

Colorado Climate Center – *WATF Climate Update*

Russ Schumacher

Water Availability Task Force

June 25, 2019



ATMOSPHERIC SCIENCE
COLORADO STATE UNIVERSITY

2019 Water Year To Date

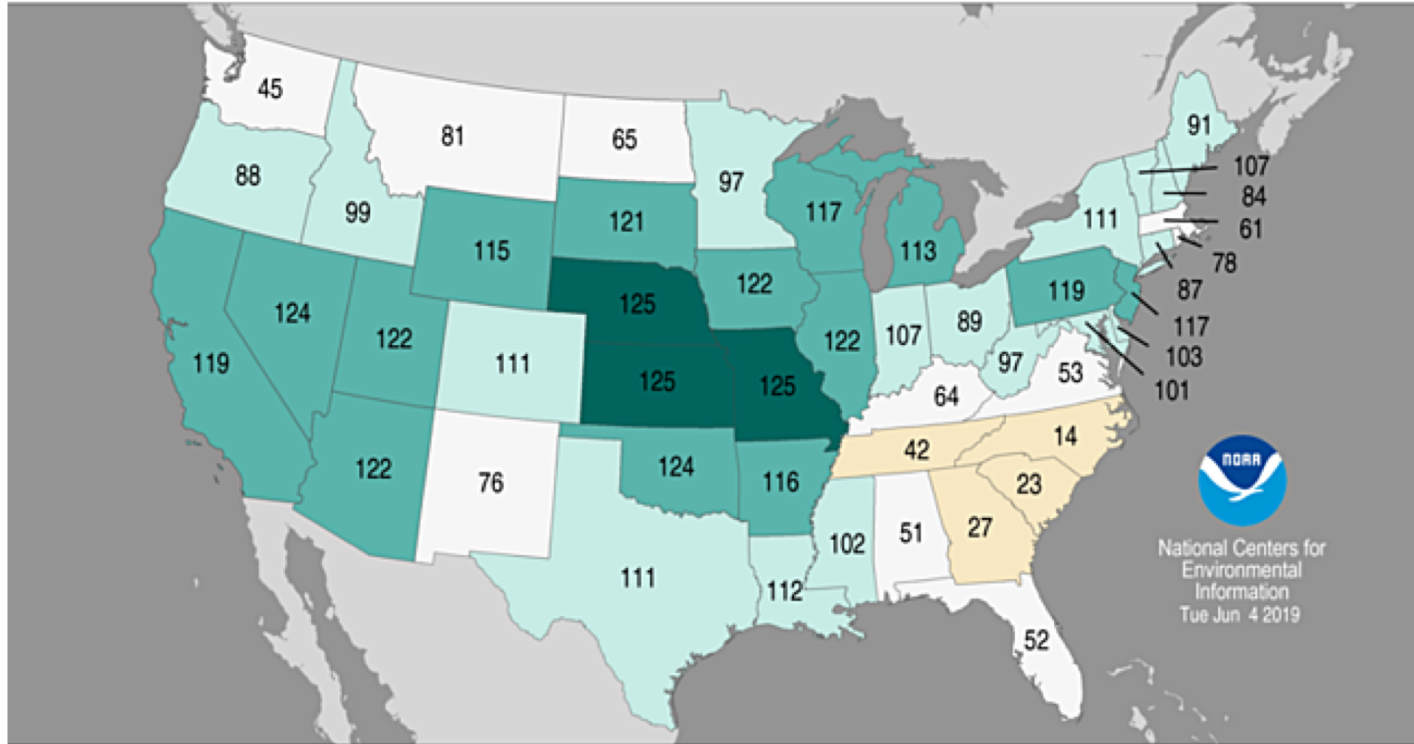
temperature, precipitation,
evaporative demand



Statewide Precipitation Ranks

May 2019

Period: 1895–2019



NORR
National Centers for
Environmental
Information
Tue Jun 4 2019

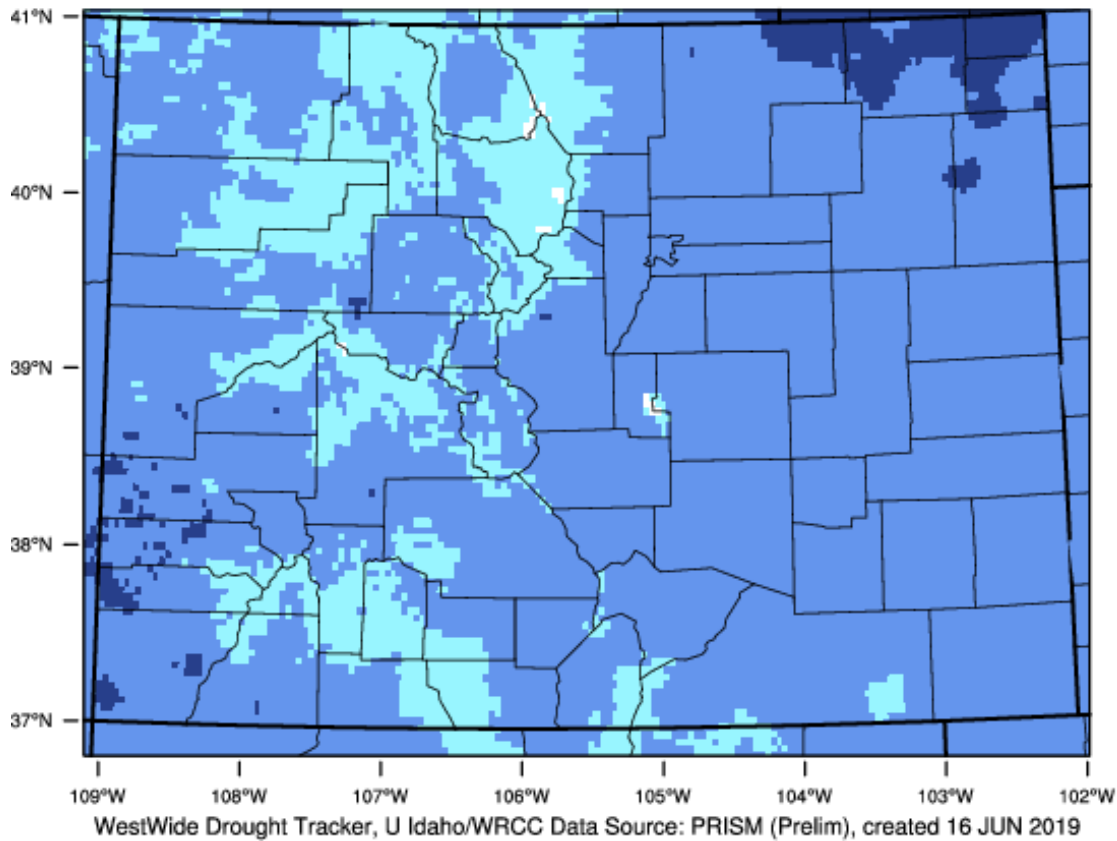
8th wettest October – May

Month	P Rank	
Oct	12 th	wettest
Nov	45 th	average
Dec	31 st	driest
Jan	32 nd	wettest
Feb	17 th	wettest
Mar	6 th	wettest
Apr	42 nd	driest
May	15 th	wettest



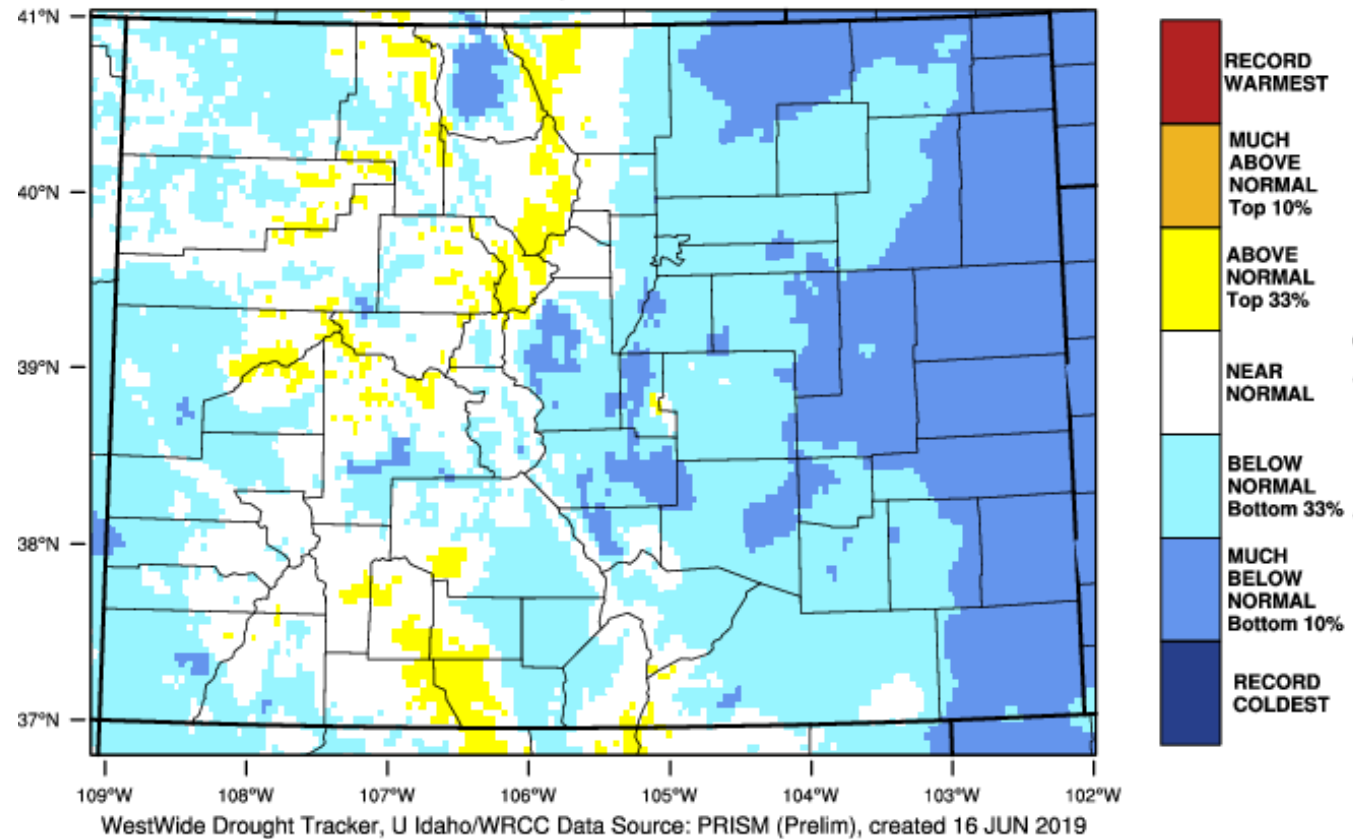
Colorado - Mean Temperature

May 2019 Percentile



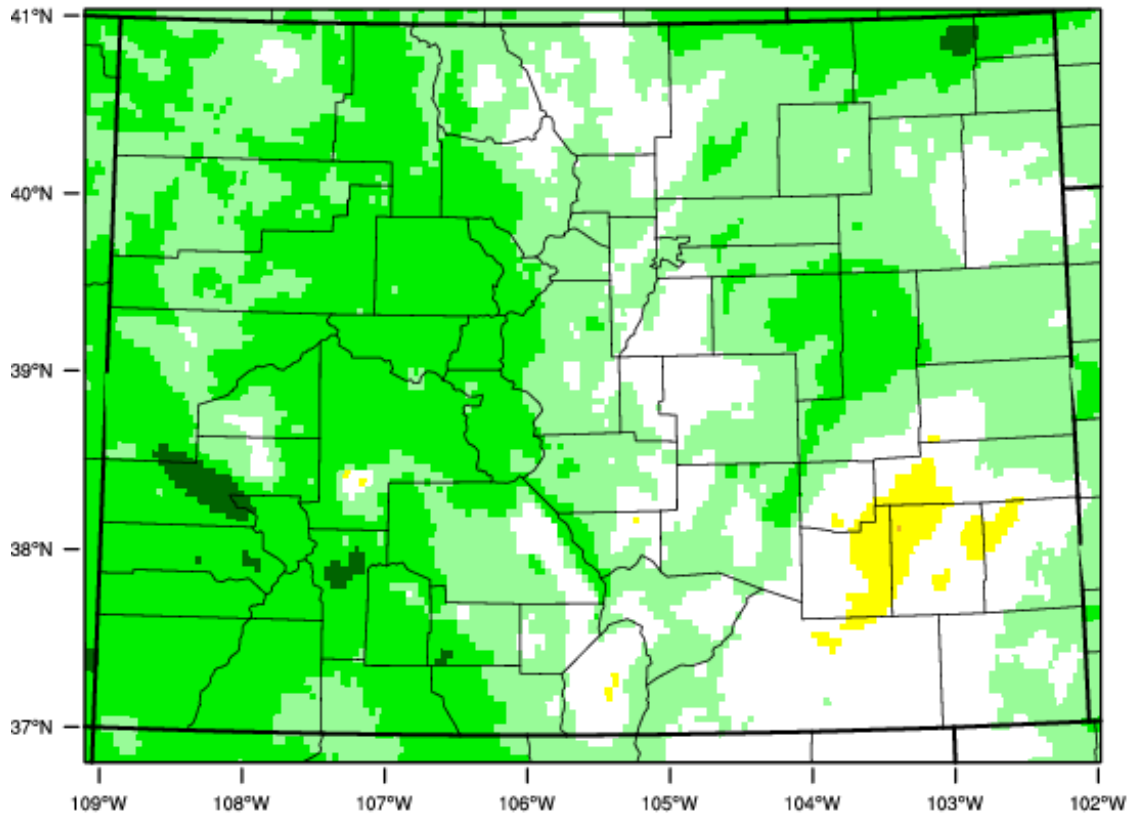
Colorado - Mean Temperature

October-May 2019 Percentile



Colorado - Precipitation

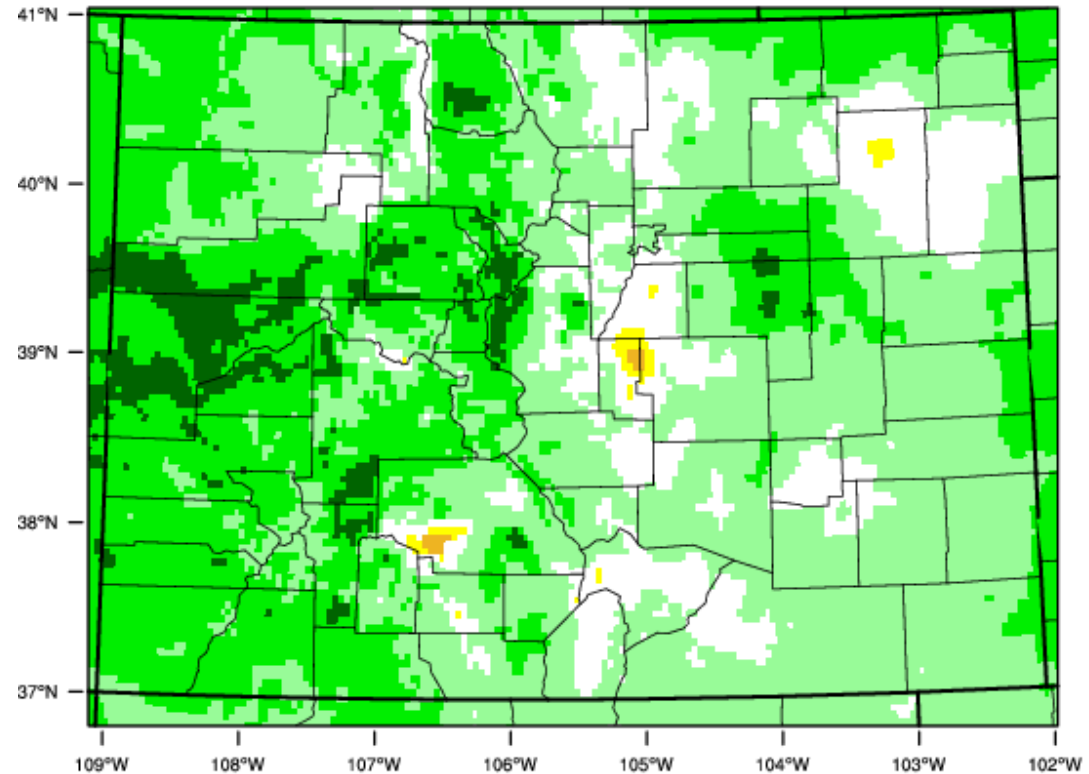
May 2019 Percentile



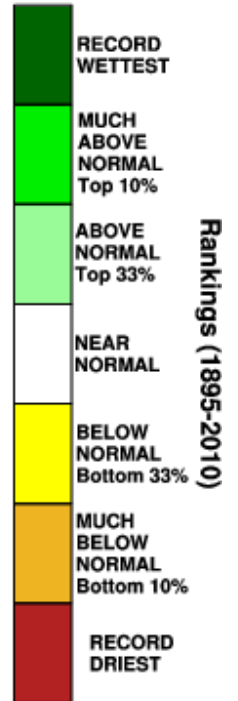
WestWide Drought Tracker, U Idaho/WRCC Data Source: PRISM (Prelim), created 16 JUN 2019

Colorado - Precipitation

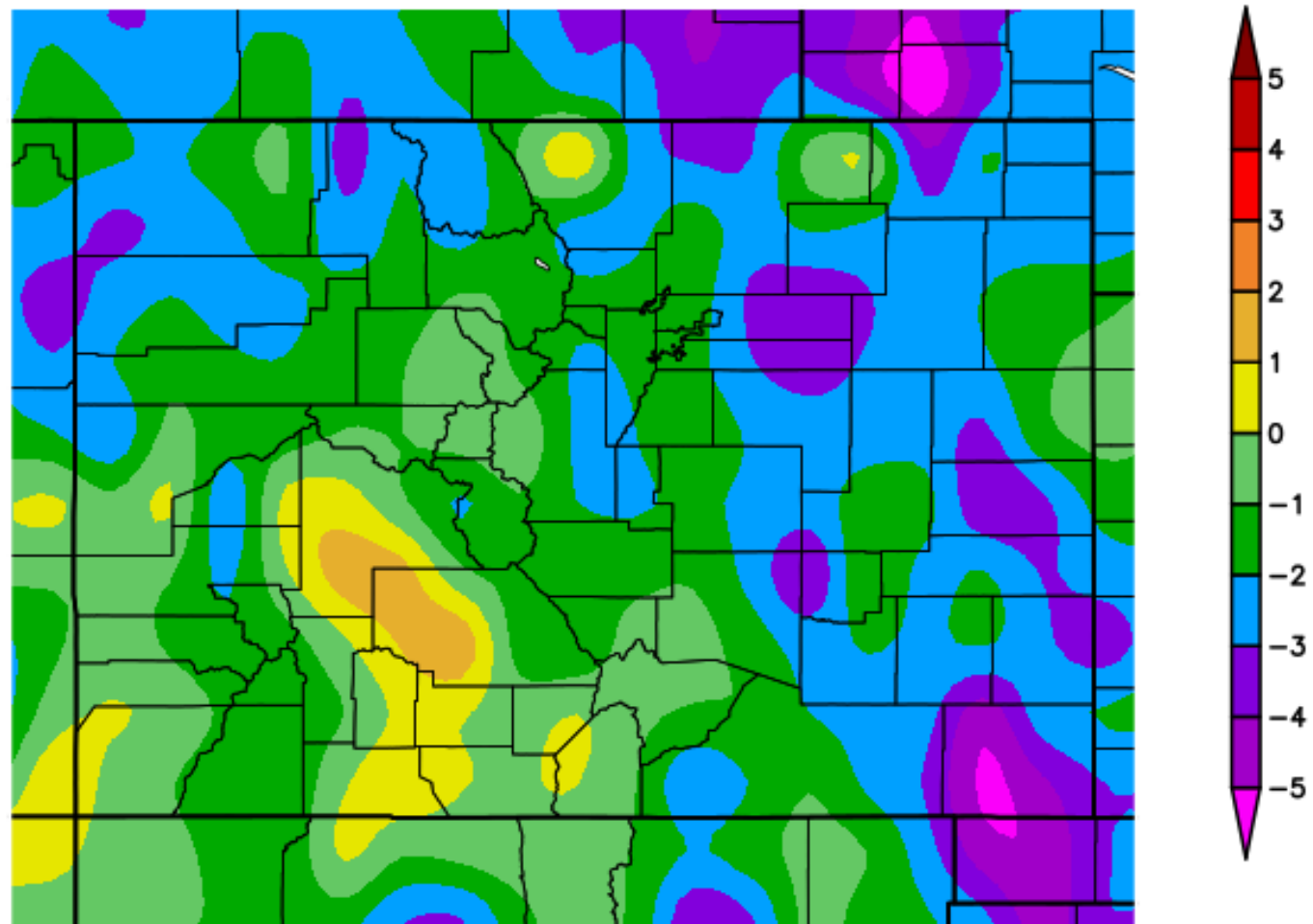
October-May 2019 Percentile



WestWide Drought Tracker, U Idaho/WRCC Data Source: PRISM (Prelim), created 16 JUN 2019



Departure from Normal Temperature (F) 6/1/2019 – 6/23/2019



Generated 6/24/2019 at HPRCC using provisional data.

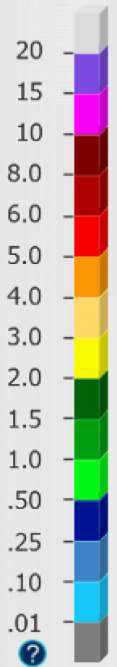
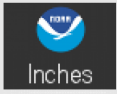
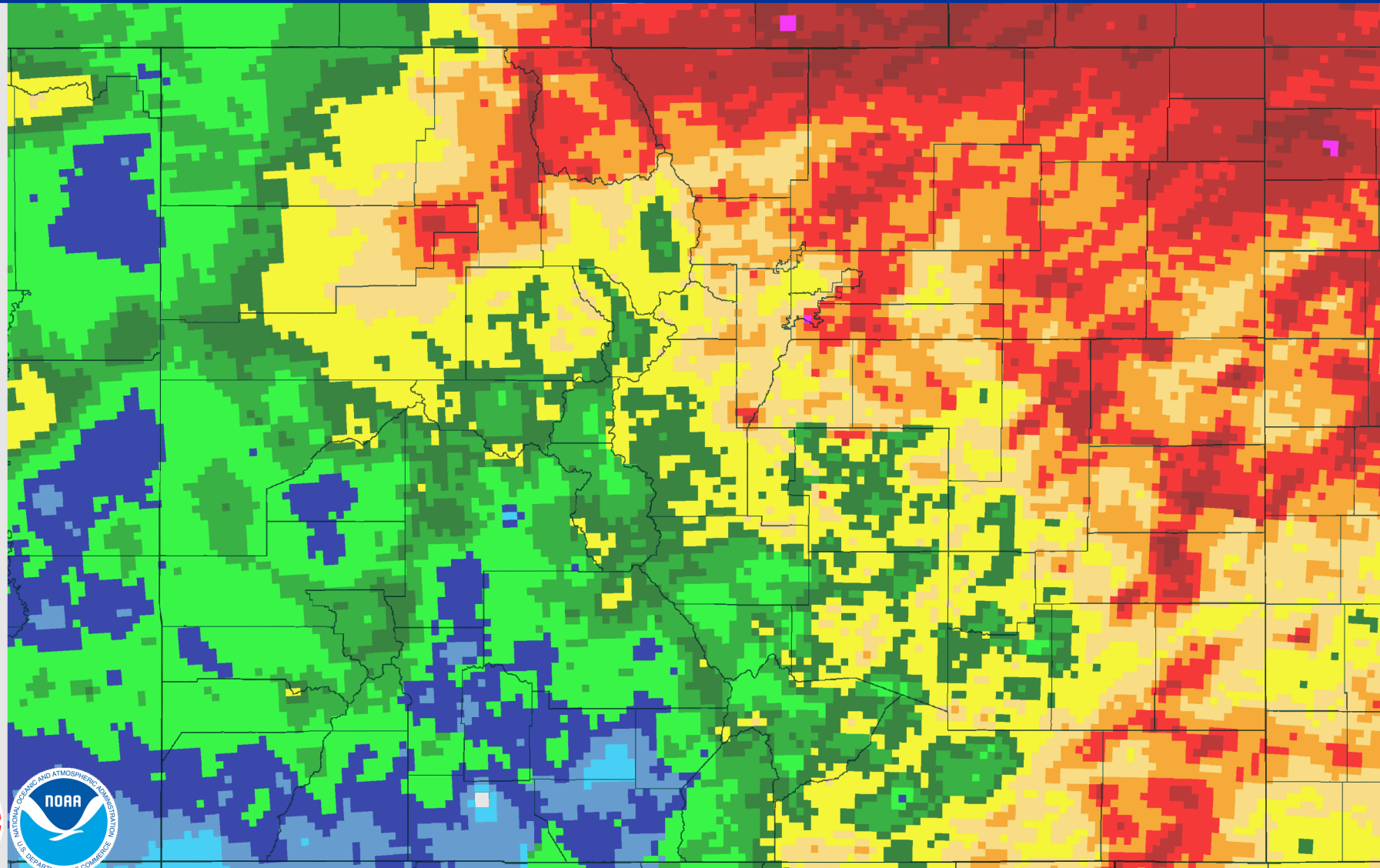
NOAA Regional Climate Centers



June 24, 2019 30-Day Observed Precipitation

Created on: June 25, 2019 - 13:21 UTC

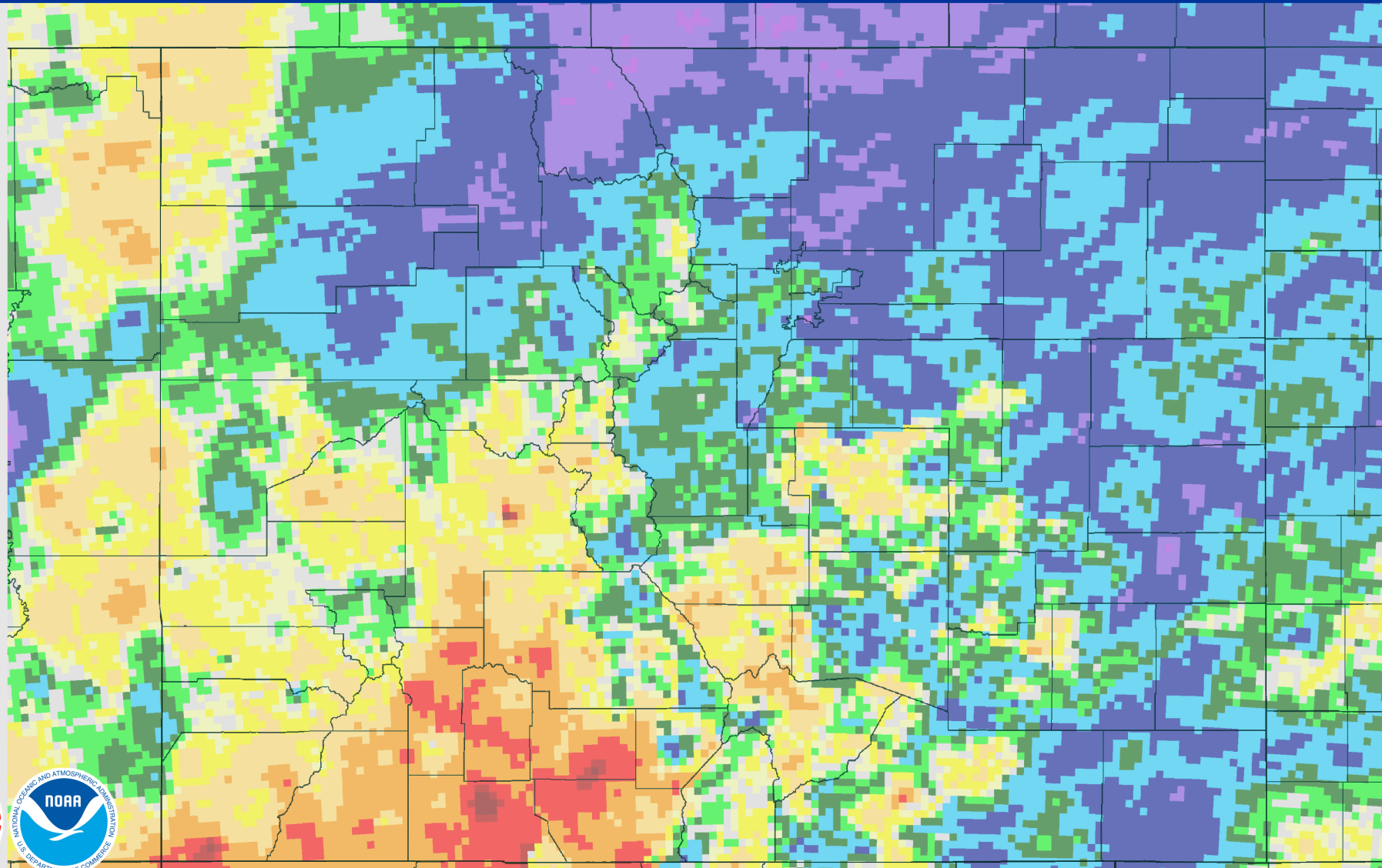
Valid on: June 24, 2019 12:00 UTC



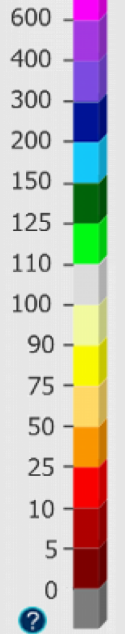
June 24, 2019 30-Day Percent Precipitation

Created on: June 25, 2019 - 13:24 UTC

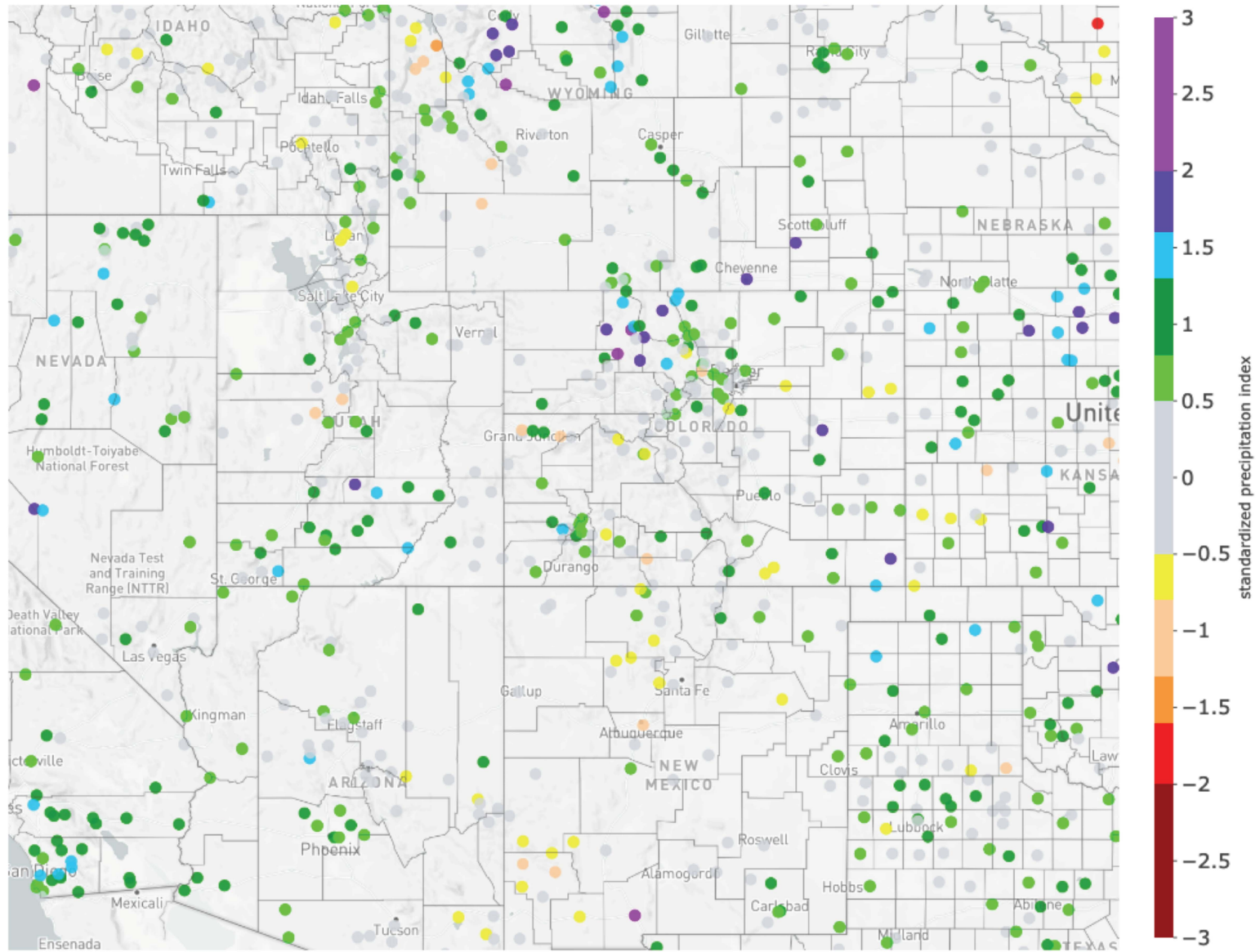
Valid on: June 24, 2019 12:00 UTC



NOAA
Percent



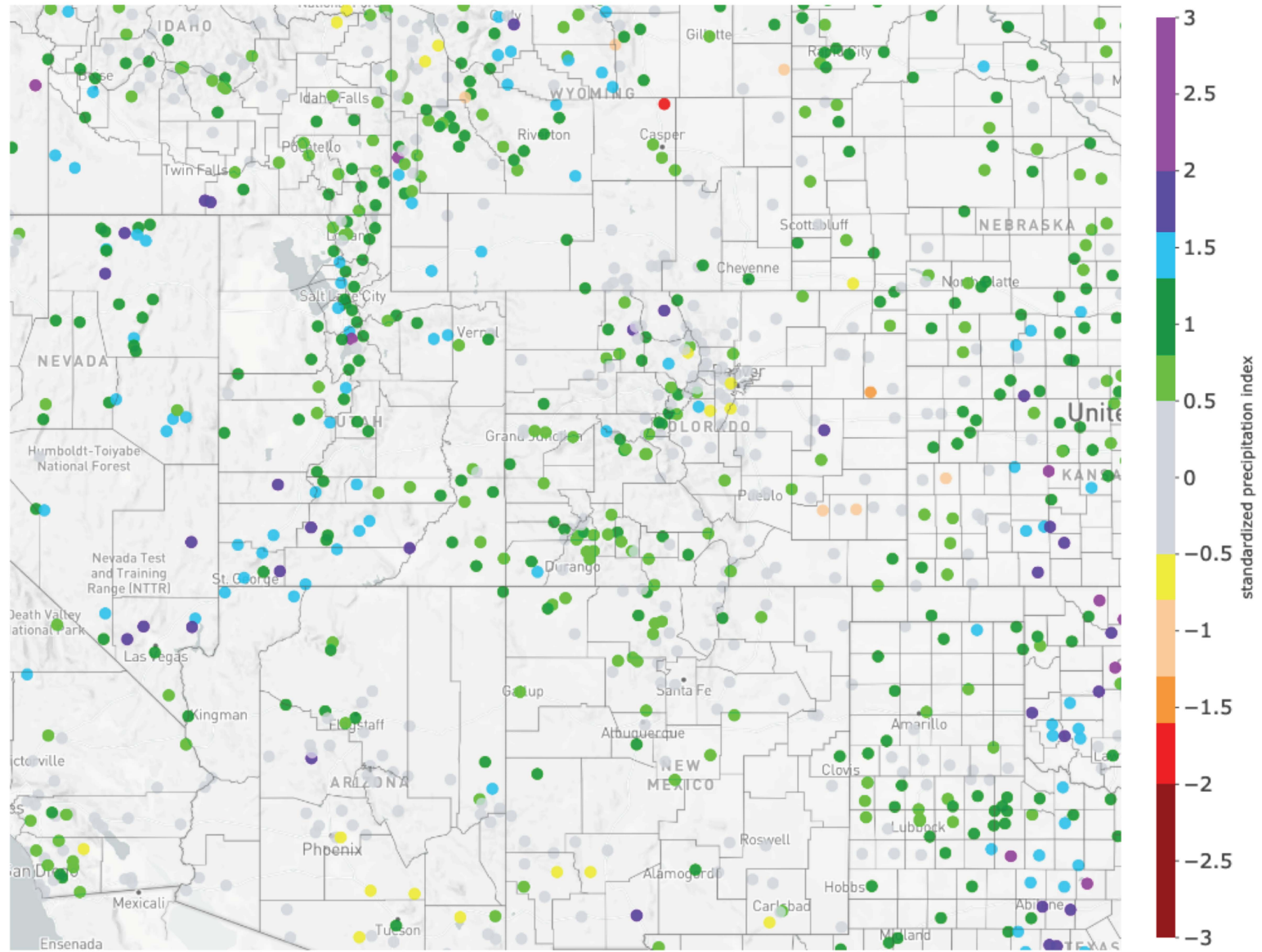
30-day Standardized Precipitation Index: 5/25/2019 - 6/23/2019



<http://climate.colostate.edu/~drought/spi.html>



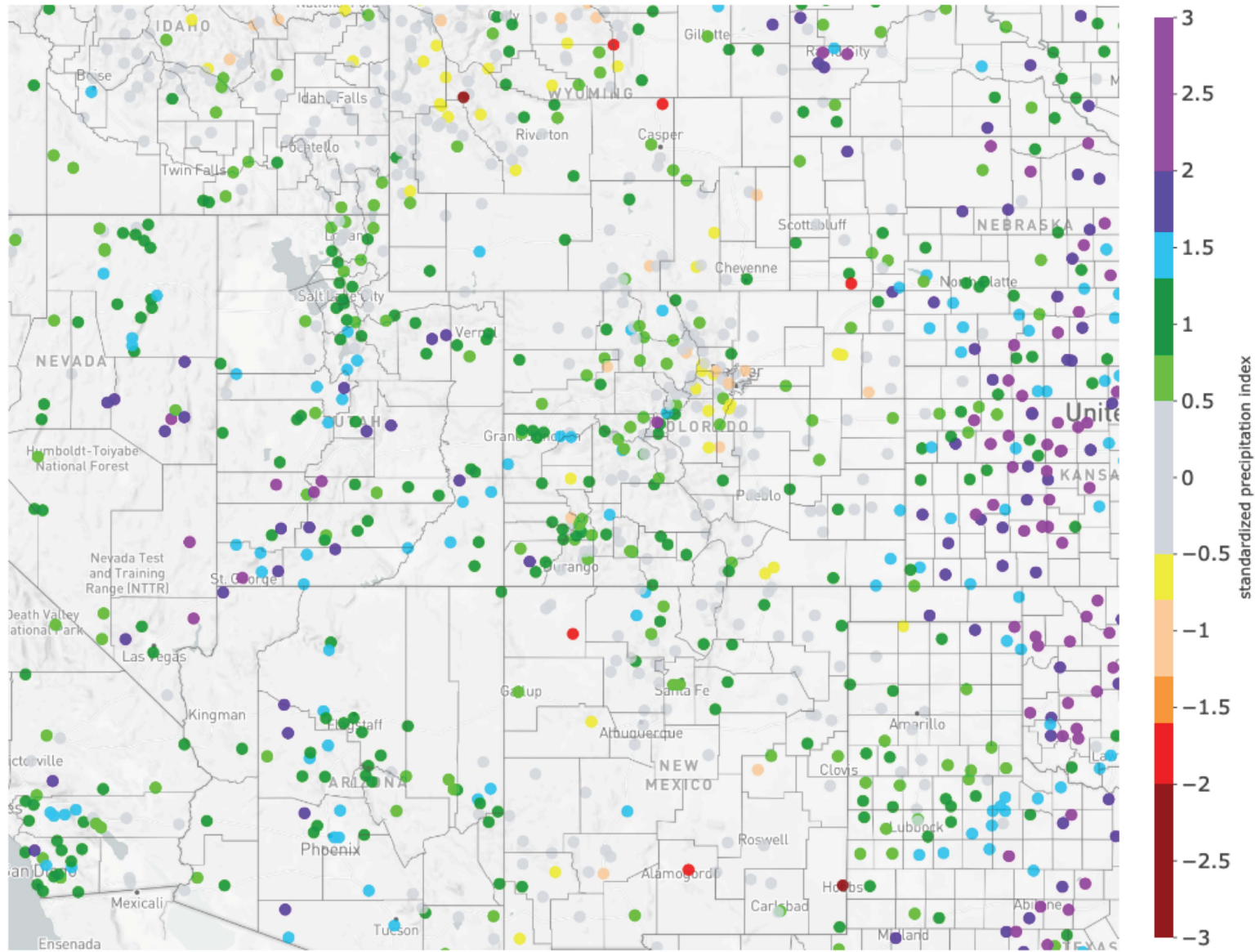
90-day Standardized Precipitation Index: 3/26/2019 - 6/23/2019



<http://climate.colostate.edu/~drought/spi.html>



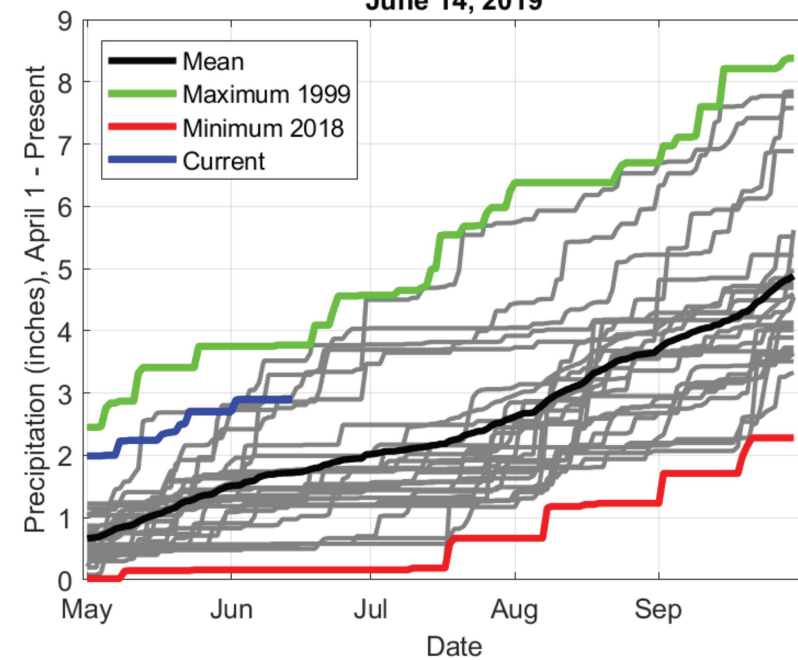
12-month Standardized Precipitation Index: 6/24/2018 - 6/23/2019



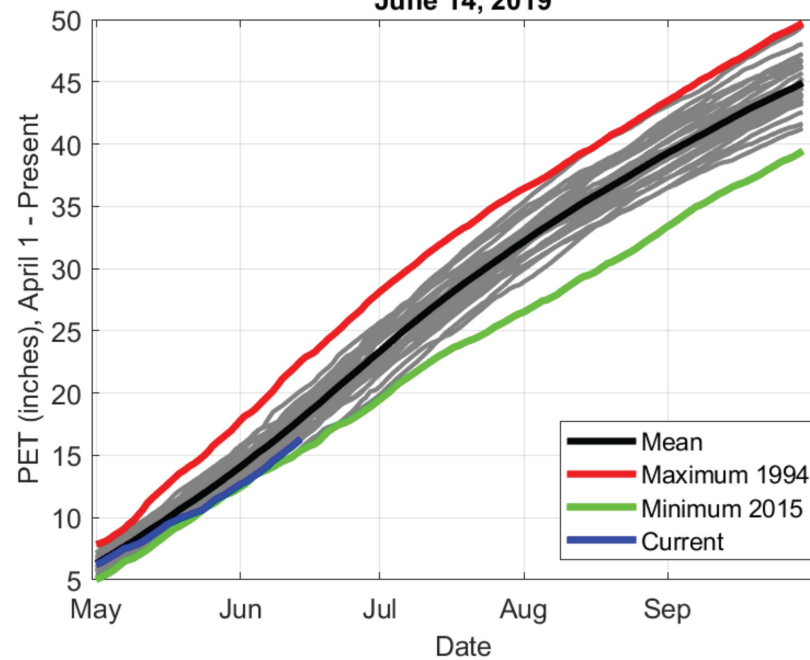
<http://climate.colostate.edu/~drought/spi.html>



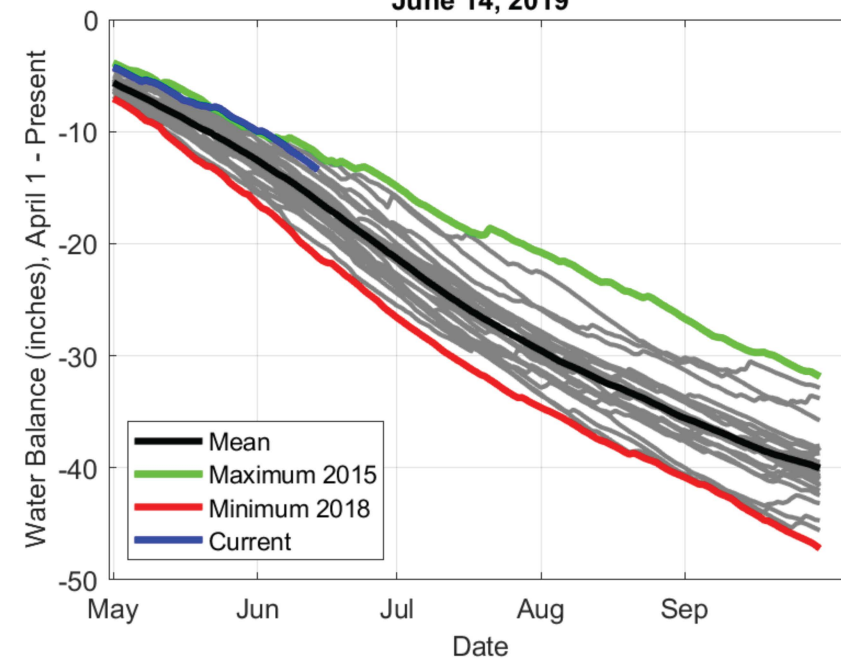
Olathe Growing Season Precipitation
June 14, 2019



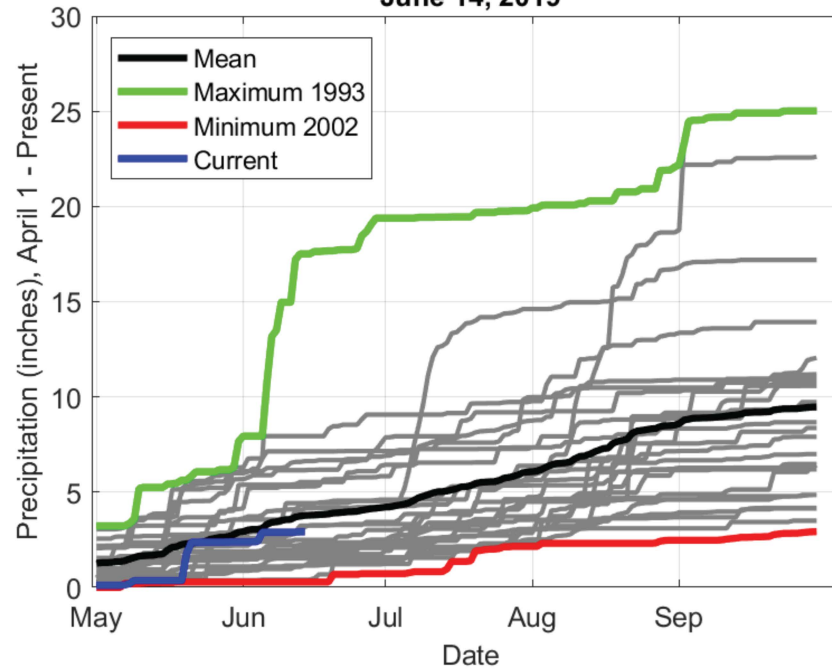
Olathe Growing Season Evaporative Demand
June 14, 2019



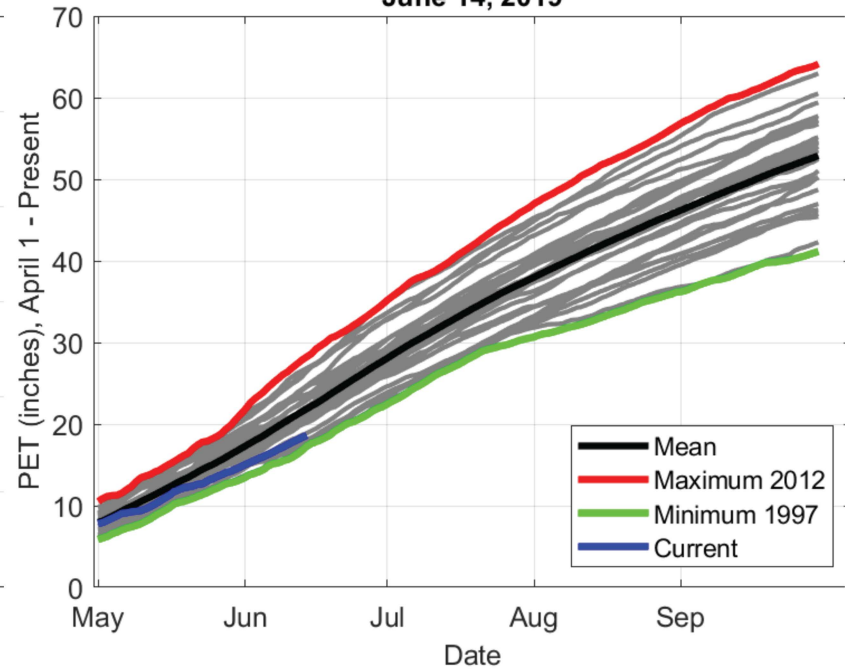
Olathe Growing Season Water Balance
June 14, 2019



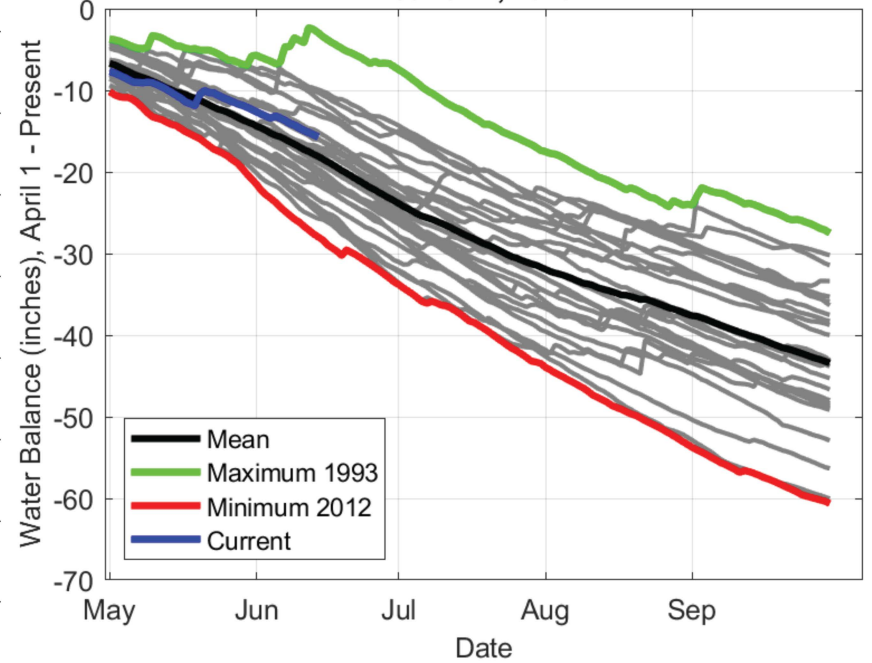
Avondale Growing Season Precipitation
June 14, 2019



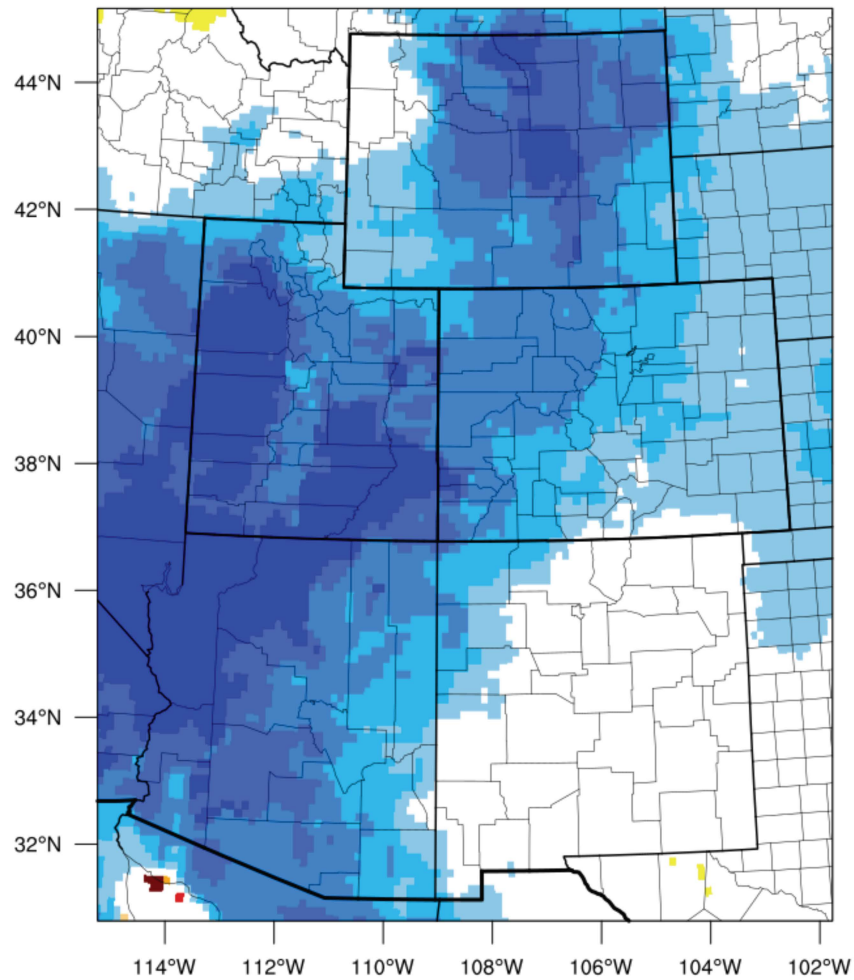
Avondale Growing Season Evaporative Demand
June 14, 2019



Avondale Growing Season Water Balance
June 14, 2019



1-month EDDI categories for June 19, 2019



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



Drought

National Drought

Colorado Drought

Colorado Drought Facts

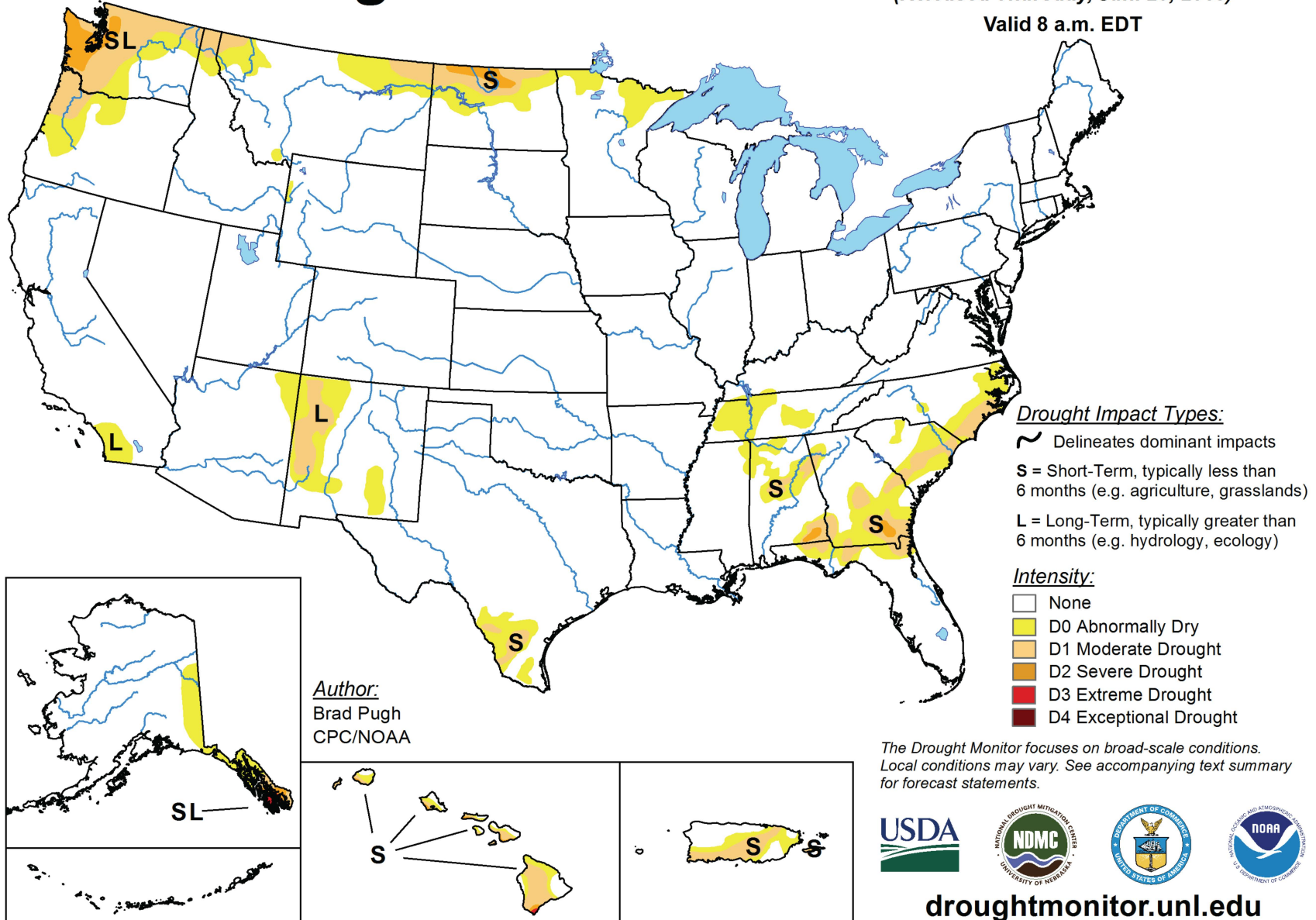


U.S. Drought Monitor

June 18, 2019

(Released Thursday, Jun. 20, 2019)

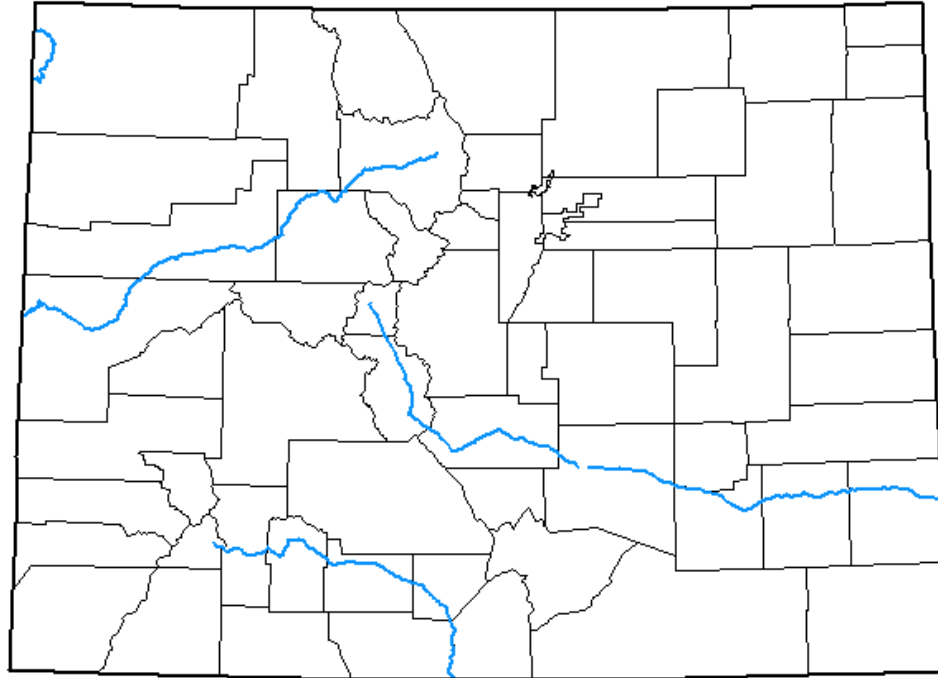
Valid 8 a.m. EDT



U.S. Drought Monitor Colorado

June 18, 2019
(Released Thursday, Jun. 20, 2019)
Valid 8 a.m. EDT

where's the color???



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	100.00	0.00	0.00	0.00	0.00	0.00
Last Week 06-11-2019	100.00	0.00	0.00	0.00	0.00	0.00
3 Months Ago 03-19-2019	53.87	46.13	6.39	0.63	0.00	0.00
Start of Calendar Year 01-01-2019	17.94	82.06	66.26	54.91	27.11	11.22
Start of Water Year 09-25-2018	14.19	85.81	72.30	64.41	48.47	16.21
One Year Ago 06-19-2018	21.33	78.67	66.90	50.67	34.19	7.79

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. See accompanying text summary for forecast statements.

Author:

Brad Pugh
CPC/NOAA



droughtmonitor.unl.edu



Colorado Drought Monitor Facts

- Last month, we reported:
 - Since the beginning of the US Drought Monitor, our state has never been completely free of D0 – D4.
 - Our record smallest amount of D0 occurred in May 2001, when only 0.13% of our state showed D0.
- Since then:
 - We became the last state to finally report a week of no D0-D4.
 - We've had 4 weeks of no D0-D4

Week	None	D0-D4
2019-06-18	100.00	0.00
2019-06-11	100.00	0.00
2019-06-04	100.00	0.00
2019-05-28	100.00	0.00
2019-05-21	99.99	0.01
2001-06-05	99.87	0.13
2001-05-29	99.87	0.13
2001-05-22	99.87	0.13
2001-05-15	99.87	0.13
2001-05-08	99.87	0.13





Outlook

Next 7 days

8-14 day Outlook

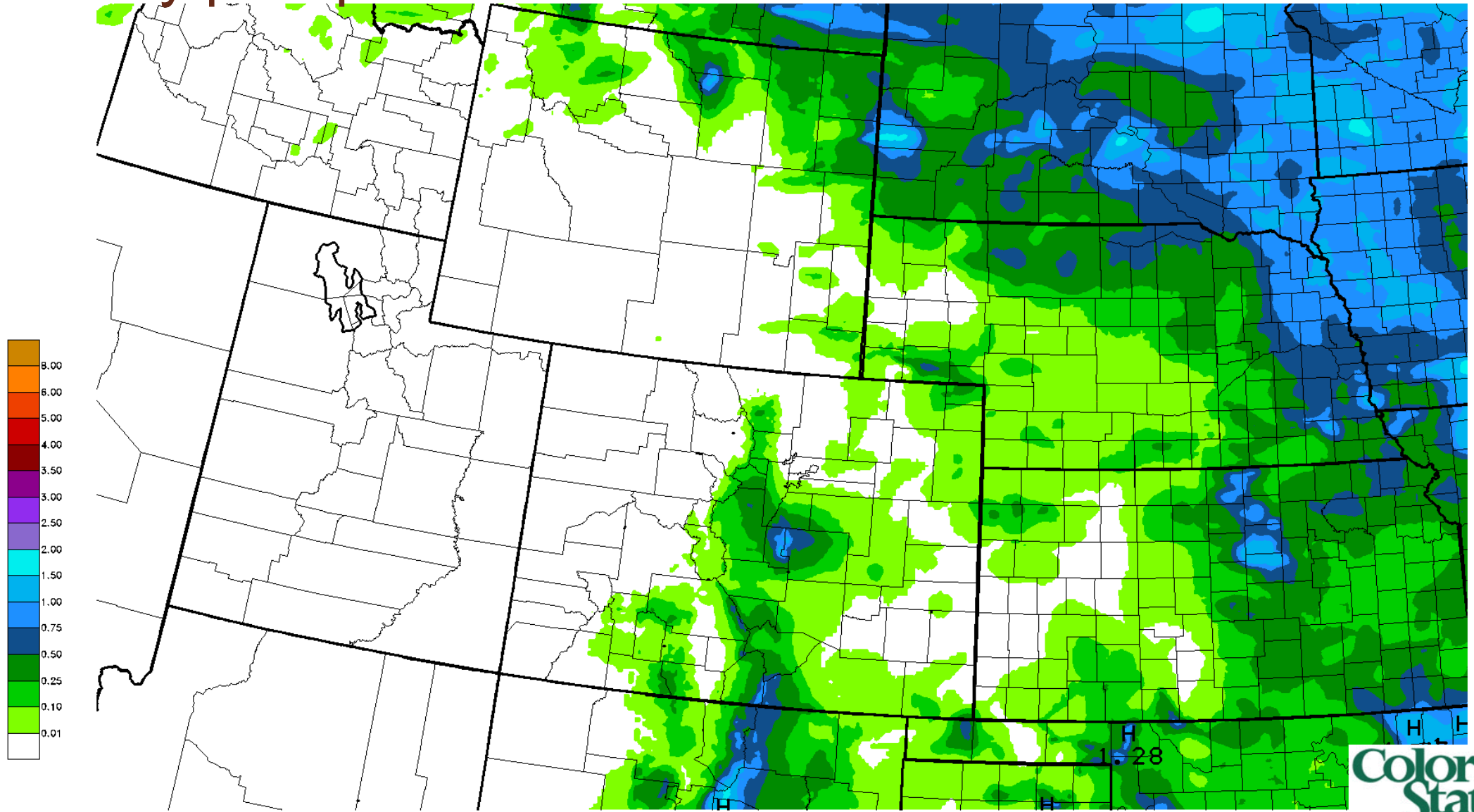
CPC Outlooks

Precipitation Projections

What does El Niño mean?



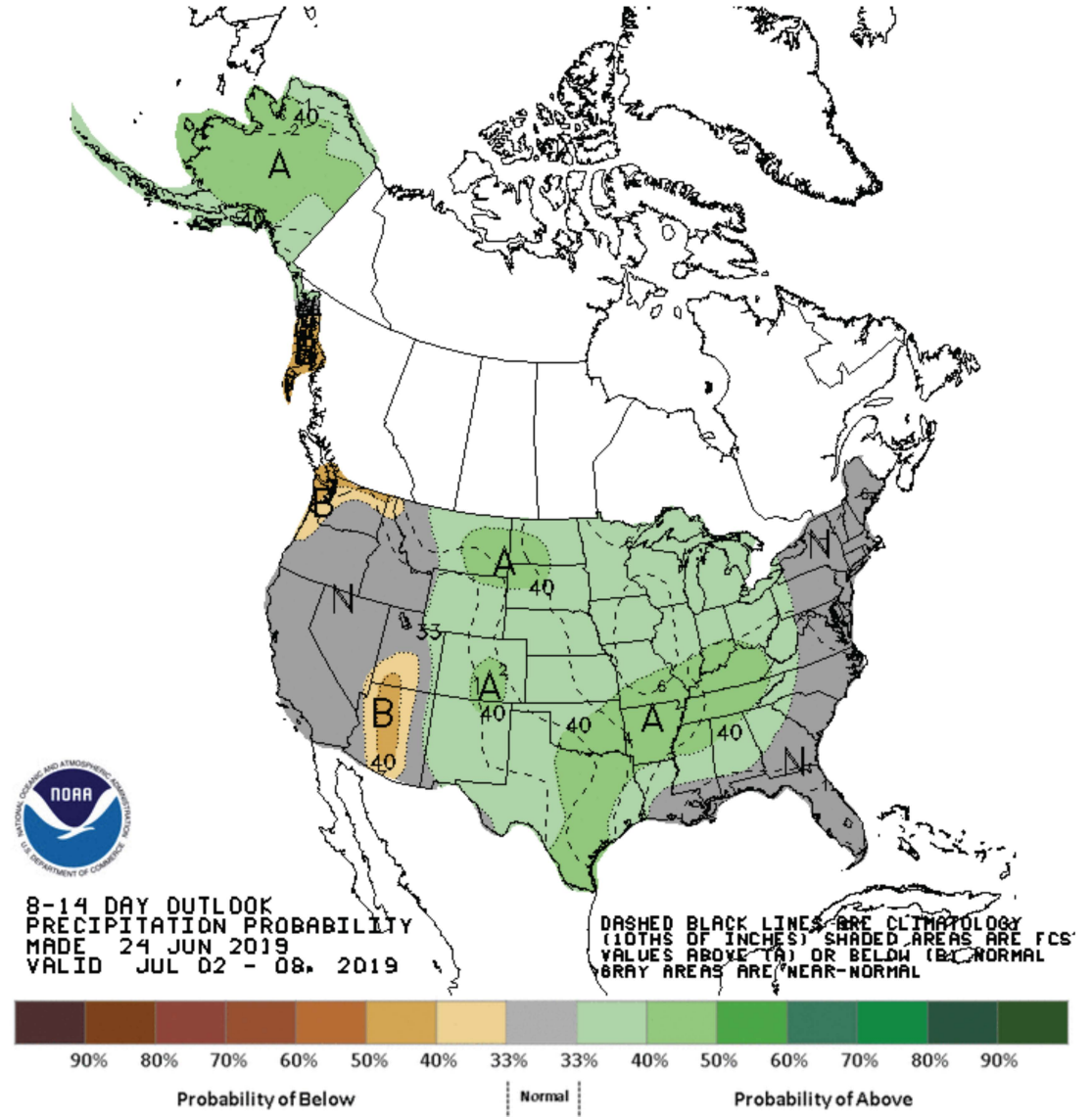
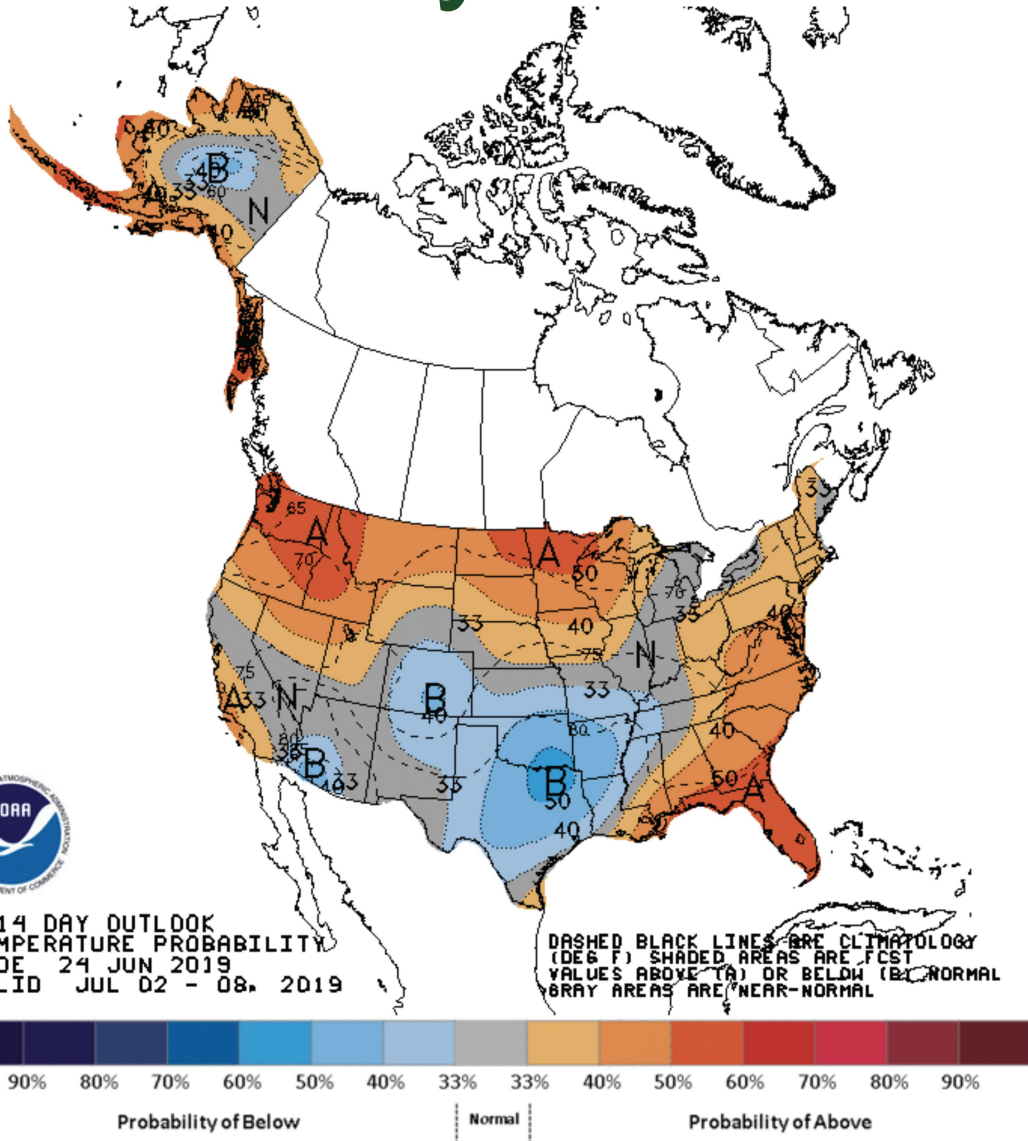
NOAA 7-day precip forecast



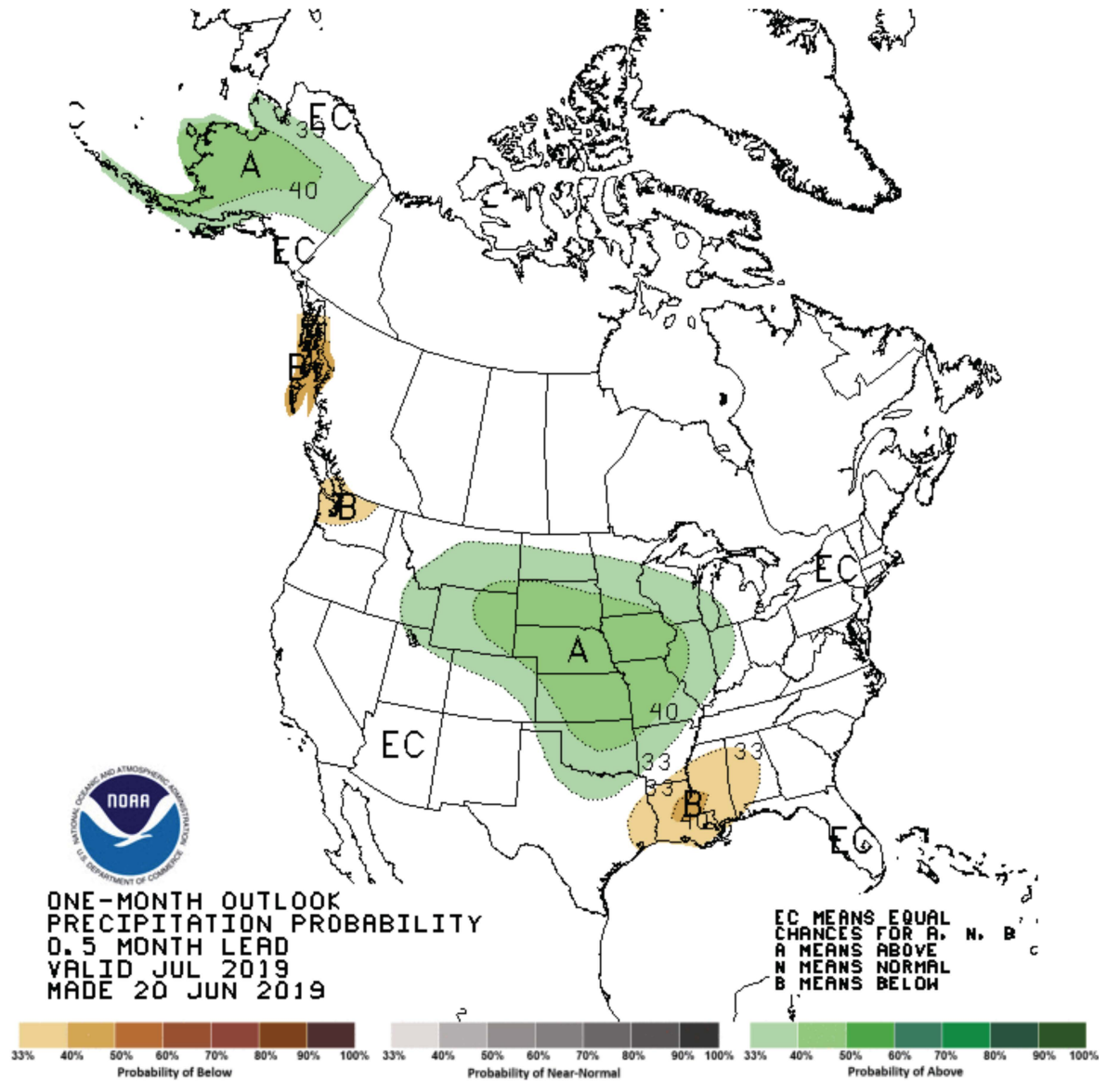
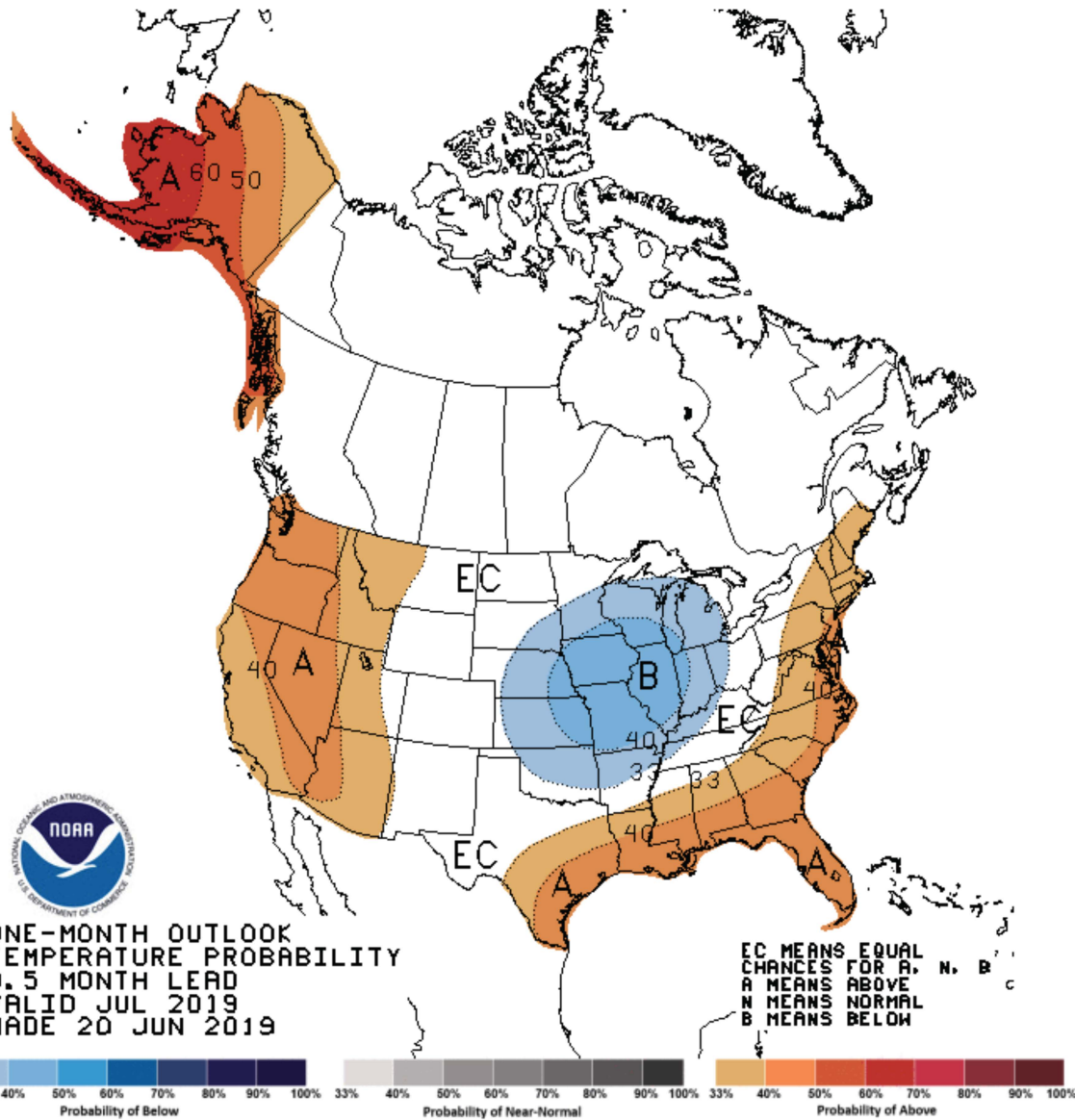
WPC FORECAST PRECIPITATION (INCHES) IN 7 DAYS ENDING TUE 190702/1200V168
FORECAST ISSUED 190625/1200F168



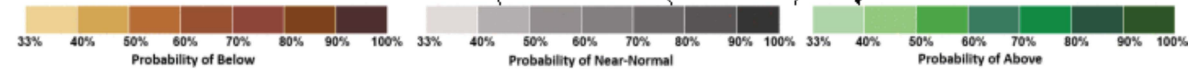
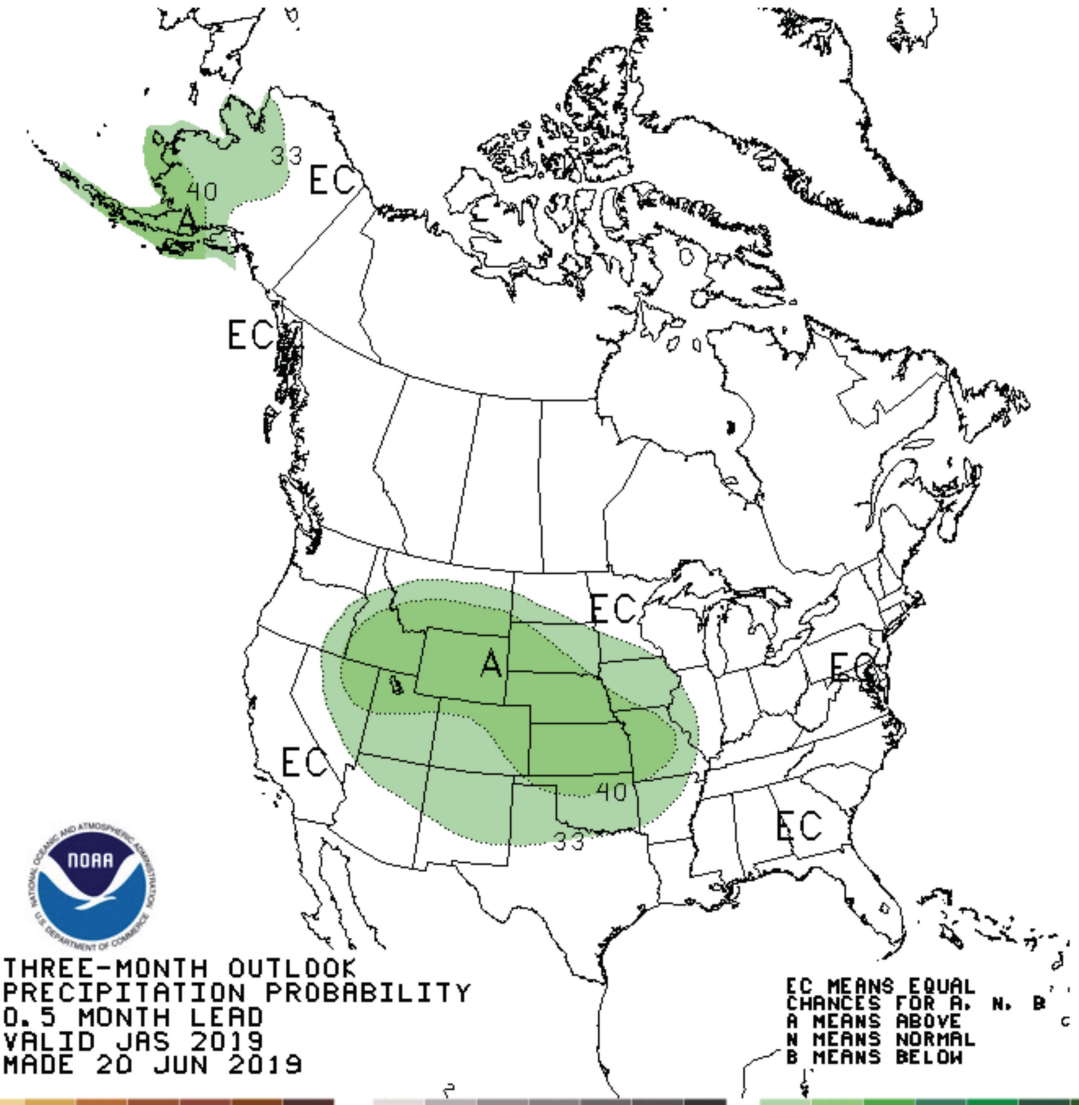
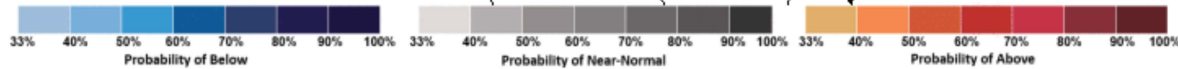
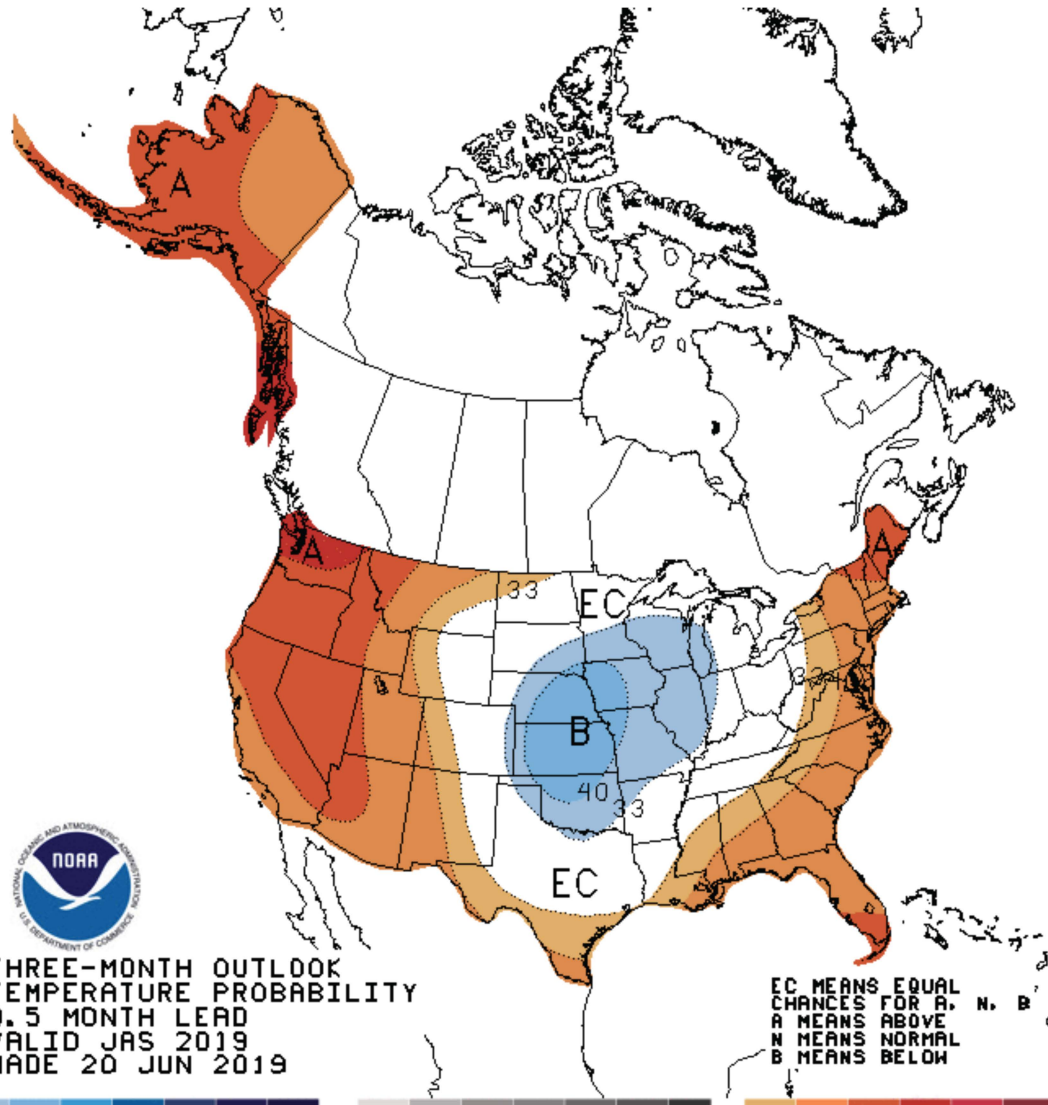
8-14 day outlook



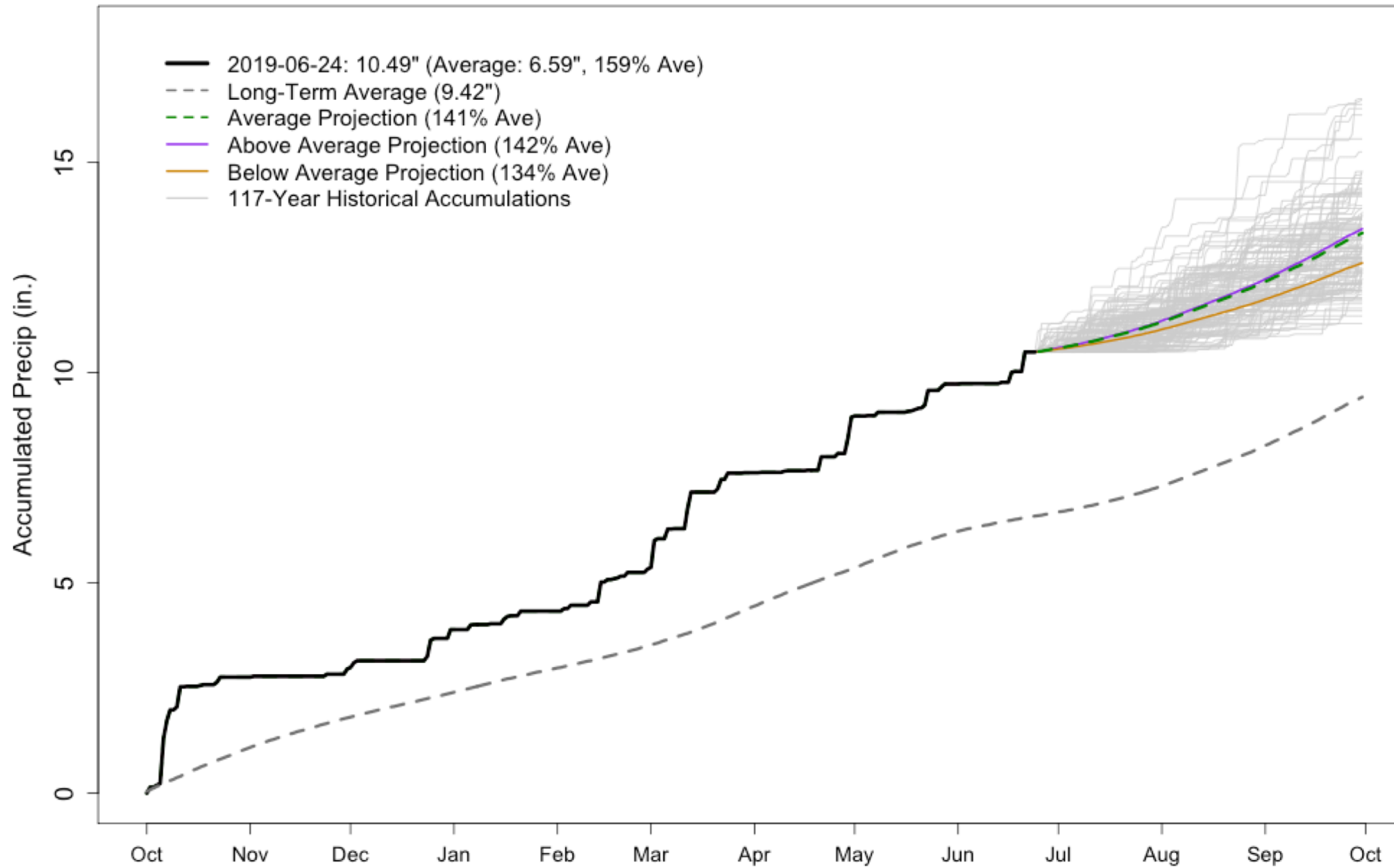
One Month Outlook



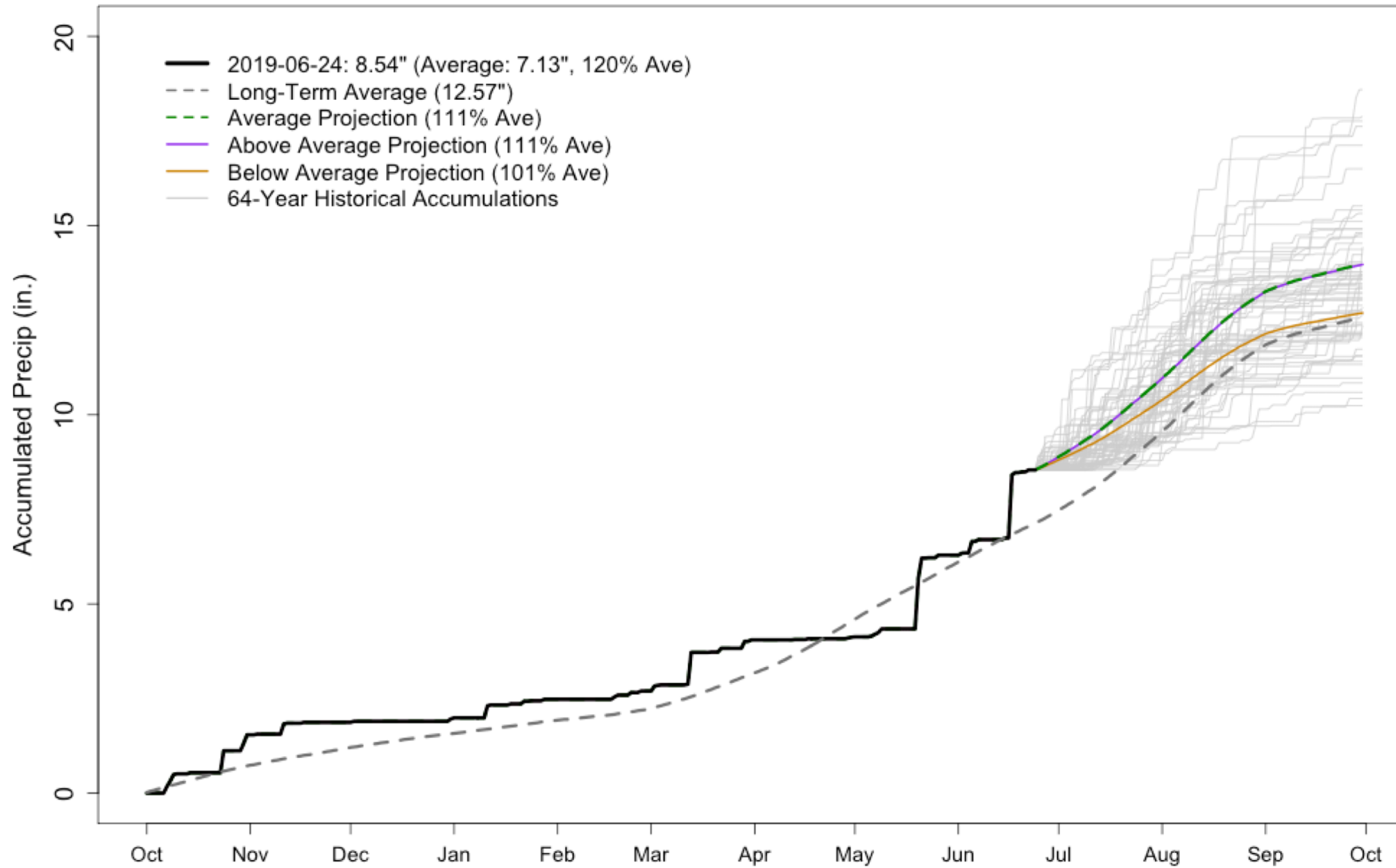
Jul-Aug-Sep Outlook



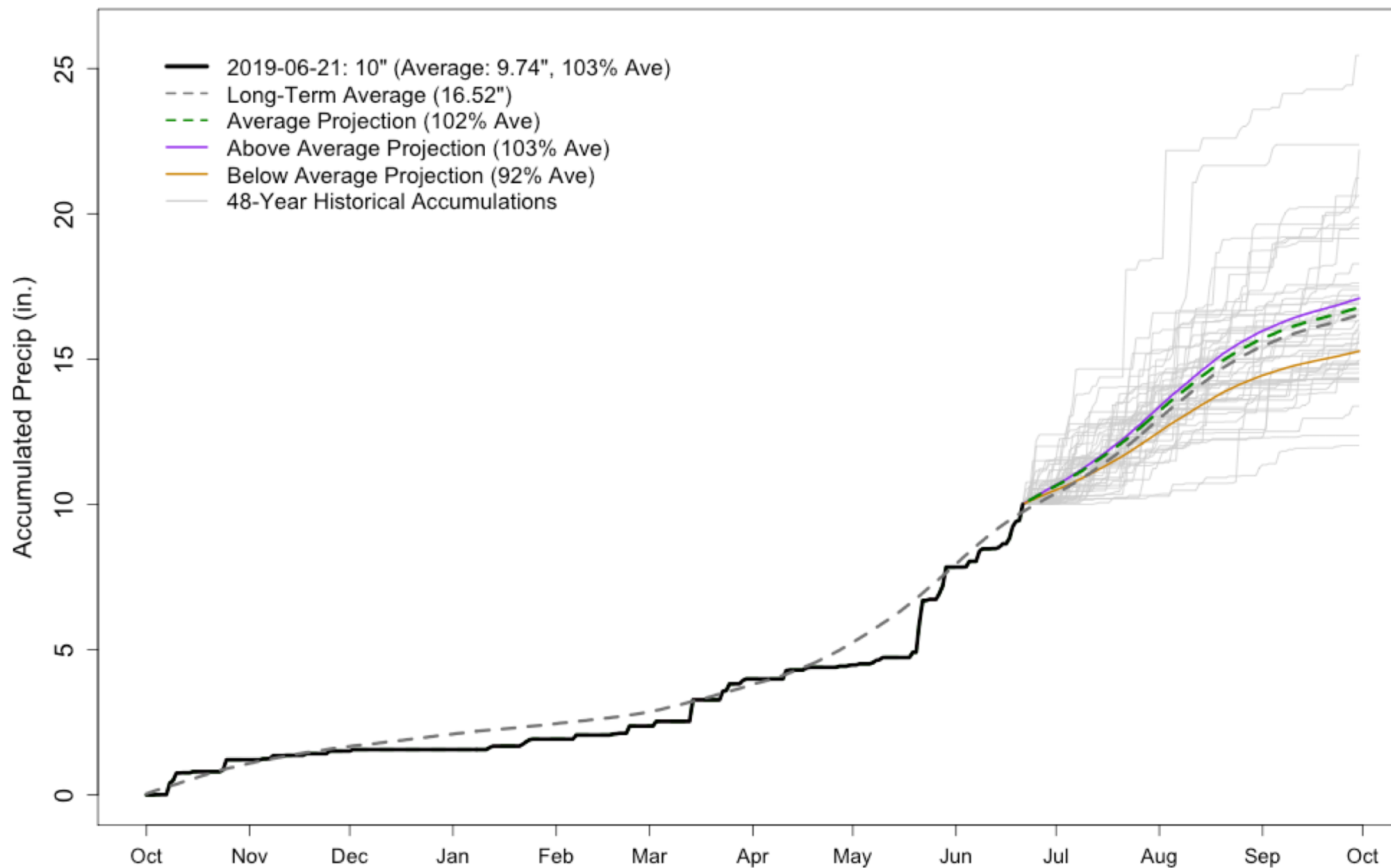
GRAND JUNCTION WALKER FIELD WY2019 Precipitation Projections



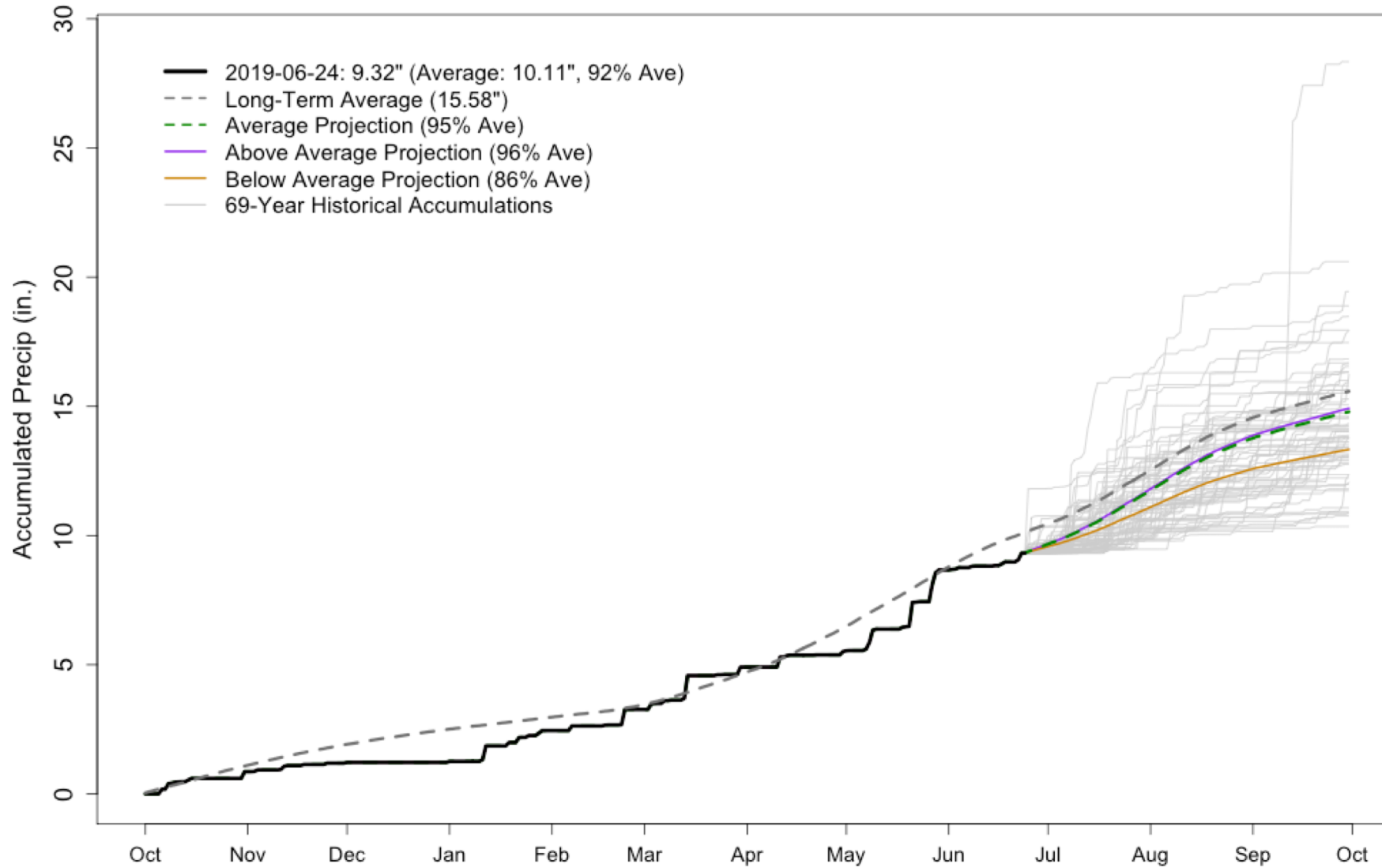
PUEBLO MEMORIAL AP WY2019 Precipitation Projections



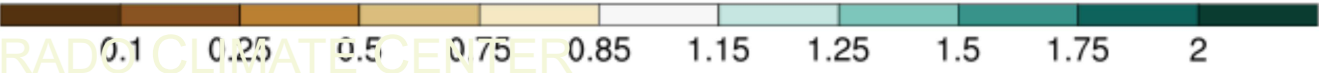
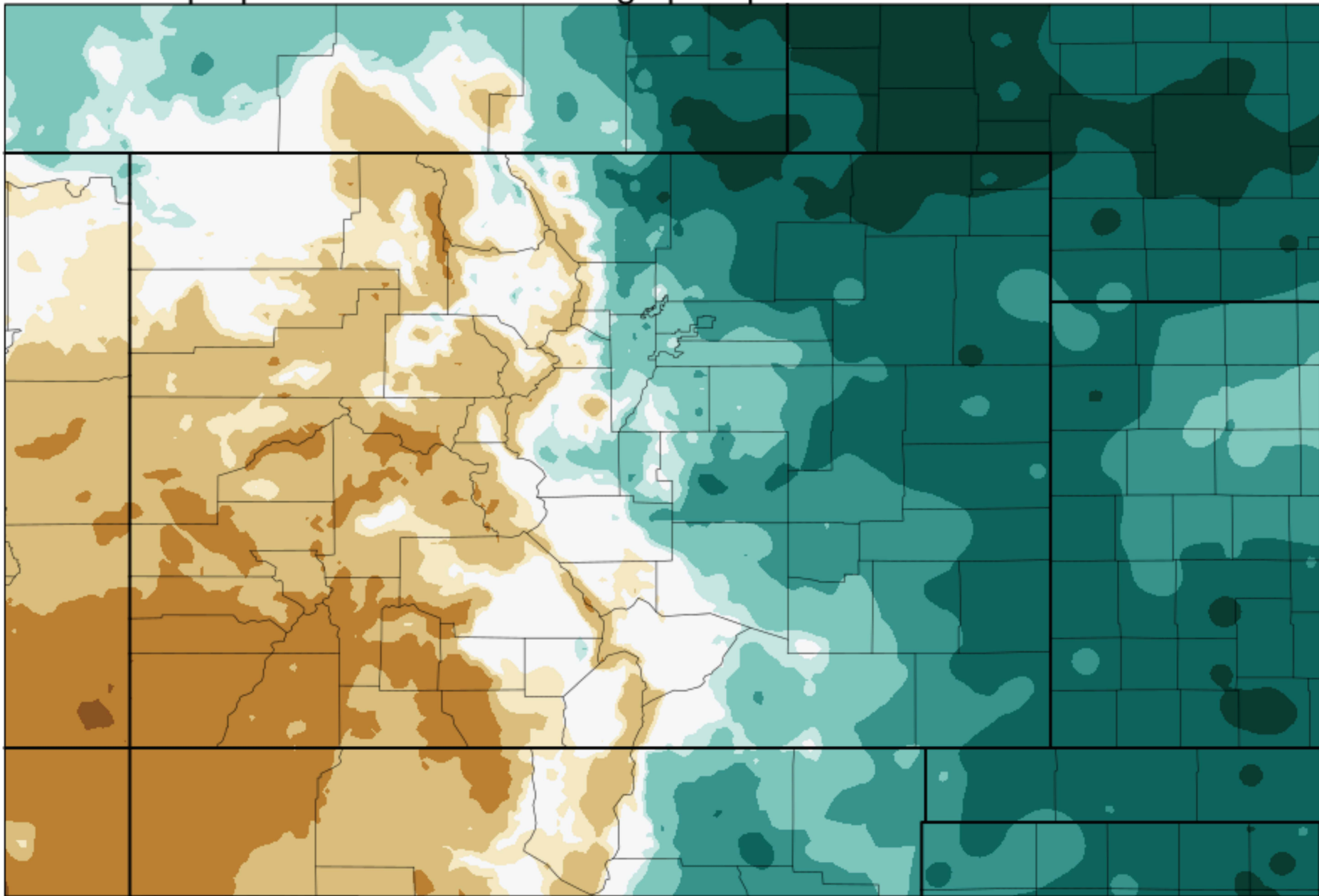
AKRON 4 E WY2019 Precipitation Projections



DENVER-STAPELTON WY2019 Precipitation Projections



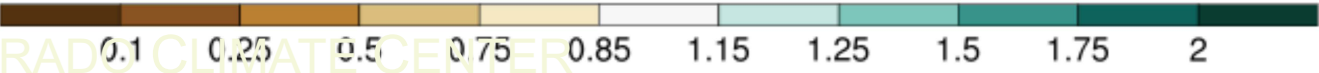
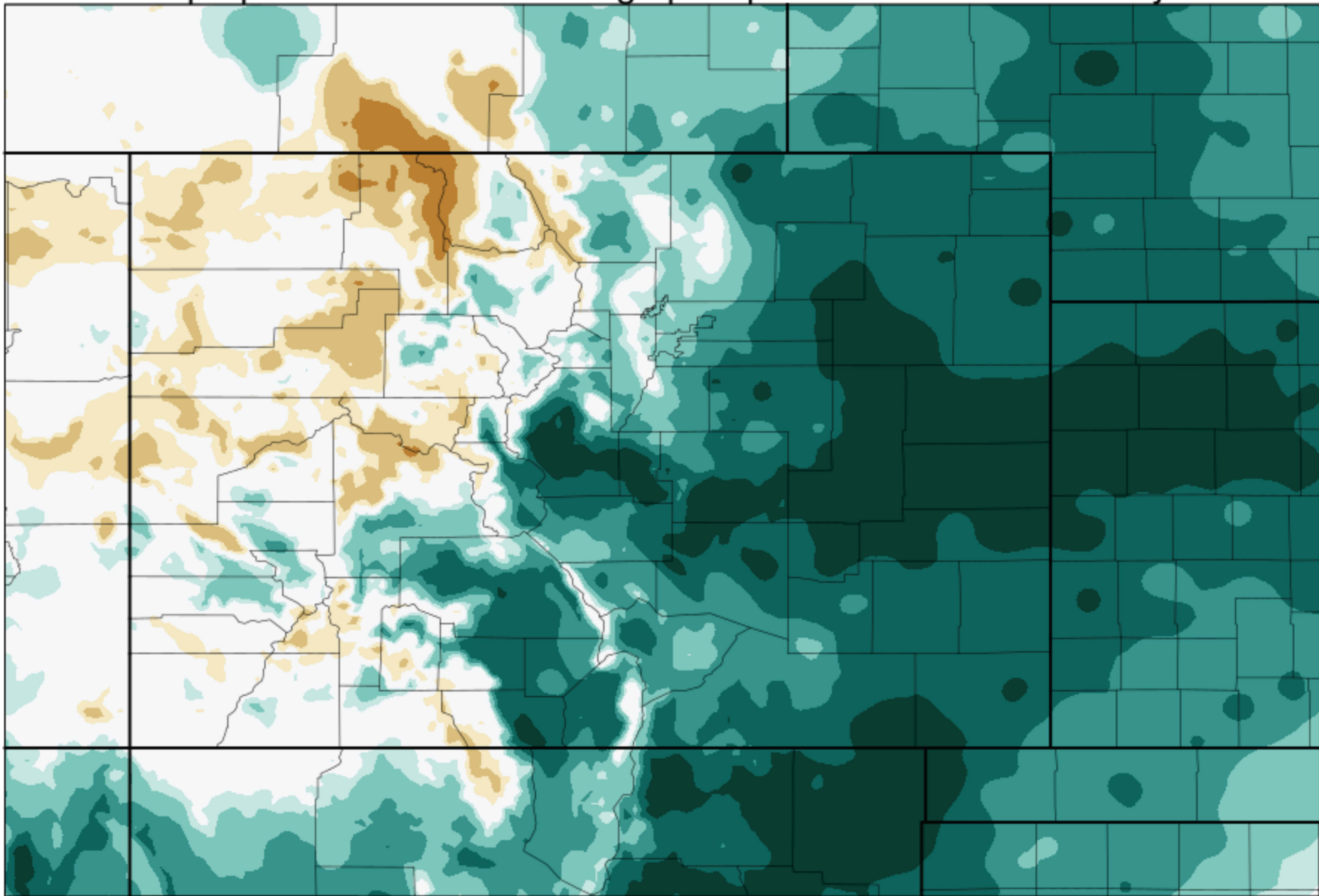
PRISM proportion of annual average precipitation in this month: June



Proportion of precip relative to 1/12th



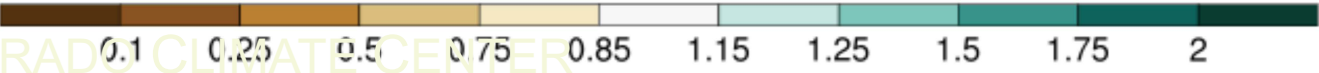
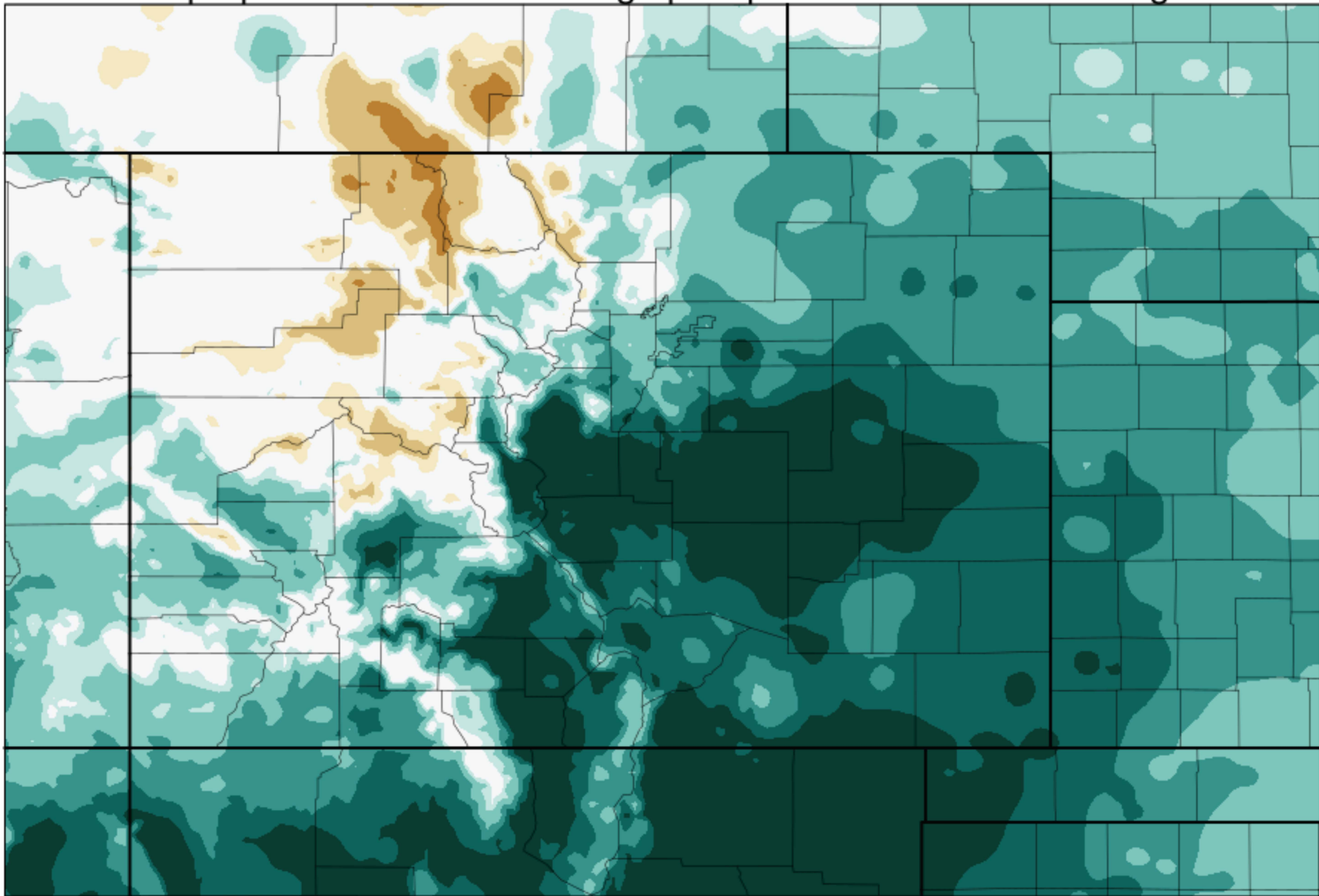
PRISM proportion of annual average precipitation in this month: July



Proportion of precip relative to 1/12th



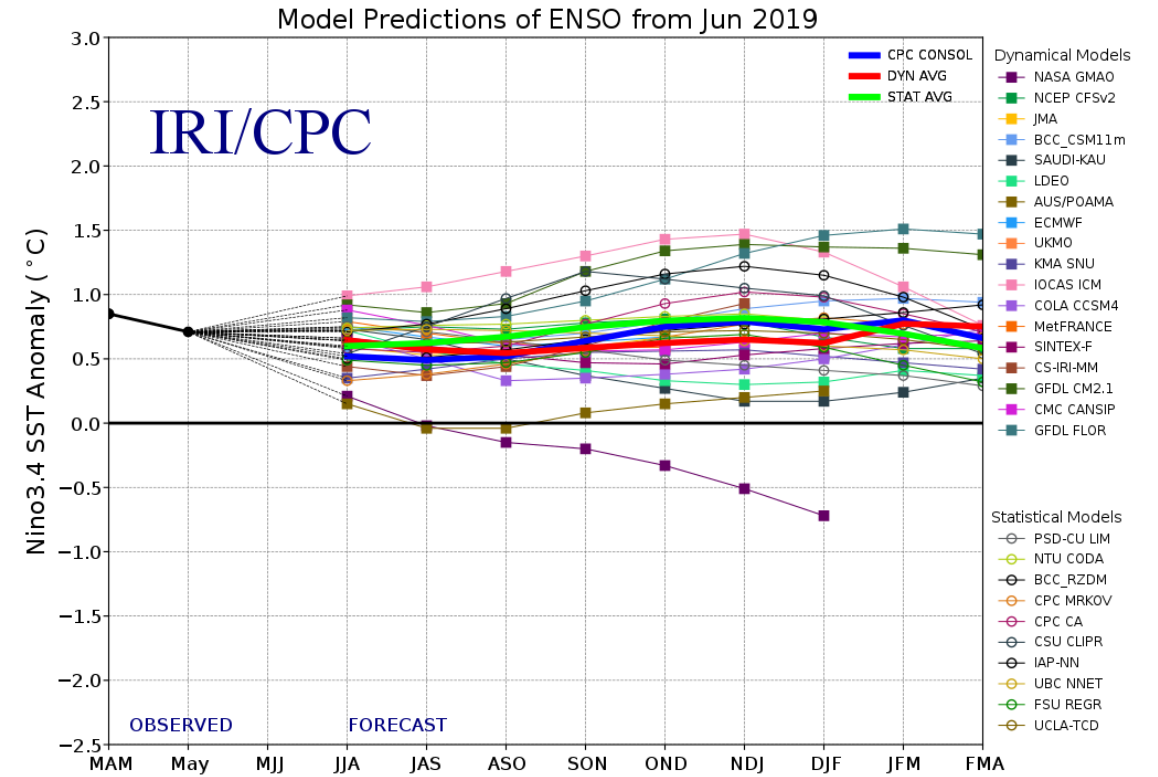
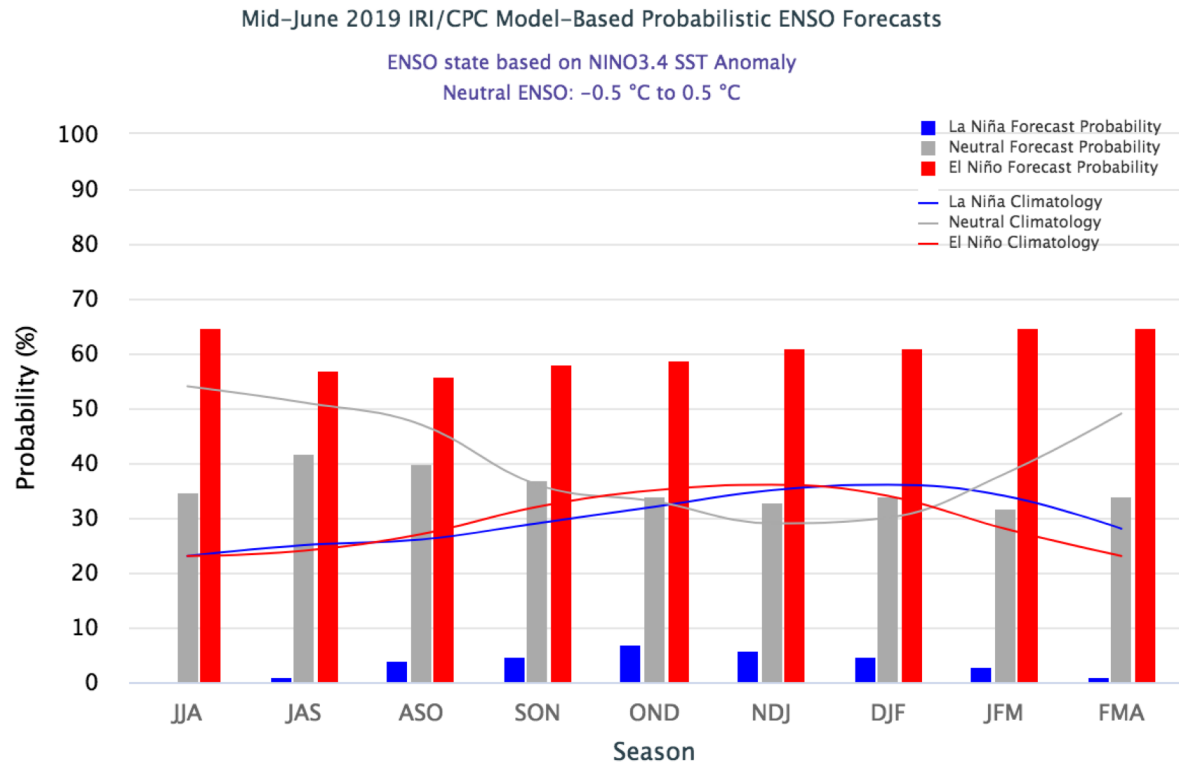
PRISM proportion of annual average precipitation in this month: August



Proportion of precip relative to 1/12th



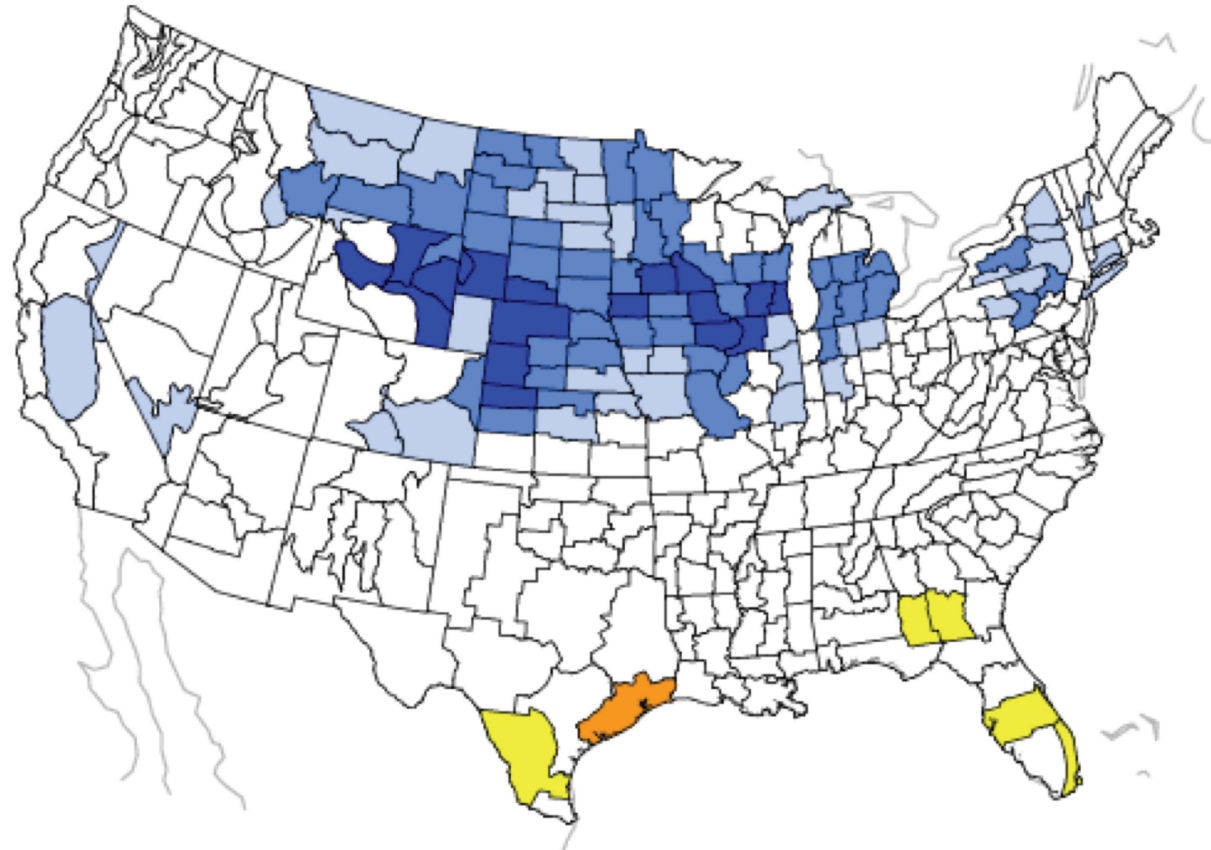
What's the El Niño forecast?



An El Niño advisory is in effect...



JAS Temperature During El Nino Increased Risk of Warm or Cold Extremes



Percent (%) Increase in Risk

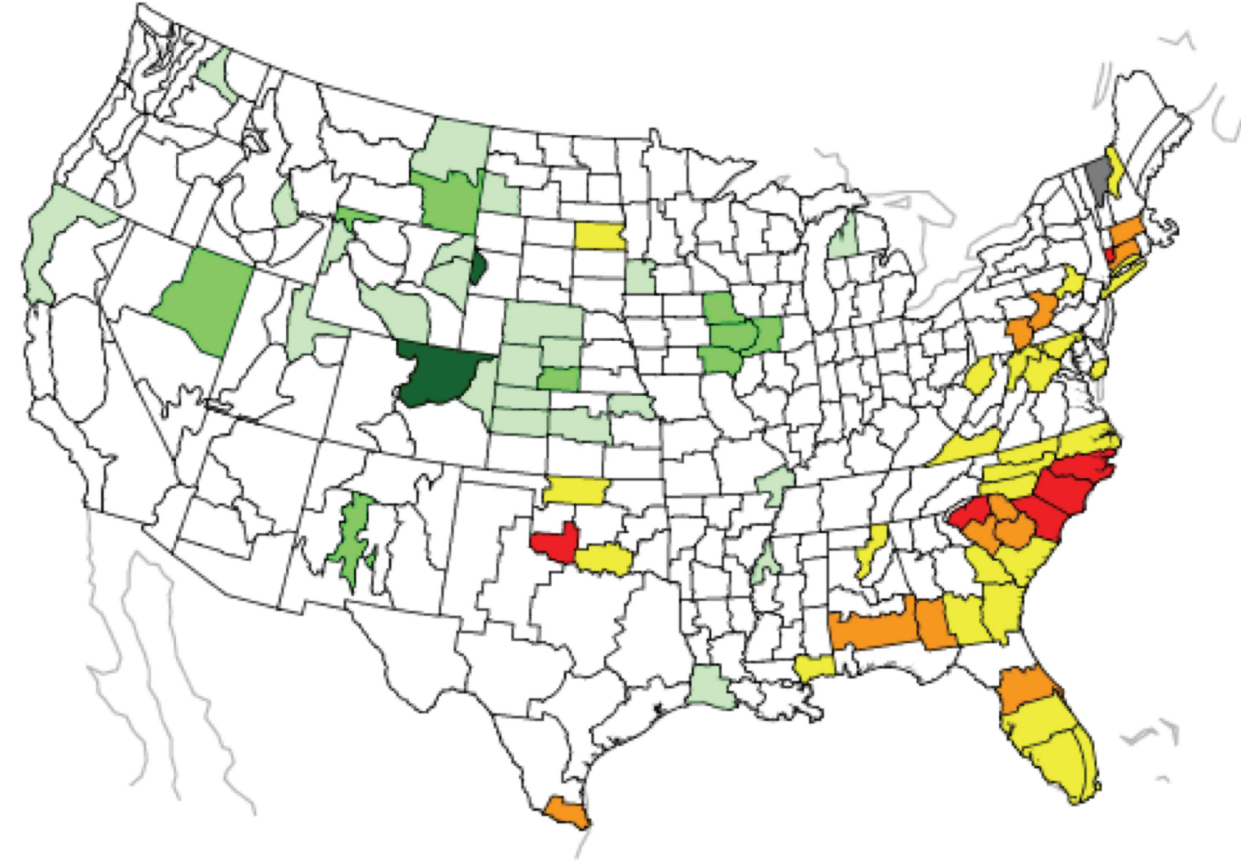
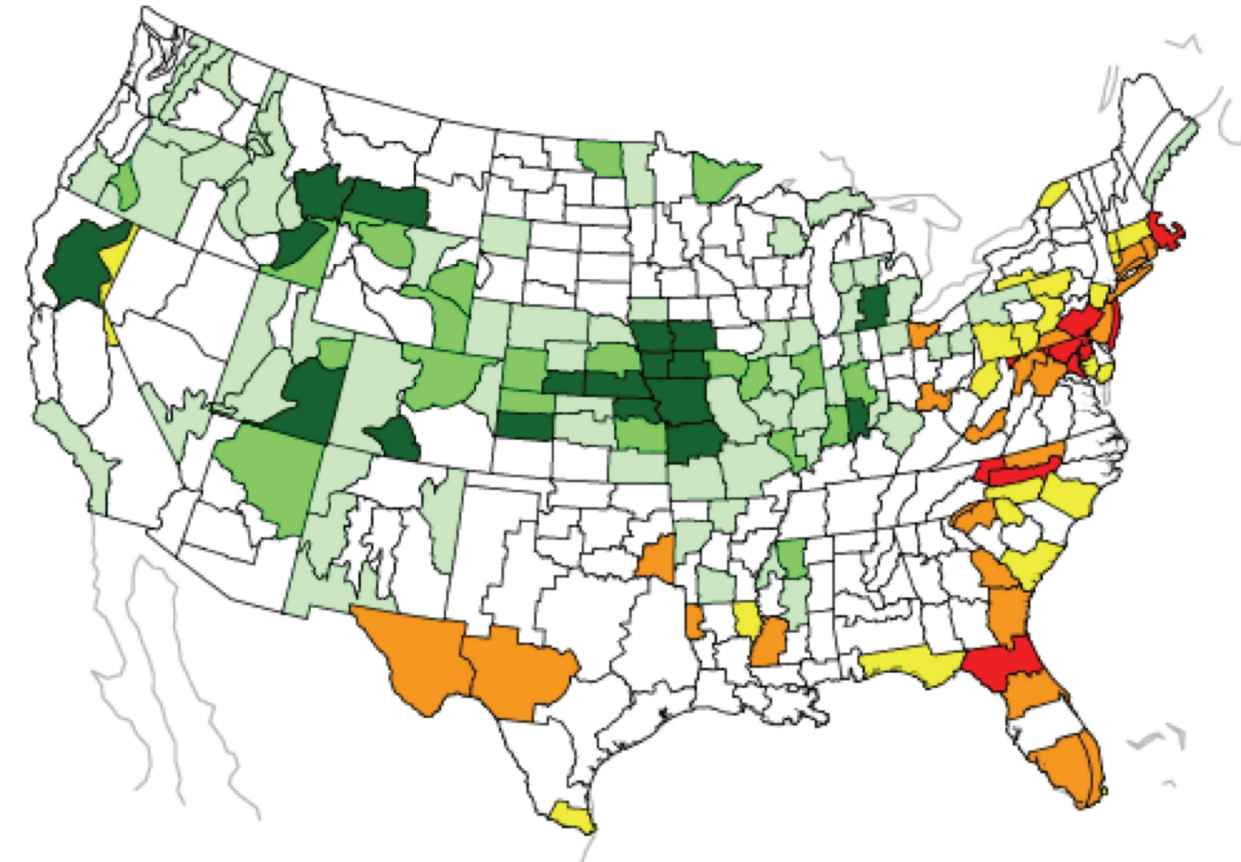
NOAA/ESRL/PSD

<https://www.esrl.noaa.gov/psd/enso/climaterisks/>



JAS Precipitation During El Nino
Increased Risk of Wet or Dry Extremes

JAS Precipitation During El Nino
Decreased Risk of Wet or Dry Extremes



Percent (%) Increase in Risk

NOAA/ESRL/PSD



Percent (%) Decrease in Risk

<https://www.esrl.noaa.gov/psd/enso/climaterisks/>



Nolan sez:

- “I think we will be in for a late July upslope event somewhere on the Front Range with heavy rains and flash flood potential”



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**To view this and other presentations:
http://climate.colostate.edu/ccc_archive.html**

Thank you



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