

Colorado Climate Center — *WATF Climate Update*

Becky Bolinger

Water Availability Task Force

May 14, 2019



COLORADO
CLIMATE
CENTER



ATMOSPHERIC SCIENCE
COLORADO STATE UNIVERSITY

2019 Water Year To Date

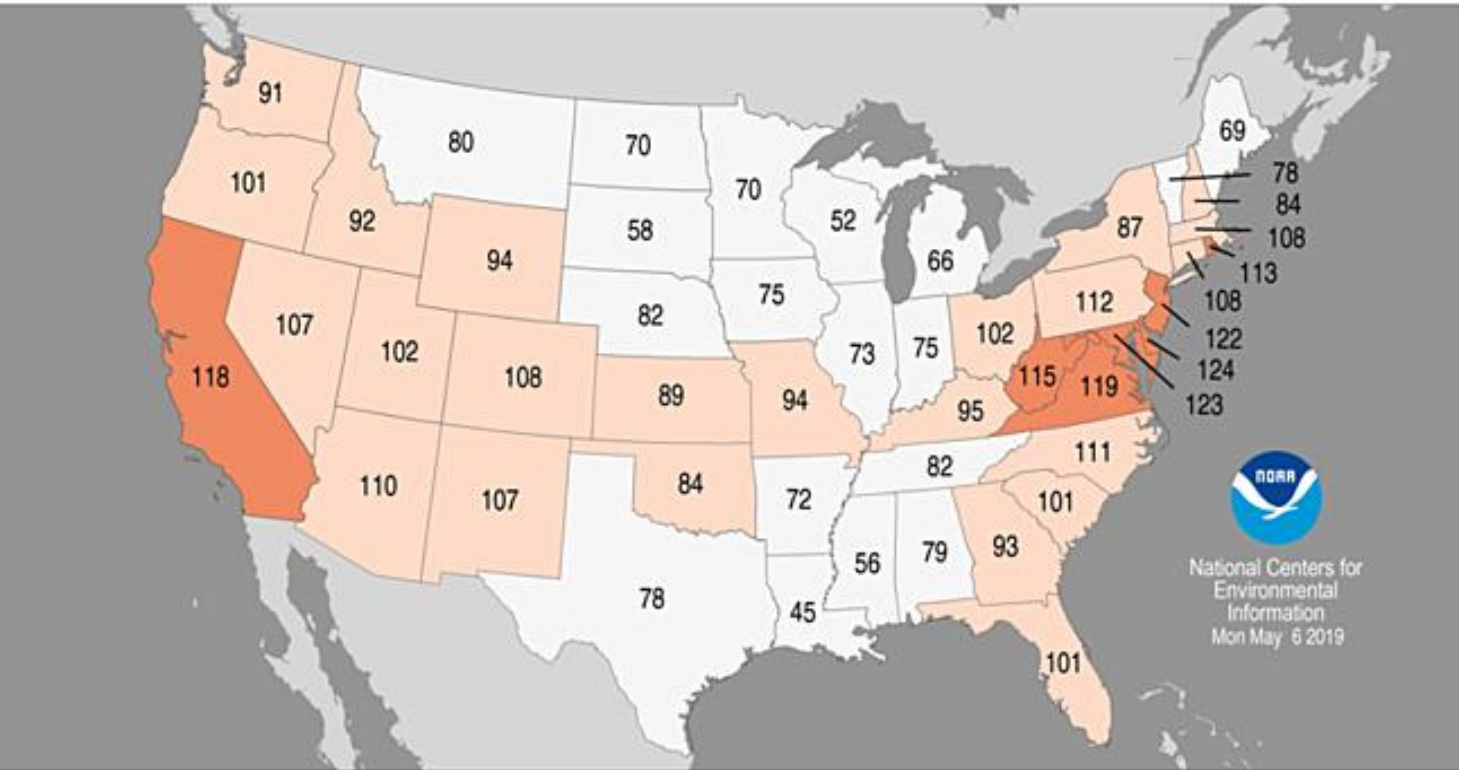
temperature, precipitation,
evaporative demand



Statewide Average Temperature Ranks

April 2019

Period: 1895–2019



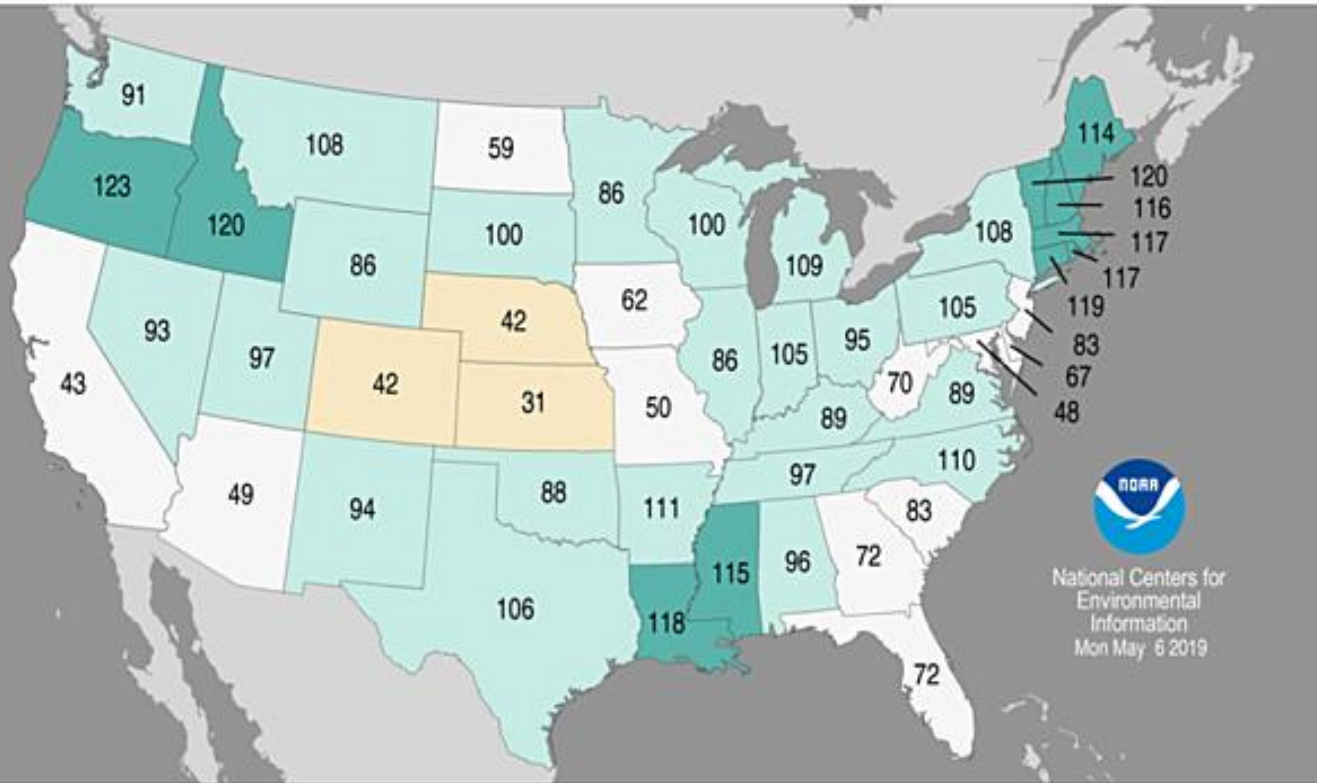
Month	T Rank	
Oct	35 th	coldest
Nov	39 th	coldest
Dec	80 th	average
Jan	36 th	warmest
Feb	28 th	coldest
Mar	66 th	average
Apr	18 th	warmest



Statewide Precipitation Ranks

April 2019

Period: 1895–2019



National Centers for
Environmental
Information
Mon May 6 2019

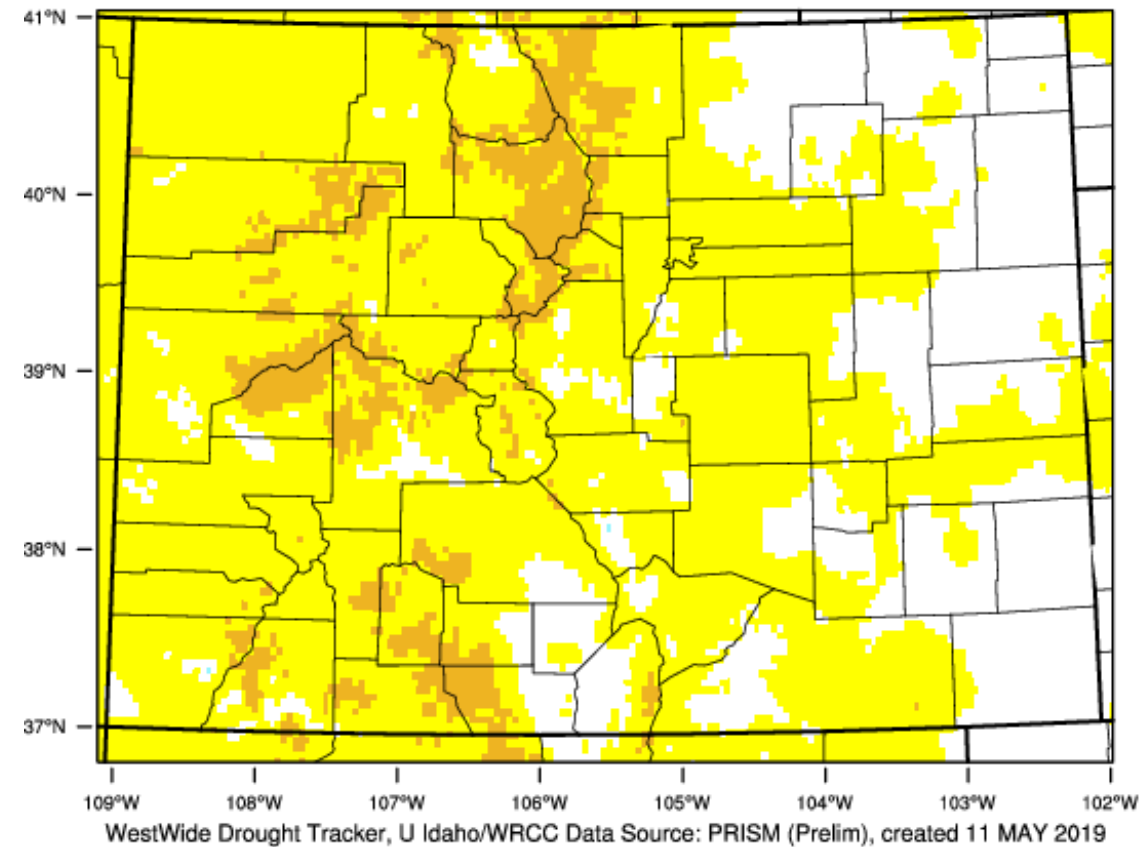
11th wettest January – April

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



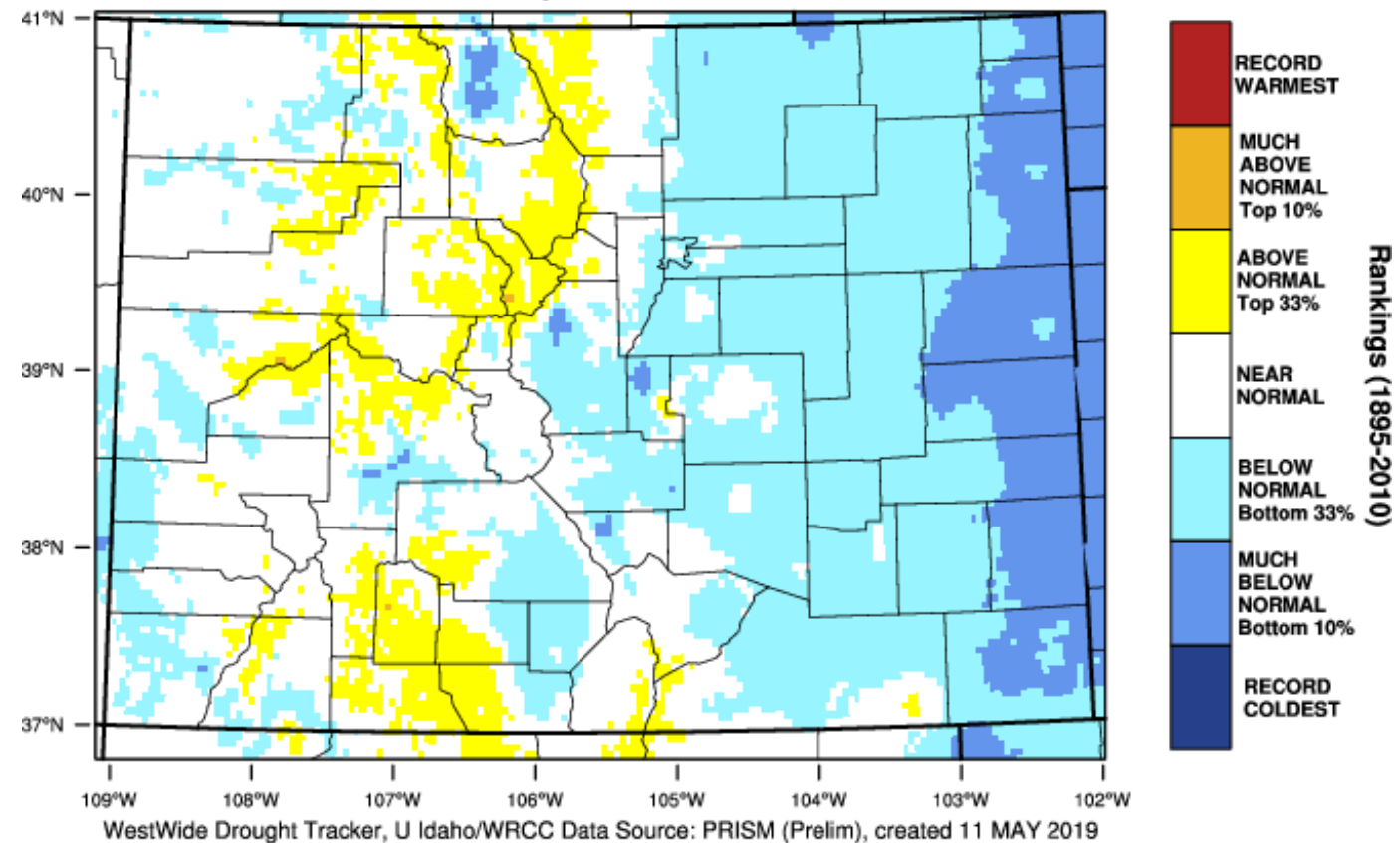
Colorado - Mean Temperature

April 2019 Percentile



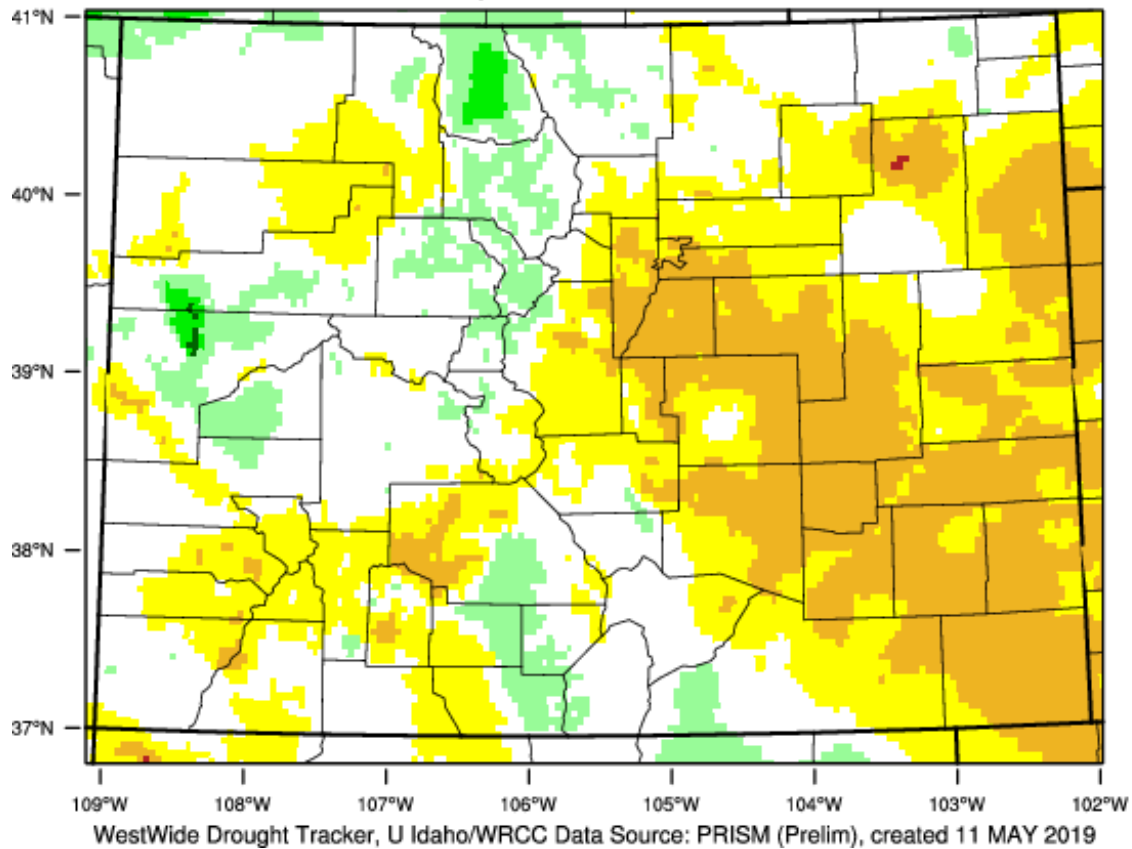
Colorado - Mean Temperature

October-April 2019 Percentile



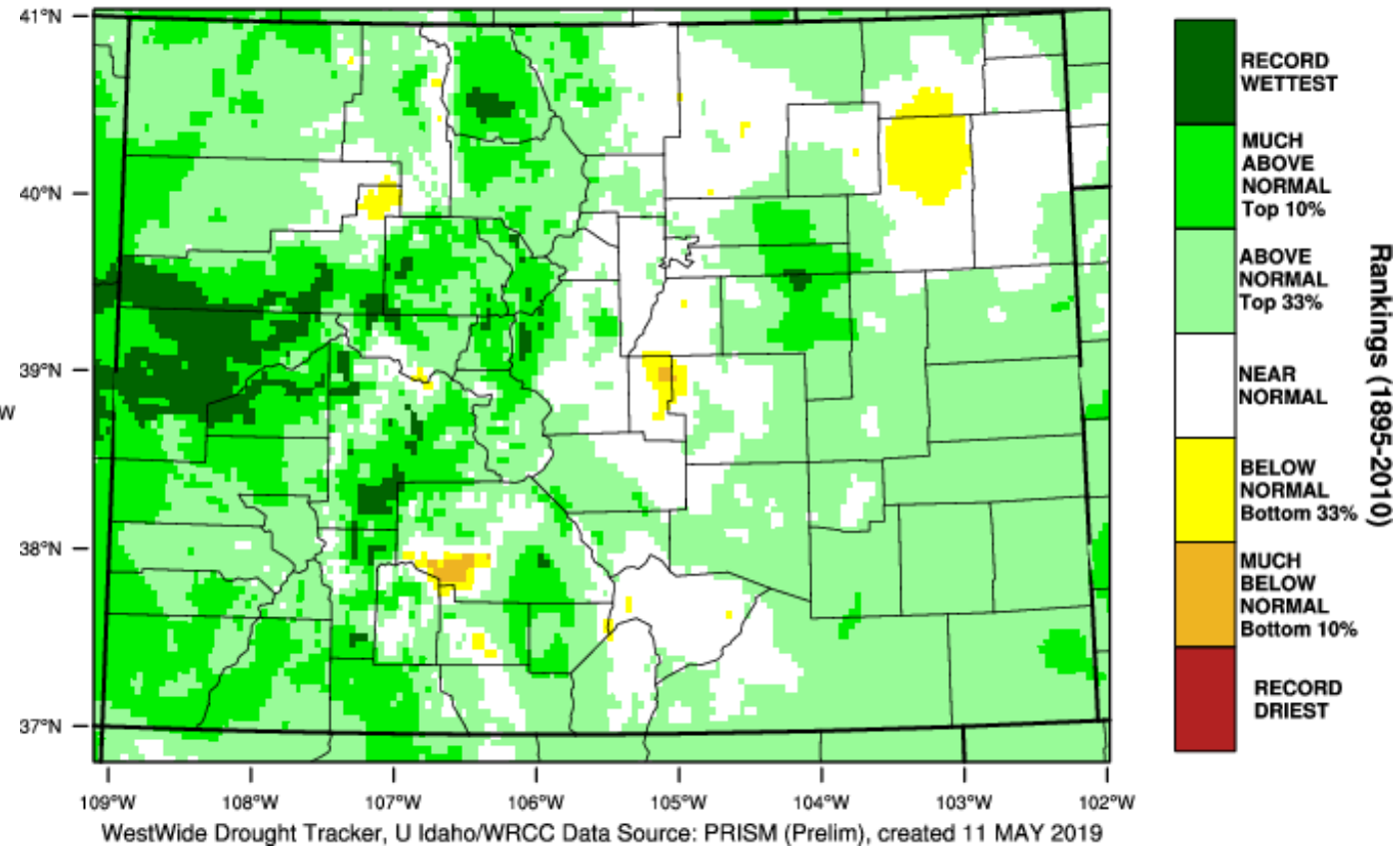
Colorado - Precipitation

April 2019 Percentile



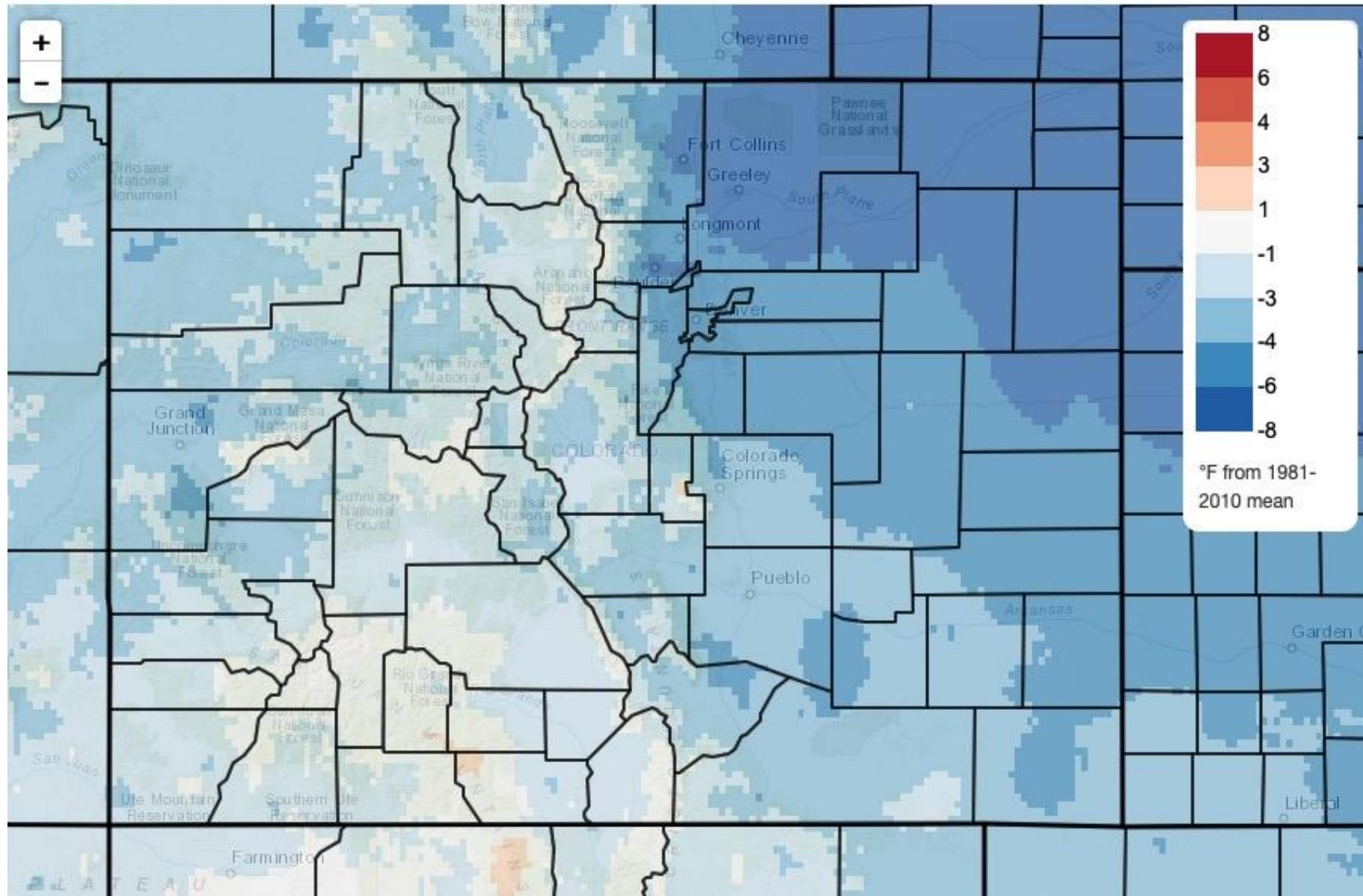
Colorado - Precipitation

October-April 2019 Percentile



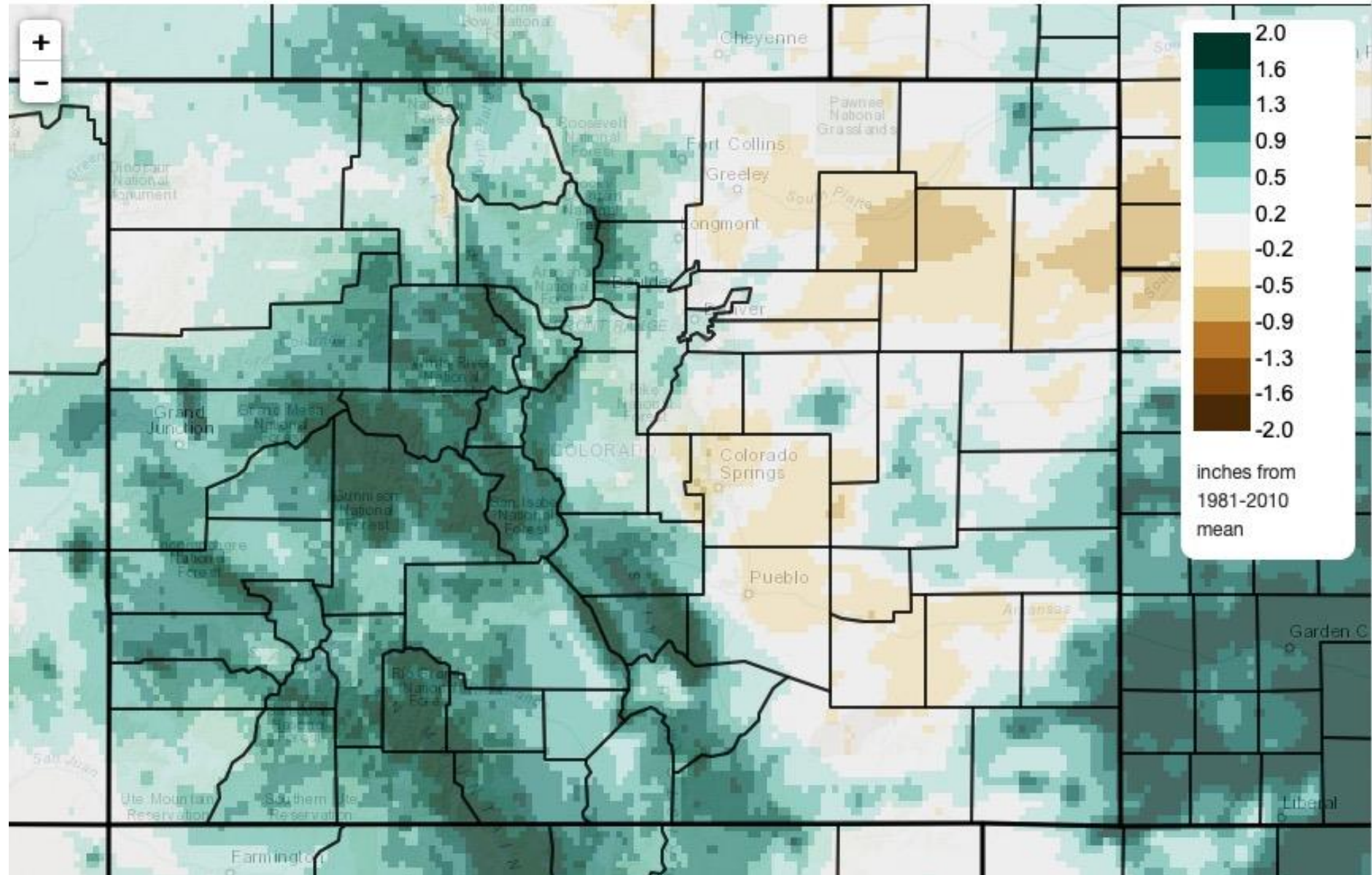
Mean Daily Temperature Anomaly, Last 15 Days

2019/04/28 - 2019/05/12

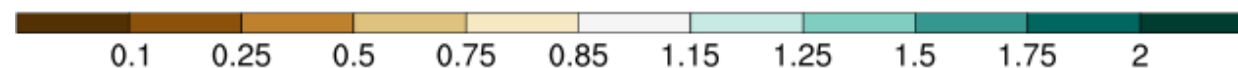
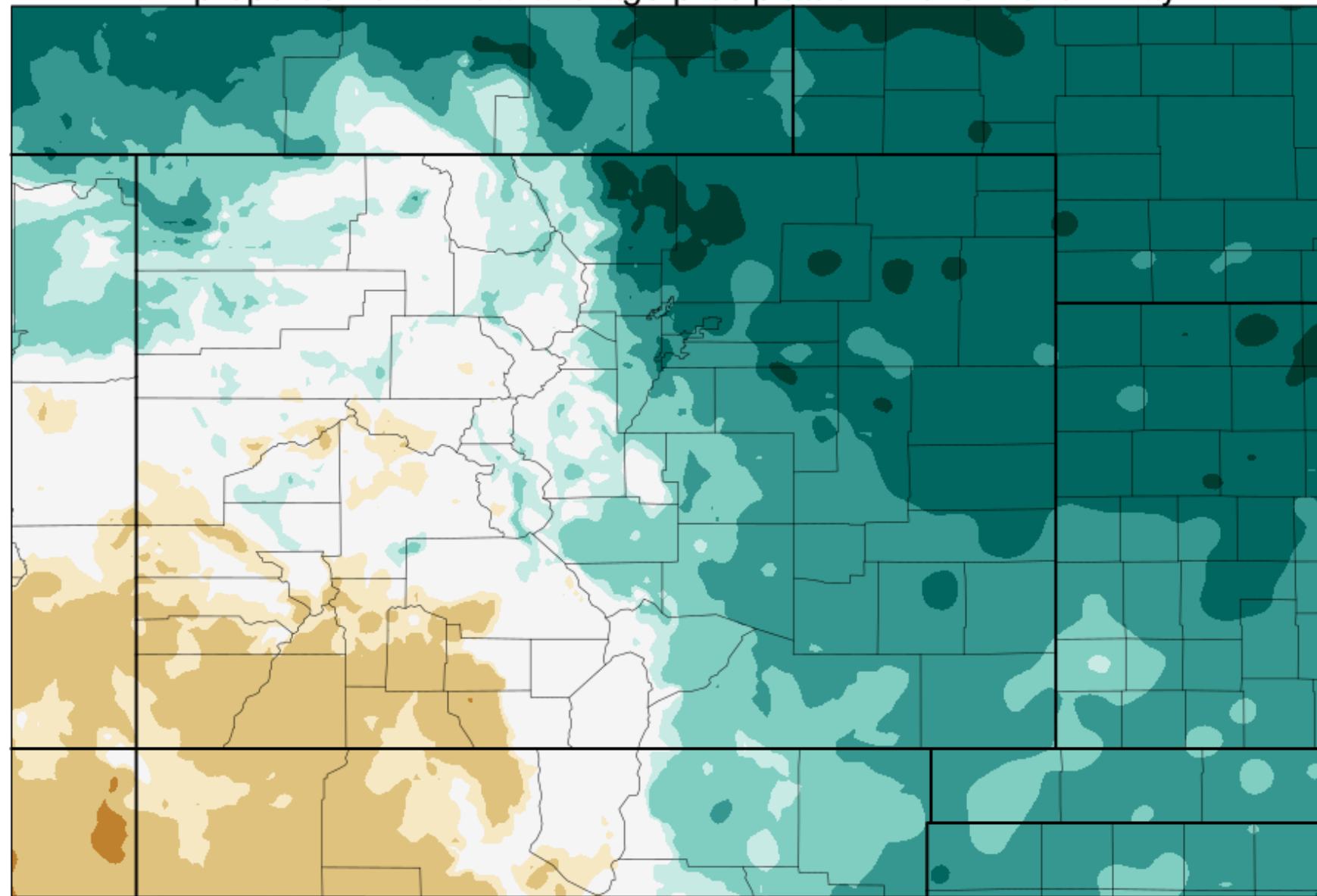


Total Precipitation Anomaly, Last 15 Days

2019/04/28 - 2019/05/12



PRISM proportion of annual average precipitation in this month: May



Proportion of precip relative to 1/12th

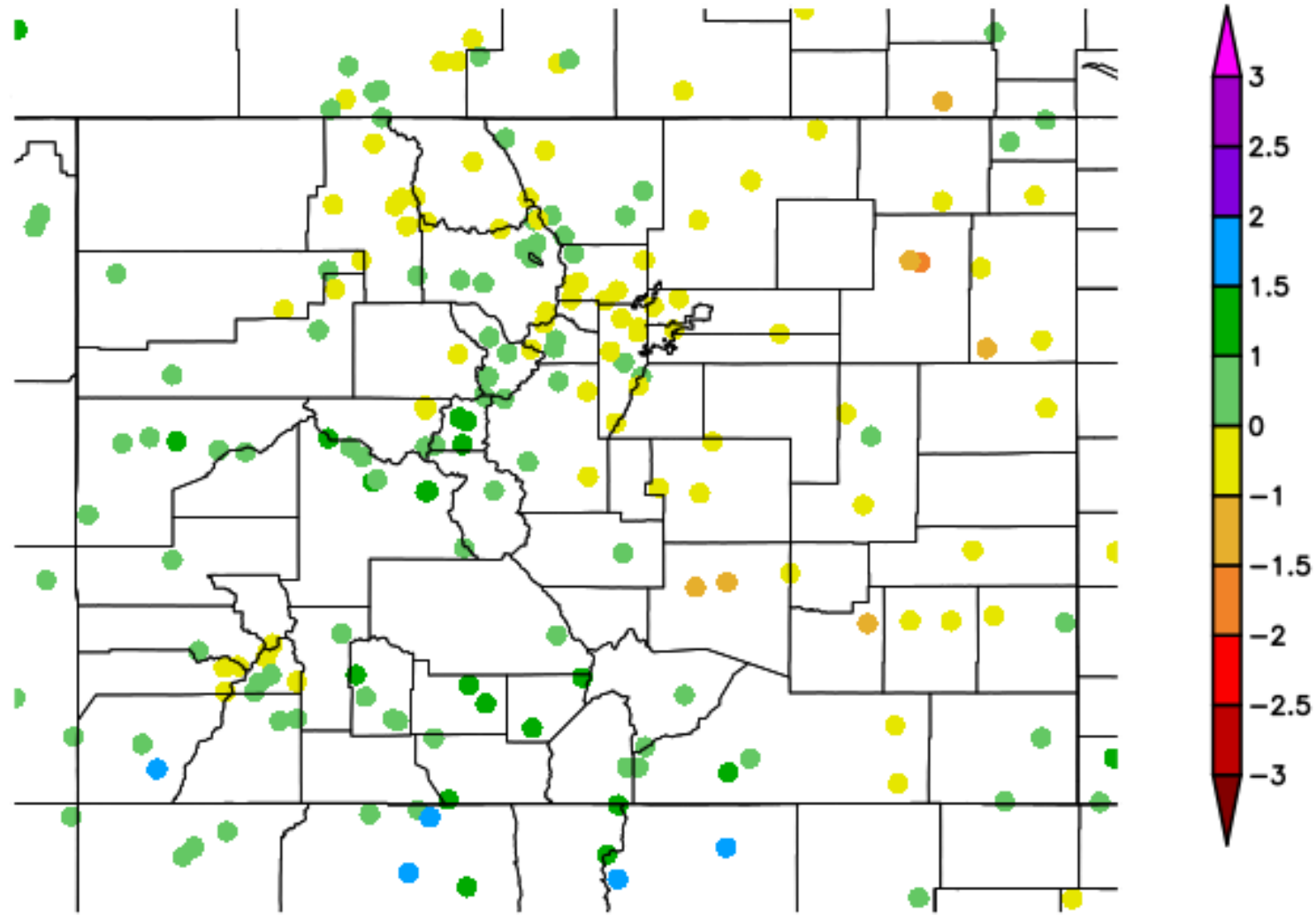
Russ Schumacher/Colorado Climate Center



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30 Day SPI
4/13/2019 – 5/12/2019



Generated 5/13/2019 at HPRCC using provisional data.

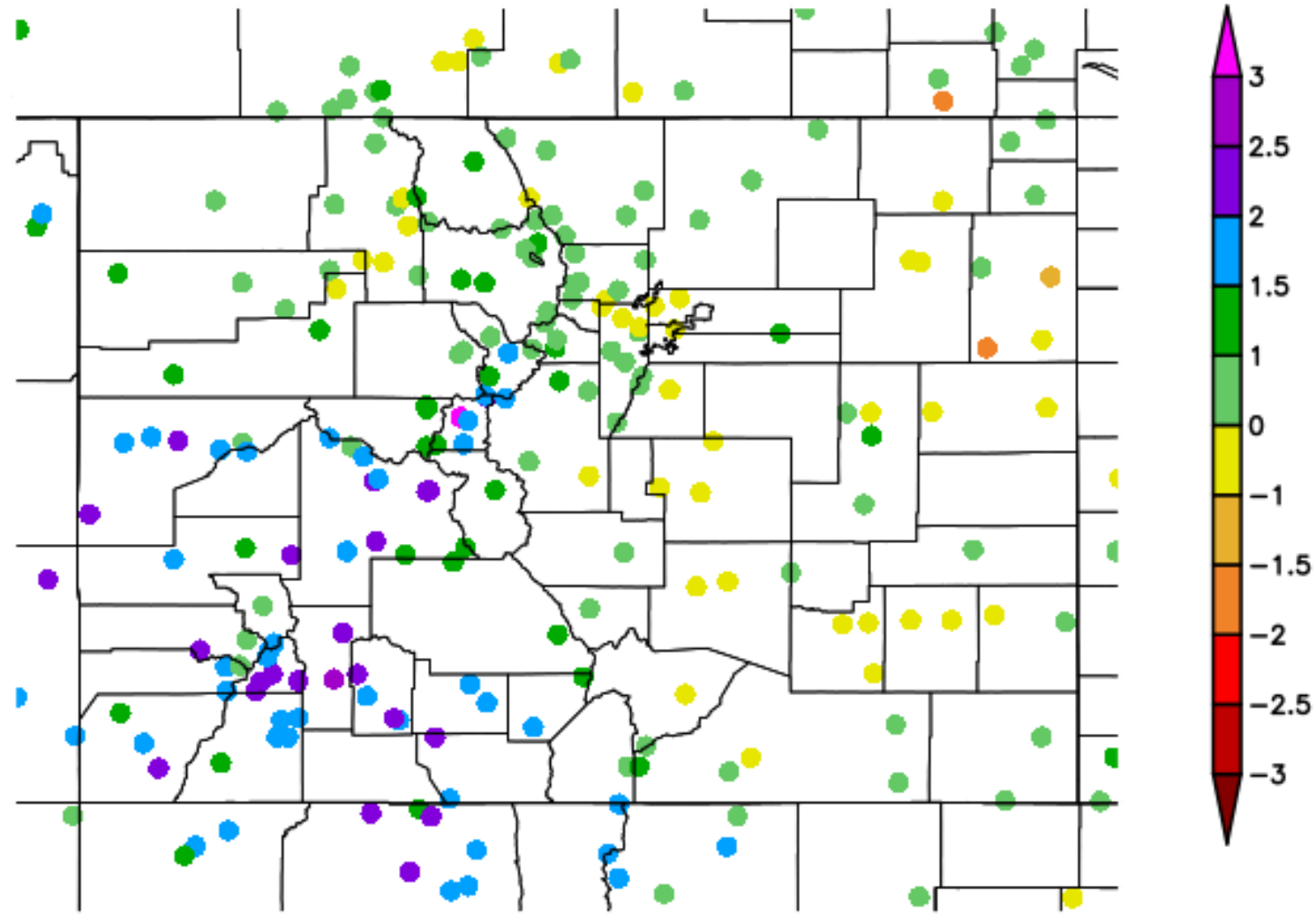
NOAA Regional Climate Centers



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90 Day SPI 2/12/2019 – 5/12/2019



Generated 5/13/2019 at HPRCC using provisional data.

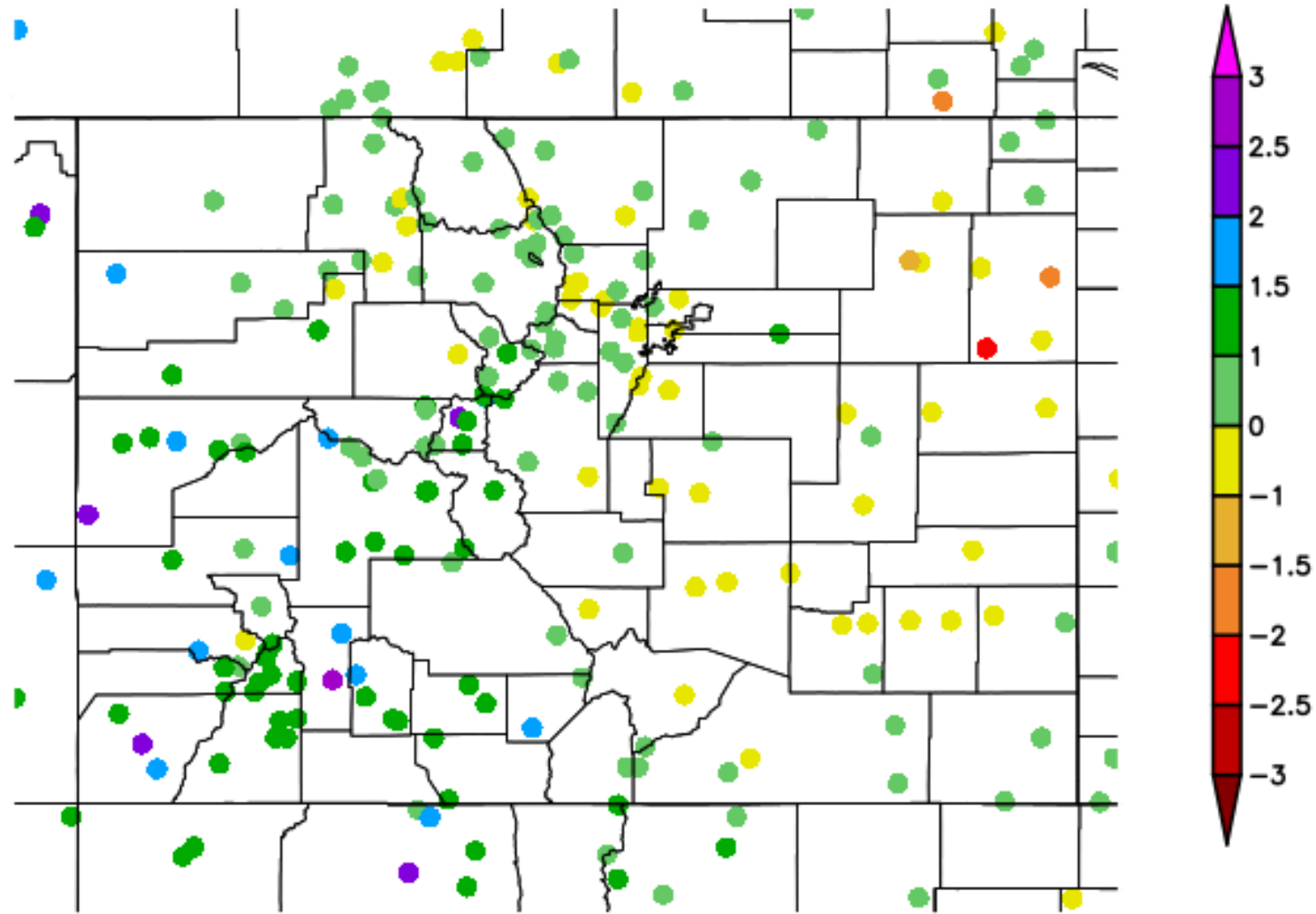
NOAA Regional Climate Centers



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6 Month SPI
11/13/2018 – 5/12/2019



Generated 5/13/2019 at HPRCC using provisional data.

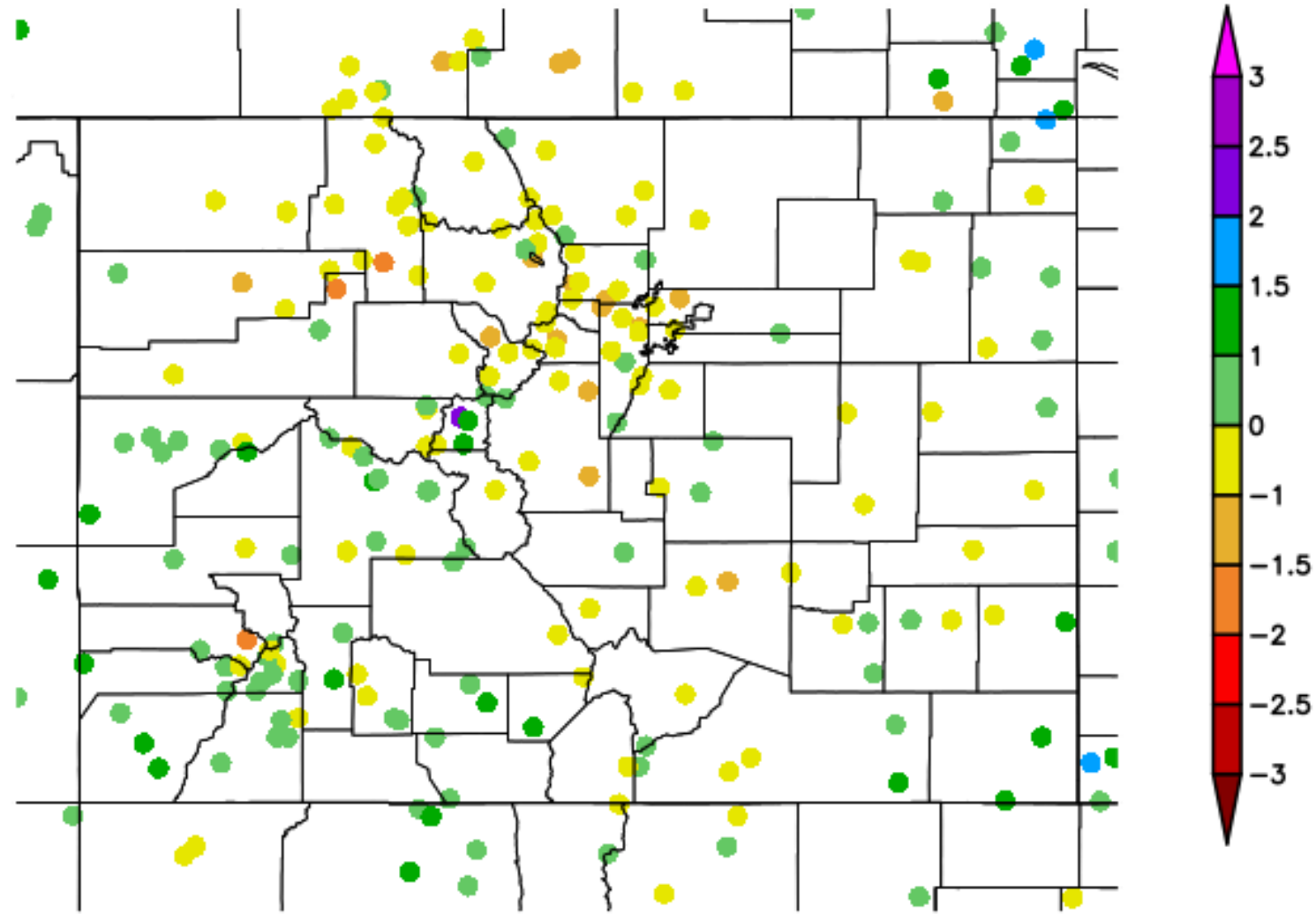
NOAA Regional Climate Centers



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12 Month SPI 5/13/2018 – 5/12/2019



Generated 5/13/2019 at HPRCC using provisional data.

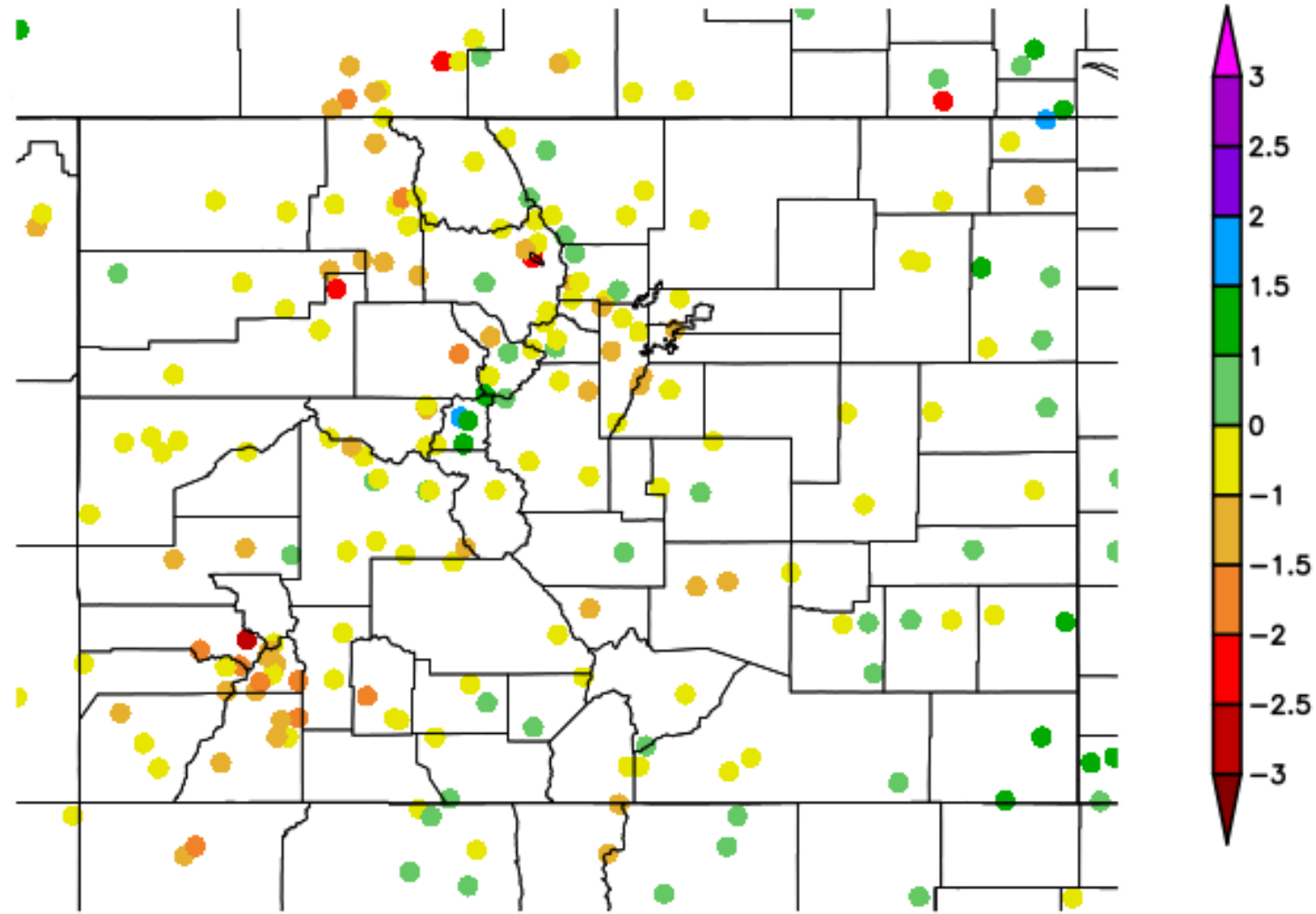
NOAA Regional Climate Centers



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24 Month SPI 5/13/2017 – 5/12/2019



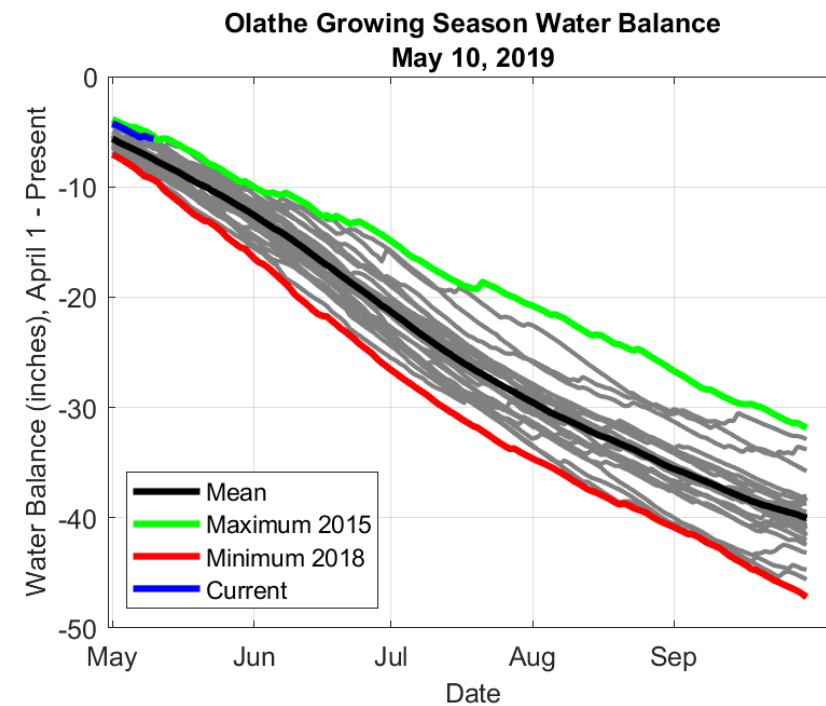
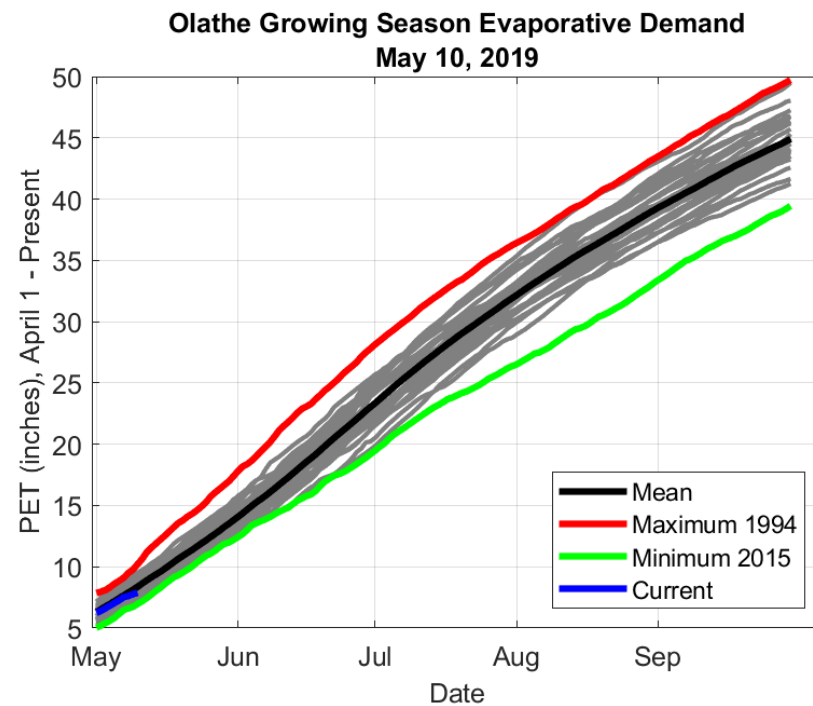
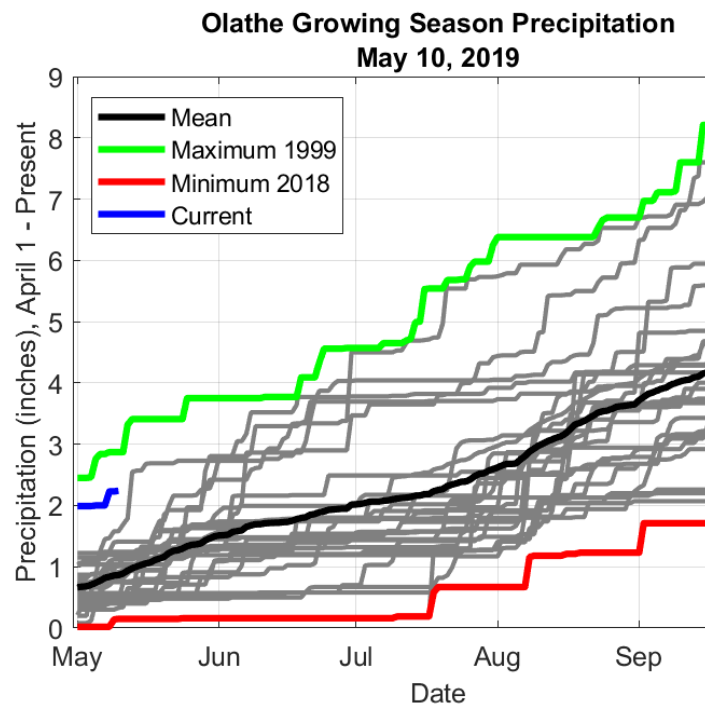
Generated 5/13/2019 at HPRCC using provisional data.

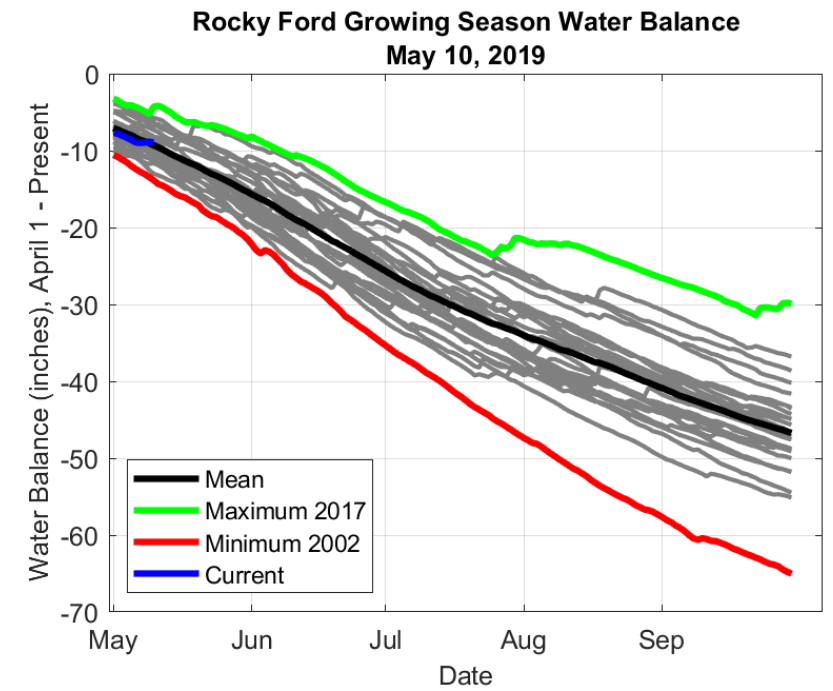
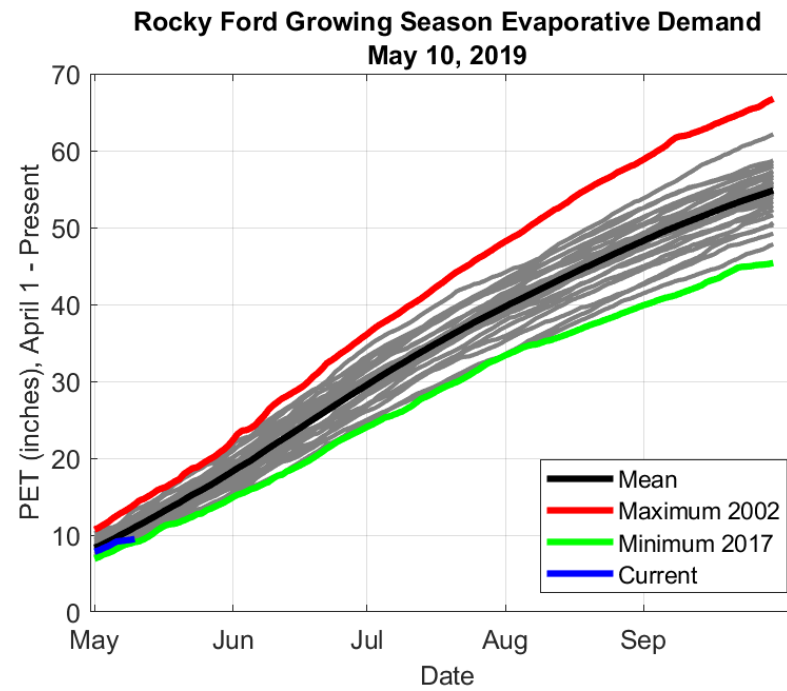
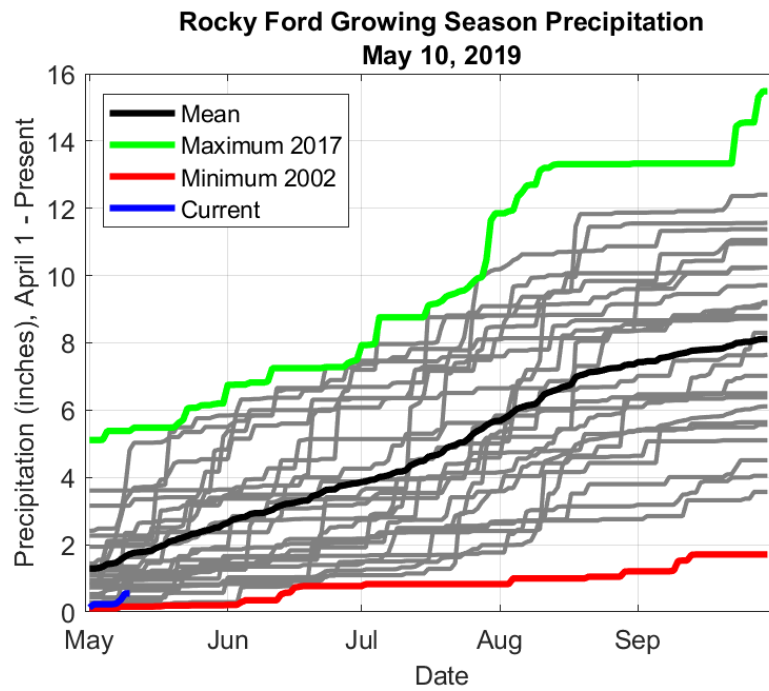
NOAA Regional Climate Centers



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Drought

National Drought

Colorado Drought

Colorado Drought Facts



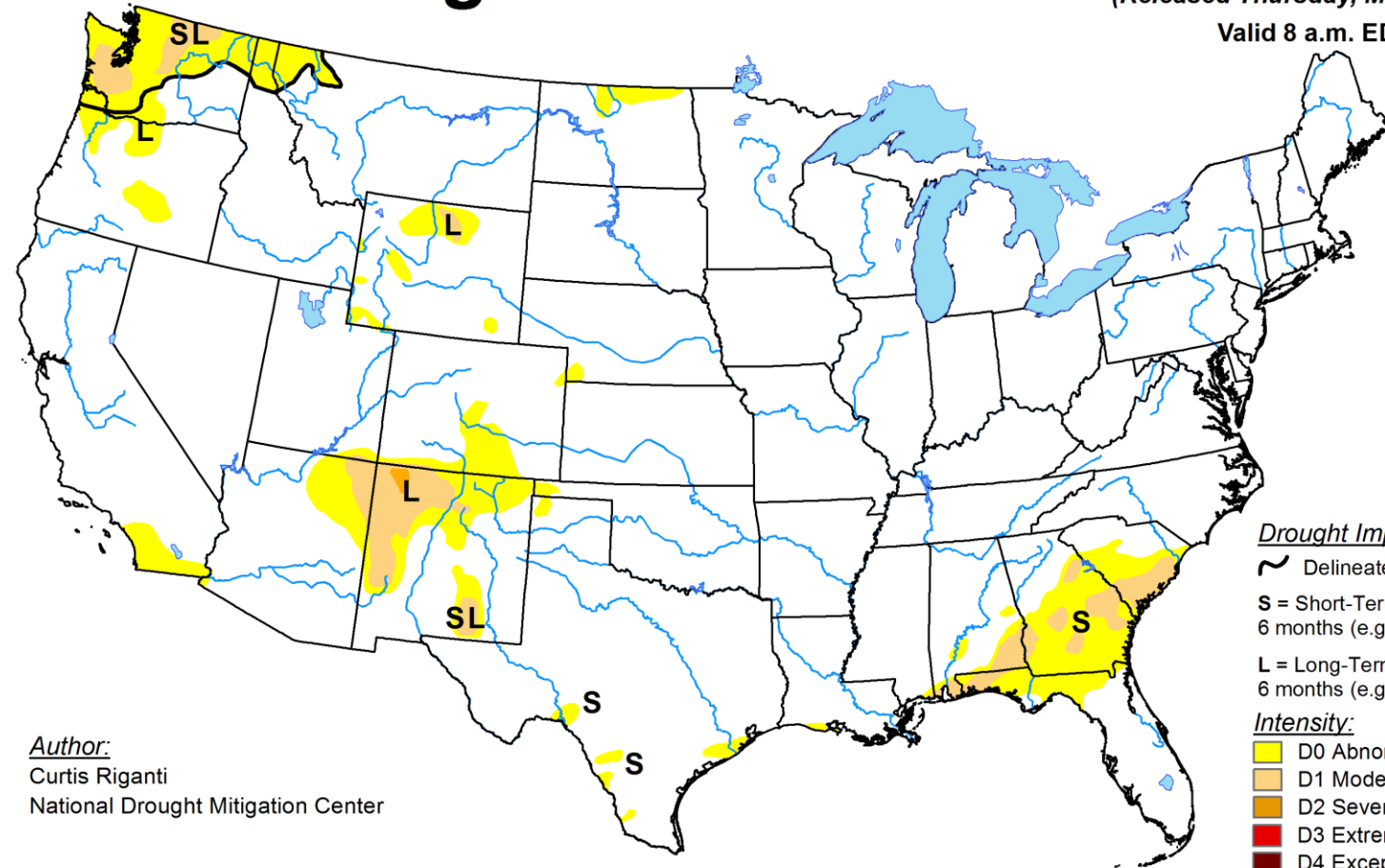
U.S. Drought Monitor

May 7, 2019
(Released Thursday, May. 9, 2019)
Valid 8 a.m. EDT

Top 5 lowest percent coverage of drought across the CONUS have occurred over the last 5 weeks.

Record lowest drought coverage over CONUS was 2.28% on April 23, 2019.

May 7, 2019:
9.83% in D0 or worse category
2.53% in D1 or worse category
0.05% in D2 category



Author:
Curtis Riganti
National Drought Mitigation Center

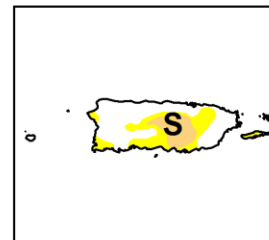
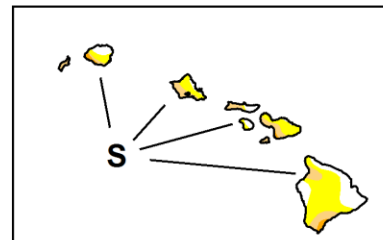
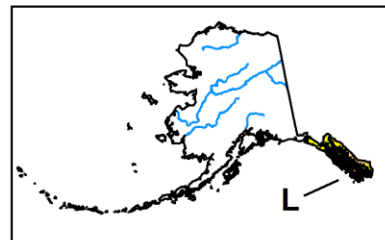
Drought Impact Types:

- ~ Delineates dominant impacts
- S** = Short-Term, typically less than 6 months (e.g. agriculture, grasslands)
- L** = Long-Term, typically greater than 6 months (e.g. hydrology, ecology)

Intensity:

- D0** Abnormally Dry
- D1** Moderate Drought
- D2** Severe Drought
- D3** Extreme Drought
- D4** Exceptional Drought

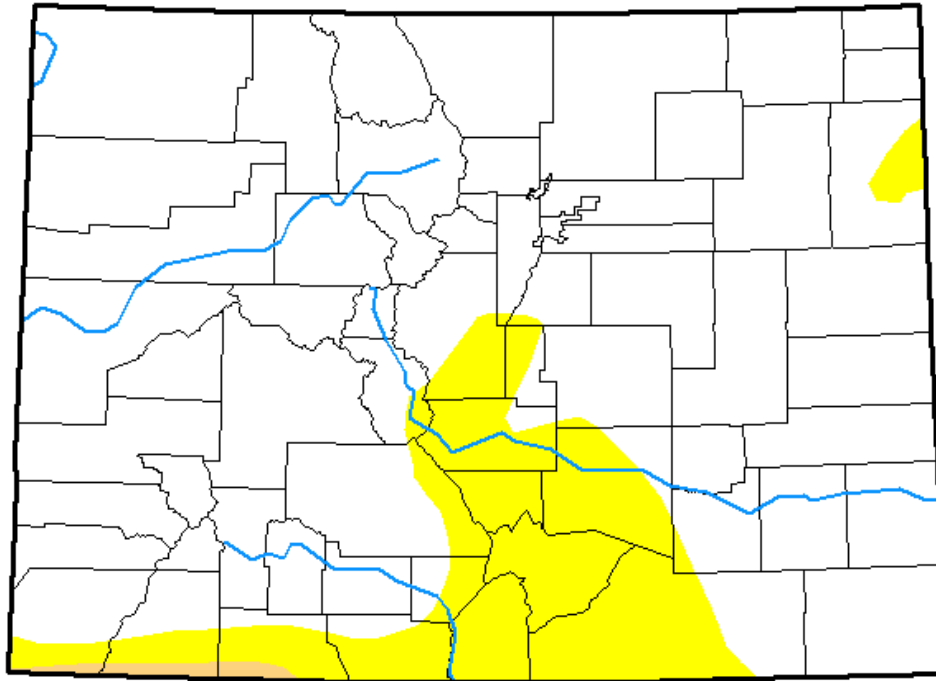
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.



<http://droughtmonitor.unl.edu/>



U.S. Drought Monitor Colorado



May 7, 2019

(Released Thursday, May. 9, 2019)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	84.23	15.77	0.59	0.00	0.00	0.00
Last Week 04-30-2019	84.72	15.28	0.59	0.00	0.00	0.00
3 Months Ago 02-05-2019	8.14	91.86	67.16	40.83	22.05	2.96
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 05-08-2018	18.02	81.98	67.98	51.57	30.89	7.40

Intensity:

D0 Abnormally Dry

D3 Extreme Drought

D1 Moderate Drought

D4 Exceptional Drought

D2 Severe Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:

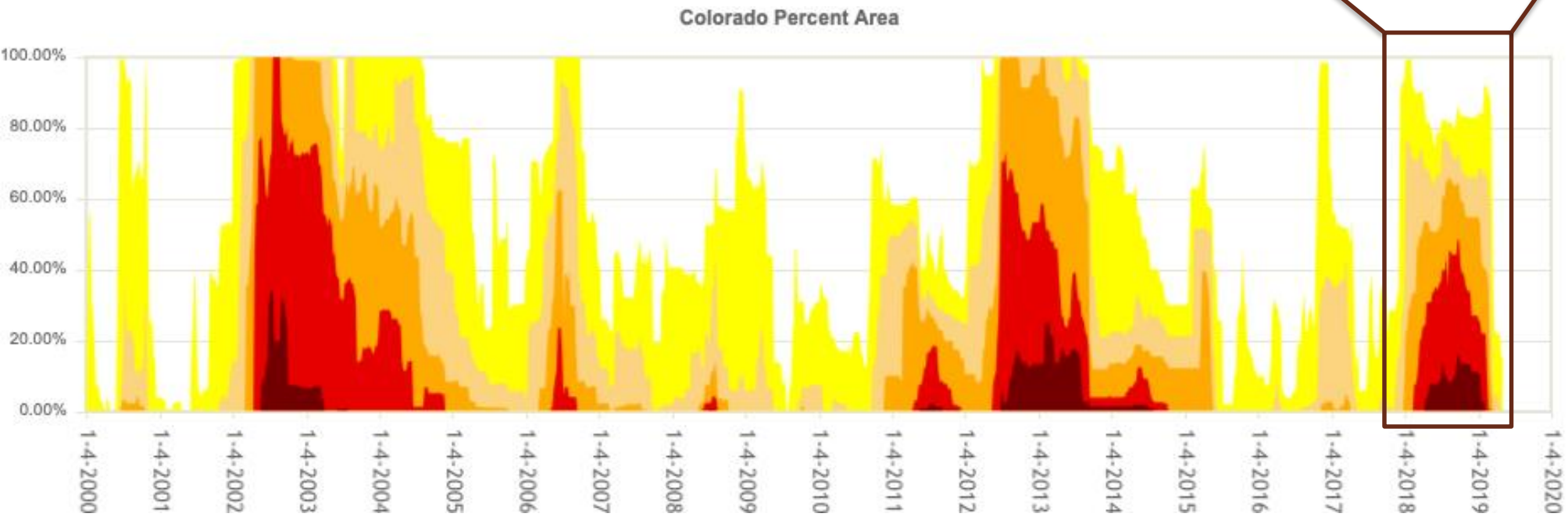
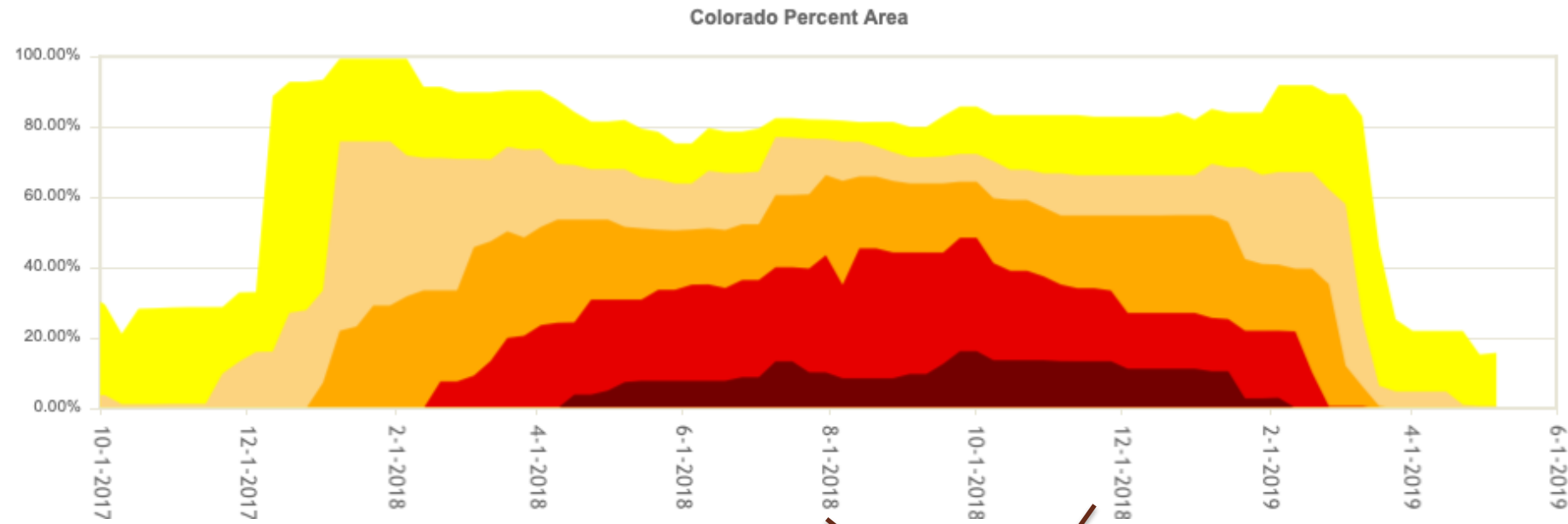
Curtis Riganti

National Drought Mitigation Center



<http://droughtmonitor.unl.edu/>





Colorado Drought Monitor Facts

- 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.
- Our longest period of drought-free conditions since the US Drought Monitor started was from 6/9/2015 – 3/6/2016.
- The last time we were drought free (no D1 – D4) was August 29, 2017.





Outlook

Next 7 days

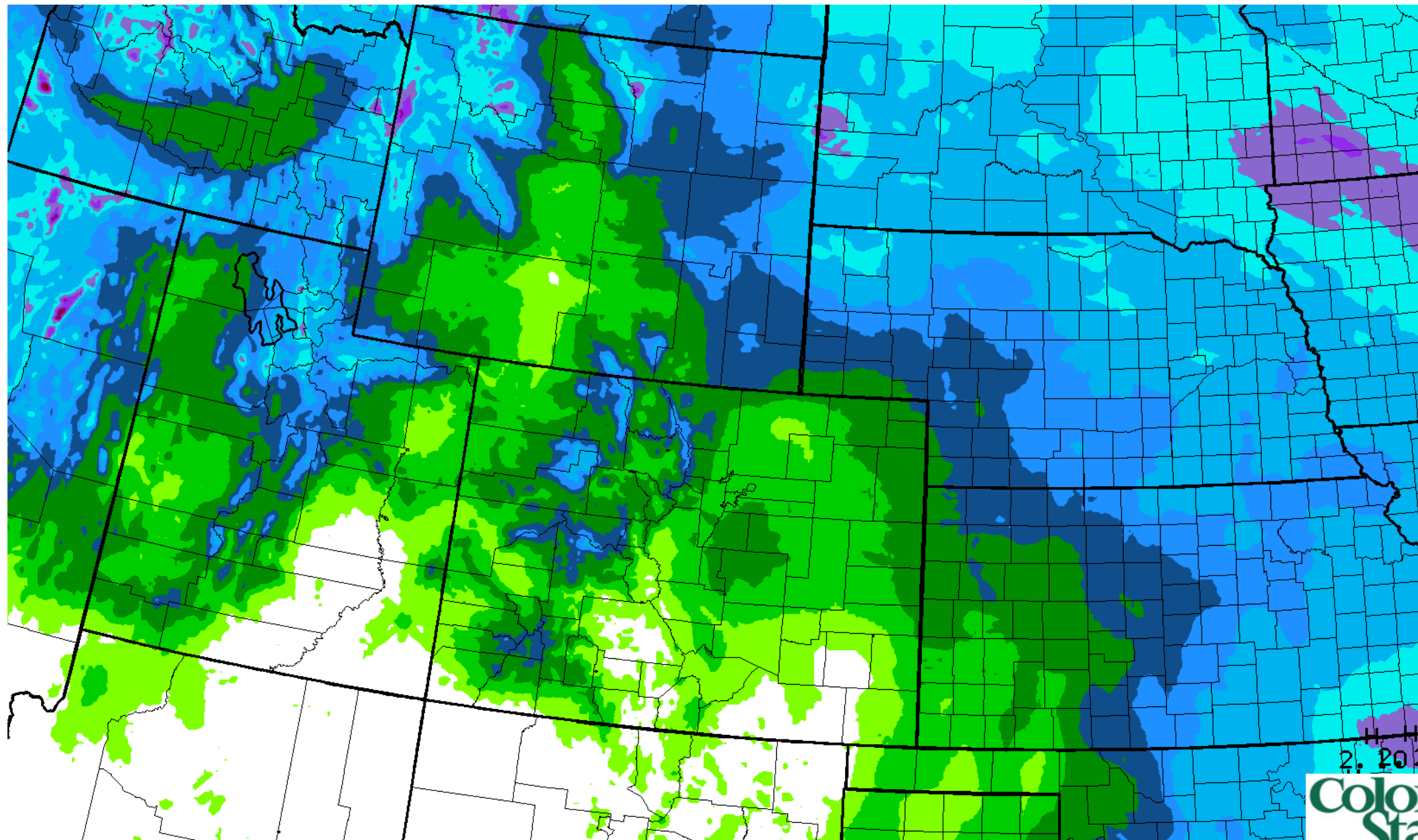
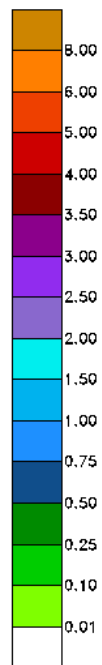
8-14 day Outlook

CPC Outlooks

Precipitation Projections

What does El Niño mean?



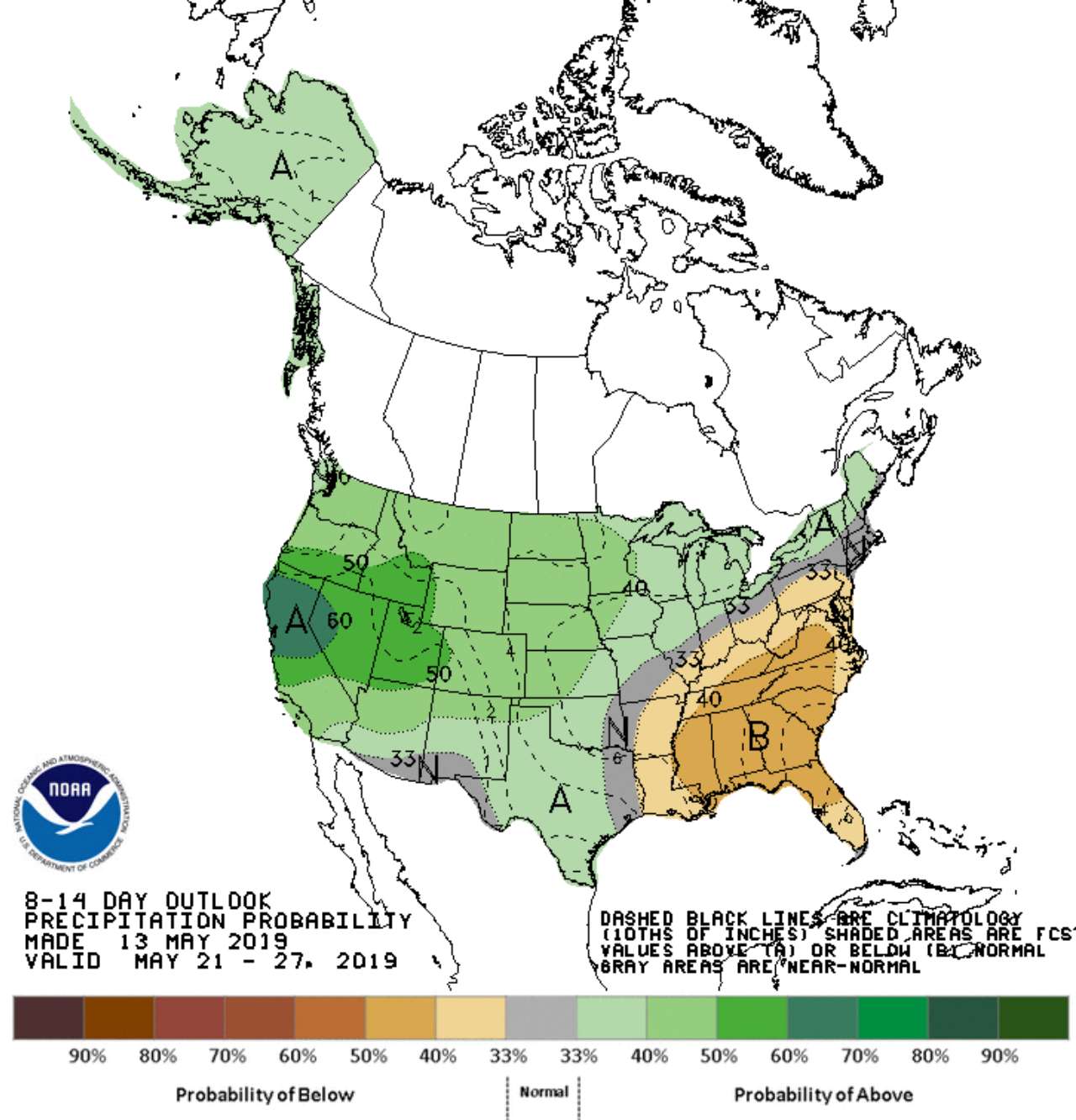
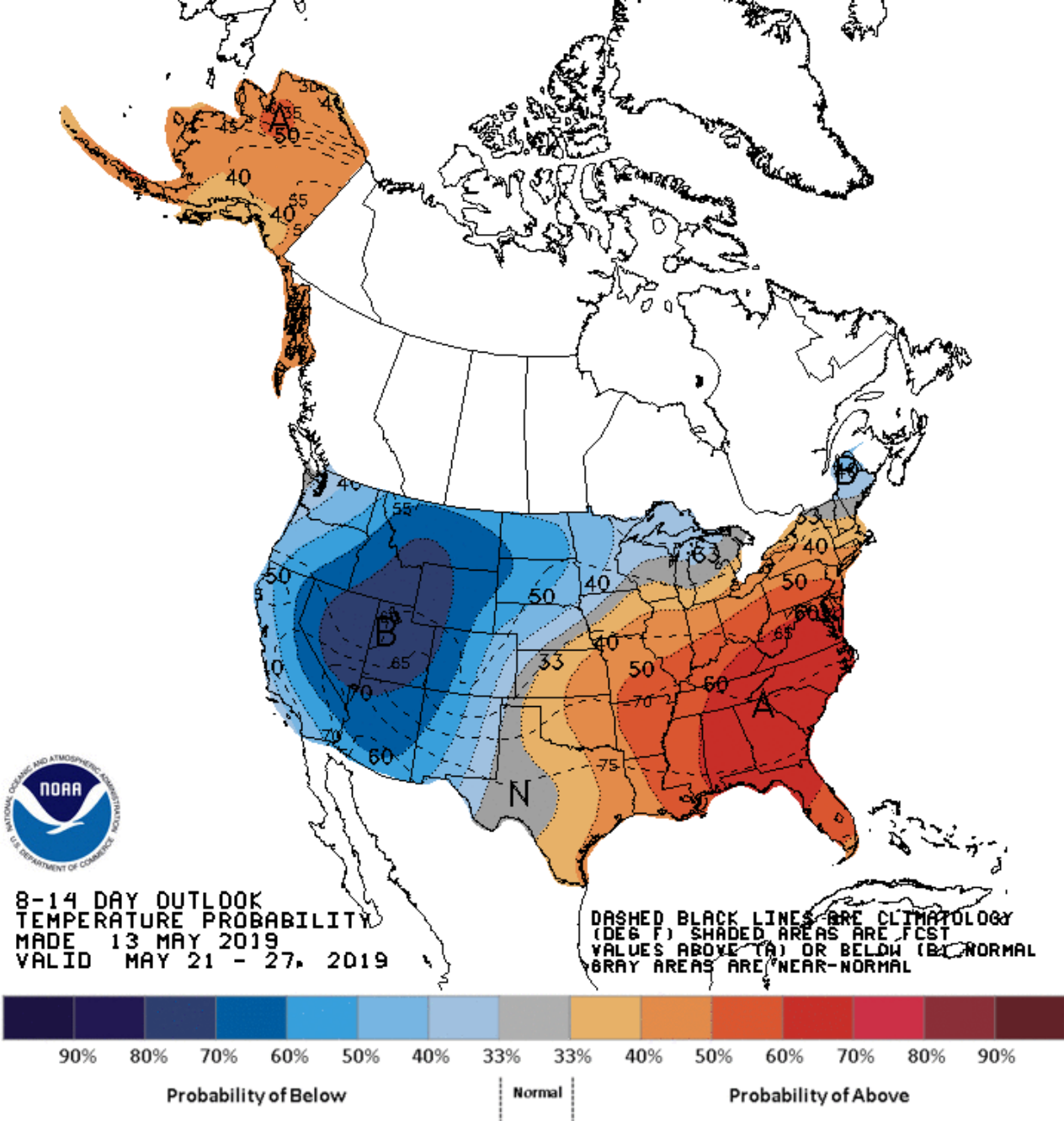


WPC FORECAST PRECIPITATION (INCHES) IN 7 DAYS ENDING TUE 190521/0000V168
FORECAST ISSUED 190514/0000F168

Colorado
State
University

COLORADO CLIMATE CENTER

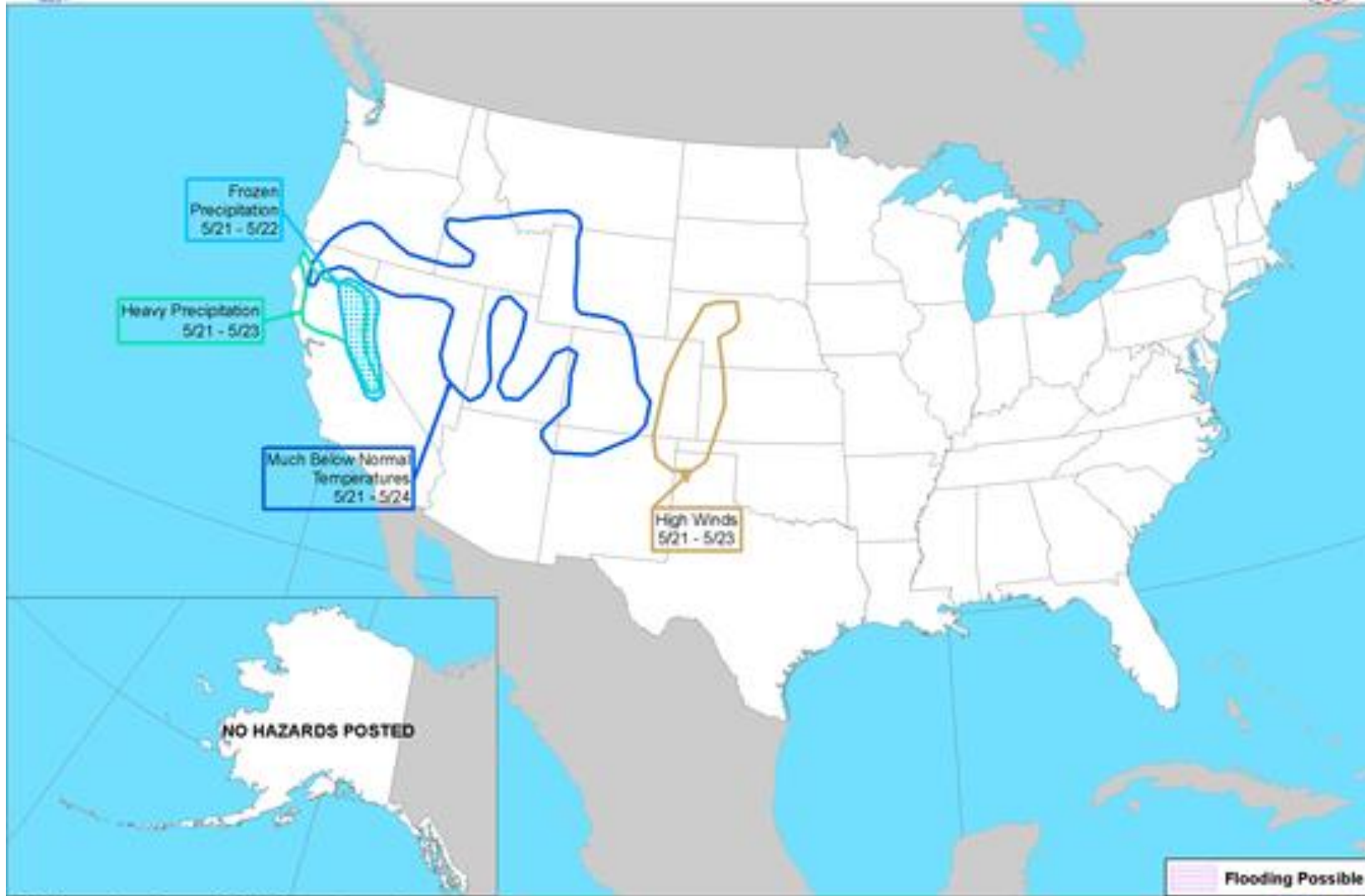






Day 8-14 U.S. Hazards Outlook

Valid: 05/21/2019-05/27/2019



Climate Prediction Center

Made: 05/13/2019 3PM EDT

Follow us:  

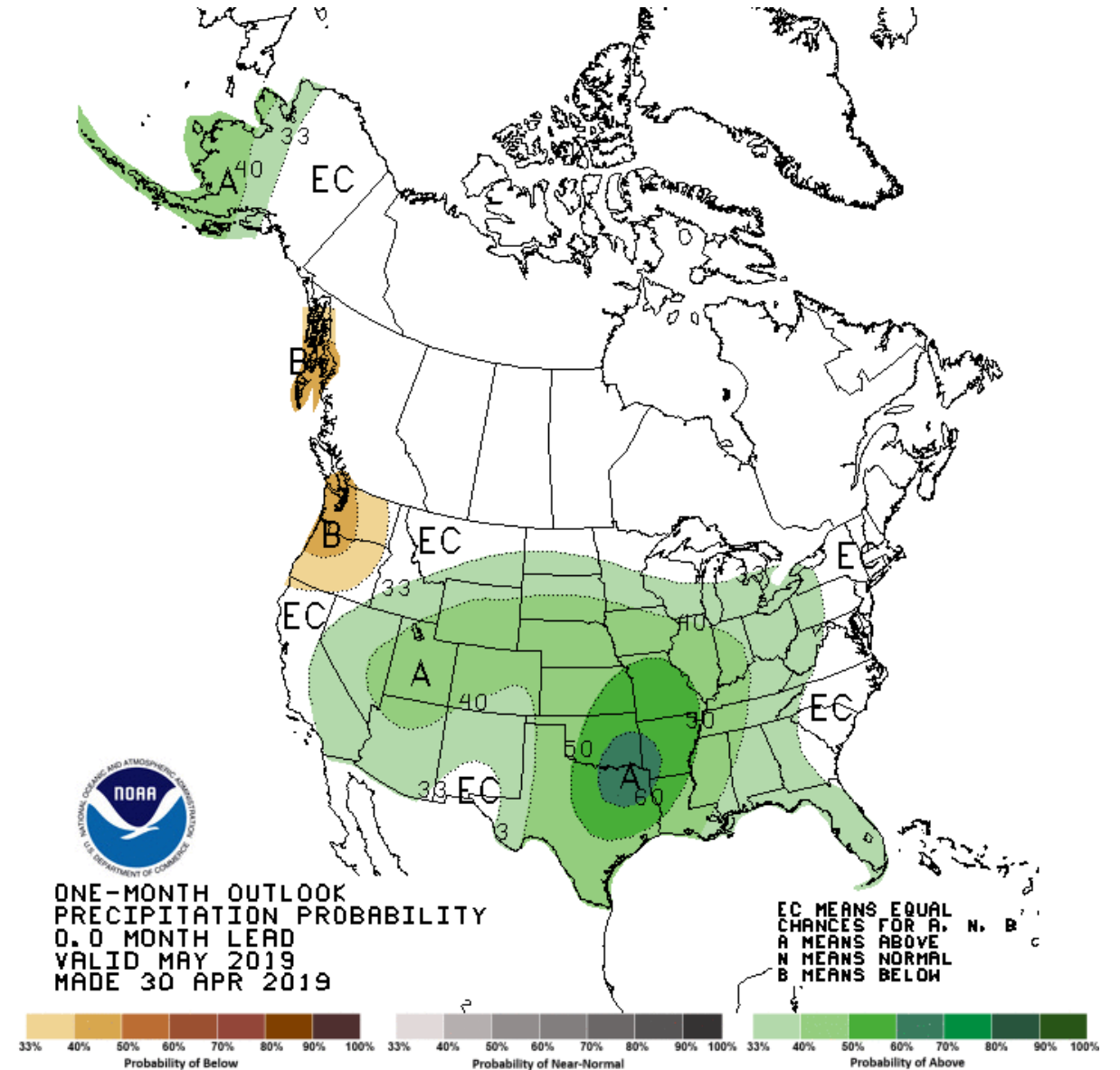
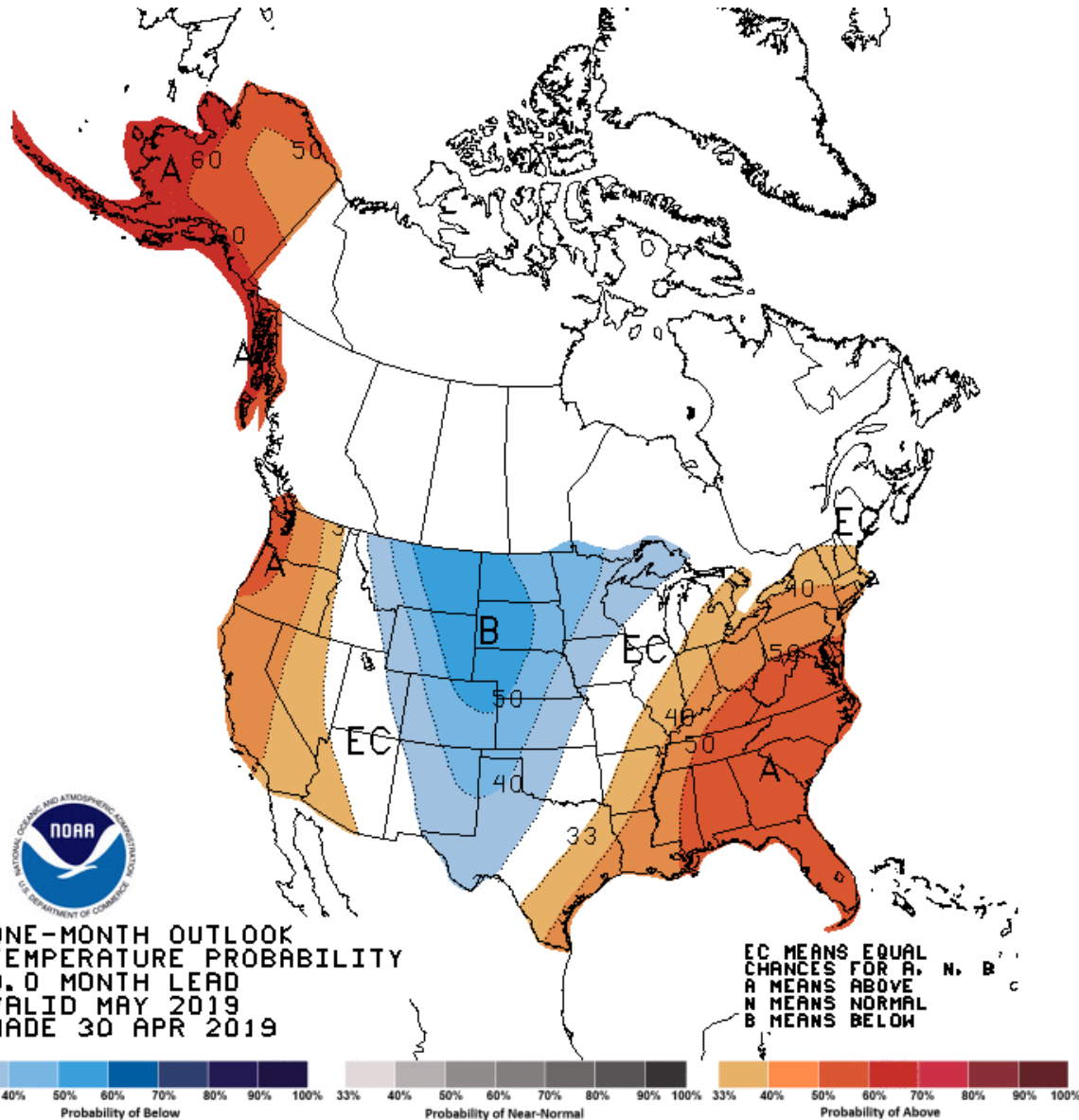
www.cpc.ncep.noaa.gov



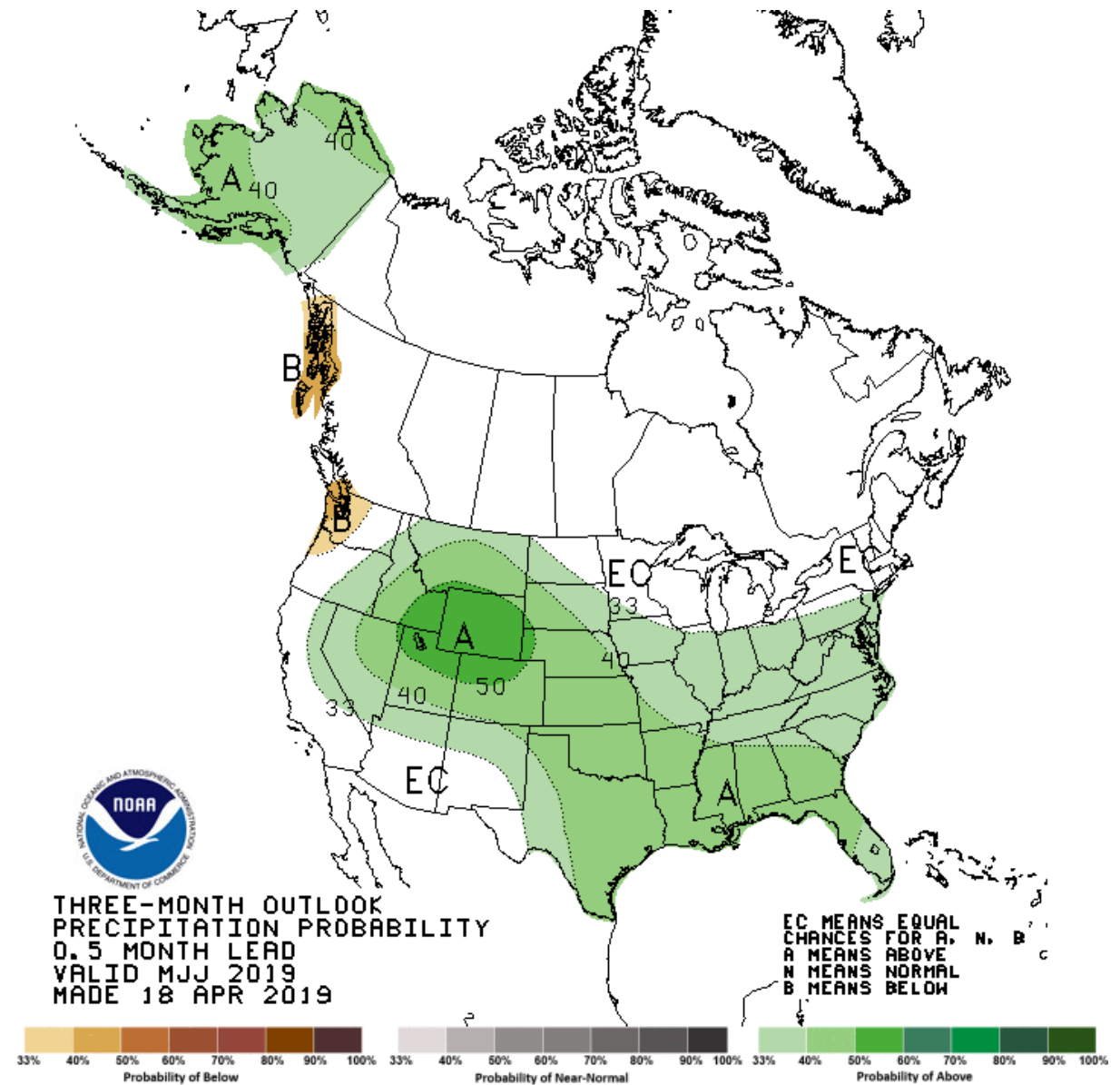
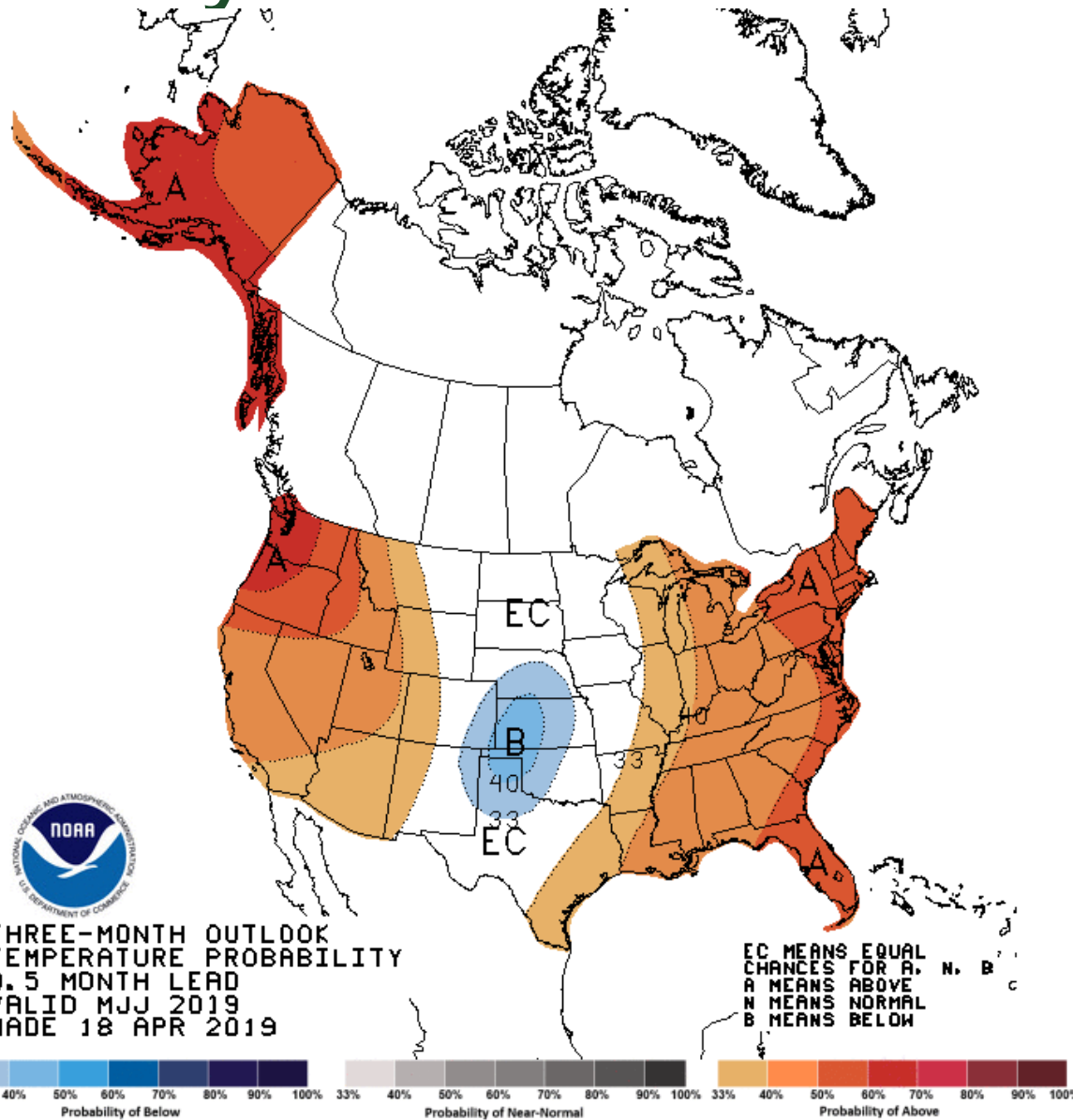
COLORADO CLIMATE CENTER



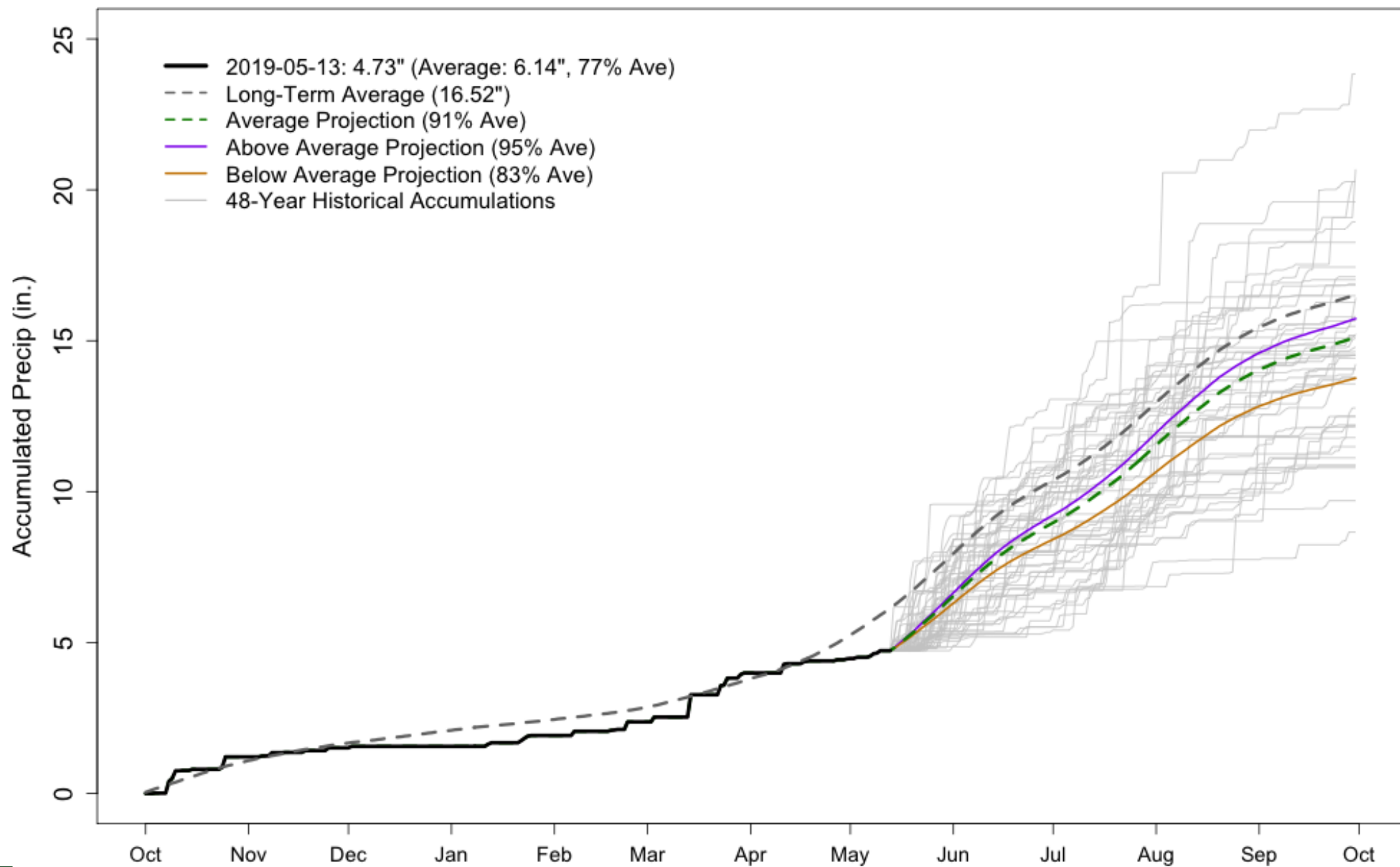
One Month Outlook



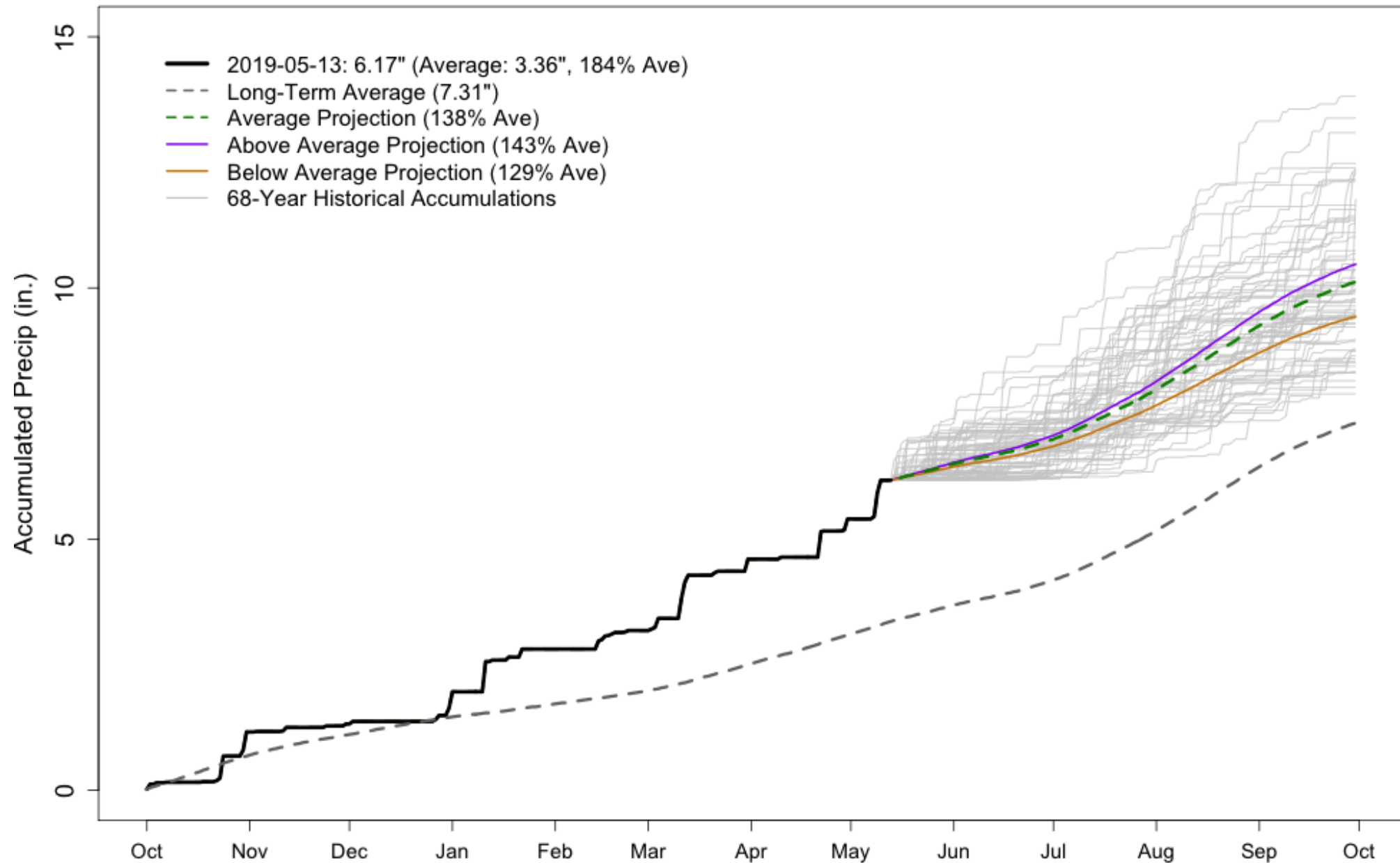
May-Jun-Jul Outlook



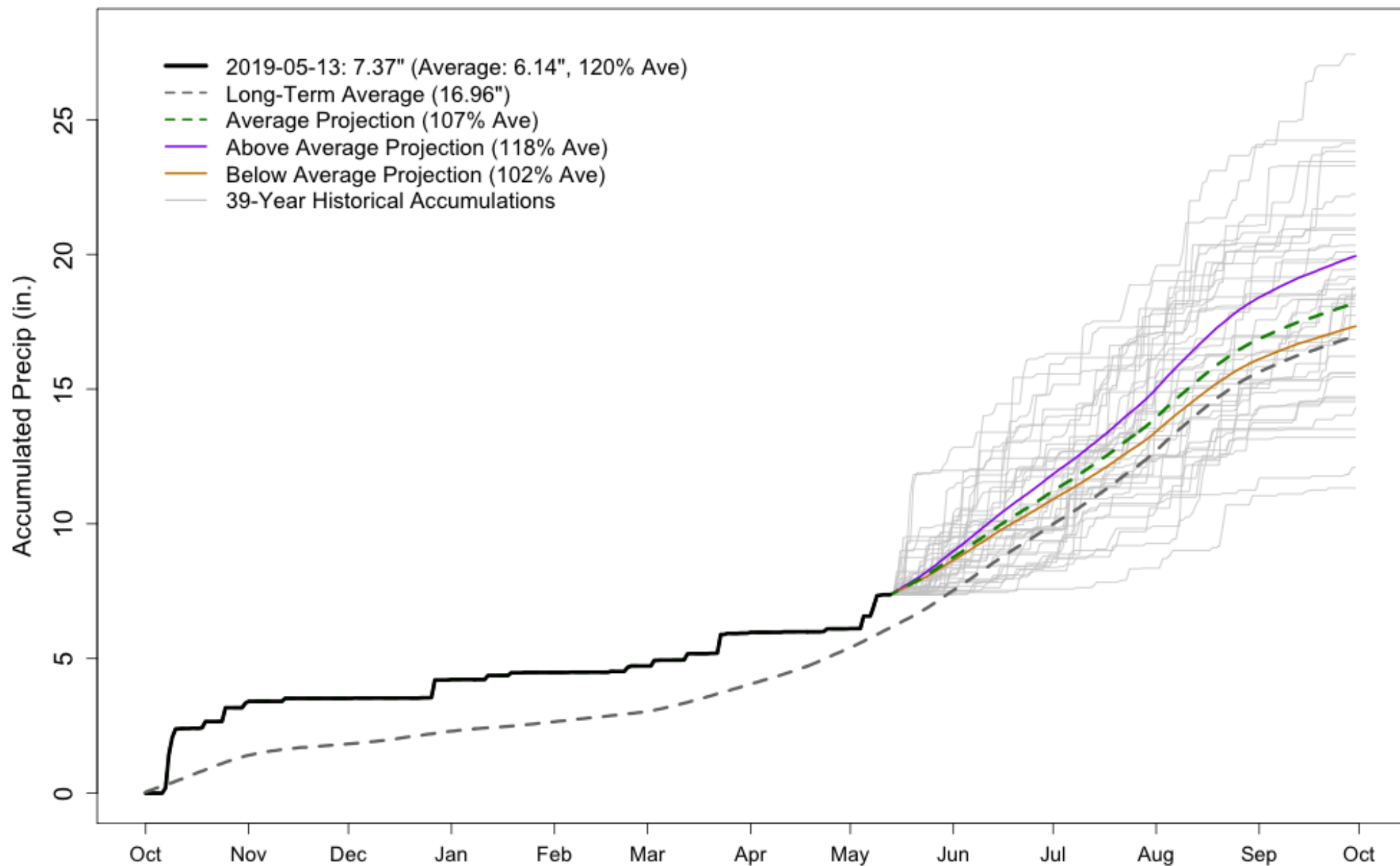
AKRON 4 E WY2019 Precipitation Projections



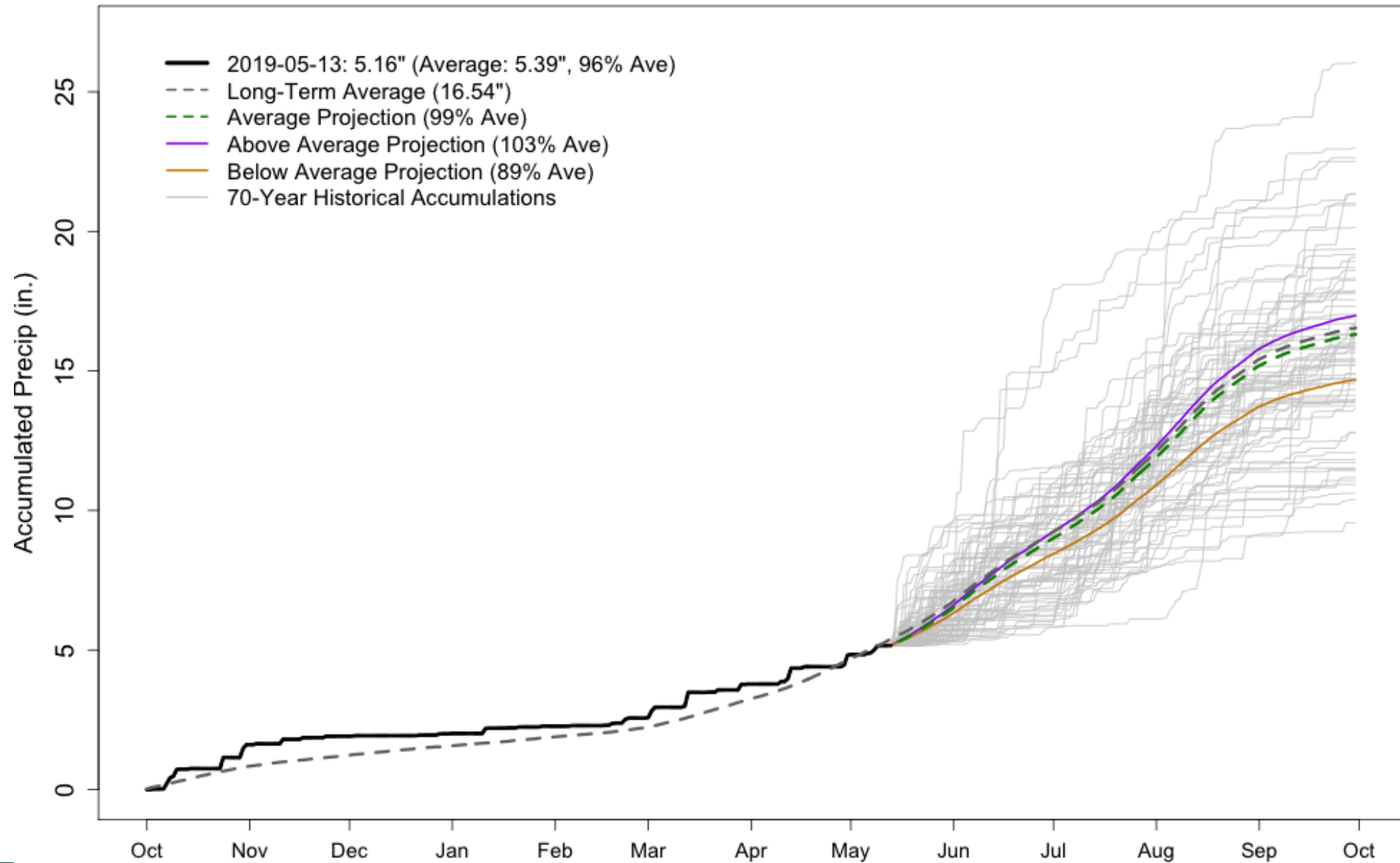
ALAMOSA SAN LUIS VALLEY REGIONAL AP WY2019 Precipitation Projections



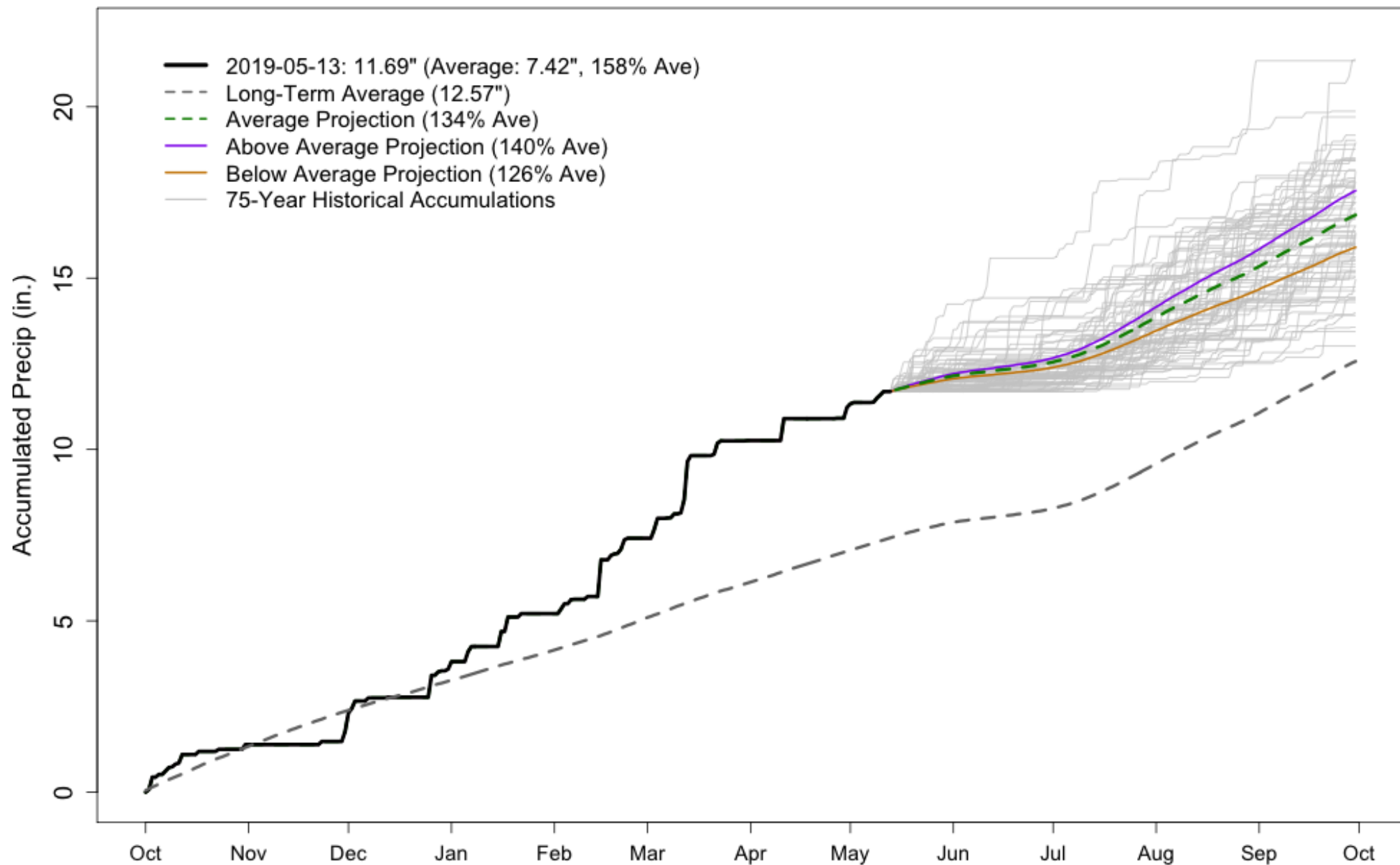
CAMPO 7 S WY2019 Precipitation Projections



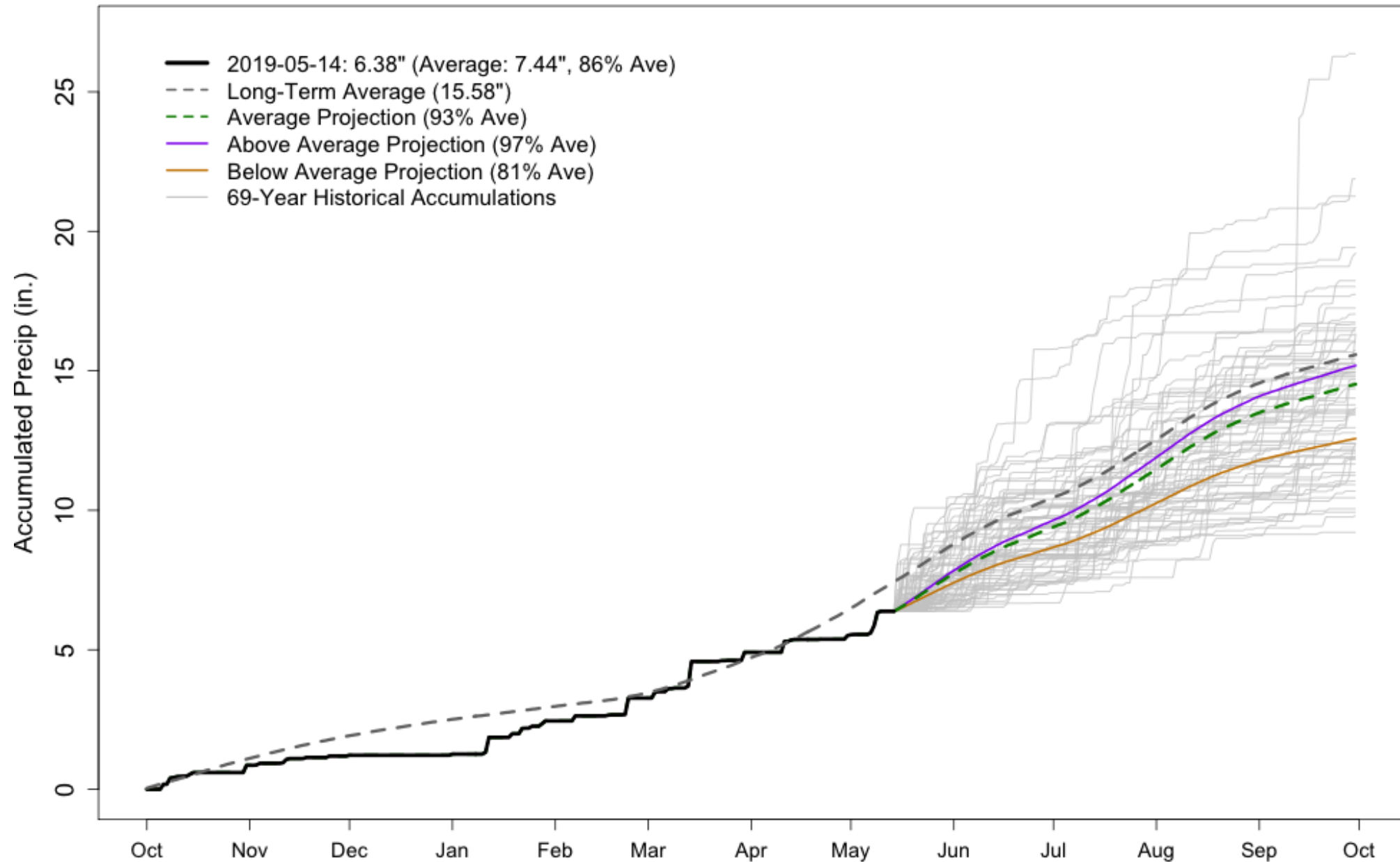
COLORADO SPRINGS MUNICIPAL AP WY2019 Precipitation Projections



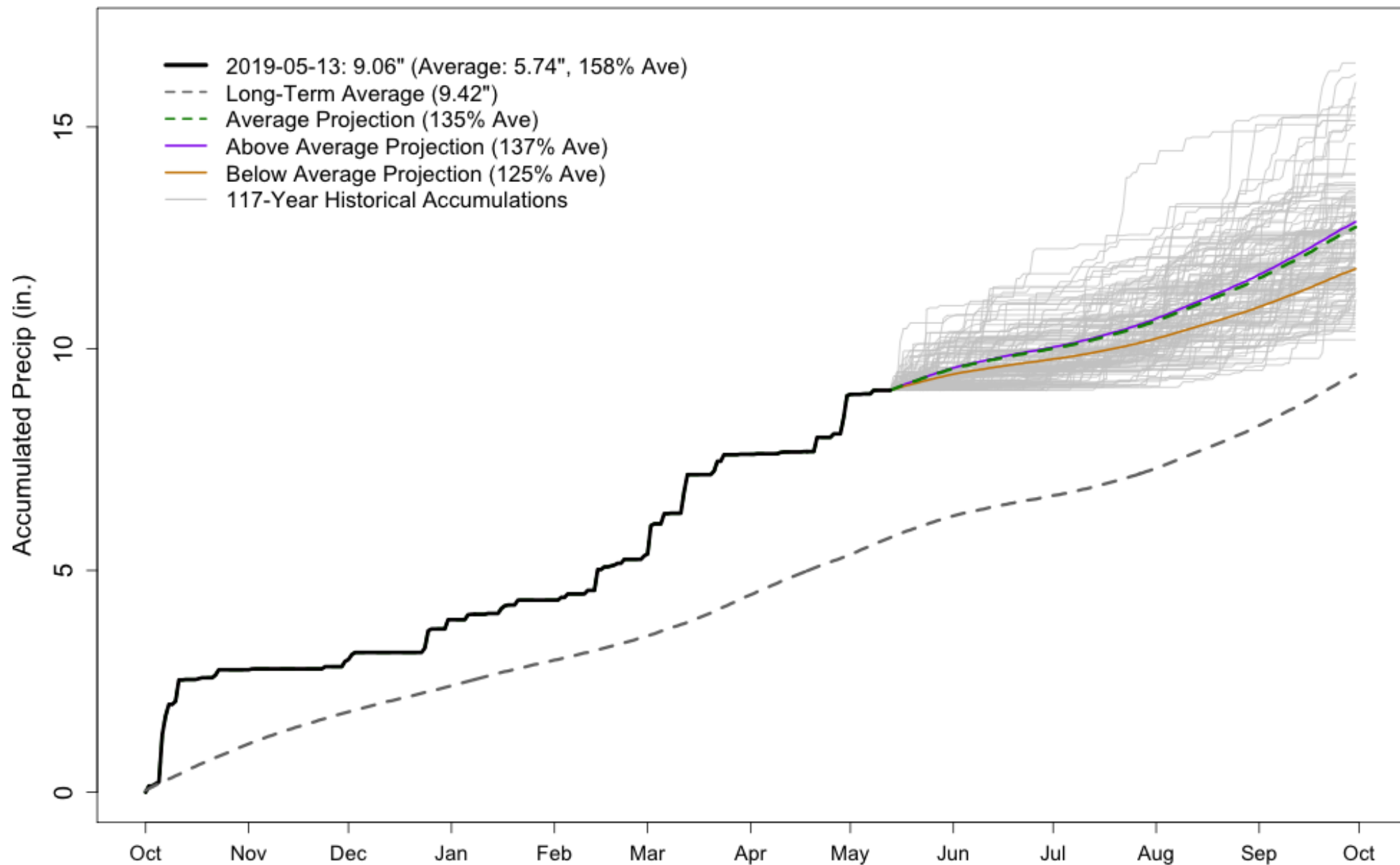
CORTEZ WY2019 Precipitation Projections



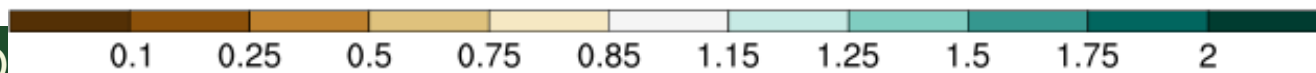
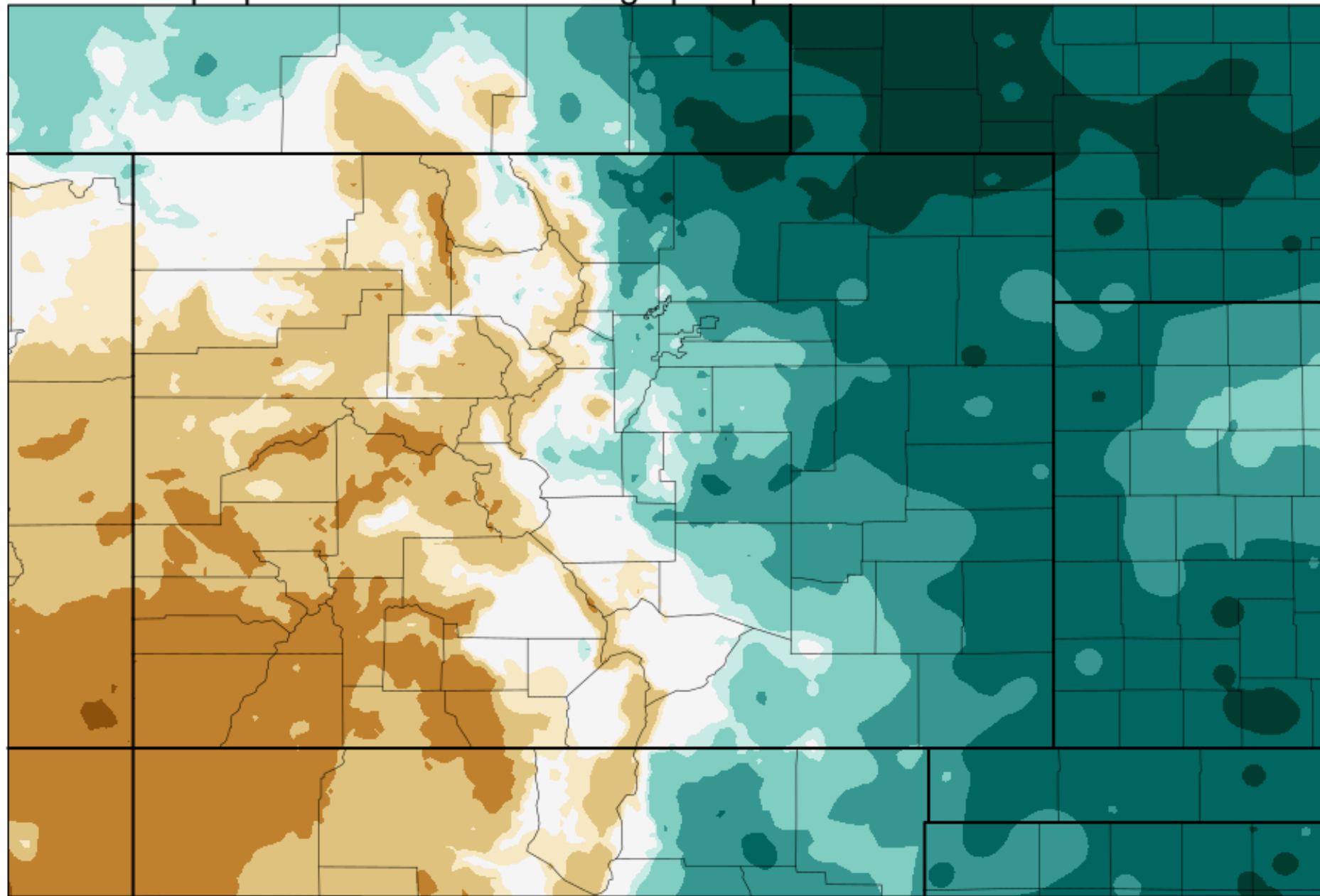
DENVER-STAPELTON WY2019 Precipitation Projections



GRAND JUNCTION WALKER FIELD WY2019 Precipitation Projections

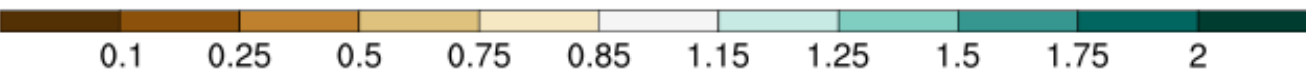
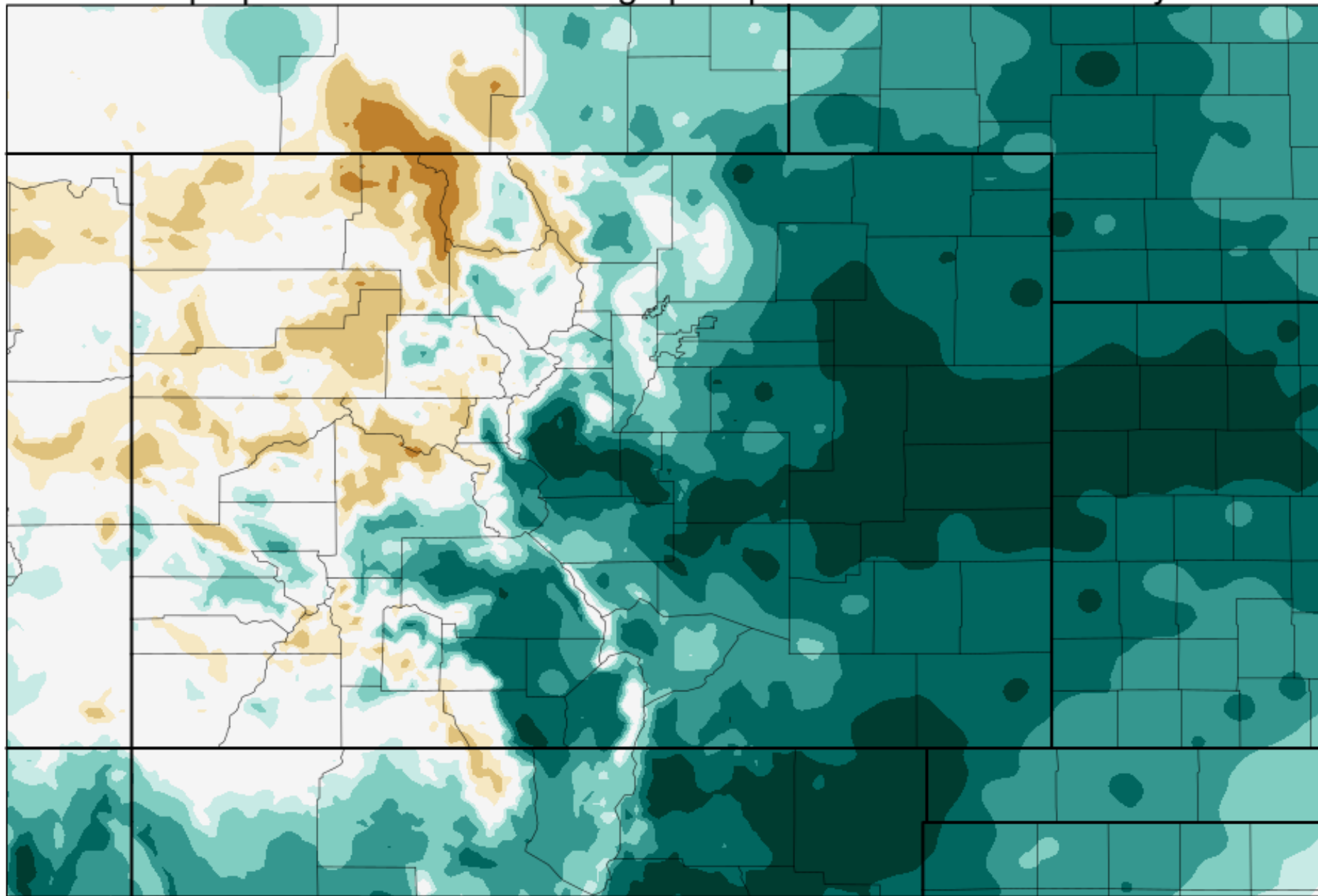


PRISM proportion of annual average precipitation in this month: June



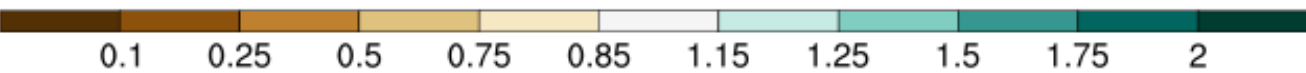
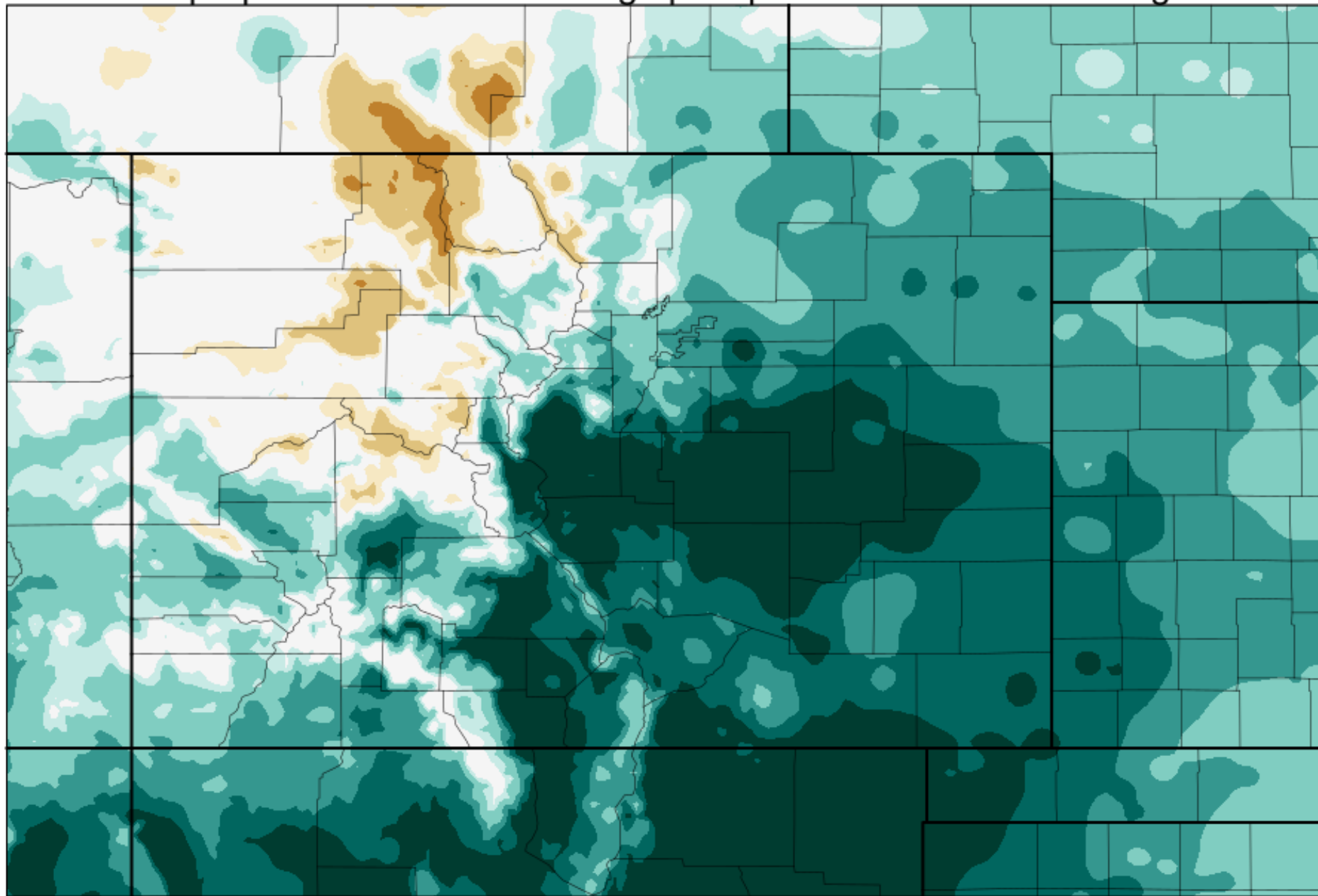
Proportion of precip relative to 1/12th

PRISM proportion of annual average precipitation in this month: July



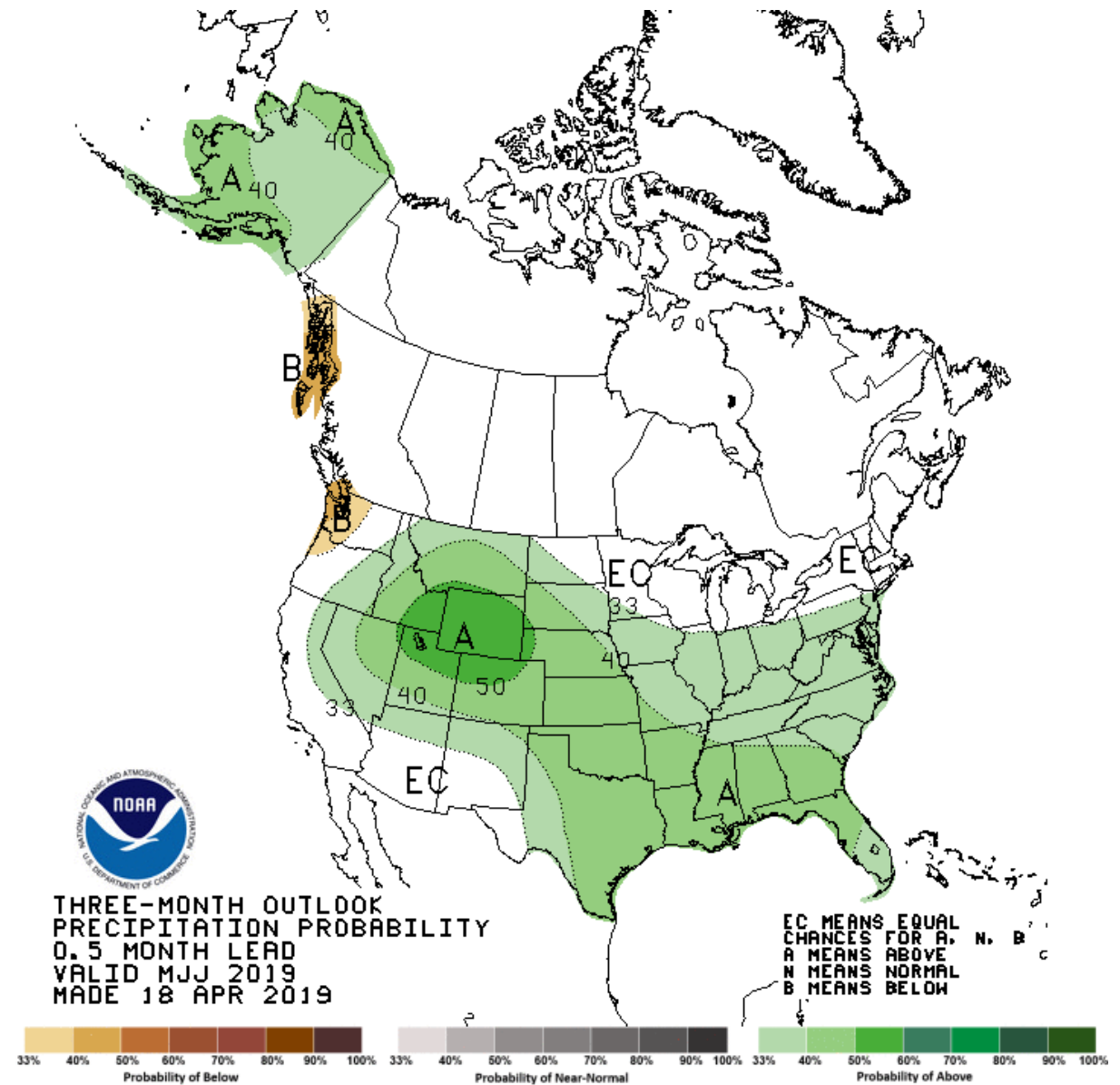
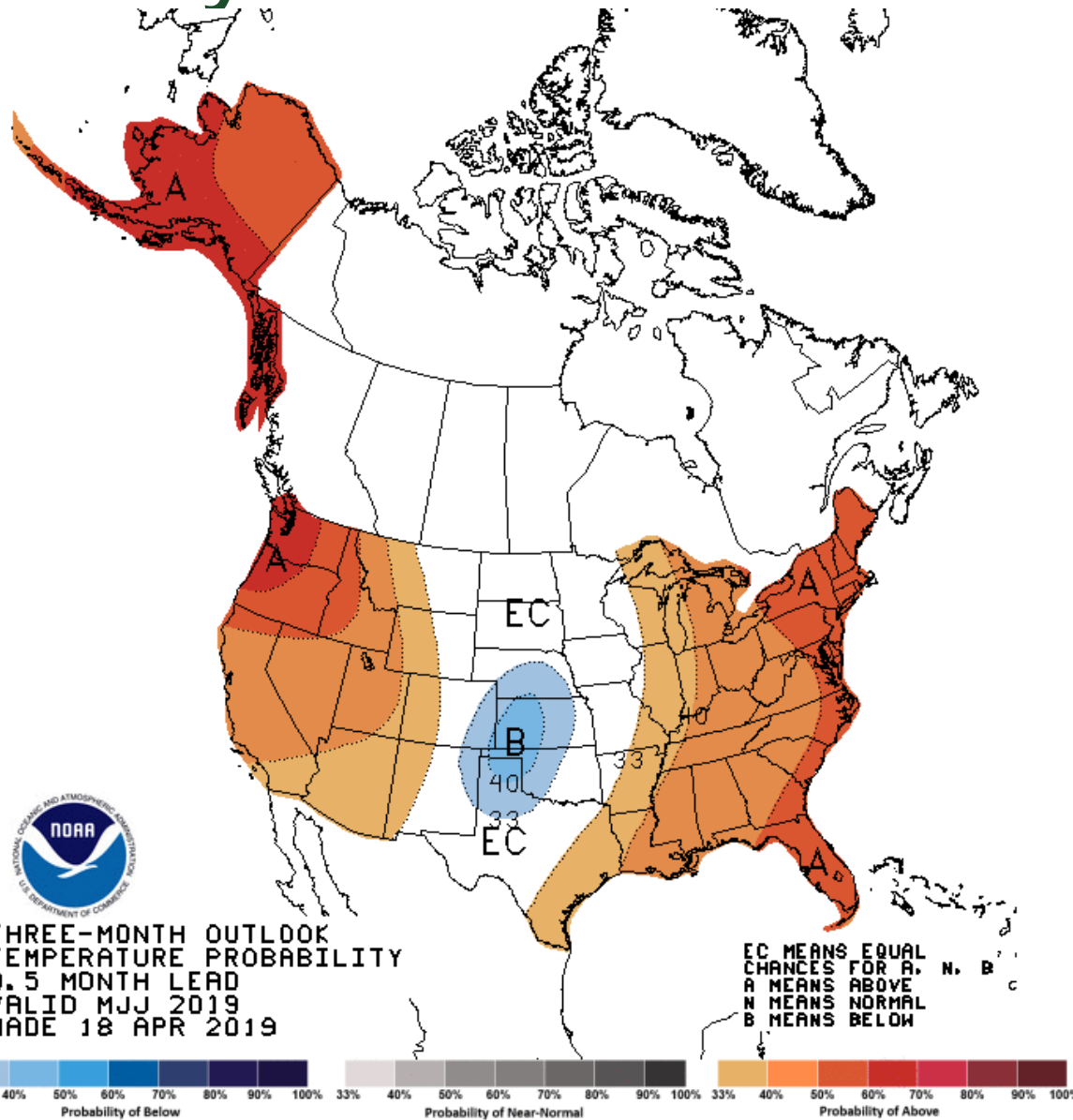
Proportion of precip relative to 1/12th

PRISM proportion of annual average precipitation in this month: August



Proportion of precip relative to 1/12th

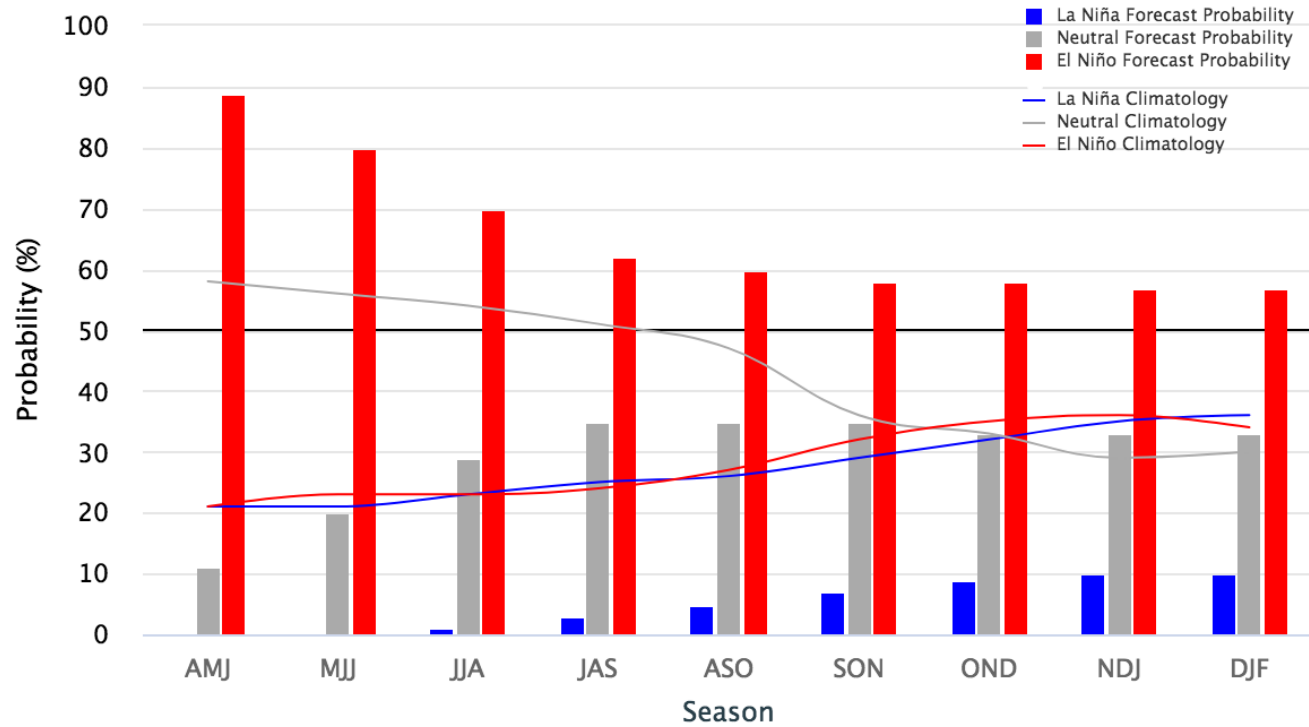
May-Jun-Jul Outlook



What's the El Niño forecast?

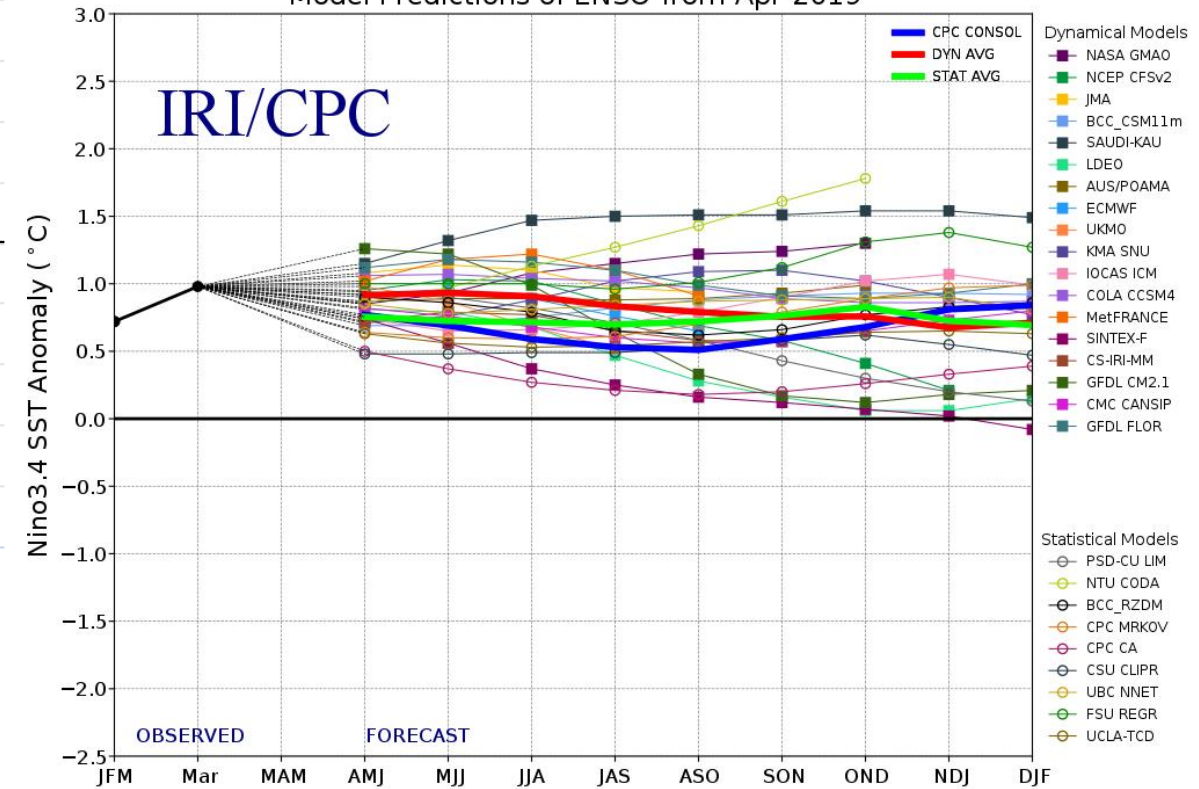
Early-May 2019 CPC/IRI Official Probabilistic ENSO Forecasts

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

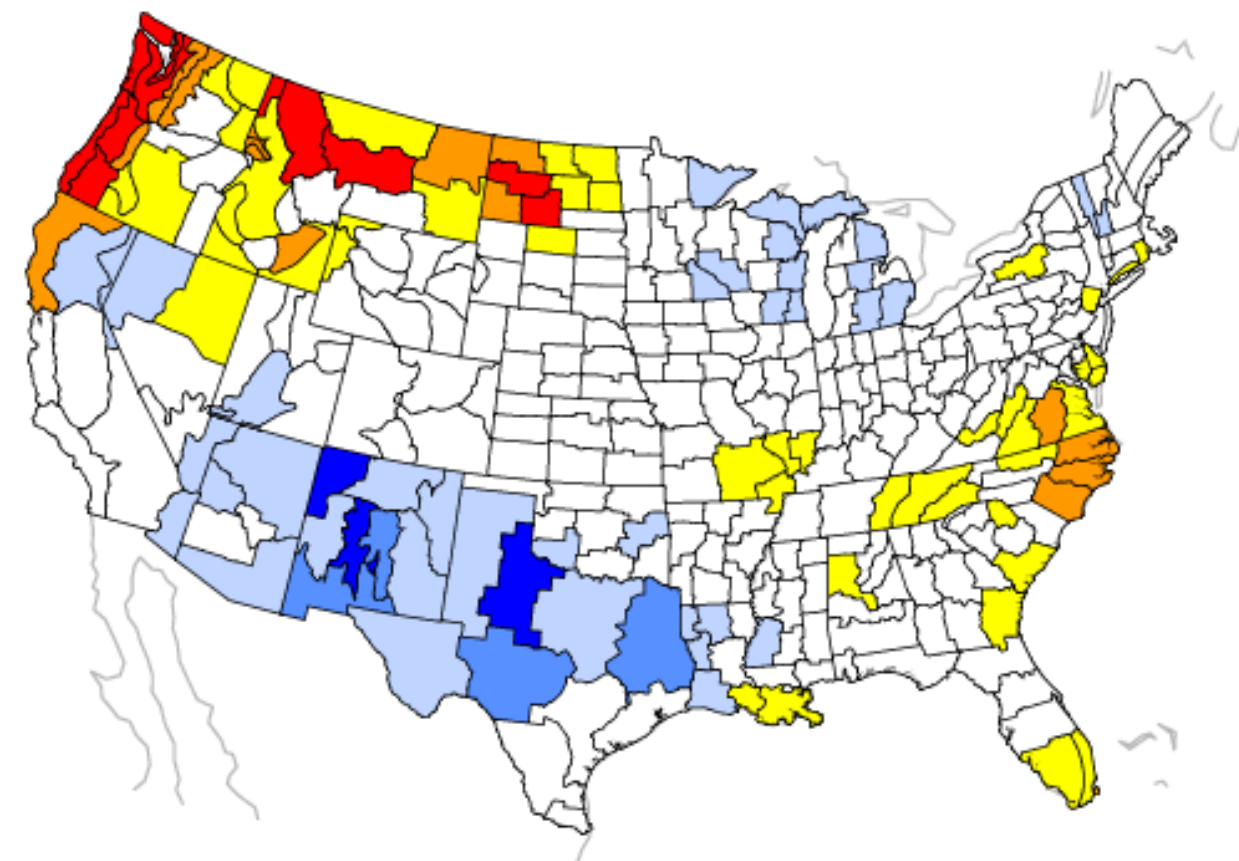


An El Niño advisory is in effect...

Model Predictions of ENSO from Apr 2019



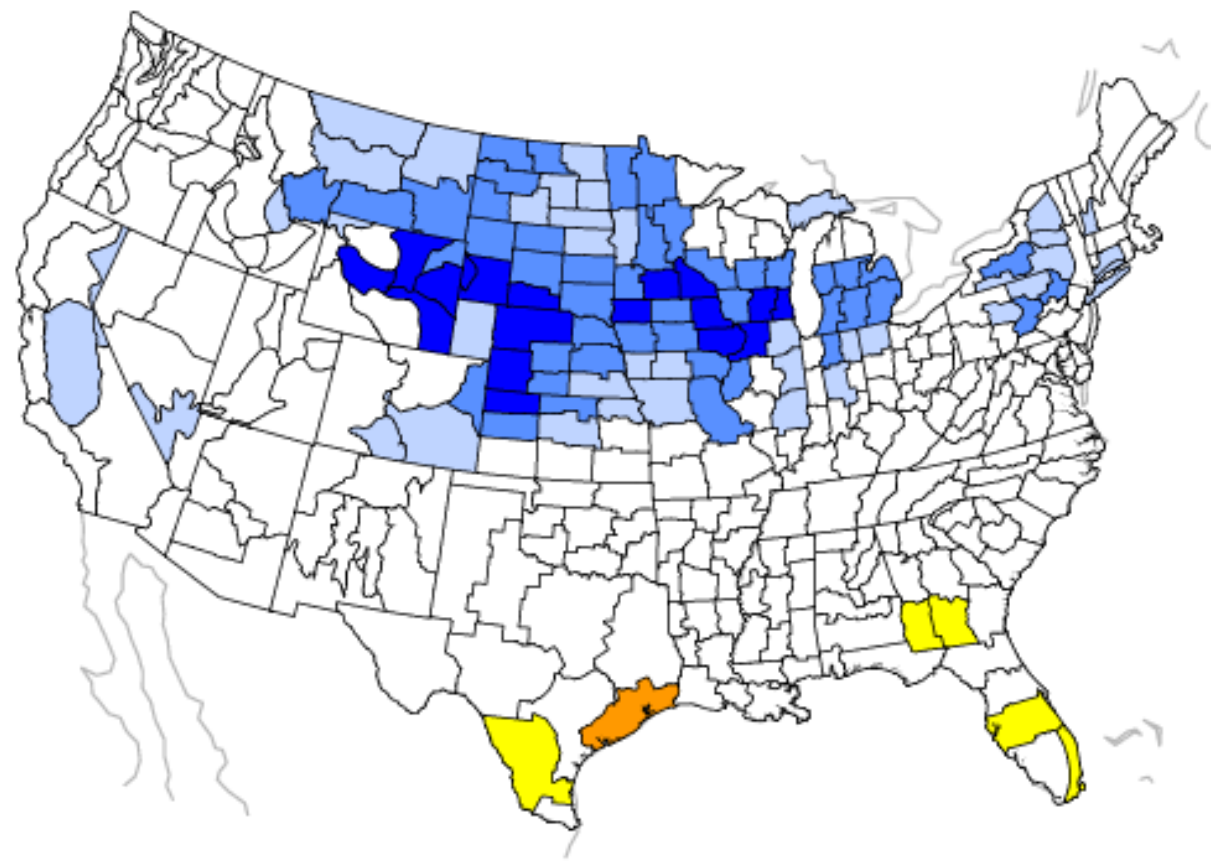
MJJ Temperature During El Nino
Increased Risk of Warm or Cold Extremes



Percent (%) Increase in Risk

NOAA/ESRL/PSD

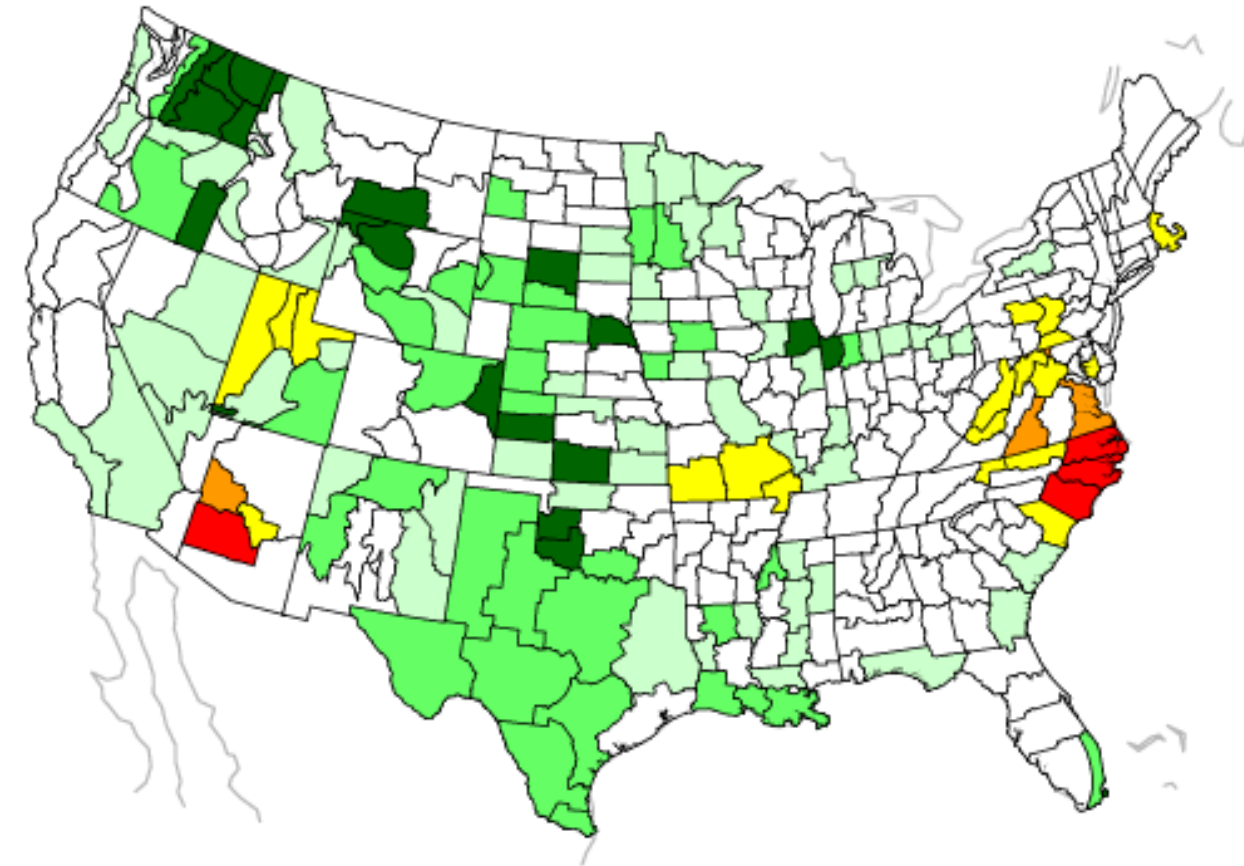
JAS Temperature During El Nino
Increased Risk of Warm or Cold Extremes



Percent (%) Increase in Risk

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

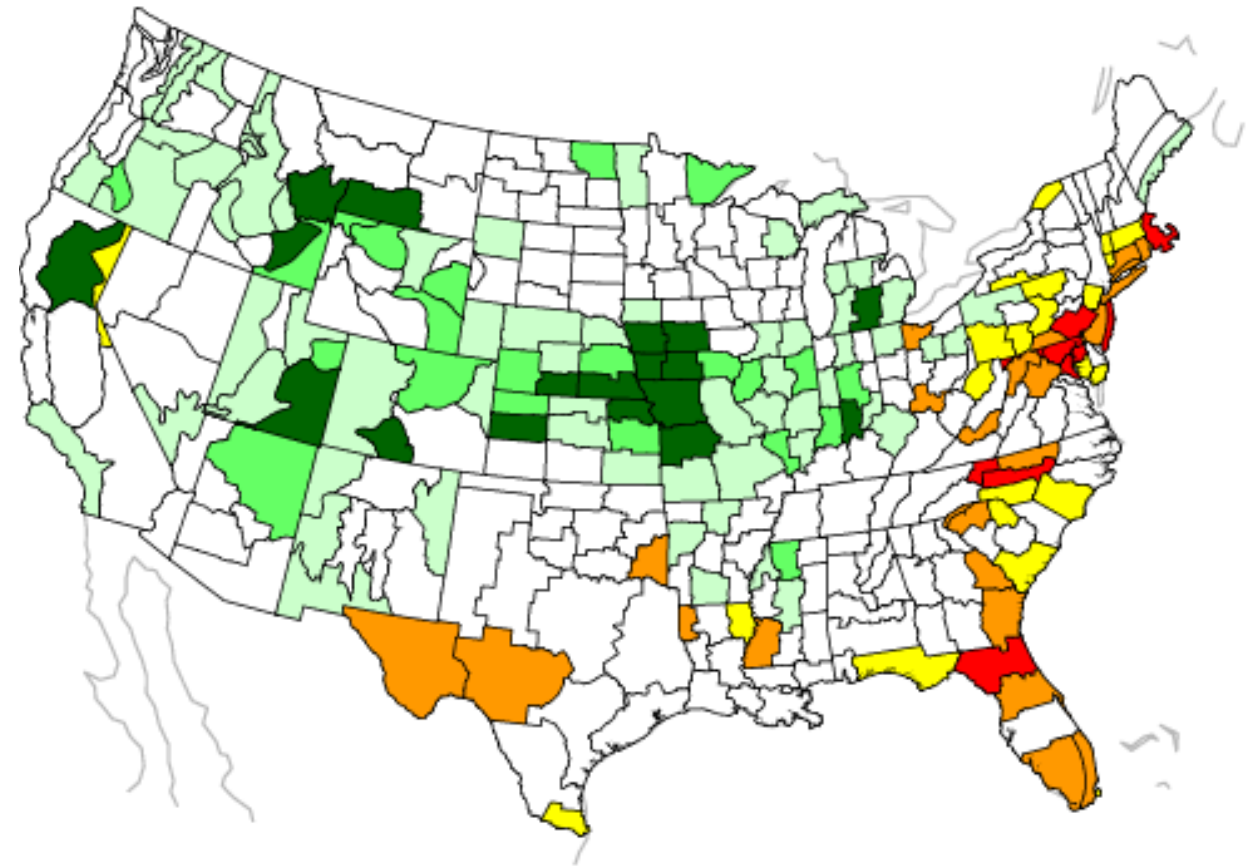
MJJ Precipitation During El Nino
Increased Risk of Wet or Dry Extremes



Percent (%) Increase in Risk

NOAA/ESRL/PSD

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



Percent (%) Increase in Risk

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



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

Thank you



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