



Water Availability Task Force Meeting

November 4th, 2021

NRCS Snow Survey and Water Supply Forecasting Program

Brian Domonkos

Hydrologist

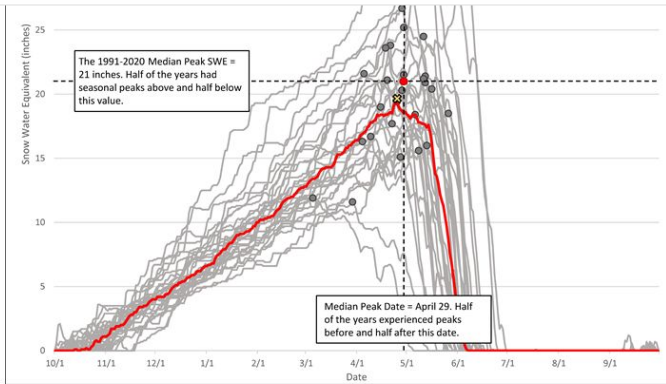
Asst. Snow Survey Supervisor

720-544-2852

<http://www.nrcs.usda.gov/wps/portal/nrcs/main/co/snow/>

Noteworthy Items

- New Normals for most data types were published on Oct 1, 2021.
 - The new normals are now based on 1991 to 2020 data.
 - You can find direct comparisons between normals both using easily accessed data and in more detailed explanations of methods and differences on our normal webpage. Simply reach out to us for links to those resources.



Central Tendencies

The statistic used as the official NRCS normal for the 1981-2010 period varied by data type. The median was used as the official 1981-2010 normal. The 1991-2020 normals only include the average. The median is the official 1991-2020 NRCS normal for all data types and will be the default.

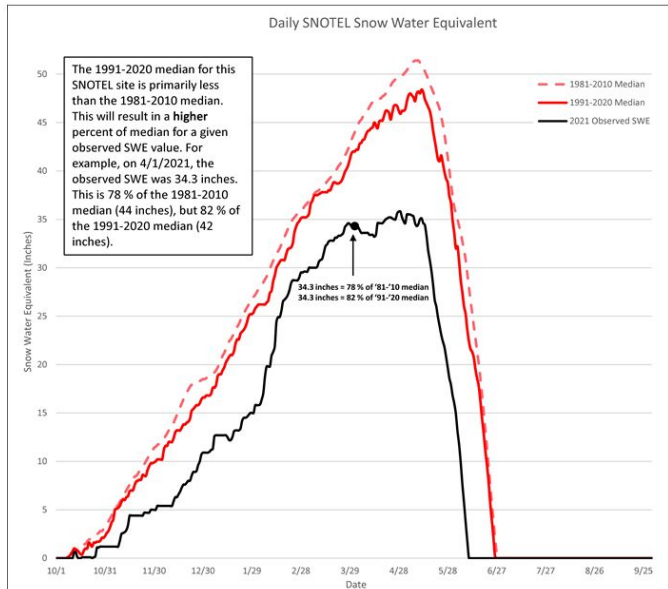
1971-2000 Averages

Most SNOTEL sites did not exist in 1971. The first major installations of SNOTEL sites occurred in the late 1970s to early 1980s. Therefore,

Interpreting Changes in Normal Values

A change in the normal values going from 1981-2010 to the new 1991-2020 reference period will result in a subsequent shift in the percent of normal values for the same observation, and vice versa.

1981-2010 Median SWE Compared to 1991-2020 Median SWE



Comparing 1981-2010 and 1991-2020 Normals

The Interactive Map provides access to charts comparing the official normals used for 1981-2010 with the official 1991-2020 normals. At each location, comparisons for SWE and some streamflow locations will show 1981-2010 median and 1991-2020 median. All other comparison charts show

Noteworthy Items

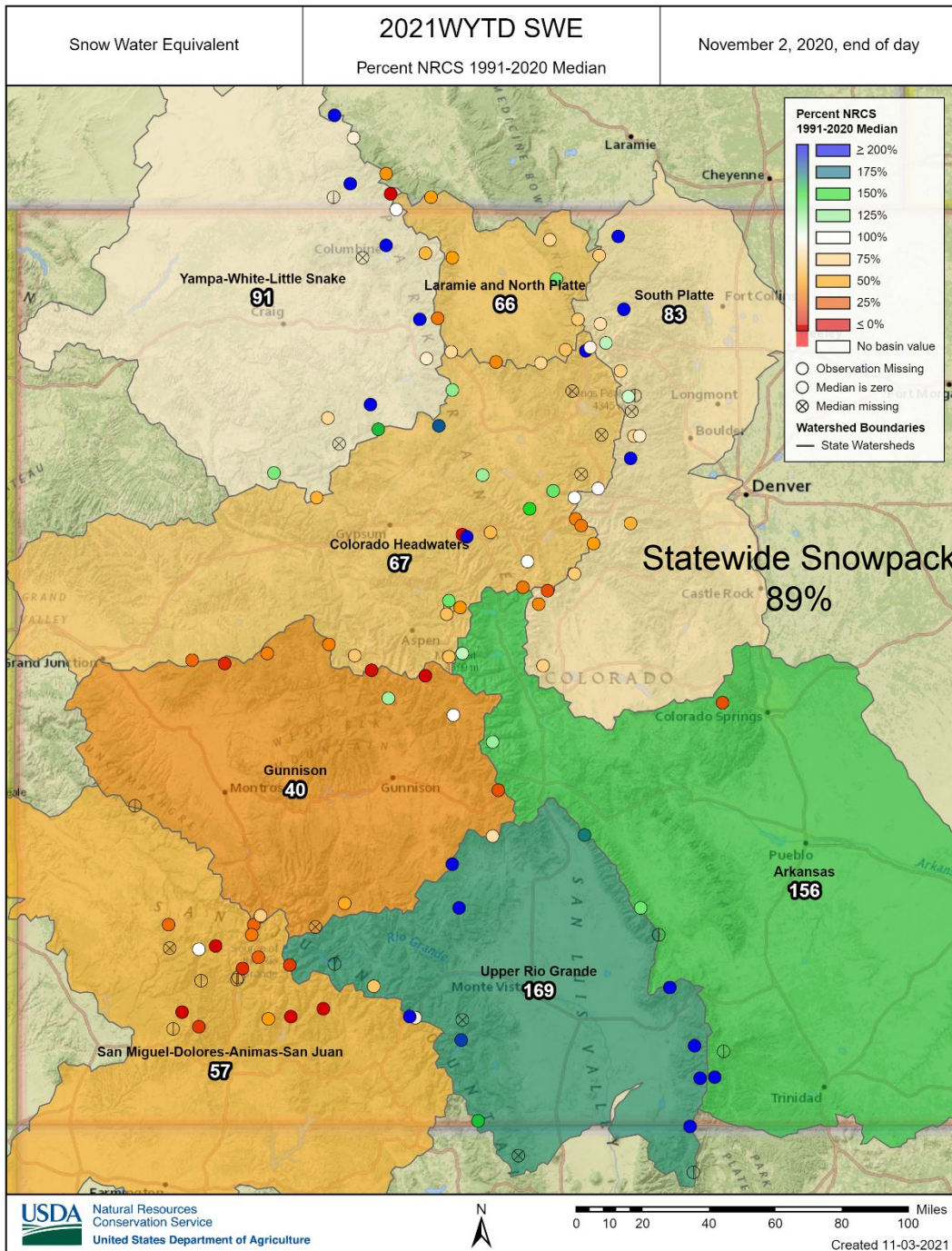
- Product website and links will be changing. Both on the National Water and Climate Center (NWCC) webpages and on Colorado Website pages and links.
 - IT required a change to new servers. As a result links and webpages are changing.
 - Data resource links will not be affected.
 - Products resource webpages and links will be affected.
 - We aren't completely sure on timeline for the change but believe the mandatory change to be in the next one to three months.
 - Working as fast possible to minimize product interruptions.
 - Changes are requiring considerable work and entirely new tools to generate the replacement products.
- Current presentation maps and graphs will change in appearance however will maintain much of the same data and overall look.
- If you have questions and comments please reach out to us



United States Department of Agriculture

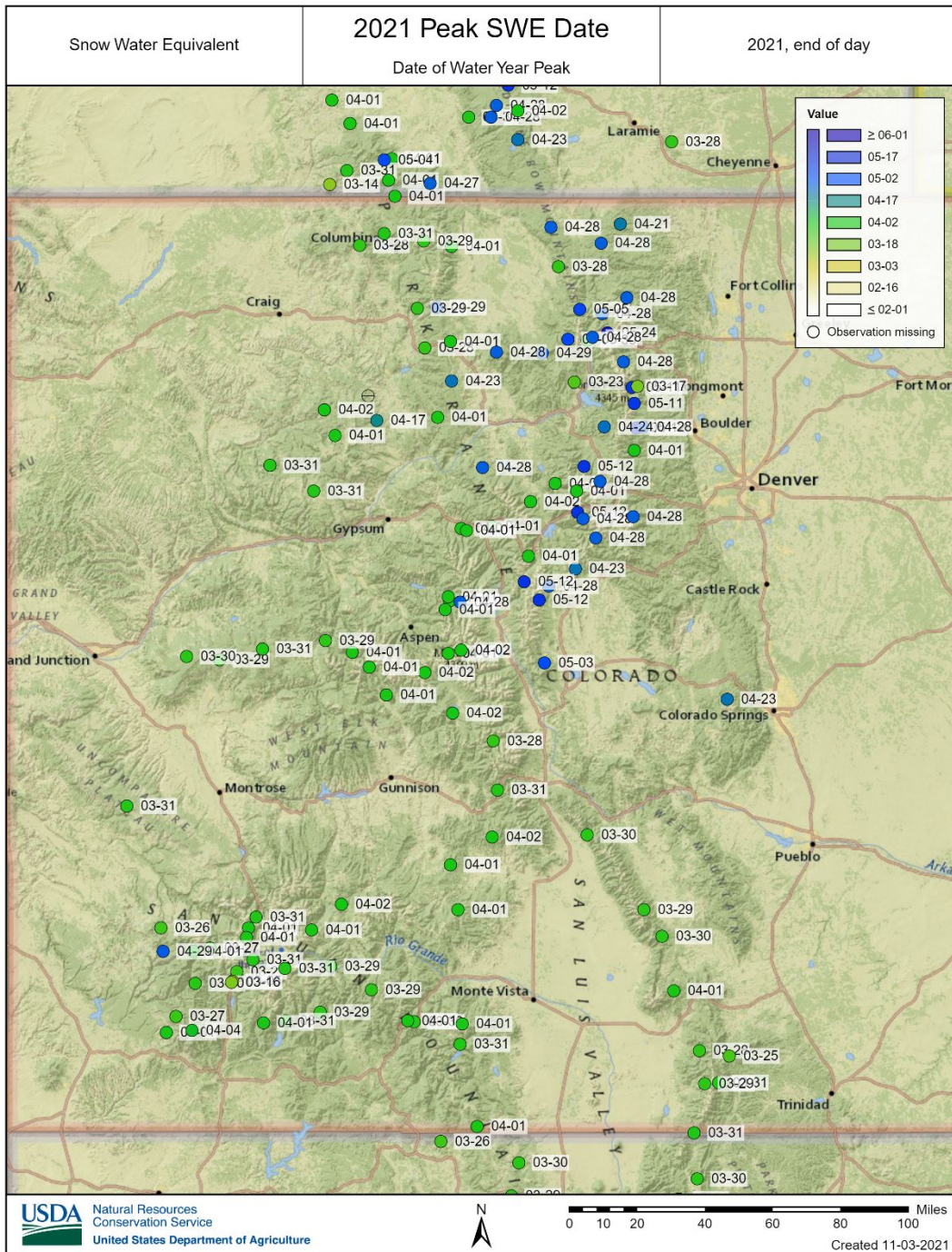
Colorado Snow Surveys

Water Year 2021 Recap



Colorado Snow Surveys

2021 Statewide
Snowpack (SWE)
Peak as a % of
Median



Colorado Snow Surveys

Statewide Snowpack (SWE) Date

- 3/30 – 4/1
- 4/28
- 5/11 – 5/12



United States Department of Agriculture

Colorado Snow Surveys

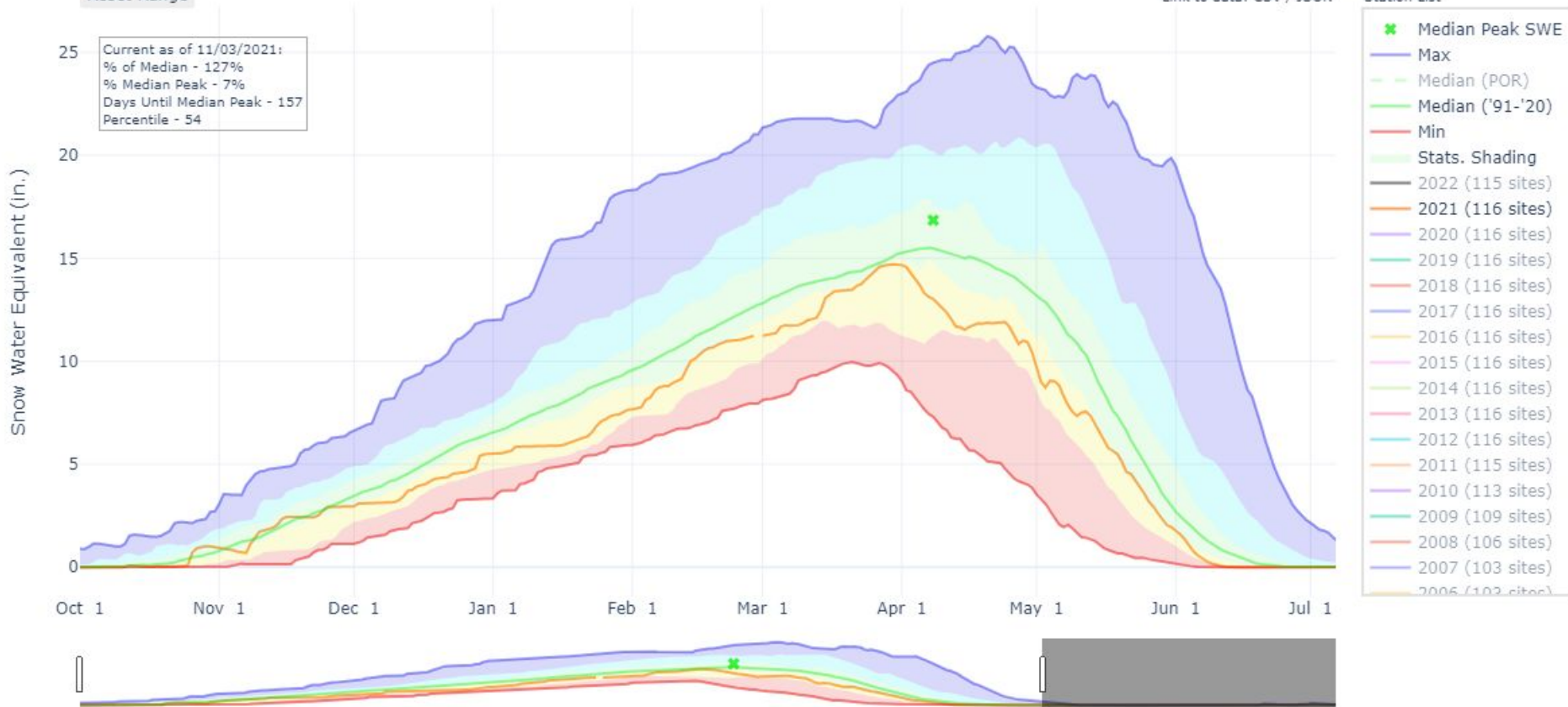
2020 Statewide Snowpack (SWE)

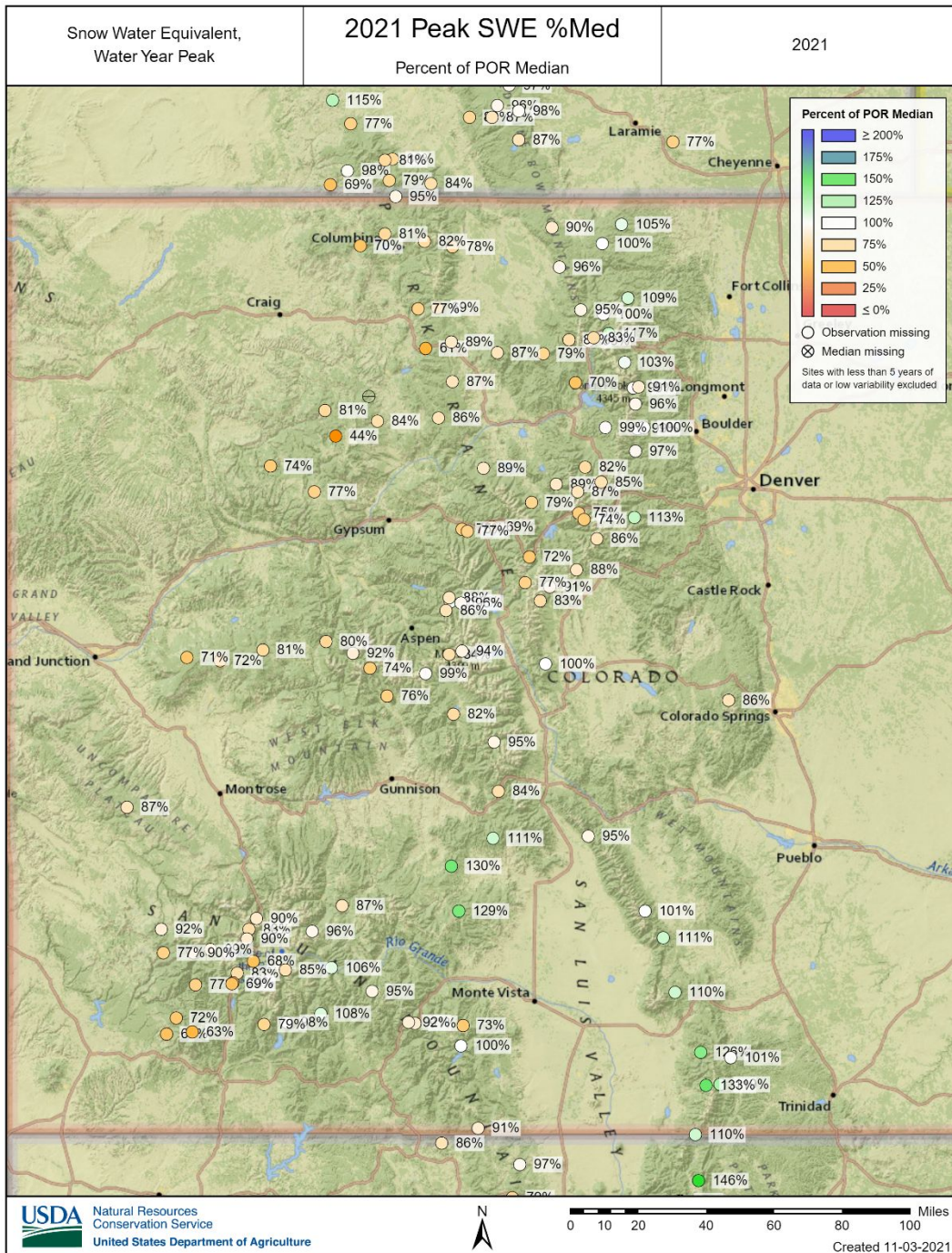
SNOW WATER EQUIVALENT IN STATE OF COLORADO

Reset Range

[Link to data: CSV / JSON](#)

Station List





Colorado Snow Surveys

Statewide Snowpack (SWE) Peak as a % of Median

- Statewide snowpack peaked 88% of median
- Ranked 28th in the 36 year period of record



2020 Statewide Year End Precip

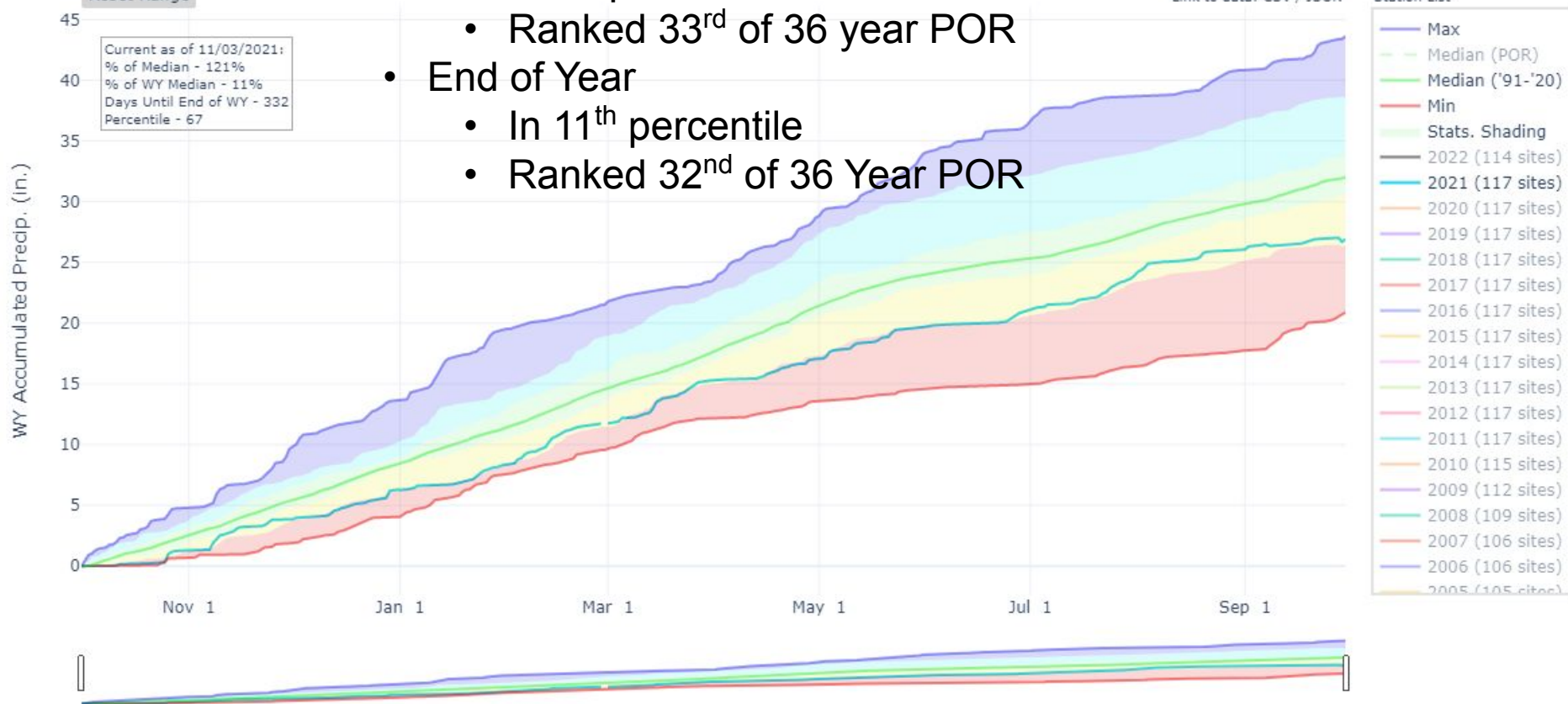
PRECIPITATION IN STATE OF COLORADO

Reset Range

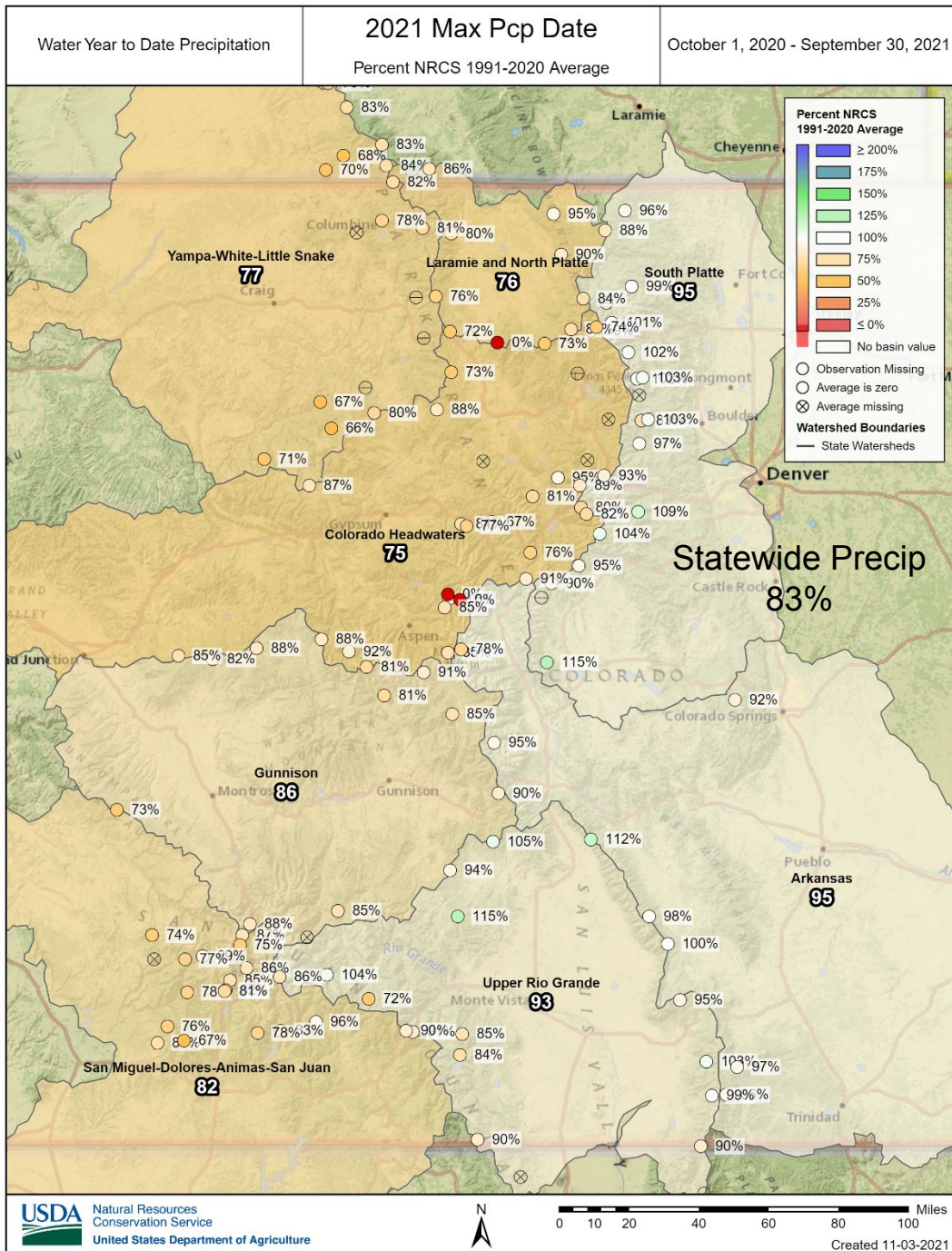
Current as of 11/03/2021:
% of Median - 121%
% of WY Median - 11%
Days Until End of WY - 332
Percentile - 67

[Link to data: CSV / JSON](#)

Station List



- This time last year Precip
 - In 9th percentile
 - Ranked 33rd of 36 year POR
- End of Year
 - In 11th percentile
 - Ranked 32nd of 36 Year POR



Colorado Snow Surveys

Statewide End Of Year Precip as a % of Median

- Statewide year end precip peaked 83% of median
- Ranked 32th in the 36 year period of Record – 5th worst



United States Department of Agriculture

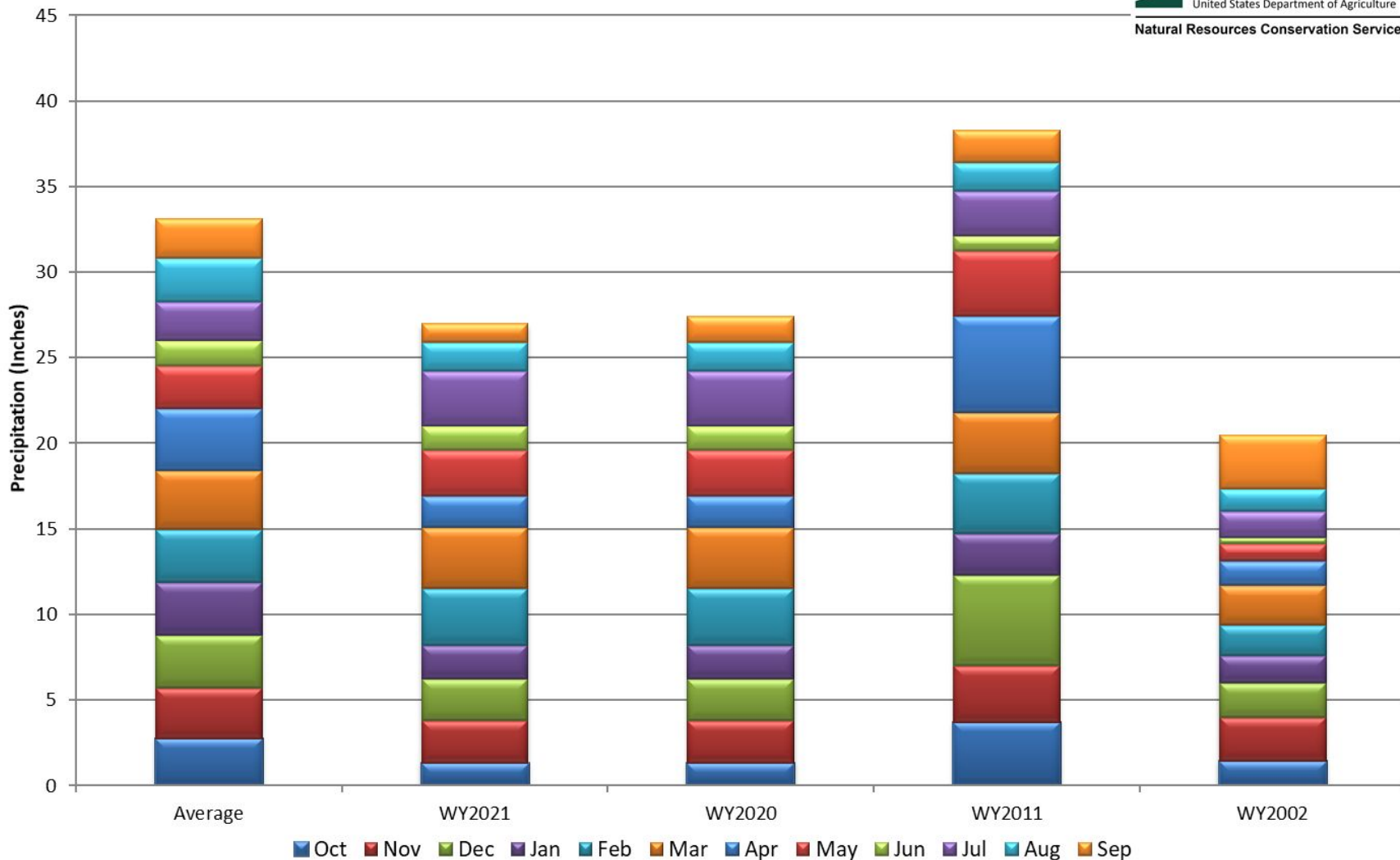
Colorado Snow Surveys

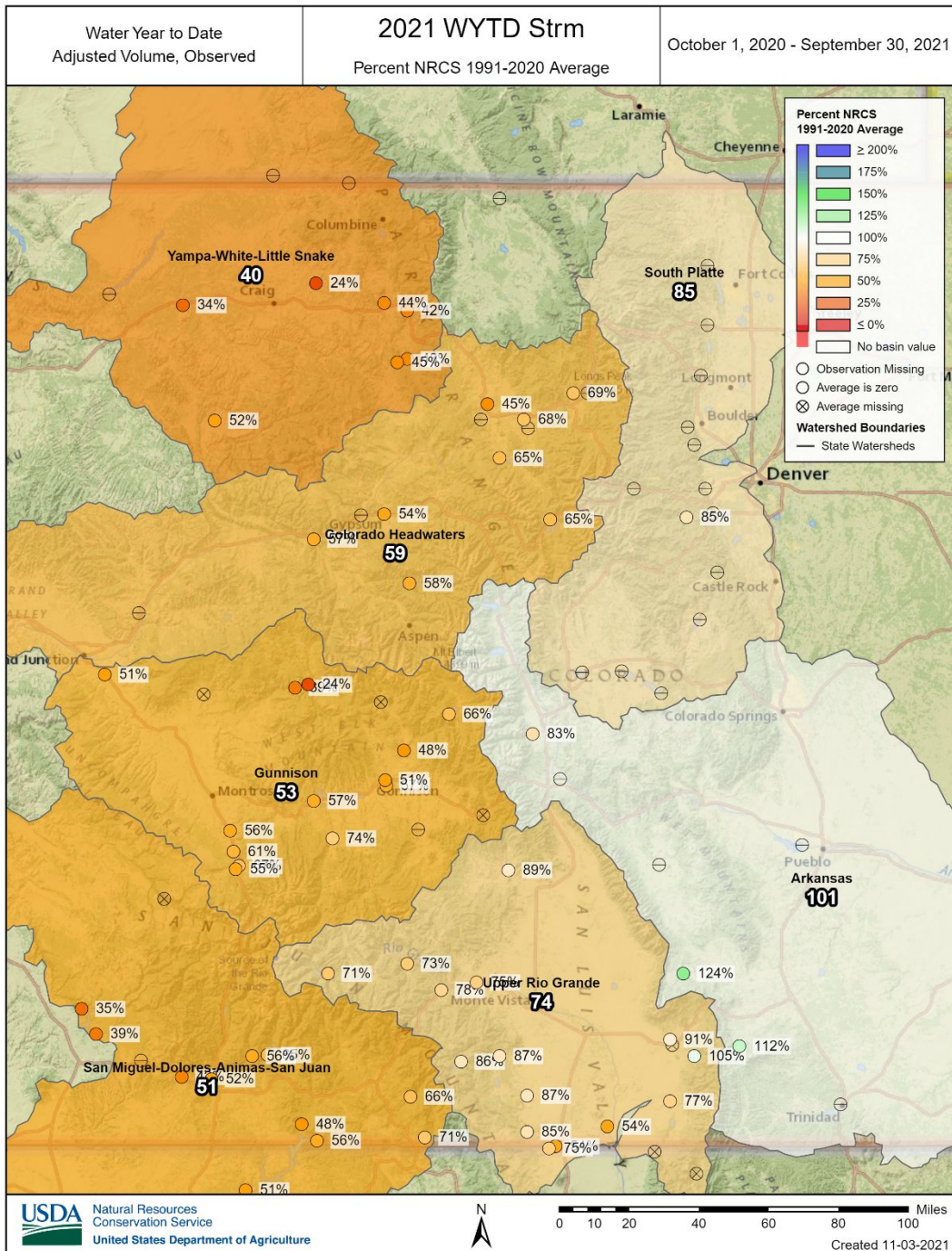
2020 Statewide Year End Precip

Colorado Statewide High/Low Monthly Precipitation Summary

Based on Provisional SNOTEL data as of Sep 30, 2021

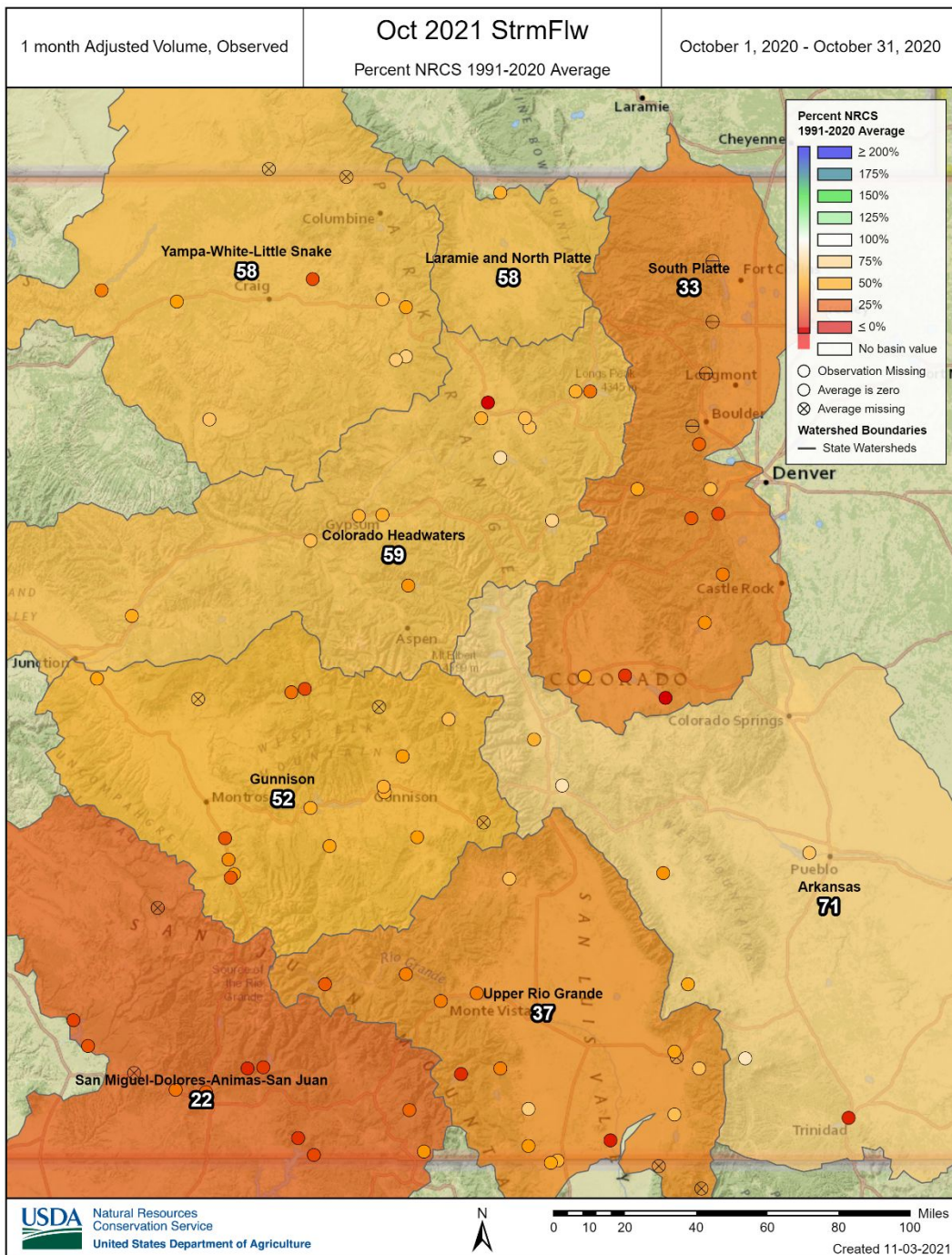
USDA
United States Department of Agriculture
Natural Resources Conservation Service





Colorado Snow Surveys

Statewide
Volumetric
Streamflow as
a % of Average
Oct 1, 2020 to
Sept 30, 2021



Colorado Snow Surveys

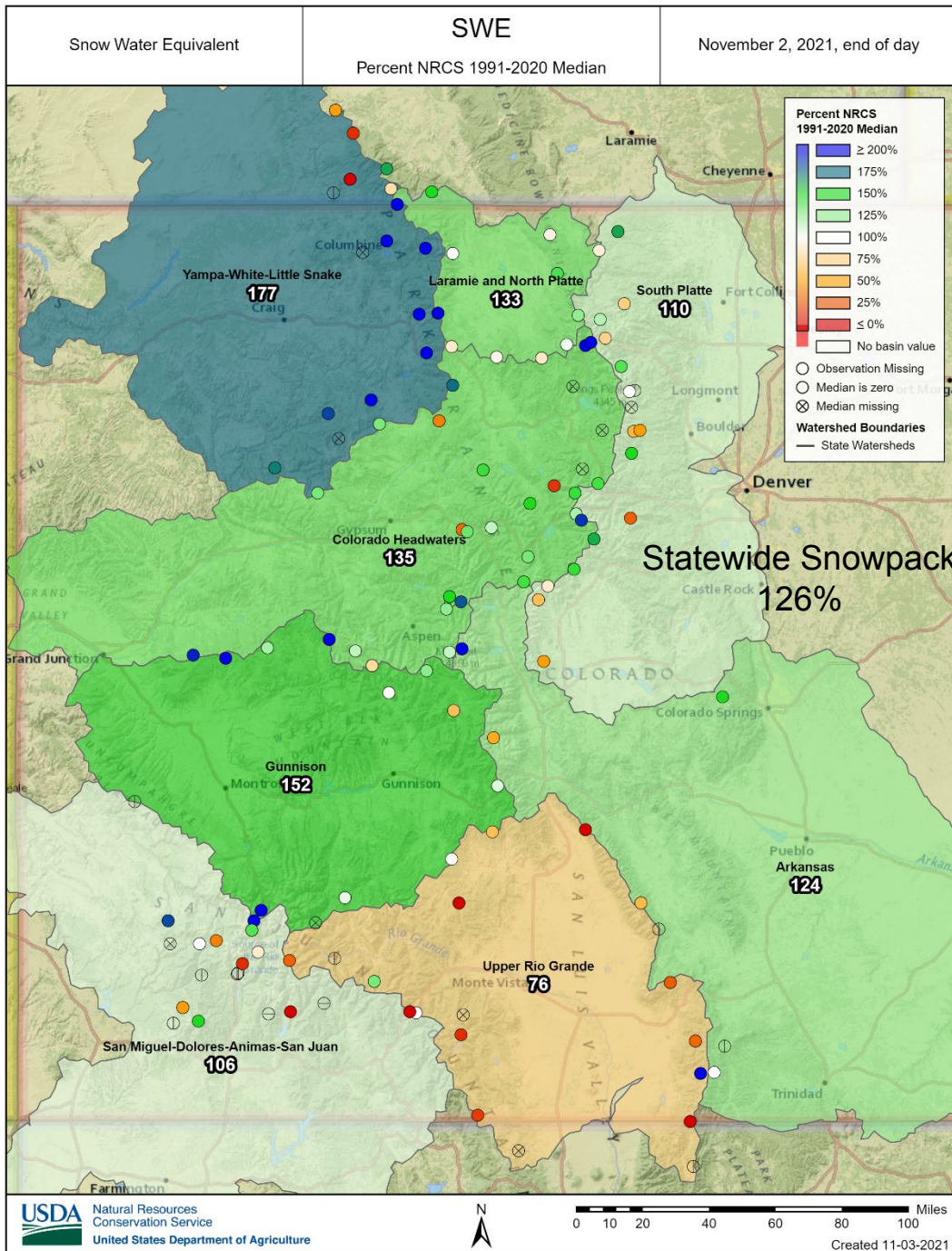
Oct 1, 2020
Volumetric
Streamflow as an
Indicator of
Baseflow Leading
Into Winter 2021



United States Department of Agriculture

Colorado Snow Surveys

Water Year 2022 To Date



Colorado Snow Surveys

Statewide
Snowpack (SWE)
Peak as a % of
Median



United States Department of Agriculture

Colorado Snow Surveys

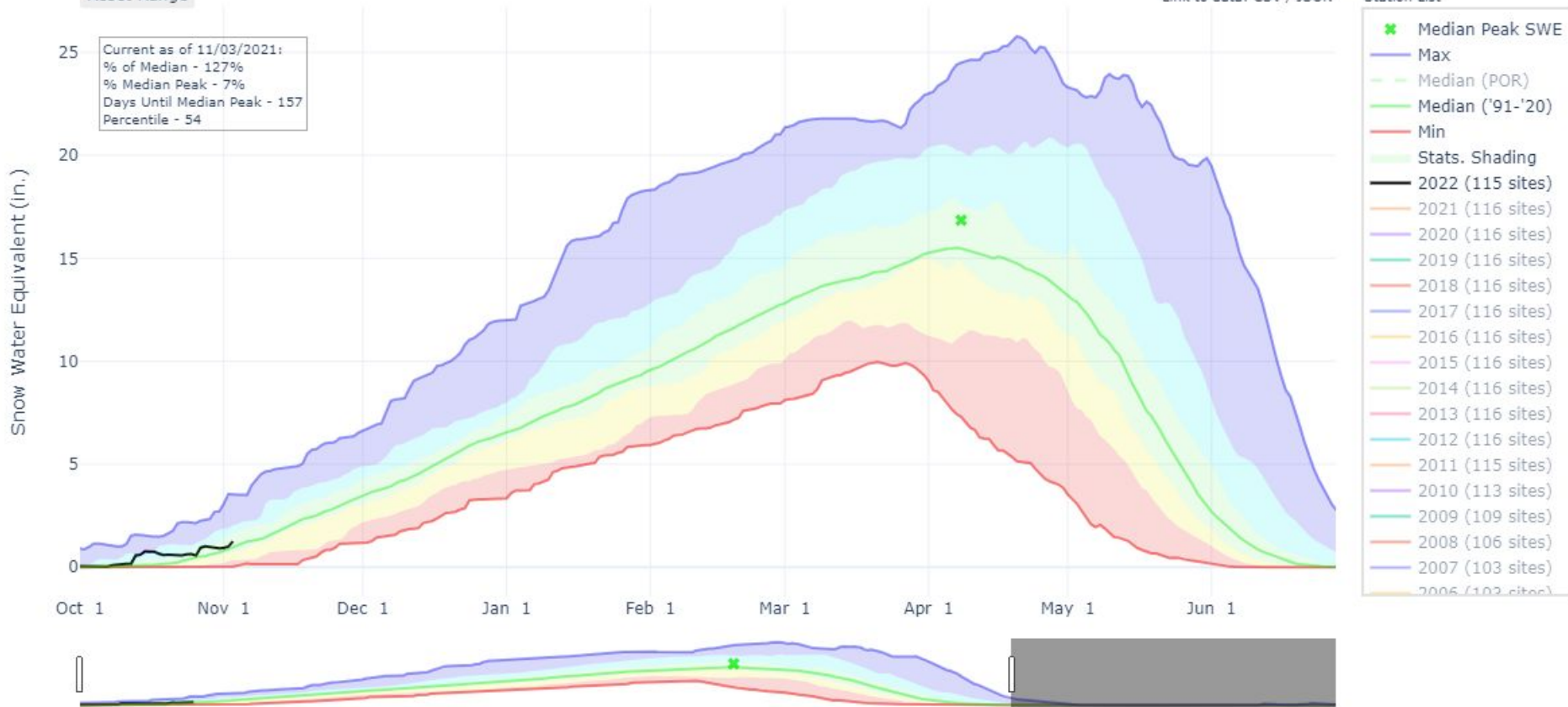
2020 Statewide Snowpack (SWE)

SNOW WATER EQUIVALENT IN STATE OF COLORADO

Reset Range

[Link to data: CSV / JSON](#)

Station List

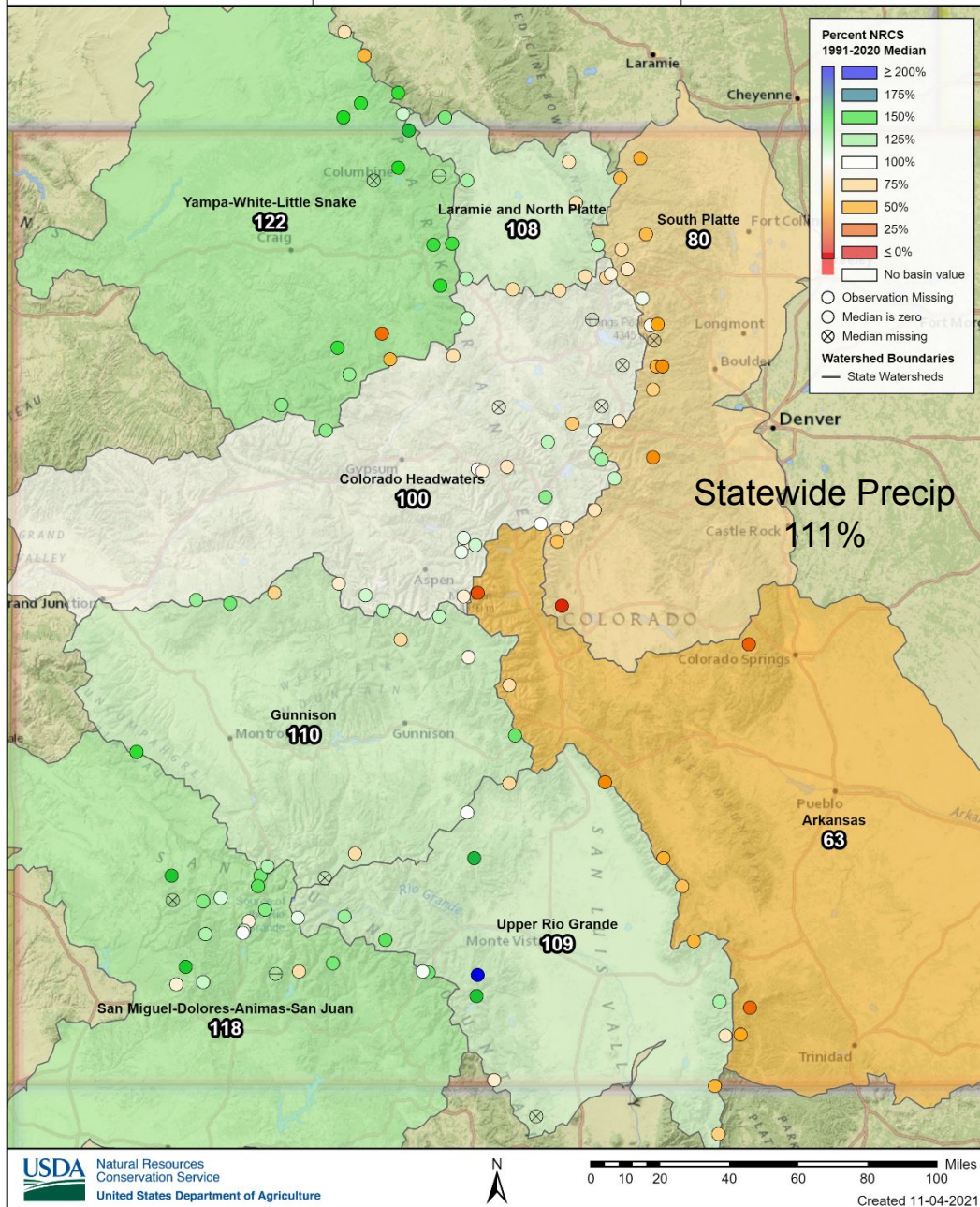


Water Year to Date Precipitation

Nov 1 2021 Prec

Percent NRCS 1991-2020 Median

October 1, 2021 - October 31, 2021



Colorado Snow Surveys

Statewide End Of
Year Precip
as a % of Median



2020 Statewide Year End Precip

PRECIPITATION IN STATE OF COLORADO

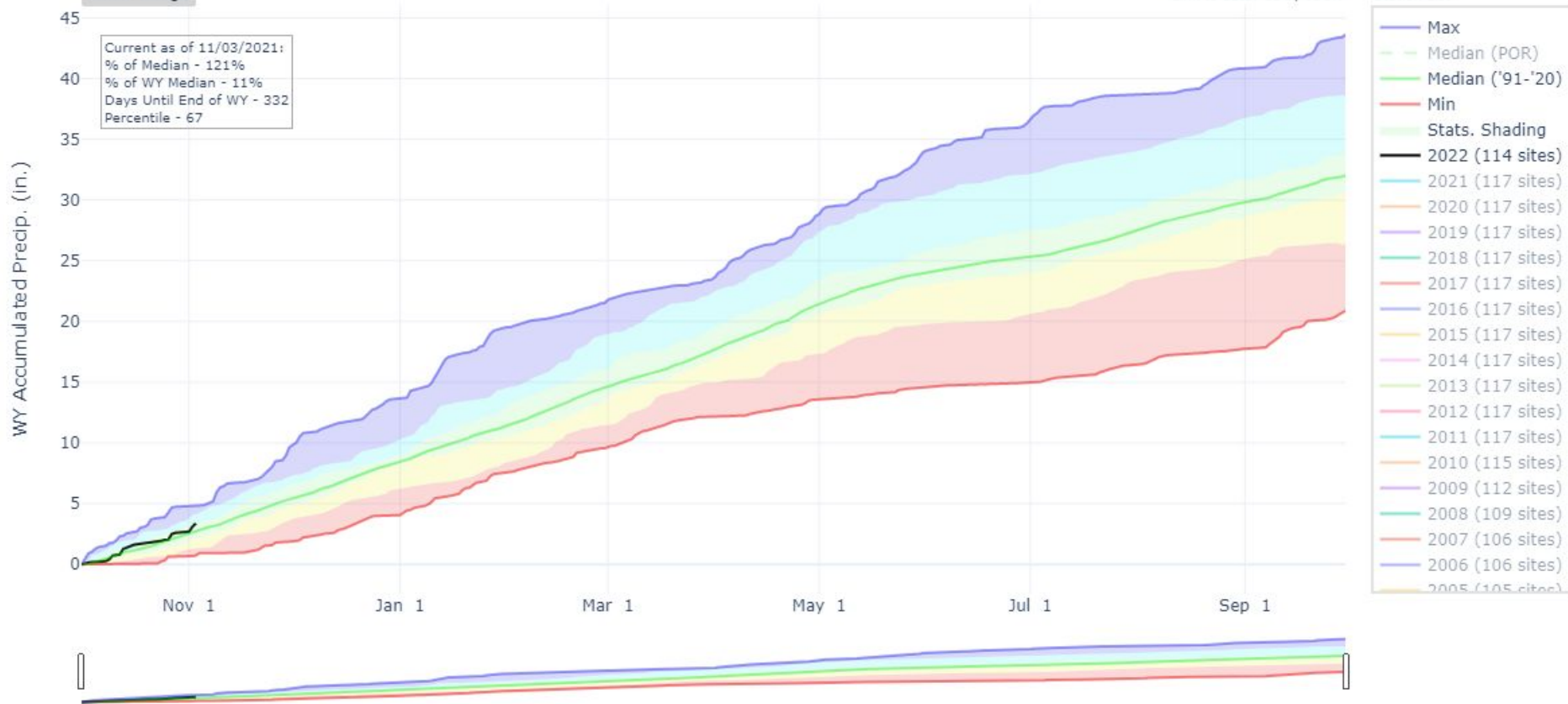
Reset Range

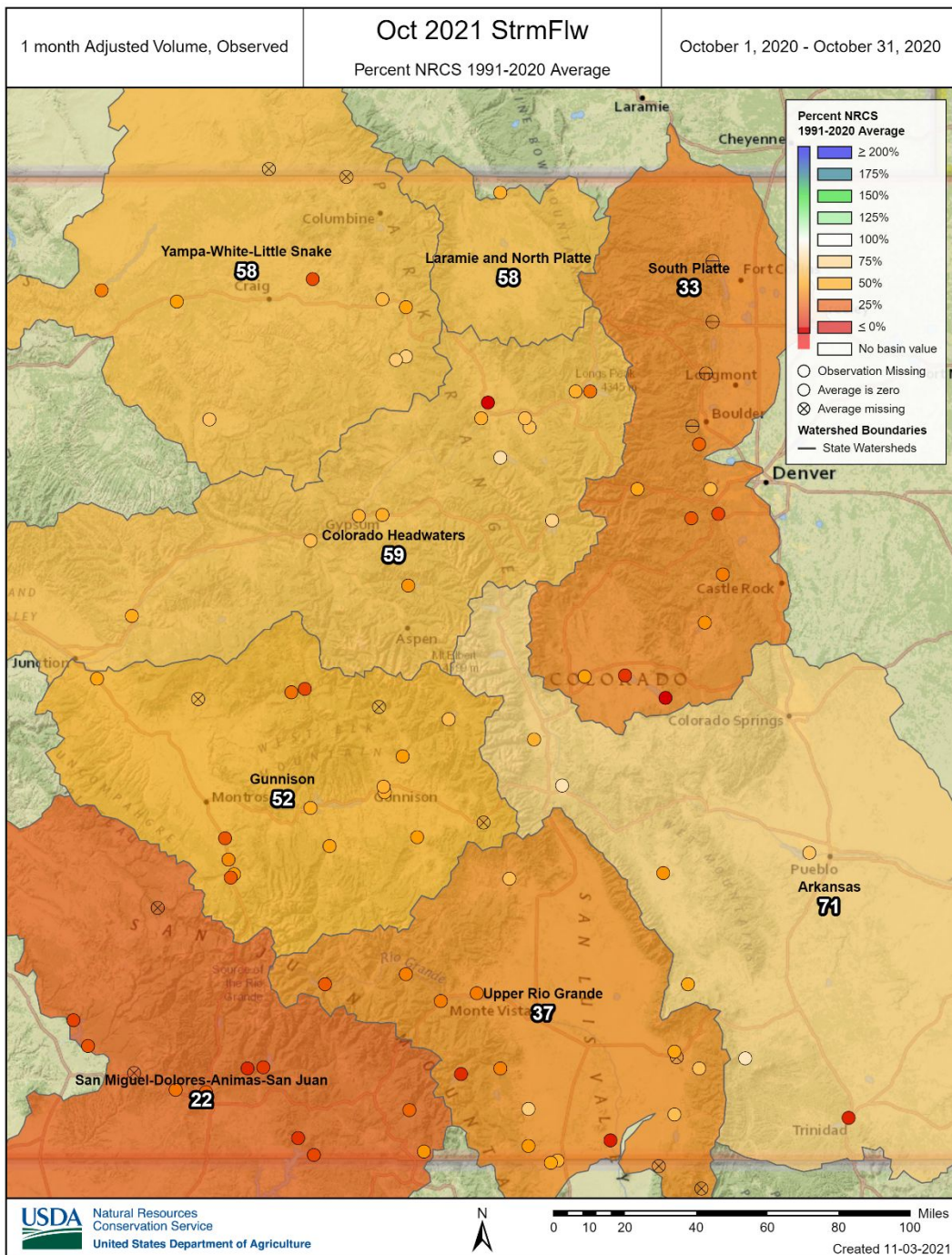
Current as of 11/03/2021:
% of Median - 121%
% of WY Median - 11%
Days Until End of WY - 332
Percentile - 67

- Precip is in 74st percentile
- Ranked 8th of 36 Year POR

[Link to data: CSV / JSON](#)

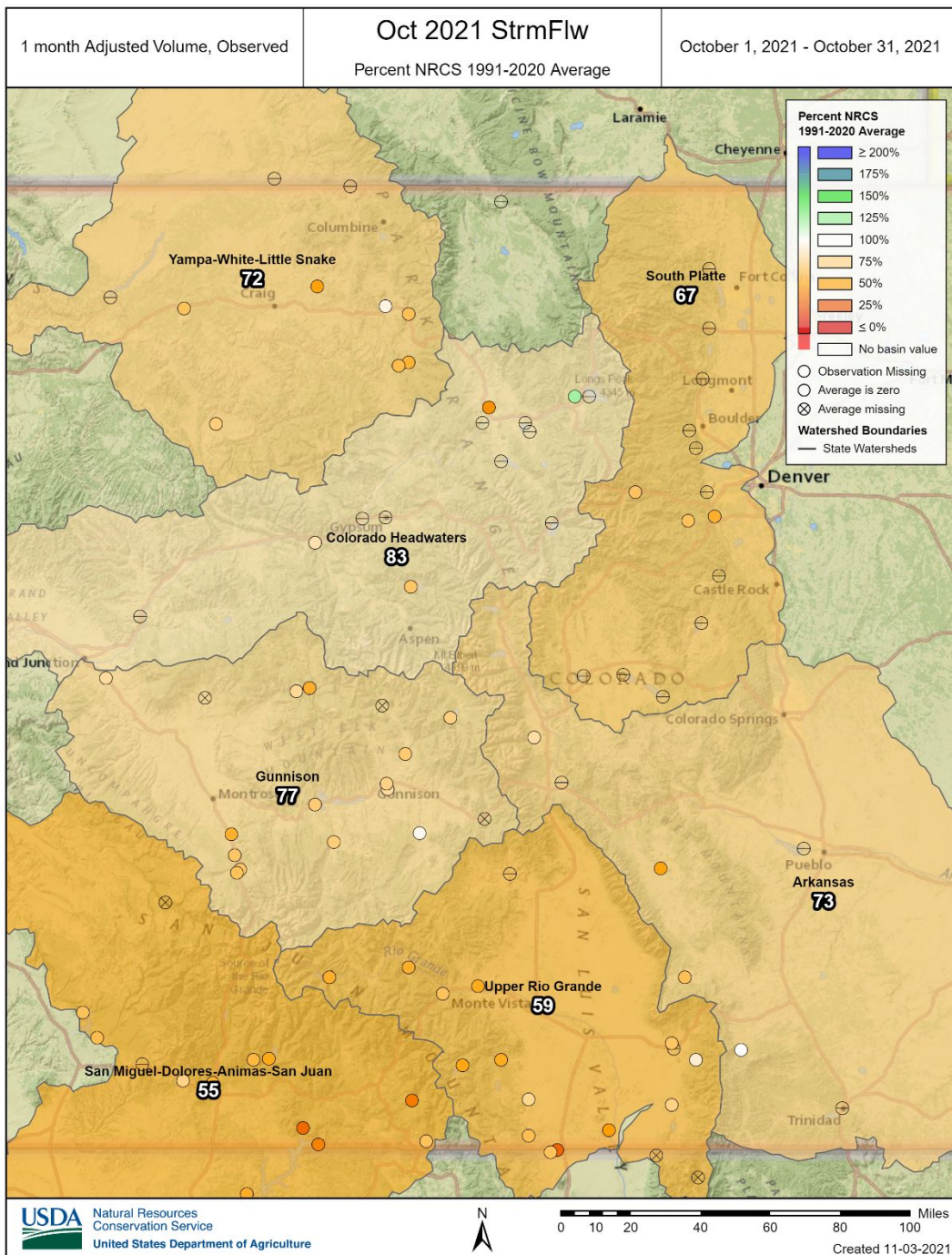
Station List





Colorado Snow Surveys

Oct 1, 2020
Volumetric
Streamflow as an
Indicator of
Baseflow Leading
Into Winter 2021

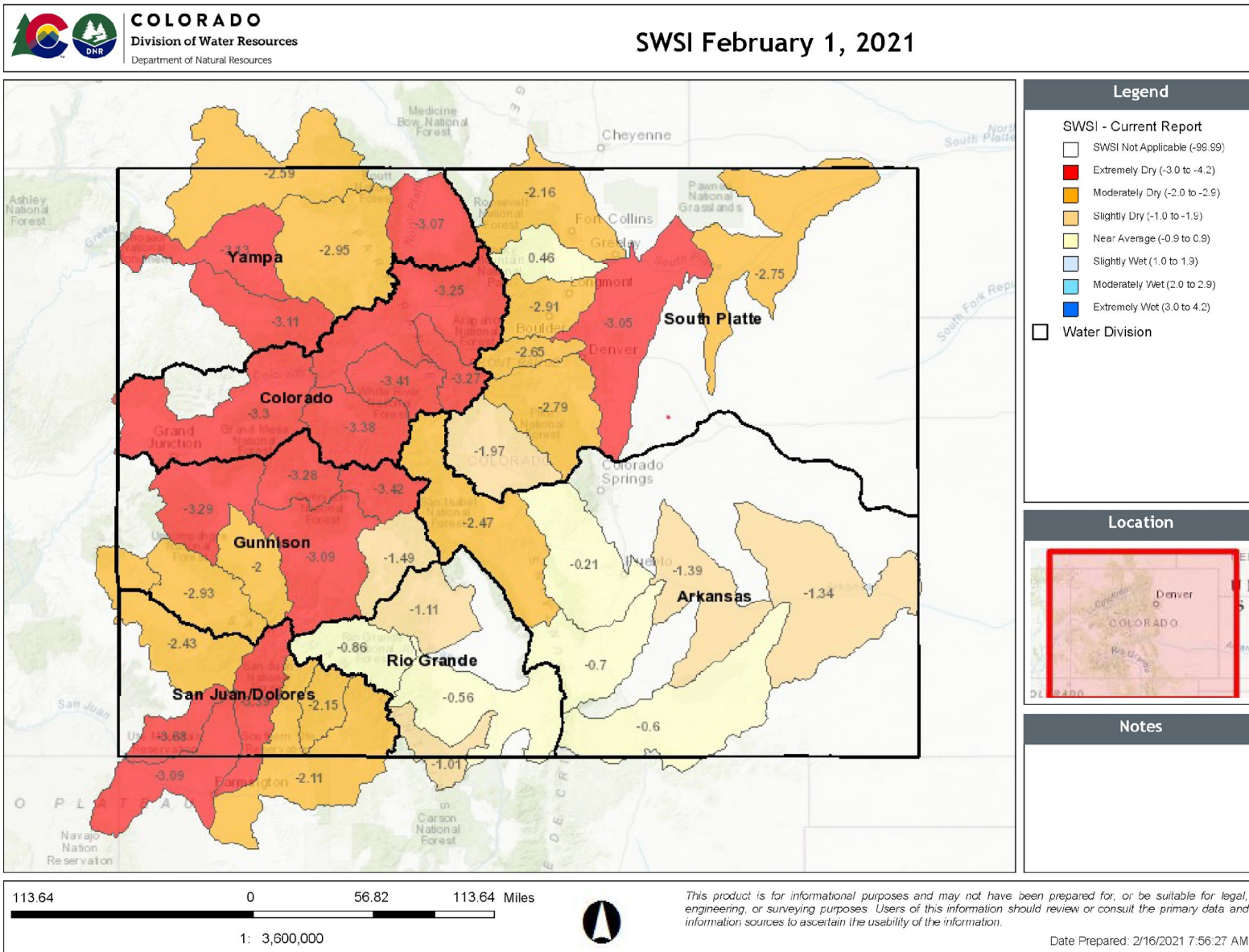


Colorado Snow Surveys

Oct 1, 2021 Volumetric Streamflow as an Indicator of Baseflow Leading Into Winter 2022

Current streamflows are considerably better than last year at this time, but still not quite average.

February 1, 2020 SWSI



Summary

- Current conditions at this point leading into winter are better than last year at this point in terms of
 - Snowpack
 - And most particularly Precipitation and Streamflow – Indicators of soil moisture
 - Snowpack at 126% of median
 - Precipitation at 120% of median
- New normals are published and available for comparison
- Products will be changing somewhat both in appearance and in web links
- If you need any assistance don't hesitate to reach out to us



Input and Feedback Welcome

- What did you like or not like about the maps and graphs I showed today?
- What is missing?



United States Department of Agriculture

Colorado Snow Surveys

Water Availability Task Force Meeting

November 4th, 2021

NRCS Snow Survey and Water Supply Forecasting Program

Brian Domonkos

Hydrologist

Asst. Snow Survey Supervisor

720-544-2852

<http://www.nrcs.usda.gov/wps/portal/nrcs/main/co/snow/>



Non-Discrimination Statement:

In accordance with Federal civil rights law and U.S. Department of agriculture (USDA) civil rights regulations and policies, the USDA, its Agencies, offices, and employees, and institutions participating in or administering USDA programs are prohibited from discriminating based on race, color, national origin, religion, sex, gender identity (including gender expression), sexual orientation, disability, age, marital status, family/parental status, income derived from a public assistance program, political beliefs, or reprisal or retaliation for prior civil rights activity, in any program or activity conducted or funded by USDA (not all bases apply to all programs). Remedies and complaint filing deadlines vary by program or incident.

Persons with disabilities who require alternative means of communication for program information (e.g., Braille, large print, audiotape, American Sign Language, etc.) should contact the responsible Agency or USDA 's TARGET Center at (202) 720-2600 (voice and TTY) or contact USDA through the Federal Relay Service at (800) 877-8339. Additionally, program information may be made available in languages other than English.

To file a program discrimination complaint, complete the USDA Program Discrimination Complaint Form, AD-3027, found online at [How to File a Program Discrimination Complaint](#) and at any USDA office or write a letter addressed to USDA and provide in the letter all of the information requested in the form. To request a copy of the complaint form, call [866] 632-9992. Submit your completed form or letter to USDA by: (1) mail: U.S. Department of Agriculture, Office of the Assistant Secretary for Civil Rights, 1400 Independence Avenue, SW, Washington, D.C. 20250-9410; (2) fax: (202) 690-7442; or (3) email: program.intake@usda.gov.