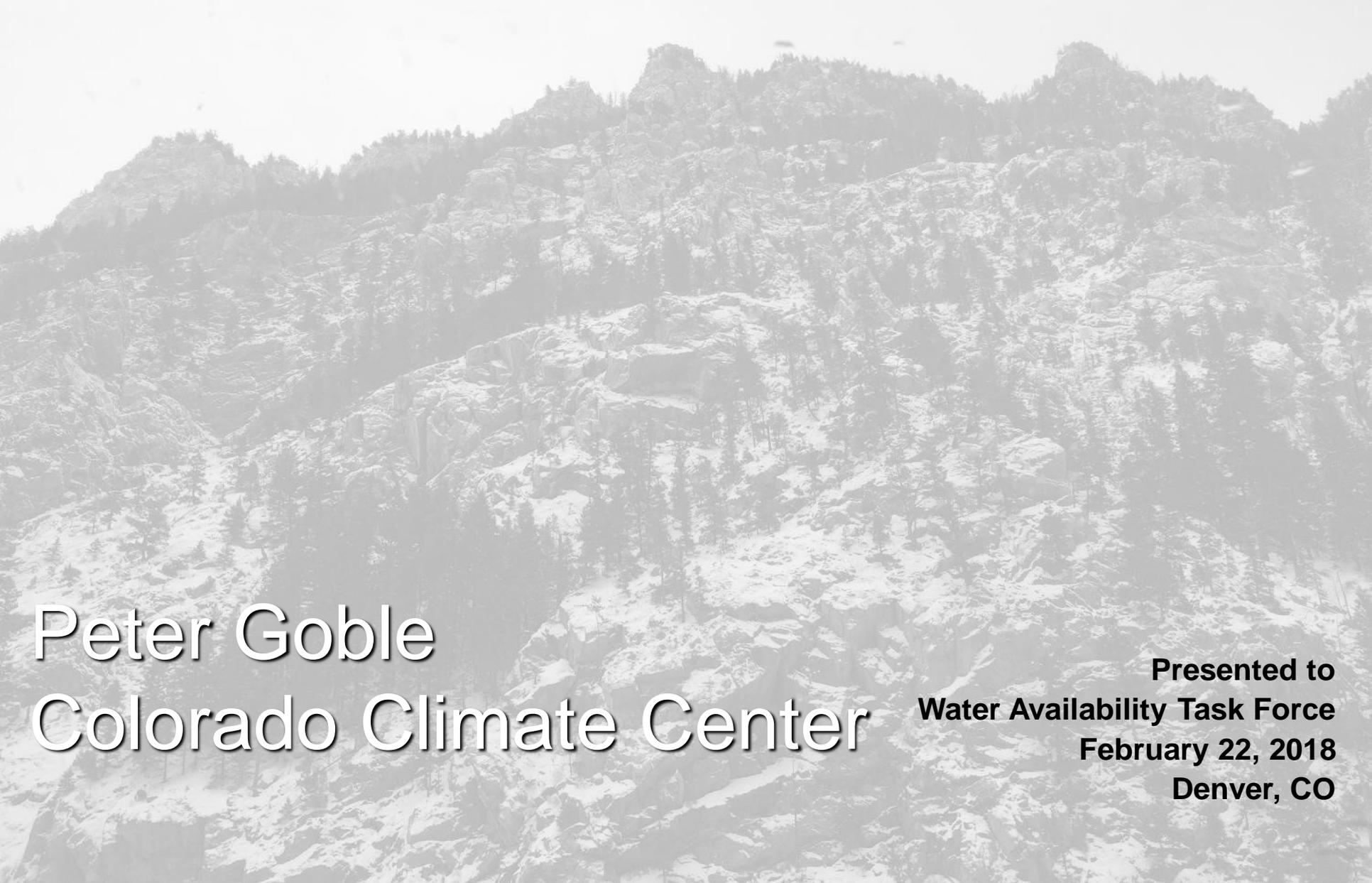




Climate Update



Peter Goble
Colorado Climate Center

**Presented to
Water Availability Task Force
February 22, 2018
Denver, CO**

Jan 2018 Average Temperature History for Colorado (NCEI)

29.8 F (+6.1)

8th warmest on record

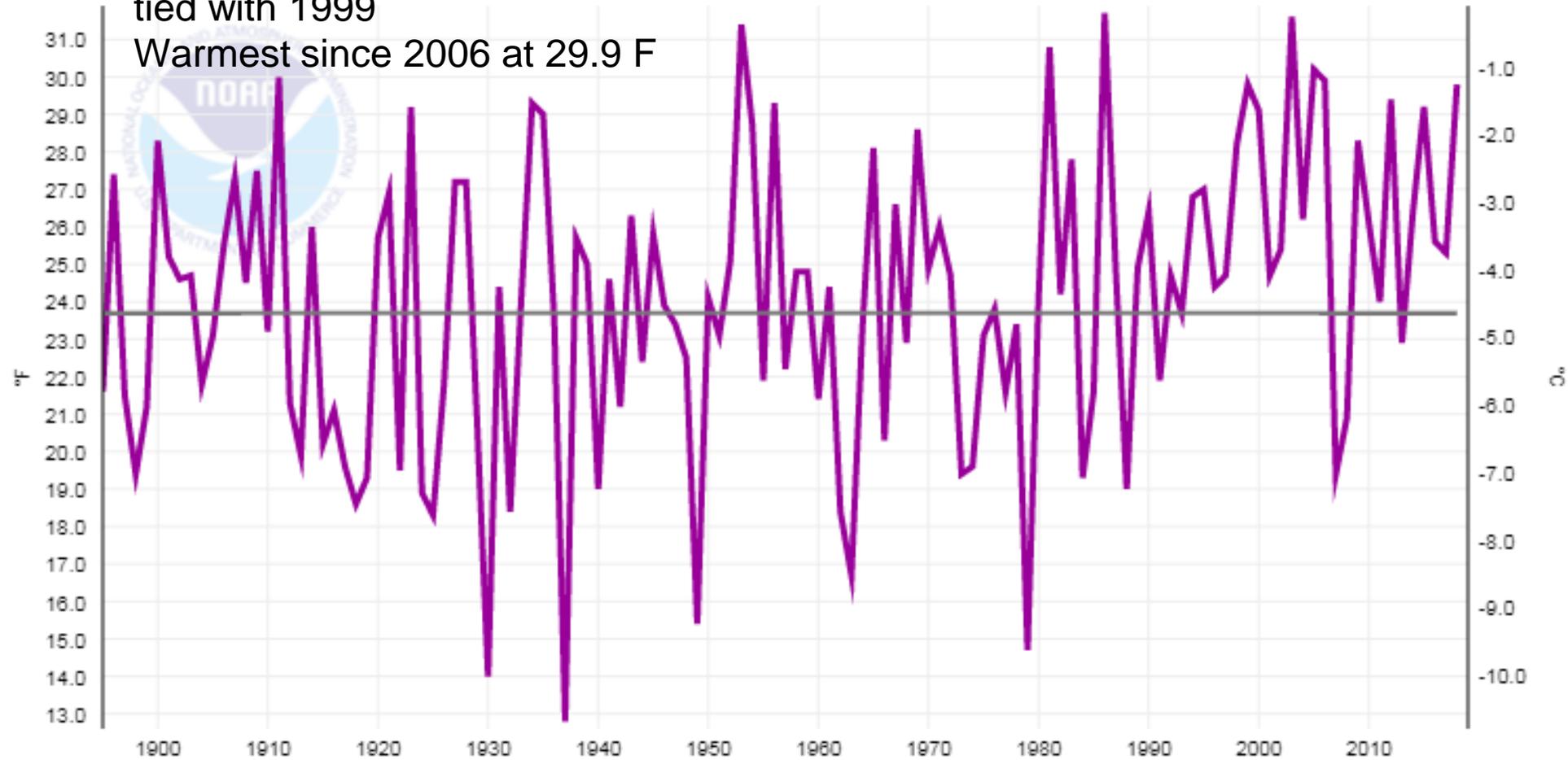
tied with 1999

Warmest since 2006 at 29.9 F

Colorado, Average Temperature, January

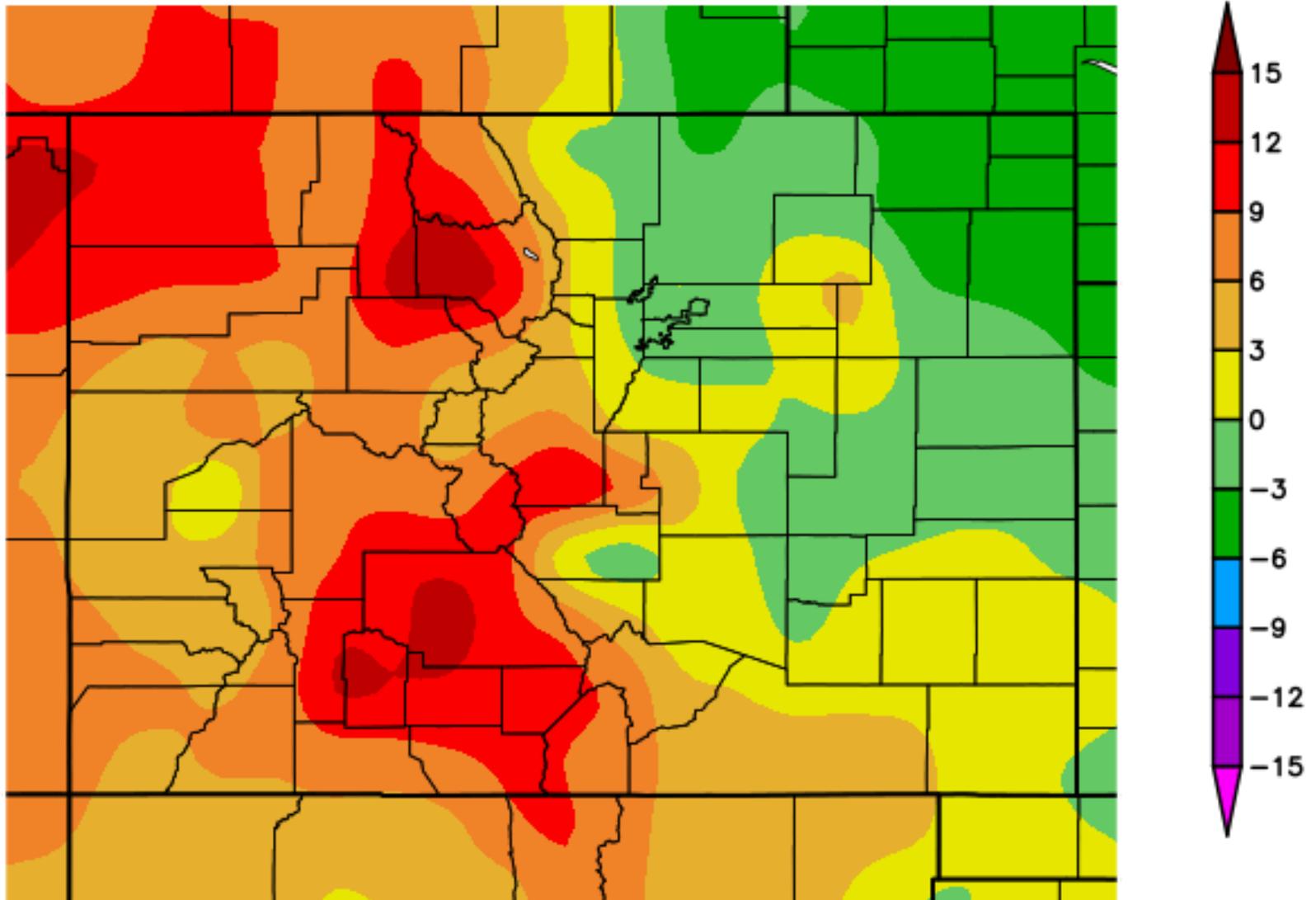
— Avg Temperature

— 1901-2000 Mean: 23.7°F



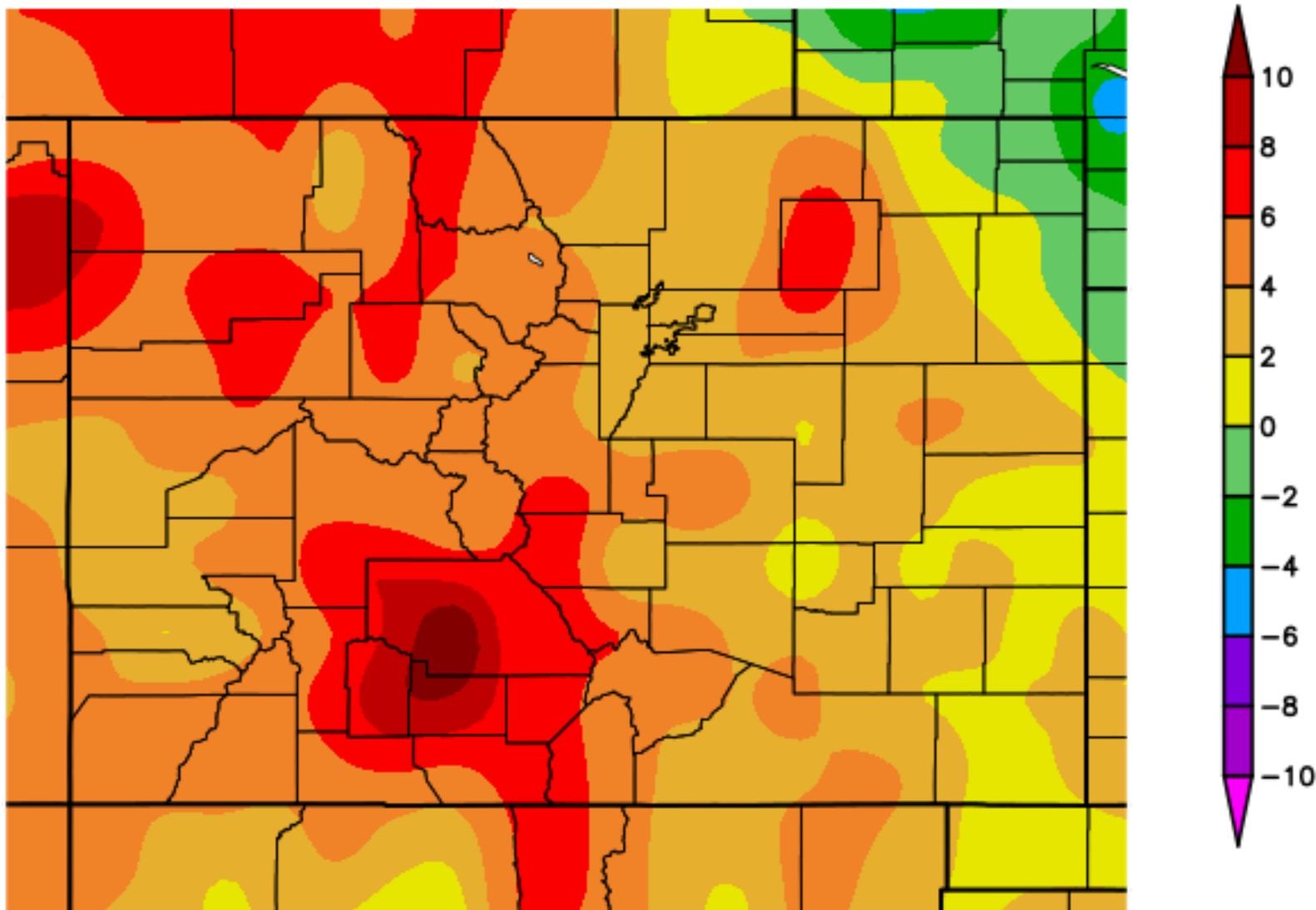
Departure from Normal Temperature (F)

2/1/2018 - 2/20/2018

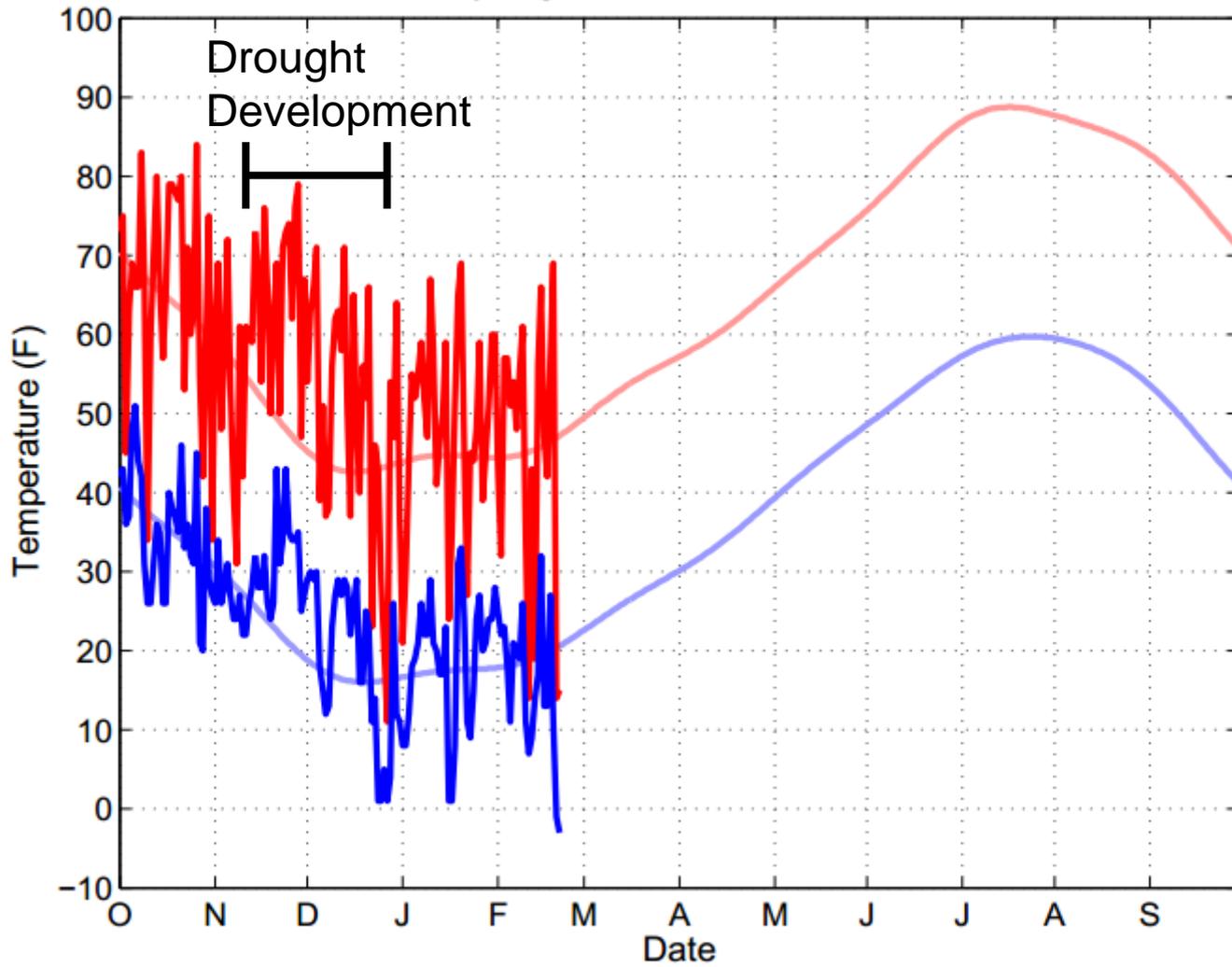


Departure from Normal Temperature (F)

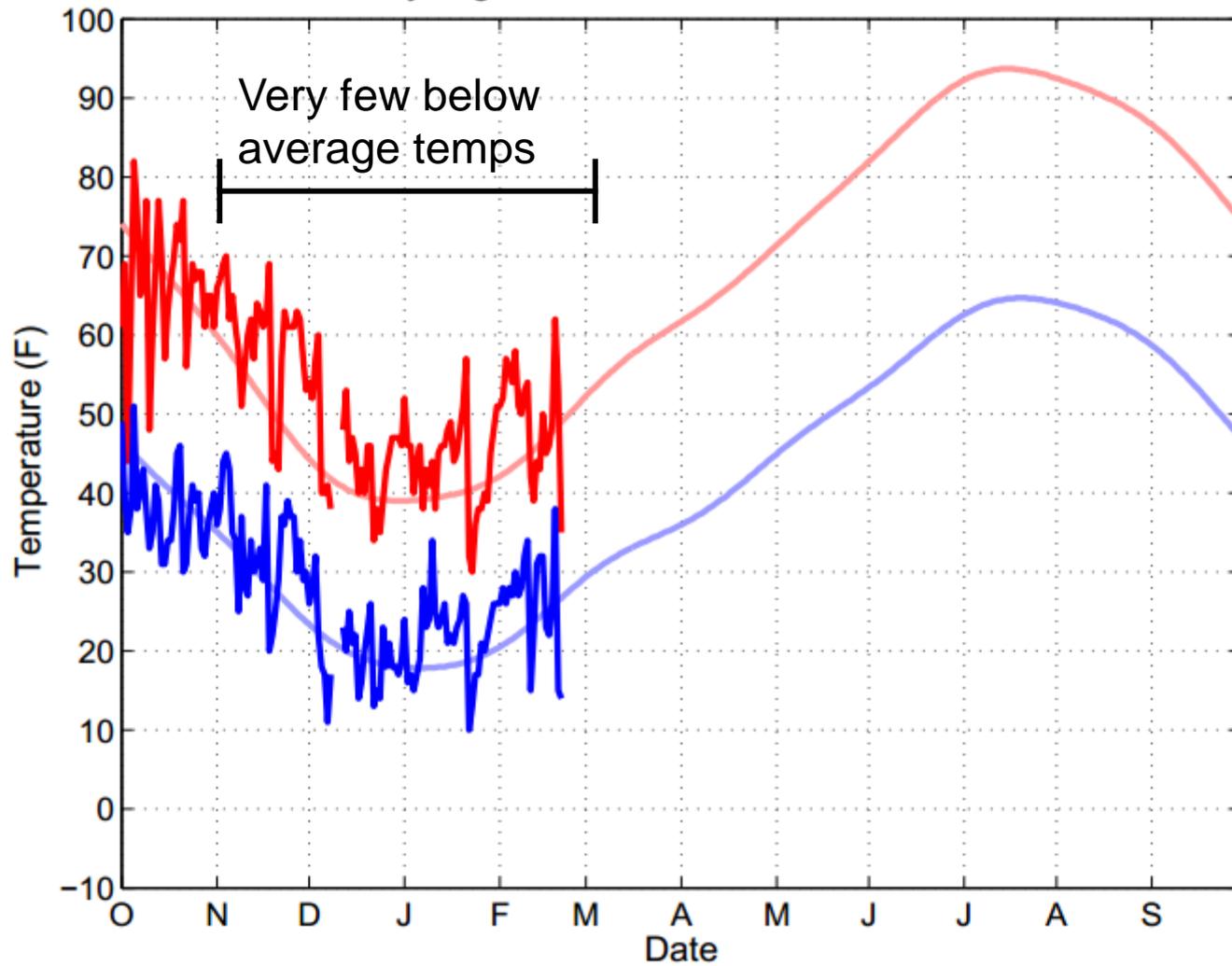
1/1/2018 - 1/31/2018



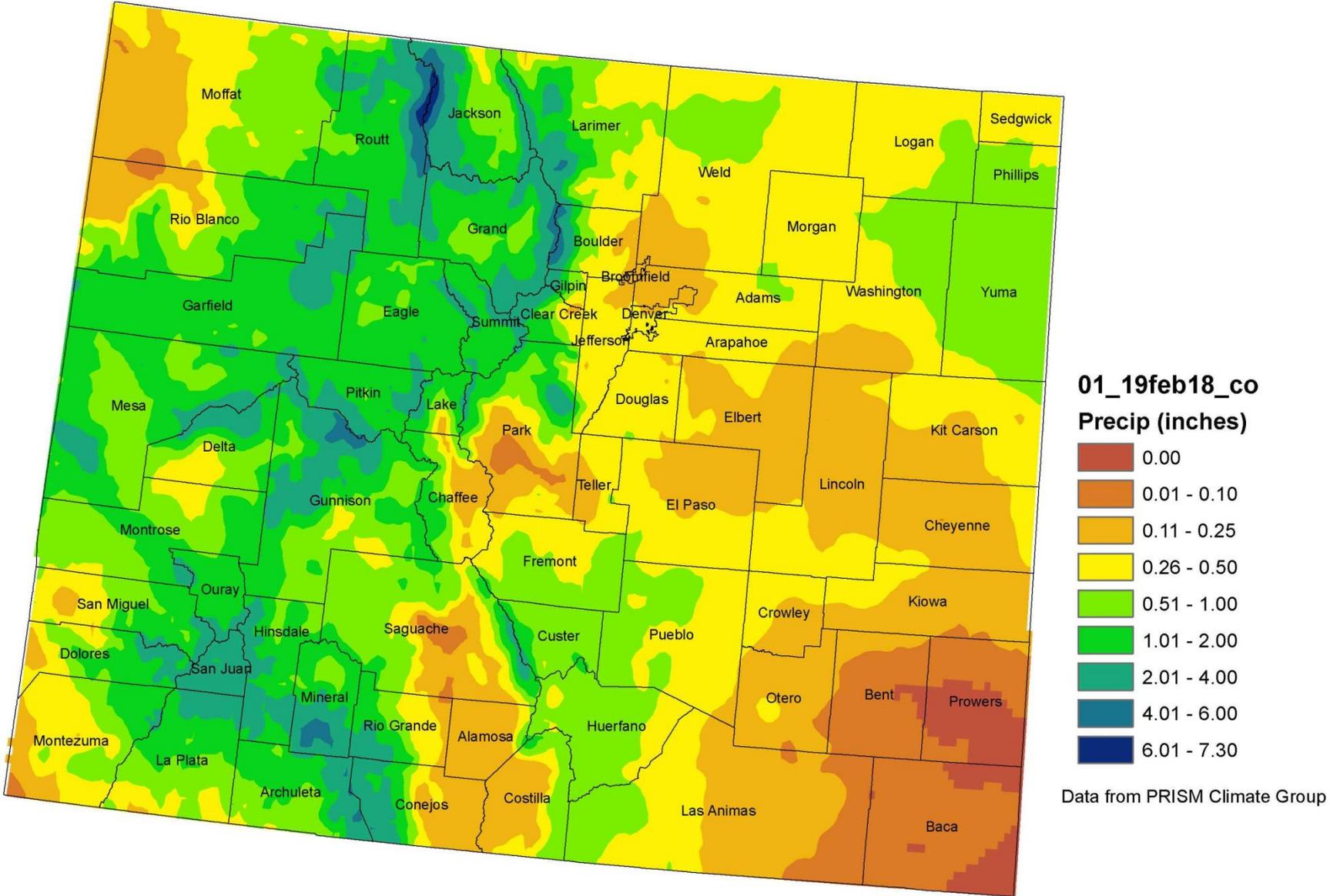
Daily Highs and Lows for Denver



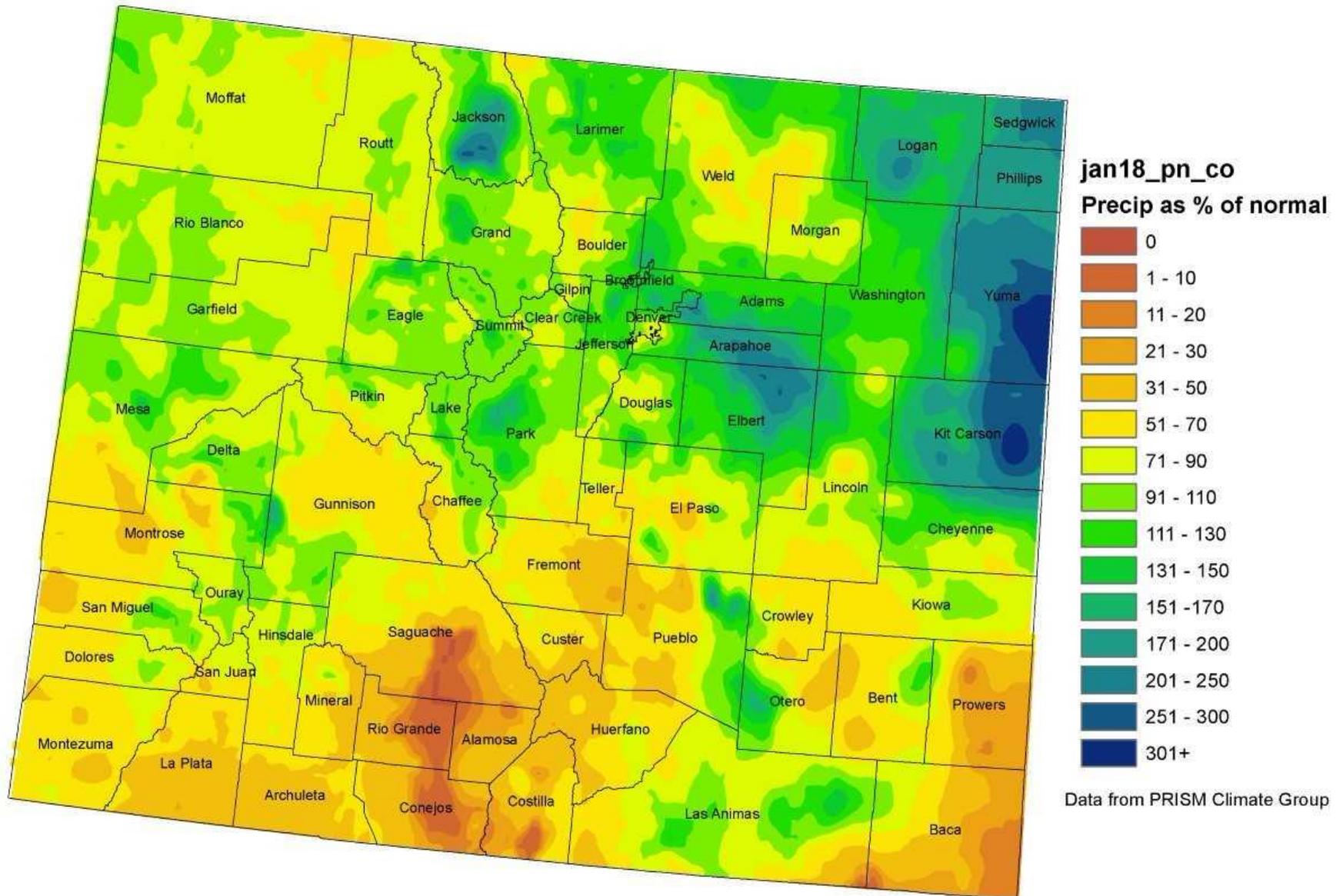
Daily Highs and Lows for Grand Junction



Colorado Month to Date Precipitation 1 - 19 February 2018



Colorado January 2018 Precipitation as a Percentage of Normal



0.76" (-0.30")

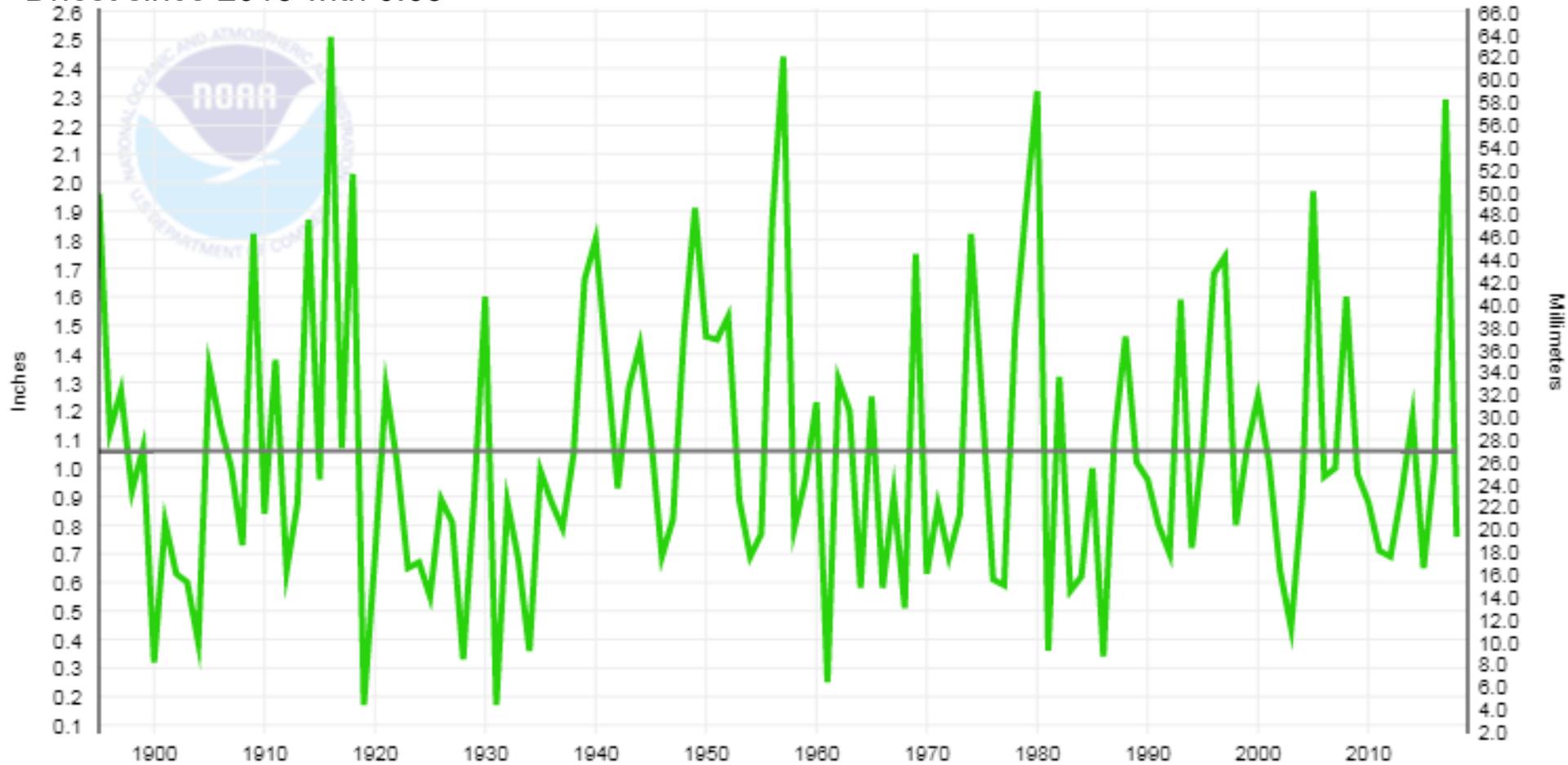
37th driest on Record 1895-2018

Driest since 2015 with 0.65"

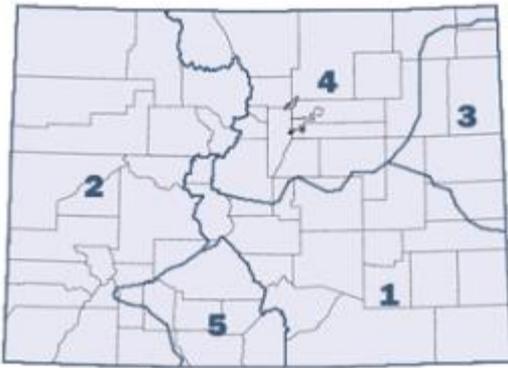
Colorado, Precipitation, January

Precip

1901-2000 Mean: 1.06"



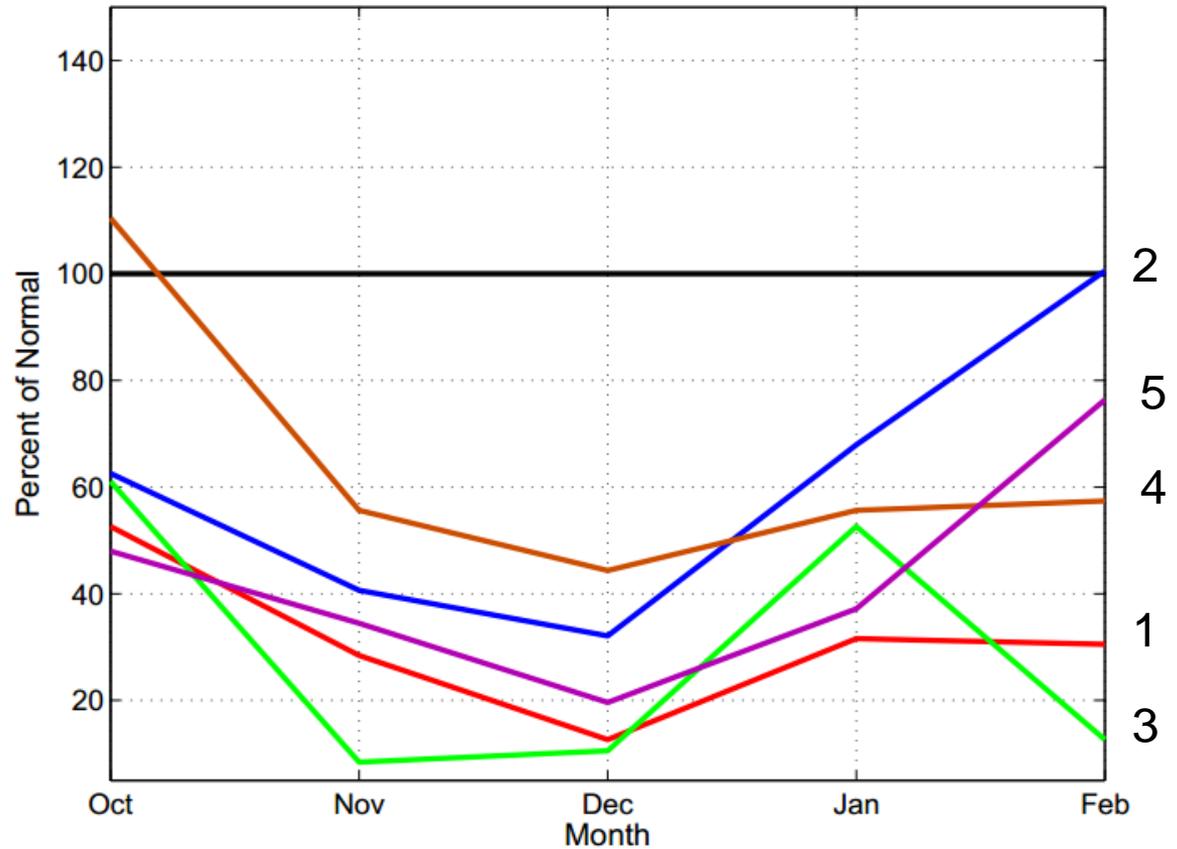
Precipitation By Climate Division



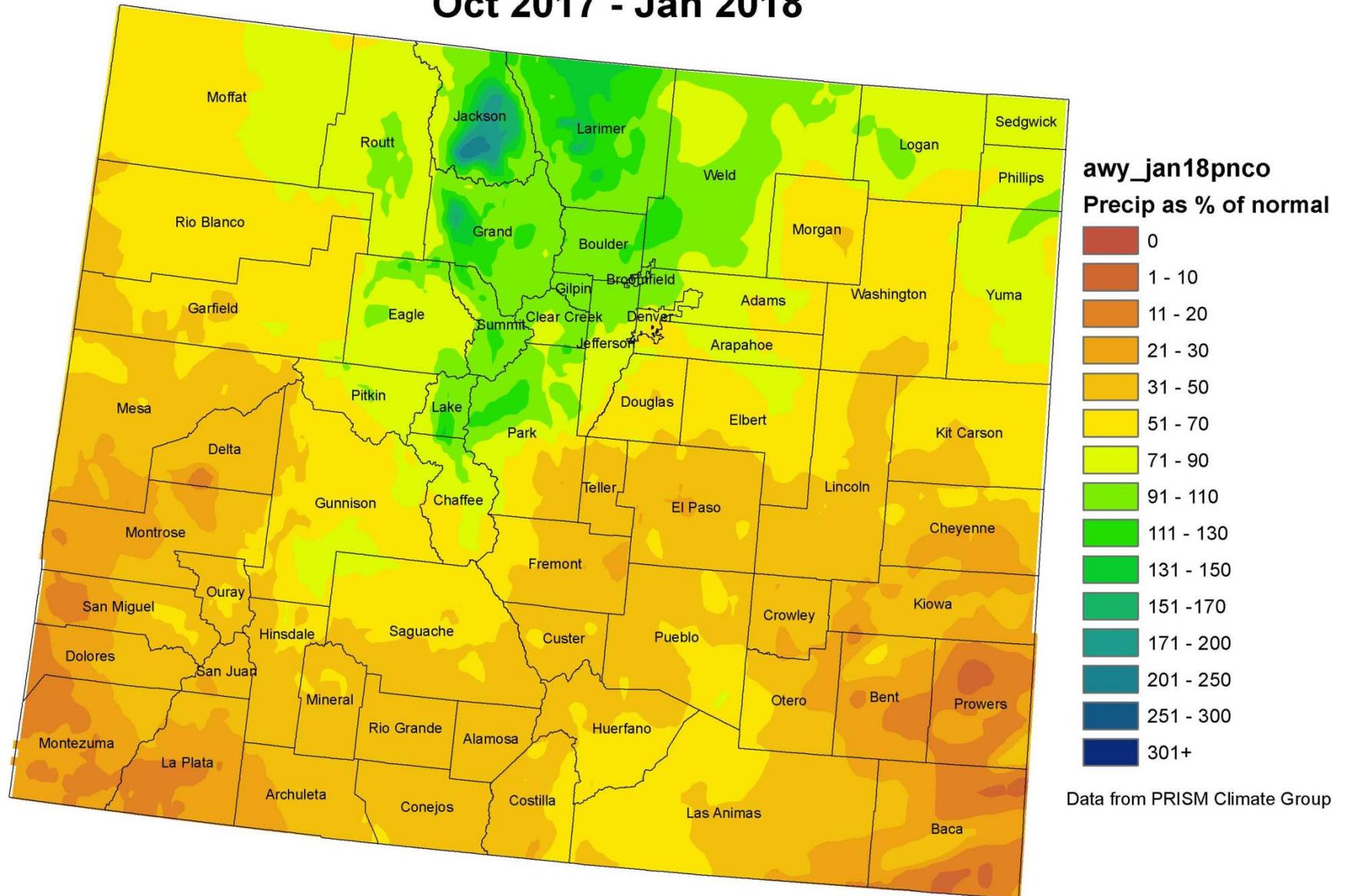
Colorado Climate Divisions



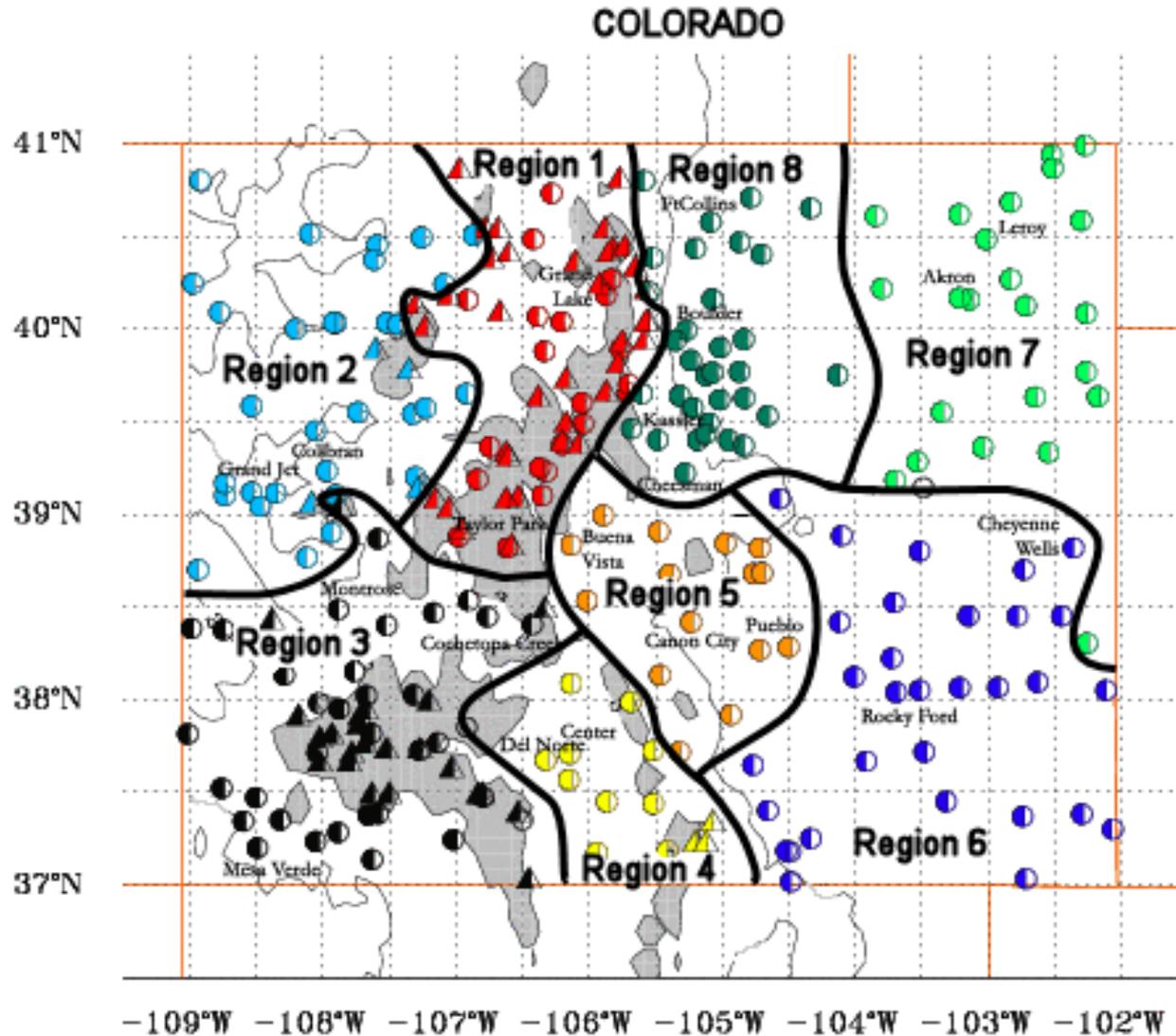
Percent of Normal Precipitation



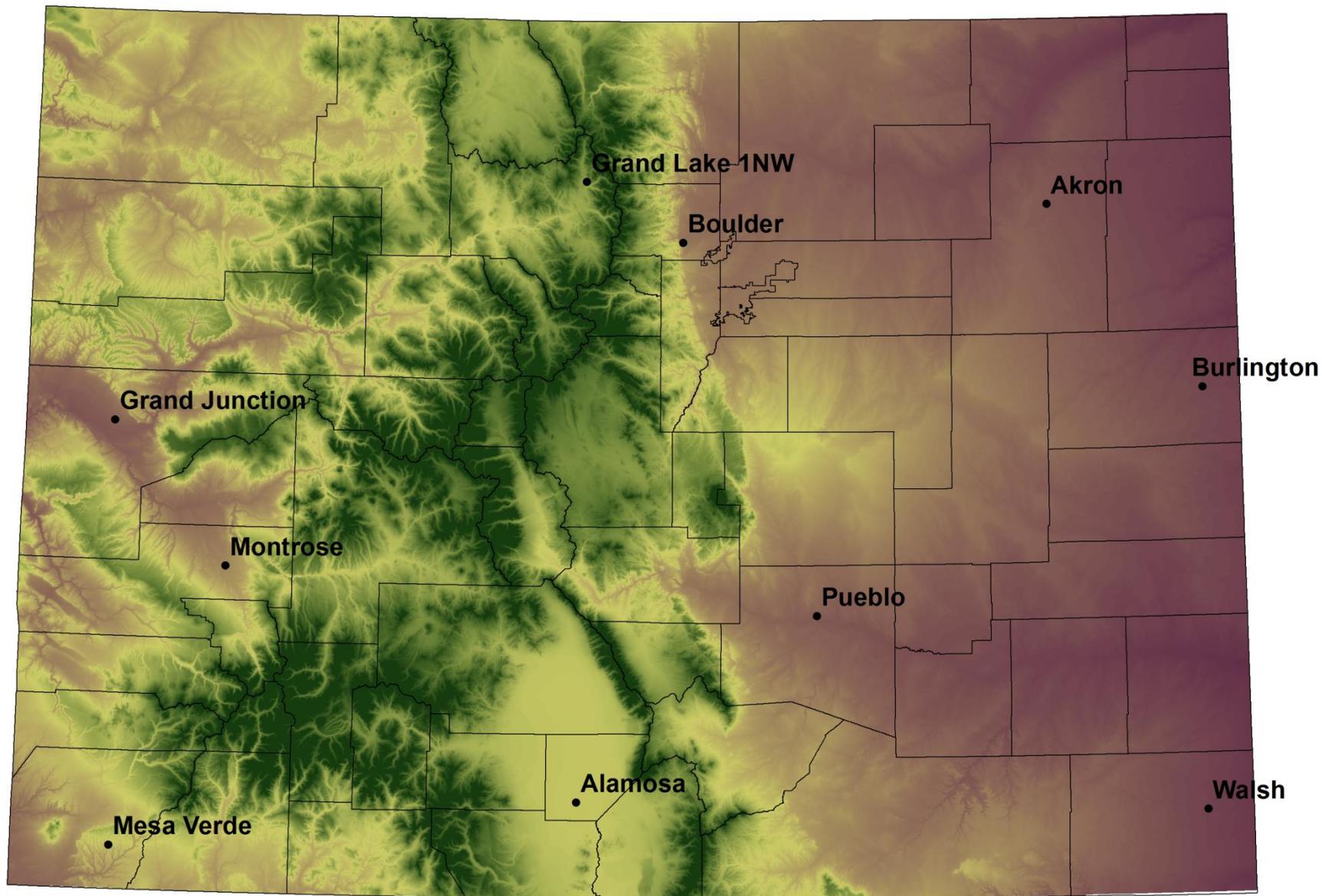
Colorado Water Year 2018 Precipitation as a Percentage of Normal Oct 2017 - Jan 2018



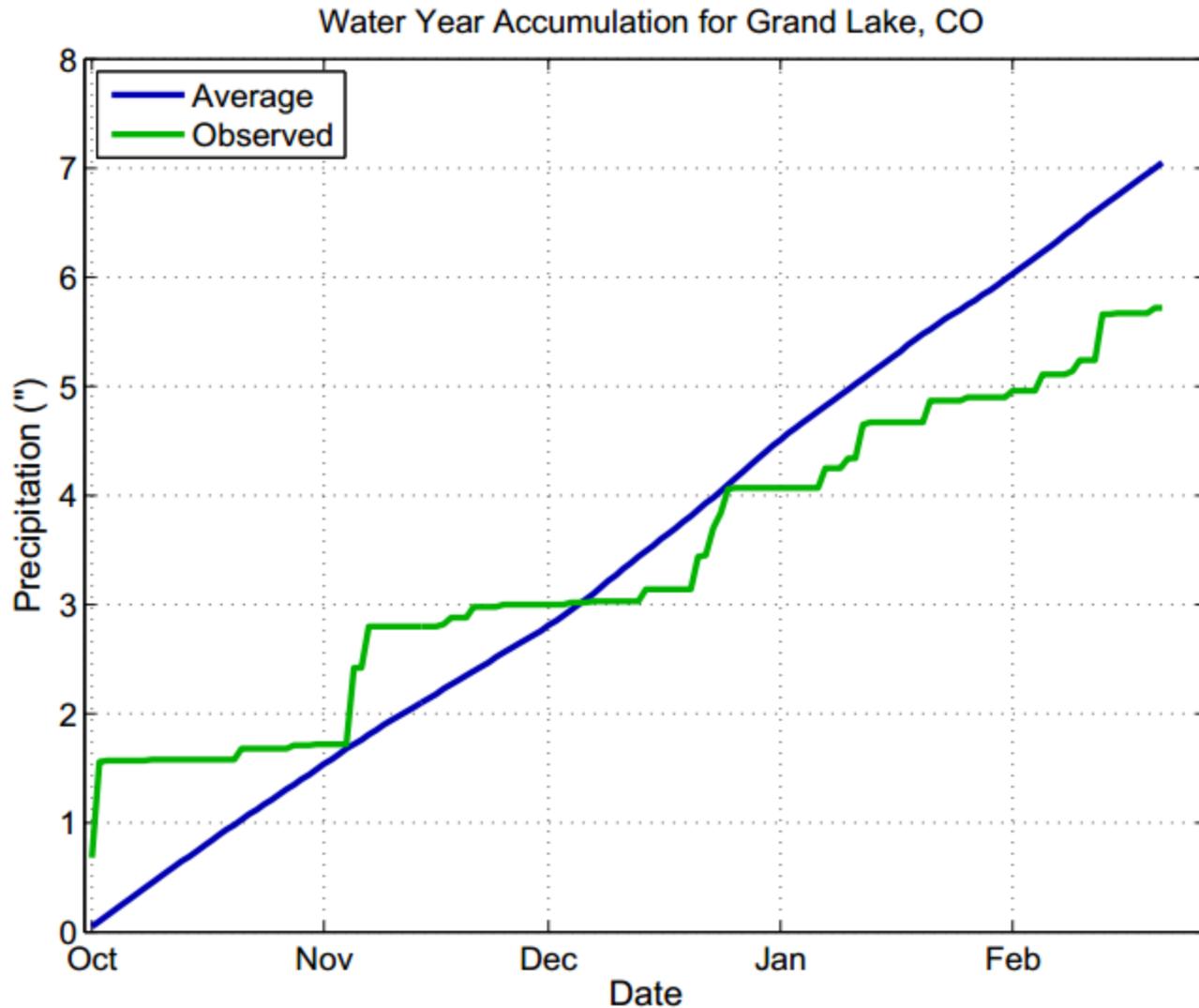
Climate divisions defined by Dr. Klaus Wolter of NOAA's Climate Diagnostic Center in Boulder, CO



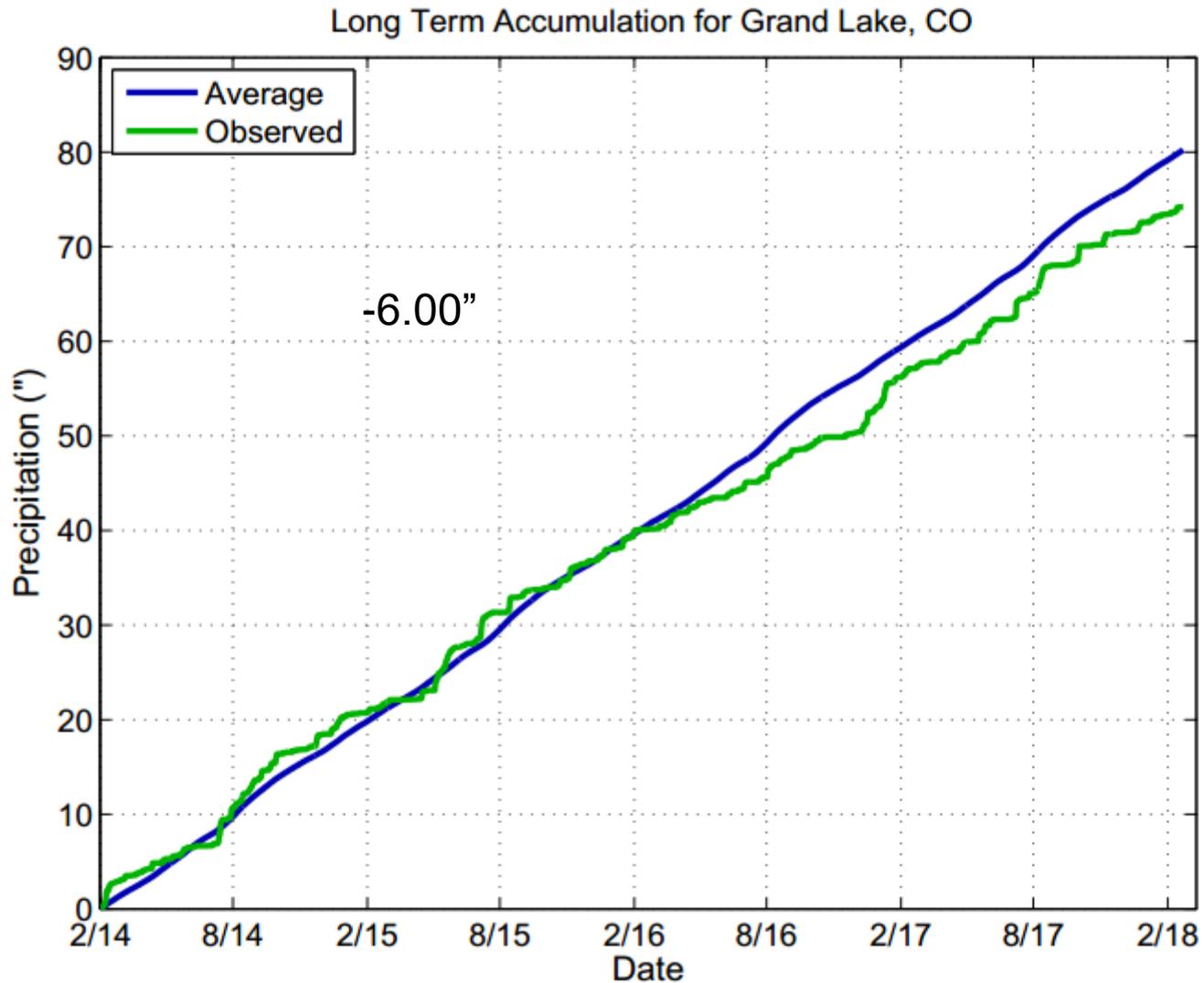
NWS Cooperative Stations for WATF



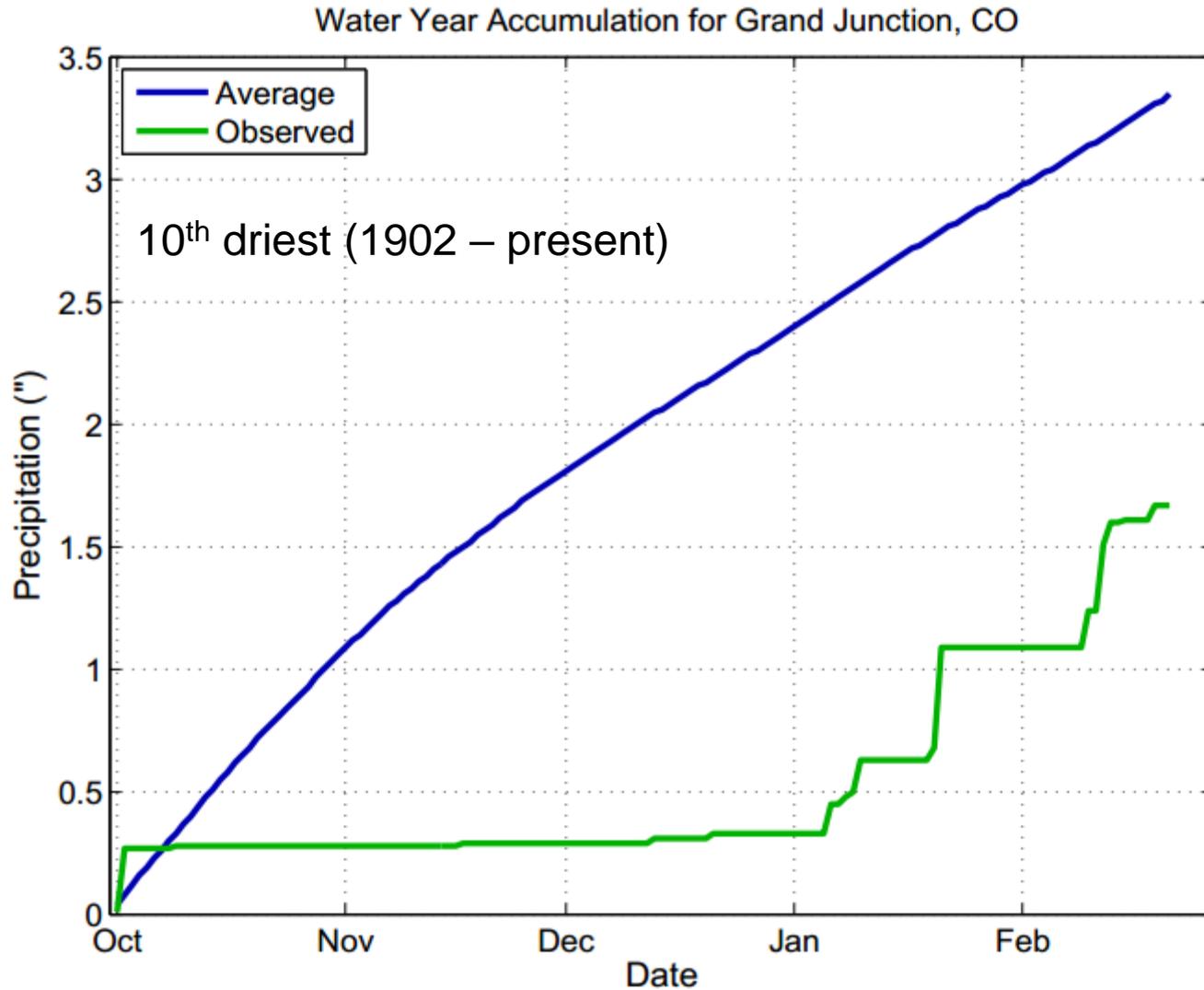
Division 1 – Grand Lake 1NW



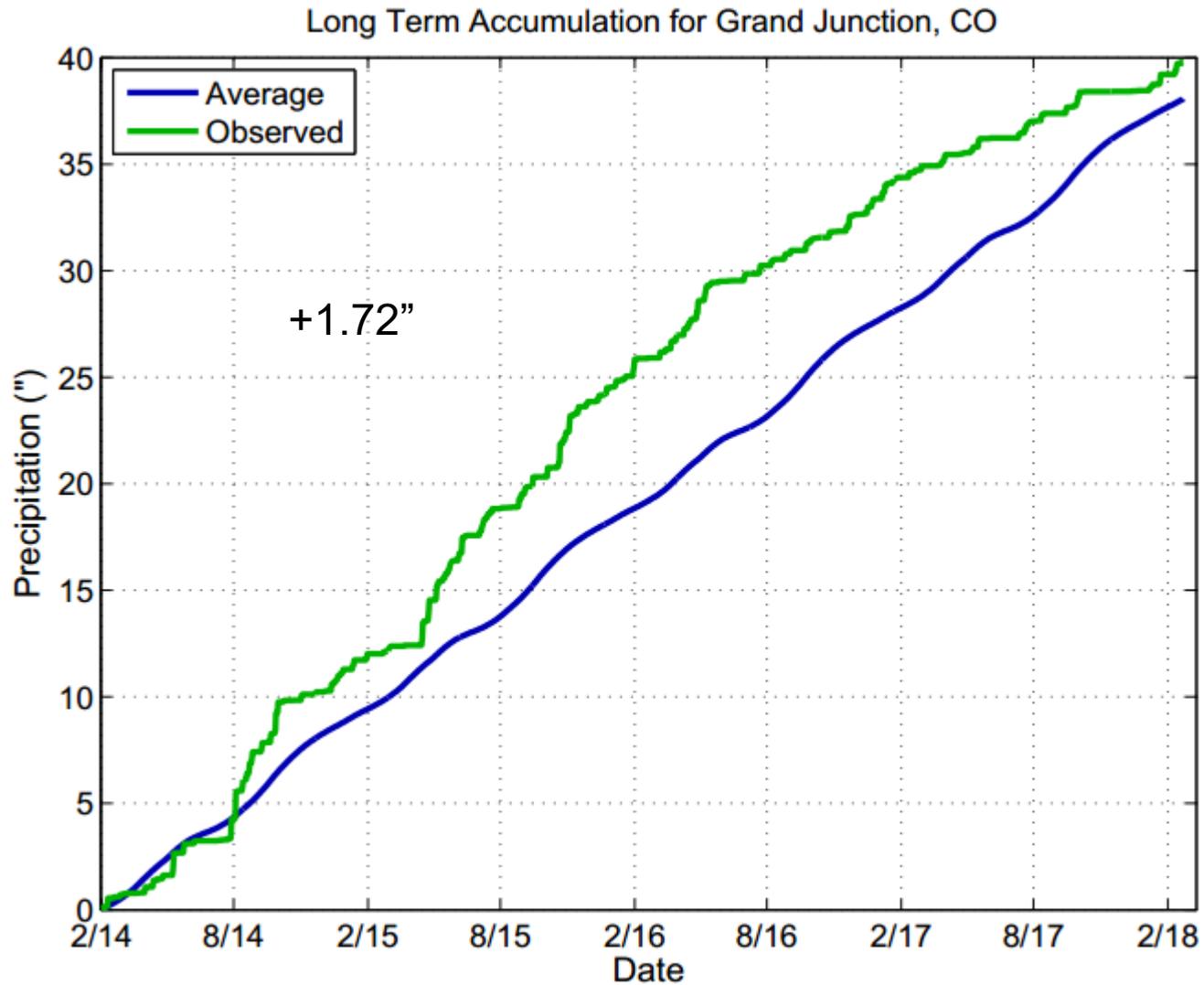
Division 1 – Grand Lake 1NW



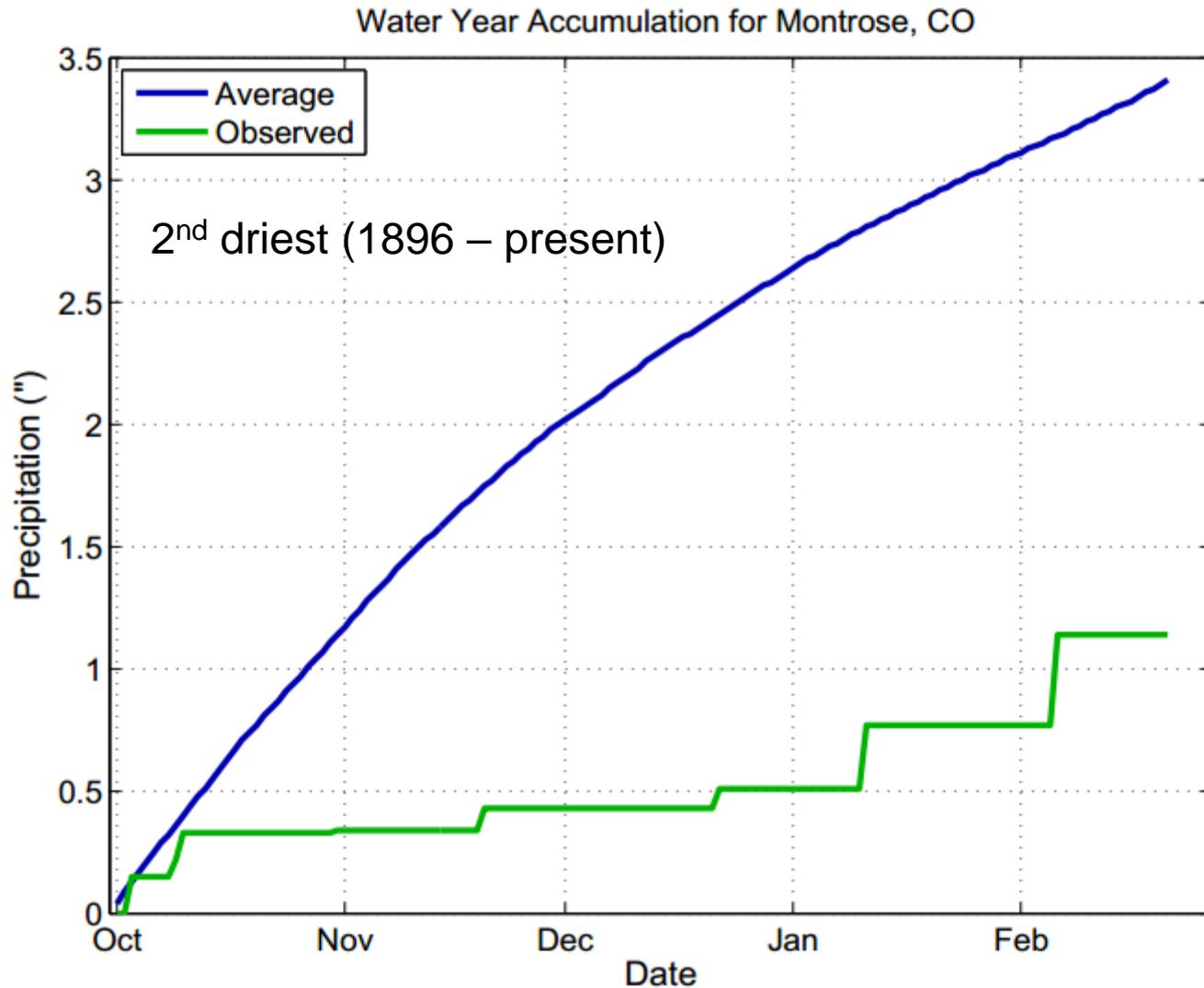
Division 2 – Grand Junction



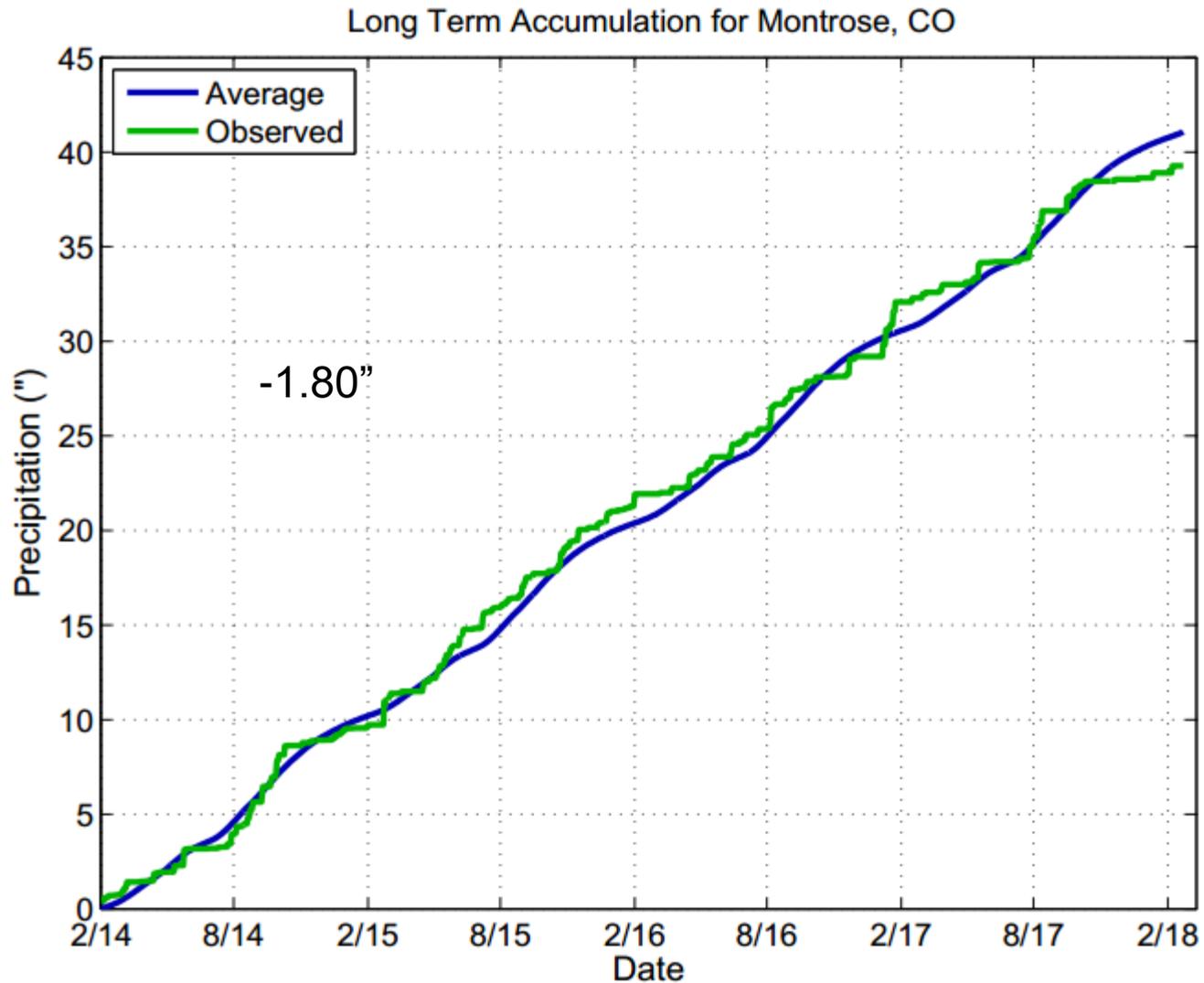
Division 2 – Grand Junction



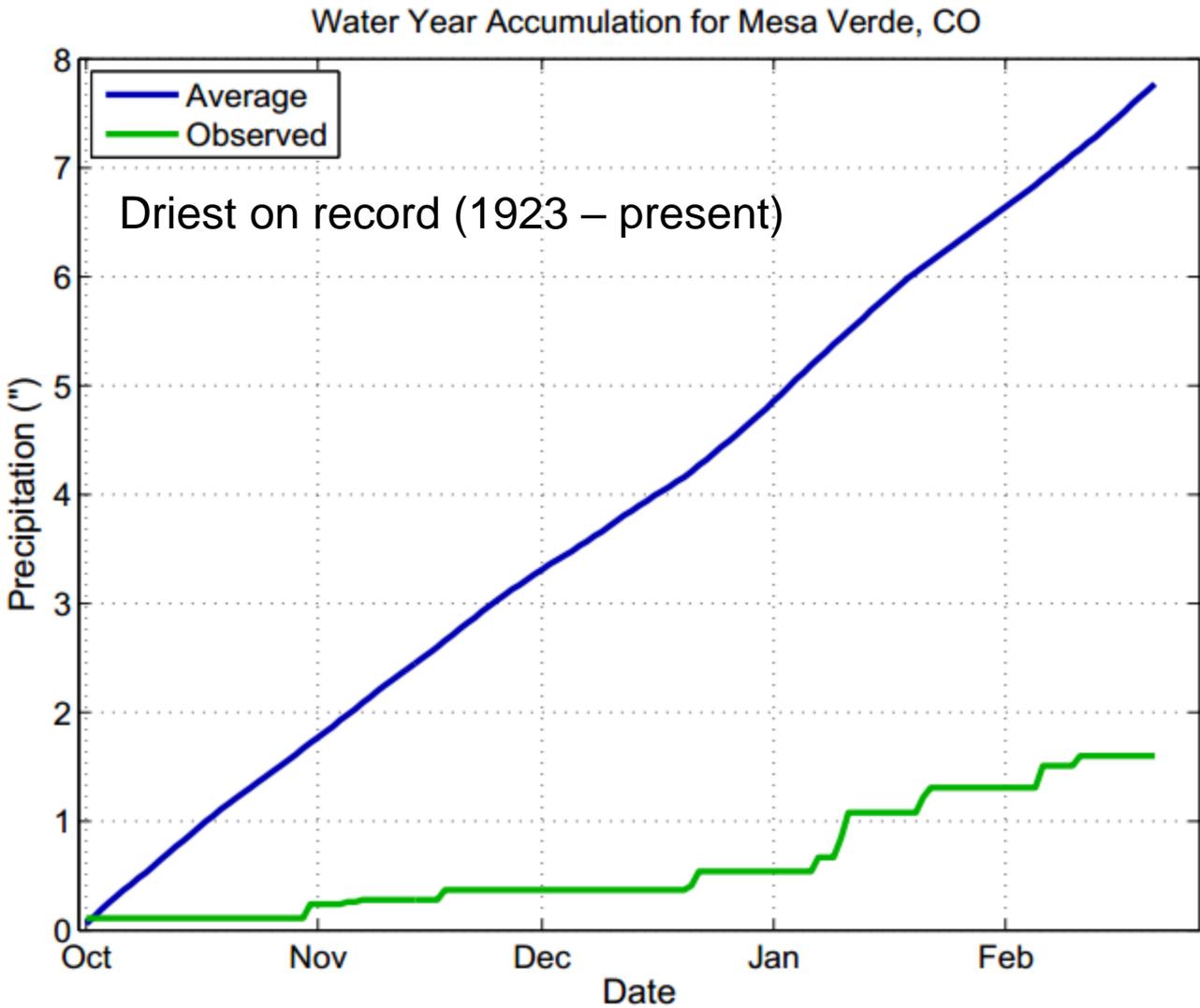
Division 3 – Montrose



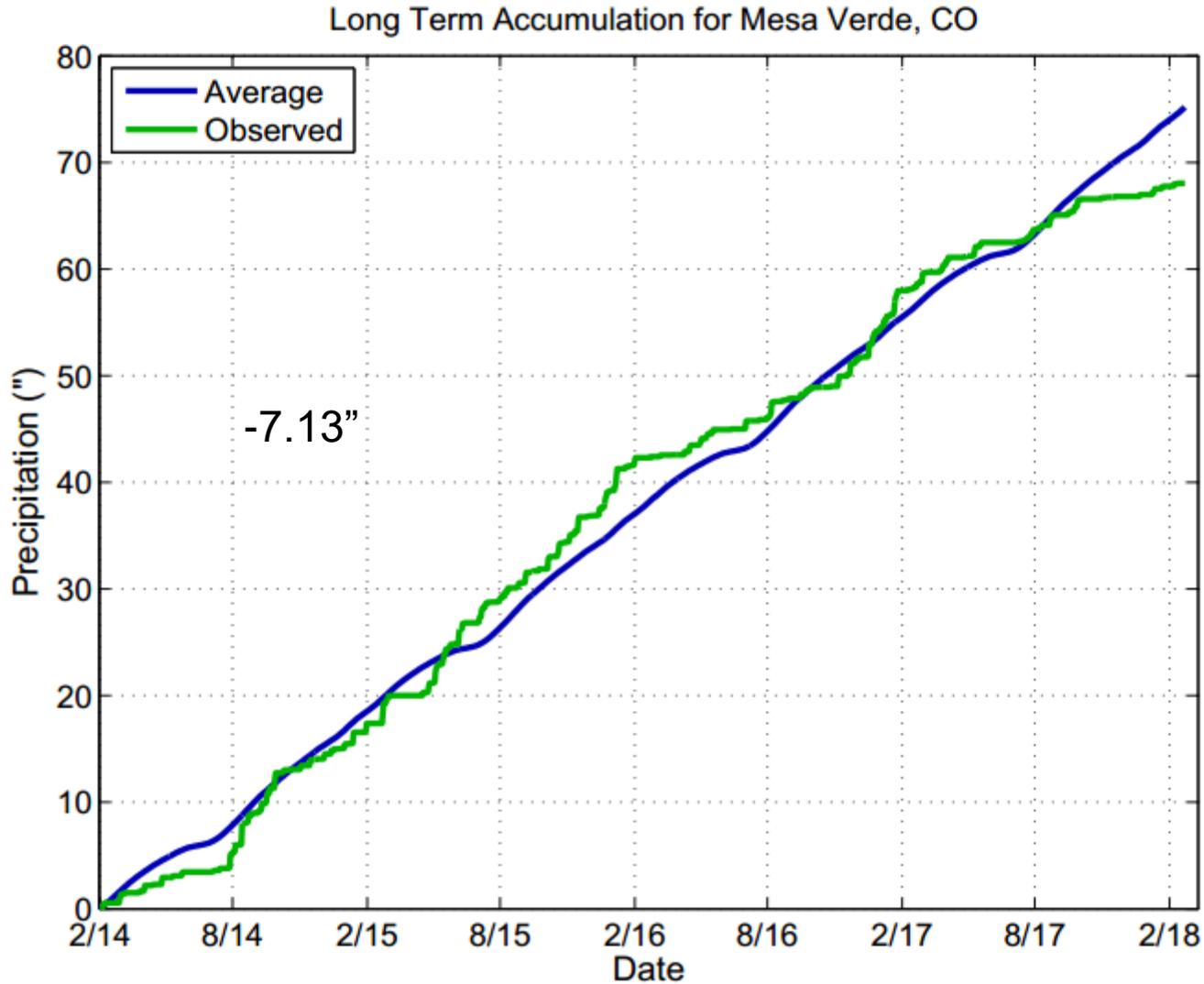
Division 3 – Montrose



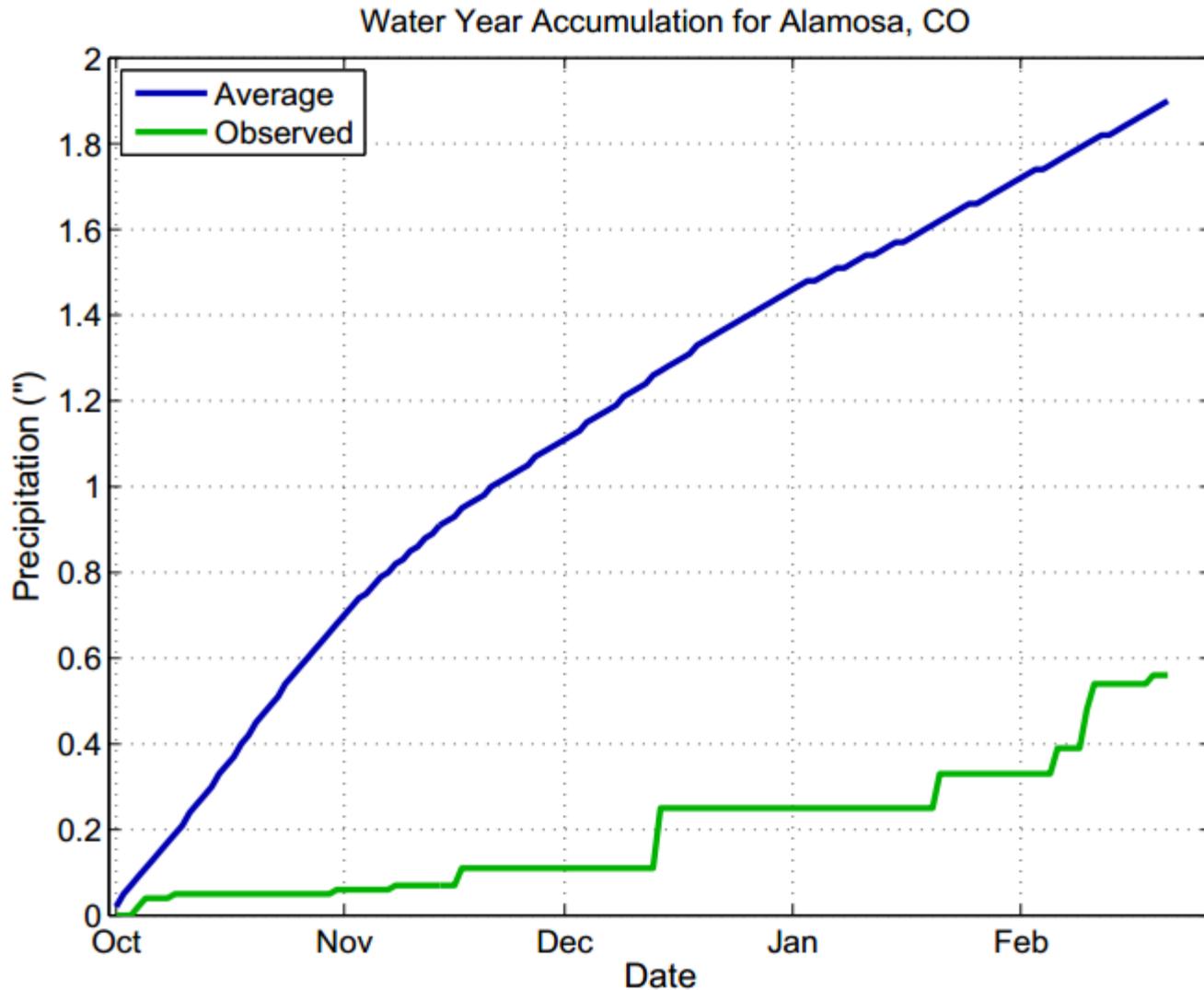
Division 3 – Mesa Verde NP



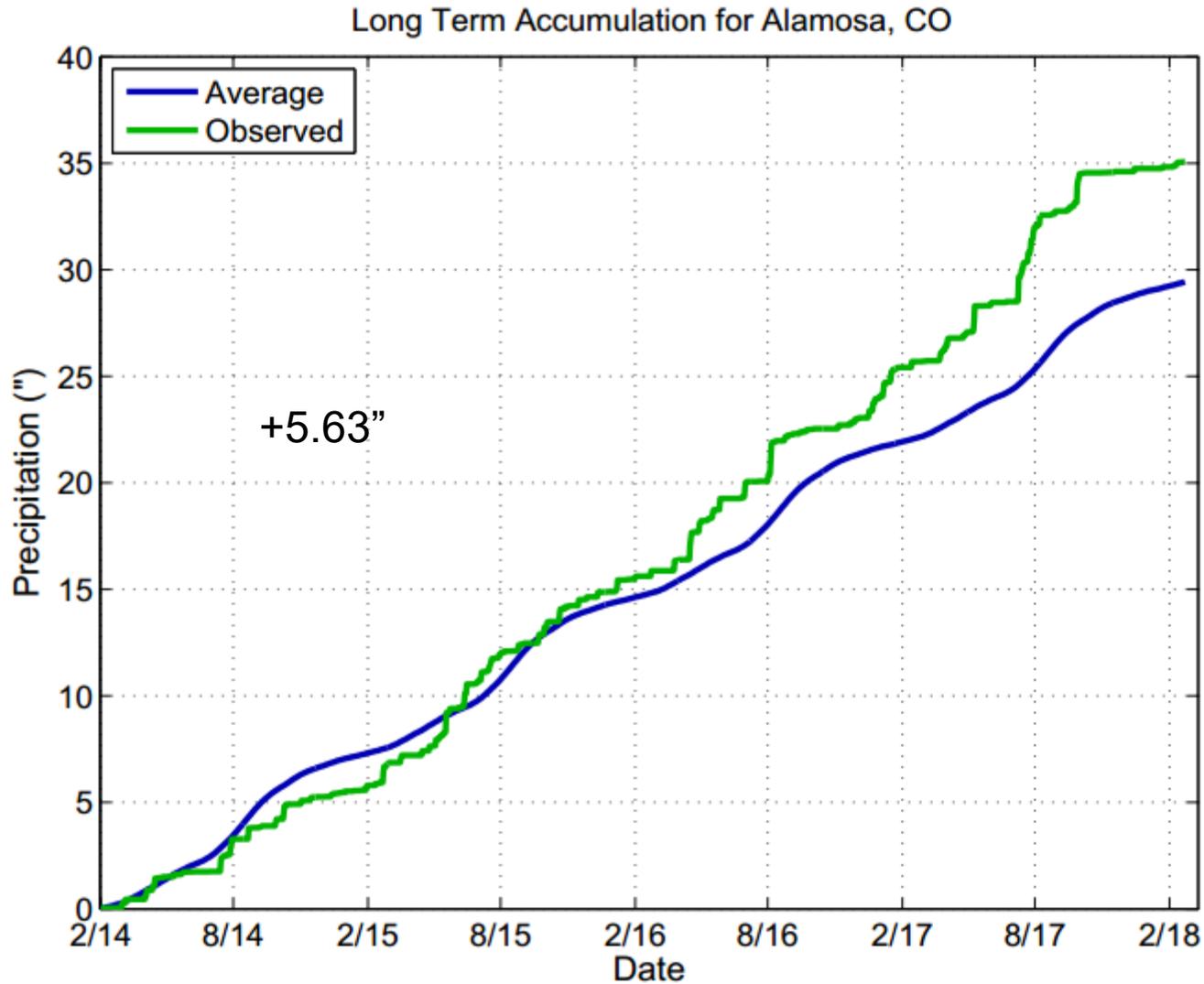
Division 3 – Mesa Verde NP



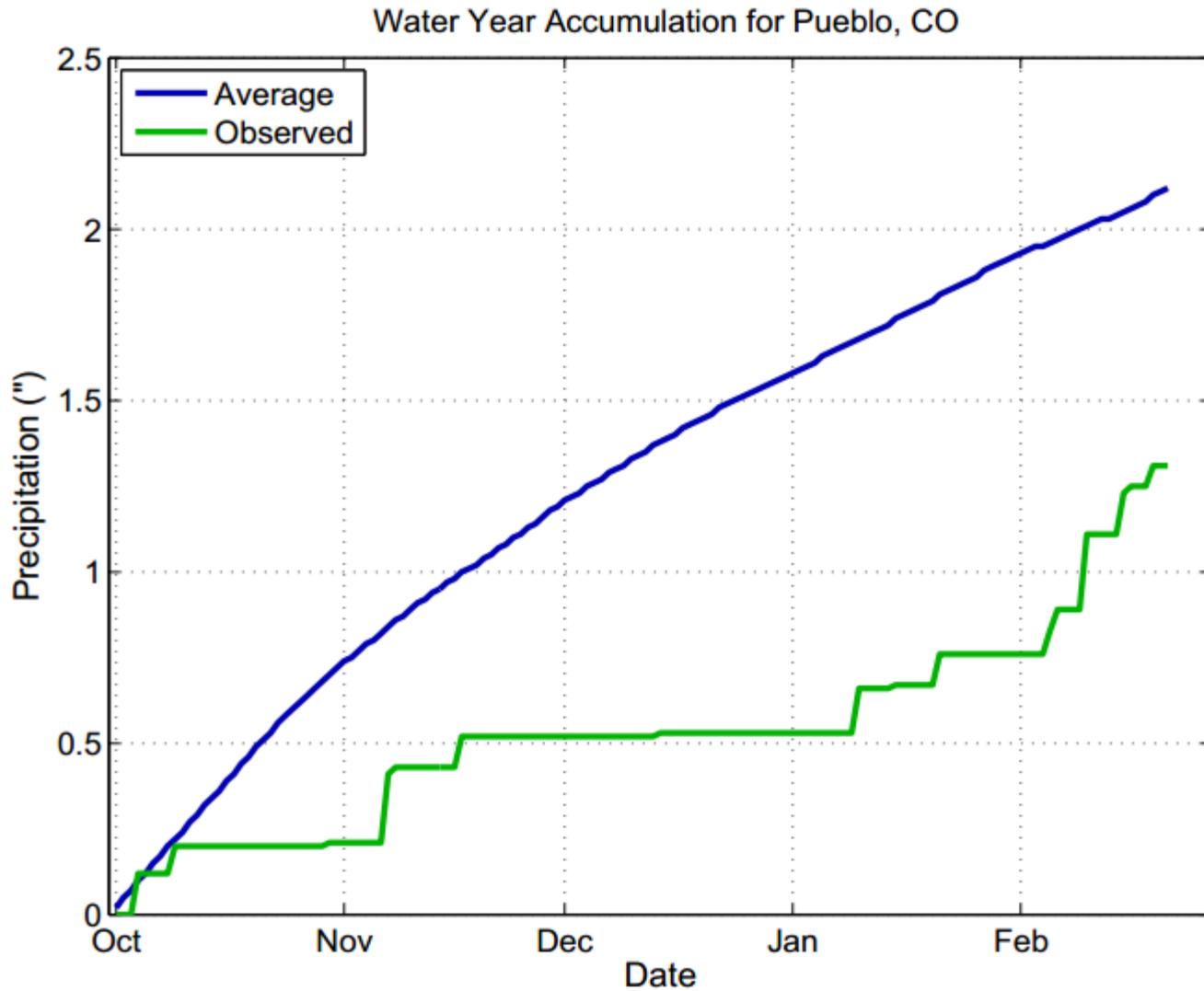
Division 4 – Alamosa



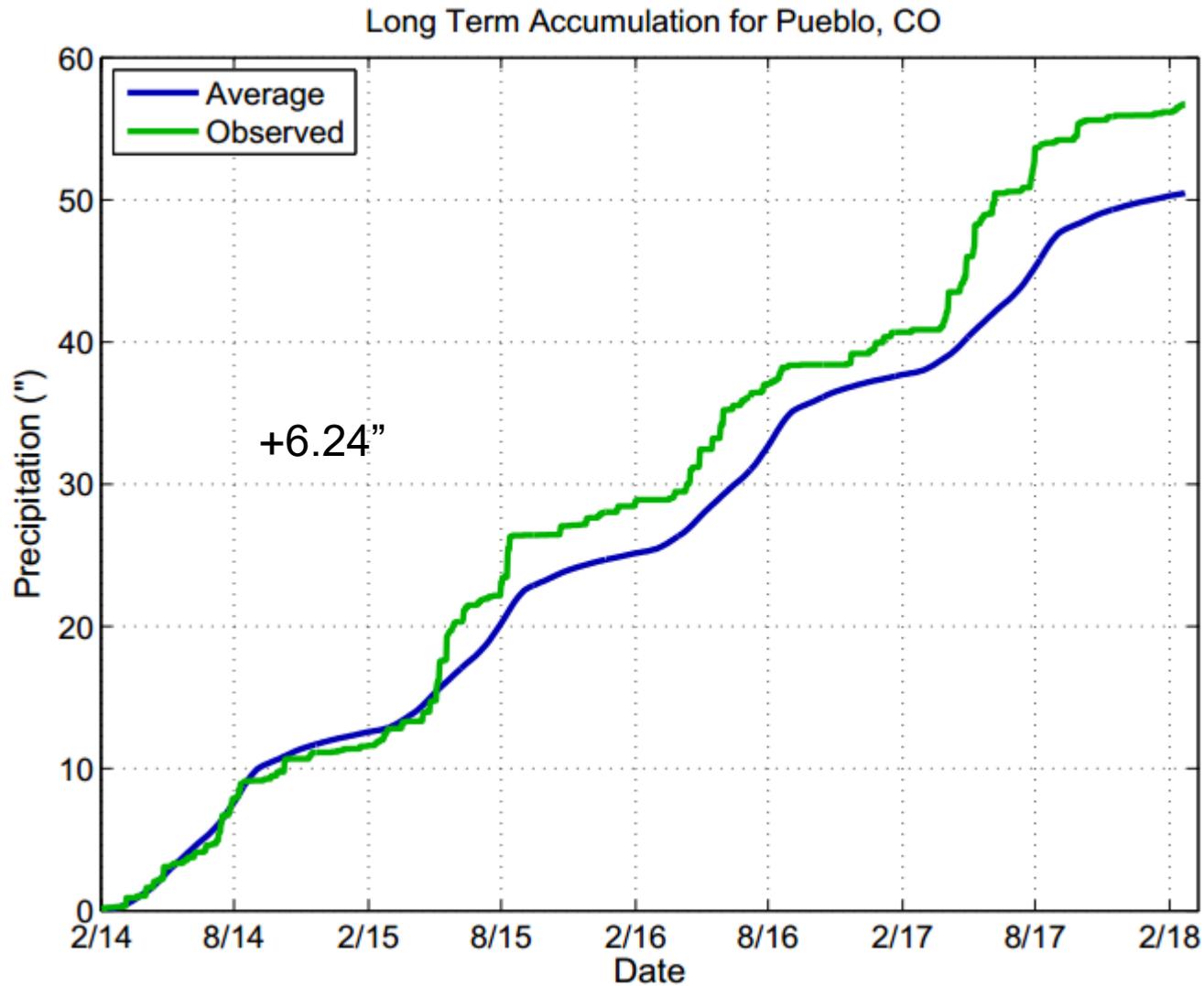
Division 4 – Alamosa



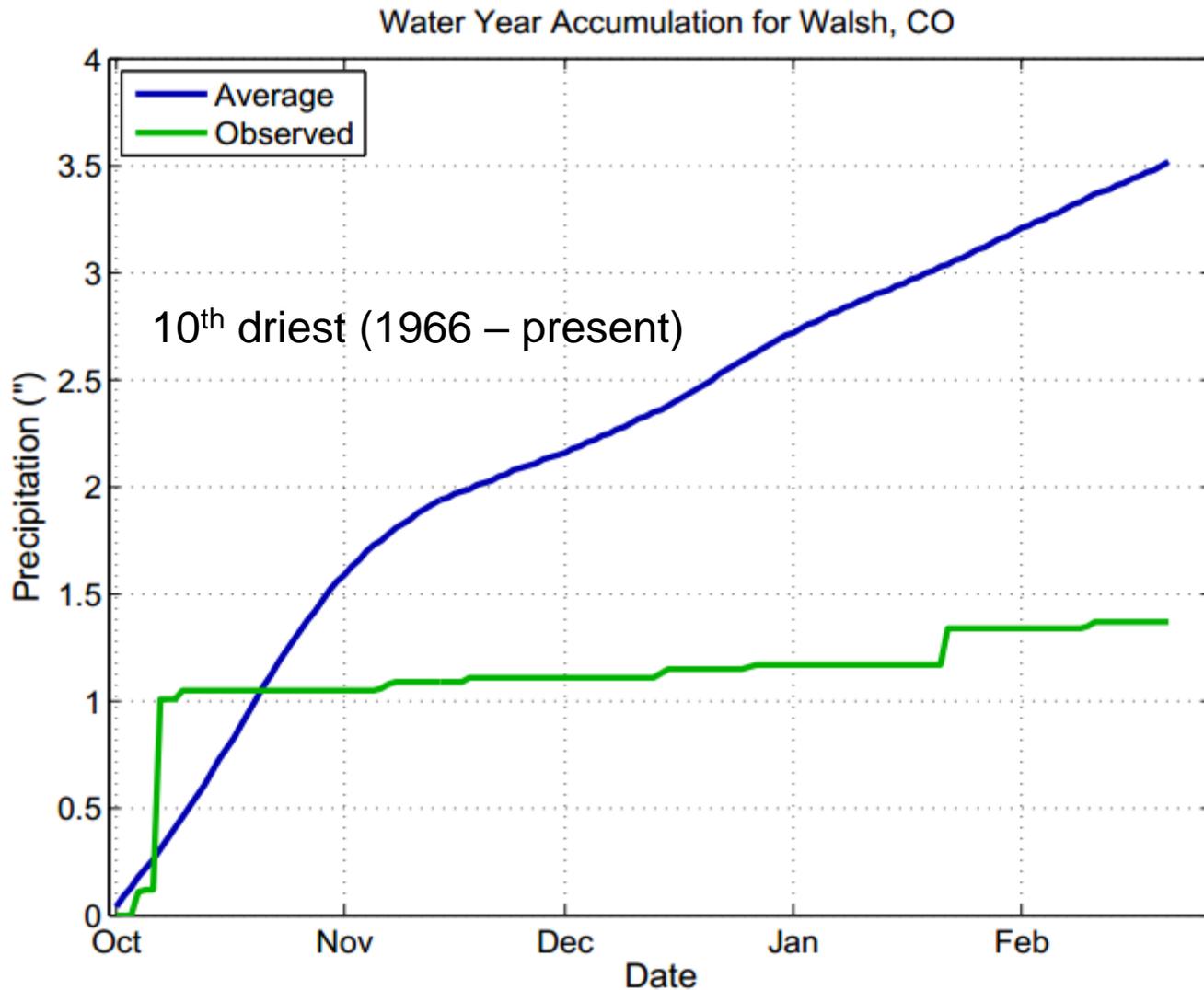
Division 5 – Pueblo



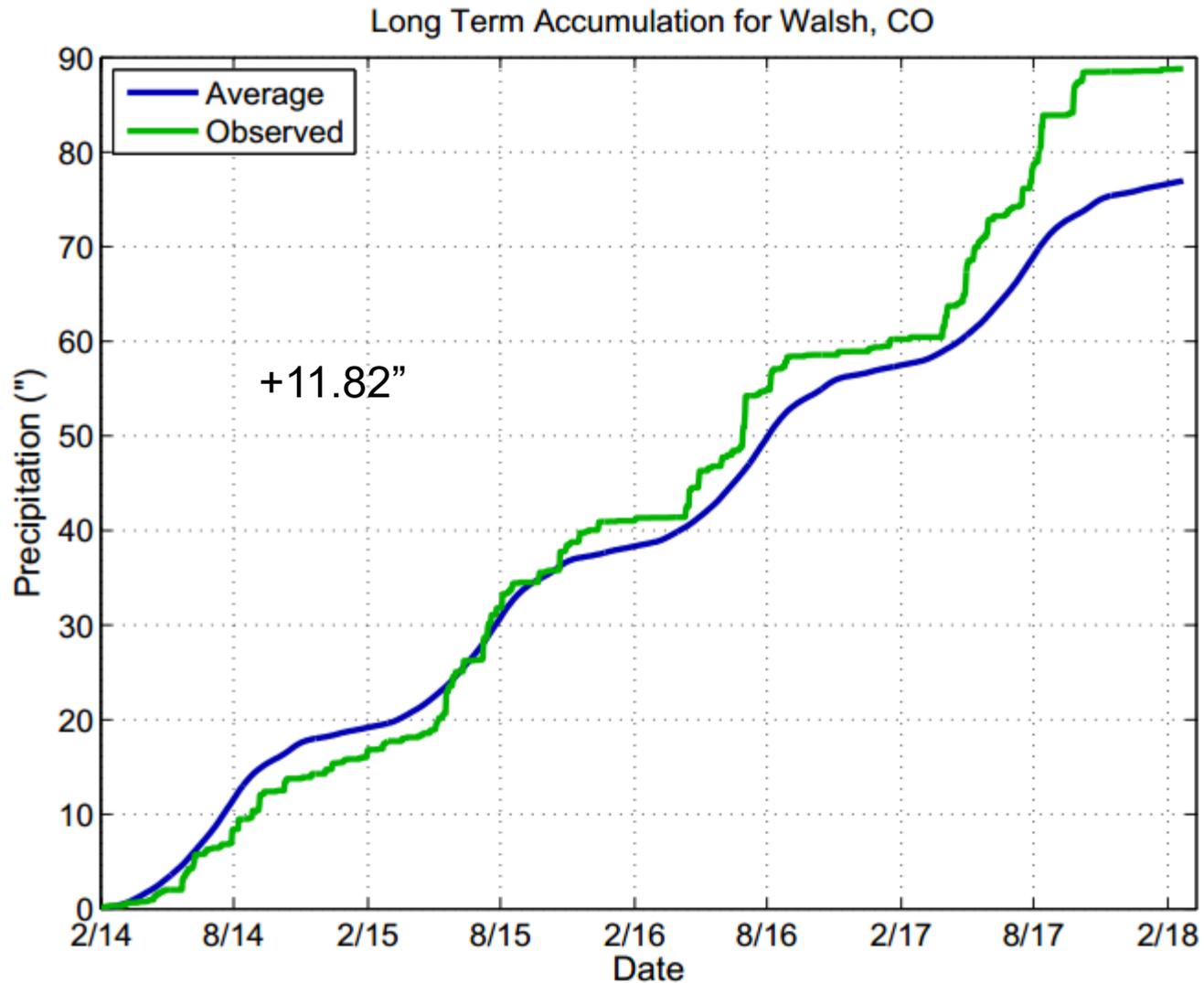
Division 5 – Pueblo



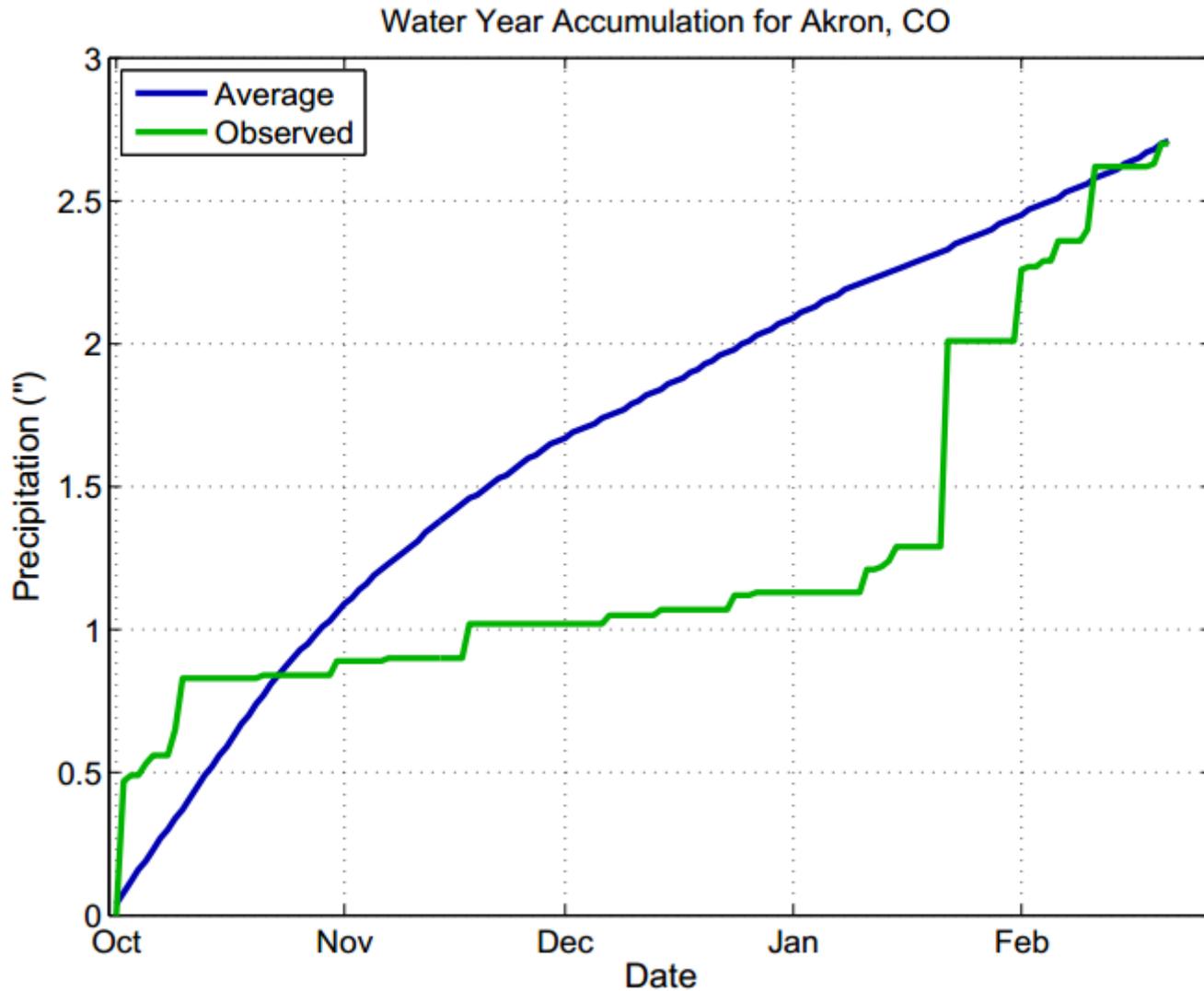
Division 6 - Walsh



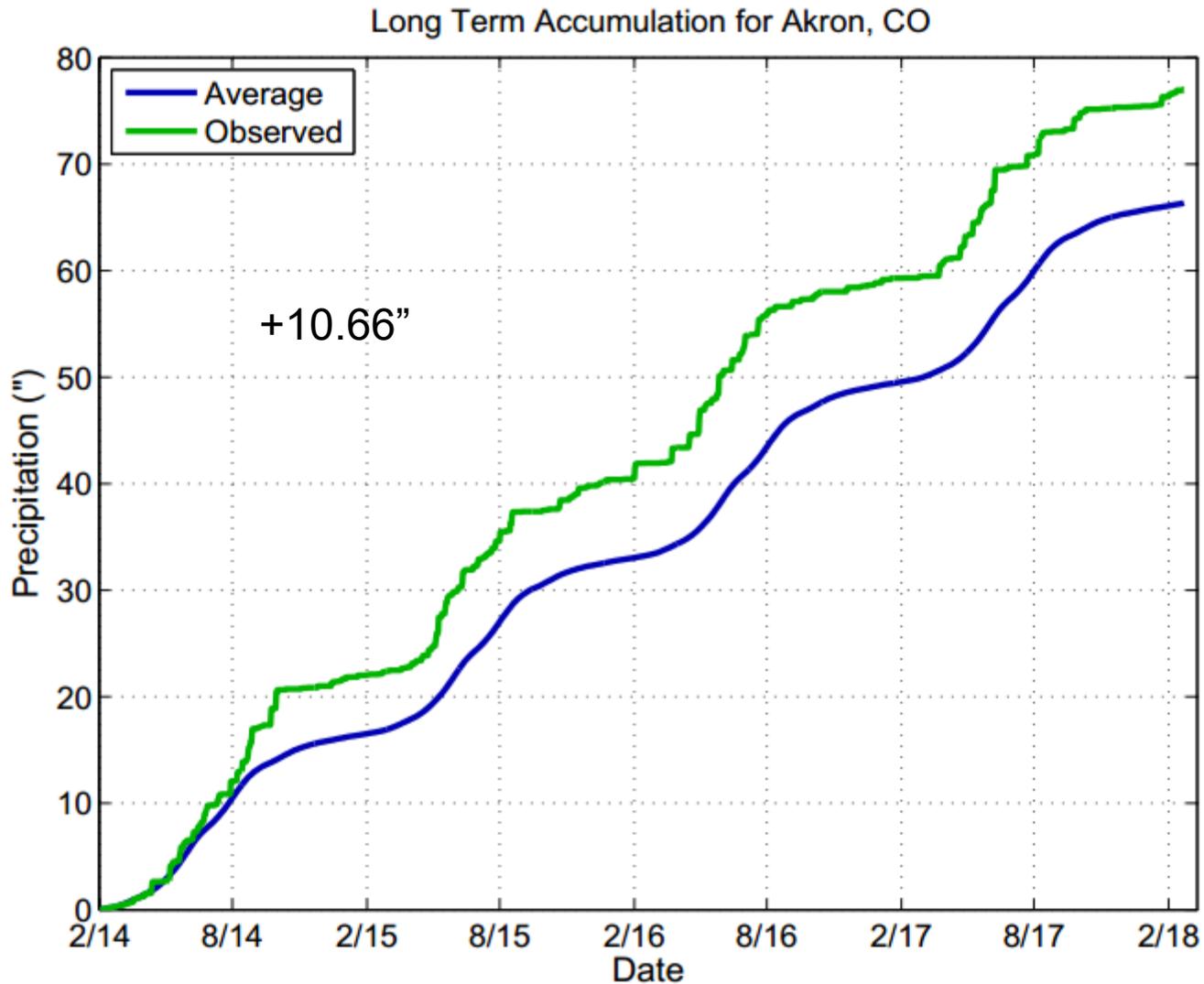
Division 6 - Walsh



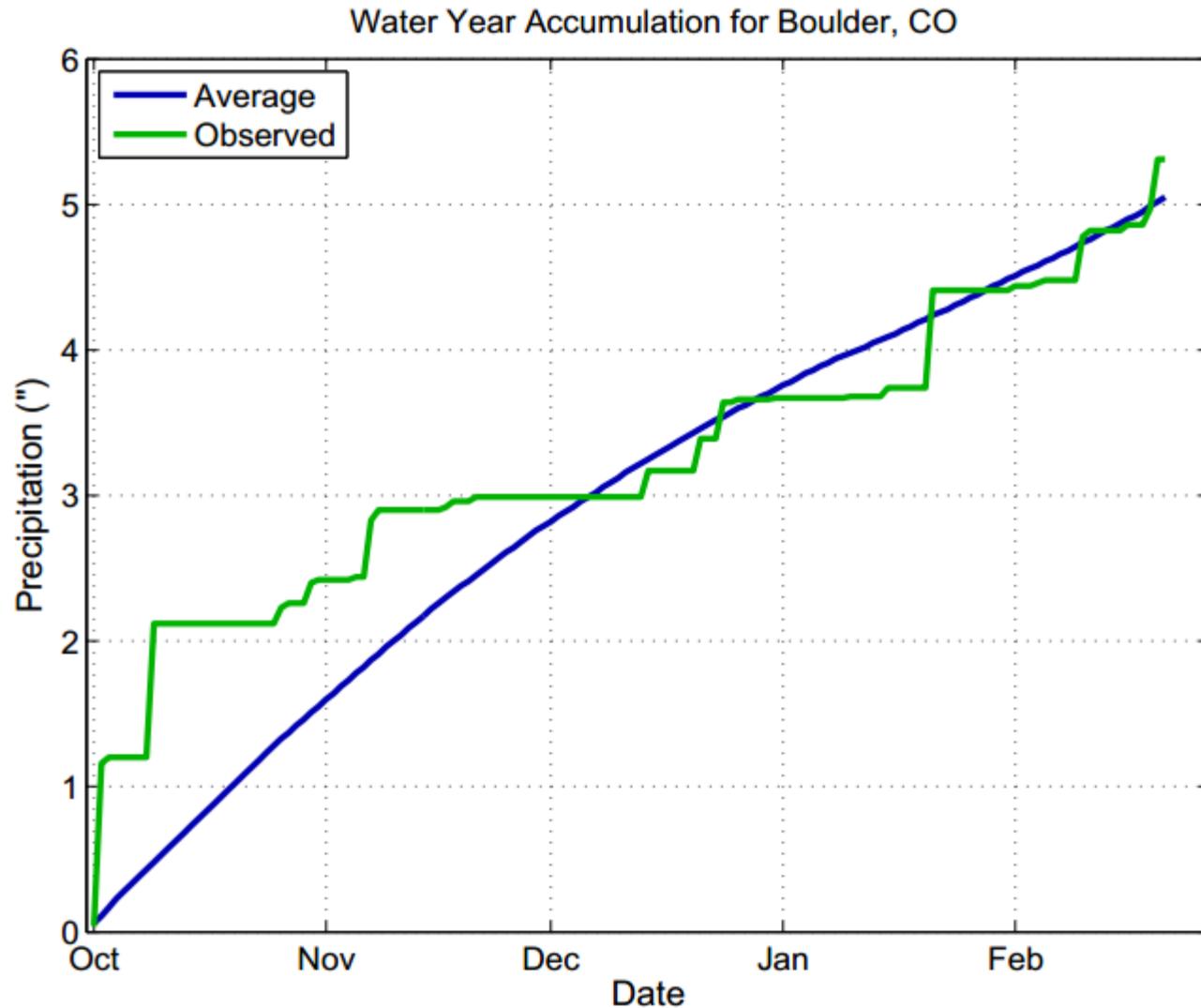
Division 7 – Akron



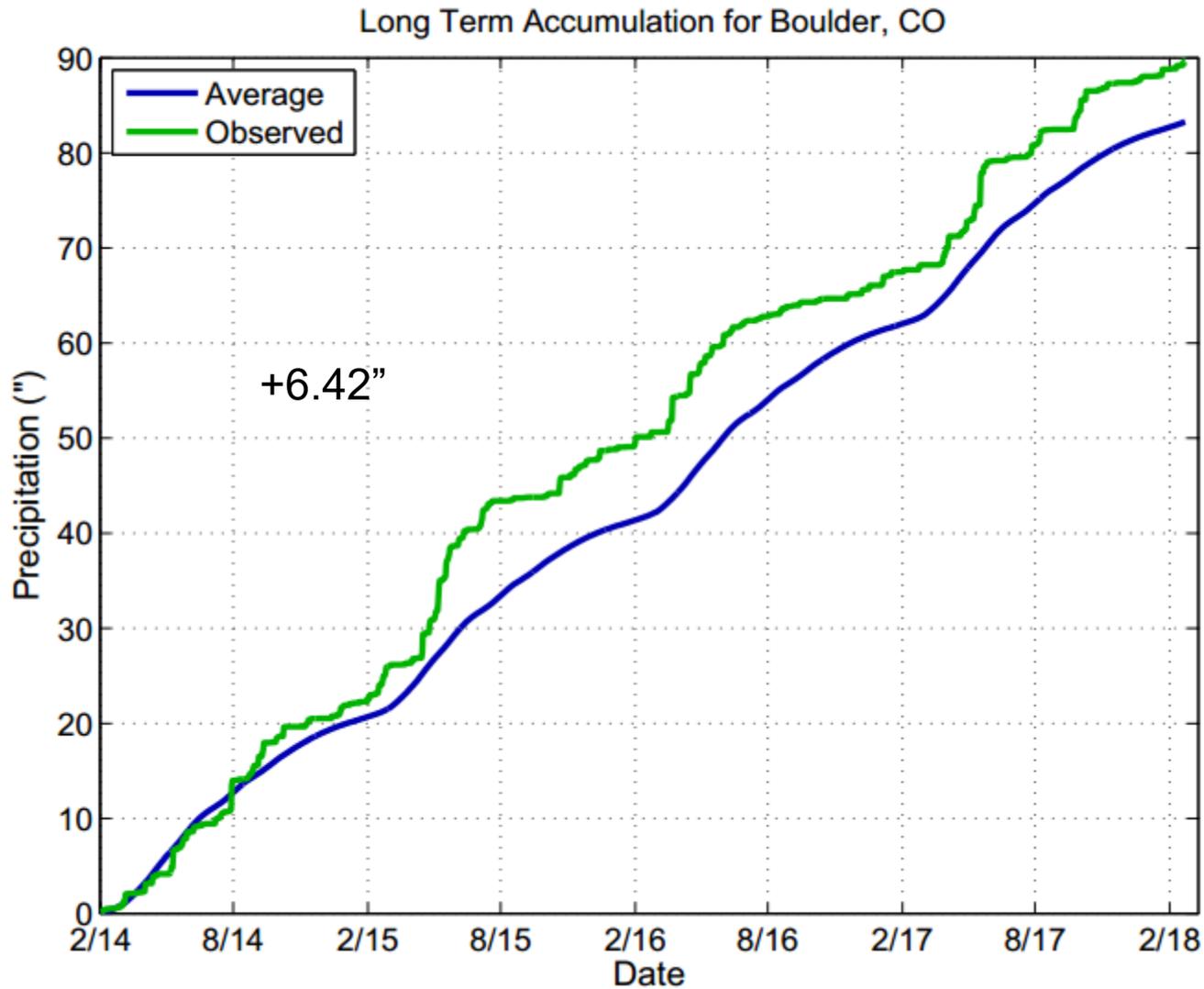
Division 7 – Akron



Division 8 - Boulder

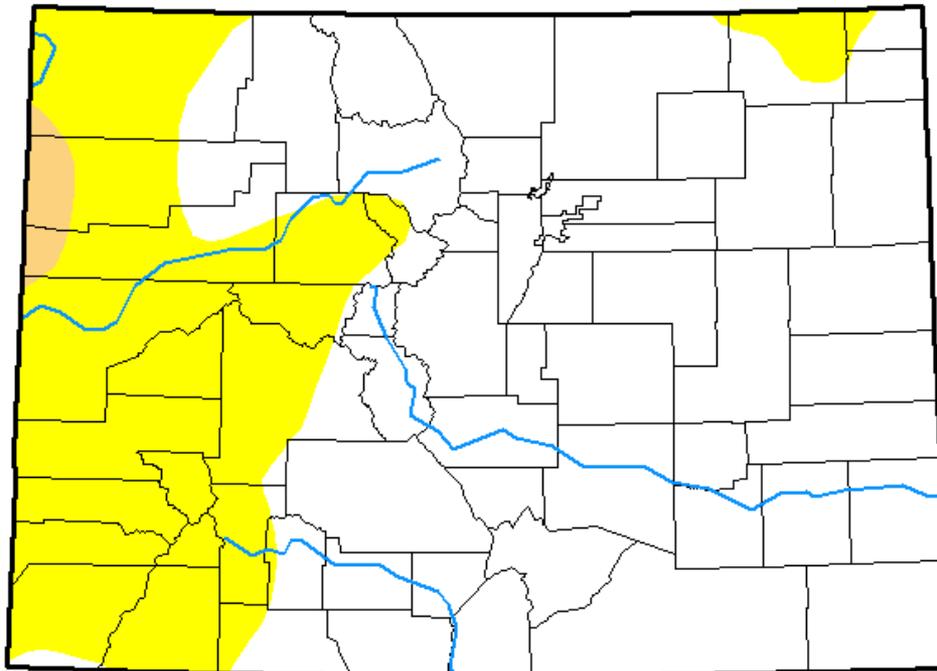


Division 8 - Boulder



U.S. Drought Monitor Colorado

October 24, 2017
(Released Thursday, Oct. 26, 2017)
Valid 8 a.m. EDT



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	71.57	28.43	1.12	0.00	0.00	0.00
Last Week 10-17-2017	71.71	28.29	1.12	0.00	0.00	0.00
3 Months Ago 07-25-2017	60.05	39.95	0.00	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 10-25-2016	35.46	64.54	5.83	0.00	0.00	0.00

Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D3 Extreme 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:

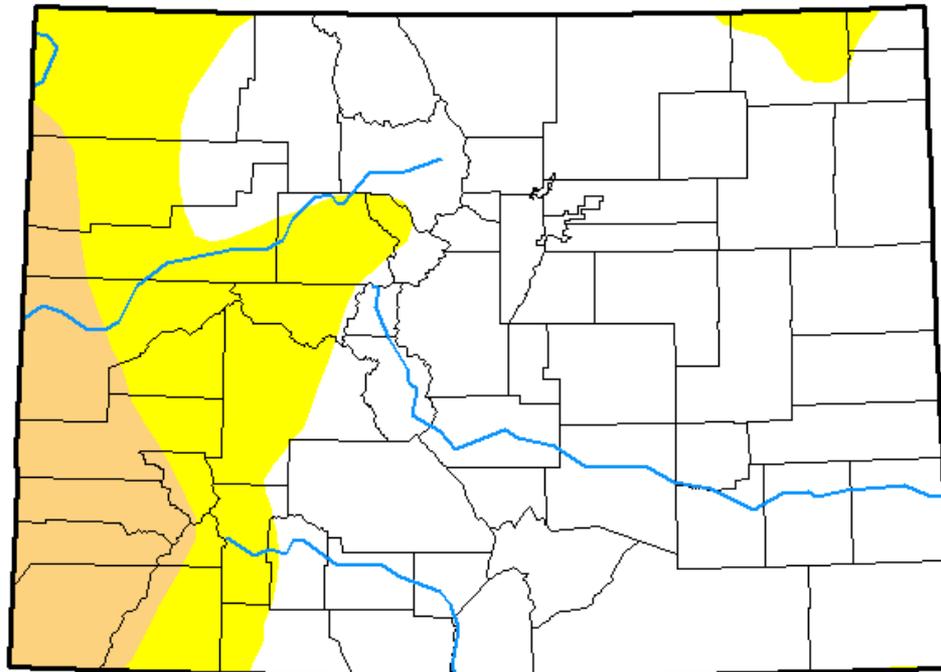
Eric Luebehusen
U.S. Department of Agriculture



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

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:

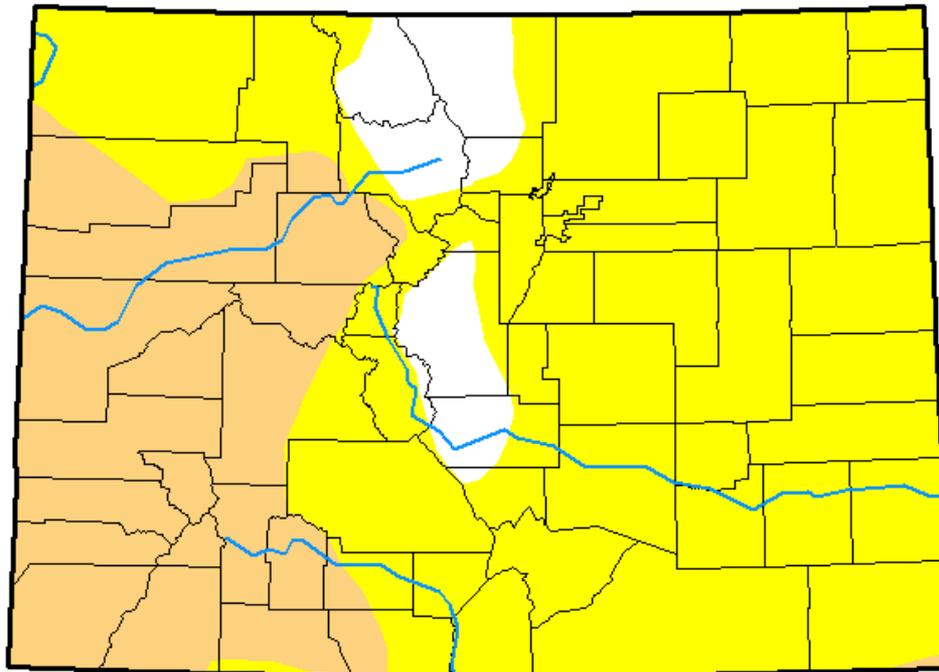
Richard Tinker
CPC/NOAA/NWS/NCEP



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

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

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

Author:

Jessica Blunden
NCEI/NOAA



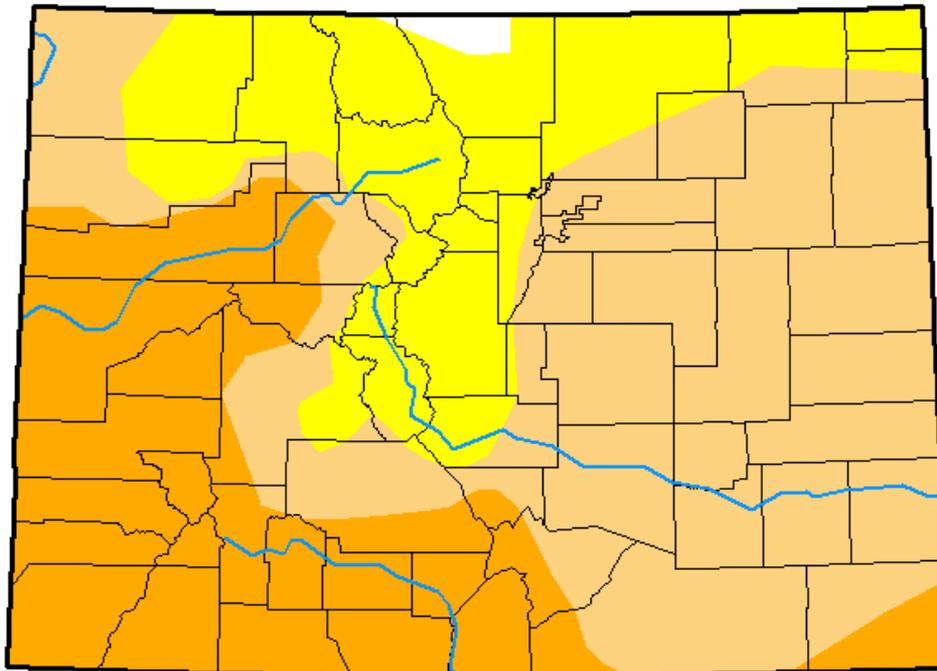
<http://droughtmonitor.unl.edu/>

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:

- 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



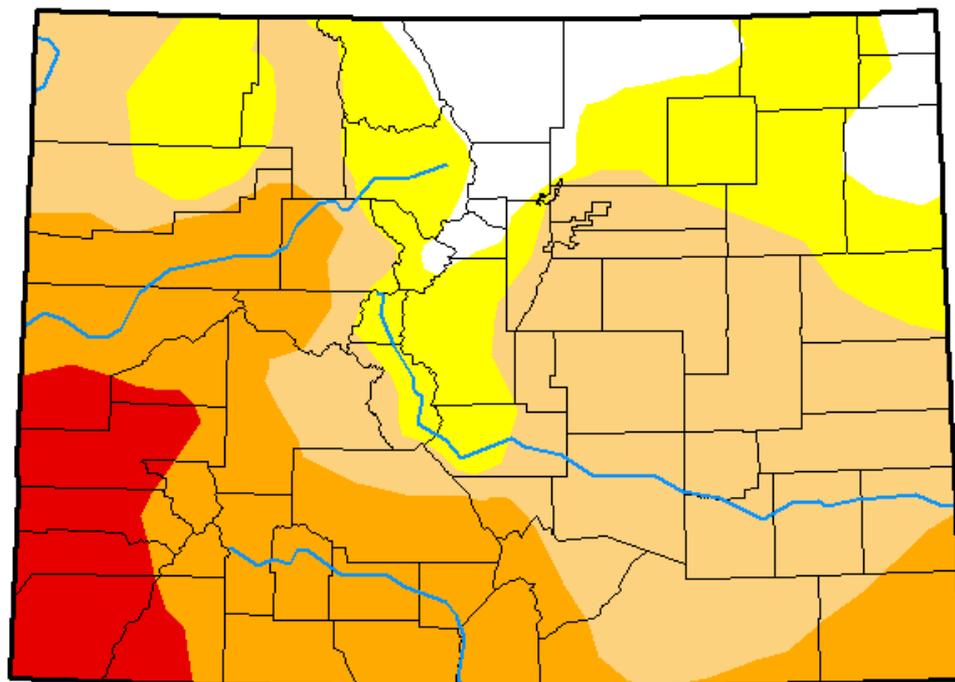
<http://droughtmonitor.unl.edu/>

U.S. Drought Monitor Colorado

February 20, 2018
(Released Thursday, Feb. 22, 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	7.62	0.00
Last Week <i>02-13-2018</i>	8.59	91.41	71.18	33.51	0.00	0.00
3 Months Ago <i>11-21-2017</i>	71.23	28.77	9.82	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>02-21-2017</i>	48.05	51.95	36.92	1.64	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.

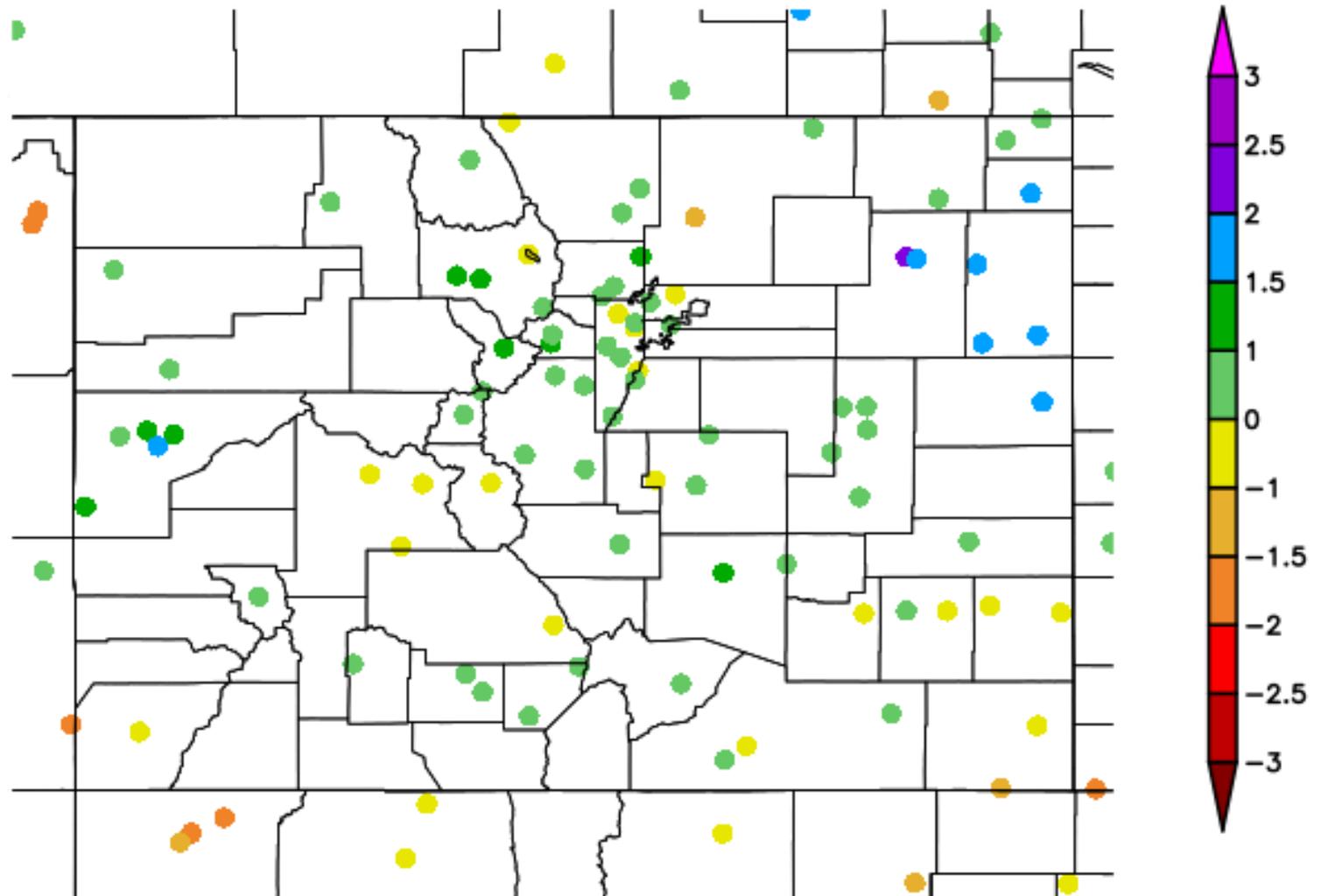
Author:

Deborah Bathke
National Drought Mitigation Center



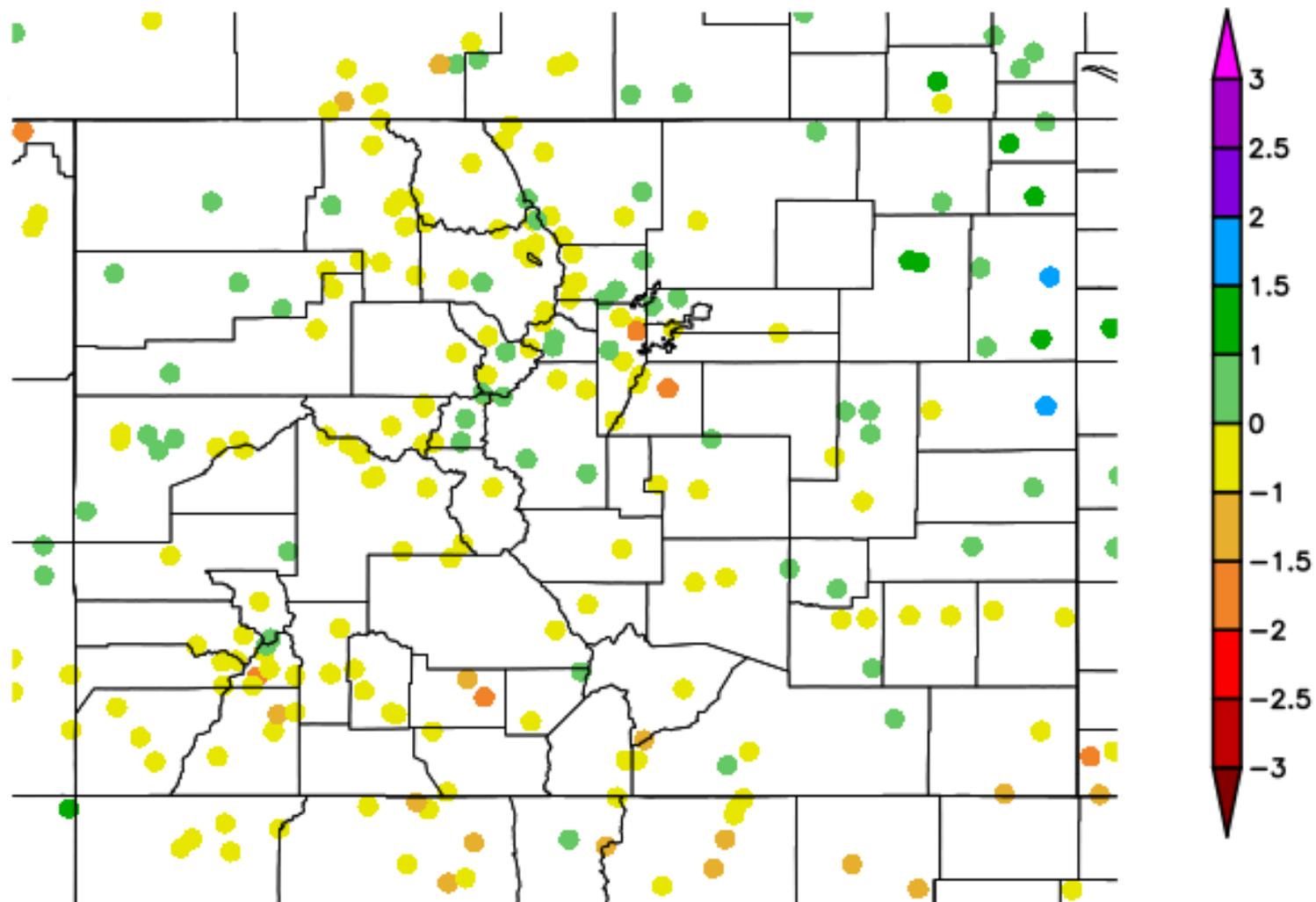
<http://droughtmonitor.unl.edu/>

30 Day SPI 1/21/2018 - 2/19/2018



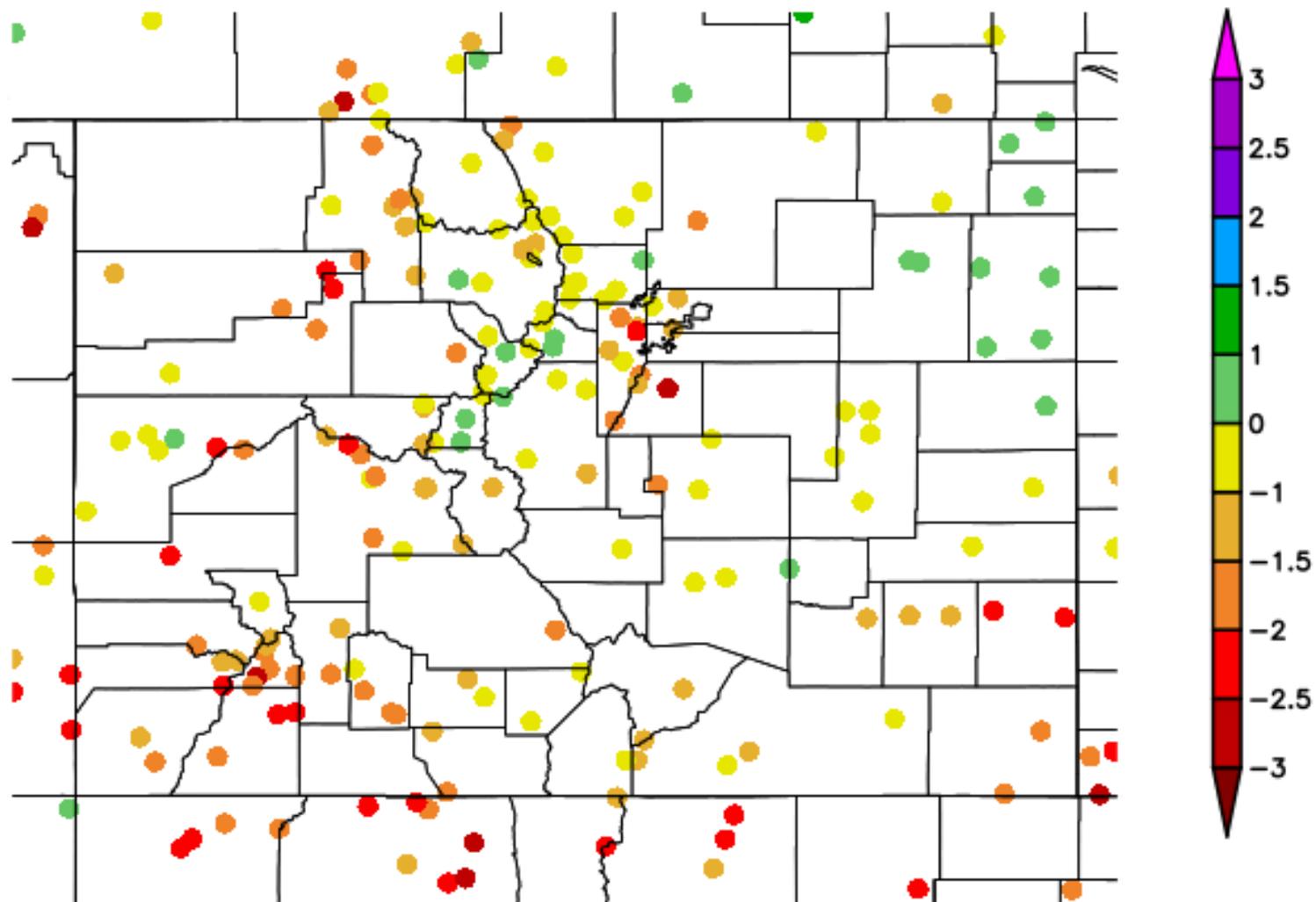
Monthly SPI

1/1/2018 - 1/31/2018



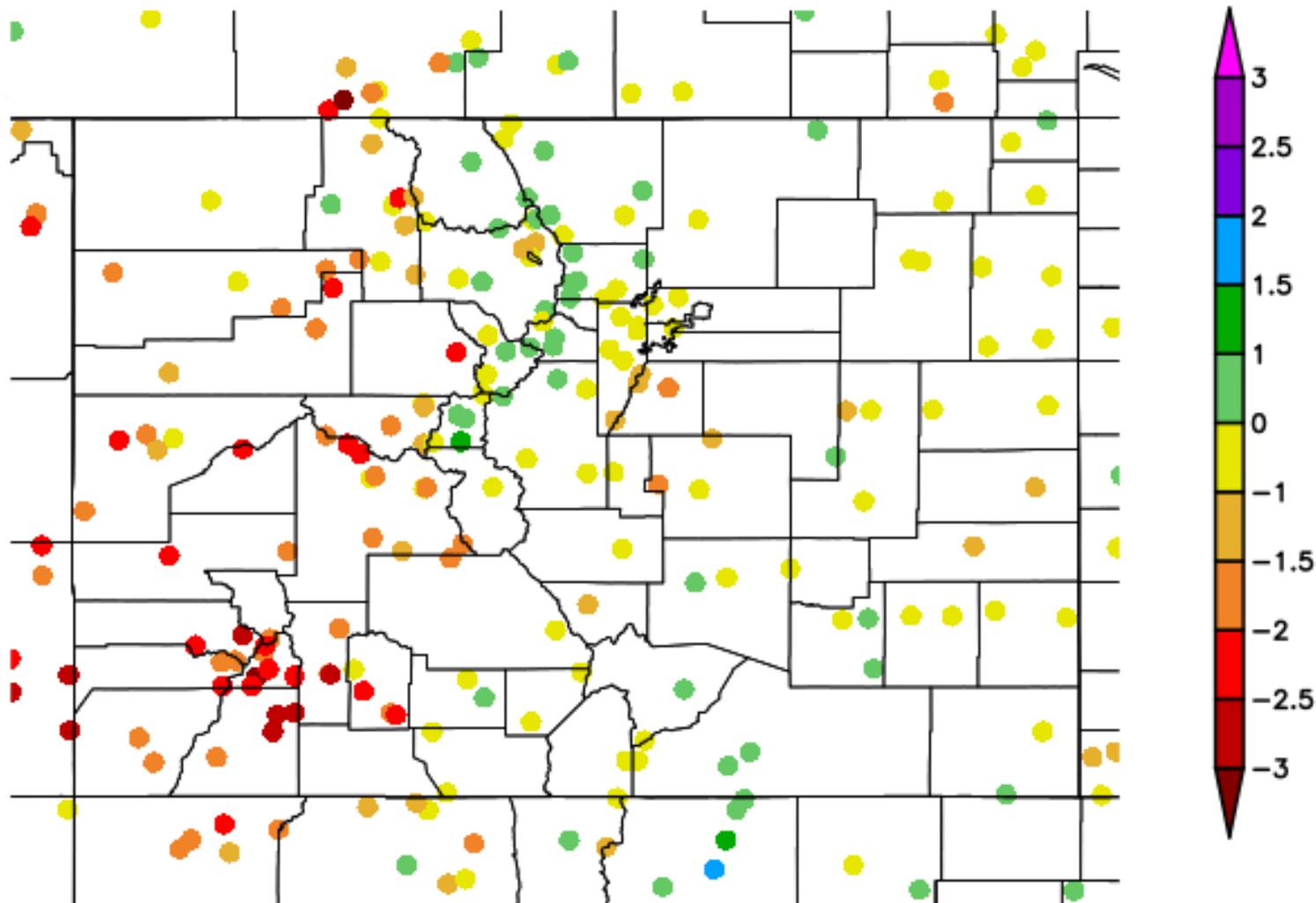
90 Day SPI

11/22/2017 - 2/19/2018

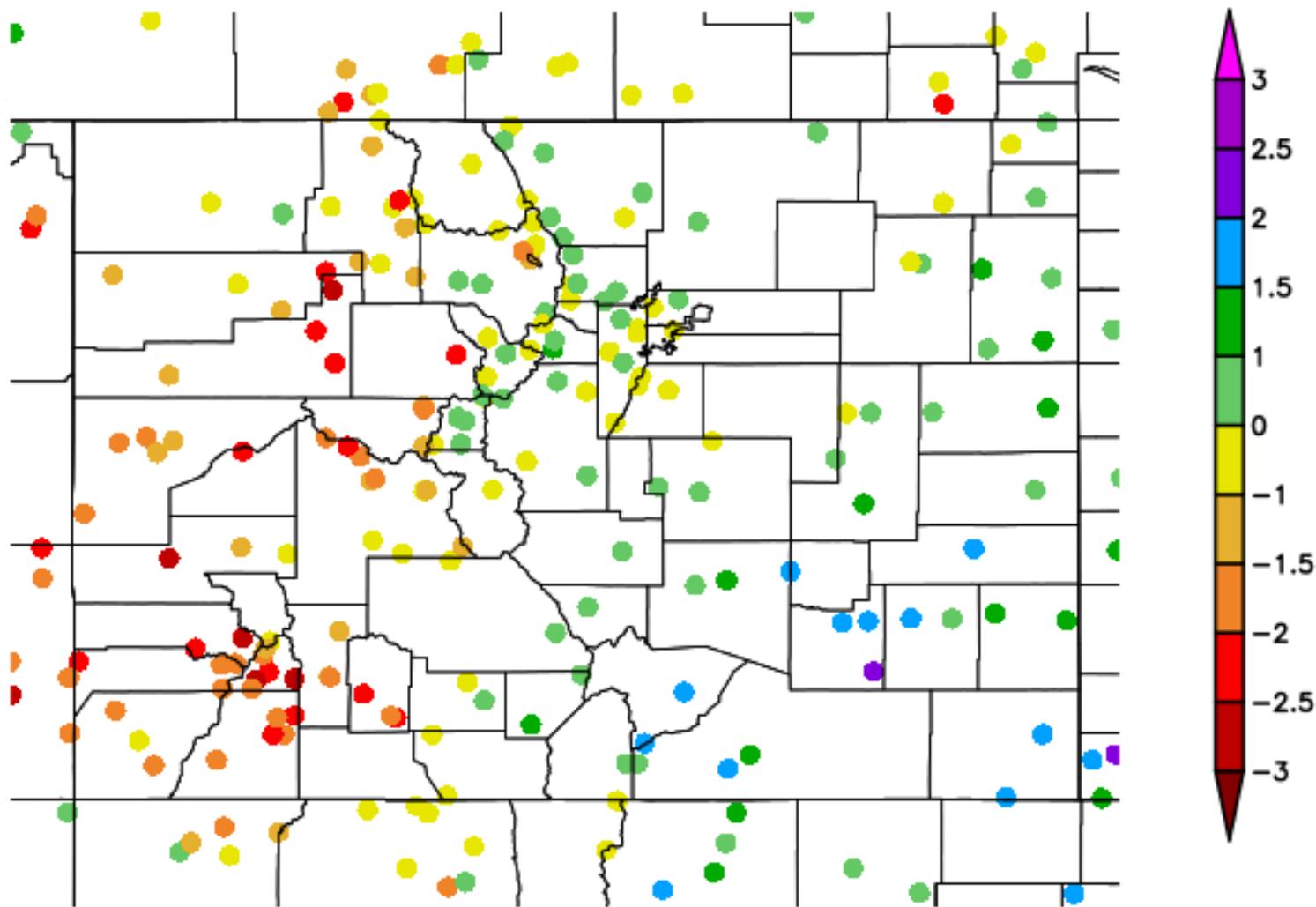


6 Month SPI

8/20/2017 - 2/19/2018



12 Month SPI 2/20/2017 - 2/19/2018

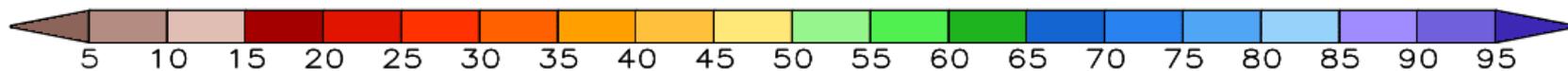
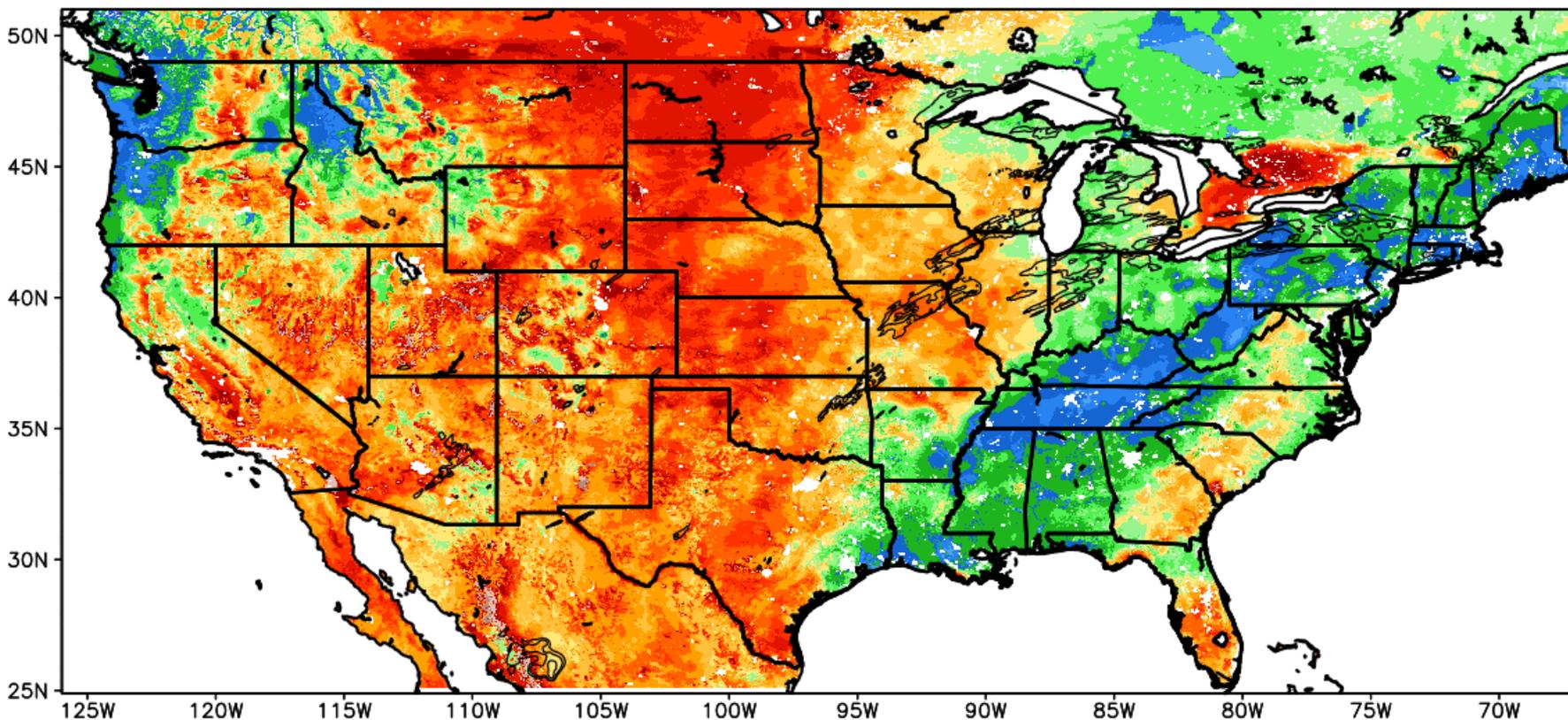


Reservoir and Soils Update

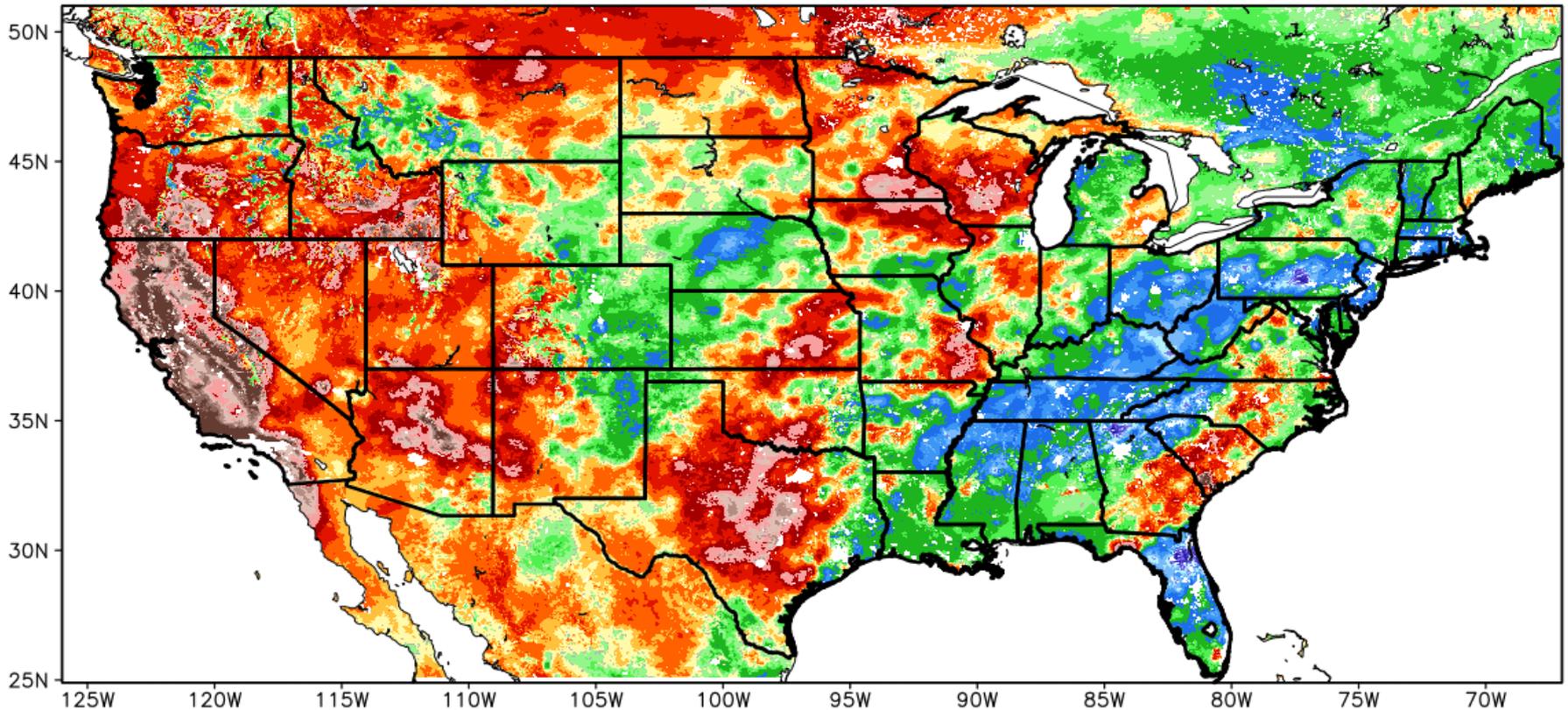


Column-Integrated Relative Soil Moisture (available water; %) valid 00z 20 Feb 2018

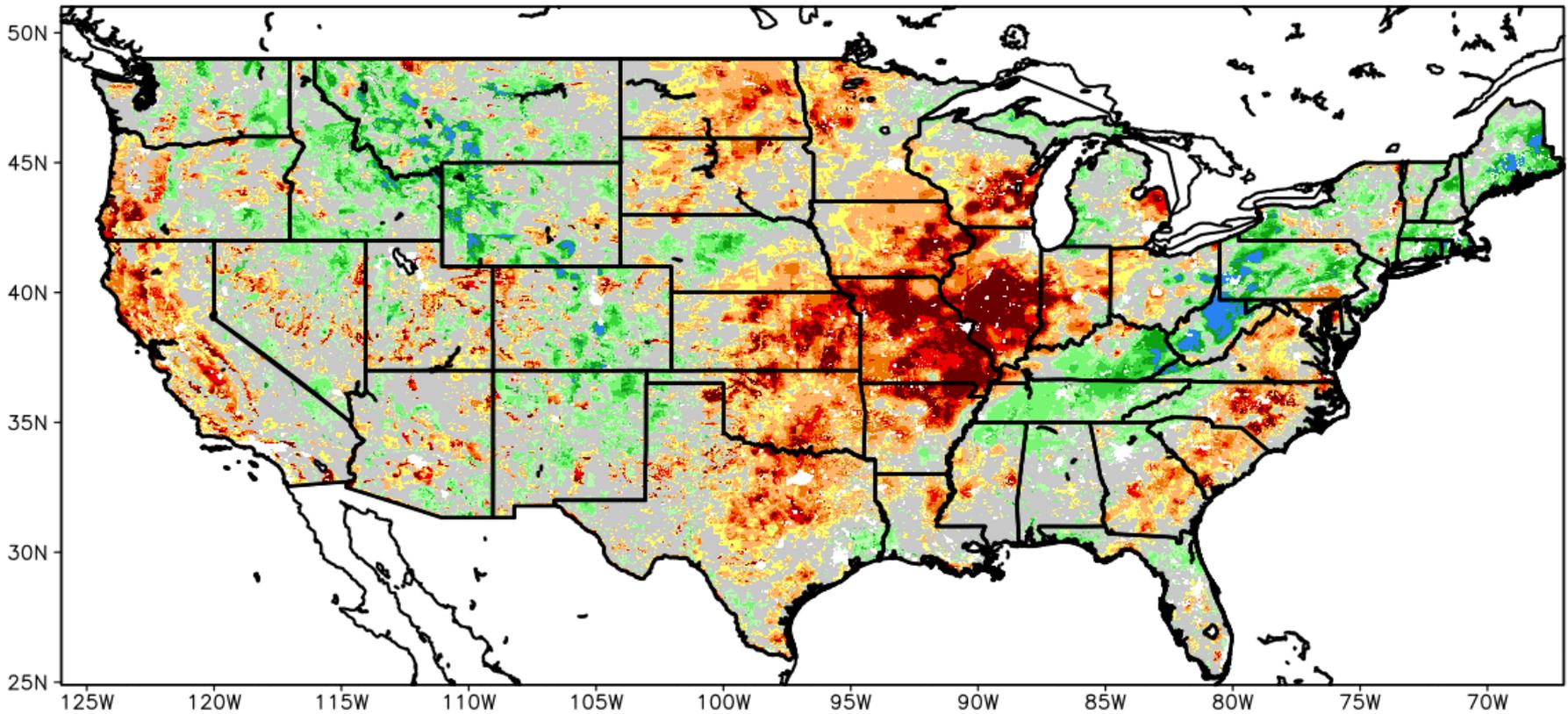
Precipitation in previous hour (1,2,5,10,15,20,25 mm contours)



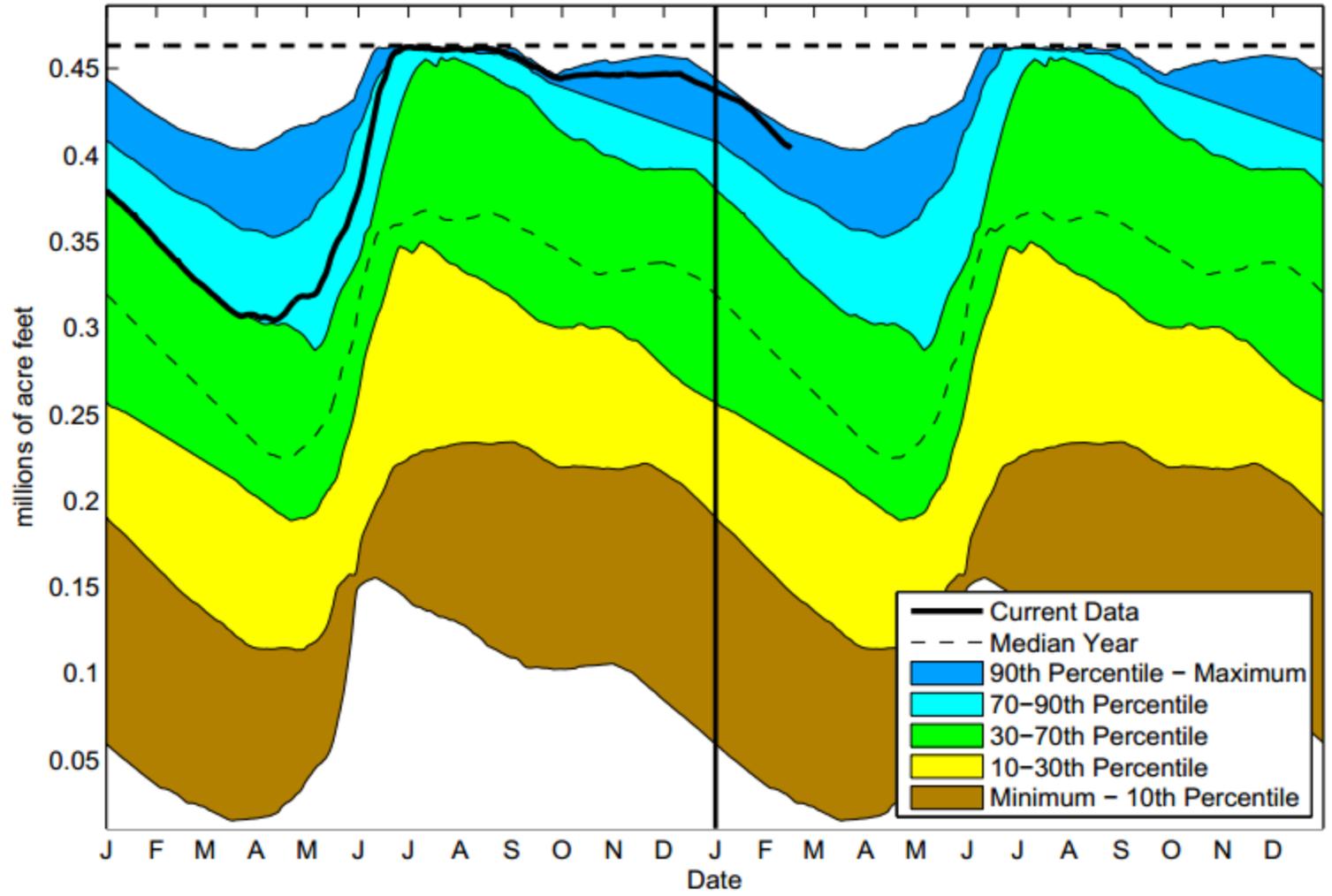
1-Year Difference in Column Relative Soil Moisture (%) valid 12z 20 Feb 2018



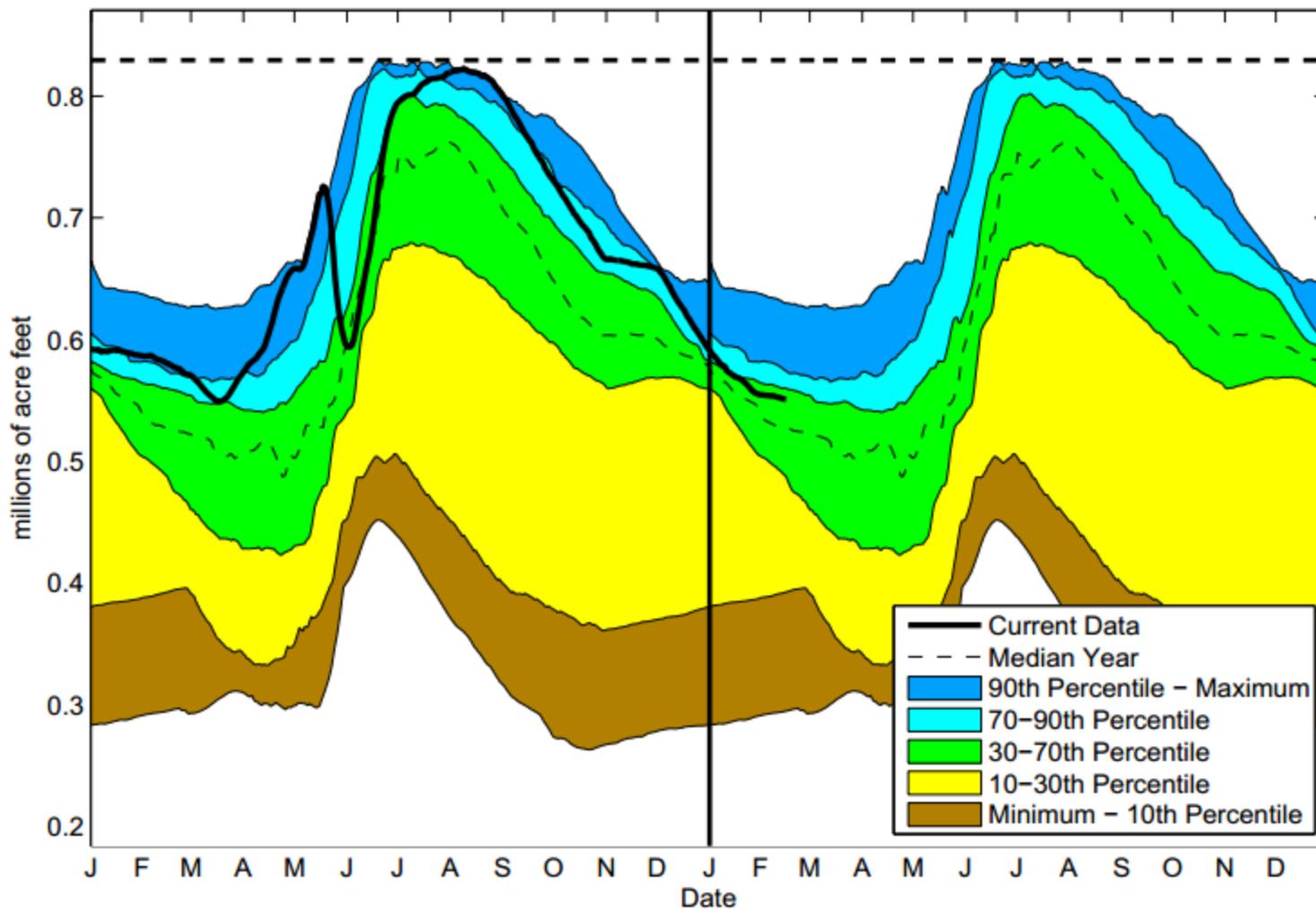
SPoRT-LIS 0-2 m RSM percentile valid 20 Feb 2018



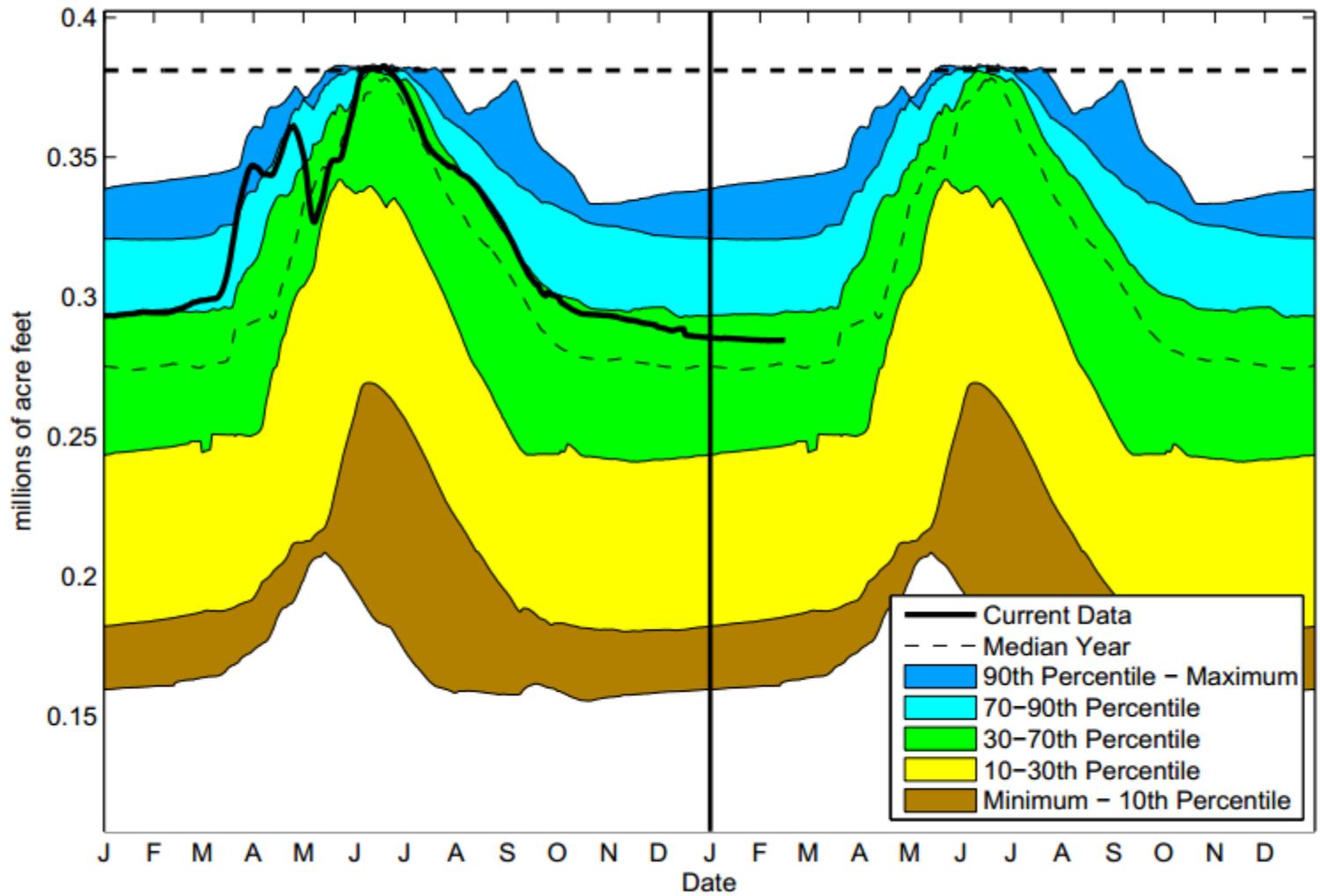
Lake Granby Reservoir Level 02/15/2018
150 Percent of 2000-2016 Average



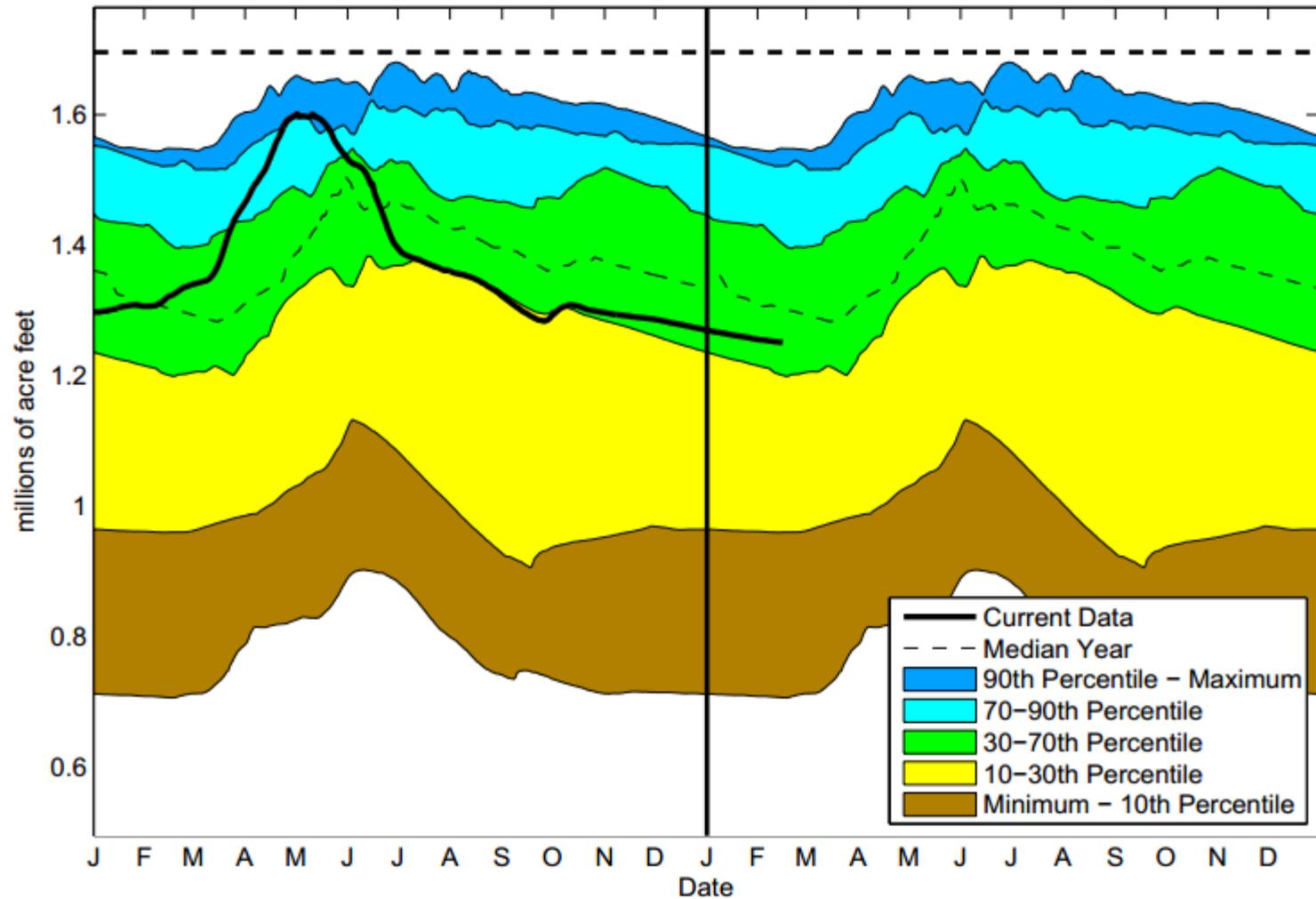
Blue Mesa Reservoir Level 02/15/2018
109 Percent of 1985-2016 Average



McPhee Reservoir Level 02/15/2018
108 Percent of 1987-2016 Average



Navajo Reservoir Level 02/15/2018
98 Percent of 1985-2016 Average





Raw Water Supply Daily Report

Day: Monday

Date: 2/19/18

Reservoir Operations:

	Inflow (cfs)	Outflow (cfs)	Elevation (feet)	Storage (ac-ft)	Change (ac-ft)	Full Elev. (feet)	Capacity (ac-ft)
South Platte System:							
Antero	17	6	8,942.09	20,319	22	8,942	19,881
Eleven Mile	59	77	8,597.54	99,624	-34	8,597	97,779
Cheesman	108	184	6,828.84	68,143	-152	6,842	79,064
Strontia Springs	243	36	5,991.28	6,806	-6	6,002	7,863
Chatfield	36	0	5,428.99	23,021	25	5,432	27,076
Marston	9	0	5,529.50	13,755	61	5,538	19,256
Soda Lakes	---	---	---	1,577	0		1,680
Platte Canyon	0	---	5,530.40	763	1	5,533	910
South Complex	0	1	---	2,991	2		3,561
Harriman	---	---	5,621.75	694	0	5,623	762
Moffat System:							
Gross	21	11	7,246.76	28,880	20	7,282	41,811
Ralston	1	1	6,016.39	6,429	-71	6,046	10,776
Upper Long Lake	0	0	6,075.40	853	0	6,088	1,519
Lower Long Lake	0	0	5,892.28		0	5,908	268
Western Slope:							
Dillon	82	113	9,012.43	242,888	-61	9,017	257,304
Williams Fork	57	45	7,789.20	66,245	24	7,811	96,822
Meadow Creek	1	1	9,970.70	2,035	0	9,995	5,370
Total System:				585,022	-170		671,702
Non-system							
Wolford Mountain	22	27	7,480.93	54,380	-10	7,489	65,985
Green Mountain	188	230	7,898.61	69,114	-84	7,950	153,639
Spinney Mountain	25	80	---	41,641	N/A		53,651

Raw Water Distribution:

(all flows in cubic feet per second, cfs)

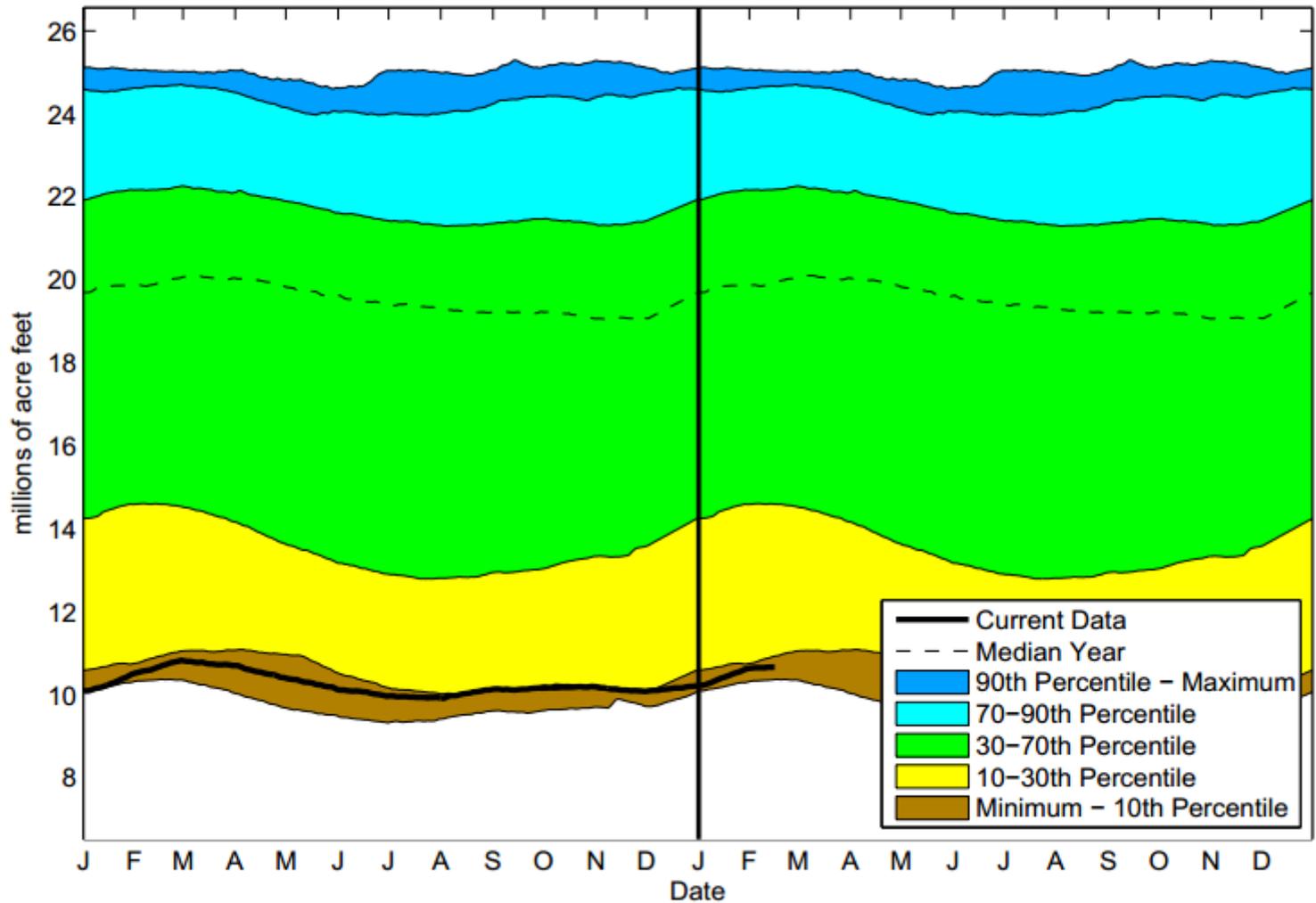
South Platte System:

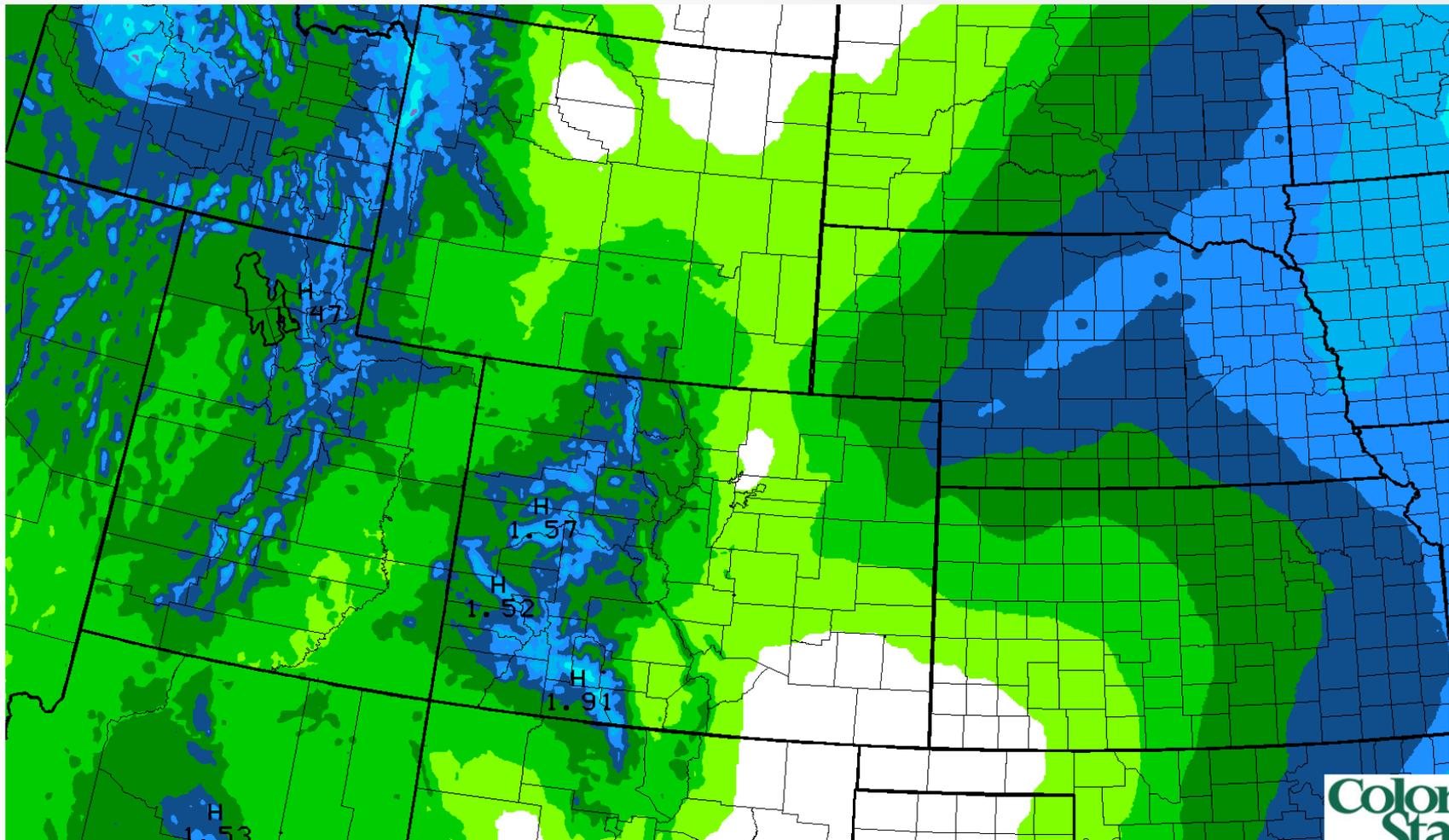
Roberts Tunnel	0
Conduit 26 to Foothills TP	139
Conduit 20 to Marston Lake	9
From Diversion Dam	0
From Last Chance Pump	9
From Chatfield Pumps	0
Conduit 15 to Marston Lake	0
High Line Canal Total Flow	0
City Ditch at Washington Park	0
Harriman Ditch Total Flow	0
Metro Sewer Effluent Exchange	0
Bi-City Effluent Exchange	0
South Complex Exchange	0
Recycling Plant	0

Moffat System:

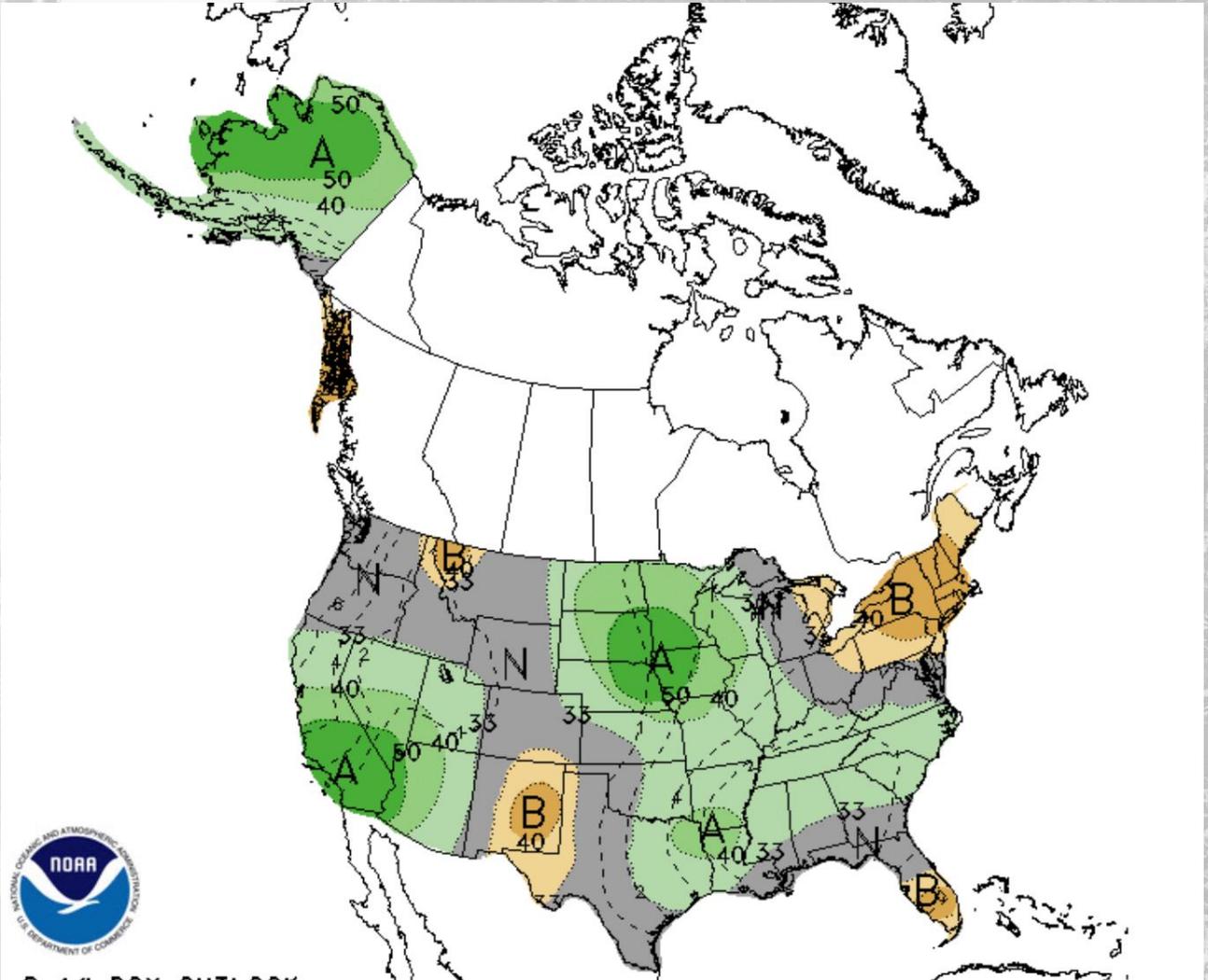
Moffat Tunnel	10
Jones Pass Tunnel	0
South Boulder Canal	0
Long Lake Feeder Ditch	0
Ralston to Moffat TP	22
Ralston/Clear Creek Canal	0

Lake Mead Reservoir Level 02/15/2018
58 Percent of 1985-2016 Average





WPC FORECAST PRECIPITATION (INCHES) IN 7 DAYS ENDING THU 180301/1200V168
 FORECAST ISSUED 180222/1200F168



Colorado Climate Center

Data and Power Point Presentations available for downloading

<http://ccc.atmos.colostate.edu/droughtpresentations.php>

