

# Colorado Climate Center — *WATF Climate Update*

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Russ Schumacher

Water Availability Task Force

June 25, 2019



COLORADO  
CLIMATE  
CENTER



ATMOSPHERIC SCIENCE  
COLORADO STATE UNIVERSITY

## 2019 Water Year To Date

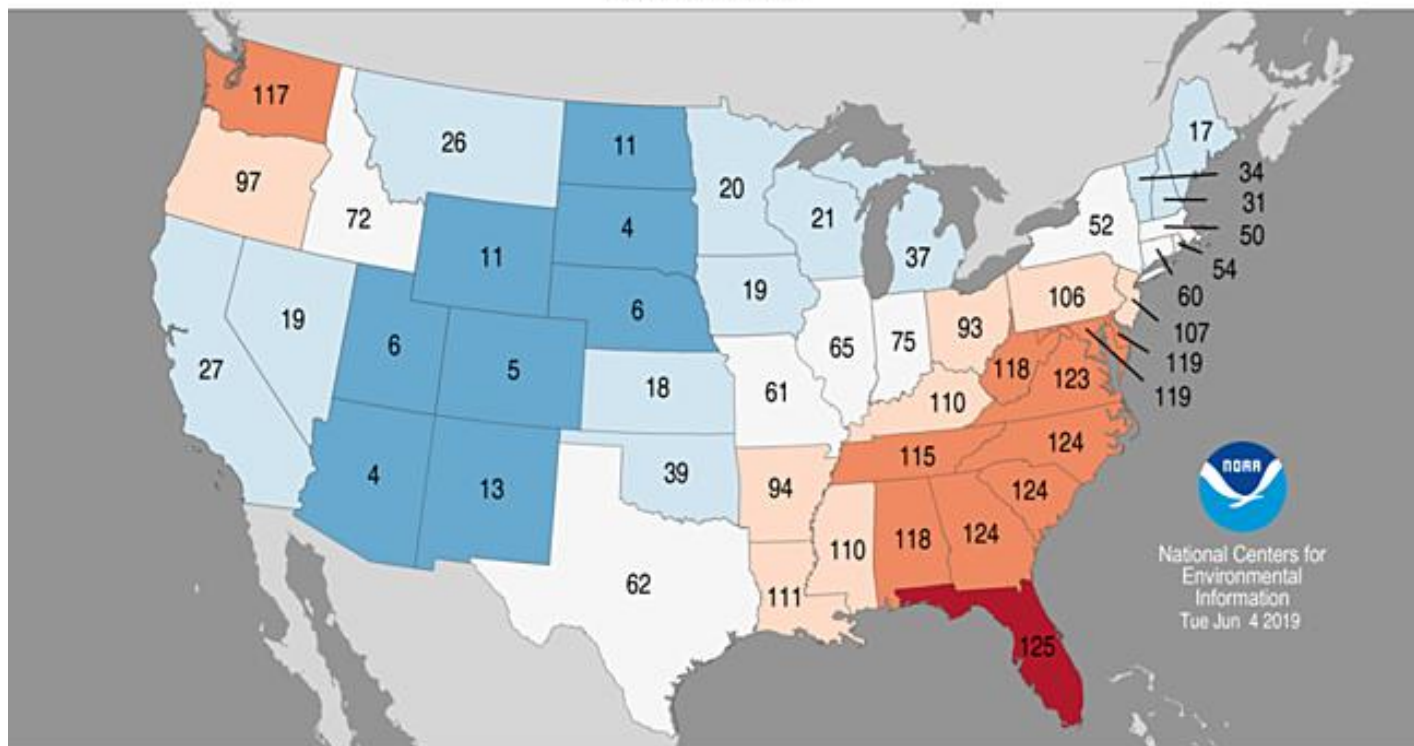
temperature, precipitation,  
evaporative demand



## Statewide Average Temperature Ranks

May 2019

Period: 1895–2019



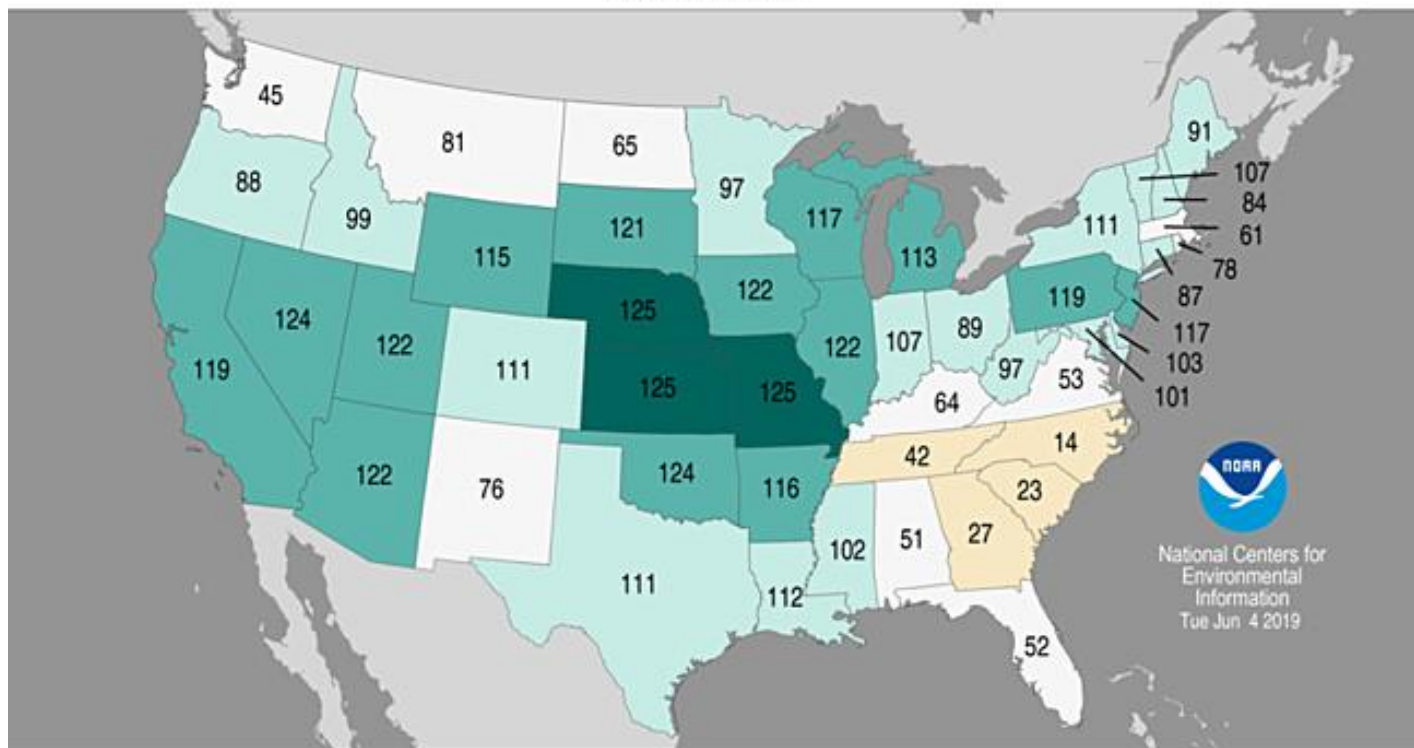
Month	T Rank	
Oct	35 <sup>th</sup>	coldest
Nov	39 <sup>th</sup>	coldest
Dec	80 <sup>th</sup>	average
Jan	36 <sup>th</sup>	warmest
Feb	28 <sup>th</sup>	coldest
Mar	66 <sup>th</sup>	average
Apr	18 <sup>th</sup>	warmest
May	5 <sup>th</sup>	coldest



## Statewide Precipitation Ranks

May 2019

Period: 1895–2019



National Centers for  
Environmental  
Information  
Tue Jun 4 2019

**8<sup>th</sup> wettest October – May**

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



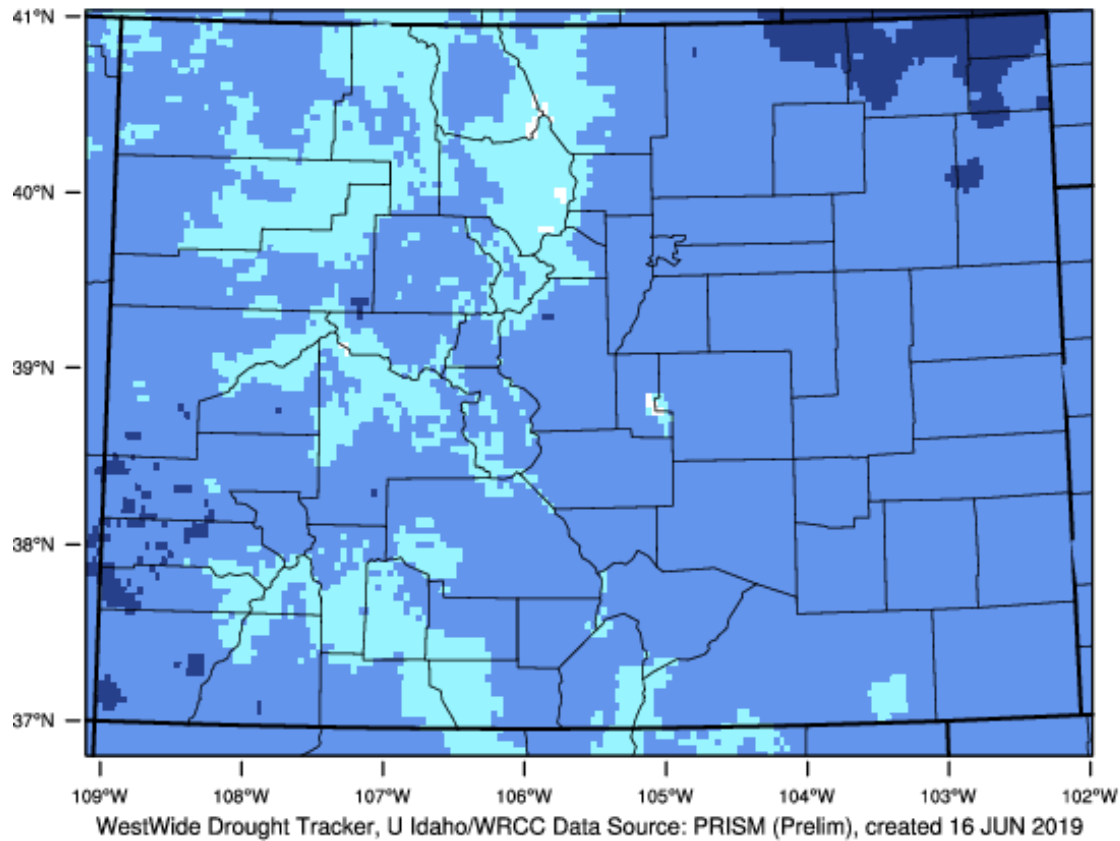
COLORADO CLIMATE CENTER





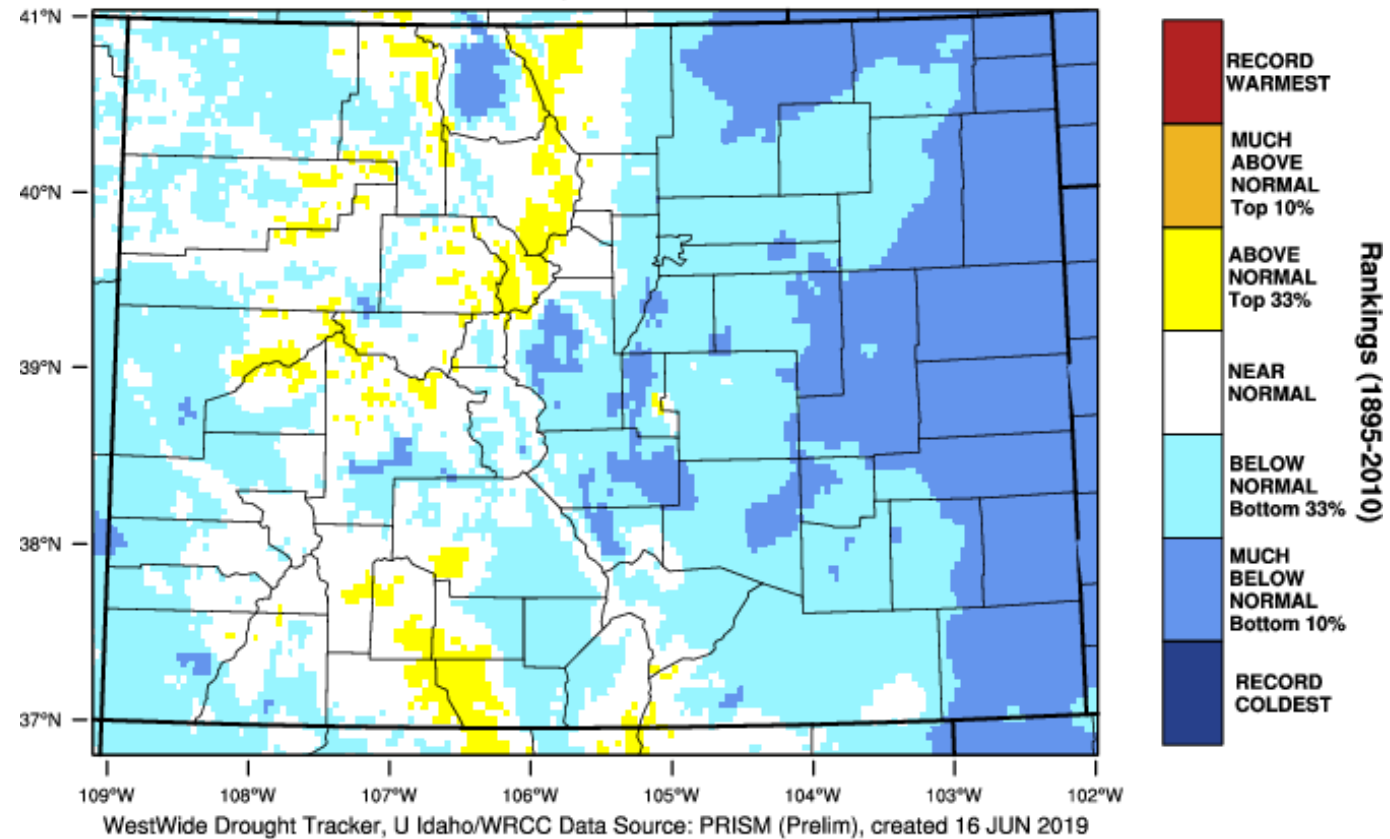
## Colorado - Mean Temperature

May 2019 Percentile



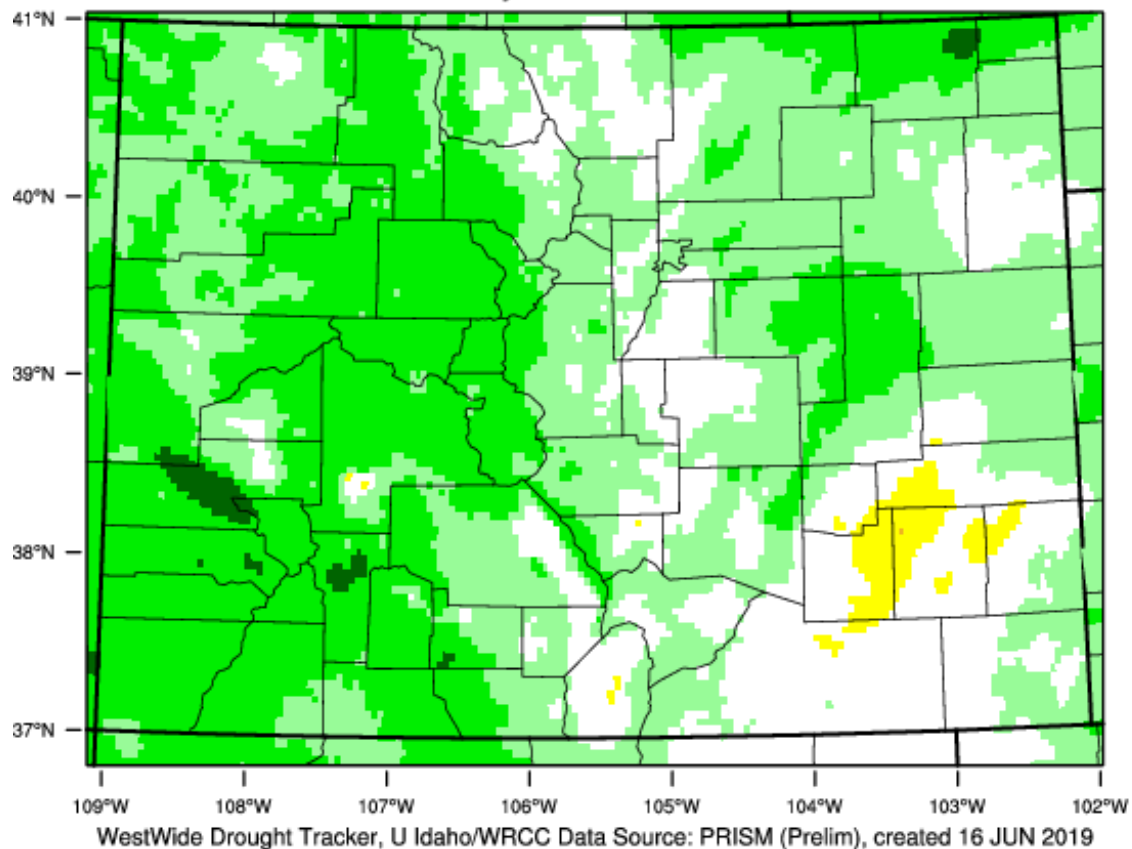
## Colorado - Mean Temperature

October-May 2019 Percentile



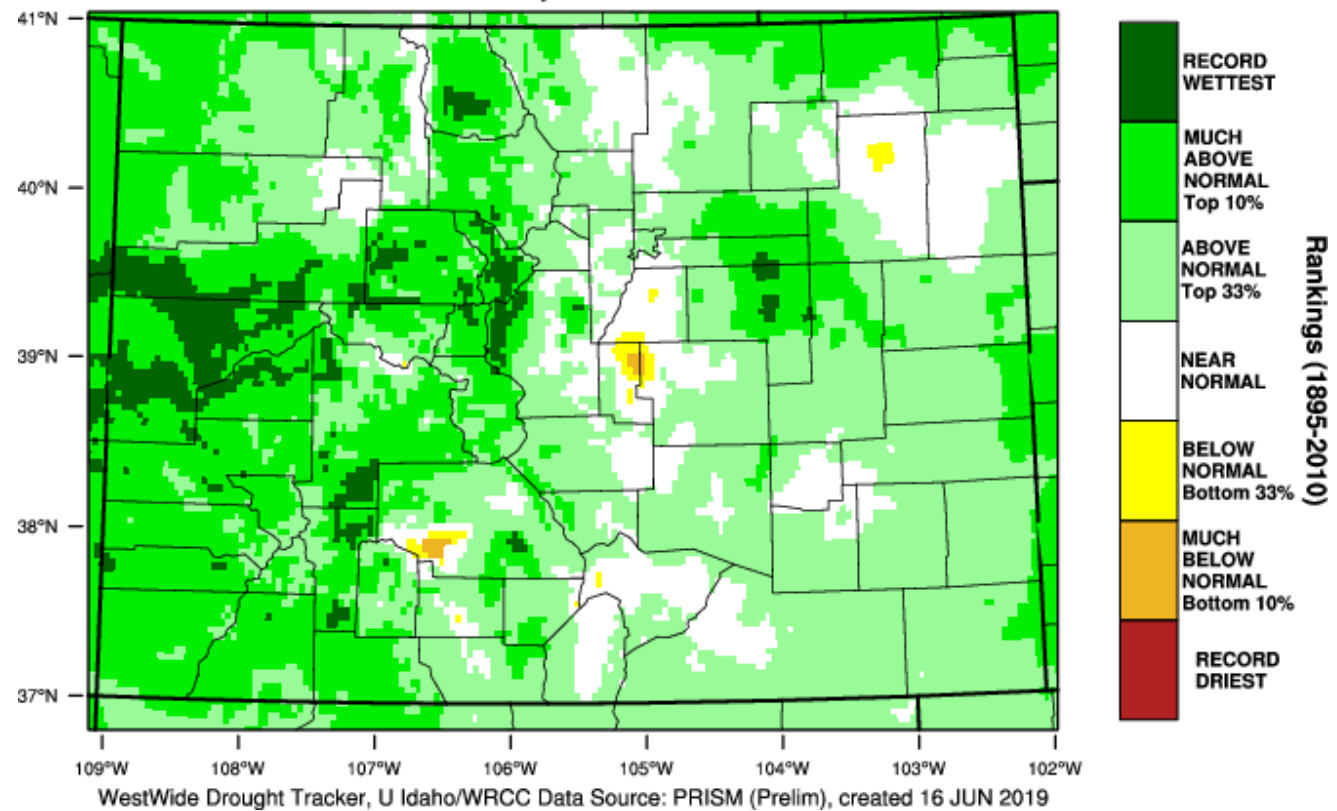
## Colorado - Precipitation

May 2019 Percentile

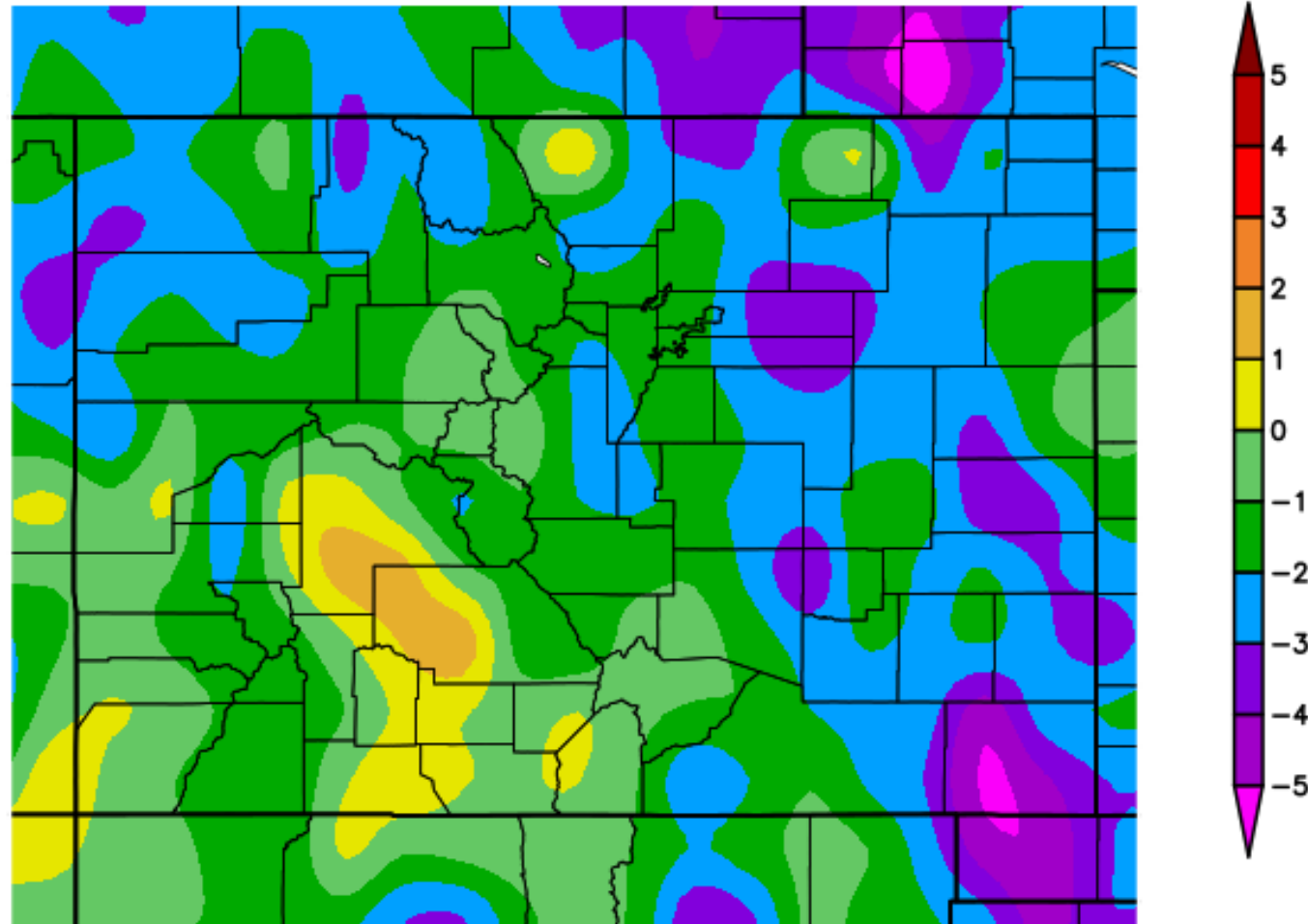


## Colorado - Precipitation

October-May 2019 Percentile



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



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

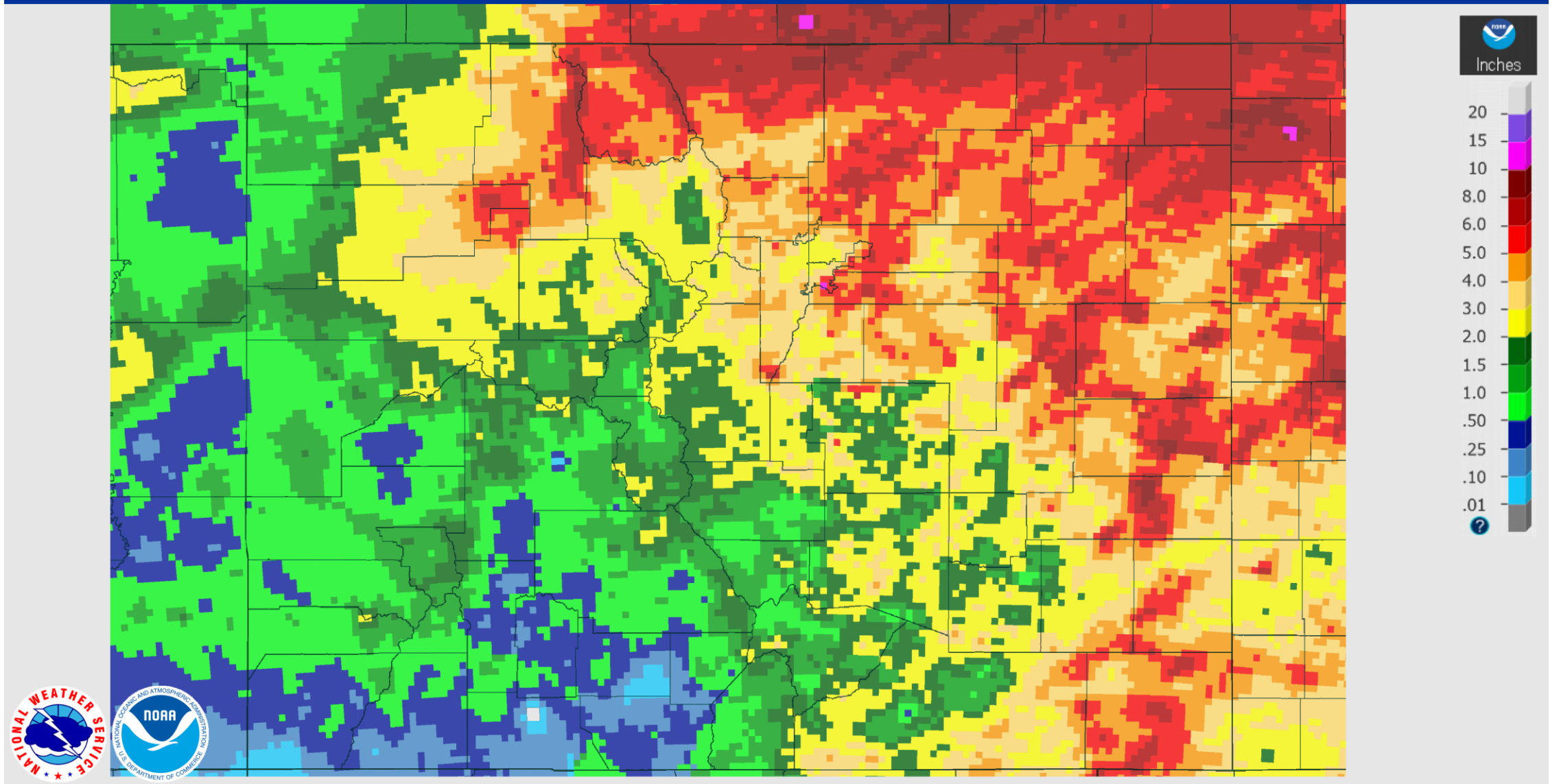
NOAA Regional Climate Centers



# June 24, 2019 30-Day Observed Precipitation

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

Valid on: June 24, 2019 12:00 UTC

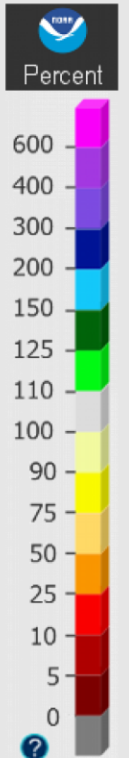
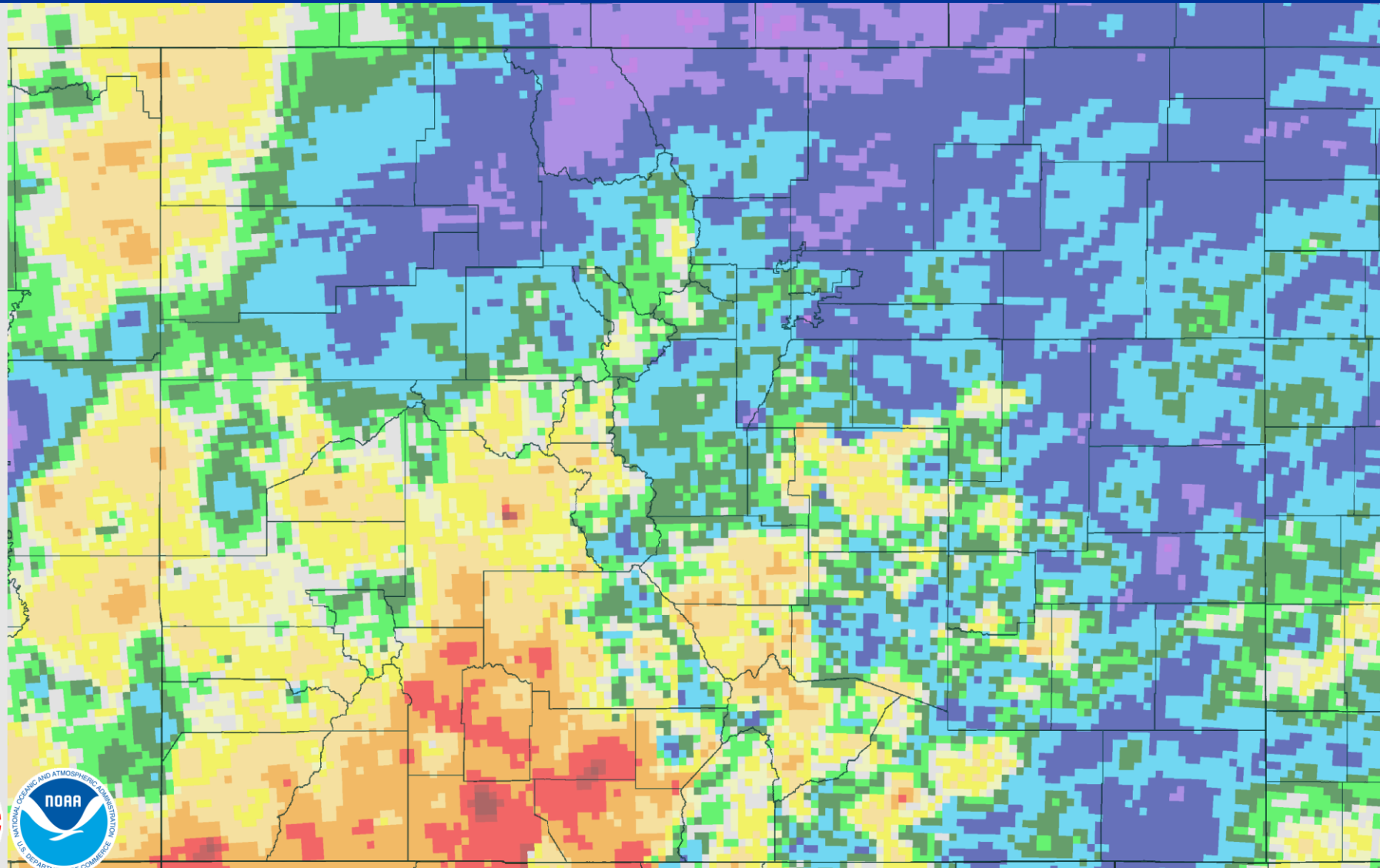




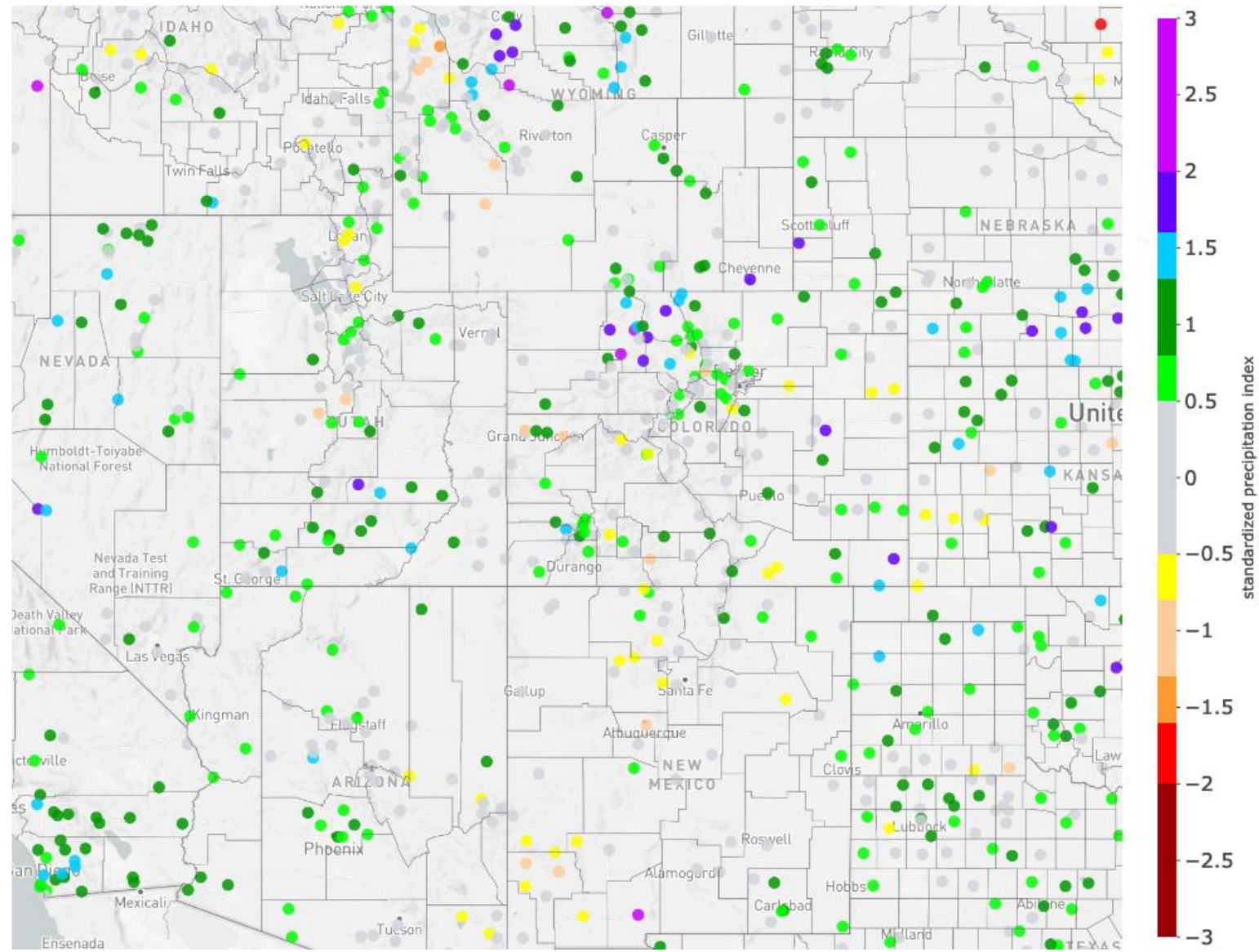
# June 24, 2019 30-Day Percent Precipitation

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

Valid on: June 24, 2019 12:00 UTC



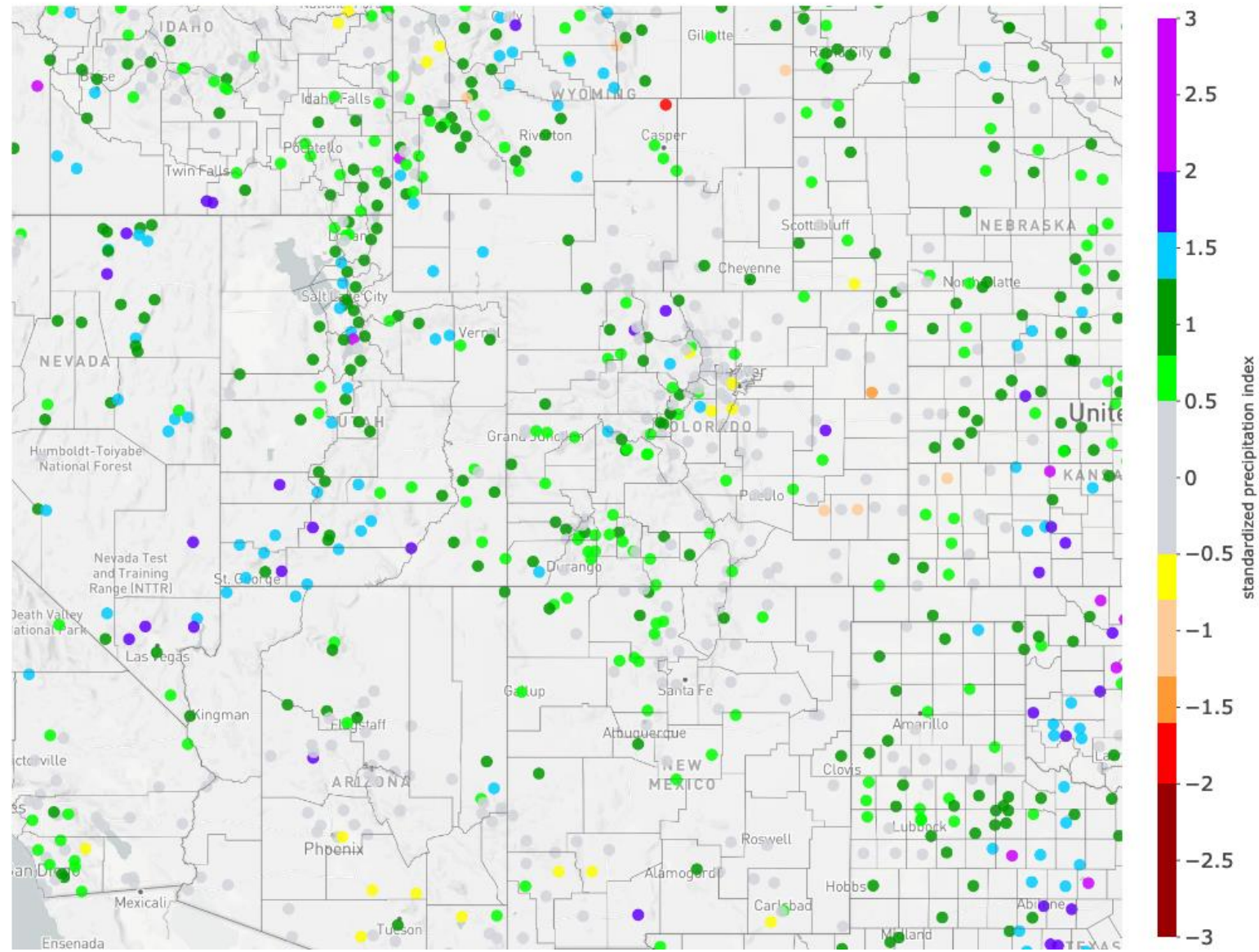
### 30-day Standardized Precipitation Index: 5/25/2019 - 6/23/2019



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



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

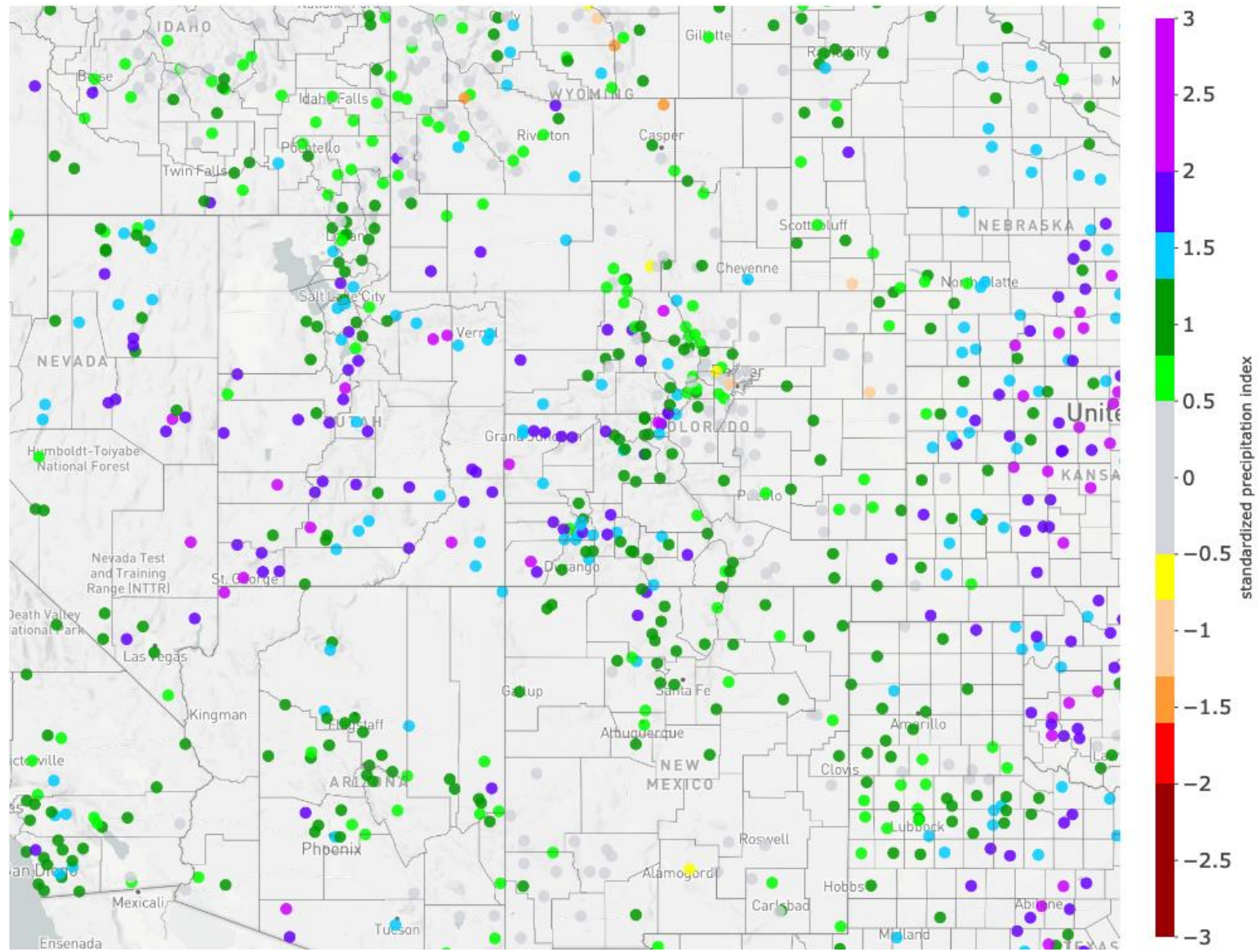


<http://climate.colostate.edu/~drought/spi.html>





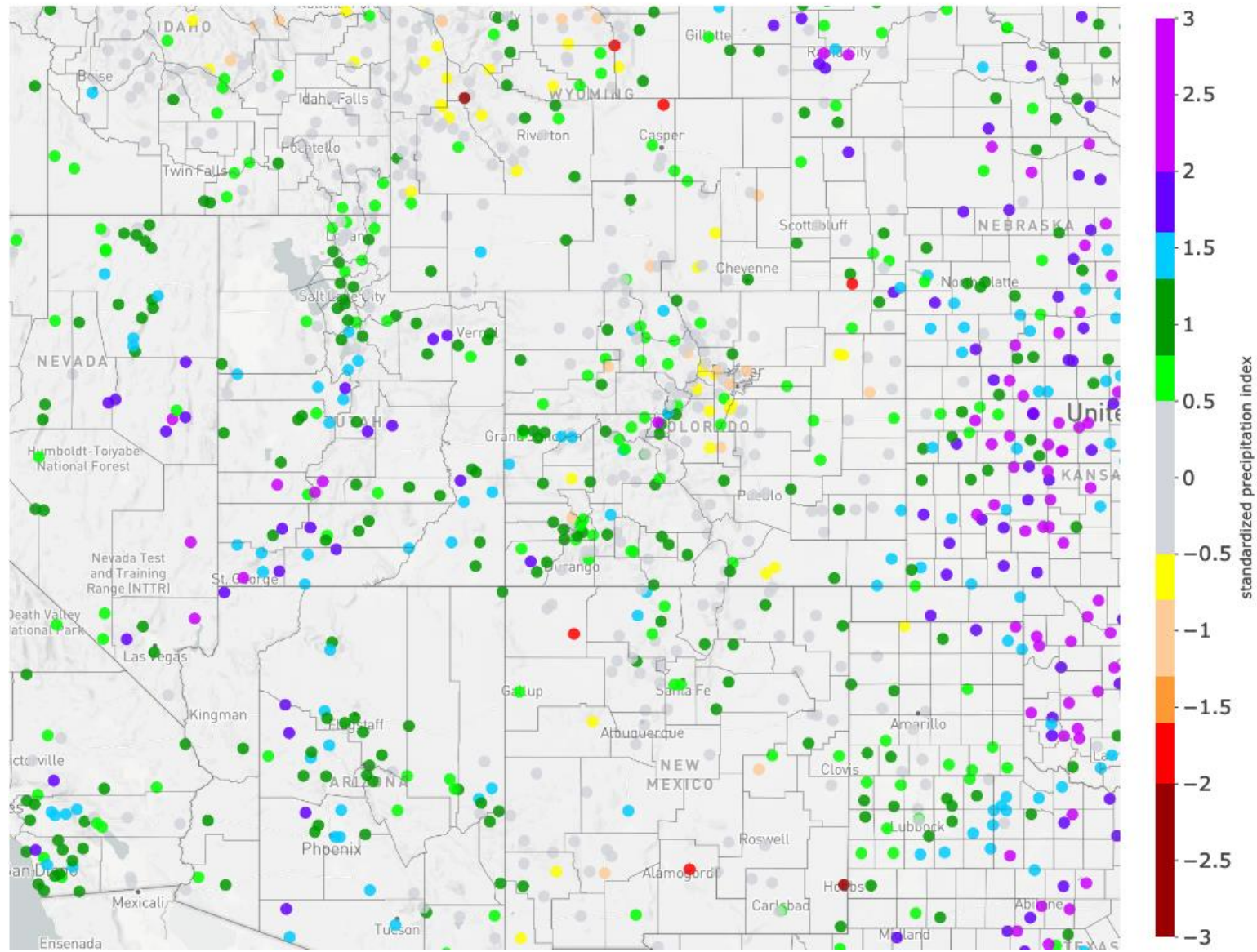
Water-year-to-date Standardized Precipitation Index: 10/1/2018 - 6/23/2019



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



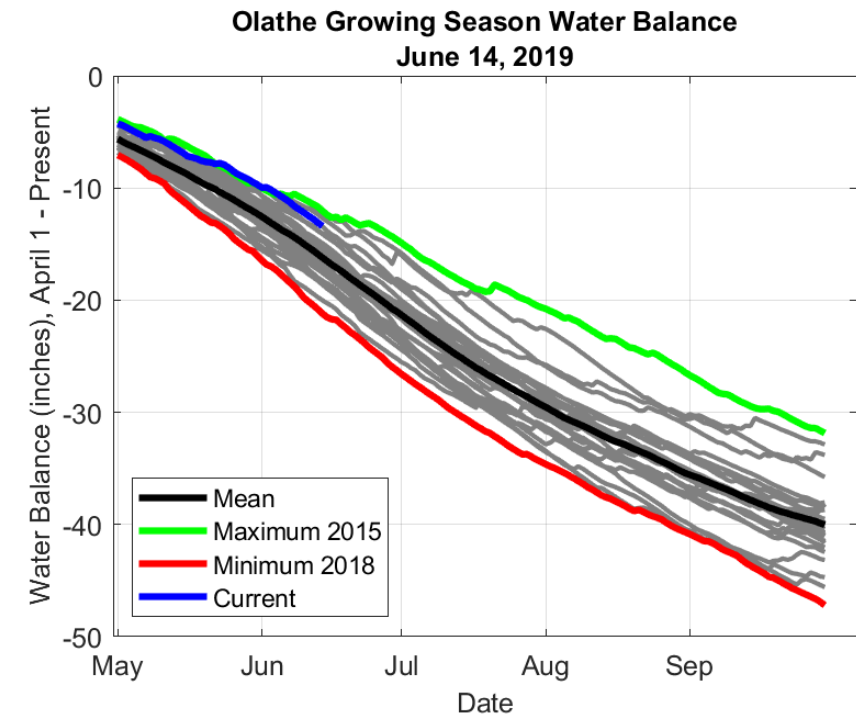
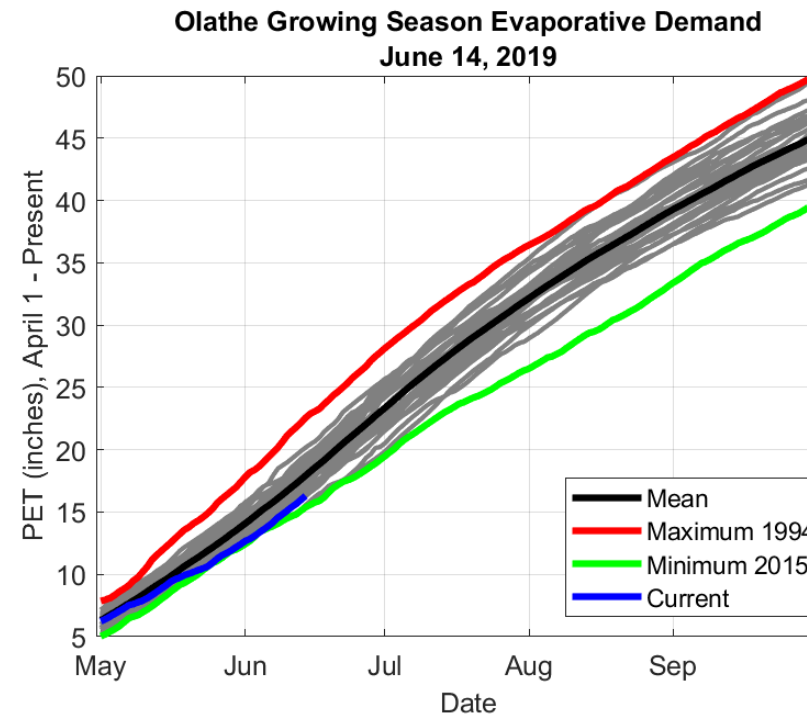
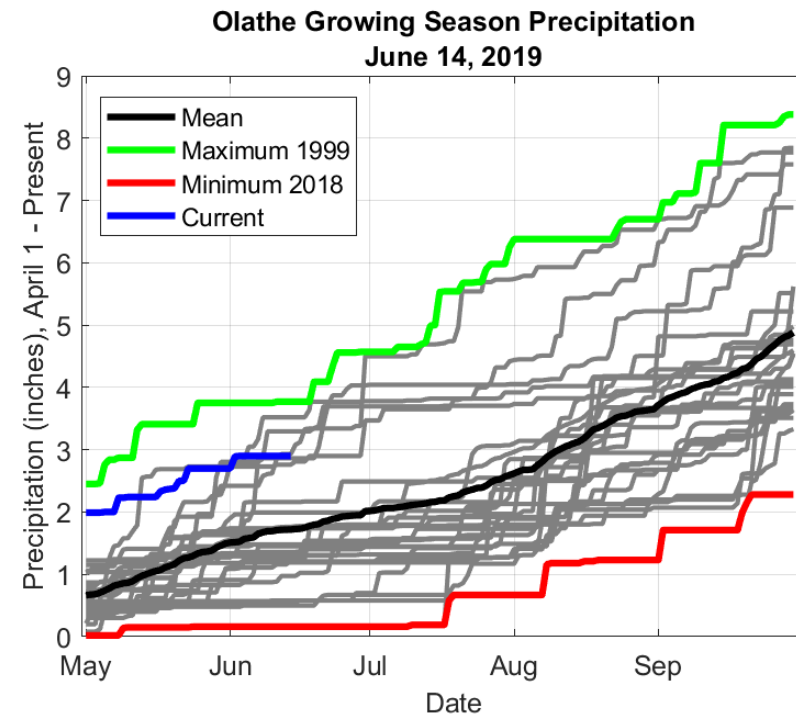
## 12-month Standardized Precipitation Index: 6/24/2018 - 6/23/2019

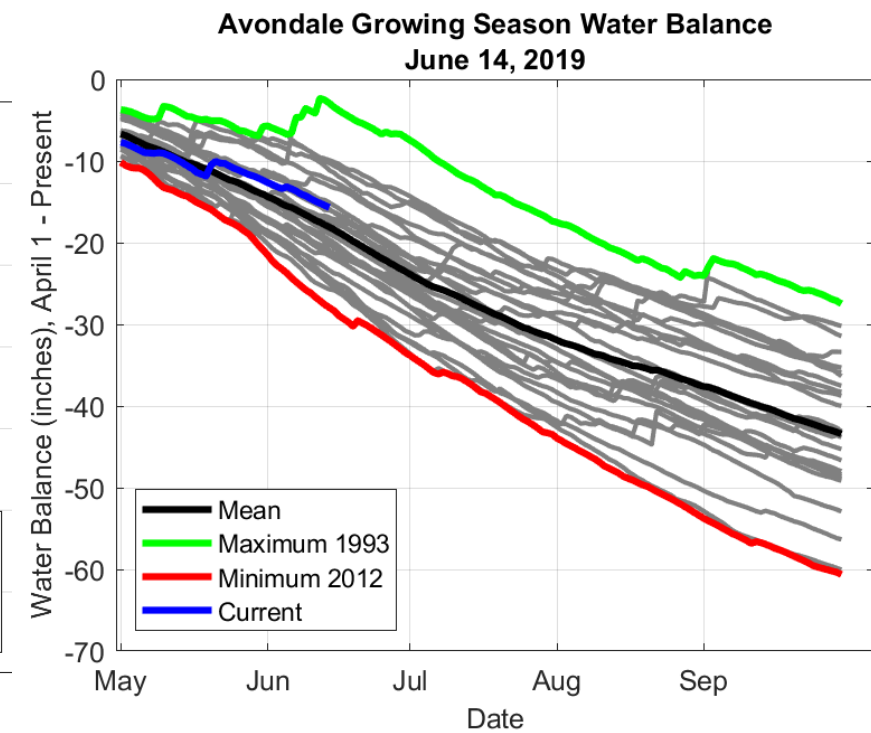
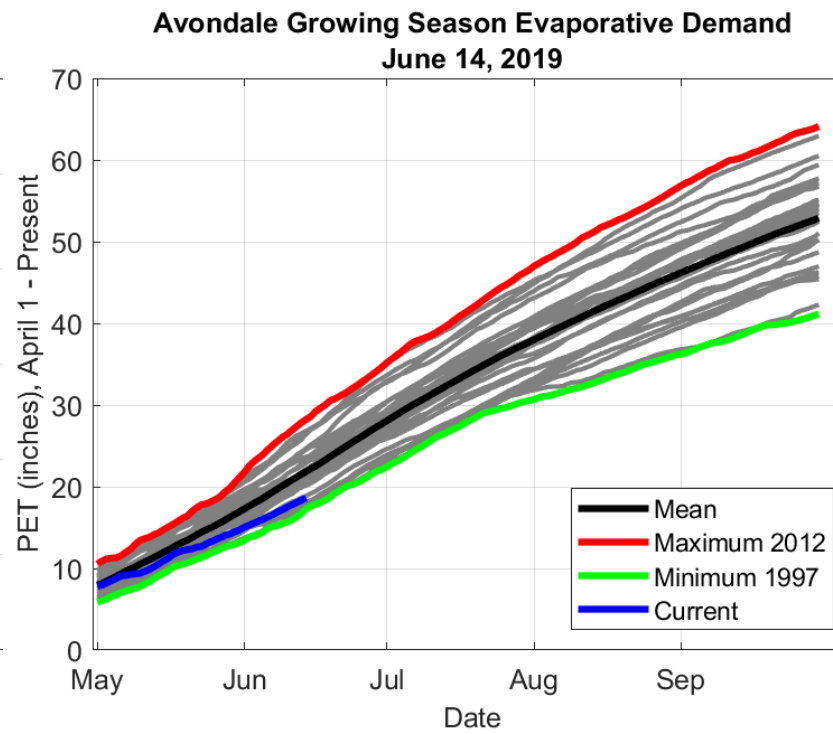
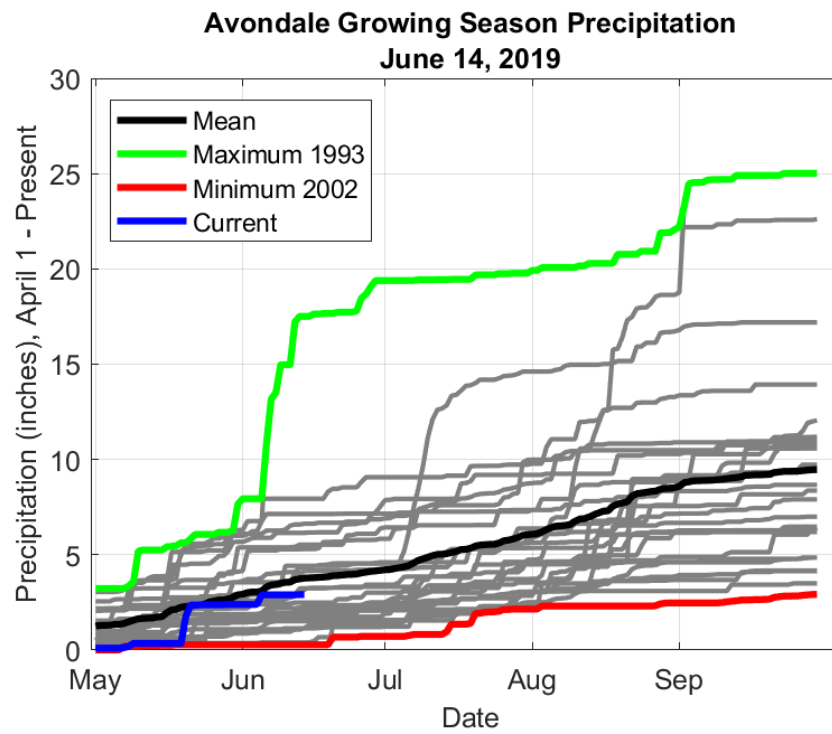


<http://climate.colostate.edu/~drought/spi.html>

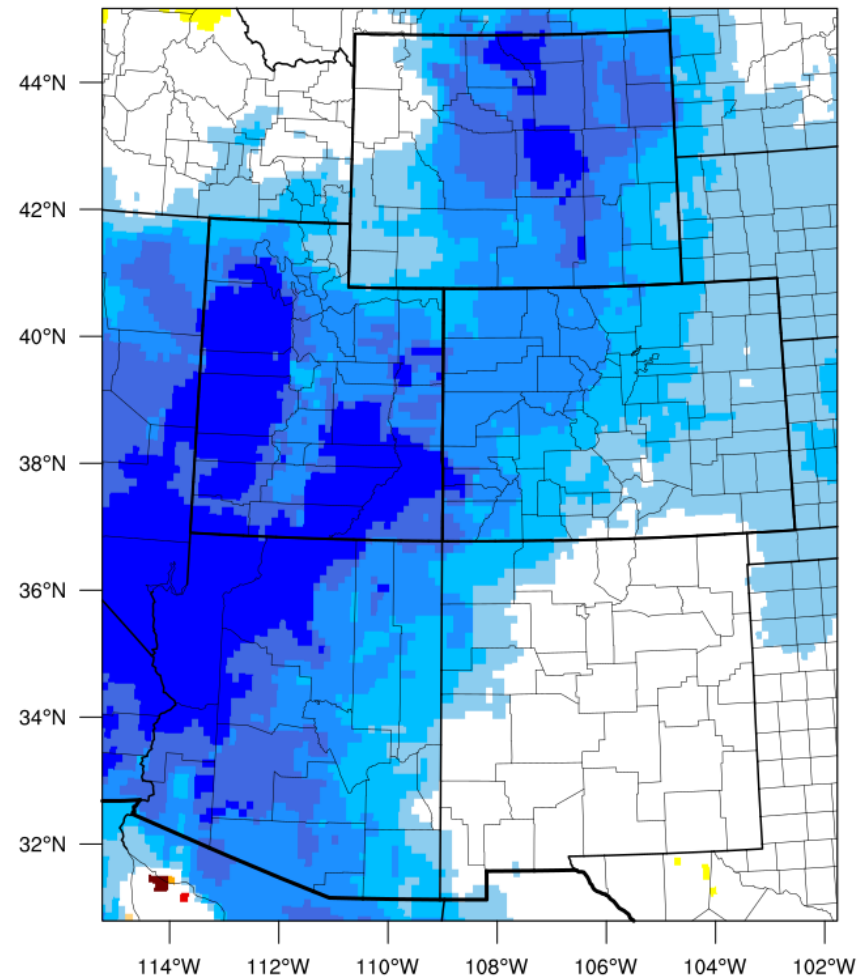






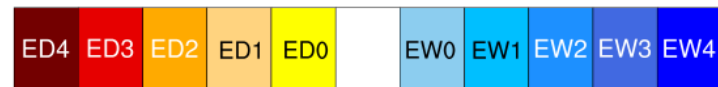


# 1-month EDDI categories for June 19, 2019



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

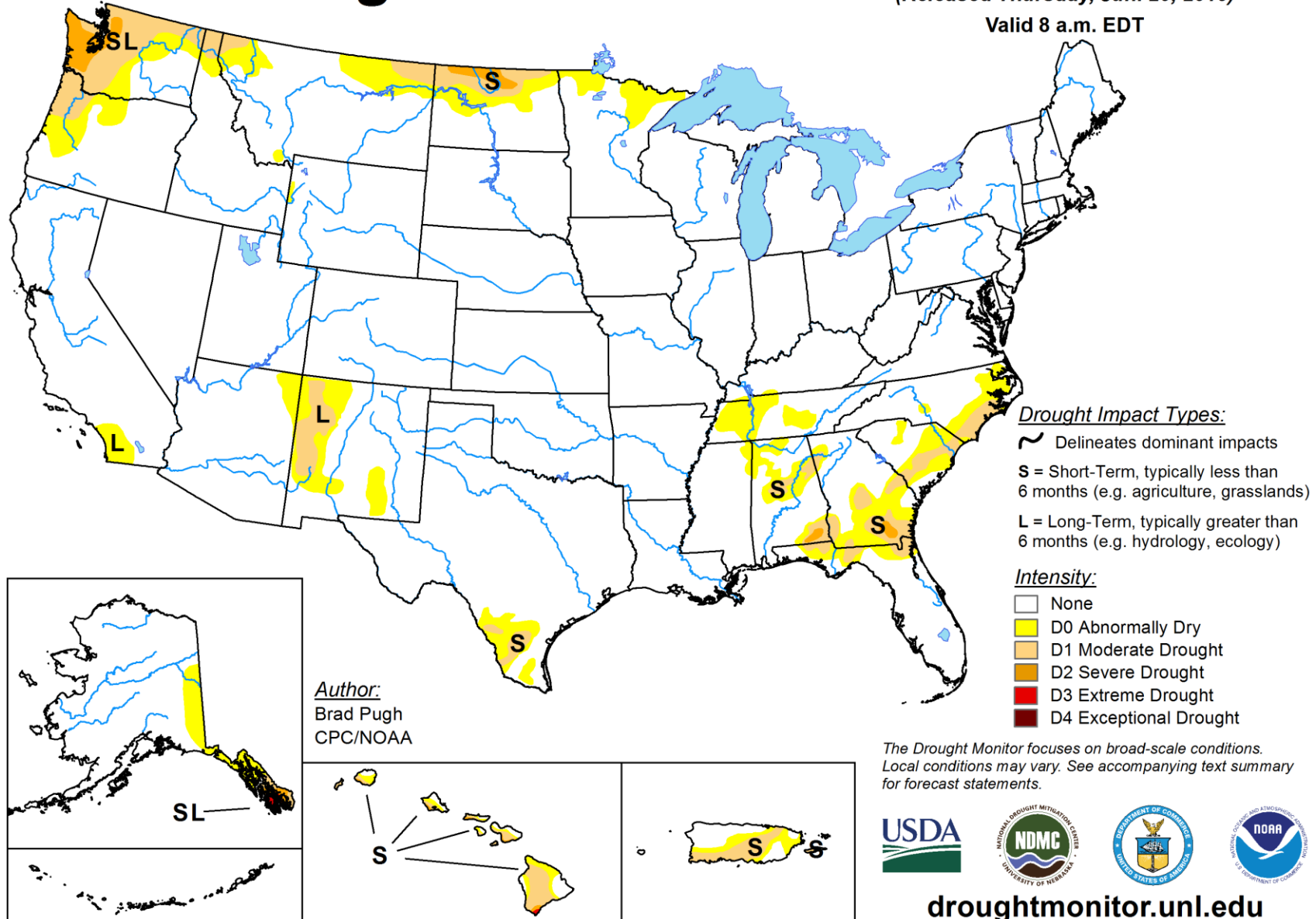


# U.S. Drought Monitor

June 18, 2019

(Released Thursday, Jun. 20, 2019)

Valid 8 a.m. EDT



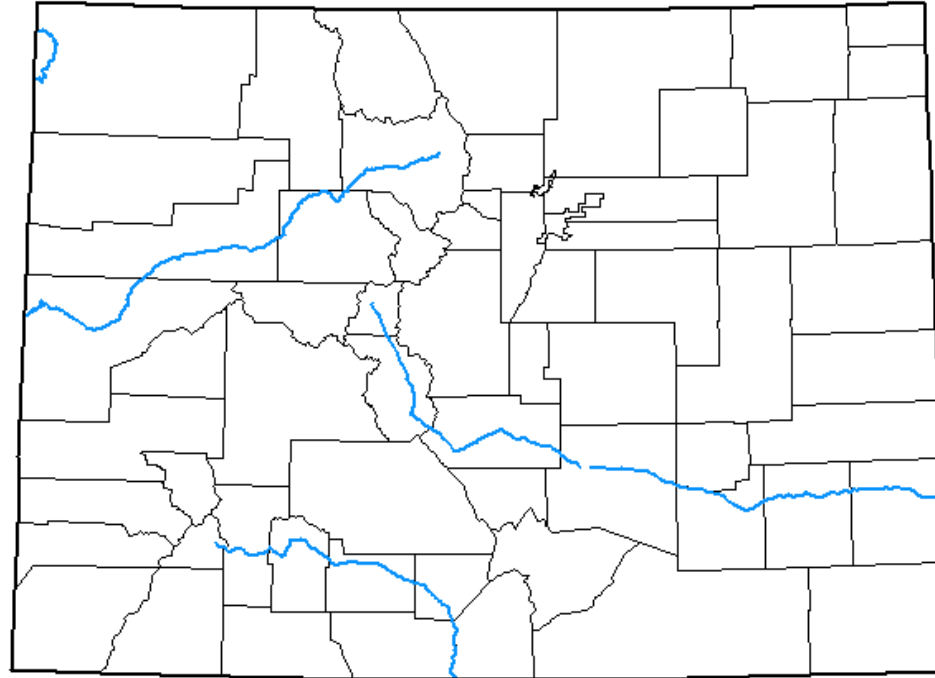
[droughtmonitor.unl.edu](http://droughtmonitor.unl.edu)





# U.S. Drought Monitor Colorado

where's the color???



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

Drought Conditions (Percent Area)

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

## Intensity:

None	D2 Severe Drought
D0 Abnormally Dry	D3 Extreme Drought
D1 Moderate 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](http://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

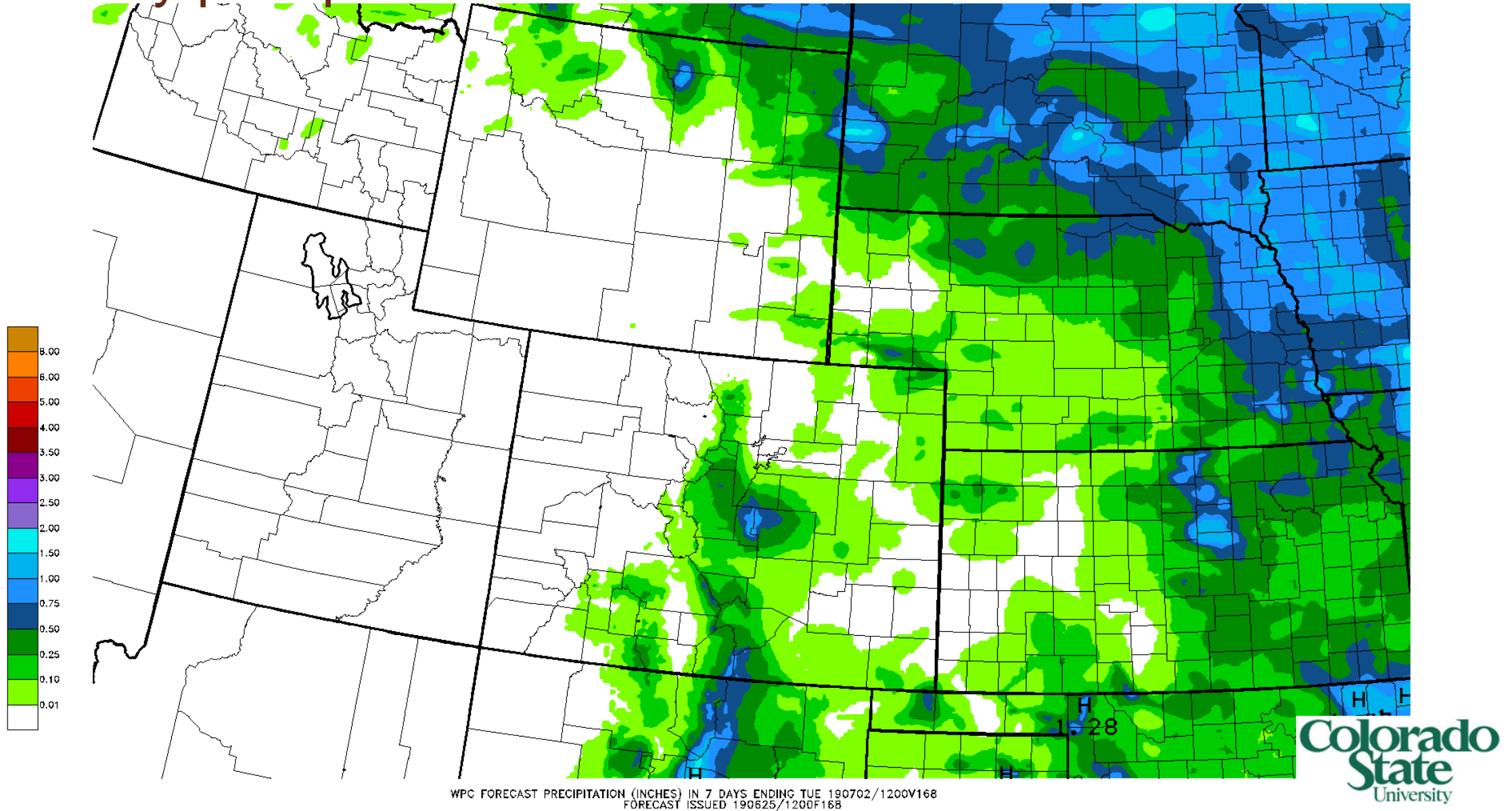
CPC Outlooks

Precipitation Projections

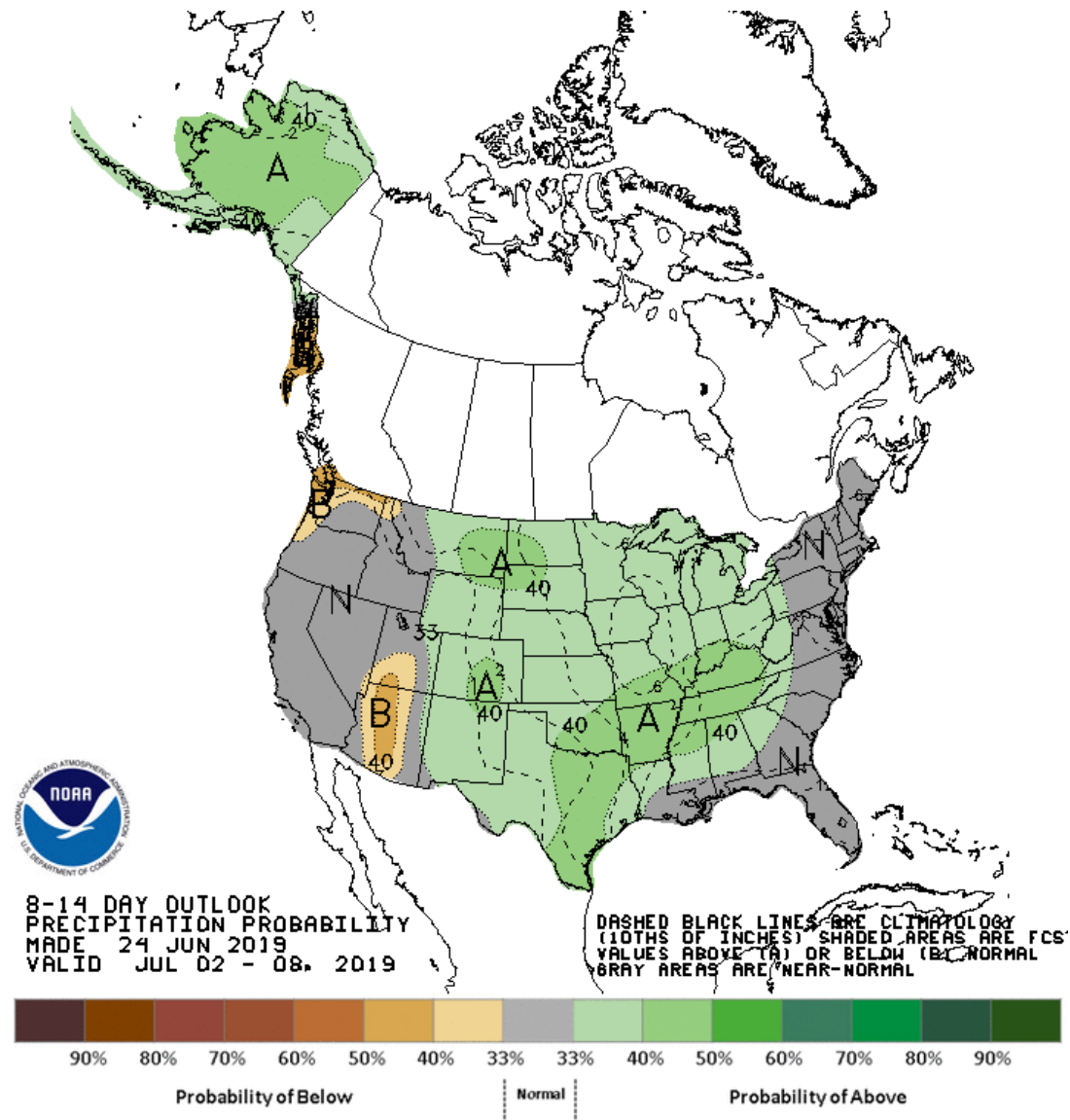
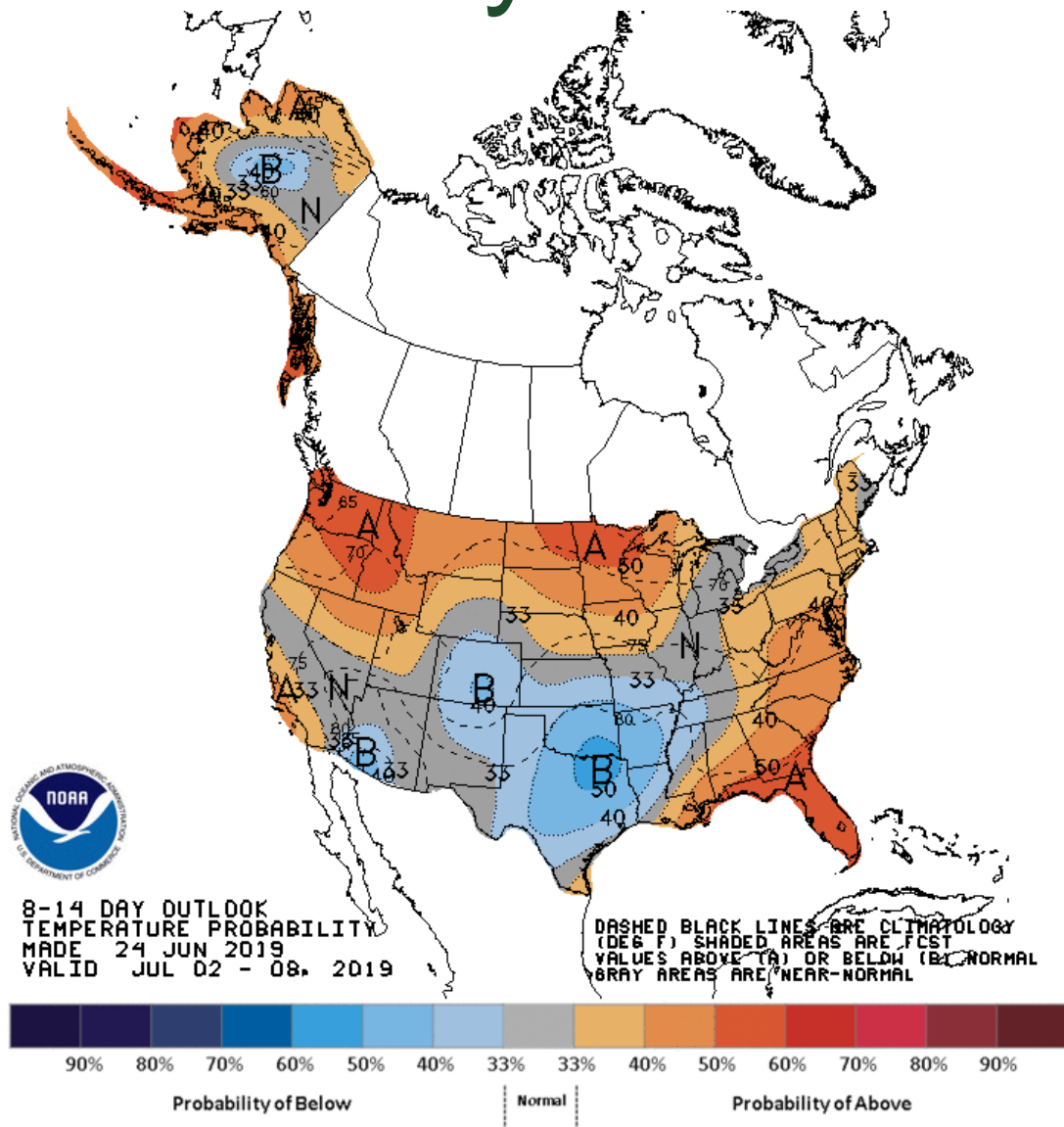
What does El Niño mean?



# NOAA 7-day precip forecast

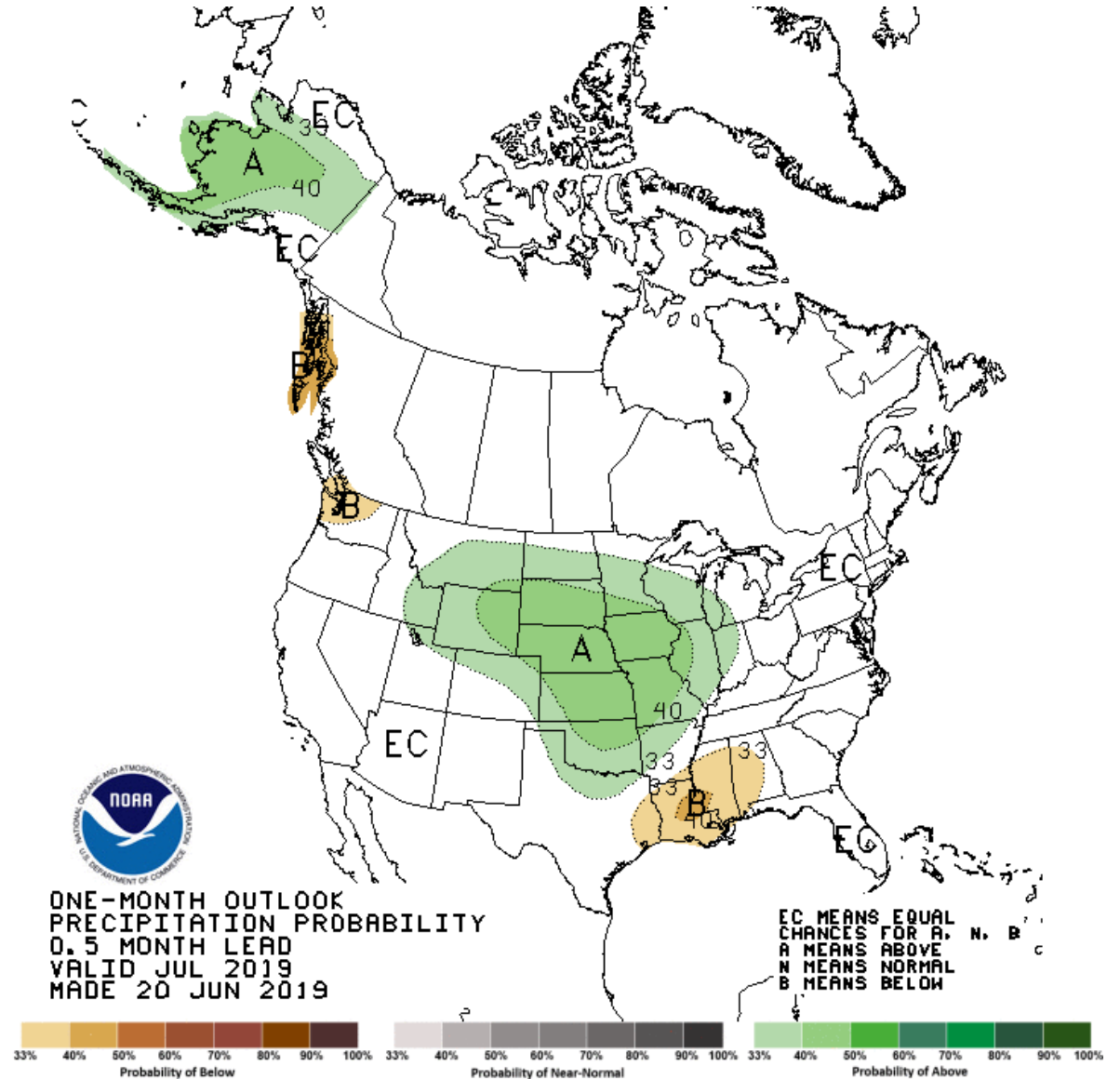
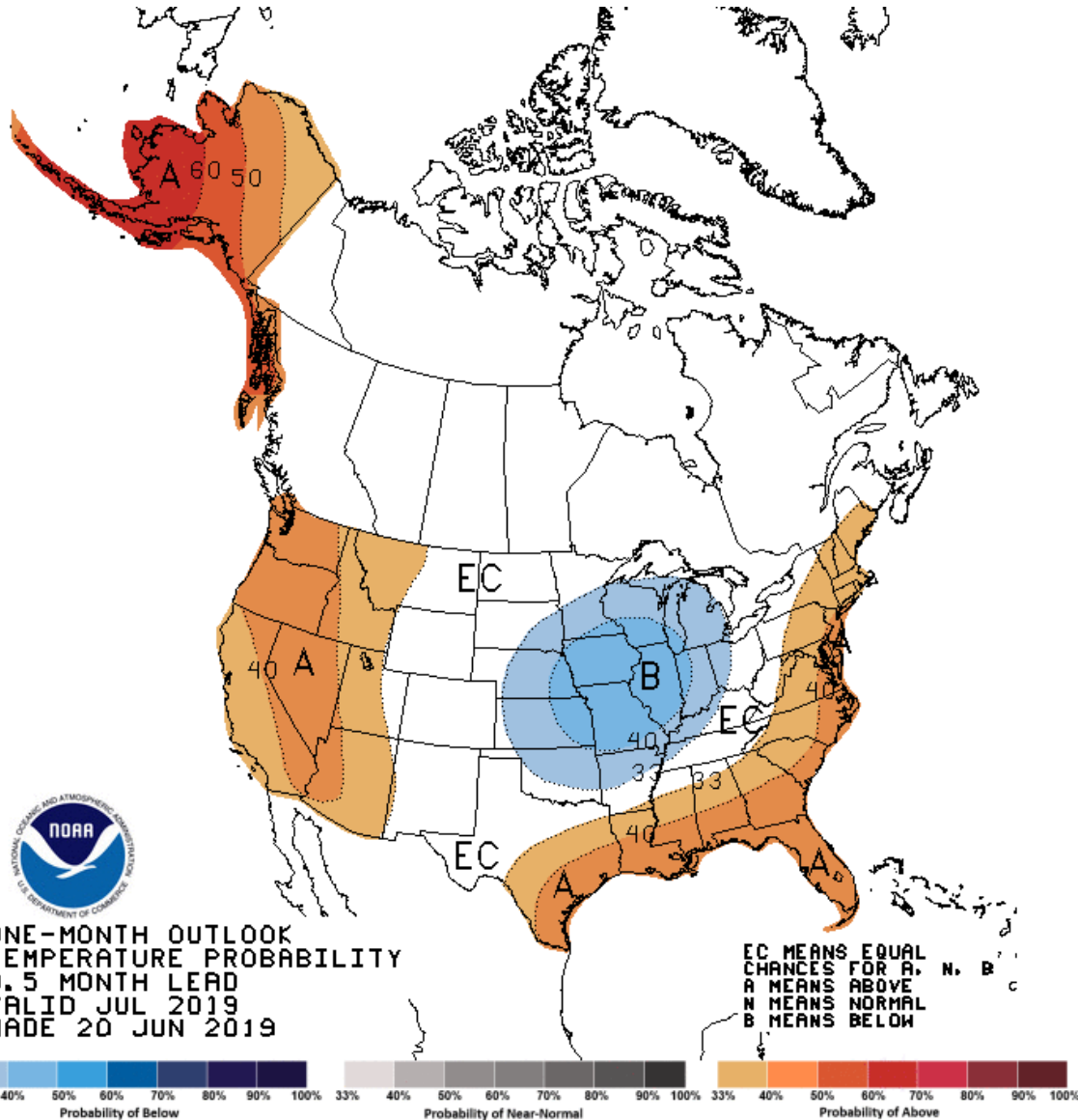


# 8-14 day outlook

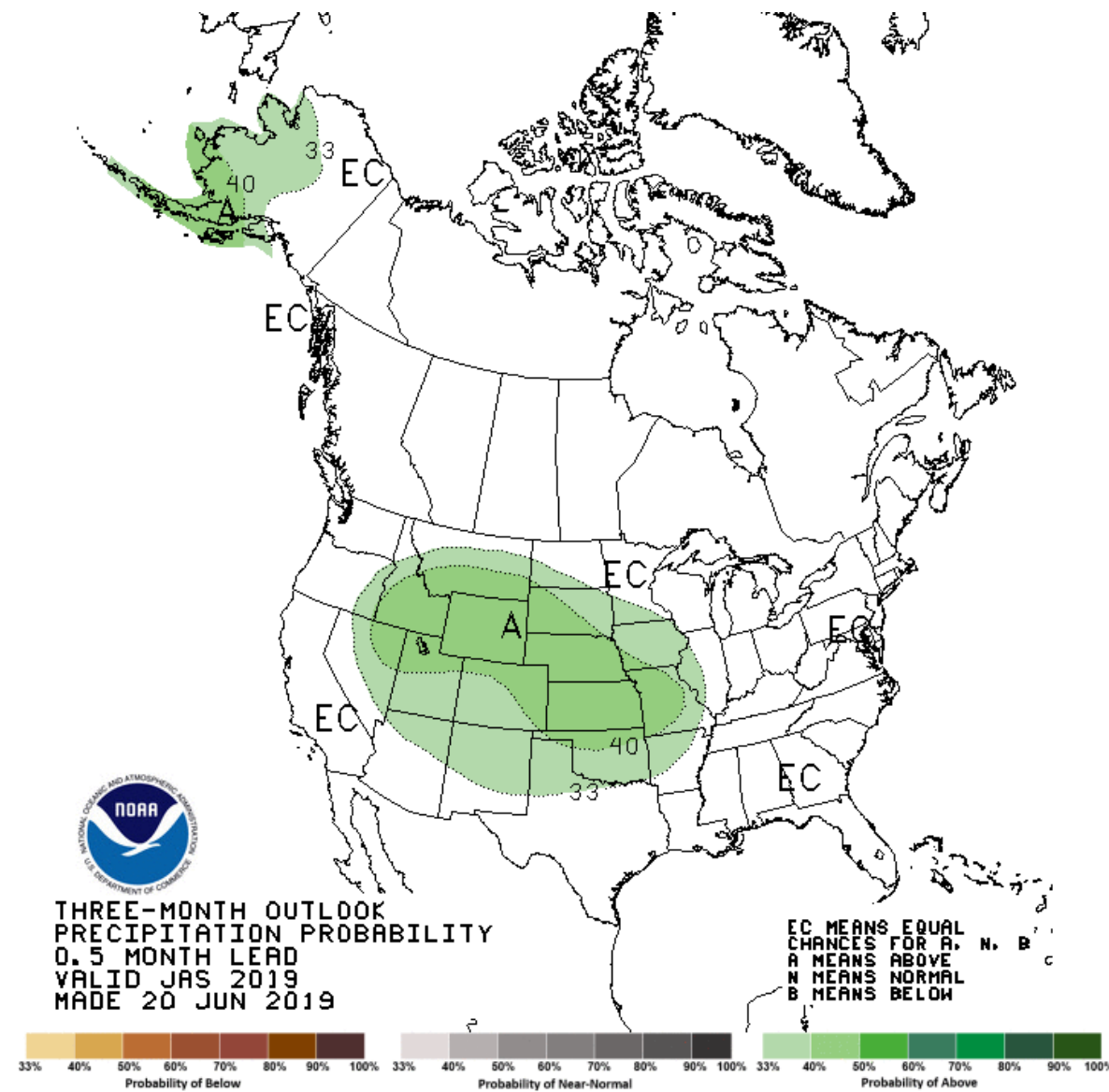
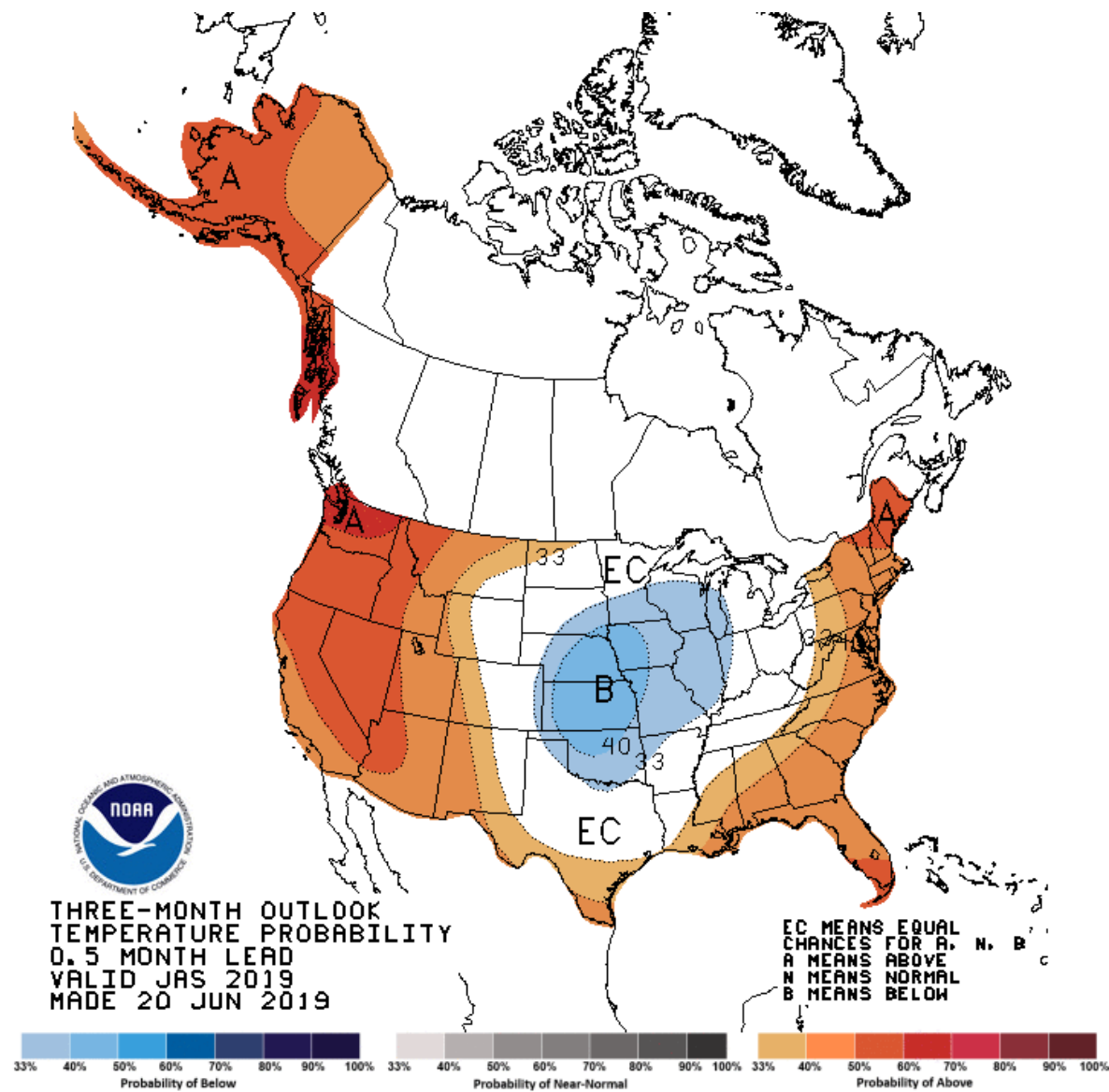




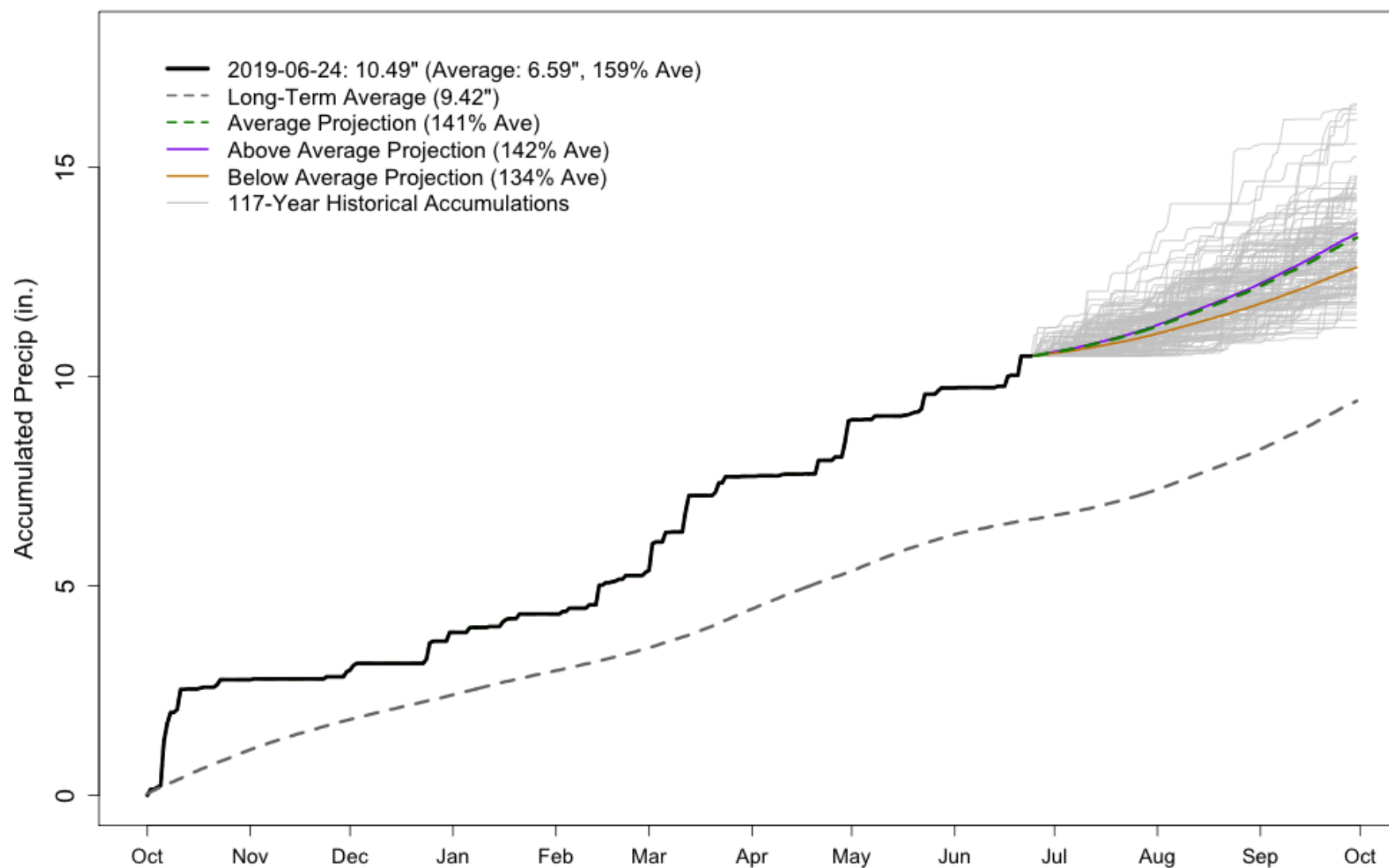
# One Month Outlook



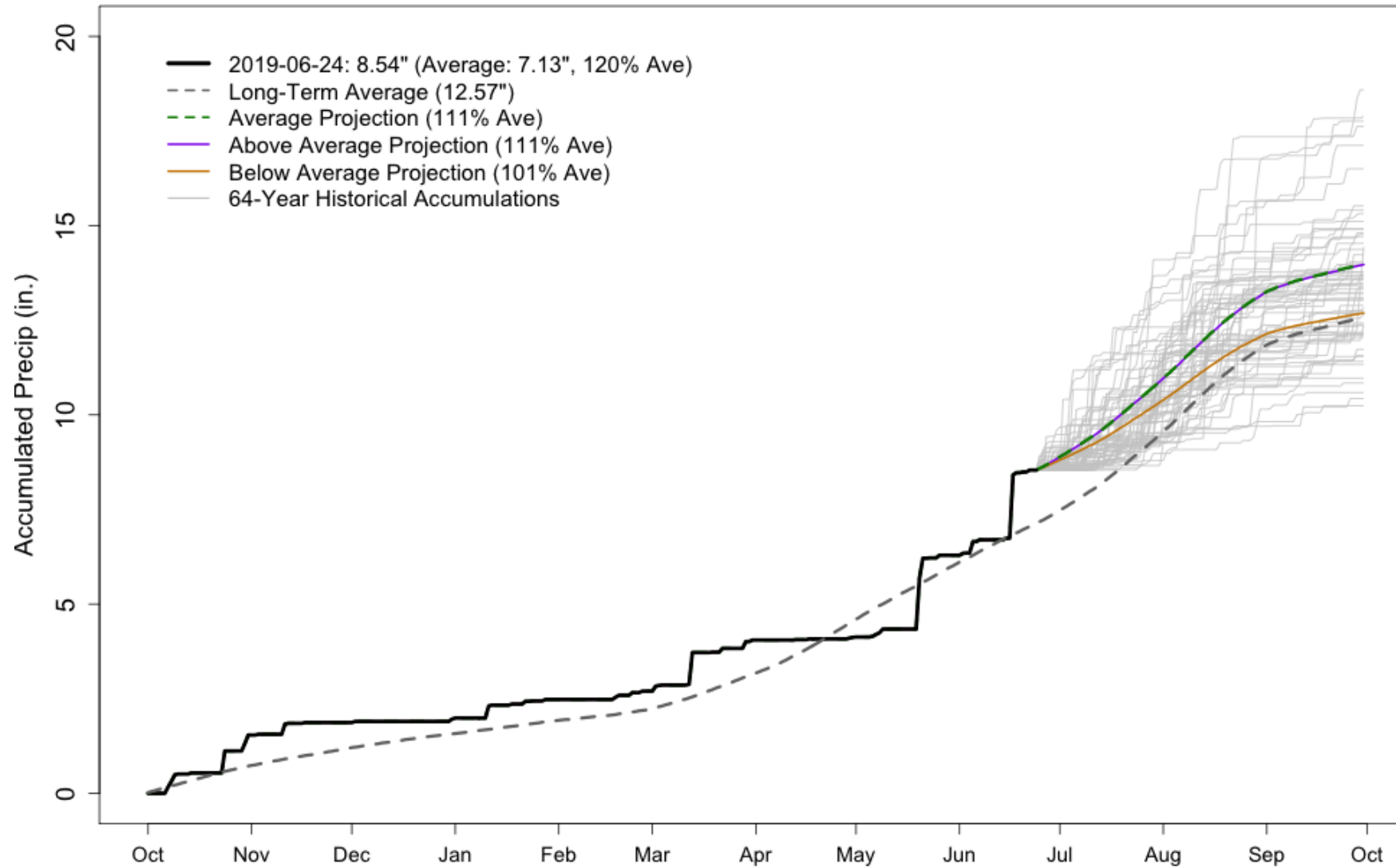
# Jul-Aug-Sep Outlook



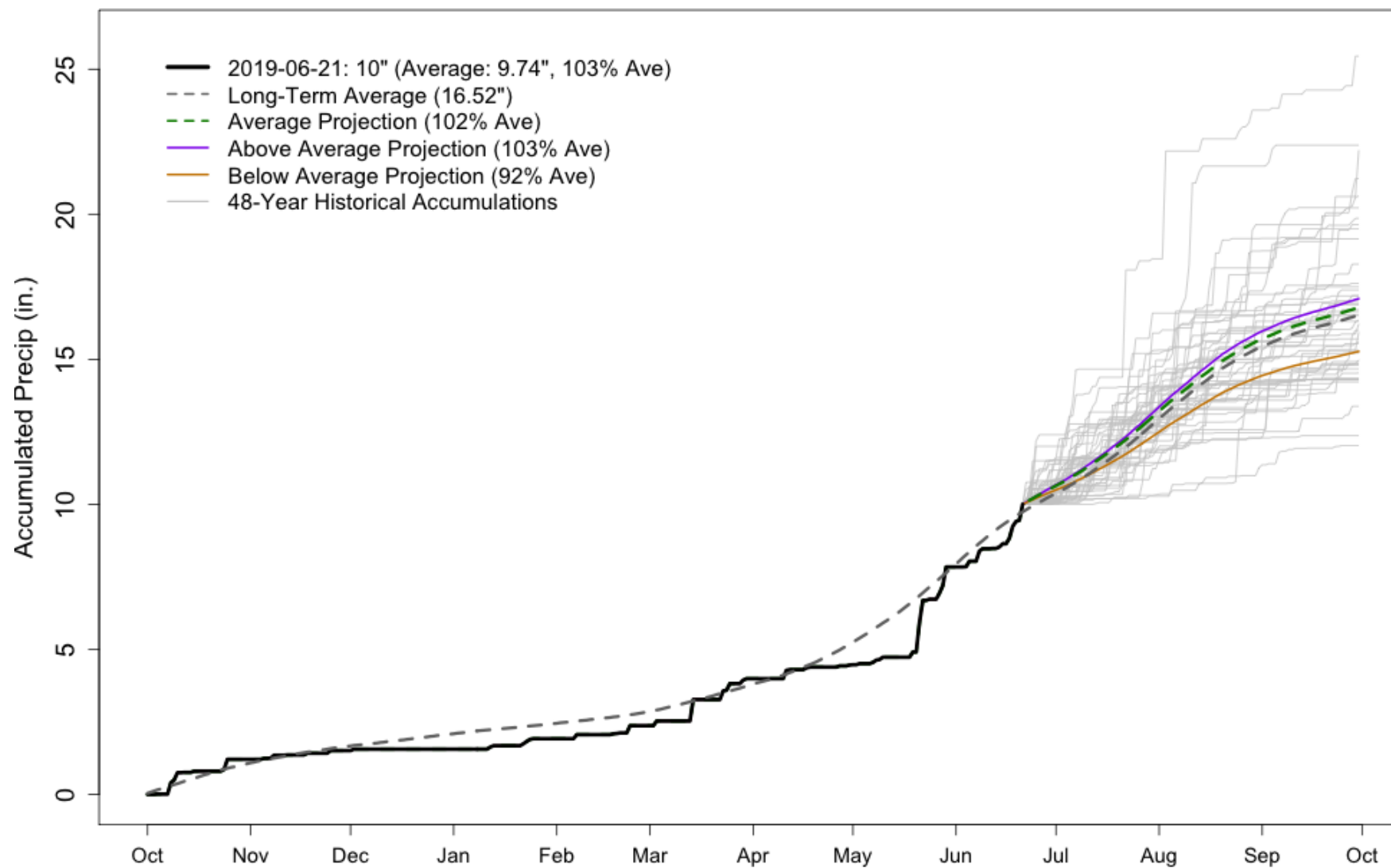
## GRAND JUNCTION WALKER FIELD WY2019 Precipitation Projections



## PUEBLO MEMORIAL AP WY2019 Precipitation Projections

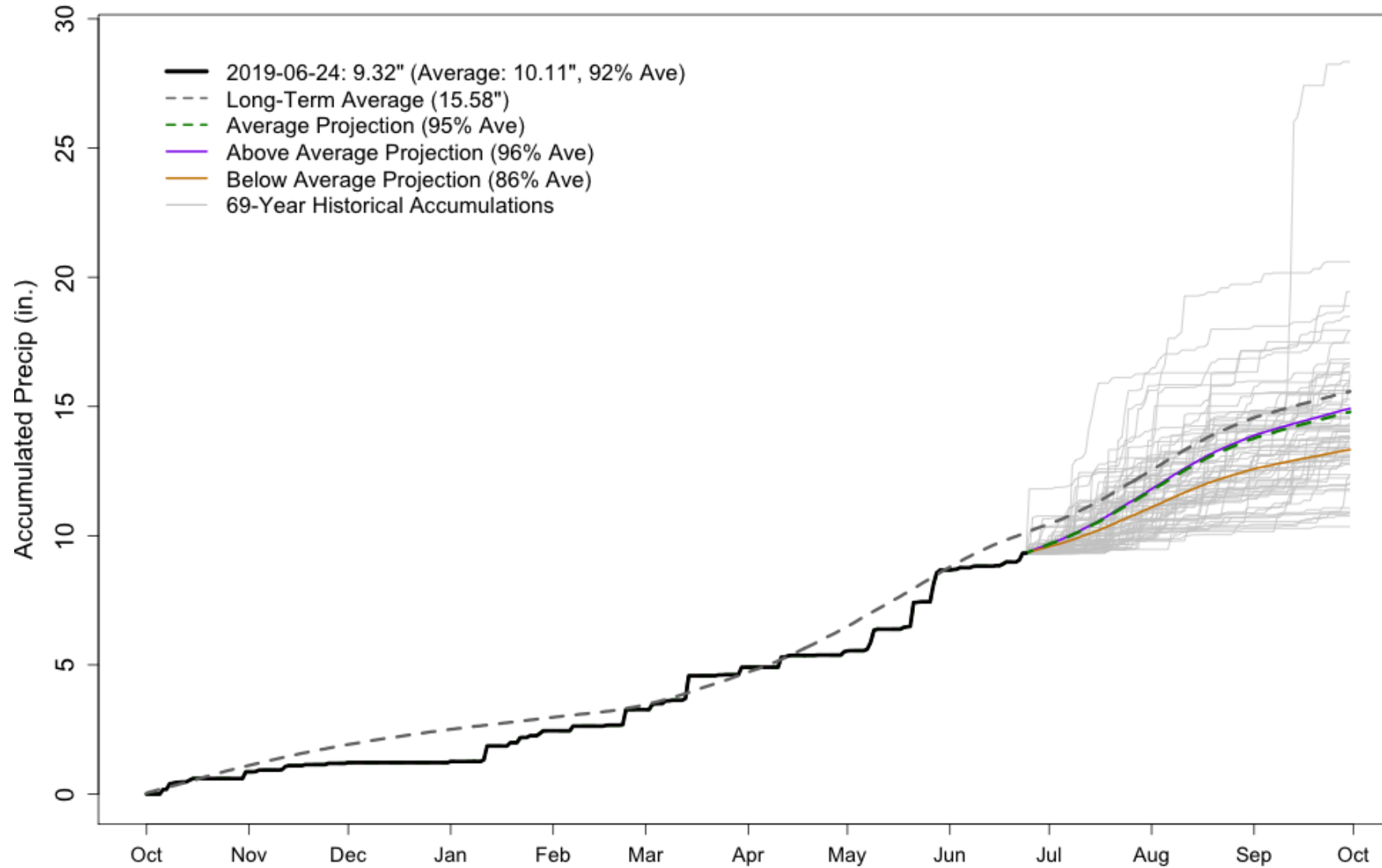


## AKRON 4 E WY2019 Precipitation Projections

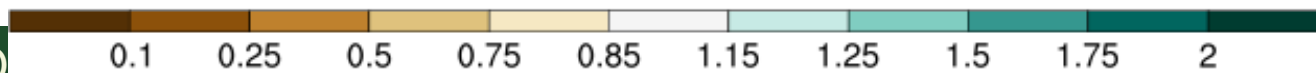
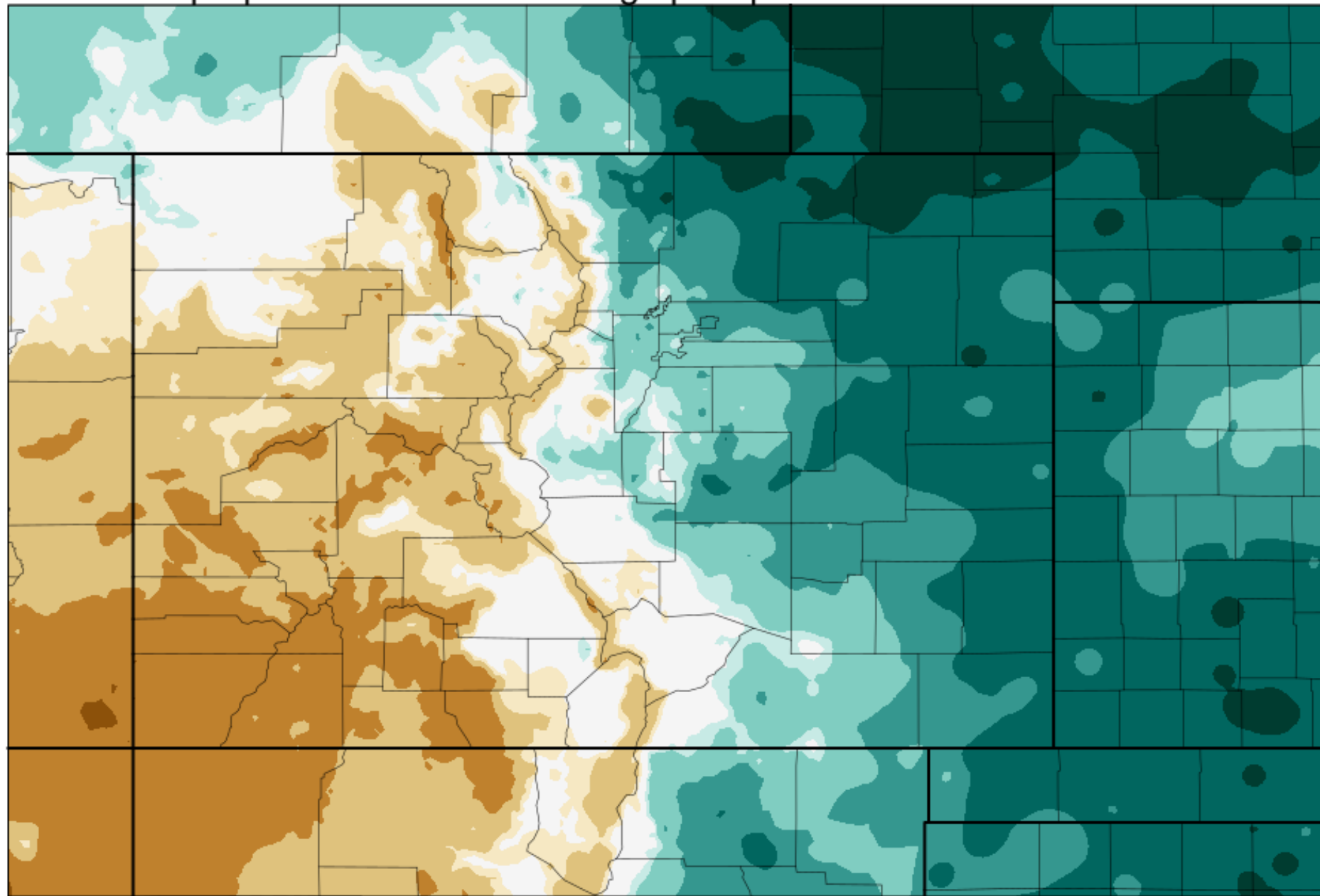




## DENVER-STAPELTON WY2019 Precipitation Projections

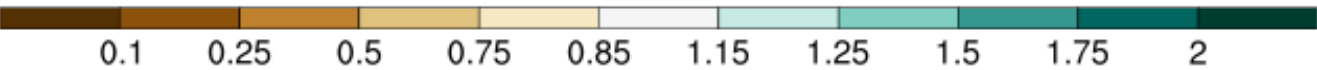
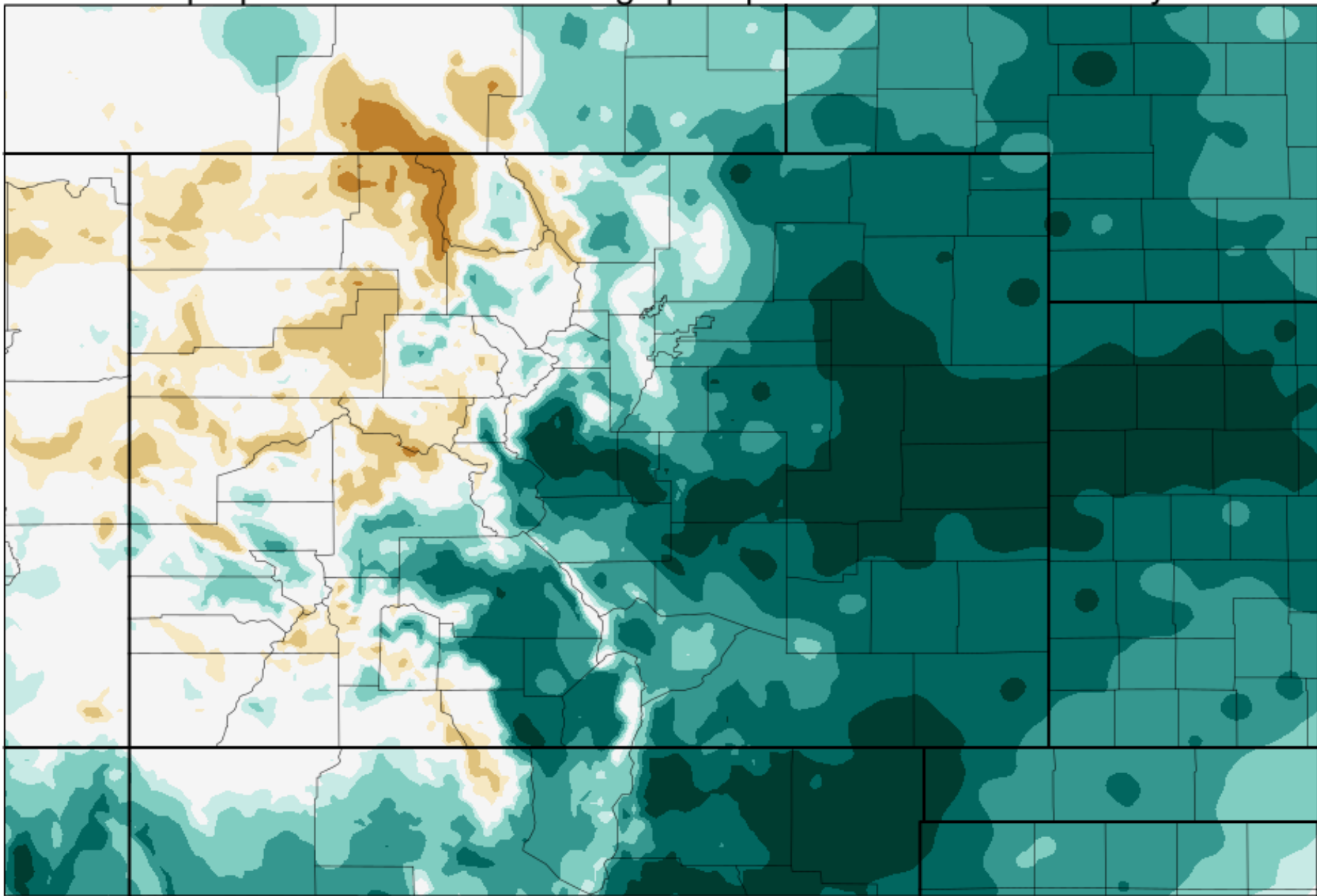


# PRISM proportion of annual average precipitation in this month: June



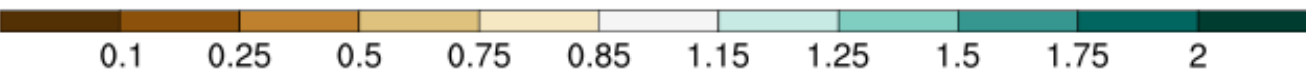
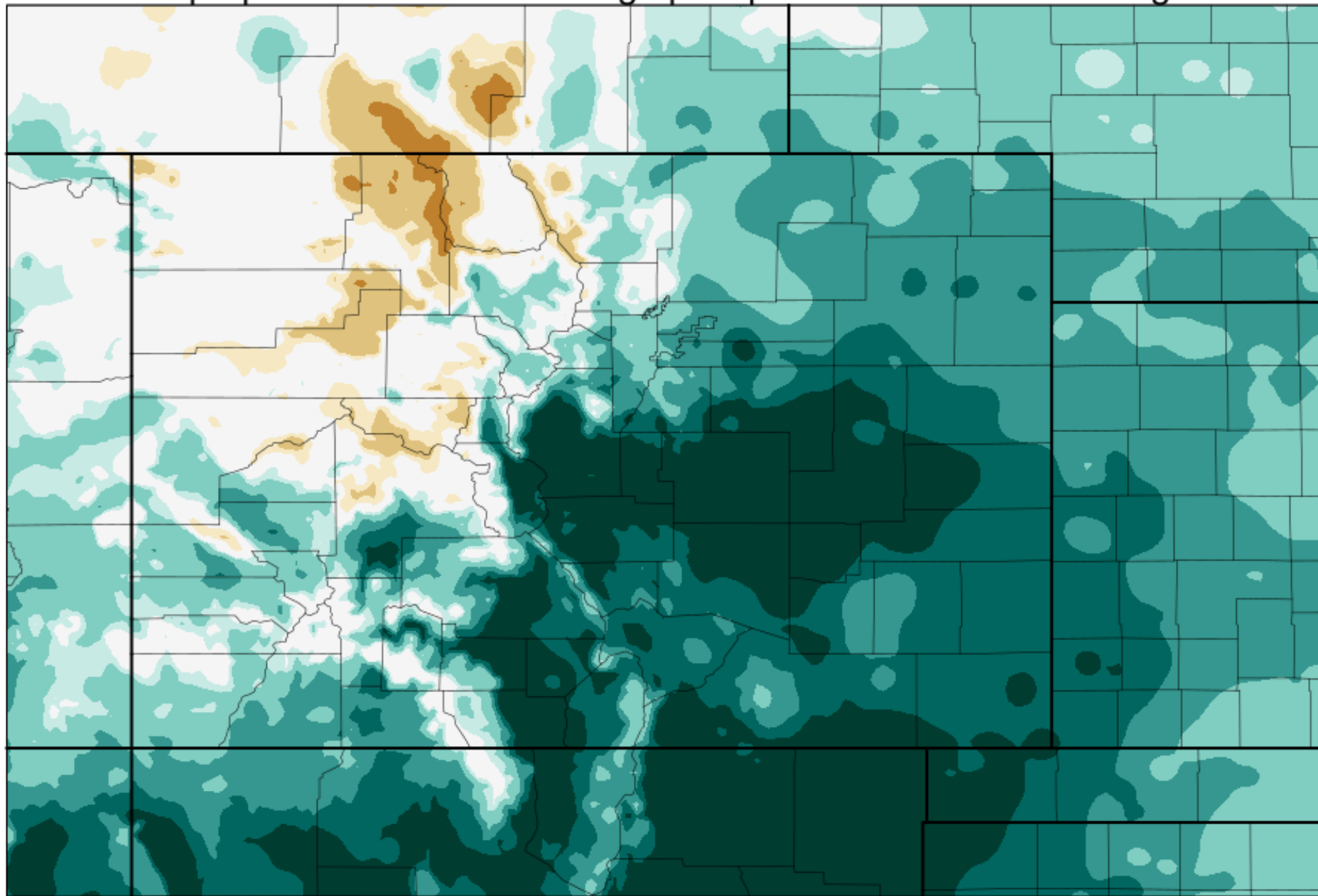
Proportion of precip relative to 1/12th

# PRISM proportion of annual average precipitation in this month: July



Proportion of precip relative to 1/12th

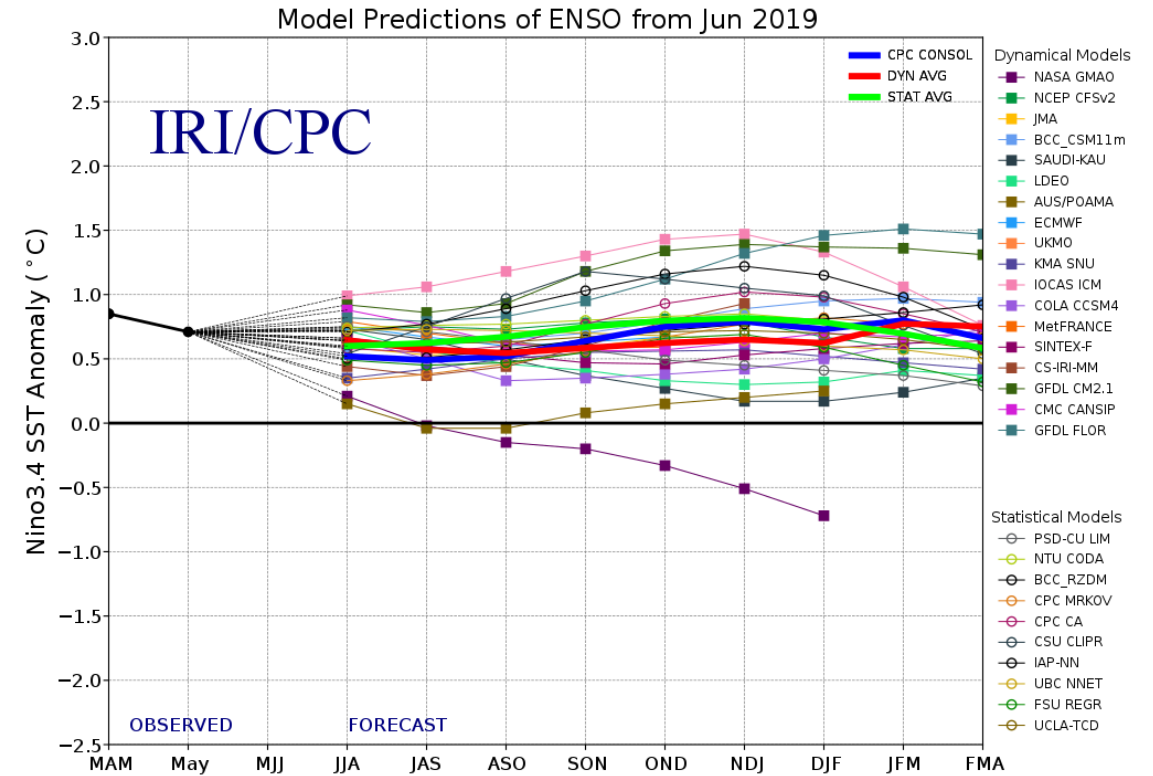
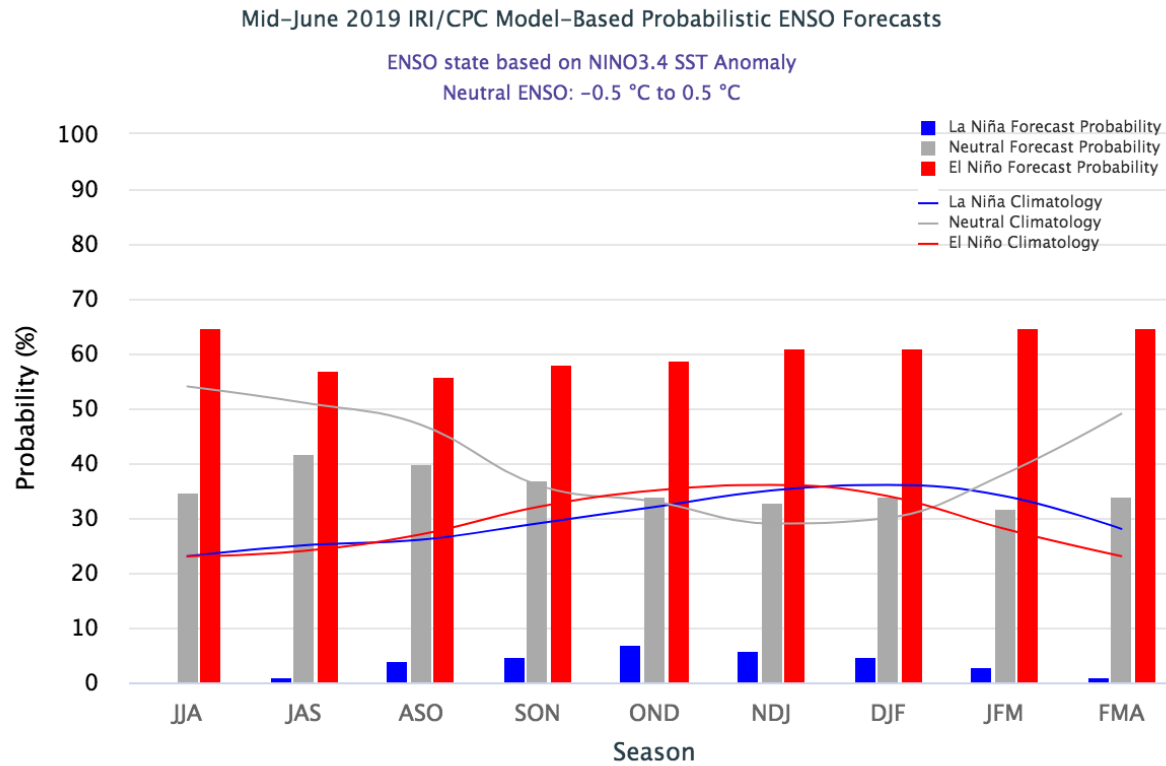
# PRISM proportion of annual average precipitation in this month: August



Proportion of precip relative to 1/12th



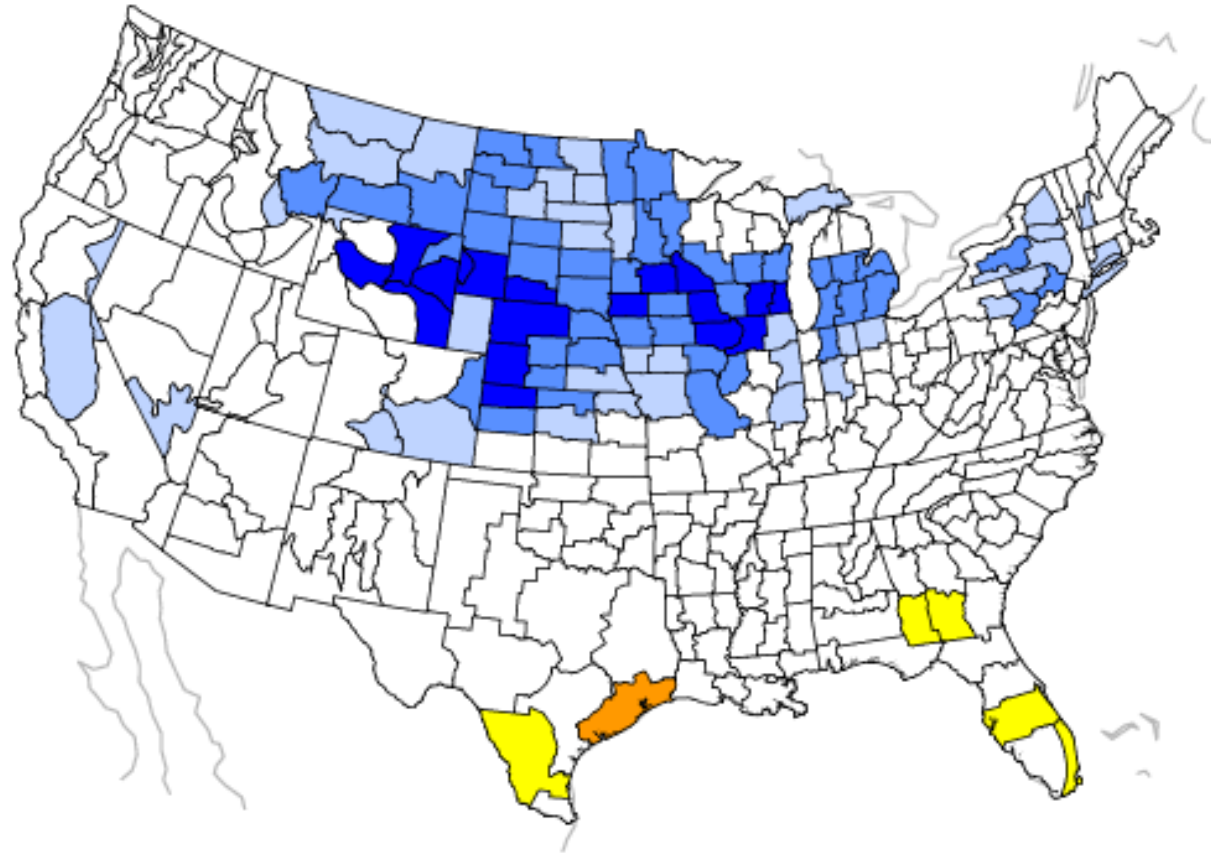
# What's the El Niño forecast?



An El Niño advisory is in effect...



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



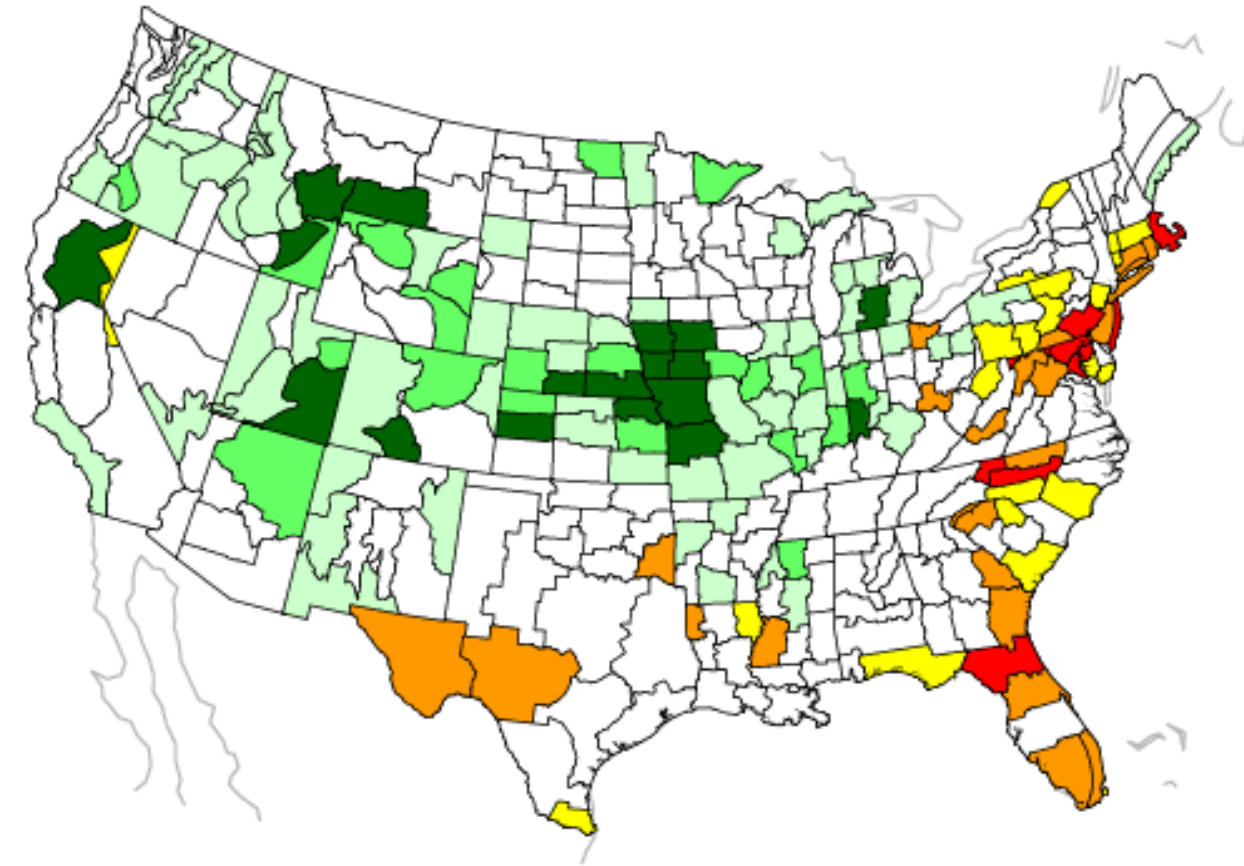
**Percent (%) Increase in Risk**

NOAA/ESRL/PSD

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



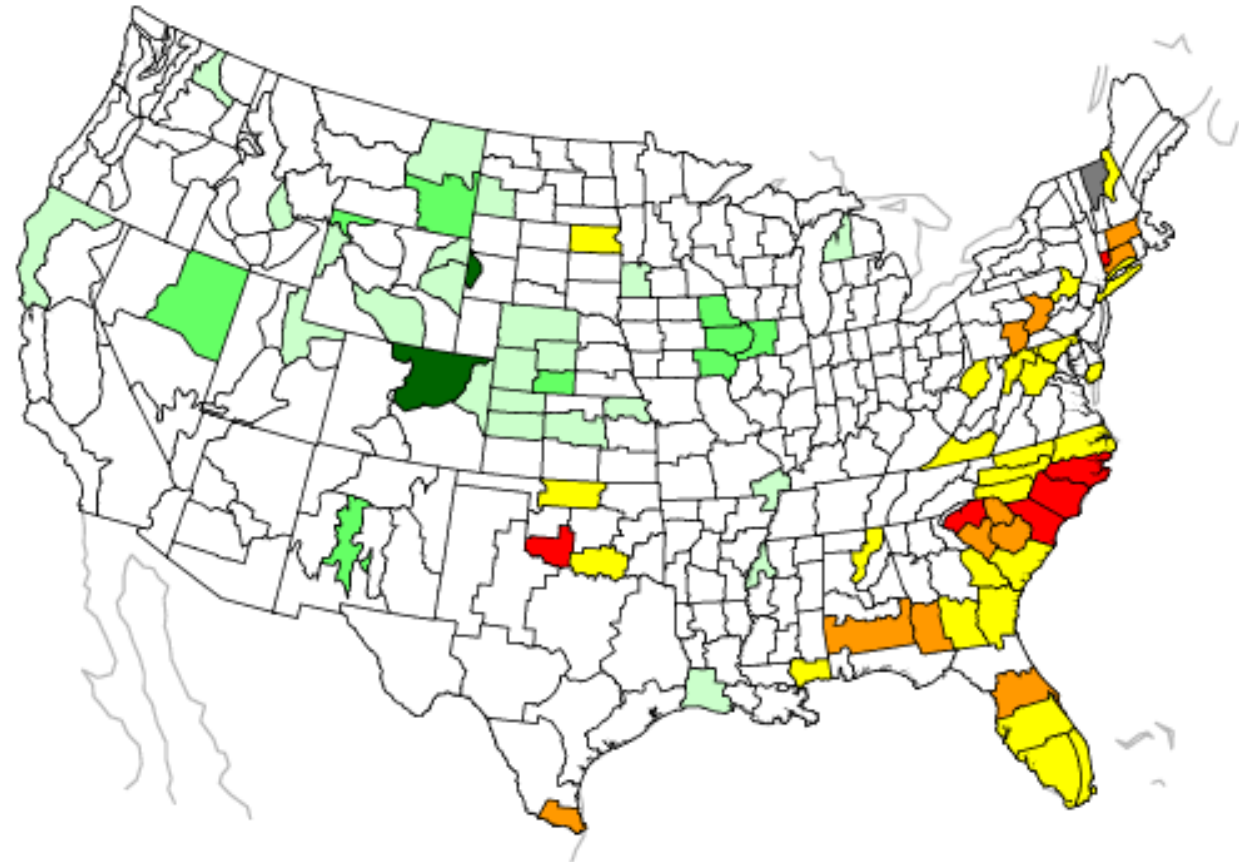
JAS Precipitation During El Nino  
Increased Risk of Wet or Dry Extremes



Percent (%) Increase in Risk

NOAA/ESRL/PSD

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



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”





**Russ.Schumacher@colostate.edu**

**To view this and other presentations:  
[http://climate.colostate.edu/ccc\\_archive.html](http://climate.colostate.edu/ccc_archive.html)**

**Thank you**

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