



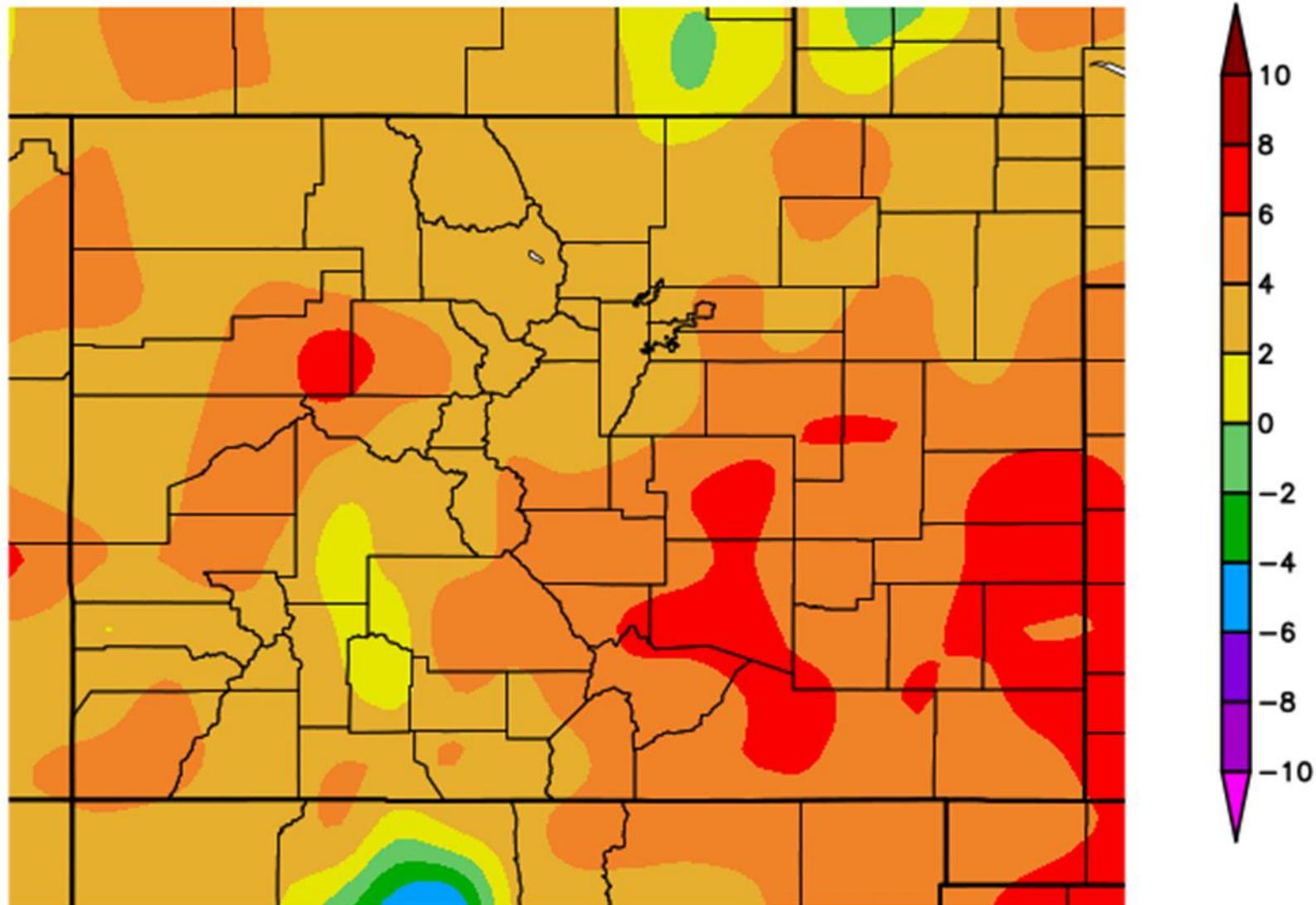
COLORADO  
CLIMATE  
CENTER

Colorado  
State  
University

# Climate Update

Peter Goble  
Colorado Climate Center  
Water Availability Task Force  
June 14, 2018

# Departure from Normal Temperature (F) 5/1/2018 - 5/31/2018



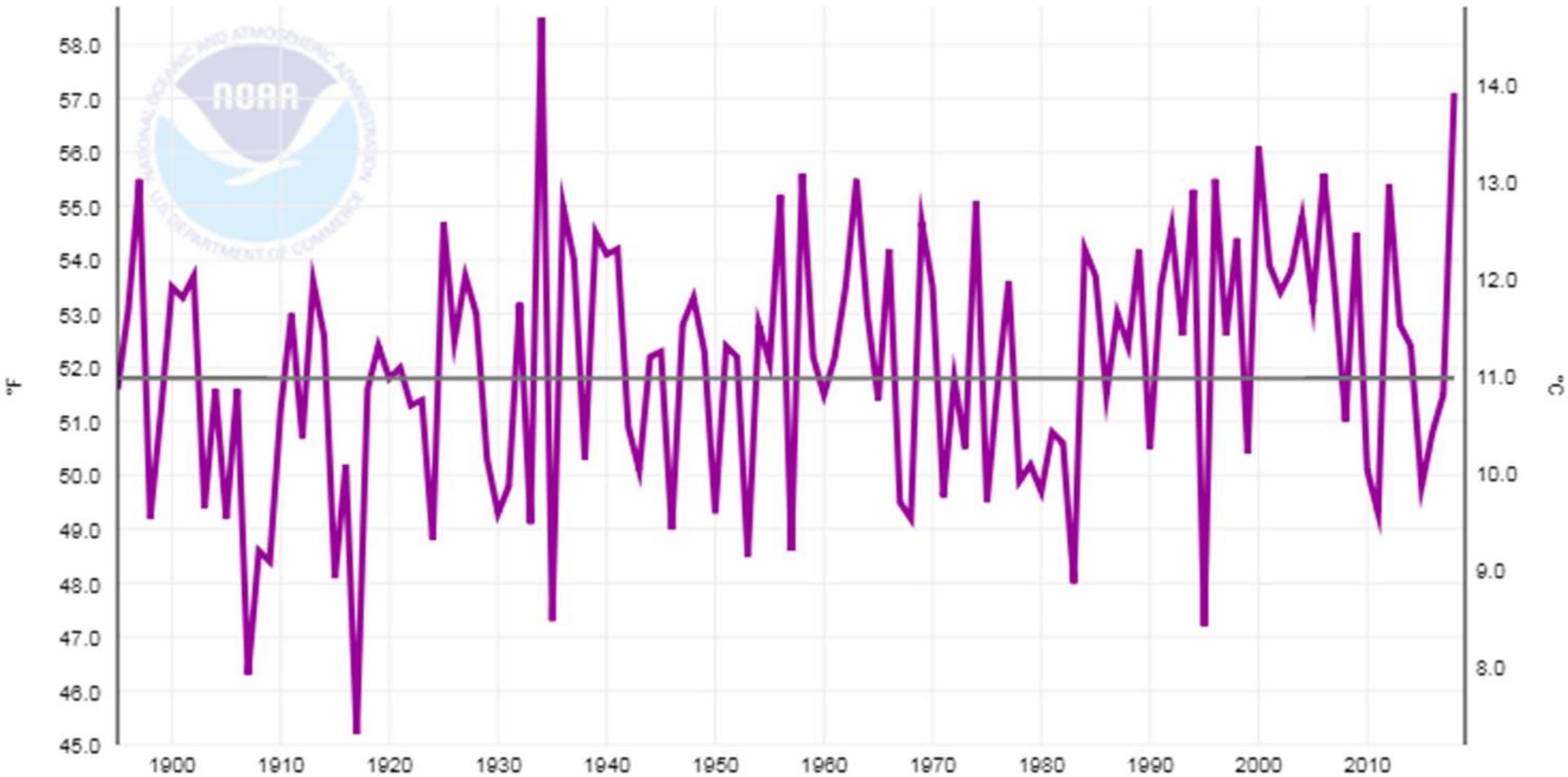
# Colorado, Average Temperature, May

57.1 F (+5.3)

Warmest since 1934 at 58.5 F

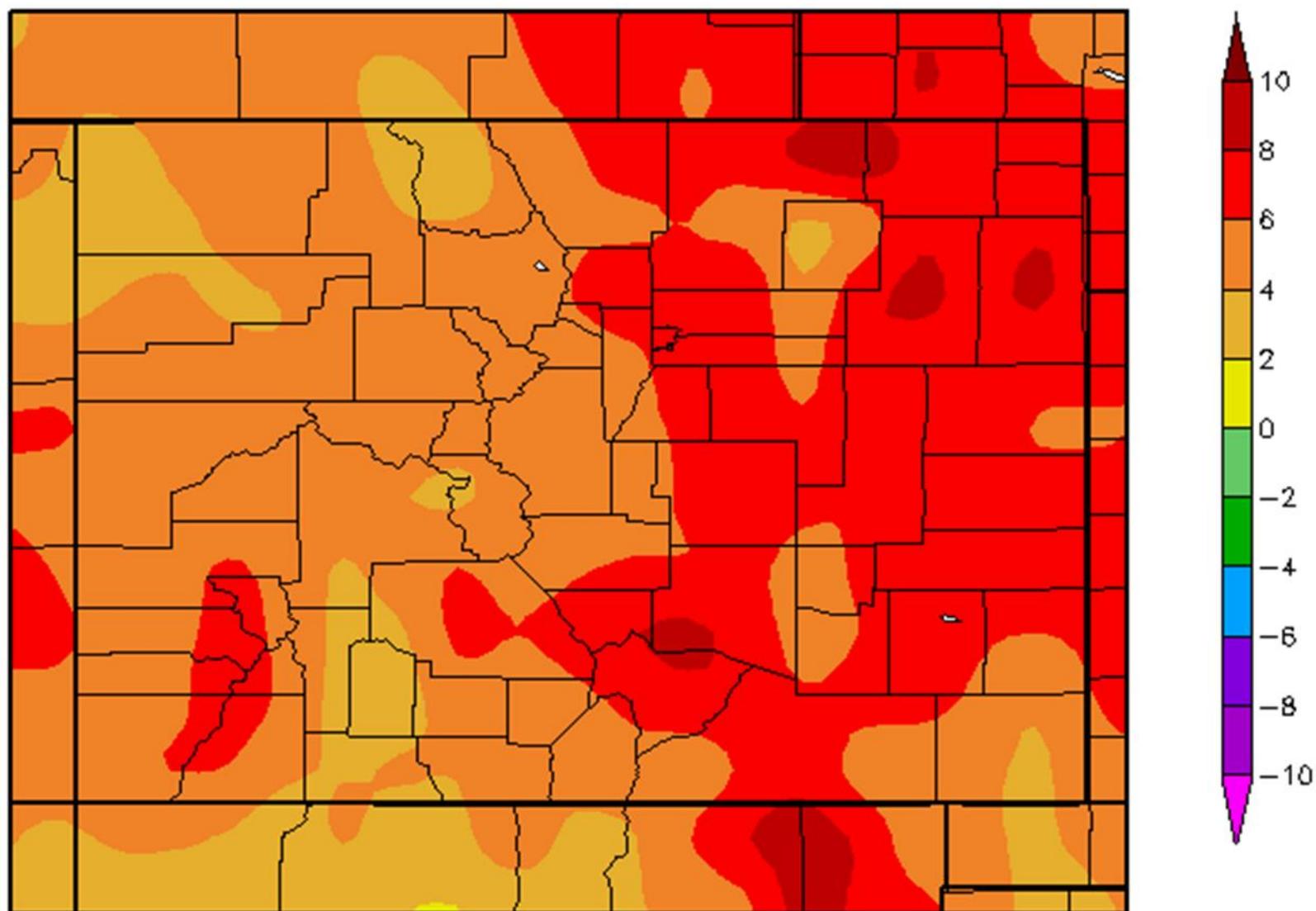
Avg Temperature

1901-2000 Mean: 51.8°F

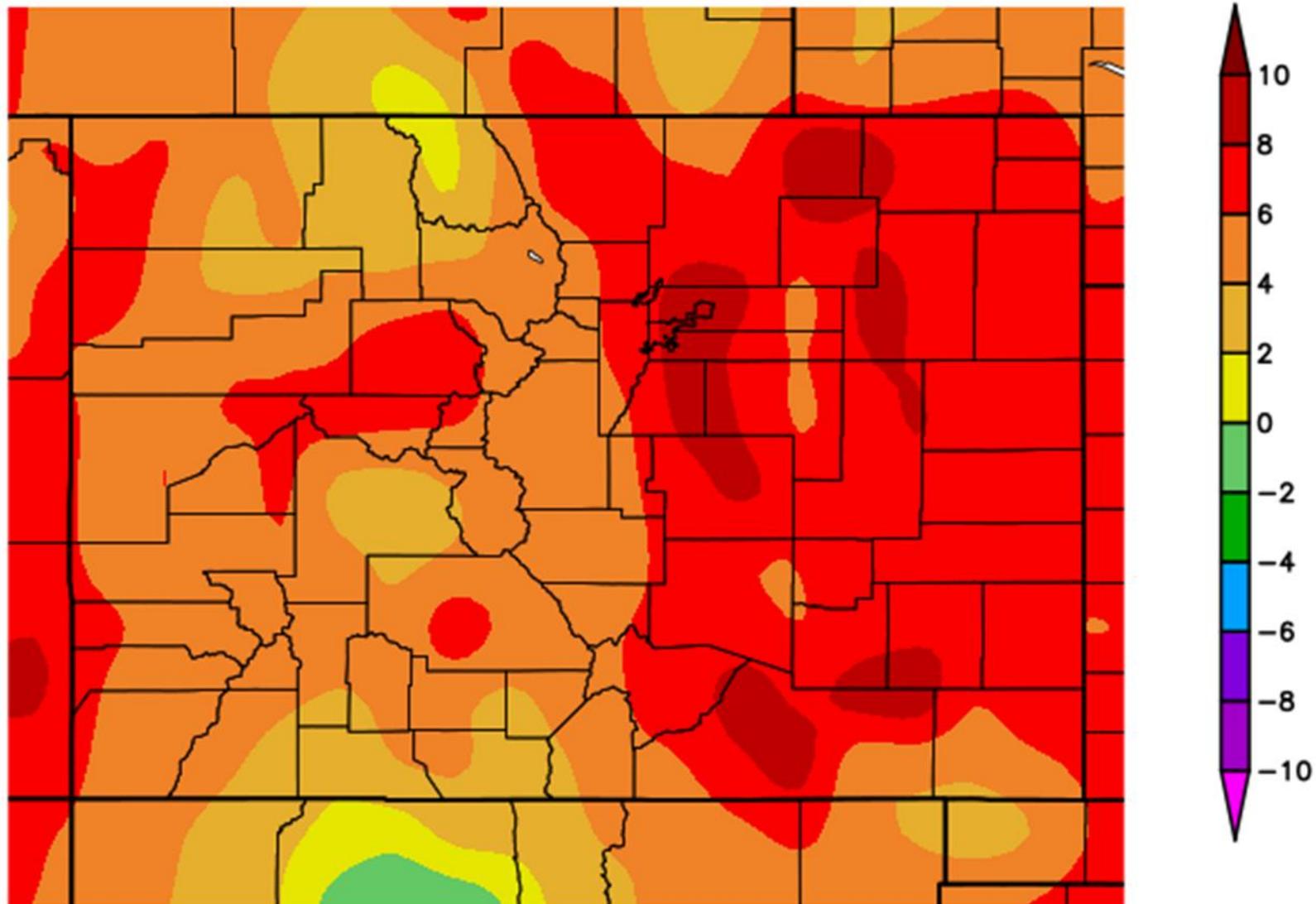


# Departure from Normal Temperature (F)

6/1/2012 - 6/30/2012

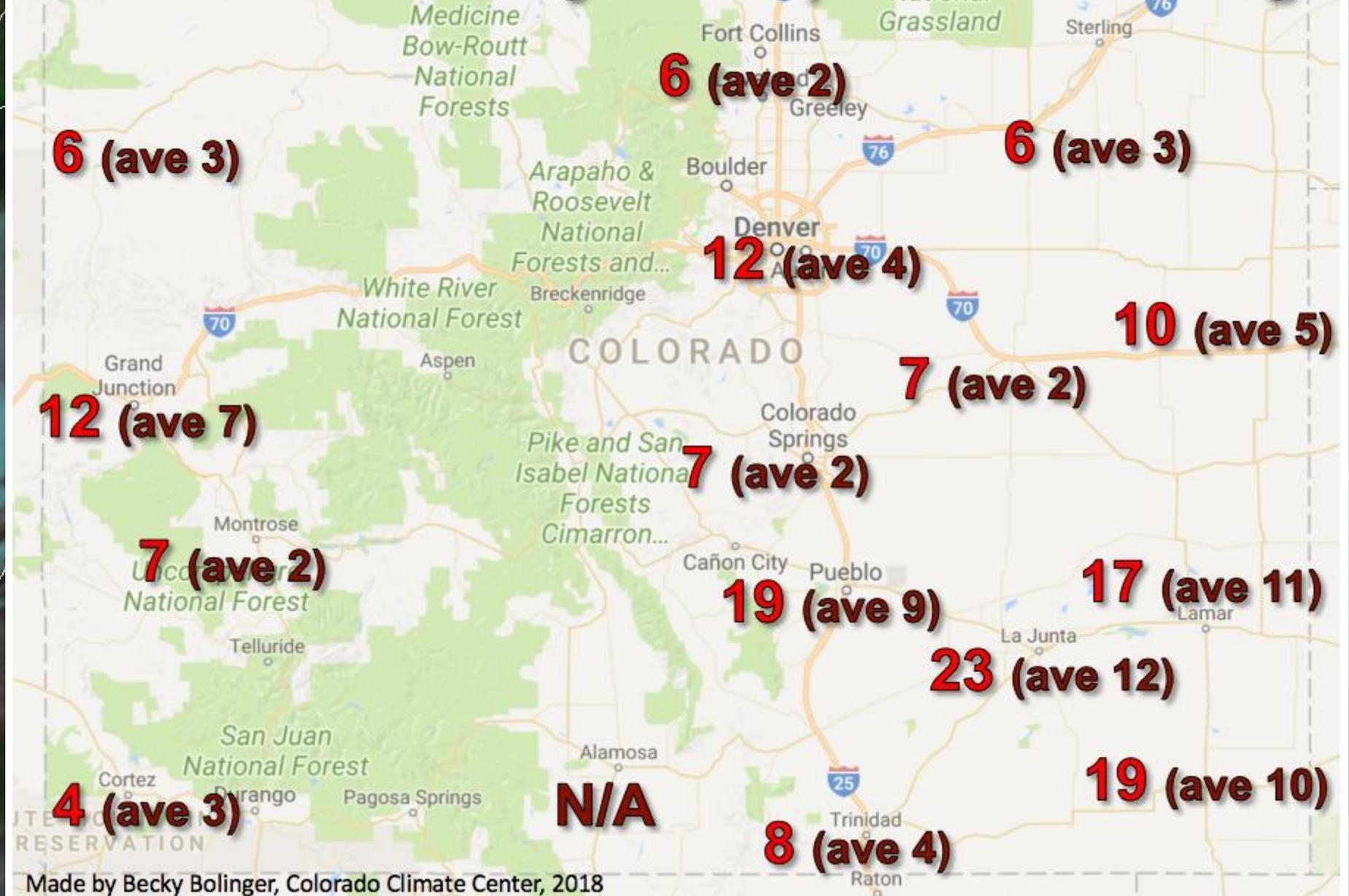


# Departure from Normal Temperature (F) 6/1/2018 – 6/12/2018



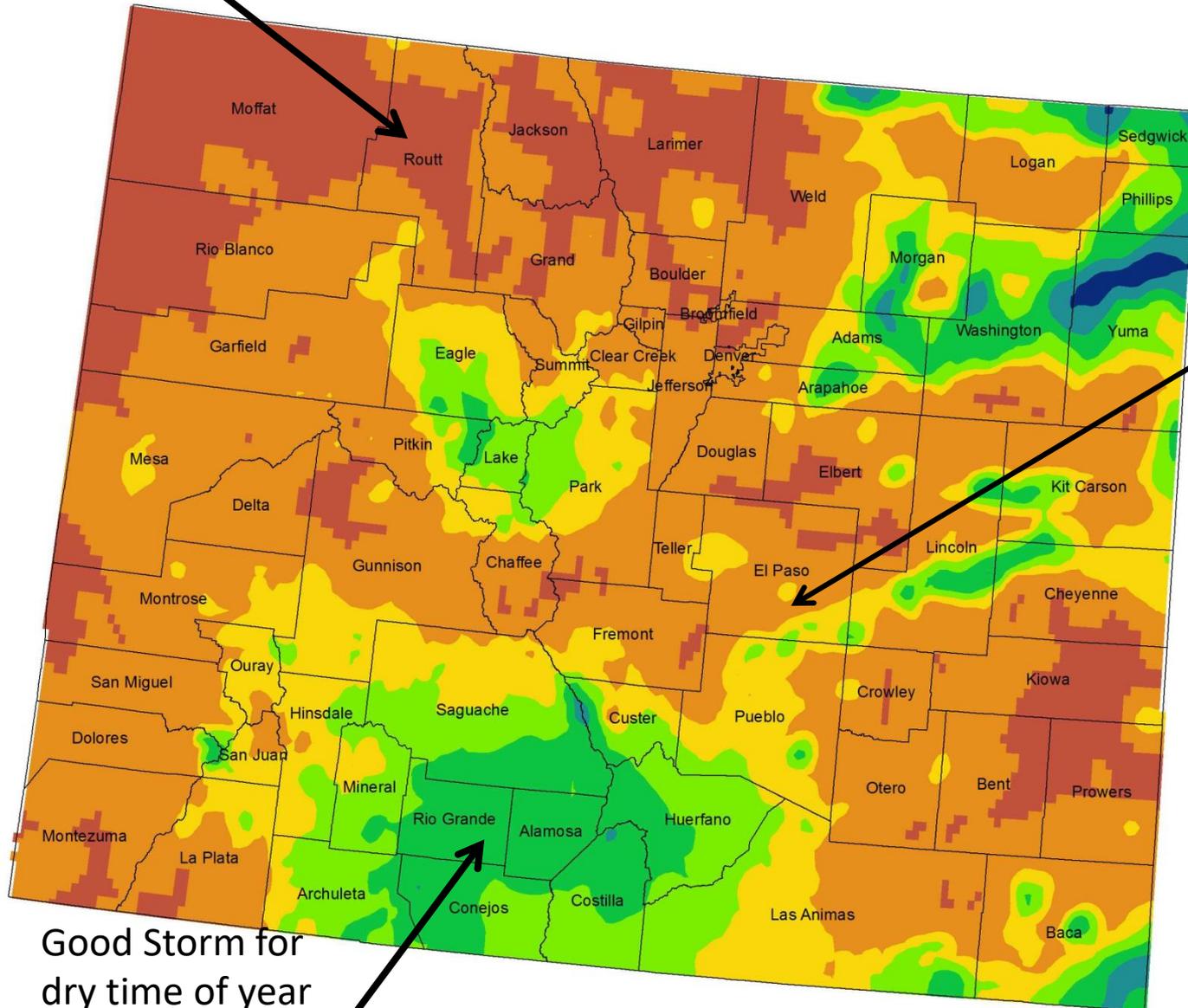
Take that,  
2012!

# Number of 90°-Days Compared to Average



# Colorado Month to Date Precipitation 1 - 11 June 2018

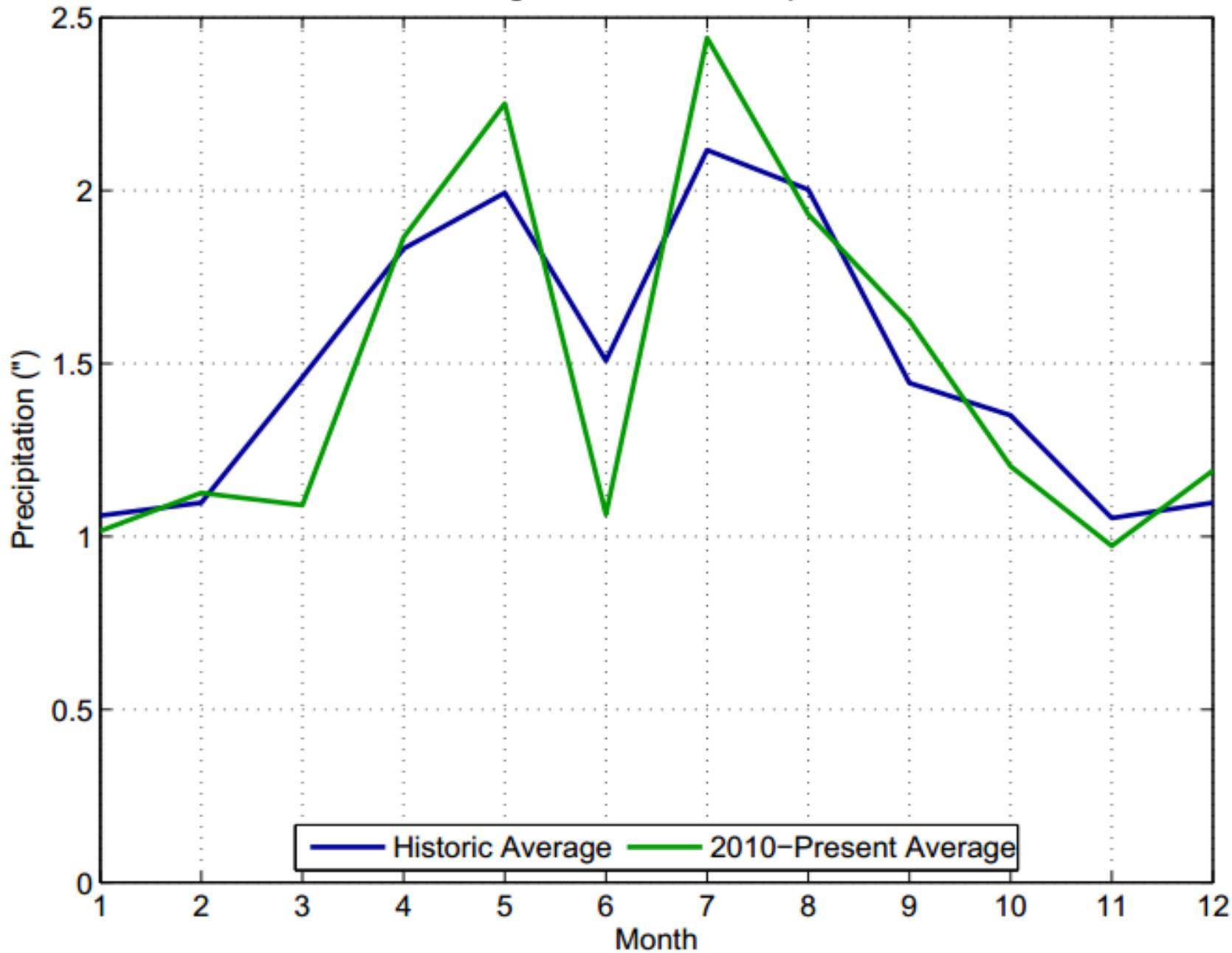
Slacking in the northwest



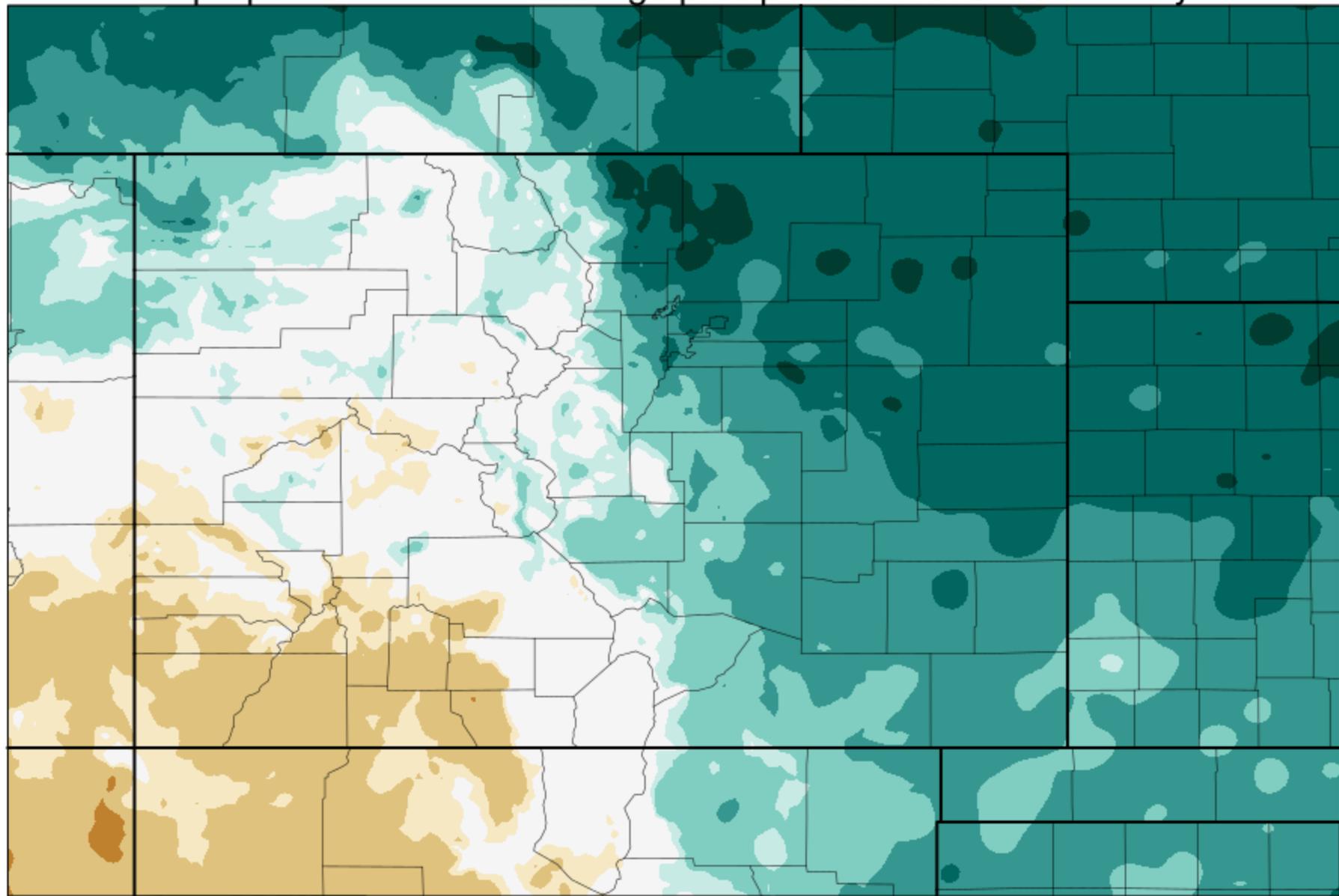
Big hail event  
not yet  
included

Good Storm for  
dry time of year

### Average Colorado Precipitation



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

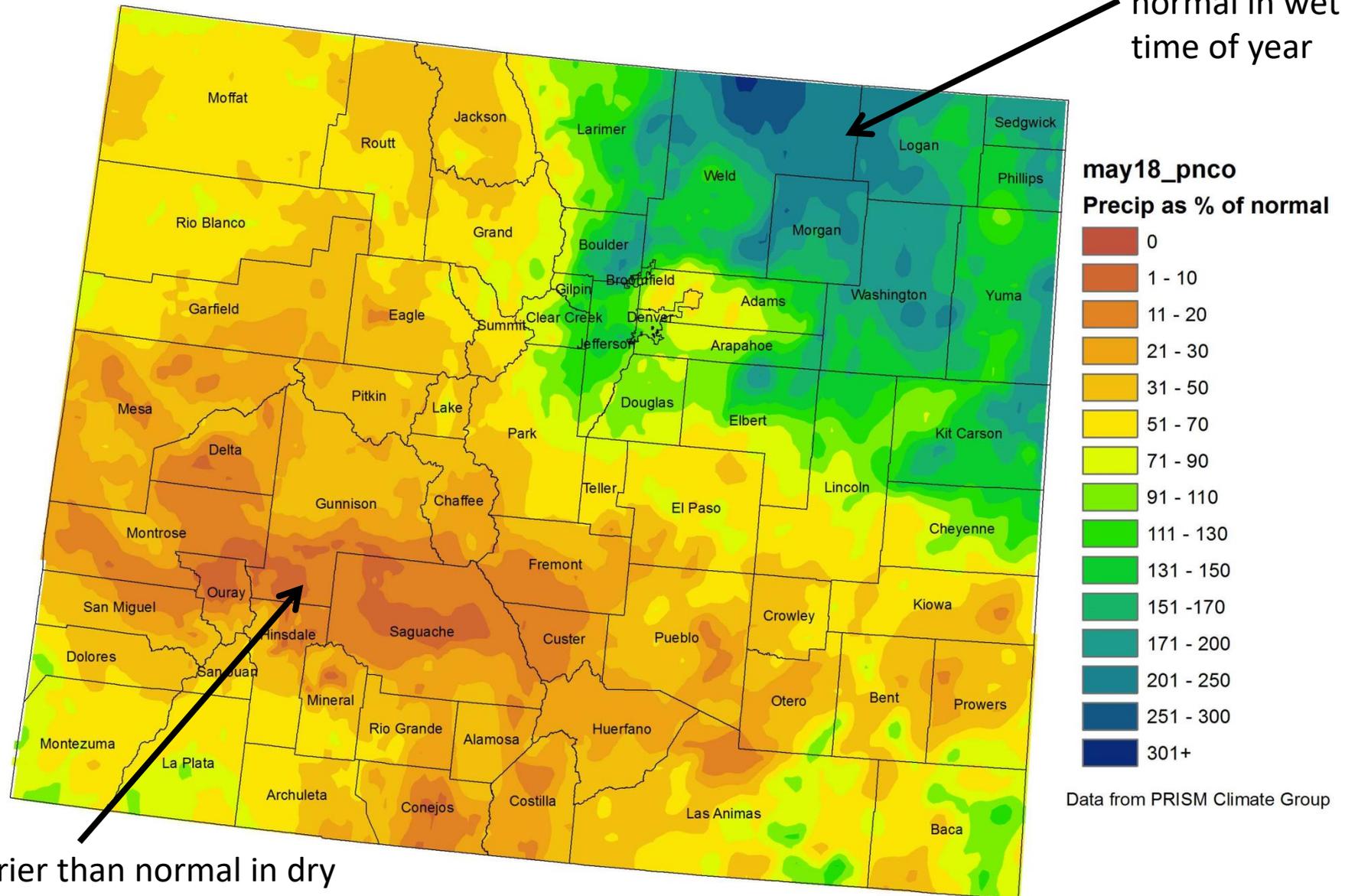


0.1 0.25 0.5 0.75 0.85 1.15 1.25 1.5 1.75 2

Proportion of precip relative to 1/12th

# Colorado May 2018 Precipitation as a Percentage of Normal

Wetter than  
normal in wet  
time of year



Drier than normal in dry  
time of year

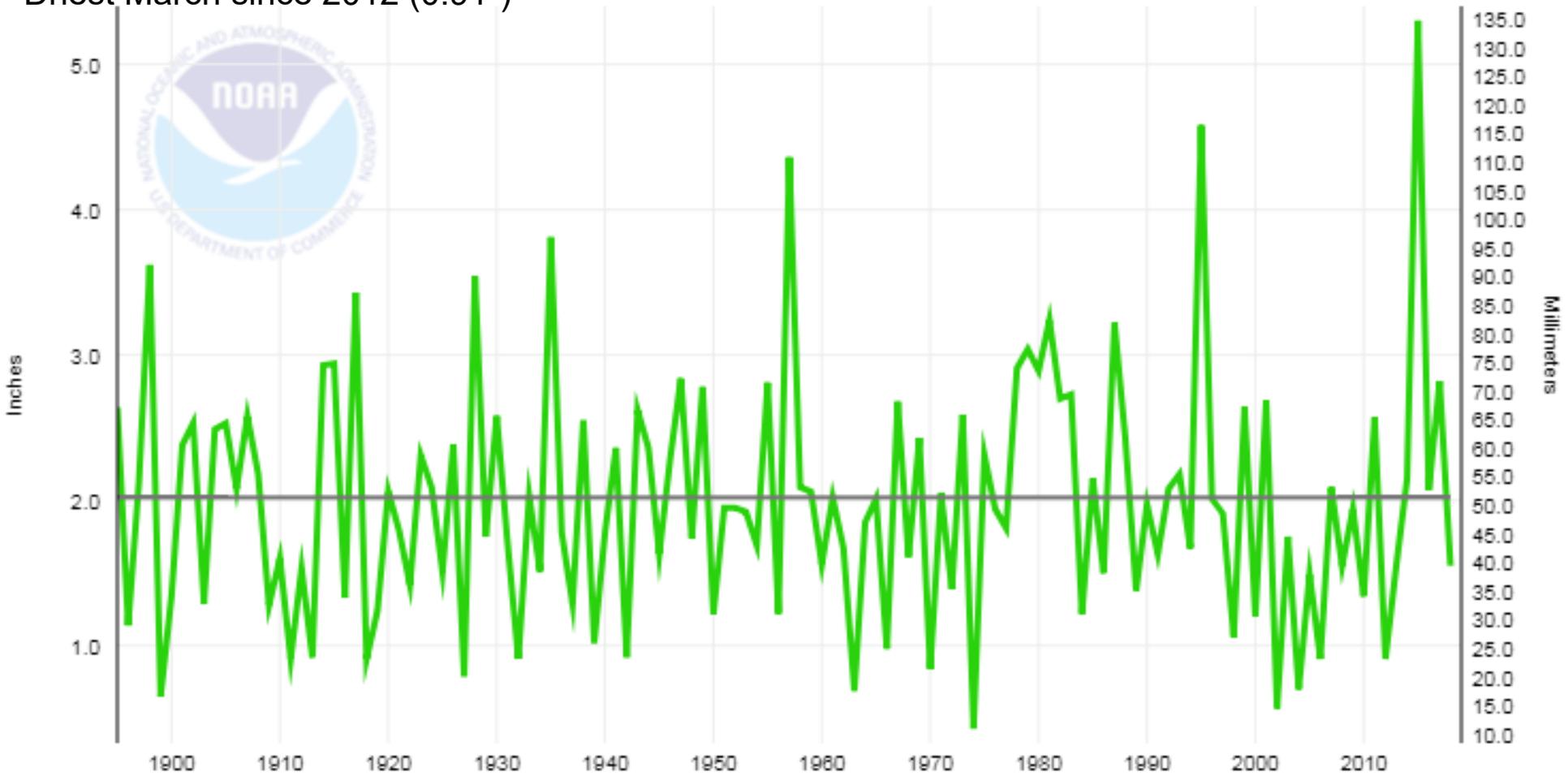
1.55" (-0.47")

26<sup>th</sup> driest on Record 1895-2018

Driest March since 2012 (0.91")

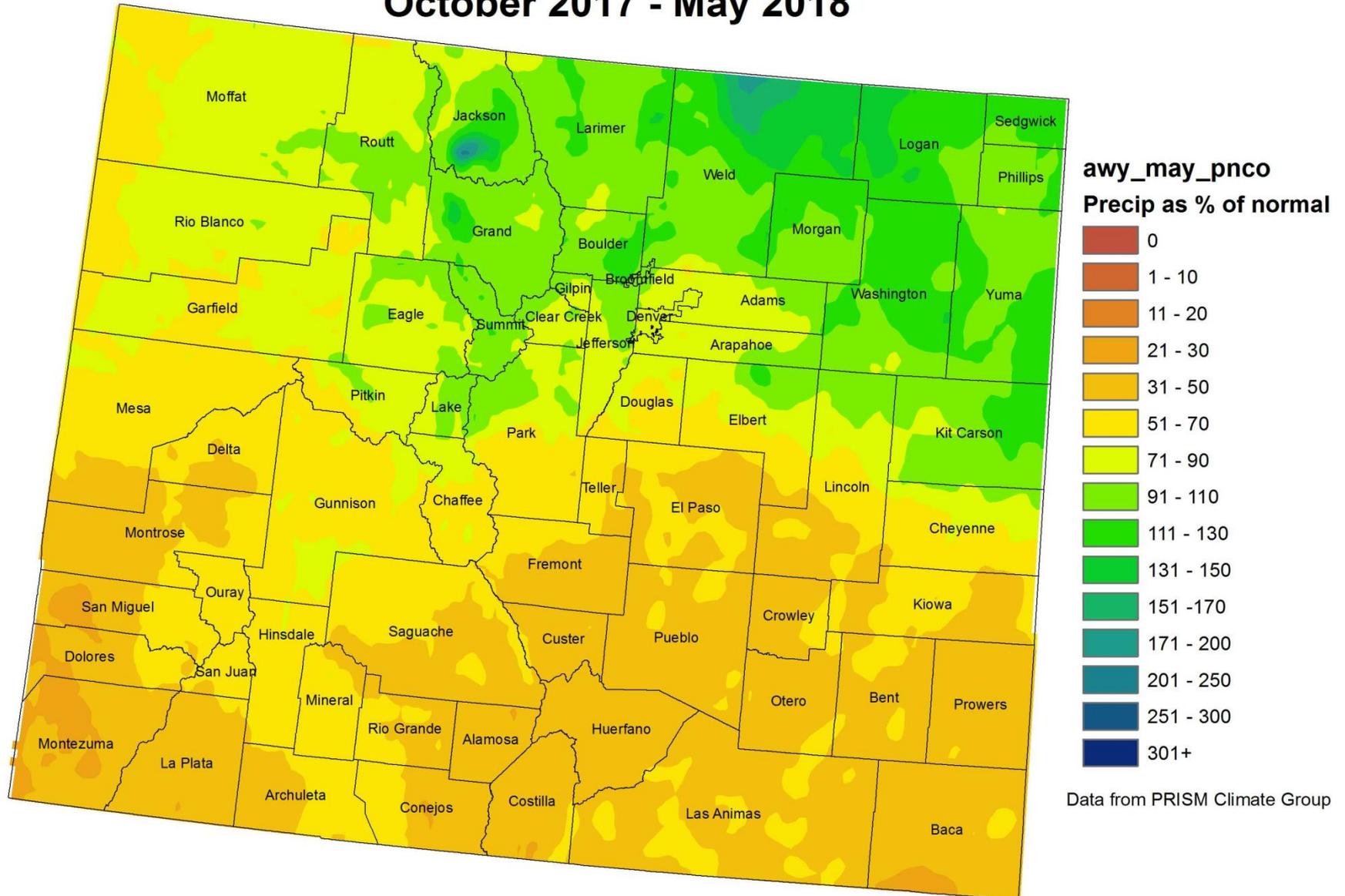
### Colorado, Precipitation, May

Precip 1901-2000 Mean: 2.02"



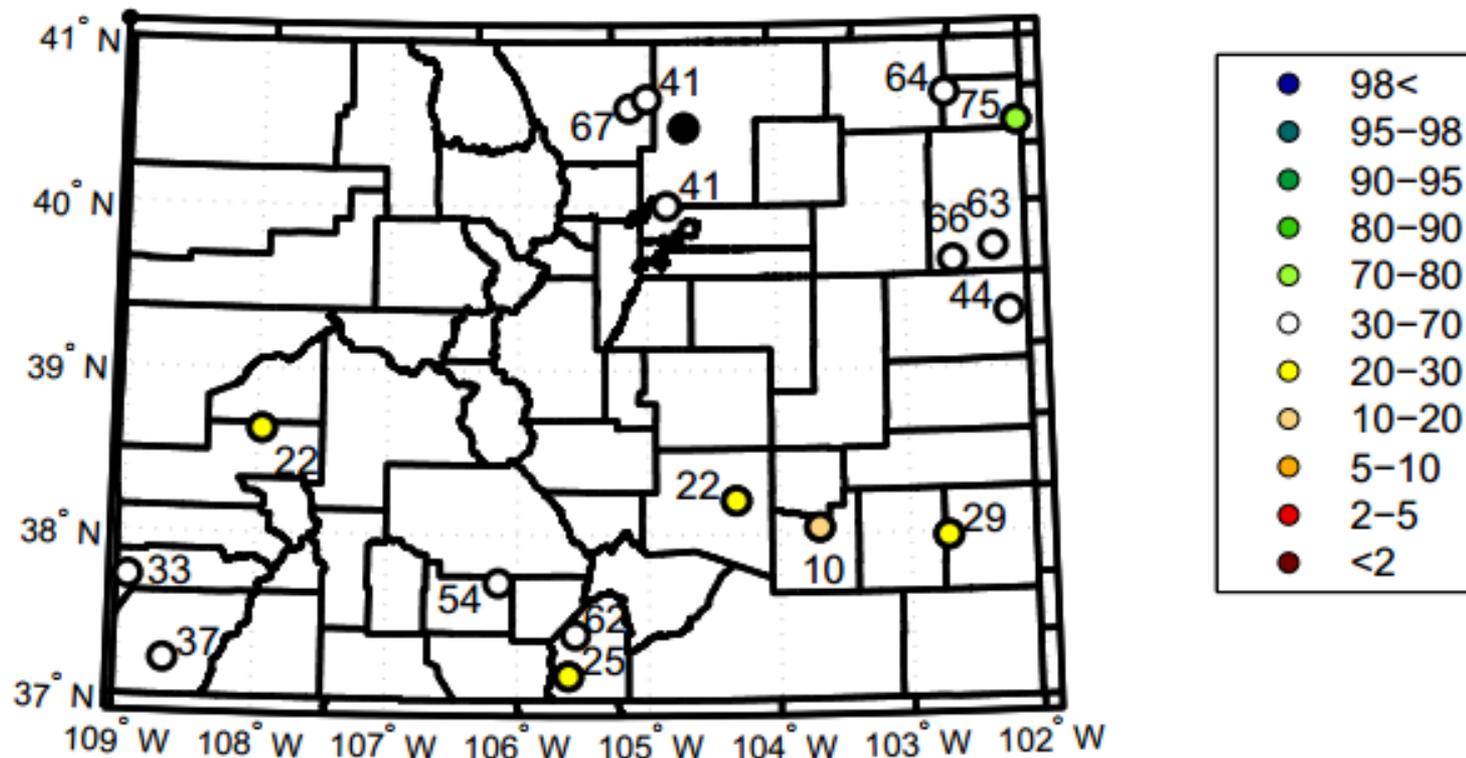
Don't blame Akron!

# Colorado Water Year 2018 Precipitation as a Percentage of Normal October 2017 - May 2018

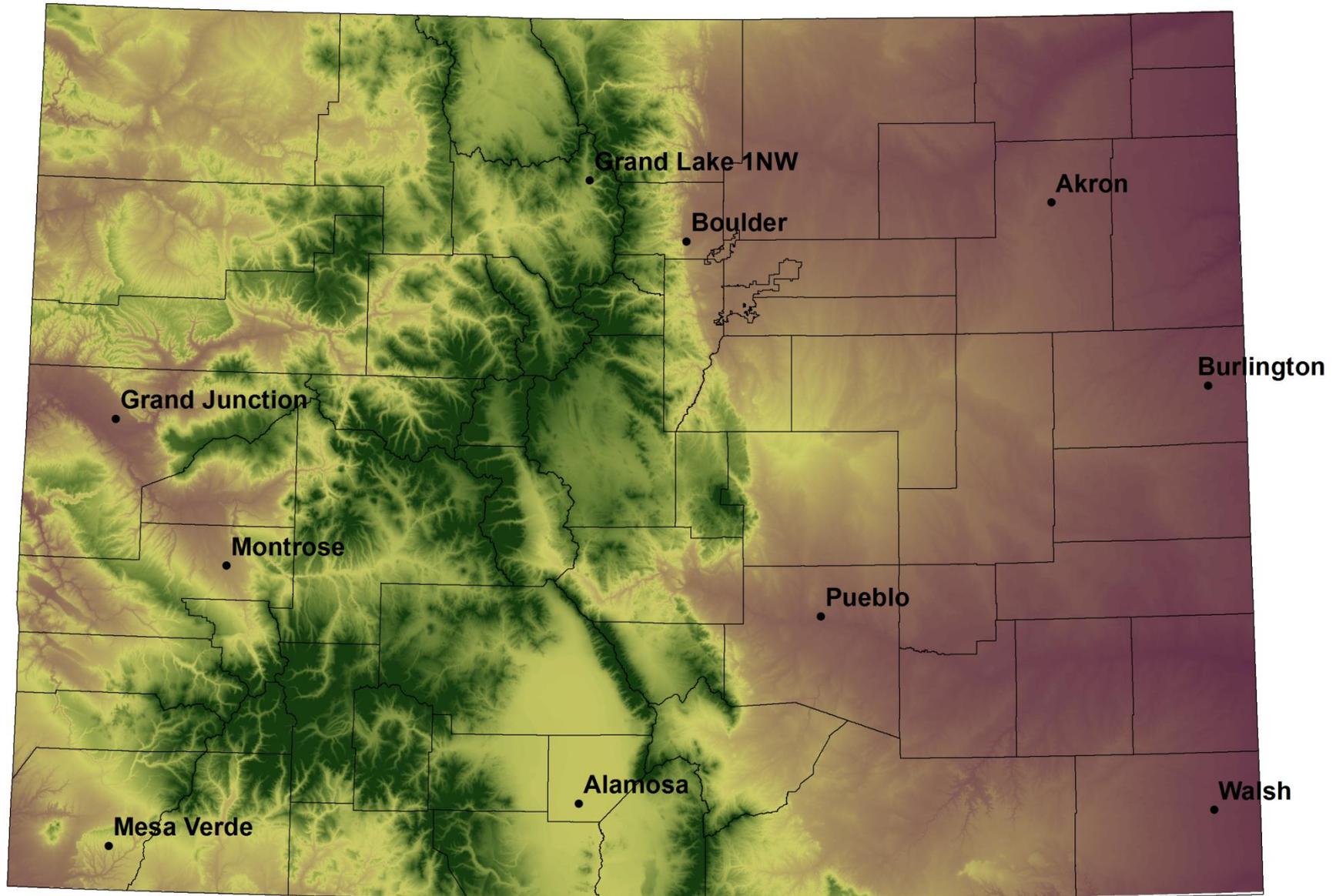


# Growing Season Water Balance (P/PET) Percentiles

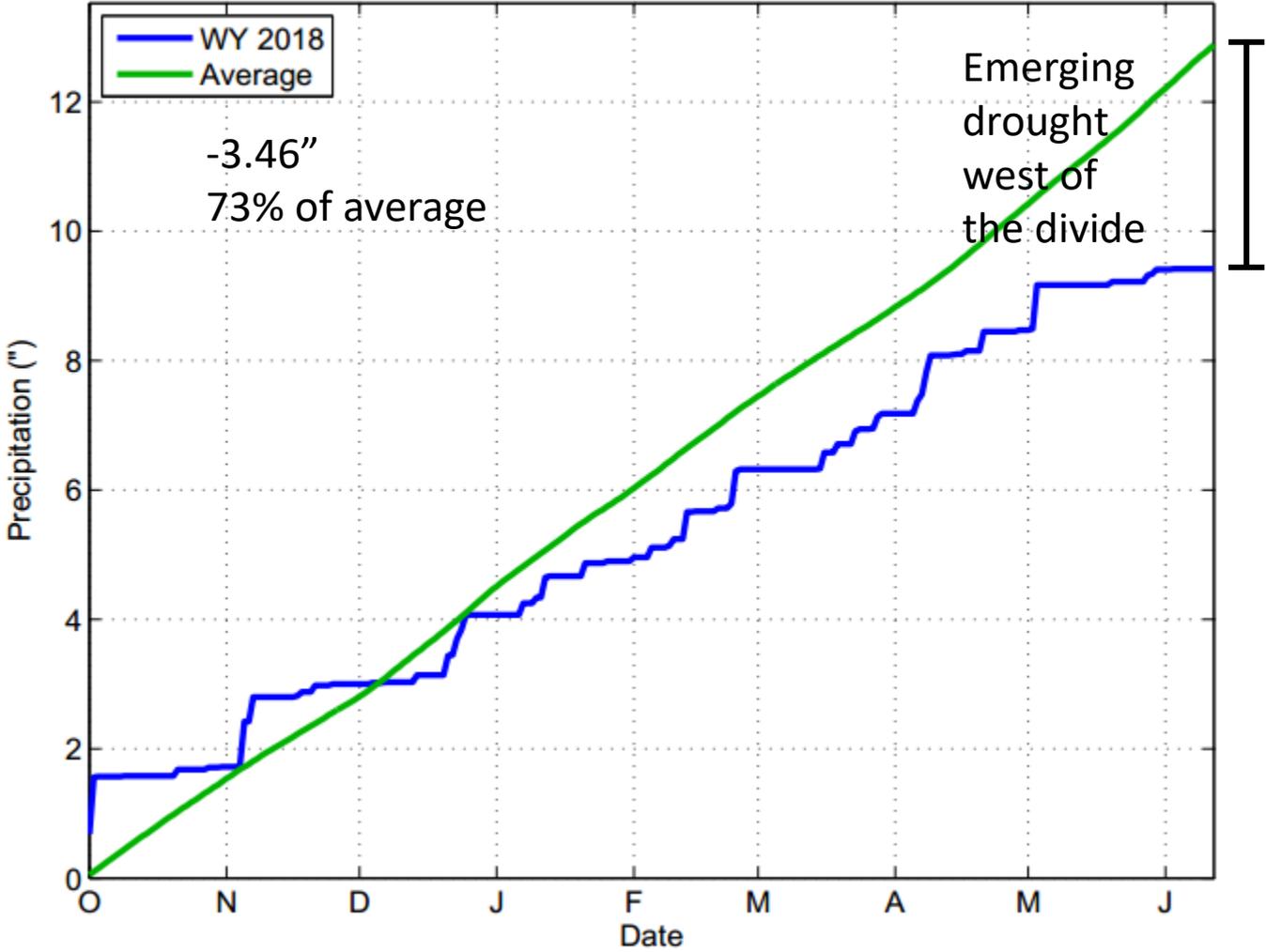
## June 11, 2018



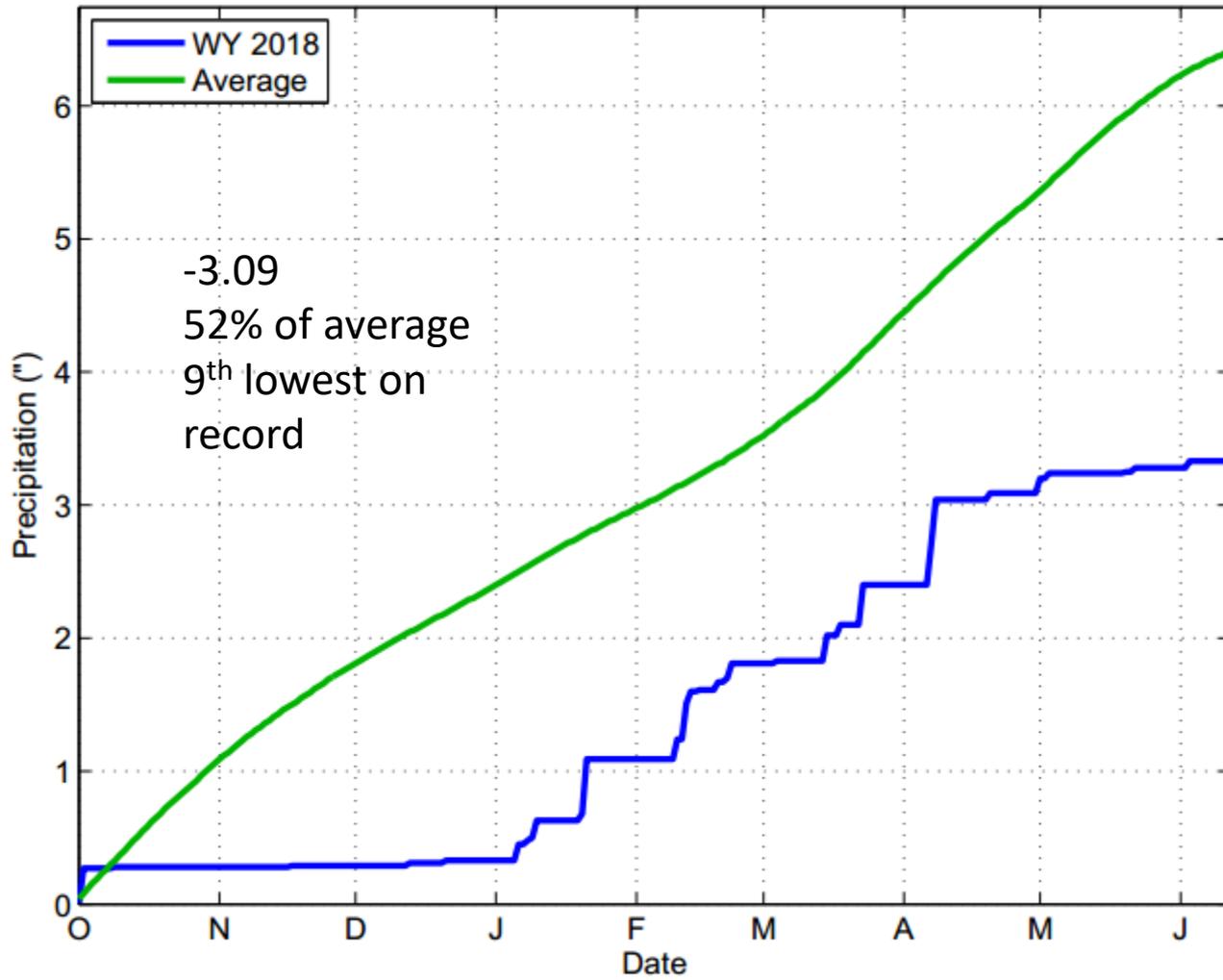
# NWS Cooperative Stations for WATF



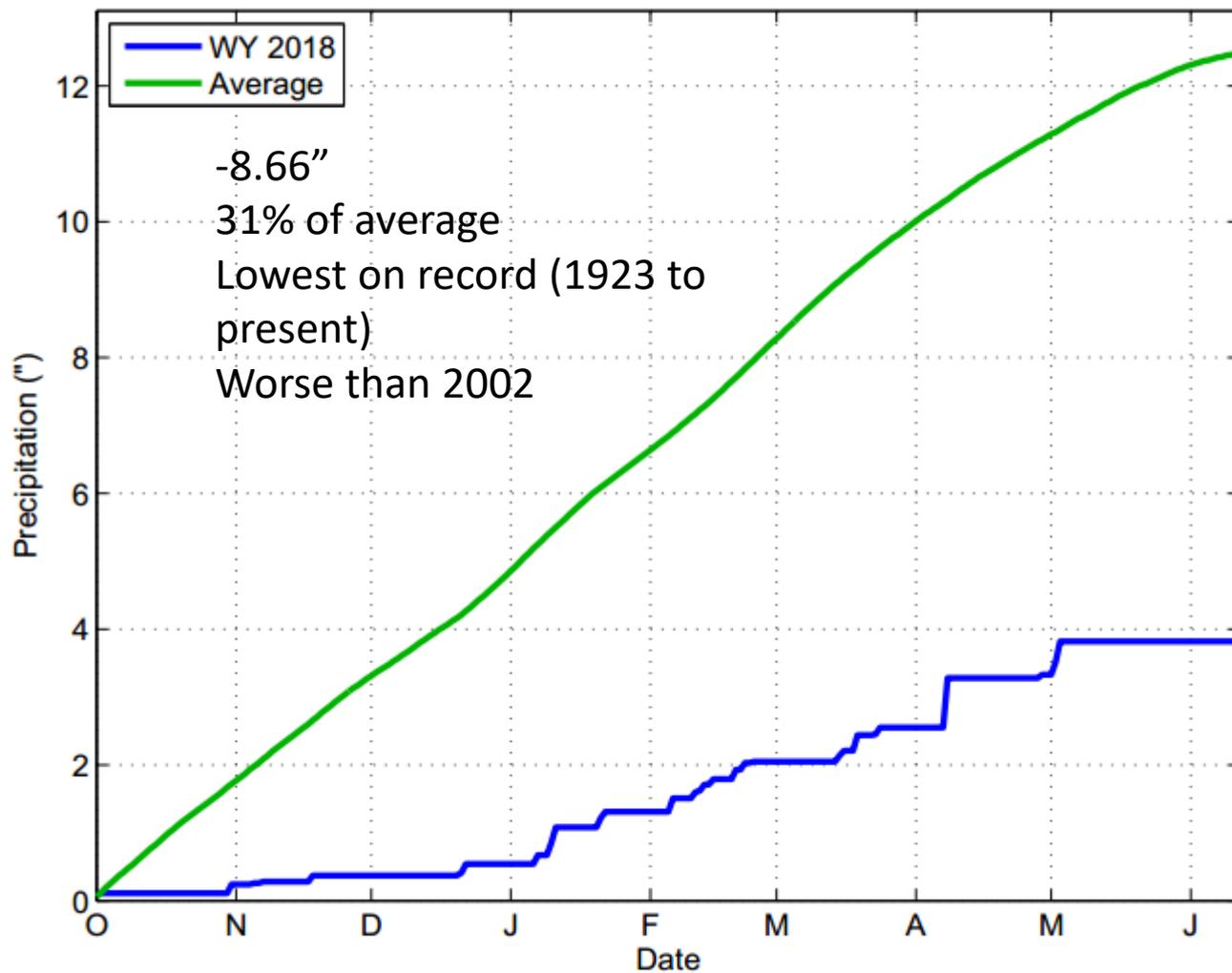
Grand Lake Precipitation Water Year 2018



### Grand Junction Precipitation Water Year 2018

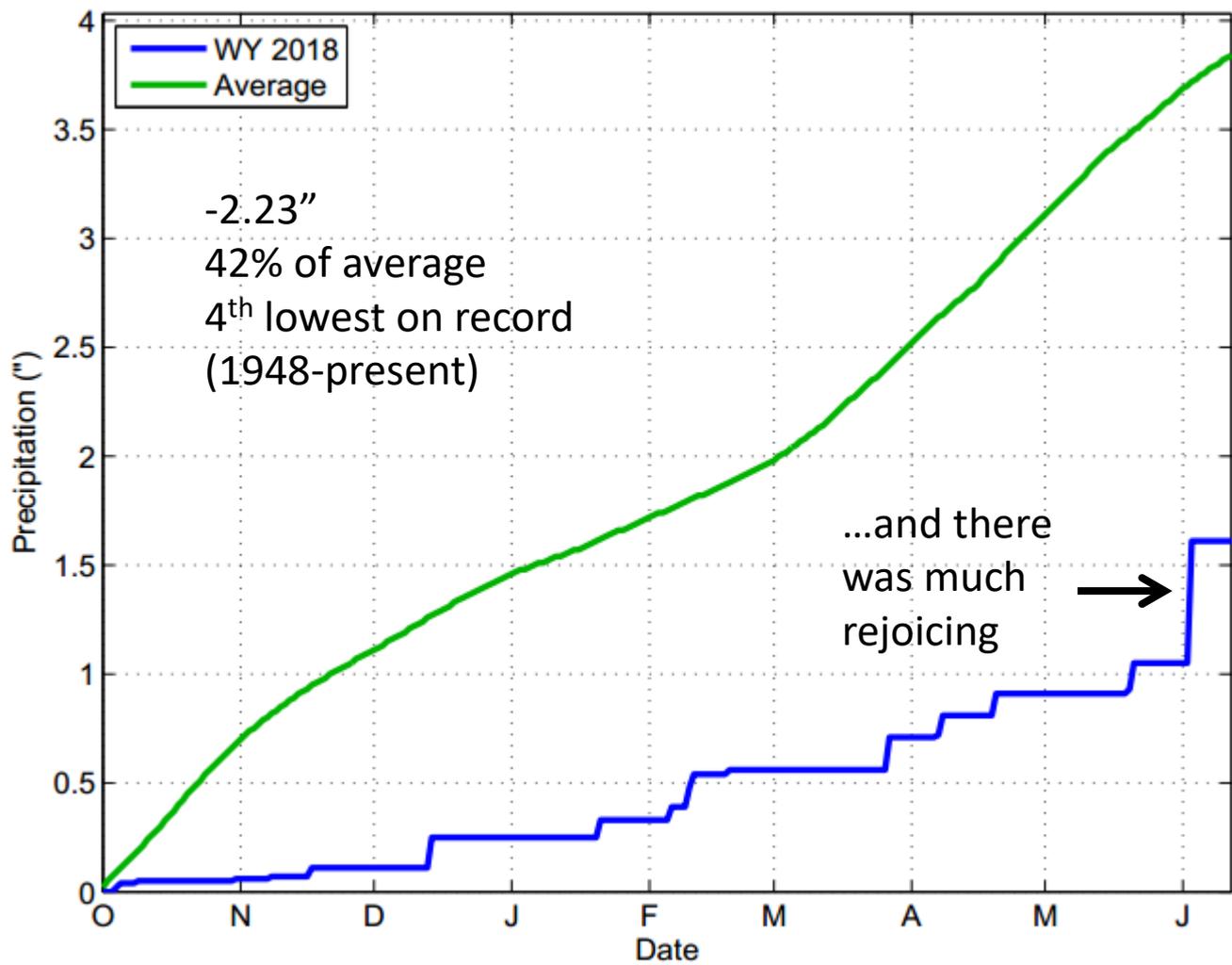


### Mesa Verde Precipitation Water Year 2018



-8.66"  
31% of average  
Lowest on record (1923 to present)  
Worse than 2002

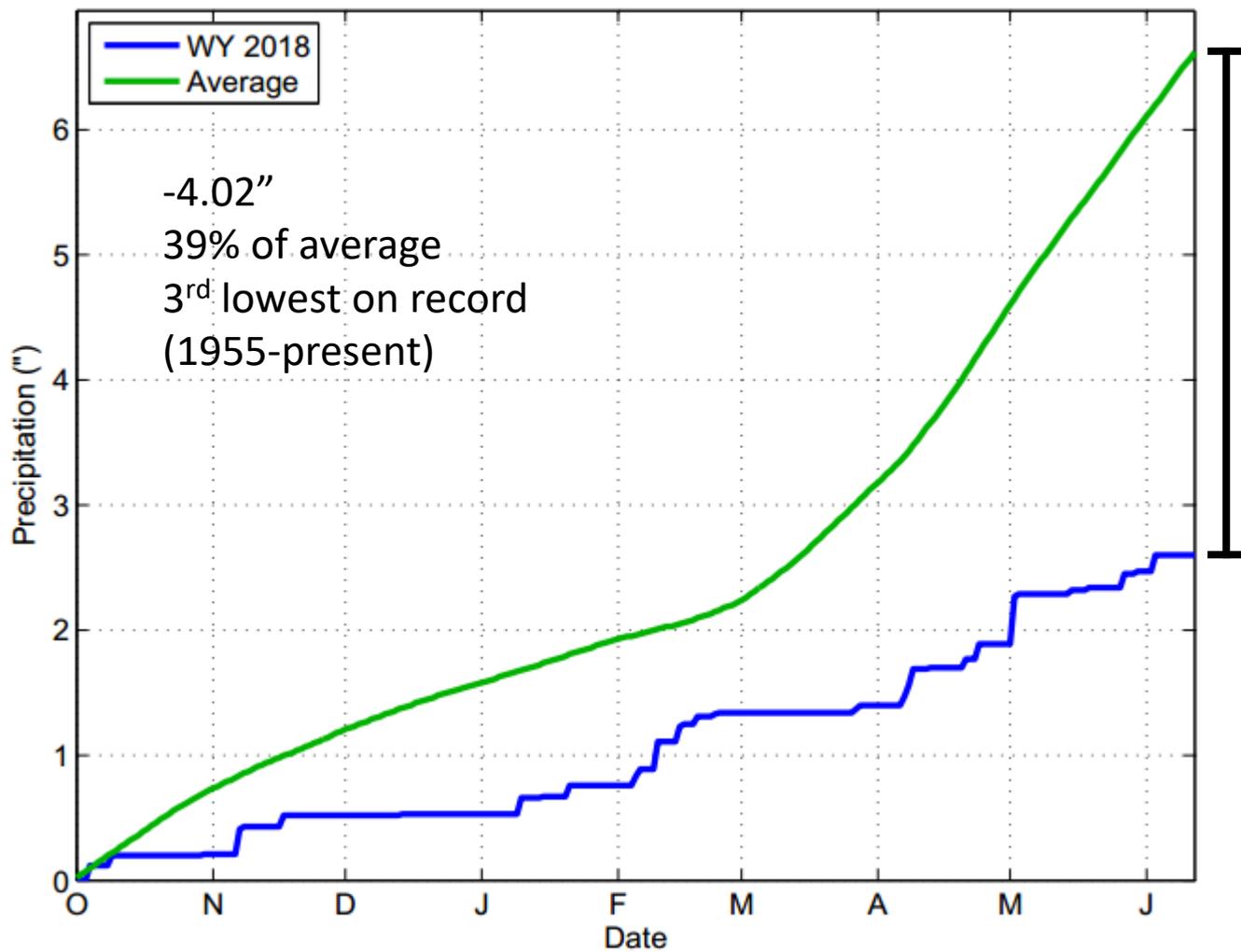
### Alamosa Precipitation Water Year 2018



-2.23"  
42% of average  
4<sup>th</sup> lowest on record  
(1948-present)

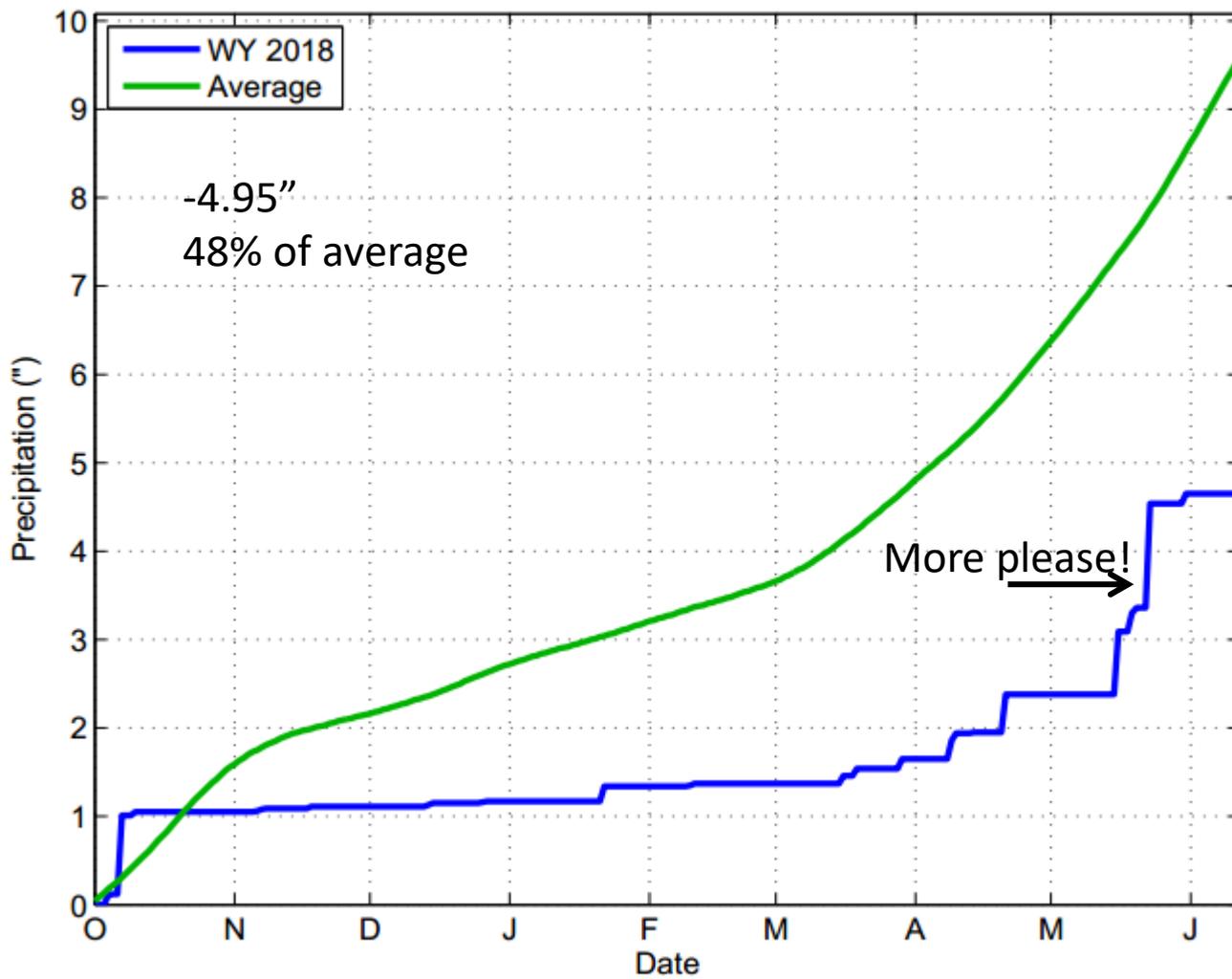
...and there was much rejoicing →

### Pueblo Precipitation Water Year 2018

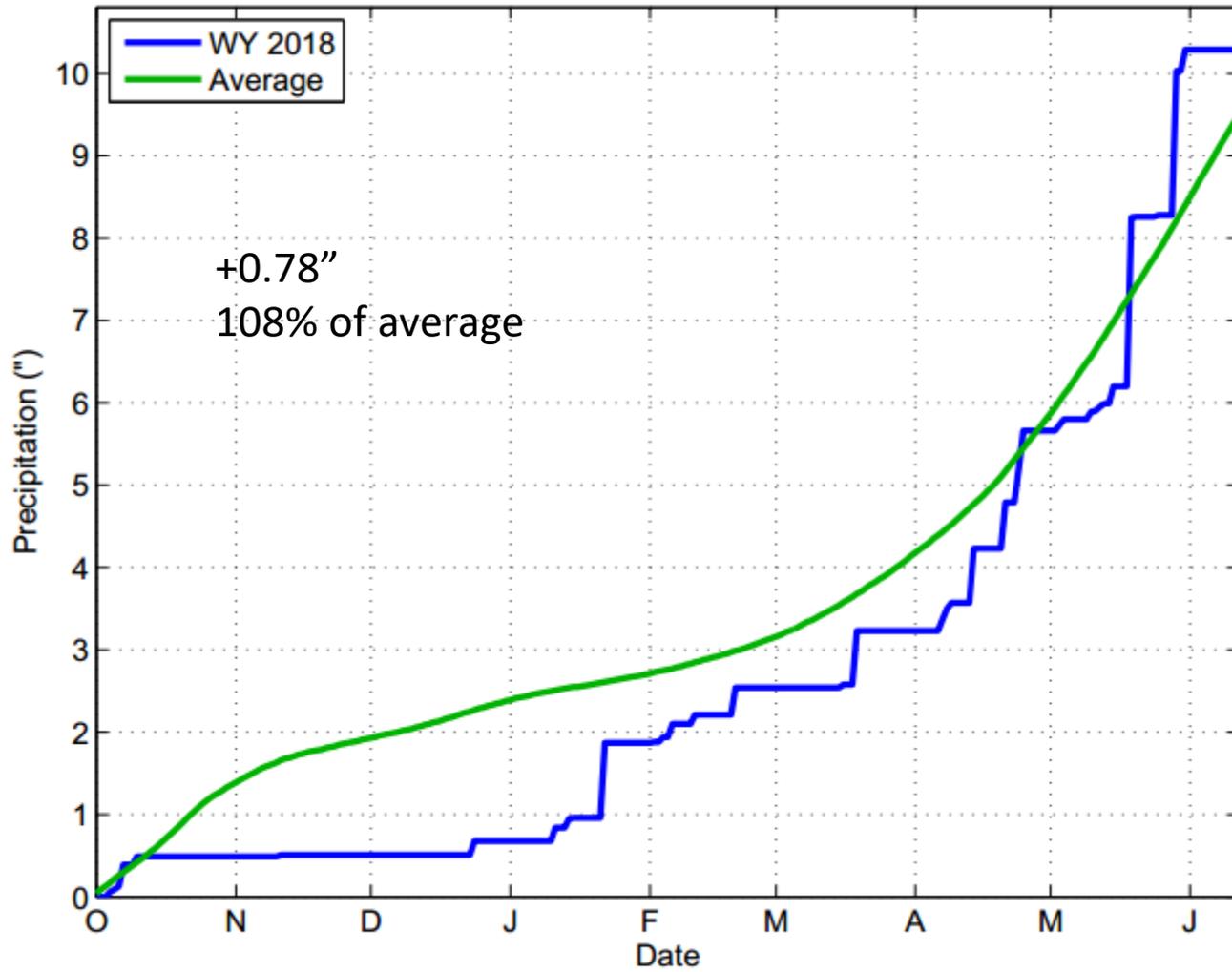


-4.02"  
39% of average  
3<sup>rd</sup> lowest on record  
(1955-present)

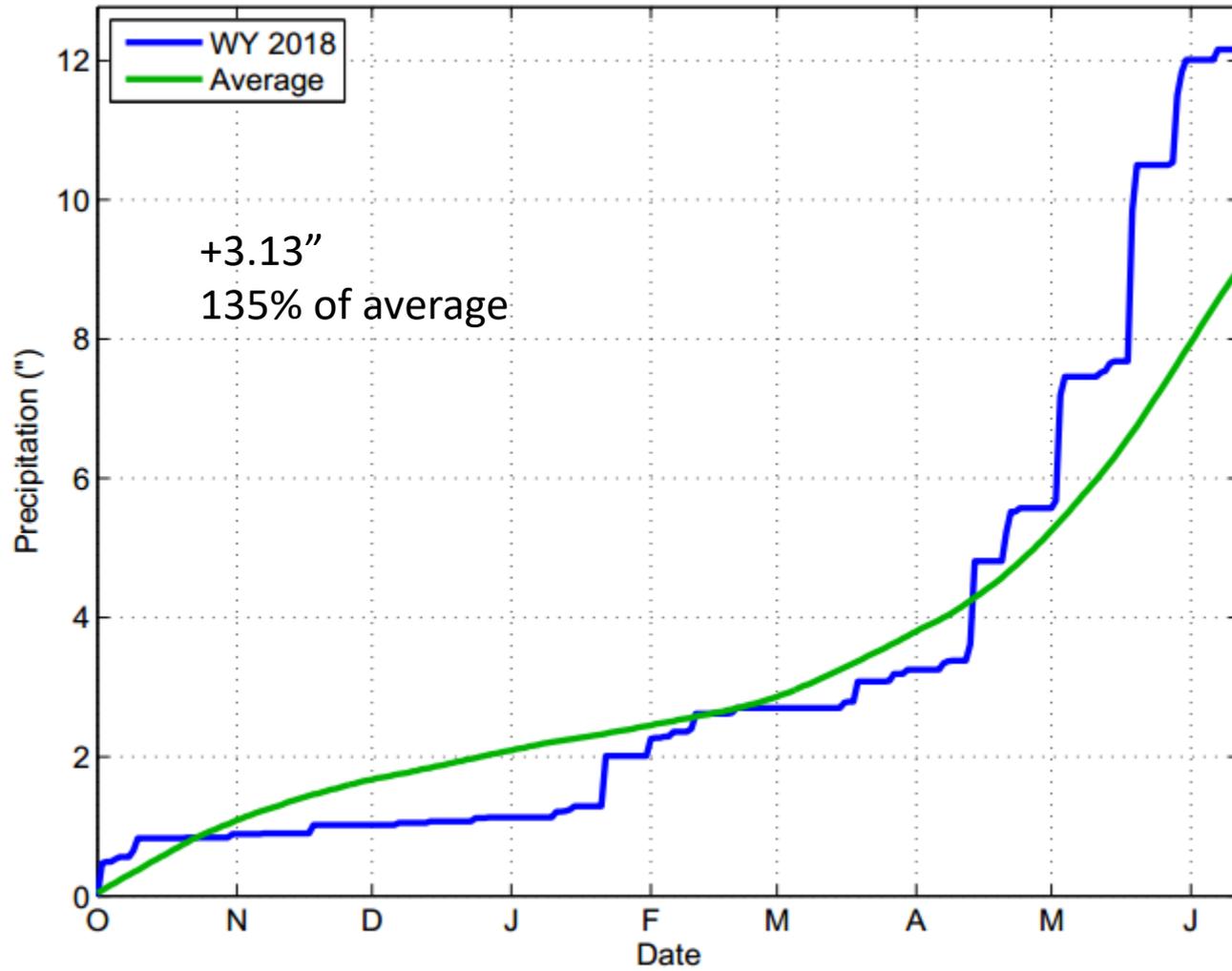
Walsh Precipitation Water Year 2018



### Burlington Precipitation Water Year 2018

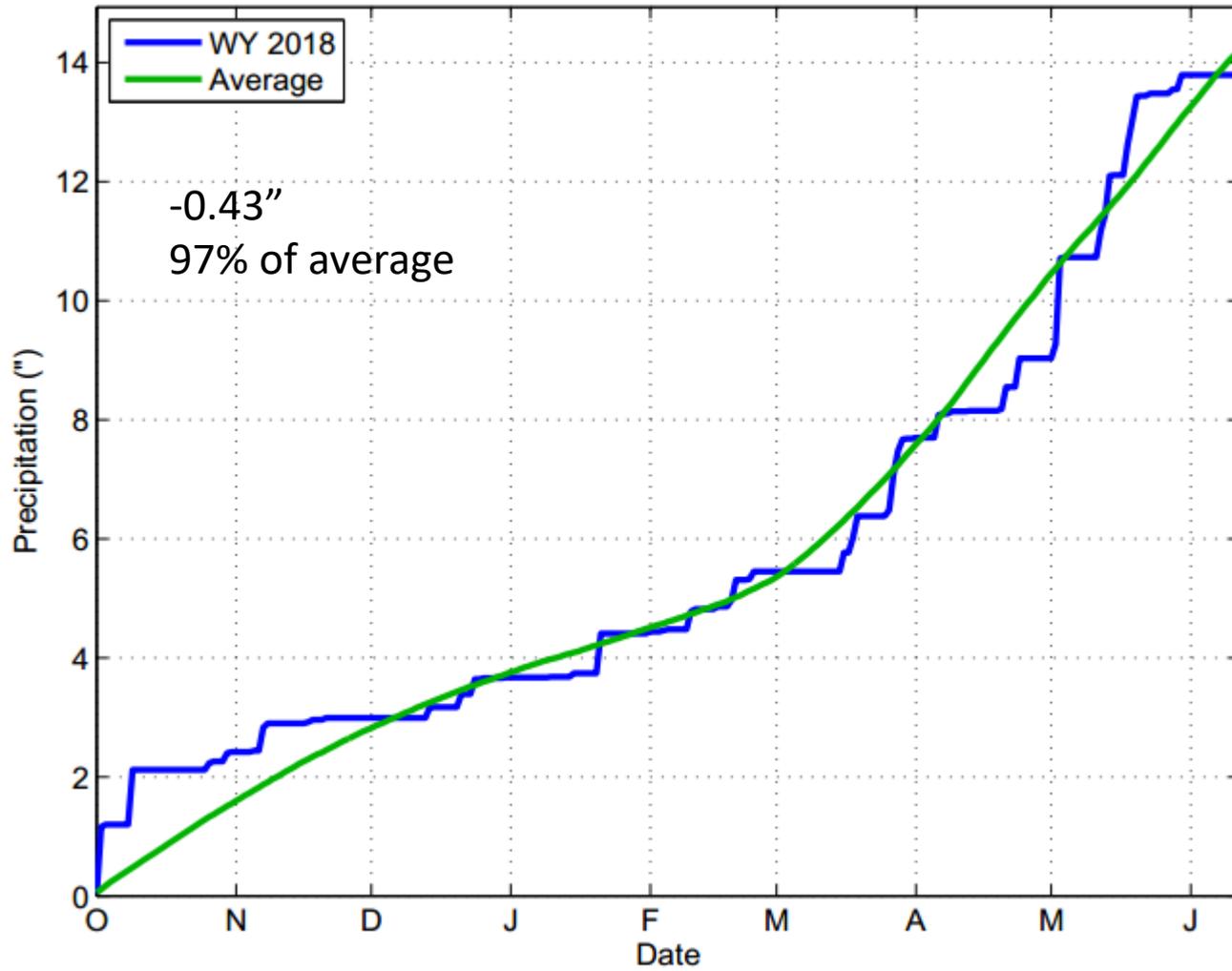


### Akron Precipitation Water Year 2018



+3.13"  
135% of average

### Boulder Precipitation Water Year 2018

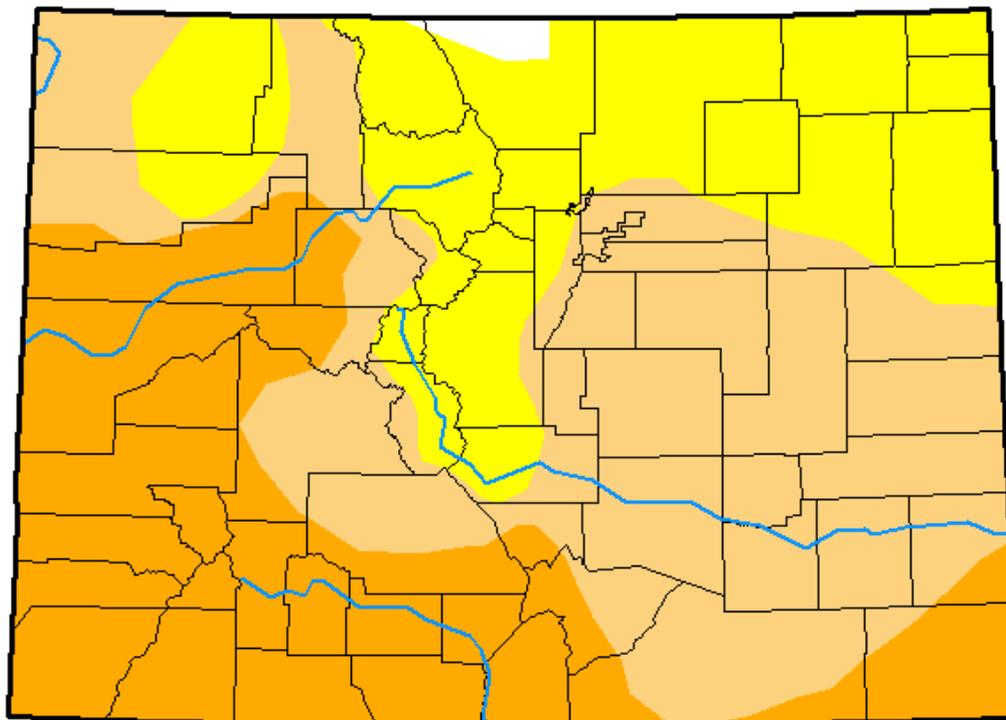


# U.S. Drought Monitor Colorado

**February 6, 2018**  
(Released Thursday, Feb. 8, 2018)  
Valid 7 a.m. EST

*Drought Conditions (Percent Area)*

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	0.59	99.41	71.90	31.82	0.00	0.00
<b>Last Week</b> <i>01-30-2018</i>	0.59	99.41	75.90	29.21	0.00	0.00
<b>3 Months Ago</b> <i>11-07-2017</i>	71.26	28.74	1.22	0.00	0.00	0.00
<b>Start of Calendar Year</b> <i>01-02-2018</i>	6.57	93.43	33.53	7.27	0.00	0.00
<b>Start of Water Year</b> <i>09-26-2017</i>	67.63	32.37	3.72	0.00	0.00	0.00
<b>One Year Ago</b> <i>02-07-2017</i>	47.49	52.51	35.34	0.75	0.00	0.00



*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.*

*Author:*

Eric Luebehusen  
U.S. Department of Agriculture



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

# U.S. Drought Monitor Colorado

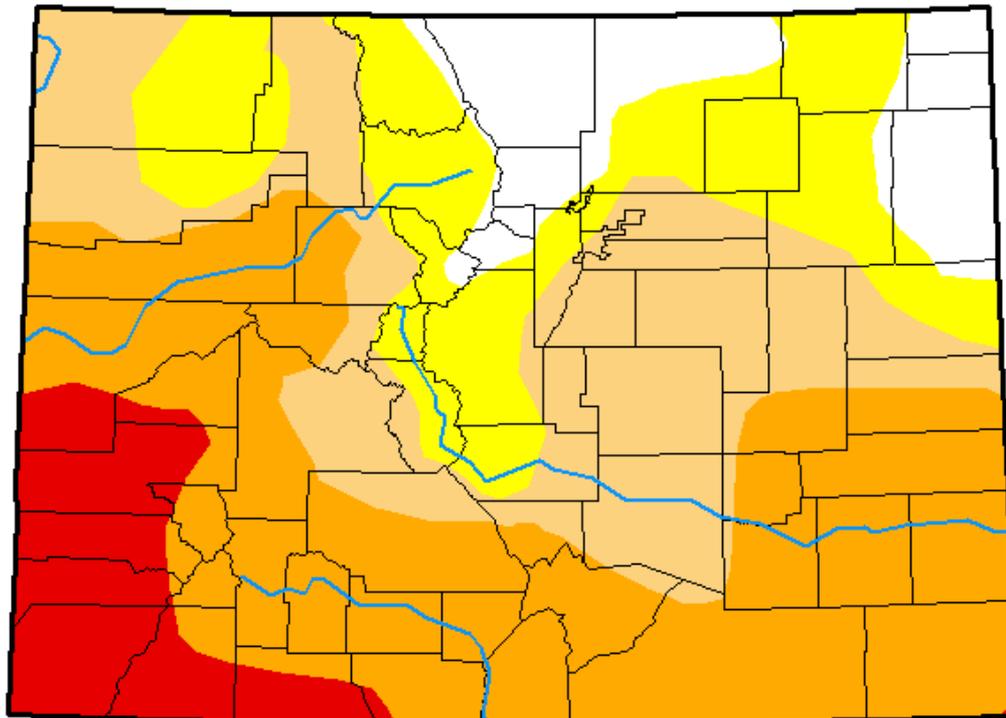
March 6, 2018

(Released Thursday, Mar. 8, 2018)

Valid 7 a.m. EST

*Drought Conditions (Percent Area)*

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	10.16	89.84	70.89	45.80	9.28	0.00
<b>Last Week</b> <i>02-27-2018</i>	10.16	89.84	70.89	33.51	7.62	0.00
<b>3 Months Ago</b> <i>12-05-2017</i>	66.96	33.04	15.99	0.00	0.00	0.00
<b>Start of Calendar Year</b> <i>01-02-2018</i>	6.57	93.43	33.53	7.27	0.00	0.00
<b>Start of Water Year</b> <i>09-26-2017</i>	67.63	32.37	3.72	0.00	0.00	0.00
<b>One Year Ago</b> <i>03-07-2017</i>	48.04	51.96	37.11	1.98	0.20	0.00



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.*

Author:

Richard Tinker  
CPC/NOAA/NWS/NCEP



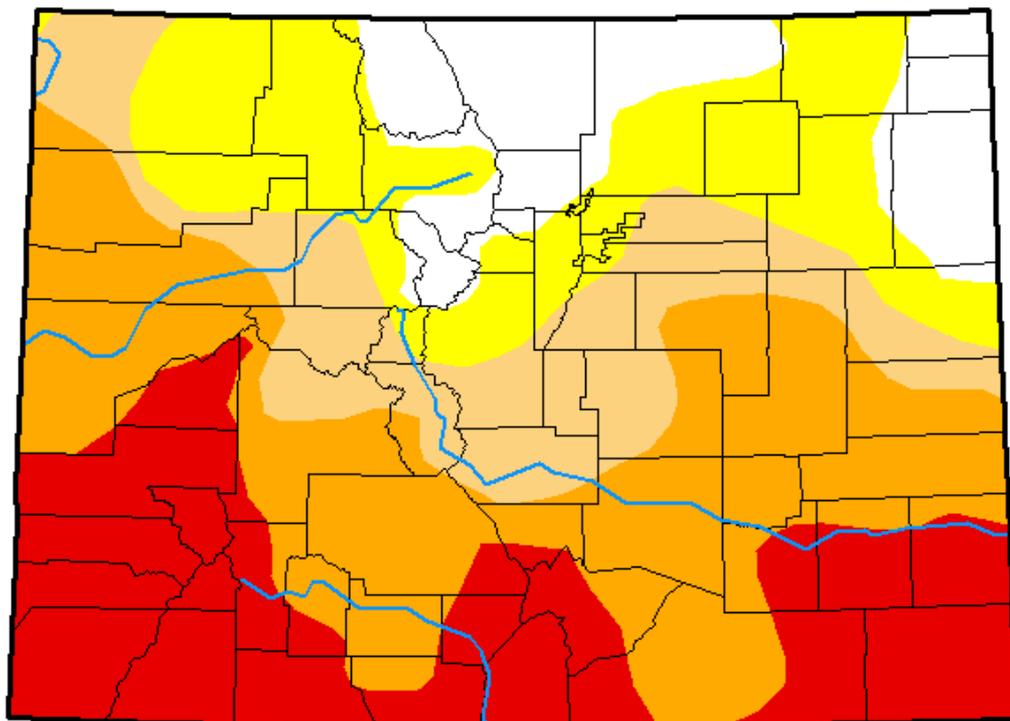
<http://droughtmonitor.unl.edu/>

# U.S. Drought Monitor Colorado

**April 10, 2018**  
(Released Thursday, Apr. 12, 2018)  
Valid 8 a.m. EDT

*Drought Conditions (Percent Area)*

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	12.38	87.62	69.43	53.65	24.31	0.00
<b>Last Week</b> <i>04-03-2018</i>	9.65	90.35	73.67	51.56	23.63	0.00
<b>3 Months Ago</b> <i>01-09-2018</i>	0.59	99.41	75.90	22.02	0.00	0.00
<b>Start of Calendar Year</b> <i>01-02-2018</i>	6.57	93.43	33.53	7.27	0.00	0.00
<b>Start of Water Year</b> <i>09-26-2017</i>	67.63	32.37	3.72	0.00	0.00	0.00
<b>One Year Ago</b> <i>04-11-2017</i>	51.89	48.11	19.46	0.00	0.00	0.00



*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.*

*Author:*

David Miskus  
NOAA/NWS/NCEP/CPC



# U.S. Drought Monitor

## Colorado

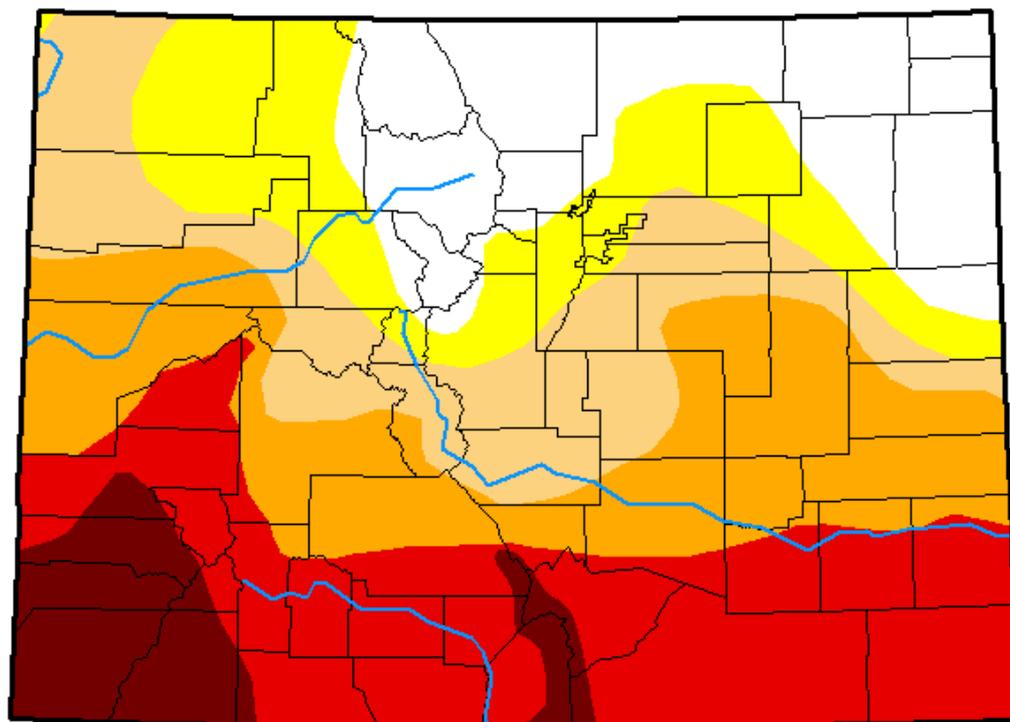
May 8, 2018

(Released Thursday, May. 10, 2018)

Valid 8 a.m. EDT

*Drought Conditions (Percent Area)*

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	18.02	81.98	67.98	51.57	30.89	7.40
<b>Last Week</b> <i>05-01-2018</i>	18.47	81.53	67.98	53.65	30.89	5.02
<b>3 Months Ago</b> <i>02-06-2018</i>	0.59	99.41	71.90	31.82	0.00	0.00
<b>Start of Calendar Year</b> <i>01-02-2018</i>	6.57	93.43	33.53	7.27	0.00	0.00
<b>Start of Water Year</b> <i>09-26-2017</i>	67.63	32.37	3.72	0.00	0.00	0.00
<b>One Year Ago</b> <i>05-09-2017</i>	87.62	12.38	2.19	0.00	0.00	0.00



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.*

Author:

David Simeral  
Western Regional Climate Center



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

# U.S. Drought Monitor Colorado

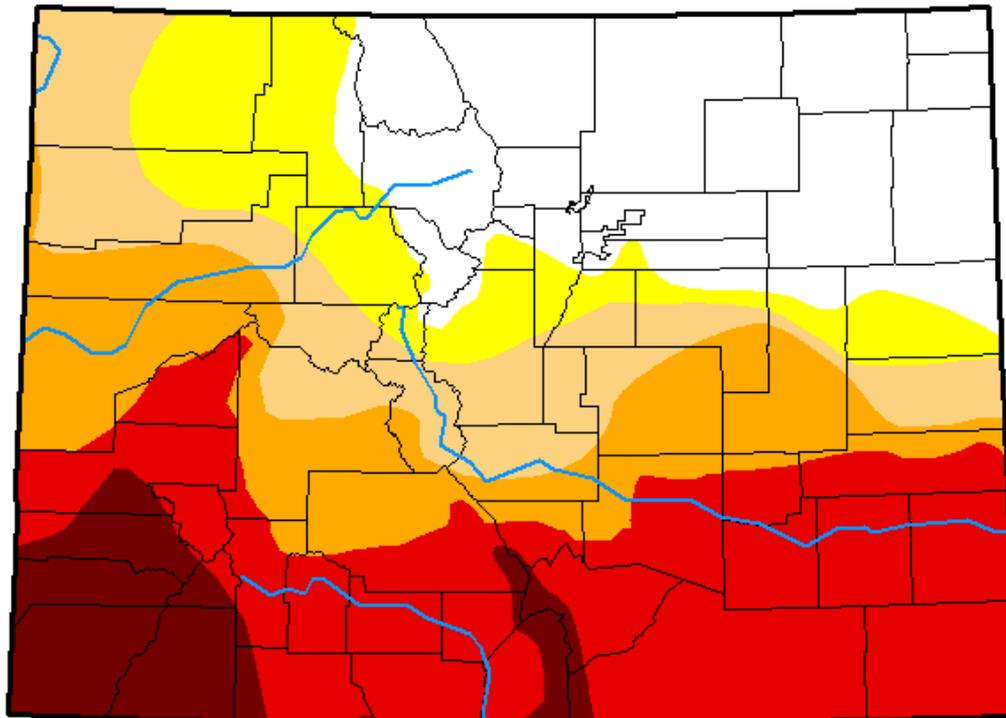
**June 5, 2018**

(Released Thursday, Jun. 7, 2018)

Valid 8 a.m. EDT

*Drought Conditions (Percent Area)*

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	24.69	75.31	63.91	50.80	35.13	7.79
<b>Last Week</b> <i>05-29-2018</i>	24.68	75.32	63.92	50.55	33.67	7.79
<b>3 Months Ago</b> <i>03-06-2018</i>	10.16	89.84	70.89	45.80	9.28	0.00
<b>Start of Calendar Year</b> <i>01-02-2018</i>	6.57	93.43	33.53	7.27	0.00	0.00
<b>Start of Water Year</b> <i>09-26-2017</i>	67.63	32.37	3.72	0.00	0.00	0.00
<b>One Year Ago</b> <i>06-06-2017</i>	93.84	6.16	0.00	0.00	0.00	0.00



Intensity:

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

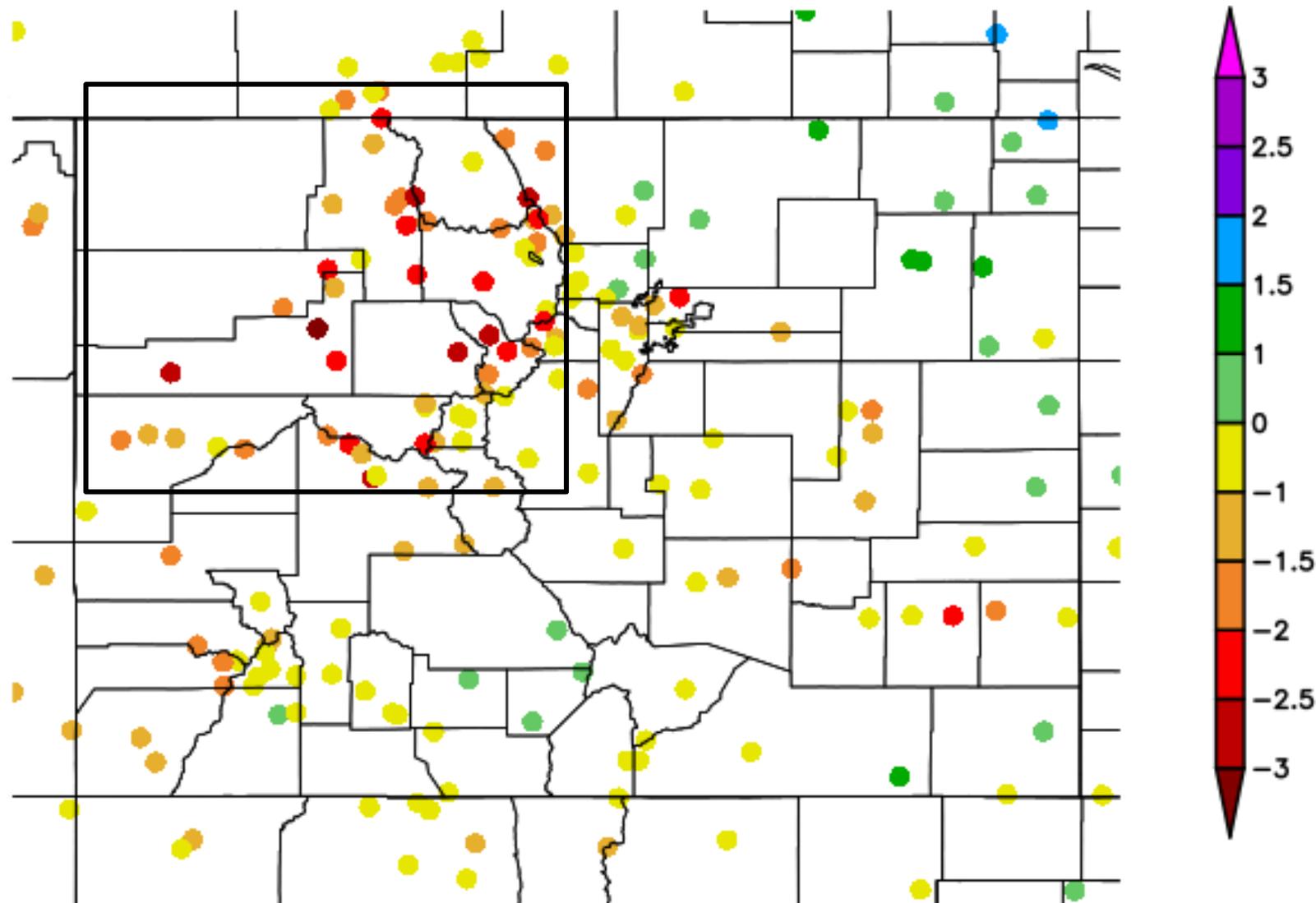
*The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.*

Author:

Anthony Artusa  
NOAA/NWS/NCEP/CPC

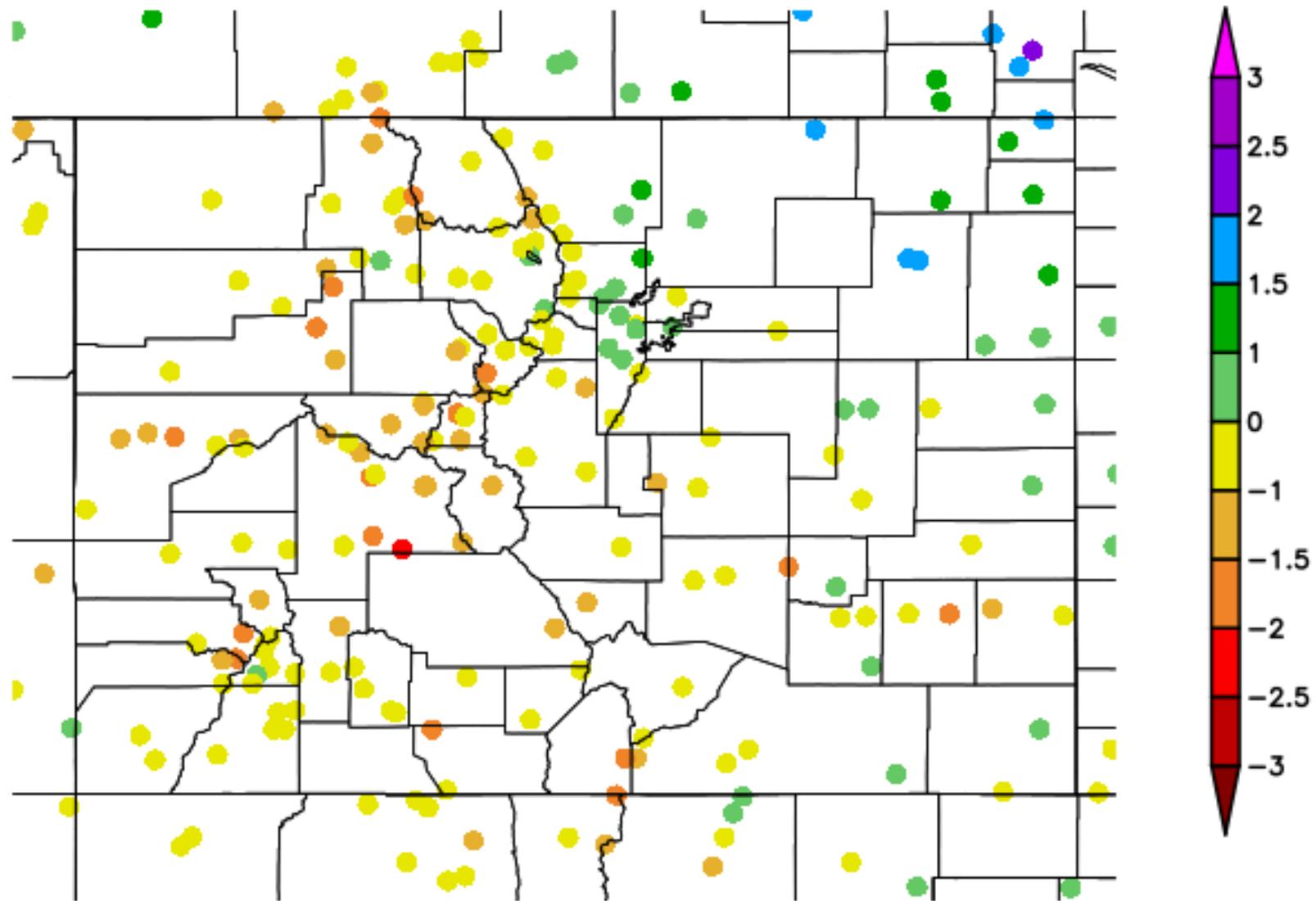


# 30 Day SPI 5/13/2018 - 6/11/2018



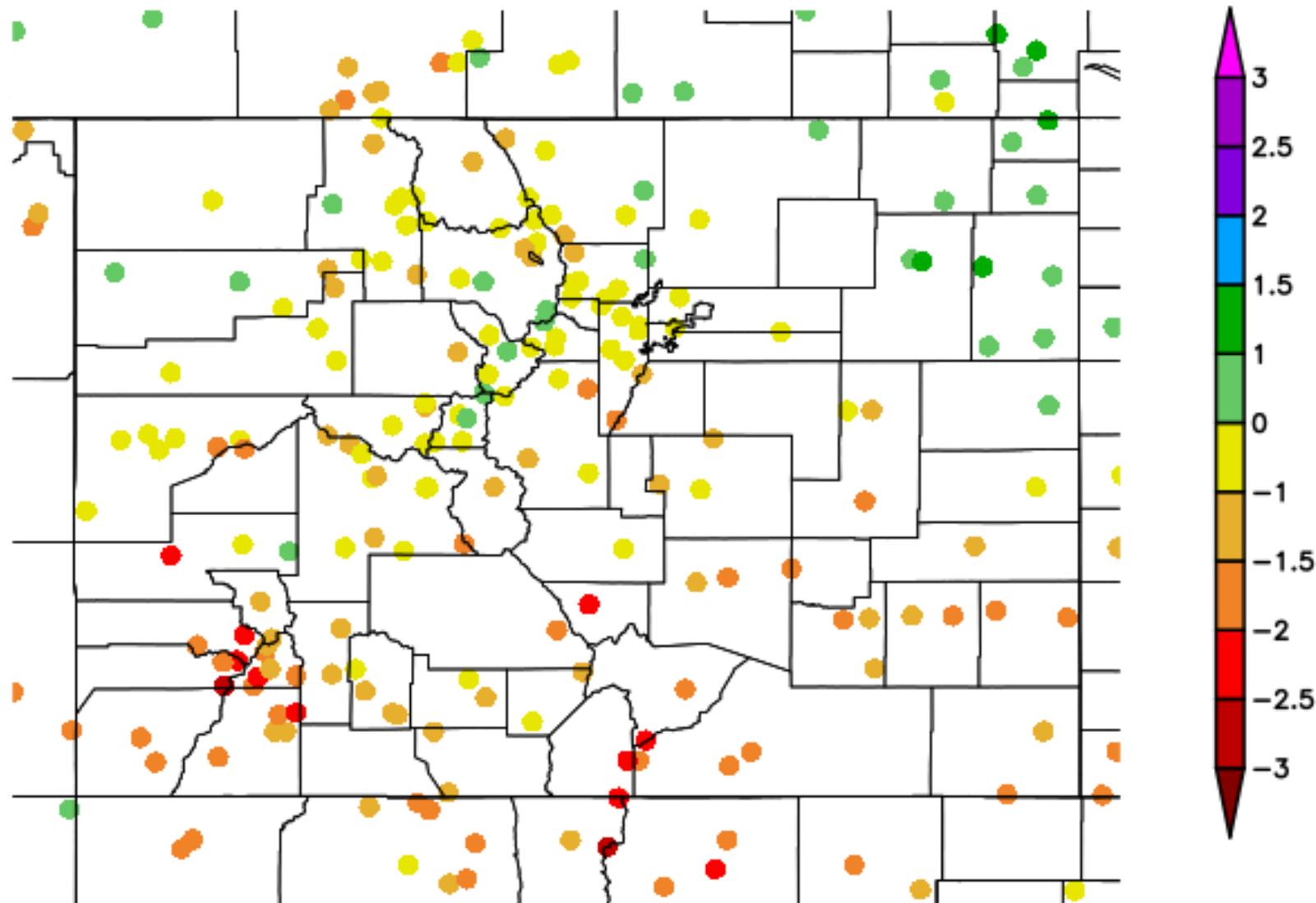
# Monthly SPI

5/1/2018 - 5/31/2018

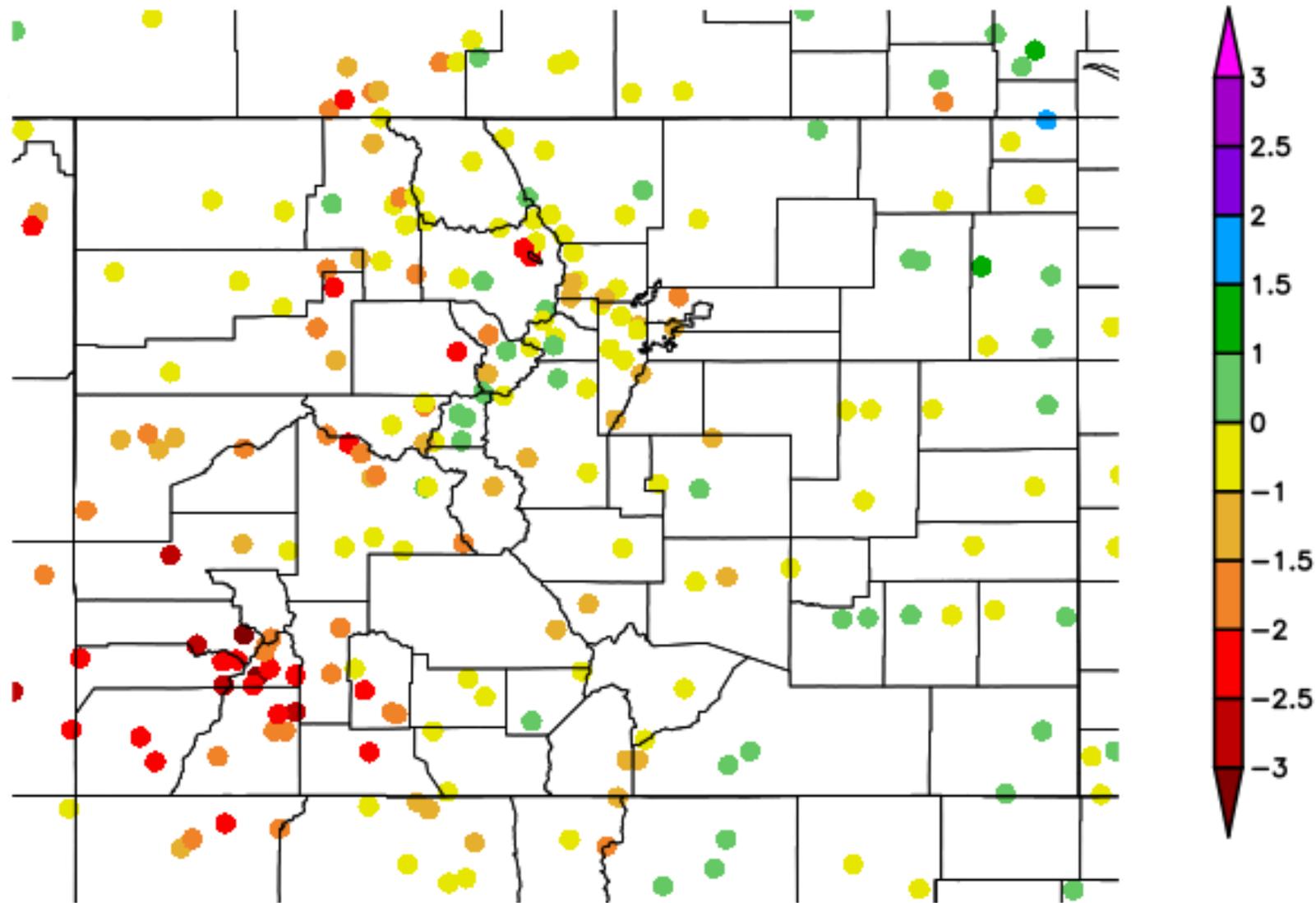


# 6 Month SPI

12/12/2017 - 6/11/2018



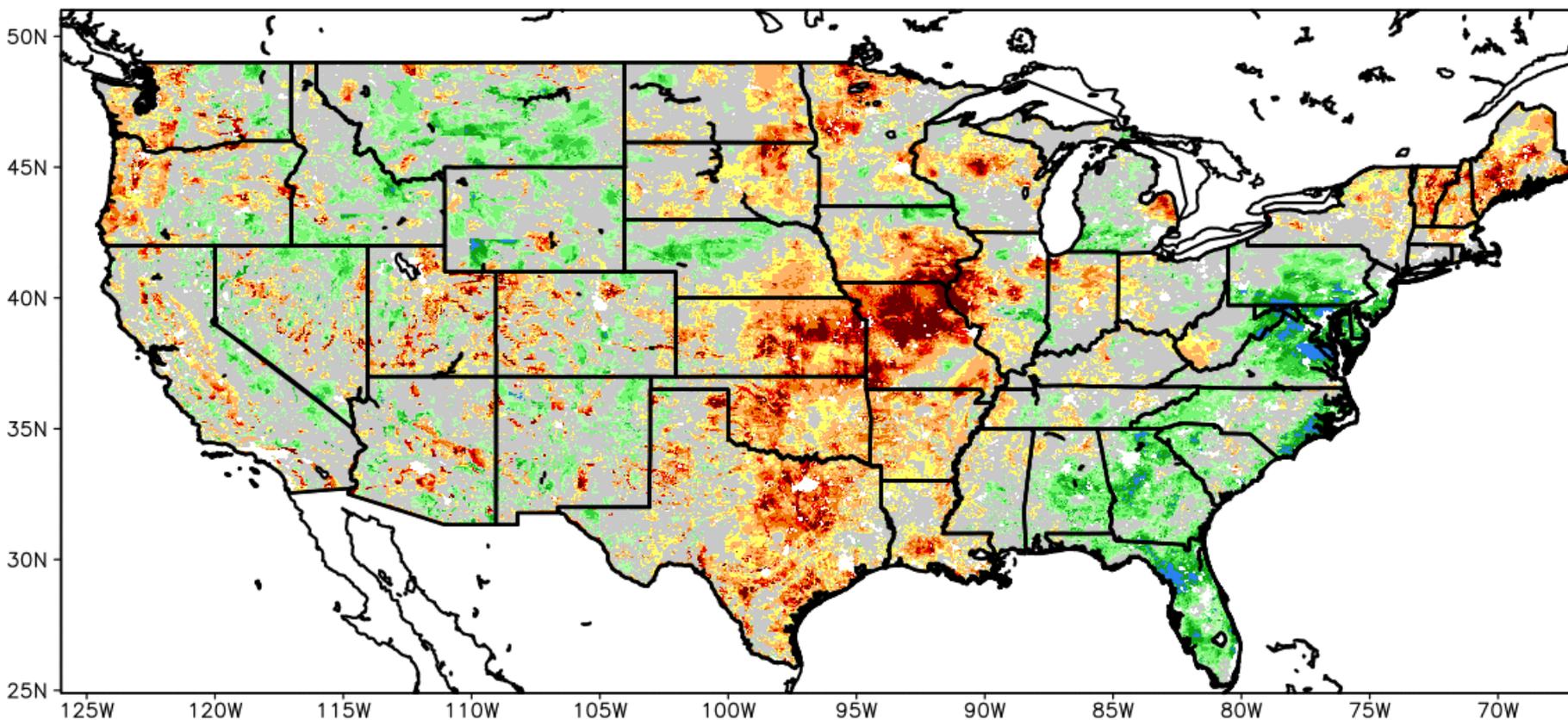
# 12 Month SPI 6/12/2017 - 6/11/2018



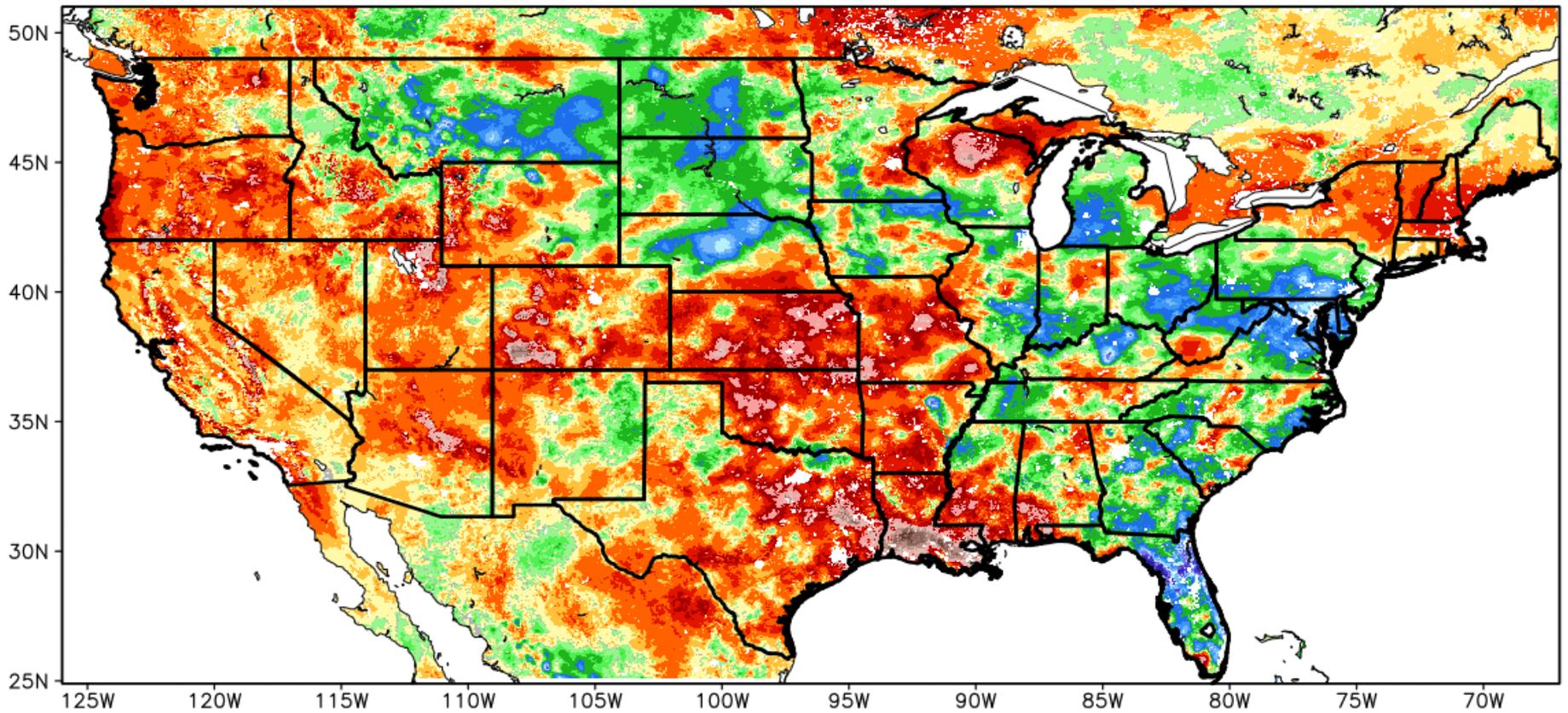
# Reservoir and Soils Update



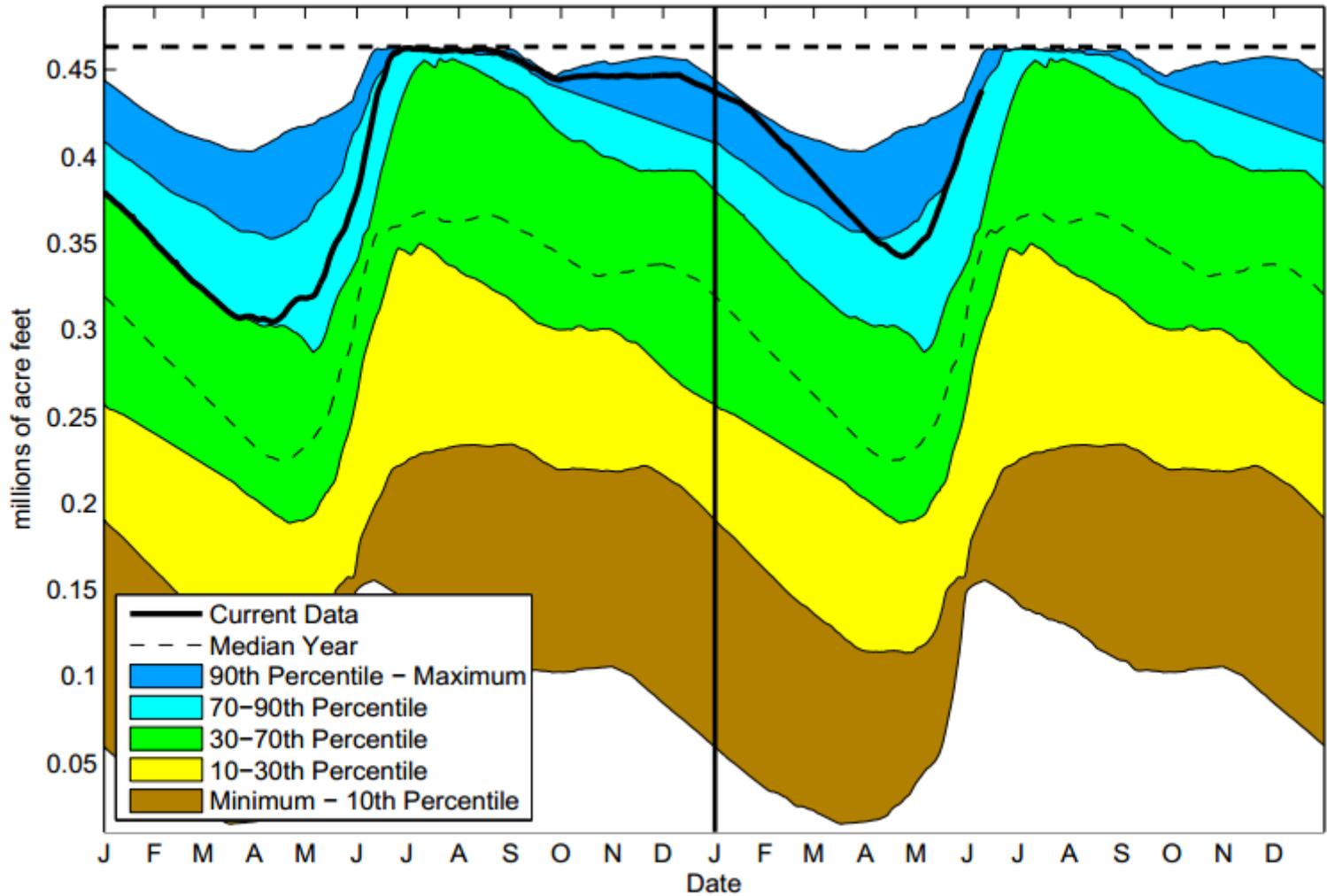
SPoRT-LIS 0-2 m RSM percentile valid 12 Jun 2018



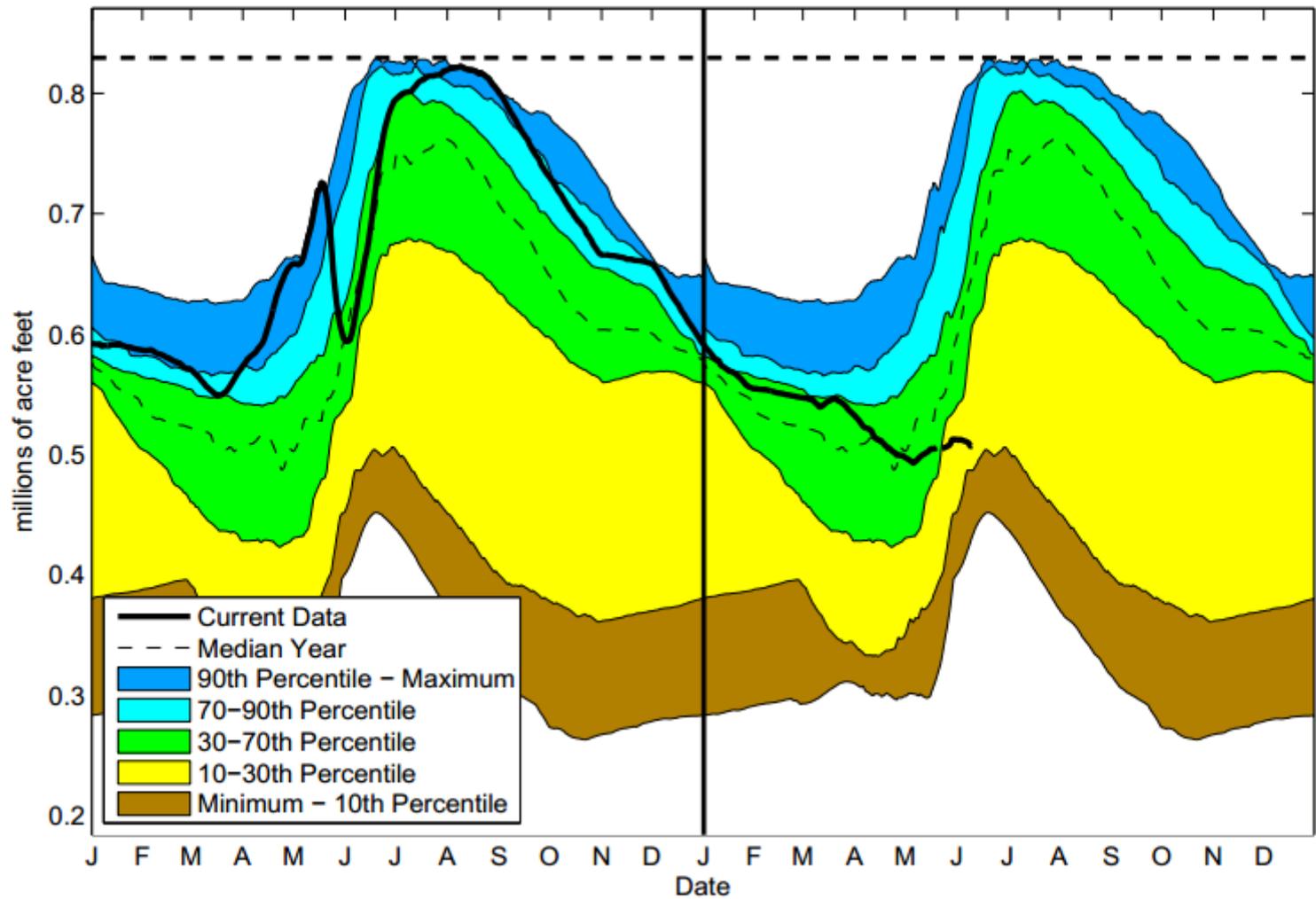
1-Year Difference in Column Relative Soil Moisture (%) valid 12z 12 Jun 2018



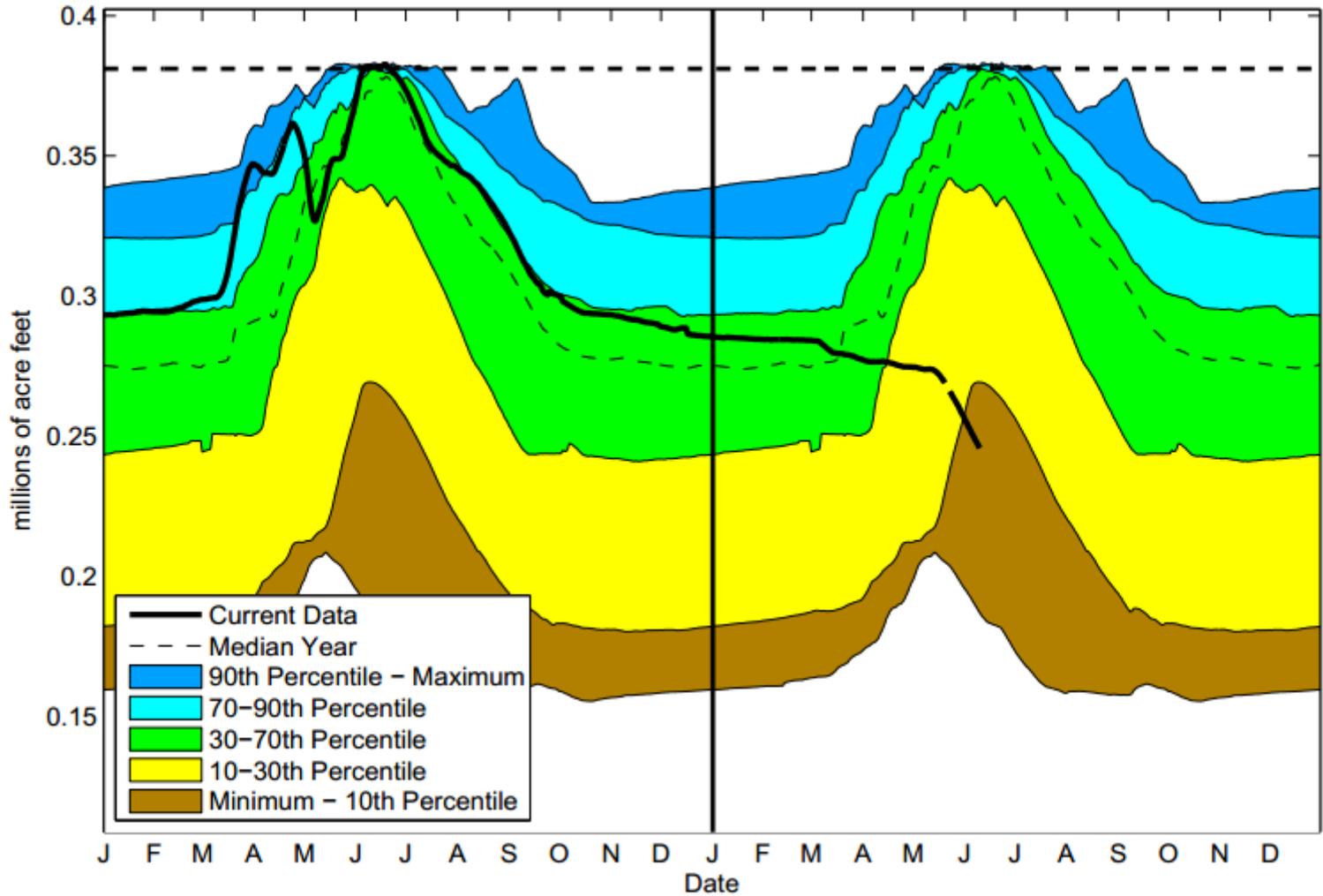
Lake Granby Reservoir Level 06/10/2018  
134 Percent of 2000-2016 Average



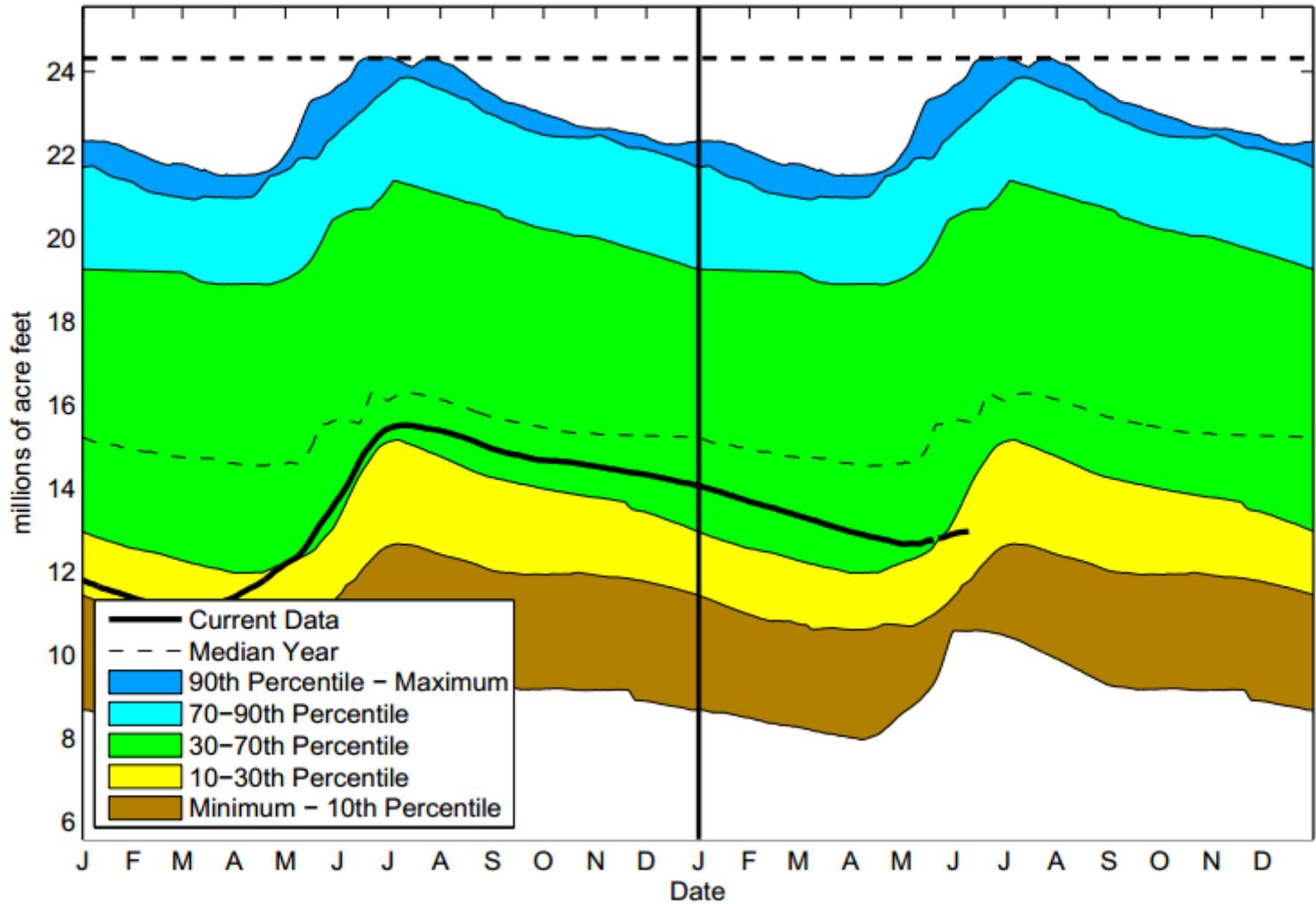
Blue Mesa Reservoir Level 06/10/2018  
79 Percent of 1985-2016 Average



McPhee Reservoir Level 06/10/2018  
71 Percent of 1987-2016 Average



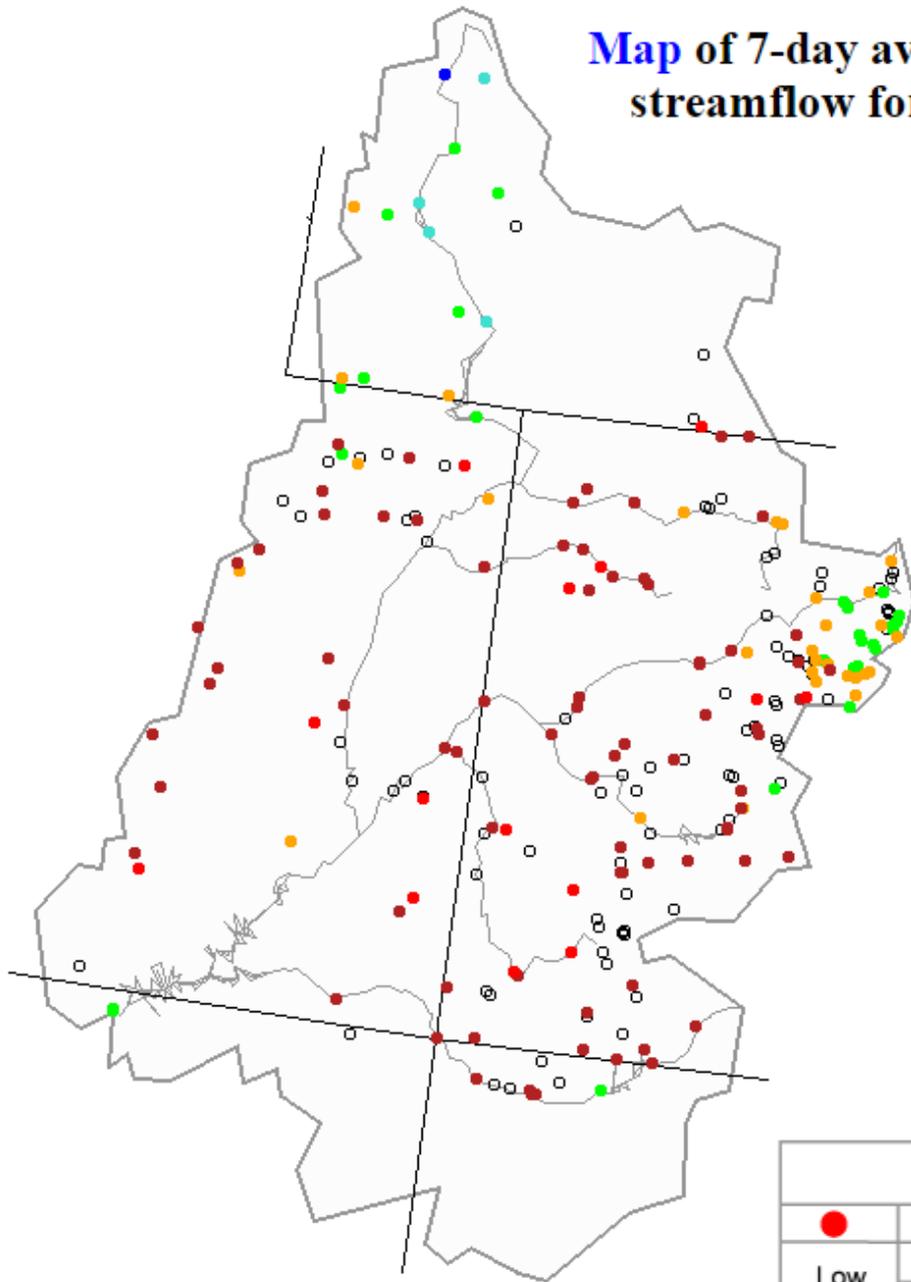
Lake Powell Reservoir Level 06/10/2018  
76 Percent of 1985-2016 Average



**Reservoir Operations:**

	Inflow (cfs)	Outflow (cfs)	Elevation (feet)	Storage (ac-ft)	Change (ac-ft)	Full Elev. (feet)	Capacity (ac-ft)
<b>South Platte System:</b>							
Antero	8	31	8,941.88	19,859	-46	8,942	19,881
Eleven Mile	35	53	8,597.38	99,075	-34	8,597	97,779
Cheesman	132	77	6,837.85	75,565	110	6,842	79,064
Strontia Springs	506	133	5,991.80	6,856	-98	6,002	7,863
Chatfield	74	14	5,431.95	26,993	14	5,432	27,076
Marston	65	124	5,532.03	15,324	-151	5,538	19,256
Soda Lakes	---	---	---	1,604	-1		1,680
Platte Canyon	0	---	5,530.50	768	0	5,533	910
South Complex	0	0	---	3,366	-4		3,561
Harriman	---	---	5,621.92	705	-8	5,623	762
<b>Moffat System:</b>							
Gross	450	483	7,282.06	41,836	-66	7,282	41,811
Ralston	2	2	6,034.95	8,997	242	6,046	10,776
Upper Long Lake	0	0	6,079.01	1,016	0	6,088	1,519
Lower Long Lake	0	0	5,895.08	10	0	5,908	268
<b>Western Slope:</b>							
Dillon	699	516	9,017.37	258,513	-229	9,017	257,304
Williams Fork	387	163	7,810.06	95,303	448	7,811	96,822
Meadow Creek	30	30	9,995.28	5,419	0	9,995	5,370
<b>Total System:</b>				<b>661,208</b>	<b>176</b>		<b>671,702</b>
<b>Non-system</b>							
Wolford Mountain	81	91	7,489.28	66,290	-20	7,489	65,985
Green Mountain	1008	72	7,933.88	121,817	1873	7,950	153,639
Spinney Mountain	209	83	---	49,100	N/A		53,651

## Map of 7-day average streamflow compared to historical streamflow for the day of the year (Upper Colorado)



### Explanation - Percentile classes

Low	<10 Much below normal	10-24 Below normal	25-75 Normal	76-90 Above normal	>90 Much above normal	High	Not-ranked

# Colorado Climate Center

**Thanks, and let's keep in touch!**

**Peter Goble – Service Climatologist - [peter.goble@colostate.edu](mailto:peter.goble@colostate.edu)**

**Russ Schumacher – State Climatologist - [russ.schumacher@colostate.edu](mailto:russ.schumacher@colostate.edu)**

**Becky Bolinger – Assistant State Climatologist - [becky.bolinger@colostate.edu](mailto:becky.bolinger@colostate.edu)**

**Zach Schwalbe – CoAgMET Manager - [zach.schwalbe@colostate.edu](mailto:zach.schwalbe@colostate.edu)**

**Data and Power Point Presentations available for downloading**

**<http://climate.colostate.edu/pubs.html>**

