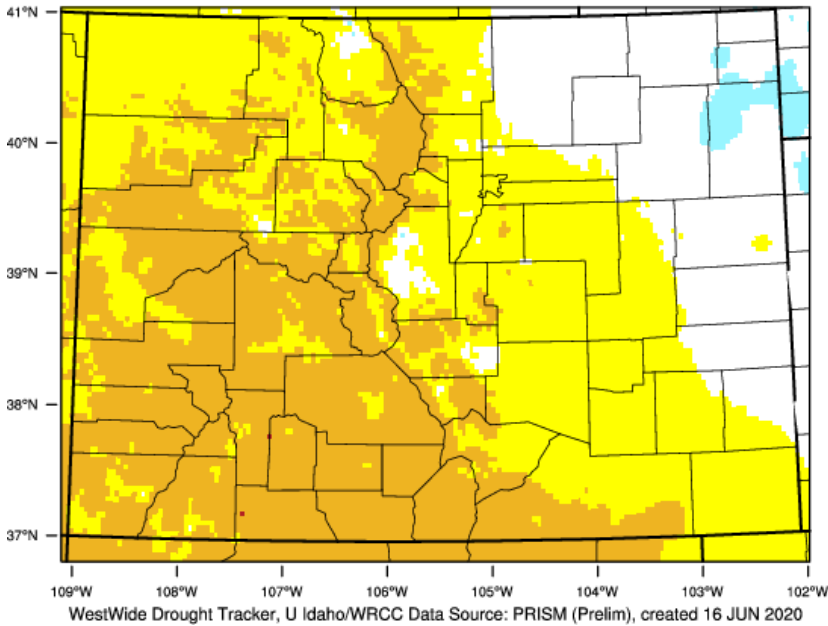
VIC modeled soil moisture
<http://www.hydro.ucla.edu/SurfaceWaterGroup/forecast/monitor/index.shtml>



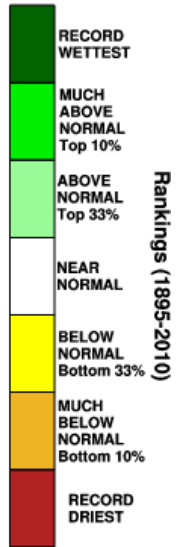
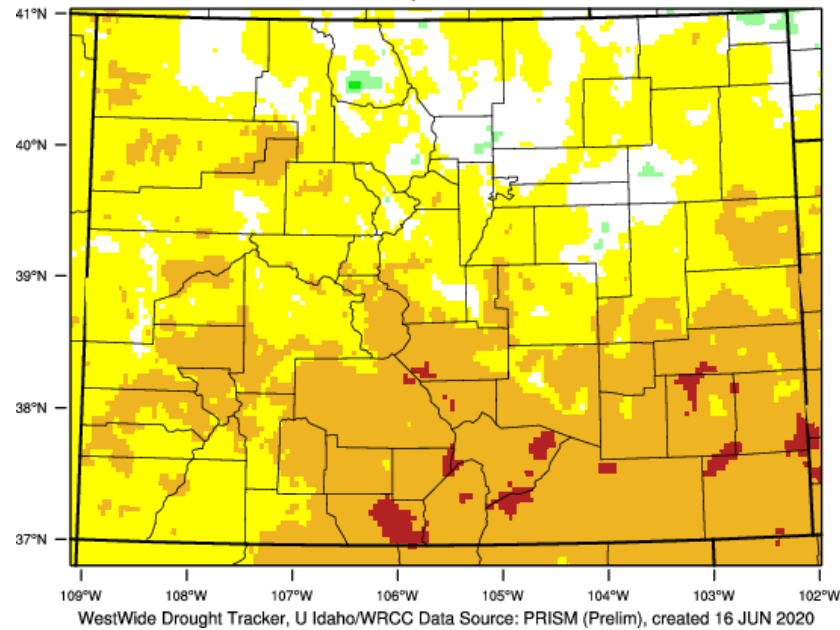
Colorado River Basin soil moisture
https://www.cbrfc.noaa.gov/wsup/sac_sm/sac_sm.php



Colorado - Mean Temperature March-May 2020 Percentile



Colorado - Precipitation March-May 2020 Percentile

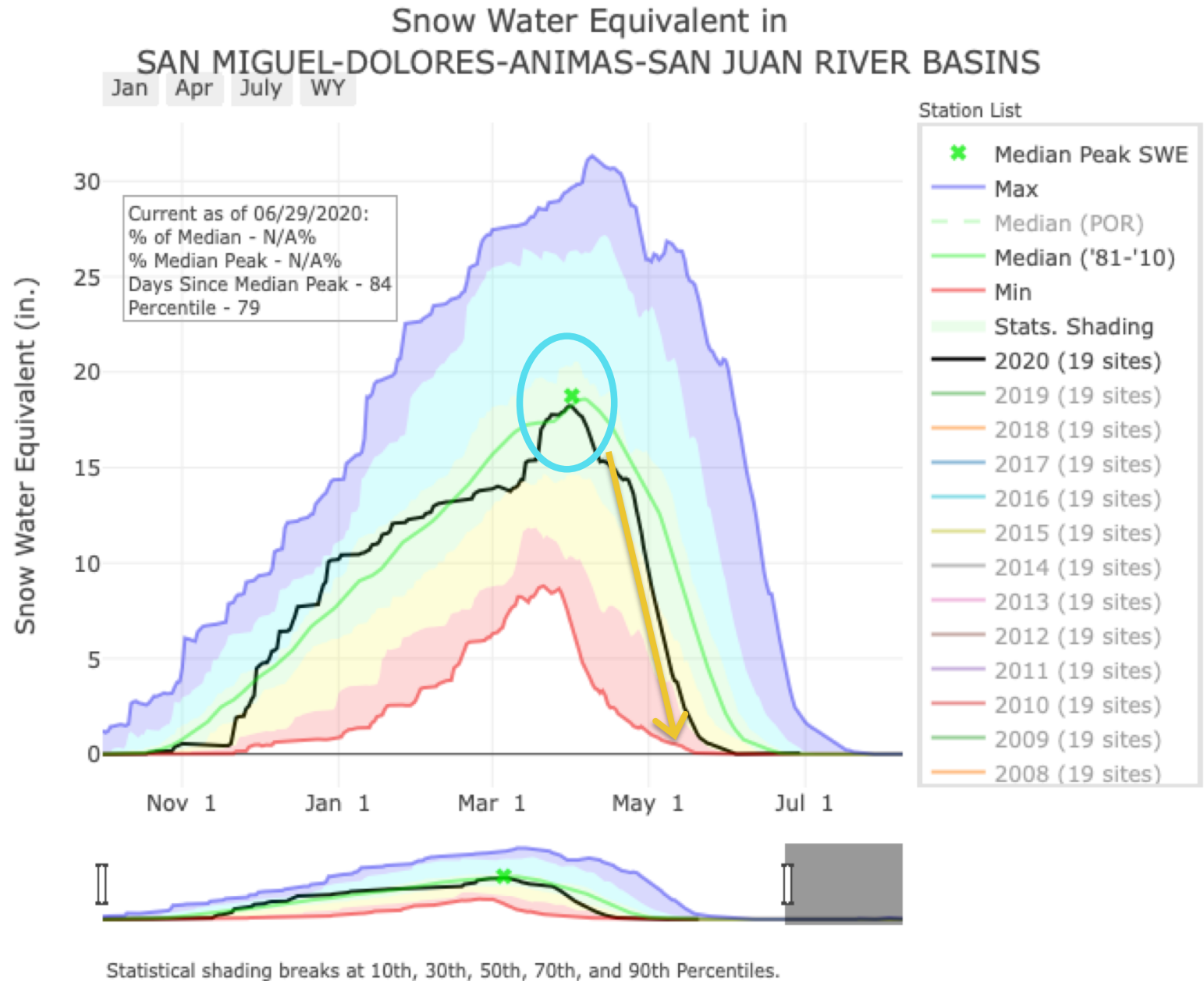


a warm and dry spring prevailed over most of the state

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



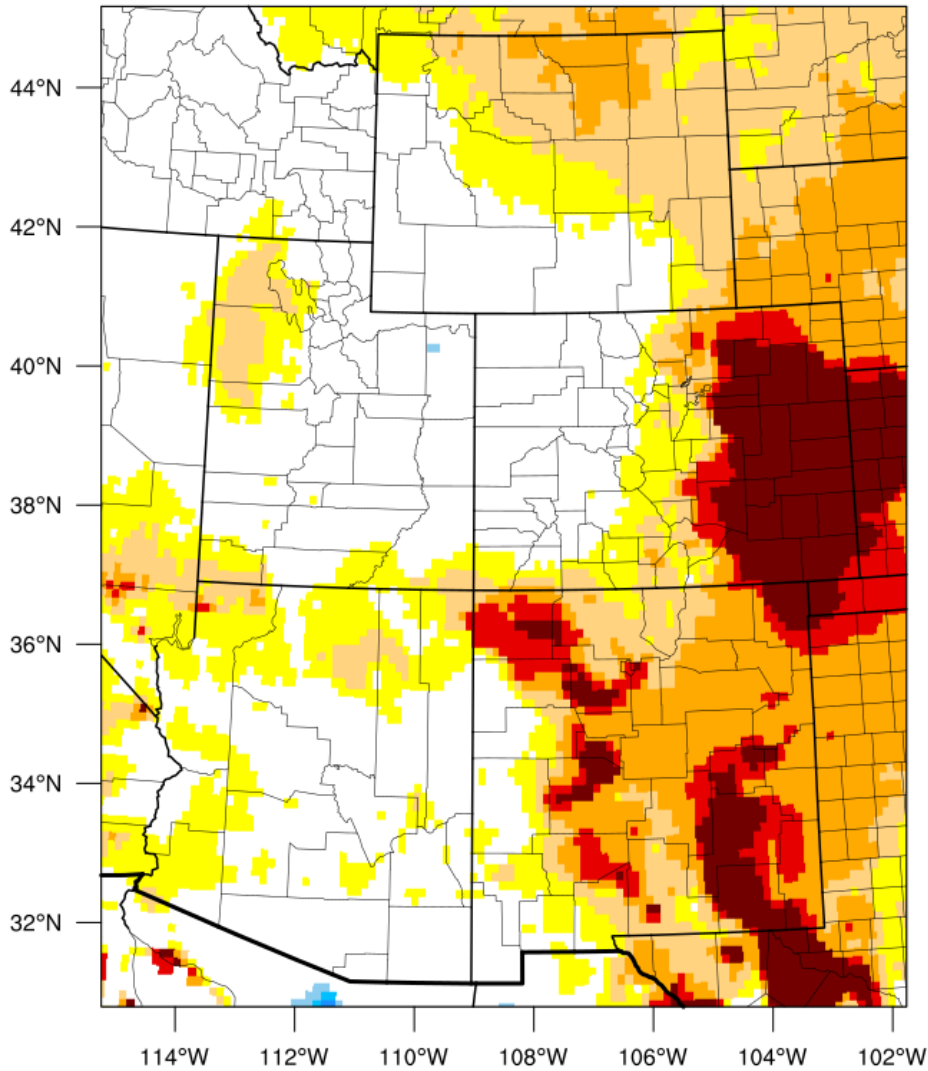
snow melted too fast



<https://www.nrcs.usda.gov/wps/portal/nrcs/main/co/snow/>

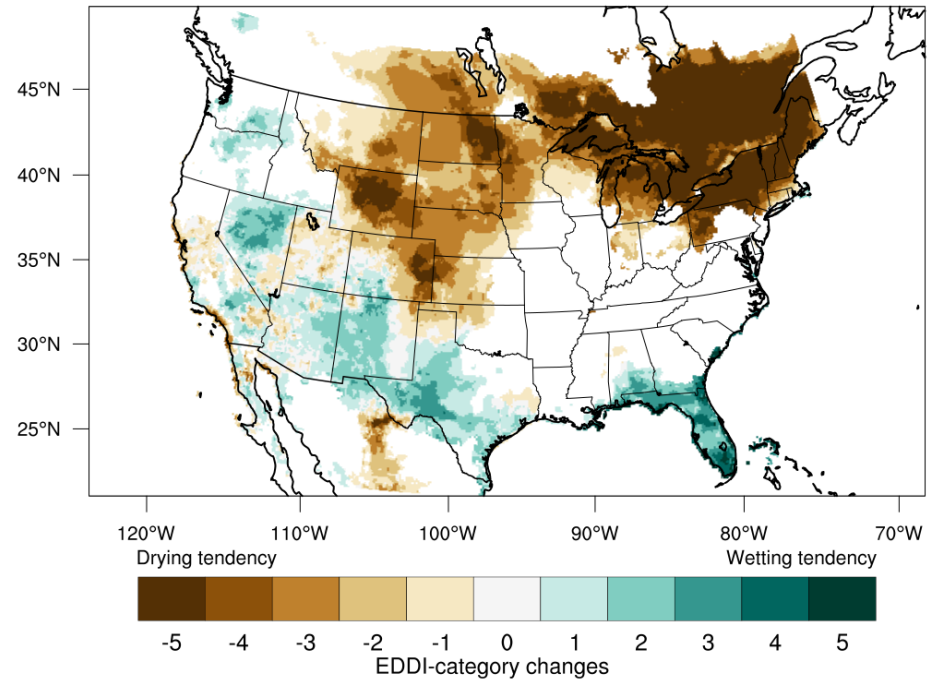


1-week EDDI categories for June 12, 2020

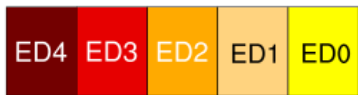


high winds and hot temperatures have made evaporative losses very high

1-month EDDI: Changes during the 30 days ending on June 17, 2020



Drought categories



Wetness categories



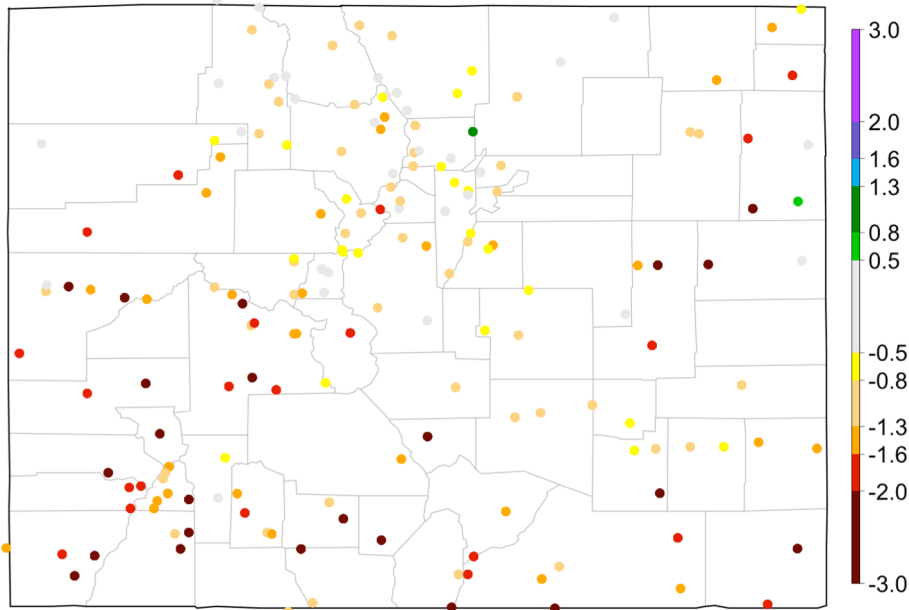
100% 98% 95% 90% 80% 70% 30% 20% 10% 5% 2% 0%
 (EDDI-percentile category breaks: 100% = driest; 0% = wettest)

Generated by NOAA/ESRL/Physical Sciences Division

<https://psl.noaa.gov/eddi/>



12-month SPI: 2019/07/05 - 2020/07/04

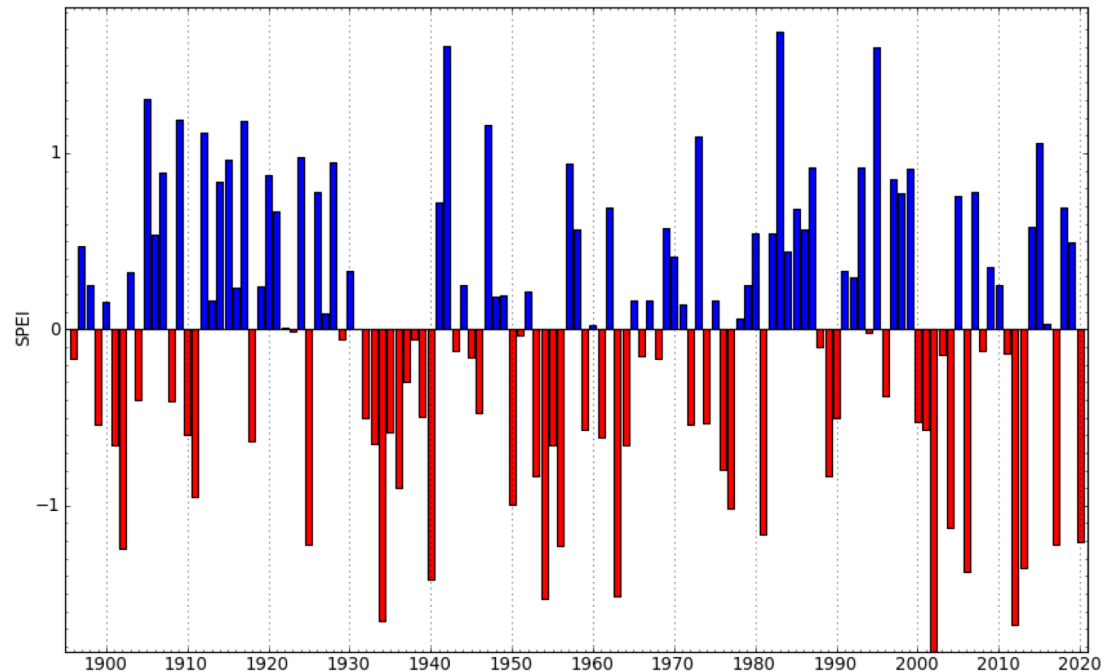


Data from High Plains Regional Climate Center and ACIS

<https://climate.colostate.edu/drought/>

Package all that together over one year, and the result is extreme drought conditions across most of the state

Standardized Precipitation-Evapotranspiration Index, 12-Months Ending in June
Colorado



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

Data Source: WRCC/UI, Created: 7-08-2020





some impacts



photo courtesy Brenda Toft

*agricultural impacts:
chiseled wheat, grass
fires, buying hay,
emergency grazing,
selling cattle, running out
of irrigation water*



Dawna Weirich, Eads



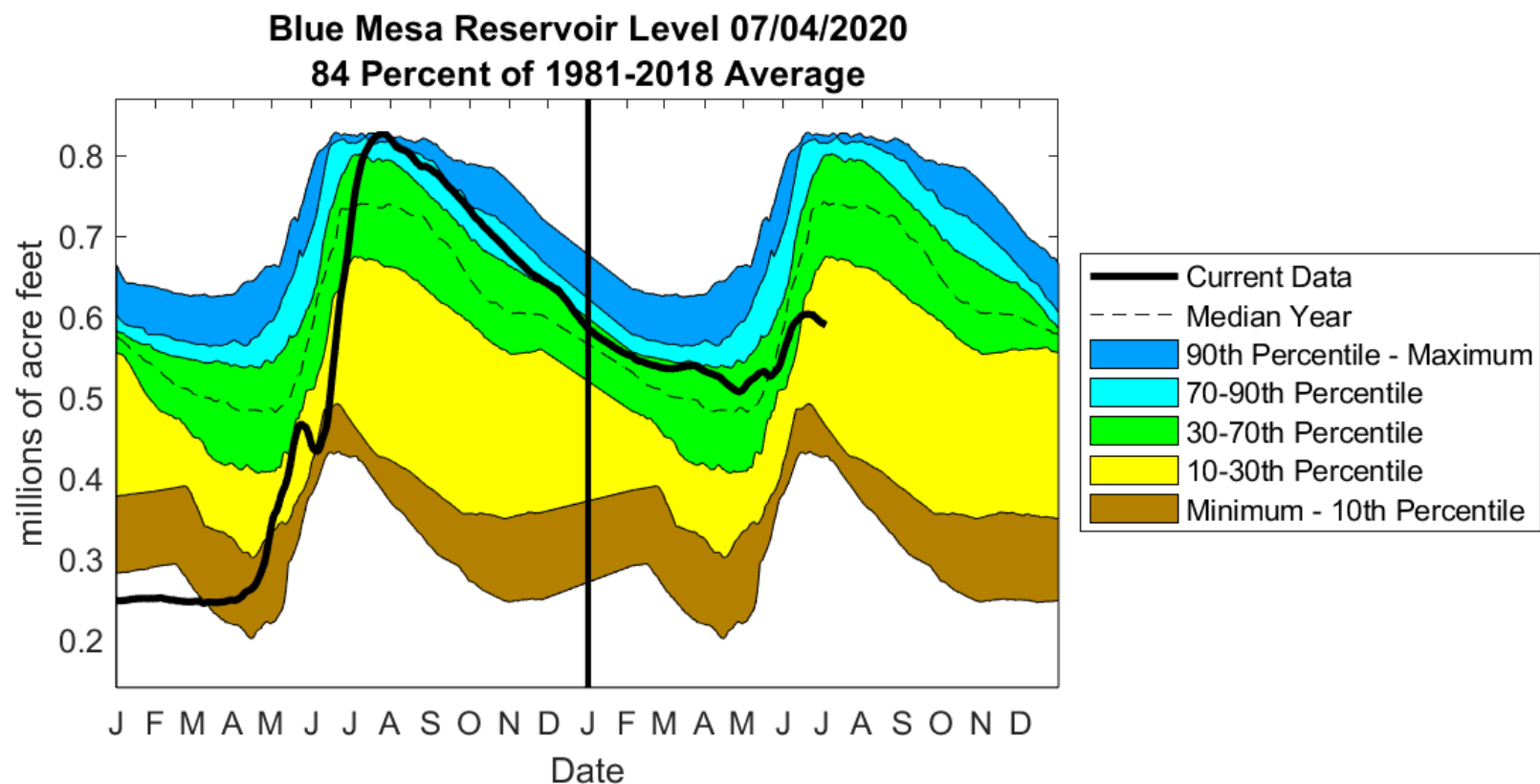
Nick Palmer, Lamar



Chuck Hanagan, Rocky Ford



Water supply is still doing okay, but didn't get as much benefit from snowmelt as it normally should.



<https://climate.colostate.edu/drought/>

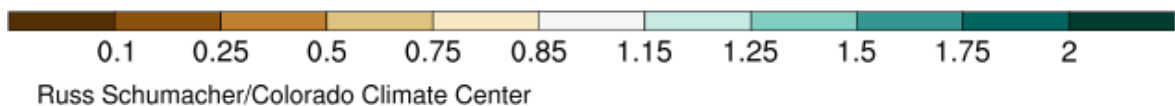
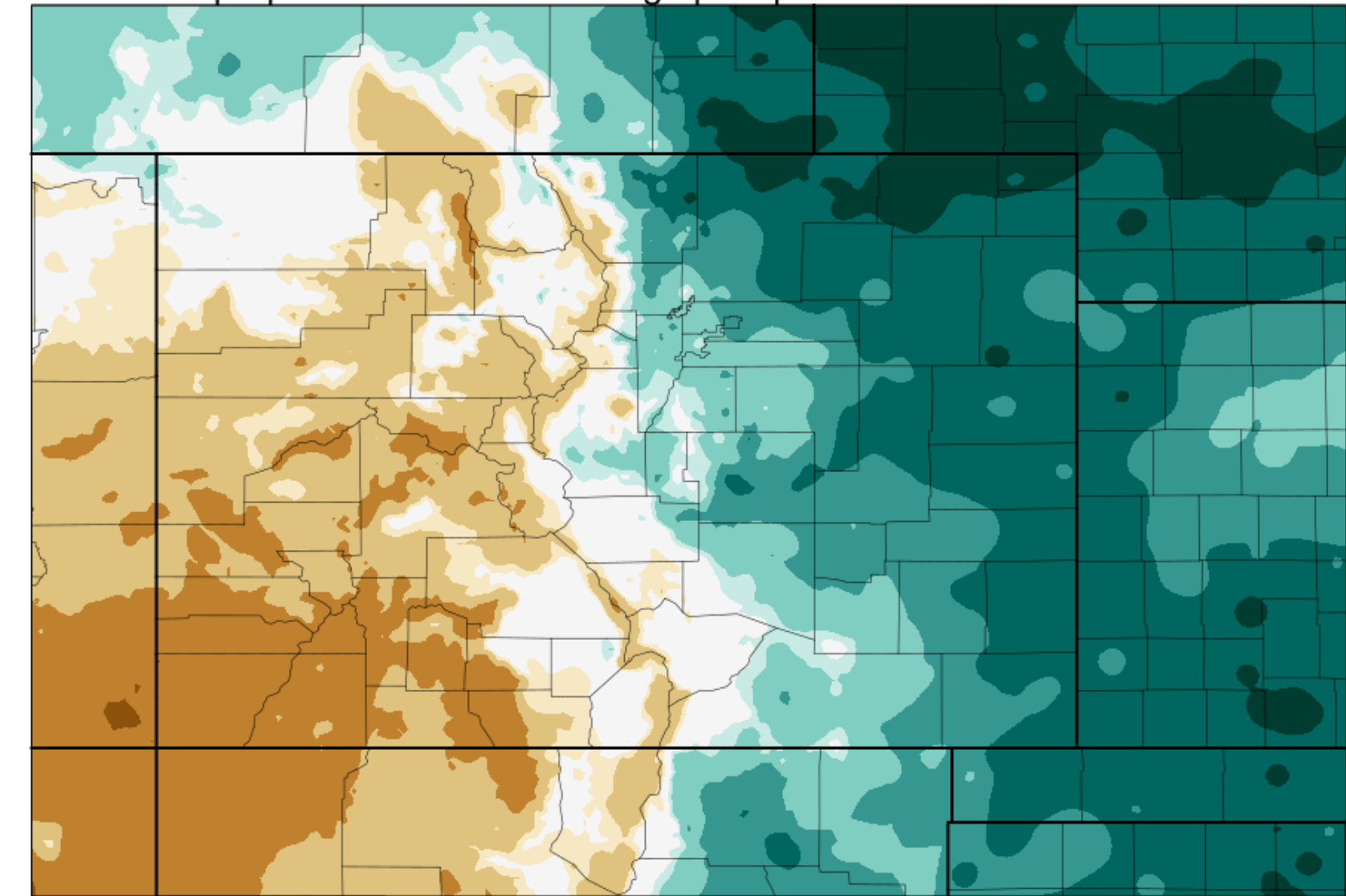


So where do we go from here?



How important is summer and fall precipitation?

PRISM proportion of annual average precipitation in this month: June

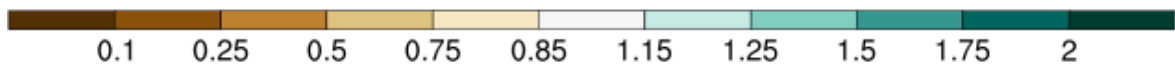
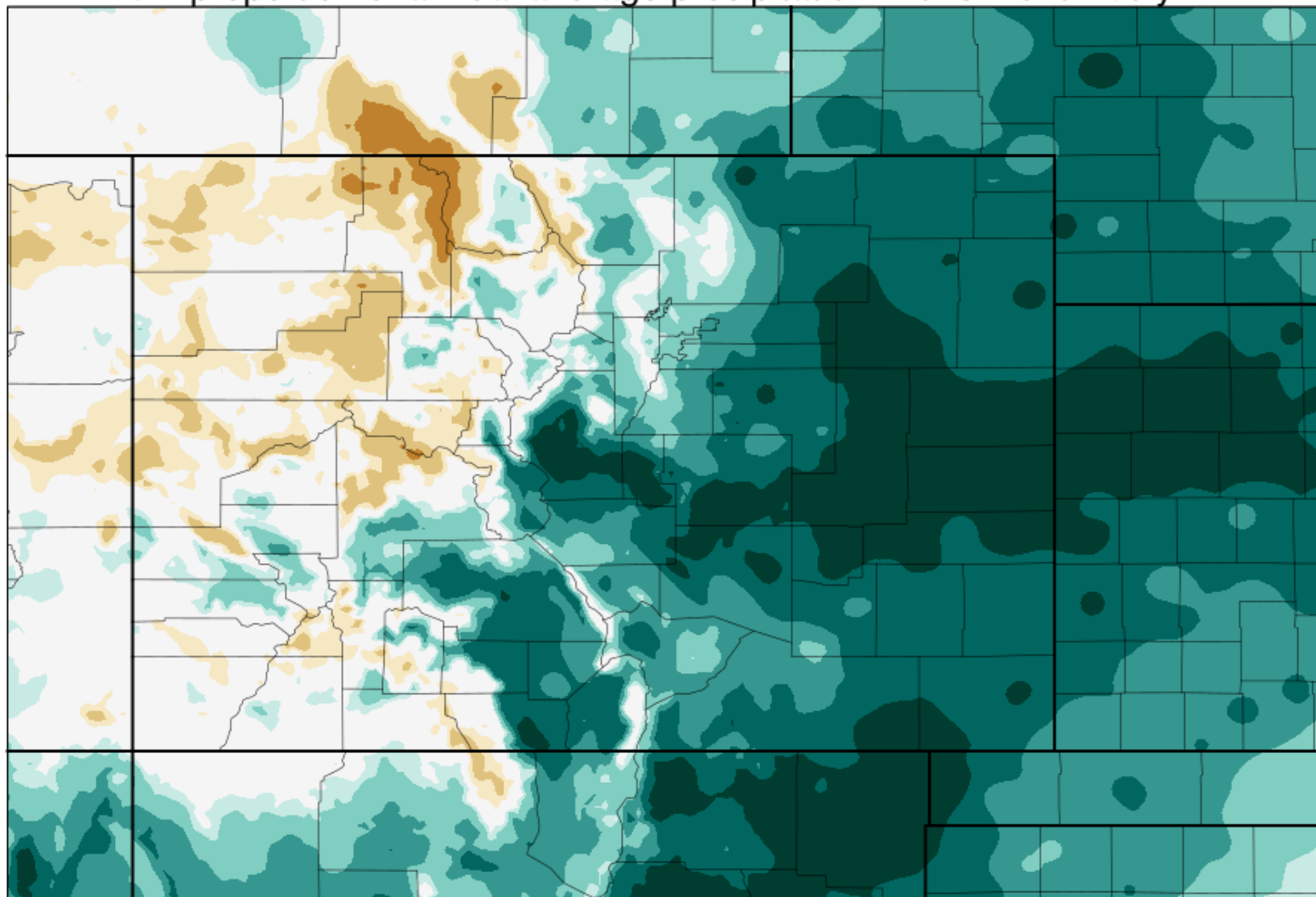


Proportion of precip relative to 1/12th
https://climate.colostate.edu/precip_prop.html



How important is summer and fall precipitation?

PRISM proportion of annual average precipitation in this month: July



Russ Schumacher/Colorado Climate Center

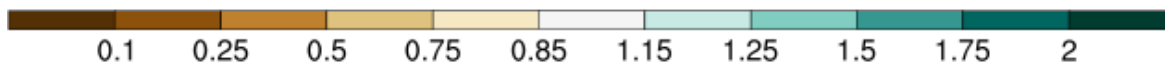
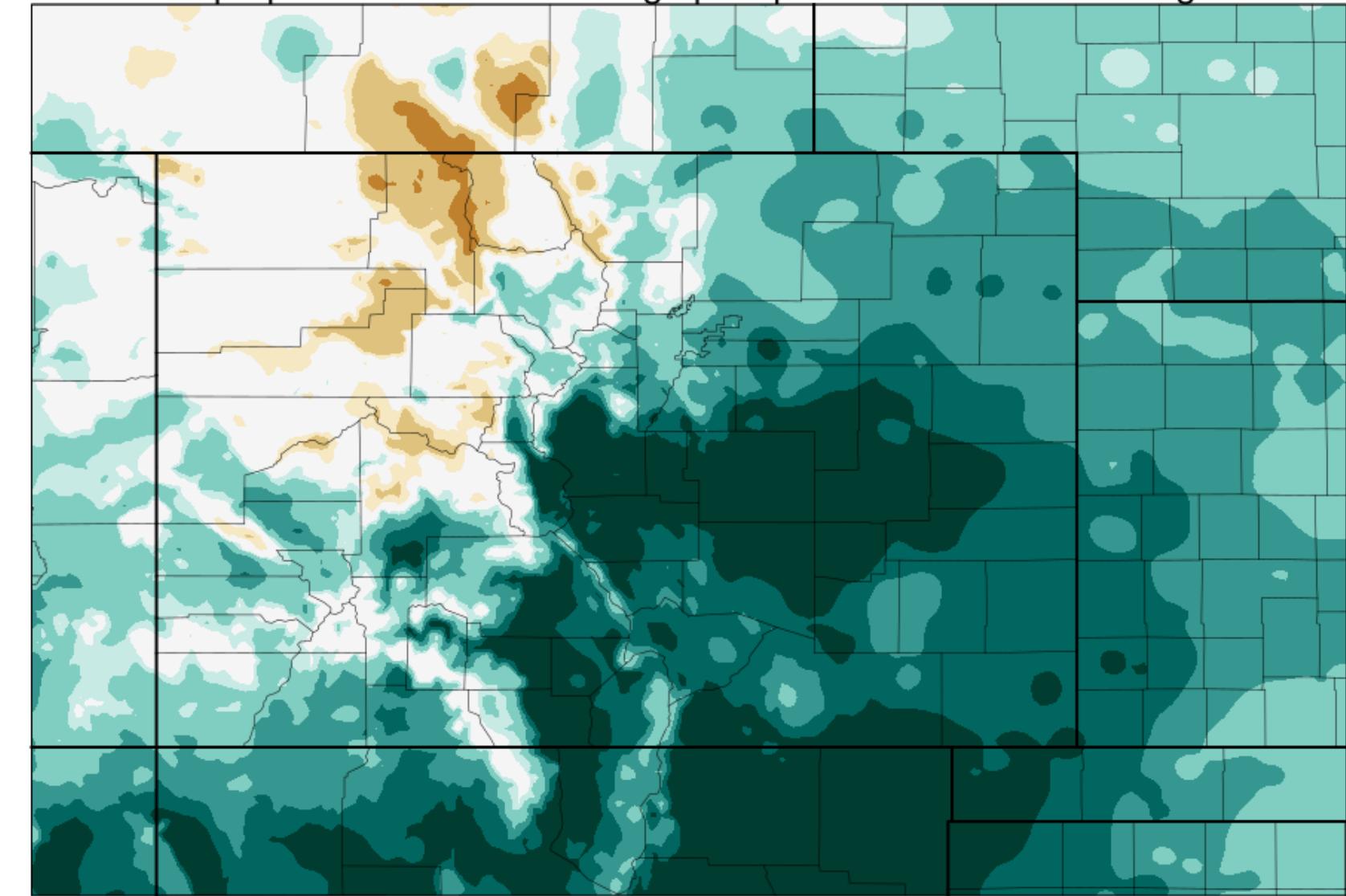
Proportion of precip relative to 1/12th

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



How important is summer and fall precipitation?

PRISM proportion of annual average precipitation in this month: August



Russ Schumacher/Colorado Climate Center

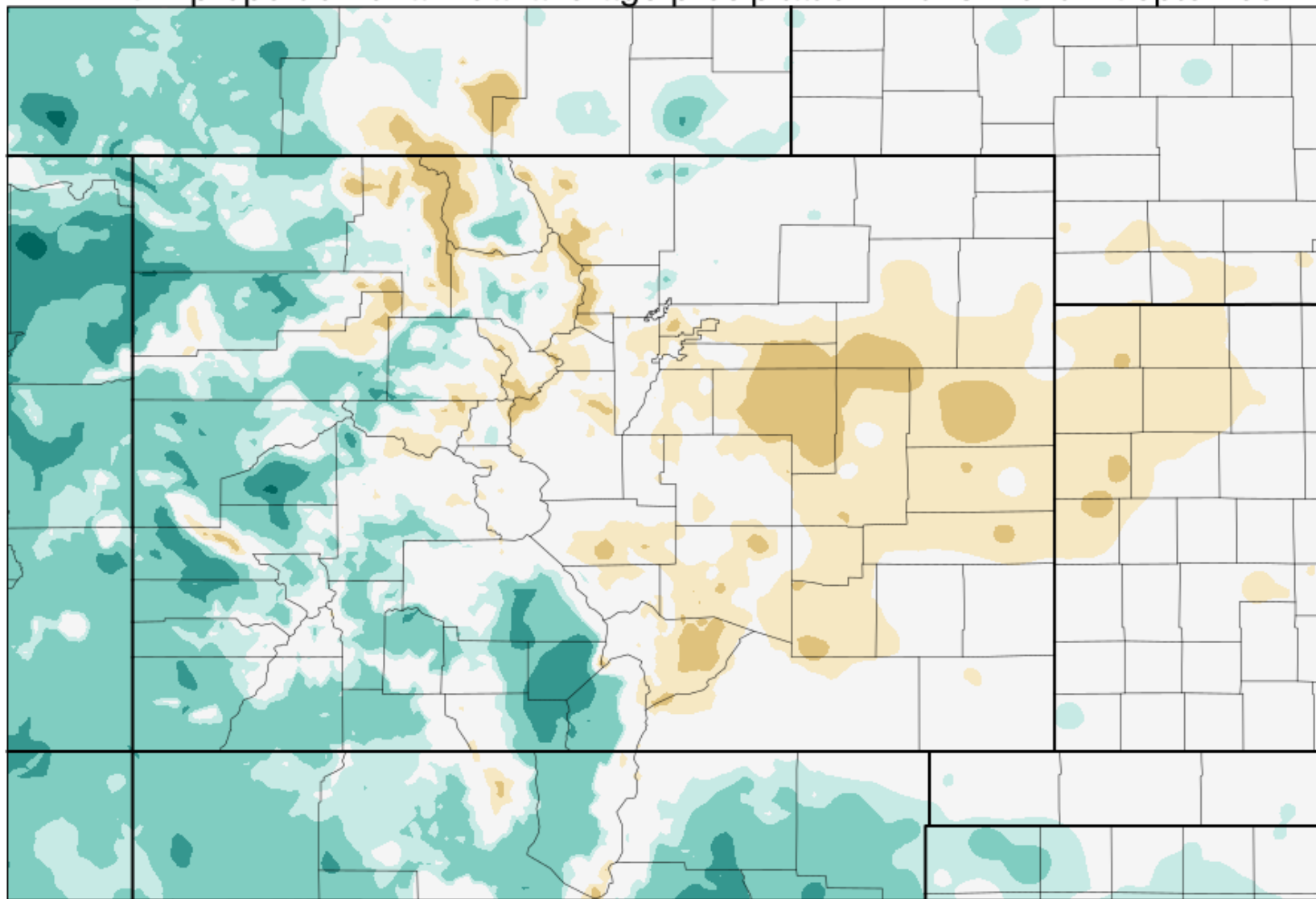
Proportion of precip relative to 1/12th

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



How important is summer and fall precipitation?

PRISM proportion of annual average precipitation in this month: September



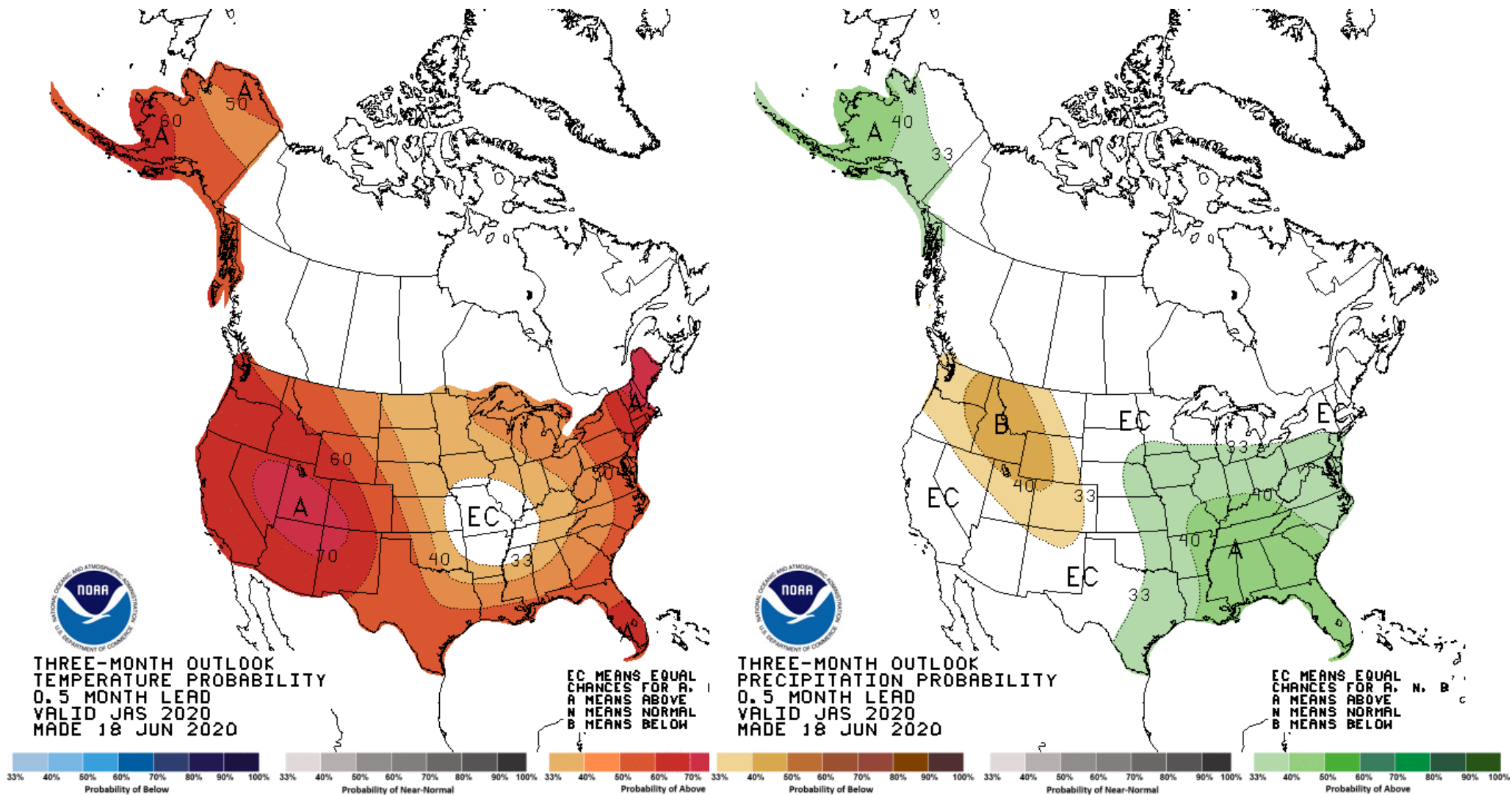
Russ Schumacher/Colorado Climate Center

Proportion of precip relative to 1/12th

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



There is uncertainty with the precipitation outlook, but CPC leans slightly toward drier than average. High confidence that warmer than average will continue.



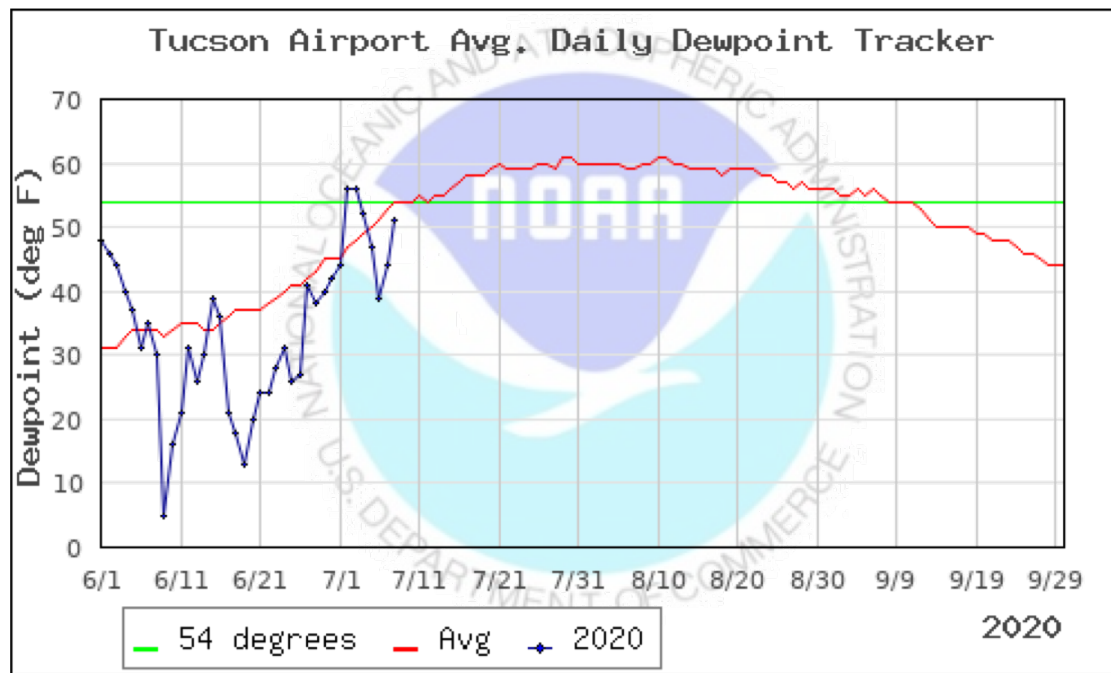
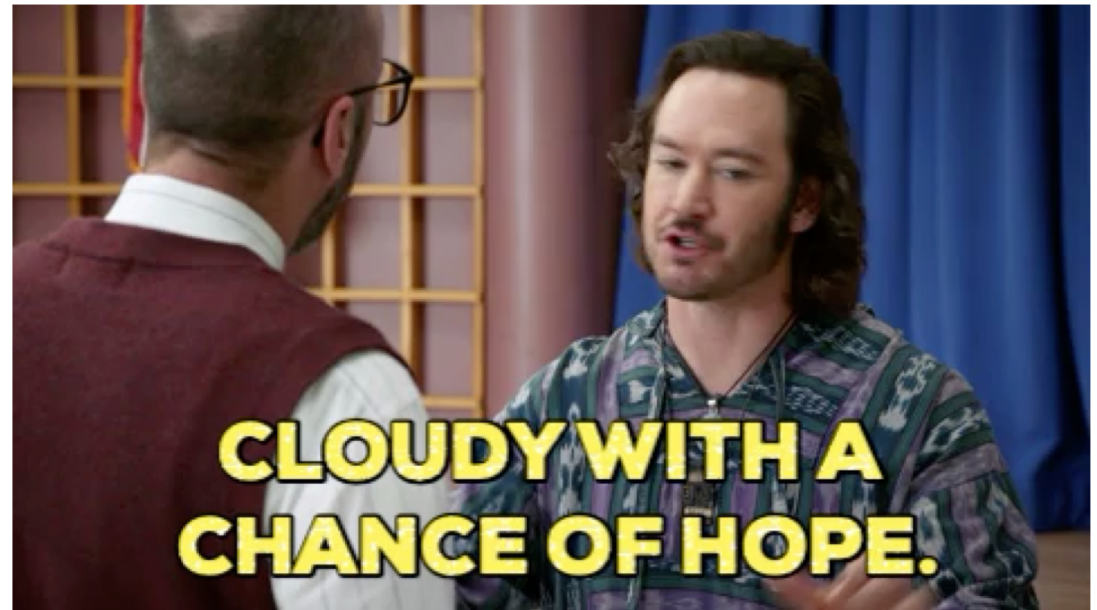
<https://www.cpc.ncep.noaa.gov>



So where's
the monsoon?

It's coming.

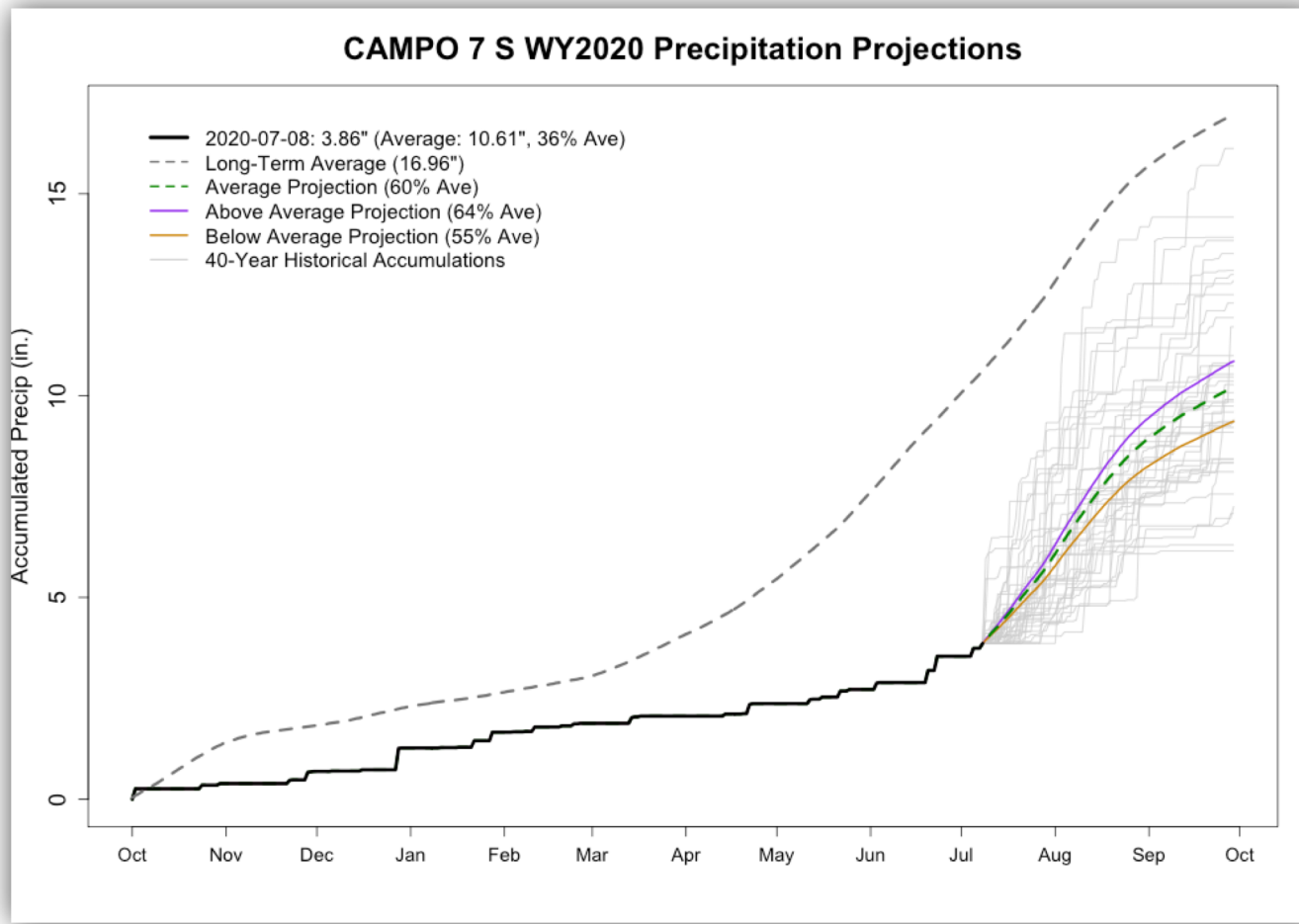
Hopefully.



<https://www.weather.gov/twc/>



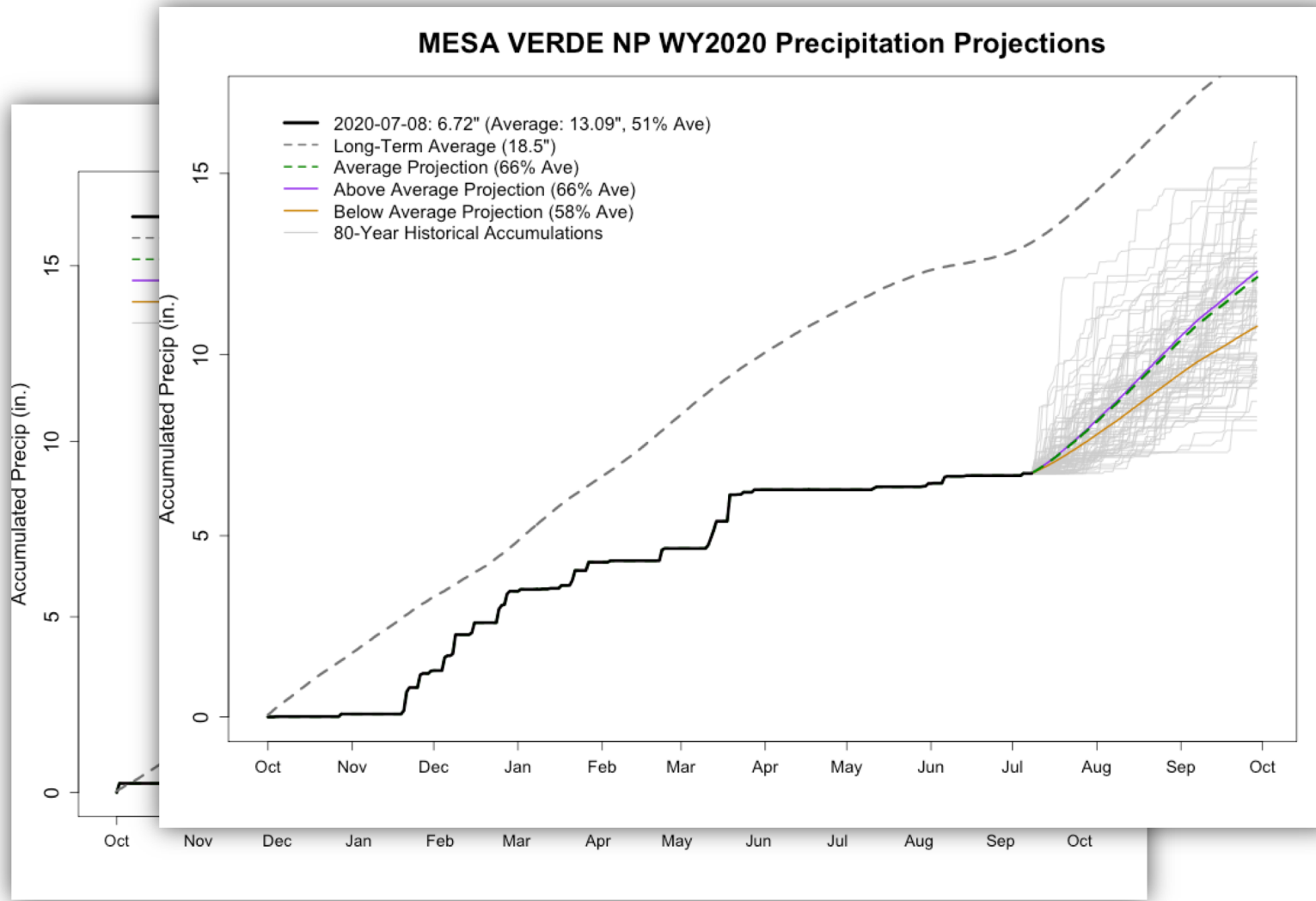
Can we make up water-year deficits? For the worst areas, probably not.



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



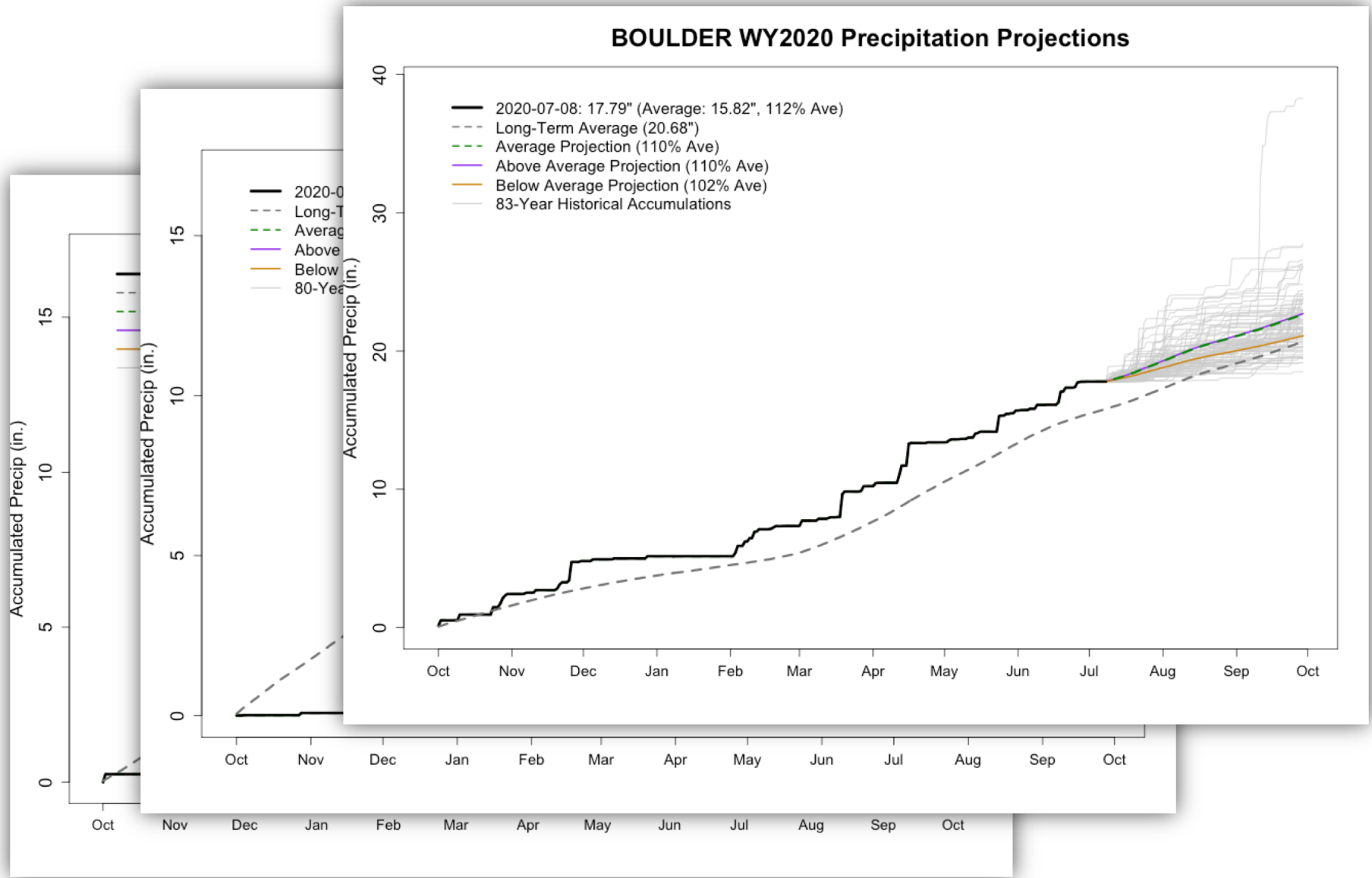
Can we make up water-year deficits? For the worst areas, probably not.



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



But let's end with a decent spot!



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



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 @ClimateBecky

climate.colostate.edu

Thank you



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