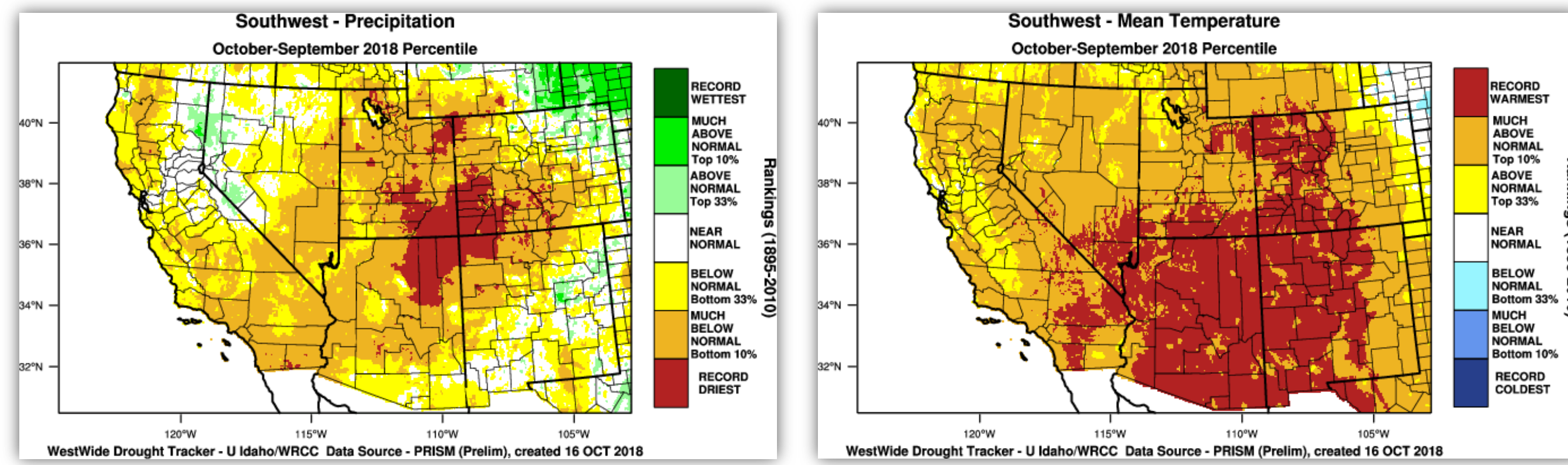


Major climate stories of 2018-19

Four Corners drought

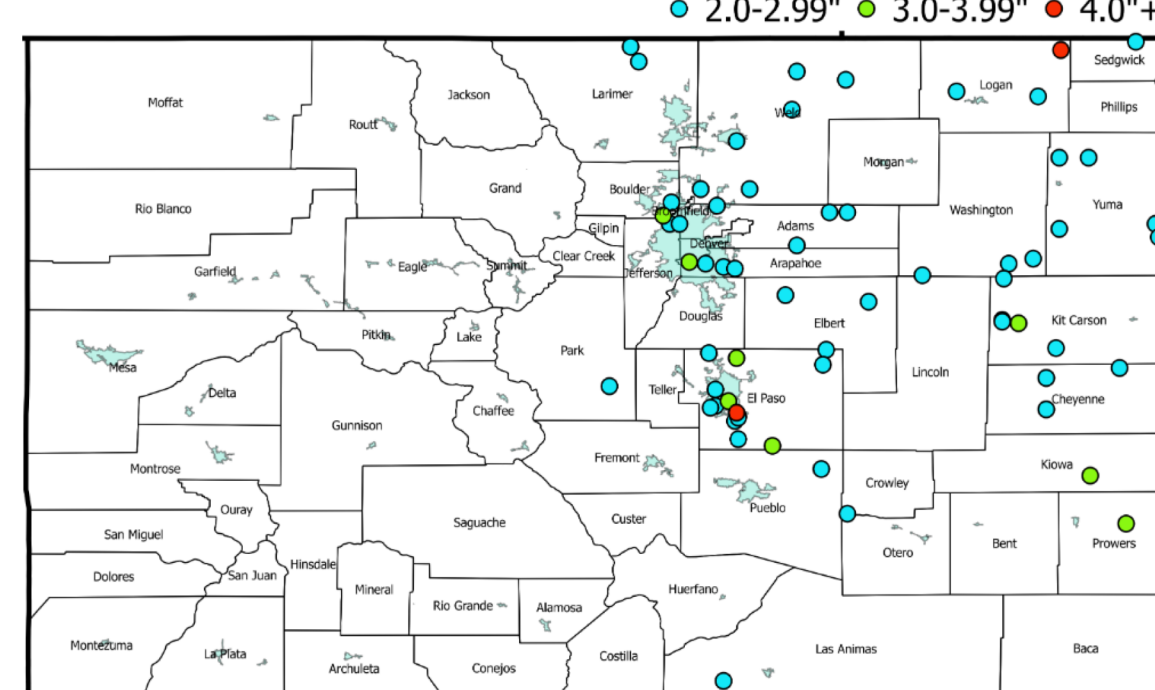
- Record warmth and lack of precipitation led to intense drought across western Colorado, especially in the Four Corners region
- The combination of a winter snow drought, and a hot dry summer produced major impacts including water shortages, agricultural impacts, and several large wildfires



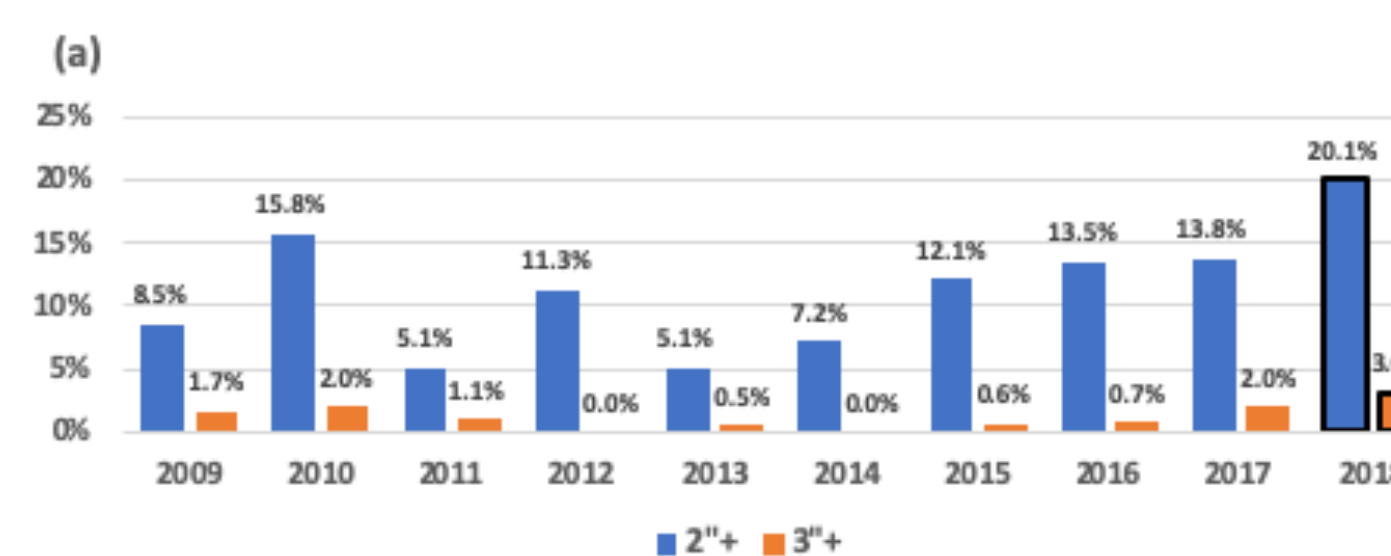
Second driest and third warmest water year on record for Colorado

A huge hail season

- Ten reports of hail 3" or larger in diameter on seven different days, with 3% of the severe hail reports being 3"+ (all of these are records for Colorado)
- The Colorado Springs area was particularly affected, with a rare overnight hailstorm in June and a storm that hit the Cheyenne Mountain Zoo in August, causing human injuries and animal fatalities



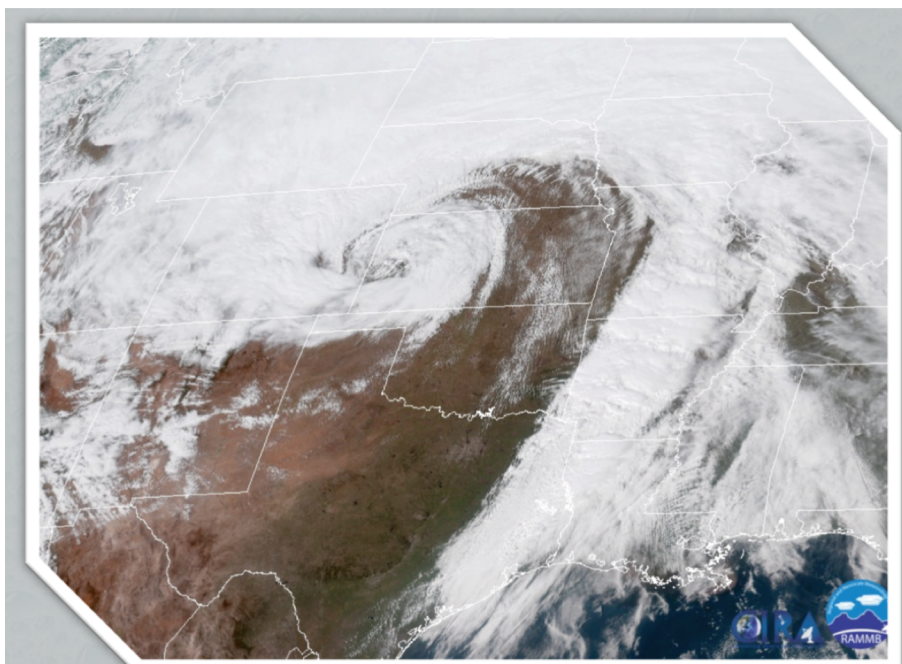
Hail reports of 2" diameter or greater in 2018



Percent of all severe hail reports from 2"+ and 3"+ hail

The "bomb cyclone" of March 2019

- An intense cyclone developed in eastern Colorado in March 2019, causing widespread blizzard conditions and fun challenges in trying to determine state records for low pressure and high wind gusts

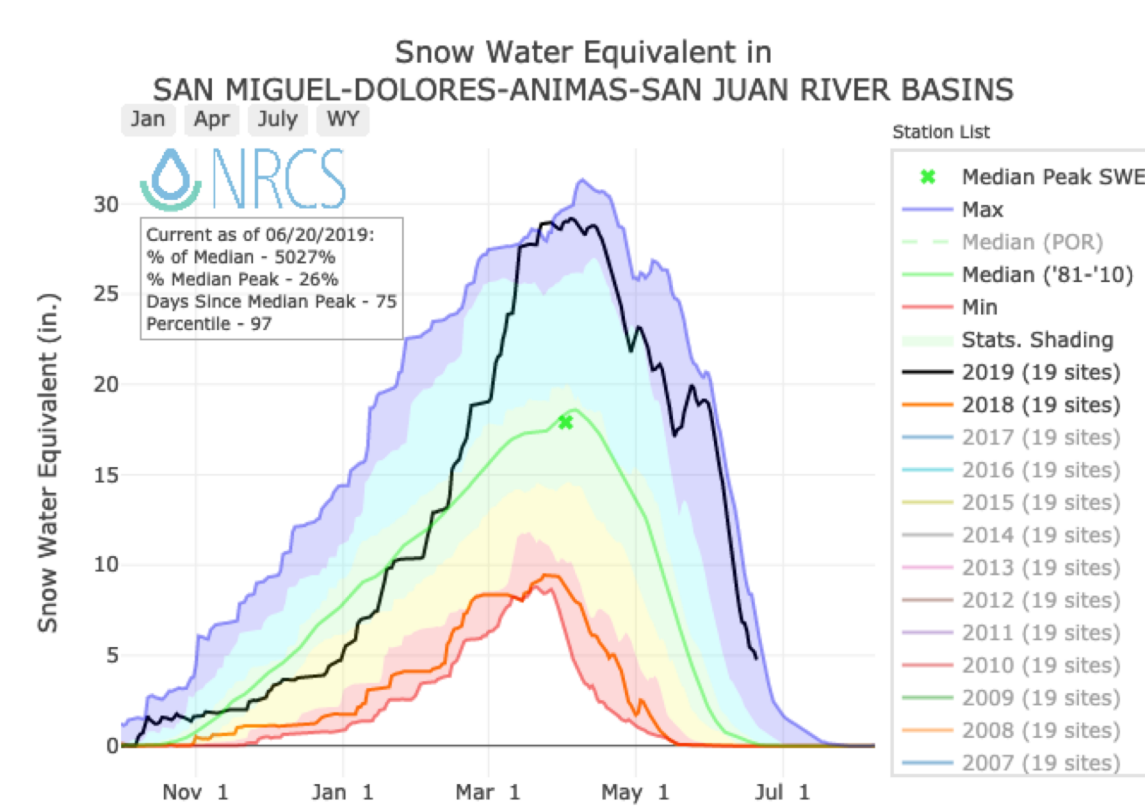


New All-time State Record
Lowest Sea Level Pressure: 970.4mb
Lamar, CO March 13, 2019

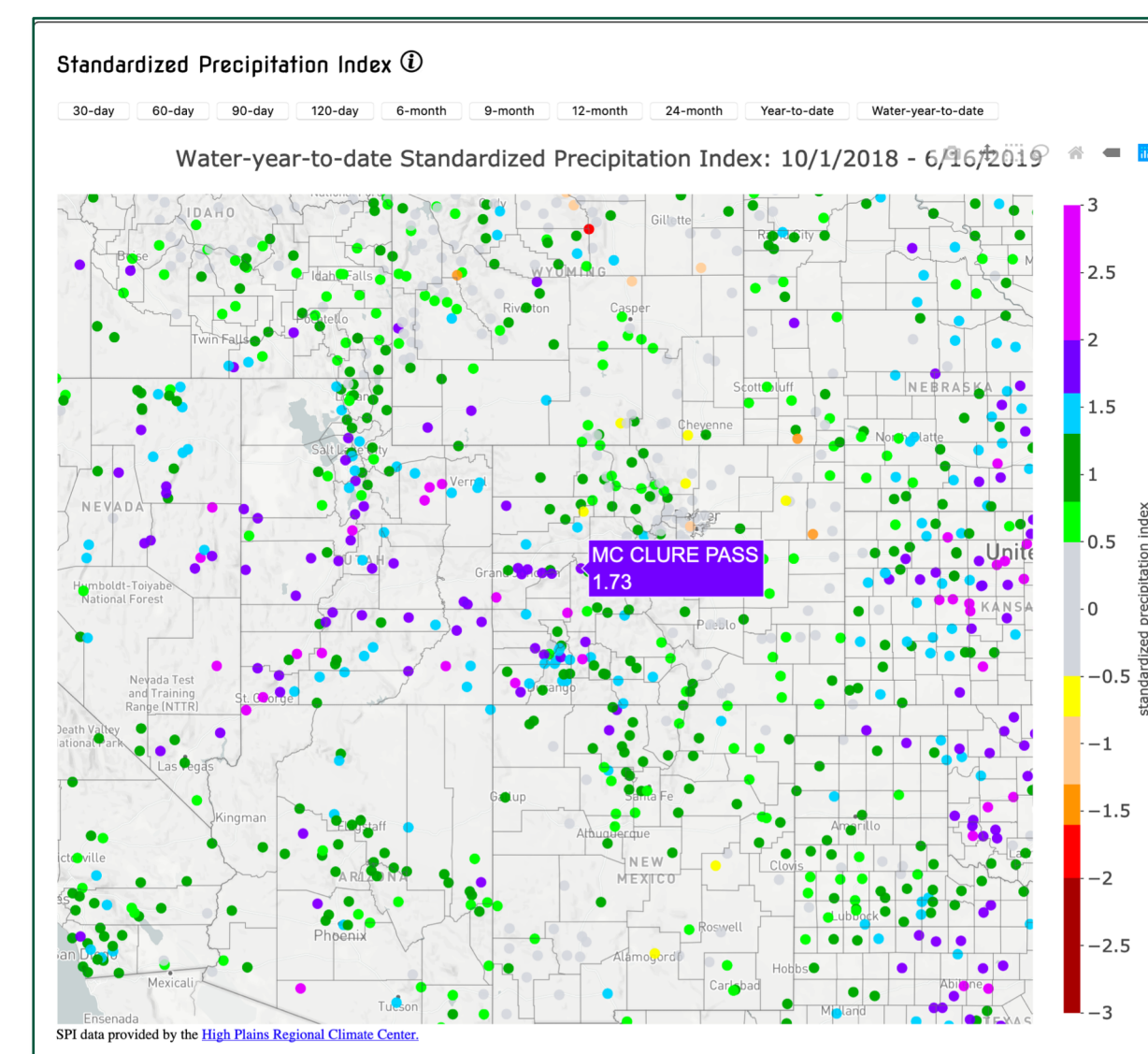
Winter 2018-19: An incredible turnaround!

- Following one of the worst years on record for snowpack, Colorado's mountains received epic snowfall in both February and March 2019
- Cold, snowy conditions persisted through May, delaying the snowmelt, and substantial snow remains even as of mid-June
- On May 28, Colorado was completely clear on the US Drought Monitor for the first time ever!

Snowpack at SNOTel sites feeding the southwest Colorado river basins: from near record low in 2017-18 (orange) to near record high in 2018-19 (black)



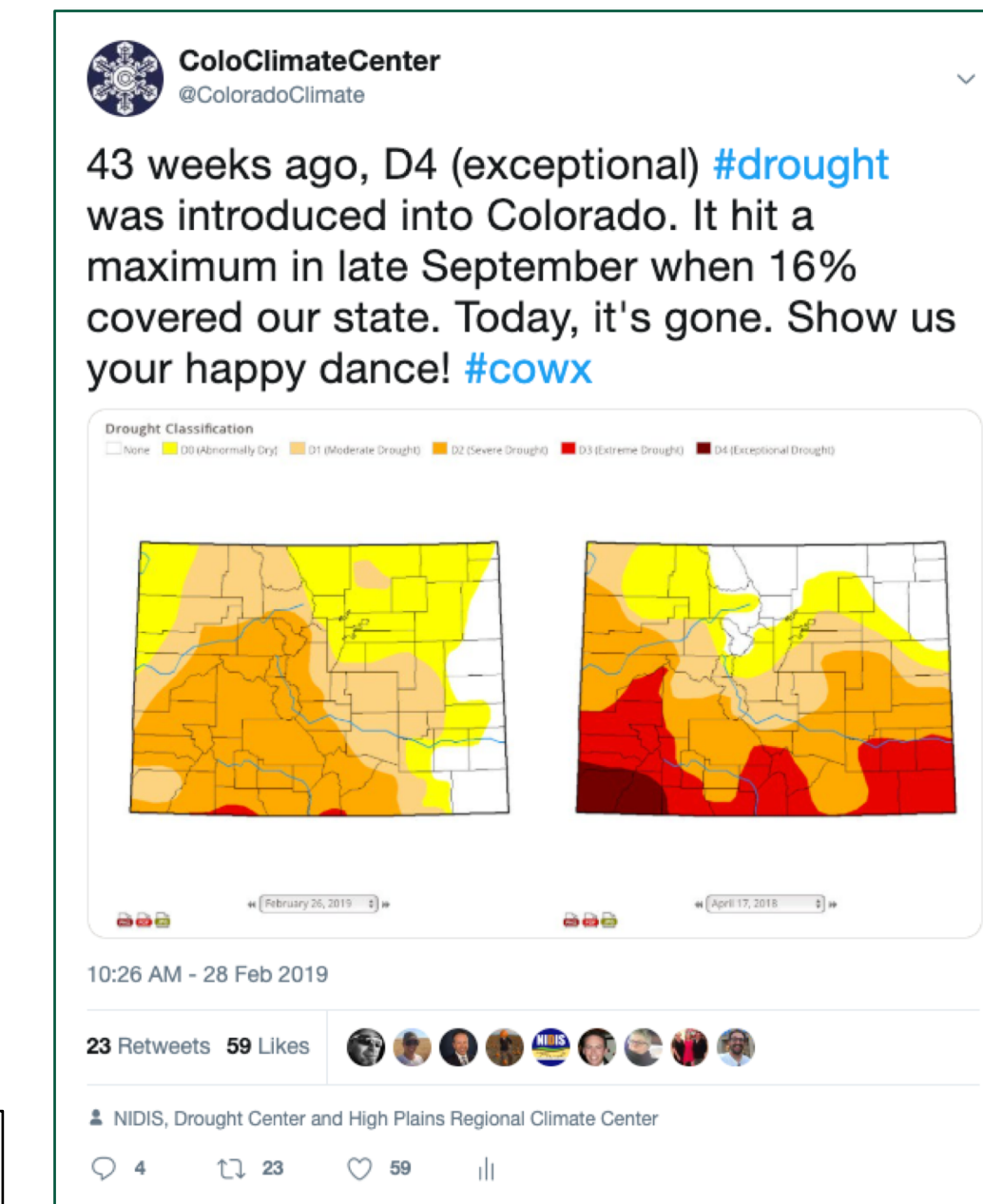
NIDIS Intermountain West DEWS



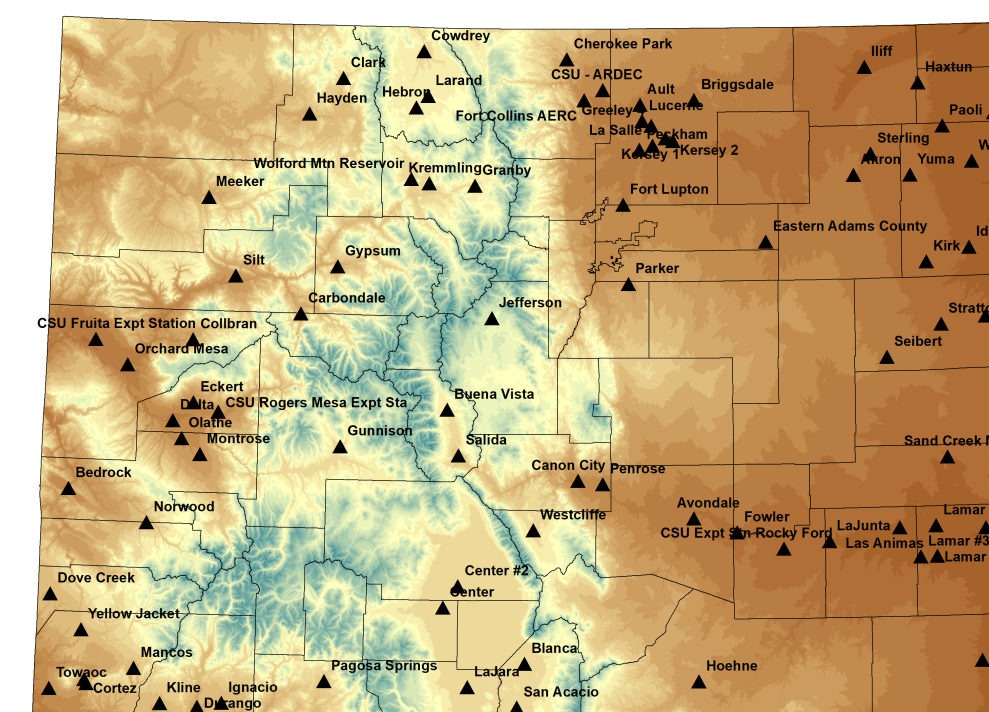
New interactive SPI maps have been added to our website as part of our drought monitoring efforts. Color scheme matches the U.S. Drought Monitor categories. https://climate.colostate.edu/spi_map.html
Check out the national and other regional maps here!

<http://climate.colostate.edu/~drought/>

With weekly assessments and monitoring, we regularly communicate drought conditions through email, website, webinars, social media, and to media outlets.



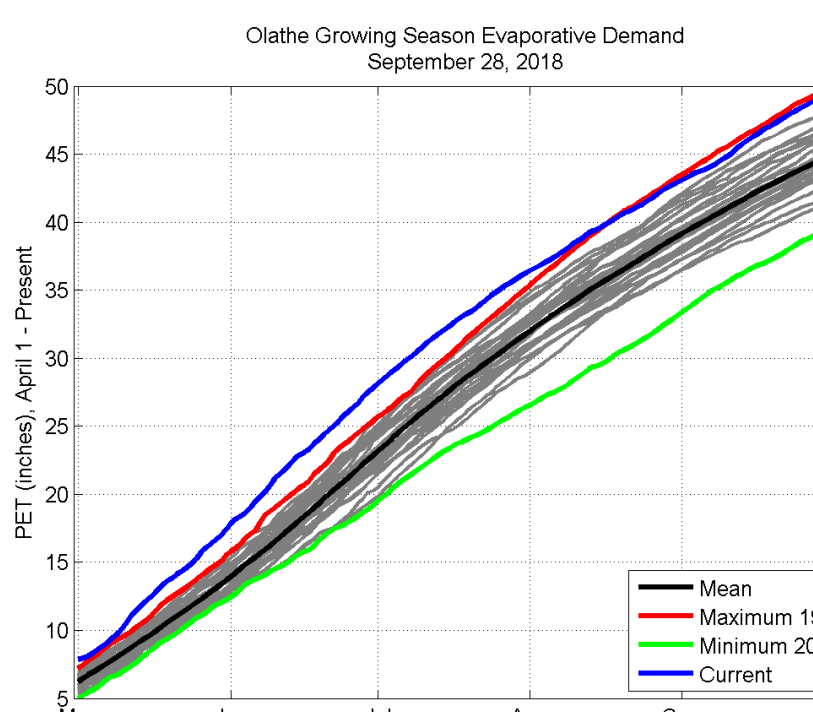
CoAgMET ("Colorado's Mesonet")



- Several stations now have more than 20 years of data, allowing for development of station climatologies
- Interactive climate summaries for these stations are under active development

- The CoAgMET network now has 85 stations, with the majority reporting data every 5 minutes
- Data are used by agricultural producers, researchers, the National Weather Service, and much more!

<http://coagmet.colostate.edu/>

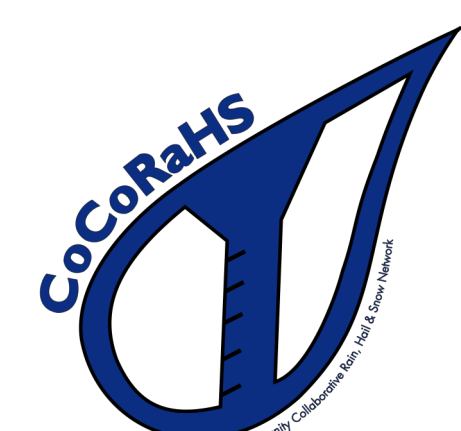


- CoAgMET stations are widely used for assessing reference evapotranspiration and water balance
- The Olathe station (above) in western Colorado illustrates the extreme evaporative demand during the 2018 drought!

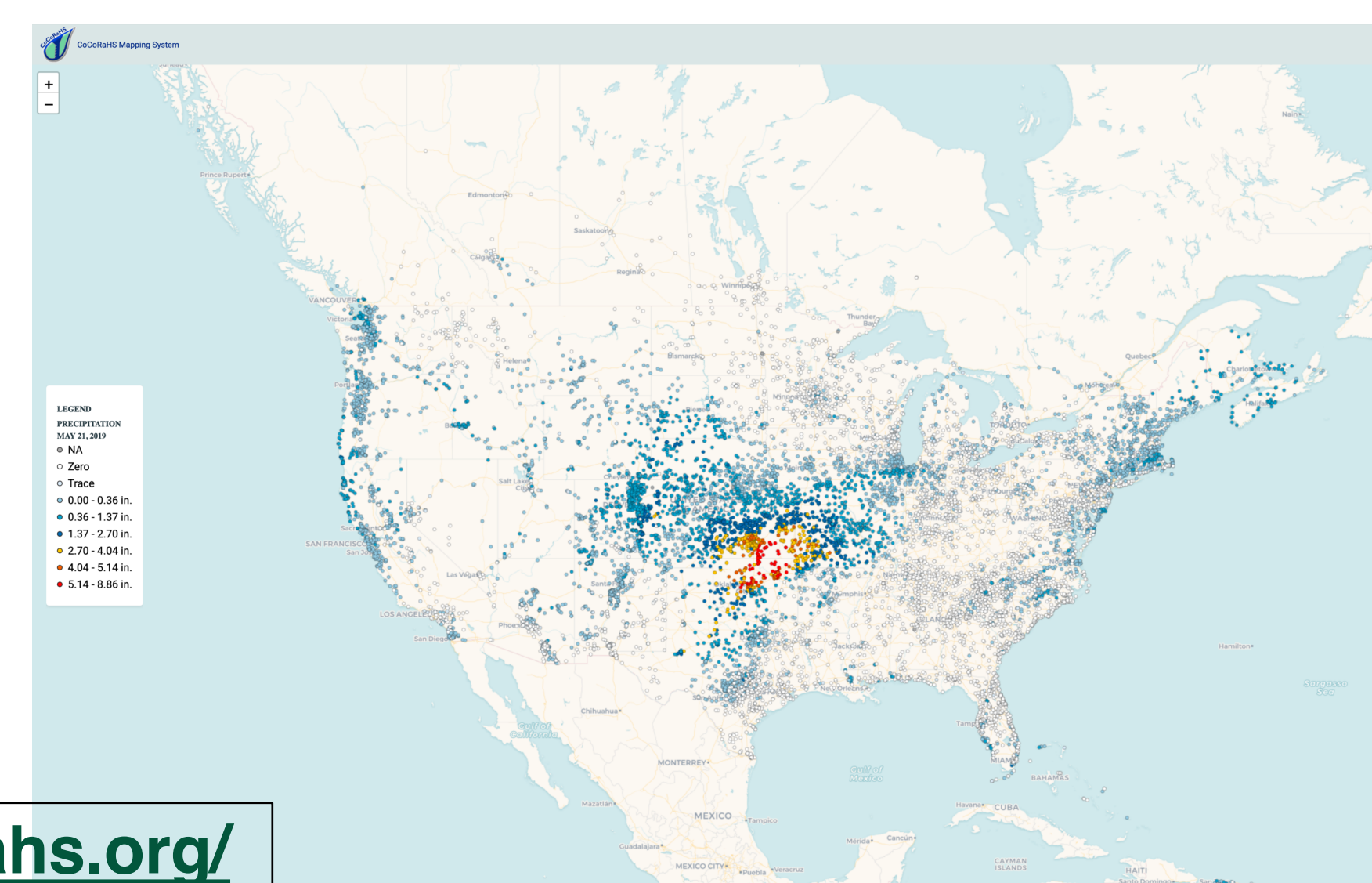
CoCoRaHS

- CoCoRaHS just celebrated its 21st birthday in June 2019
- The network continues to expand, with an average of approx. 350,000 observations each month, and over 9,000 stations with more than 25 obs per month
- A CoCoRaHS observer established a new state record for annual precipitation in Maryland

New mapping system coming soon!

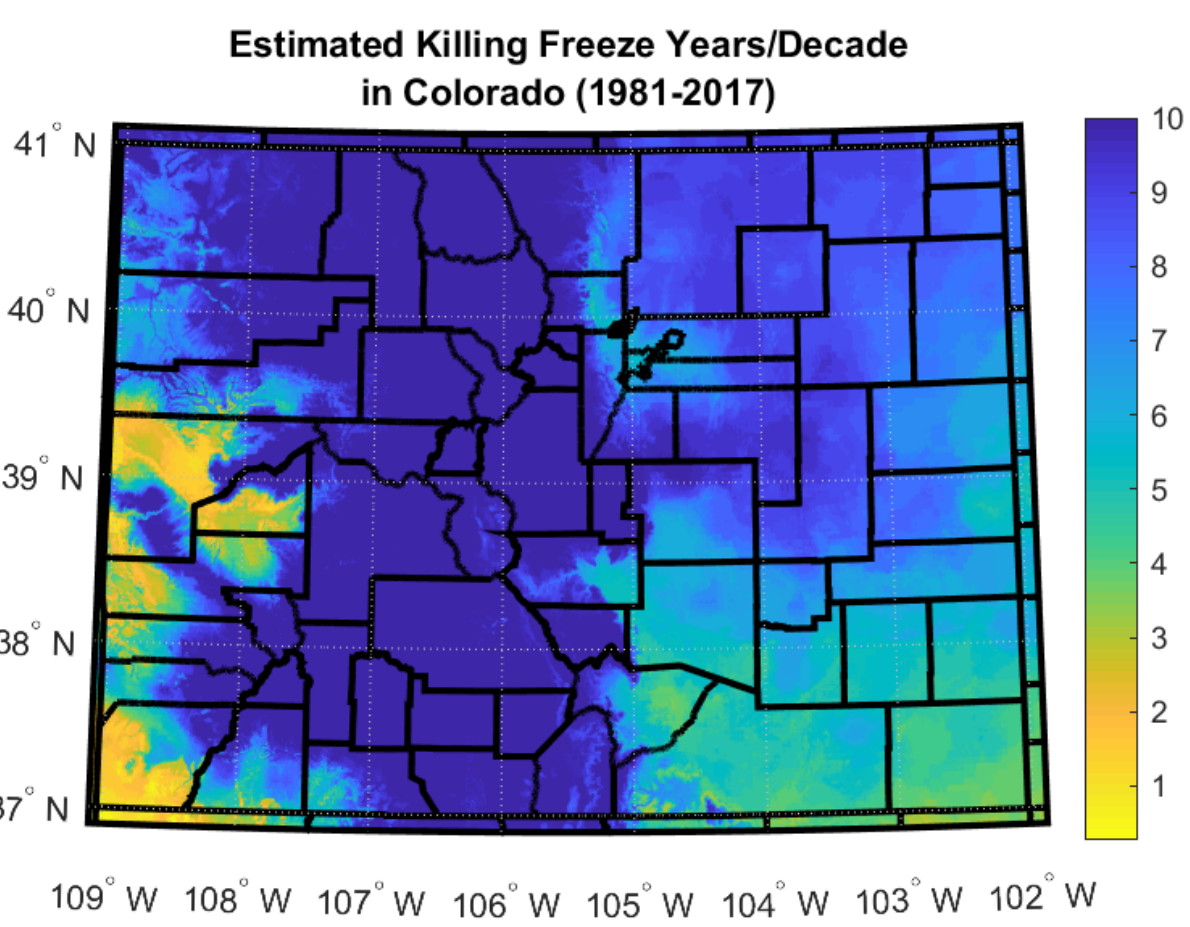


<https://www.cocorahs.org/>



Colorado Wine Industry

- The Colorado Climate Center has partnered with the Colorado Wine Industry Development Board to identify areas suitable for expanded wine grape growth.
- One of the primary constraints on growing wine grapes in our state is cold temperatures; we're no Sonoma!
- Hard spring freezes after bud break (about May 15th), freezes before harvest, and deep winter cold have all been known to kill grapes and damage vines. Depicted here is one of our efforts to quantify the frequency of killing freeze years. Things look good for Grand Junction and Palisade; we expected that, but there are some surprises on the map too!

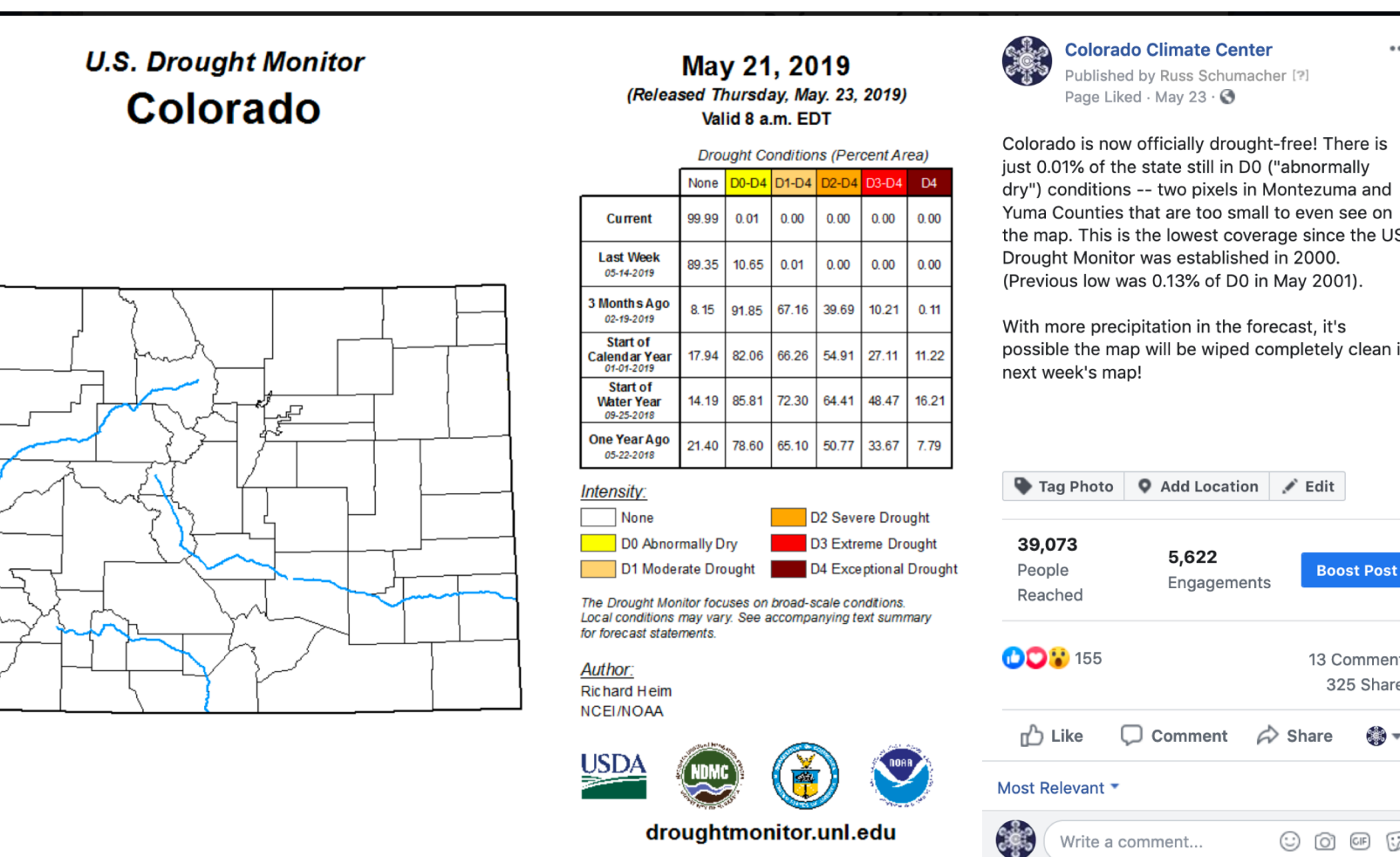


- As a part of this project, the Climate Center is maintaining small temperature sensor mesonets/micronets in Montezuma and Fremont Counties. Maintaining these sensors is easy when you're not running from bulls!

CCC staff and office updates



- Dani Talmadge joined the full-time CCC staff in 2018, working on CoCoRaHS quality control, drought monitoring, and other projects
- Steve Hilberg was hired as a part-time CoCoRaHS project manager
- Nolan Doesken is enjoying retirement, but still has a part-time appointment at CSU and remains active in Colorado climate and CoCoRaHS work



Regular engagement on social media, with >1500 followers on both Facebook and Twitter

This post, when we finally became drought-free, reached over 39,000 people!

Acknowledgments

- We are thankful for the support of the Colorado Agricultural Experiment Station, National Integrated Drought Information System, National Mesonet Program, Colorado Water Conservation Board, Colorado Wine Industry Development Board, PRISM Climate Group, and CoCoRaHS data users and volunteers!