



# *Climate Update*

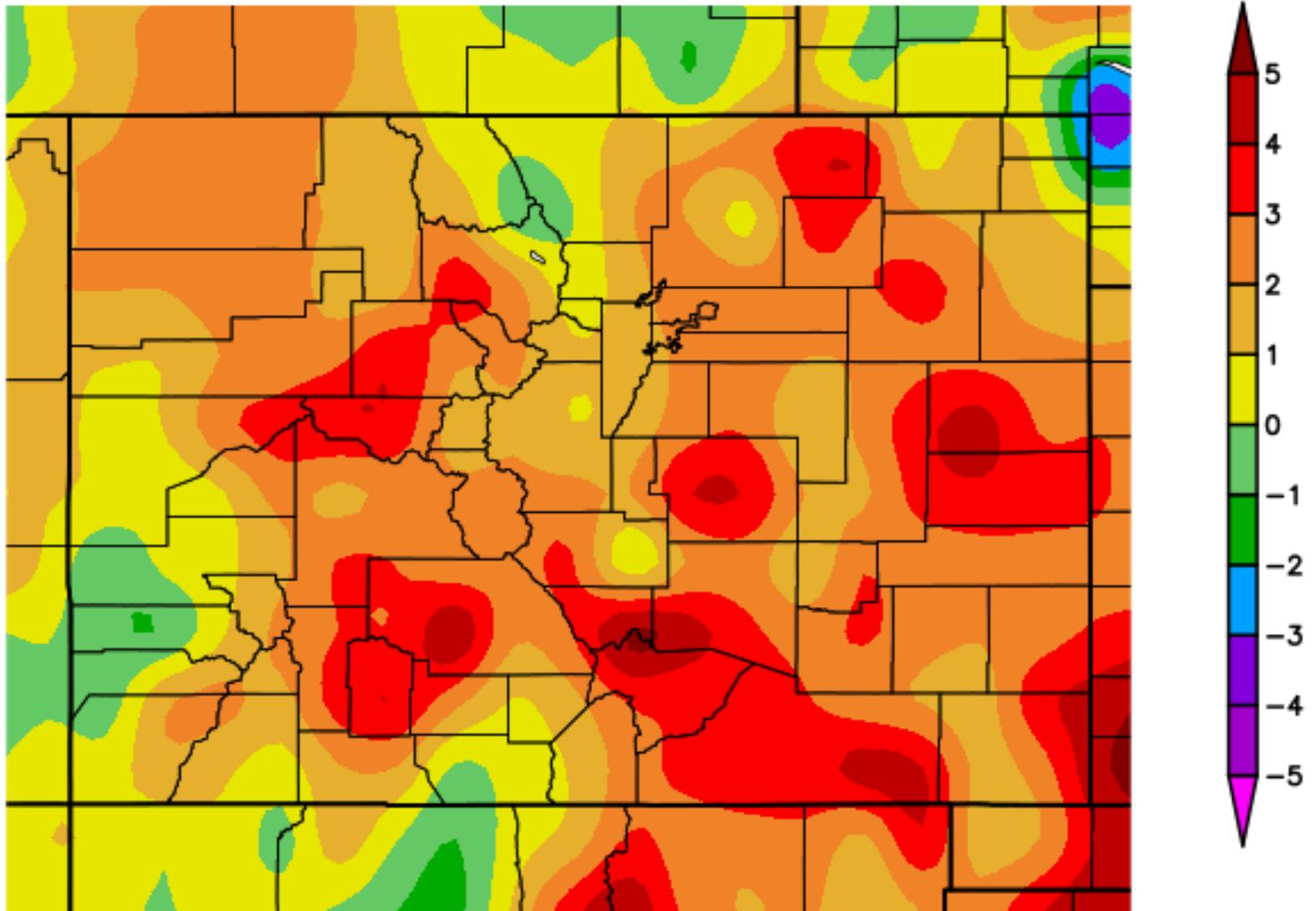


Peter Goble  
Colorado Climate Center

**Presented to  
Water Availability Task Force  
April 19, 2018  
Denver, CO**

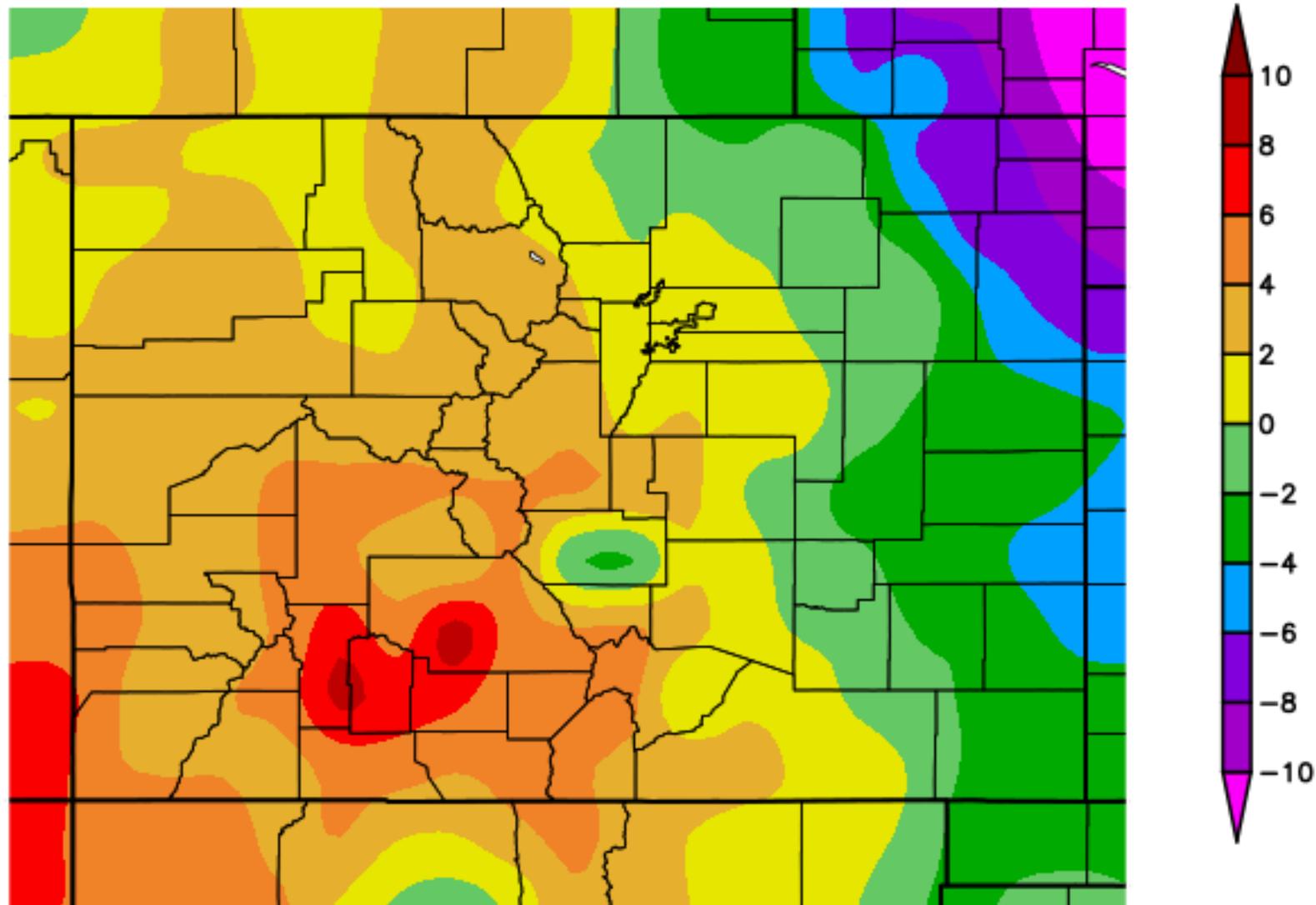
# Departure from Normal Temperature (F)

3/1/2018 - 3/31/2018

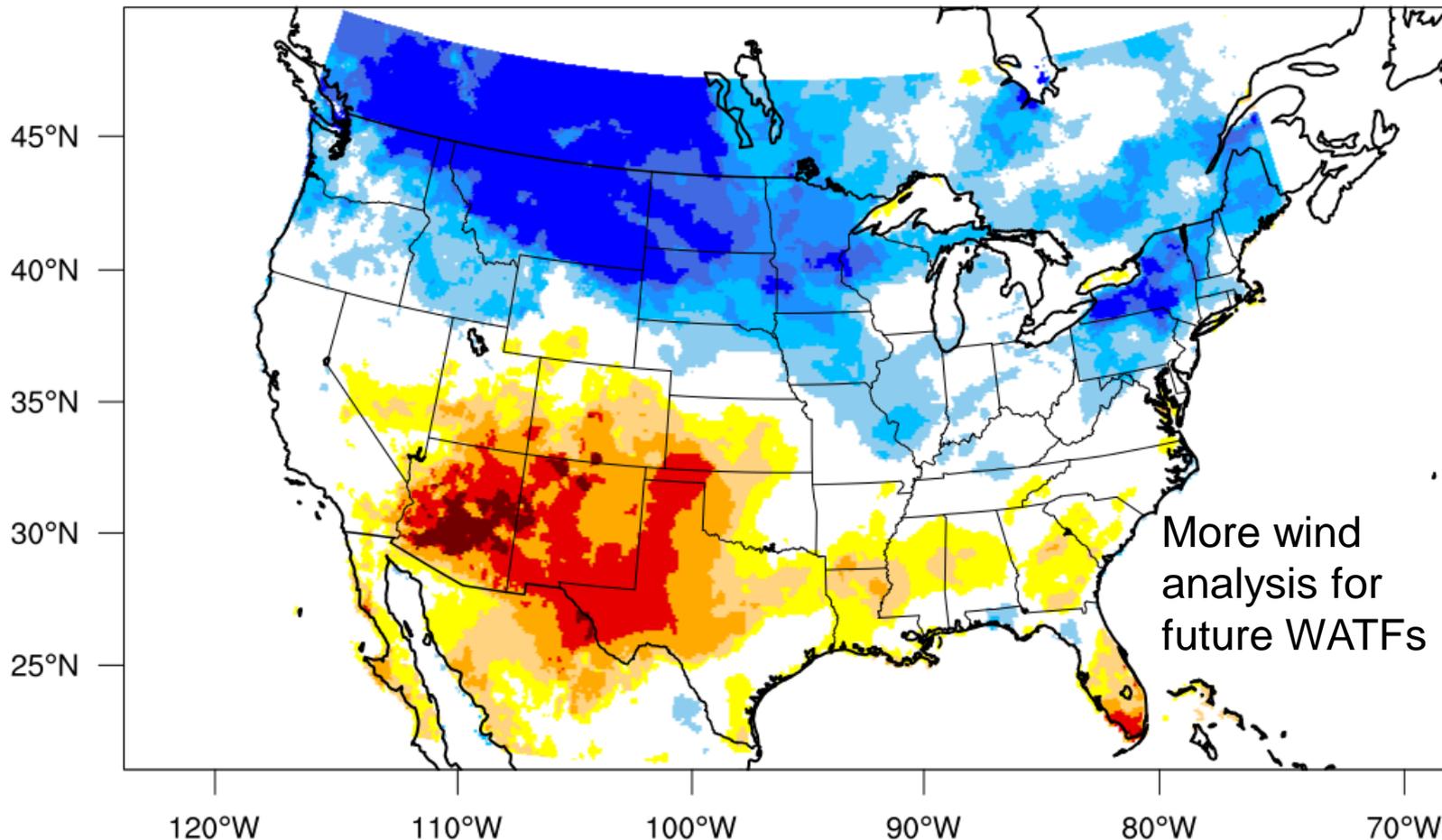


# Departure from Normal Temperature (F)

## 4/1/2018 - 4/17/2018



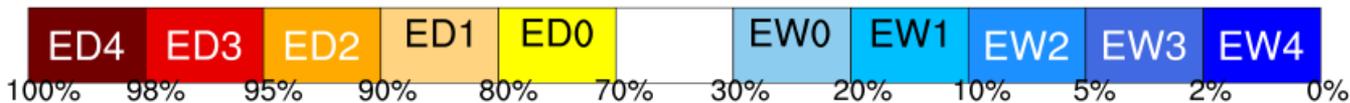
# 1-month EDDI categories for April 13, 2018



More wind analysis for future WATFs

Drought categories

Wetness categories



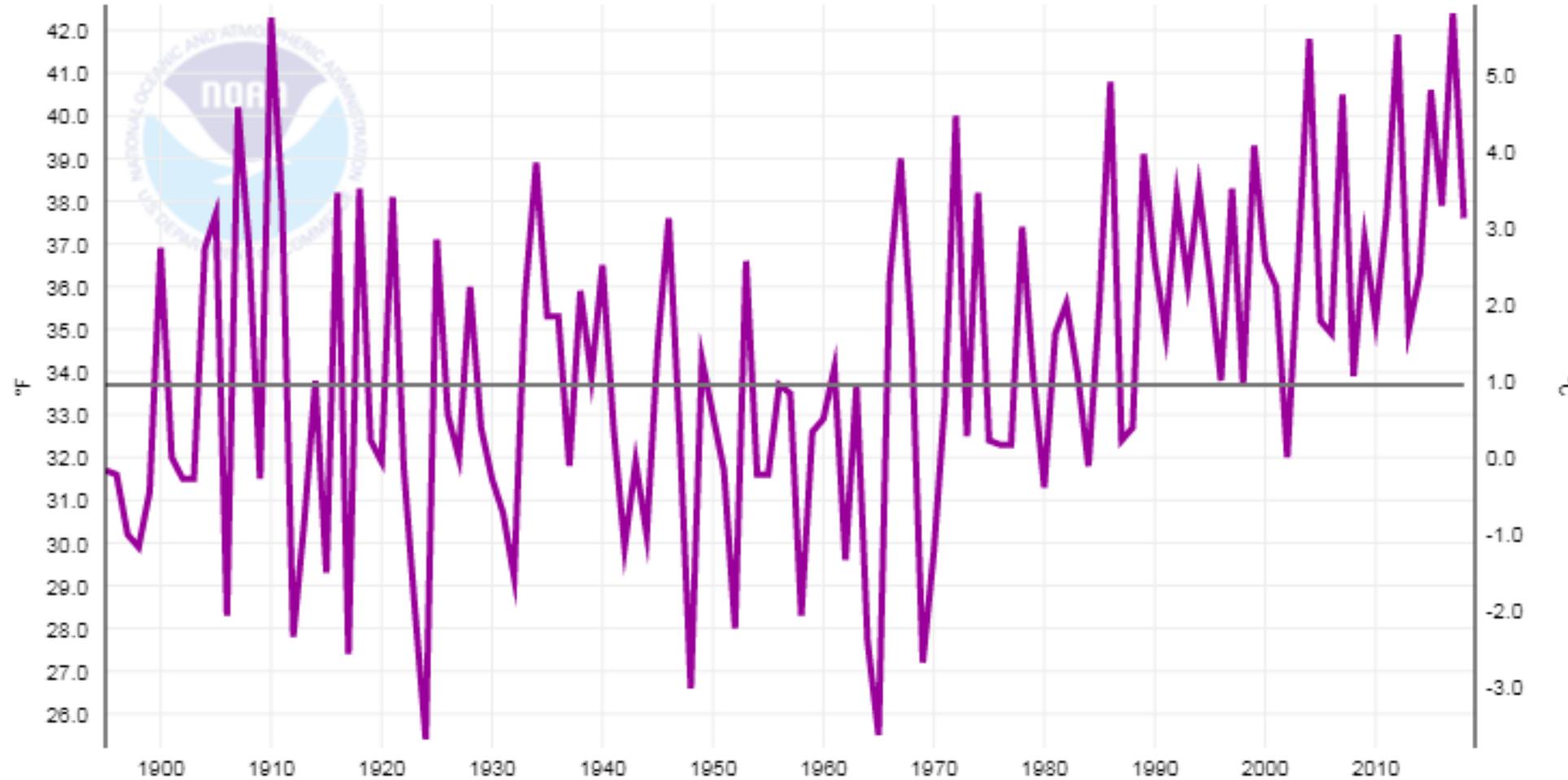
(EDDI-percentile category breaks: 100% = driest; 0% = wettest)

# Colorado, Average Temperature, March

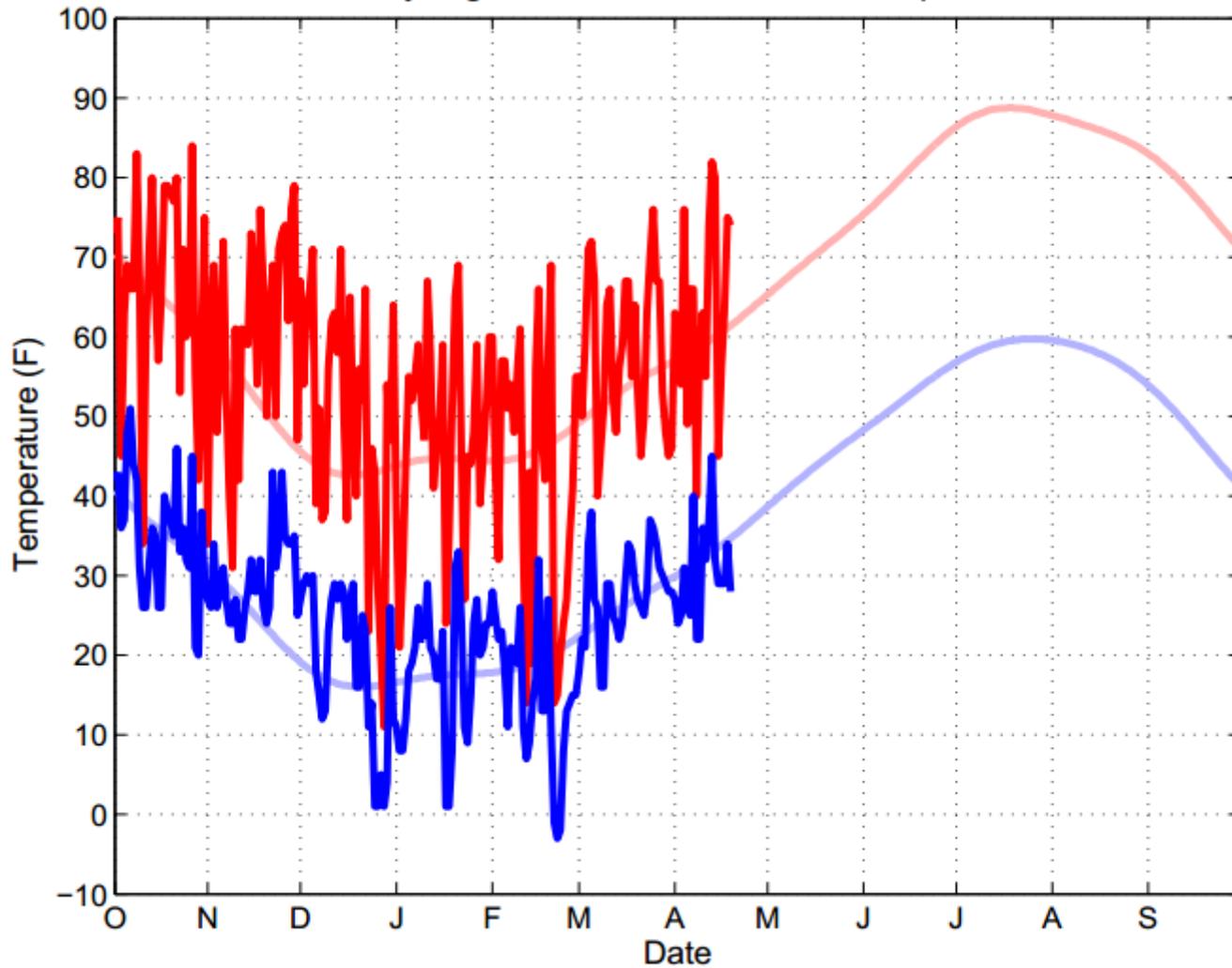
37.6 F (+3.9)

Cooler since 2014 at 36.3 F

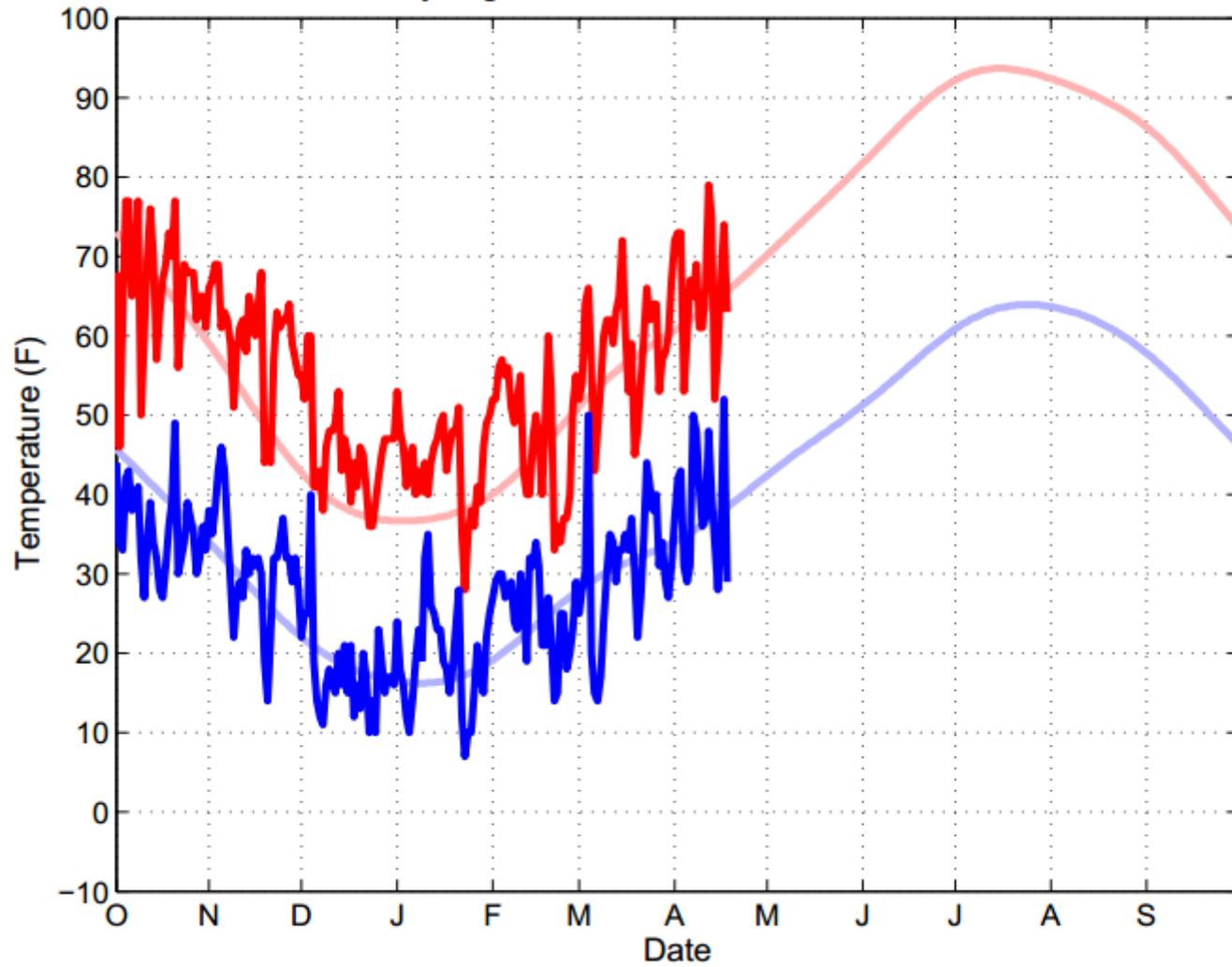
Avg Temperature      1901-2000 Mean: 33.7°F



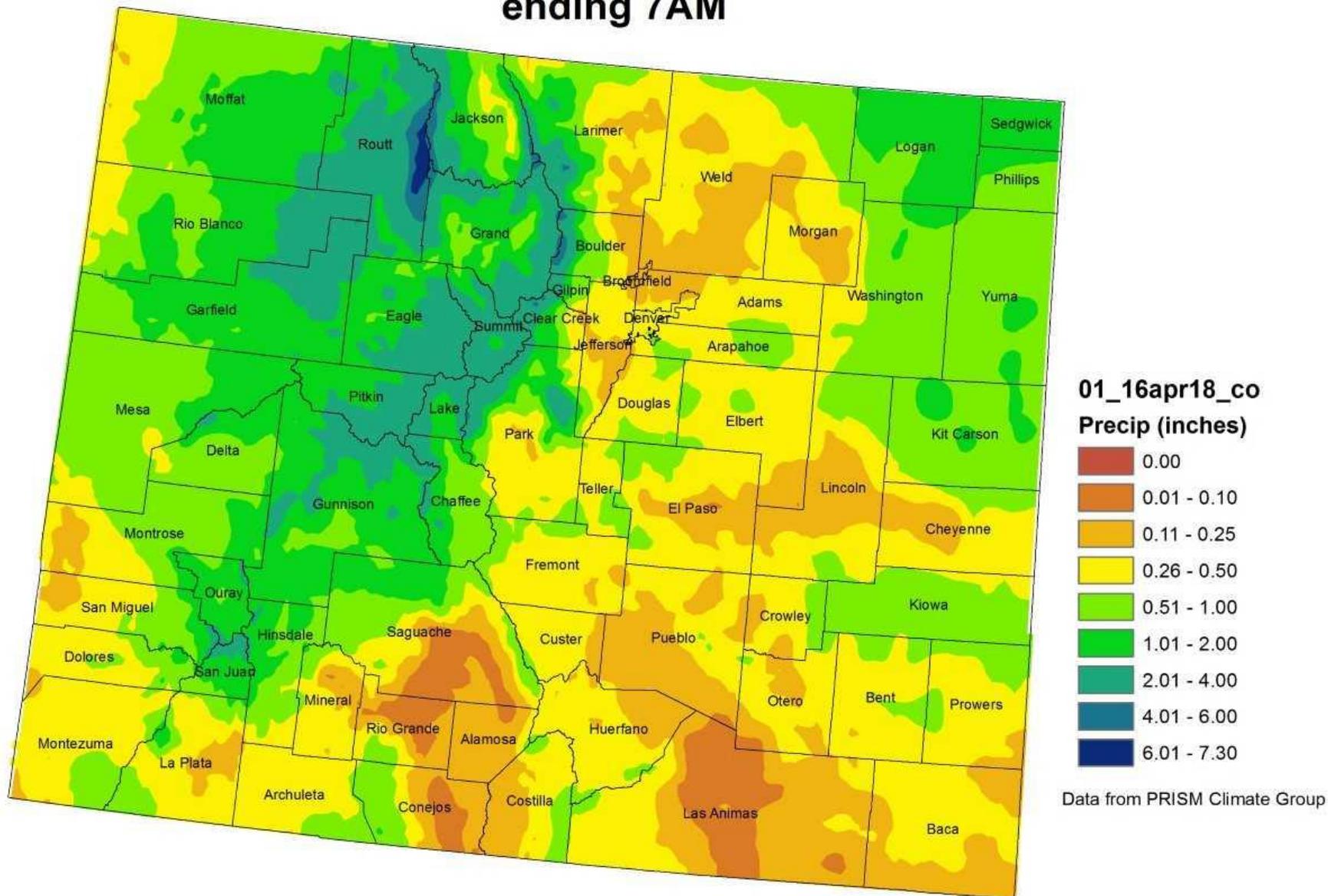
Daily Highs and Lows for Denver Stapleton



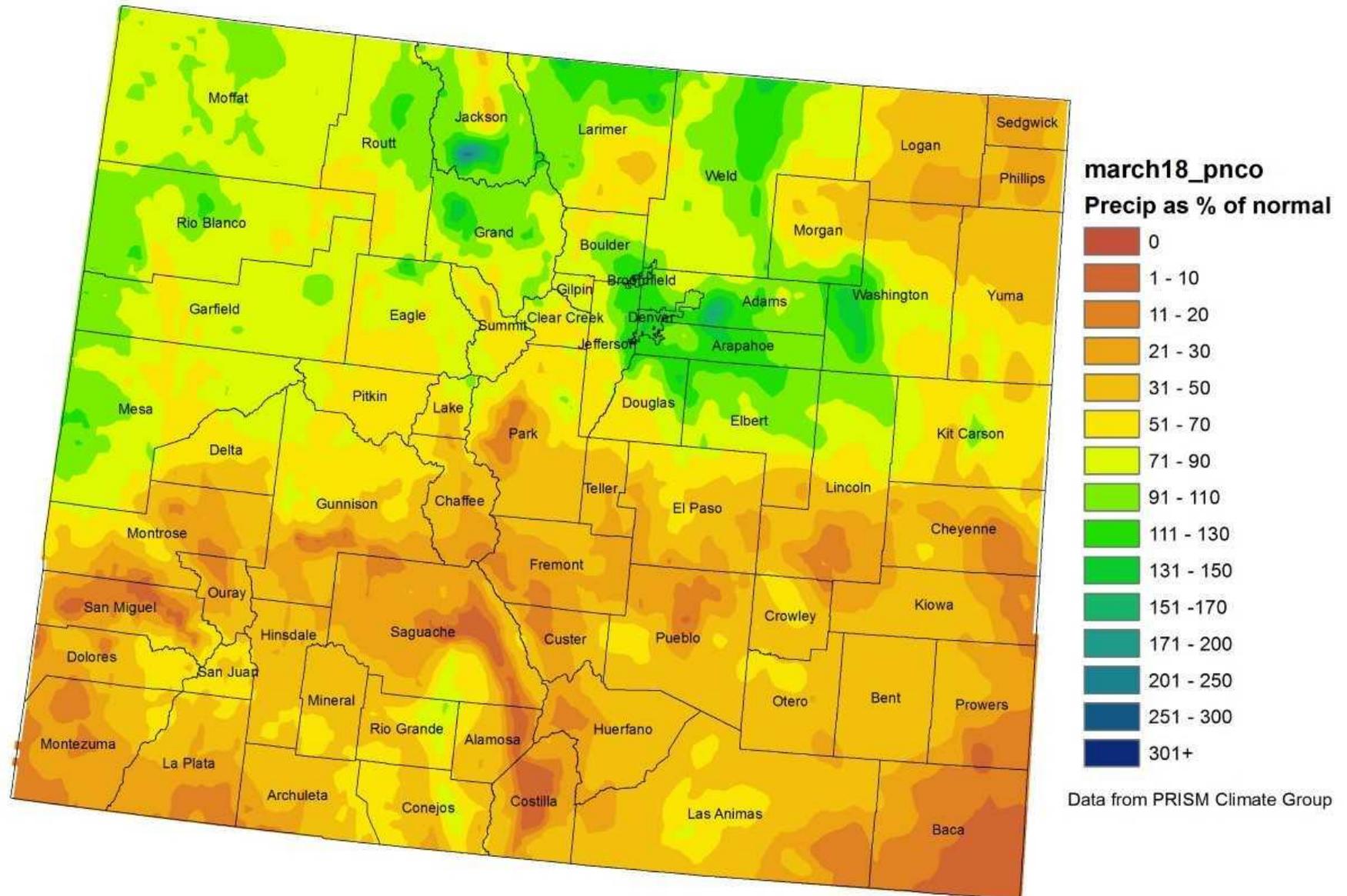
Daily Highs and Lows for Grand Junction



# Colorado Month to Date Precipitation 1 - 16 April 2018 ending 7AM



# Colorado March 2018 Precipitation as a Percentage of Normal



0.92" (-0.60")

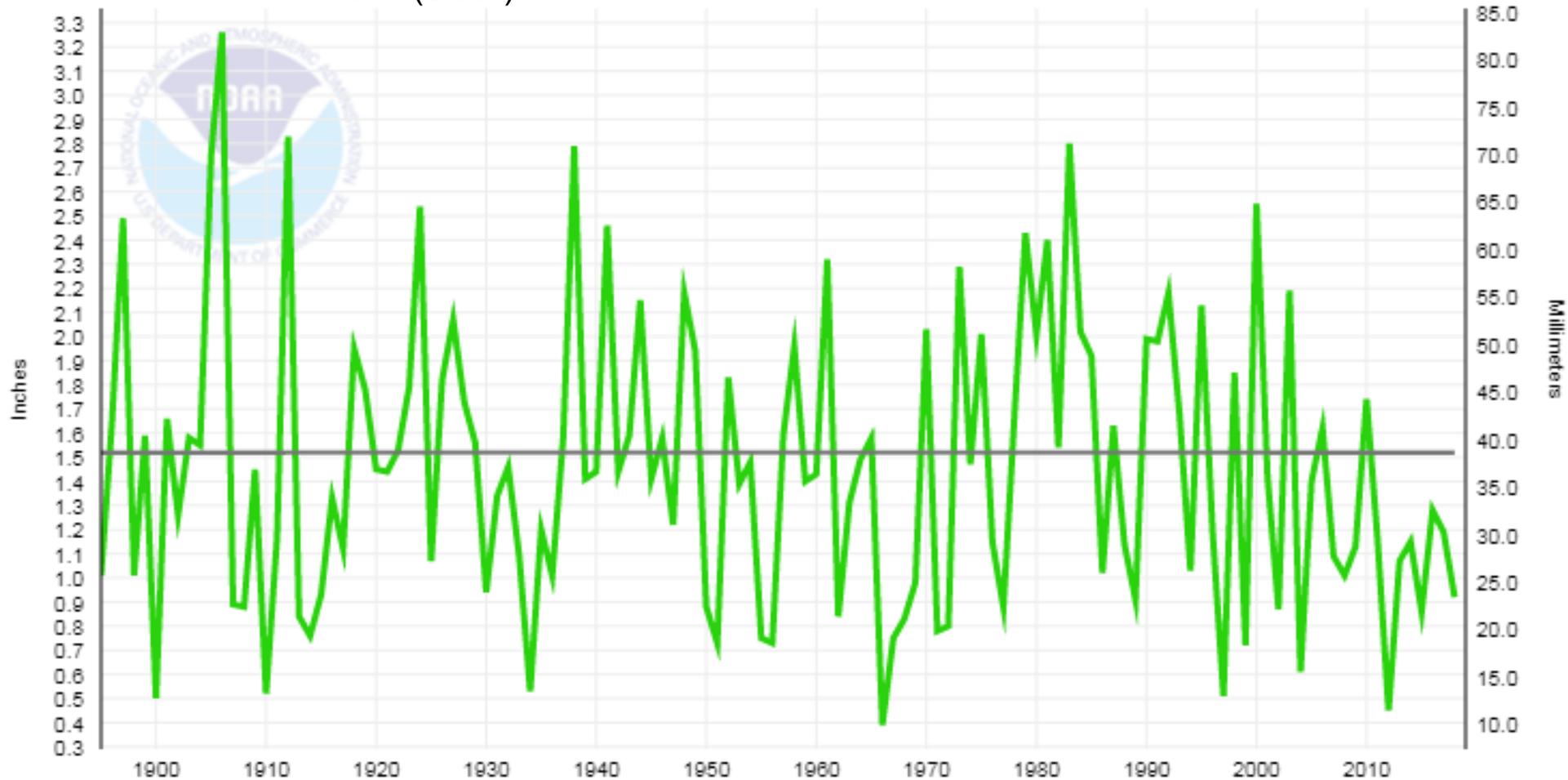
26<sup>th</sup> driest on Record 1895-2018

Driest March since 2015 (0.86")

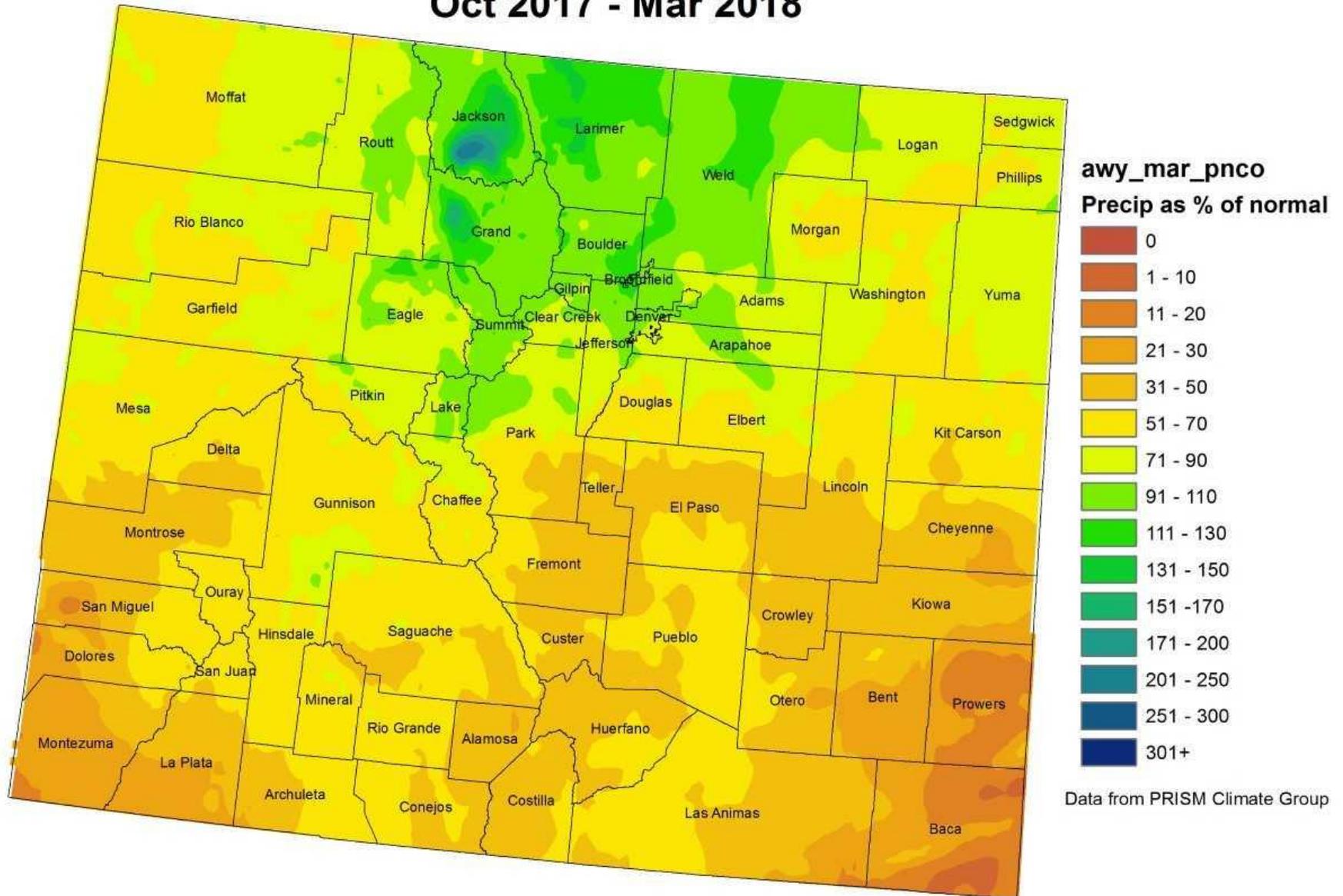
## Colorado, Precipitation, March

— Precip

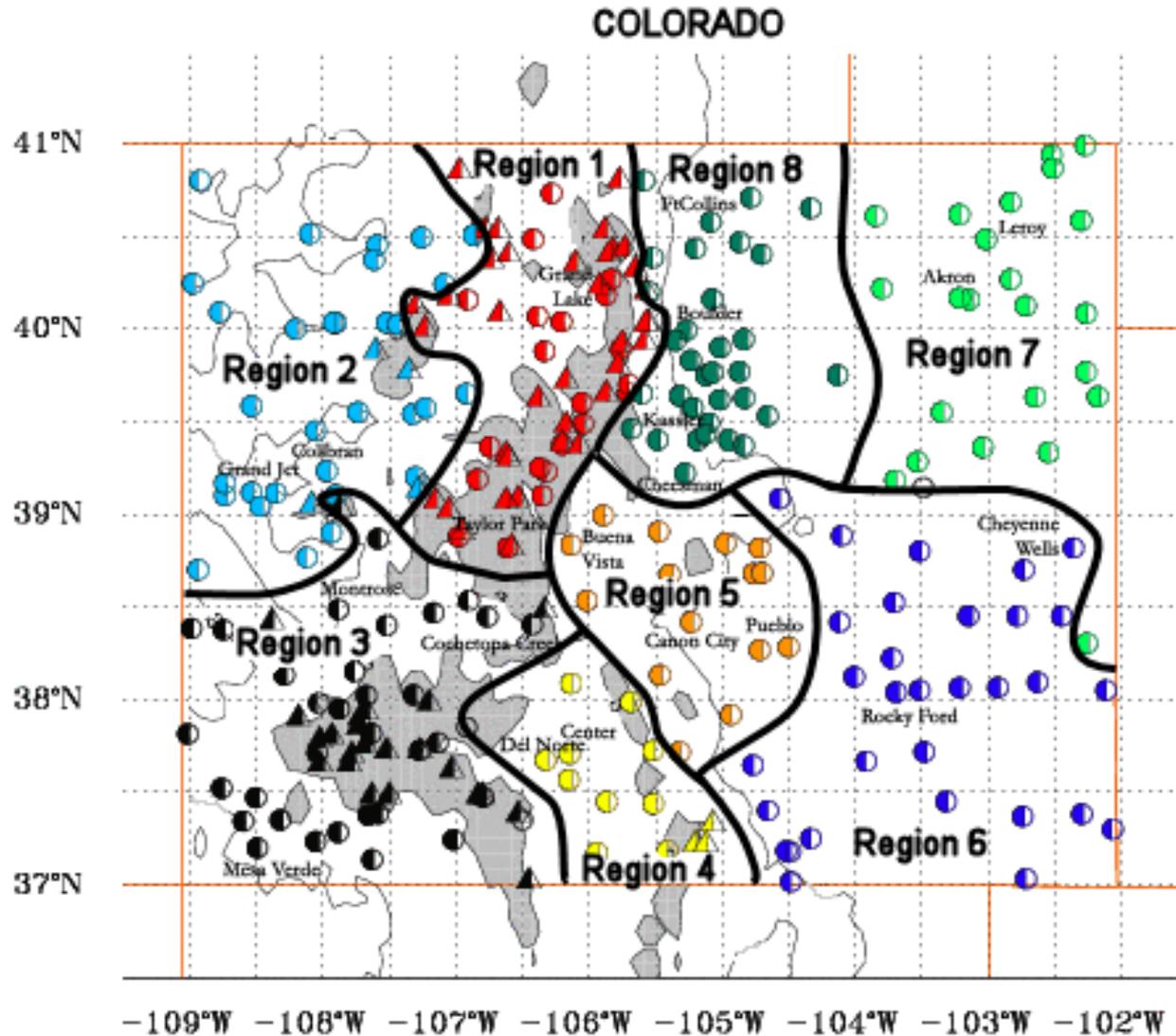
— 1901-2000 Mean: 1.52"



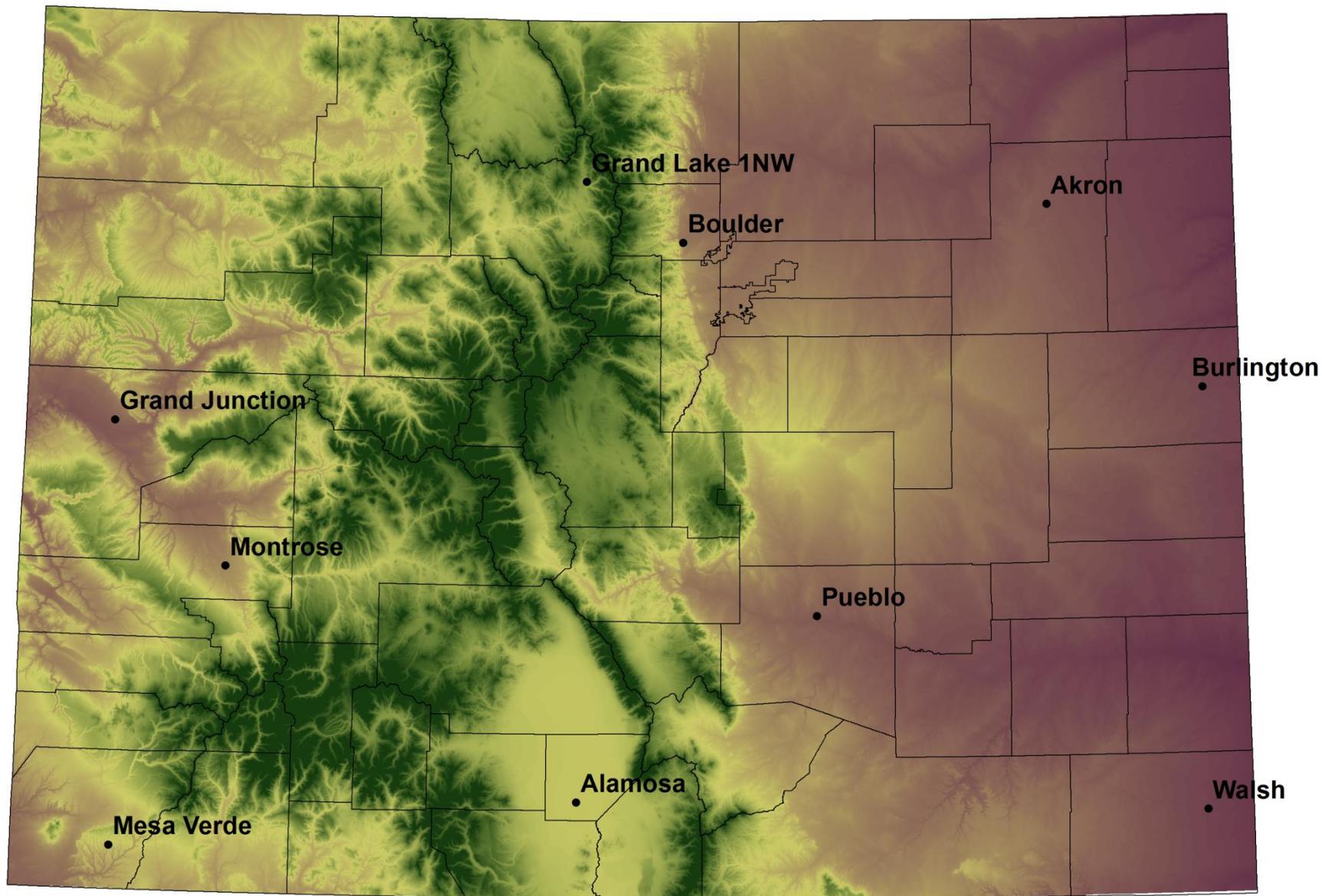
# Colorado Water Year 2018 Precipitation as a Percentage of Normal Oct 2017 - Mar 2018



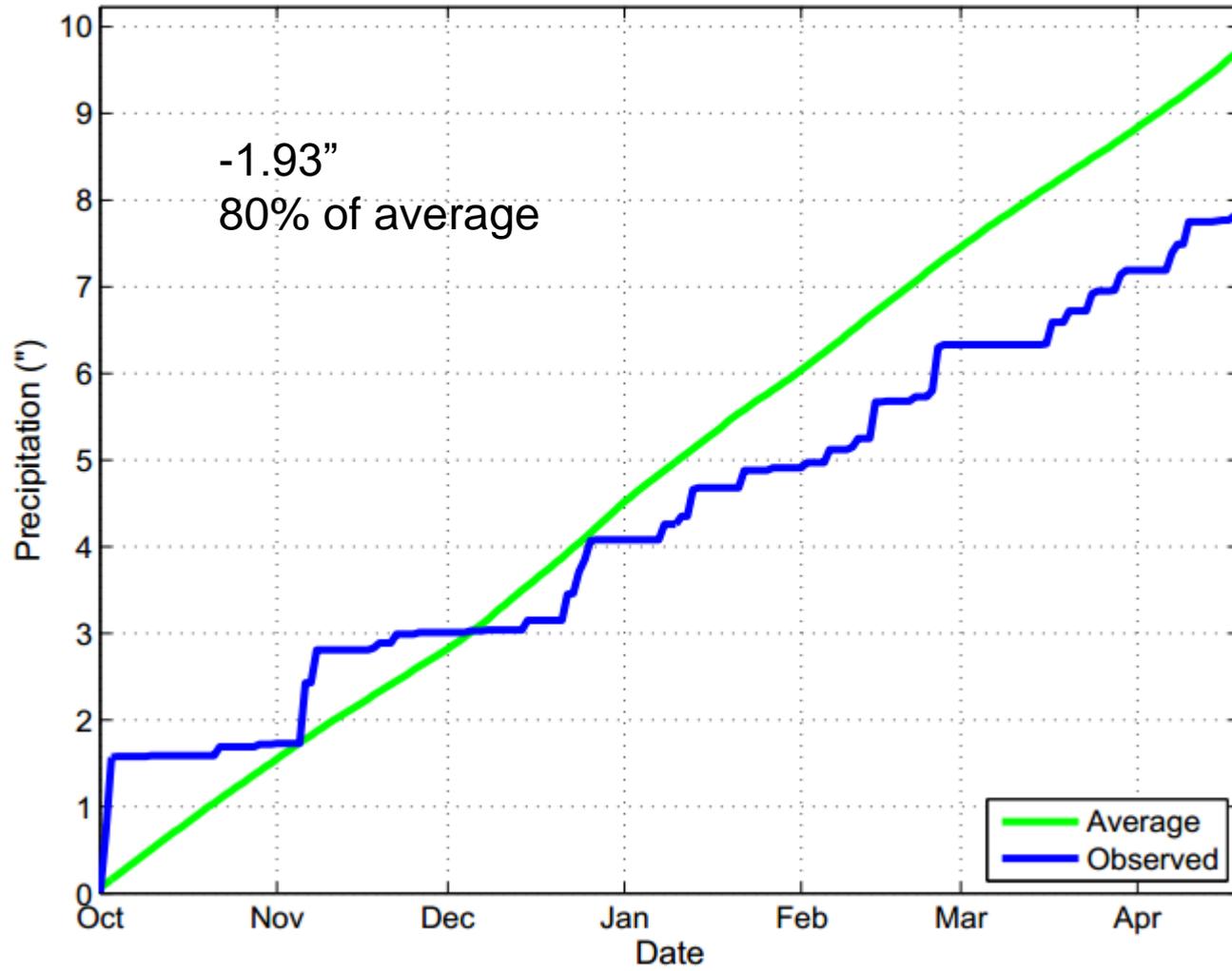
# Climate divisions defined by Dr. Klaus Wolter of NOAA's Climate Diagnostic Center in Boulder, CO



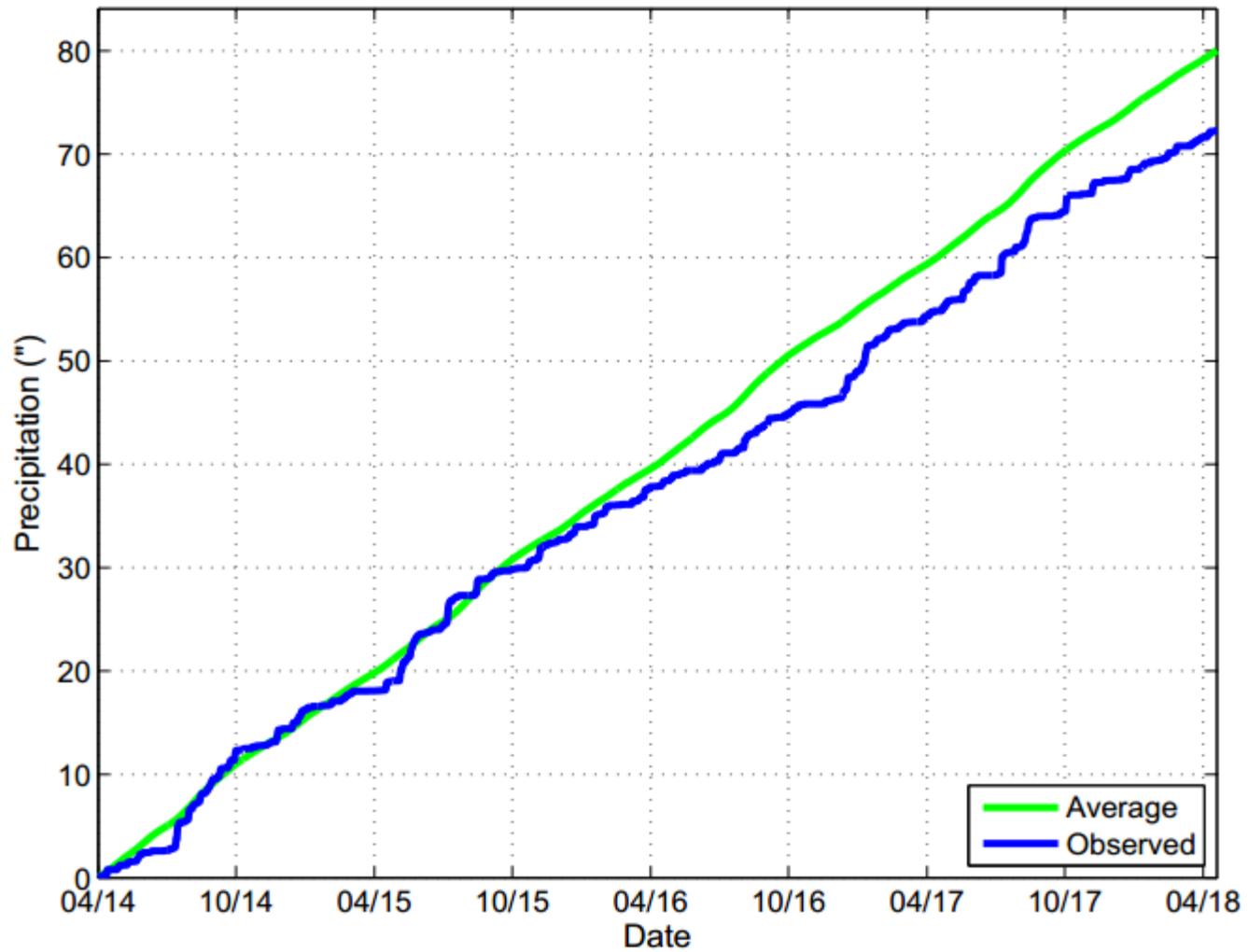
# NWS Cooperative Stations for WATF



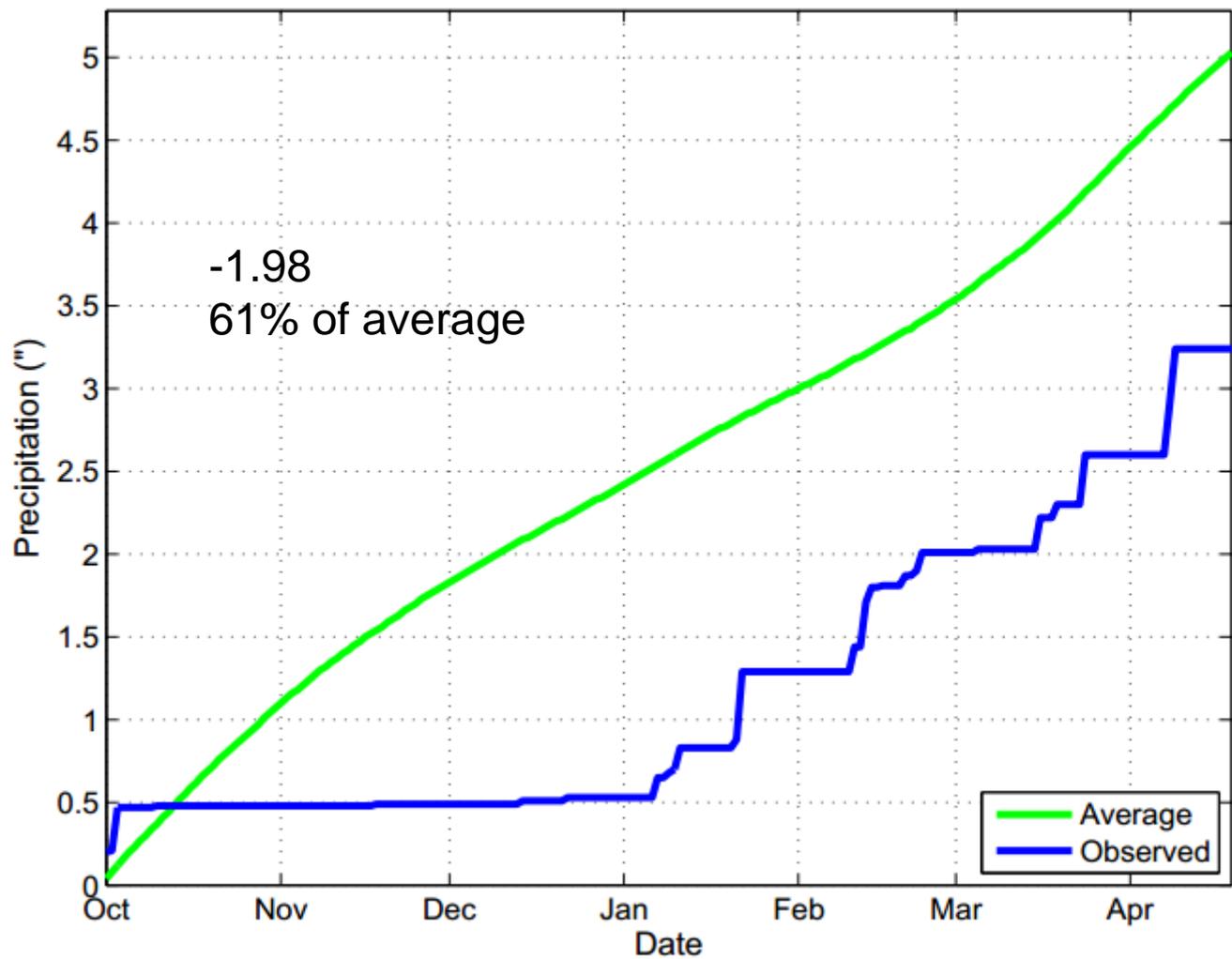
Water Year Accumulation for Grand Lake



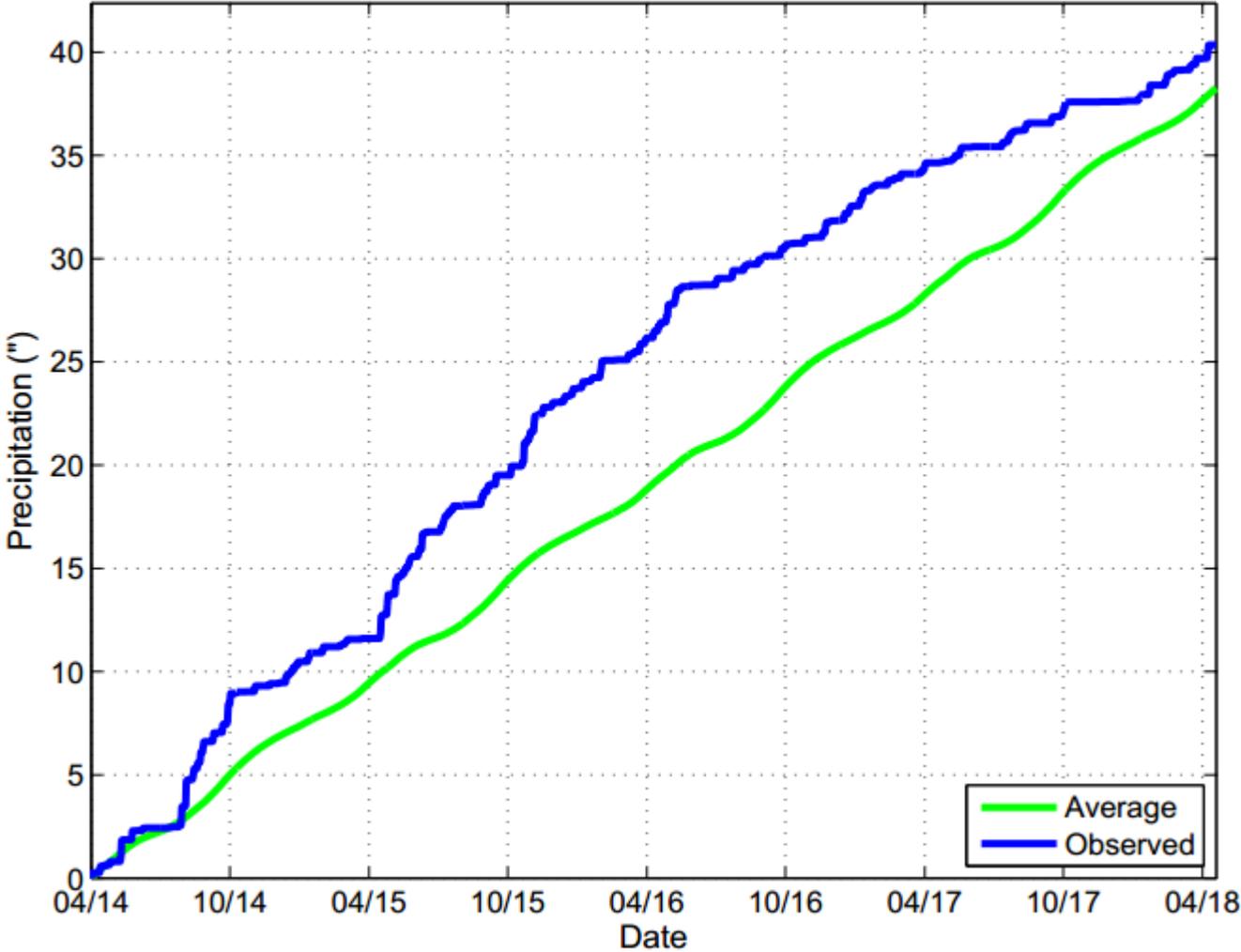
### Long Term Accumulation for Grand Lake



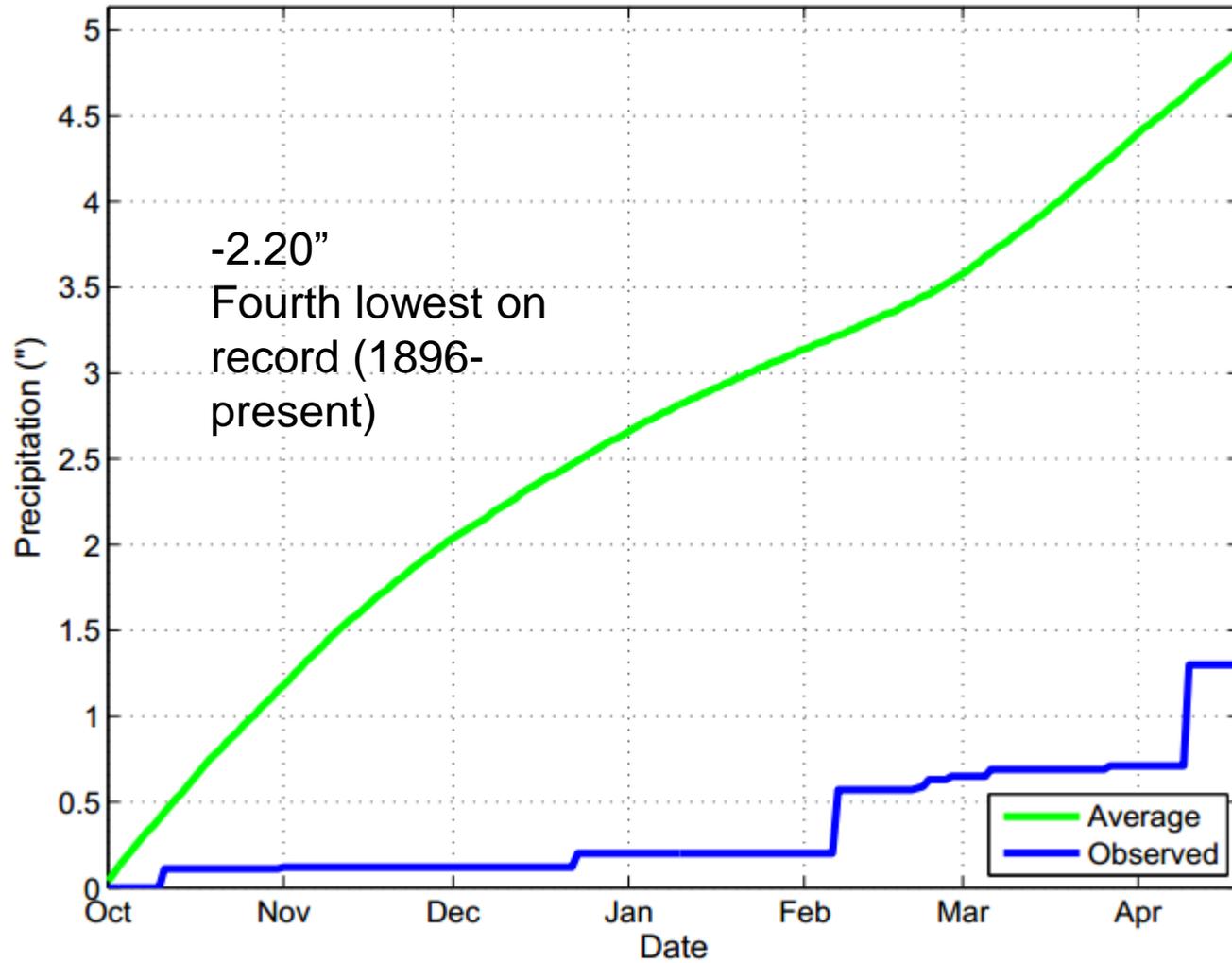
### Water Year Accumulation for Grand Junction



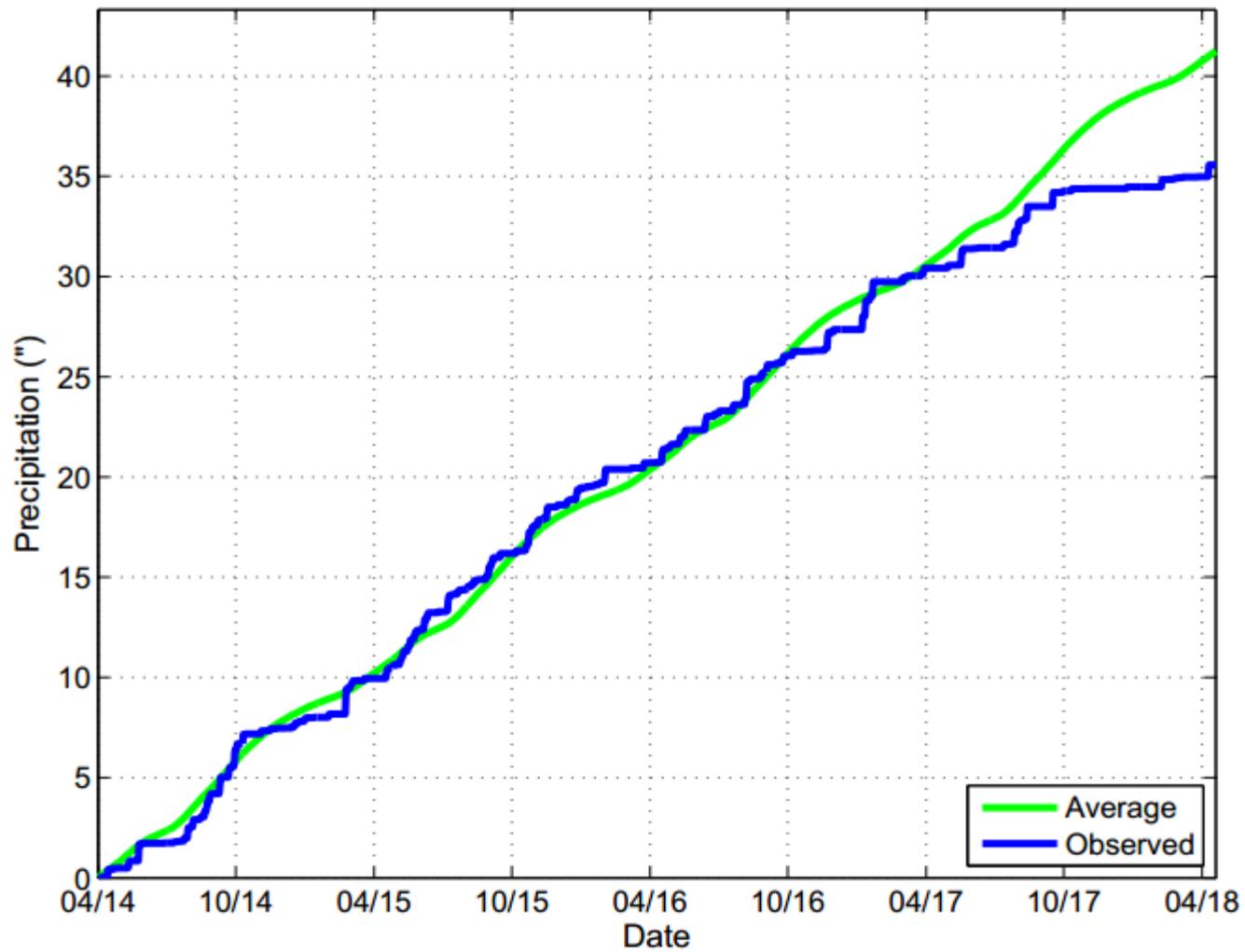
Long Term Accumulation for Grand Junction



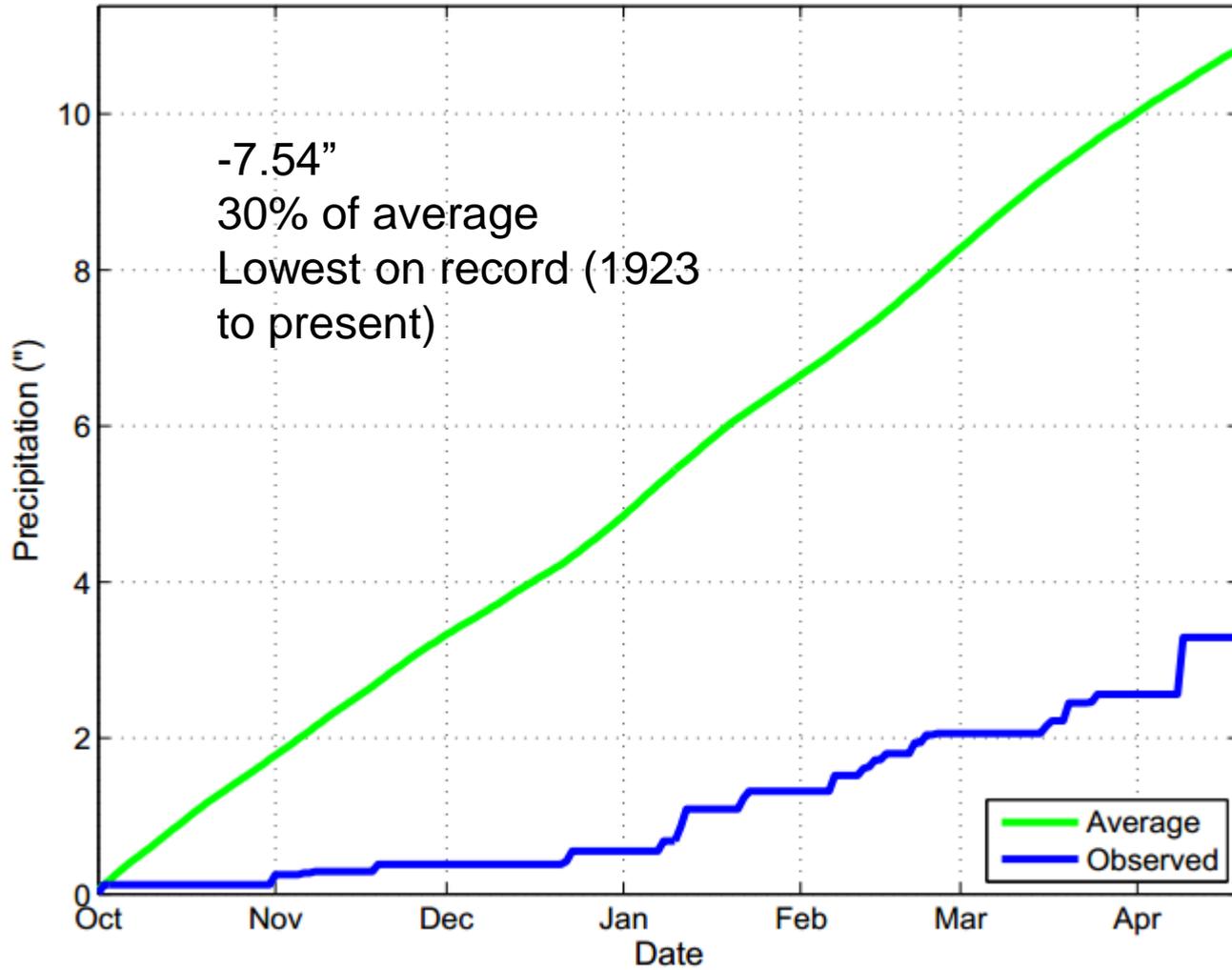
### Water Year Accumulation for Montrose



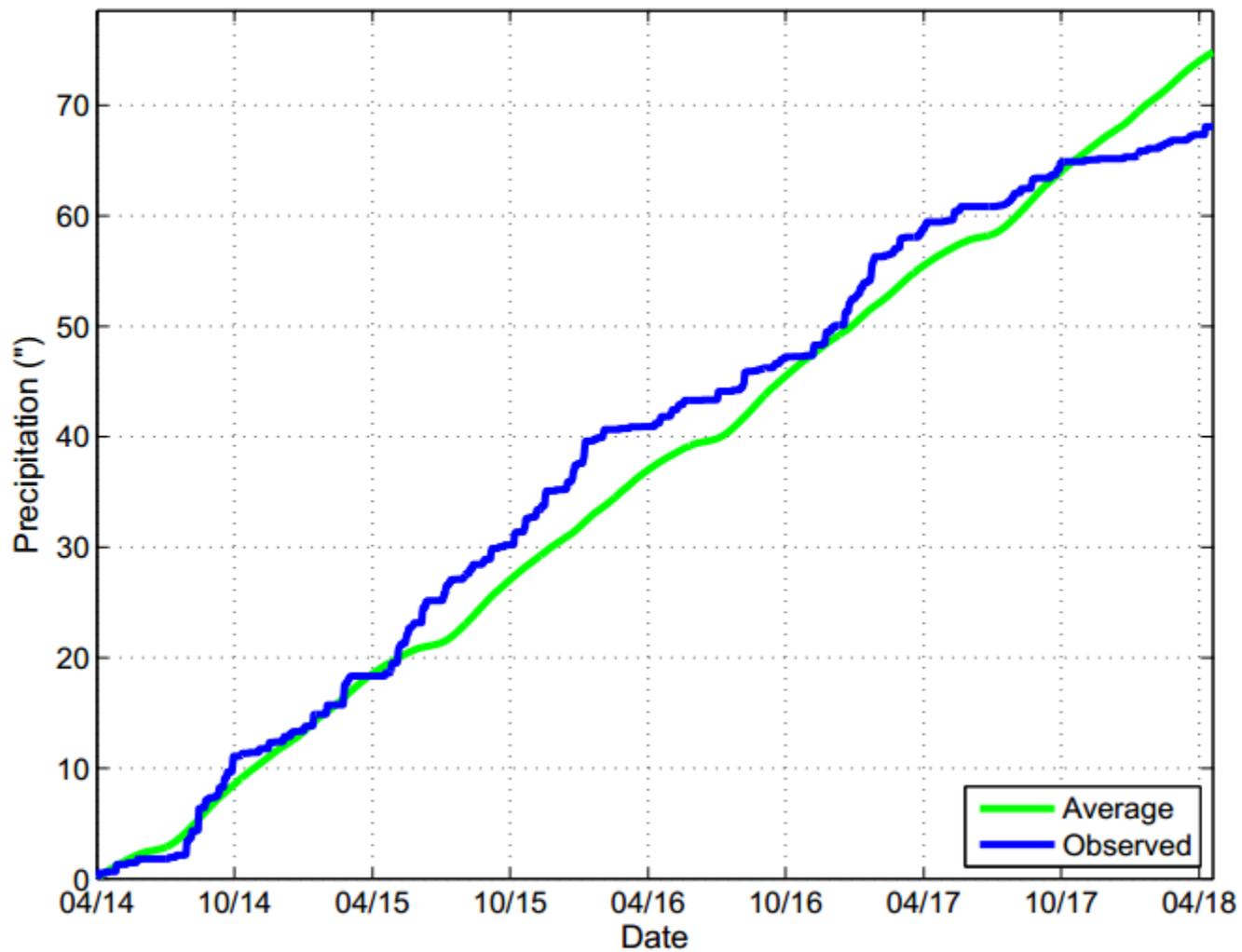
Long Term Accumulation for Montrose



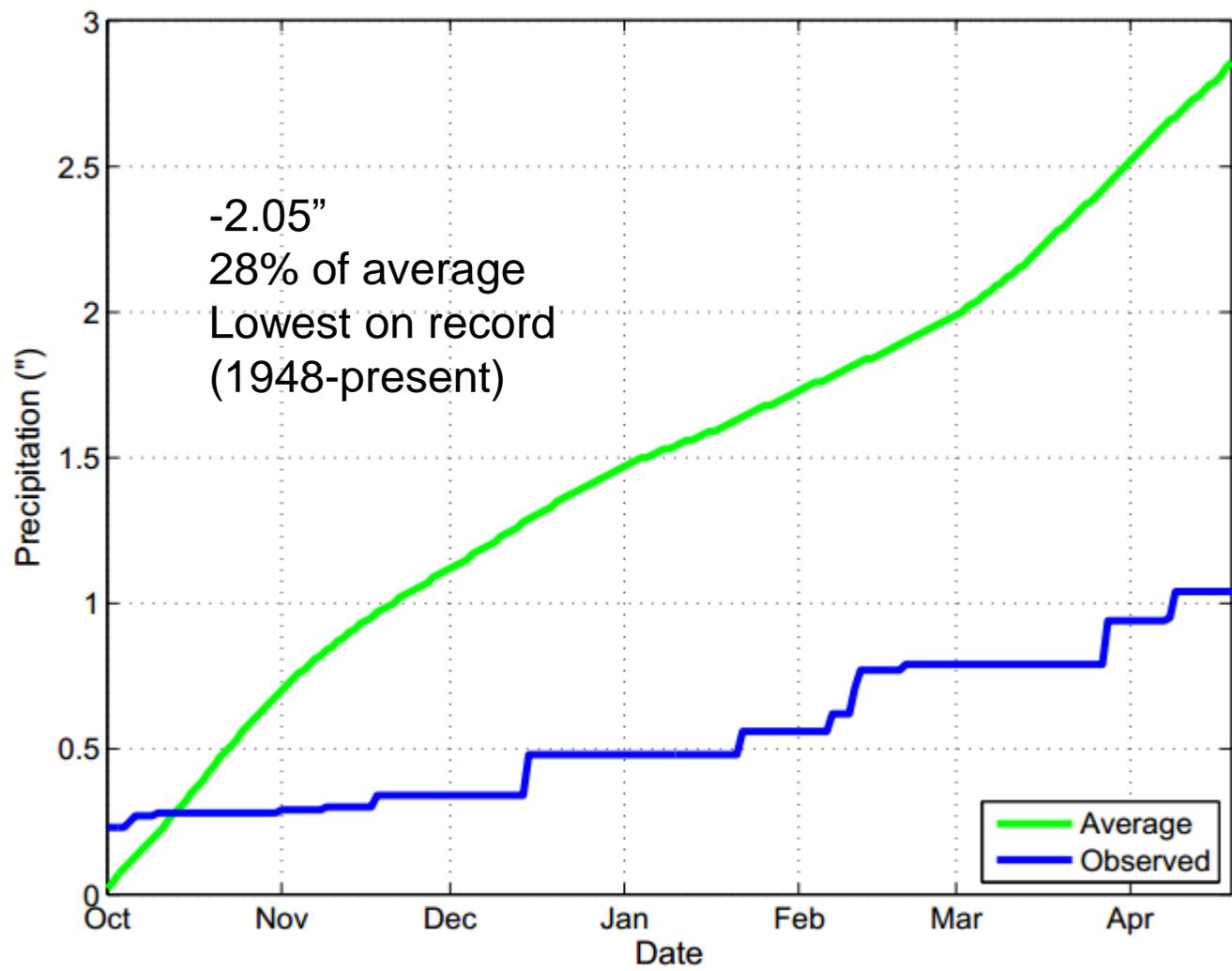
### Water Year Accumulation for Mesa Verde



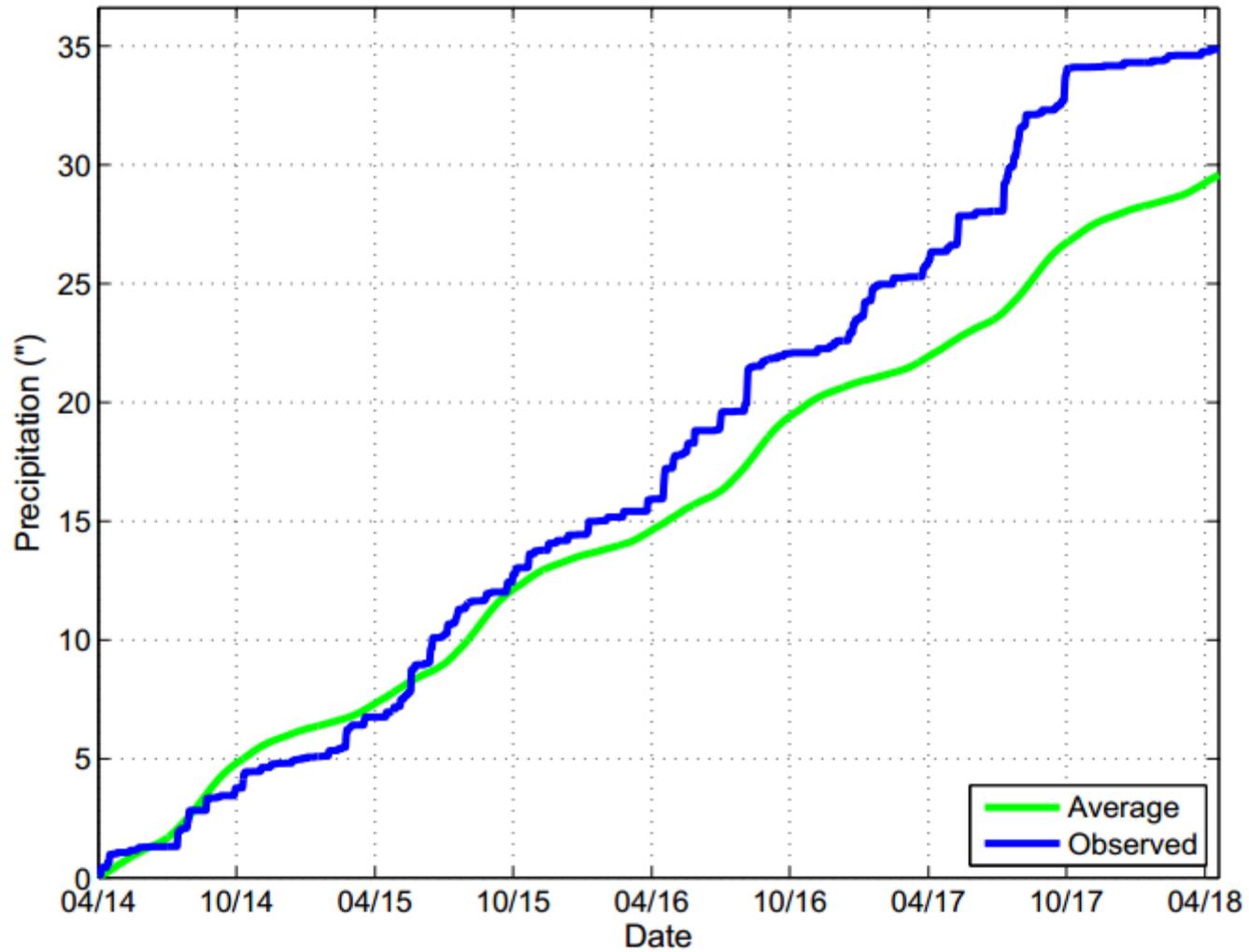
### Long Term Accumulation for Mesa Verde



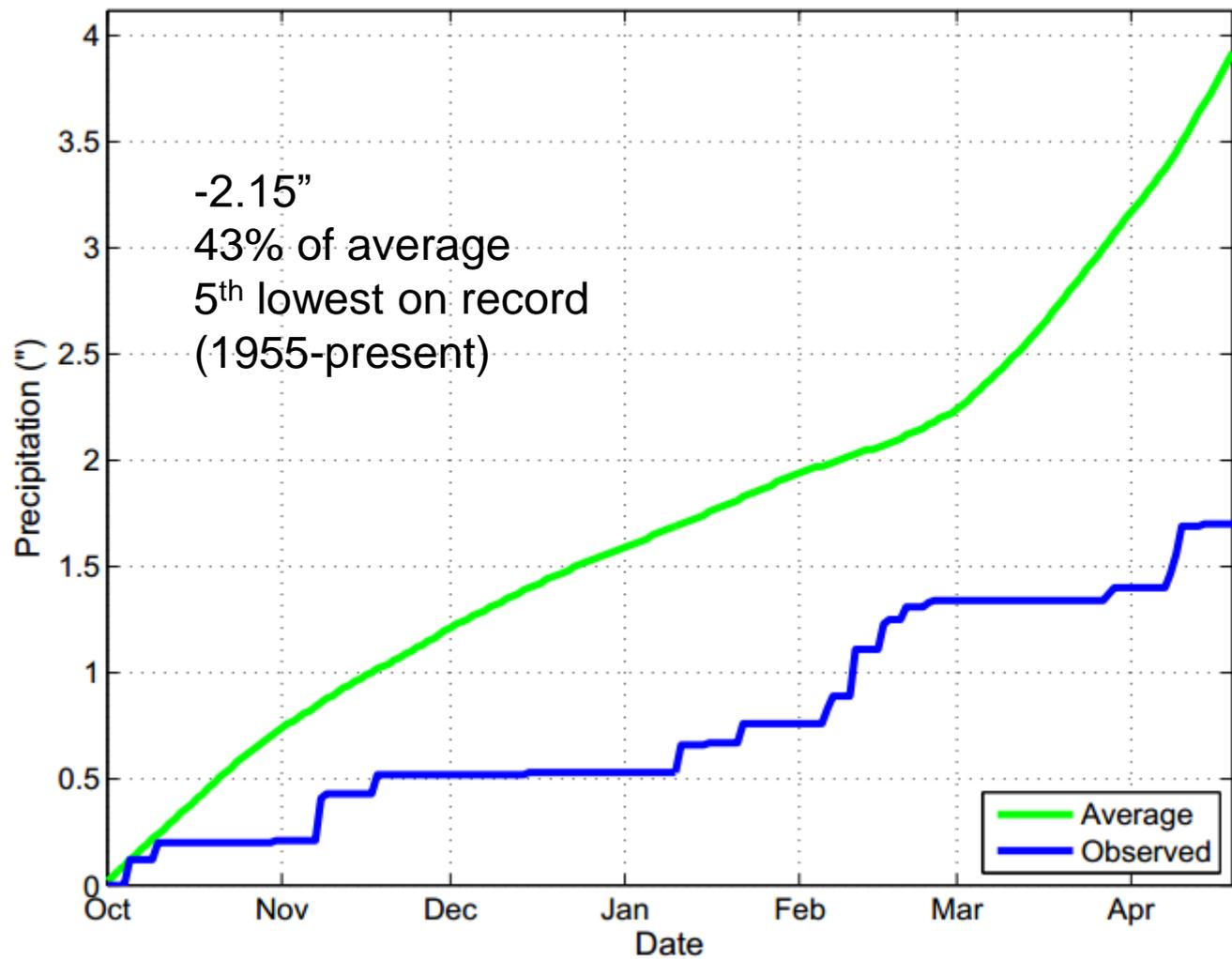
### Water Year Accumulation for Alamosa



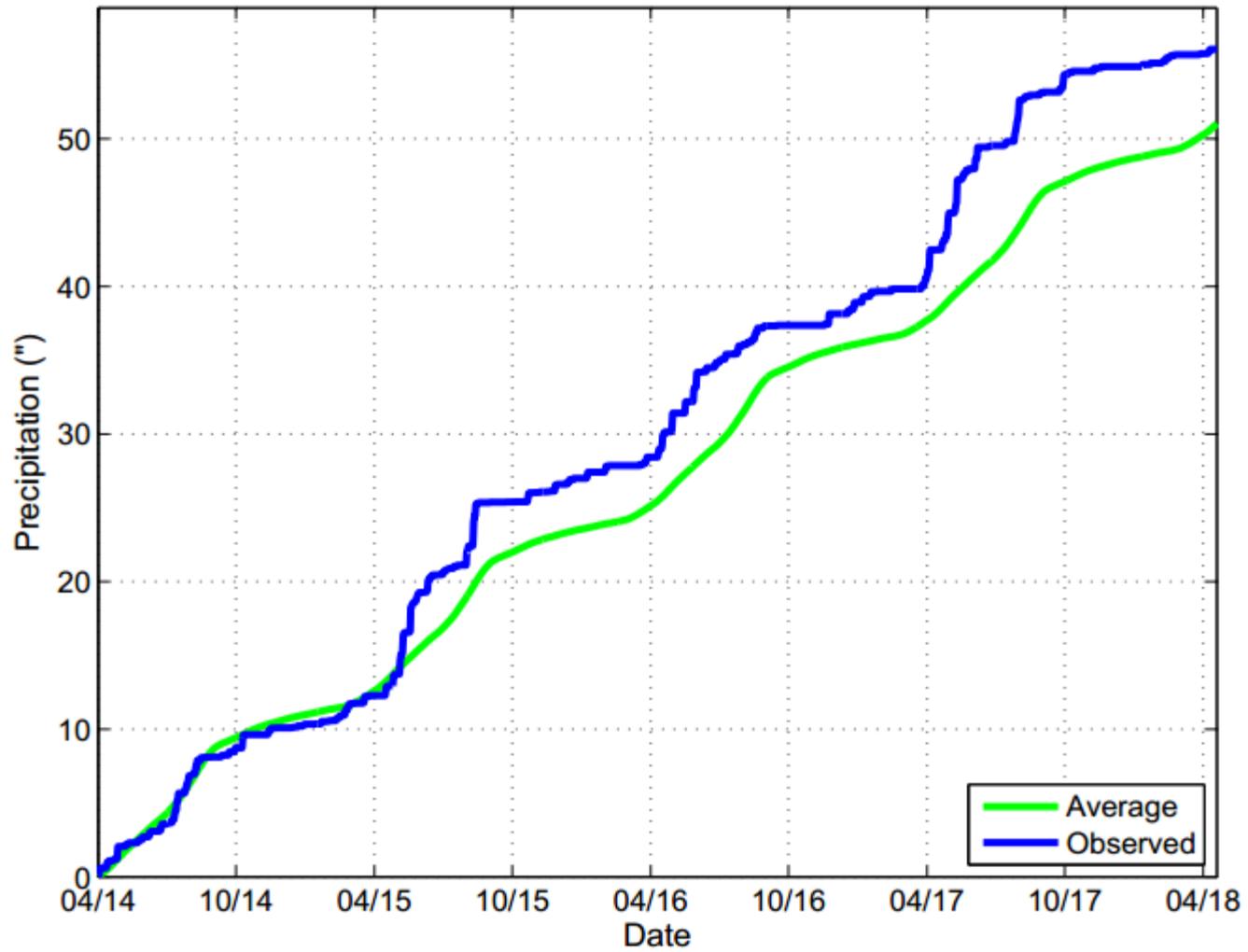
Long Term Accumulation for Alamosa



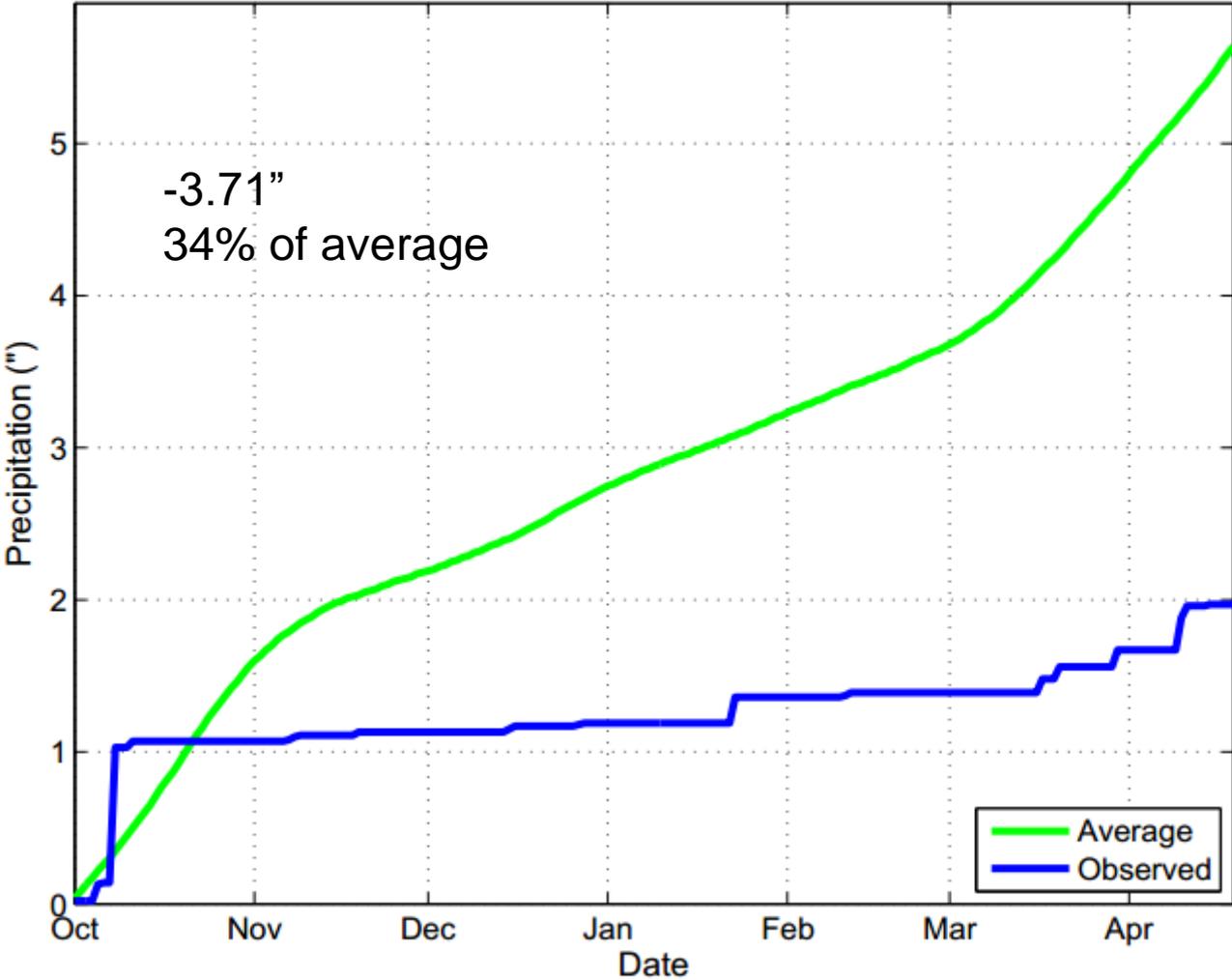
### Water Year Accumulation for Pueblo



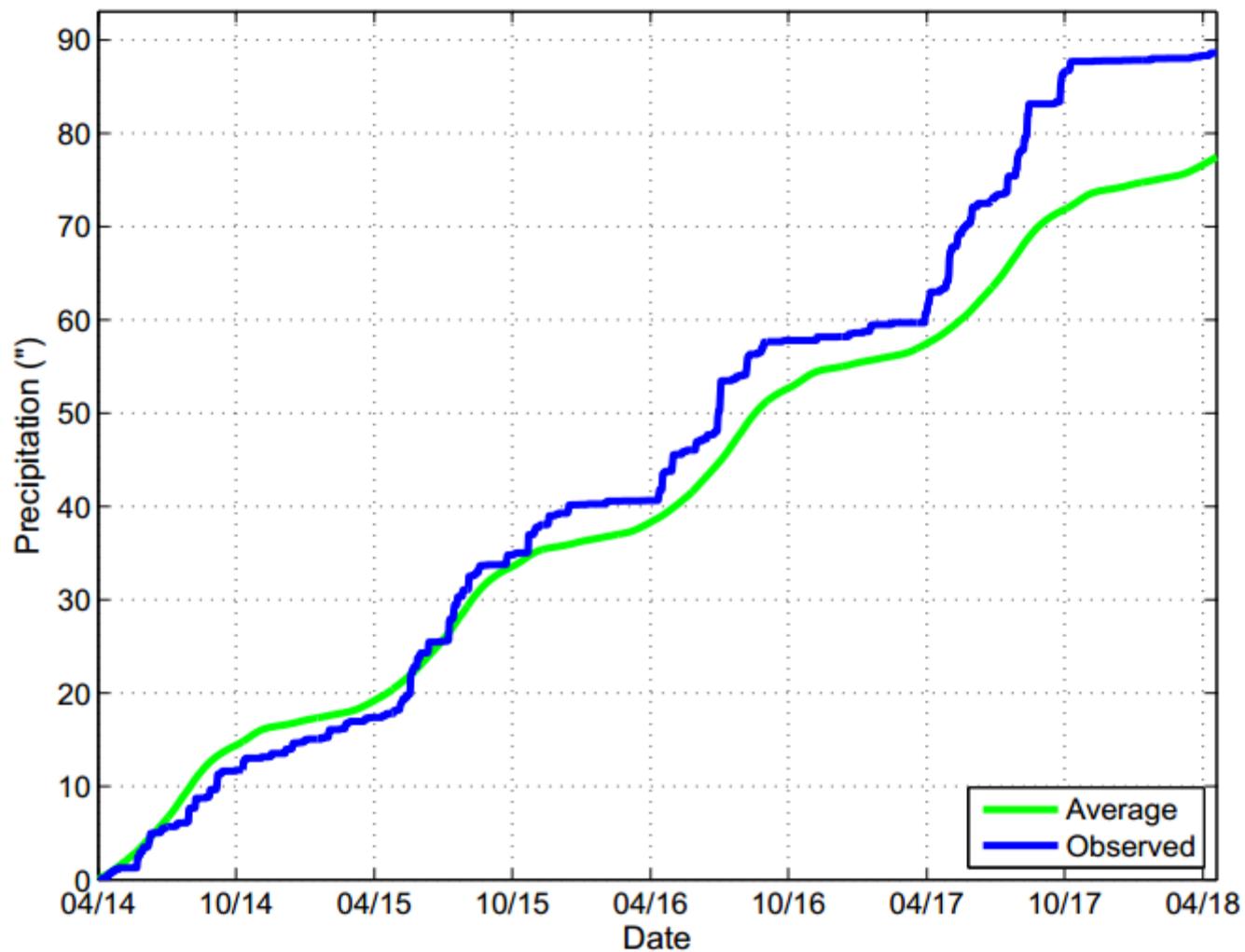
Long Term Accumulation for Pueblo



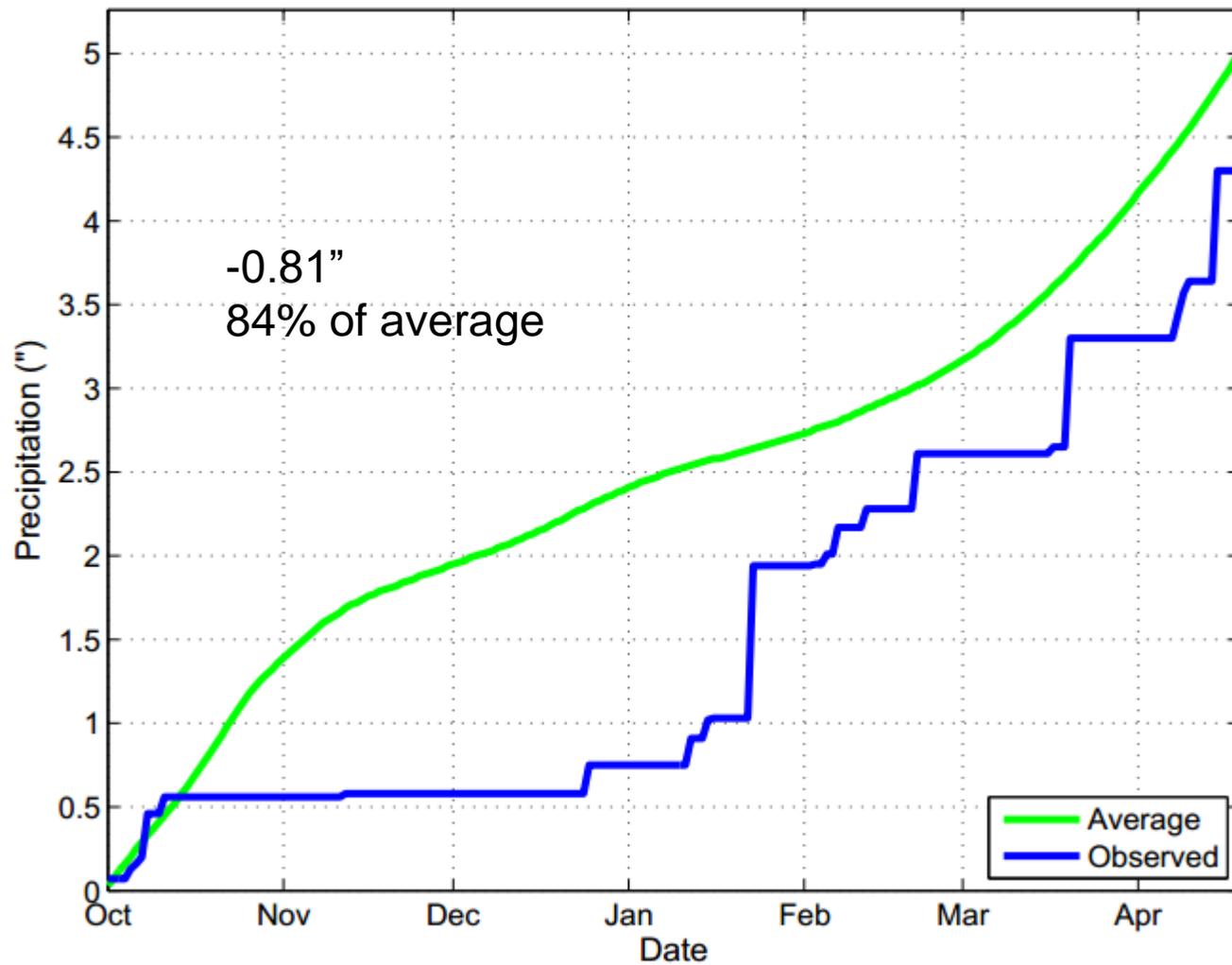
### Water Year Accumulation for Walsh



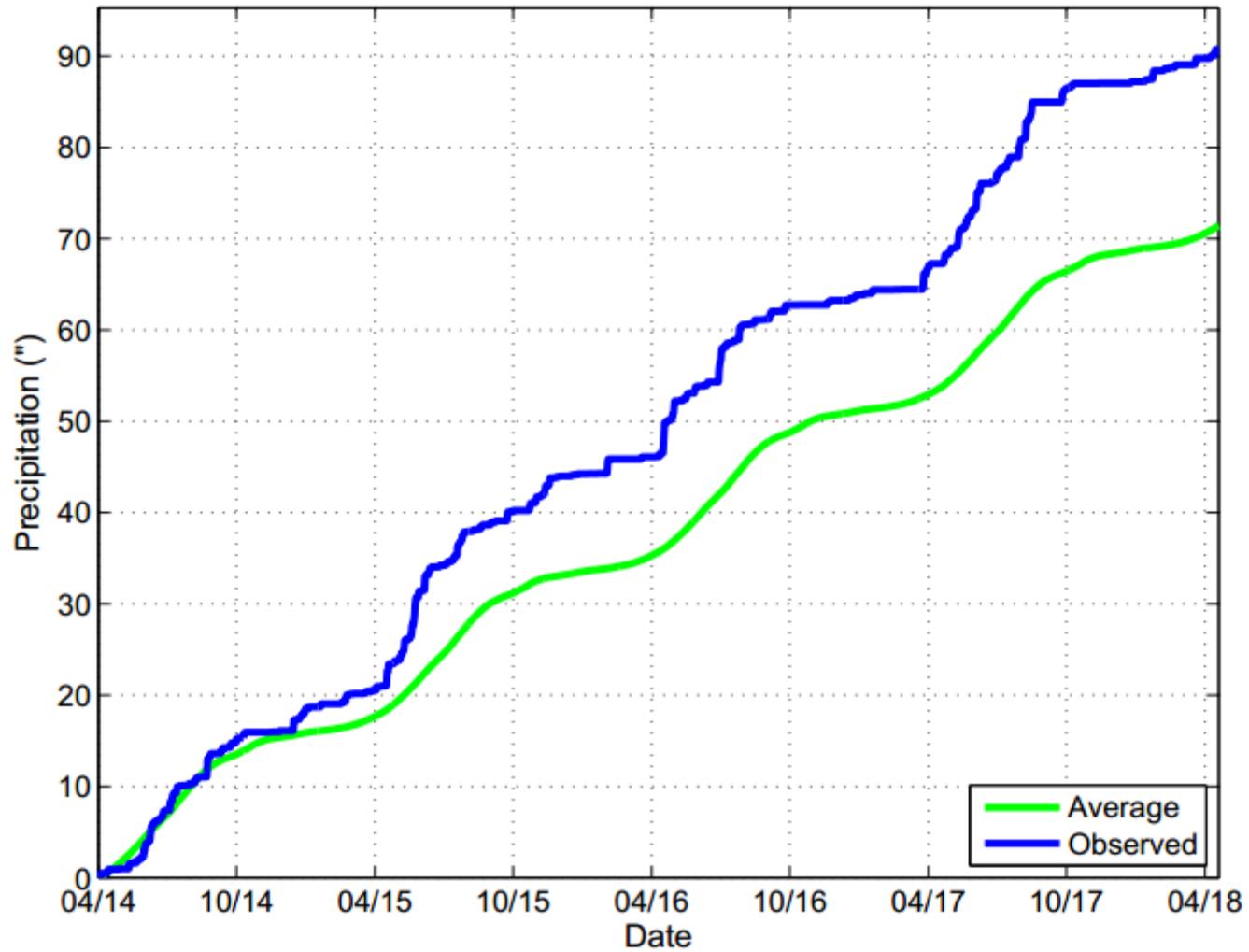
Long Term Accumulation for Walsh



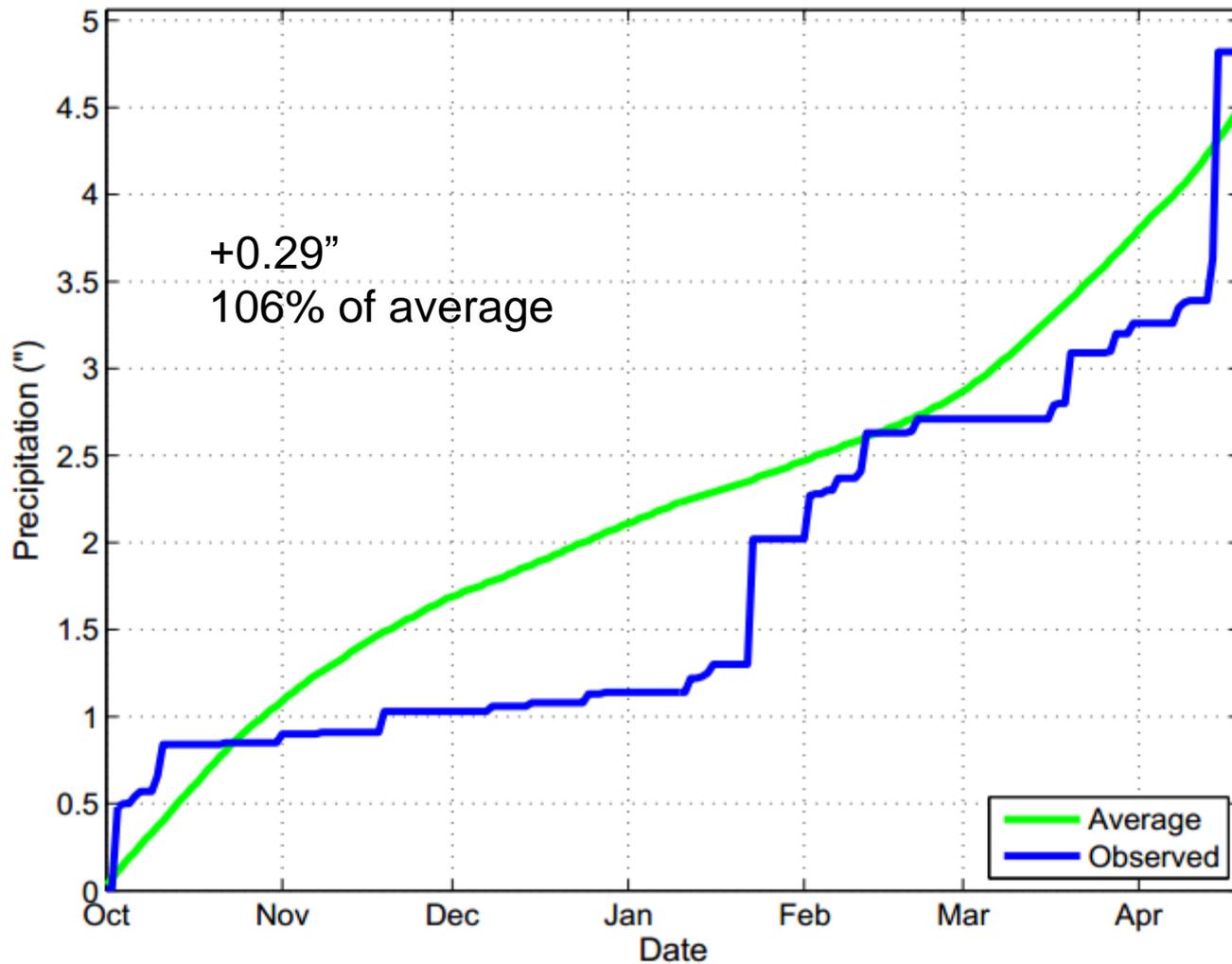
### Water Year Accumulation for Burlington



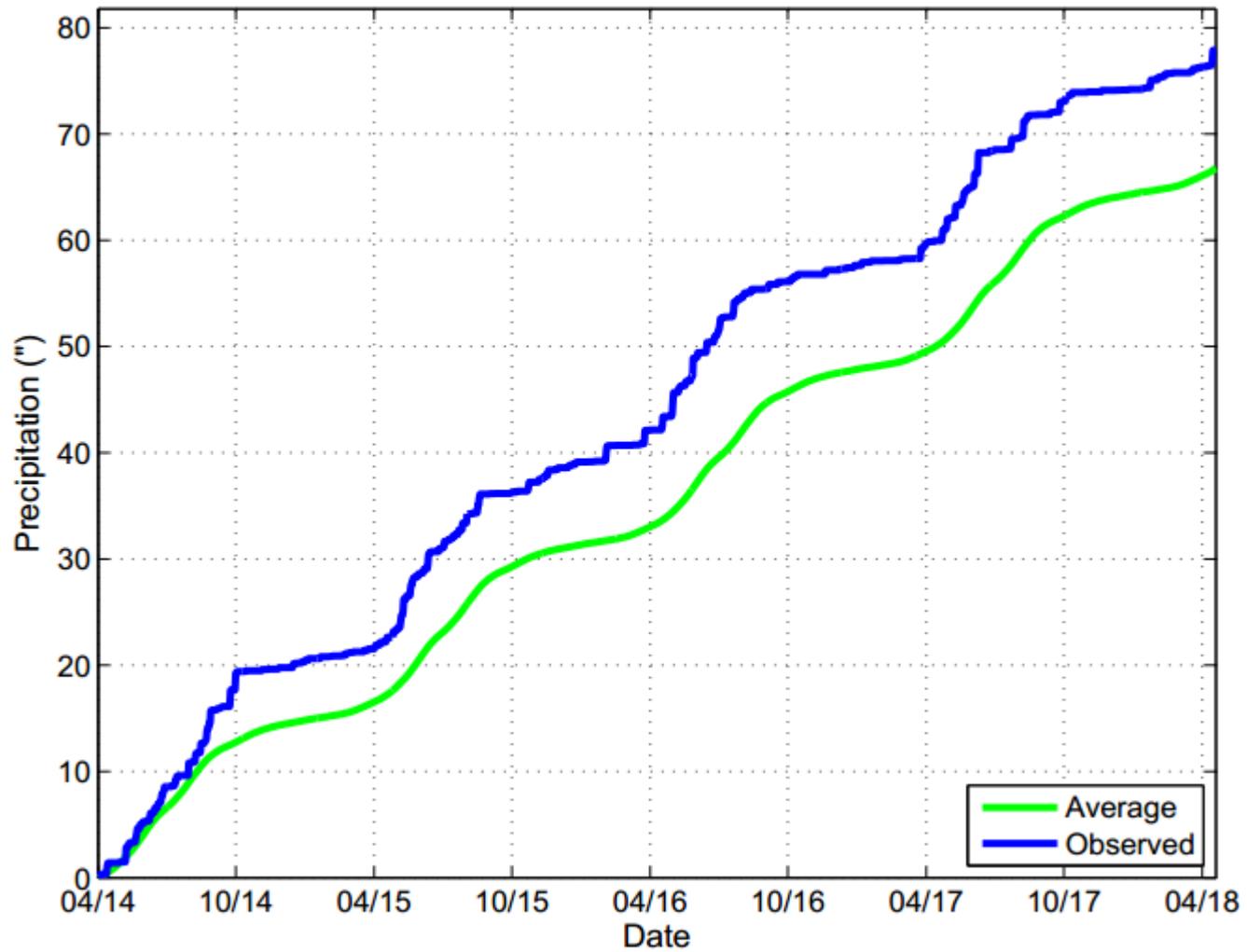
### Long Term Accumulation for Burlington



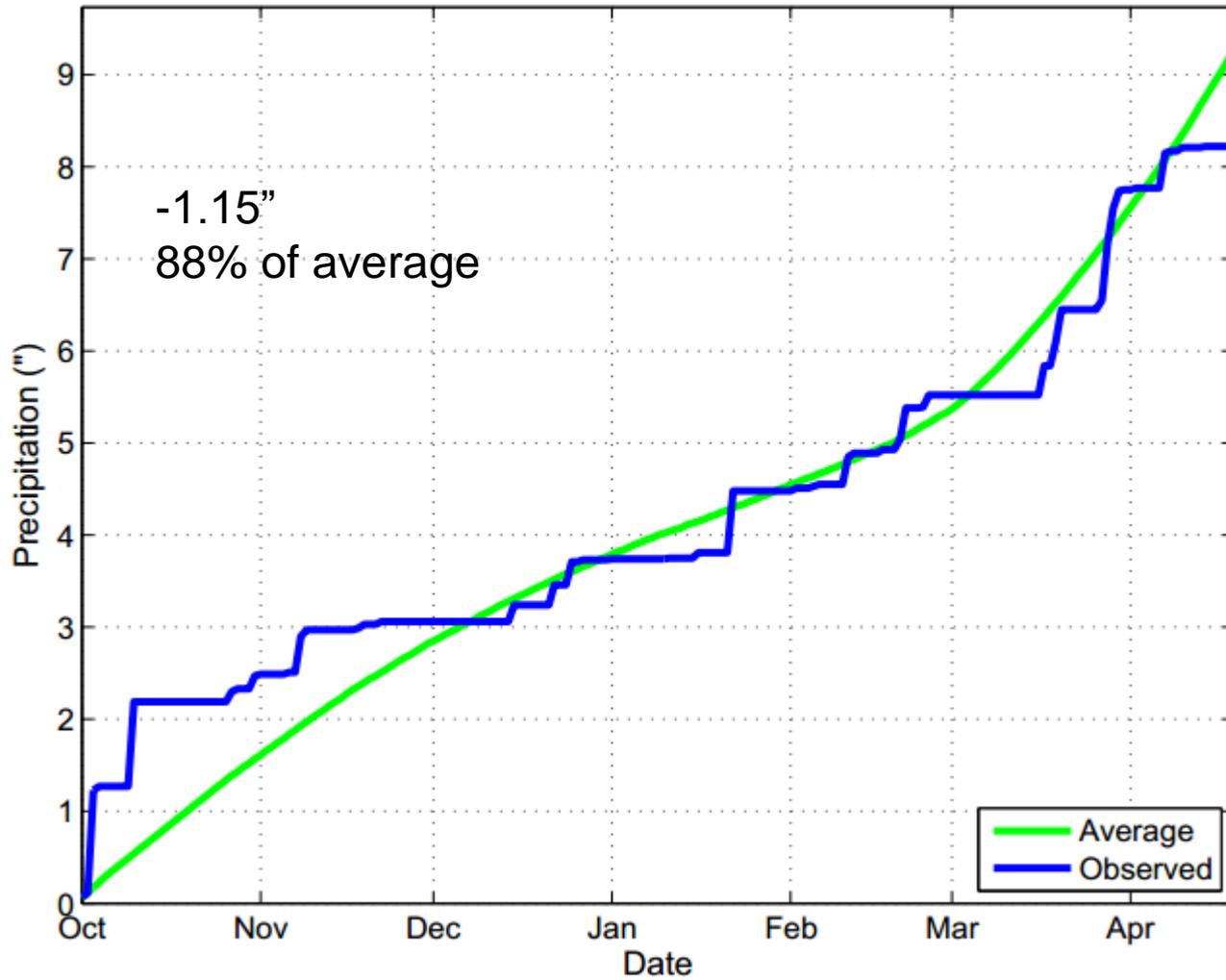
### Water Year Accumulation for Akron



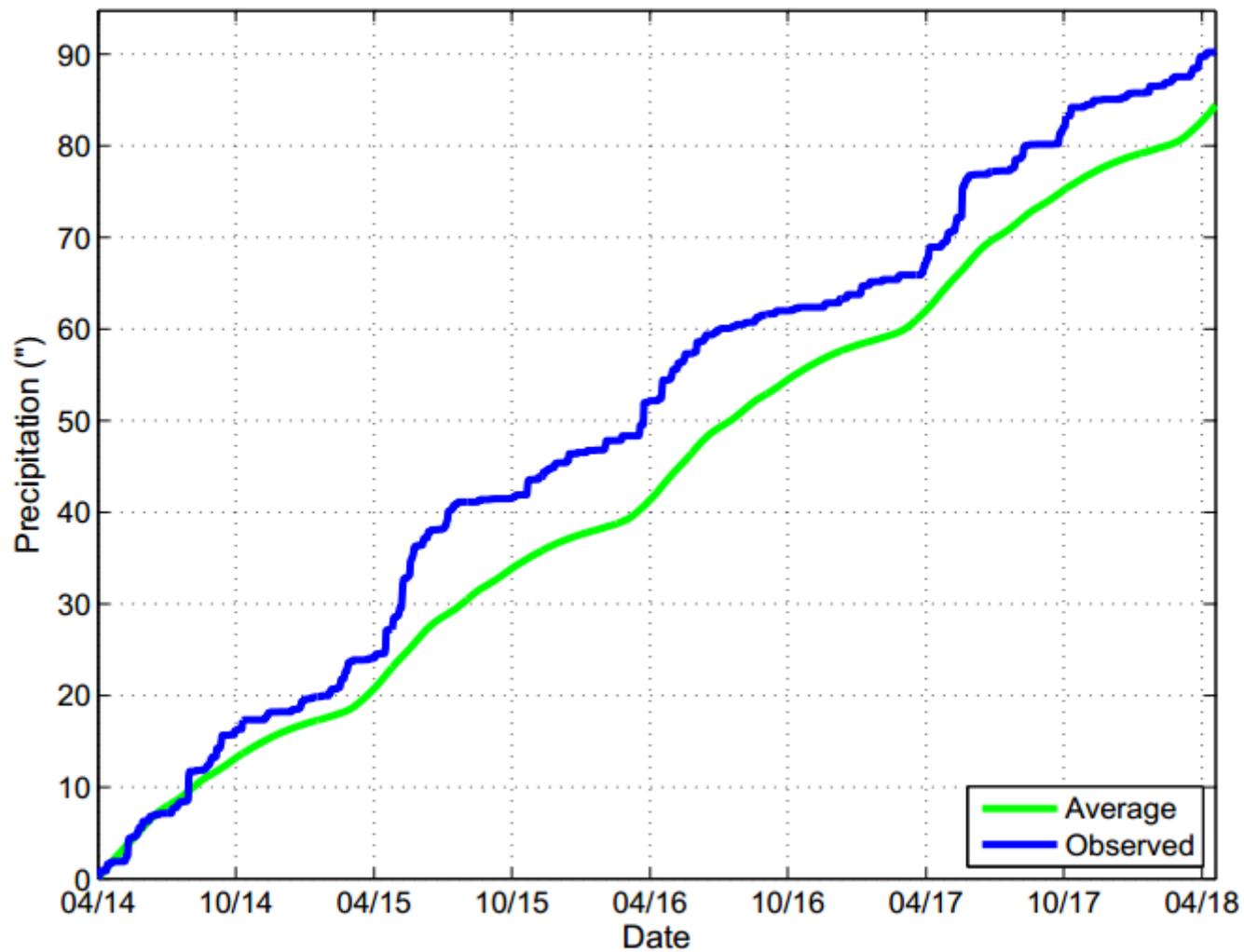
Long Term Accumulation for Akron



### Water Year Accumulation for Boulder

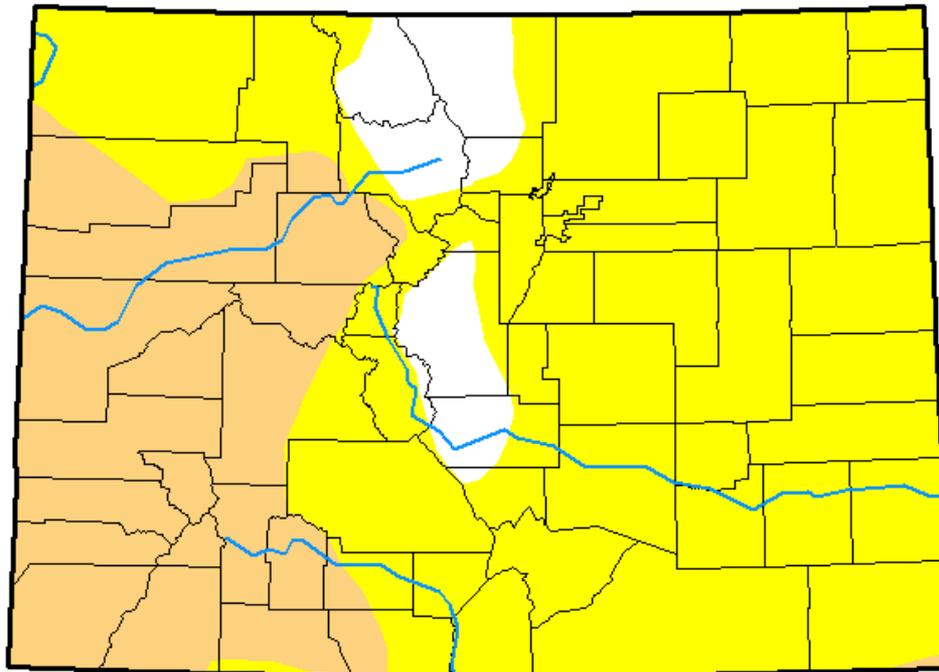


### Long Term Accumulation for Boulder



# U.S. Drought Monitor Colorado

**December 19, 2017**  
(Released Thursday, Dec. 21, 2017)  
Valid 7 a.m. EST



*Drought Conditions (Percent Area)*

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	7.17	92.83	27.13	0.00	0.00	0.00
<b>Last Week</b> 12-12-2017	11.25	88.75	16.09	0.00	0.00	0.00
<b>3 Months Ago</b> 09-19-2017	64.79	35.21	3.72	0.00	0.00	0.00
<b>Start of Calendar Year</b> 01-03-2017	31.88	68.12	37.21	2.88	0.00	0.00
<b>Start of Water Year</b> 09-26-2017	67.63	32.37	3.72	0.00	0.00	0.00
<b>One Year Ago</b> 12-20-2016	1.66	98.34	38.38	2.88	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:

Jessica Blunden  
NCEI/NOAA

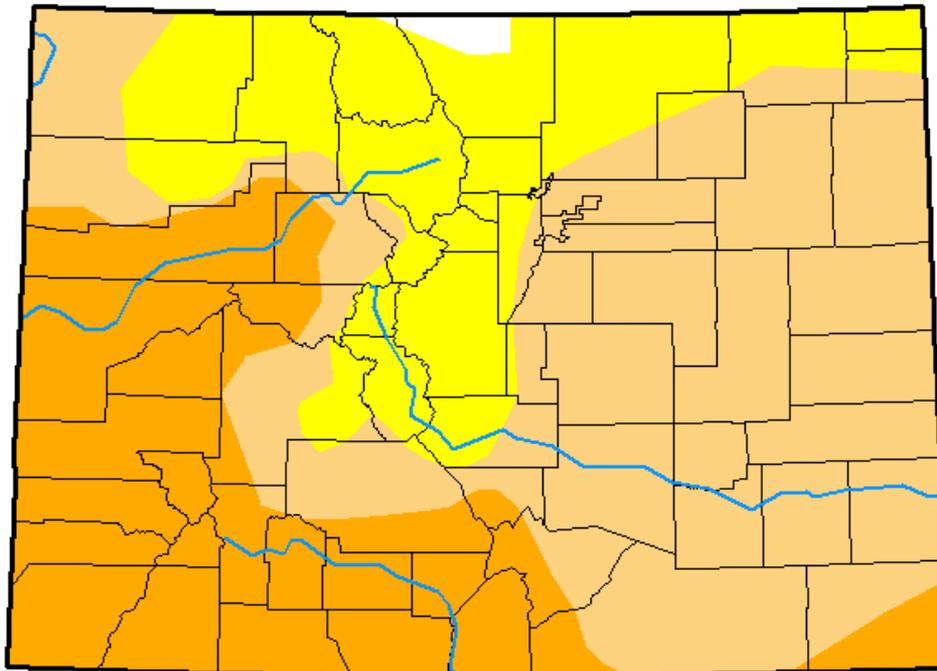


# U.S. Drought Monitor Colorado

**January 23, 2018**  
(Released Thursday, Jan. 25, 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	75.90	29.21	0.00	0.00
<b>Last Week</b> <i>01-16-2018</i>	0.59	99.41	75.90	23.23	0.00	0.00
<b>3 Months Ago</b> <i>10-24-2017</i>	71.57	28.43	1.12	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>01-24-2017</i>	44.27	55.73	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:

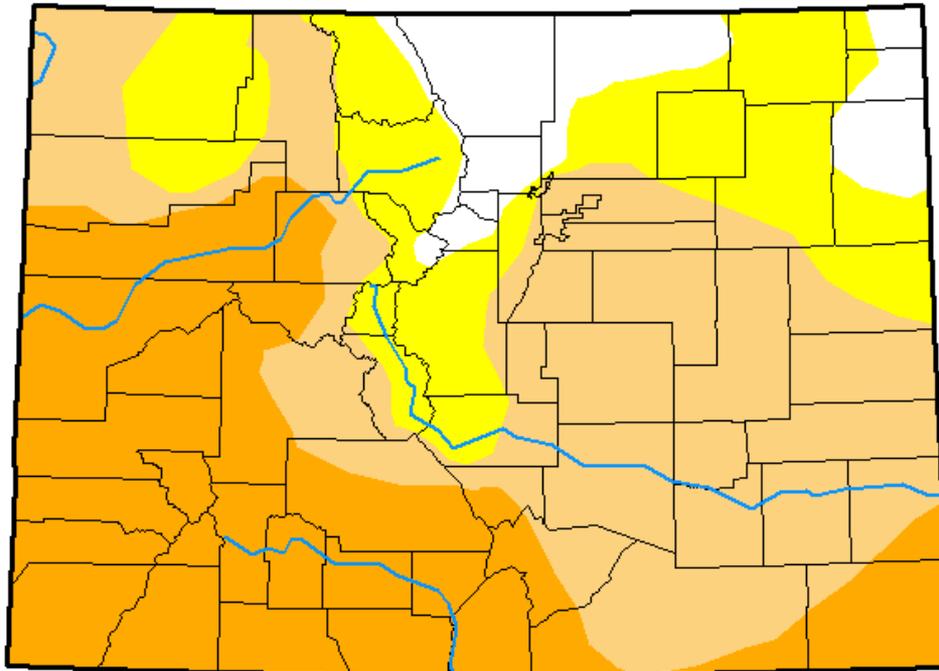
Richard Heim  
NCEI/NOAA



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

# U.S. Drought Monitor Colorado

**February 13, 2018**  
(Released Thursday, Feb. 15, 2018)  
Valid 7 a.m. EST



*Drought Conditions (Percent Area)*

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	8.59	91.41	71.18	33.51	0.00	0.00
<b>Last Week</b> <i>02-06-2018</i>	0.59	99.41	71.90	31.82	0.00	0.00
<b>3 Months Ago</b> <i>11-14-2017</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>02-14-2017</i>	46.88	53.12	36.92	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



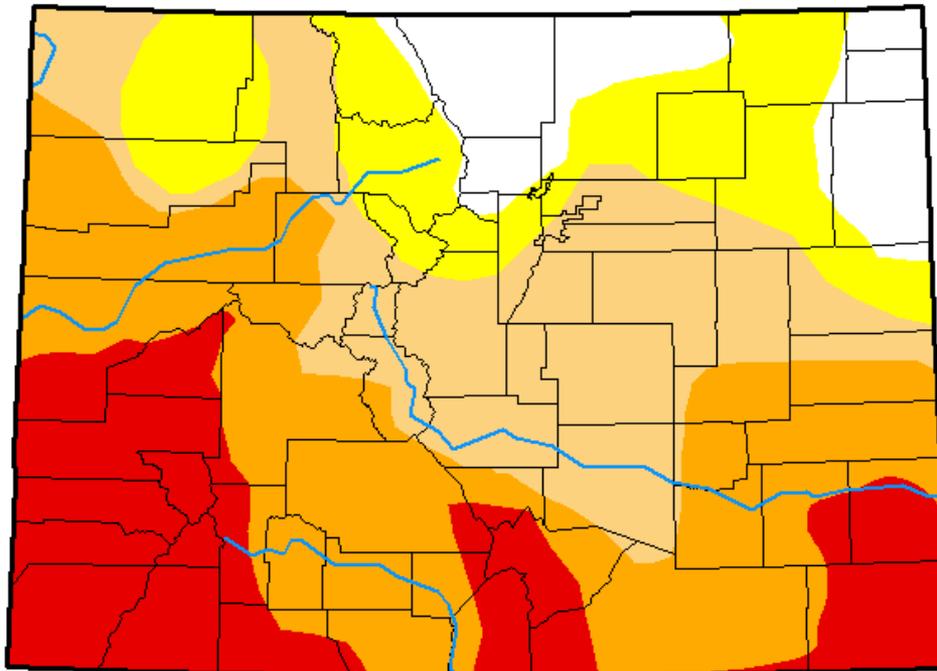
<http://droughtmonitor.unl.edu/>

# U.S. Drought Monitor Colorado

**March 20, 2018**  
(Released Thursday, Mar. 22, 2018)  
Valid 8 a.m. EDT

*Drought Conditions (Percent Area)*

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	9.65	90.35	74.31	50.29	19.99	0.00
<b>Last Week</b> <i>03-13-2018</i>	10.16	89.84	70.75	47.44	13.44	0.00
<b>3 Months Ago</b> <i>12-19-2017</i>	7.17	92.83	27.13	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>03-21-2017</i>	48.05	51.95	41.82	5.14	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:

Chris Fenimore  
NCEI/NESDIS/NOAA



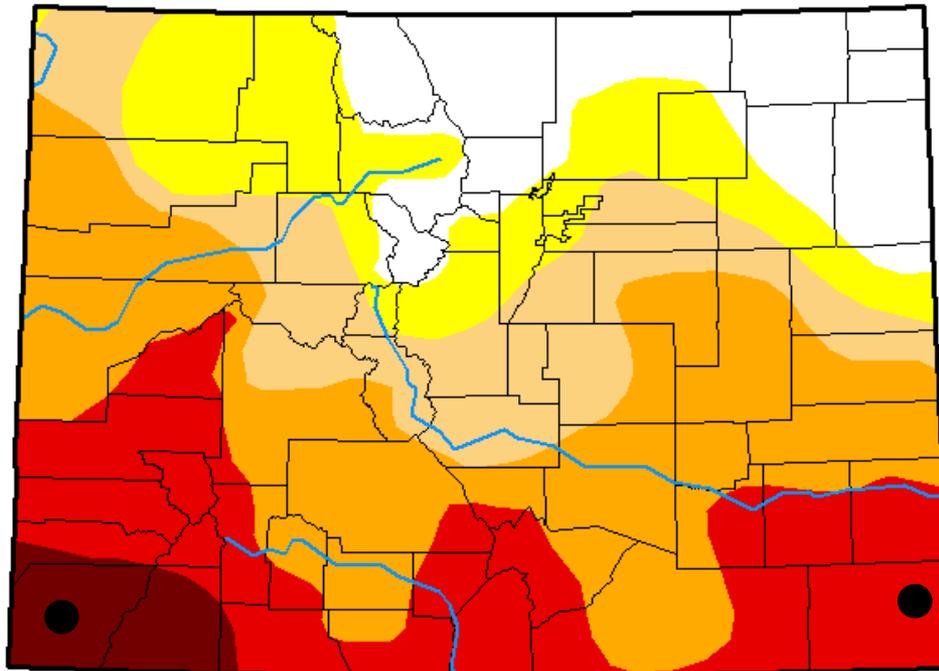
<http://droughtmonitor.unl.edu/>

# U.S. Drought Monitor Colorado

**April 17, 2018**  
(Released Thursday, Apr. 19, 2018)  
Valid 8 a.m. EDT

*Drought Conditions (Percent Area)*

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	15.74	84.26	69.17	53.65	24.42	3.87
<b>Last Week</b> <i>04-10-2018</i>	12.38	87.62	69.43	53.65	24.31	0.00
<b>3 Months Ago</b> <i>01-16-2018</i>	0.59	99.41	75.90	23.23	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>04-18-2017</i>	46.01	53.99	11.88	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.*

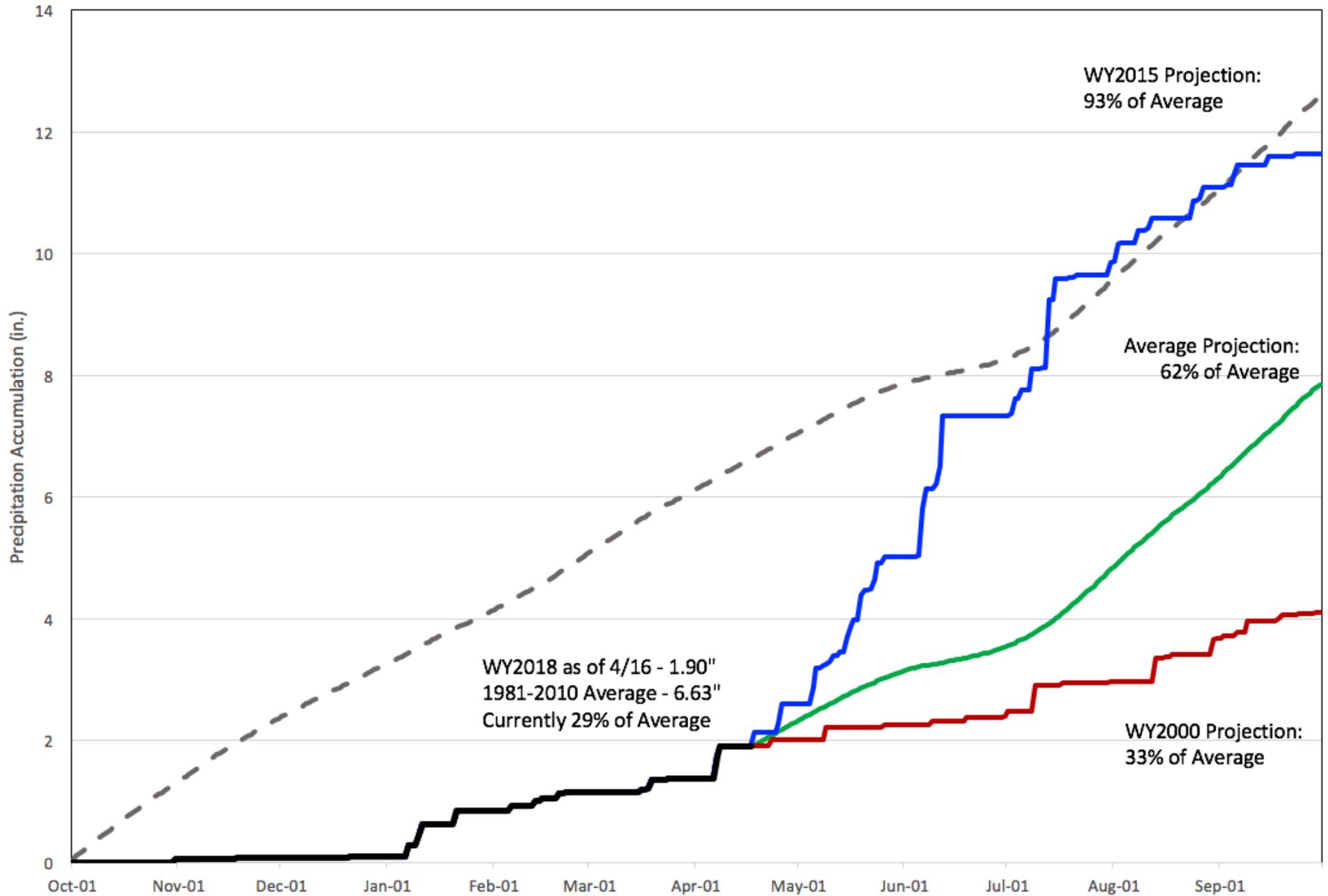
Author:

Brad Rippey  
U.S. Department of Agriculture

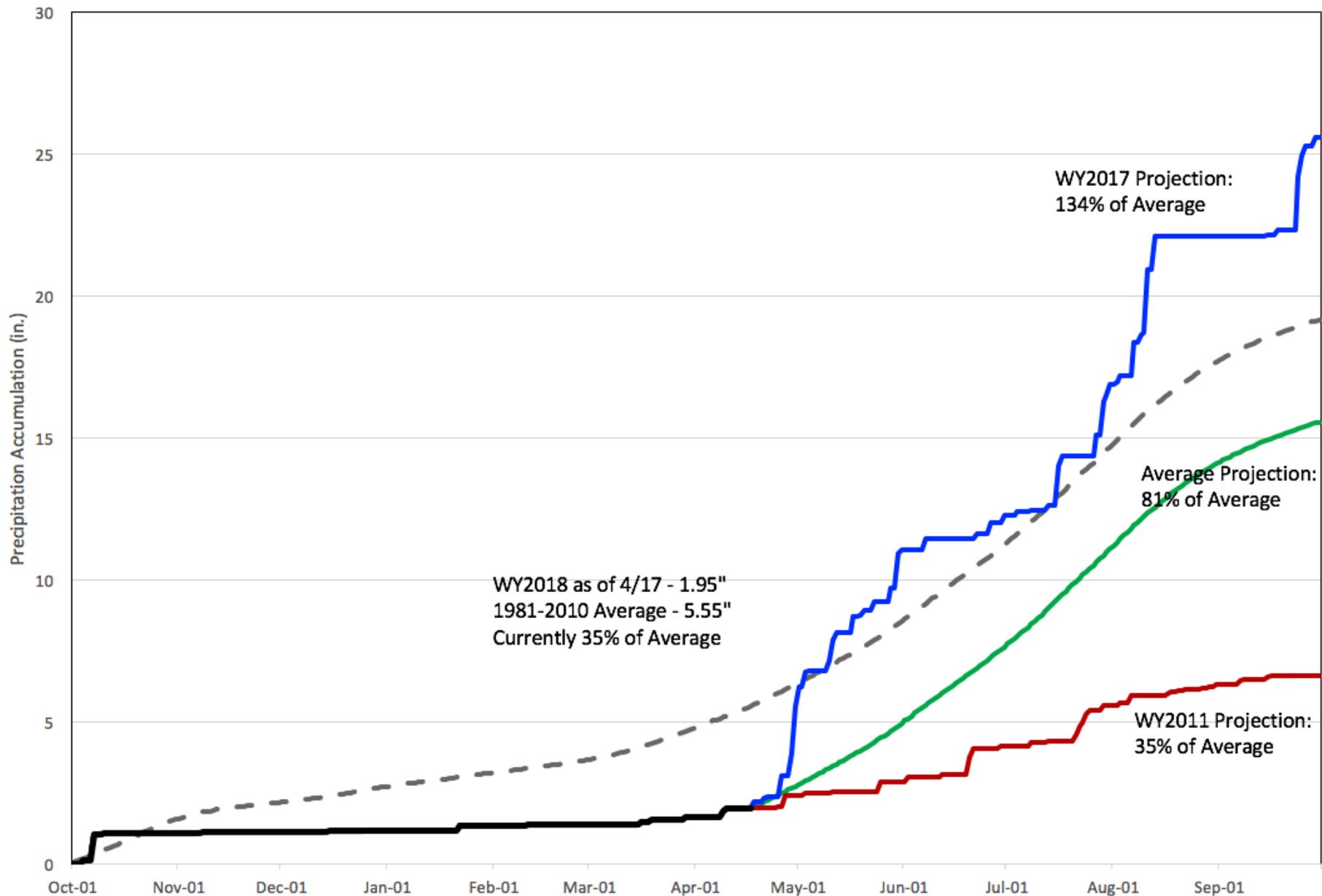


<http://droughtmonitor.unl.edu/>

# CORTEZ Precipitation Accumulation Projections

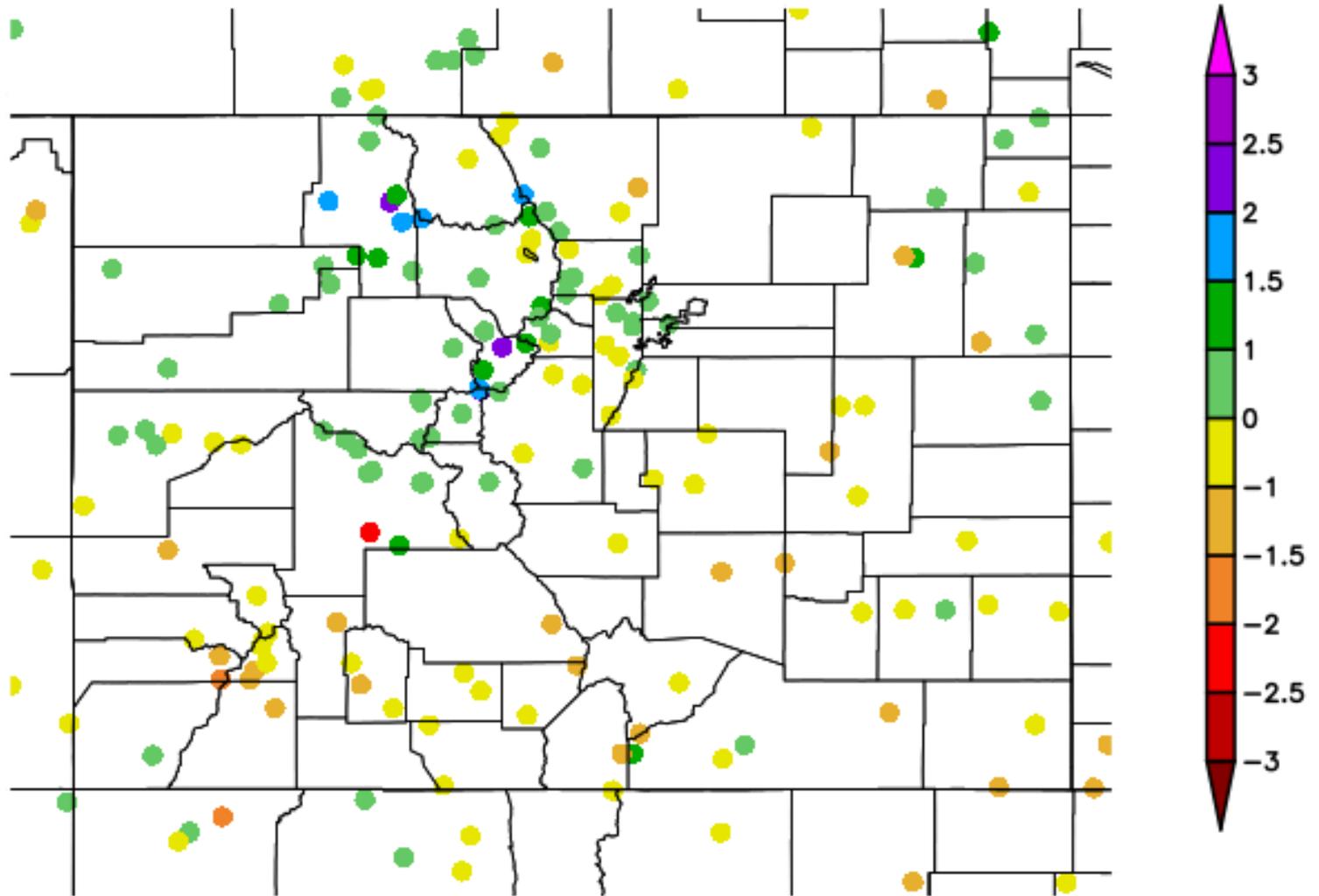


# WALSH 1 W Precipitation Accumulation Projections



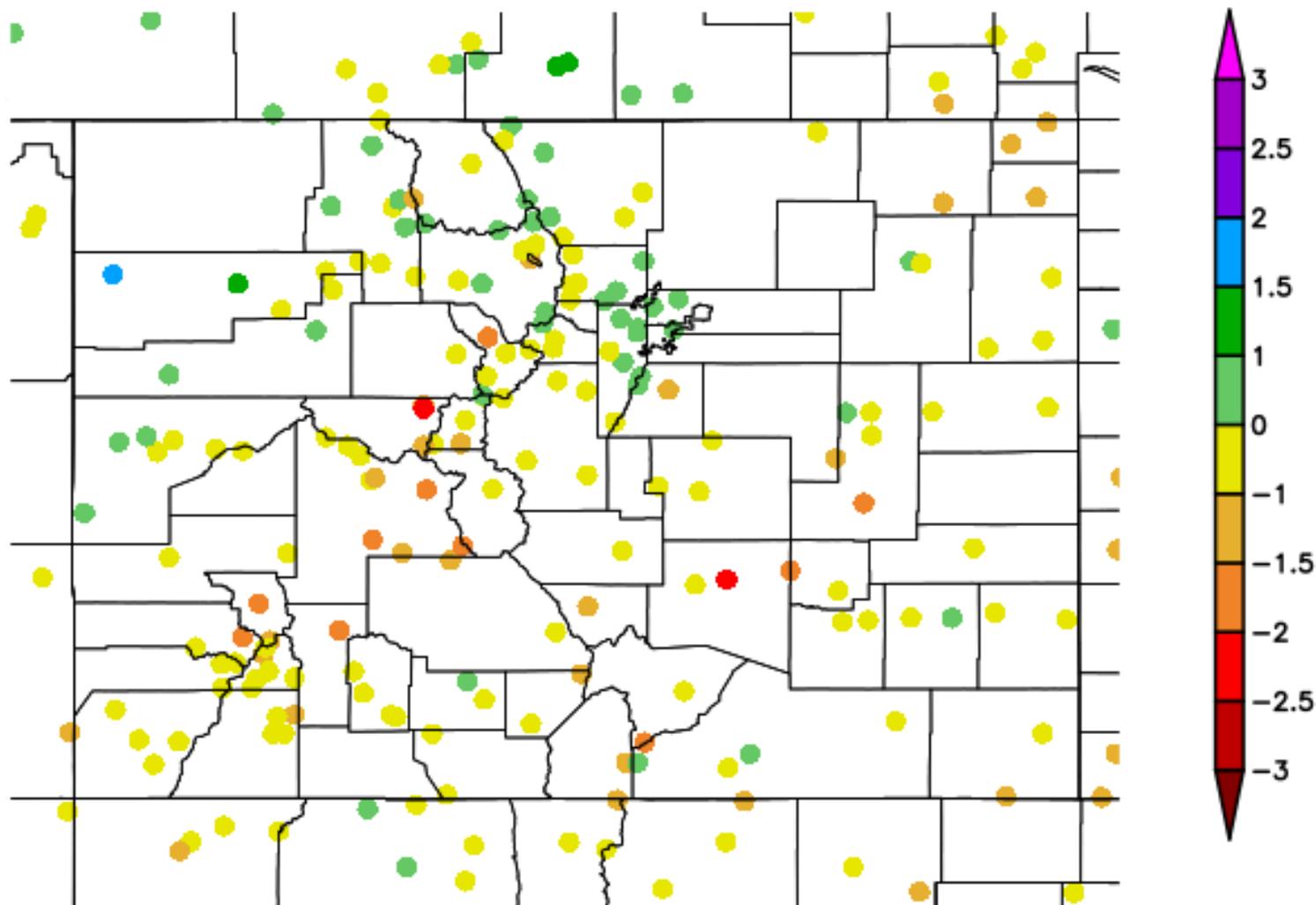
# 30 Day SPI

3/19/2018 - 4/17/2018

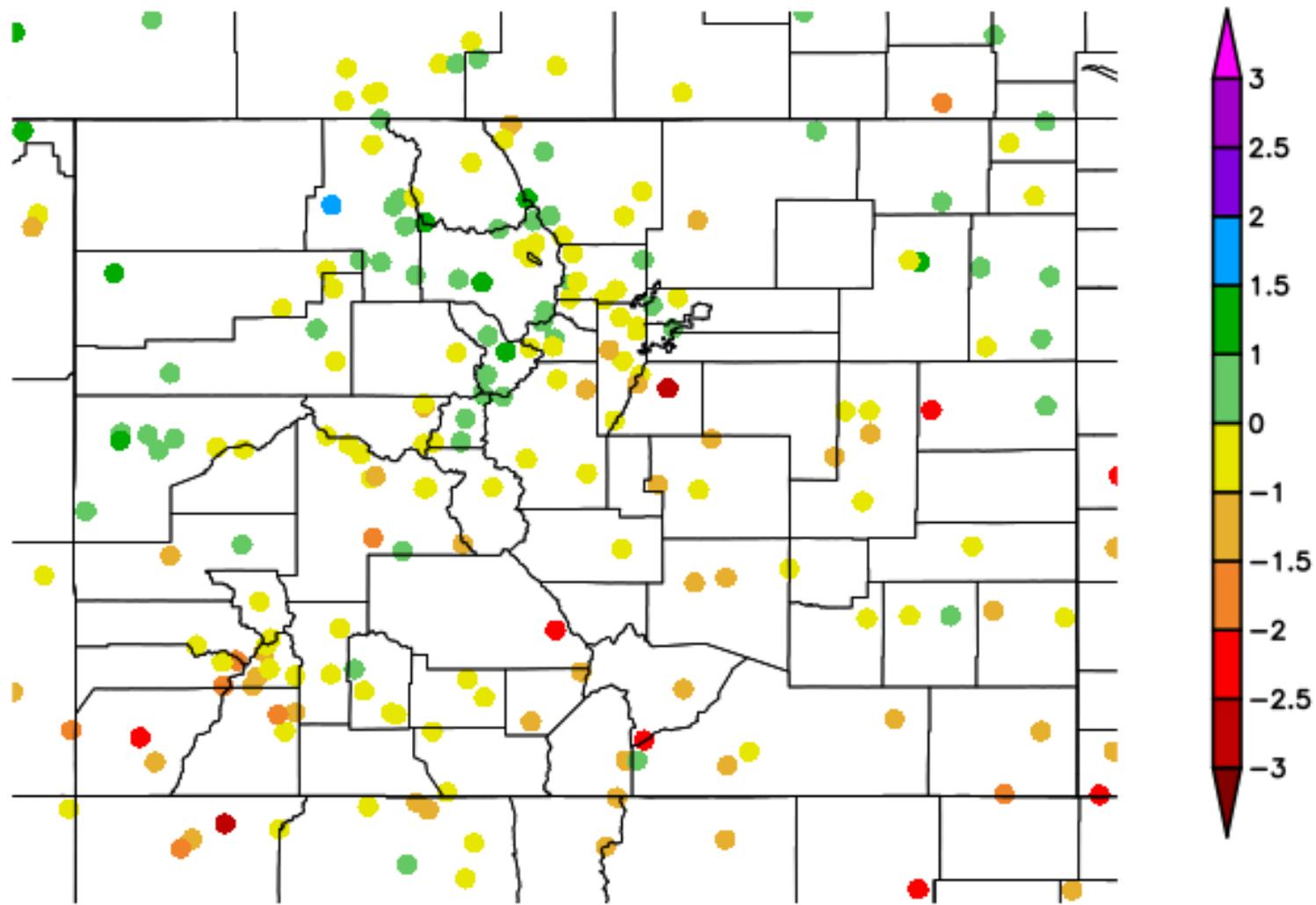


# Monthly SPI

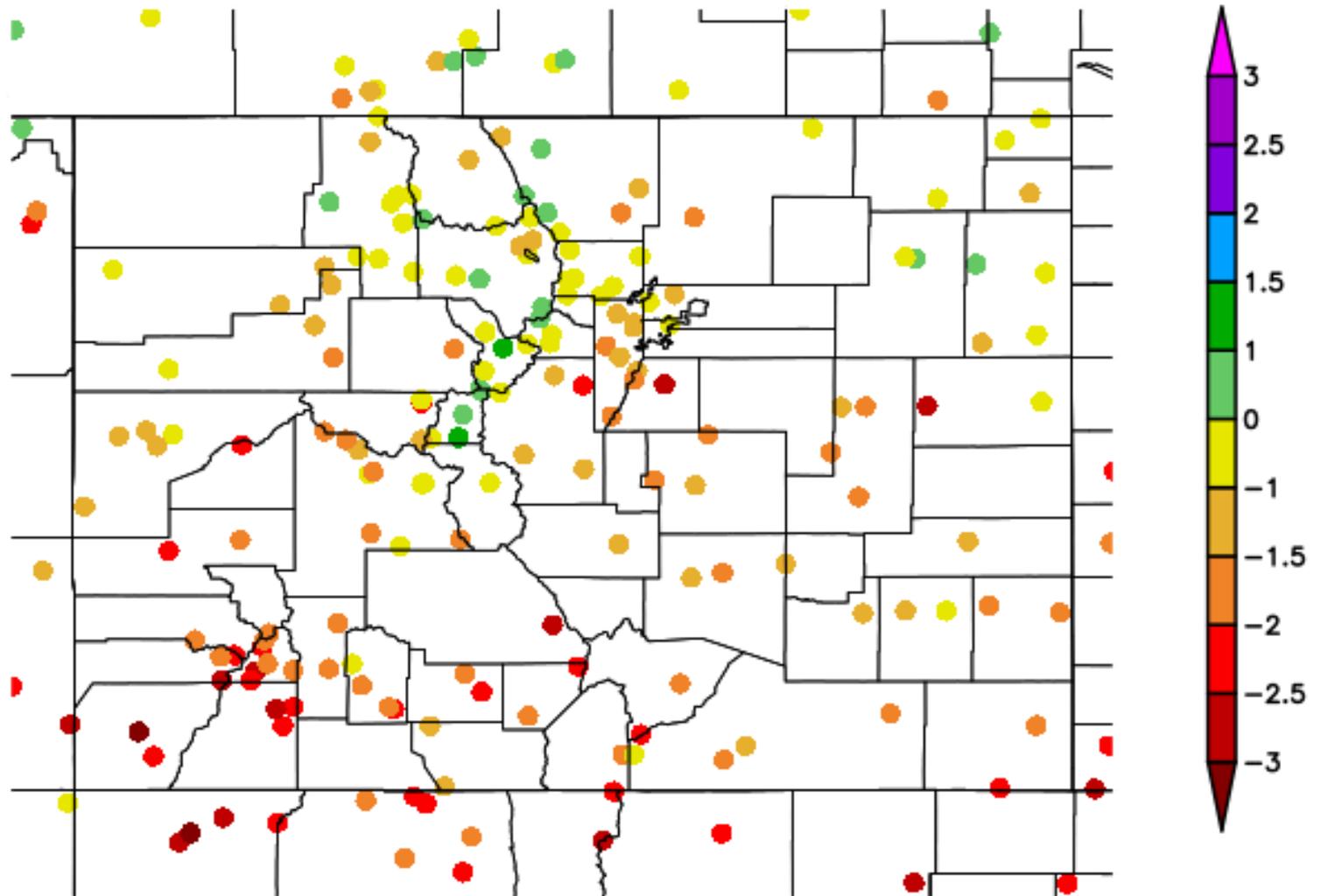
3/1/2018 - 3/31/2018



# 90 Day SPI 1/18/2018 - 4/17/2018

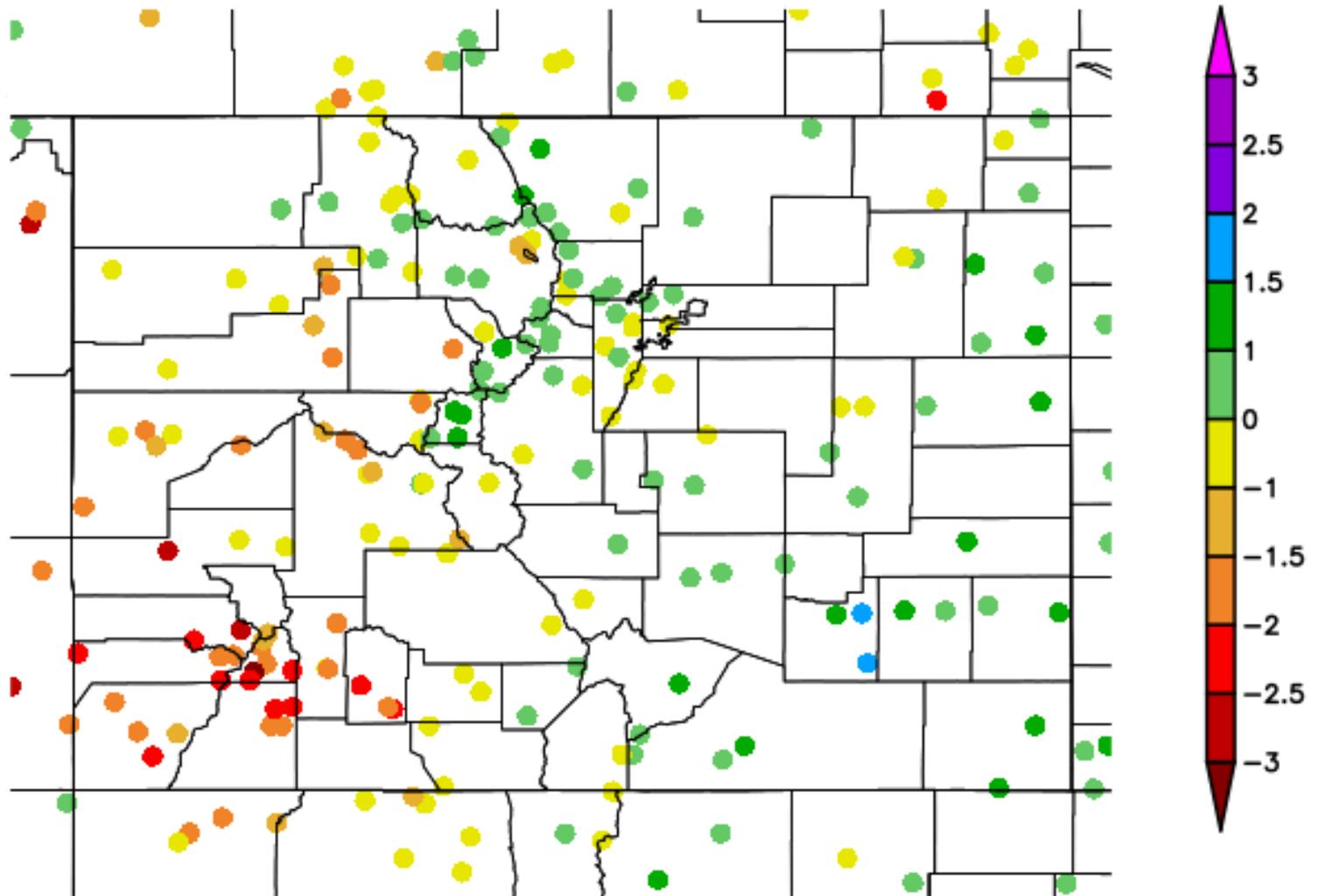


# 6 Month SPI 10/18/2017 - 4/17/2018



# 12 Month SPI

4/18/2017 - 4/17/2018

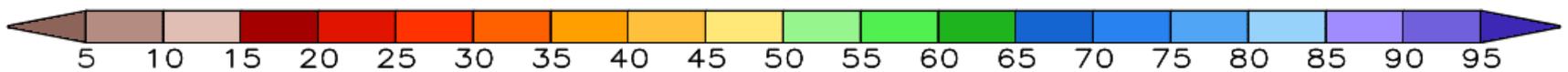
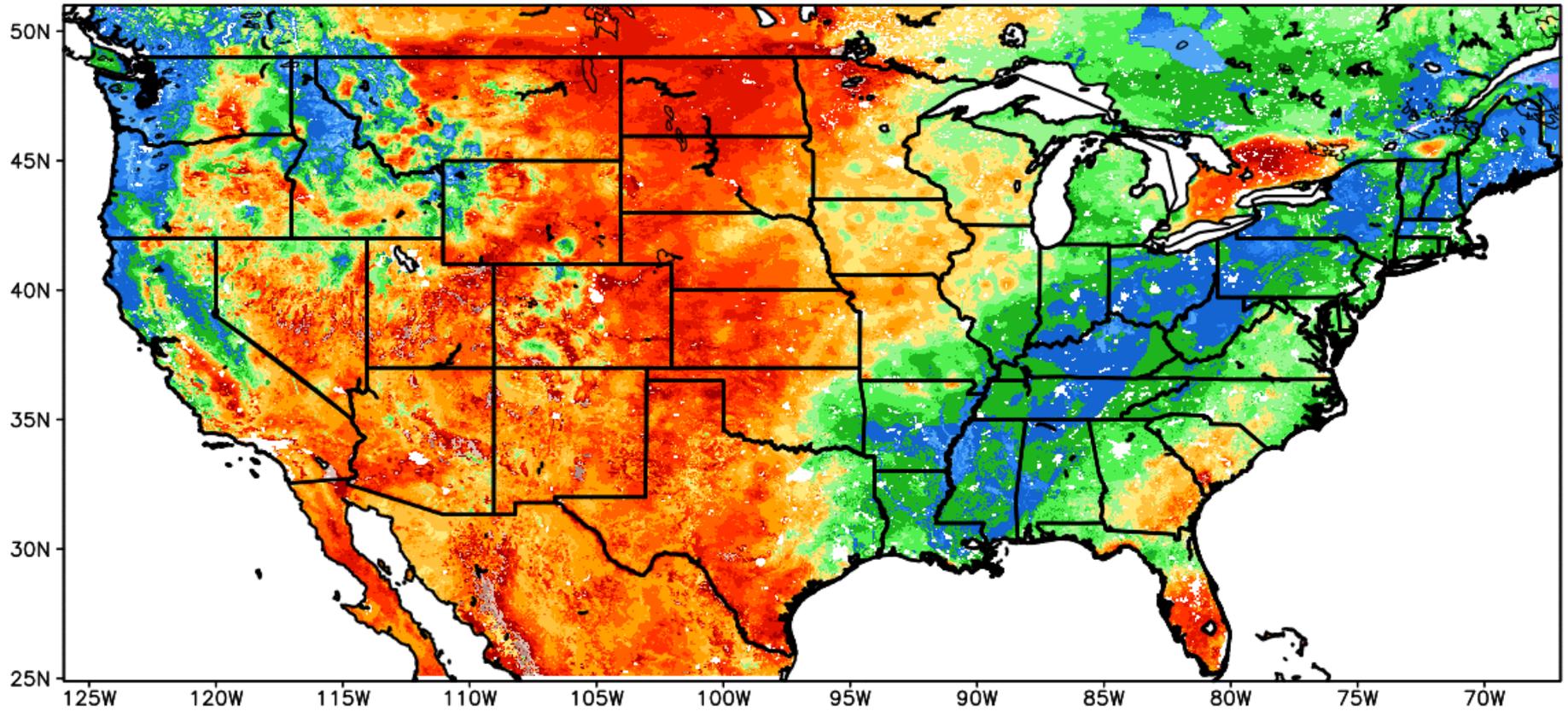


# Reservoir and Soils Update

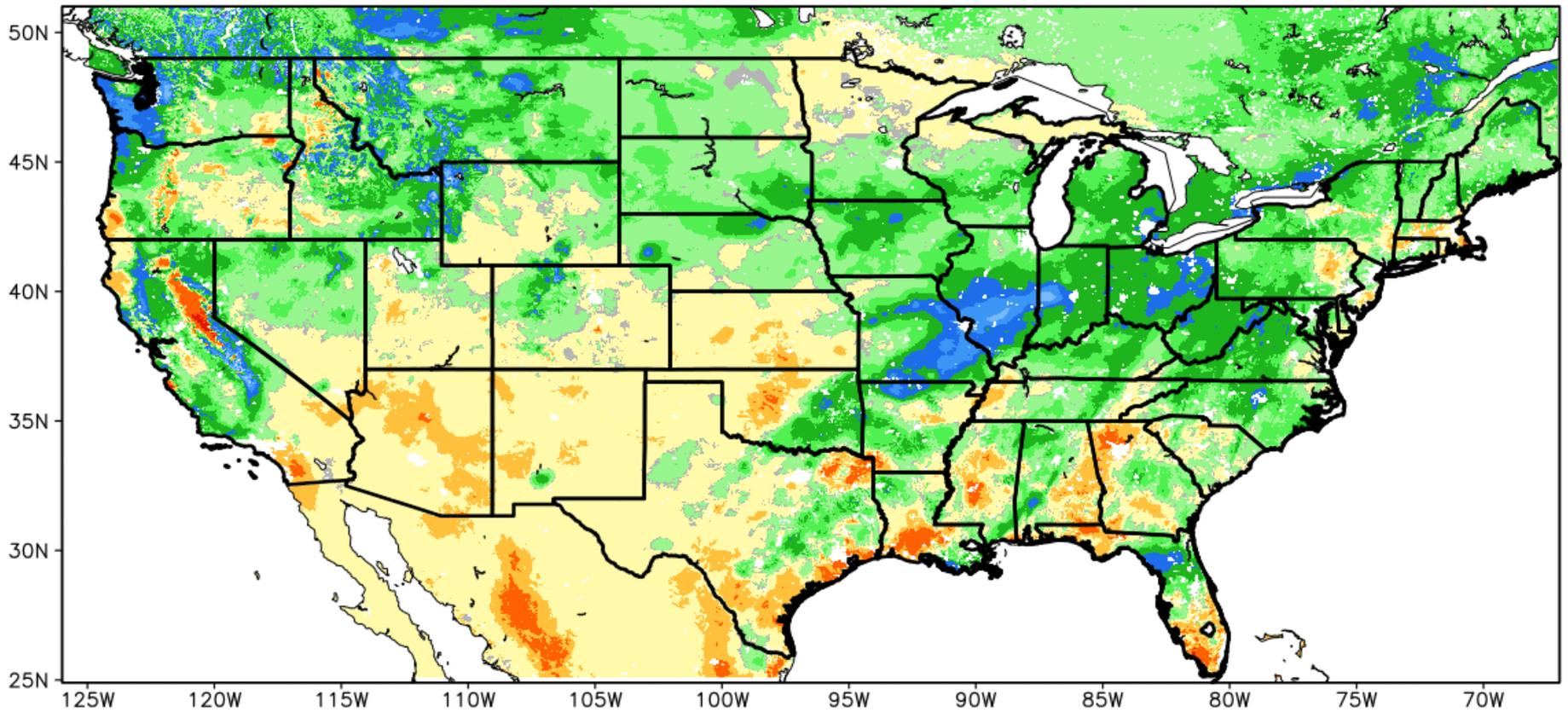


**Column-Integrated Relative Soil Moisture (available water; %) valid 00z 18 Apr 2018**

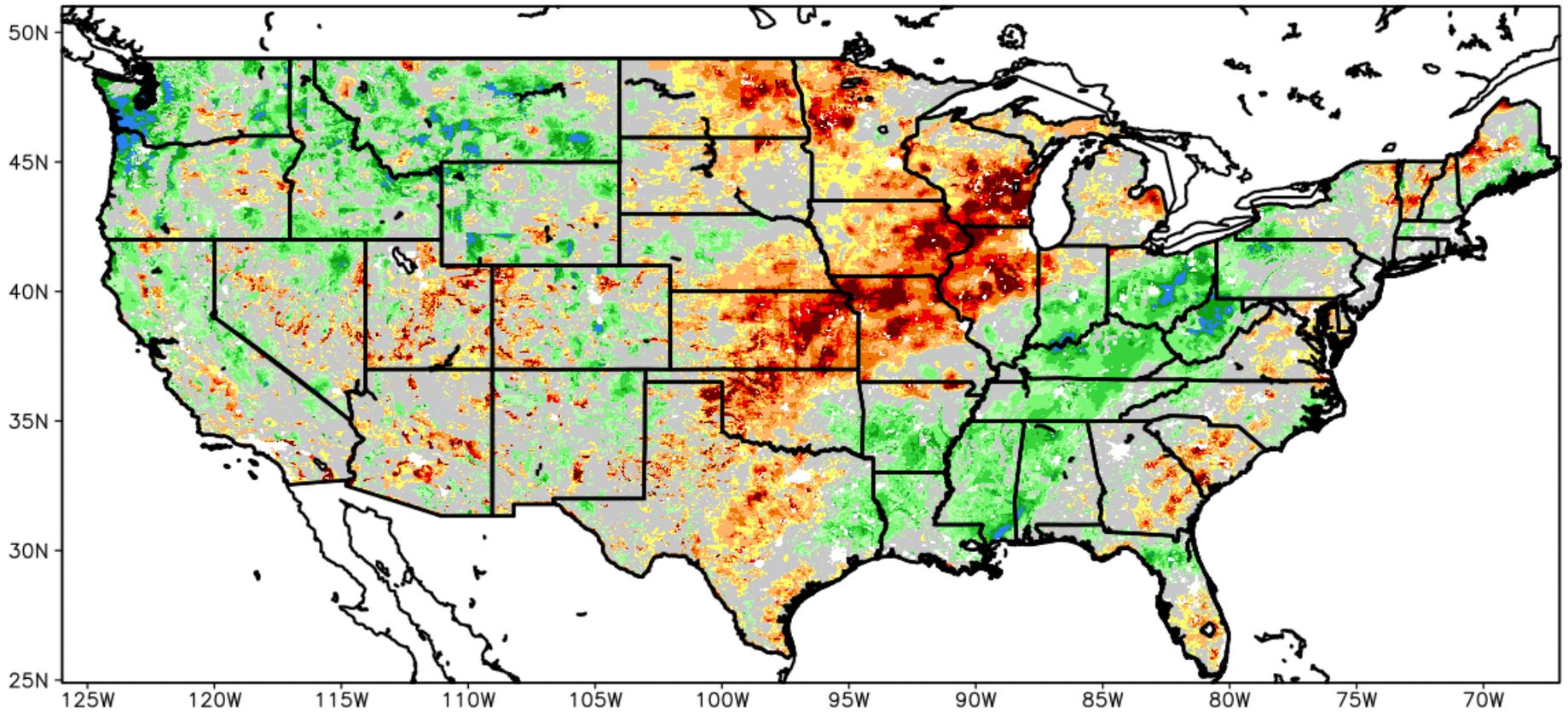
Precipitation in previous hour (1,2,5,10,15,20,25 mm contours)



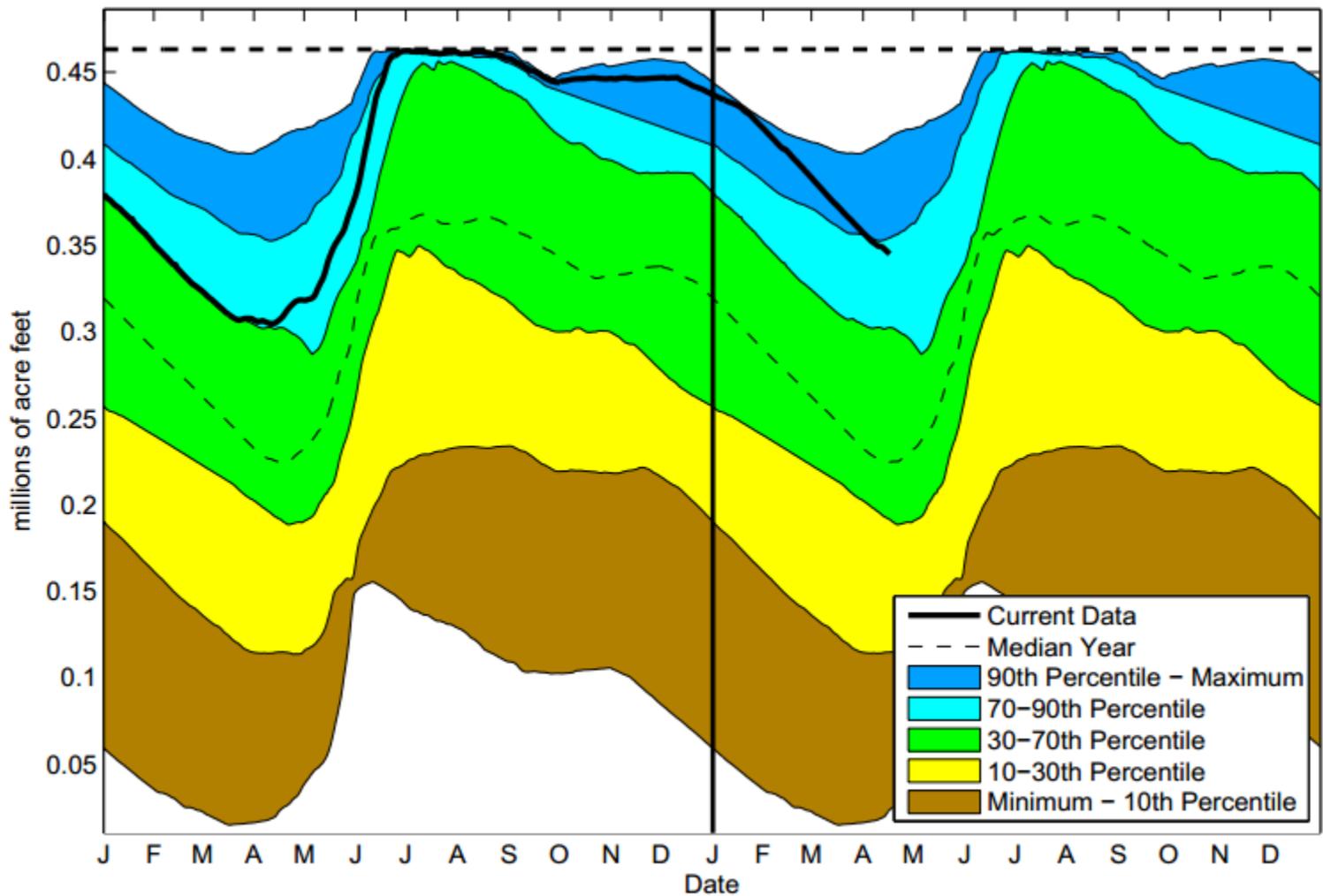
# 1-Month Difference in Column Relative Soil Moisture (%) valid 12z 18 Apr 2018



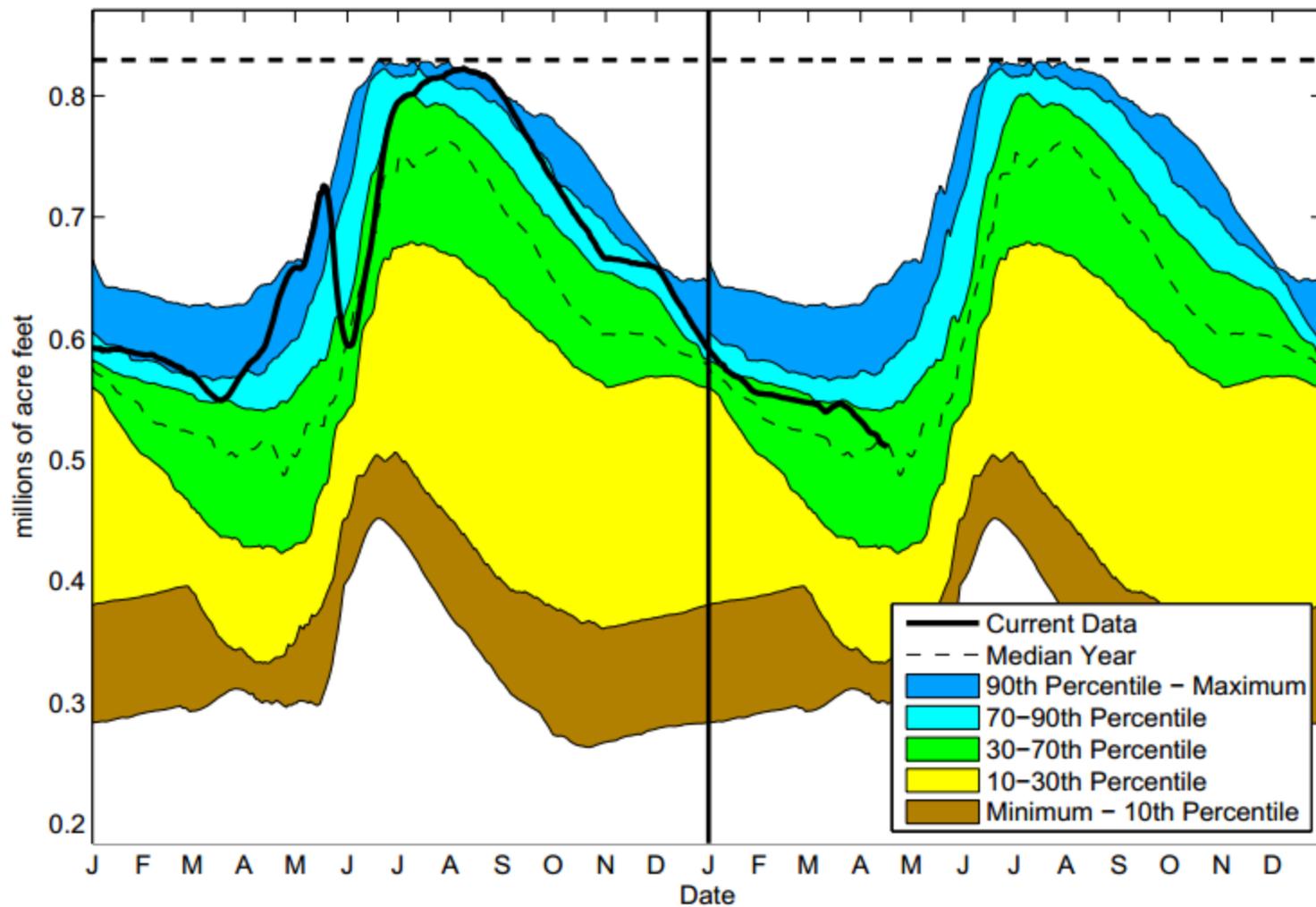
SPoRT-LIS 0-2 m RSM percentile valid 17 Apr 2018



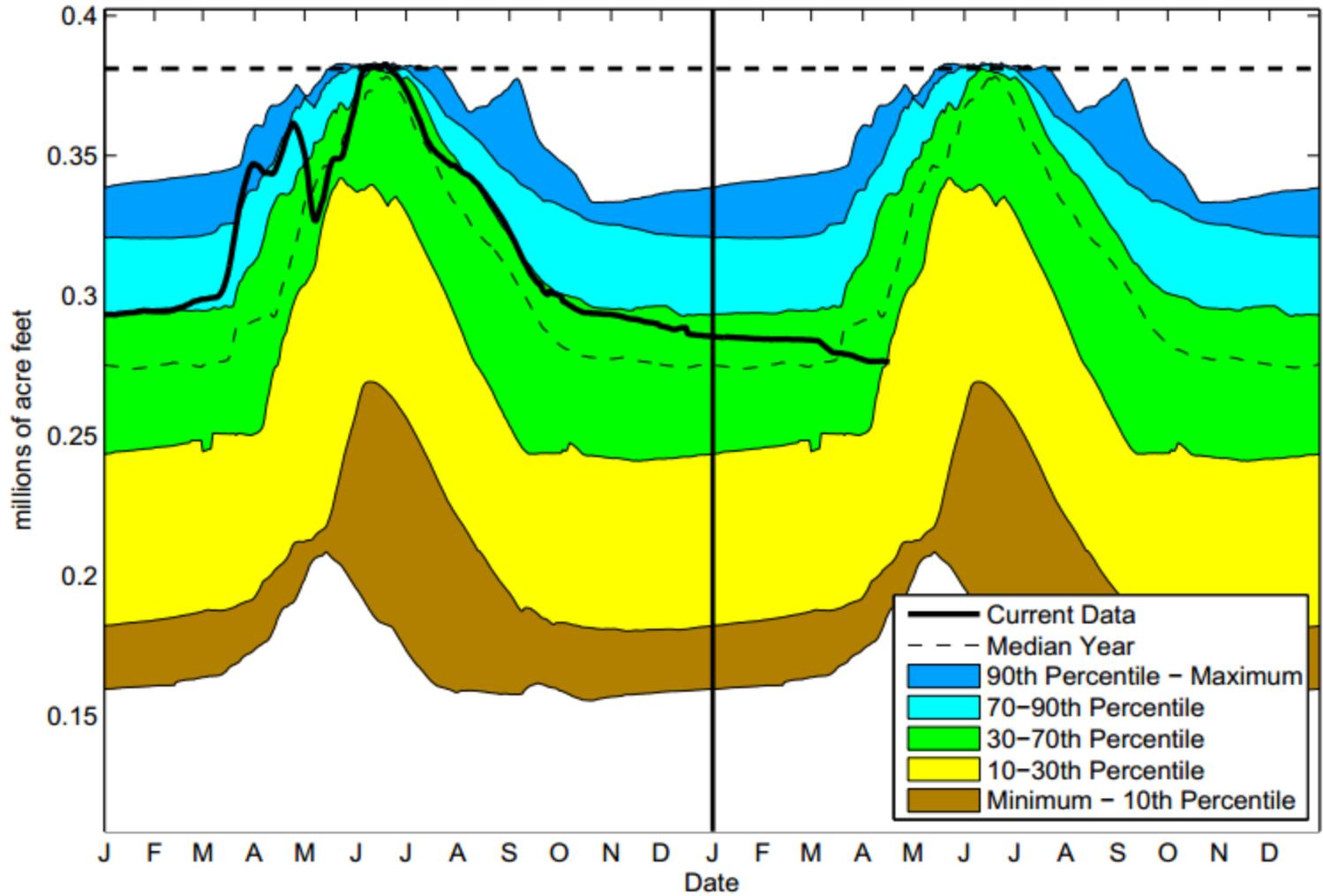
Lake Granby Reservoir Level 04/17/2018  
148 Percent of 2000-2016 Average



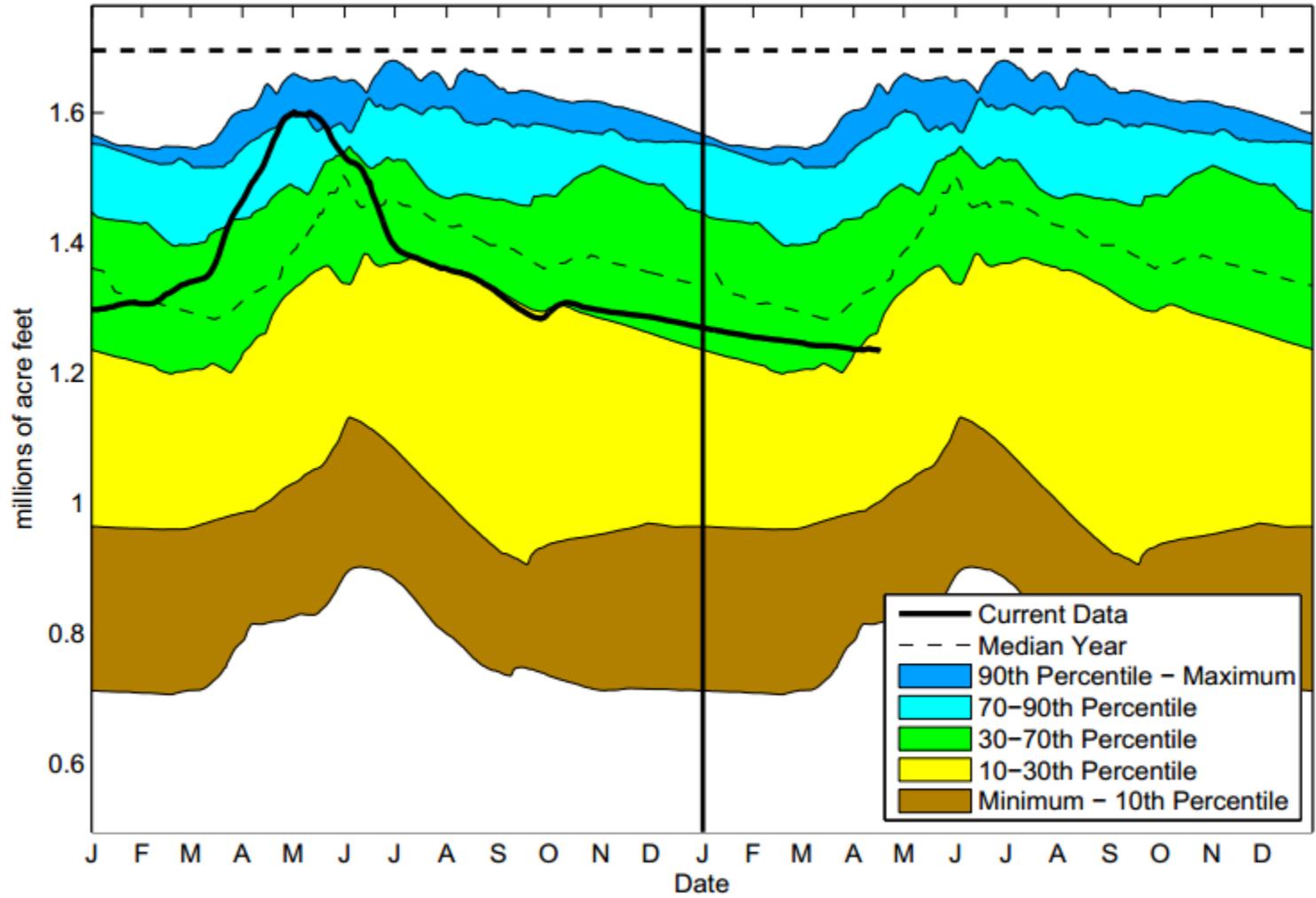
Blue Mesa Reservoir Level 04/17/2018  
107 Percent of 1985-2016 Average



McPhee Reservoir Level 04/17/2018  
93 Percent of 1987-2016 Average



Navajo Reservoir Level 04/17/2018  
93 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	-17	5	8,941.92	19,949	-43	8,942	19,881
Eleven Mile	88	70	8,597.47	99,383	34	8,597	97,779
Cheesman	106	70	6,826.25	66,096	71	6,842	79,064
Strontia Springs	259	107	5,991.21	6,799	-165	6,002	7,863
Chatfield	20	9	5,431.08	25,784	-28	5,432	27,076
Marston	50	18	5,530.10	14,123	43	5,538	19,256
Soda Lakes	---	---	---	1,616	-2		1,680
Platte Canyon	0	---	5,529.74	727	-2	5,533	910
South Complex	0	7	---	2,921	-19		3,561
Harriman	---	---	5,622.69	754	0	5,623	762
<b>Moffat System:</b>							
Gross	42	281	7,229.01	23,529	-478	7,282	41,811
Ralston	3	5	6,015.84	6,361	332	6,046	10,776
Upper Long Lake	0	0	6,075.30	849	0	6,088	1,519
Lower Long Lake	0	0	5,892.28		0	5,908	268
<b>Western Slope:</b>							
Dillon	186	118	9,010.46	236,920	-150	9,017	257,304
Williams Fork	46	39	7,790.73	68,125	13	7,811	96,822
Meadow Creek	1	1	9,970.70	2,035	0	9,995	5,370
<b>Total System:</b>				<b>575,971</b>	<b>-393</b>		<b>671,702</b>
<b>Non-system</b>							
Wolford Mountain	71	126	7,480.57	53,900	-110	7,489	65,985
Green Mountain	237	401	7,891.84	61,374	-328	7,950	153,639
Spinney Mountain	33	90	---	37,078	N/A		53,651

# Colorado Climate Center

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

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

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

