



Climate Update



Peter Goble
Colorado Climate Center

**Presented to
Water Availability Task Force
March 23, 2018
Denver, CO**

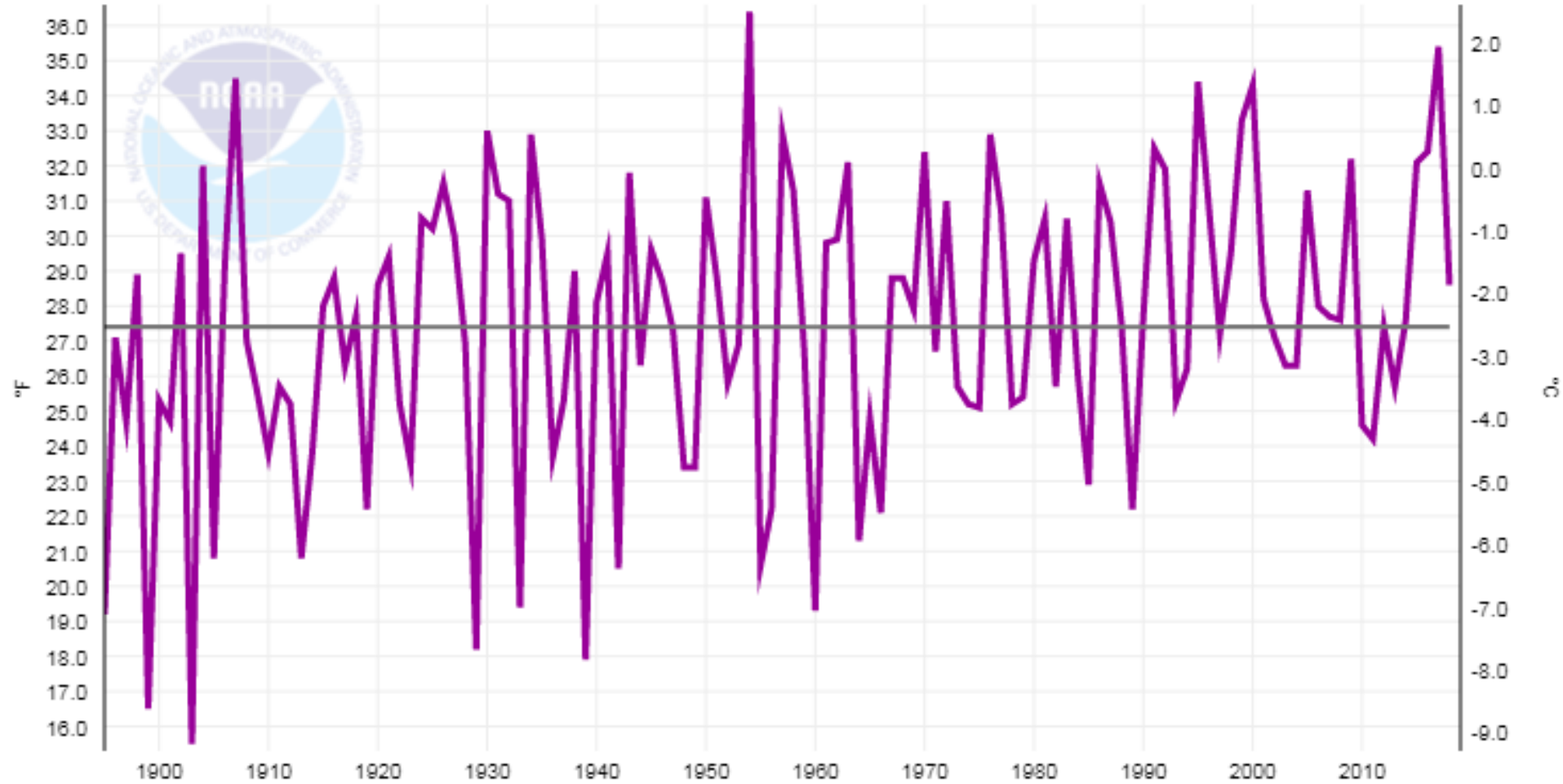
Colorado, Average Temperature, February

28.6.8 F (+1.2)

Warmest since 2014 at 27.6 F

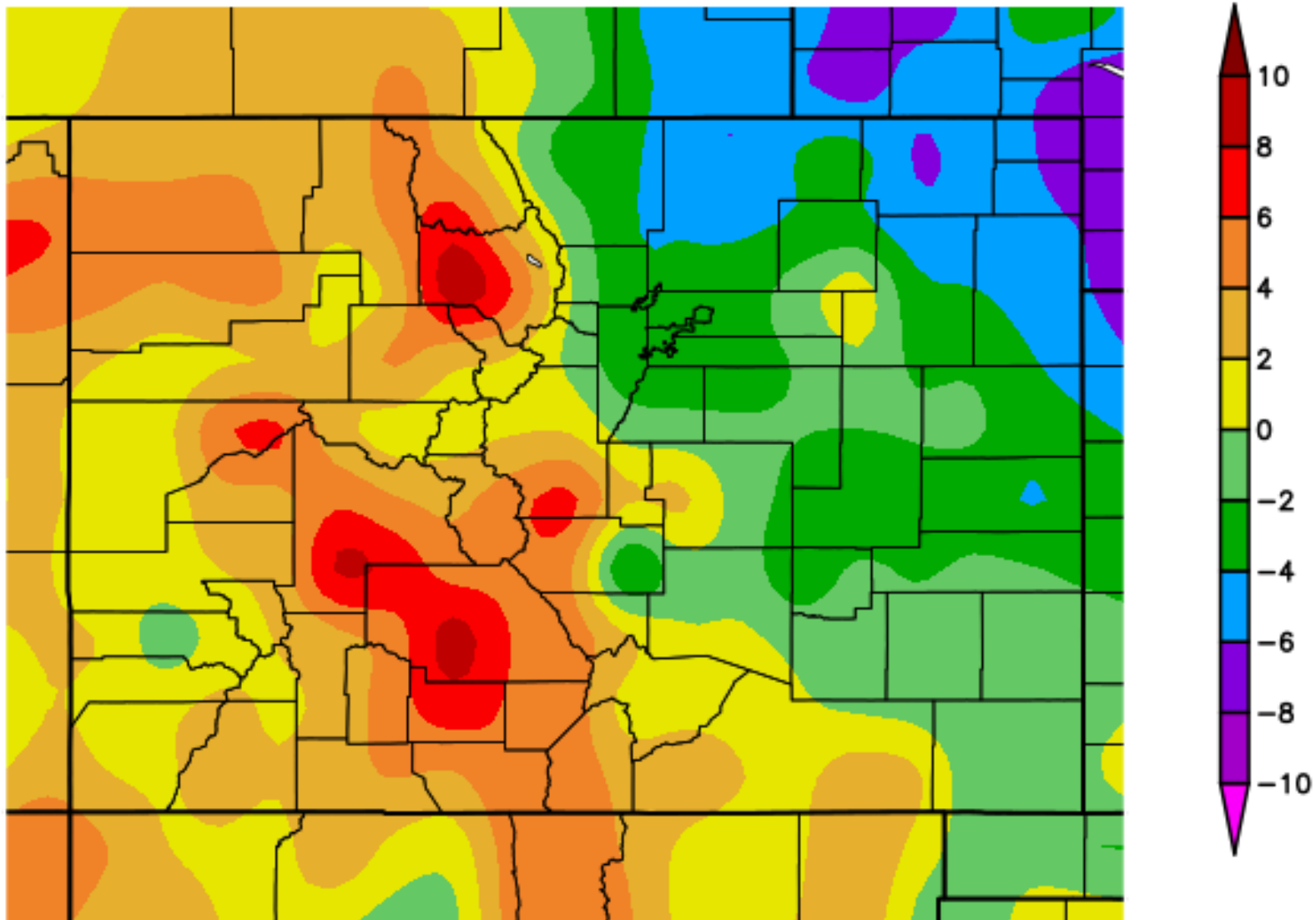
— Avg Temperature

— 1901-2000 Mean: 27.4°F



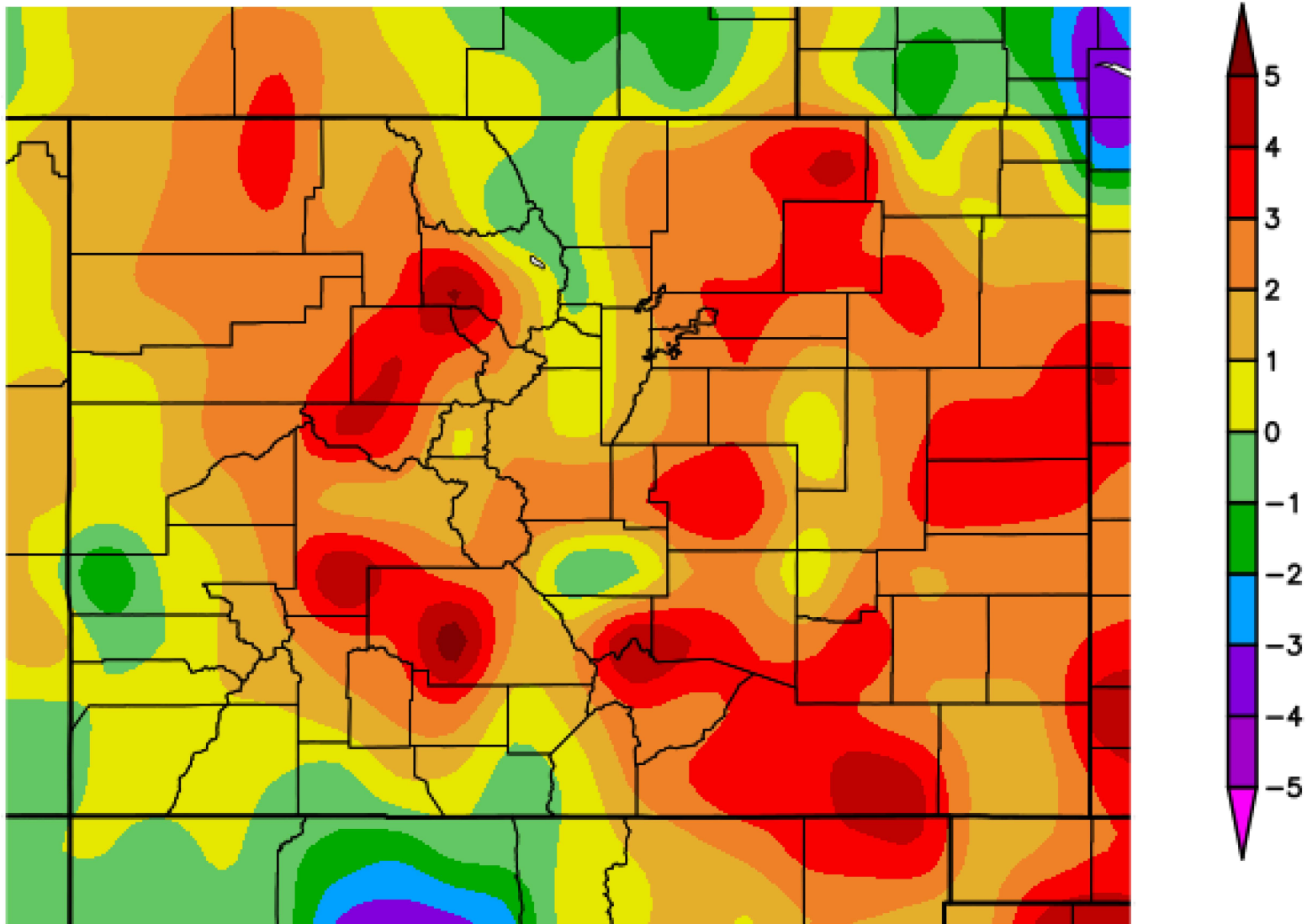
Departure from Normal Temperature (F)

2/1/2018 - 2/28/2018

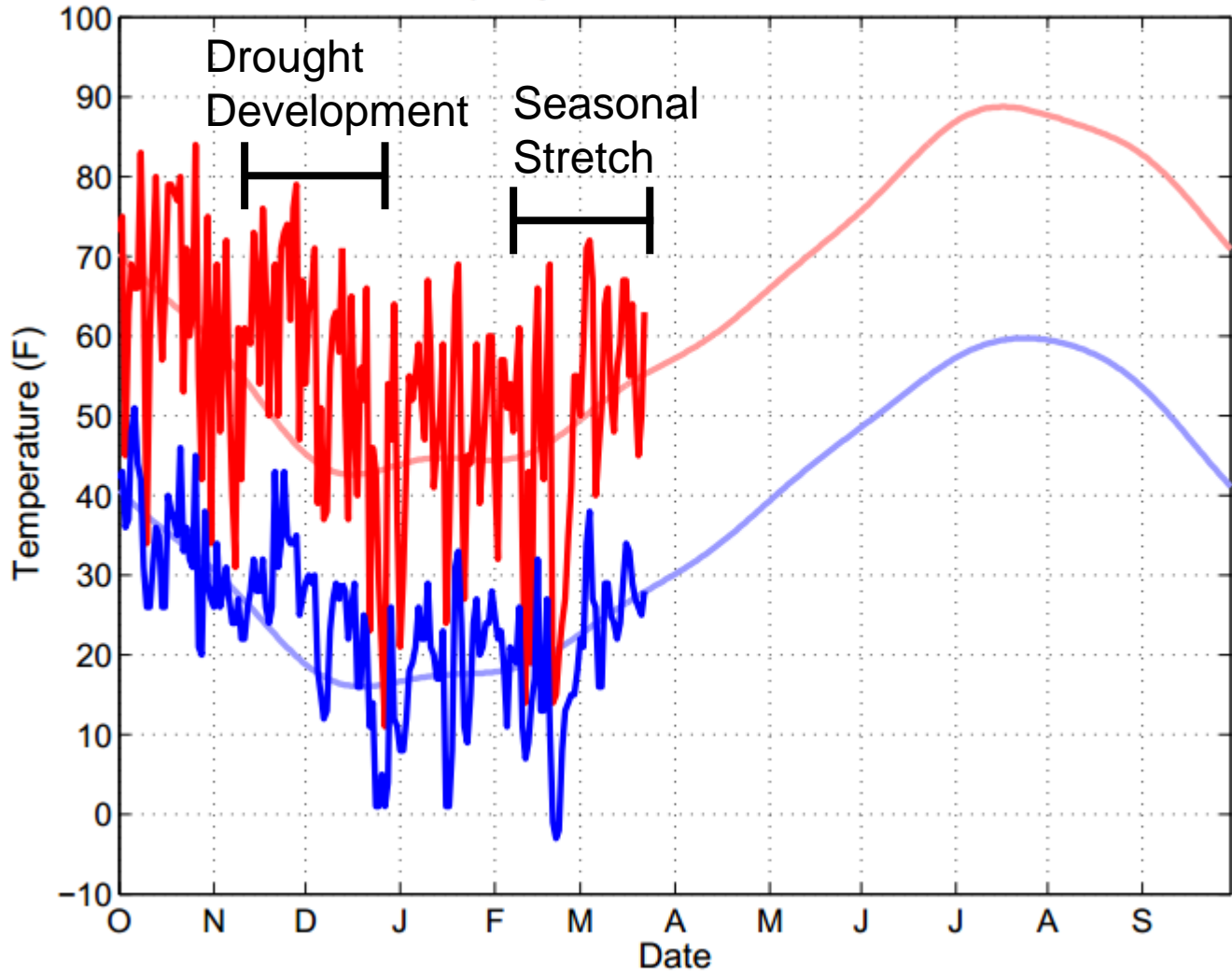


Departure from Normal Temperature (F)

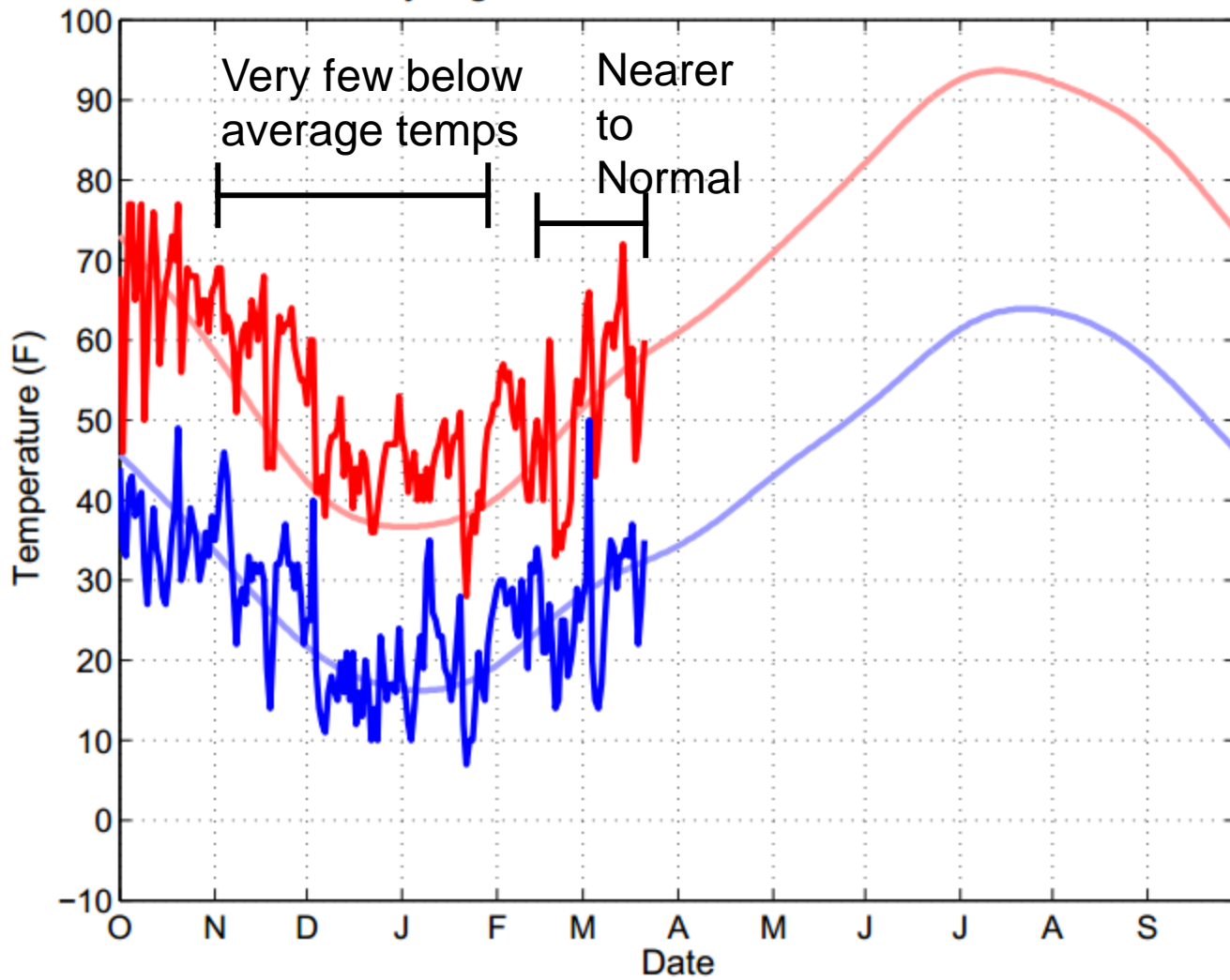
3/1/2018 - 3/21/2018



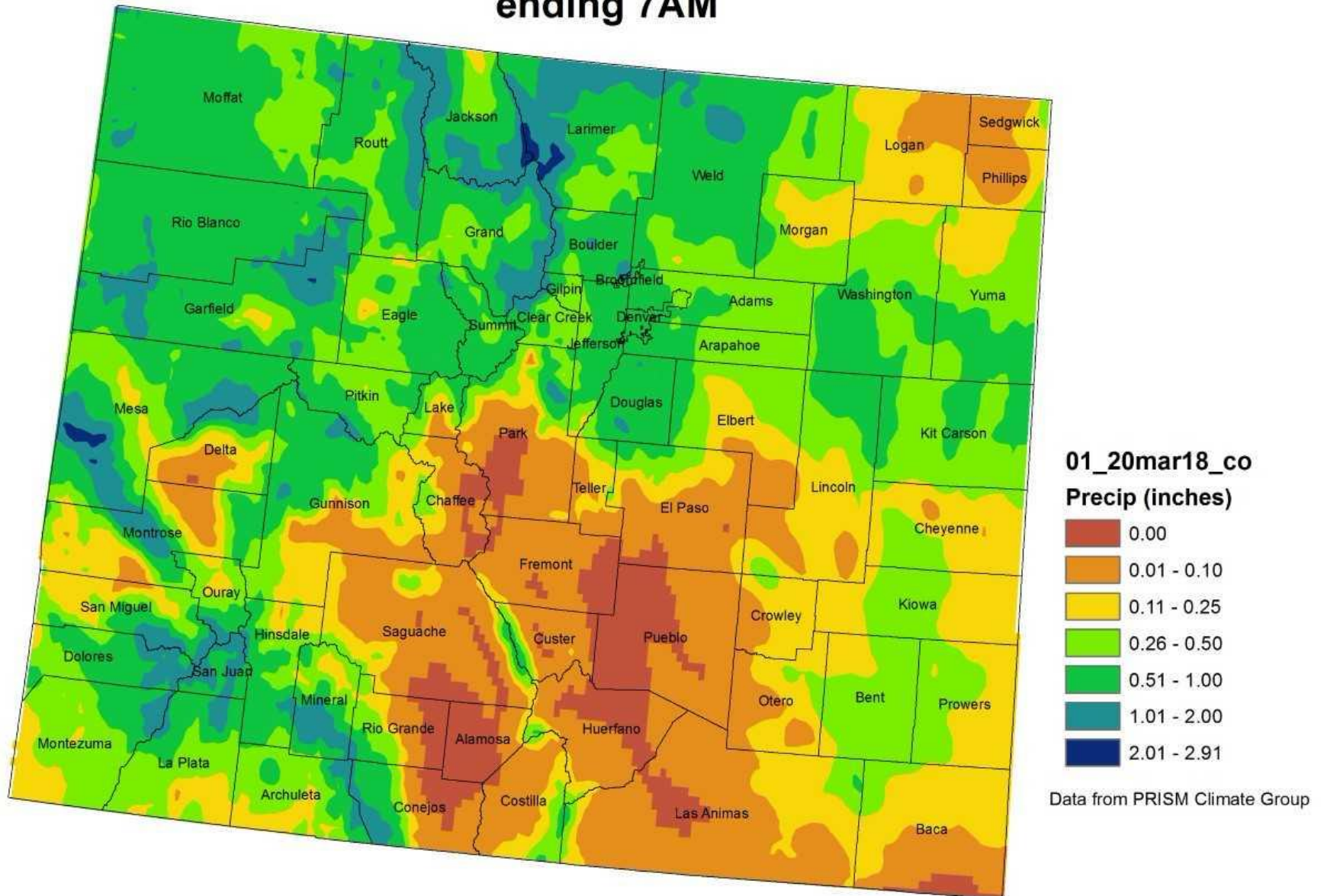
Daily Highs and Lows for Denver



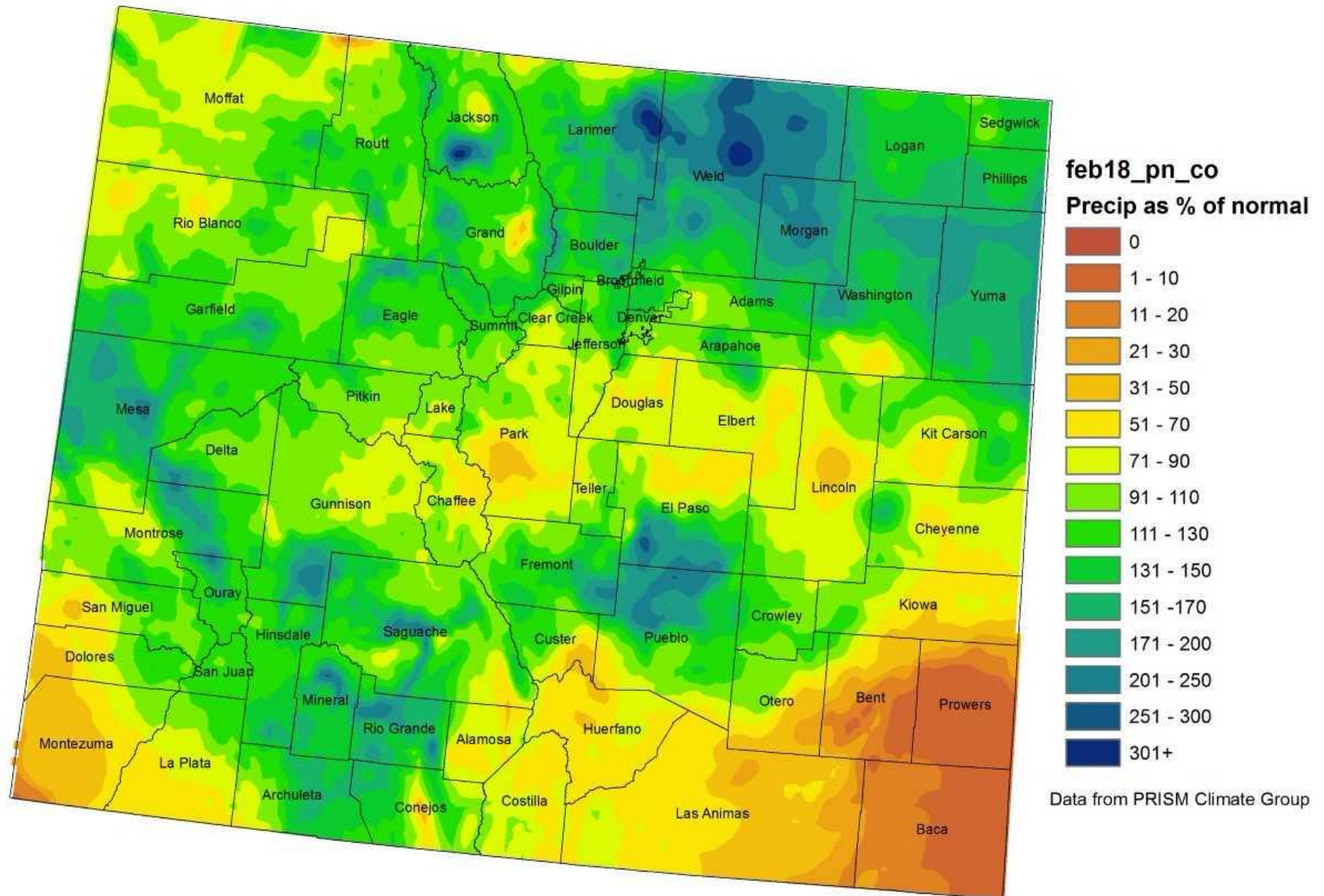
Daily Highs and Lows for Grand Junction



Colorado Month to Date Precipitation 1 - 20 March 2018 ending 7AM



Colorado February 2018 Precipitation as a Percentage of Normal



1.10" (+0.01")

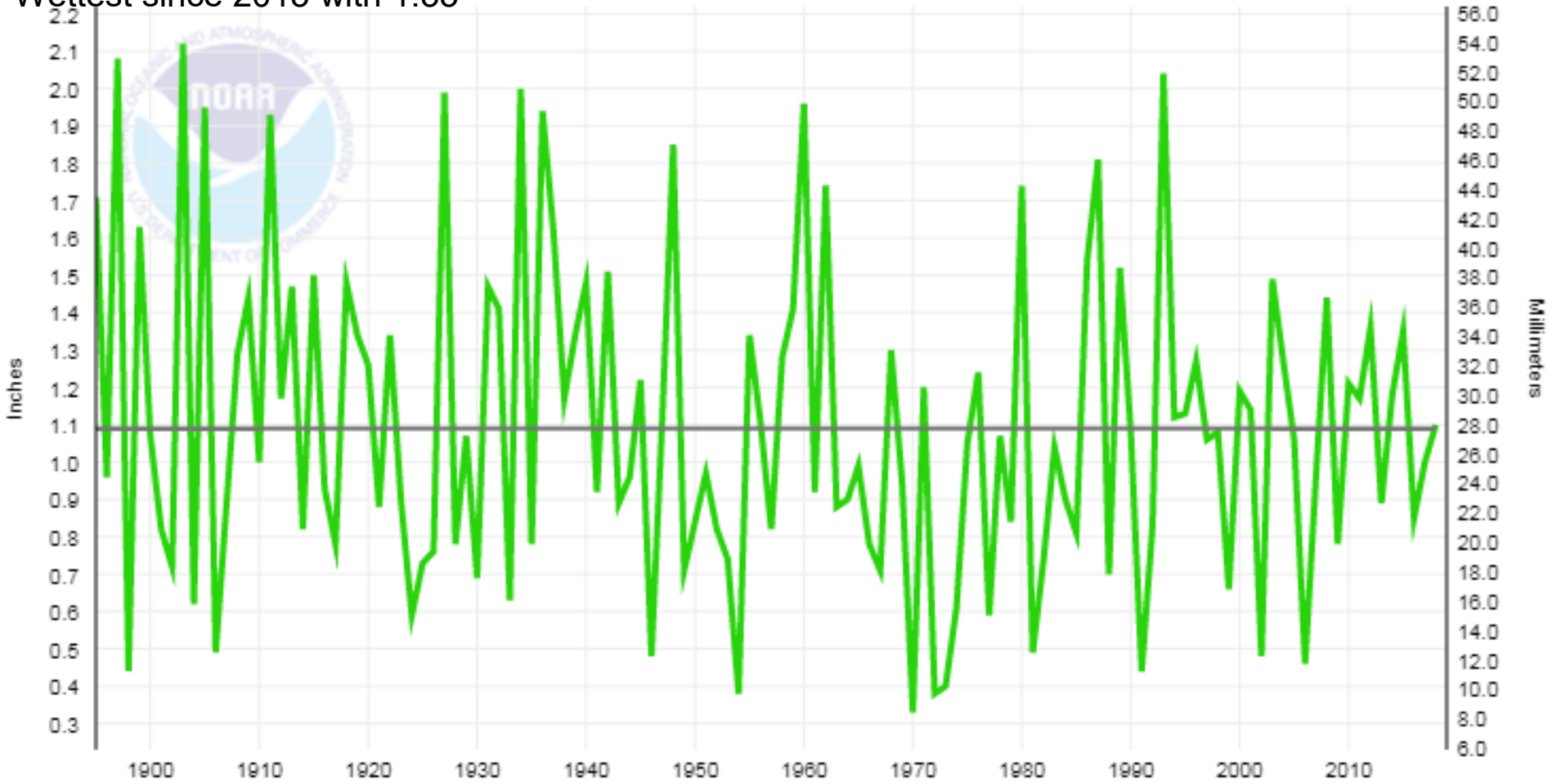
69th driest on Record 1895-2018

Wettest since 2015 with 1.35"

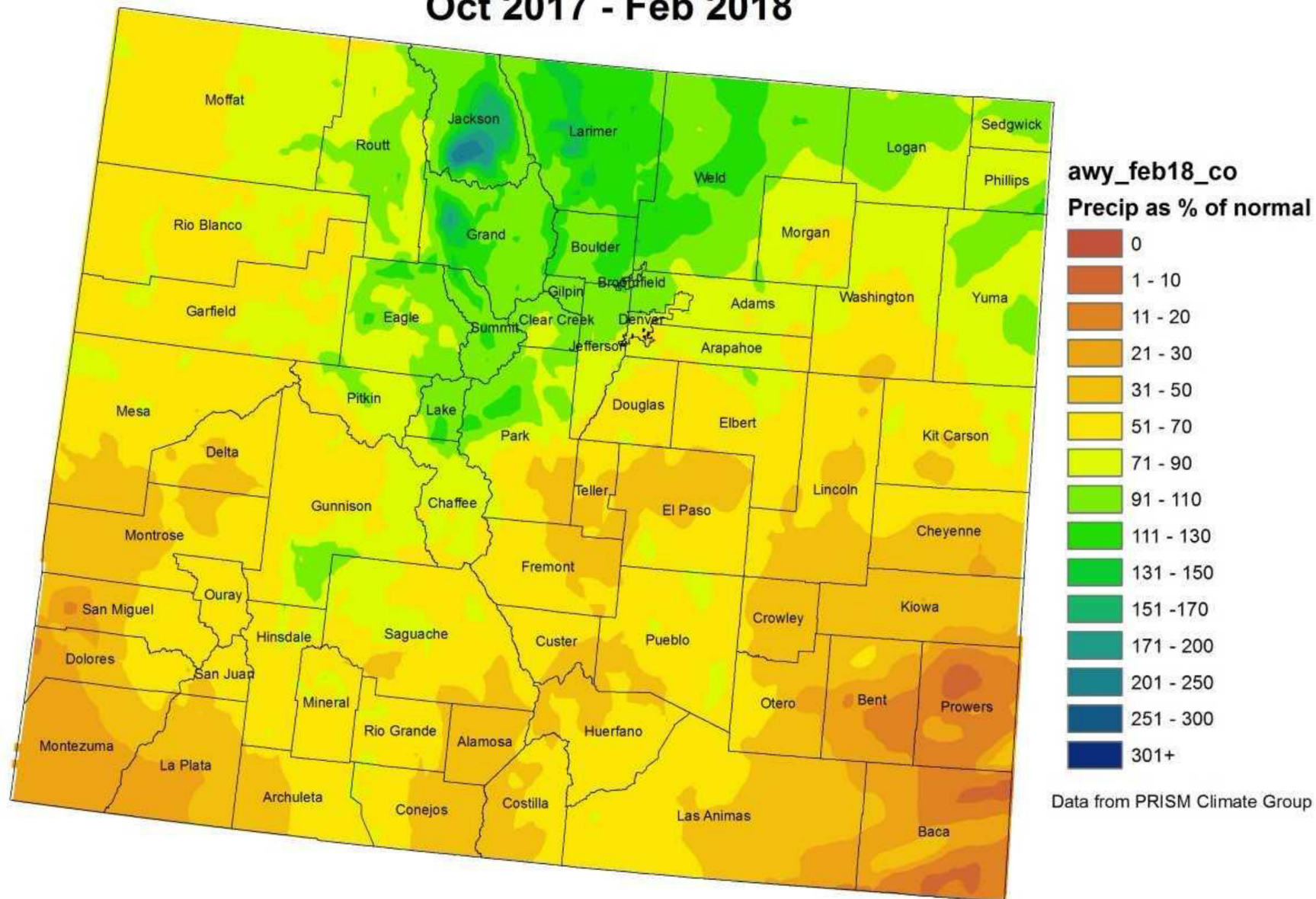
Colorado, Precipitation, February

— Precip

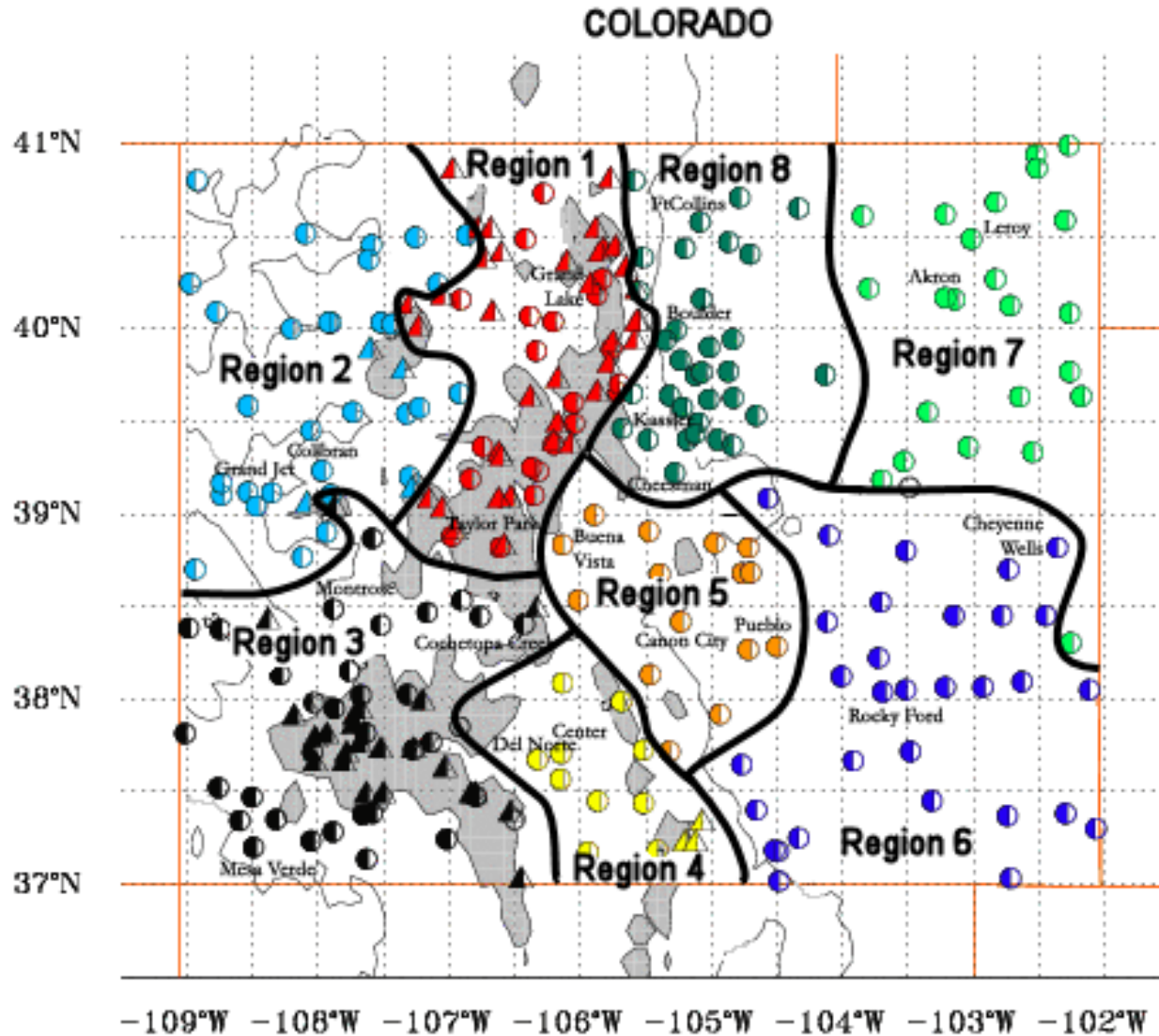
— 1901-2000 Mean: 1.09"



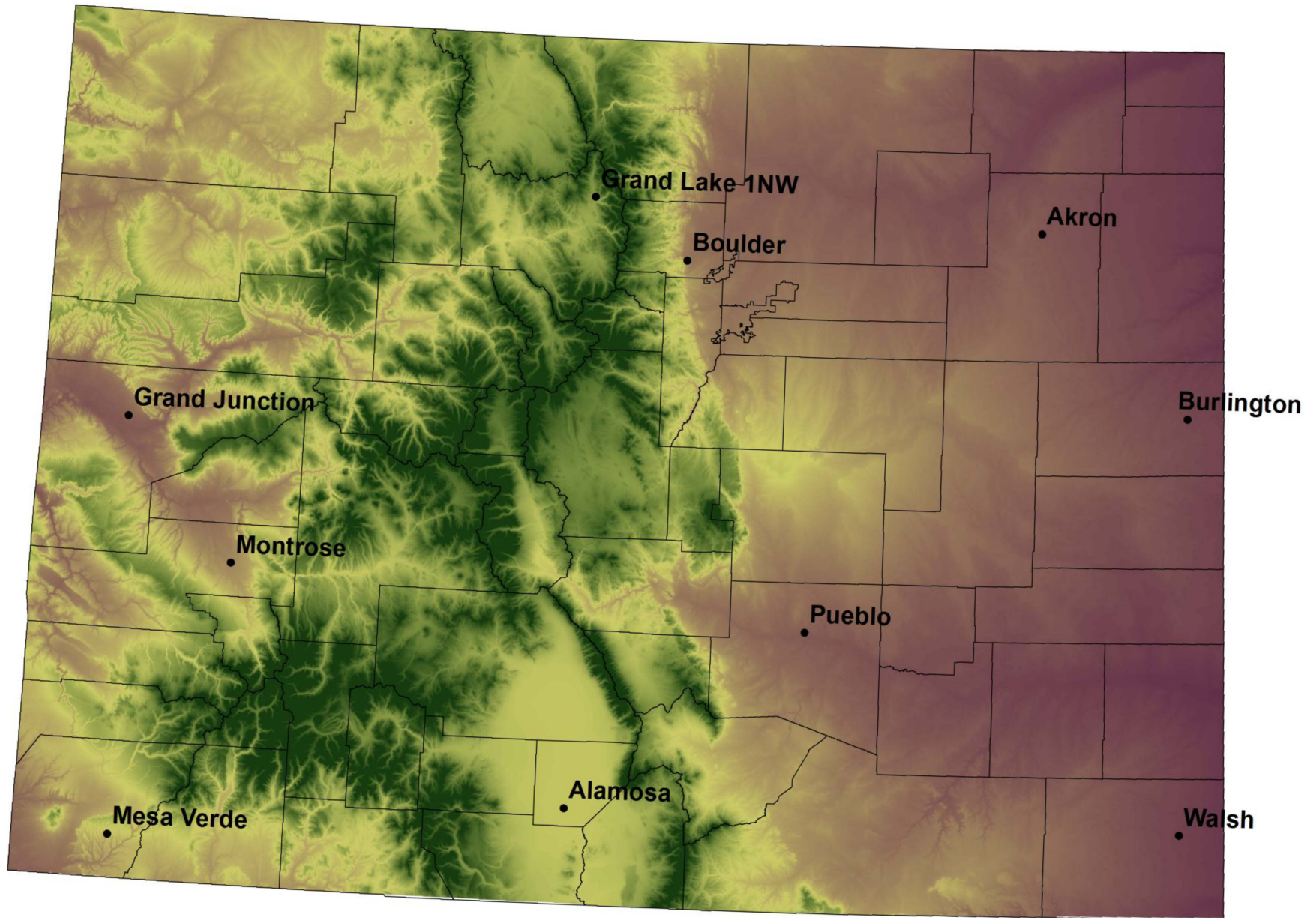
Colorado Water Year 2018 Precipitation as a Percentage of Normal Oct 2017 - Feb 2018



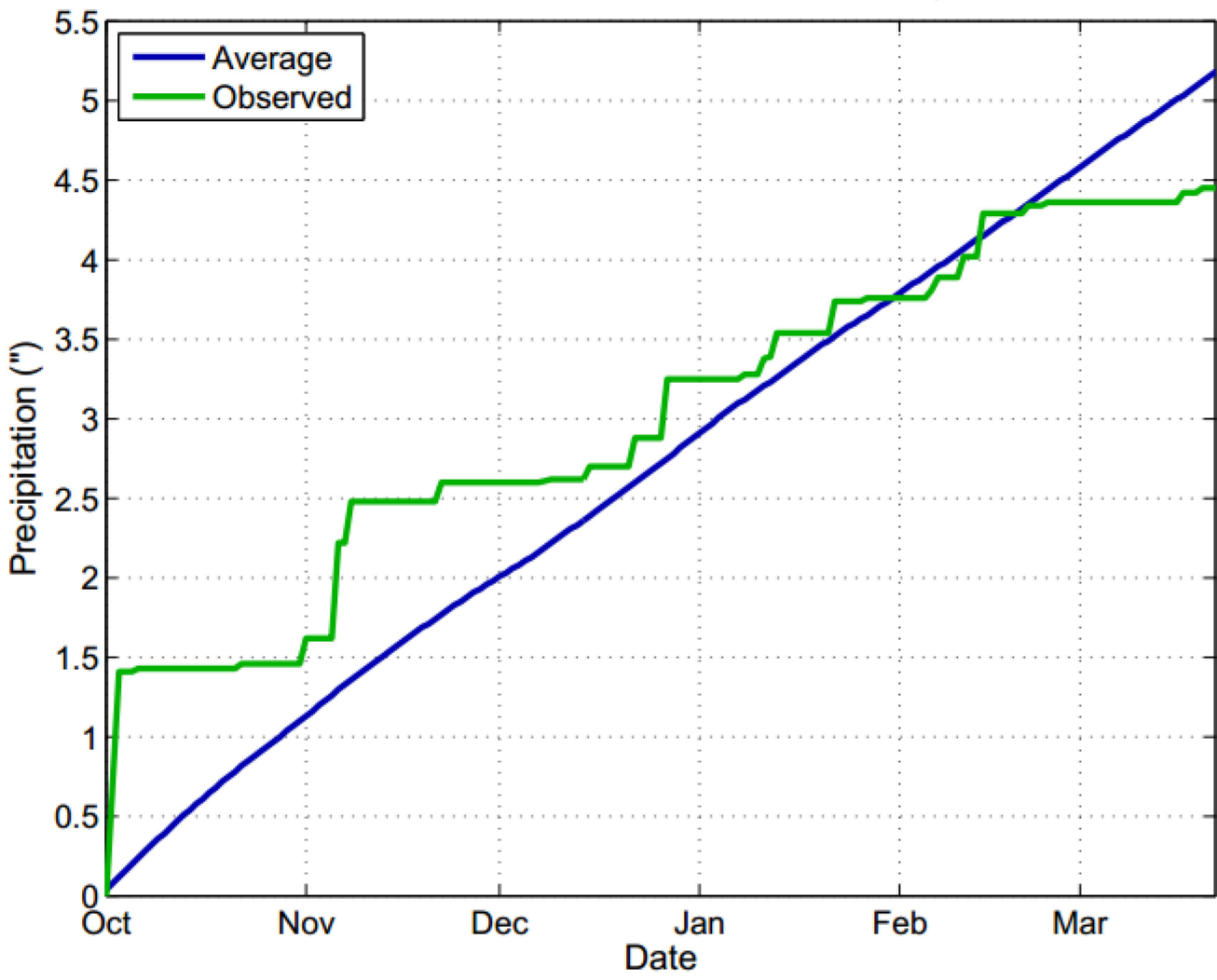
Climate divisions defined by Dr. Klaus Wolter of NOAA's Climate Diagnostic Center in Boulder, CO



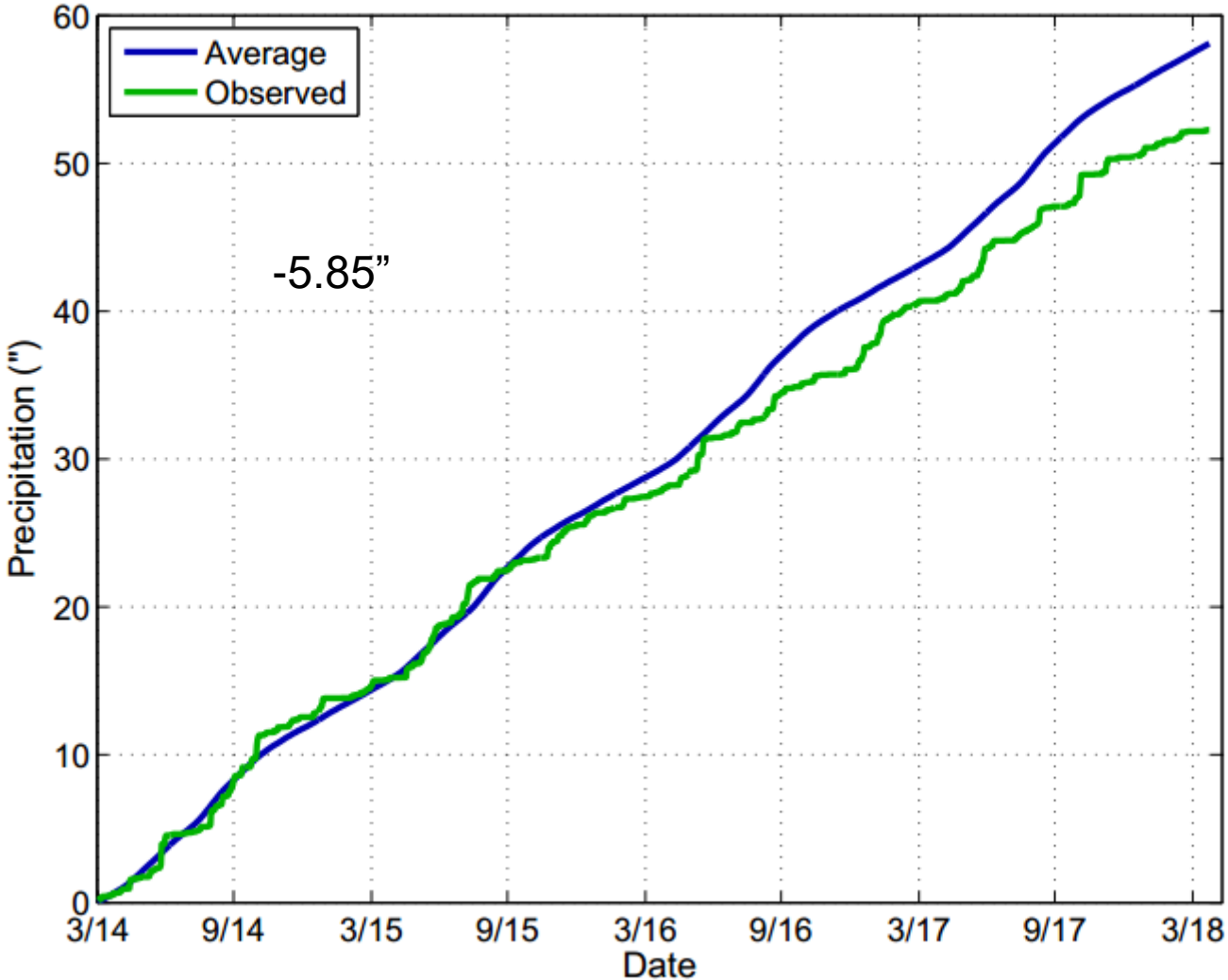
NWS Cooperative Stations for WATF



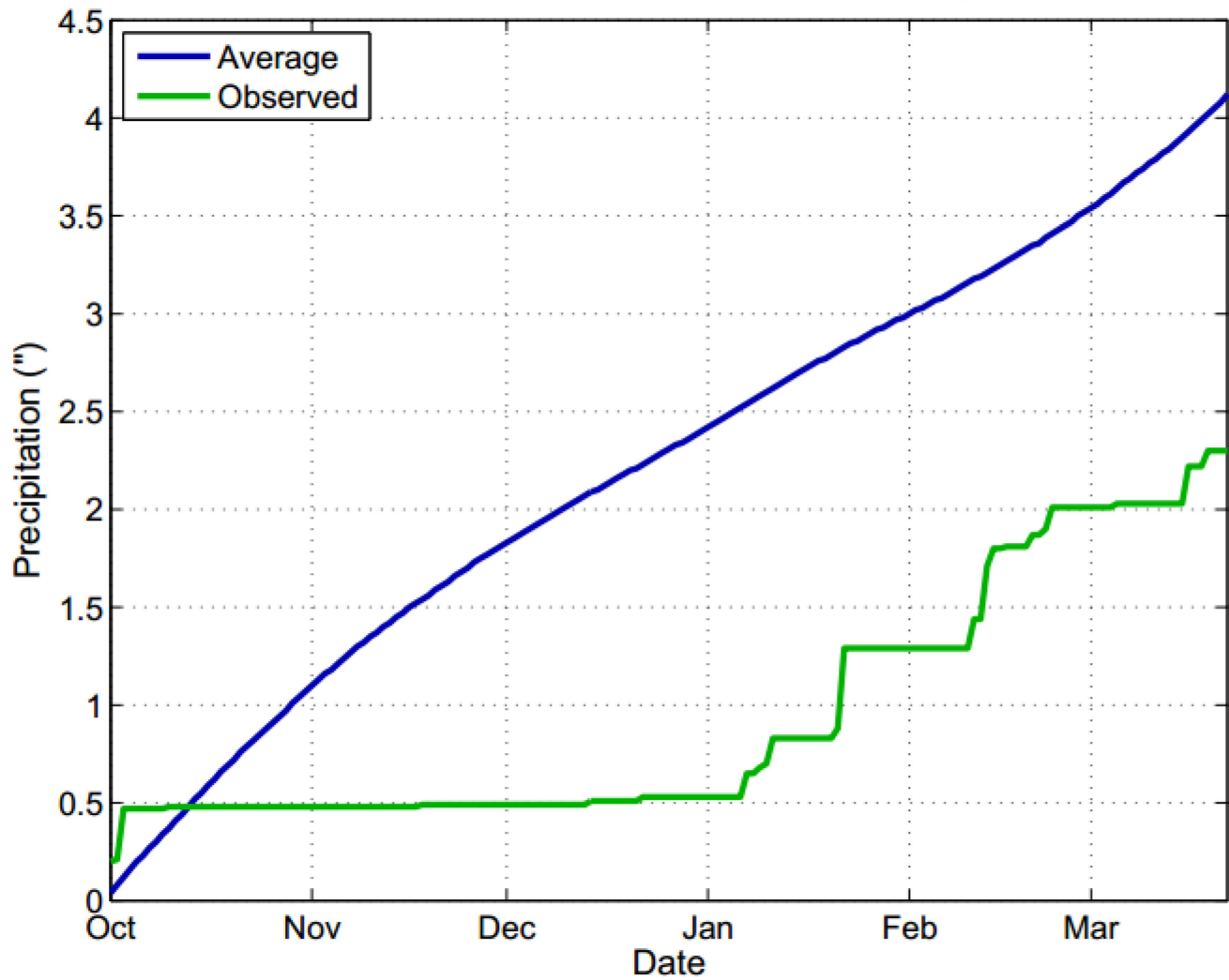
Water Year Accumulation for Grand Lake, CO



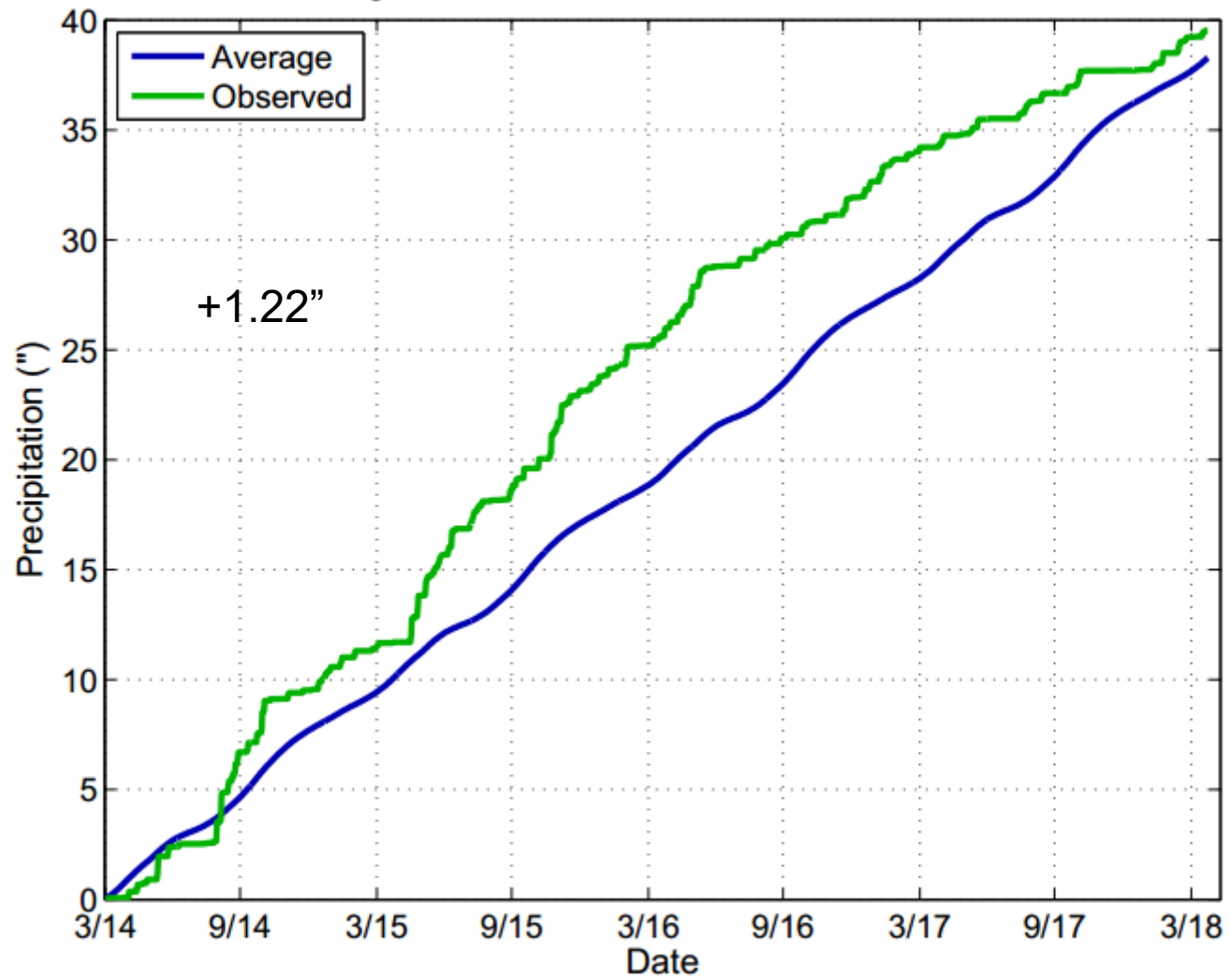
Long Term Accumulation for Grand Lake, CO



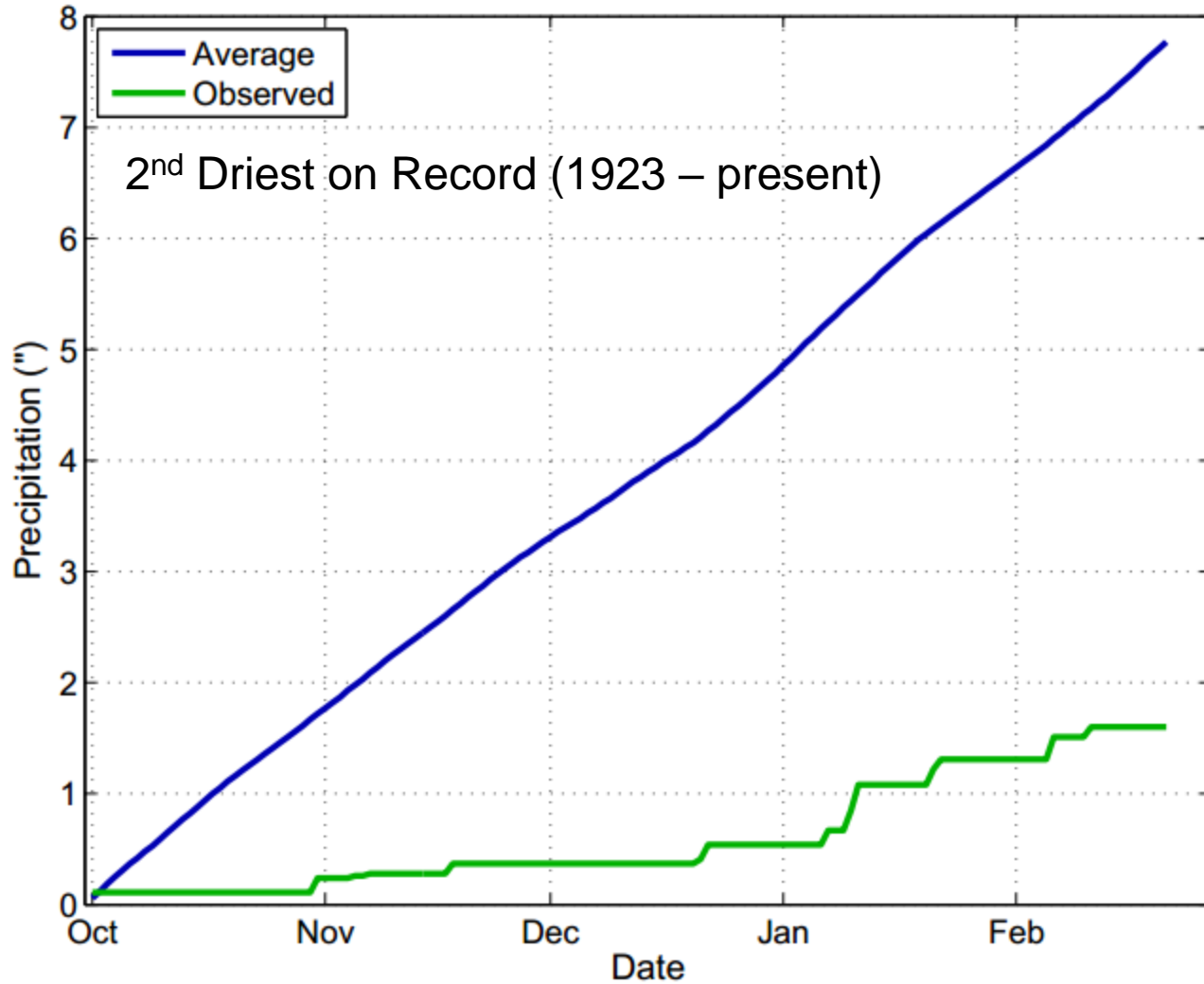
Water Year Accumulation for Grand Junction, CO



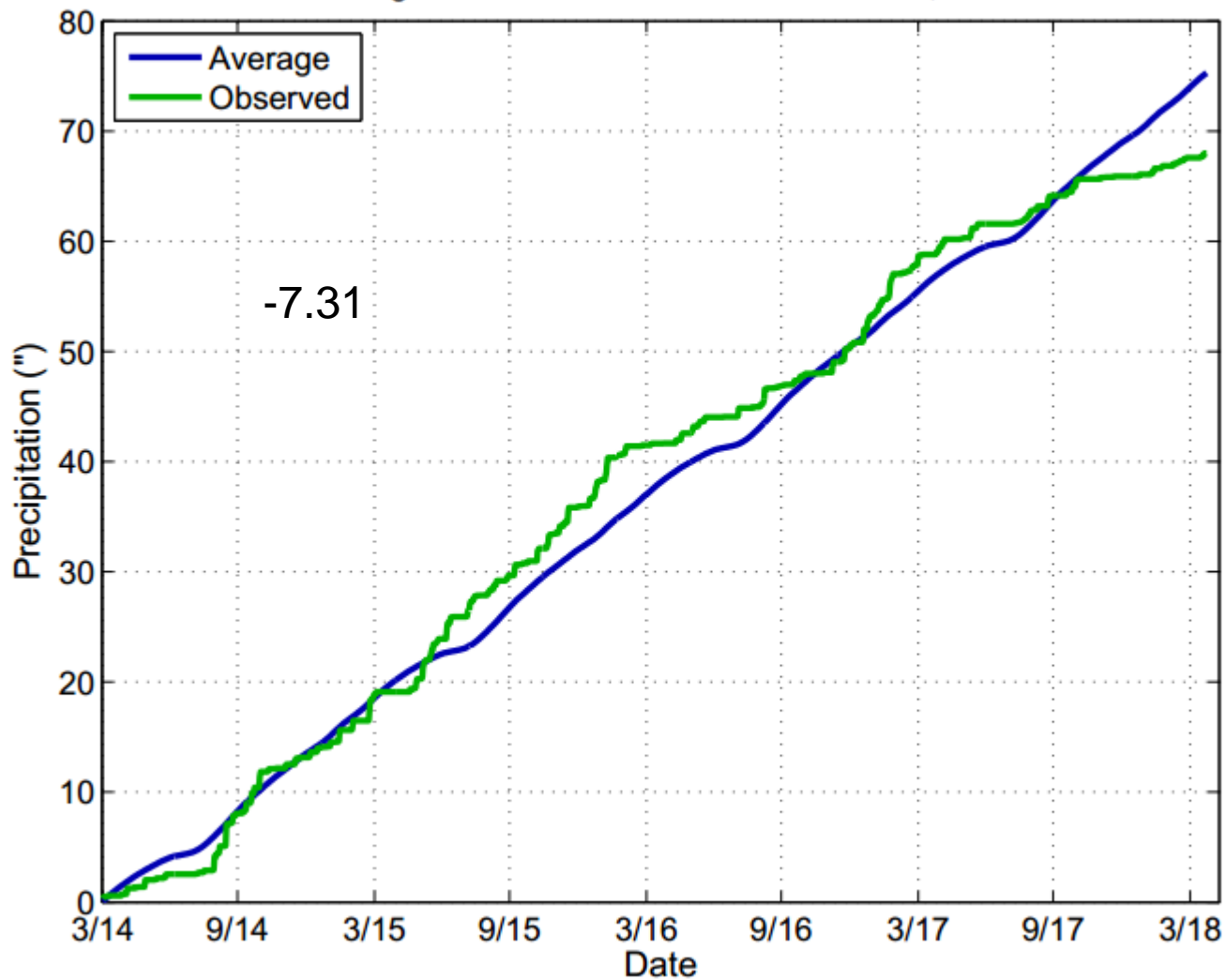
Long Term Accumulation for Grand Junction, CO



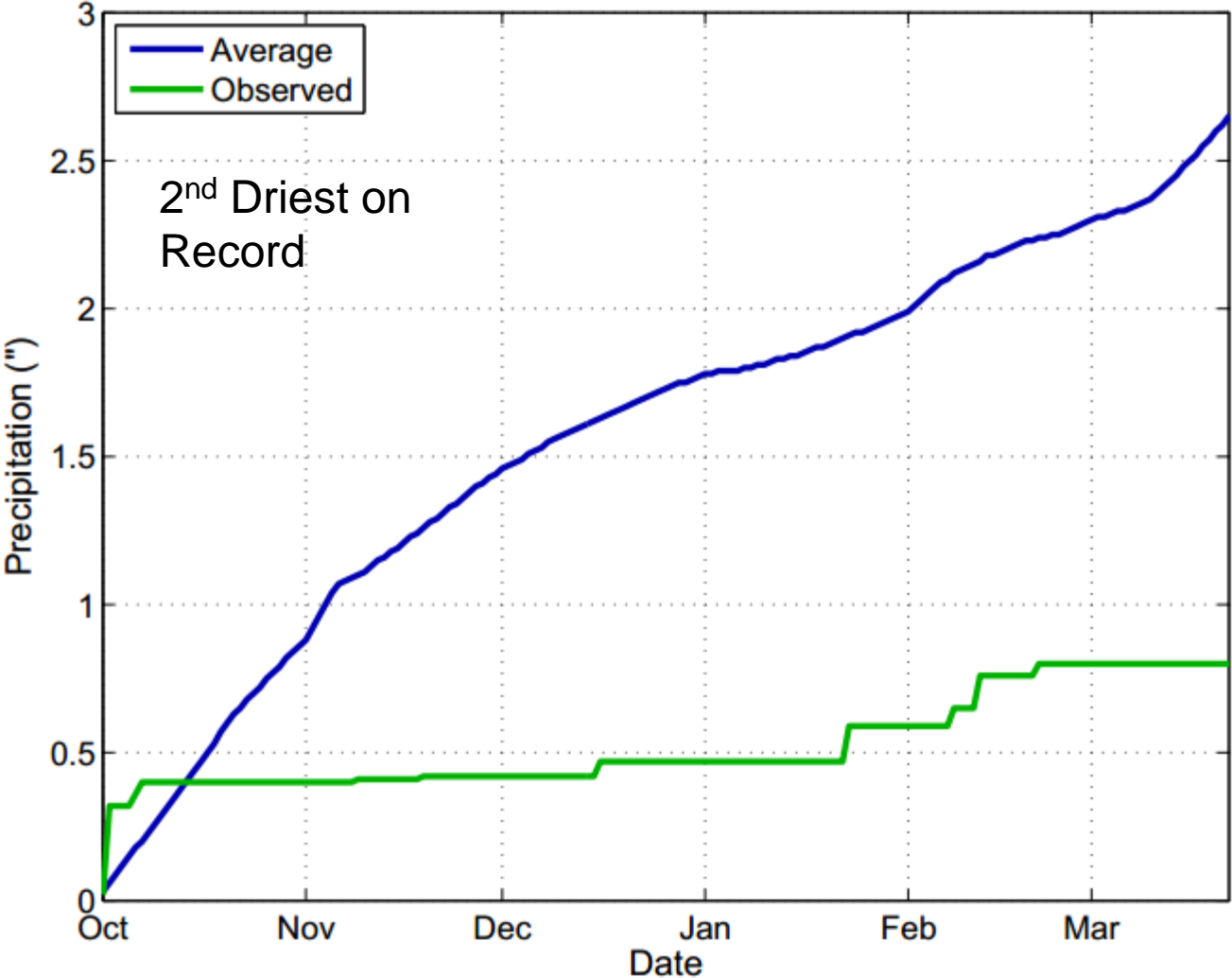
Water Year Accumulation for Mesa Verde, CO



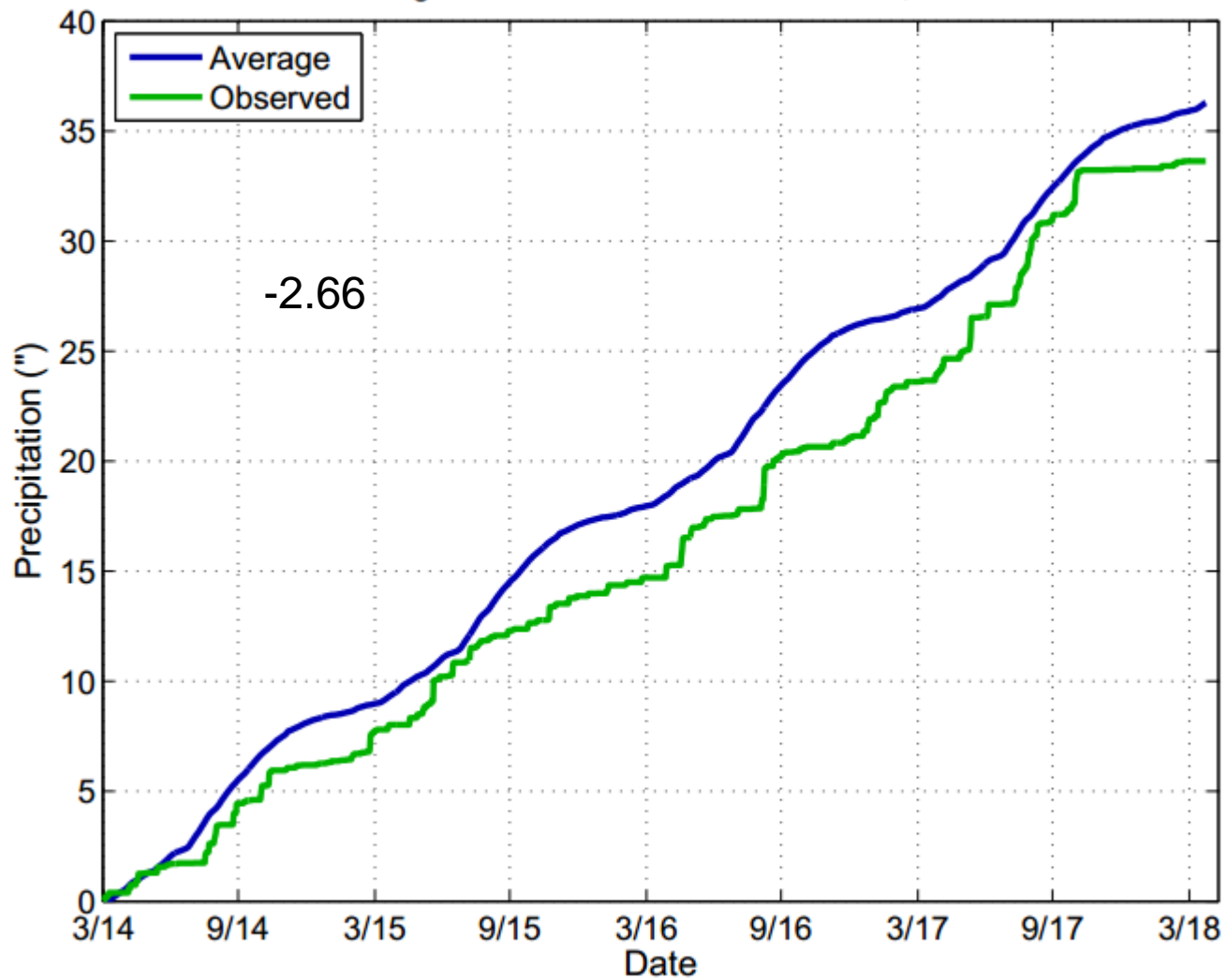
Long Term Accumulation for Mesa Verde, CO



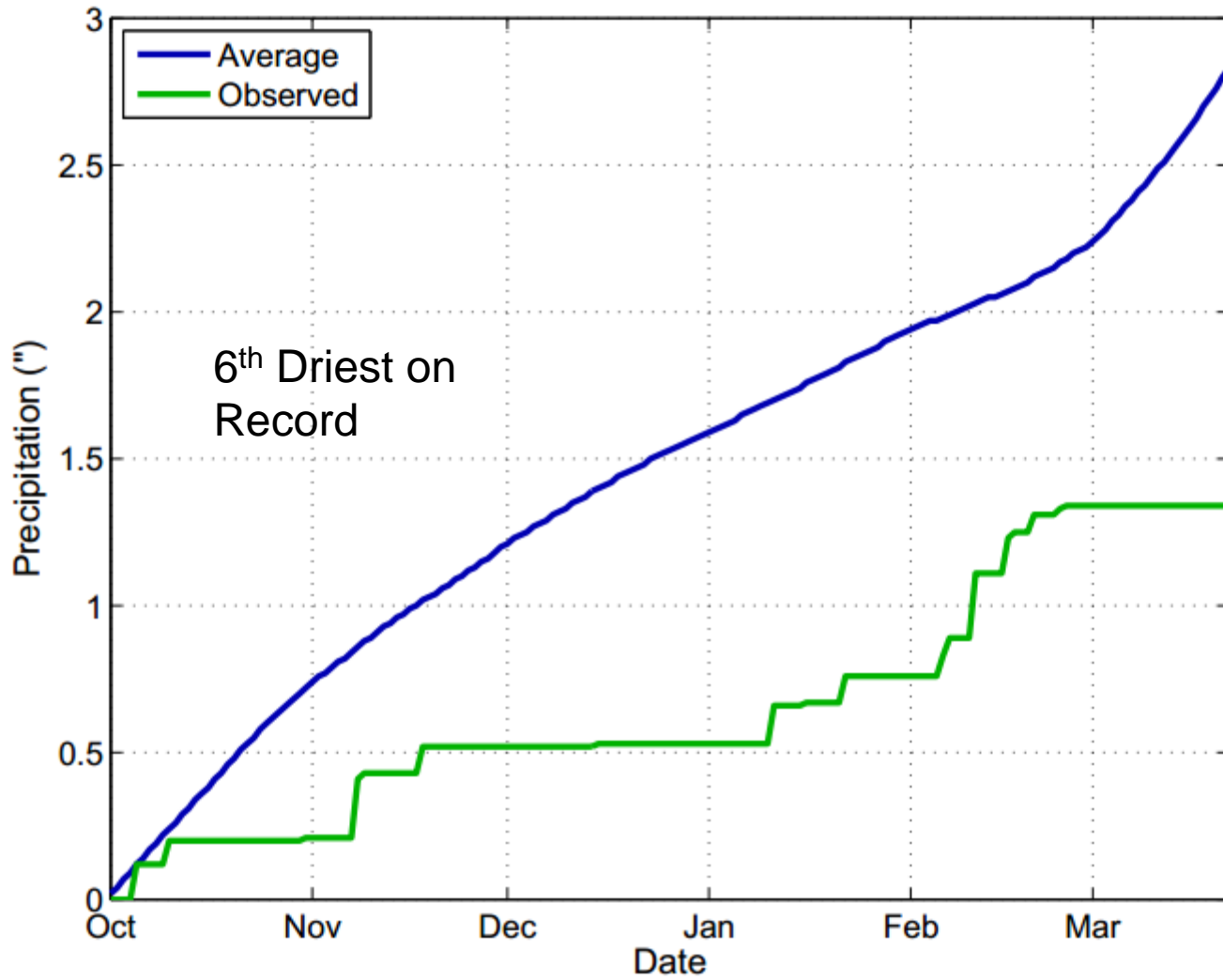
Water Year Accumulation for Alamosa, CO



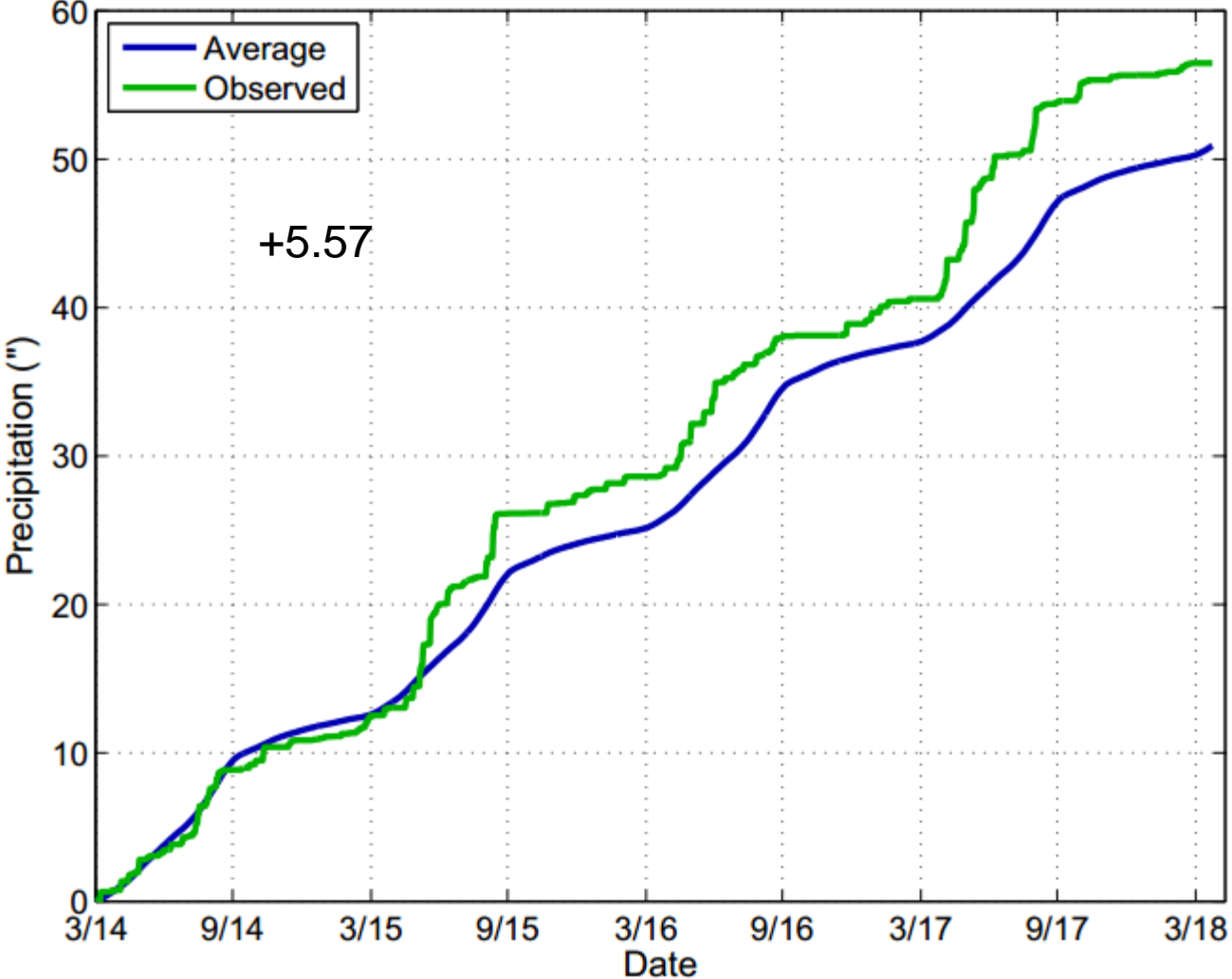
Long Term Accumulation for Alamosa, CO



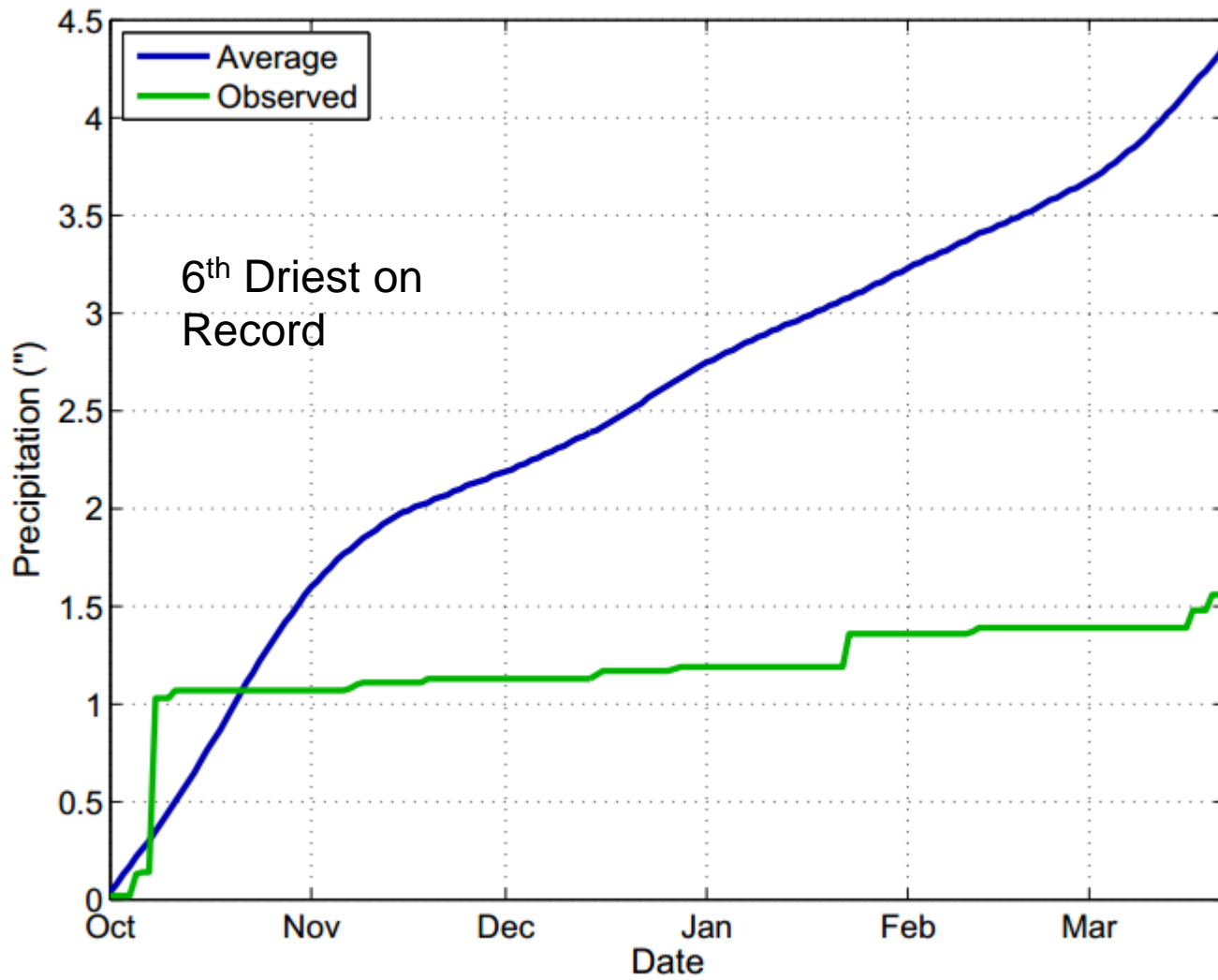
Water Year Accumulation for Pueblo, CO



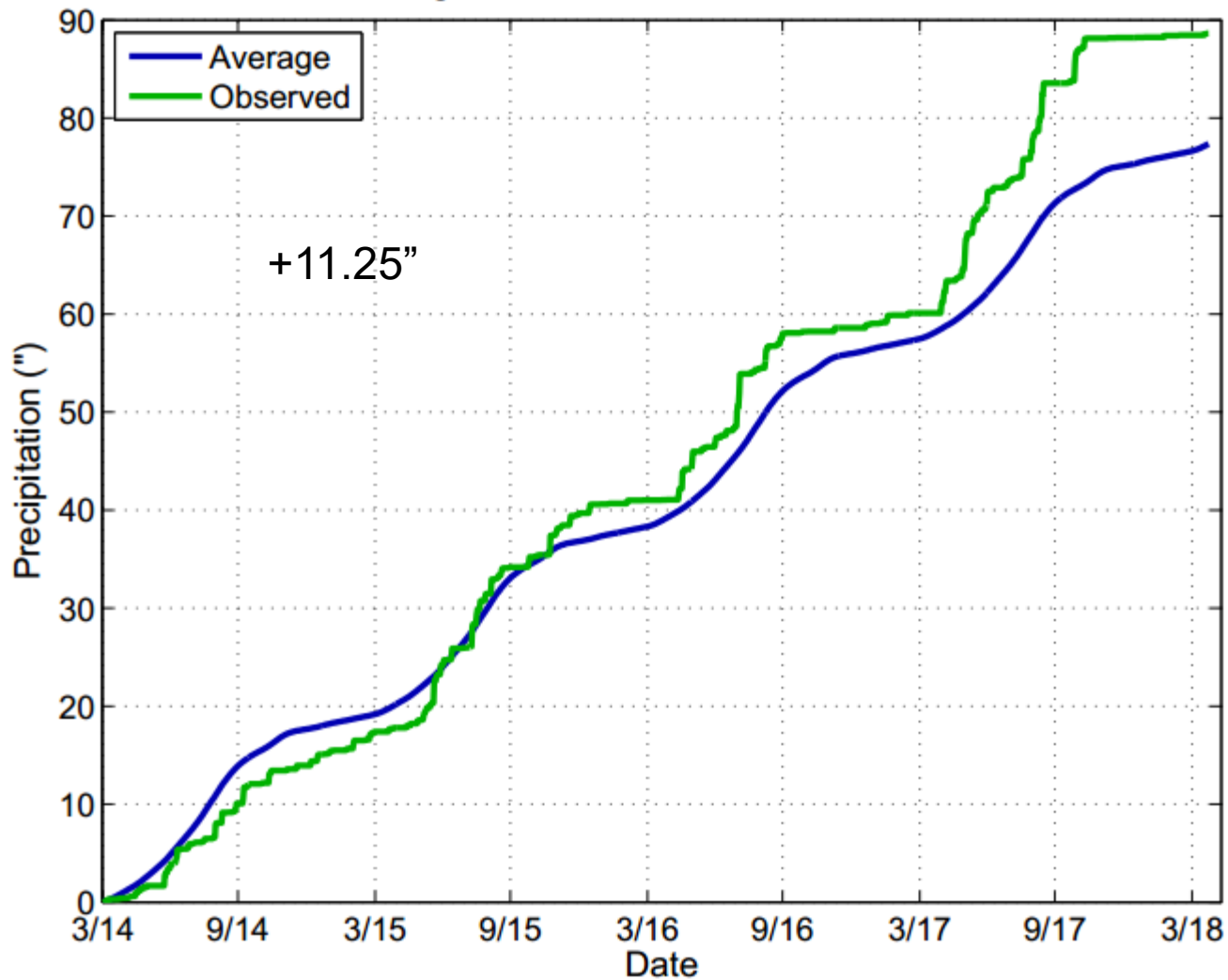
Long Term Accumulation for Pueblo, CO



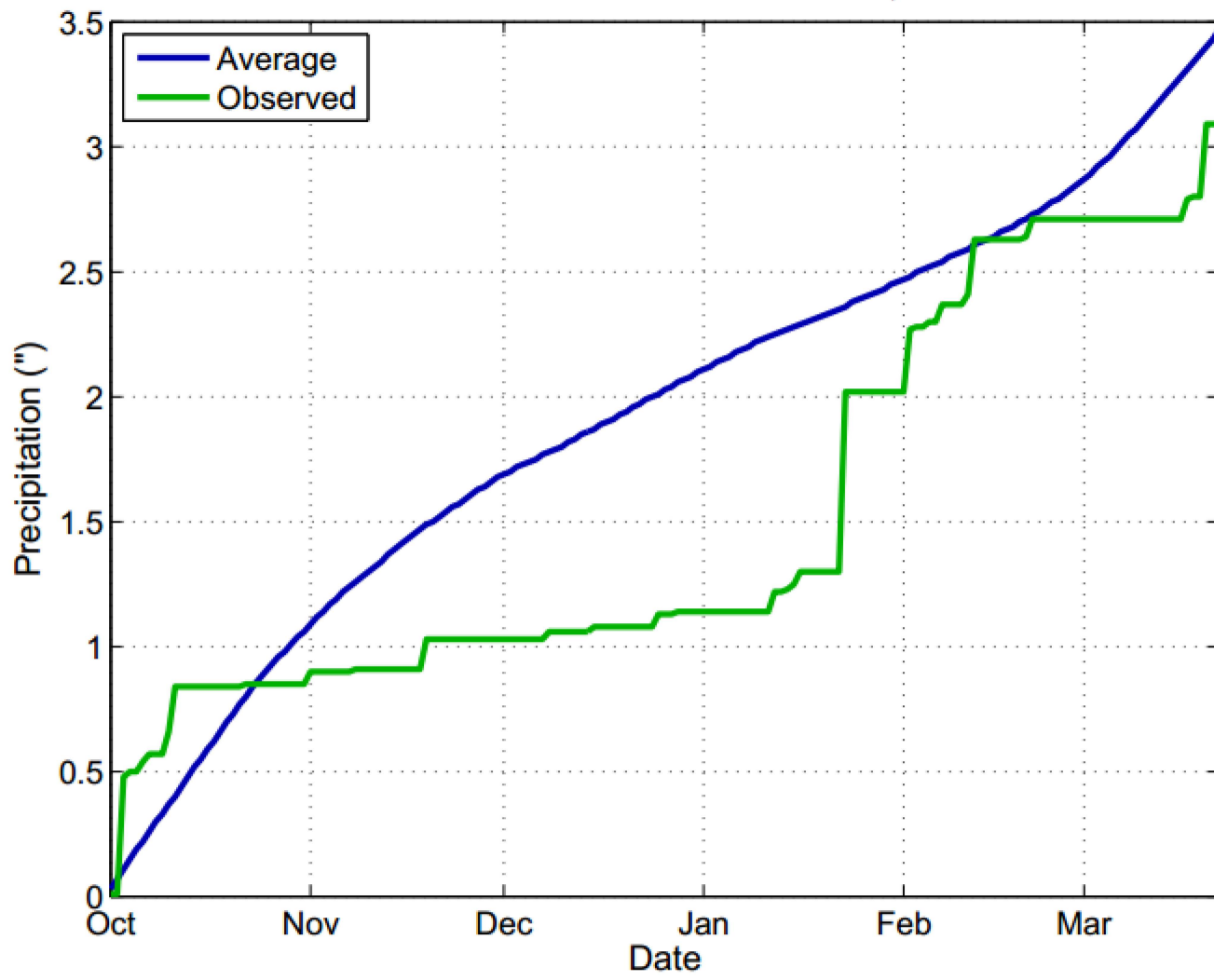
Water Year Accumulation for Walsh, CO



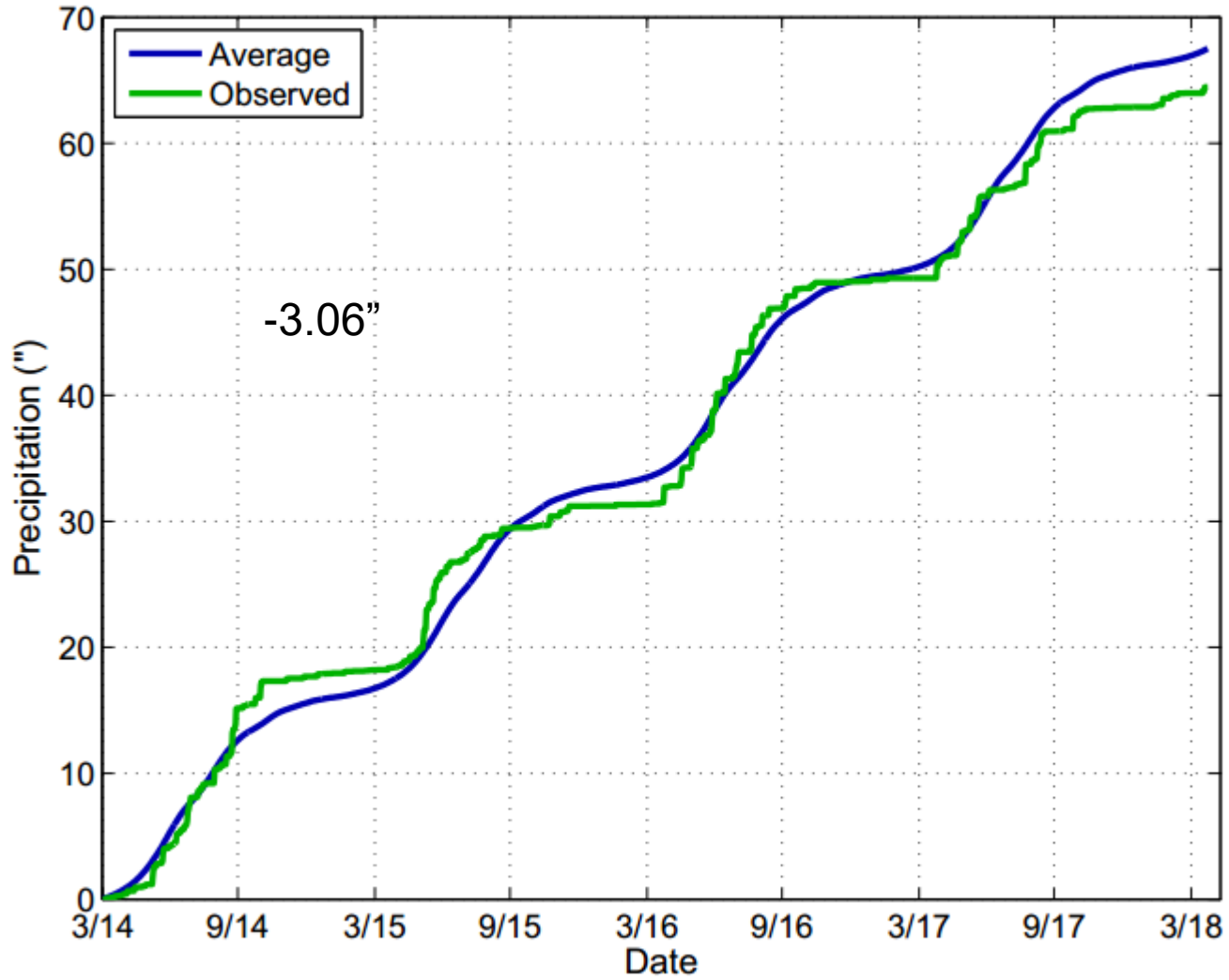
Long Term Accumulation for Walsh, CO



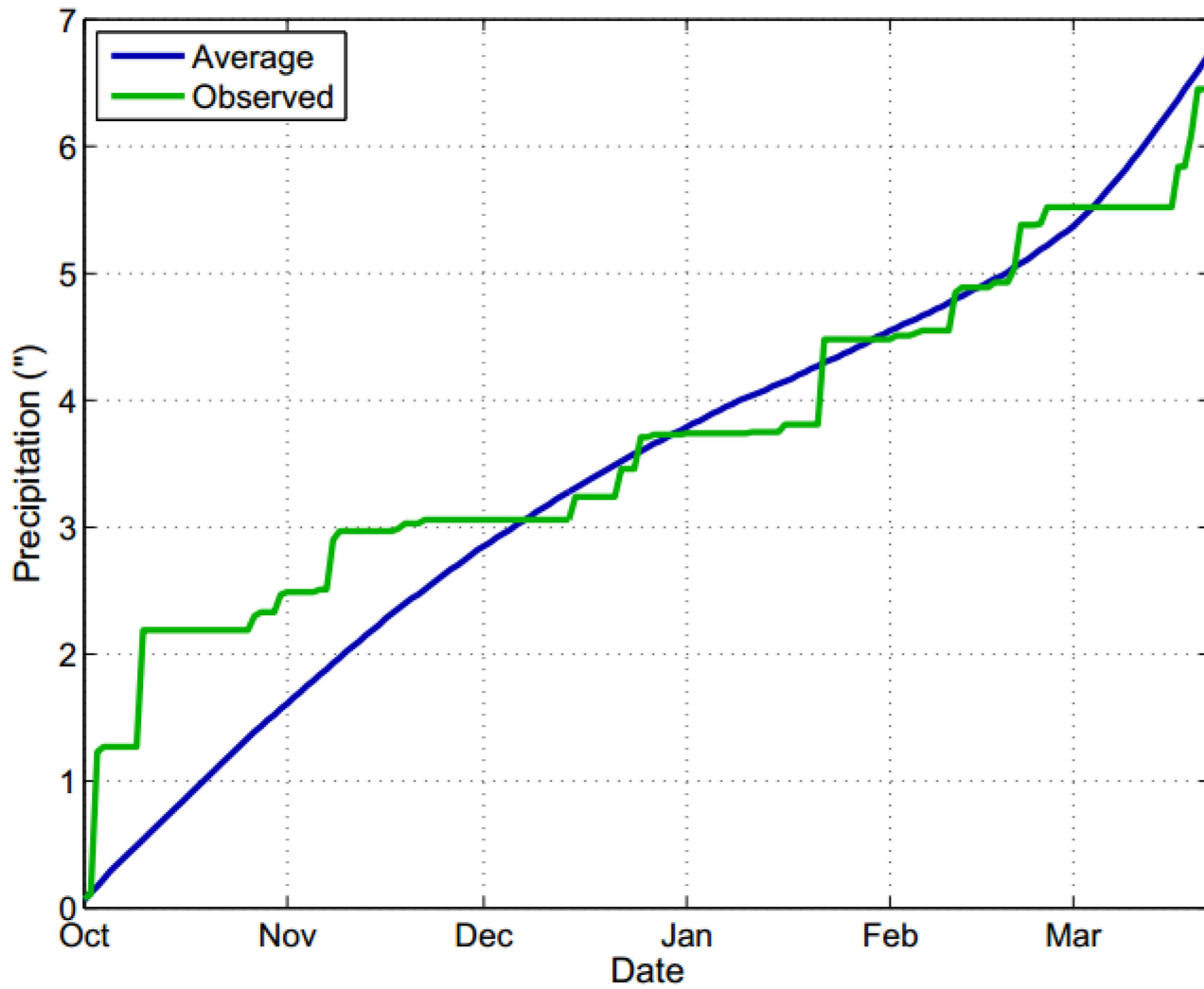
Water Year Accumulation for Akron, CO



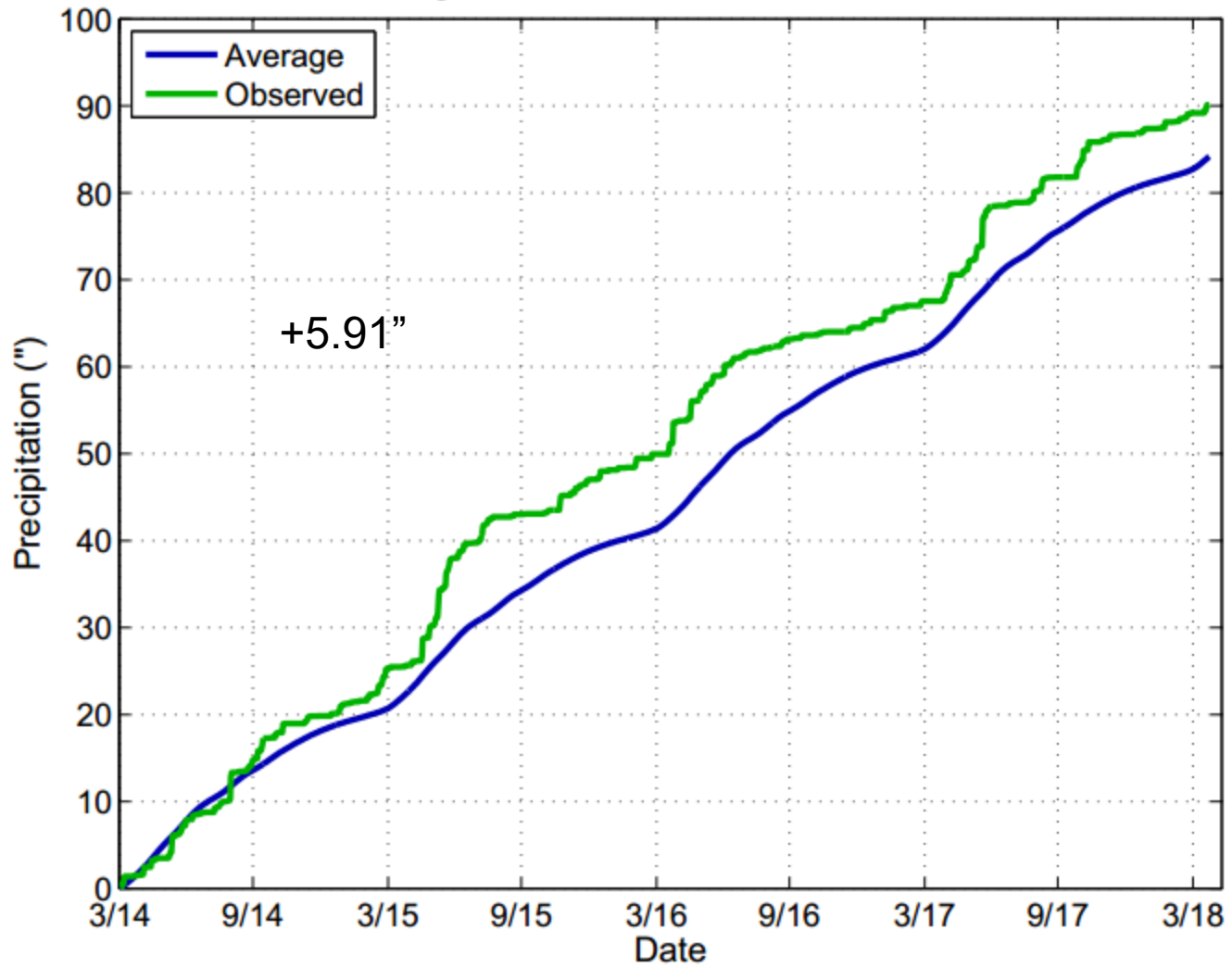
Long Term Accumulation for Akron, CO



Water Year Accumulation for Boulder, CO

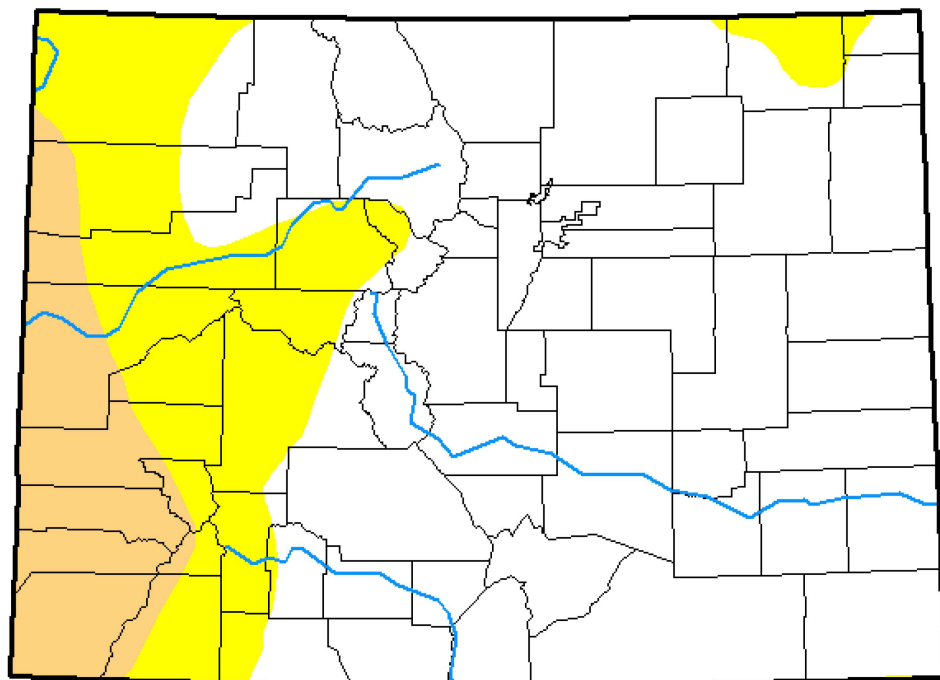


Long Term Accumulation for Boulder, CO



U.S. Drought Monitor Colorado

November 21, 2017
(Released Wednesday, Nov. 22, 2017)
Valid 7 a.m. EST



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	71.23	28.77	9.82	0.00	0.00	0.00
Last Week <i>11-14-2017</i>	71.26	28.74	1.22	0.00	0.00	0.00
3 Months Ago <i>08-22-2017</i>	83.96	16.04	0.00	0.00	0.00	0.00
Start of Calendar Year <i>01-03-2017</i>	31.88	68.12	37.21	2.88	0.00	0.00
Start of Water Year <i>09-26-2017</i>	67.63	32.37	3.72	0.00	0.00	0.00
One Year Ago <i>11-22-2016</i>	1.60	98.40	35.21	2.15	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 Tinker
CPC/NOAA/NWS/NCEP

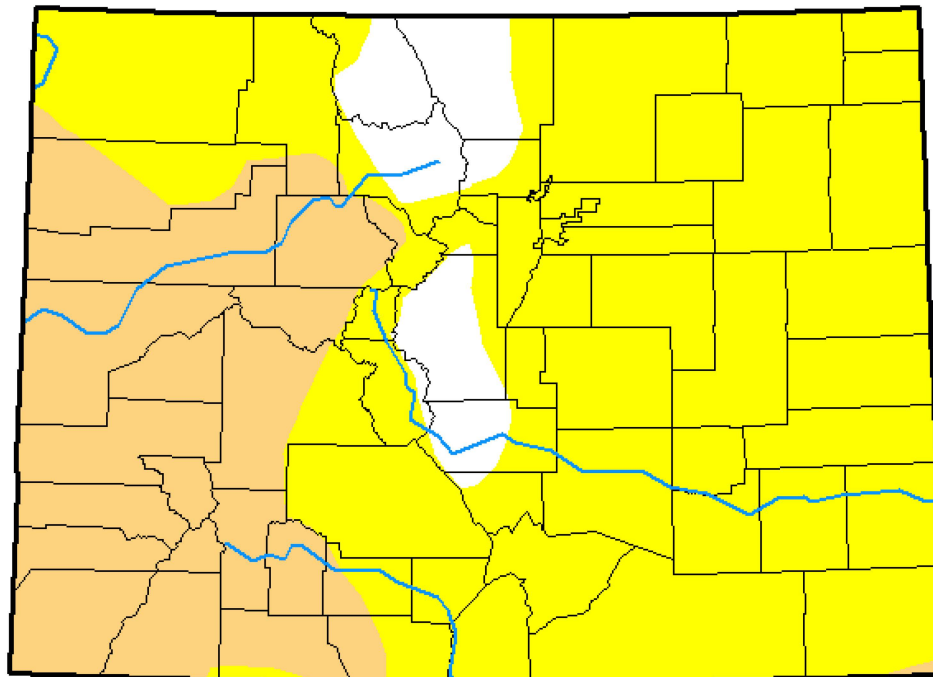


U.S. Drought Monitor Colorado

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
Current	7.17	92.83	27.13	0.00	0.00	0.00
Last Week 12-12-2017	11.25	88.75	16.09	0.00	0.00	0.00
3 Months Ago 09-19-2017	64.79	35.21	3.72	0.00	0.00	0.00
Start of Calendar Year 01-03-2017	31.88	68.12	37.21	2.88	0.00	0.00
Start of Water Year 09-26-2017	67.63	32.37	3.72	0.00	0.00	0.00
One Year Ago 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

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Author:

Jessica Blunden
NCEI/NOAA



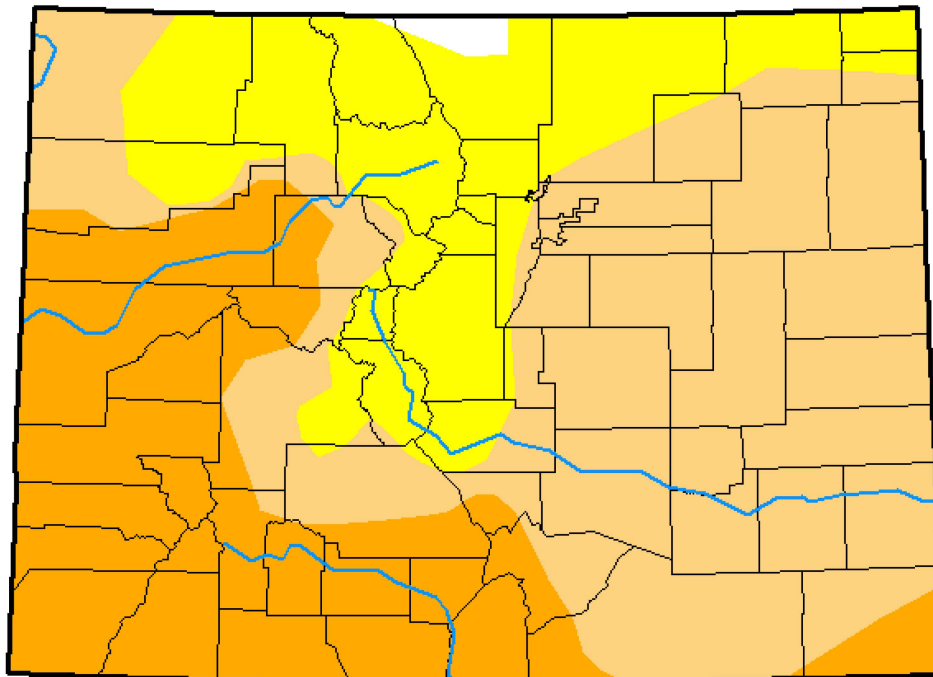
<http://droughtmonitor.unl.edu/>

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
Current	0.59	99.41	75.90	29.21	0.00	0.00
Last Week <i>01-16-2018</i>	0.59	99.41	75.90	23.23	0.00	0.00
3 Months Ago <i>10-24-2017</i>	71.57	28.43	1.12	0.00	0.00	0.00
Start of Calendar Year <i>01-02-2018</i>	6.57	93.43	33.53	7.27	0.00	0.00
Start of Water Year <i>09-26-2017</i>	67.63	32.37	3.72	0.00	0.00	0.00
One Year Ago <i>01-24-2017</i>	44.27	55.73	35.34	0.75	0.00	0.00



Intensity:

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- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

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Author:

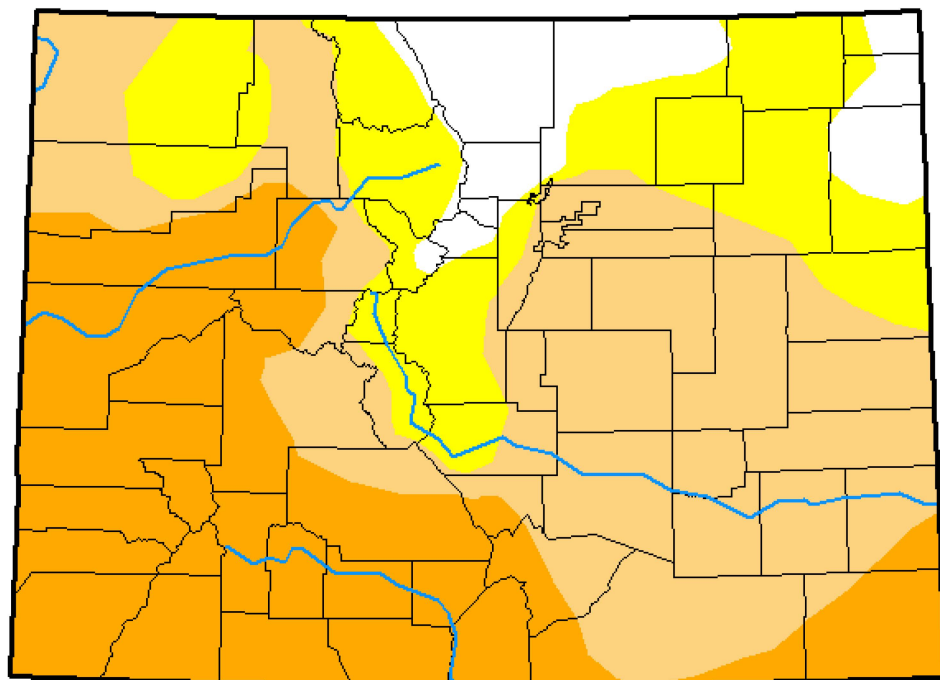
Richard Heim
NCEI/NOAA



<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
Current	8.59	91.41	71.18	33.51	0.00	0.00
Last Week <i>02-06-2018</i>	0.59	99.41	71.90	31.82	0.00	0.00
3 Months Ago <i>11-14-2017</i>	71.26	28.74	1.22	0.00	0.00	0.00
Start of Calendar Year <i>01-02-2018</i>	6.57	93.43	33.53	7.27	0.00	0.00
Start of Water Year <i>09-26-2017</i>	67.63	32.37	3.72	0.00	0.00	0.00
One Year Ago <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



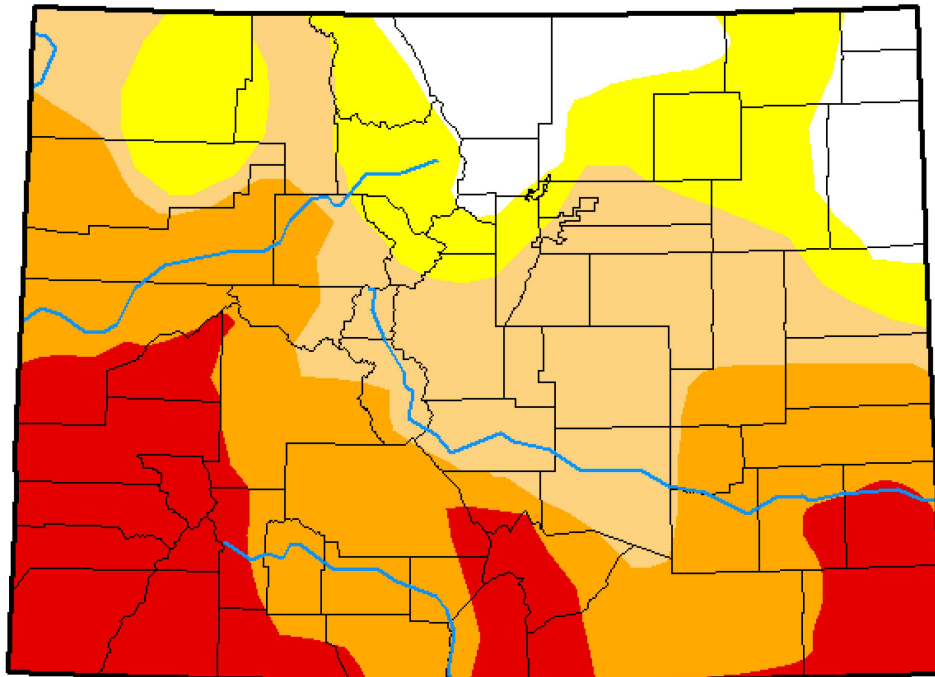
<http://droughtmonitor.unl.edu/>

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
Current	9.65	90.35	74.31	50.29	19.99	0.00
Last Week 03-13-2018	10.16	89.84	70.75	47.44	13.44	0.00
3 Months Ago 12-19-2017	7.17	92.83	27.13	0.00	0.00	0.00
Start of Calendar Year 01-02-2018	6.57	93.43	33.53	7.27	0.00	0.00
Start of Water Year 09-26-2017	67.63	32.37	3.72	0.00	0.00	0.00
One Year Ago 03-21-2017	48.05	51.95	41.82	5.14	0.20	0.00



Intensity:

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- D3 Extreme Drought
- D4 Exceptional Drought

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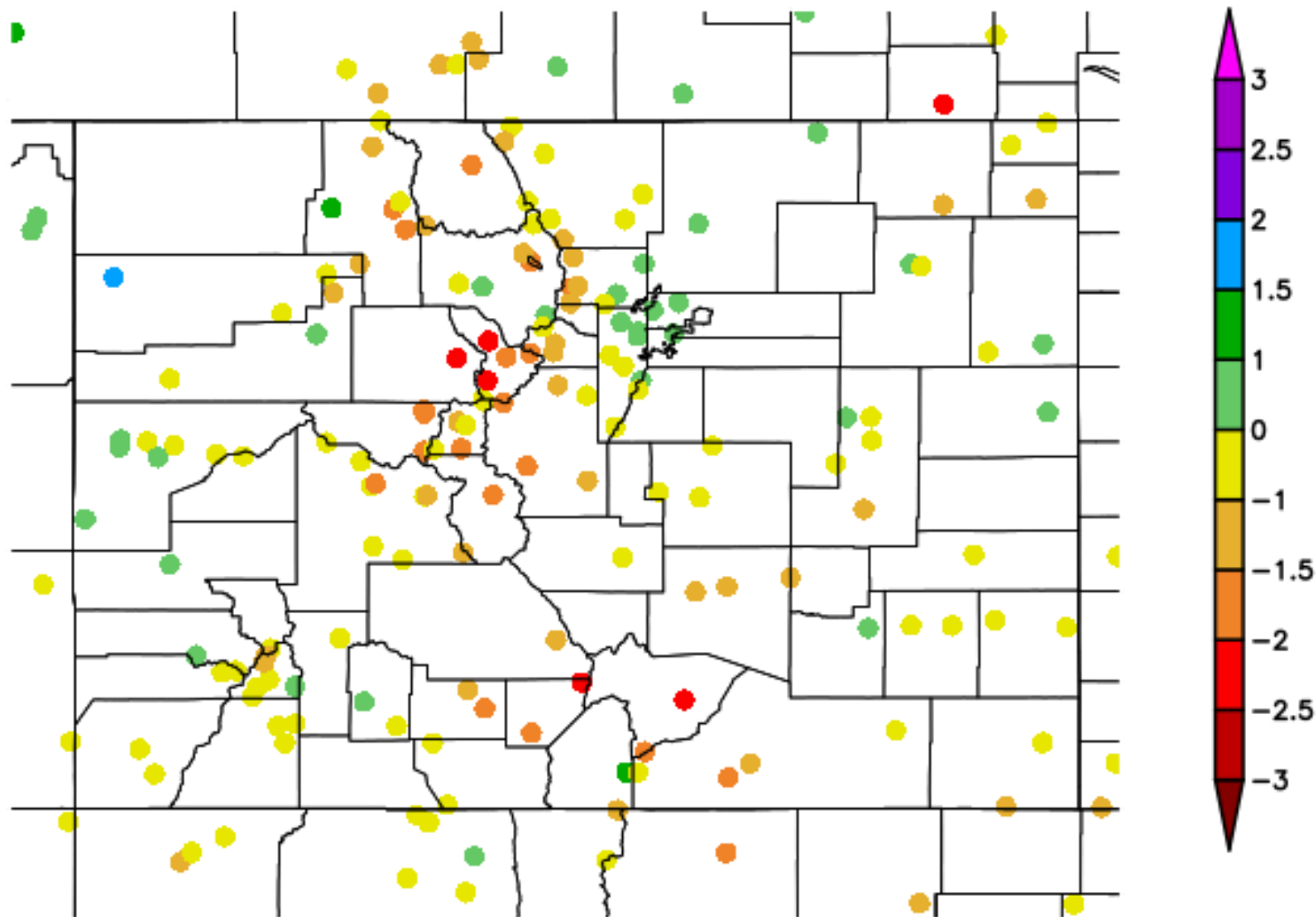
Author:

Chris Fenimore
NCEI/NESDIS/NOAA



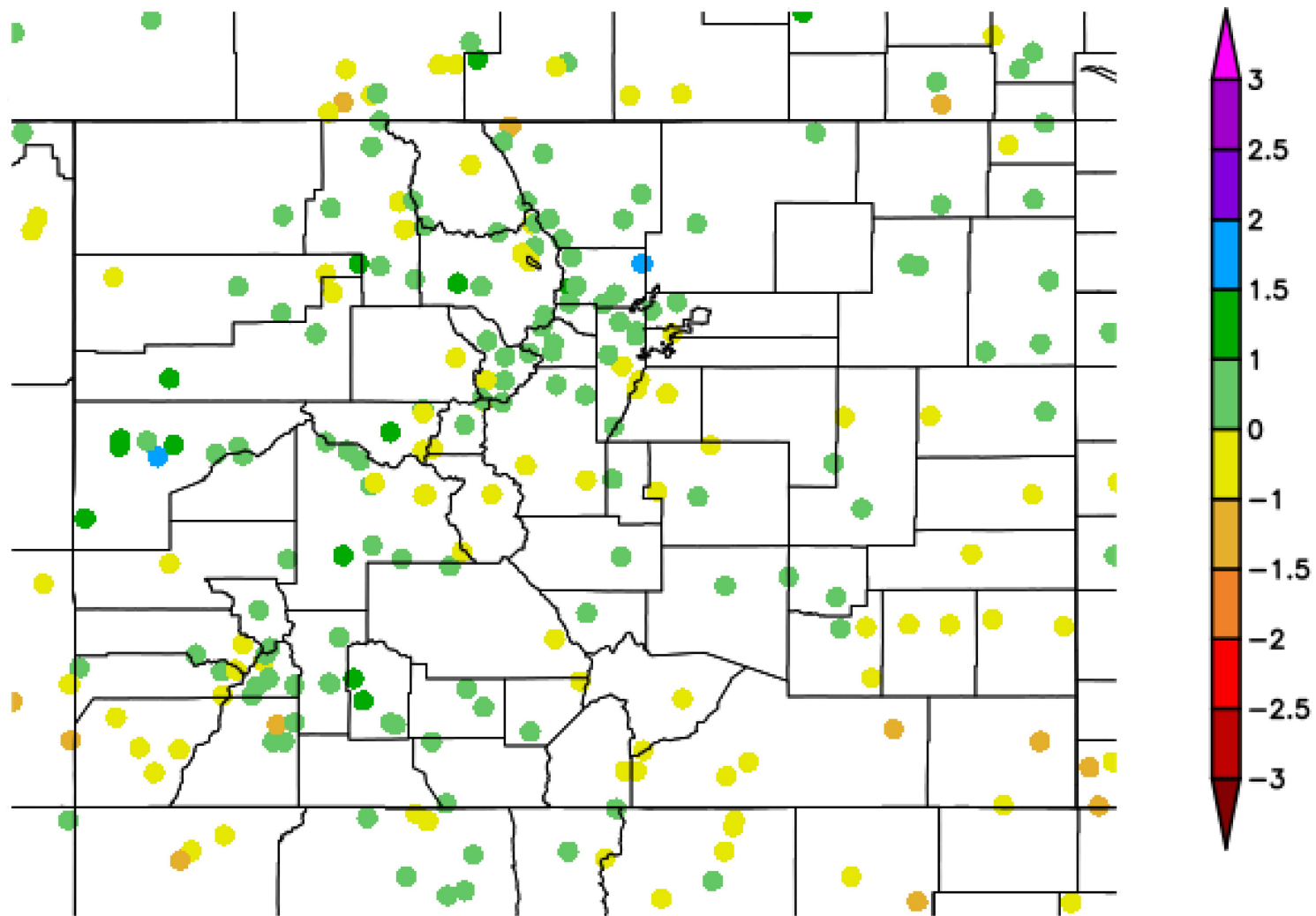
<http://droughtmonitor.unl.edu/>

30 Day SPI 2/19/2018 - 3/20/2018



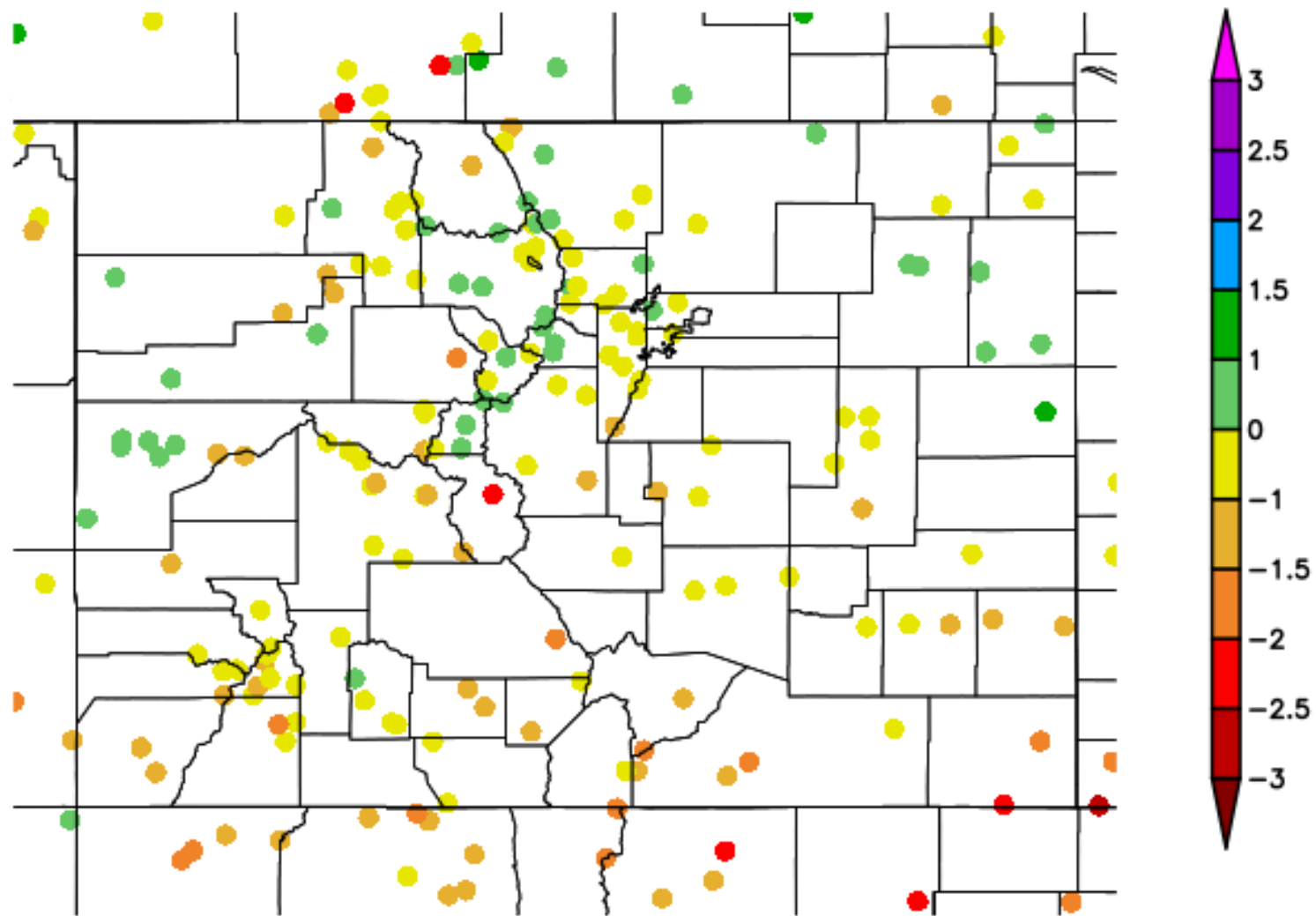
Monthly SPI

2/1/2018 - 2/28/2018



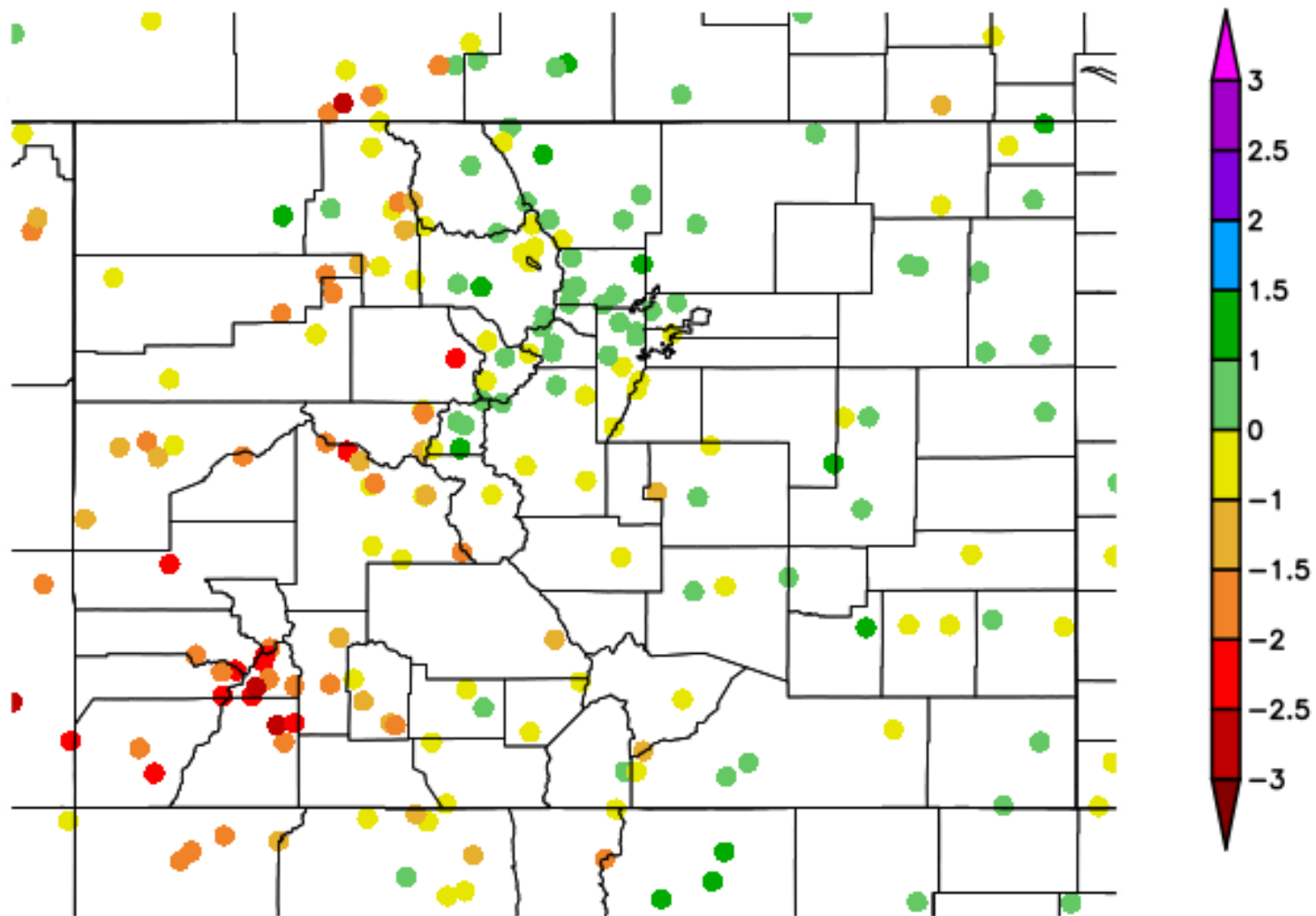
90 Day SPI

12/21/2017 - 3/20/2018

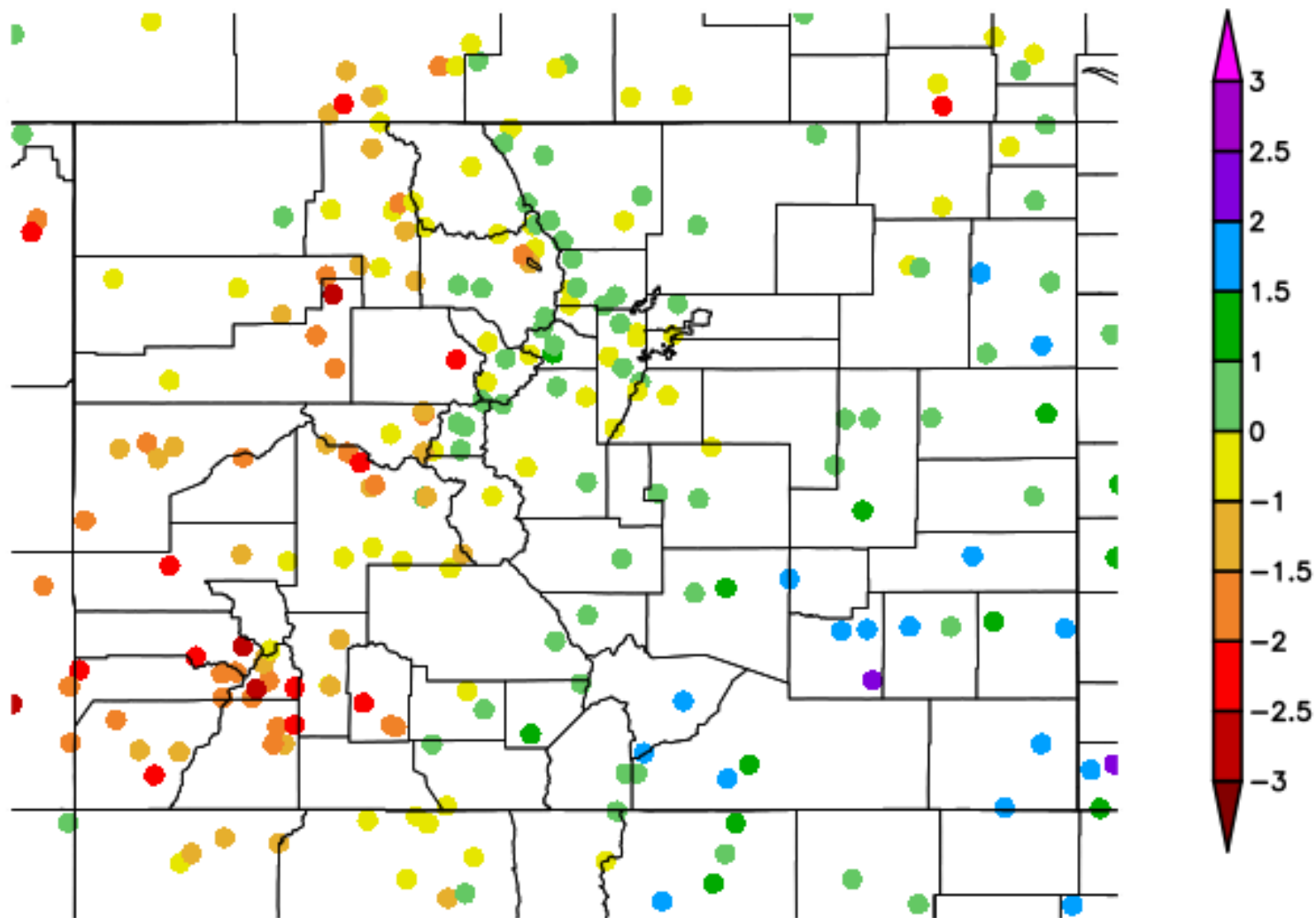


6 Month SPI

9/21/2017 - 3/20/2018



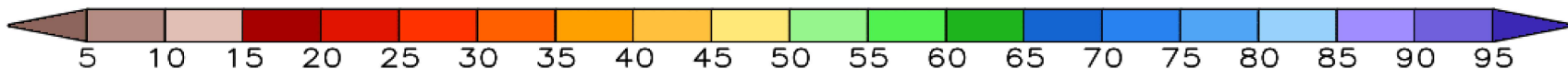
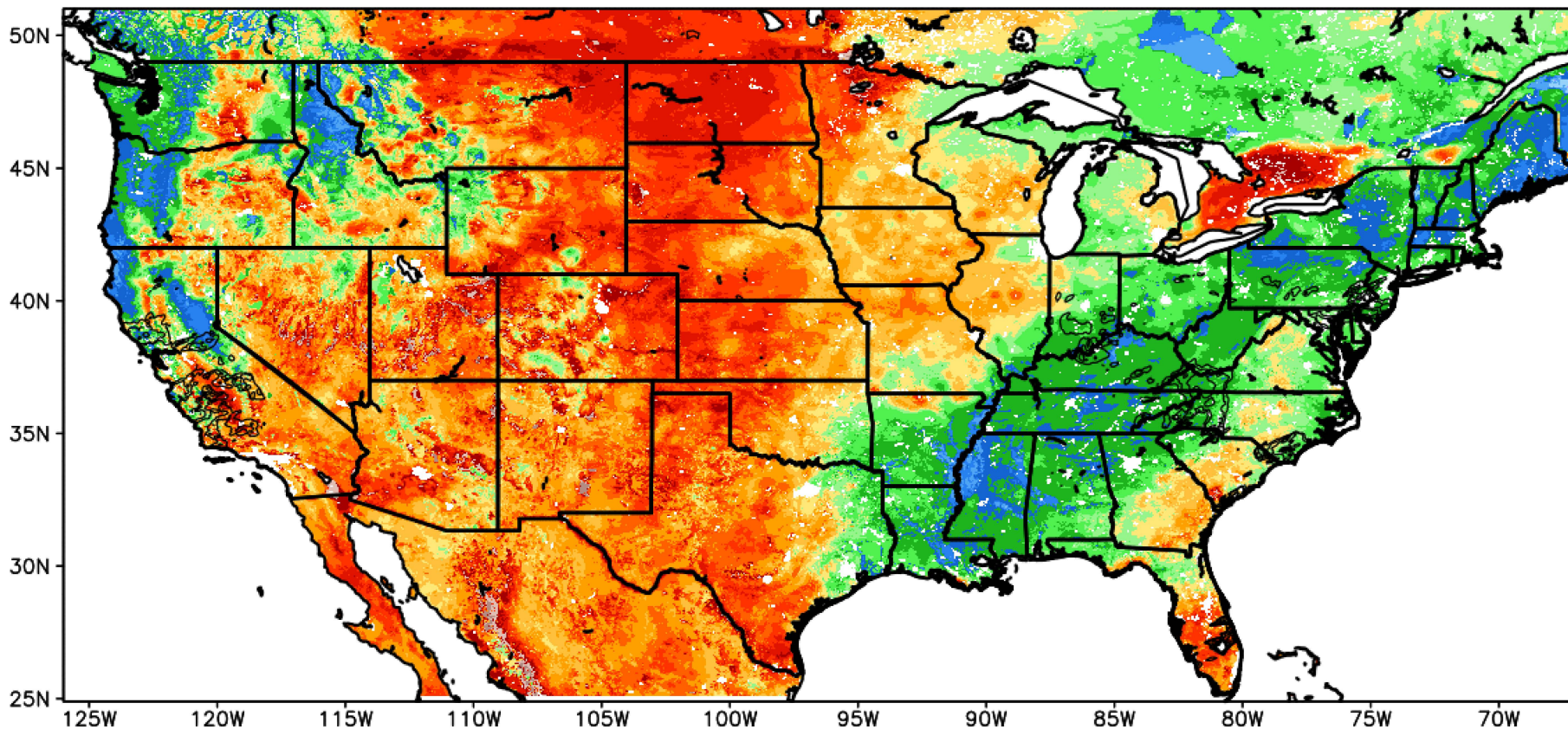
12 Month SPI 3/21/2017 - 3/20/2018



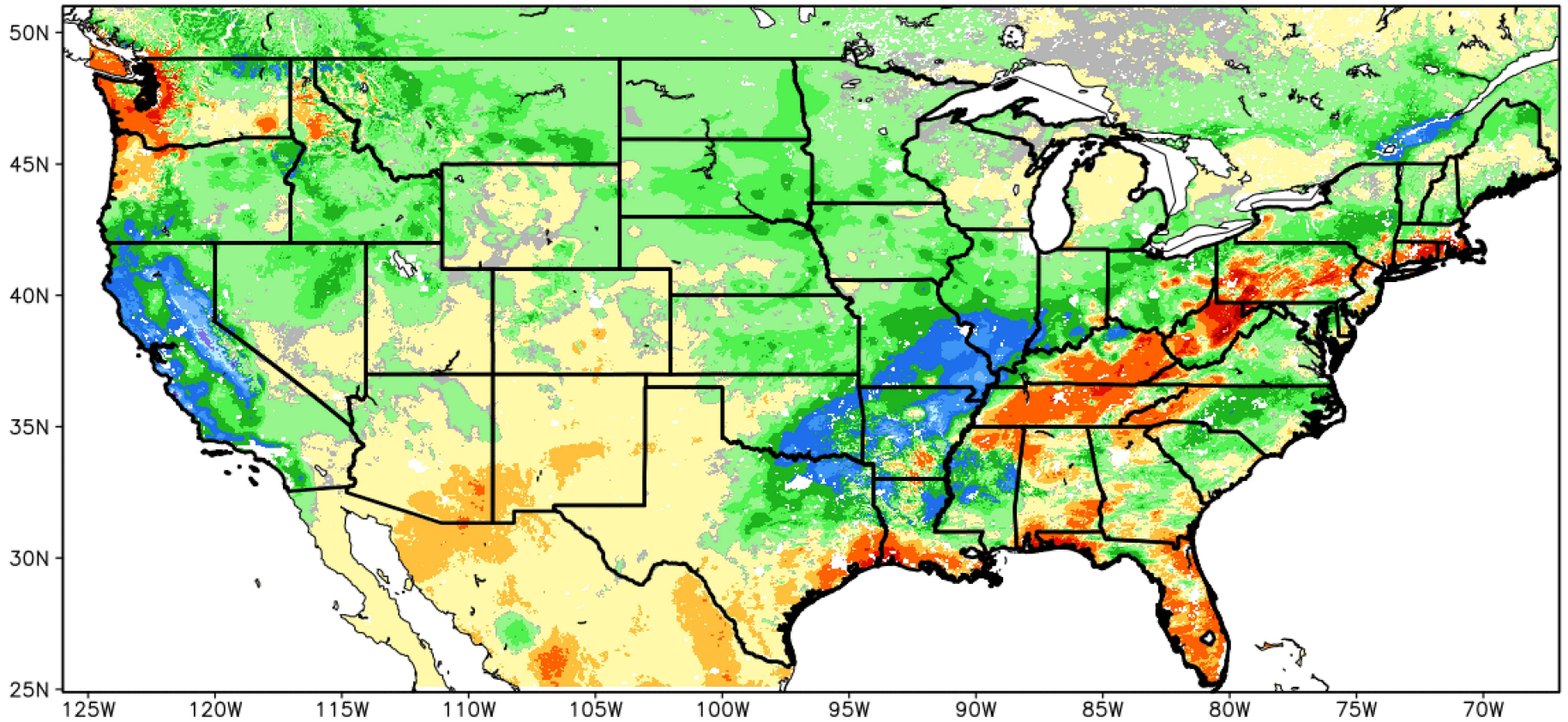
Reservoir and Soils Update



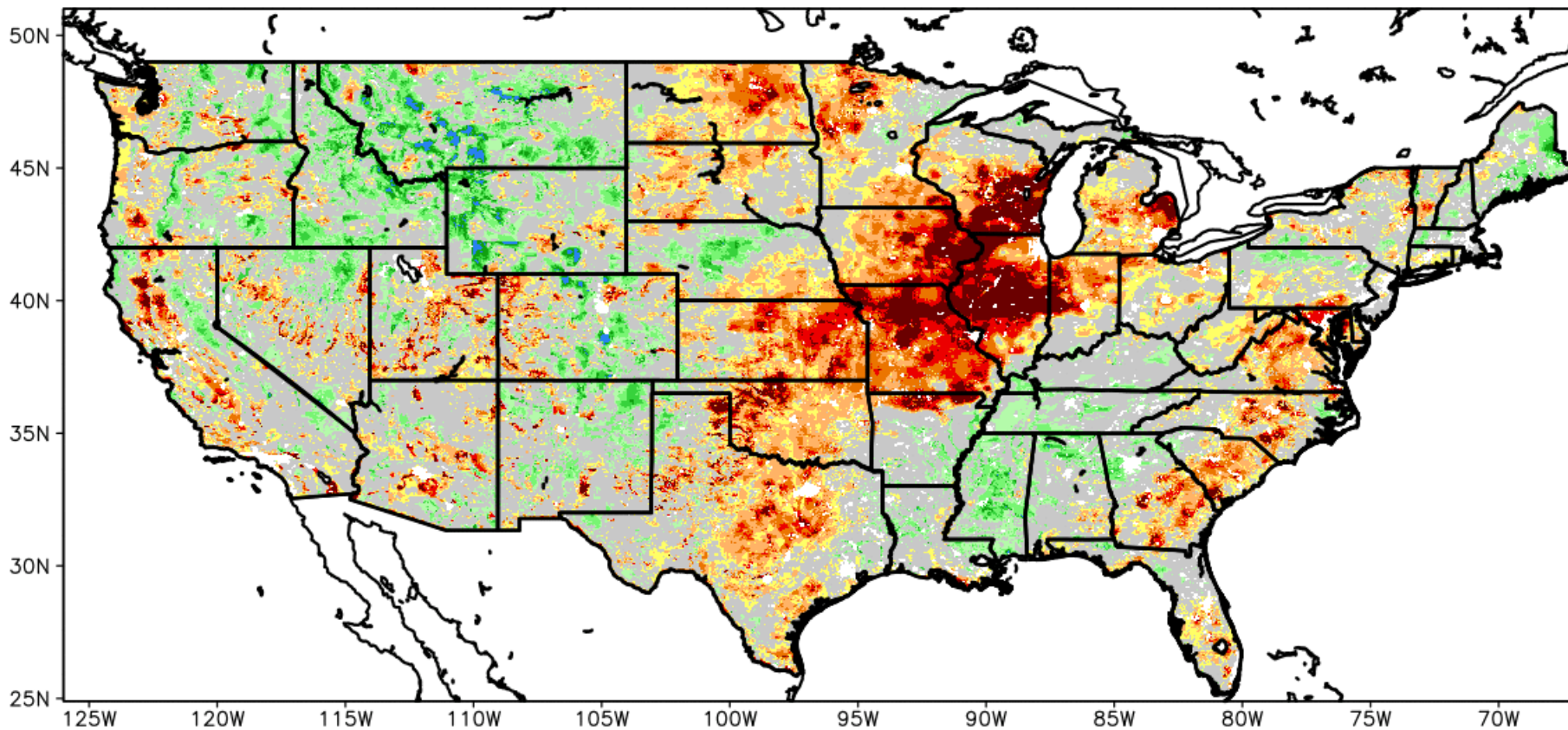
Column-Integrated Relative Soil Moisture (available water; %) valid 00z 21 Mar 2018
Precipitation in previous hour (1,2,5,10,15,20,25 mm contours)



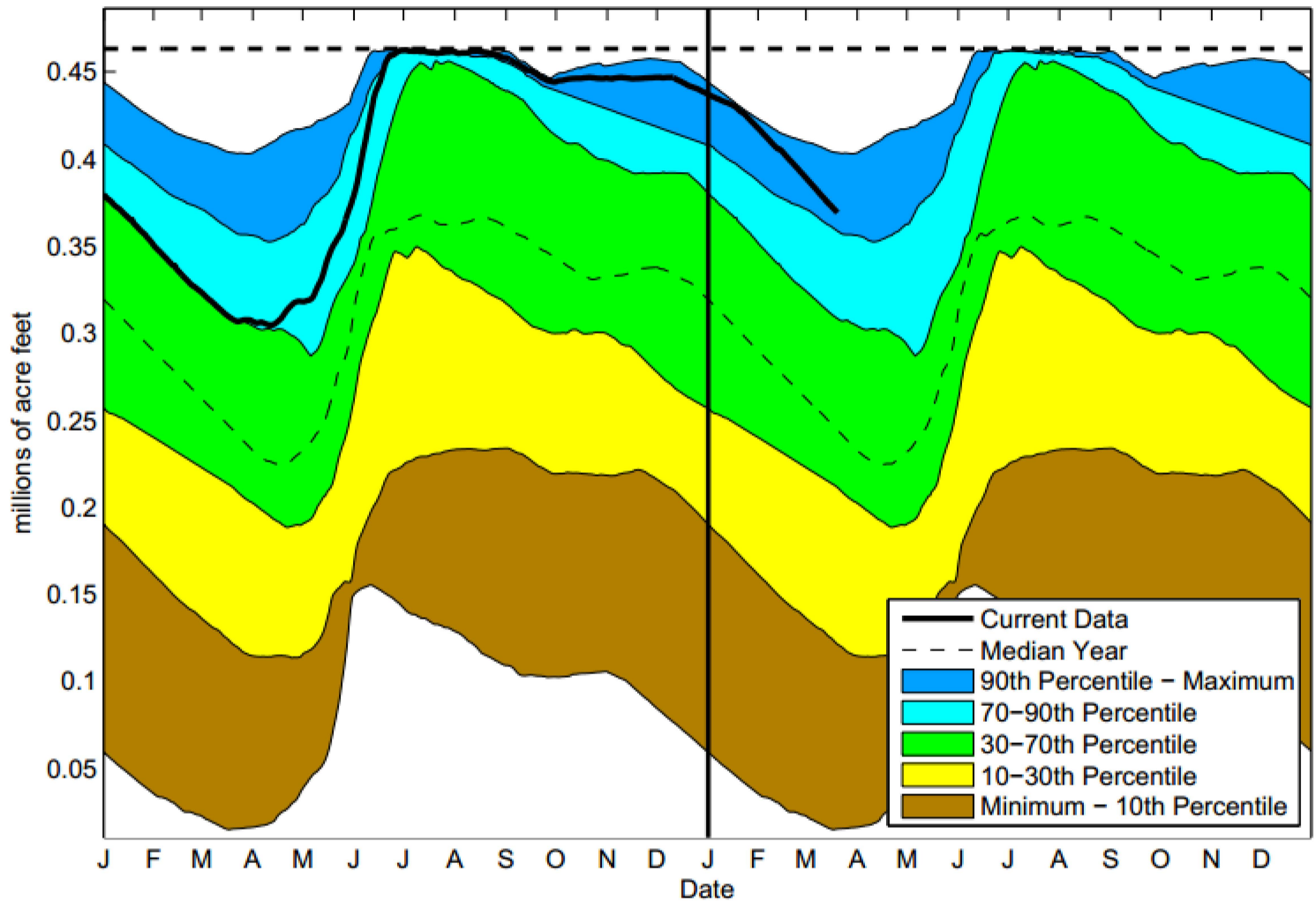
1-Month Difference in Column Relative Soil Moisture (%) valid 12z 21 Mar 2018



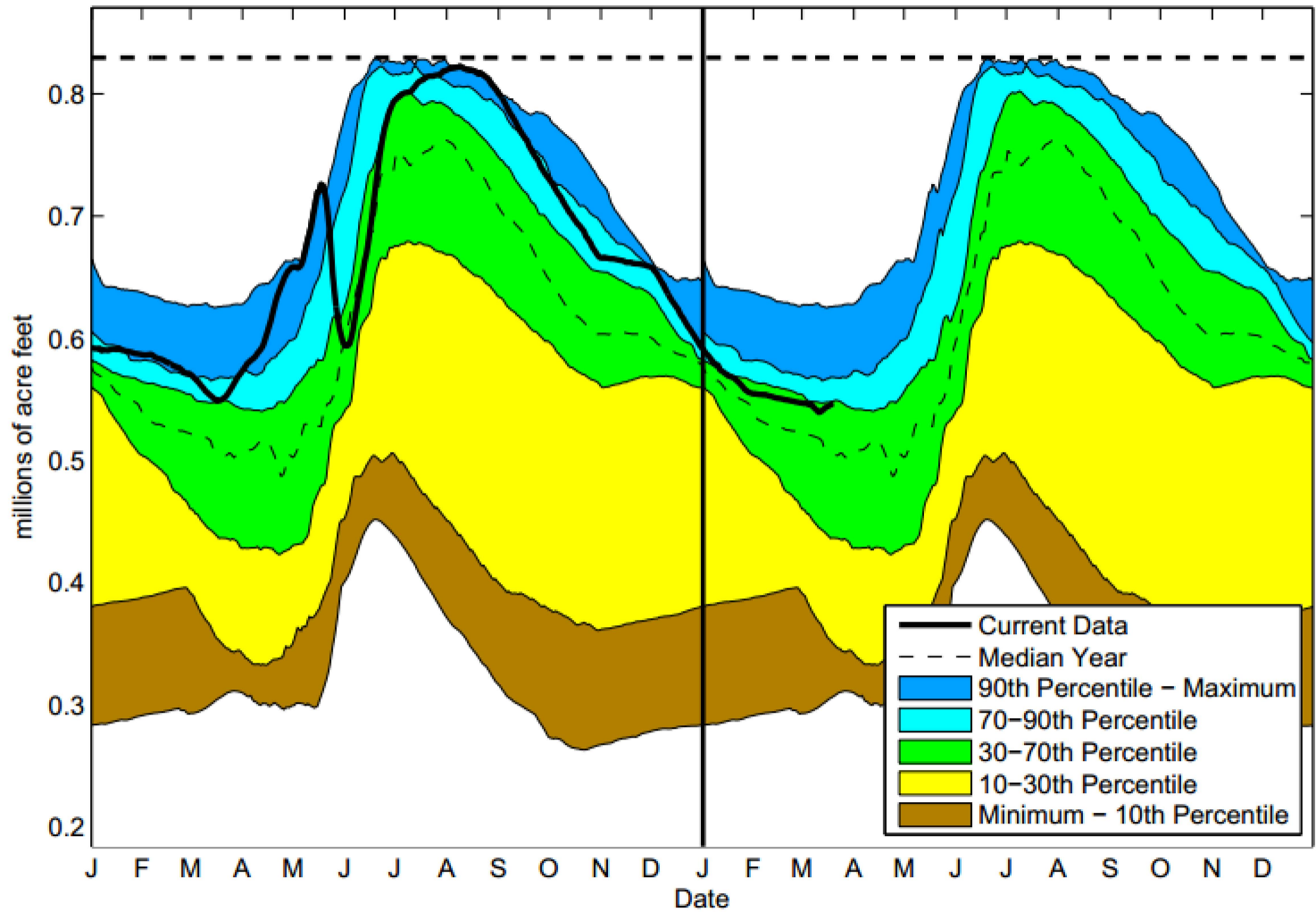
SPoRT-LIS 0-2 m RSM percentile valid 20 Mar 2018



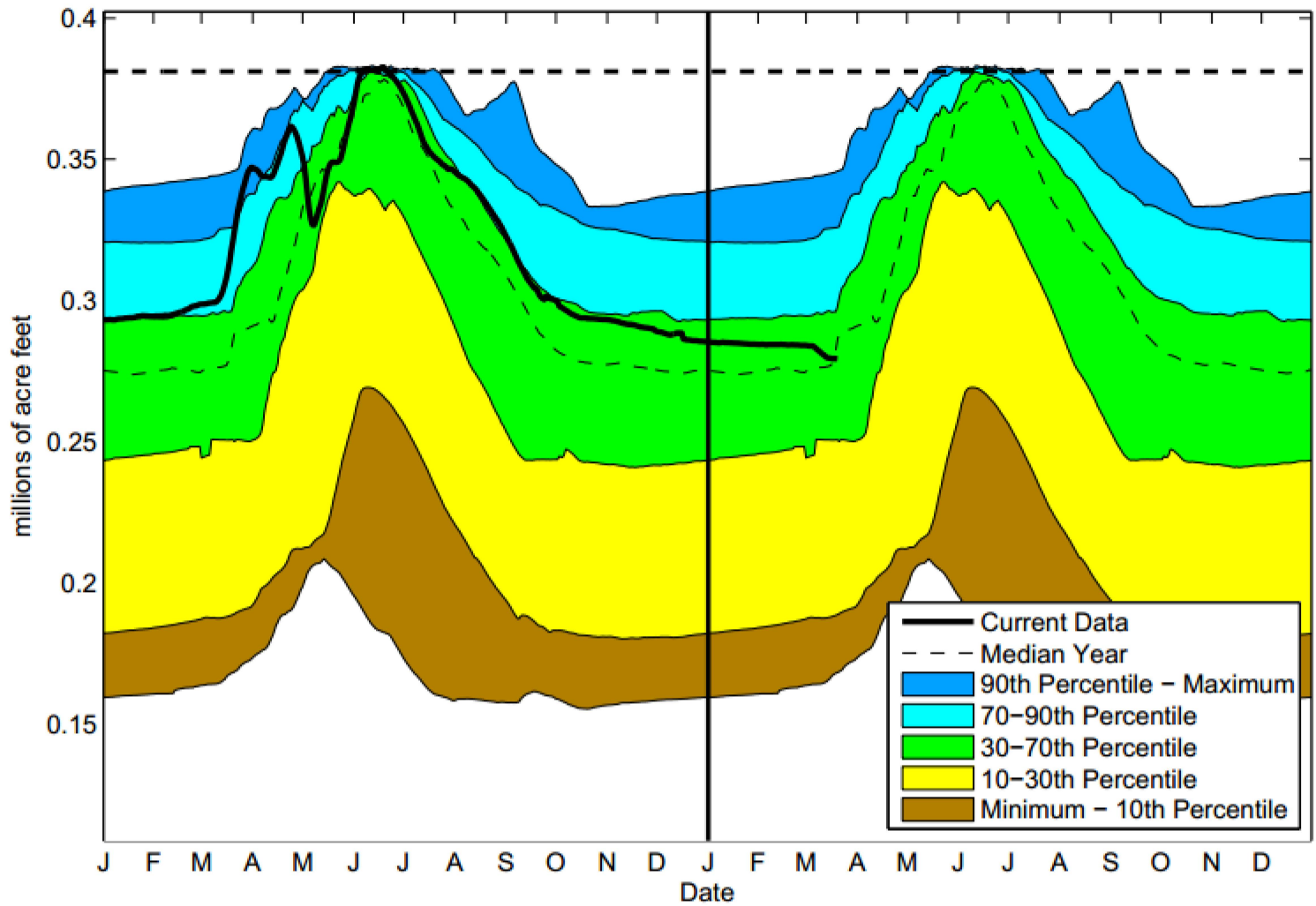
Lake Granby Reservoir Level 03/20/2018
152 Percent of 2000-2016 Average



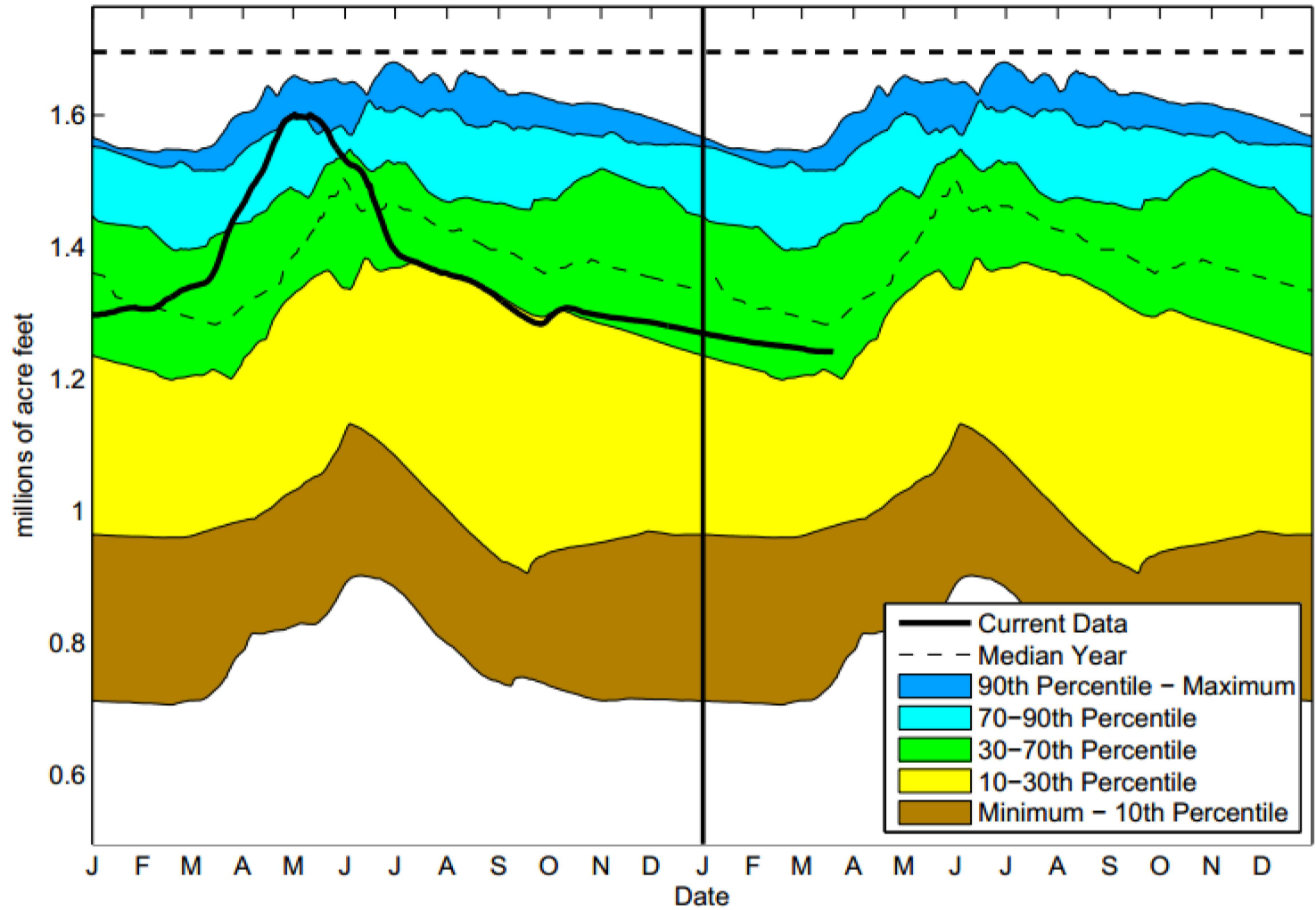
Blue Mesa Reservoir Level 03/20/2018
113 Percent of 1985-2016 Average



McPhee Reservoir Level 03/20/2018
103 Percent of 1987-2016 Average



Navajo Reservoir Level 03/20/2018
97 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)
South Platte System:							
Antero	-3	8	8,942.00	20,122	-22	8,942	19,881
Eleven Mile	72	72	8,597.50	99,486	0	8,597	97,779
Cheesman	95	99	6,822.98	63,565	-8	6,842	79,064
Strontia Springs	184	36	5,994.81	7,147	-64	6,002	7,863
Chatfield	56	0	5,429.97	24,304	52	5,432	27,076
Marston	0	0	5,530.00	14,061	-12	5,538	19,256
Soda Lakes	---	---	---	1,638	0		1,680
Platte Canyon	0	---	5,530.03	742	0	5,533	910
South Complex	0	0	---	2,974	0		3,561
Harriman	---	---	5,622.80	761	0	5,623	762
Moffat System:							
Gross	20	12	7,235.83	25,497	15	7,282	41,811
Ralston	2	1	6,024.60	7,498	-76	6,046	10,776
Upper Long Lake	0	0	6,075.39	853	0	6,088	1,519
Lower Long Lake	0	0	5,892.28		0	5,908	268
Western Slope:							
Dillon	83	98	9,011.81	240,995	-91	9,017	257,304
Williams Fork	52	40	7,789.36	66,440	25	7,811	96,822
Meadow Creek	-37	1	9,970.00	1,960	-75	9,995	5,370
Total System:				578,044	-256		671,702
Non-system							
Wolford Mountain	16	31	7,480.78	54,180	-30	7,489	65,985
Green Mountain	178	242	7,896.93	67,122	-129	7,950	153,639
Spinney Mountain	25	80	---	40,142	N/A		53,651

Colorado Climate Center

Thanks, and let's keep in touch!

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Becky Bolinger – becky.bolinger@colostate.edu

Zach Schwalbe – zach.schwalbe@colostate.edu

Data and Power Point Presentations available for downloading

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

