

Colorado weather and climate update (or: “What a difference a year makes”)

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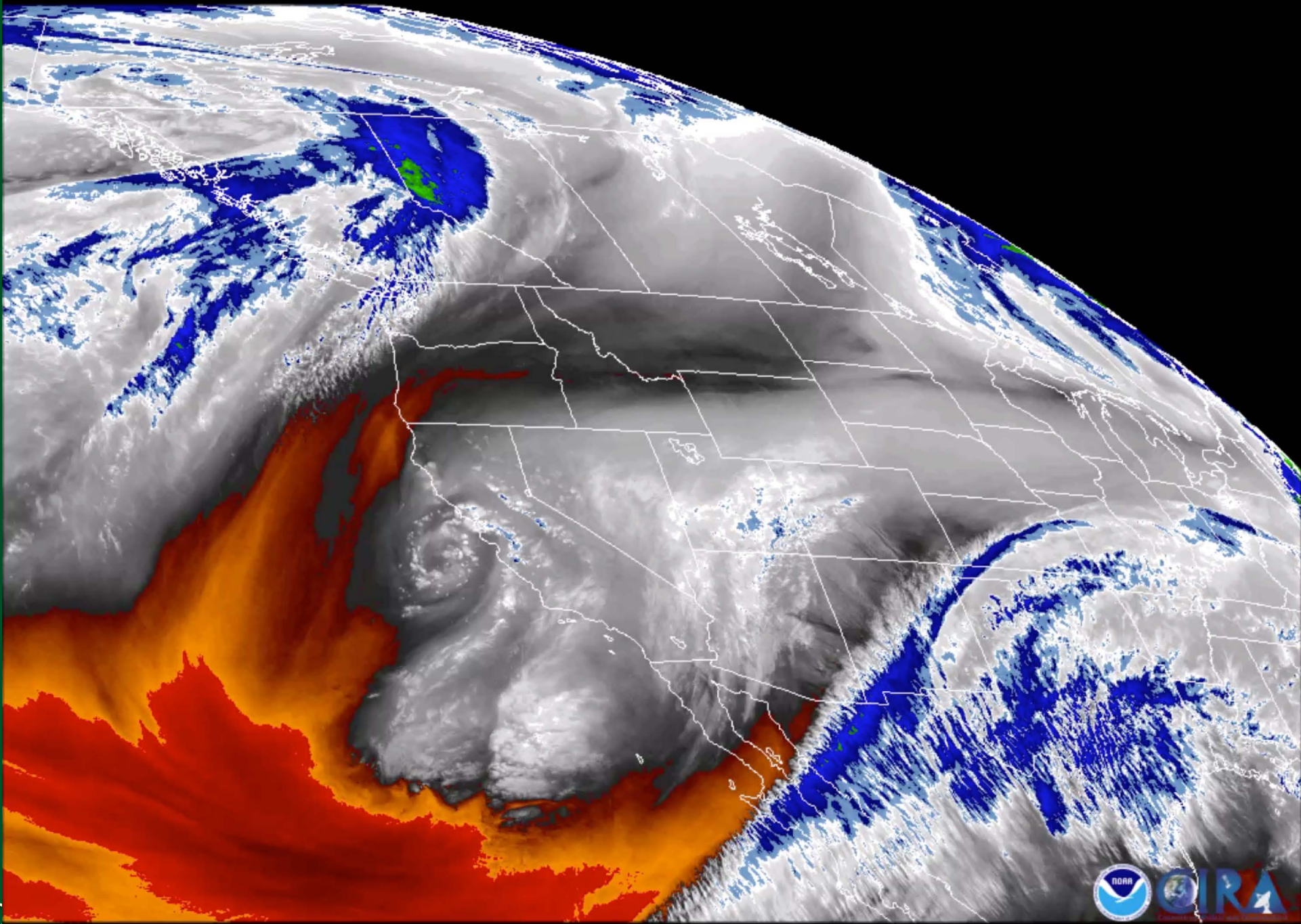
Along with: Zach Schwalbe, Becky Bolinger, Peter Goble, Nolan Doesken



Greeley Water roundup
March 2019



ATMOSPHERIC SCIENCE
COLORADO STATE UNIVERSITY

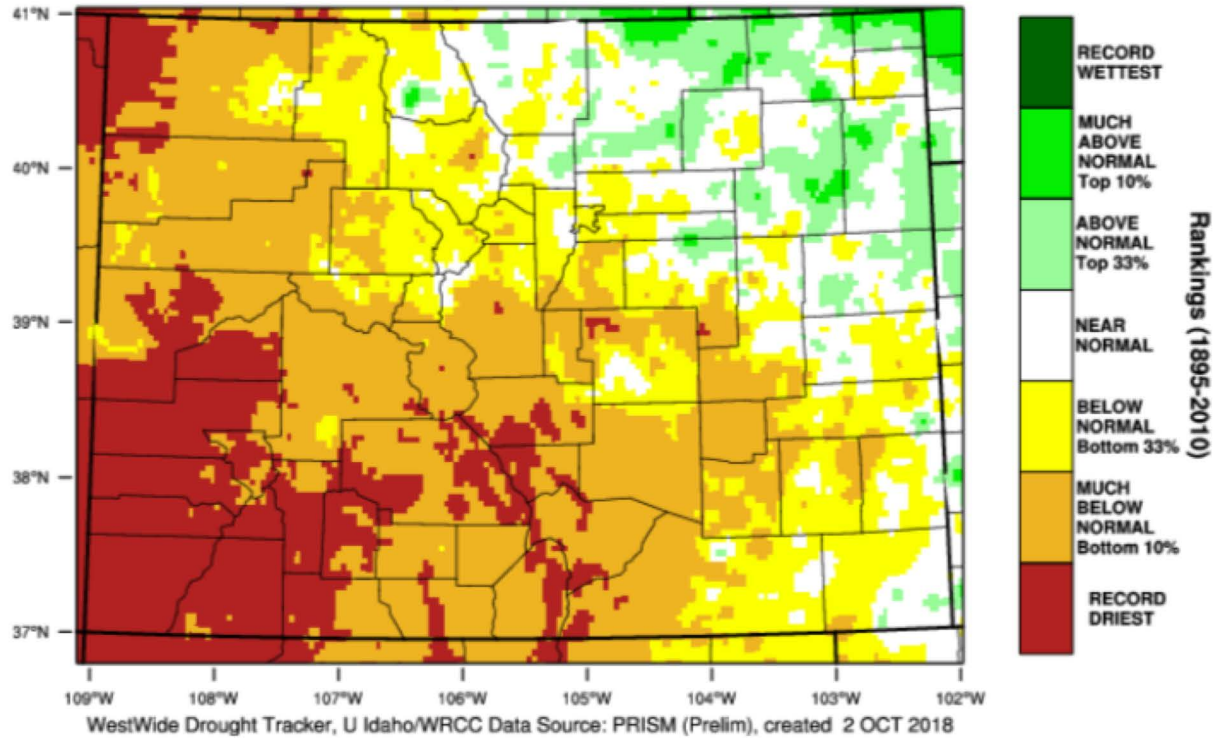


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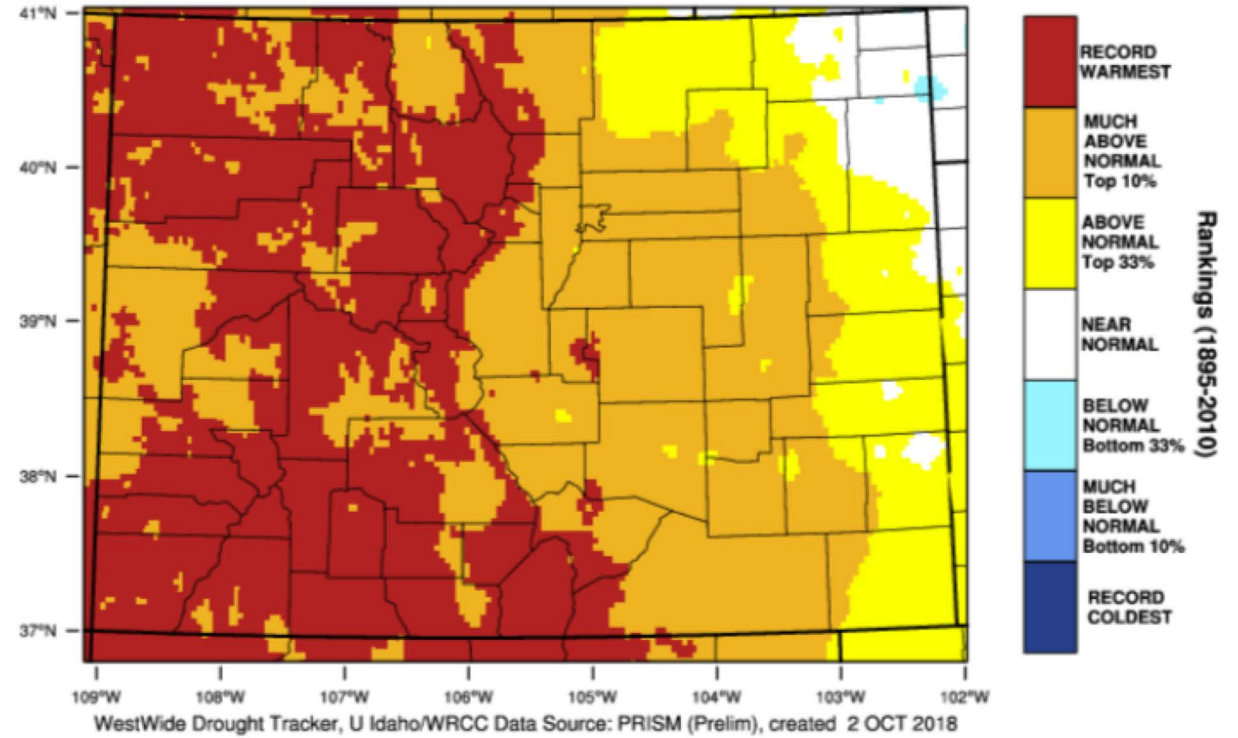
Water Year 2018: One to forget!

Colorado - Precipitation
October-September 2018 Percentile



2nd driest water year on record for Colorado

Colorado - Mean Temperature
October-September 2018 Percentile



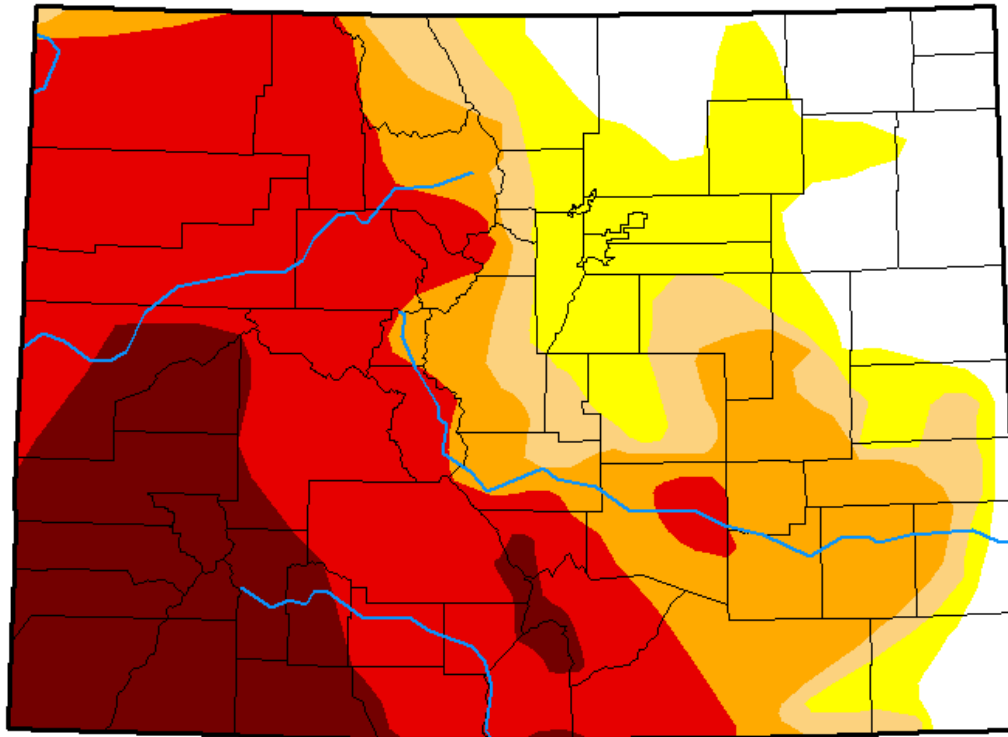
3rd warmest water year on record for Colorado






Water Year 2018: One to forget!

U.S. Drought Monitor Colorado

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



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:

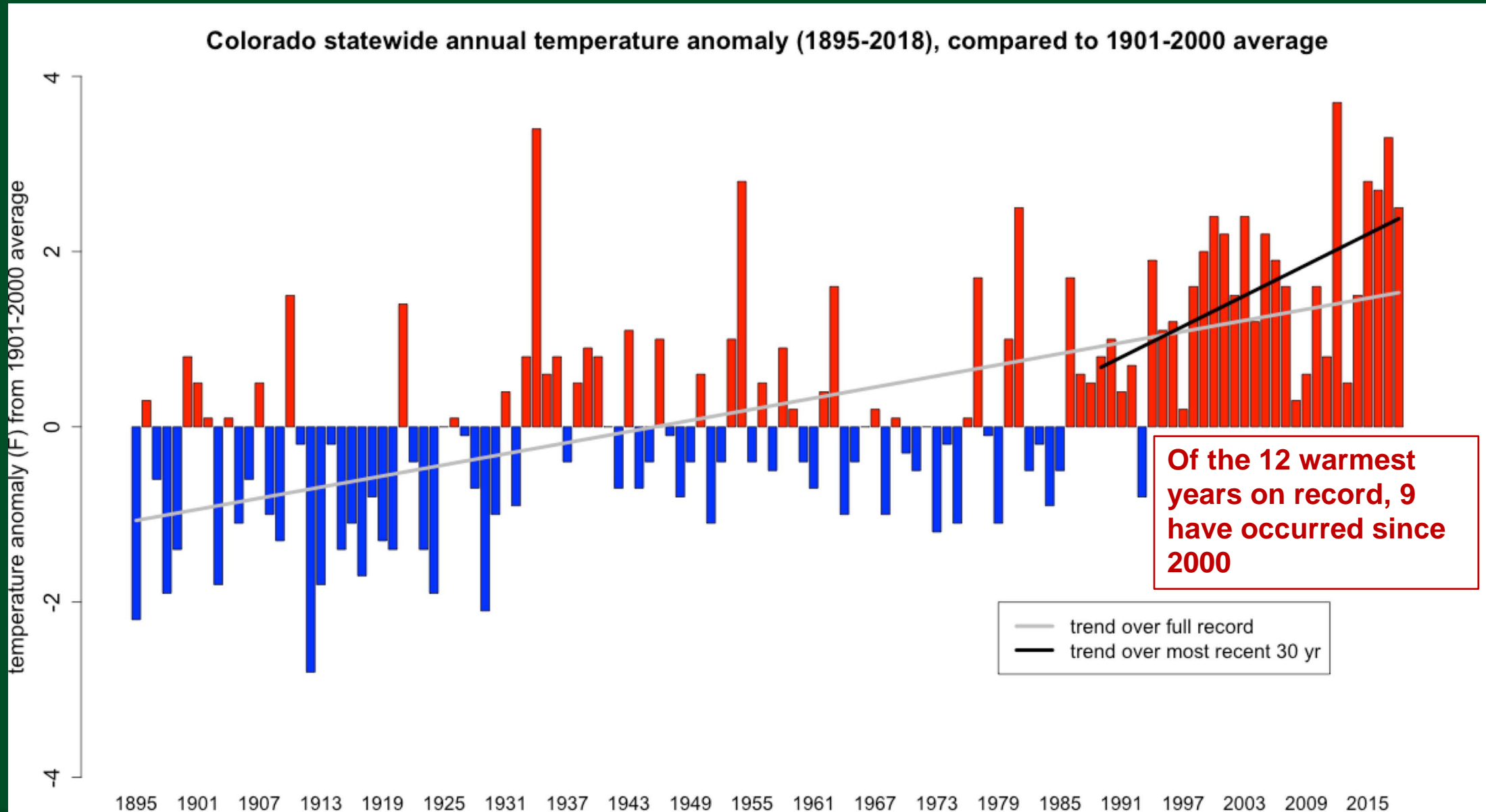
David Miskus
NOAA/NWS/NCEP/CPC



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



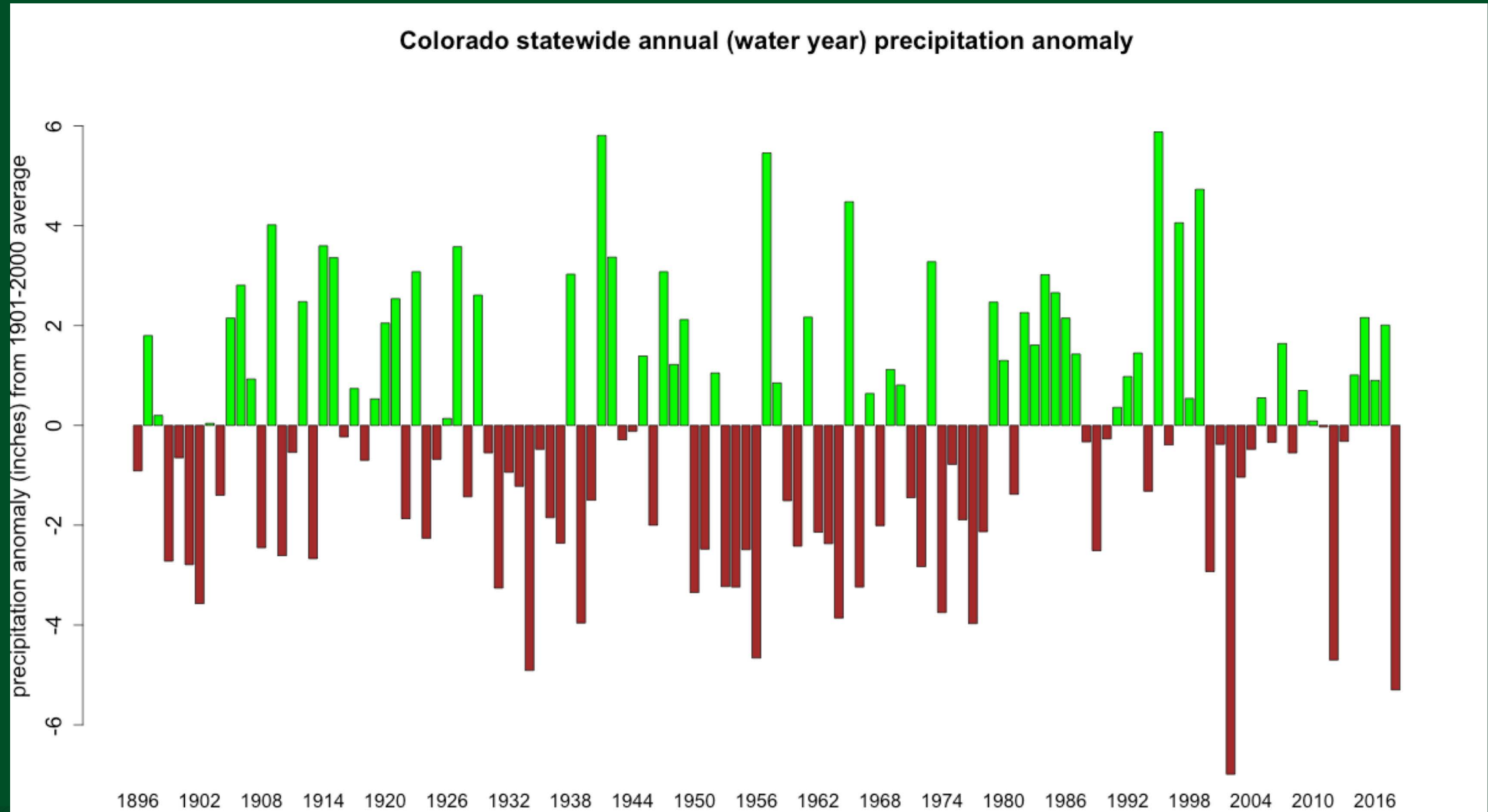
Statewide annual average temperature anomalies



Data source: NOAA/NCEI
Graphic by Colorado Climate Center



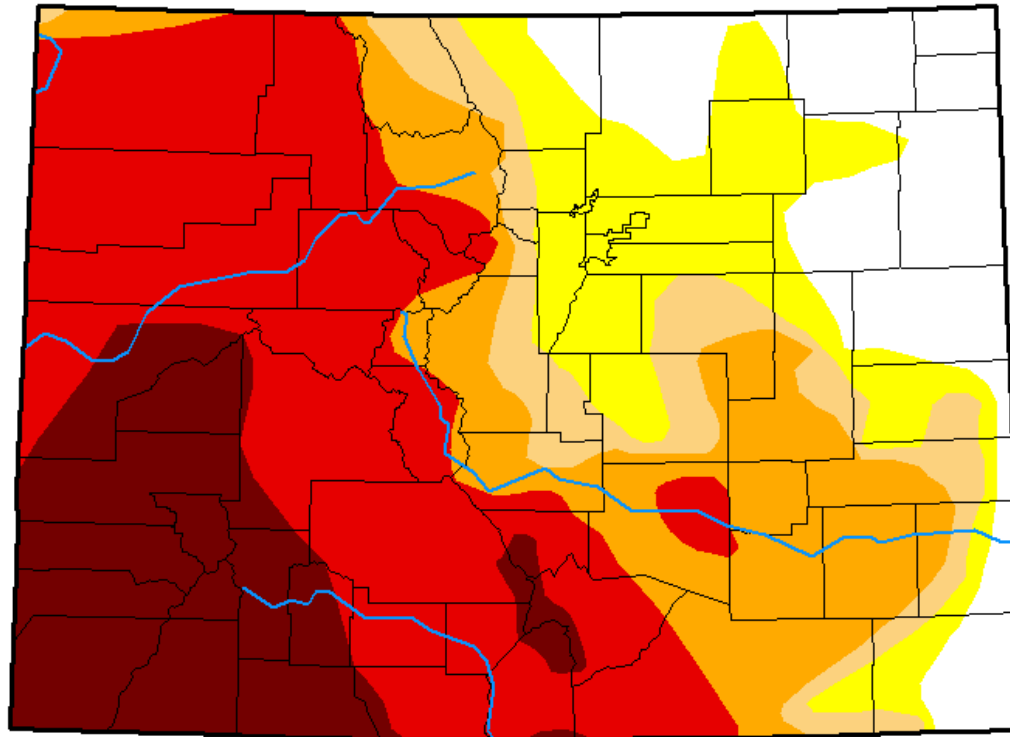
Statewide water year precipitation anomalies





Water Year 2019: A huge turnaround!

U.S. Drought Monitor Colorado

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



Intensity:

-  D0 Abnormally Dry
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Author:

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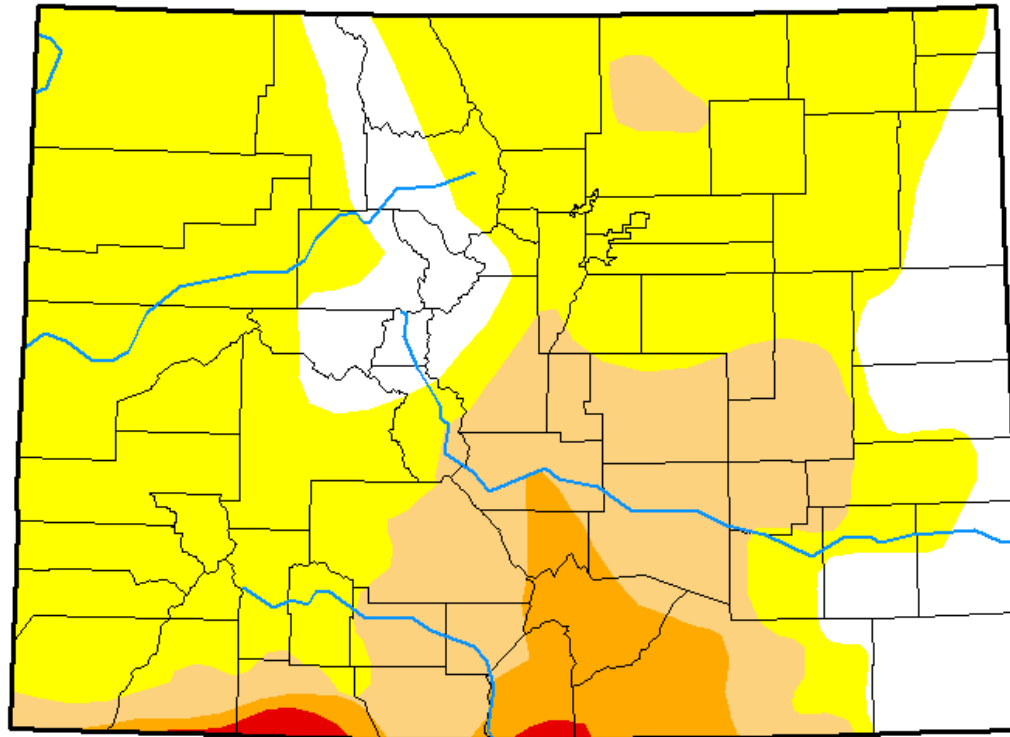
<http://droughtmonitor.unl.edu/>








Water Year 2019: A huge turnaround!

U.S. Drought Monitor Colorado

March 12, 2019
(Released Thursday, Mar. 14, 2019)
Valid 8 a.m. EDT



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

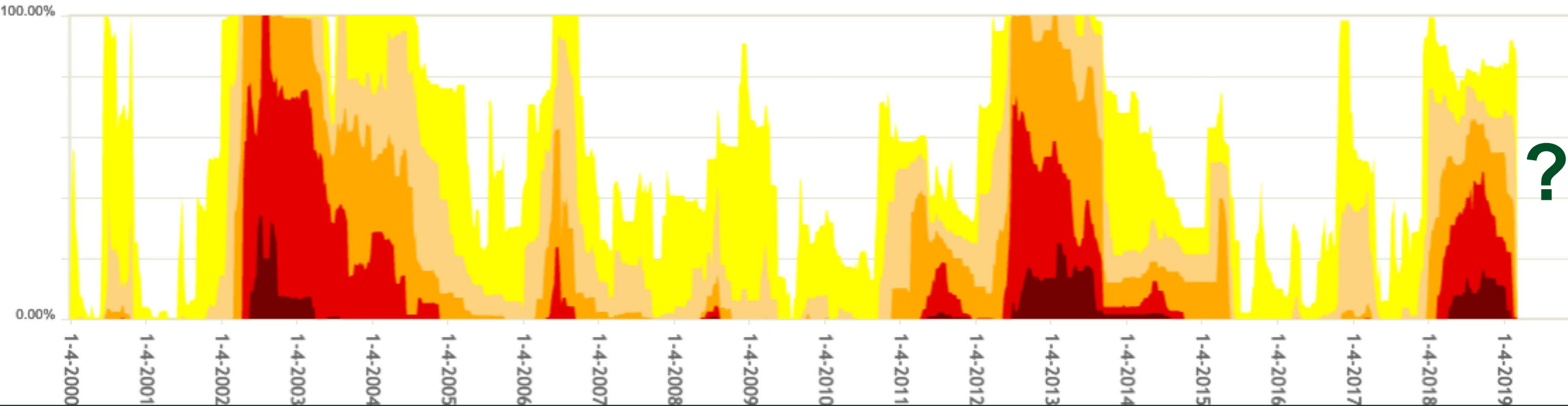


<http://droughtmonitor.unl.edu/>




US Drought Monitor: Colorado

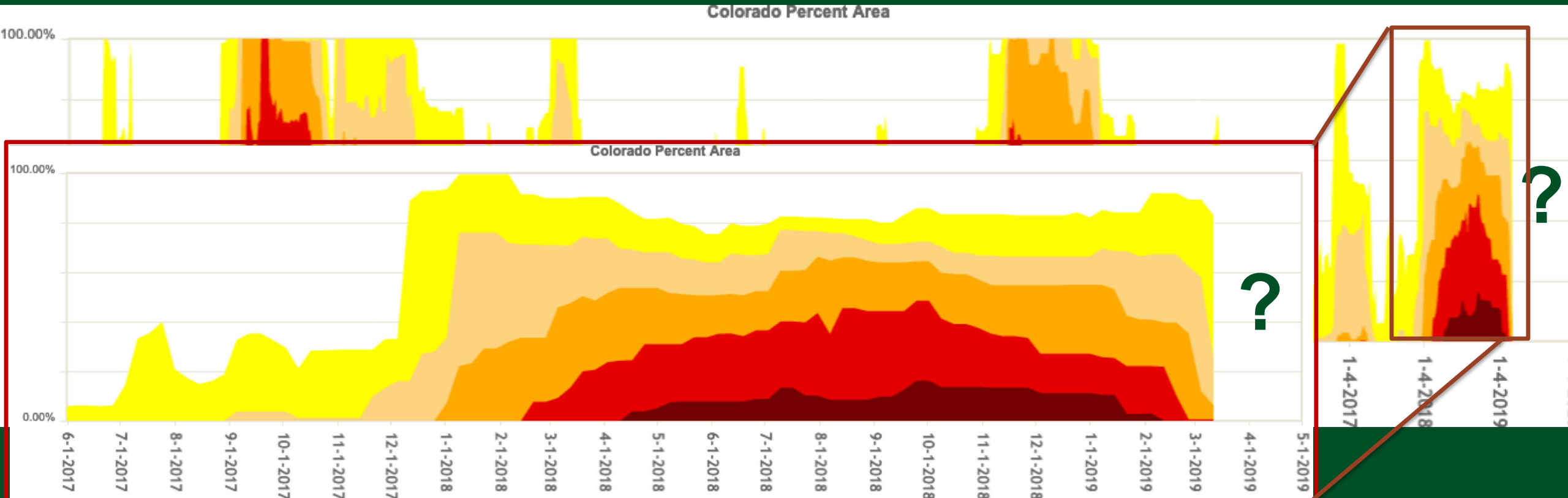
Colorado Percent Area



Intensity:

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

US Drought Monitor: Colorado

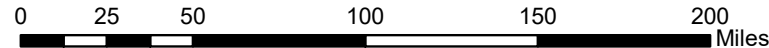
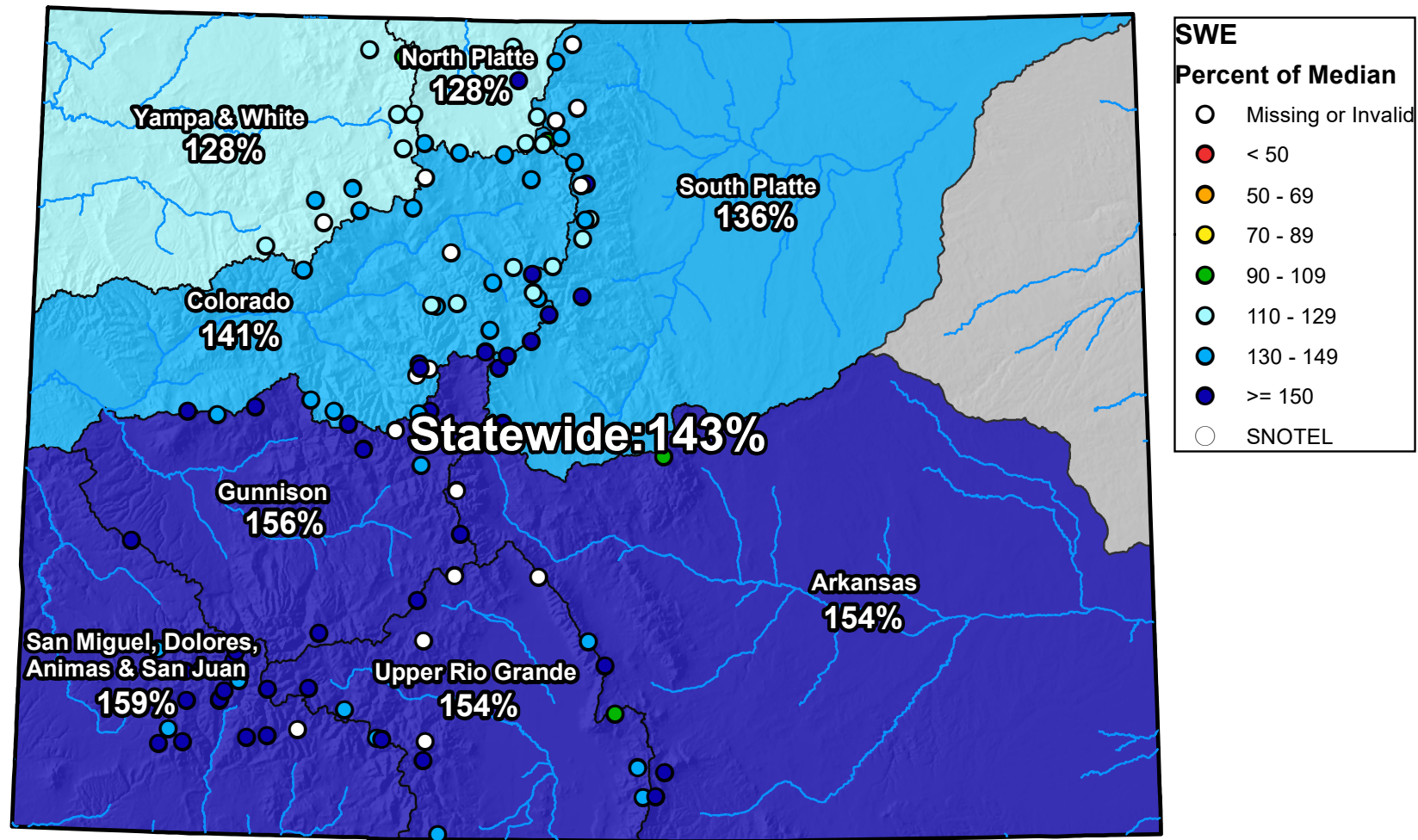


- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought



Colorado SNOTEL Snow Water Equivalent (SWE) Update Map with Site Data

Current as of Mar 14, 2019



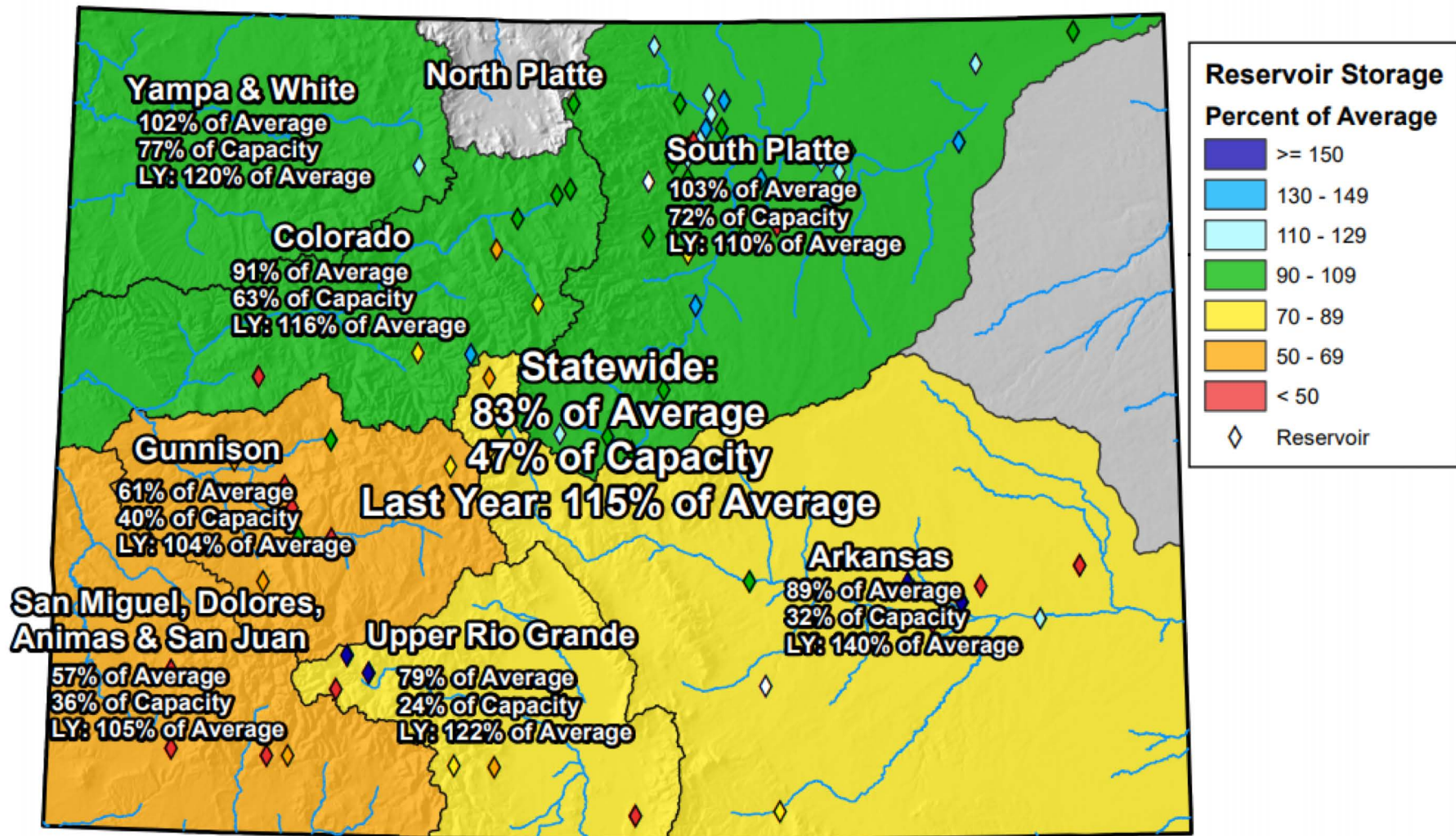
United States Department of Agriculture

Natural Resources Conservation Service

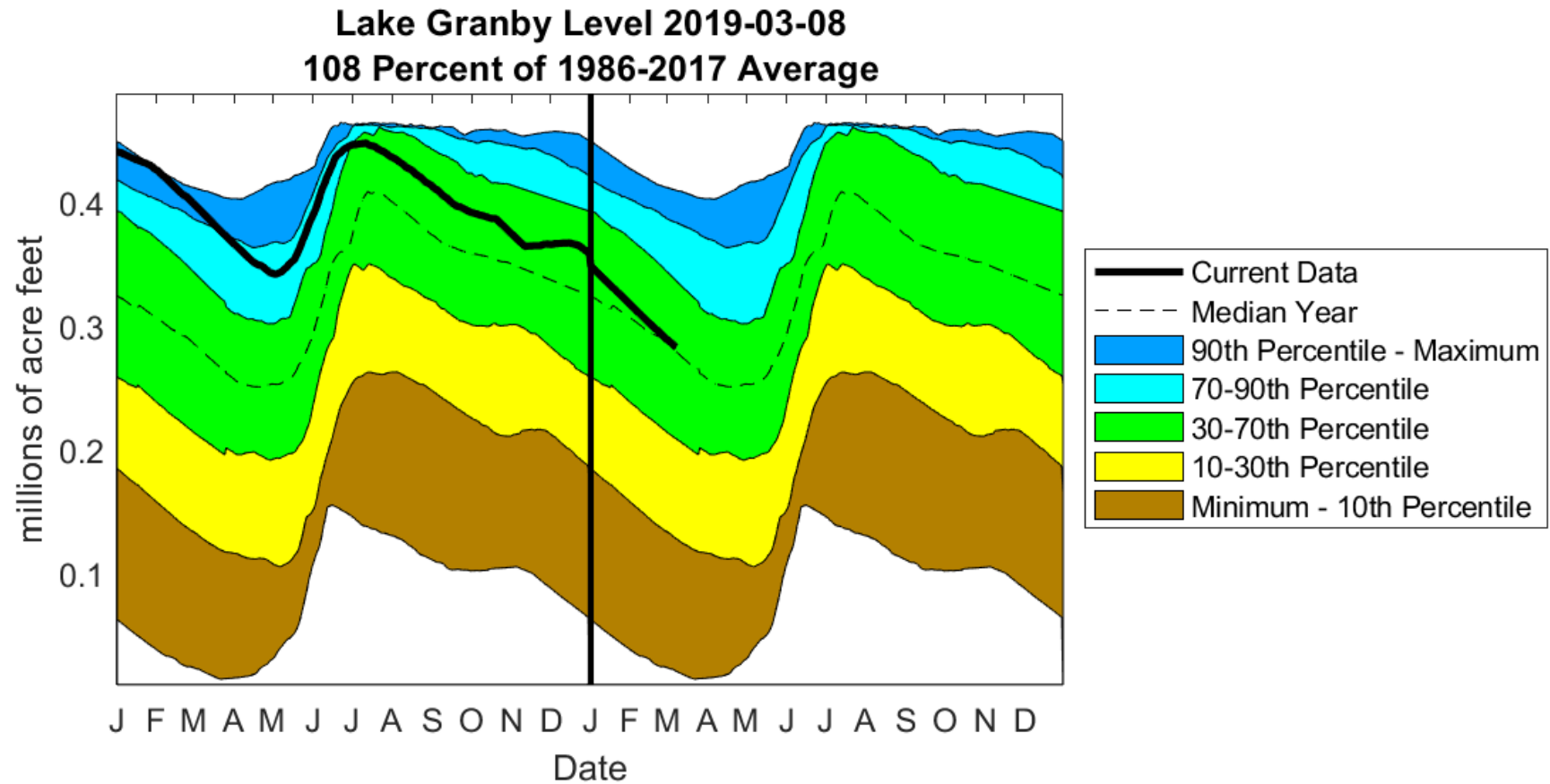


Colorado Monthly Reservoir Storage Summary

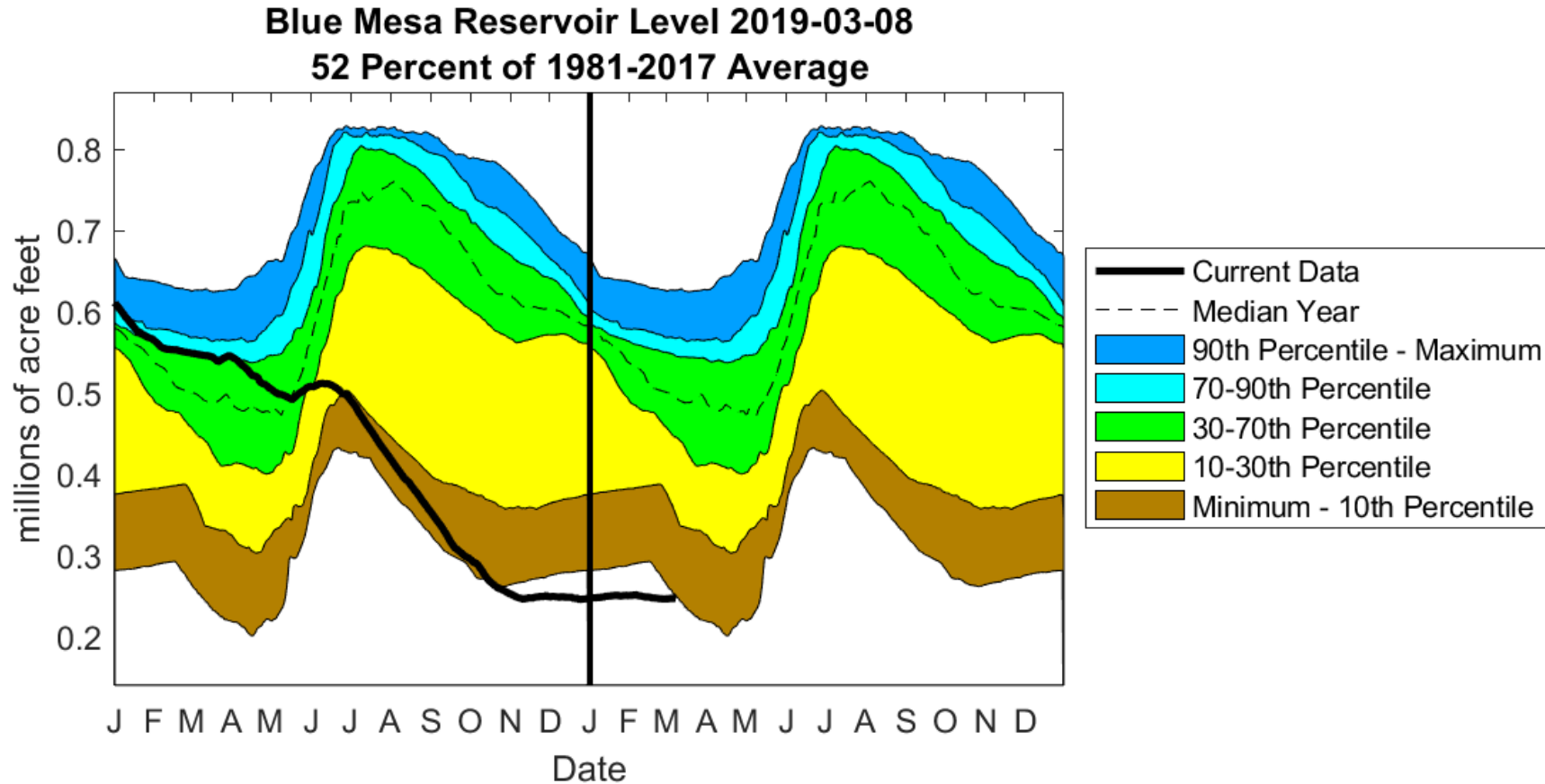
End of January 2019



Lake Granby

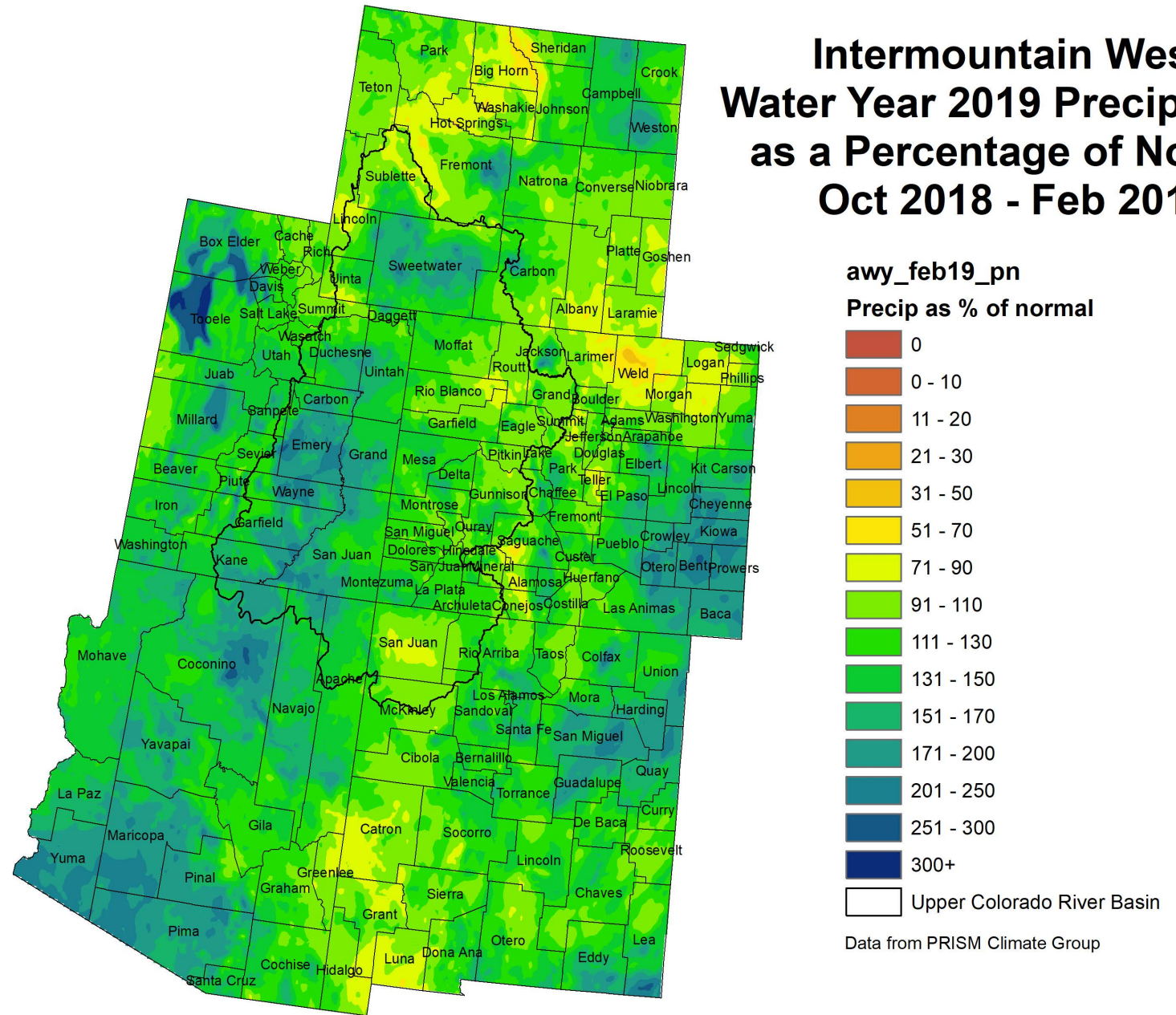


Blue Mesa reservoir

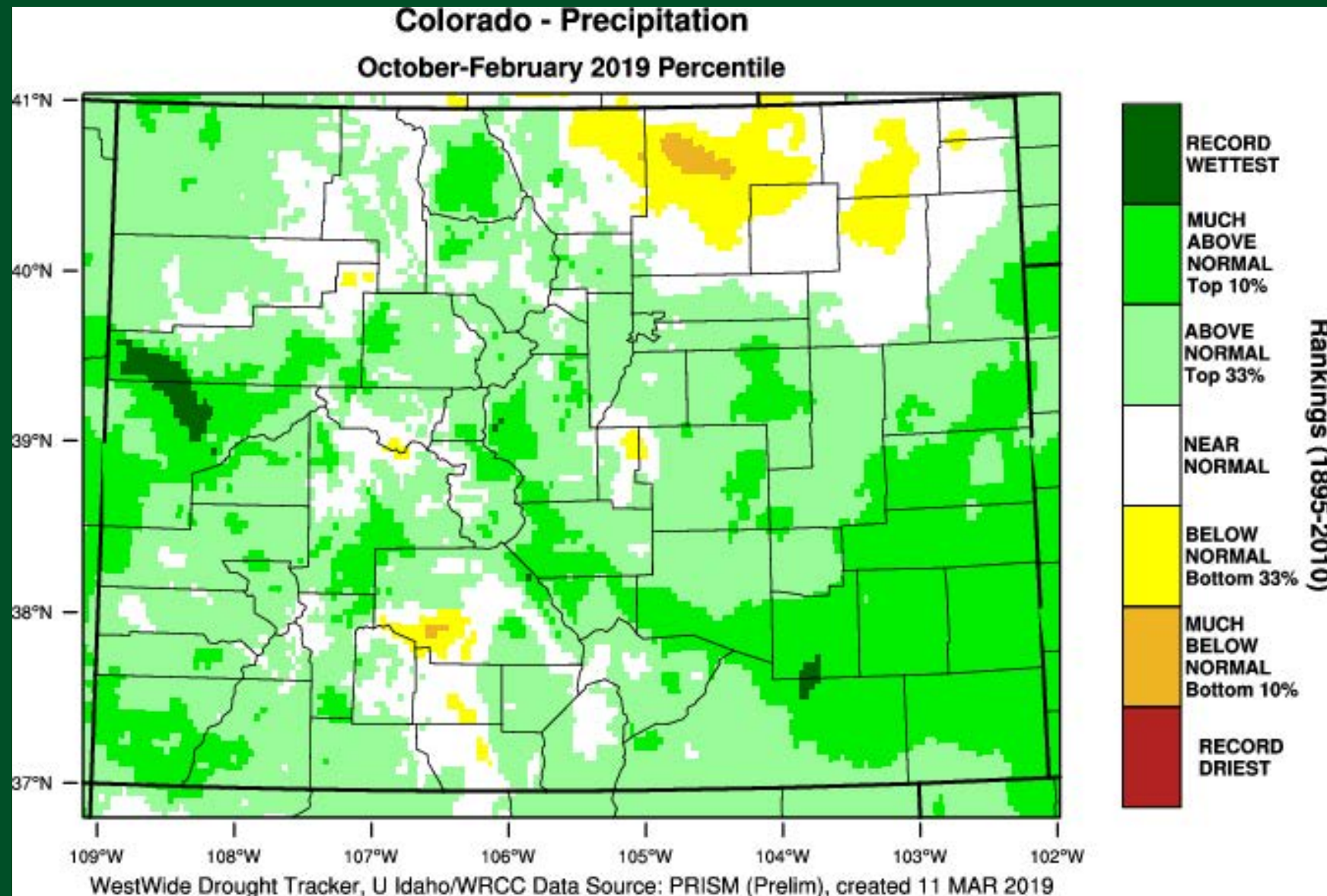


Precipitation (Oct - Feb)

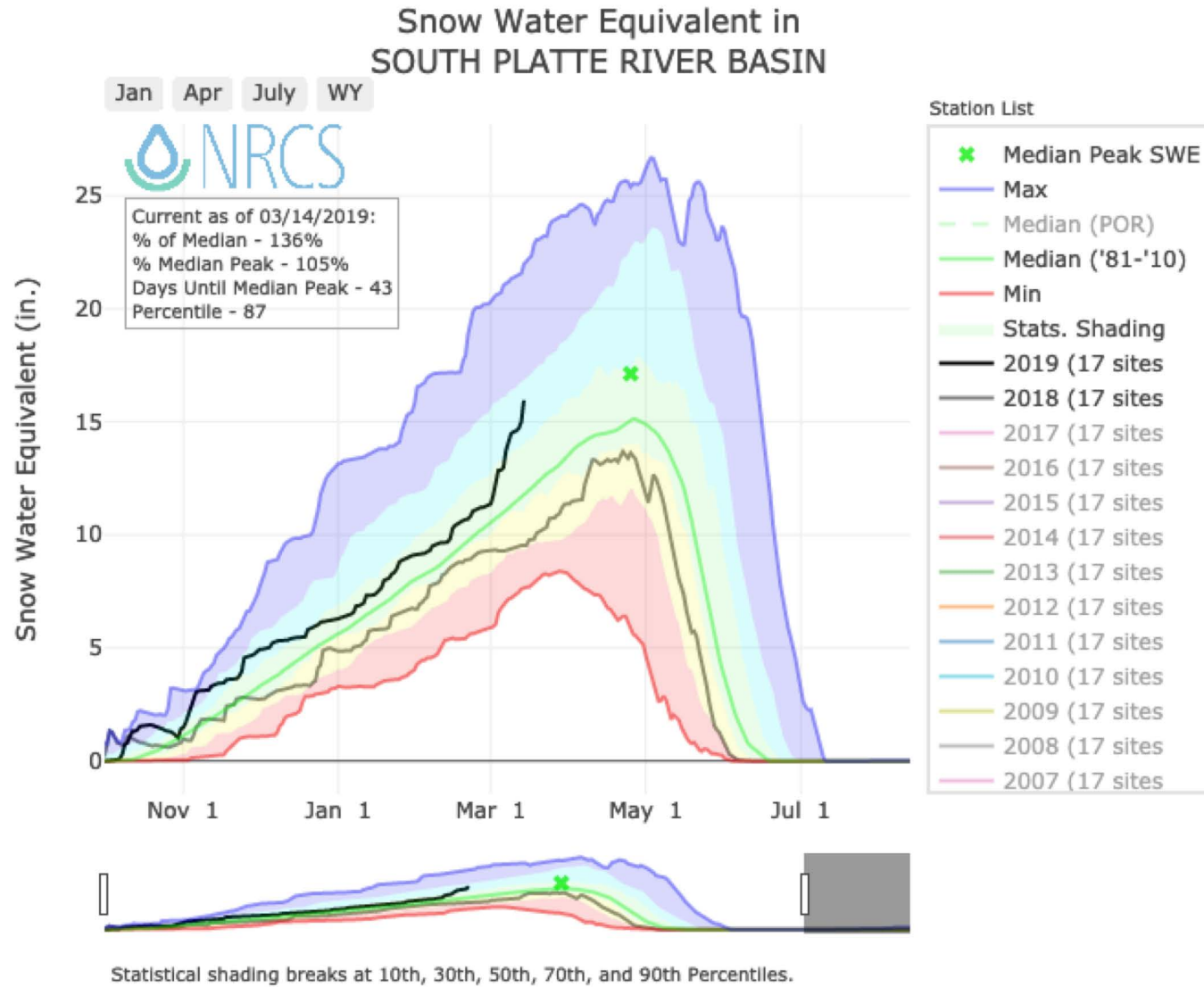
Intermountain West Water Year 2019 Precipitation as a Percentage of Normal Oct 2018 - Feb 2019



Precipitation (Oct - Feb)



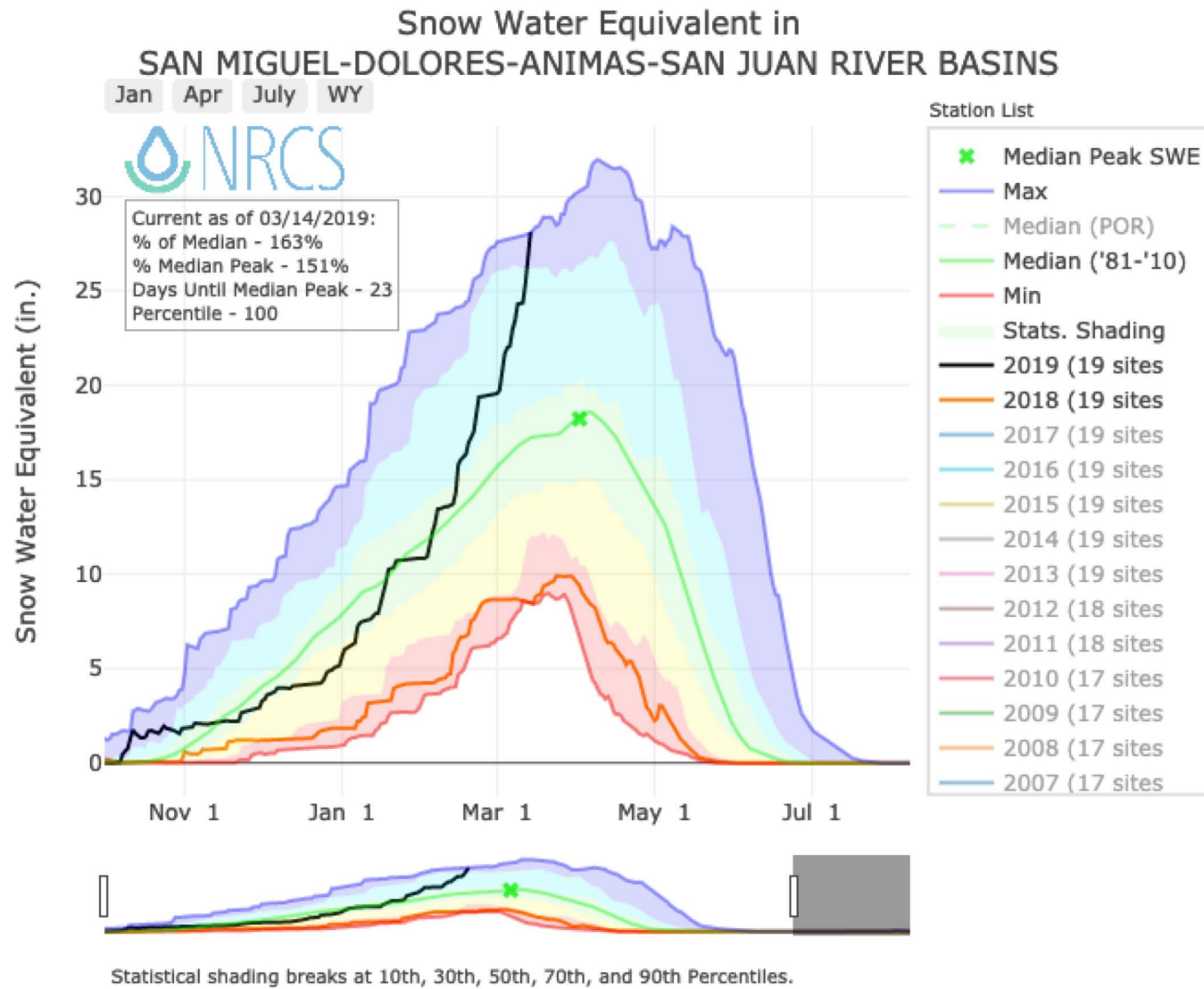
South Platte River basin



For more information visit: [30 year normals calculation description](#).



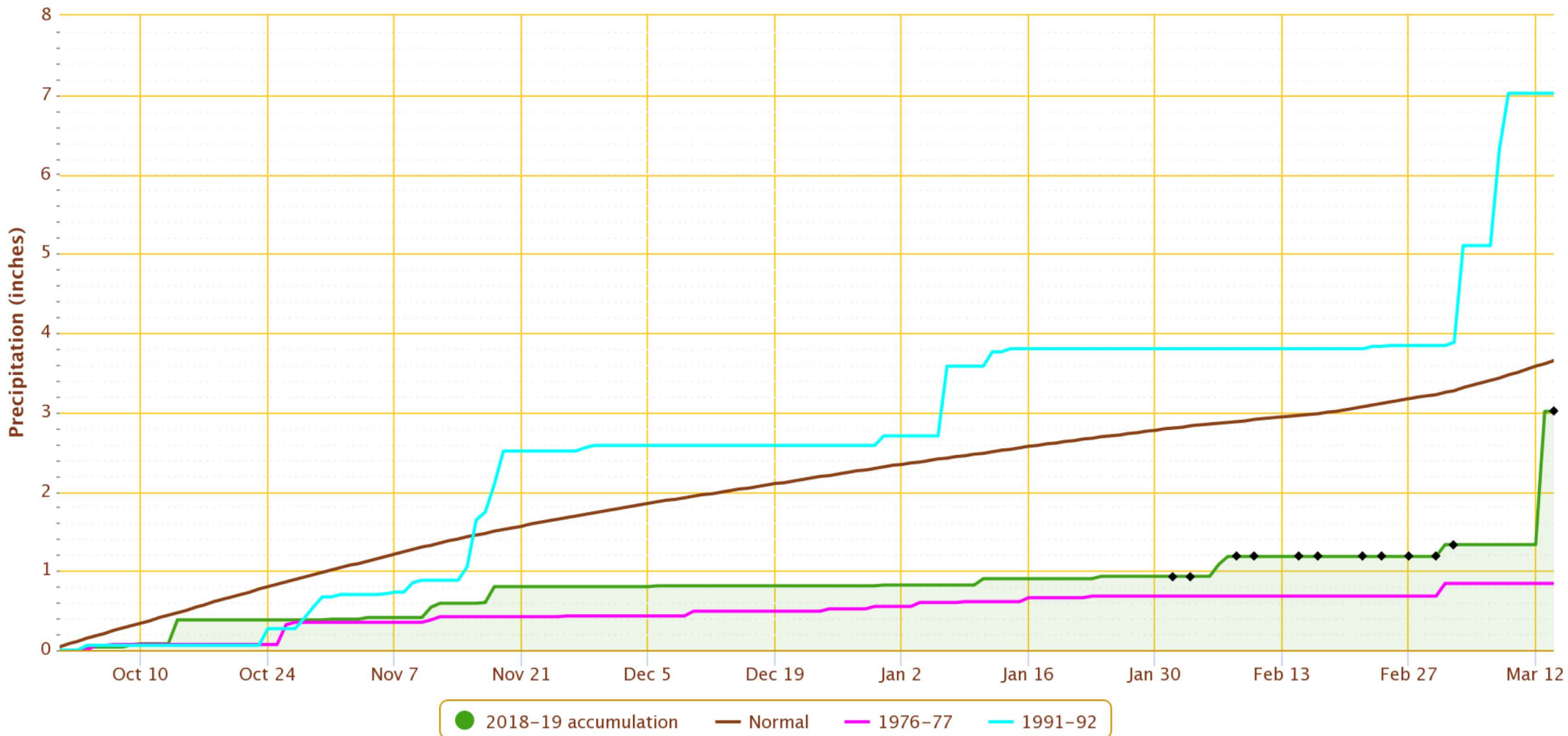
Southwest river basins



Water year precipitation thus far: Greeley

Accumulated Precipitation - GREELEY UNC, CO

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



(wettest)

Average

This year

(driest)

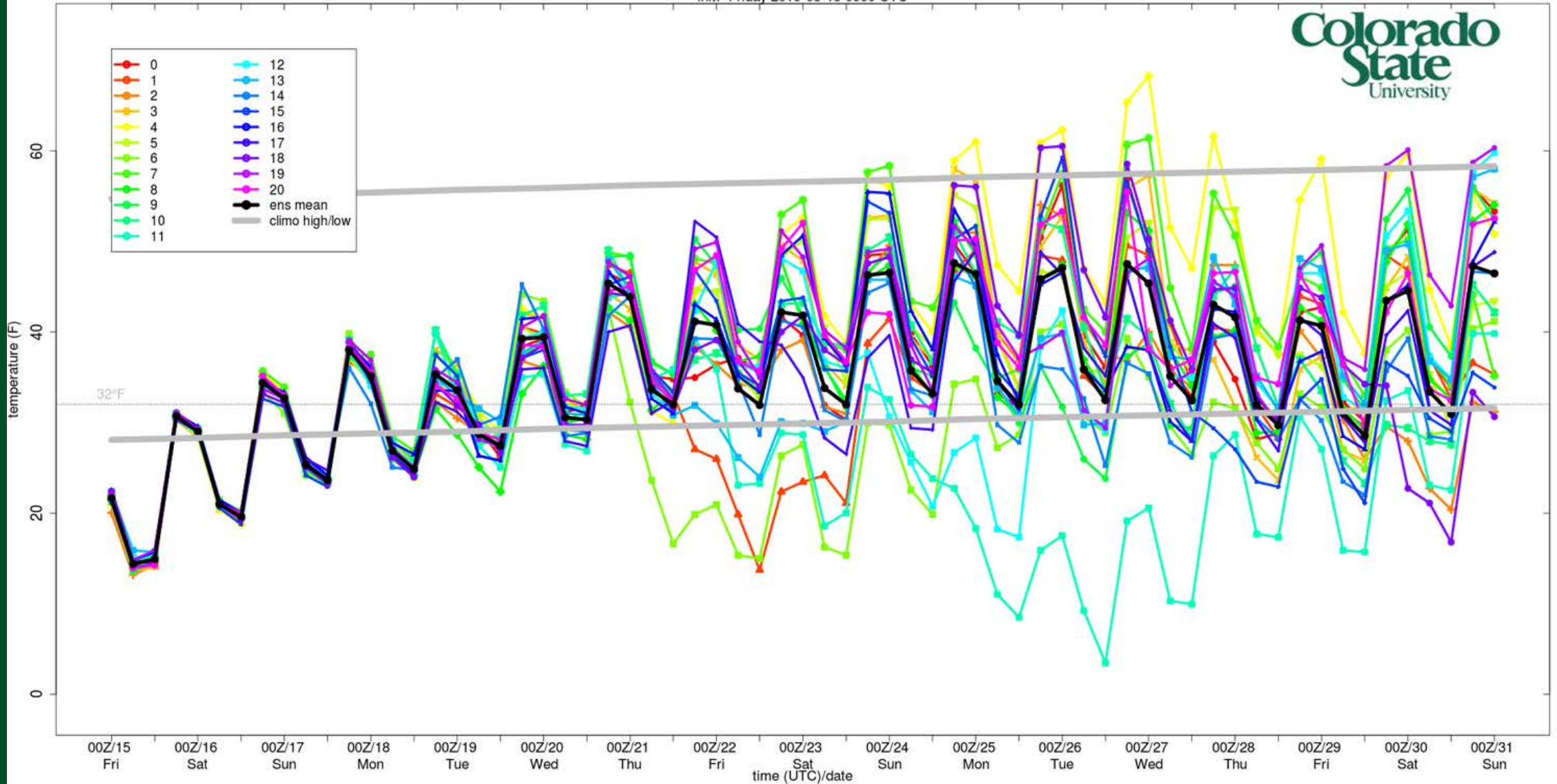
Powered by ACIS



Ensemble weather forecasts (out two weeks)

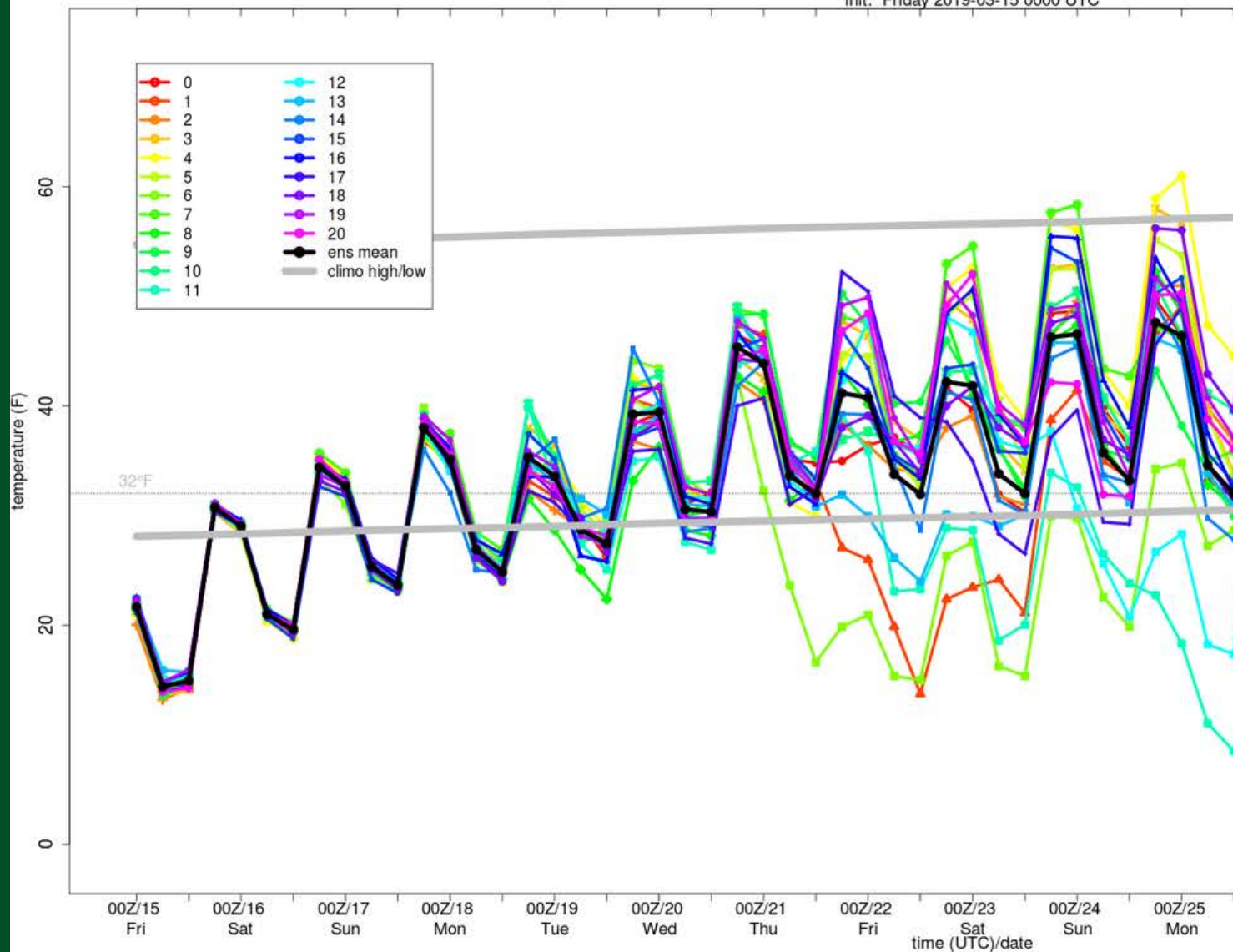
NCEP GEFS 2-m temperature at Fort Collins

init: Friday 2019-03-15 0000 UTC



Ensemble weather forecasts (out two weeks)

NCEP GEFS 2-m temperature at Fort Collins
init: Friday 2019-03-15 0000 UTC



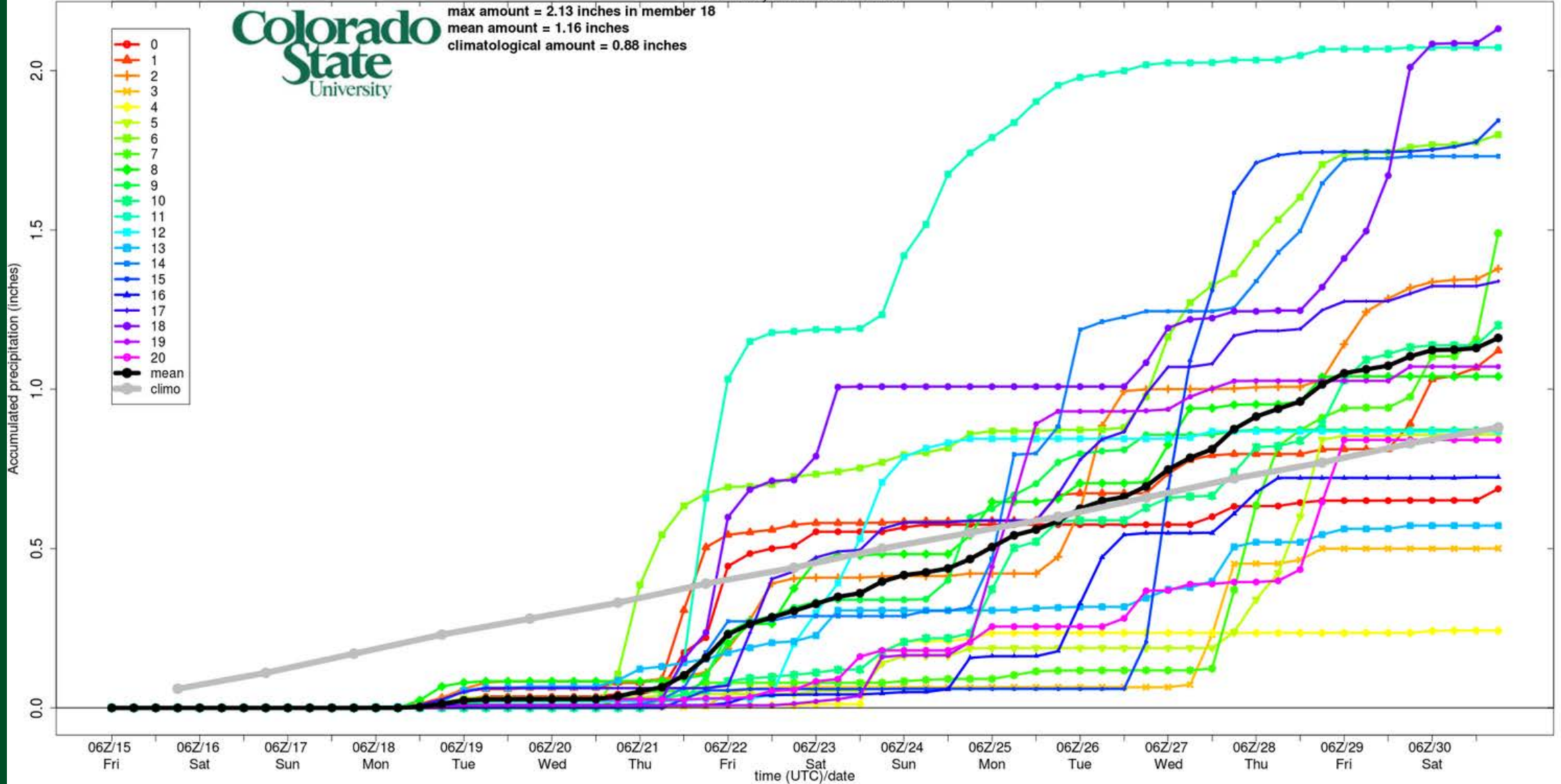
Beyond 10 days, probably don't pay too much attention...the models will generally just revert to the average conditions for the time of year



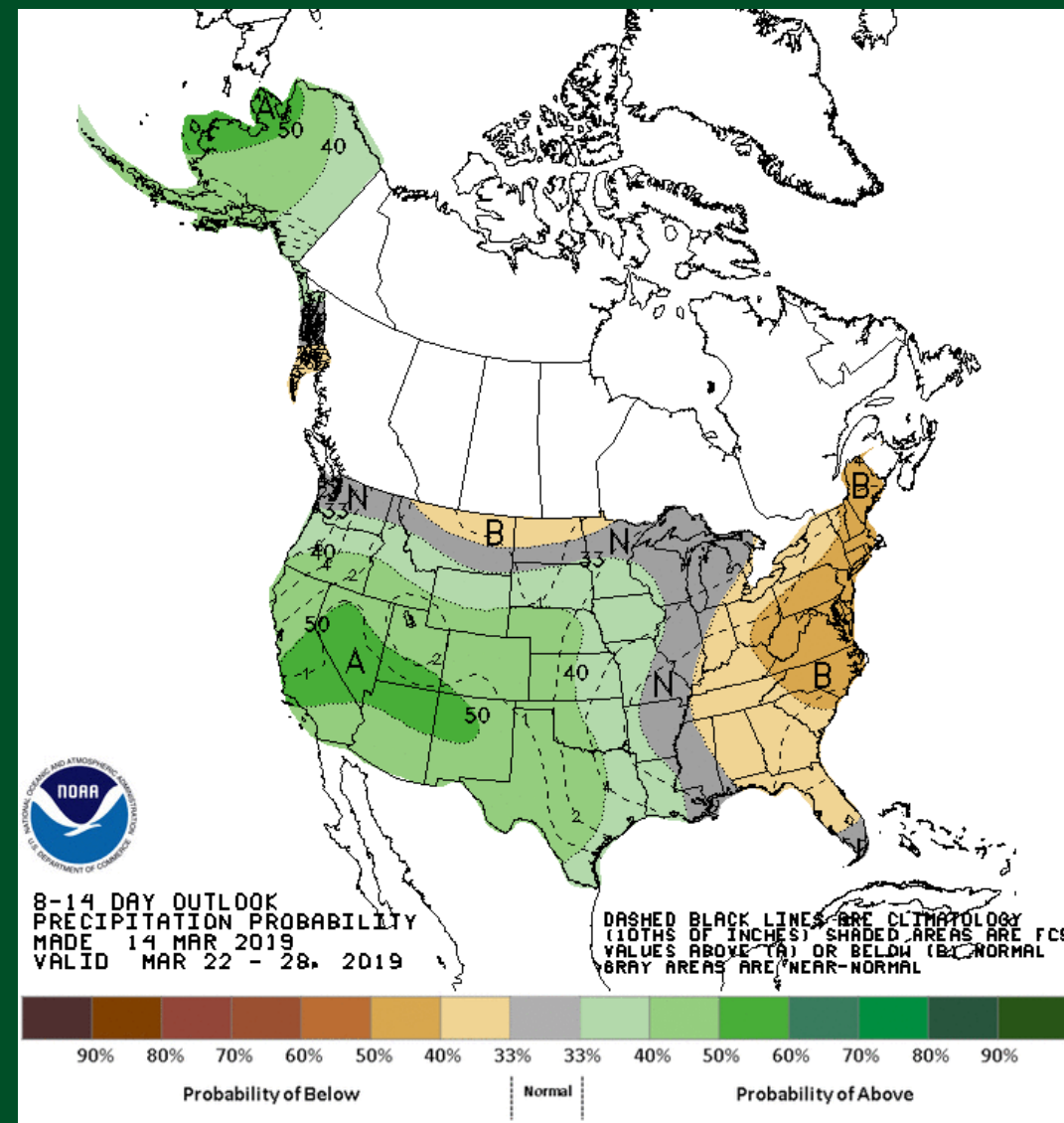
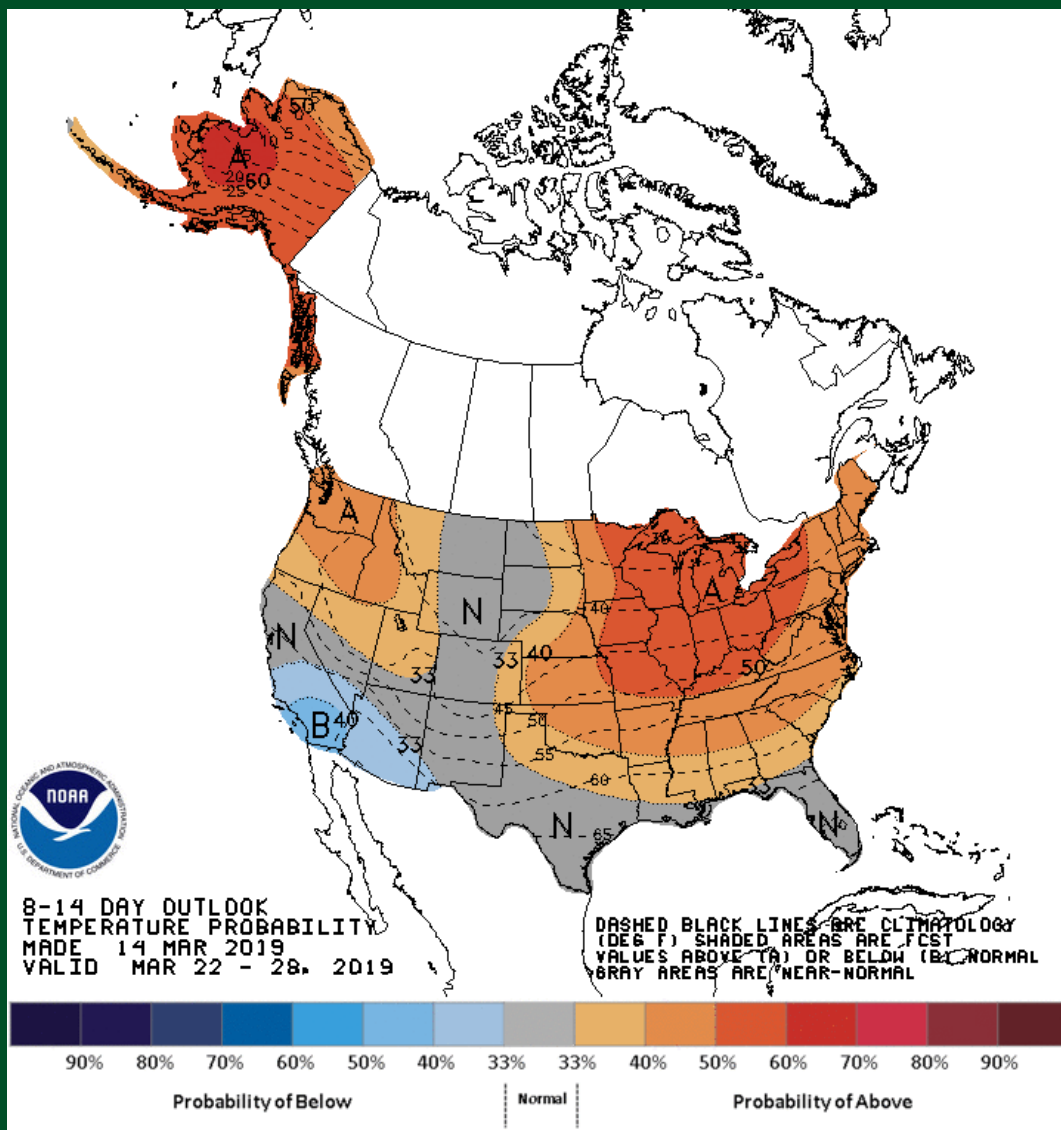
Ensemble weather forecasts (out two weeks)

NCEP GEFS accumulated precipitation at Fort Collins

init: Friday 2019-03-15 0000 UTC



Outlook: 8-14 day temp and precip

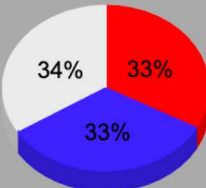


Spring (March-April-May) outlook

Find address or place

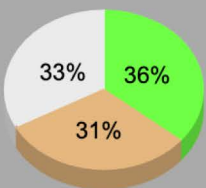
[7 Day Forecast for Greeley, CO](#)

Three Category Temperature Outlook
 Normal Maximum Temperature: **64**
 Normal Minimum Temperature: **34**



- Above Normal
- Below Normal
- Near Normal

Three Category Precipitation Outlook
 Normal Precipitation: **5.09**



- Above Normal
- Below Normal
- Near Normal

Select Lead ▾

Seasonal Outlook

March 2019-May 2019 (Lead 1)

Temperature

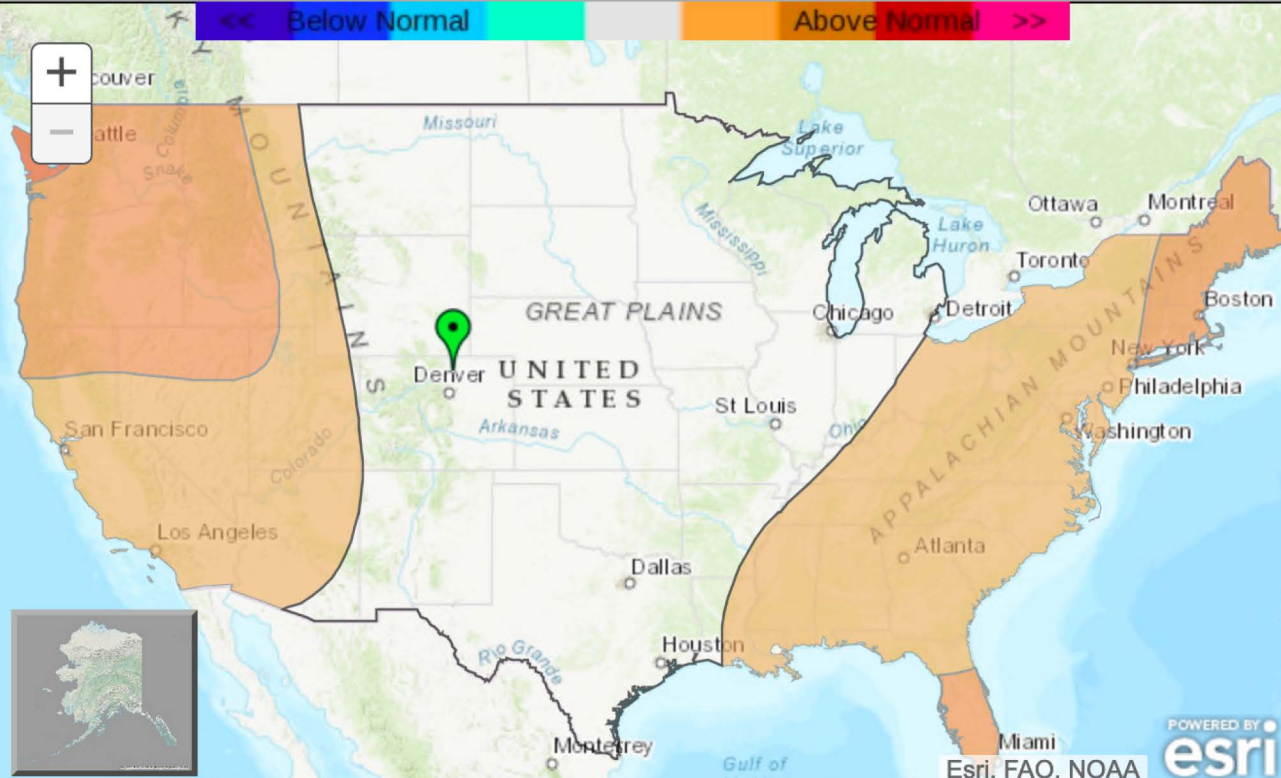
Outlook

Opacity: 60%


Precipitation

Outlook

<< Below Normal Above Normal >>



POWERED BY



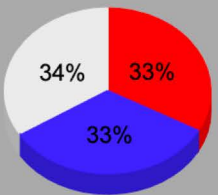
COLORADO CLIMATE CENTER

Spring (March-April-May) outlook

Find address or place

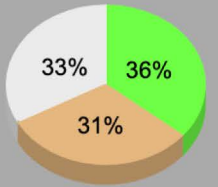
[7 Day Forecast for Greeley, CO](#)

Three Category Temperature Outlook
Normal Maximum Temperature: **64**
Normal Minimum Temperature: **34**



- Above Normal
- Below Normal
- Near Normal

Three Category Precipitation Outlook
Normal Precipitation: **5.09**

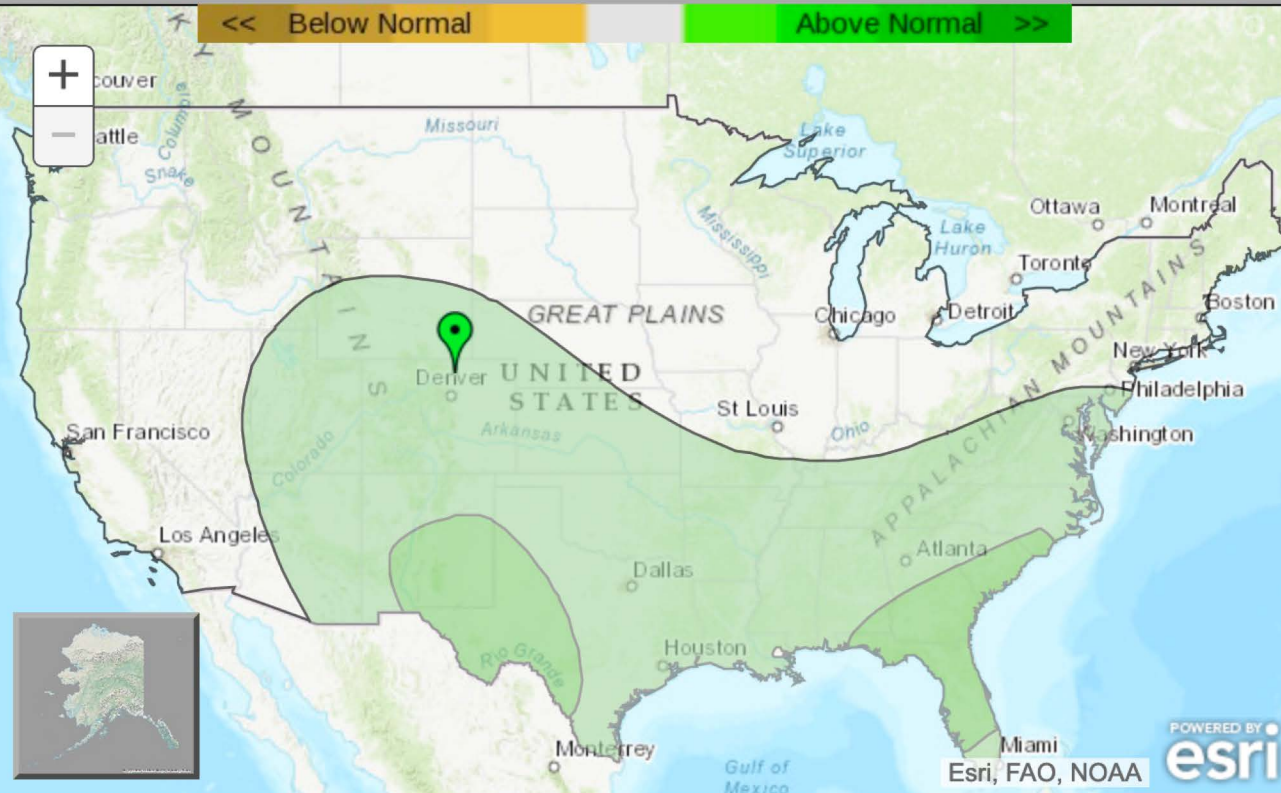


- Above Normal
- Below Normal
- Near Normal

Seasonal Outlook
March 2019-May 2019 (Lead 1)

Select Lead

Temperature Outlook Opacity: 60% Precipitation Outlook



Map showing seasonal outlook for March 2019-May 2019 (Lead 1). The map displays precipitation outlook (Above Normal, Below Normal, Near Normal) across the United States. A legend indicates 'Below Normal' (yellow) and 'Above Normal' (green). The map shows a large area of 'Above Normal' precipitation (green) covering the central and eastern US, and a smaller area of 'Below Normal' precipitation (yellow) in the western US. A legend at the top shows 'Below Normal' in yellow and 'Above Normal' in green. A slider for opacity is set to 60%.

POWERED BY **esri**
Esri, FAO, NOAA



**And finally, the all-important question:
“Do you have a rain gauge?” (and a
snowboard!)**



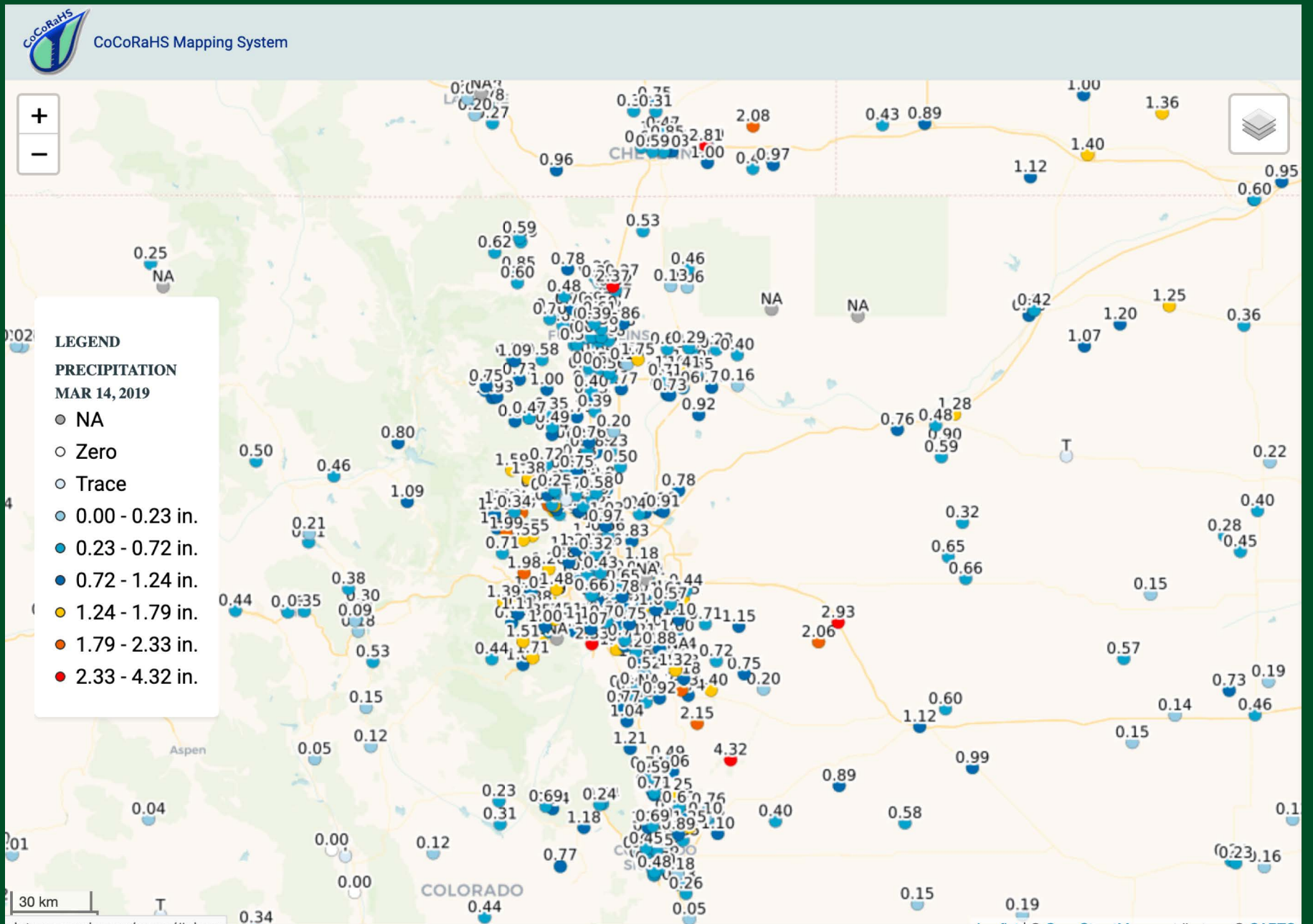
A large, rounded object, possibly a snowman or a large snow pile, is covered in a thick layer of snow. The acronym 'COCORAHHS' is carved into the snow in a simple, blocky font. The background shows some dry grass and a dark, possibly wooded area.

If you are interested in weather and the variations in precipitation, please join the Community Collaborative Rain, Hail and Snow Network

<http://www.cocorahhs.org>

or see me today

Precip observations from 14 March 2019



Thank you!

<http://climate.colostate.edu/>
russ.schumacher@colostate.edu

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Twitter! @ColoradoClimate



COLORADO CLIMATE CENTER

Providing information and expertise on Colorado's complex climate

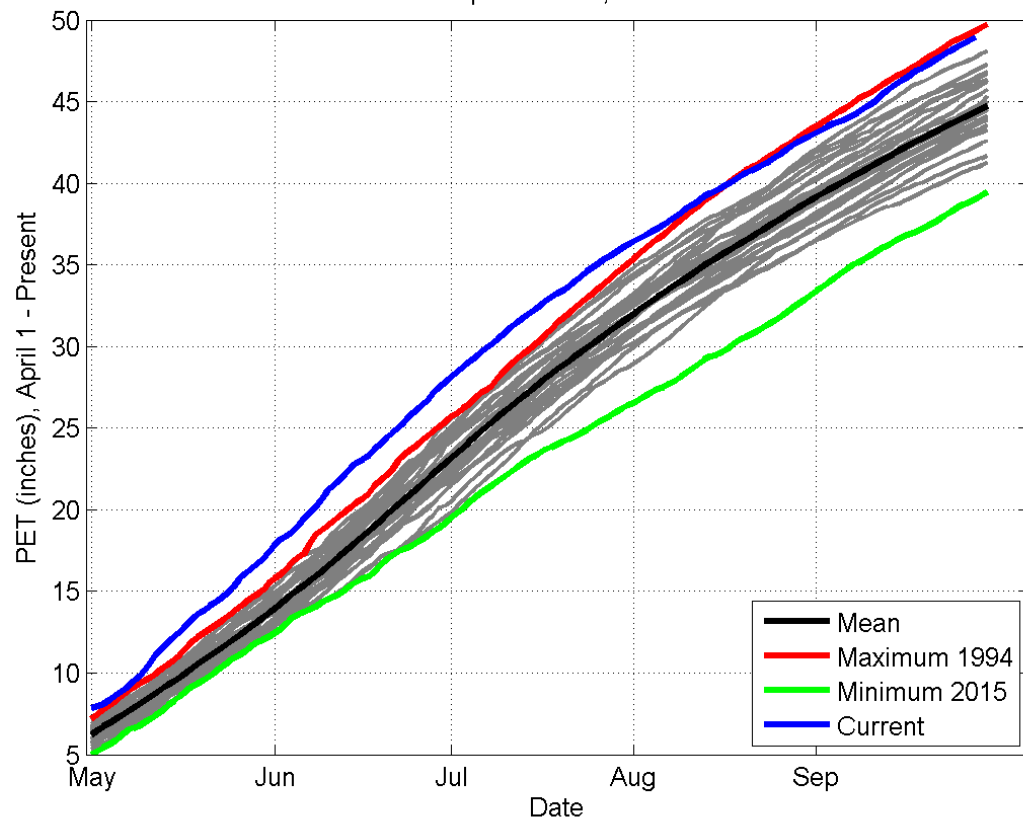




Olathe CoAgMET station, 2018 growing season

Evaporative demand: the atmosphere's "thirst"

Olathe Growing Season Evaporative Demand
September 28, 2018

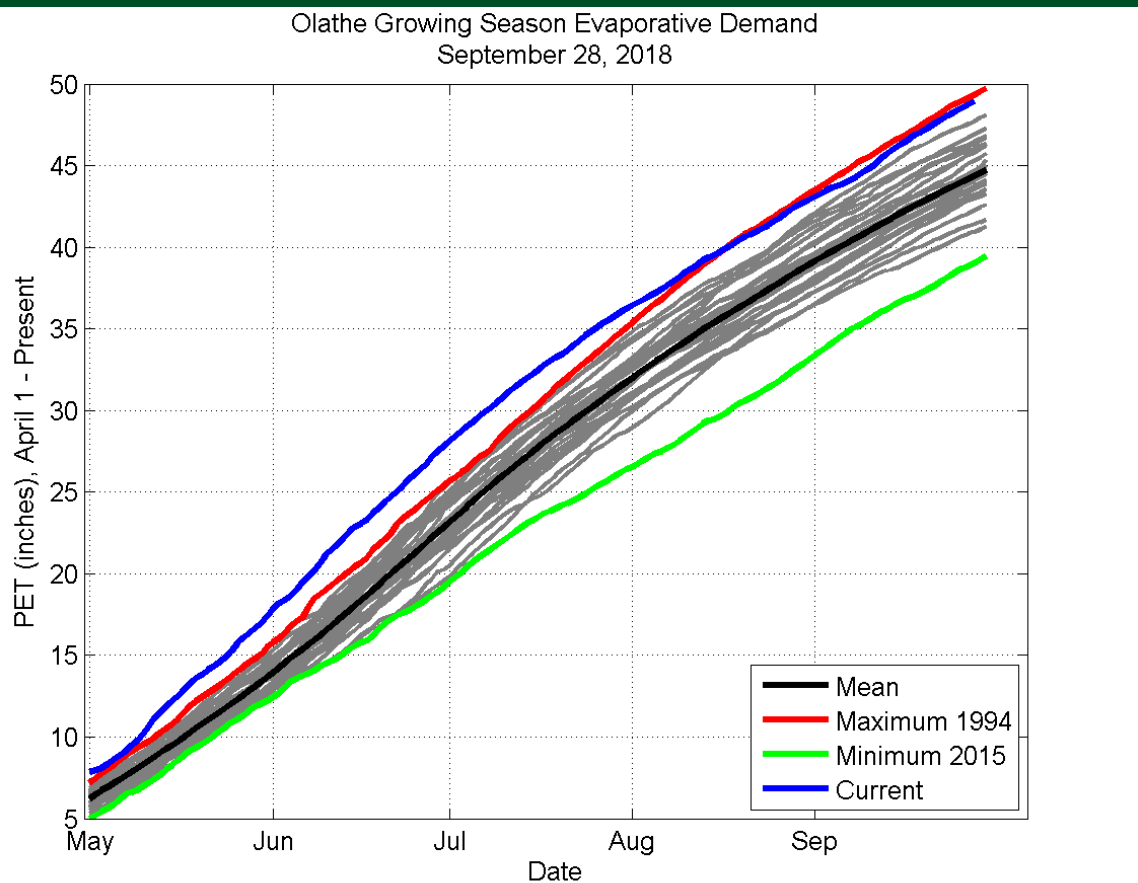


April-September Evaporative Demand for Olathe, CO

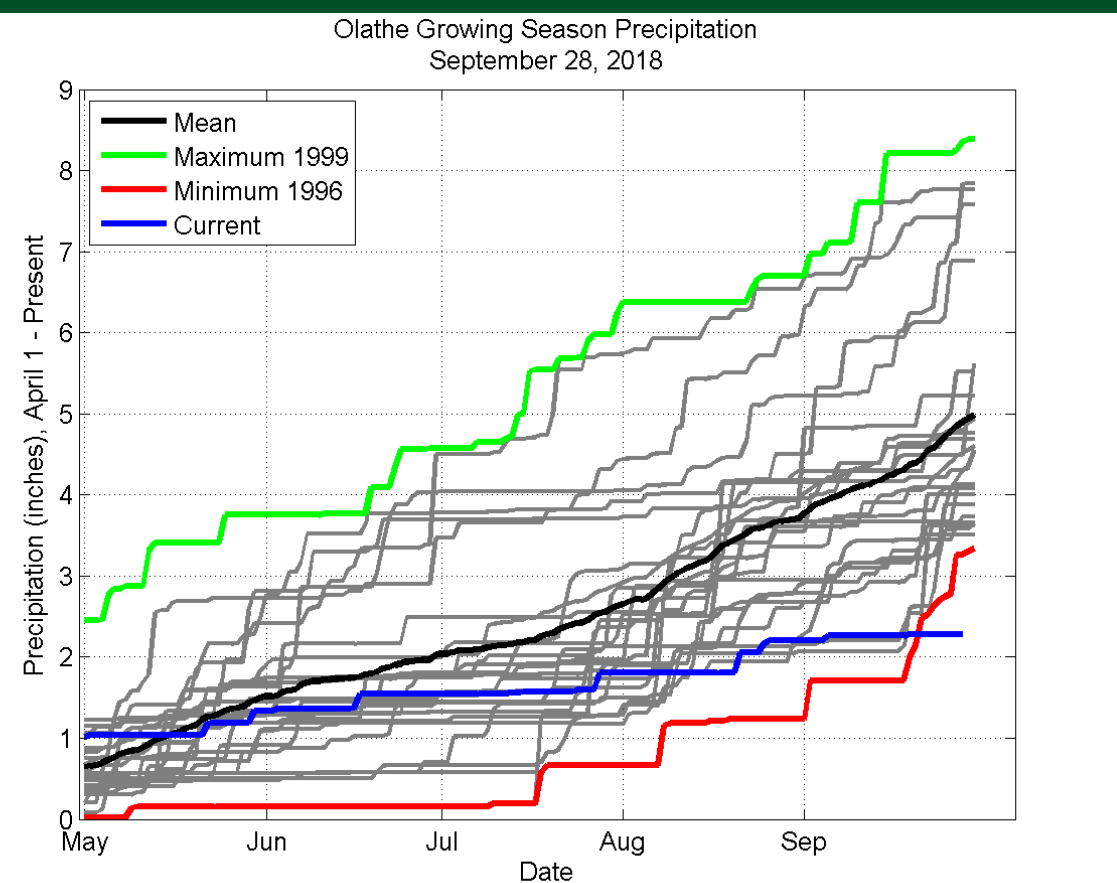


Olathe CoAgMET station, 2018 growing season

Evaporative demand: the atmosphere's "thirst"

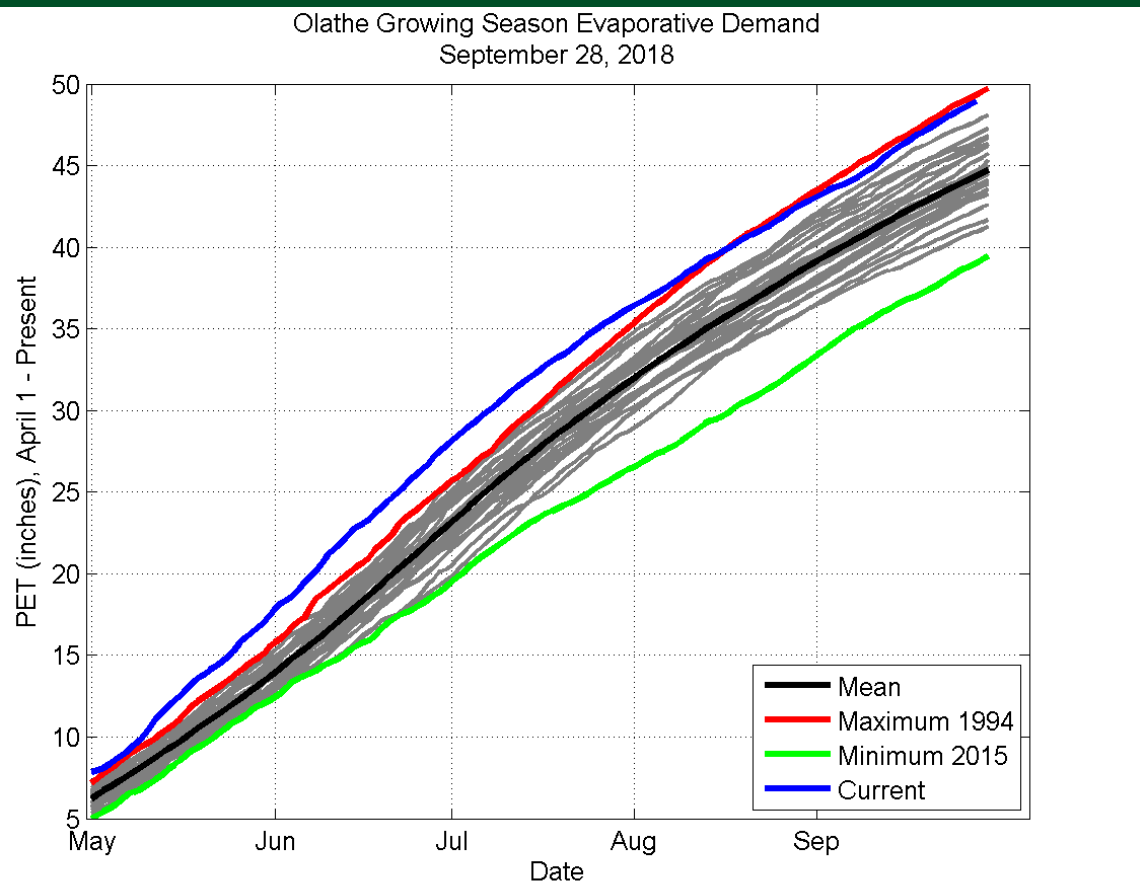


Precipitation



Olathe CoAgMET station, 2018 growing season

Evaporative demand: the atmosphere's "thirst"



Water balance (precipitation minus evaporative demand)

