



Climate Update

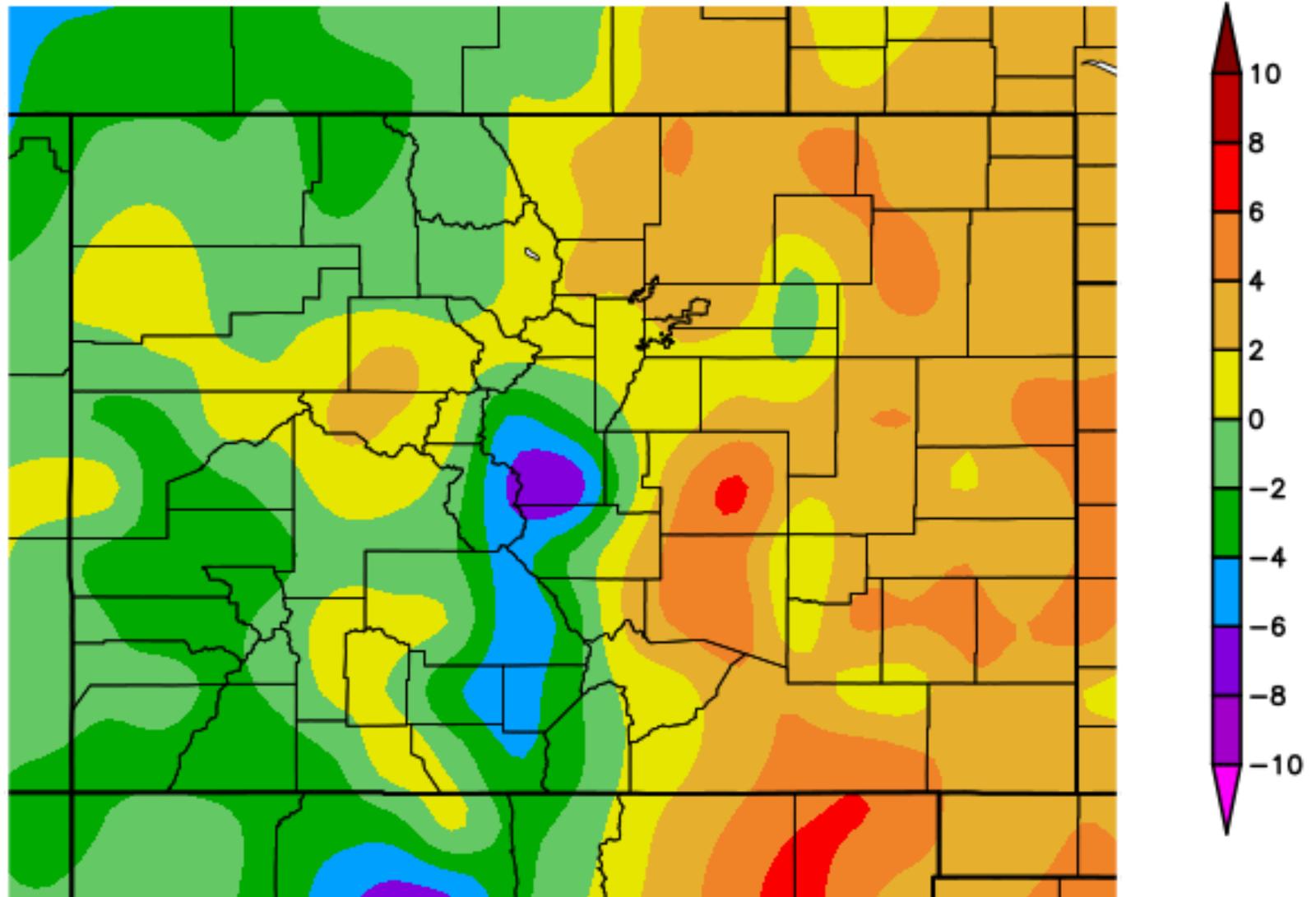


Peter Goble
Colorado Climate Center

Presented to
Water Availability Task Force
January 22, 2019
Denver, CO

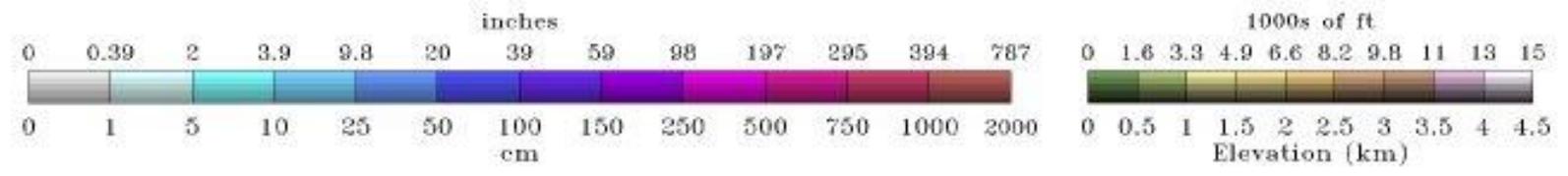
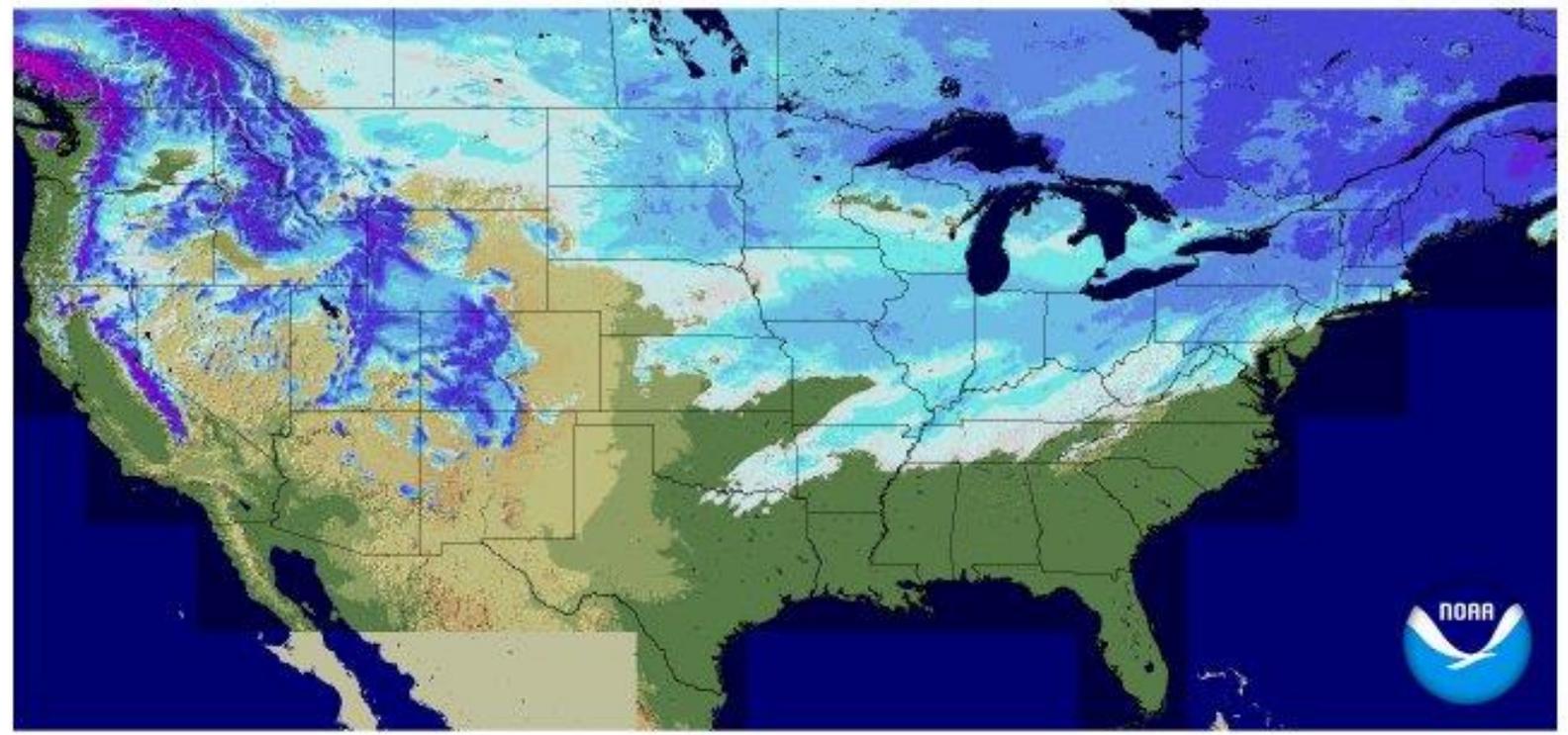
Departure from Normal Temperature (F)

1/1/2019 - 1/20/2019



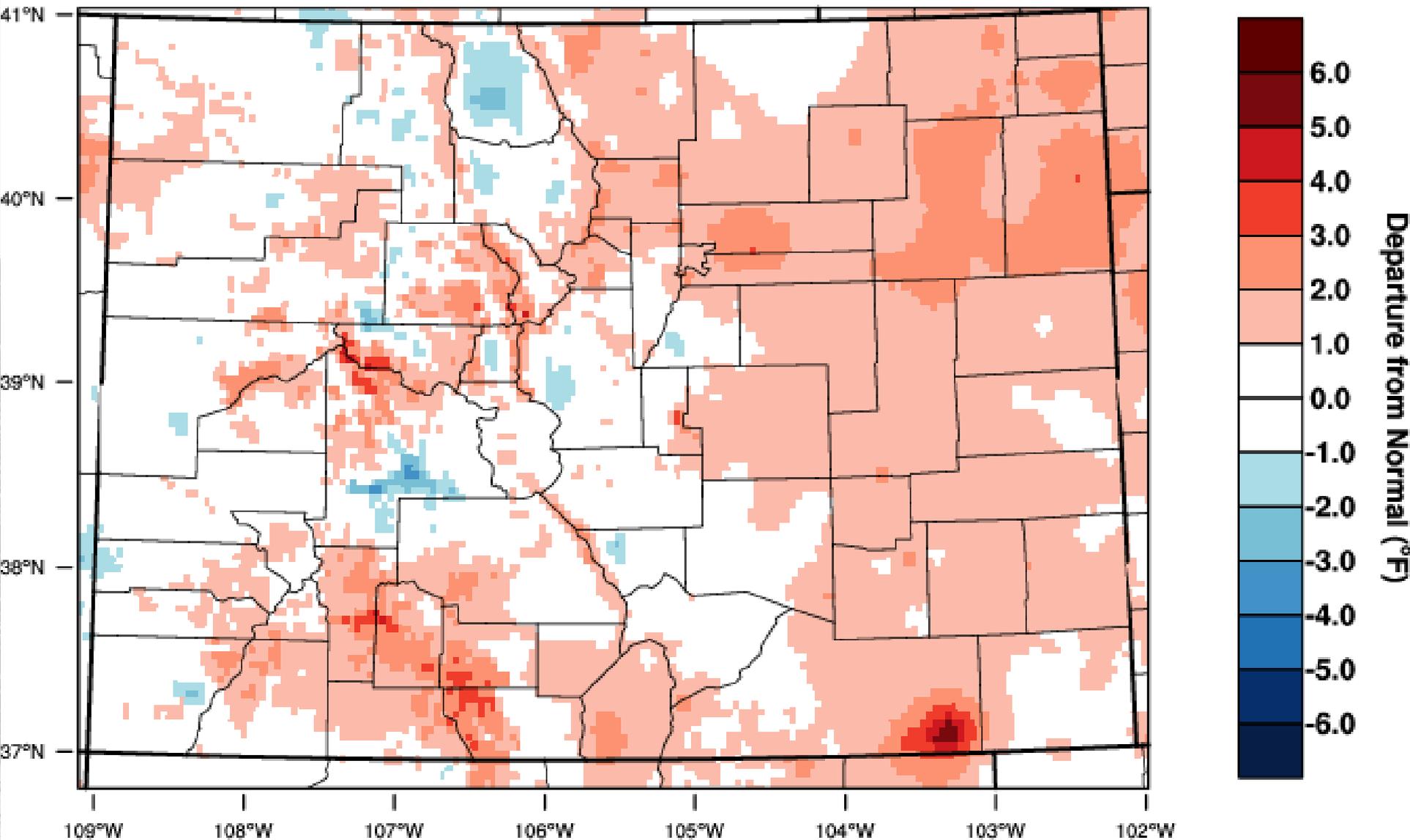
Snow Depth

2019-01-21 06 UTC



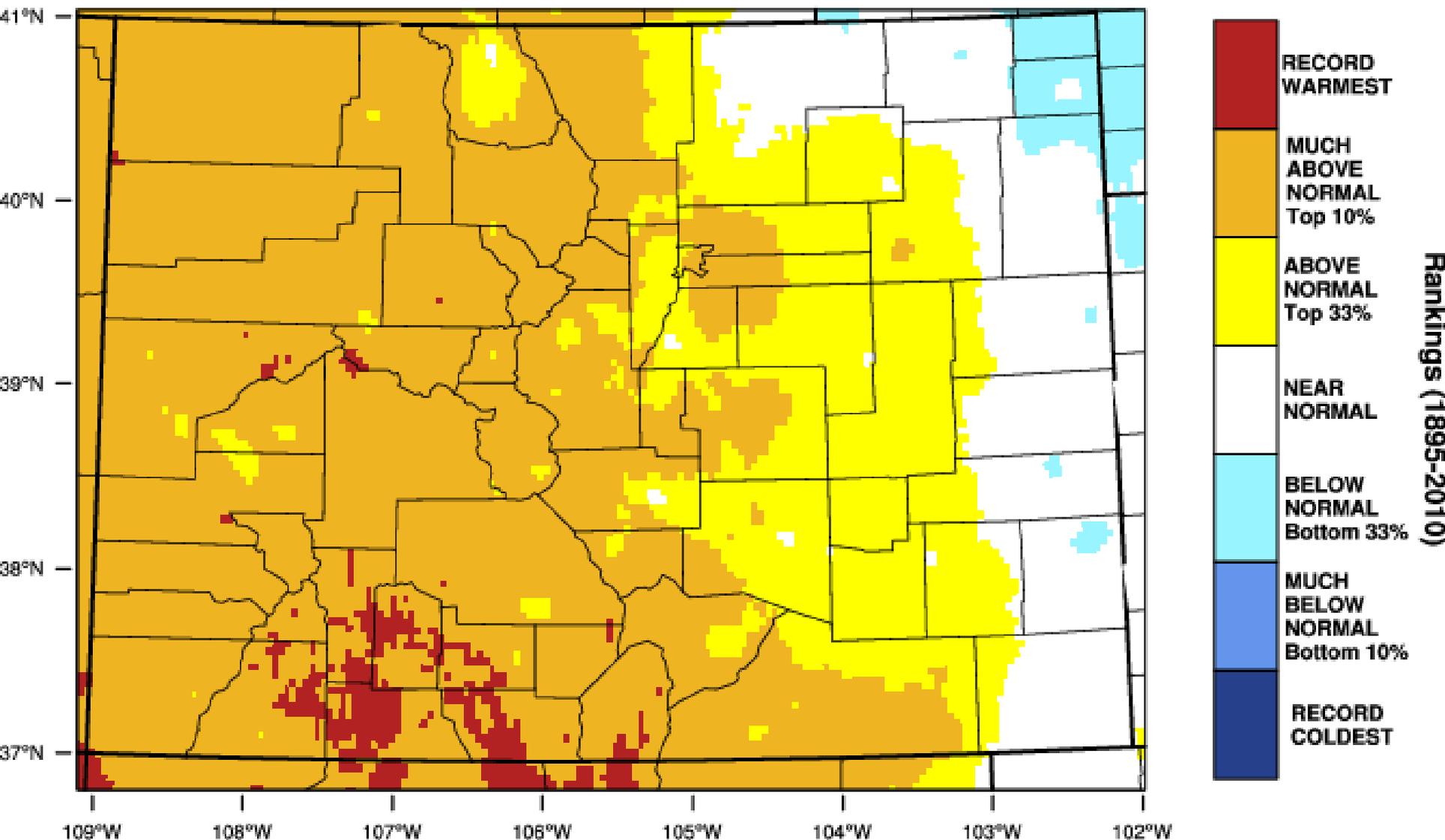
Colorado - Mean Temperature

December 2018 Departure from 1981-2010 Normal



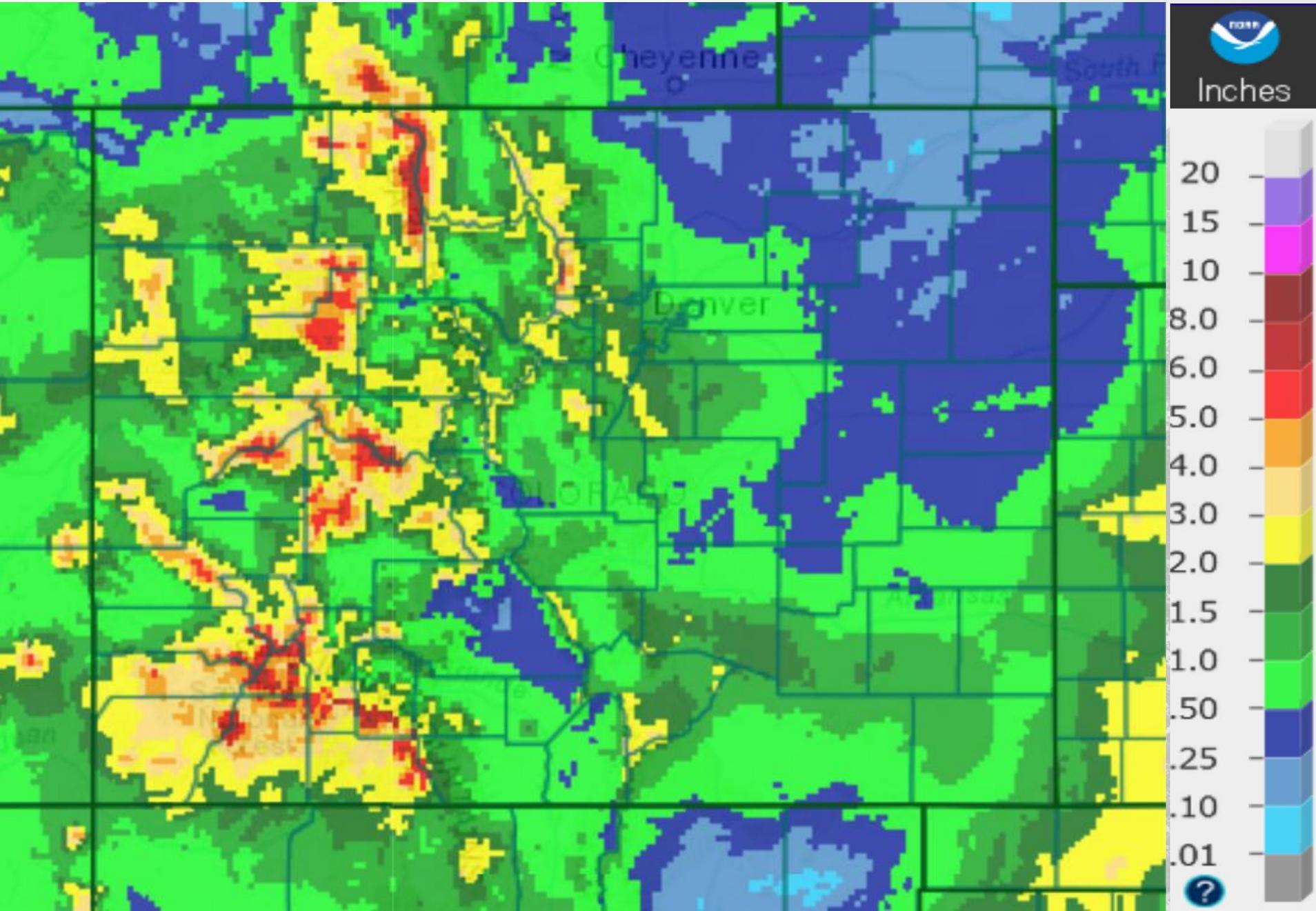
WestWide Drought Tracker, U Idaho/WRCC Data Source: PRISM (Prelim), created 7 JAN 2019

Colorado - Mean Temperature January-December 2018 Percentile



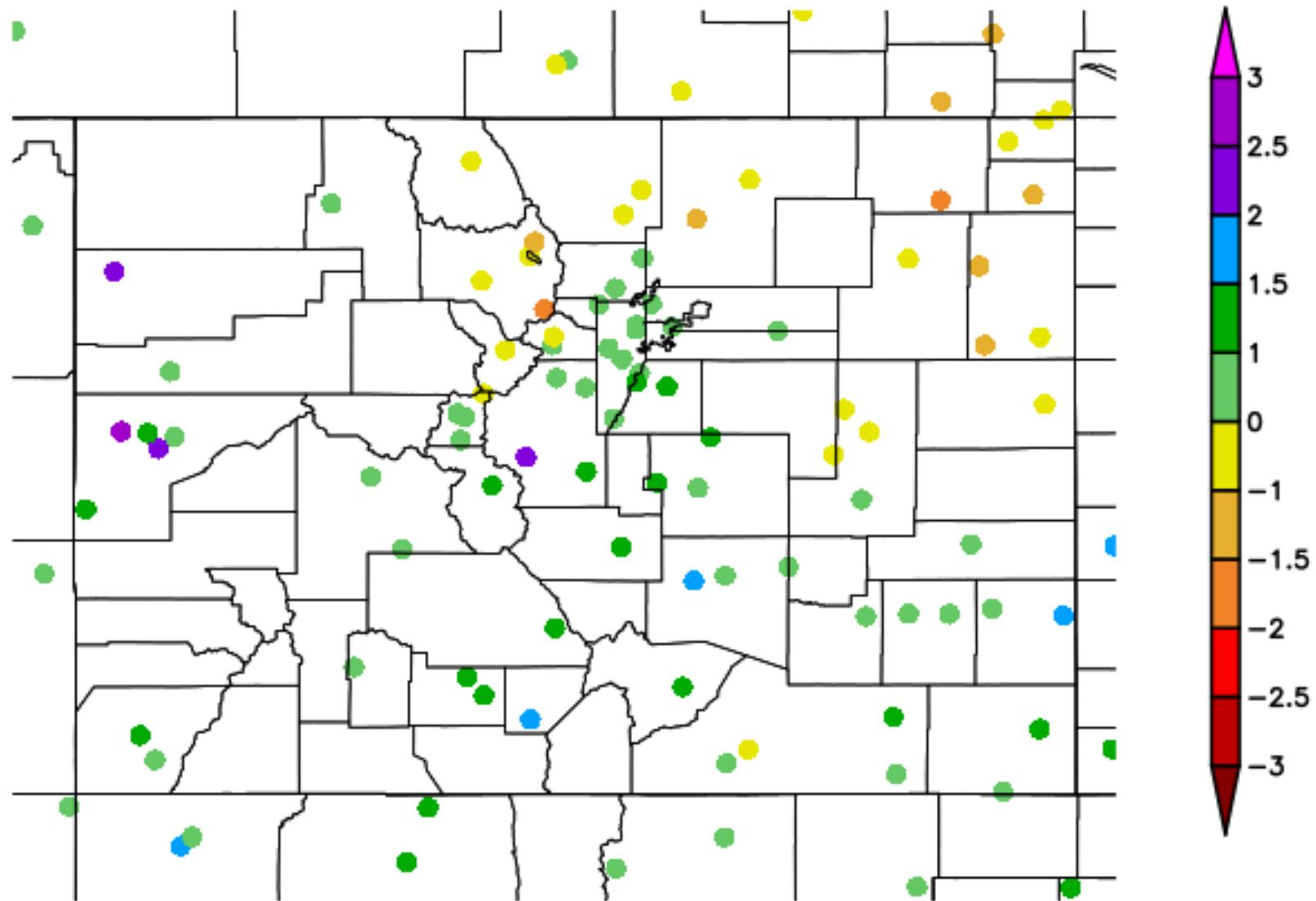
WestWide Drought Tracker, U Idaho/WRCC Data Source: PRISM (Prelim), created 7 JAN 2019

Radar Estimated Precipitation (last 30 days)



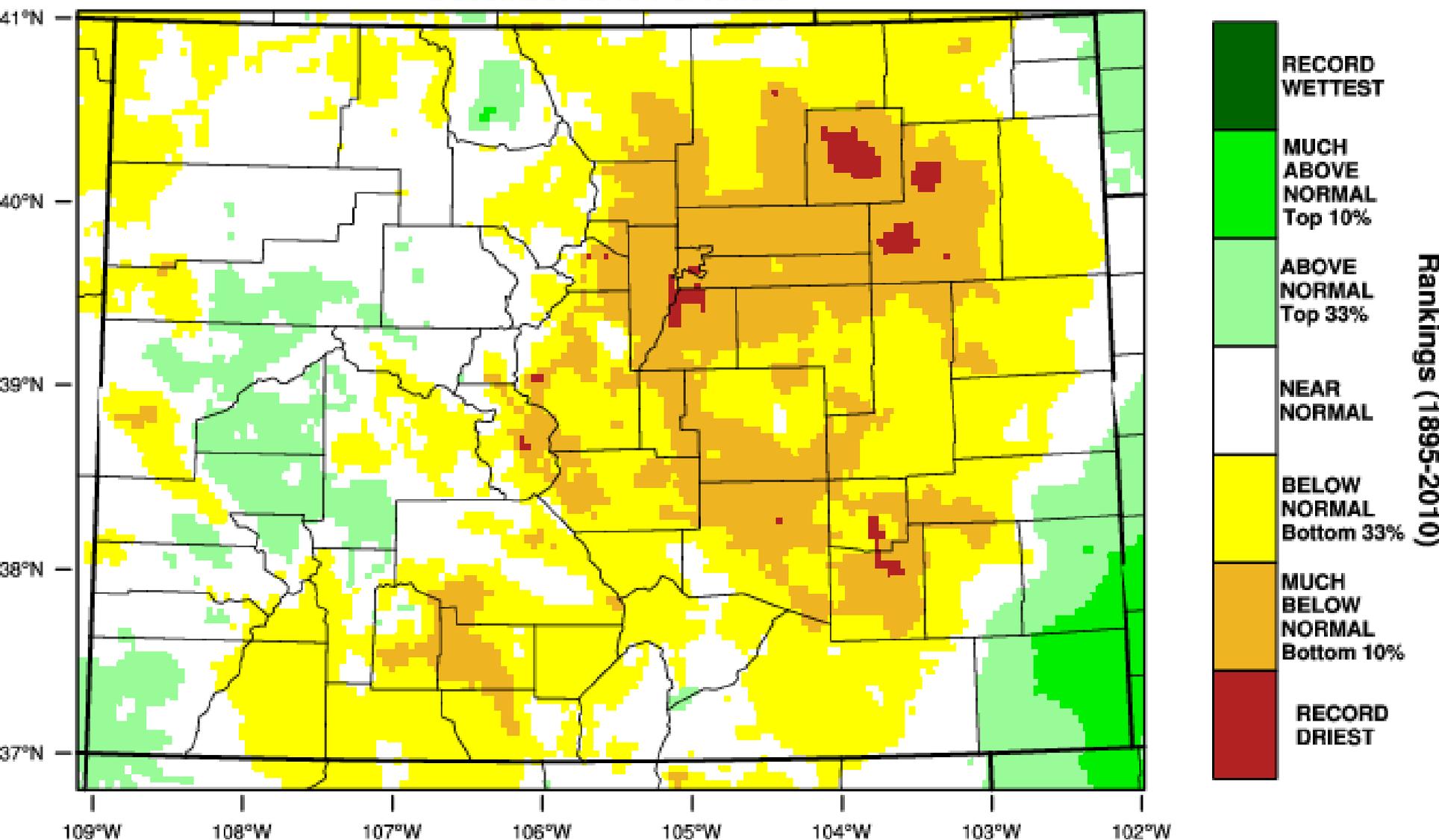
30 Day SPI

12/19/2018 - 1/17/2019



Colorado - Precipitation

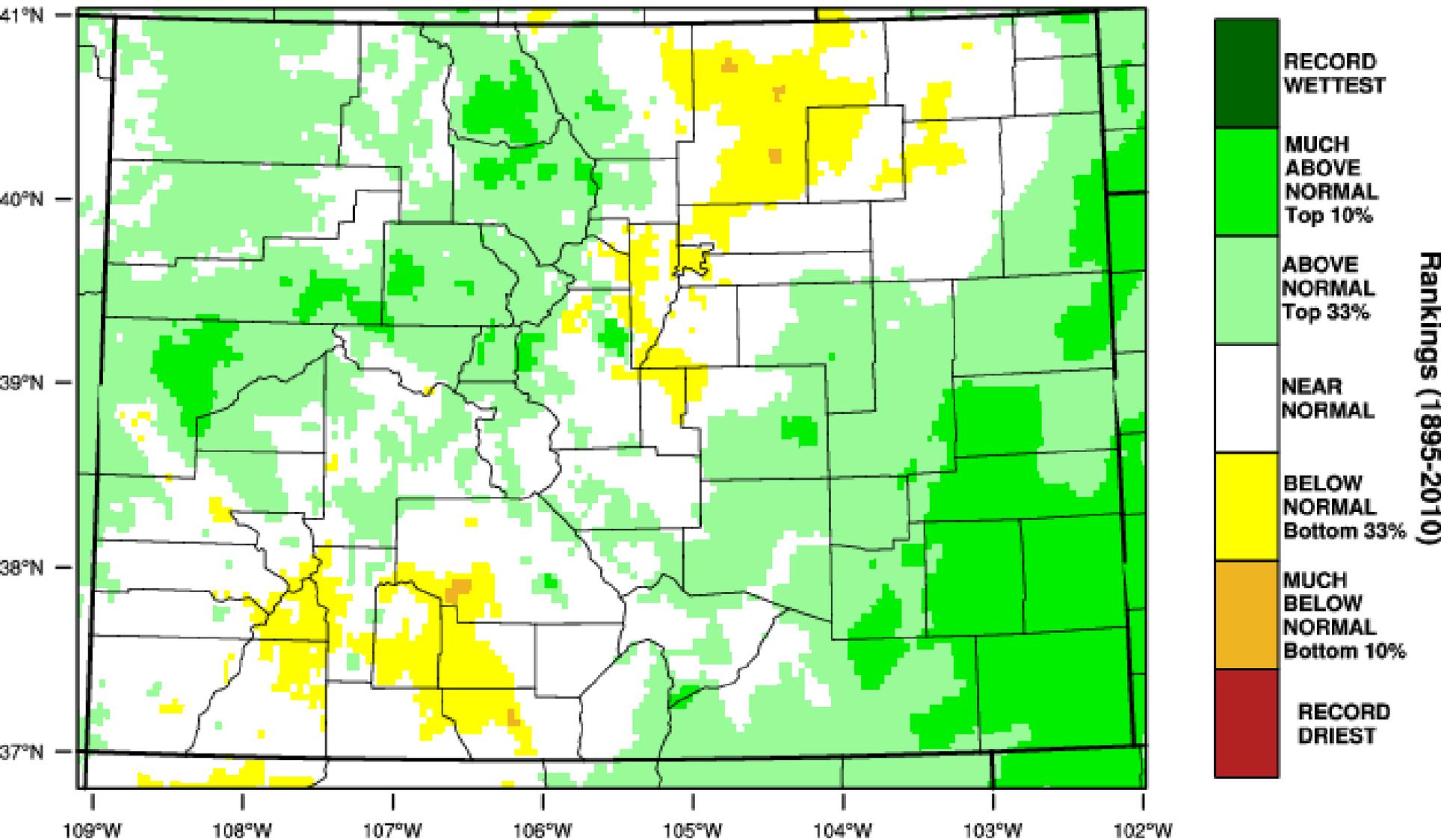
December 2018 Percentile



WestWide Drought Tracker, U Idaho/WRCC Data Source: PRISM (Prelim), created 7 JAN 2019

Colorado - Precipitation

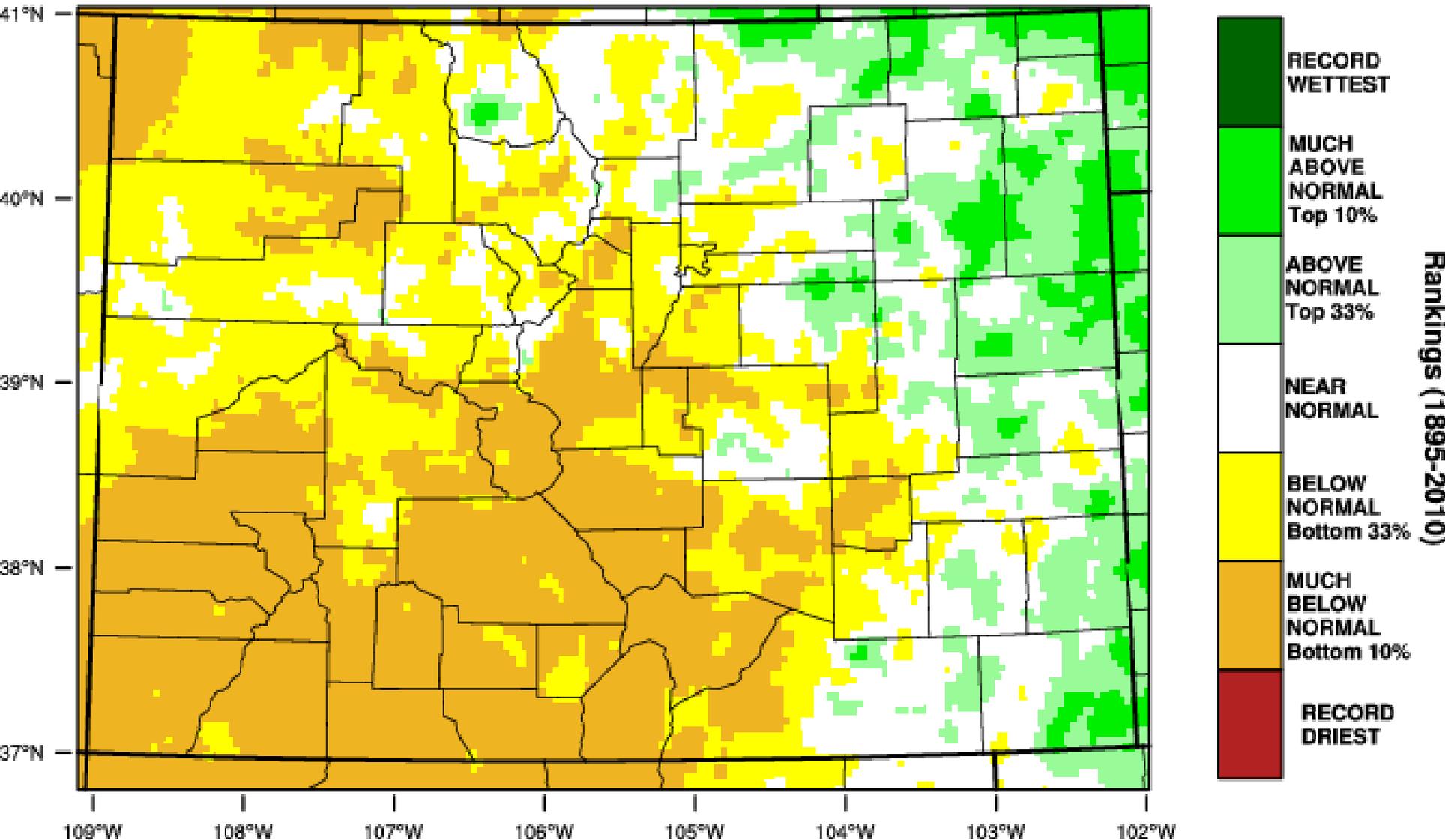
October-December 2018 Percentile



WestWide Drought Tracker, U Idaho/WRCC Data Source: PRISM (Prelim), created 7 JAN 2019

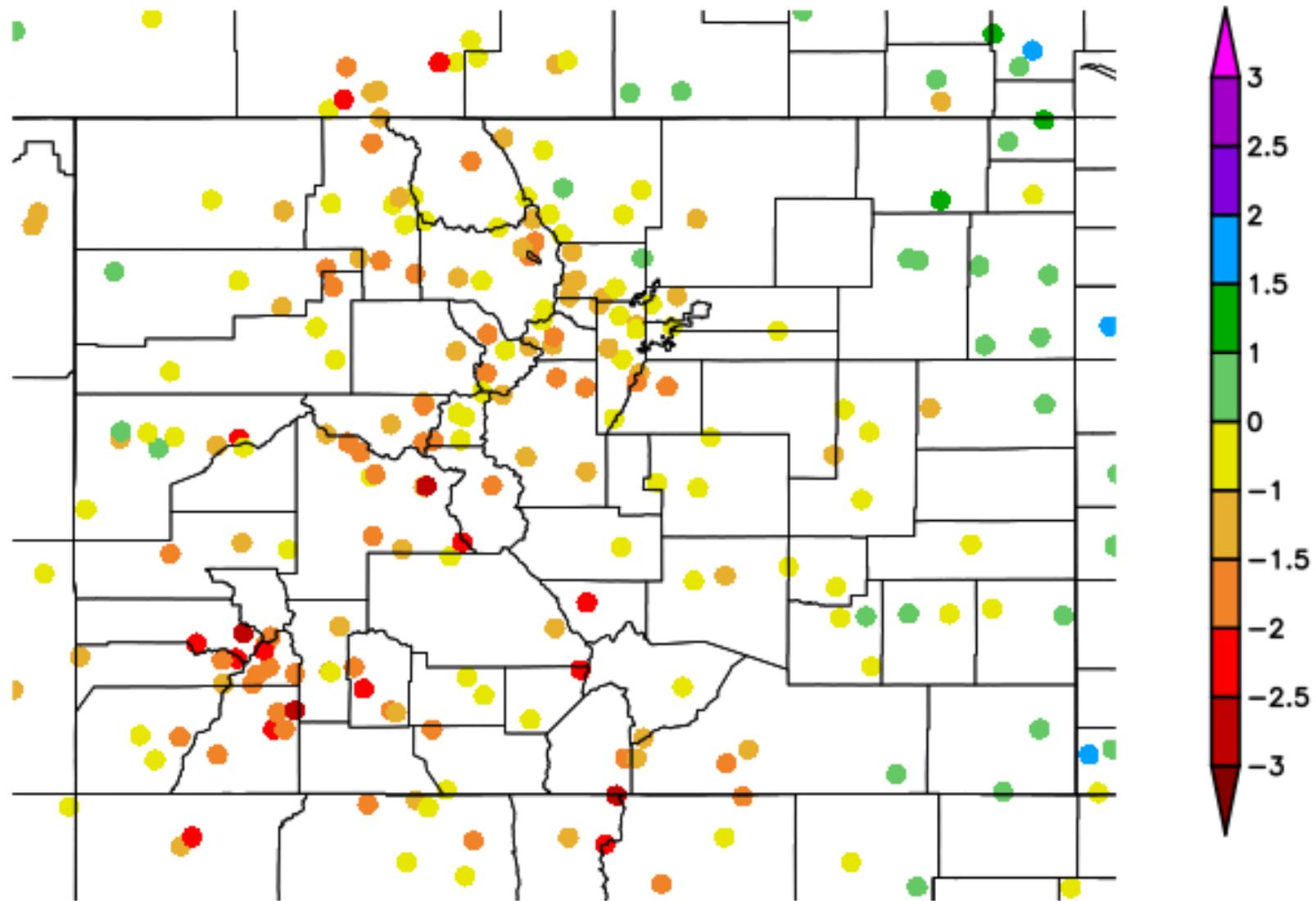
Colorado - Precipitation

January-December 2018 Percentile

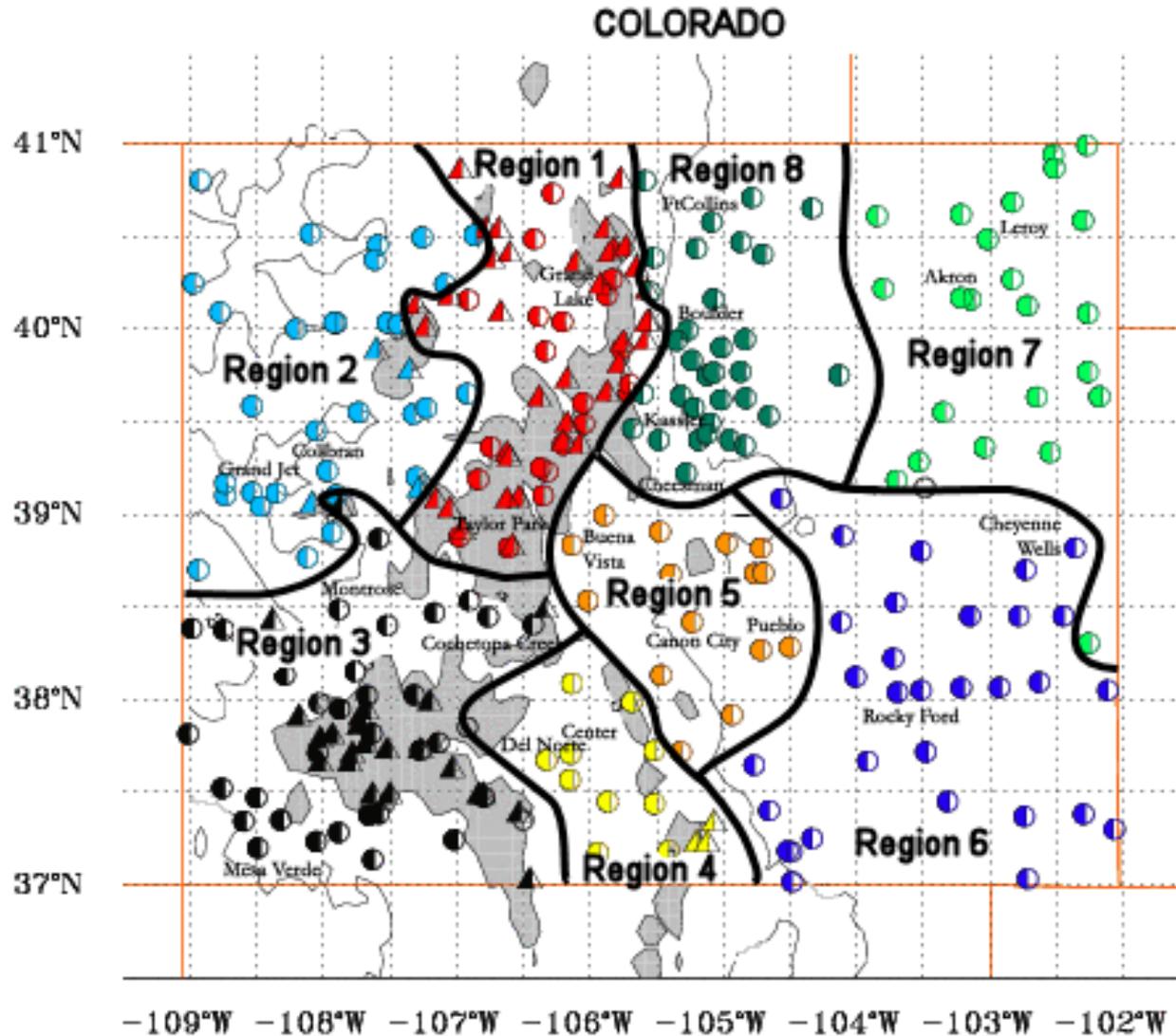


WestWide Drought Tracker, U Idaho/WRCC Data Source: PRISM (Prelim), created 7 JAN 2019

12 Month SPI 1/18/2018 - 1/17/2019

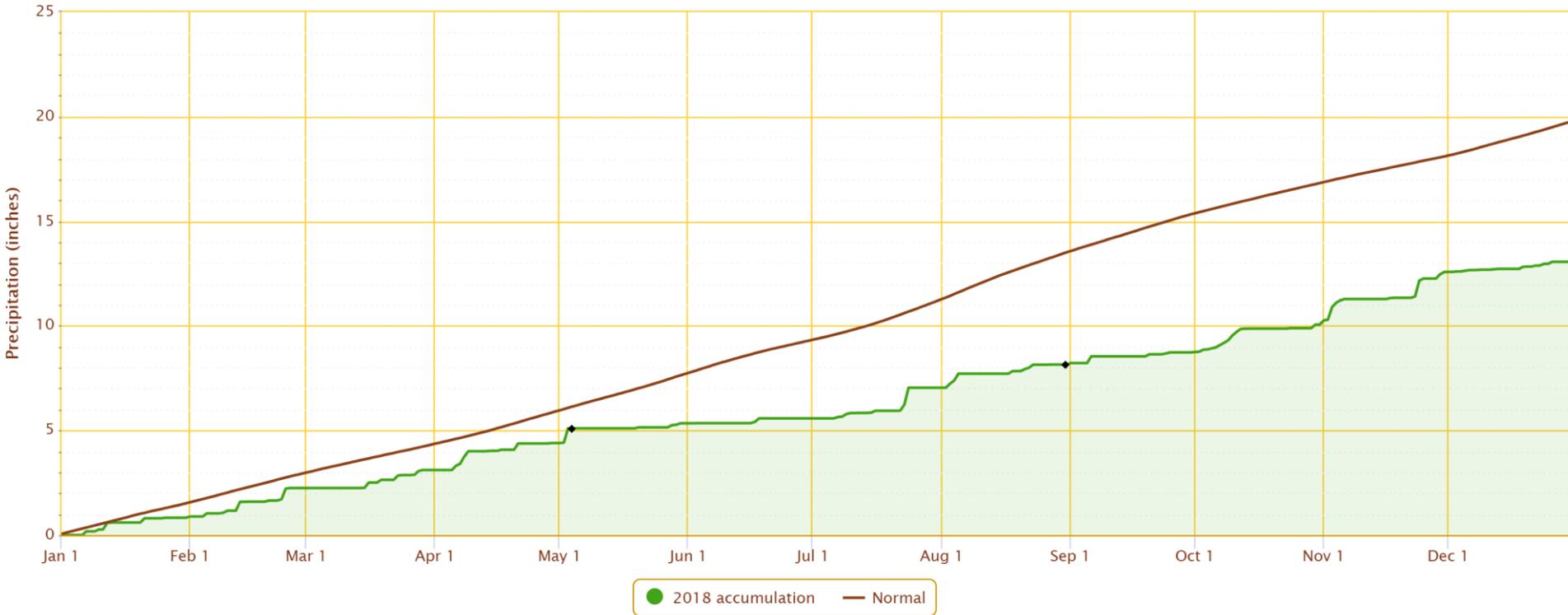


Precipitation by Climate Division



Accumulated Precipitation – GRAND LAKE 1 NW, CO

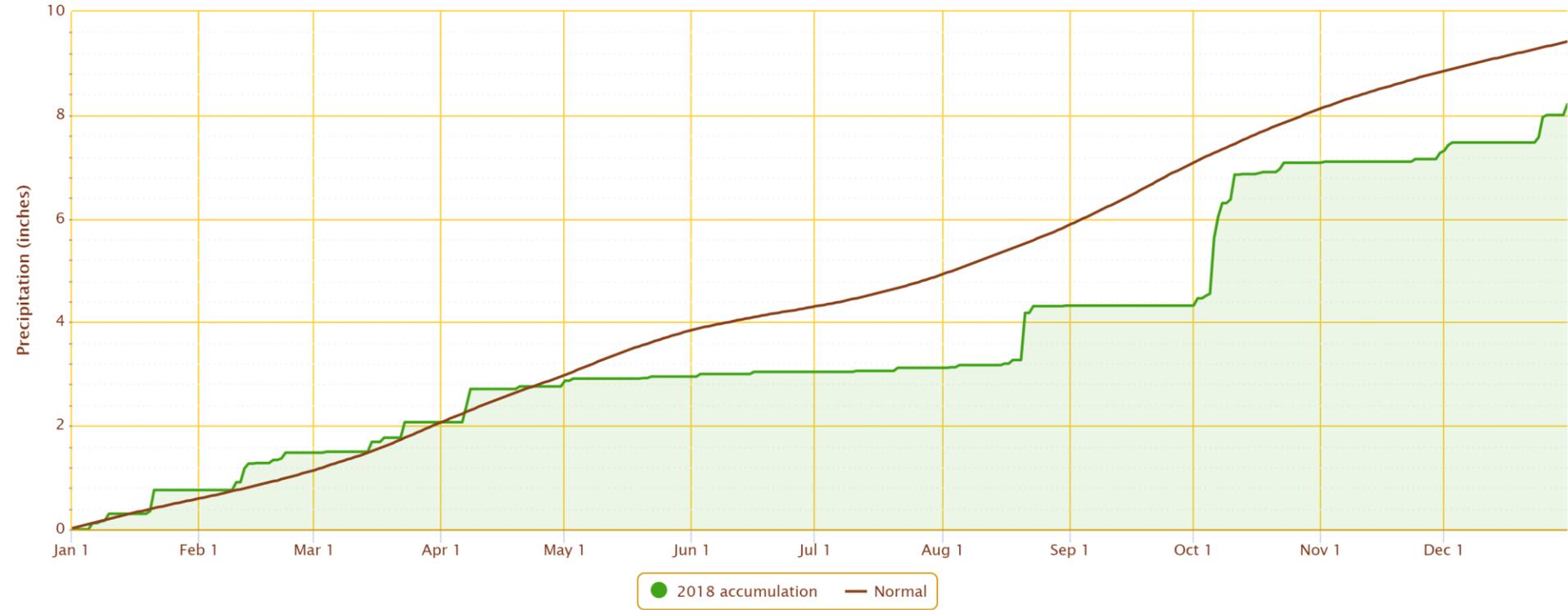
Click and drag to zoom to a shorter time interval; green/black diamonds represent subsequent/missing values



6.68" below normal (lowest since before 1950)

Accumulated Precipitation – GRAND JUNCTION WALKER FIELD, CO

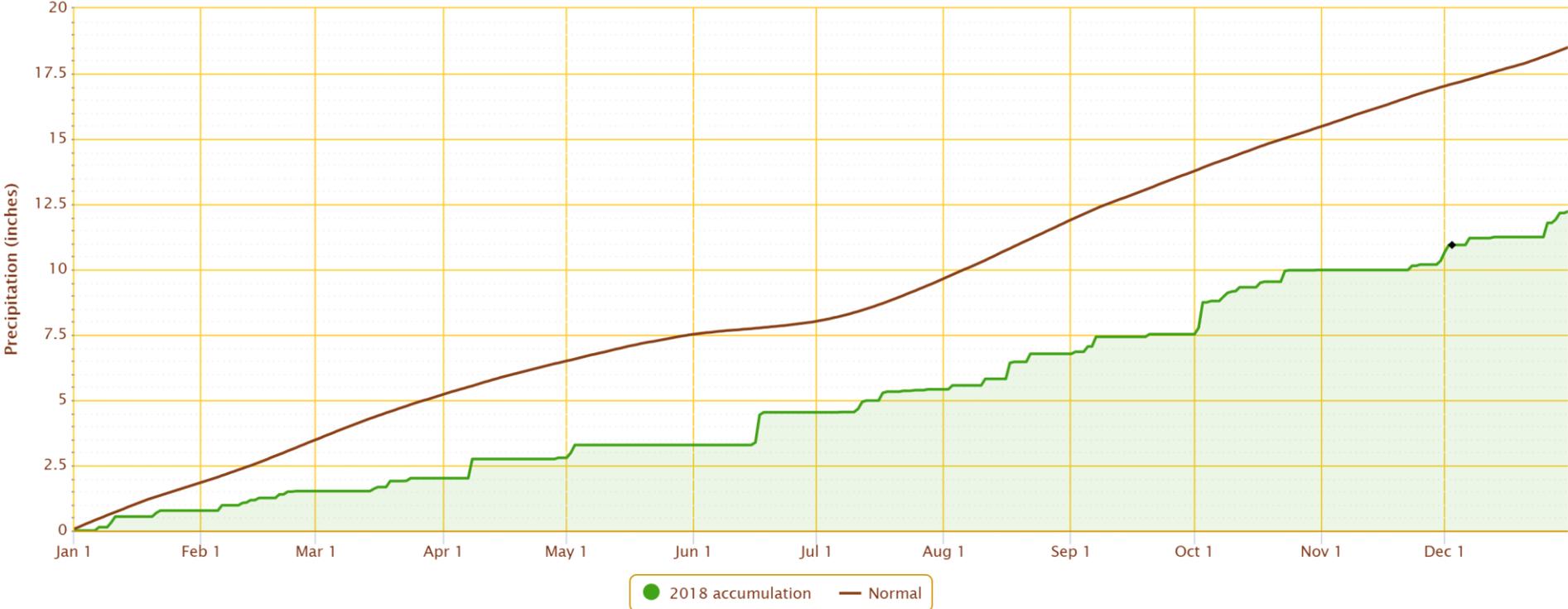
Click and drag to zoom to a shorter time interval; green/black diamonds represent subsequent/missing values



1.21" below normal

Accumulated Precipitation – MESA VERDE NP, CO

Click and drag to zoom to a shorter time interval; green/black diamonds represent subsequent/missing values

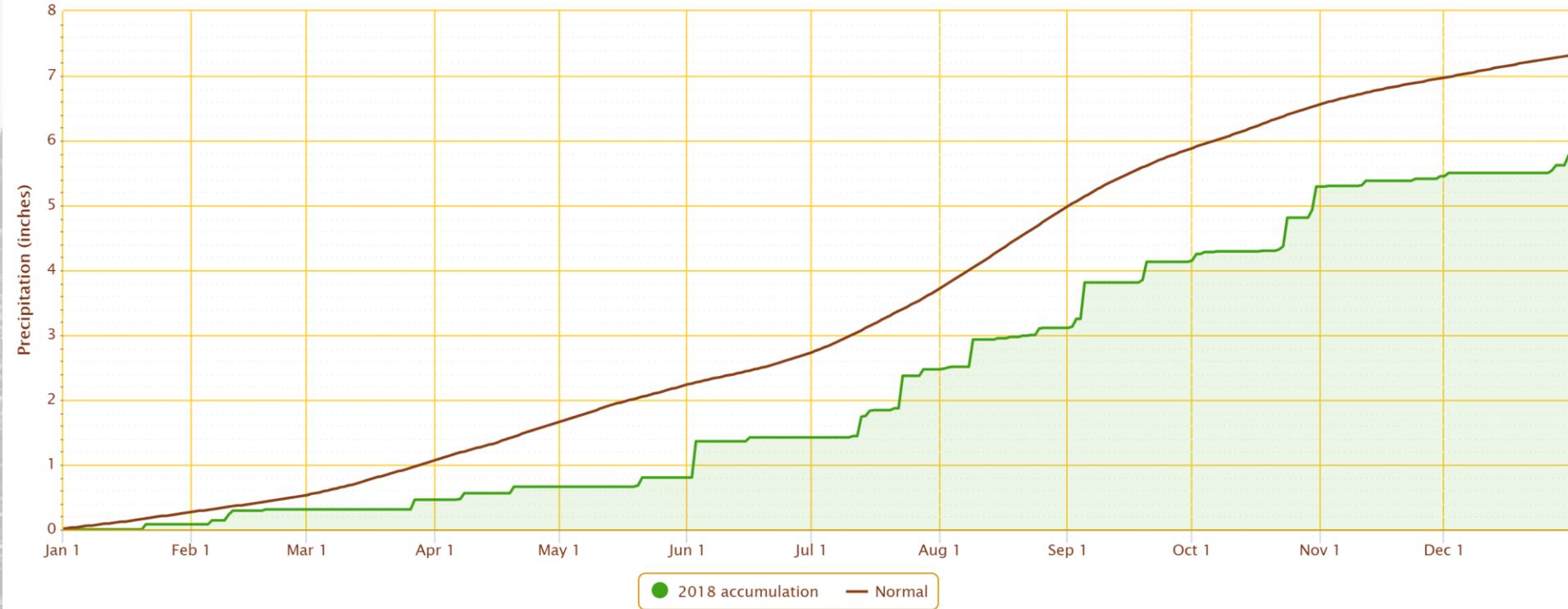


6.28" below normal (lowest since 2012)

Accumulated Precipitation – ALAMOSA SAN LUIS VALLEY REGIONAL AP, CO



Click and drag to zoom to a shorter time interval; green/black diamonds represent subsequent/missing values

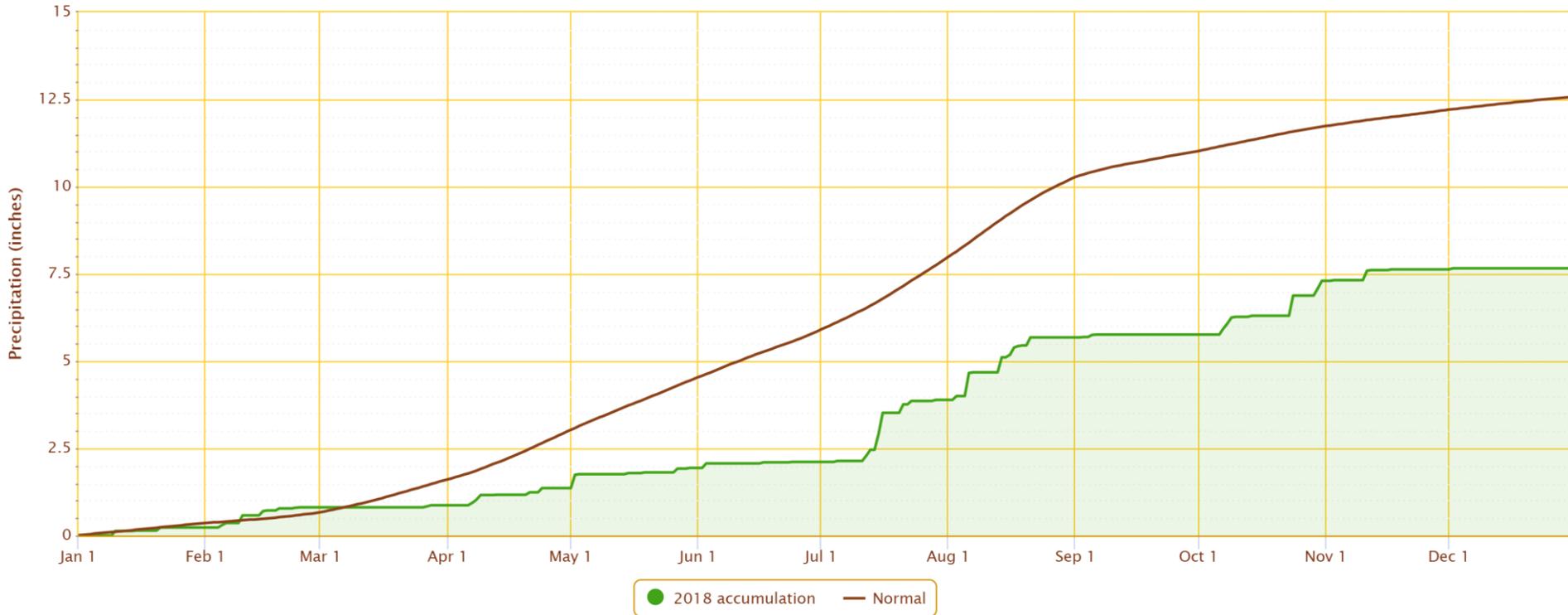


1.54" below normal

Accumulated Precipitation – PUEBLO MEMORIAL AP, CO



Click and drag to zoom to a shorter time interval; green/black diamonds represent subsequent/missing values

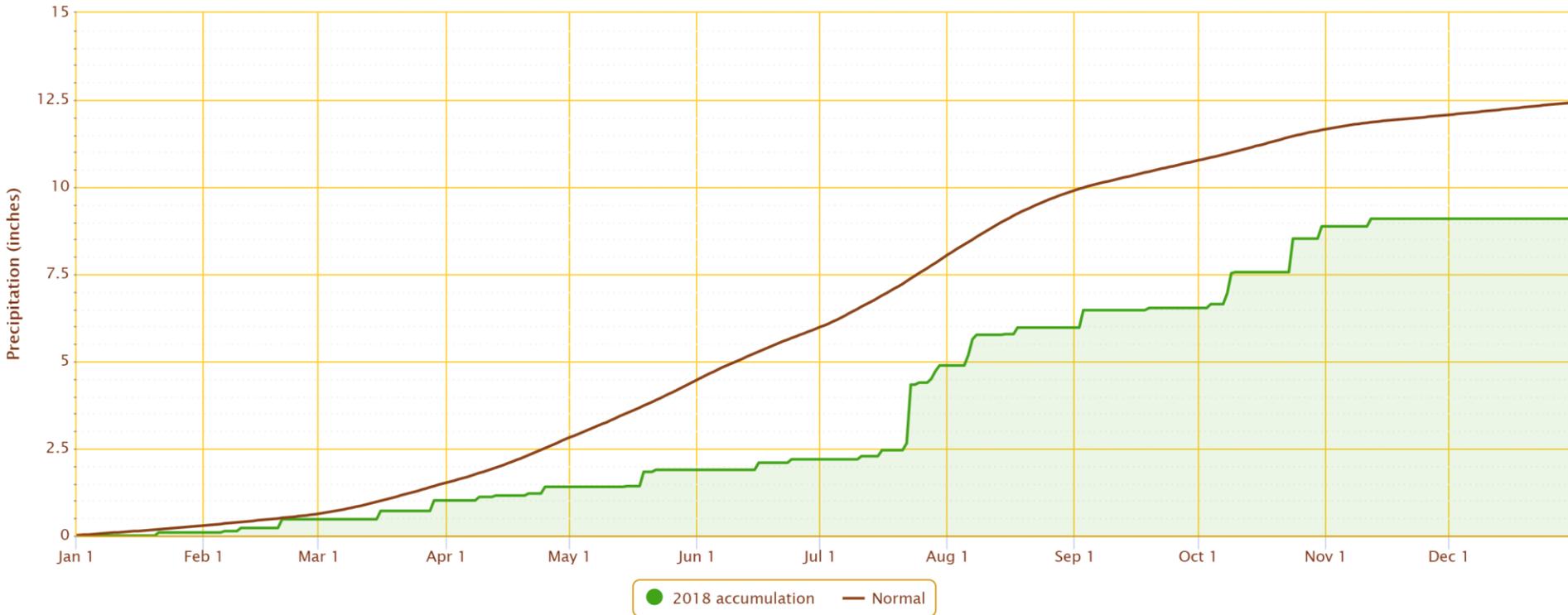


4.85" below normal (7th lowest on record starting in 1954)

Accumulated Precipitation – ROCKY FORD 2 SE, CO



Click and drag to zoom to a shorter time interval; green/black diamonds represent subsequent/missing values

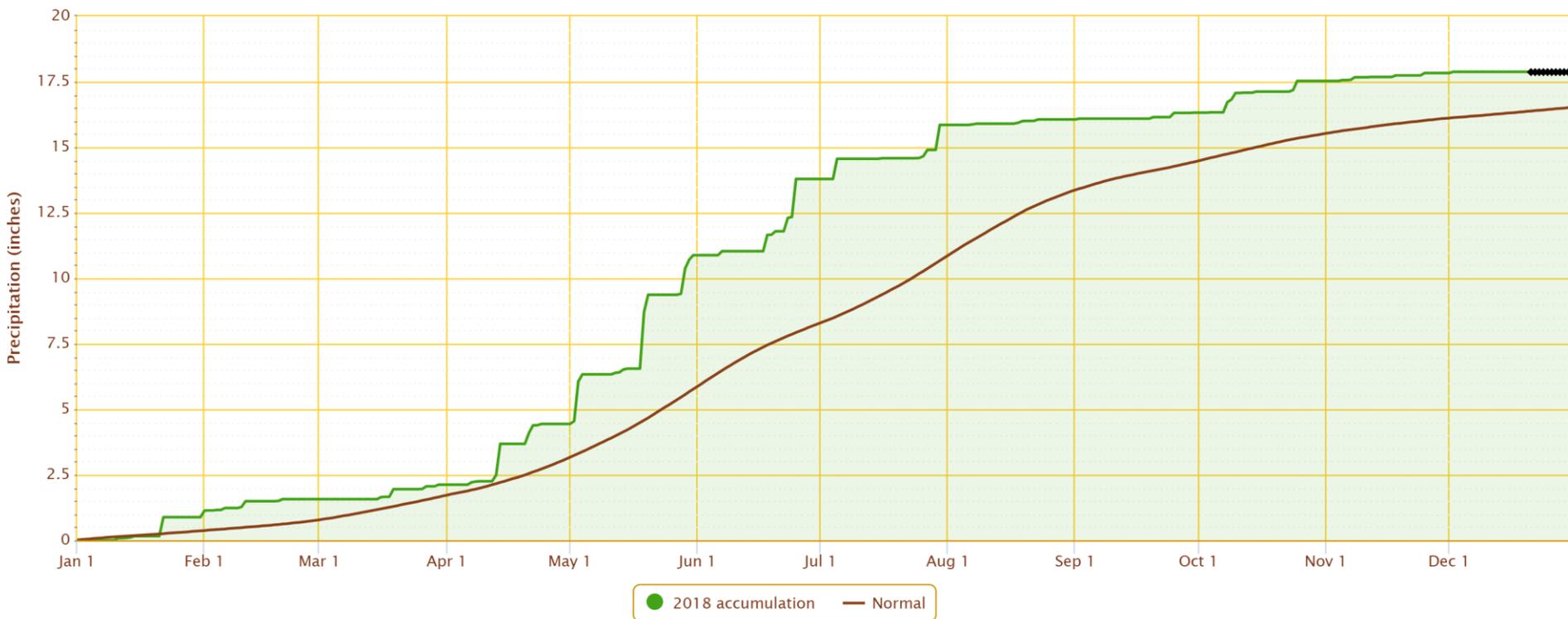


3.31" below normal (still more than 2012 and 2002 combined)

Accumulated Precipitation – AKRON 4 E, CO



Click and drag to zoom to a shorter time interval; green/black diamonds represent subsequent/missing values

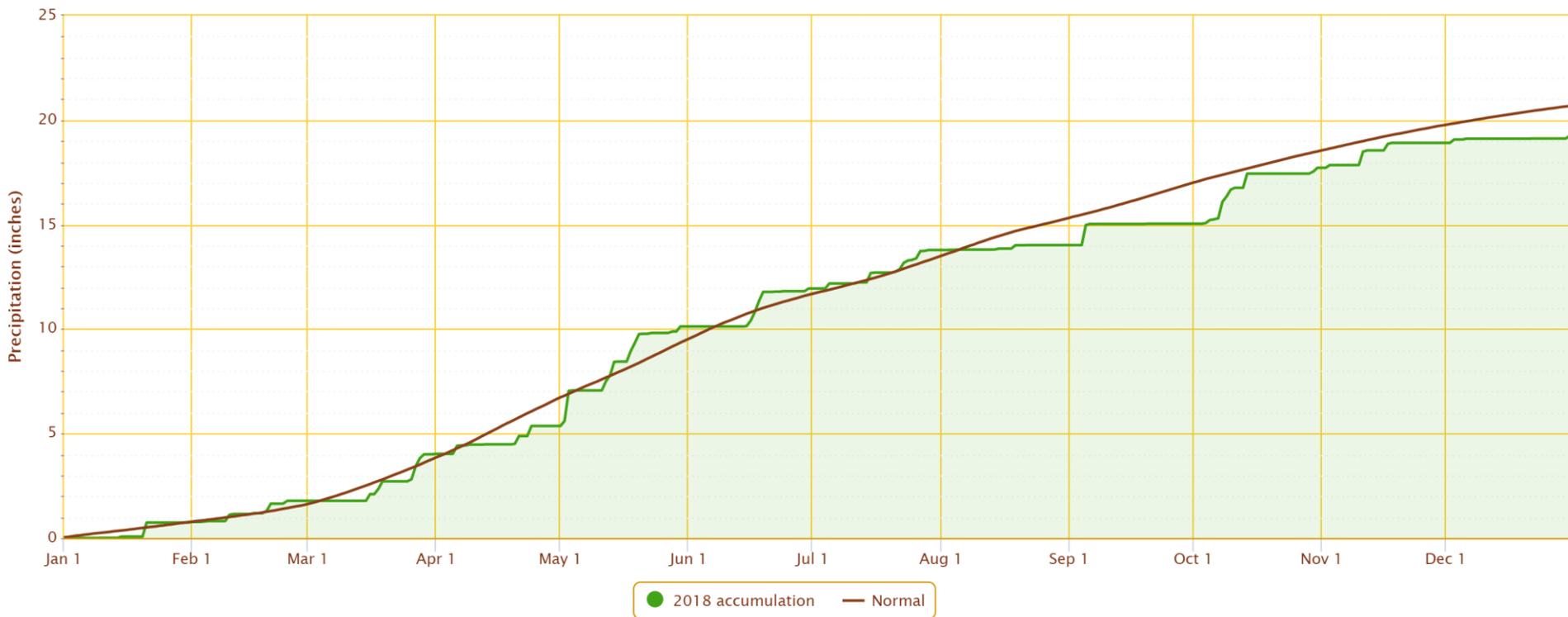


1.36" **ABOVE** normal

Accumulated Precipitation – BOULDER, CO

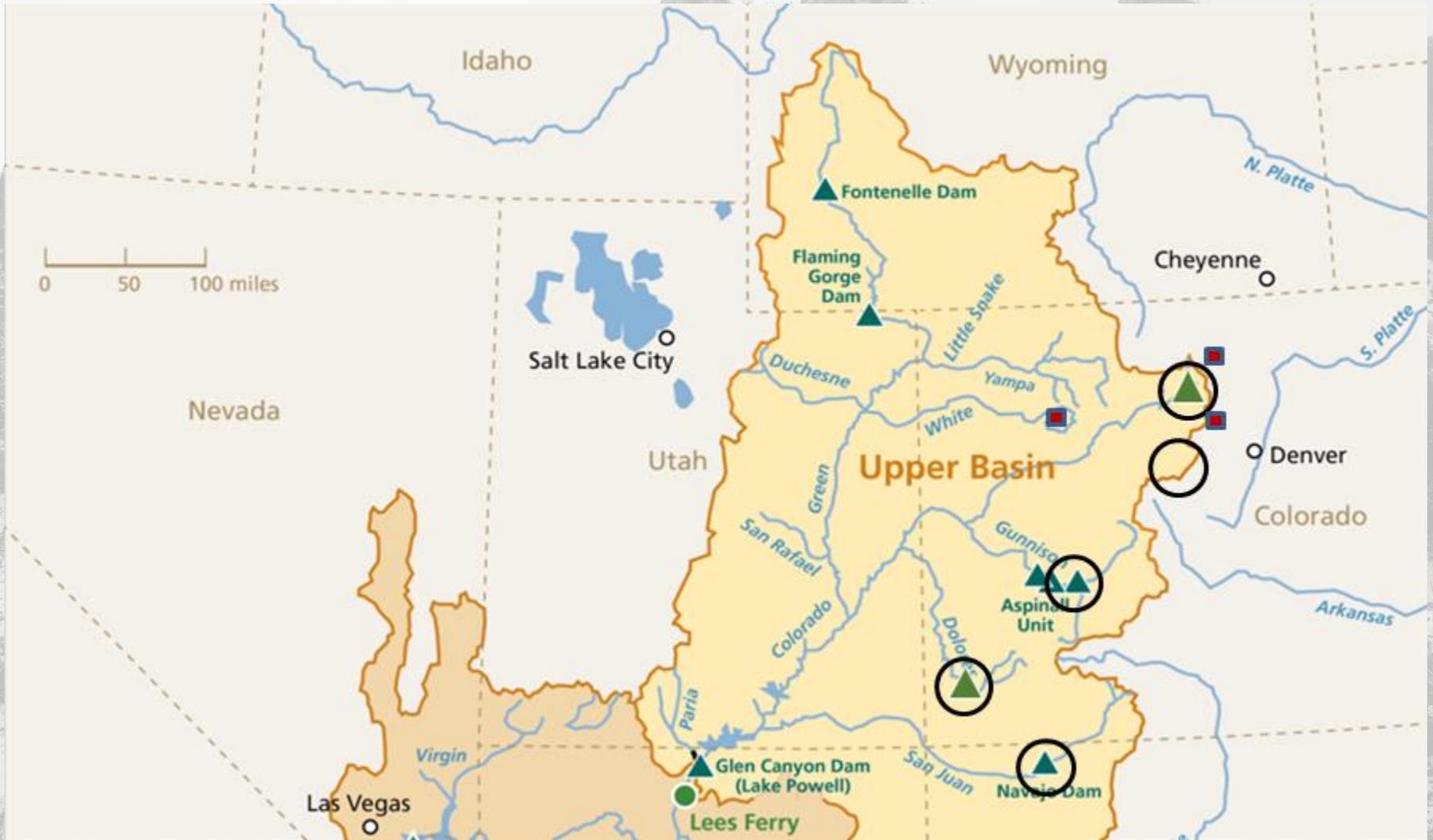


Click and drag to zoom to a shorter time interval; green/black diamonds represent subsequent/missing values

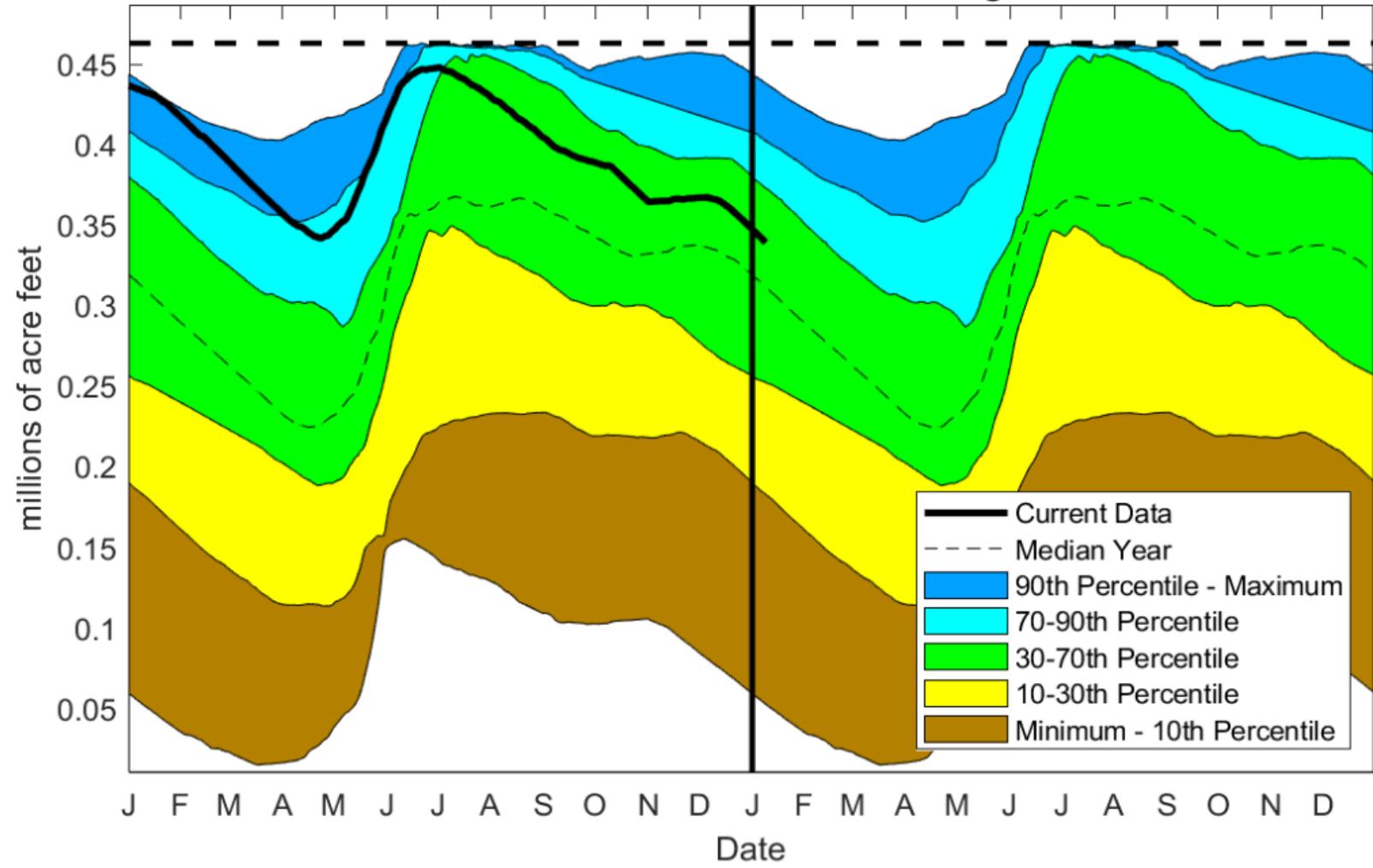


1.43" below normal

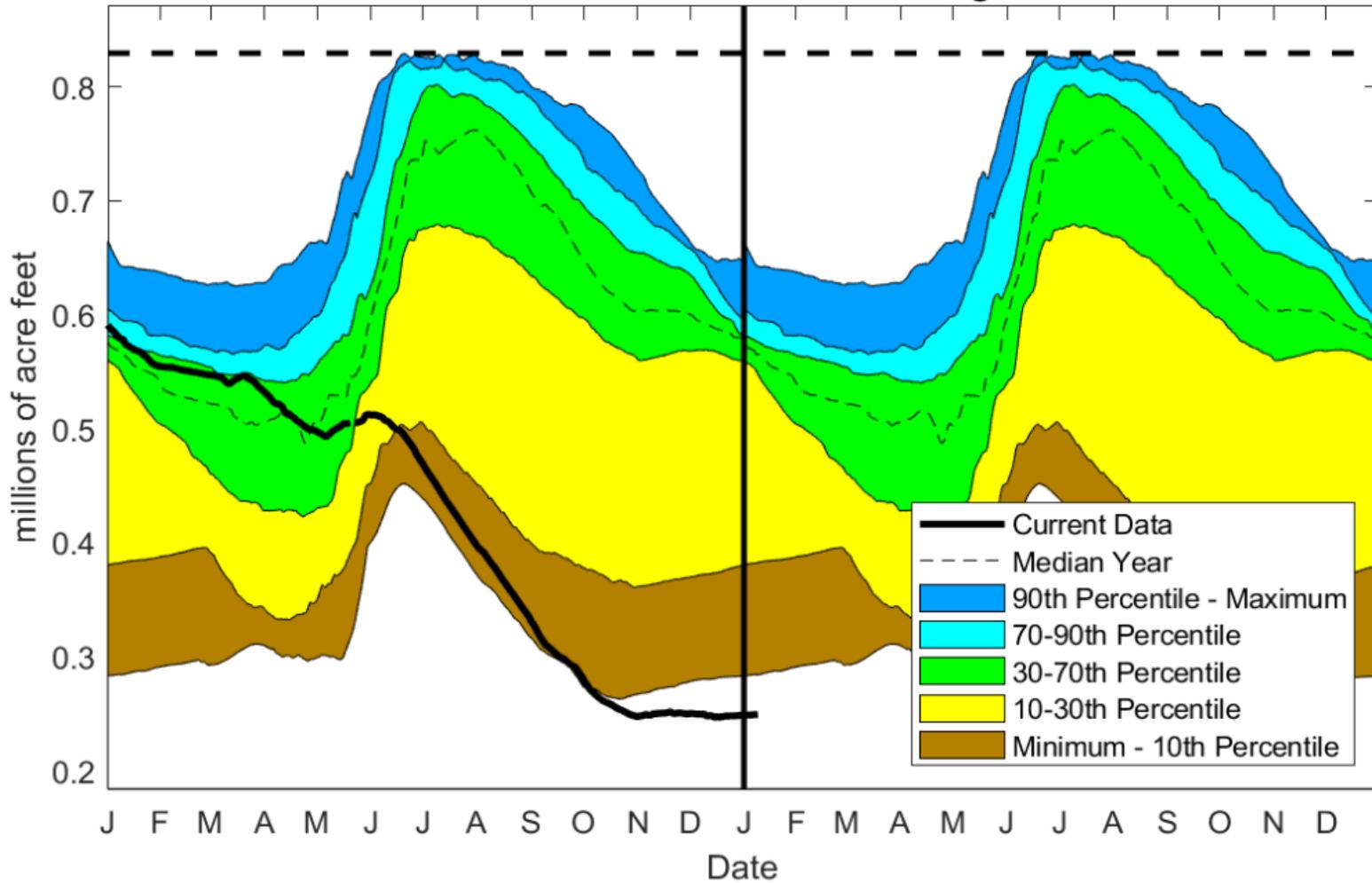
Reservoir and Soils Update



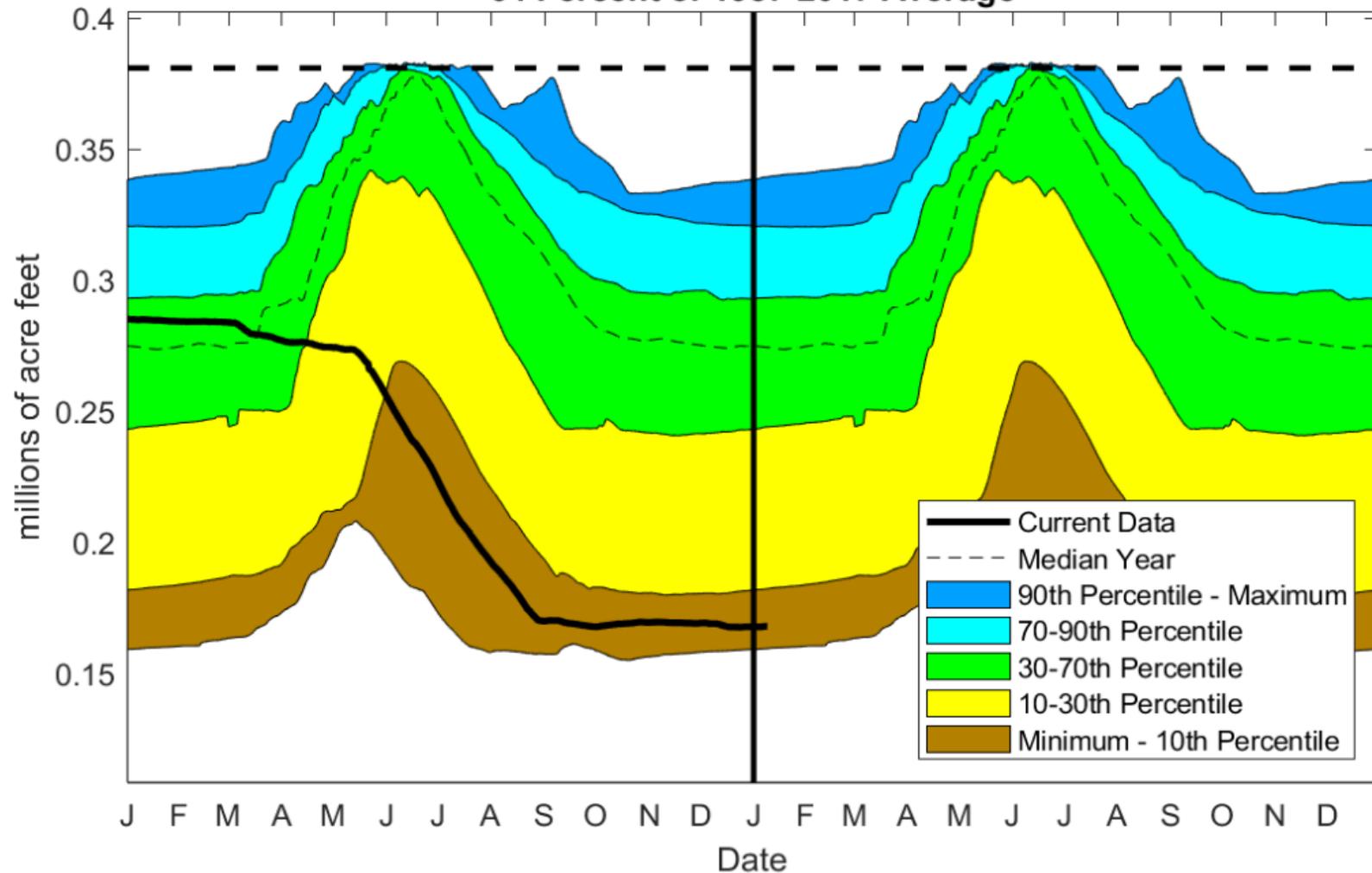
Lake Granby Reservoir Level 01/09/2019 113 Percent of 2000-2017 Average



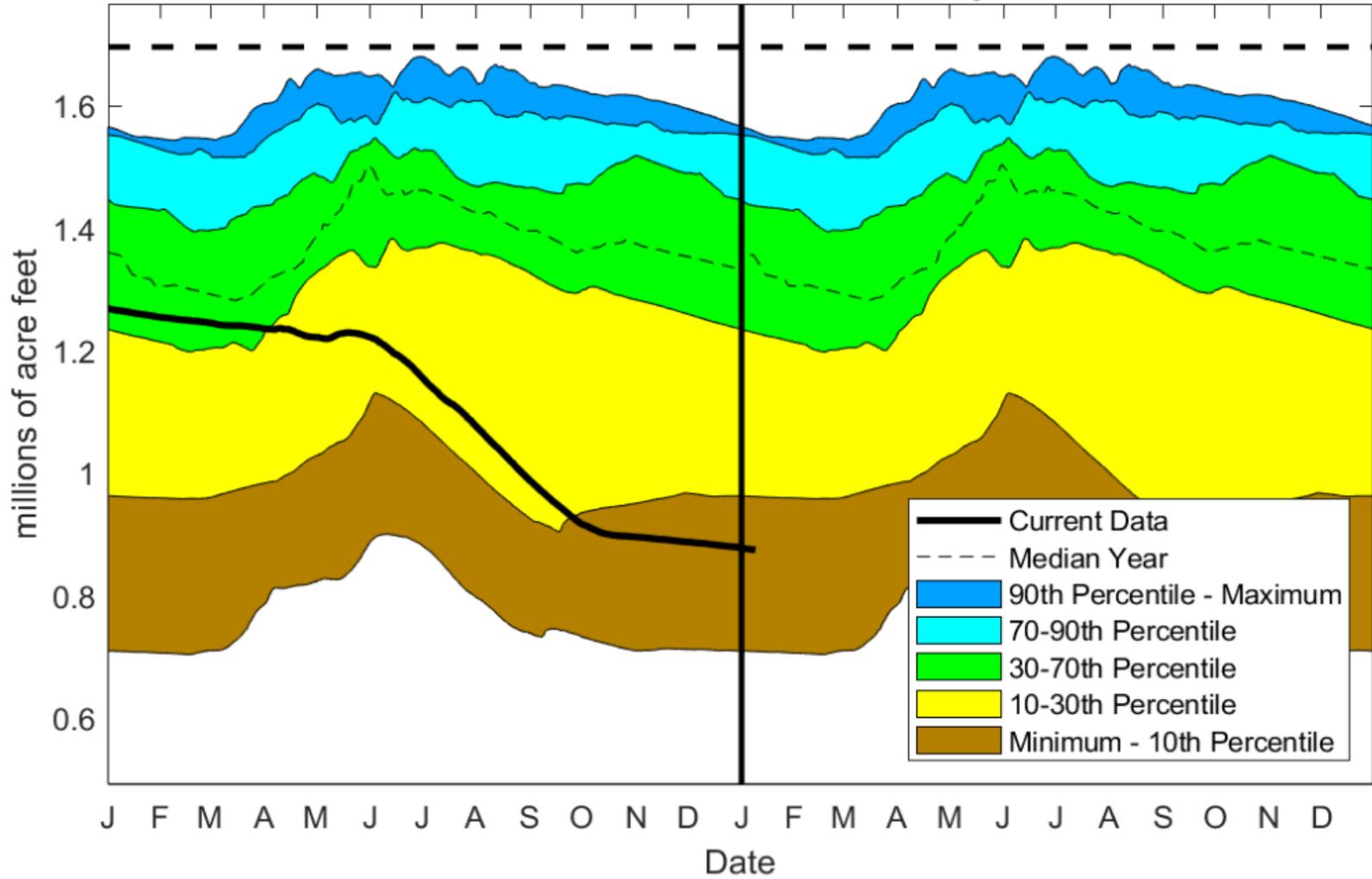
Blue Mesa Reservoir Level 01/09/2019
46 Percent of 1985-2017 Average



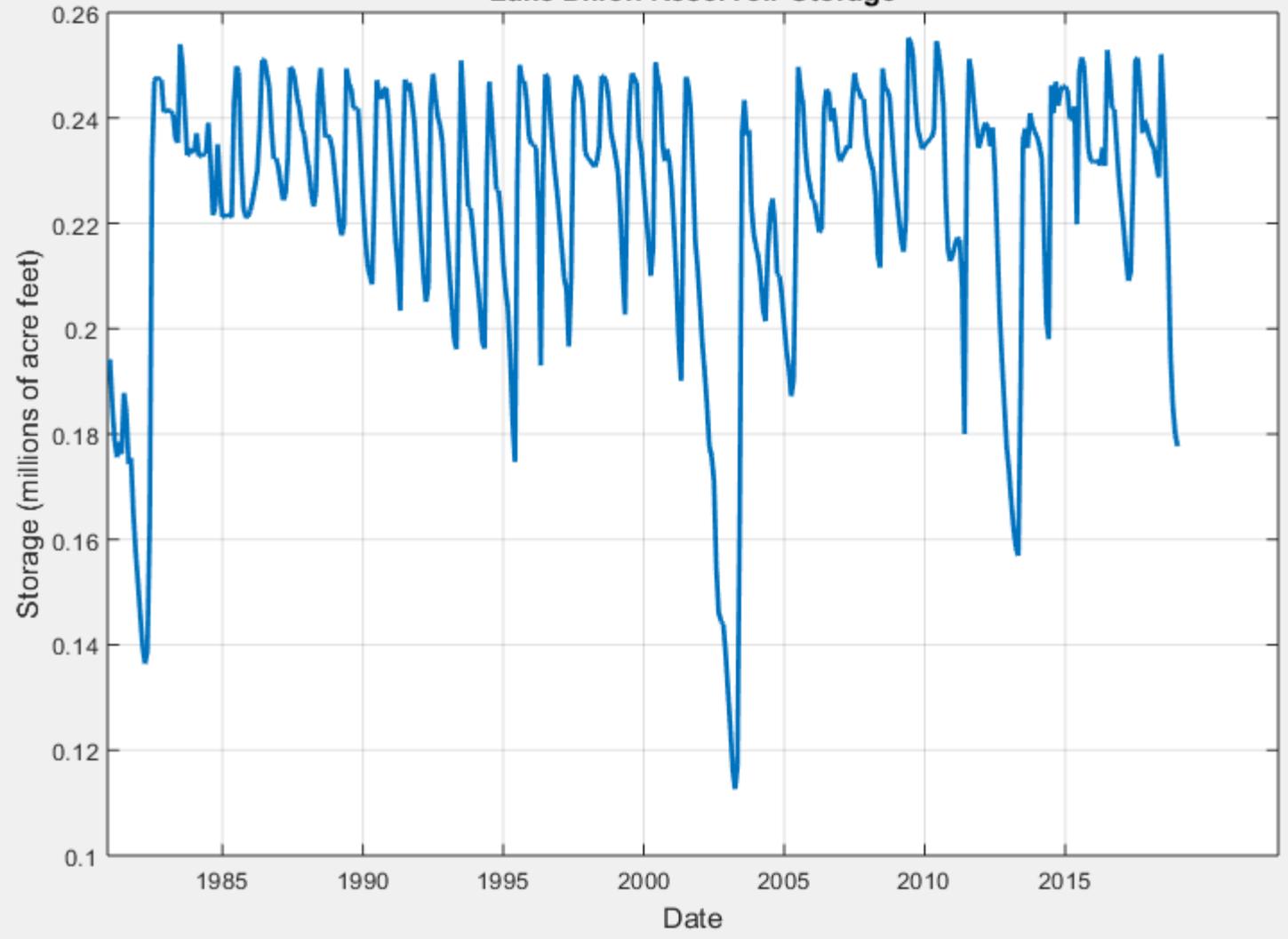
McPhee Reservoir Level 01/09/2019 64 Percent of 1987-2017 Average



Navajo Reservoir Level 01/09/2019 68 Percent of 1985-2017 Average

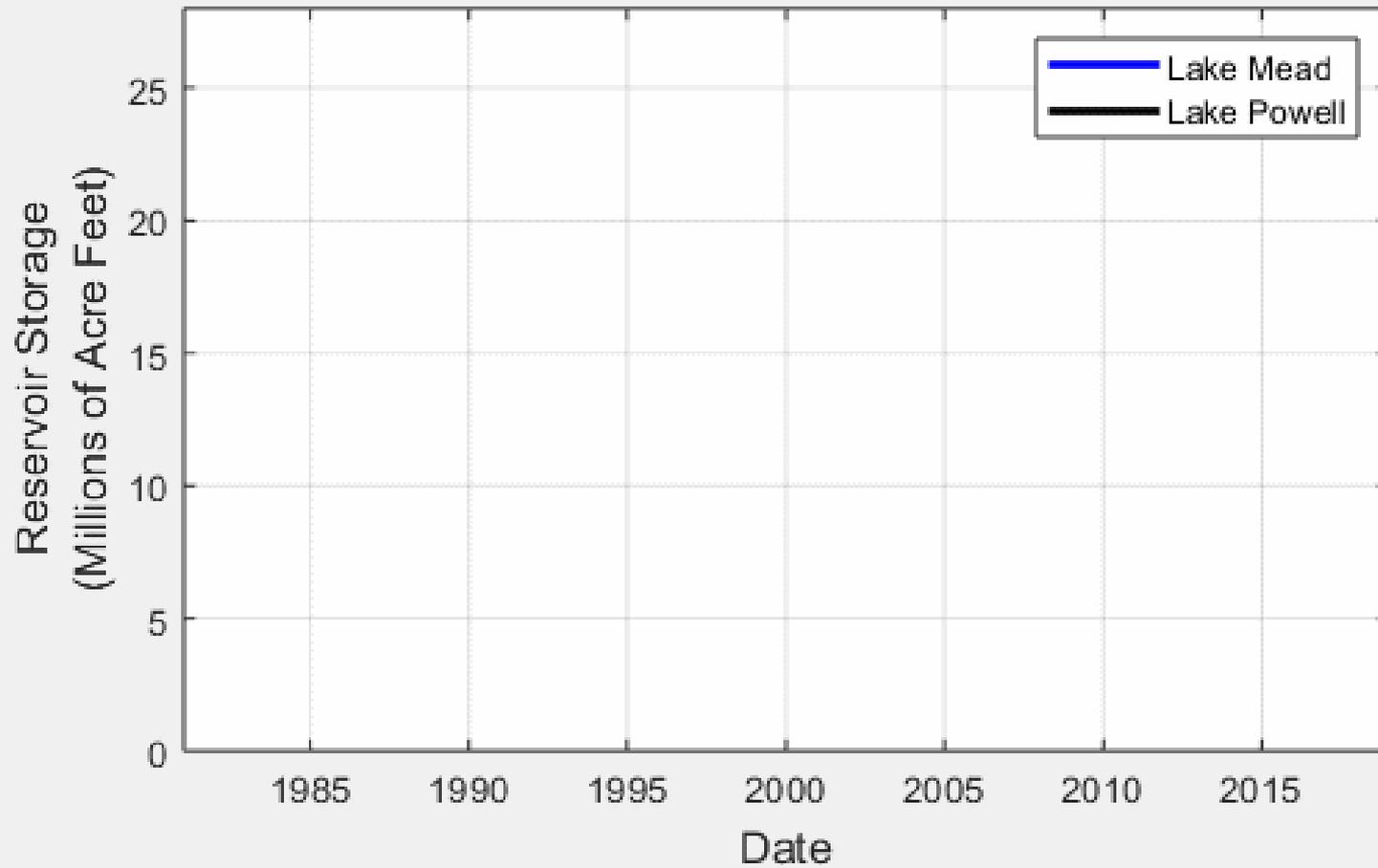


Lake Dillon Reservoir Storage

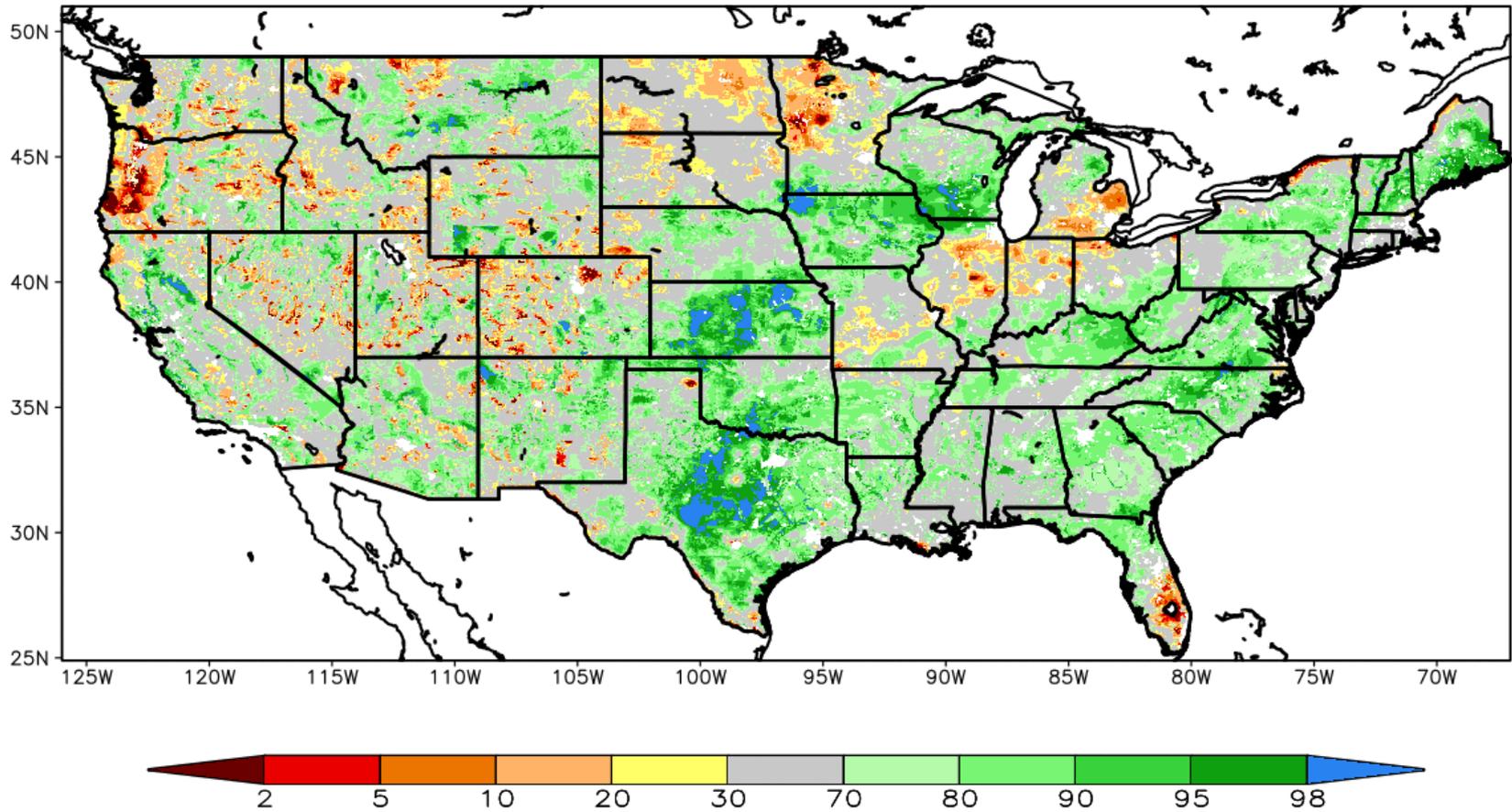


Reservoir Levels on the Colorado River

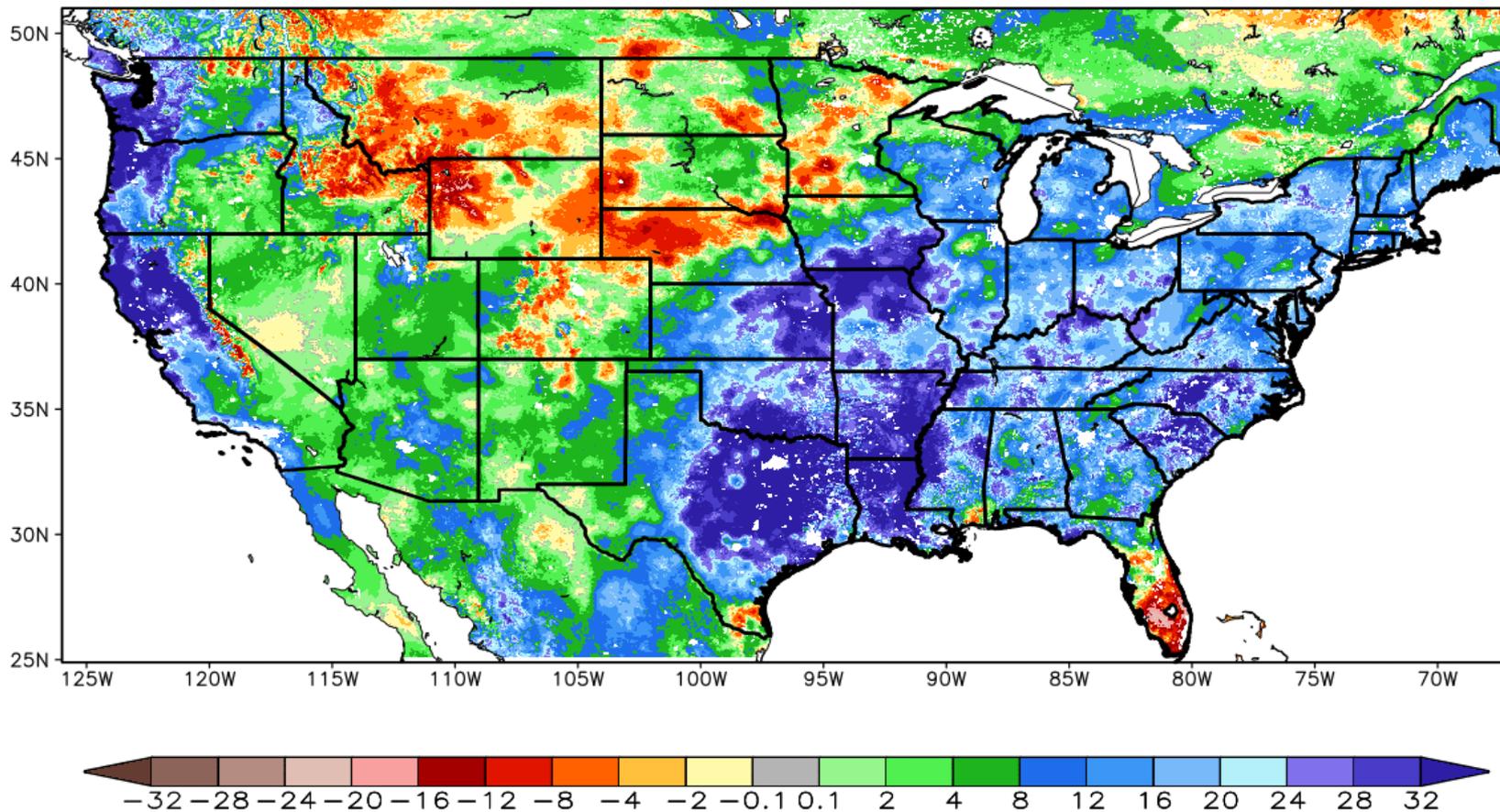
Jan 1981



SPoRT-LIS 0-2 m RSM percentile valid 17 Jan 2019

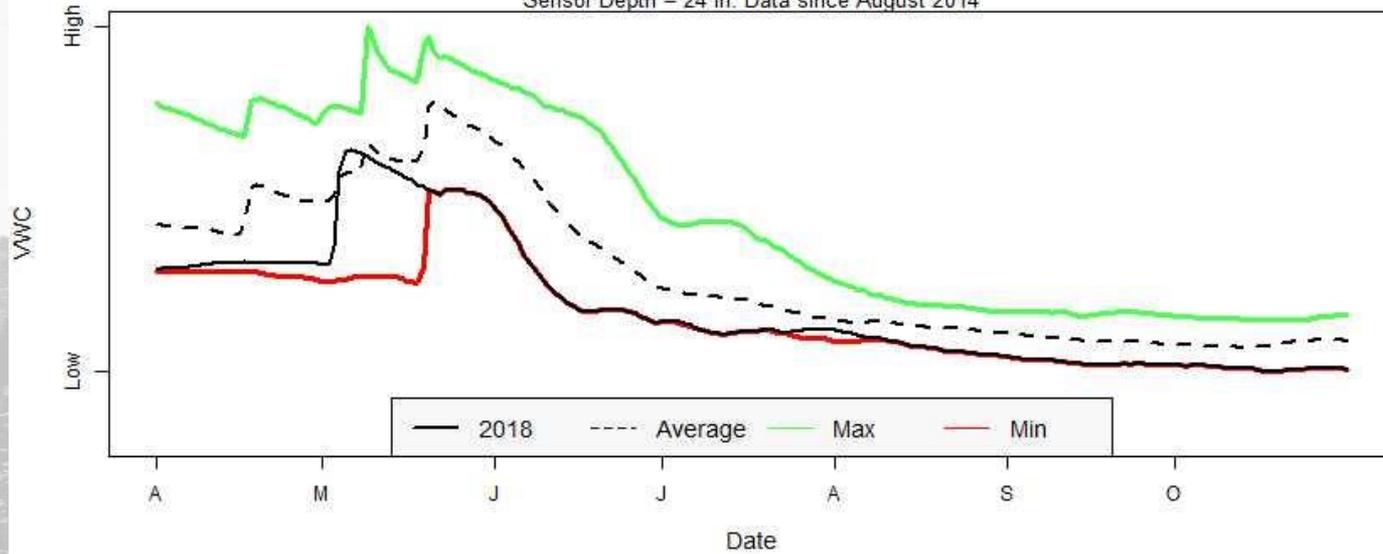


6-Month Difference in Column Relative Soil Moisture (%) valid 12z 17 Jan 2019

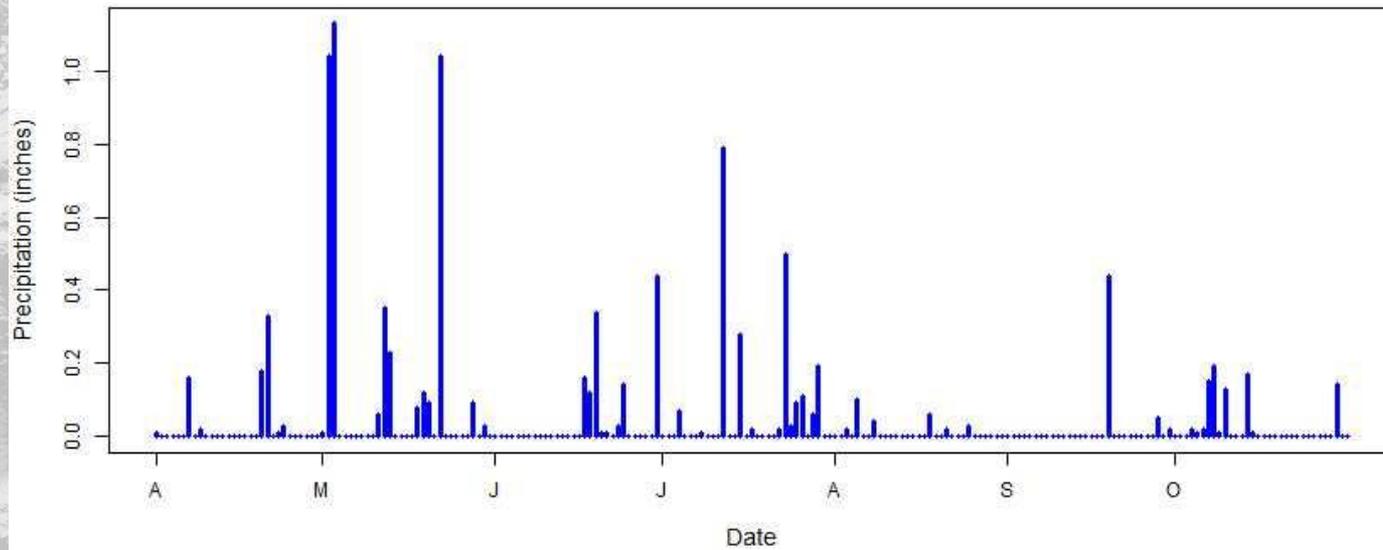


Fort Collins Soil Moisture

Sensor Depth = 24 in. Data since August 2014



Fort Collins Precipitation

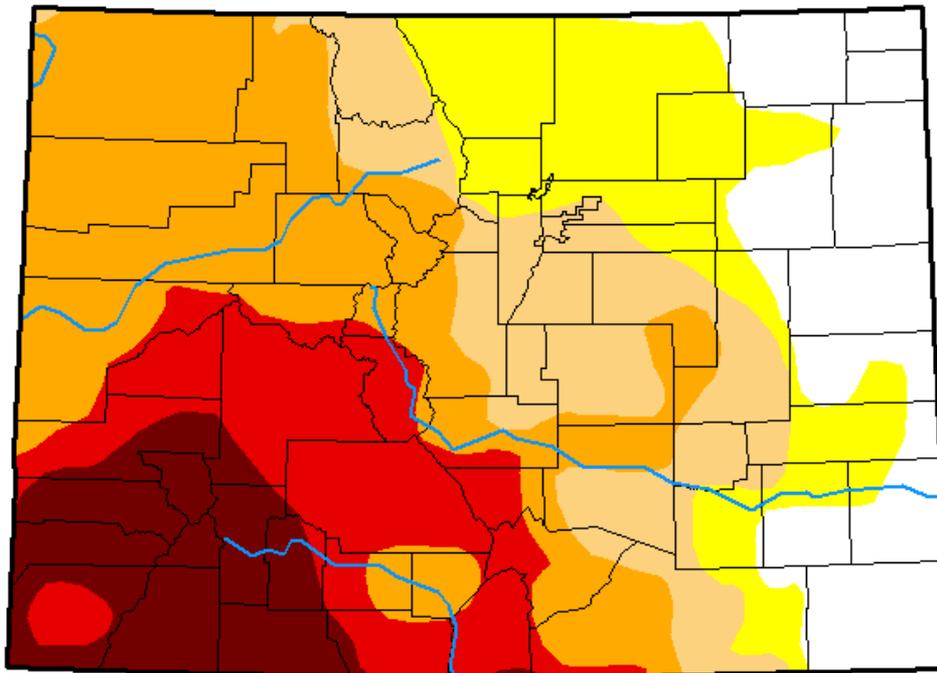


U.S. Drought Monitor Colorado

January 15, 2019
(Released Thursday, Jan. 17, 2019)
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	15.91	84.09	68.49	53.00	25.35	10.51
Last Week <i>01-08-2019</i>	14.89	85.11	69.48	54.91	25.69	10.51
3 Months Ago <i>10-16-2018</i>	16.64	83.36	67.83	59.23	39.09	13.64
Start of Calendar Year <i>01-01-2019</i>	17.94	82.06	66.26	54.91	27.11	11.22
Start of Water Year <i>09-25-2018</i>	14.19	85.81	72.30	64.41	48.47	16.21
One Year Ago <i>01-16-2018</i>	0.59	99.41	75.90	23.23	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.

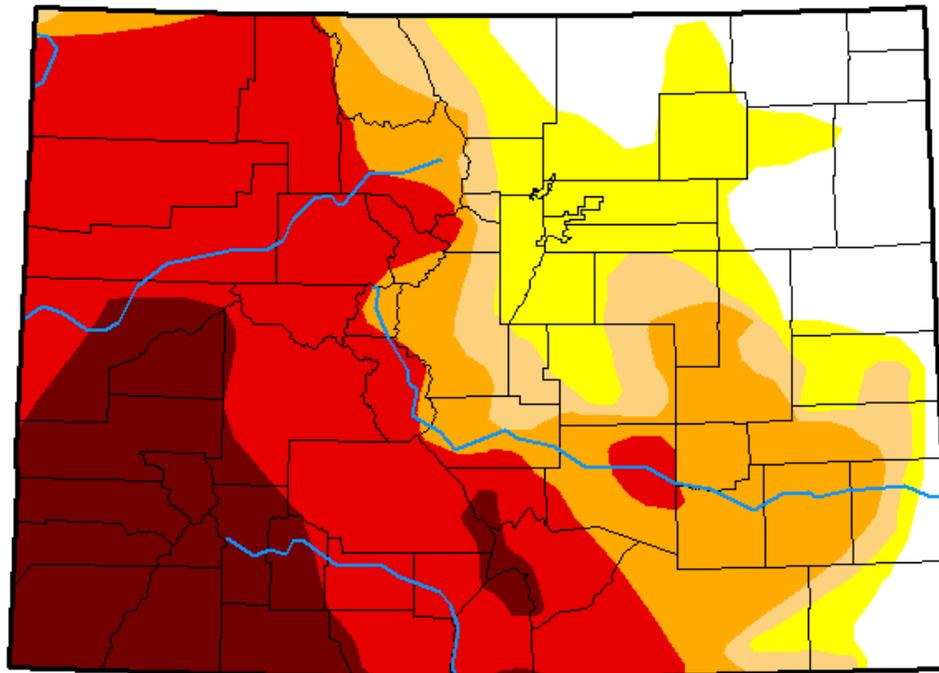
Author:
Brad Pugh
CPC/NOAA



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

U.S. Drought Monitor Colorado

October 2, 2018
(Released Thursday, Oct. 4, 2018)
Valid 8 a.m. EDT



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	14.19	85.81	72.30	64.41	48.47	16.21
Last Week 09-25-2018	14.19	85.81	72.30	64.41	48.47	16.21
3 Months Ago 07-03-2018	20.46	79.54	67.30	52.31	36.46	8.81
Start of Calendar Year 01-02-2018	6.57	93.43	33.53	7.27	0.00	0.00
Start of Water Year 09-25-2018	14.19	85.81	72.30	64.41	48.47	16.21
One Year Ago 10-03-2017	70.54	29.46	3.70	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:

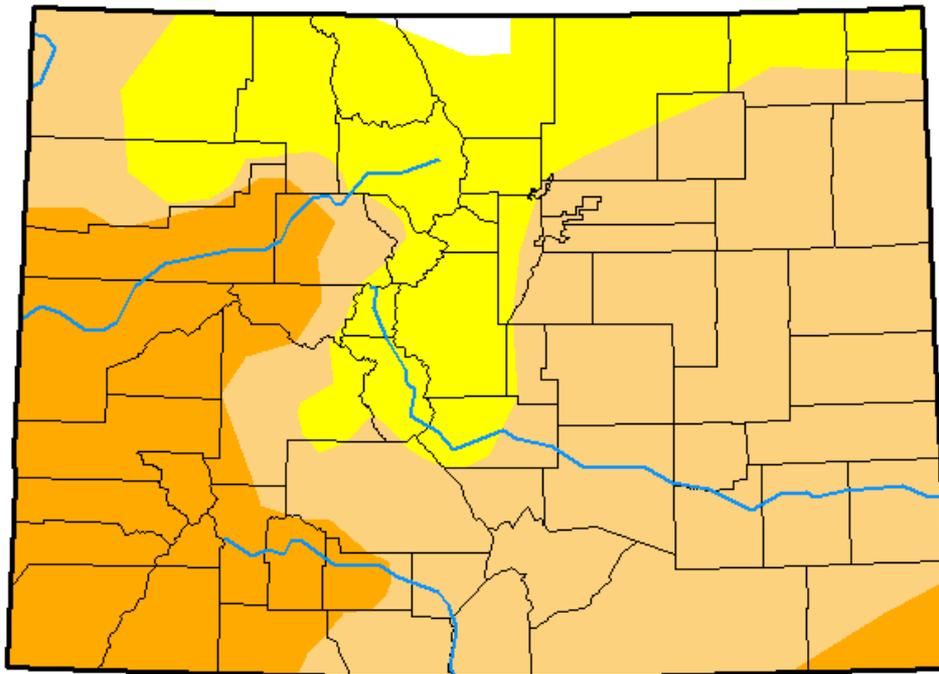
David Miskus
NOAA/NWS/NCEP/CPC



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

U.S. Drought Monitor Colorado

January 16, 2018
(Released Thursday, Jan. 18, 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	23.23	0.00	0.00
Last Week <i>01-09-2018</i>	0.59	99.41	75.90	22.02	0.00	0.00
3 Months Ago <i>10-17-2017</i>	71.71	28.29	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>01-17-2017</i>	44.17	55.83	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:

Brian Fuchs
National Drought Mitigation Center



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

Seasonal Predictions



National Oceanic and Atmospheric Administration

U.S. Department of Commerce

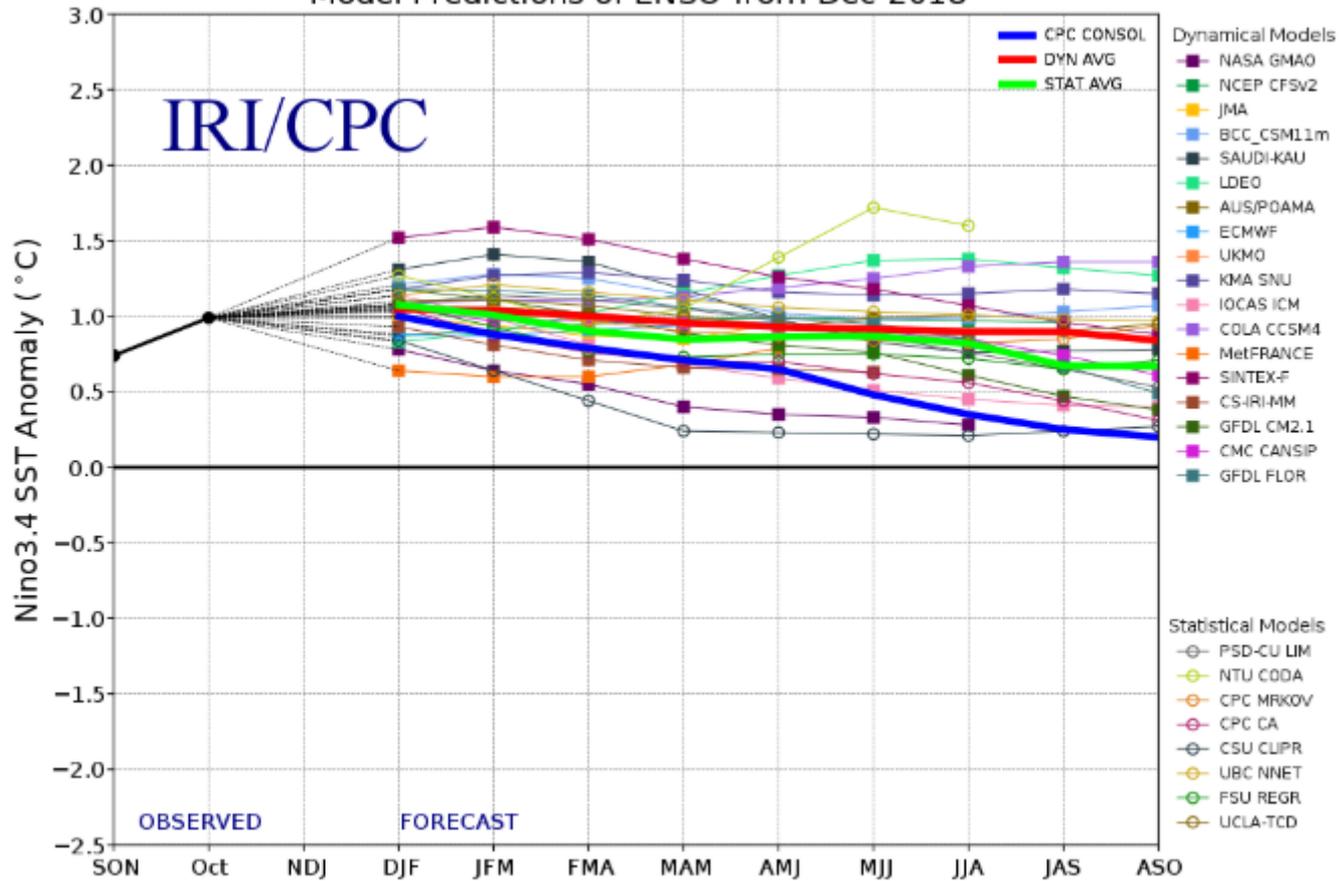
The website you are trying to access is not available at this time due to a lapse in appropriation.

NOAA.gov and specific NOAA websites necessary to protect lives and property are operational and will be maintained during this partial closure of the U.S. Government.

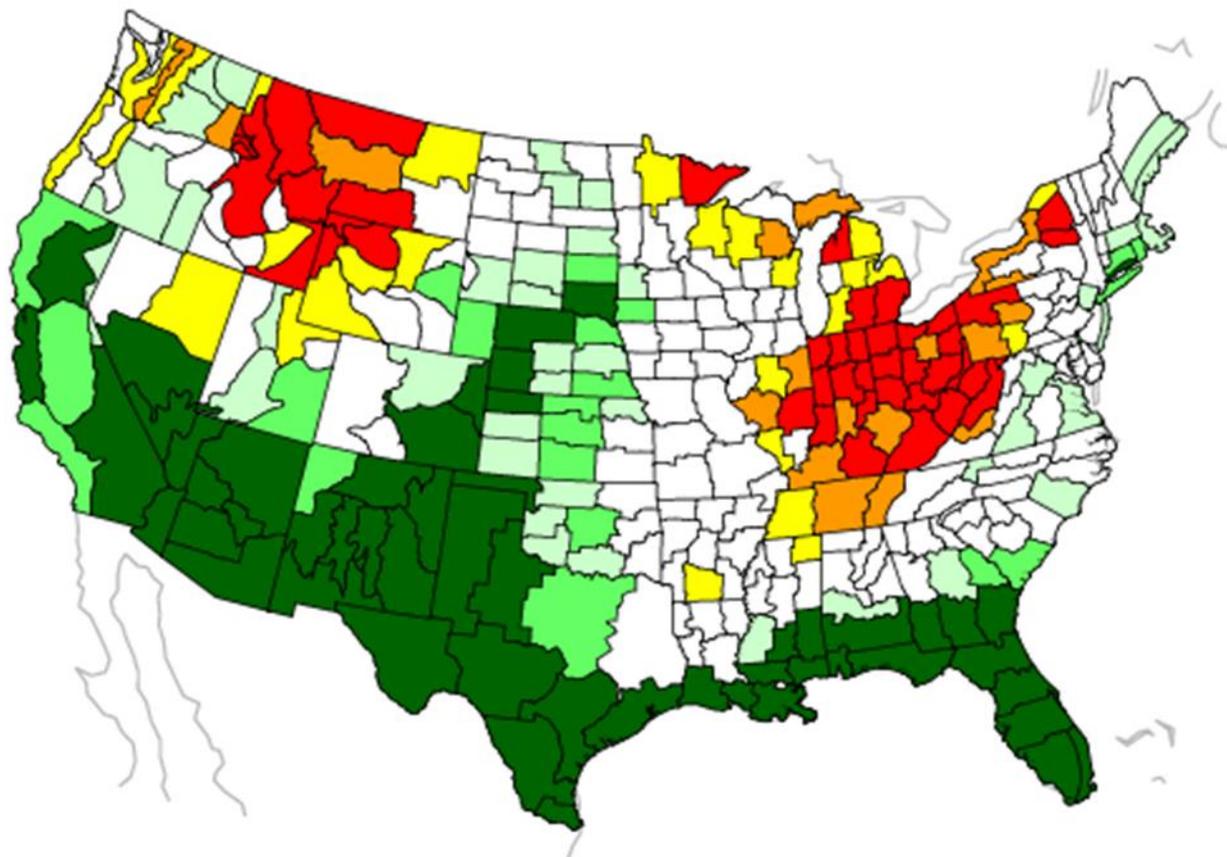
See [weather.gov](https://www.weather.gov) for forecasts and critical weather information.

NOAA Federal Employees: Go to the [NOAA Furlough information page](#) for information, forms and other resources related to the shutdown.

Model Predictions of ENSO from Dec 2018



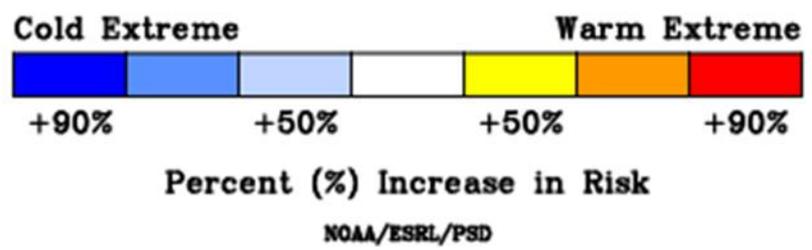
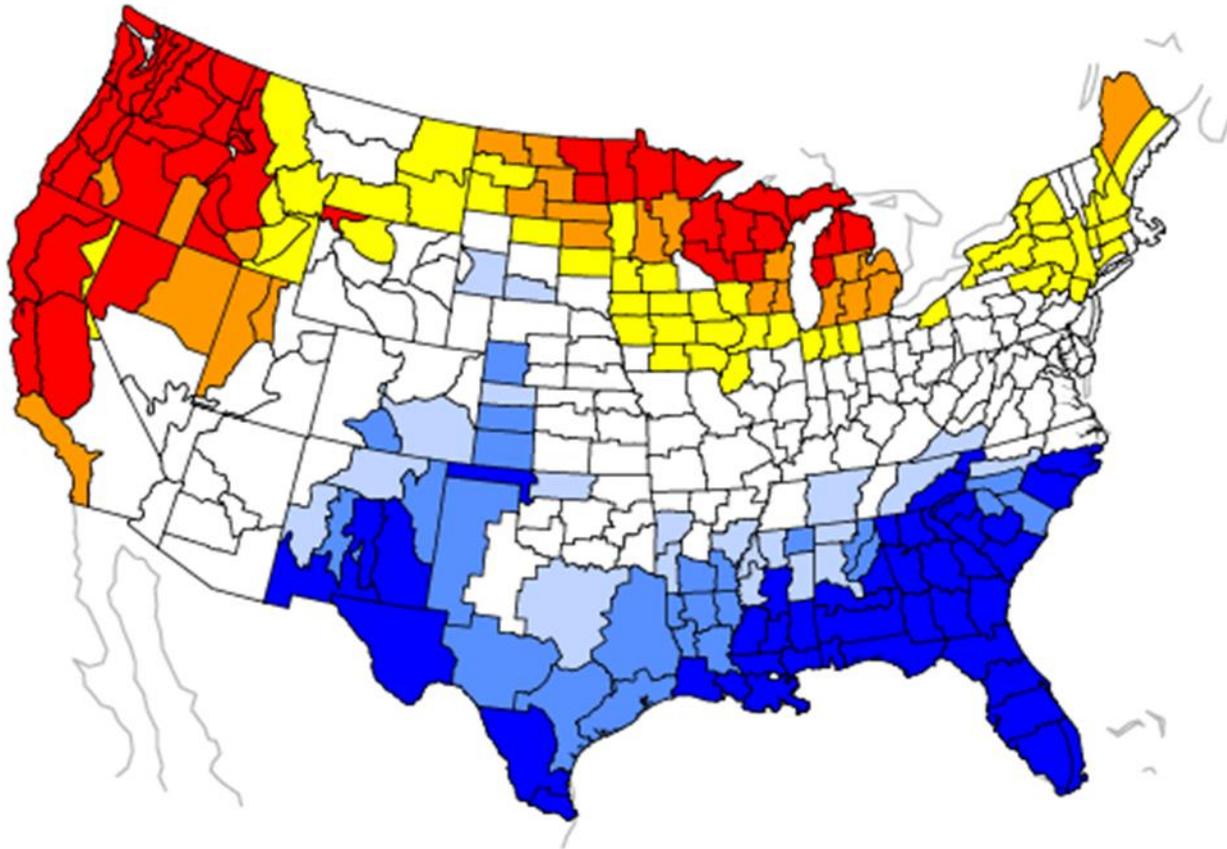
JFM Precipitation During El Nino Increased Risk of Wet or Dry Extremes

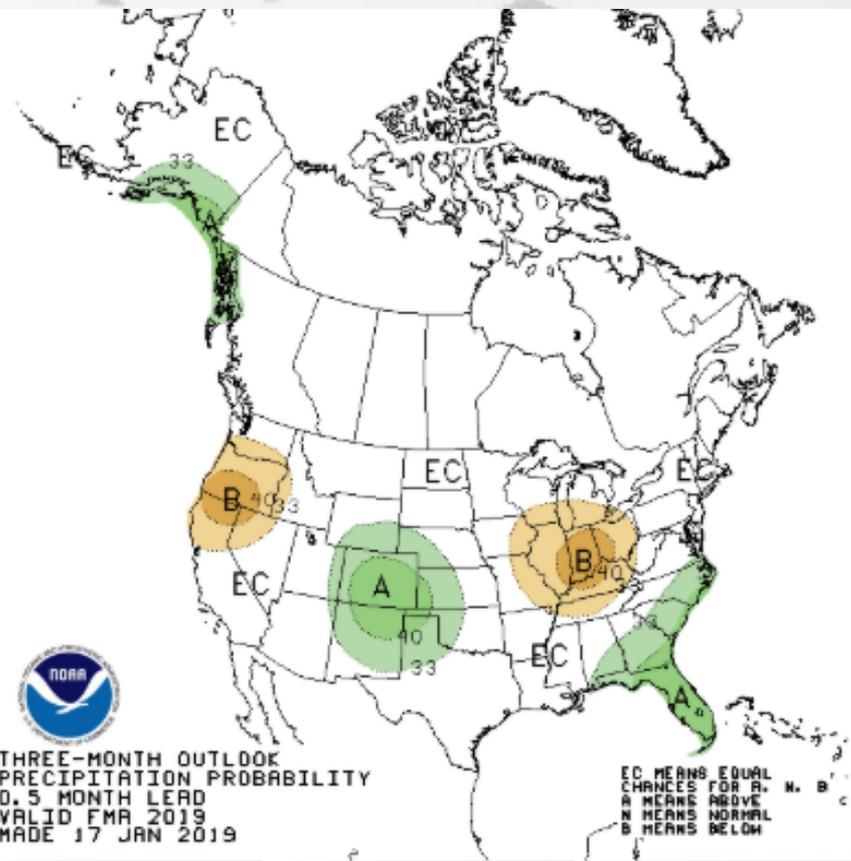
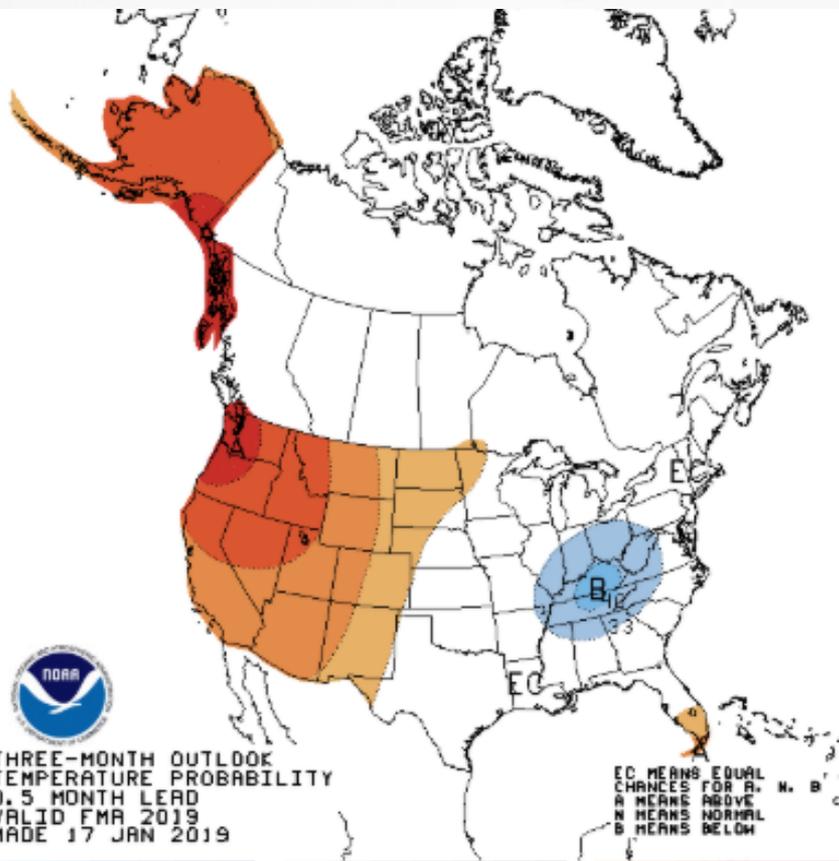


Percent (%) Increase in Risk

NOAA/ESRL/PSD

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

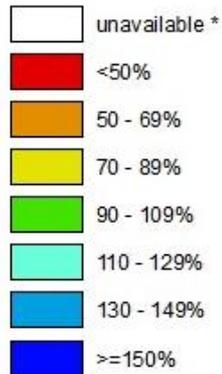




Colorado
SNOTEL Current Snow Water Equivalent (SWE) % of Normal
 Laramie and North Platte

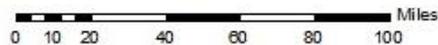
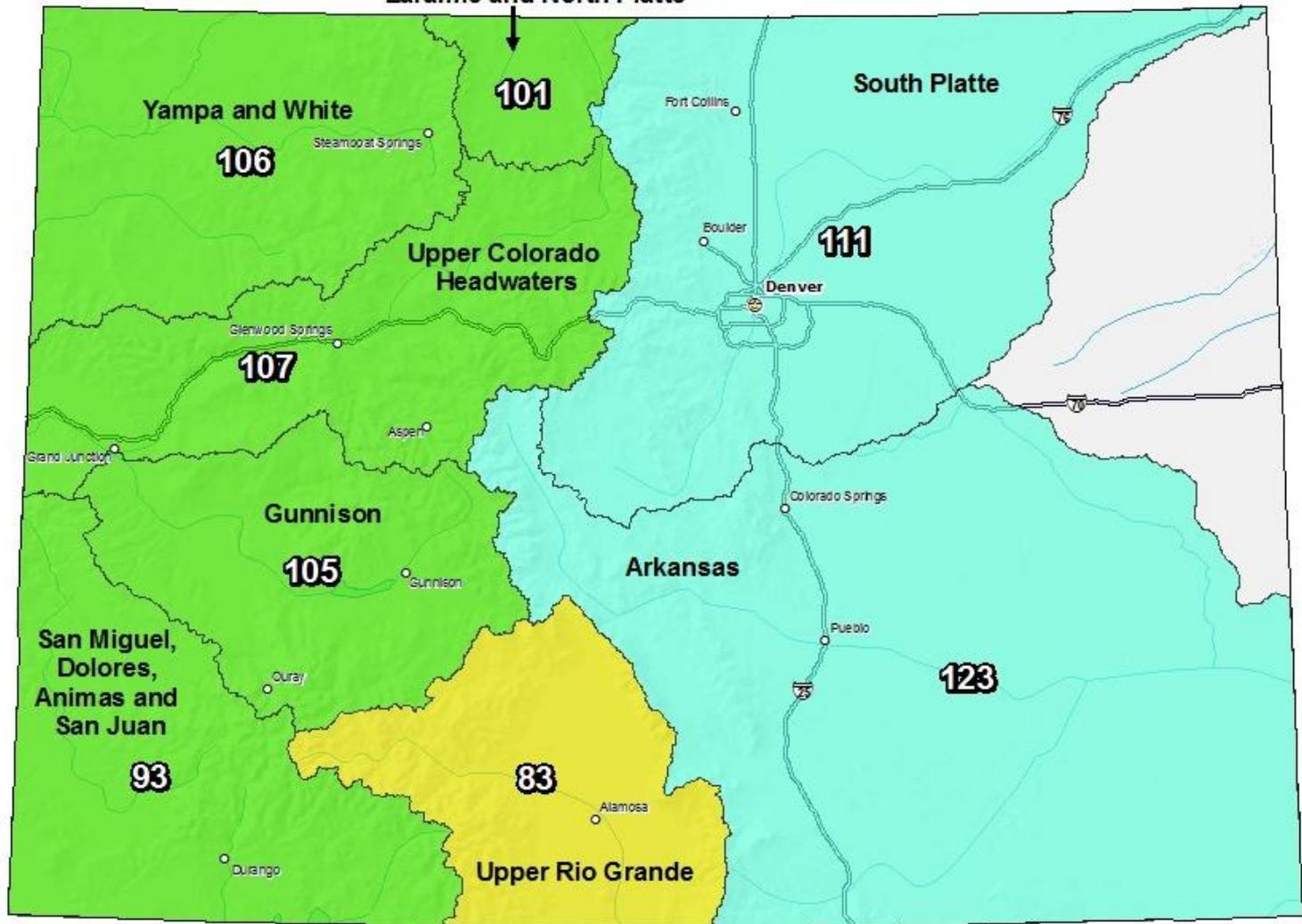
Jan 18, 2019

Current Snow Water Equivalent (SWE) Basin-wide Percent of 1981-2010 Median



* Data unavailable at time of posting or measurement is not representative at this time of year

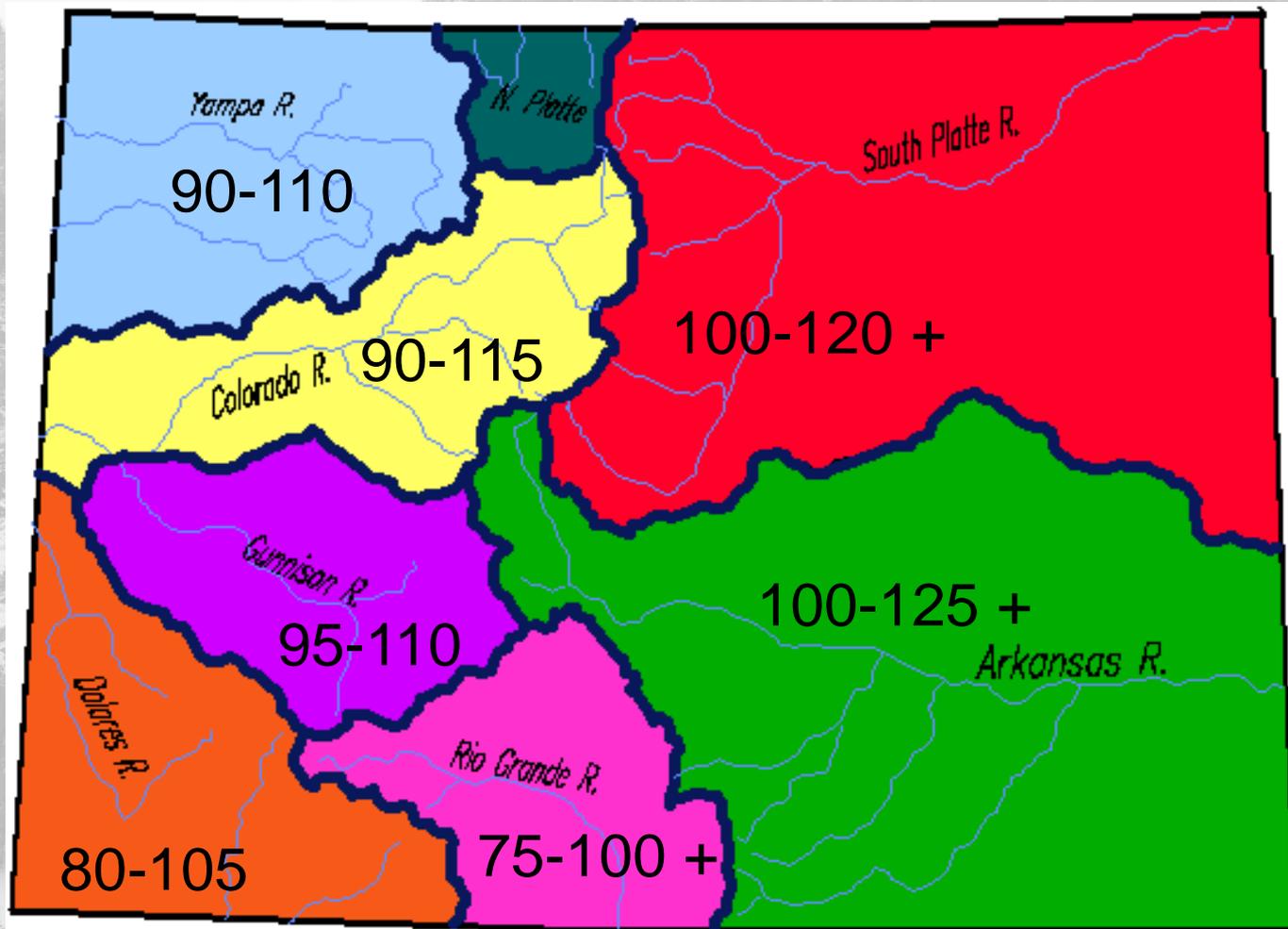
*Provisional Data
 Subject to Revision*



The snow water equivalent percent of normal represents the current snow water equivalent found at selected SNOTEL sites in or near the basin compared to the average value for those sites on this day. Data based on the first reading of the day (typically 00:00).

Prepared by:
 USDA/NRCS National Water and Climate Center
 Portland, Oregon
<http://www.wcc.nrcs.usda.gov>

Peak Snowpack Projection 30-70th percentile range



Takeaways

- Western Colorado has been clawing out of severe drought since the fall, but the urban corridor is slipping back into short term drought
- If our snowpack is average, or even slightly positive, our surface water supplies are unlikely to make a full recovery
- Seasonal predictions indicate a tilt towards warmer and wetter than normal conditions, which is a historically unusual combination

Colorado Climate Center

Thanks, and let's keep in touch!

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Zach Schwalbe – zach.Schwalbe@colostate.edu

Viewing this, and previous WATF Briefings:

http://climate.colostate.edu/ccc_archive.html

