

Colorado Climate Center – *WATF Climate Update*

Russ Schumacher, state climatologist

Water Availability Task Force

May 28, 2020



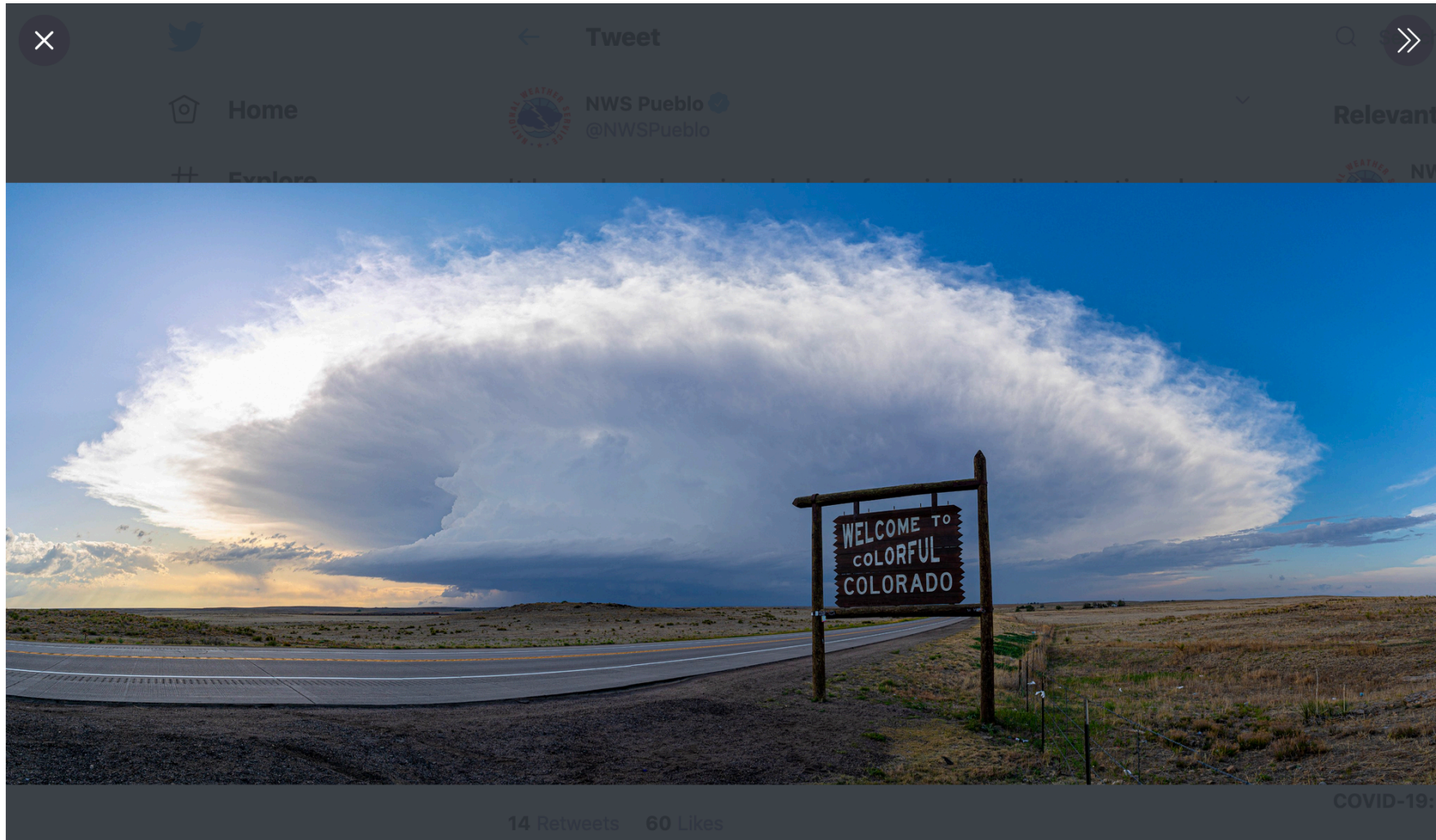
COLORADO
CLIMATE
CENTER



ATMOSPHERIC SCIENCE
COLORADO STATE UNIVERSITY

Water year 2020 to date:

temperature, precipitation, snow, evaporative demand



NWS Pueblo
@NWSPueblo

It has already gained a lot of social media attention, but we wanted to share this with our followers. Thank you, [@stormchaserQ](#), for sharing this beautiful photo of a supercell in Baca County from May 24th with us. Absolutely stunning! [#COWx](#) [#Colorado](#)

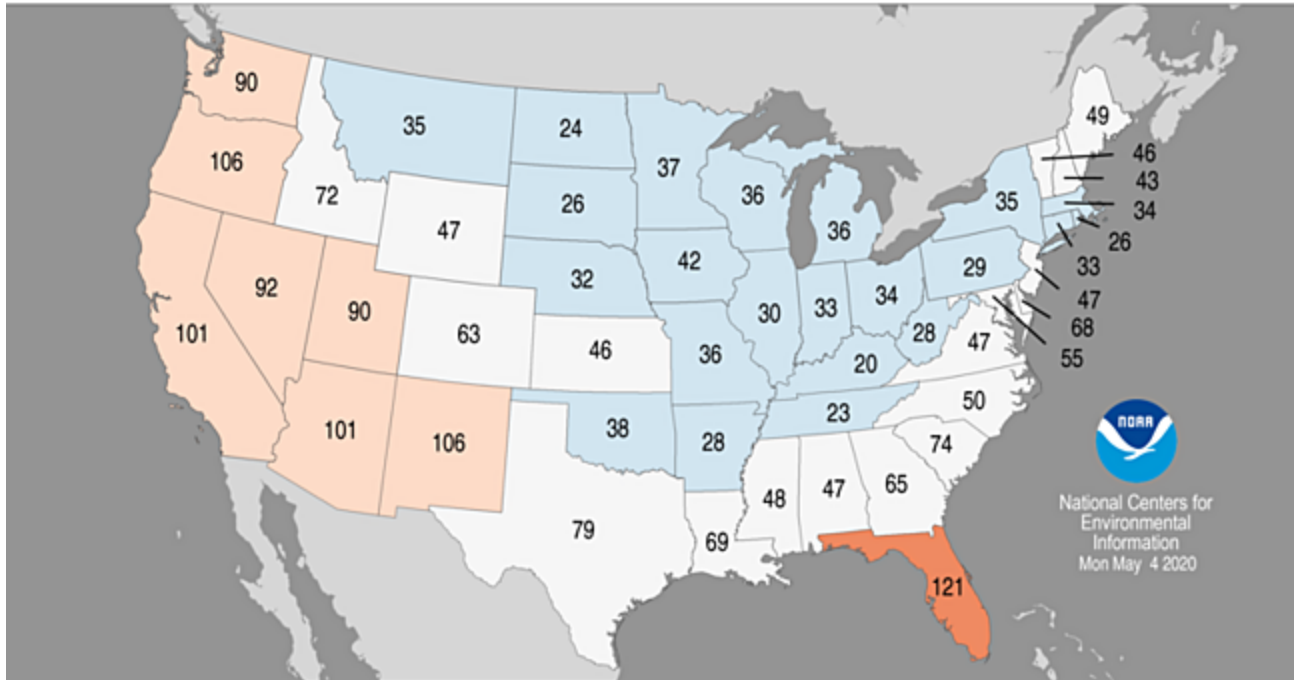
8:17 AM · May 27, 2020 · [Twitter Web App](#)

14 Retweets 60 Likes



Statewide Average Temperature Ranks

April 2020
Period: 1895–2020



Month	T Rank (of 125 years)	Above, below, or near avg?
Oct	4 th	much below
Nov	90 th	above
Dec	101 st	above
Jan	101 st	above
Feb	47 th	near avg
Mar	113 th	above
Apr	63 rd	near avg

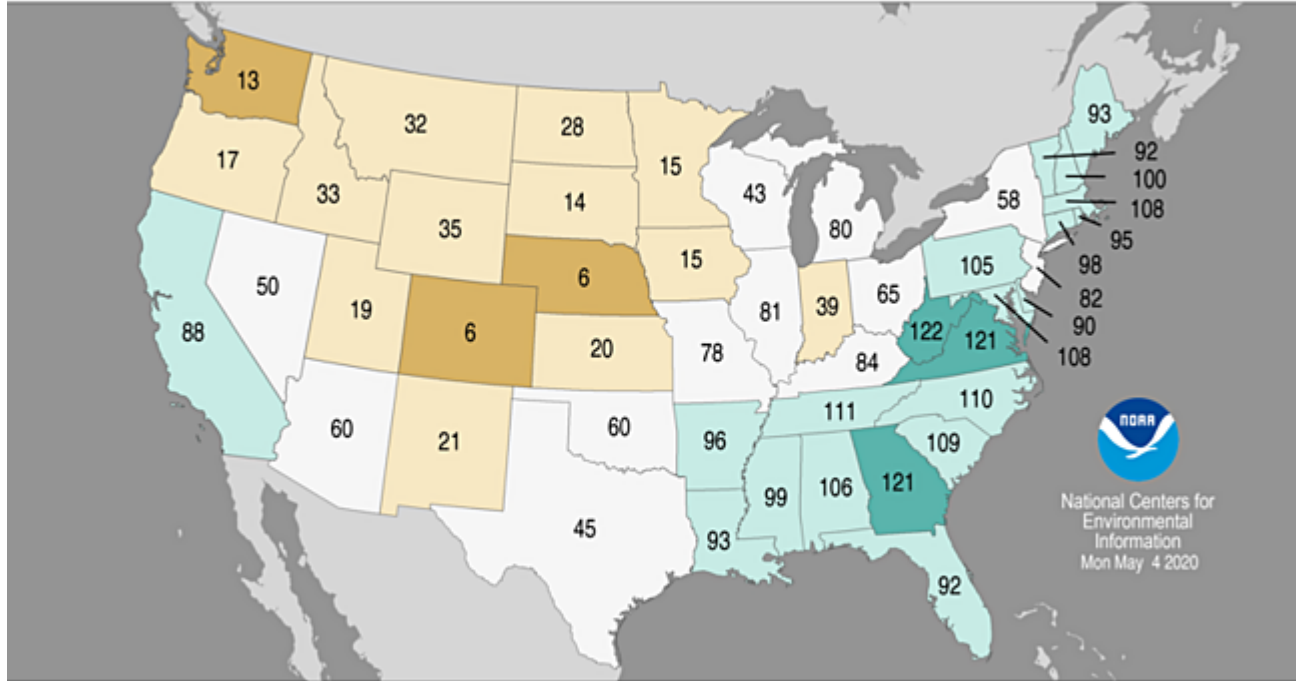
Water year through April: 1.0°F above average
Ranked 87th out of 125 October-April periods



Statewide Precipitation Ranks

April 2020

Period: 1895-2020



Month	P Rank (of 125 years)	Above, below, or near avg?
Oct	42 nd	below
Nov	68 th	near
Dec	83 rd	near
Jan	36 th	below
Feb	67 th	near
Mar	53 rd	near
Apr	6 th	much below

Water year through January: 1.76" below the 20th century average
Ranked 24th out of 125 October-April periods

For comparison: 2017-18 was 5th driest October-April



Daily records

(Water year thus far:
Oct 1 – May 17)

Weather Record Broken	Record broken for a day	Record broken for a month
Highest max temperature	453	28
Highest min temperature	771	16
Lowest max temperature	837	110
Lowest min temperature	1020	123
Precipitation	558	18
Snowfall	274	11

Source: <https://www.ncdc.noaa.gov/cdo-web/datatools/records>

Daily cold records outpacing warm records by about 1.6 to 1 so far this water year (around 5 to 1 for monthly records), primarily from the cold October



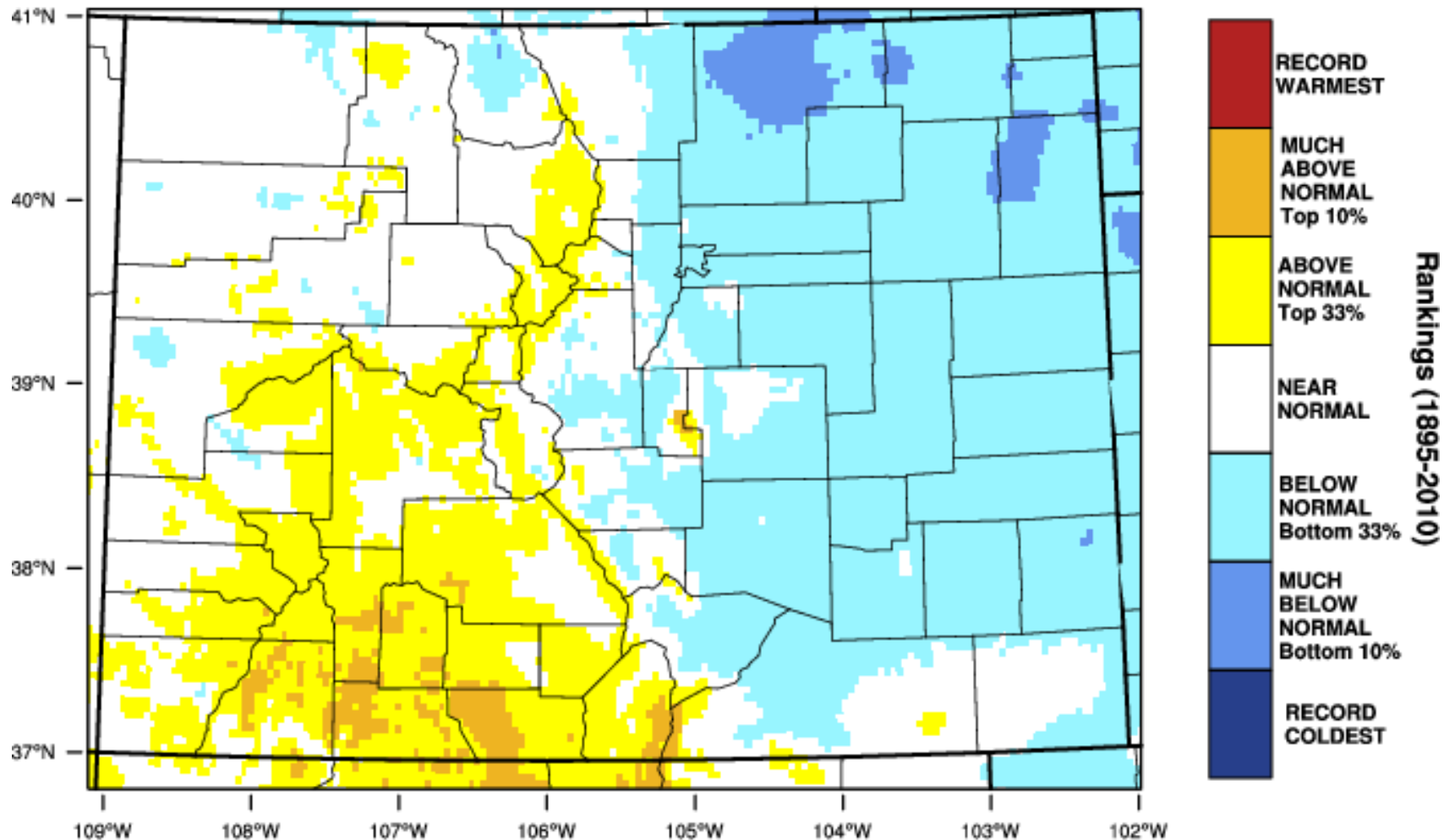
Some notable events

- Boulder set their all-time seasonal snowfall record: 152”
- Late-spring freeze on the west slope: Grand Junction reached a low of 19F on April 14; tied for the 2nd coldest temperature after April 10
- Alamosa set 13 daily high temperature records between April 26 and May 19 (though we’re a little suspicious of some of these numbers)



Colorado - Mean Temperature

April 2020 Percentile



WestWide Drought Tracker, U Idaho/WRCC Data Source: PRISM (Prelim), created 16 MAY 2020



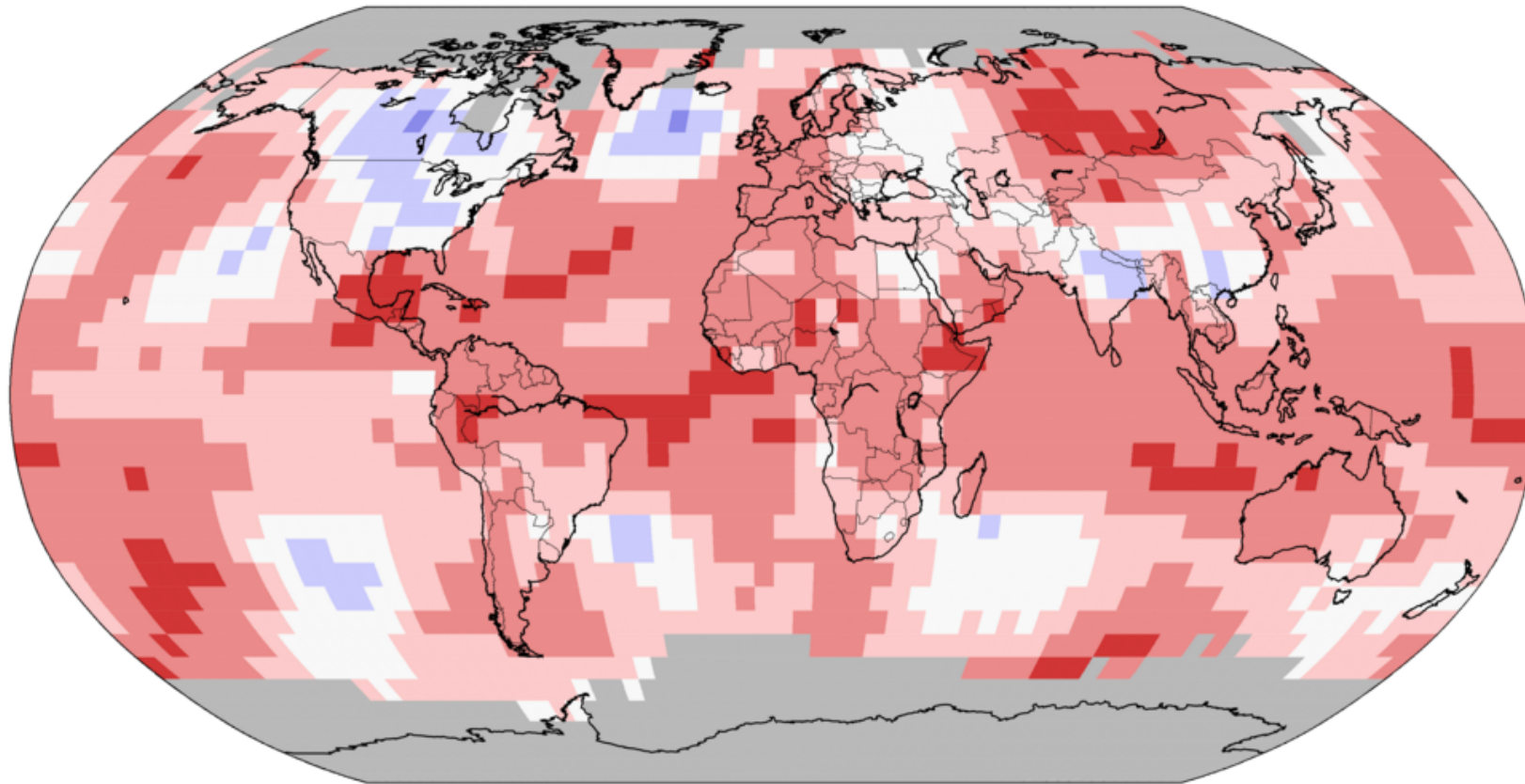
Land & Ocean Temperature Percentiles Apr 2020

NOAA's National Centers for Environmental Information

Data Source: NOAAGlobalTemp v5.0.0-20200508

Globally, 2nd warmest April on record; January-April has also been 2nd warmest on record

“the year 2020 is almost certain to rank among the four warmest years on record”



Record Coldest

Much Cooler than Average

Cooler than Average

Near Average

Warmer than Average

Much Warmer than Average

Record Warmest

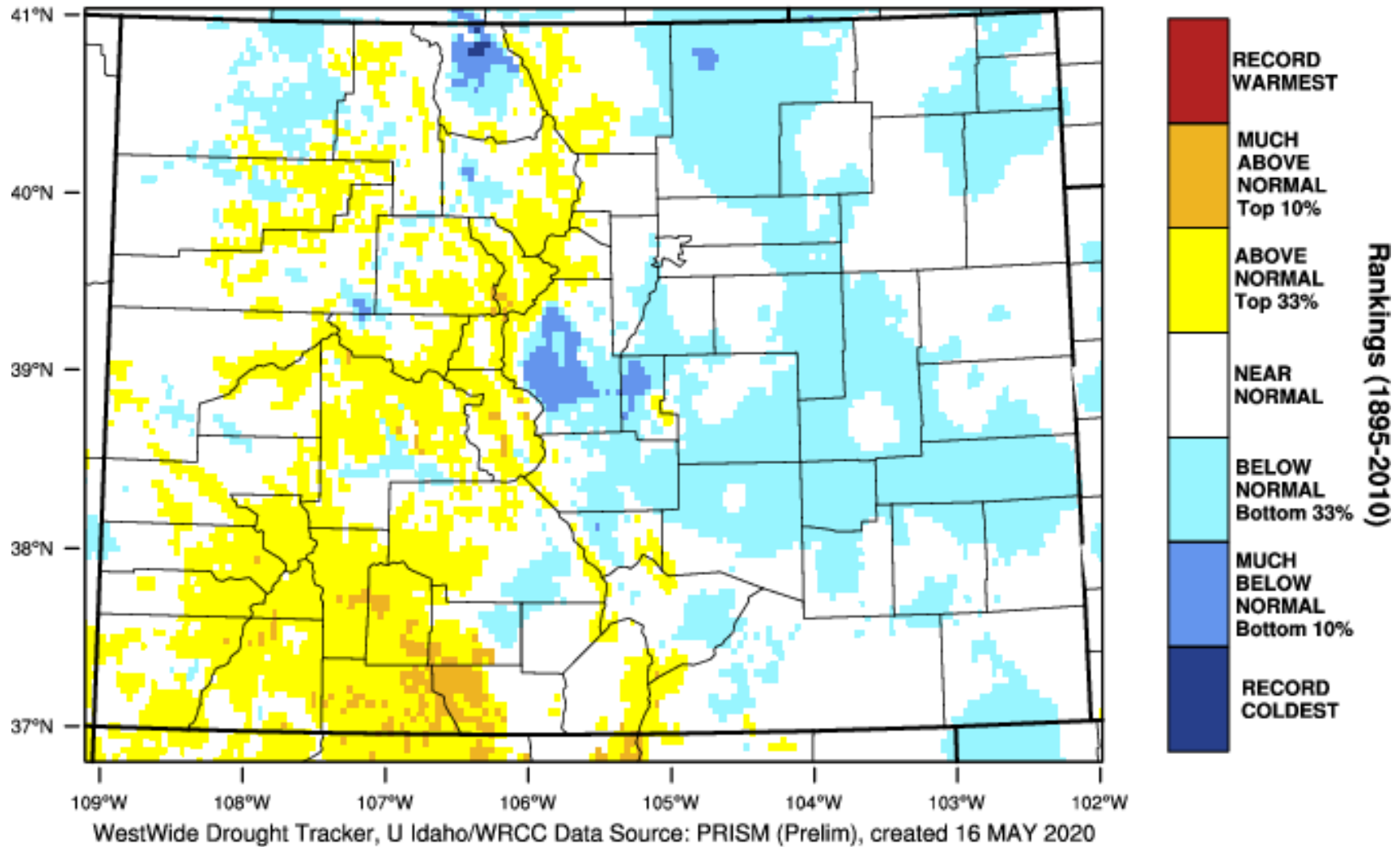


GHCNM v4.0.1.20200507.qfe

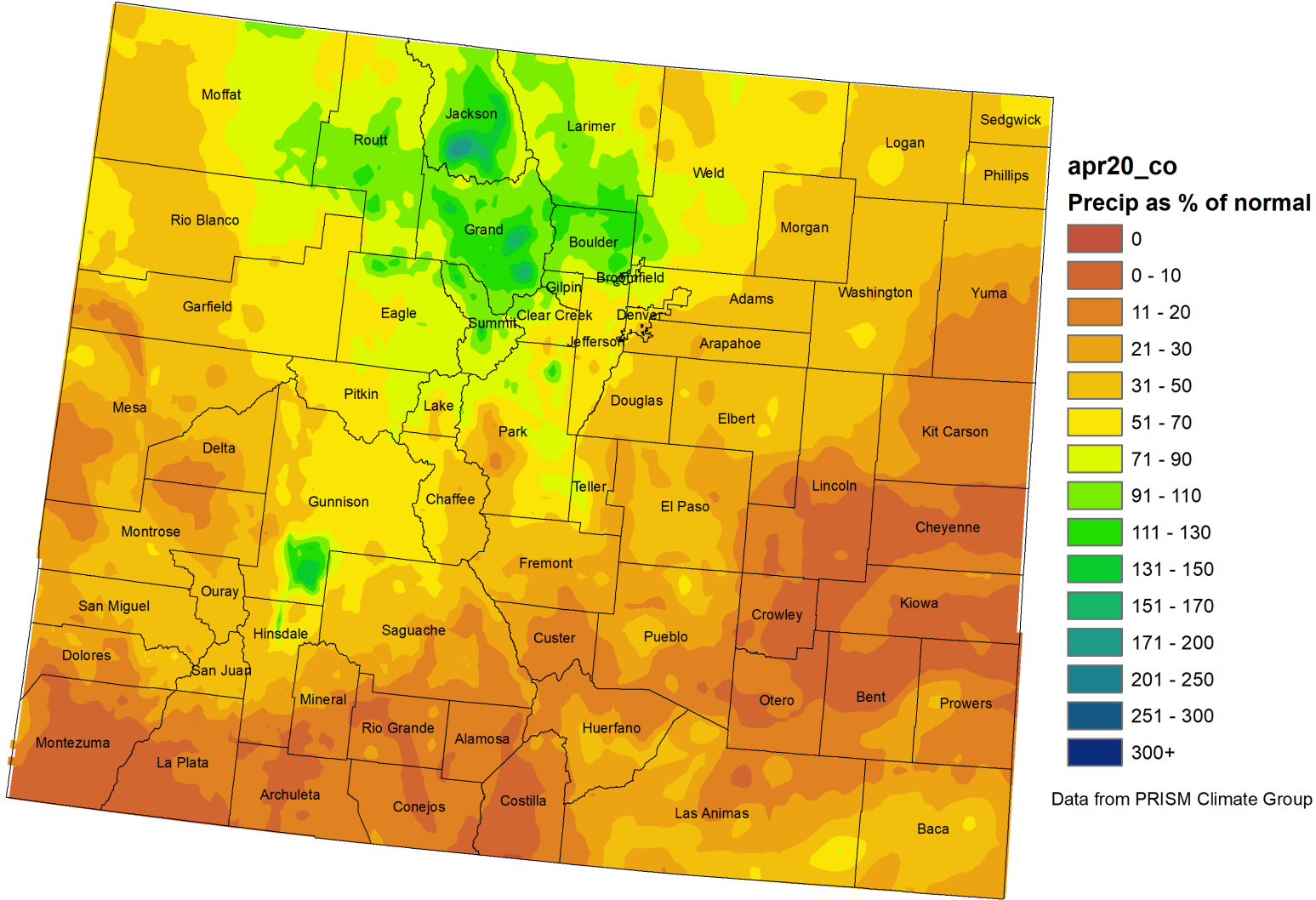


Colorado - Mean Temperature

October-April 2020 Percentile

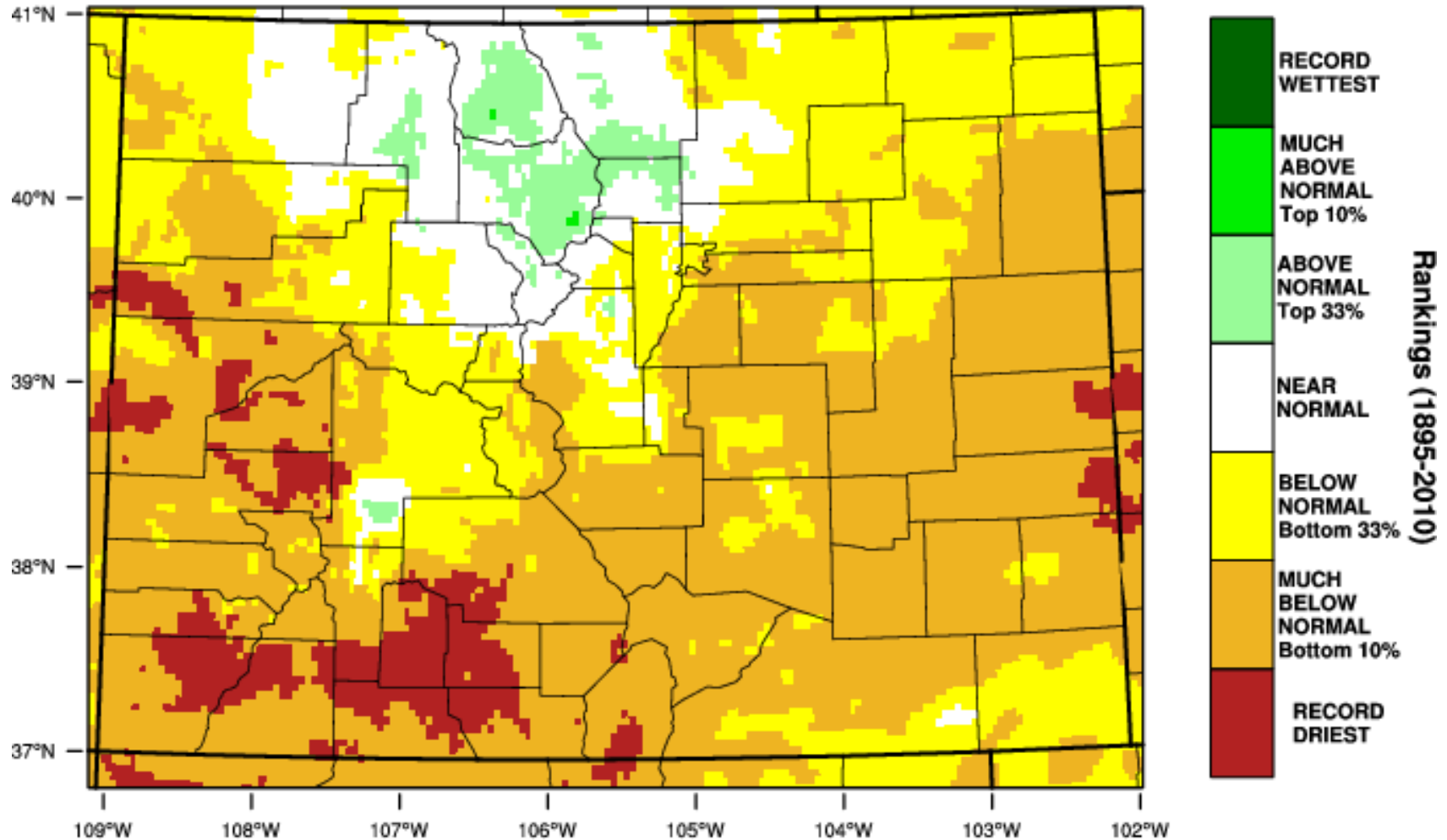


Colorado April 2020 Precipitation as a Percentage of Normal



Colorado - Precipitation

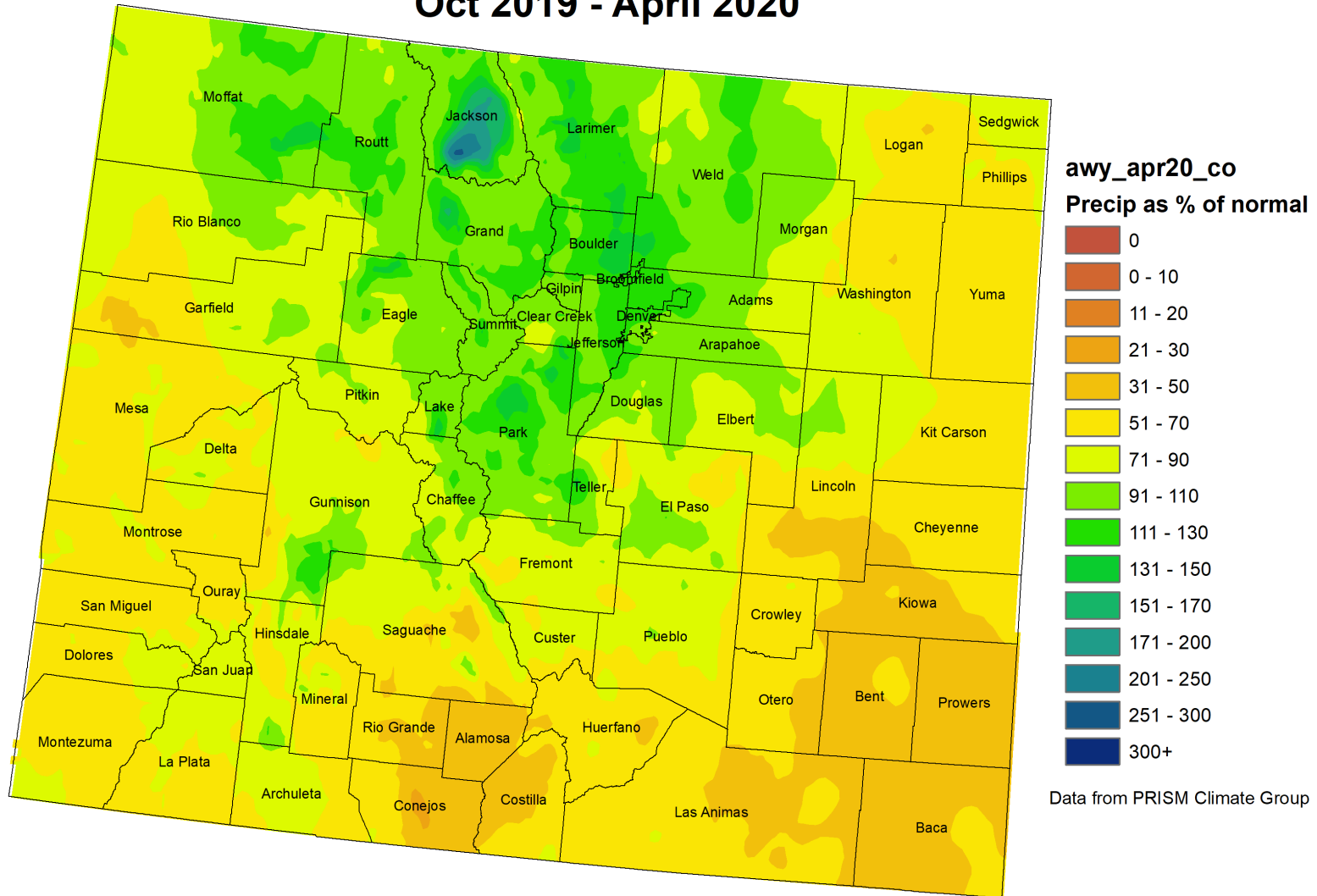
April 2020 Percentile



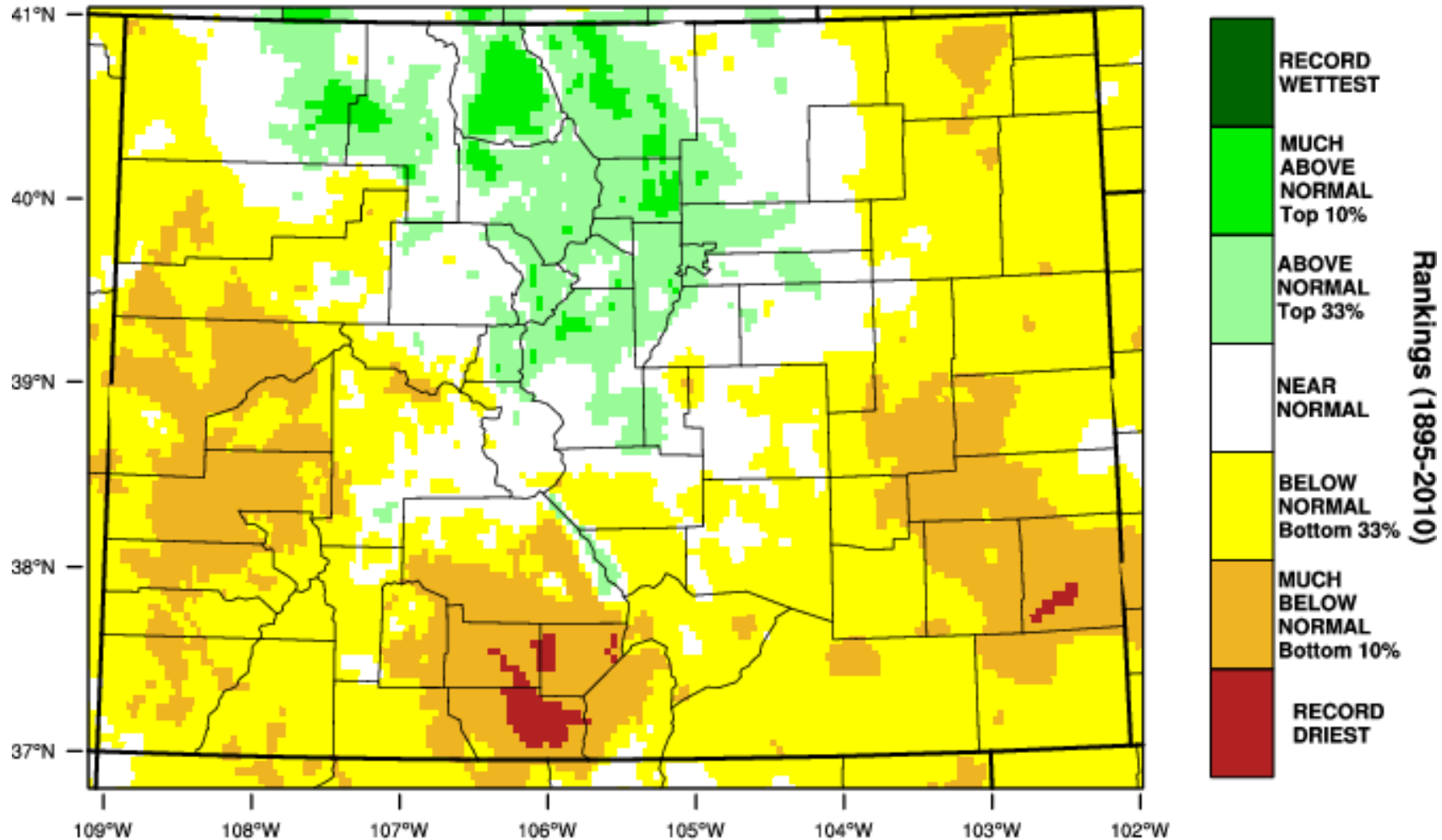
WestWide Drought Tracker, U Idaho/WRCC Data Source: PRISM (Prelim), created 16 MAY 2020



Colorado Water Year 2020 Precipitation as a Percentage of Normal Oct 2019 - April 2020



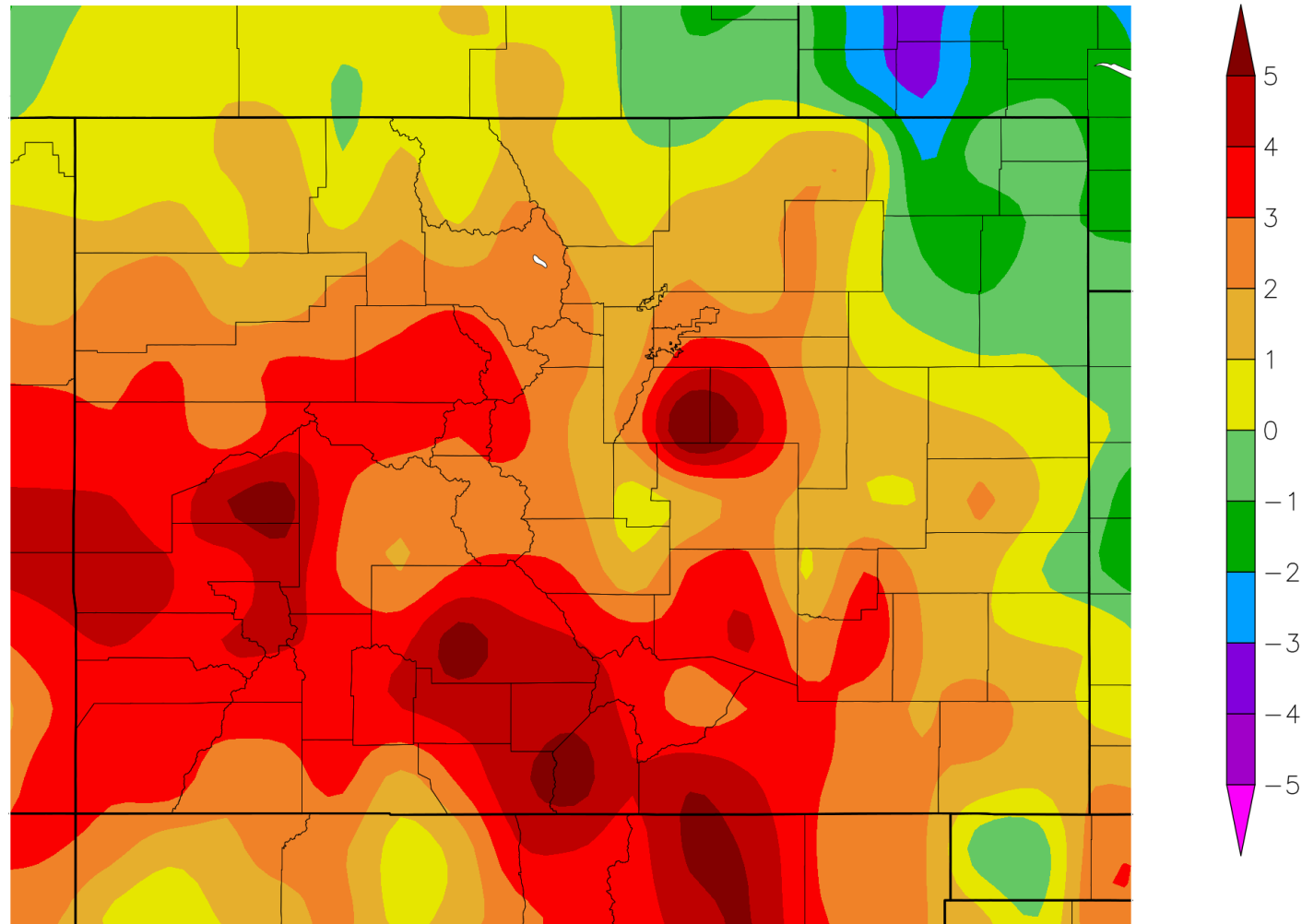
Colorado - Precipitation October-April 2020 Percentile



WestWide Drought Tracker, U Idaho/WRCC Data Source: PRISM (Prelim), created 16 MAY 2020



Departure from Normal Temperature (F) 5/1/2020 – 5/26/2020

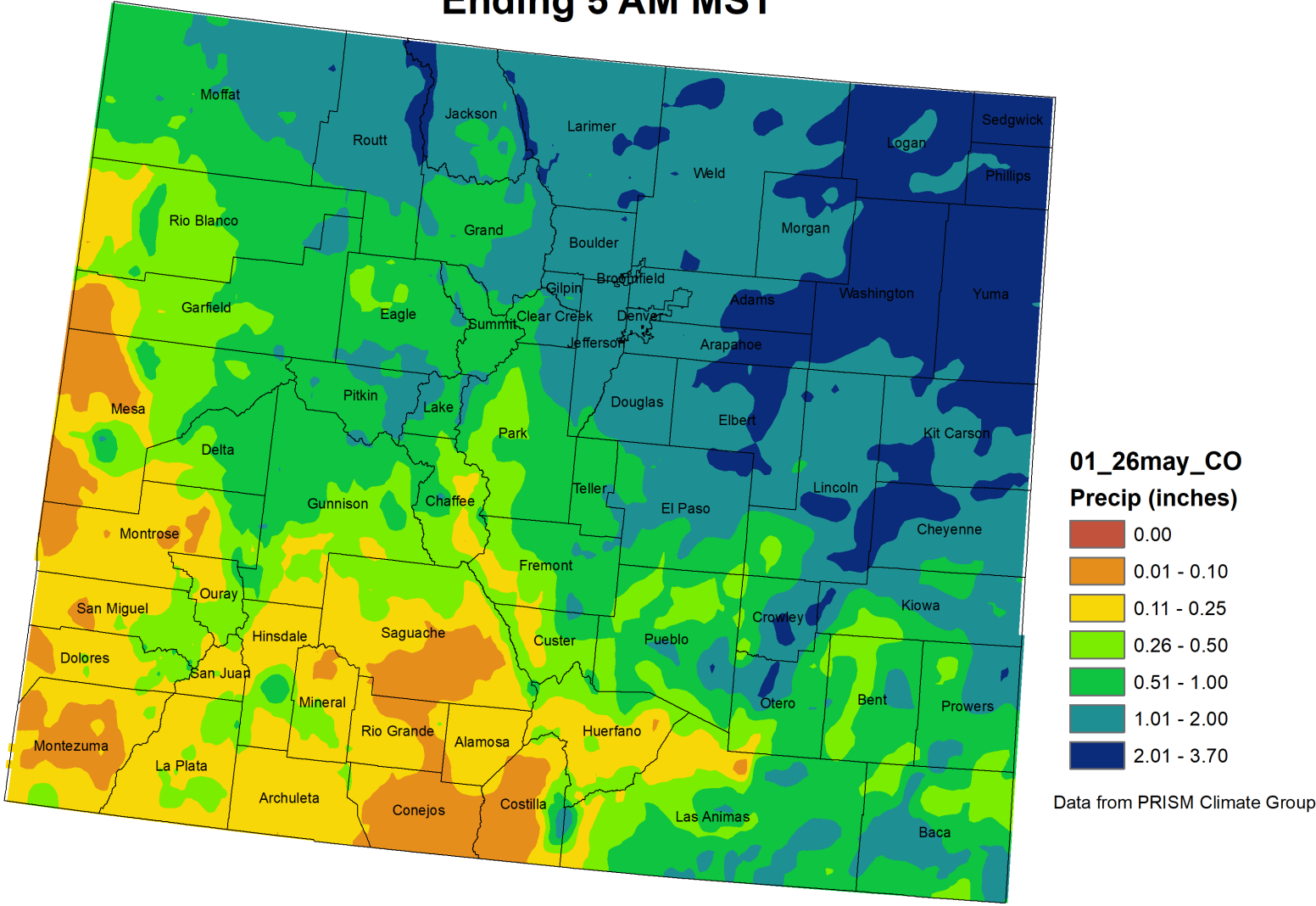


Generated 5/27/2020 at HPRCC using provisional data.

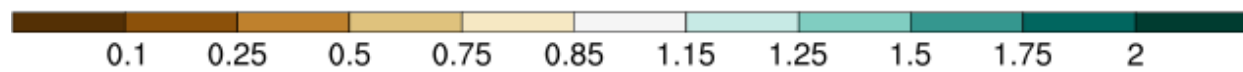
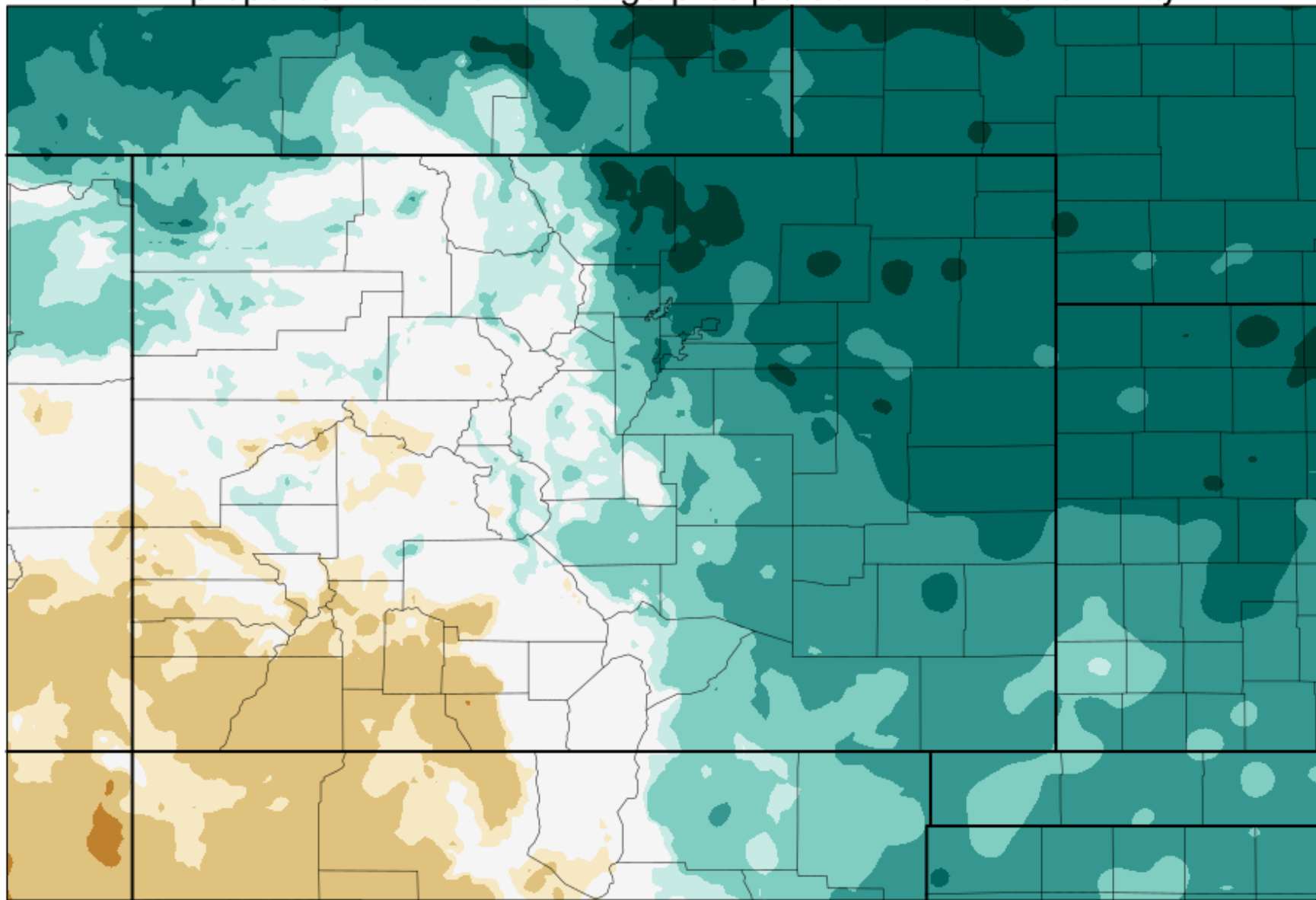
NOAA Regional Climate Centers



Colorado Month to Date Precipitation 1 - 26 May 2020 Ending 5 AM MST



PRISM proportion of annual average precipitation in this month: May

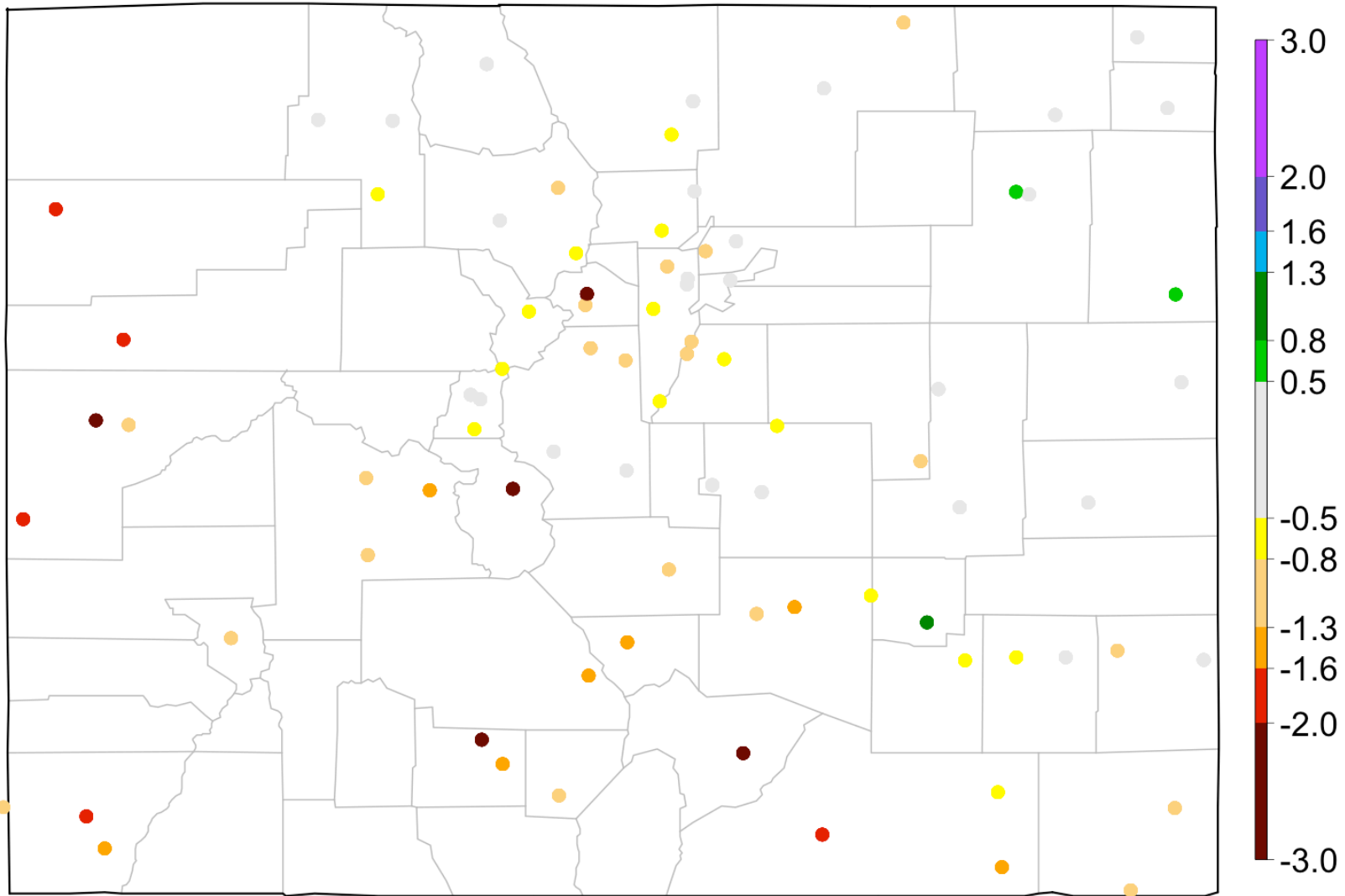


Proportion of precip relative to 1/12th

Russ Schumacher/Colorado Climate Center



30-day SPI: 2020/04/25 - 2020/05/24

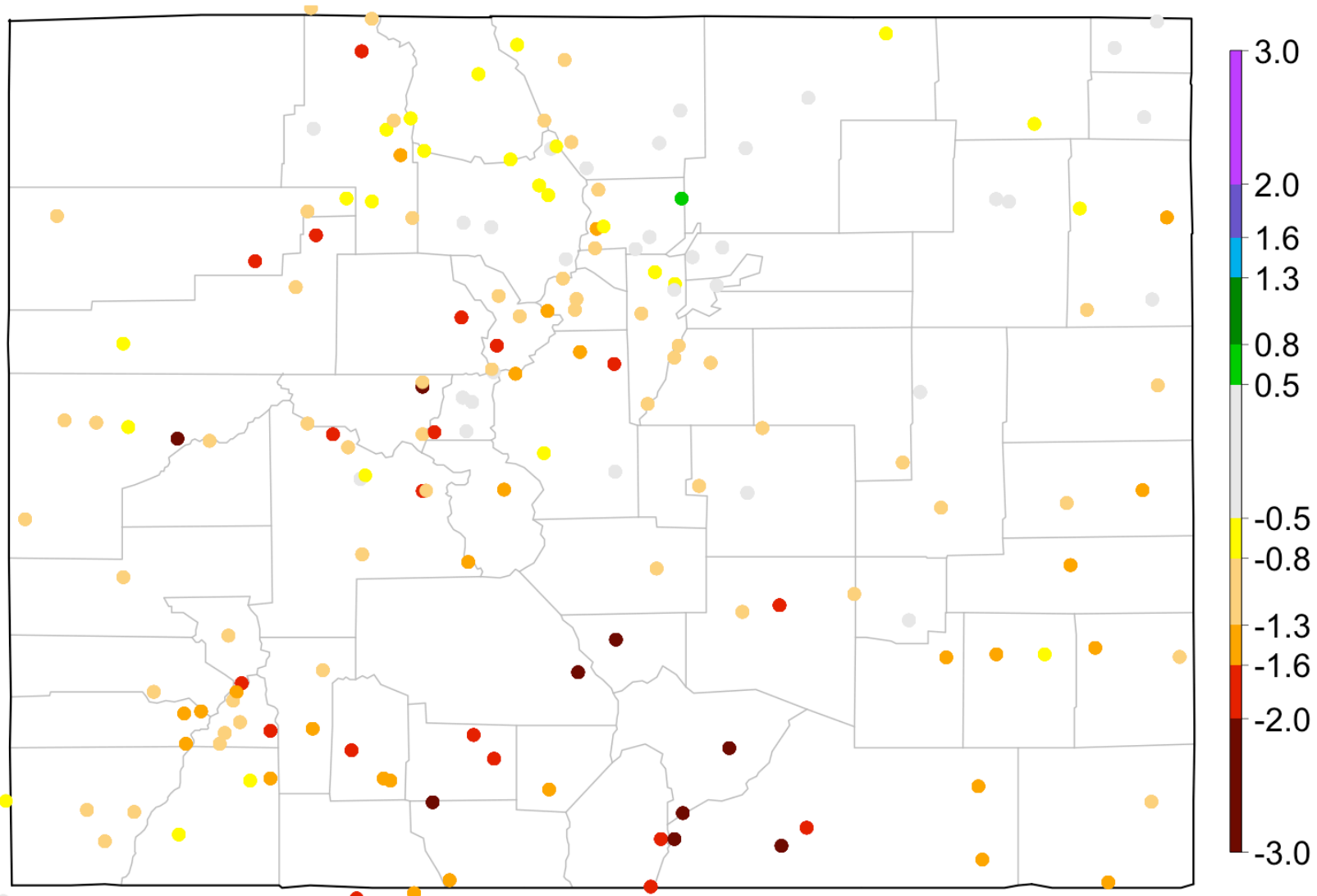


Data from High Plains Regional Climate Center and ACIS

[nl](#)



90-day SPI: 2020/02/24 - 2020/05/24

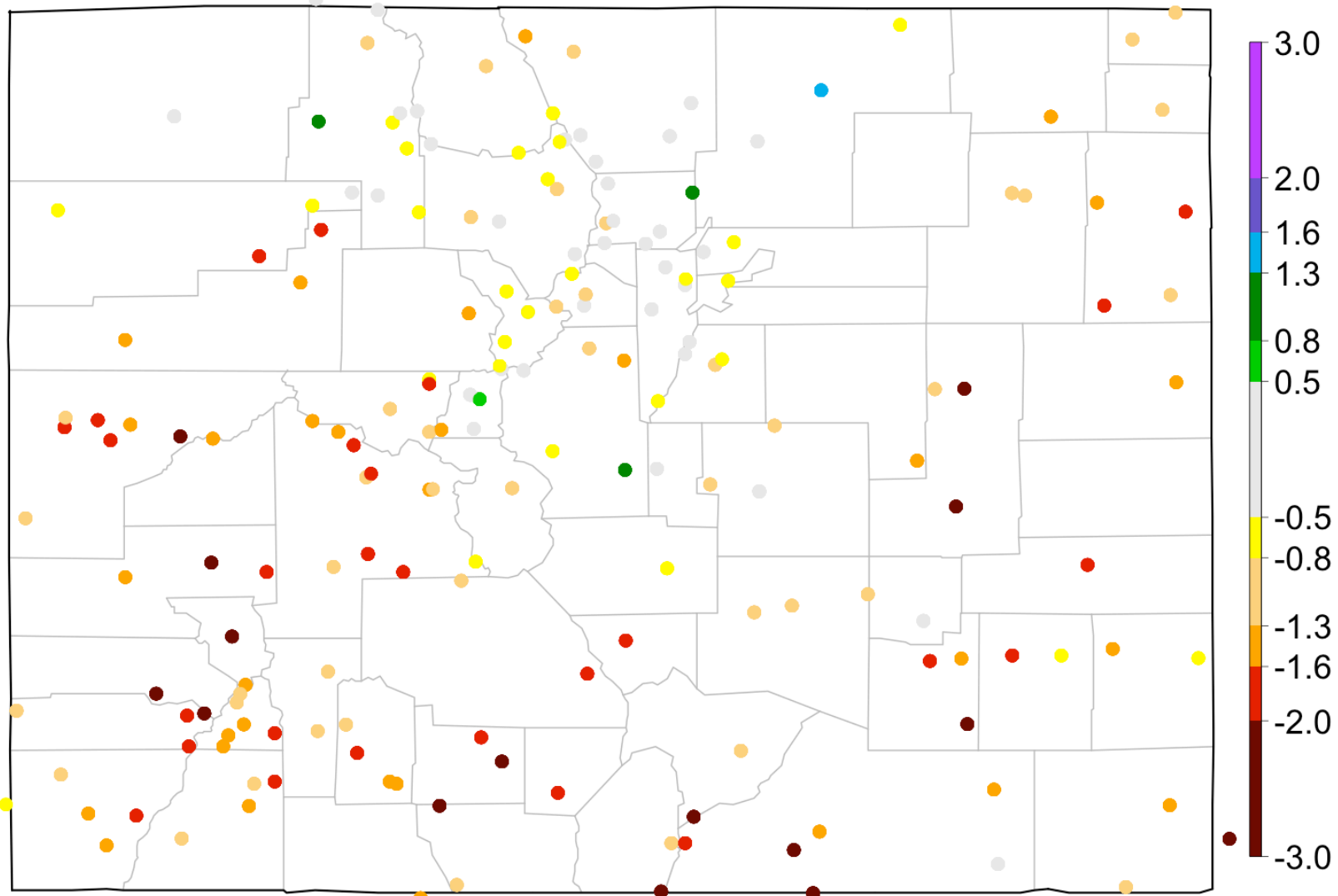


Data from High Plains Regional Climate Center and ACIS

[nl](#)



9-month SPI: 2019/08/25 - 2020/05/24

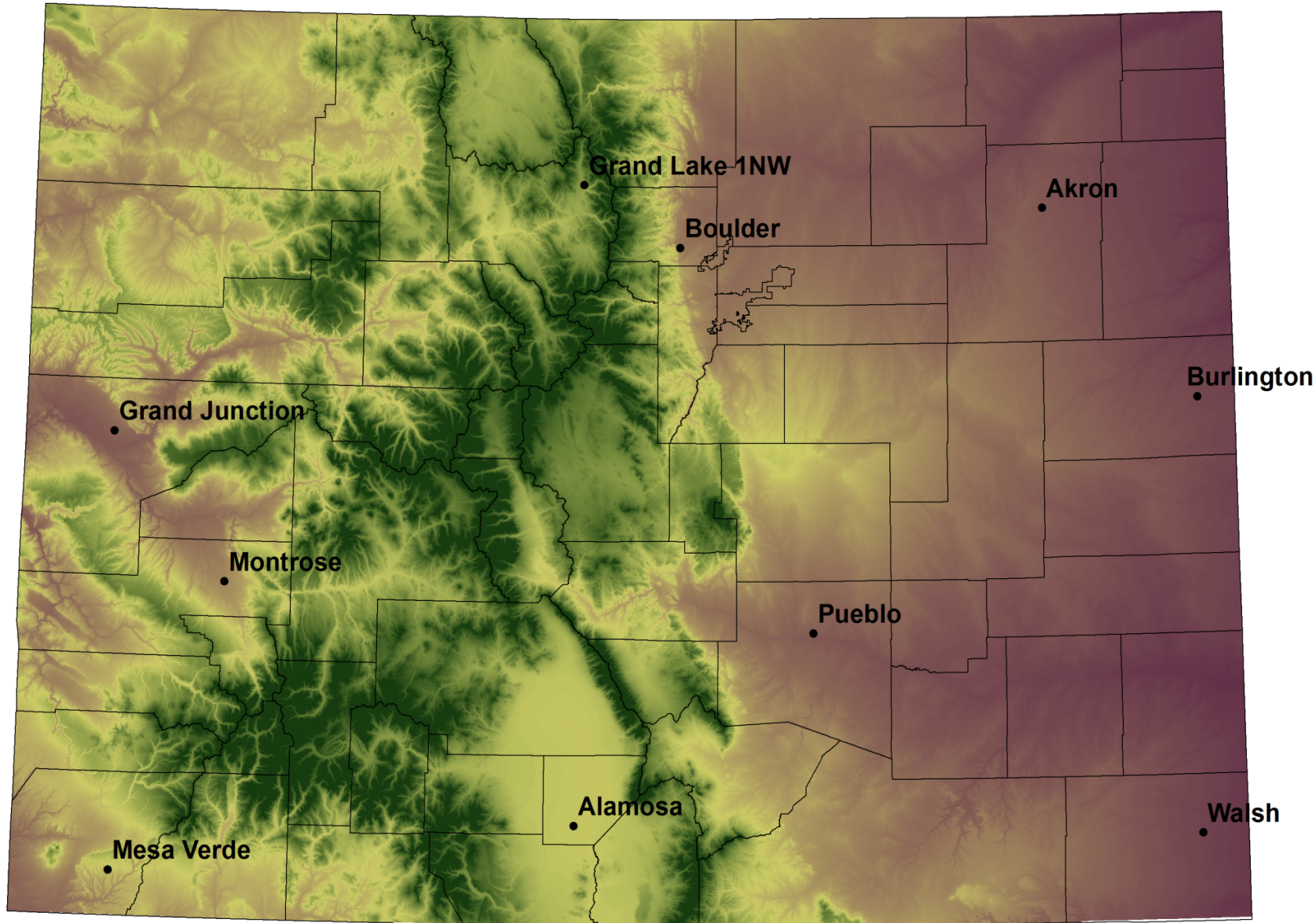


Data from High Plains Regional Climate Center and ACIS

[nl](#)



NWS Cooperative Stations for WATF

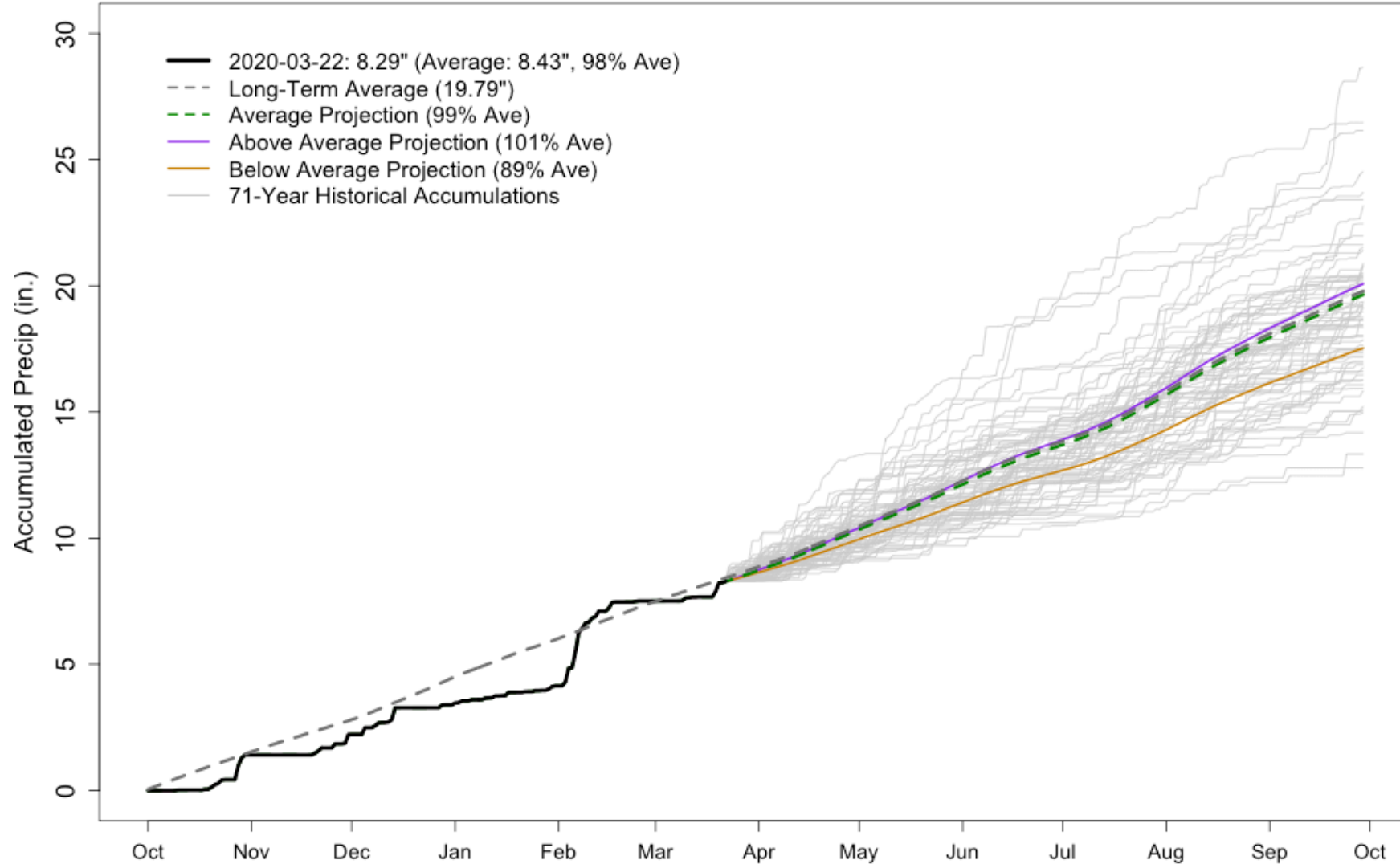


Water Year 2020 – Station Updates



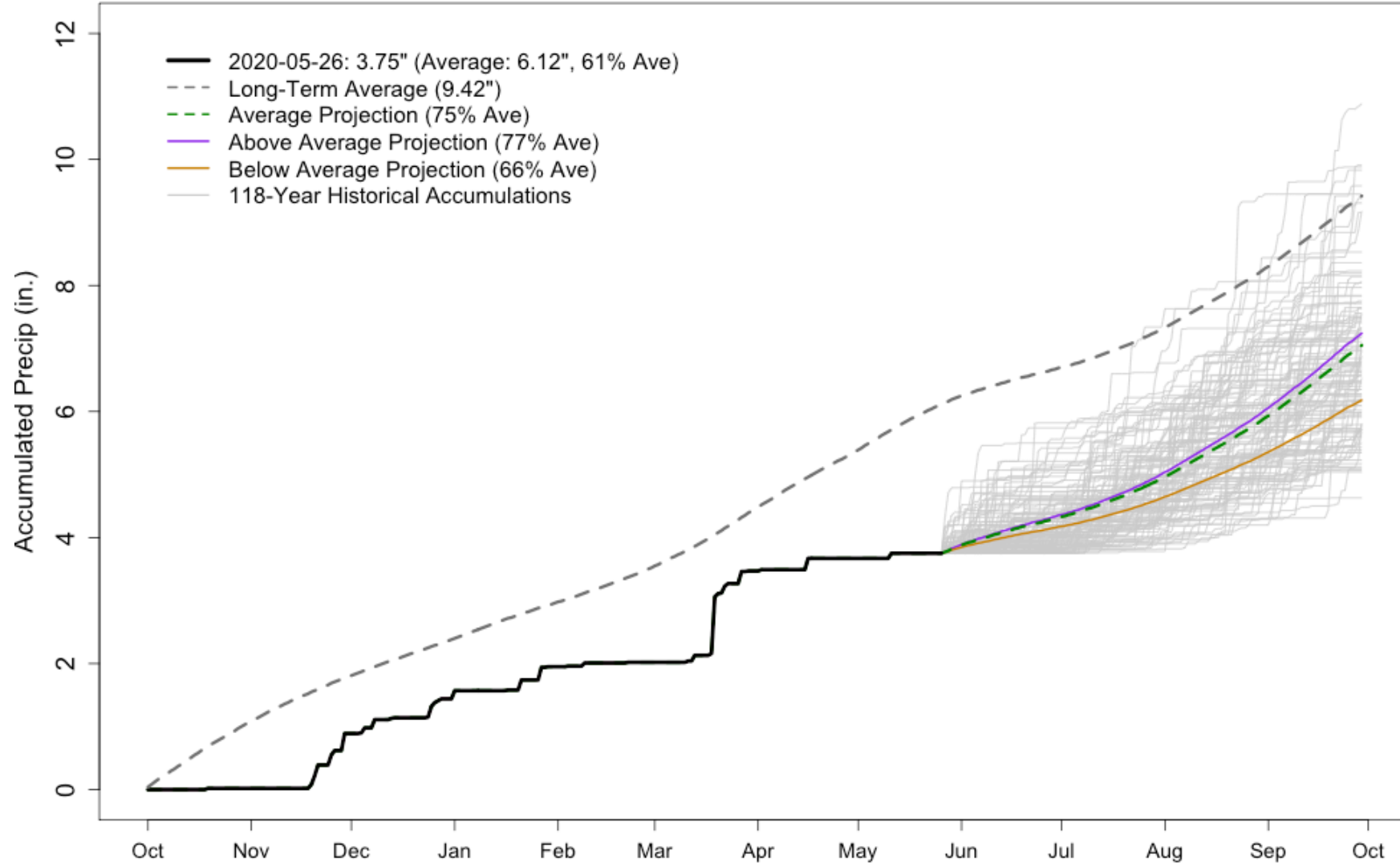
Grand Lake

GRAND LAKE 1 NW WY2020 Precipitation Projections

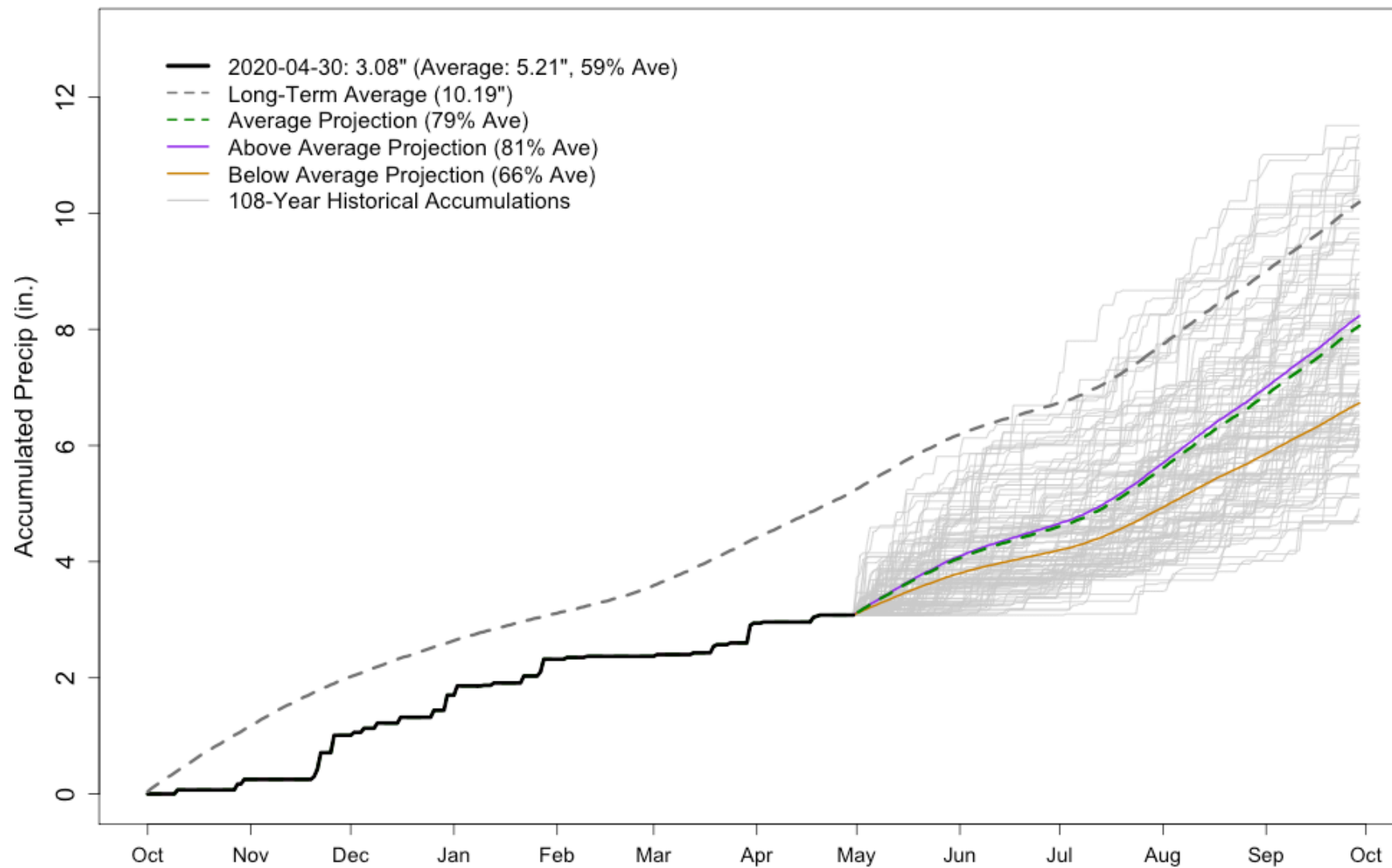


Grand Junction

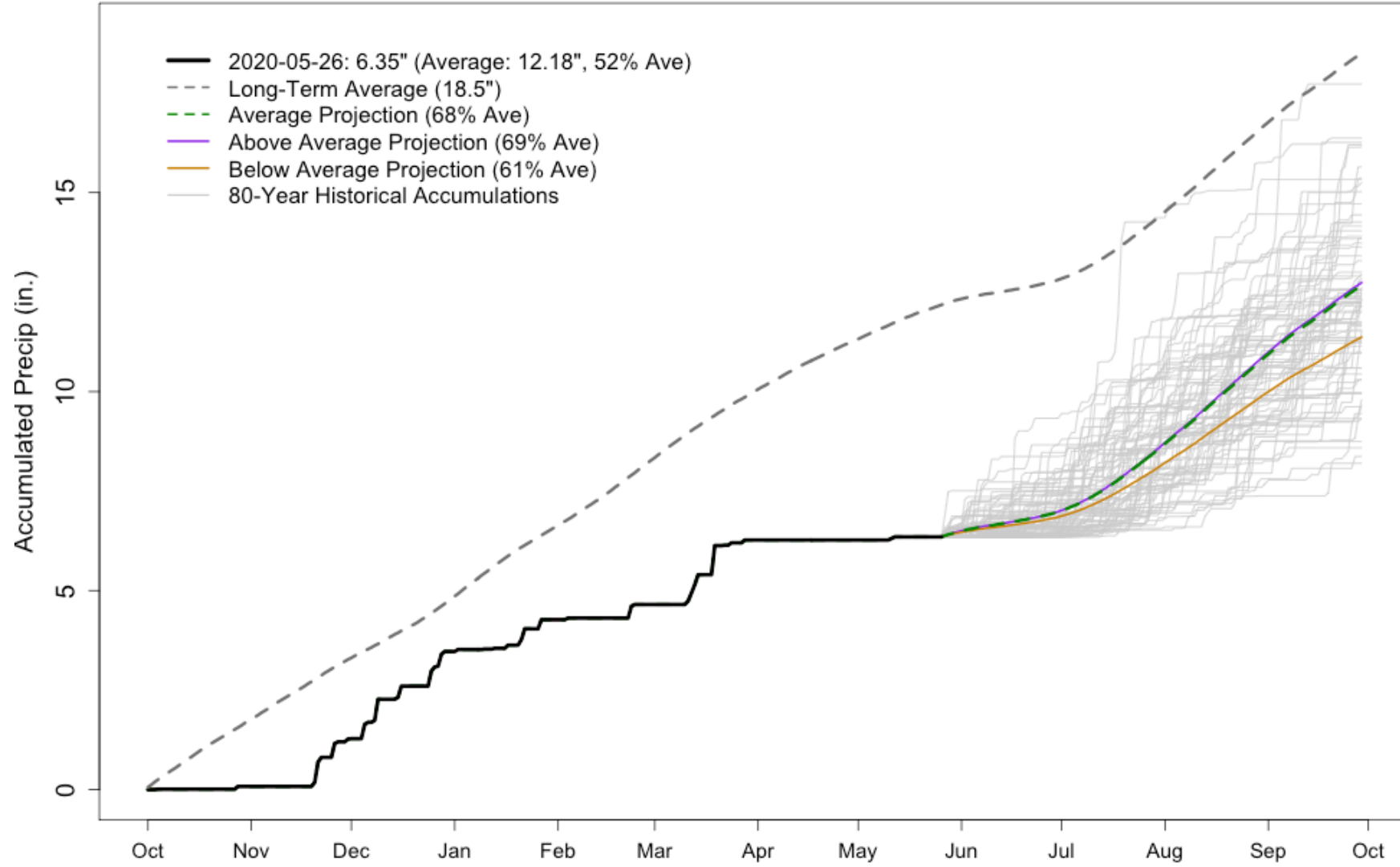
GRAND JUNCTION WALKER FIELD WY2020 Precipitation Projections



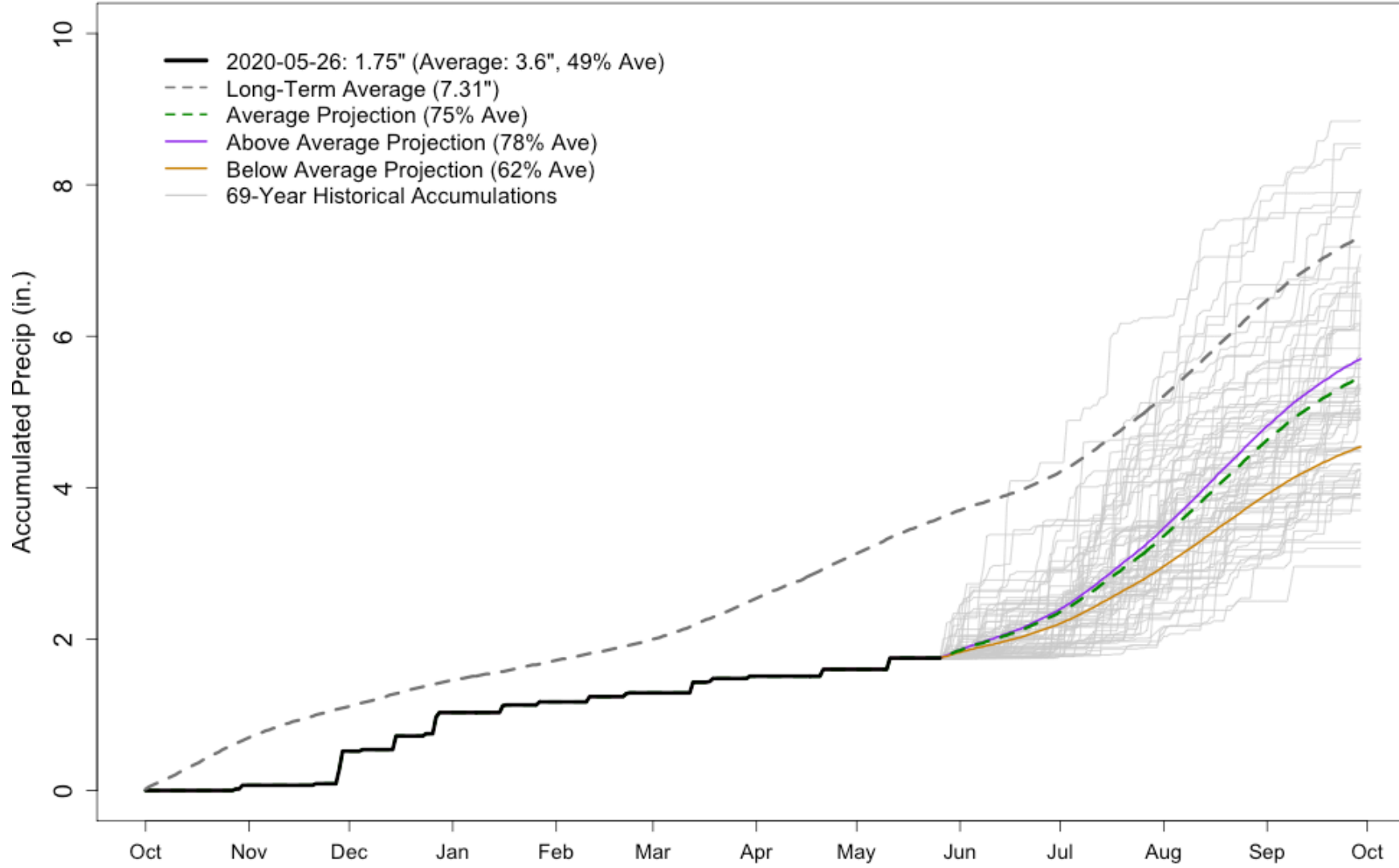
MONTROSE NO 2 WY2020 Precipitation Projections



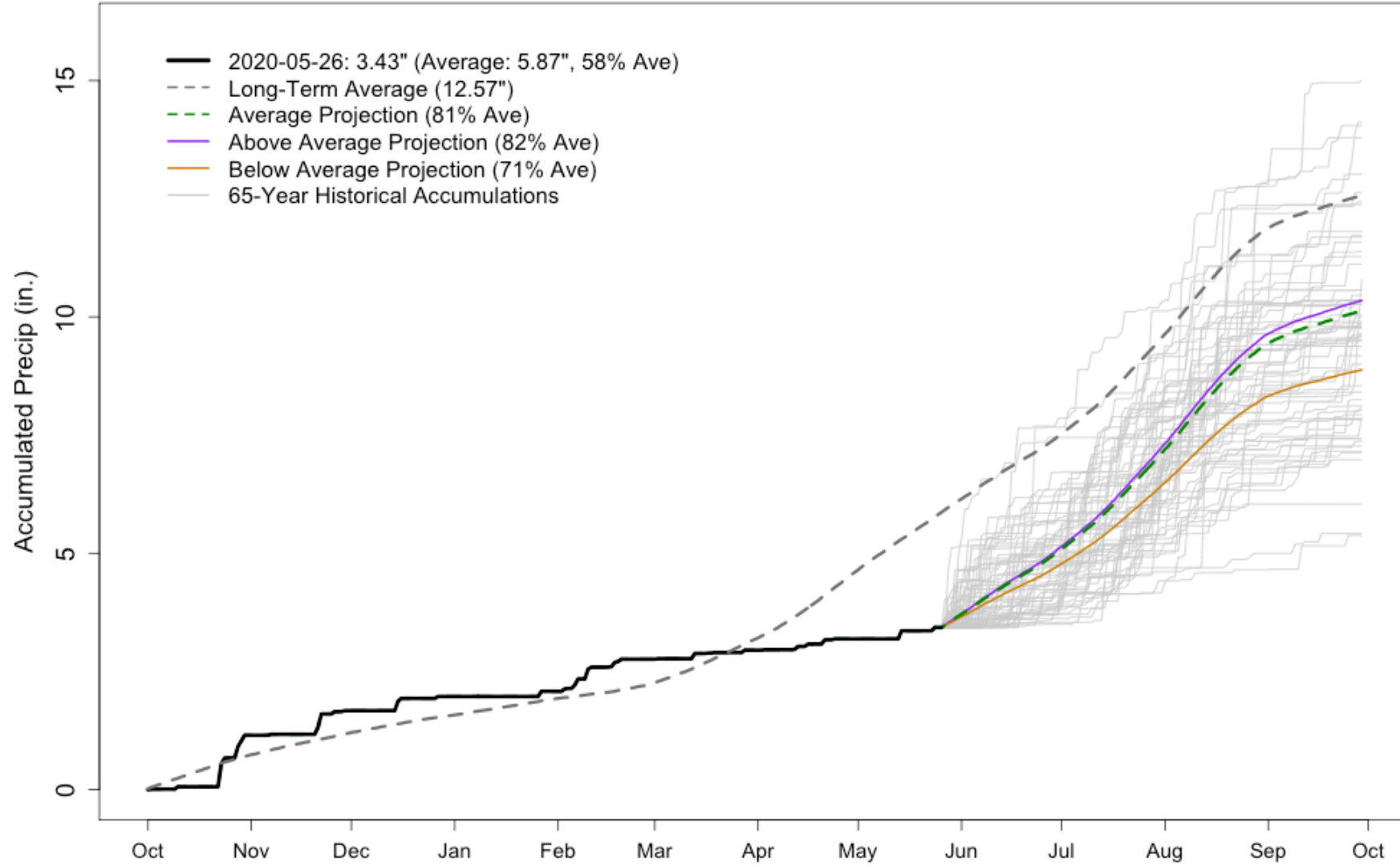
MESA VERDE NP WY2020 Precipitation Projections



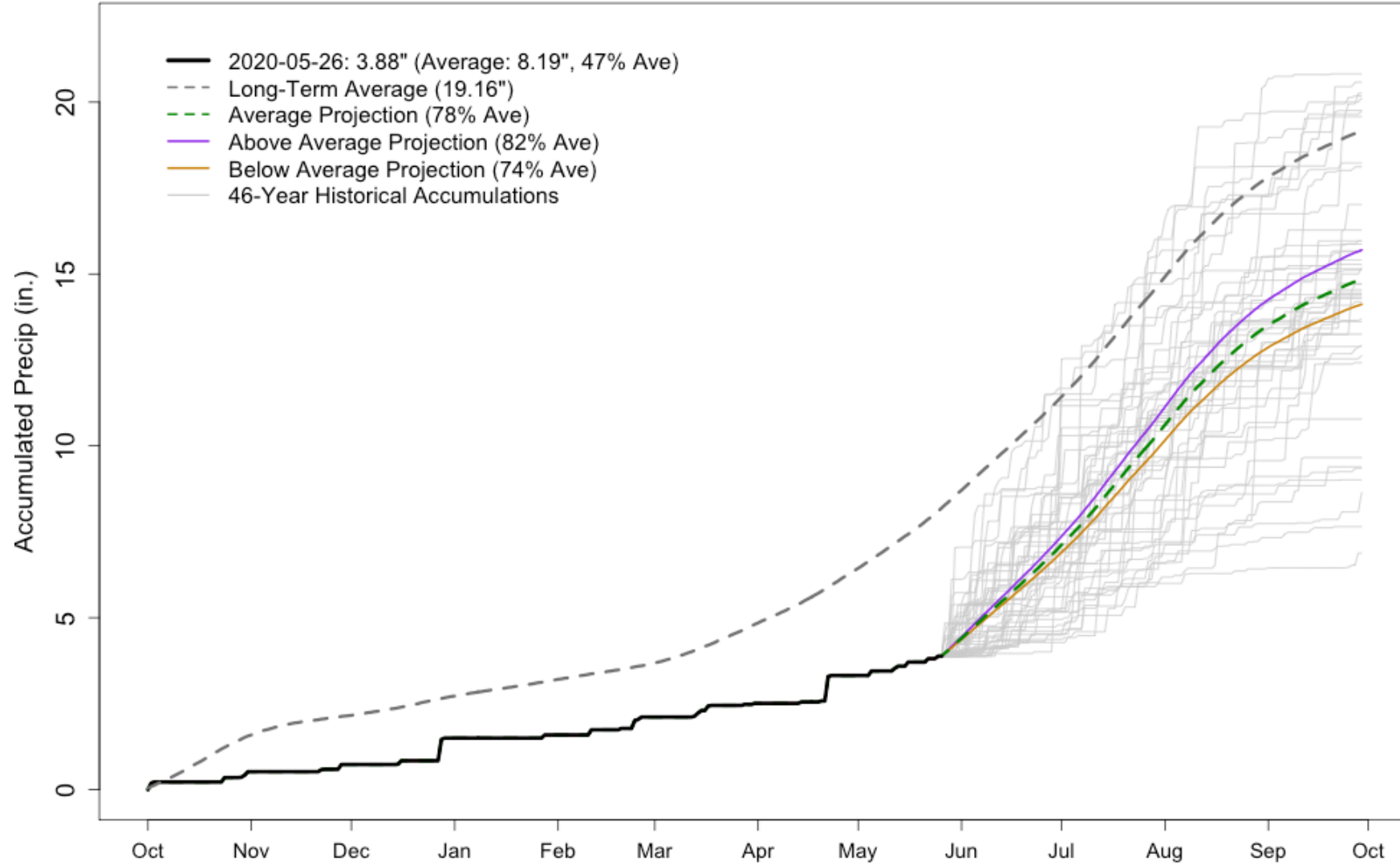
ALAMOSA SAN LUIS VALLEY REGIONAL AP WY2020 Precipitation Projections



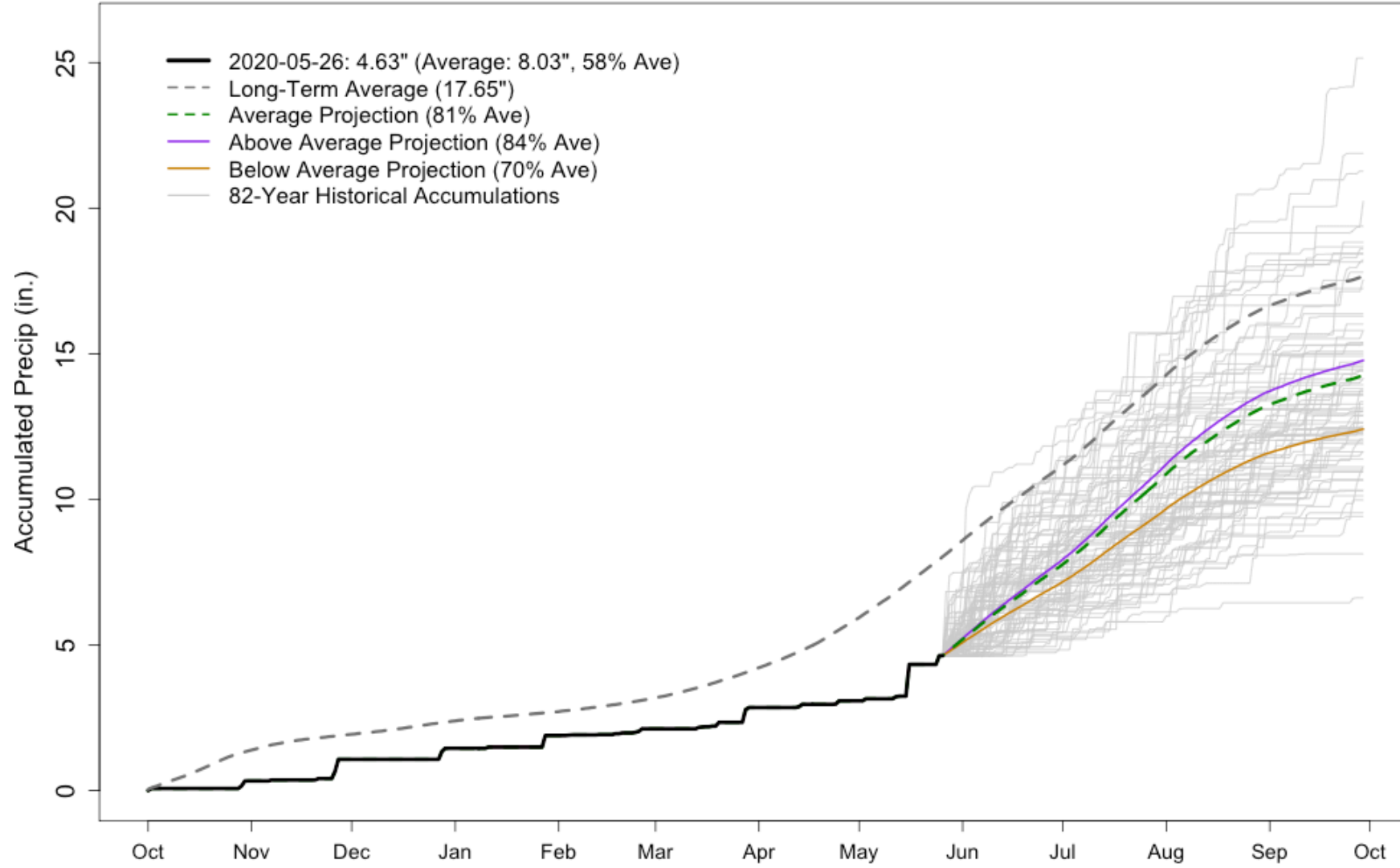
PUEBLO MEMORIAL AP WY2020 Precipitation Projections



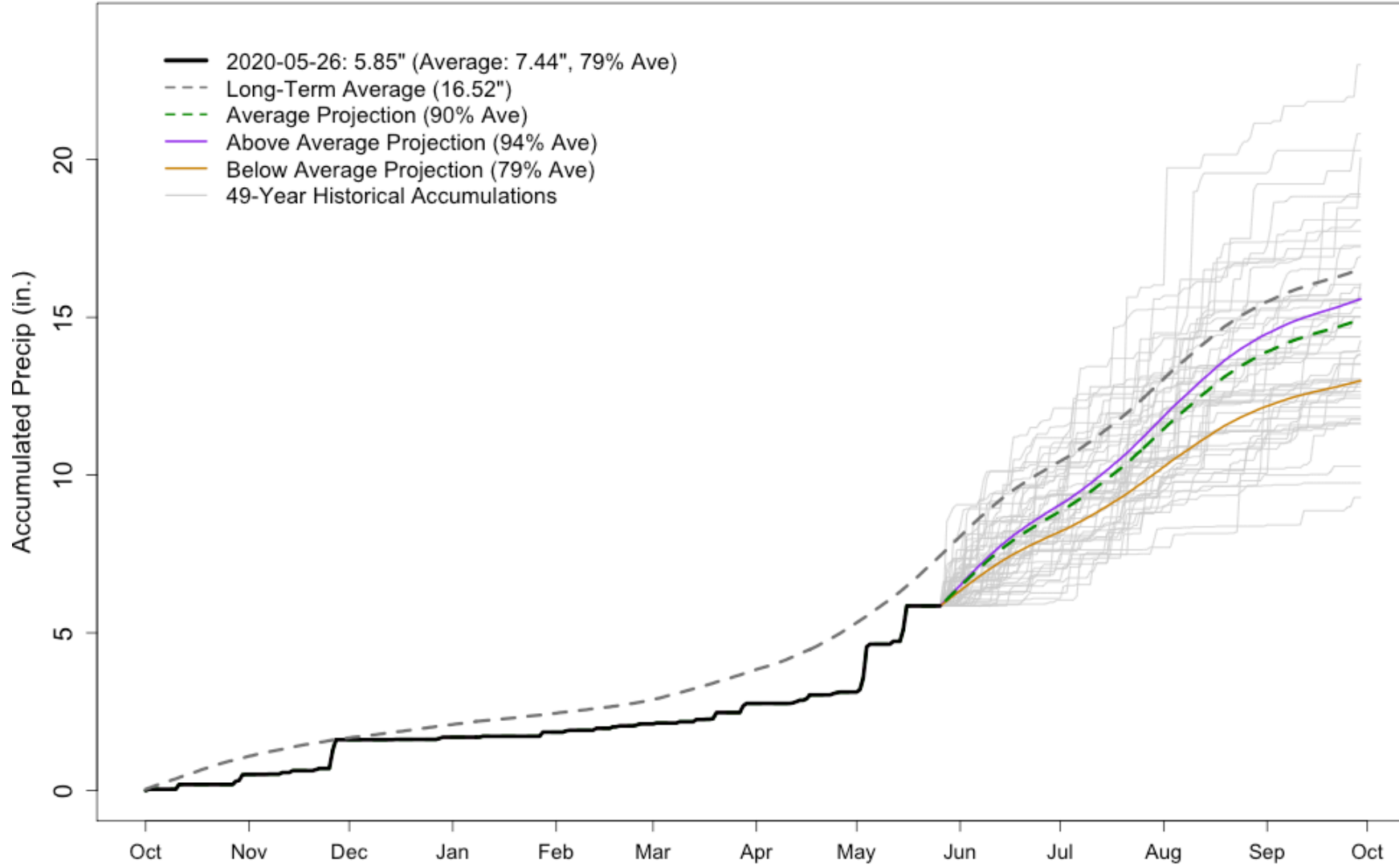
WALSH 1 W WY2020 Precipitation Projections



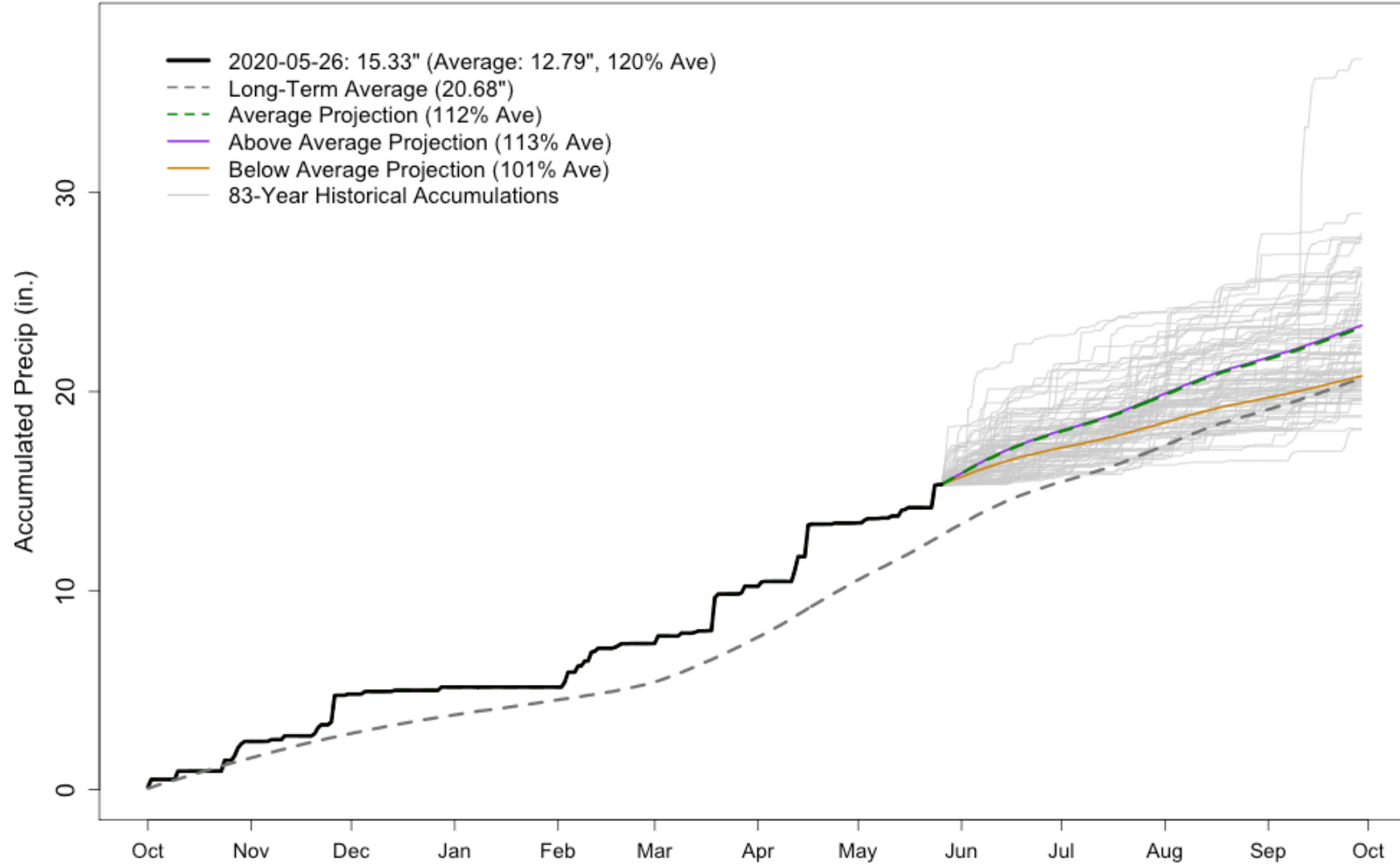
BURLINGTON WY2020 Precipitation Projections



AKRON 4 E WY2020 Precipitation Projections



BOULDER WY2020 Precipitation Projections





[View original](#)

[Flag media](#)



Otero County Sheriff - Colorado @OteroSheriff

6d

View of Kim fire in Las Animas county. Photo taken about 10 miles south of La Junta by @OteroSheriff

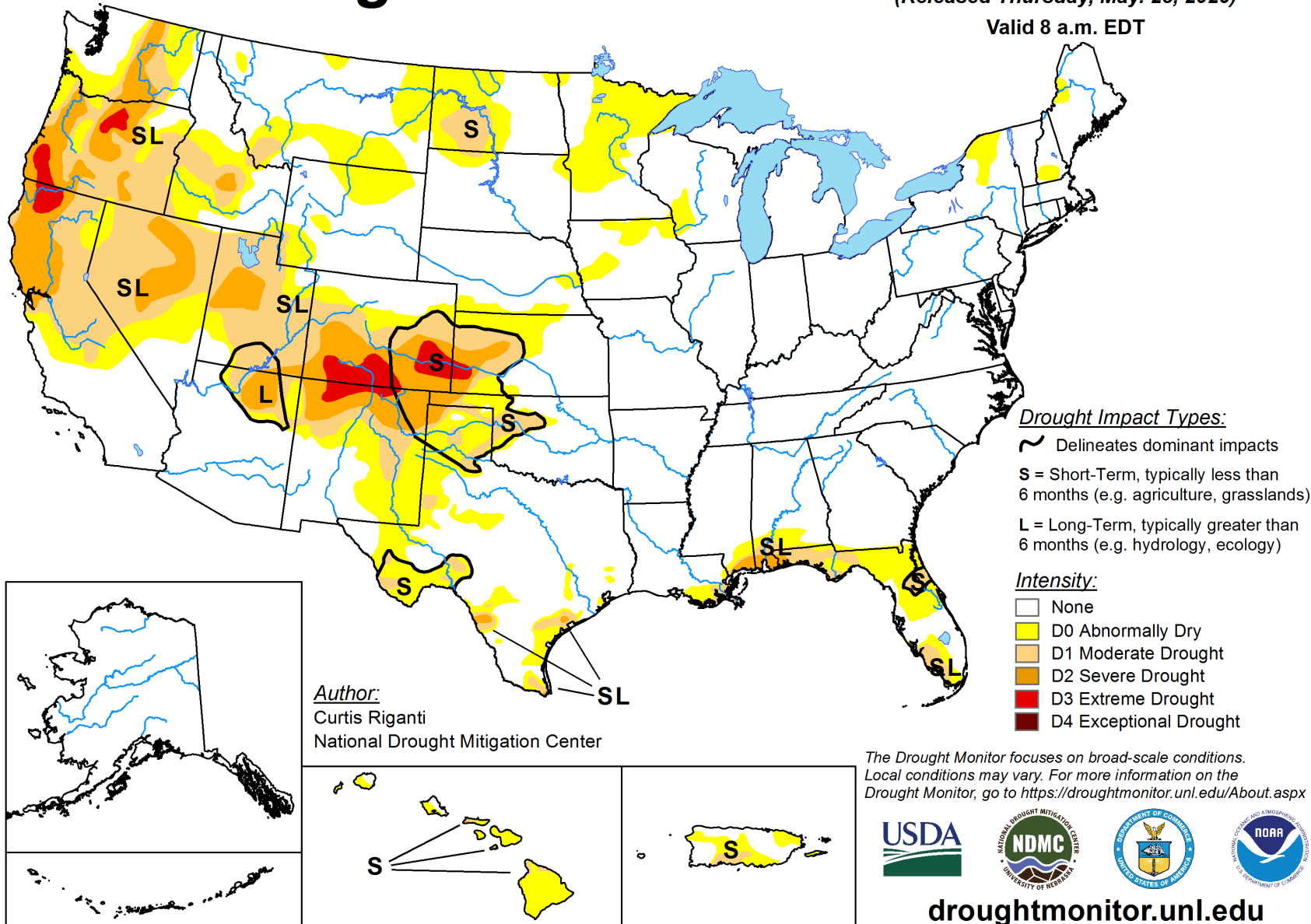
3 17 18



U.S. Drought Monitor

May 26, 2020
(Released Thursday, May. 28, 2020)

Valid 8 a.m. EDT

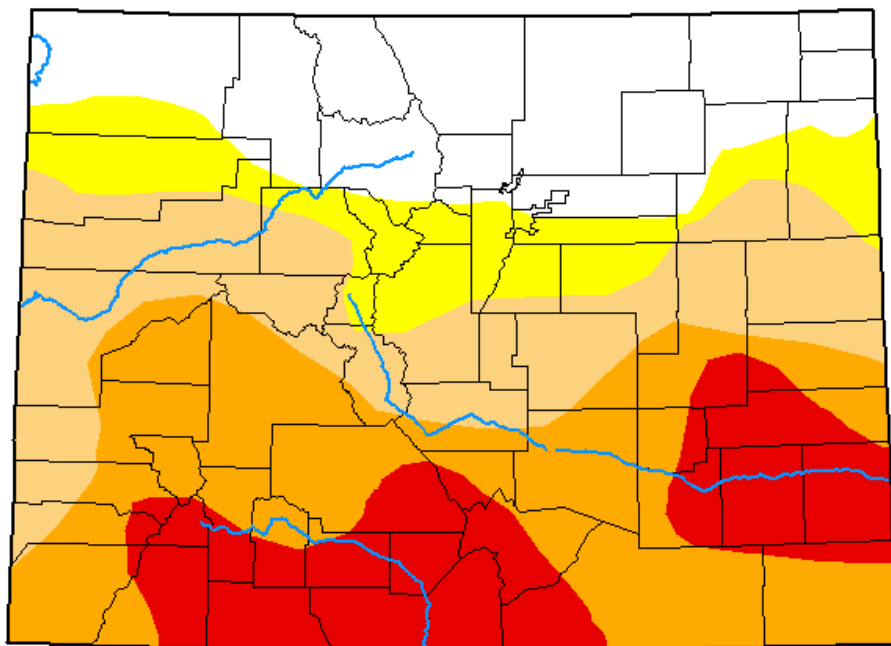


droughtmonitor.unl.edu



U.S. Drought Monitor Colorado

May 26, 2020
(Released Thursday, May. 28, 2020)
Valid 8 a.m. EDT



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	23.22	76.78	65.20	43.76	17.52	0.00
Last Week <i>05-19-2020</i>	23.22	76.78	65.20	46.31	17.52	0.00
3 Months Ago <i>02-25-2020</i>	30.09	69.91	42.77	3.30	0.00	0.00
Start of Calendar Year <i>12-31-2019</i>	31.72	68.28	51.19	20.11	0.00	0.00
Start of Water Year <i>10-01-2019</i>	30.14	69.86	27.53	0.00	0.00	0.00
One Year Ago <i>05-28-2019</i>	100.00	0.00	0.00	0.00	0.00	0.00

Intensity:



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:

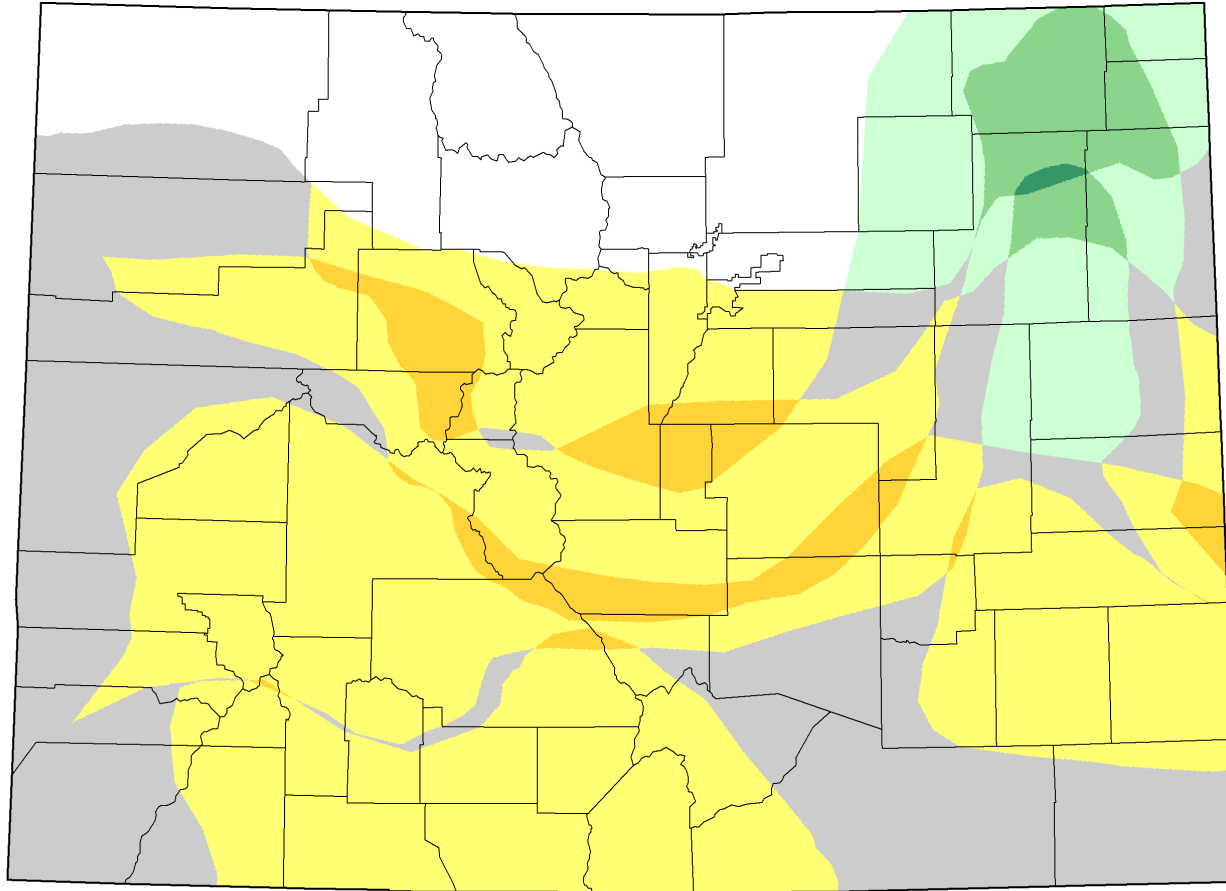
Curtis Riganti
National Drought Mitigation Center



droughtmonitor.unl.edu



U.S. Drought Monitor Class Change - Colorado 1 Month



May 26, 2020
compared to
April 28, 2020

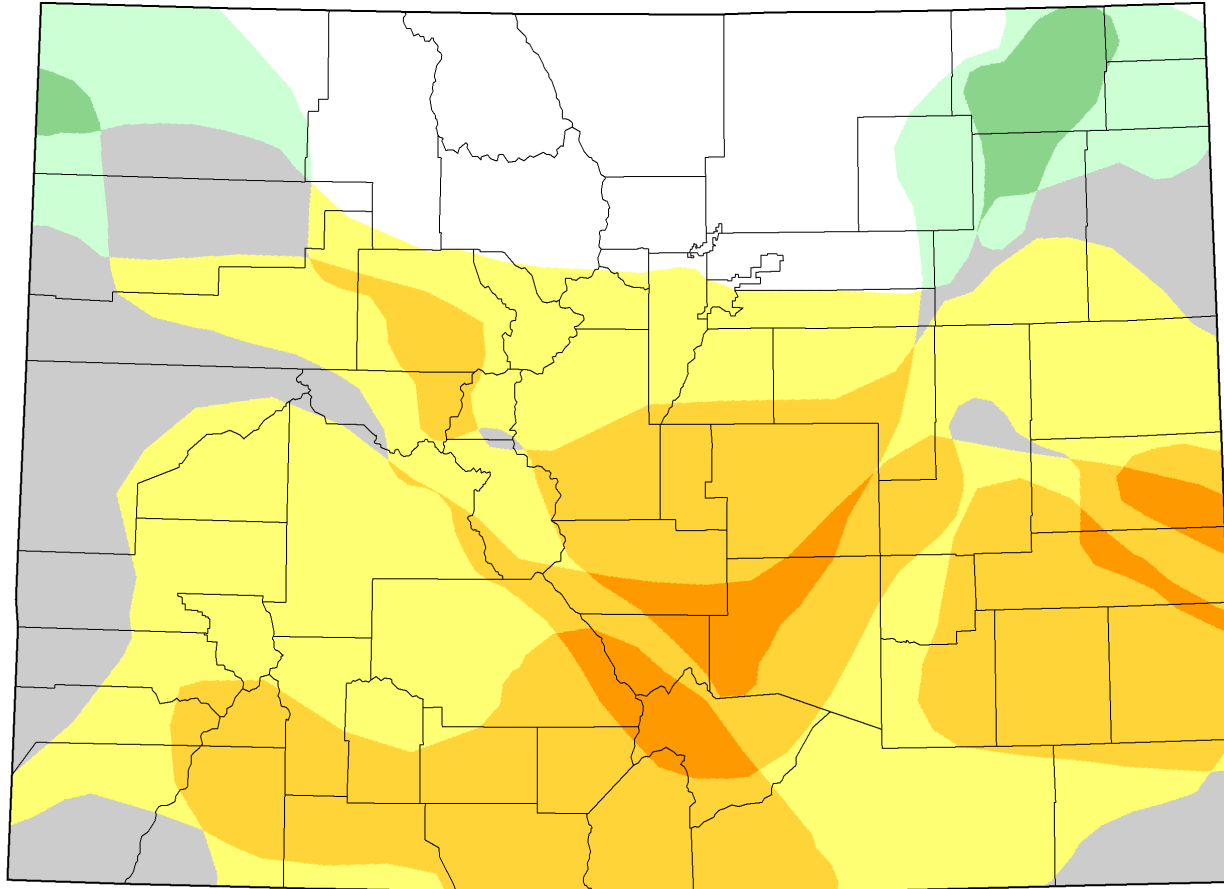
droughtmonitor.unl.edu



- 5 Class Degradation
- 4 Class Degradation
- 3 Class Degradation
- 2 Class Degradation
- 1 Class Degradation
- No Change
- 1 Class Improvement
- 2 Class Improvement
- 3 Class Improvement
- 4 Class Improvement
- 5 Class Improvement



U.S. Drought Monitor Class Change - Colorado 3 Months



May 26, 2020
compared to
March 3, 2020

droughtmonitor.unl.edu



- 5 Class Degradation
- 4 Class Degradation
- 3 Class Degradation
- 2 Class Degradation
- 1 Class Degradation
- No Change
- 1 Class Improvement
- 2 Class Improvement
- 3 Class Improvement
- 4 Class Improvement
- 5 Class Improvement

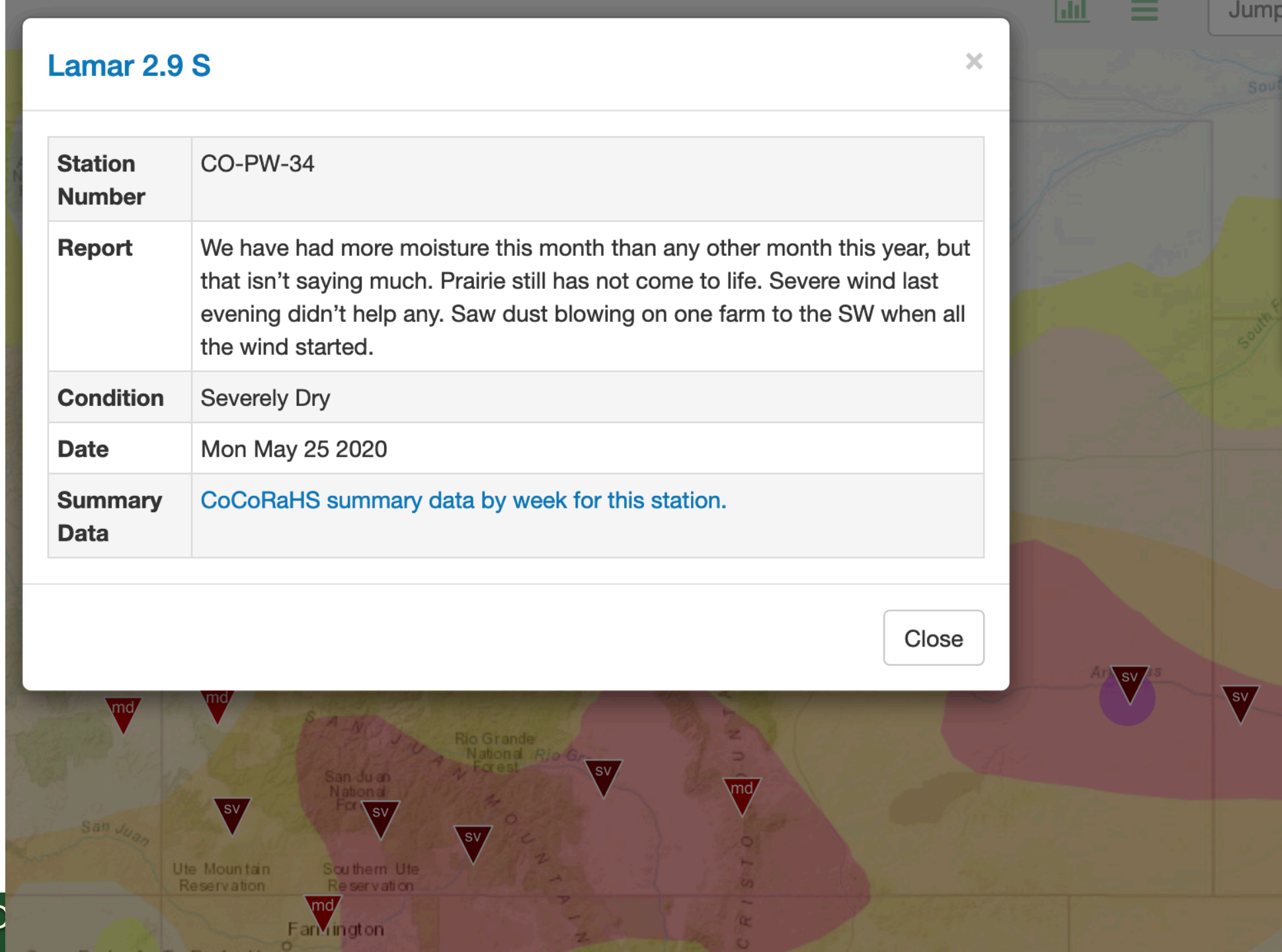


Lamar 2.9 S

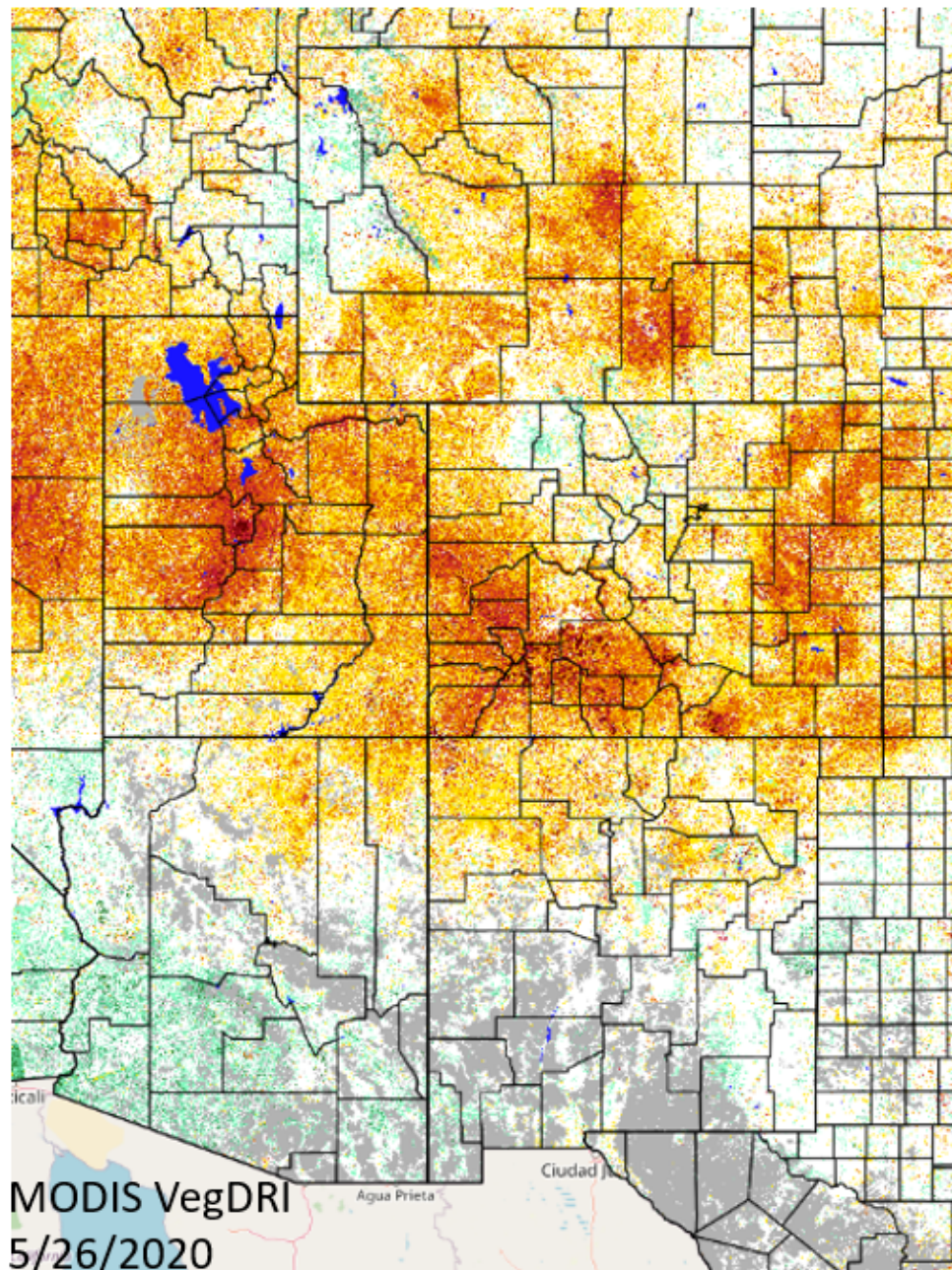


Station Number	CO-PW-34
Report	We have had more moisture this month than any other month this year, but that isn't saying much. Prairie still has not come to life. Severe wind last evening didn't help any. Saw dust blowing on one farm to the SW when all the wind started.
Condition	Severely Dry
Date	Mon May 25 2020
Summary Data	CoCoRaHS summary data by week for this station.











Close



VegDRI
(vegetation conditions
viewed from satellite)



Vegetation Condition

 Extreme Drought	 Unusually Moist
 Severe Drought	 Very Moist
 Moderate Drought	 Extreme Moist
 Pre-drought stress	 Out of Season
 Near Normal	 Water





Outlook

Next 7 days

8-14 day Outlook

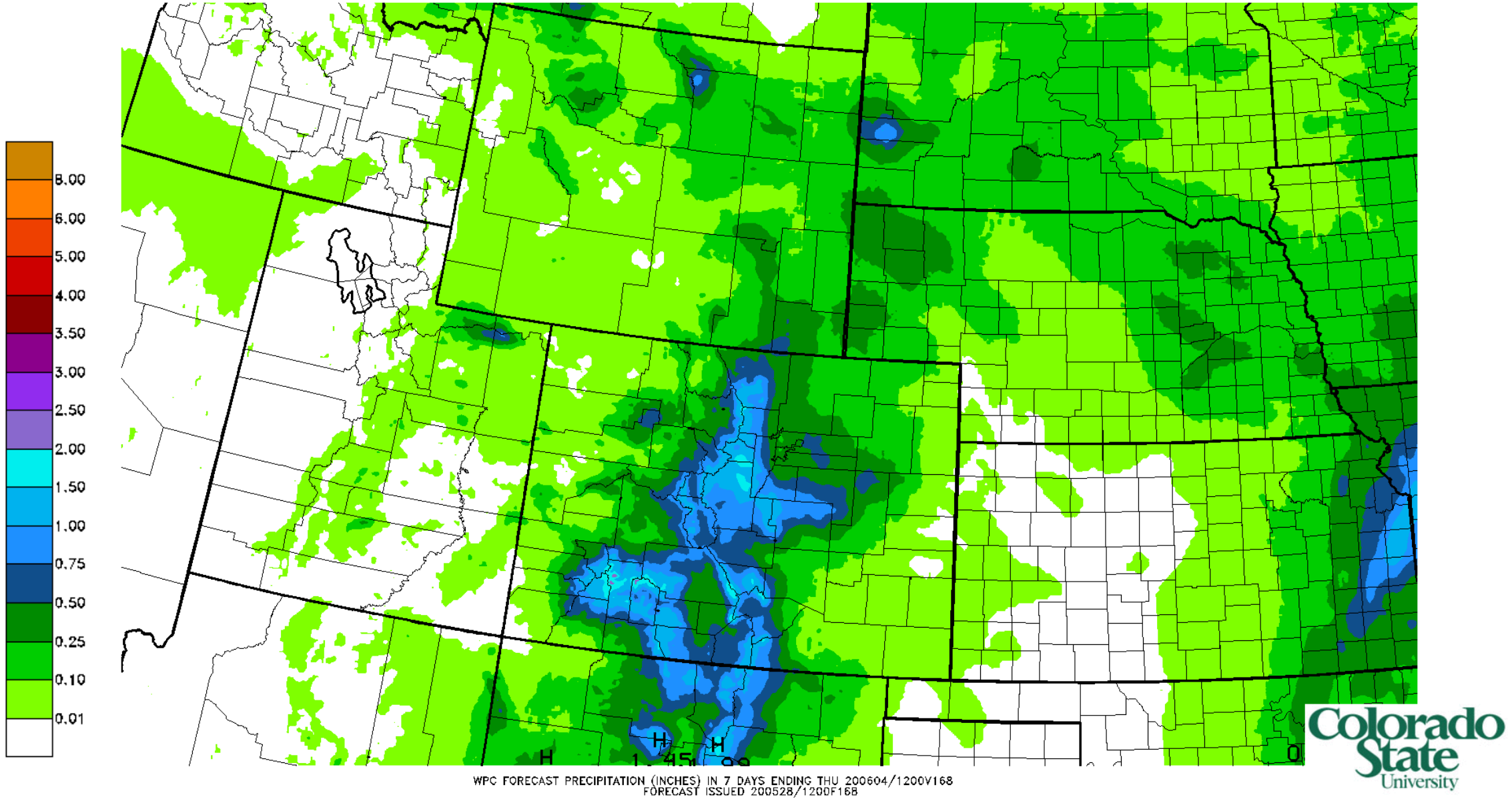
CPC Outlooks

Precipitation Projections

What is happening with El Niño?



NOAA 7-day precip forecast

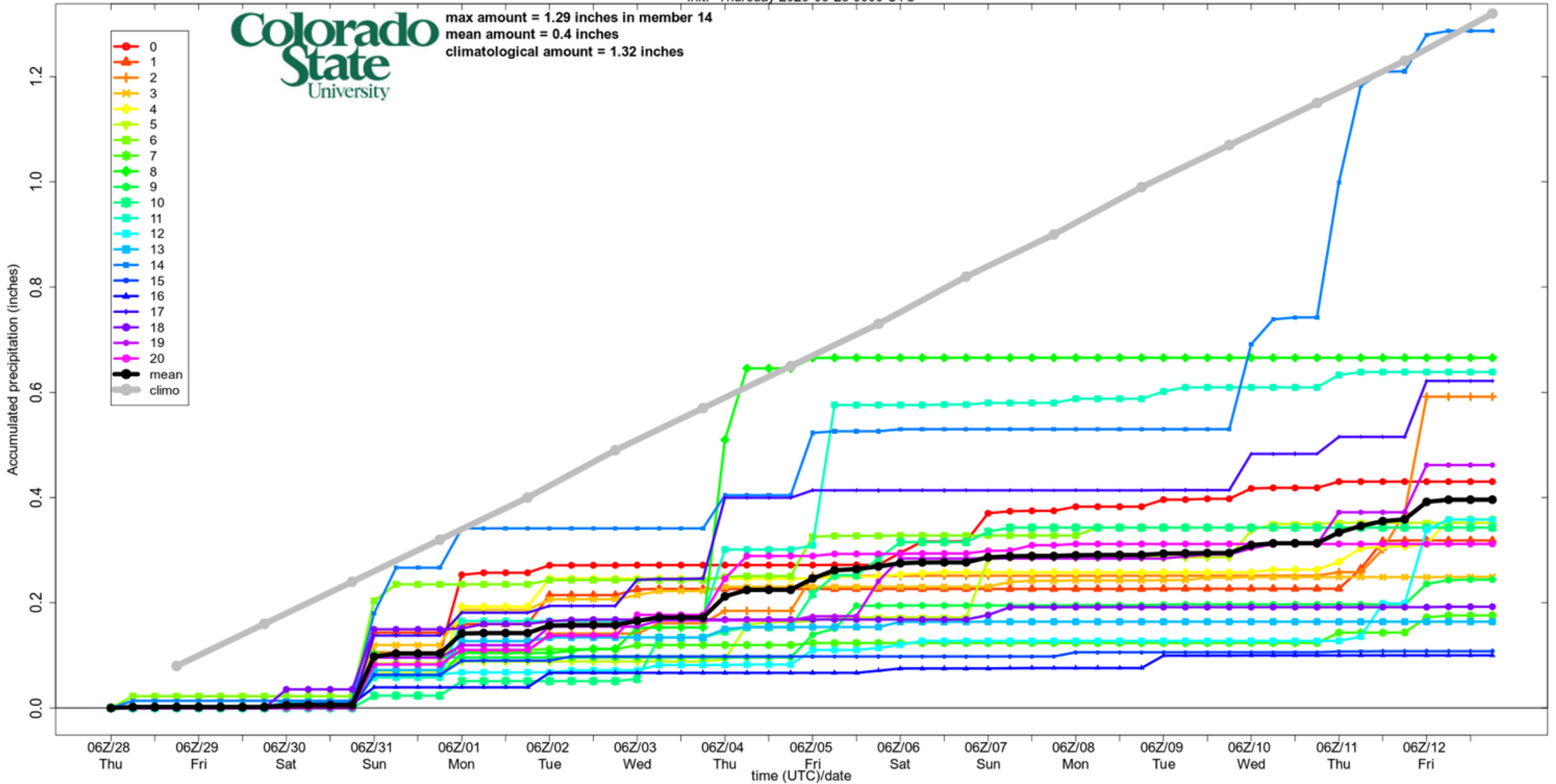


NCEP GEFS accumulated precipitation at Lamar

init: Thursday 2020-05-28 0000 UTC

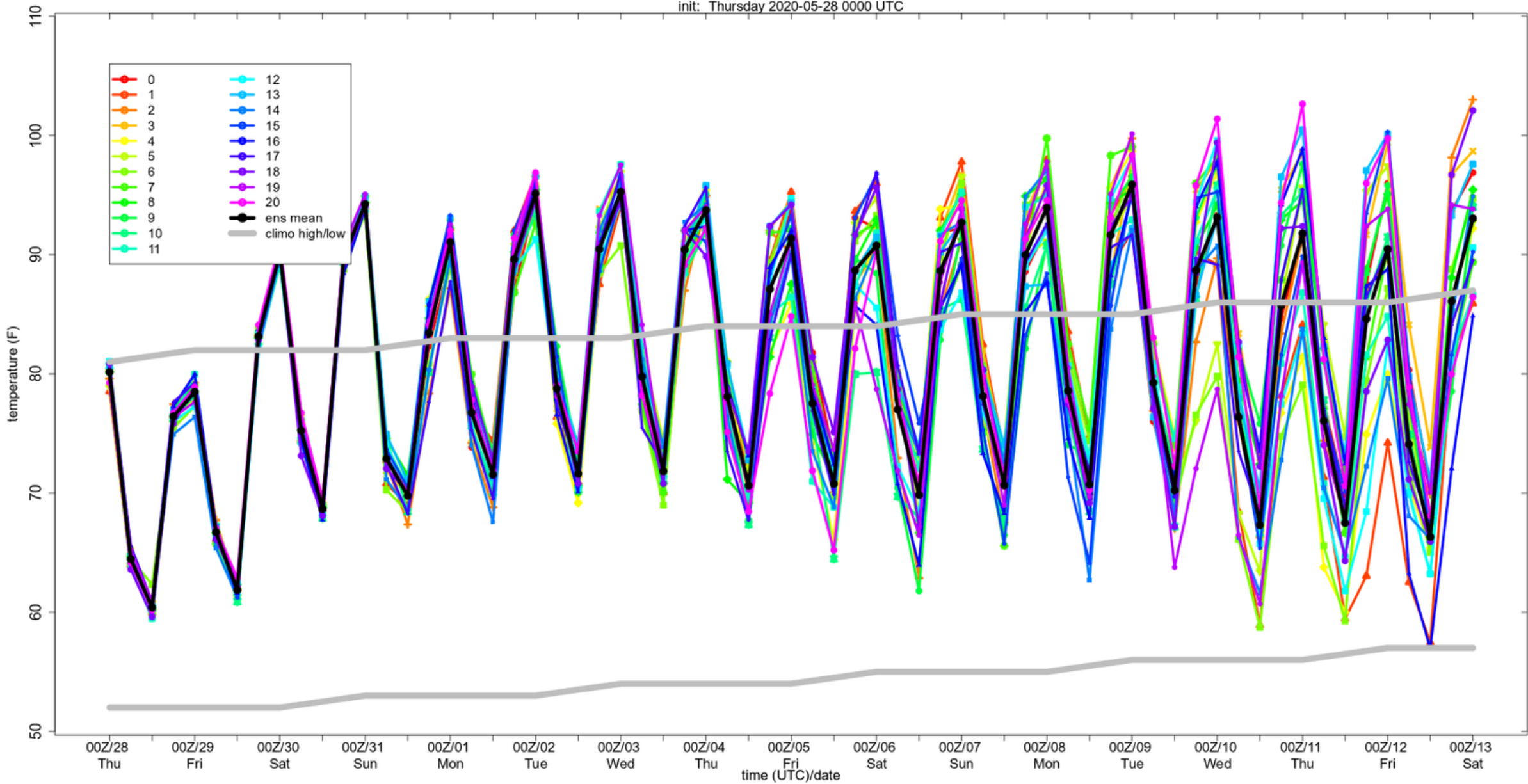


max amount = 1.29 inches in member 14
mean amount = 0.4 inches
climatological amount = 1.32 inches



NCEP GEFS 2-m temperature at Lamar

init: Thursday 2020-05-28 0000 UTC

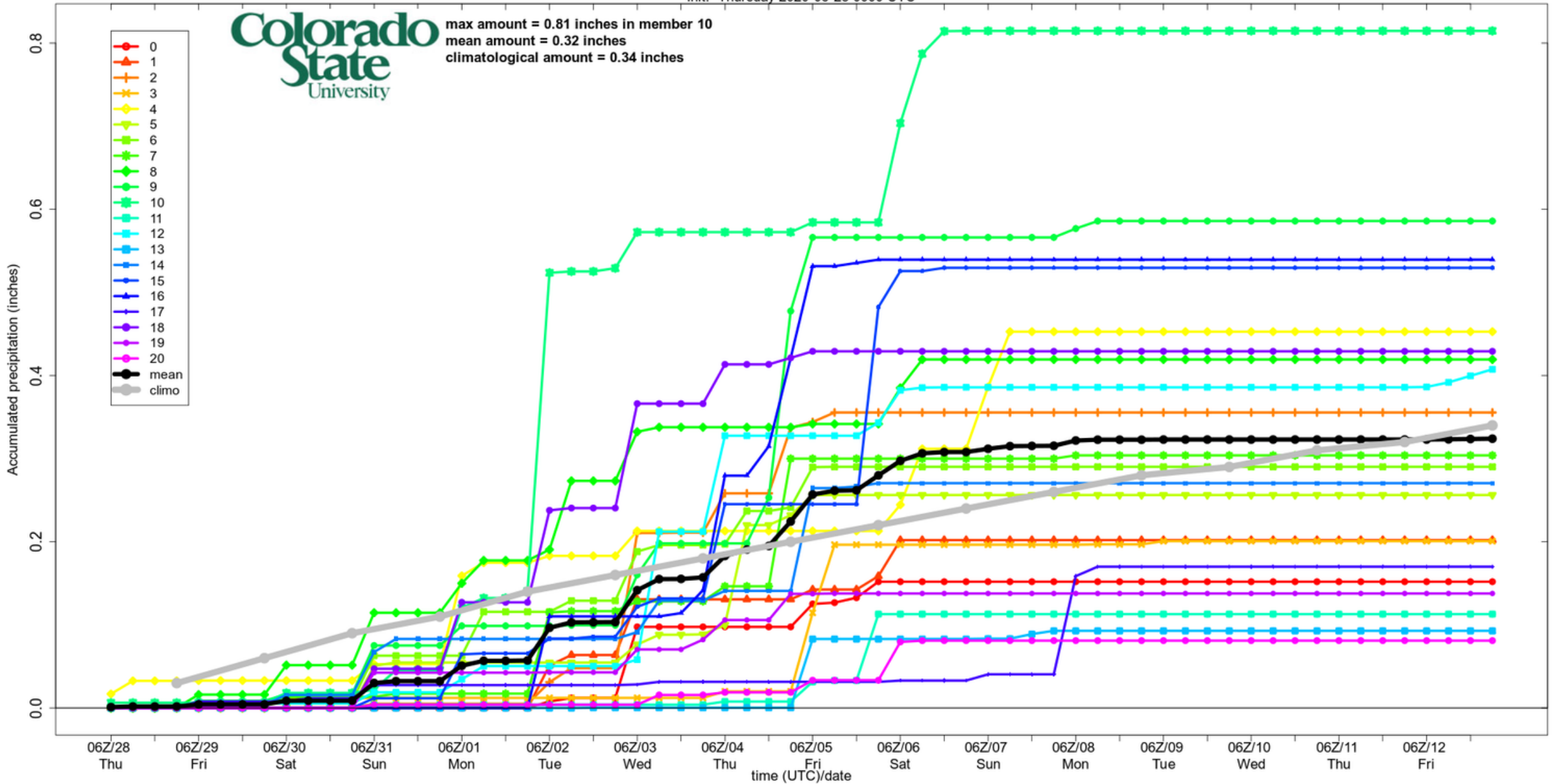


NCEP GEFS accumulated precipitation at Durango

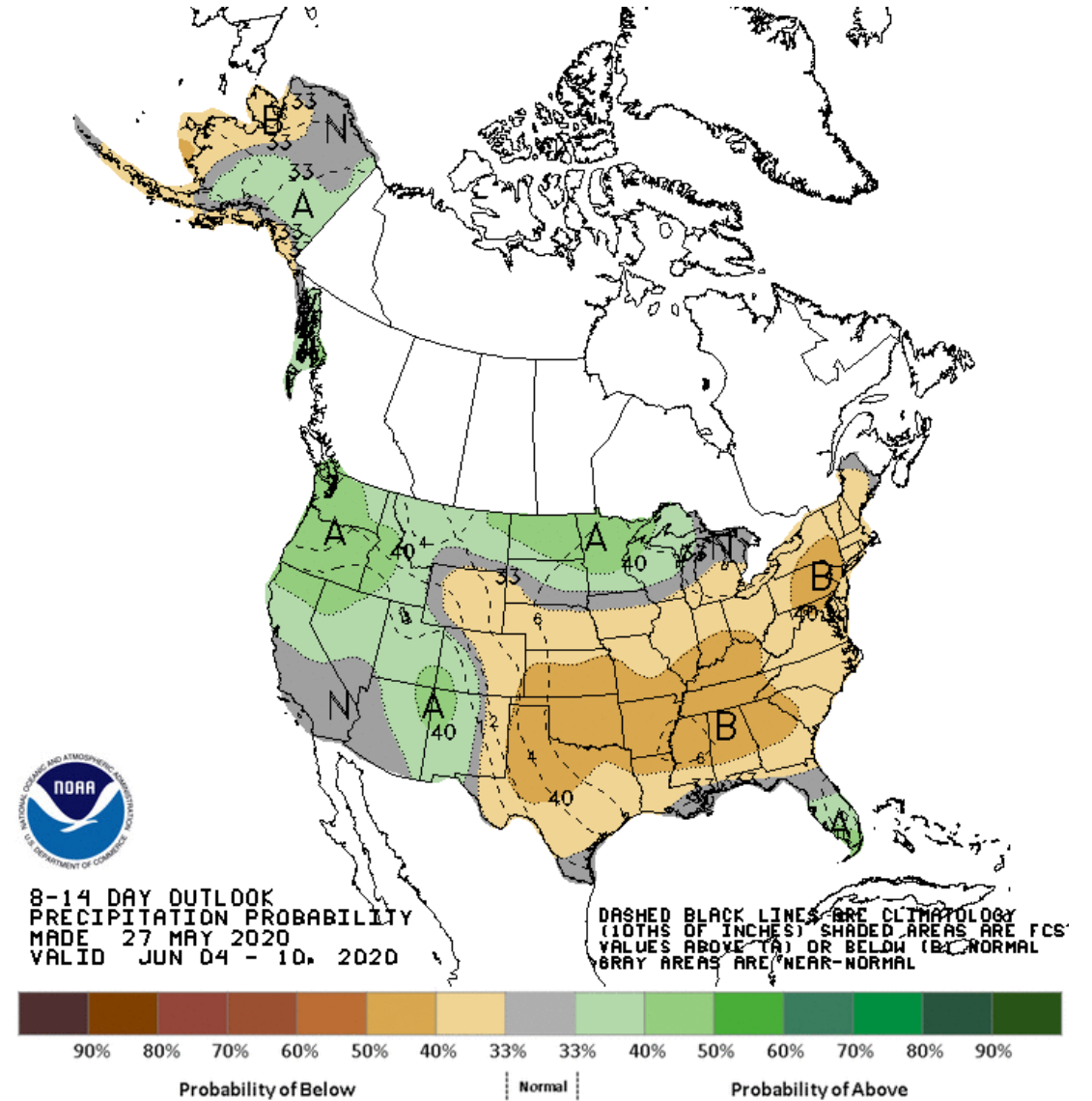
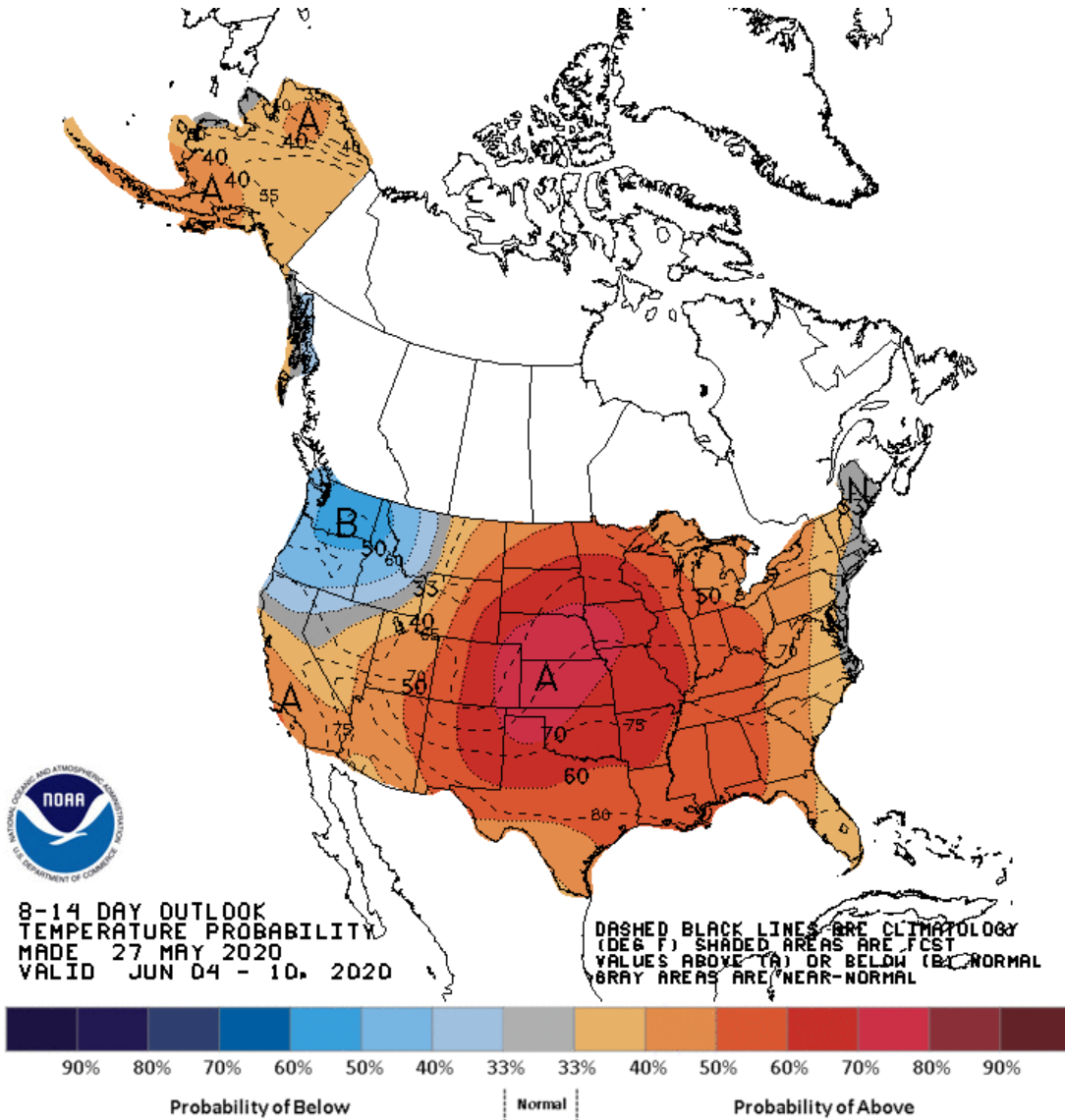
init: Thursday 2020-05-28 0000 UTC



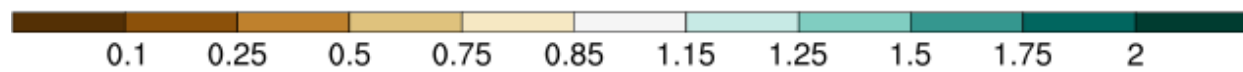
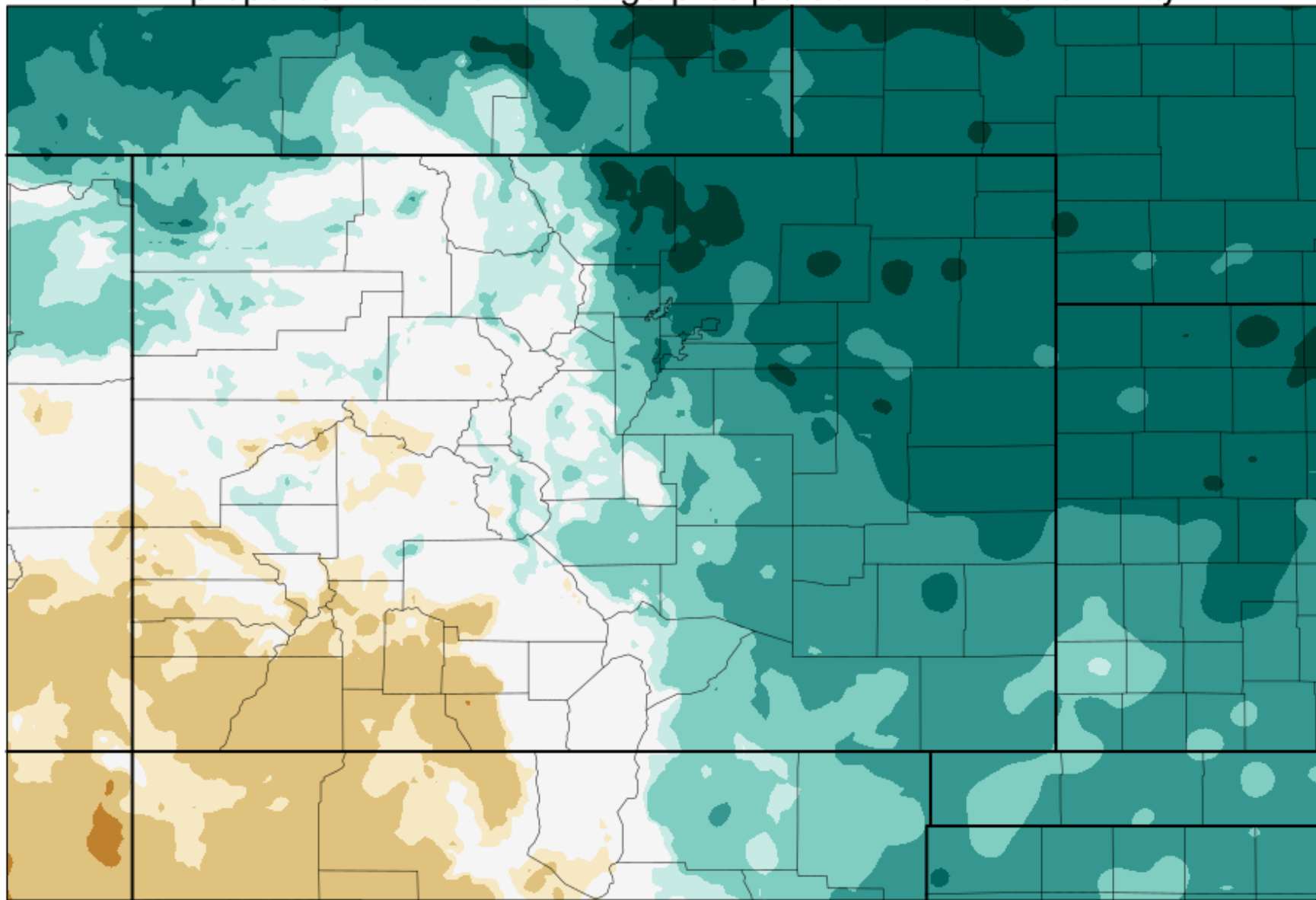
max amount = 0.81 inches in member 10
mean amount = 0.32 inches
climatological amount = 0.34 inches



8-14 day outlook



PRISM proportion of annual average precipitation in this month: May

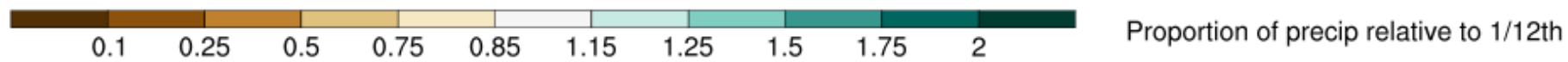
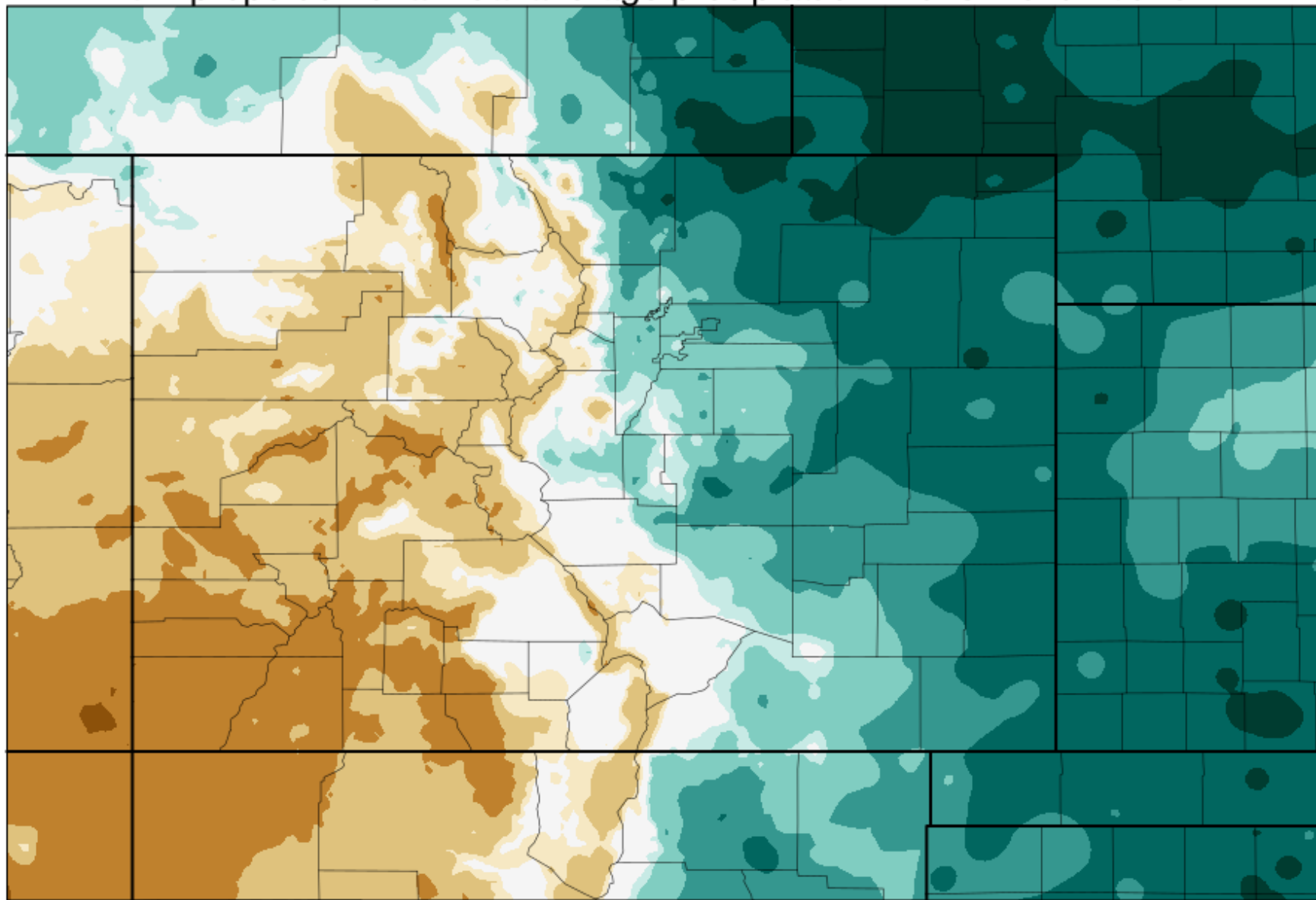


Proportion of precip relative to 1/12th

Russ Schumacher/Colorado Climate Center



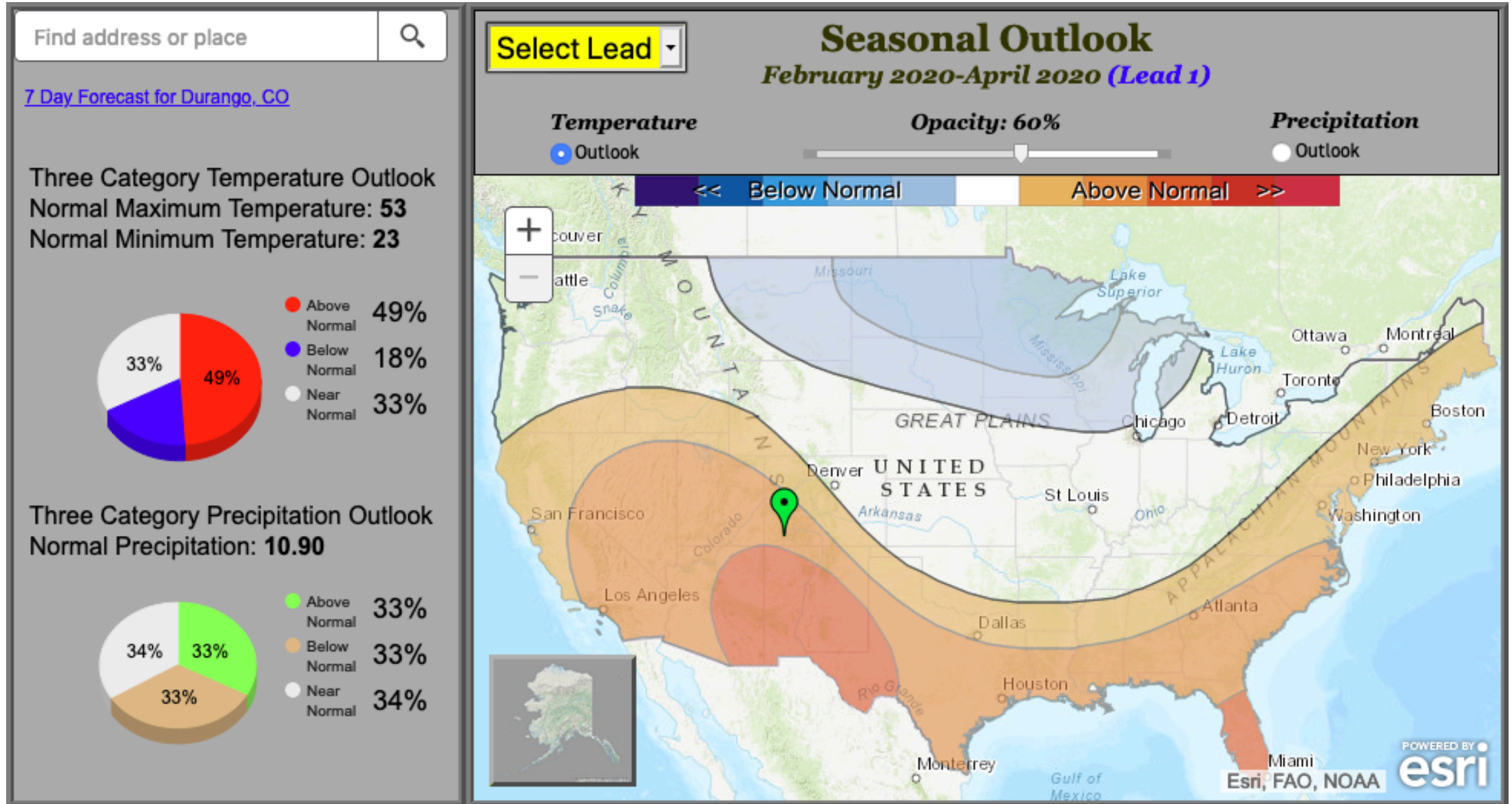
PRISM proportion of annual average precipitation in this month: June



Russ Schumacher/Colorado Climate Center



A look back at CPC outlooks...



A look back at CPC outlooks...

Find address or place

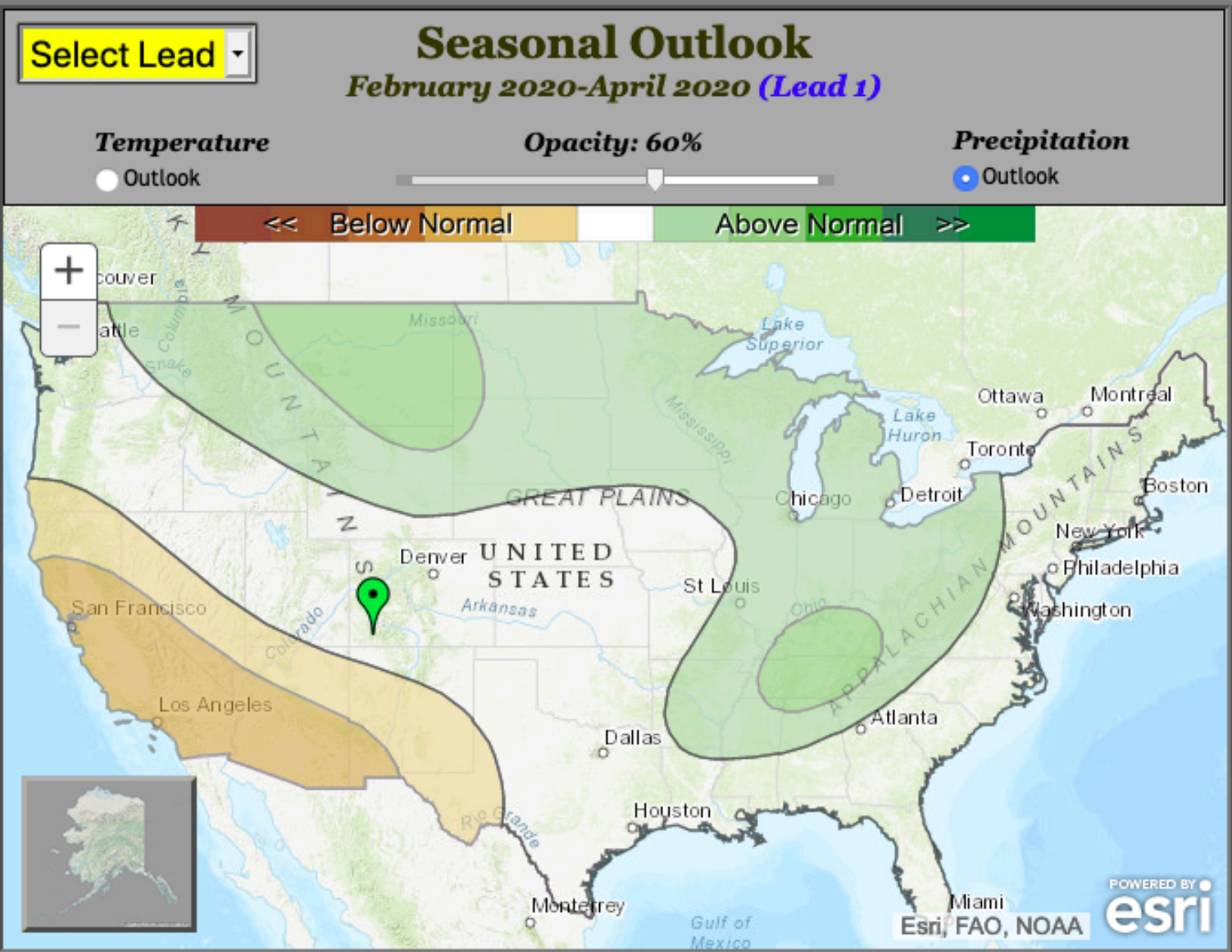
[7 Day Forecast for Durango, CO](#)

Three Category Temperature Outlook
Normal Maximum Temperature: **53**
Normal Minimum Temperature: **23**

	<ul style="list-style-type: none">Above Normal 49%Below Normal 18%Near Normal 33%
--	--

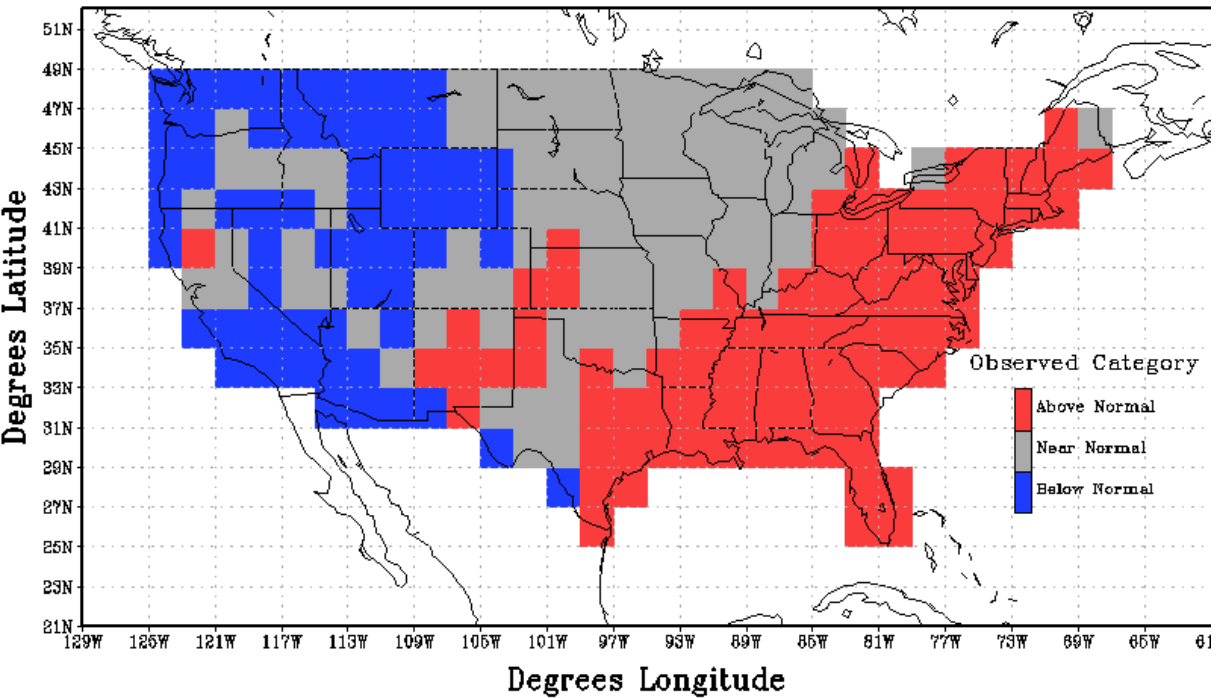
Three Category Precipitation Outlook
Normal Precipitation: **10.90**

	<ul style="list-style-type: none">Above Normal 33%Below Normal 33%Near Normal 34%
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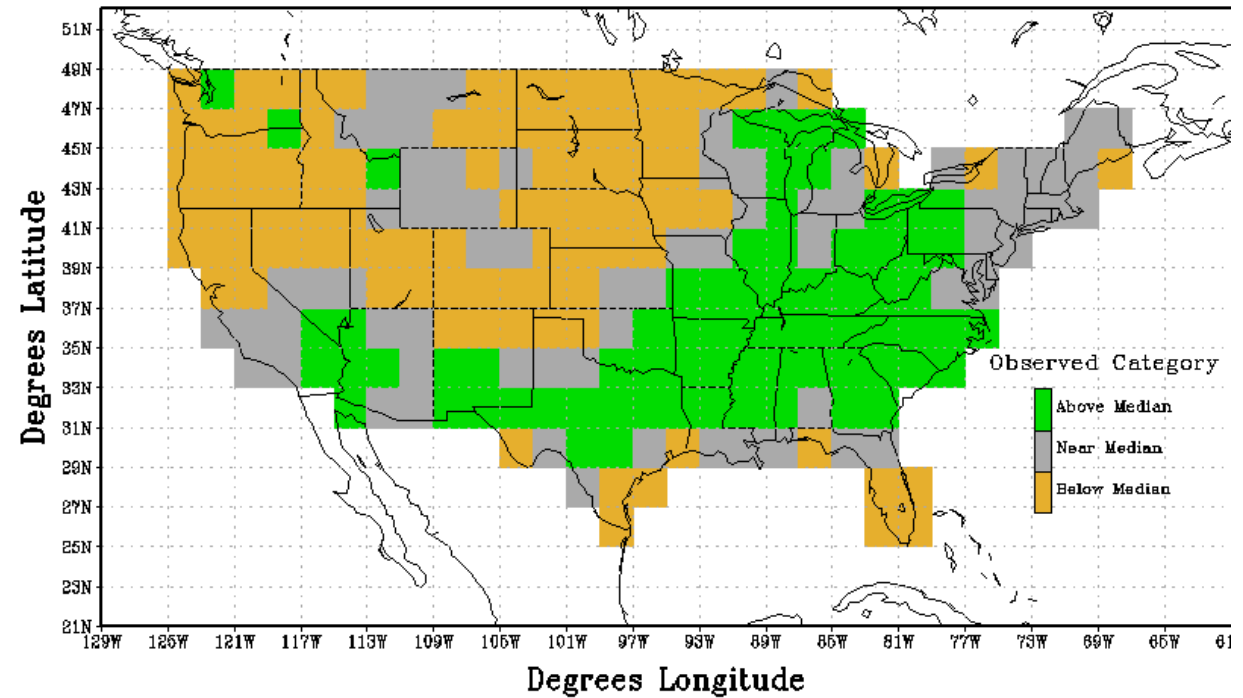


A look back at CPC outlooks...

Categorical Temperature Observations
Valid: Feb-Mar-Apr 2020



Categorical Precipitation Observations
Valid: Feb-Mar-Apr 2020

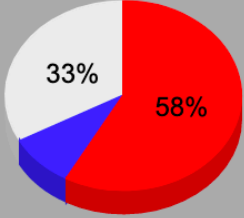
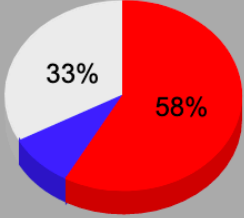
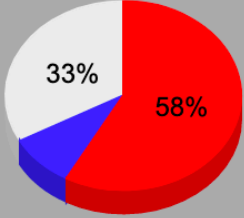


June Outlook

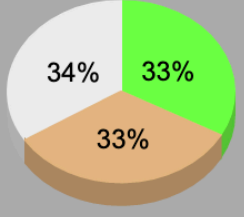
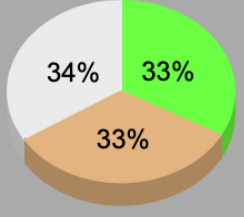
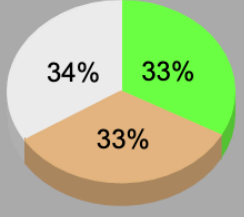
Find address or place

[7 Day Forecast for Durango, CO](#)

Three Category Temperature Outlook
Normal Maximum Temperature: **77**
Normal Minimum Temperature: **45**

	Above Normal	58%
	Below Normal	9%
	Near Normal	33%

Three Category Precipitation Outlook
Normal Precipitation: **0.85**

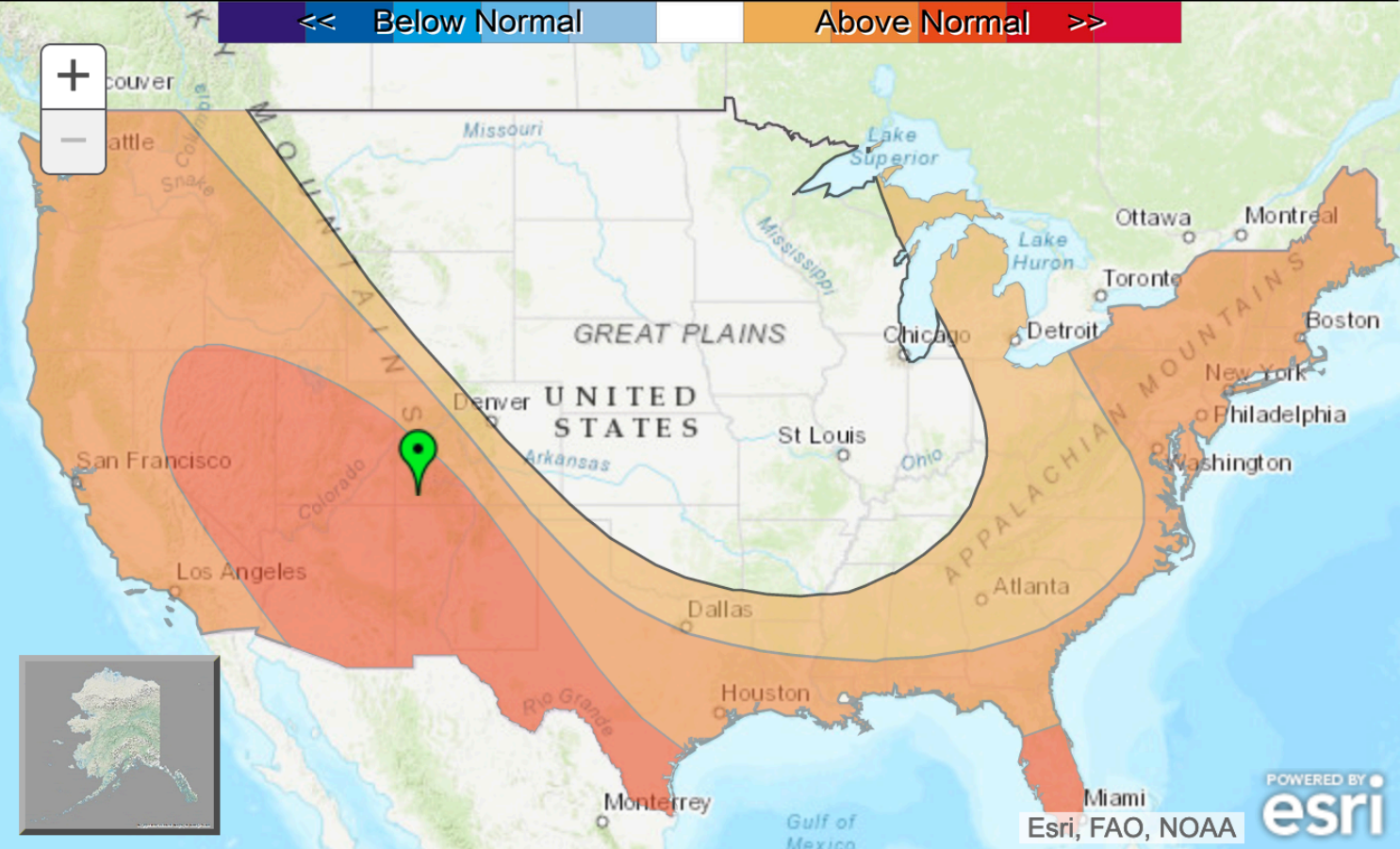
	Above Normal	33%
	Below Normal	33%
	Near Normal	34%

Monthly Outlook

June 2020

Temperature **Opacity: 60%** Outlook Outlook

Temperature Legend: << Below Normal | Above Normal >>

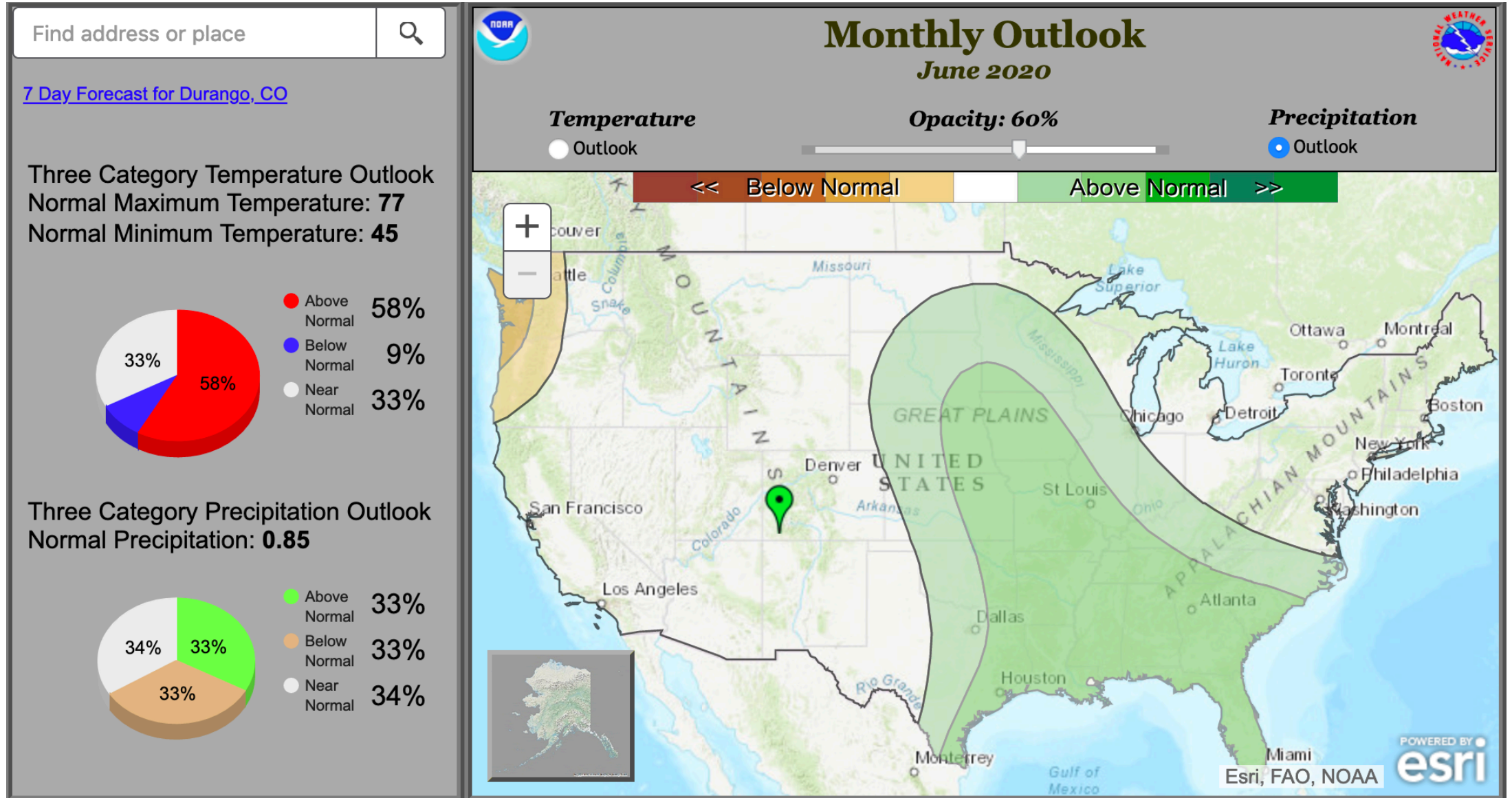


Map Labels: San Francisco, Los Angeles, Denver, Dallas, Houston, Miami, Atlanta, Chicago, Detroit, St. Louis, Philadelphia, Washington, New York, Boston, Toronto, Montreal, Ottawa, Lake Superior, Lake Huron, Missouri, Mississippi, Ohio, Rio Grande, Gulf of Mexico, UNITED STATES, COLORADO MOUNTAINS, APPALACHIAN MOUNTAINS.

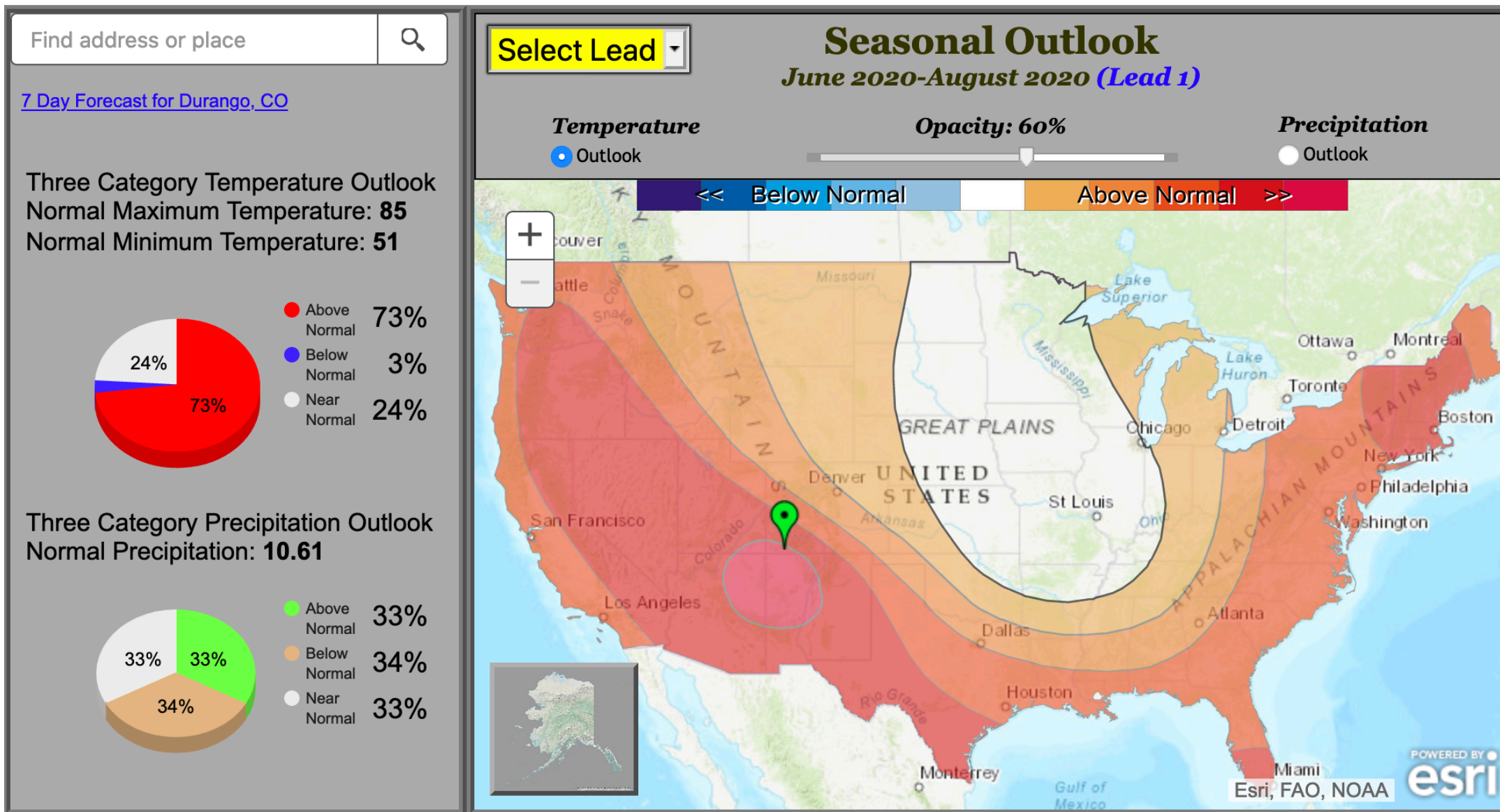
POWERED BY **esri**

Esri, FAO, NOAA

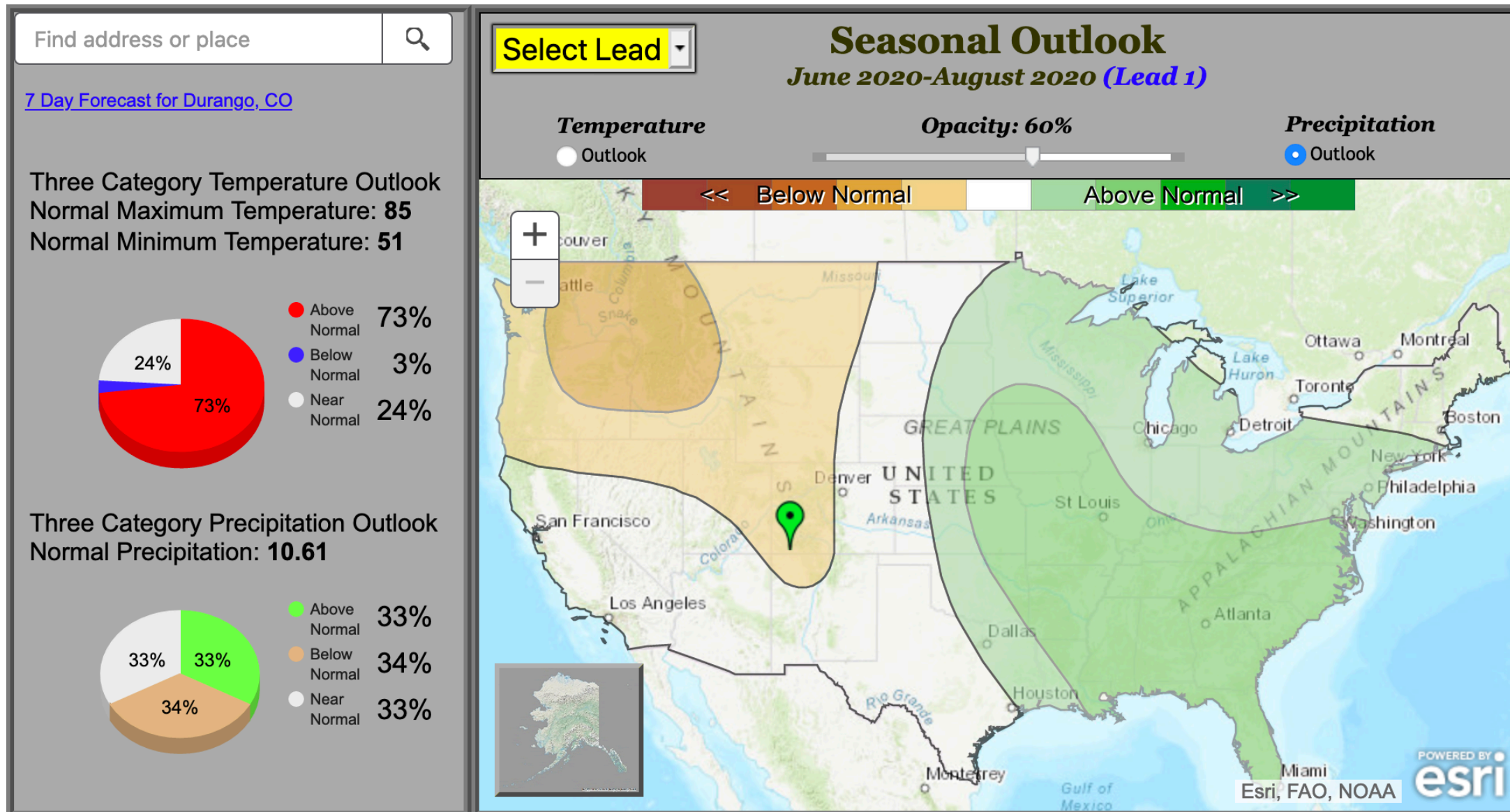
June Outlook



June-July-August Outlook



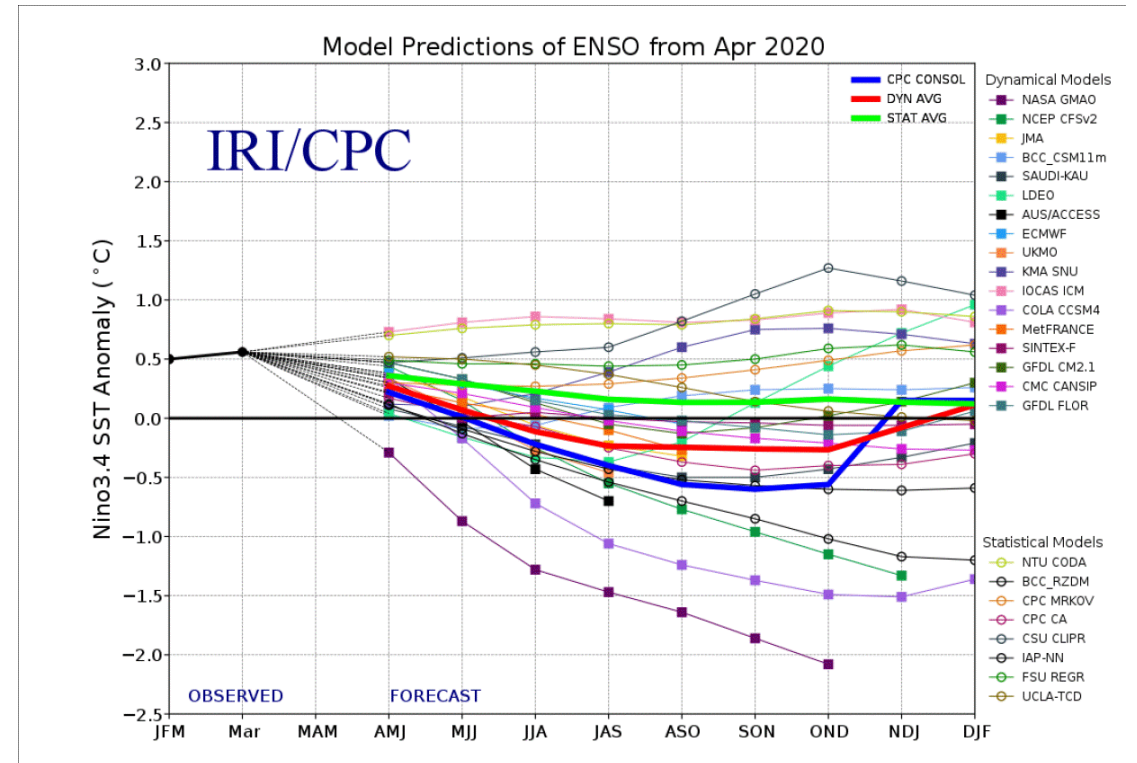
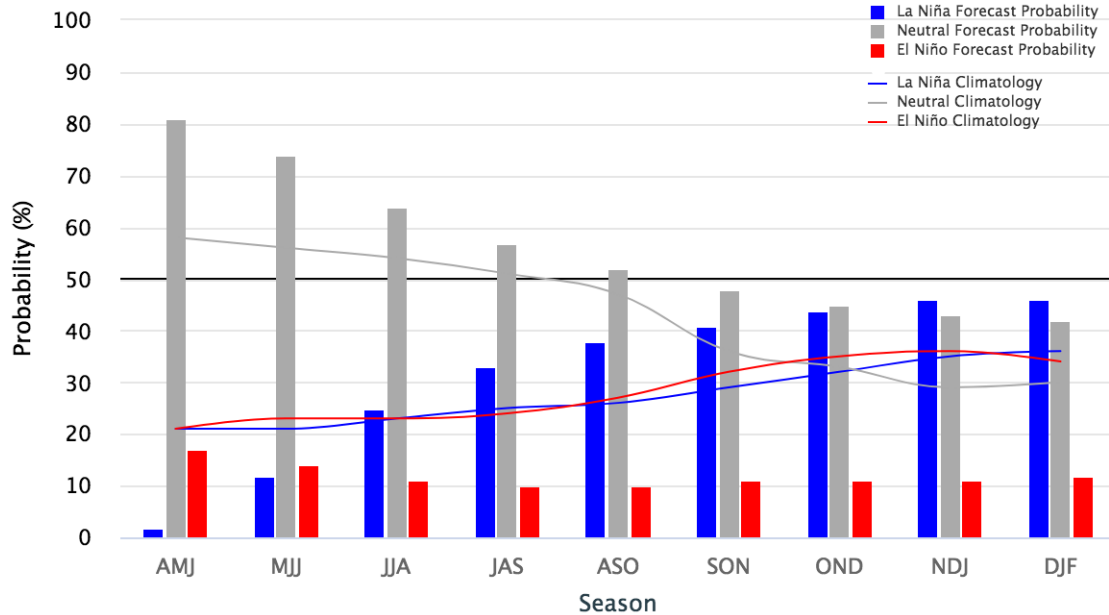
June-July-August Outlook



What's the El Niño forecast?

Early-May 2020 CPC/IRI Official Probabilistic ENSO Forecasts

ENSO state based on NINO3.4 SST Anomaly
Neutral ENSO: -0.5 °C to 0.5 °C



Neutral conditions continue; most likely scenario is they continue through the summer (65% probability)

By the fall, La Niña starts to become a possibility – let's hope for a good summer monsoon in southern CO, because La Niña winters tend to be less-snowy to the south



Summary points

- After a very cold October, the water year temperatures have been near to slightly above average across the state
- Mountain snowpack built nicely through the winter, reaching near-normal peaks
- But things have since turned very dry across the southern half of the state
- Drought has intensified especially in the San Luis Valley, the Arkansas Valley, and parts of the western slope
- We're headed into the typically dry time of year on the western slope, though forecasts suggest the potential for some decent rain (for the time of year).
- Eastern plains look hot and dry for the next couple weeks – situation in southeastern CO looks to get worse before it gets better
- Summer monsoon precipitation outlook is uncertain, but temperature very likely to be warmer than average, especially in western Colorado



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Thank you!



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