



# Water Availability Task Force Meeting

## March 18<sup>th</sup>, 2021

### NRCS Snow Survey and Water Supply Forecasting Program

Brian Domonkos

Hydrologist

Asst. Snow Survey Supervisor

720-544-2852

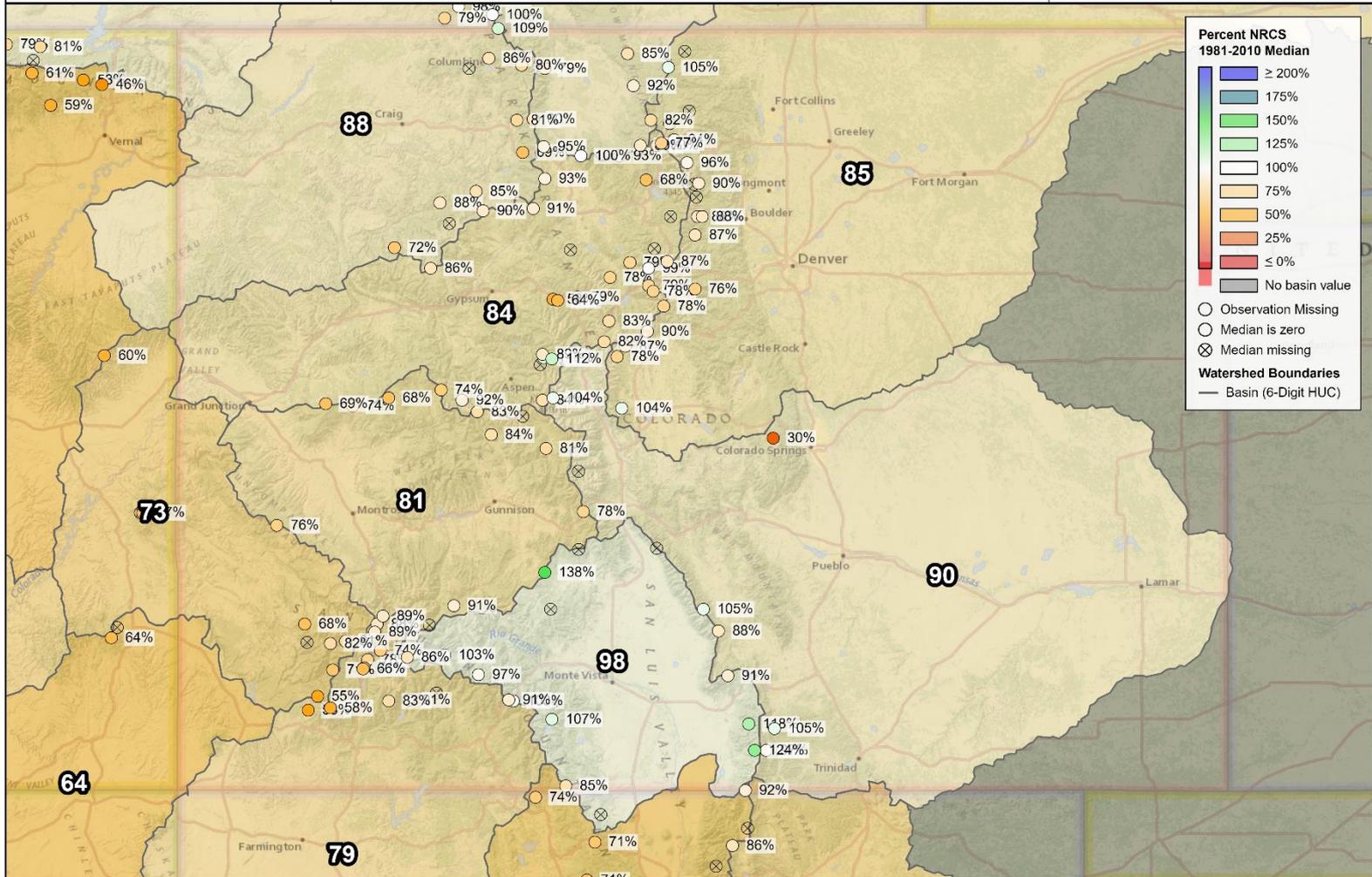
<http://www.nrcs.usda.gov/wps/portal/nrcs/main/co/snow/>



Snow Water Equivalent

Percent NRCS 1981-2010 Median

March 10, 2021, end of day

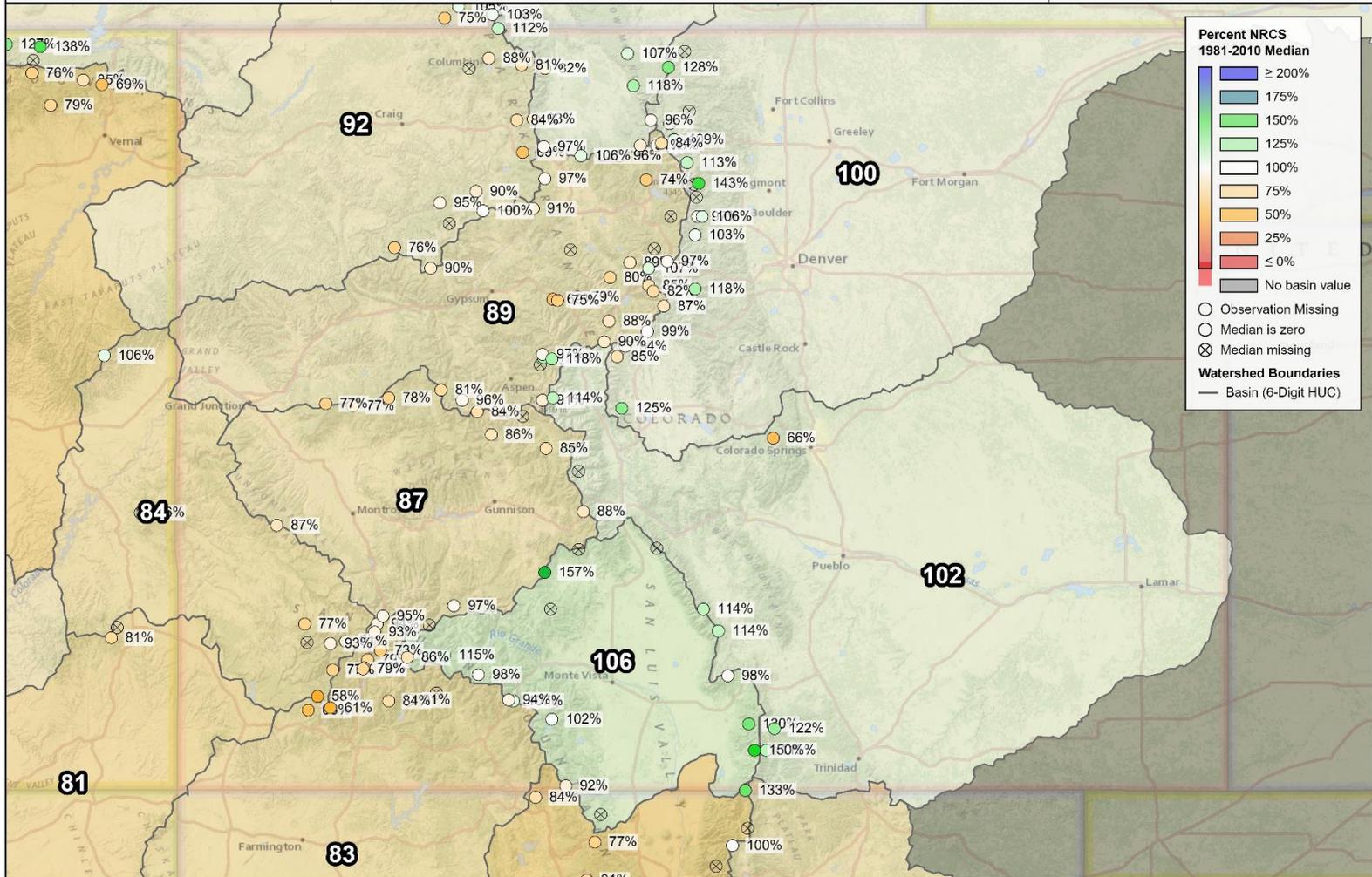




Snow Water Equivalent

Percent NRCS 1981-2010 Median

March 16, 2021, end of day

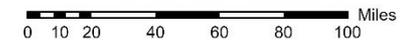


**Percent NRCS 1981-2010 Median**

- ≥ 200%
- 175%
- 150%
- 125%
- 100%
- 75%
- 50%
- 25%
- ≤ 0%
- No basin value

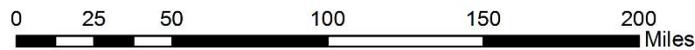
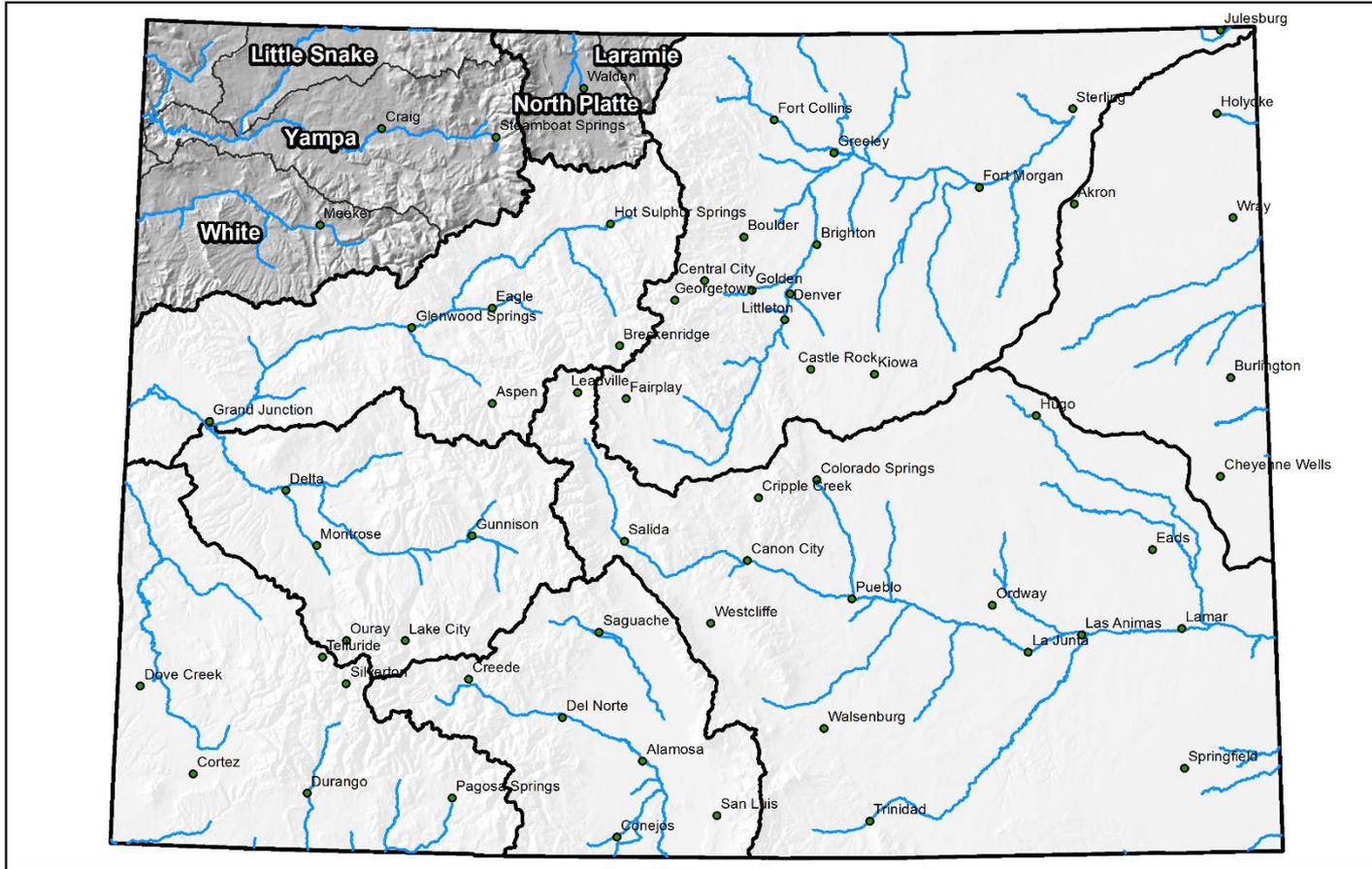
○ Observation Missing  
○ Median is zero  
⊗ Median missing

**Watershed Boundaries**  
— Basin (6-Digit HUC)



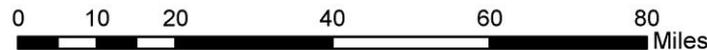
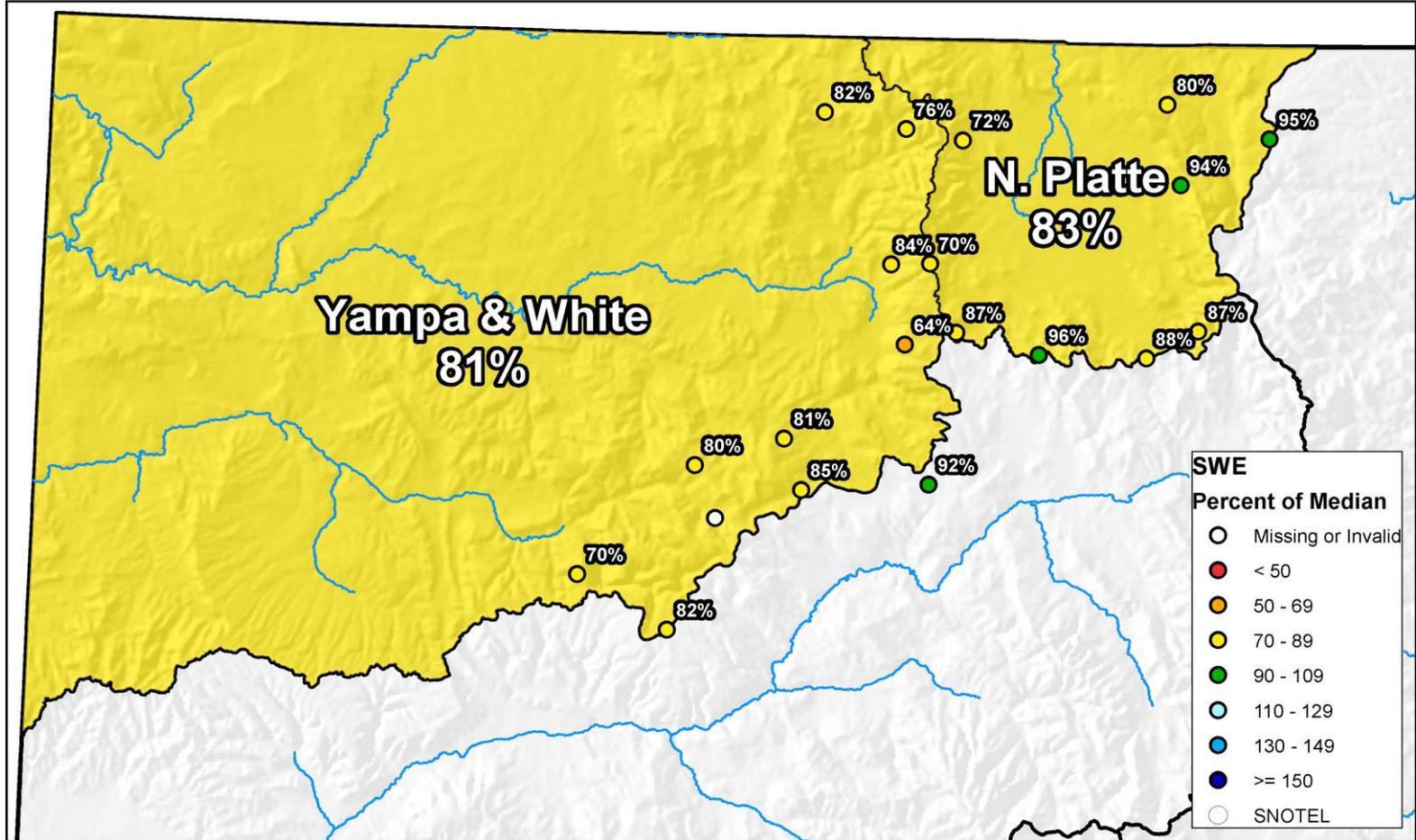
## Major Basin Summary

### Yampa, White, and North Platte River Basins

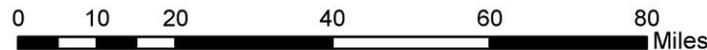
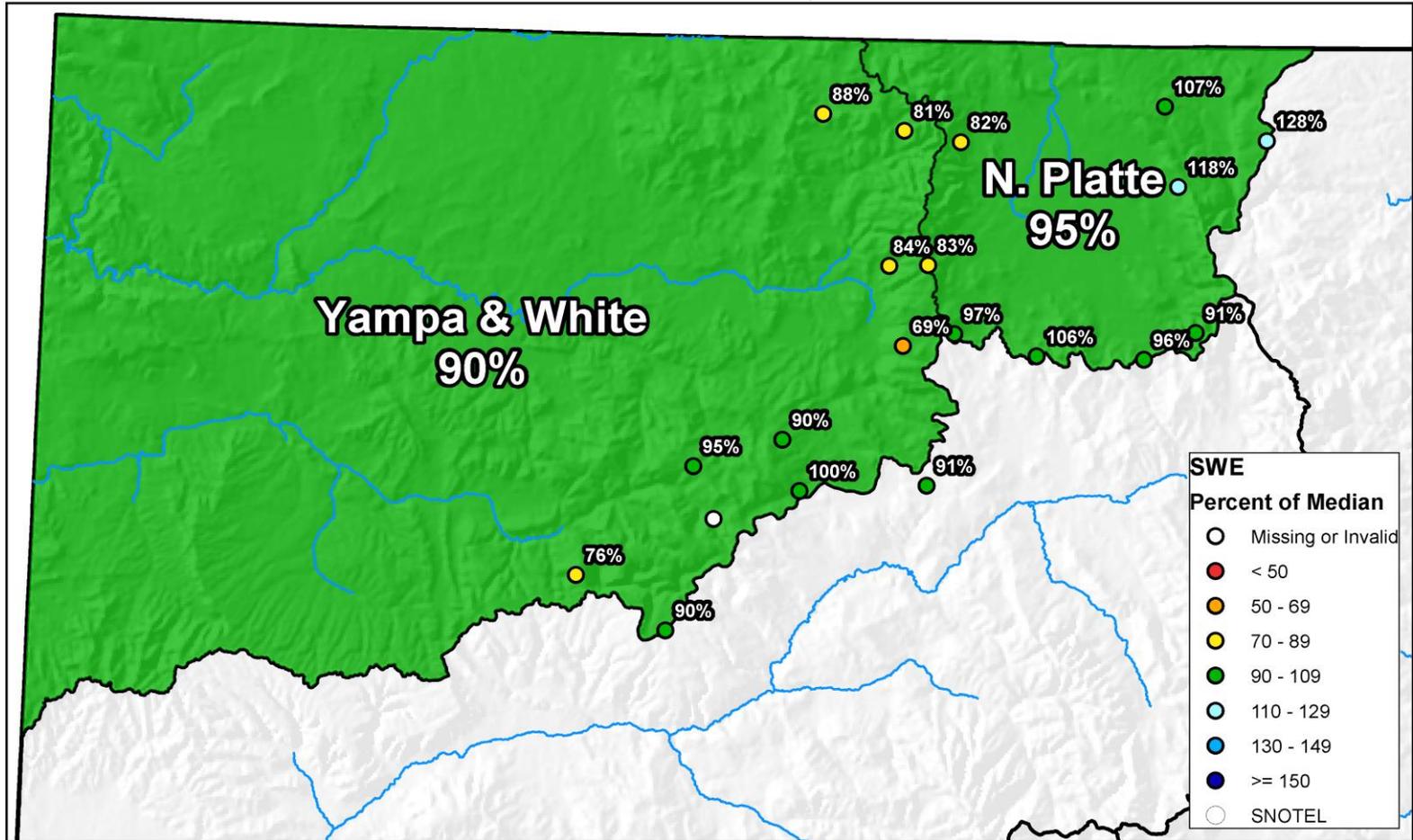




## Yampa, White, and North Platte River Basins Snow Water Equivalent (SWE) Summary Current as of Feb 12, 2021



## Yampa, White, and North Platte River Basins Snow Water Equivalent (SWE) Summary Current as of Mar 17, 2021



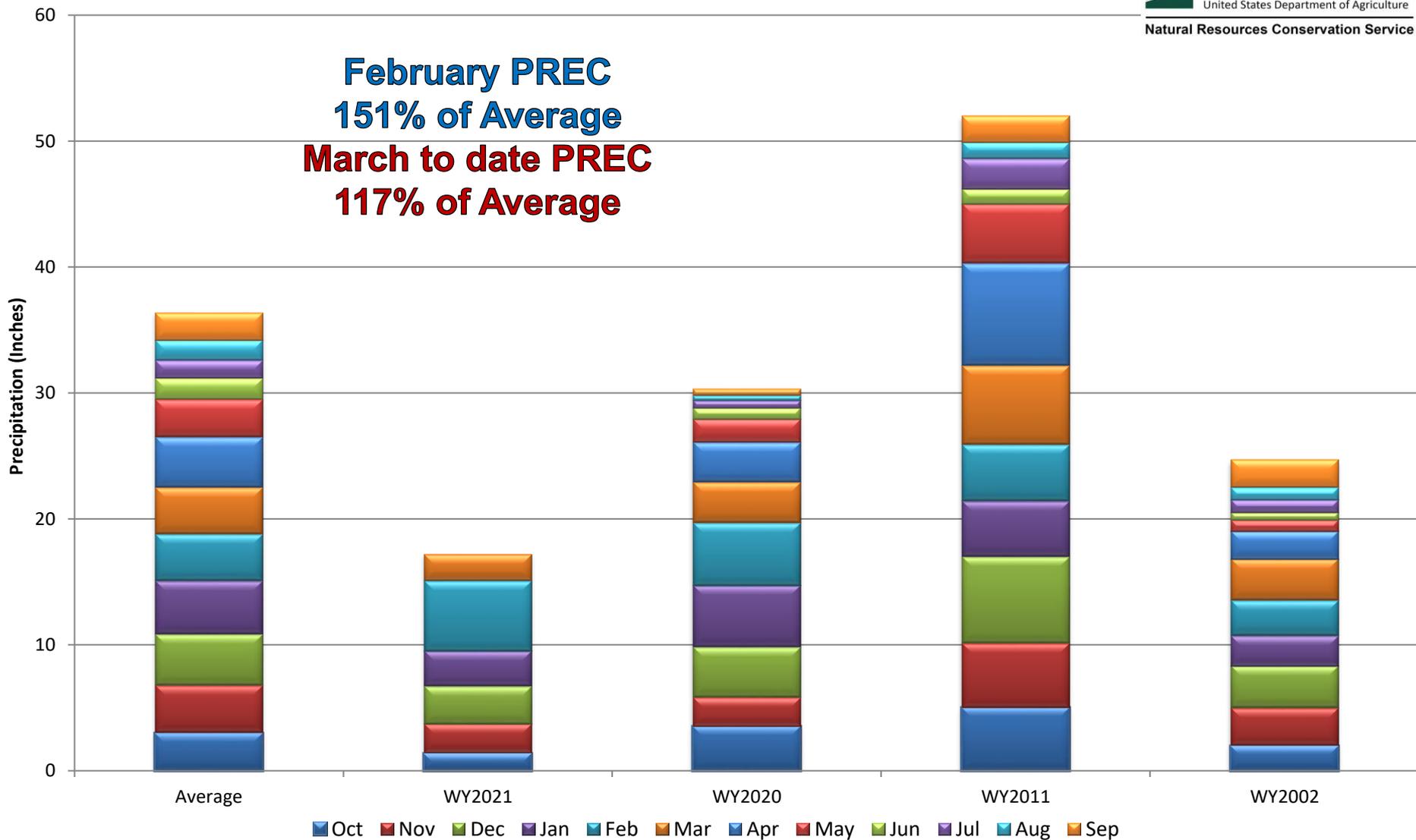


## Yampa and White River Basins High/Low Monthly Precipitation Summary

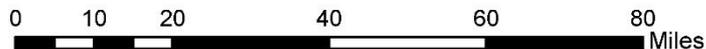
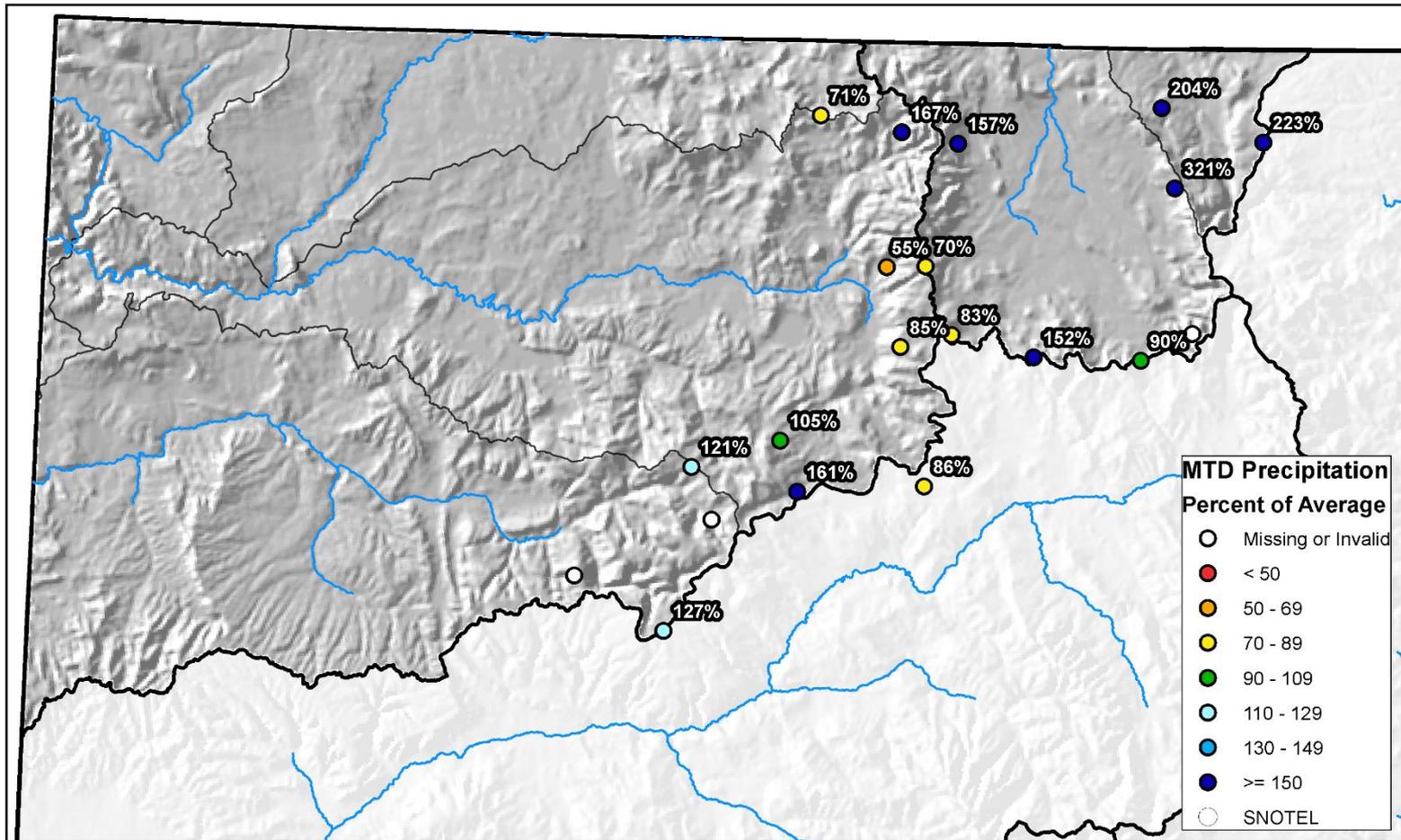
*Based on Provisional SNOTEL data as of Mar 17, 2021*



**February PREC  
151% of Average**  
**March to date PREC  
117% of Average**

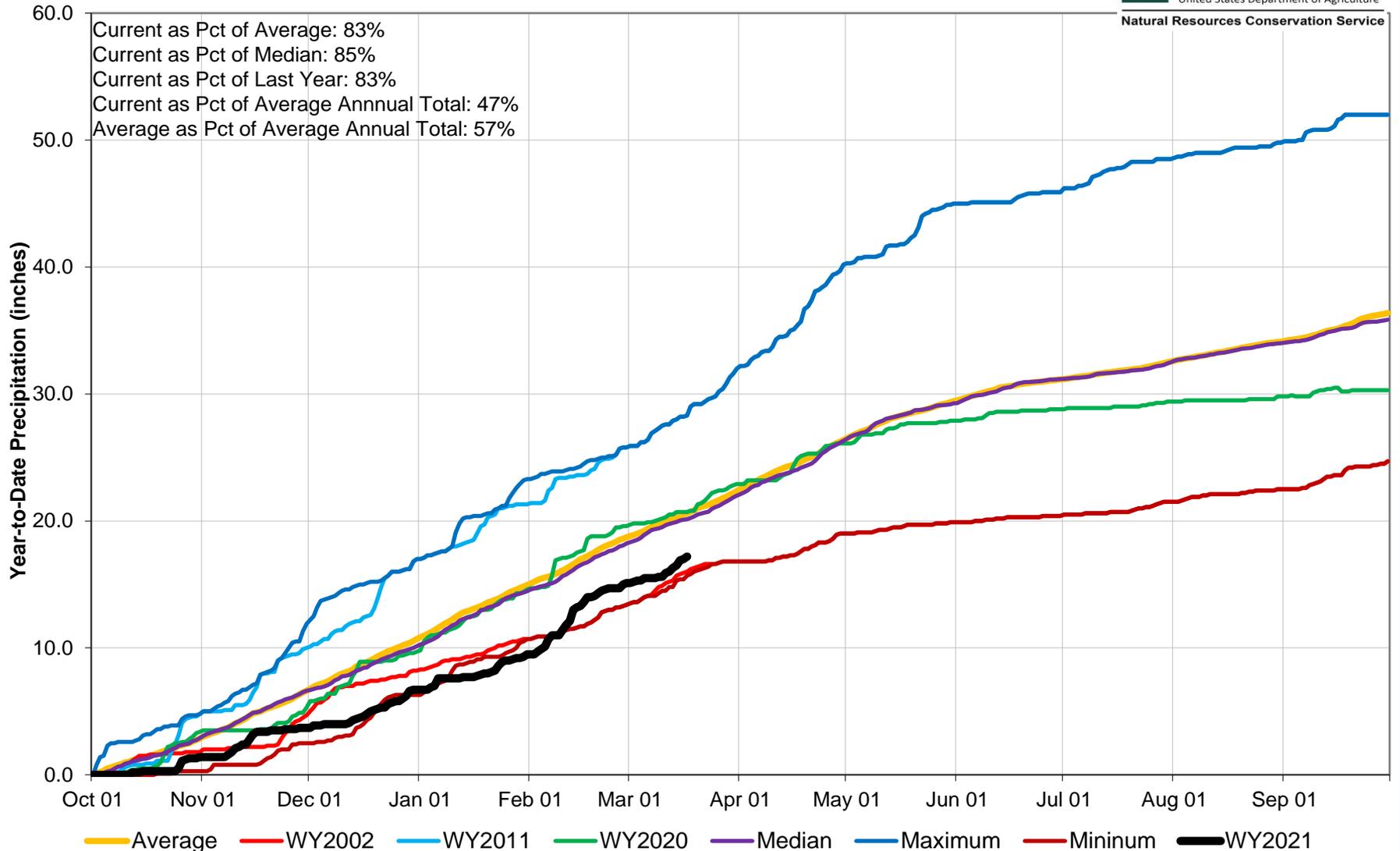


## Yampa, White, and North Platte River Basins Month to Date Precipitation Summary Current as of Mar 17, 2021

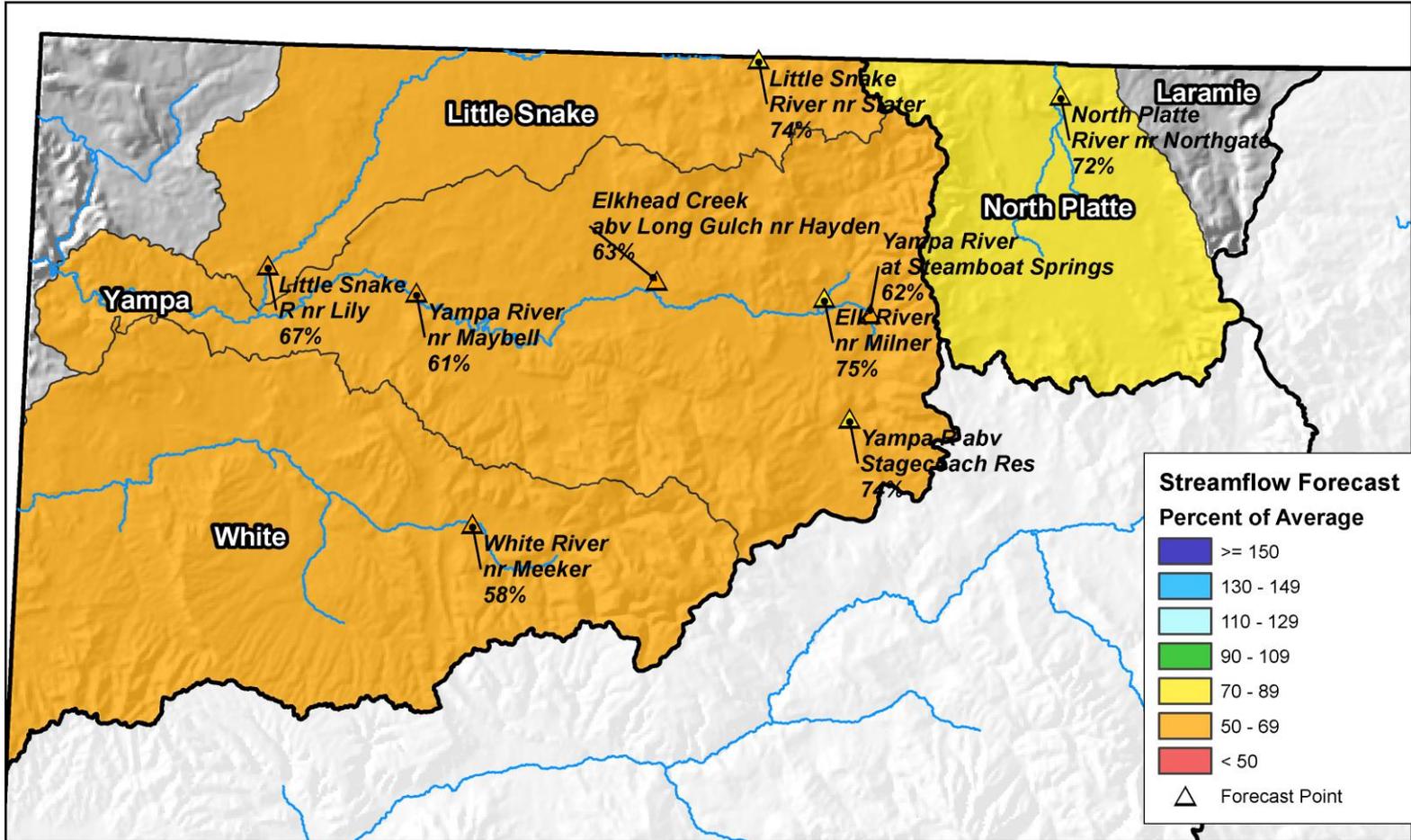


## Yampa and White River Basins High/Low Year-to-Date Precipitation Summary

*Based on Provisional SNOTEL data as of Mar 17, 2021*

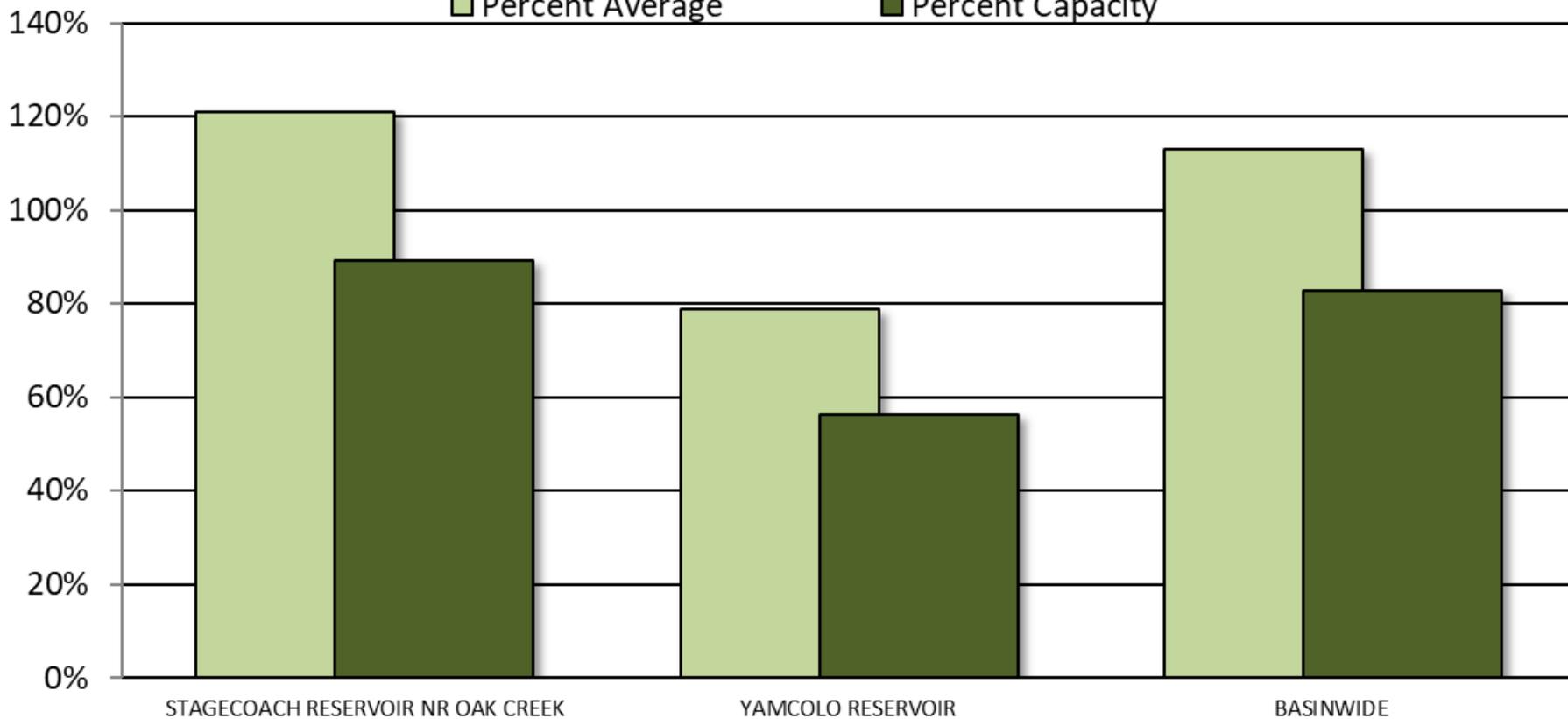


## Yampa, White, and North Platte River Basins Streamflow Forecast Summary March 1, 2021



## End of February Reservoir Storage

■ Percent Average     
 ■ Percent Capacity

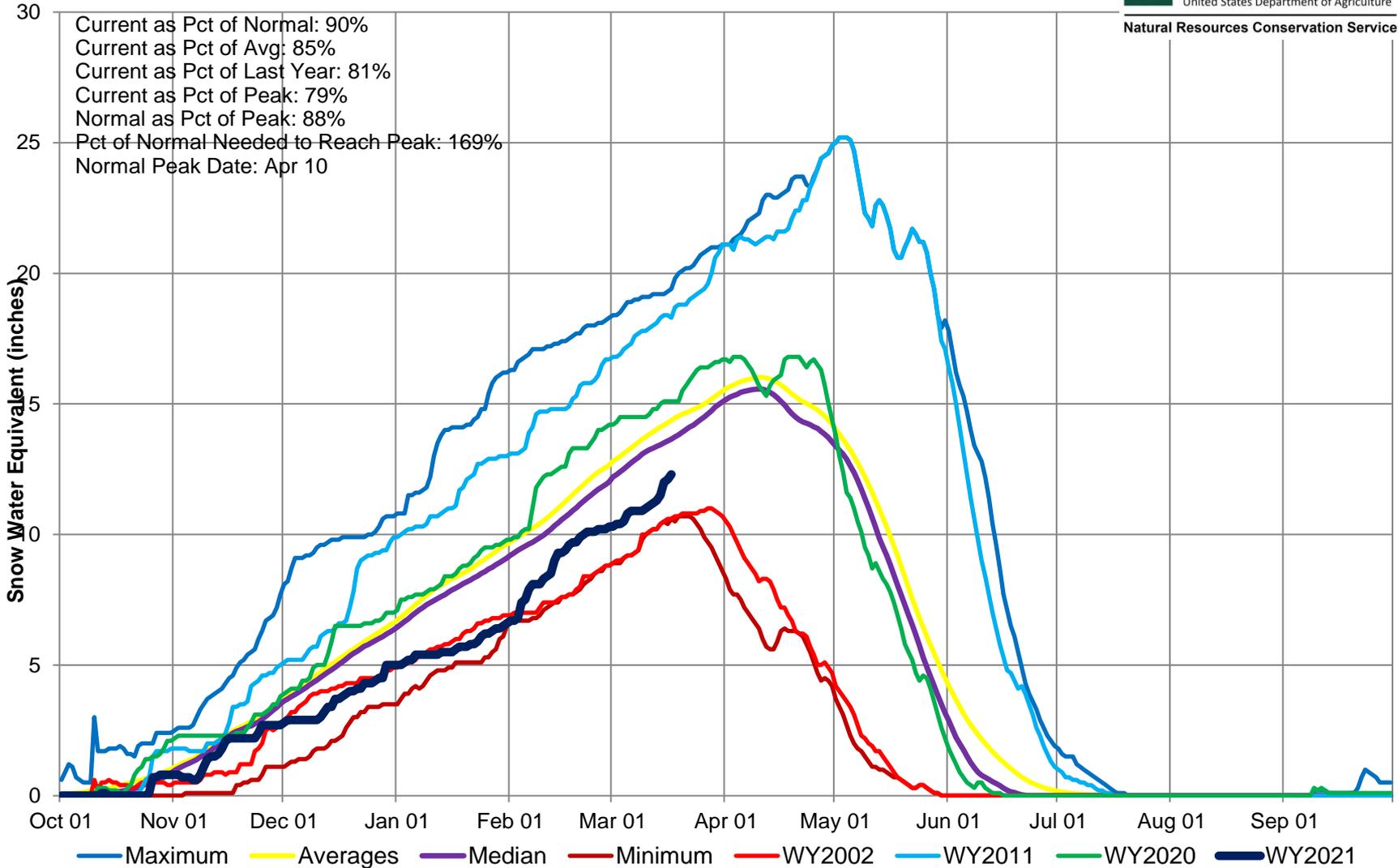




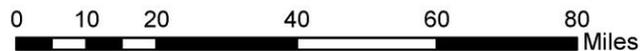
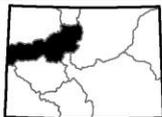
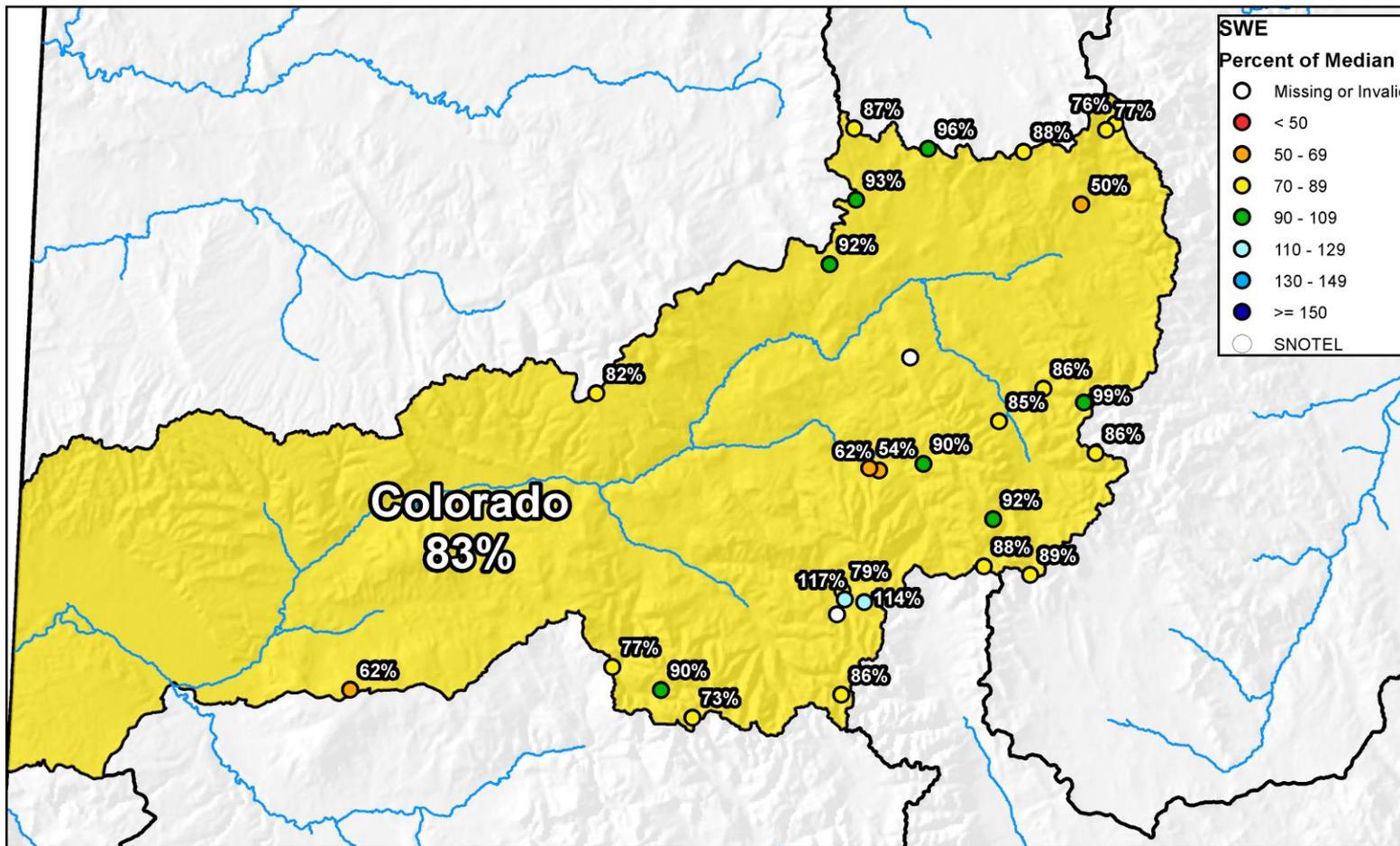
## Upper Colorado River Basin High/Low Snowpack Summary

*Based on Provisional SNOTEL data as of Mar 17, 2021*

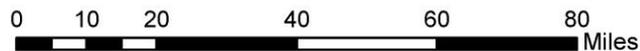
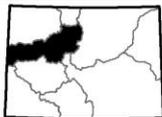
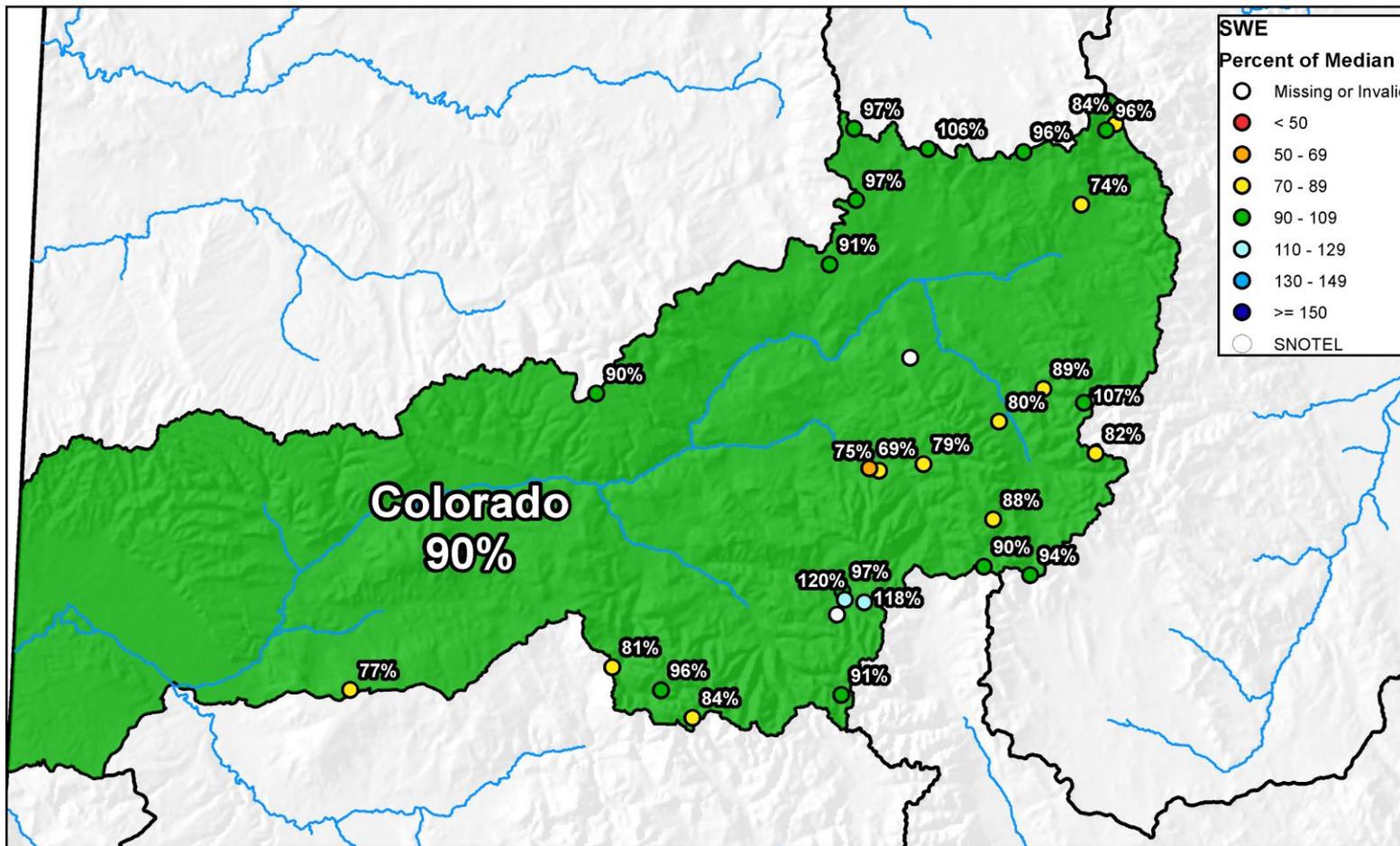
USDA  
United States Department of Agriculture  
Natural Resources Conservation Service



## Upper Colorado River Basin Snow Water Equivalent (SWE) Summary Current as of Feb 12, 2021



## Upper Colorado River Basin Snow Water Equivalent (SWE) Summary Current as of Mar 17, 2021



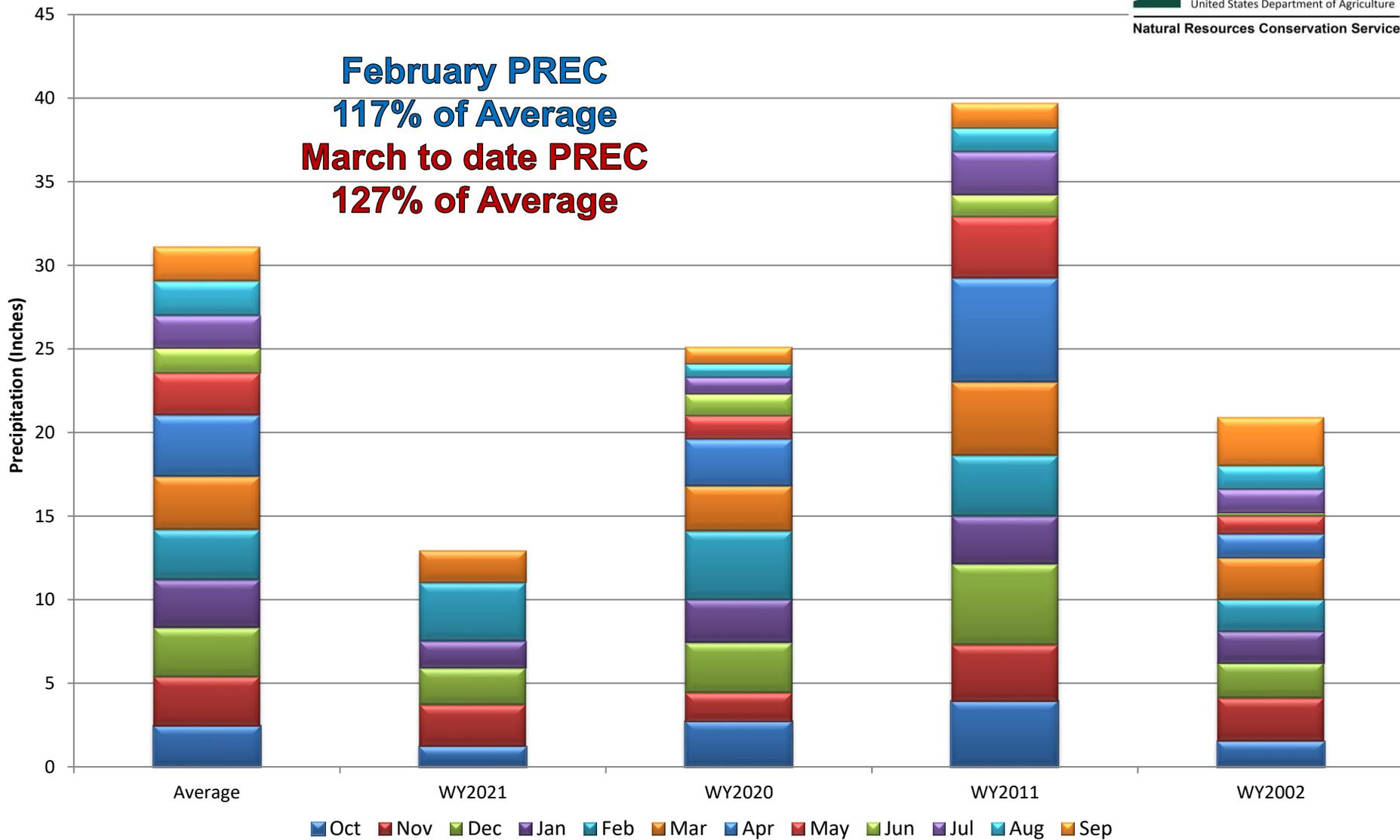


## Upper Colorado River Basin High/Low Monthly Precipitation Summary

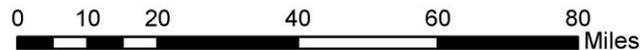
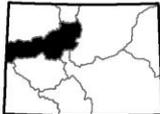
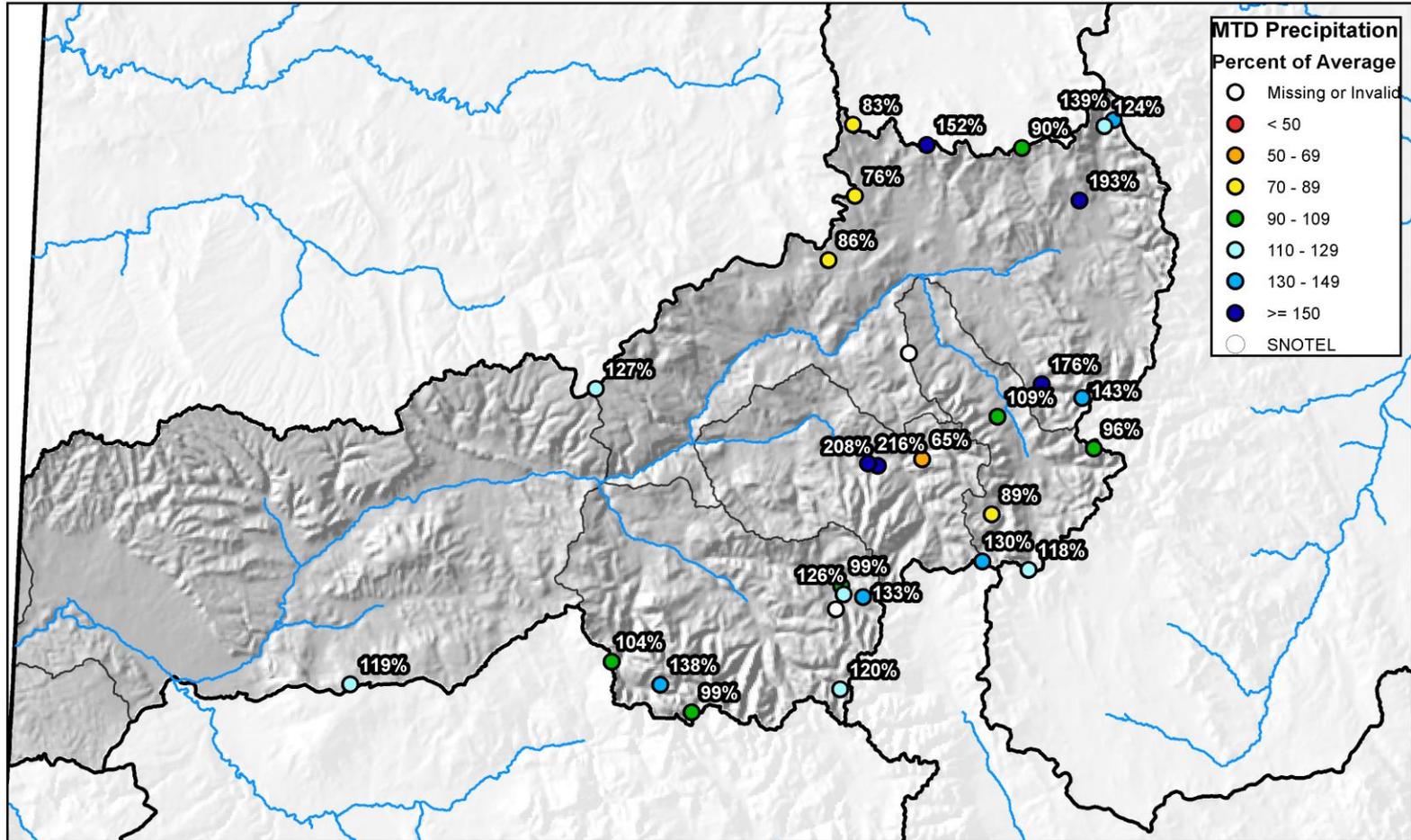
*Based on Provisional SNOTEL data as of Mar 17, 2021*



**February PREC**  
**117% of Average**  
**March to date PREC**  
**127% of Average**



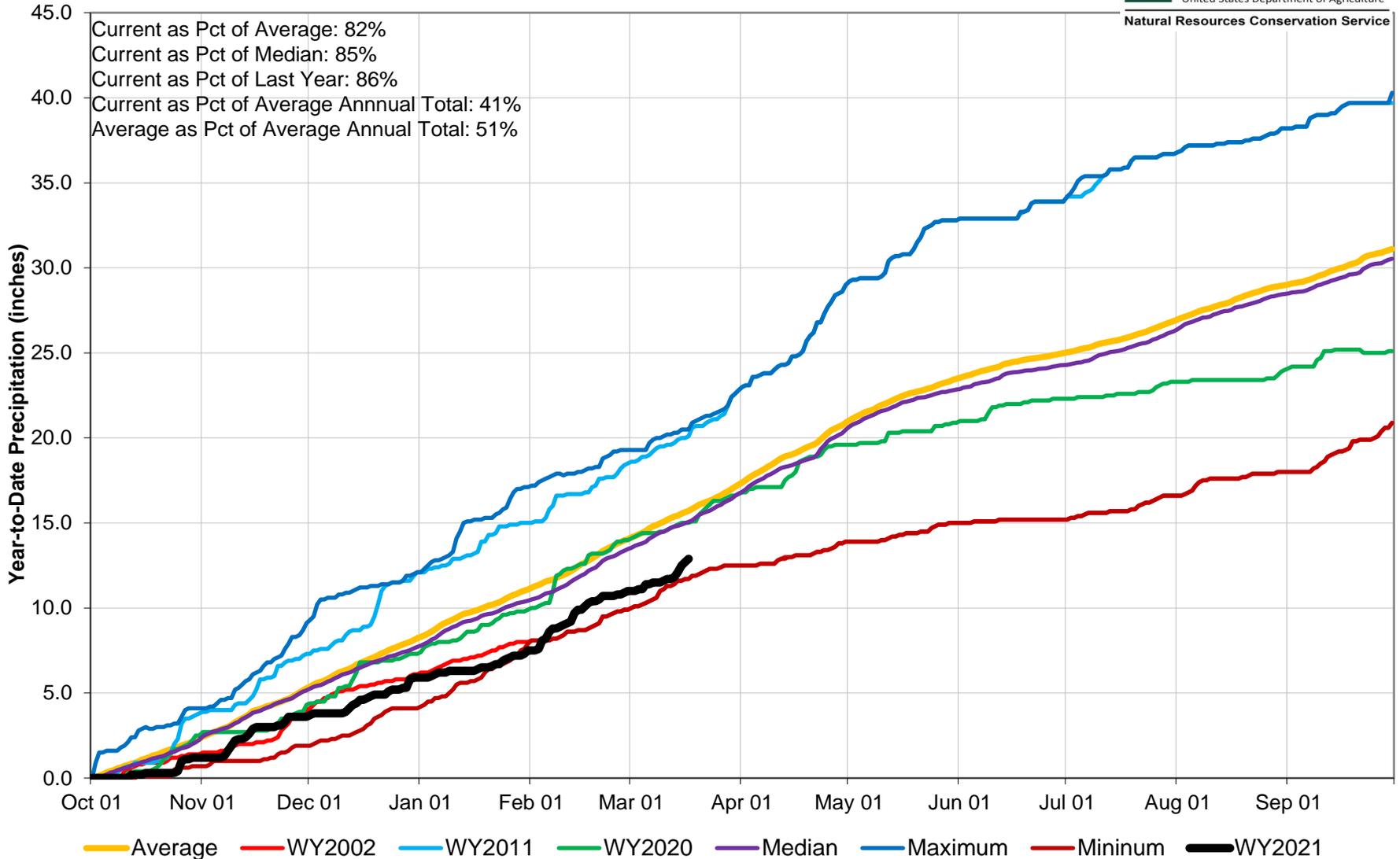
## Upper Colorado River Basin Month to Date Precipitation Summary Current as of Mar 17, 2021





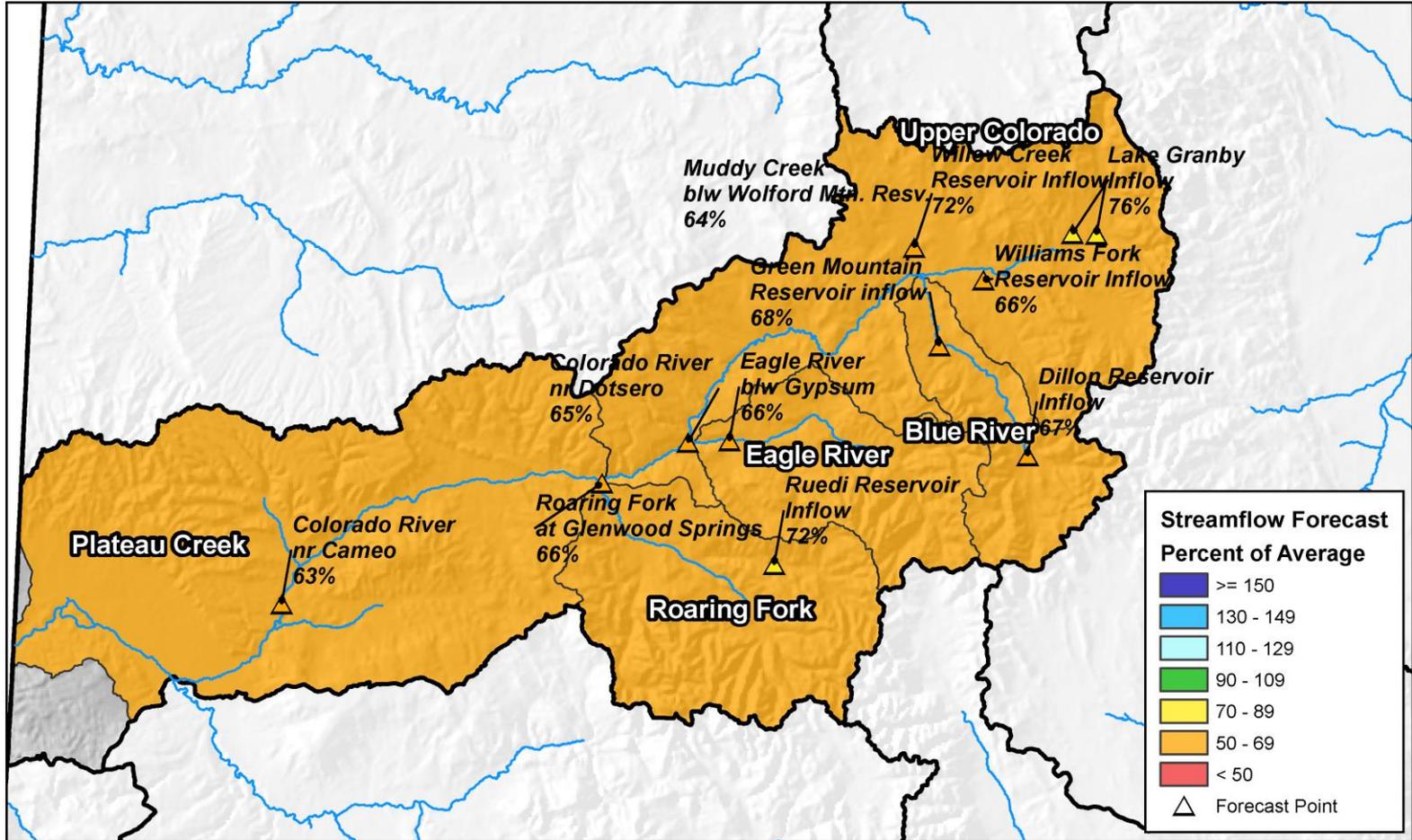
## Upper Colorado River Basin High/Low Year-to-Date Precipitation Summary

*Based on Provisional SNOTEL data as of Mar 17, 2021*



## Upper Colorado River Basin Streamflow Forecast Summary

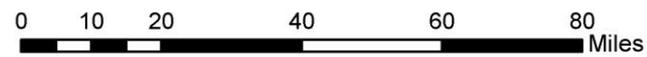
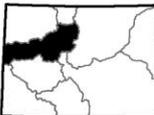
March 1, 2021



**Streamflow Forecast Percent of Average**

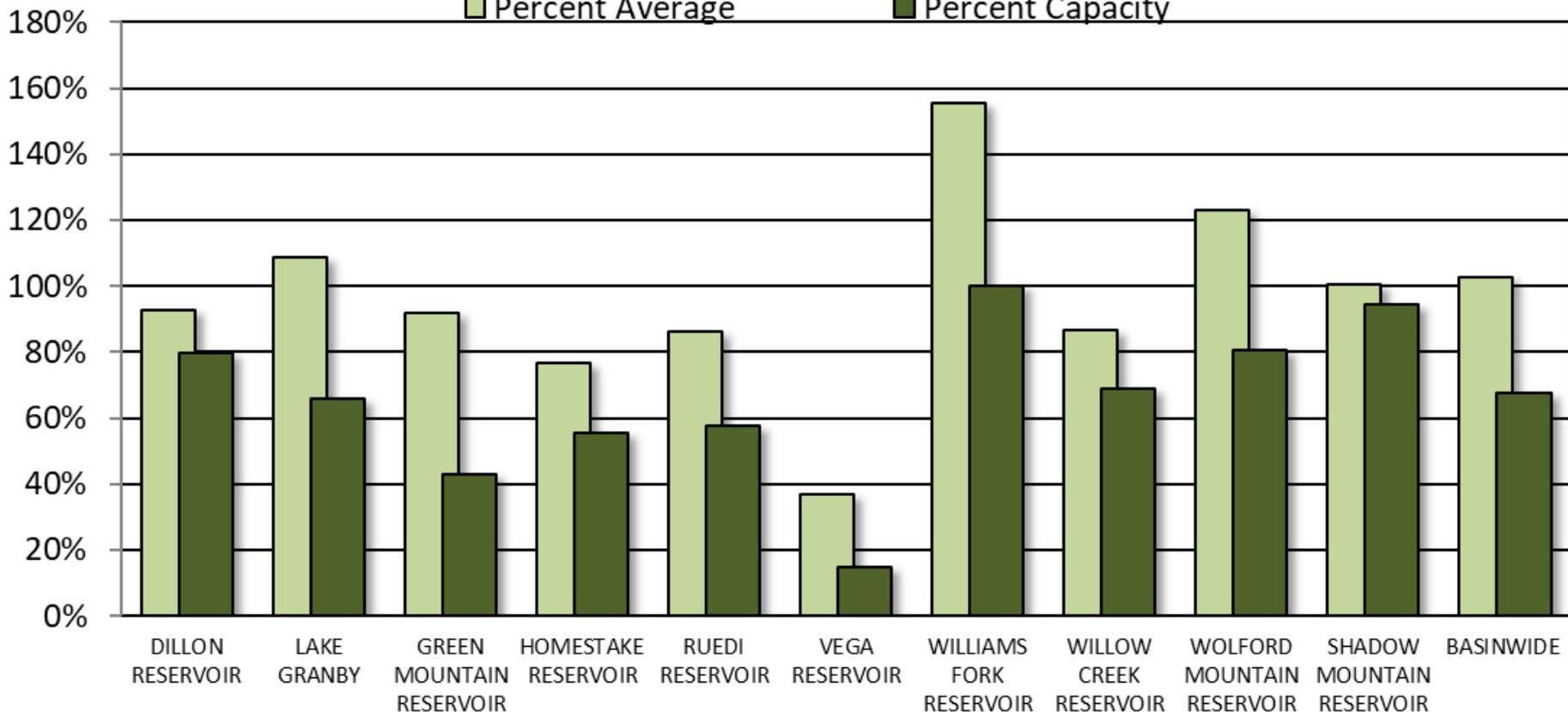
- >= 150
- 130 - 149
- 110 - 129
- 90 - 109
- 70 - 89
- 50 - 69
- < 50

△ Forecast Point



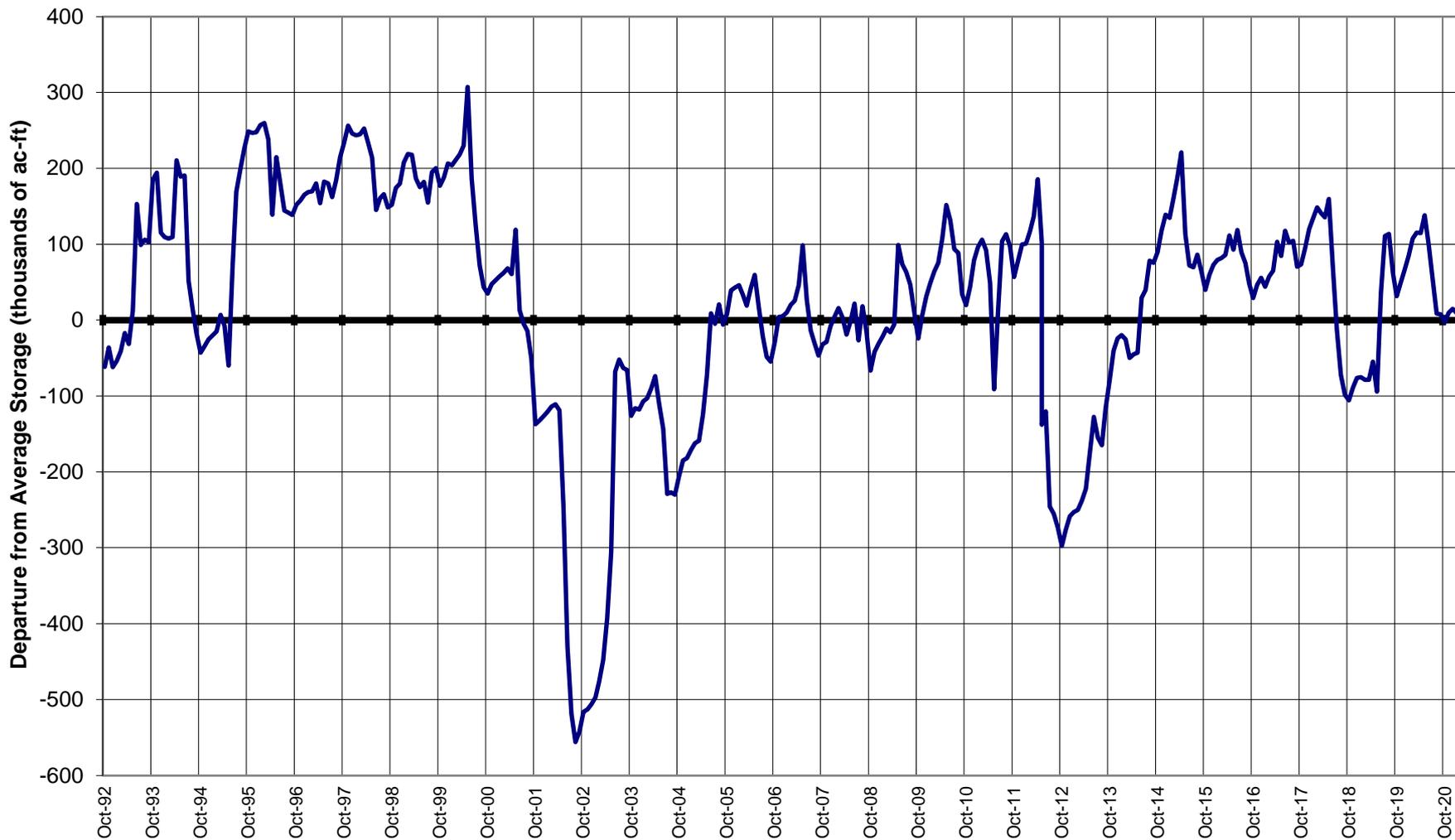
## End of February Reservoir Storage

■ Percent Average      ■ Percent Capacity



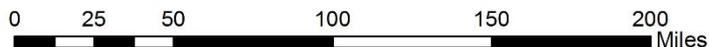
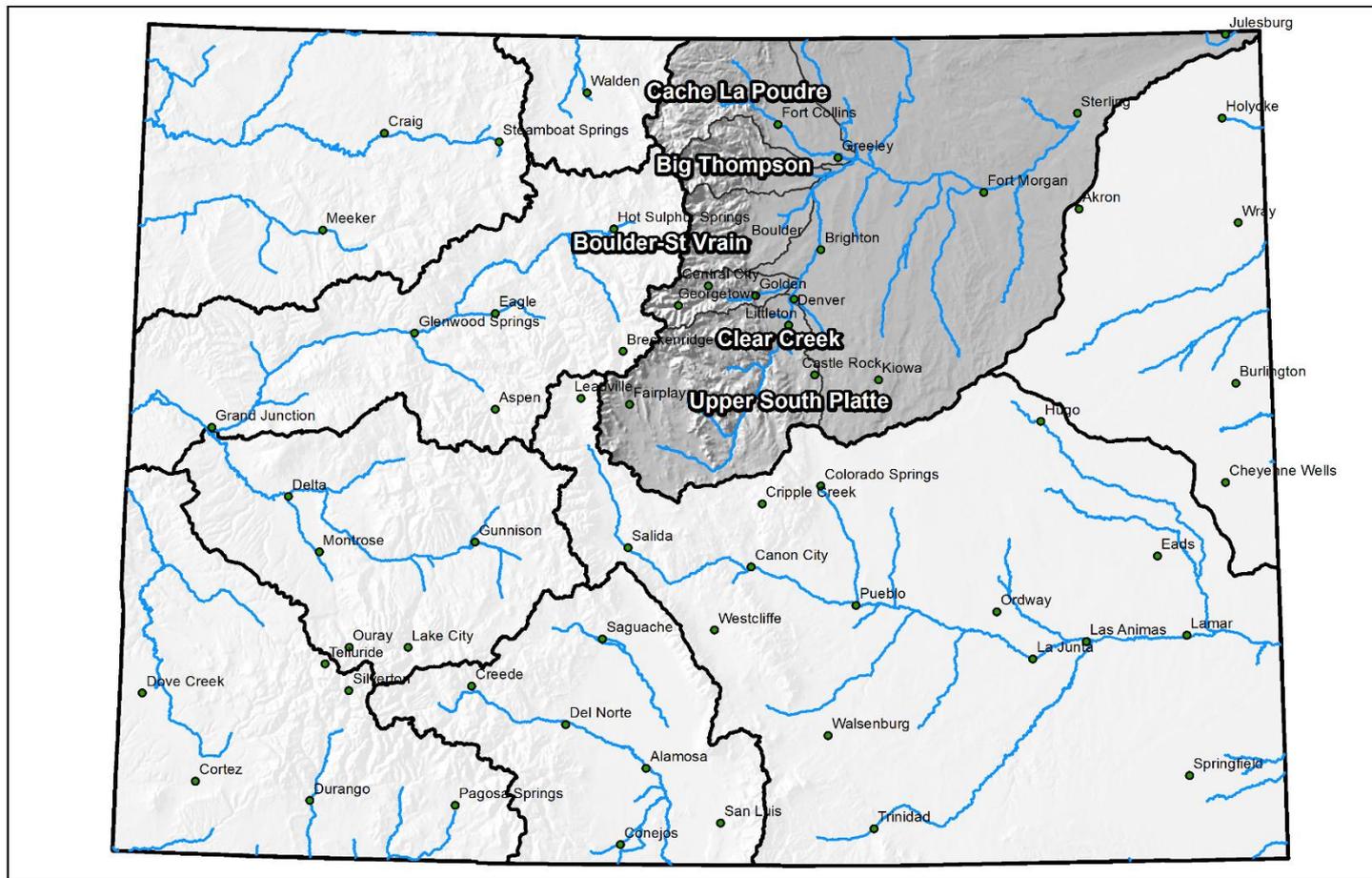


## COLORADO RIVER BASIN Reservoir Storage Departure from Average



## Major Basin Summary

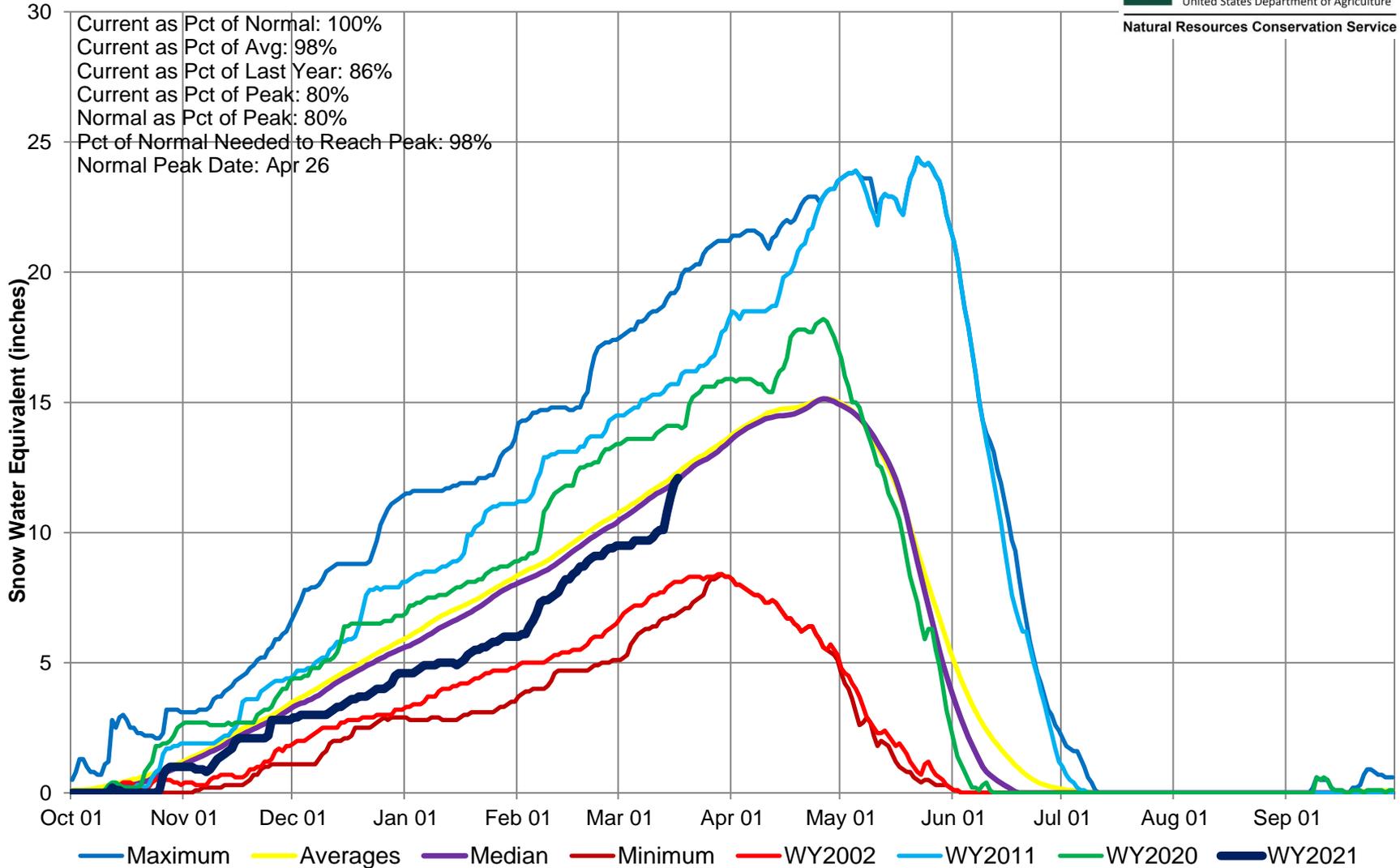
### South Platte River Basin





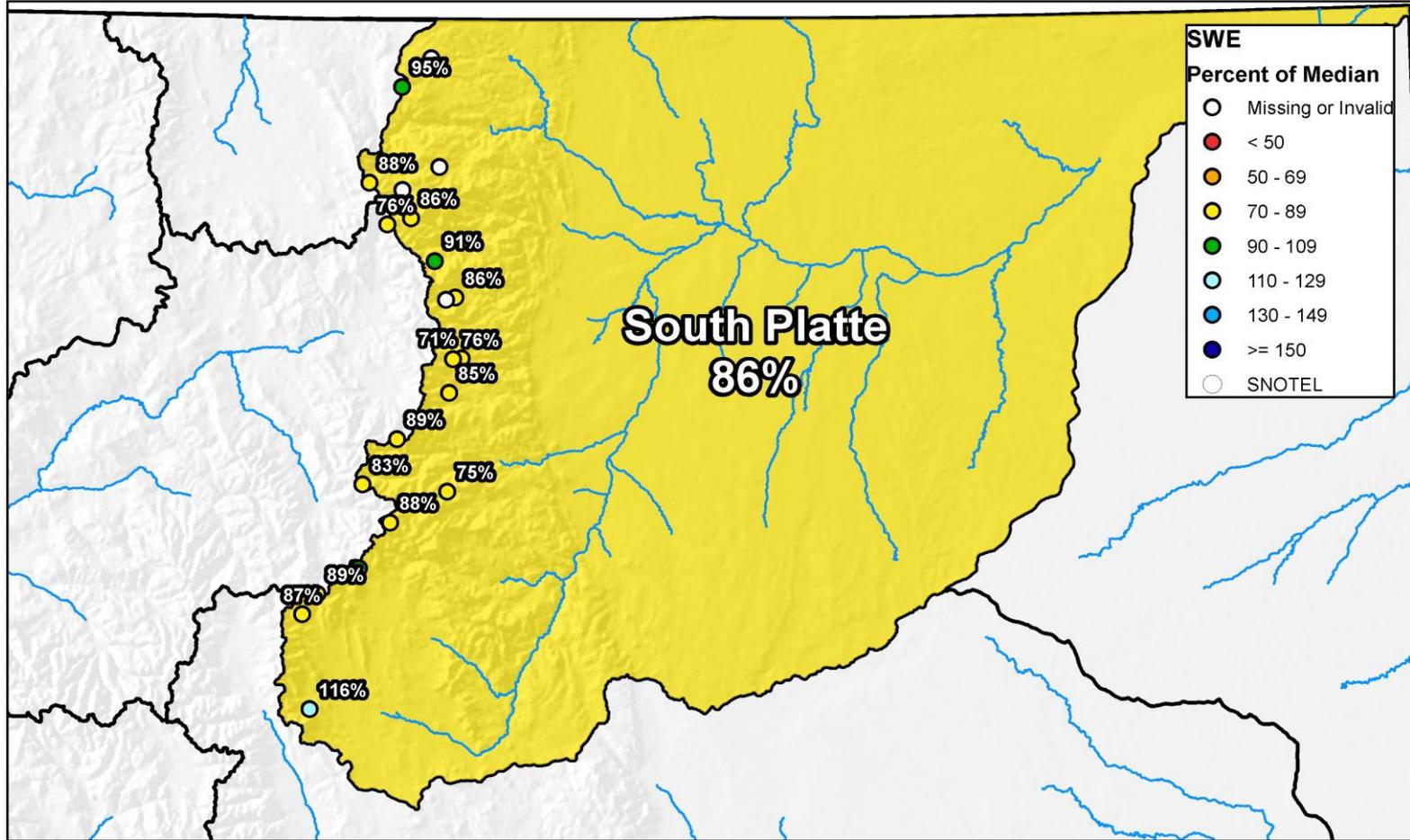
## South Platte River Basin High/Low Snowpack Summary

*Based on Provisional SNOTEL data as of Mar 17, 2021*



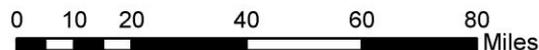
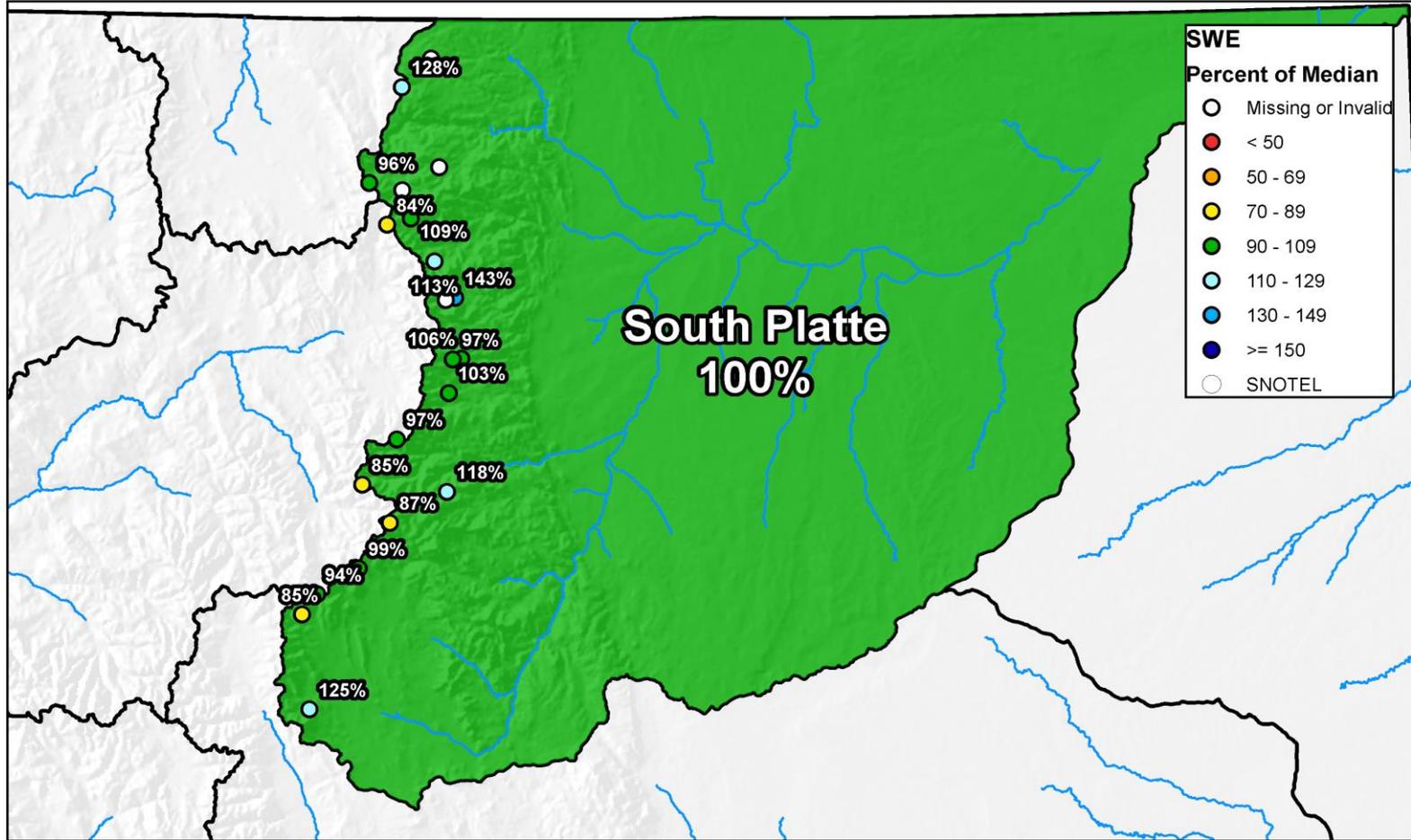
## South Platte River Basin Snow Water Equivalent (SWE) Summary

Current as of Feb 12, 2021



## South Platte River Basin Snow Water Equivalent (SWE) Summary

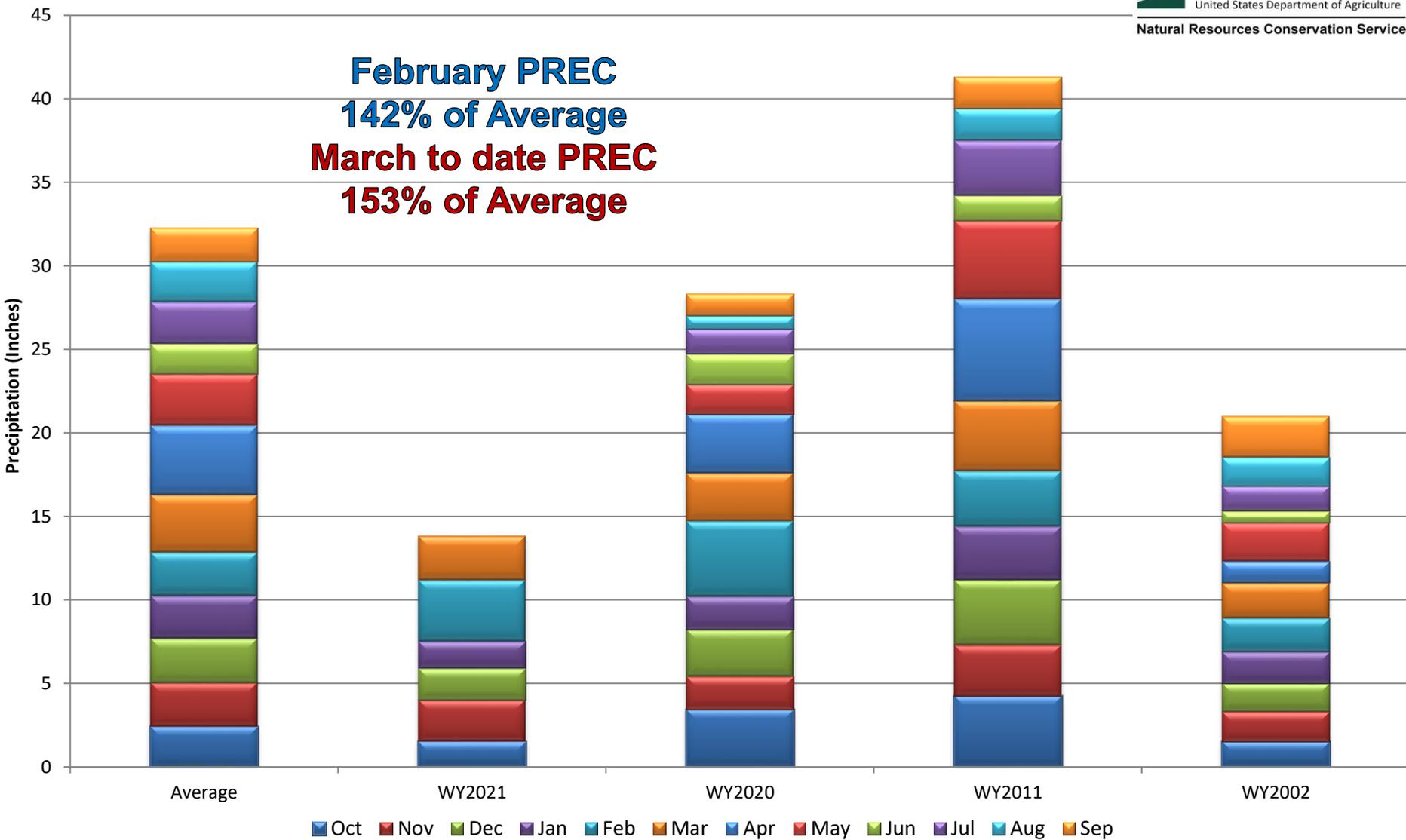
Current as of Mar 17, 2021



## South Platte River Basin High/Low Monthly Precipitation Summary

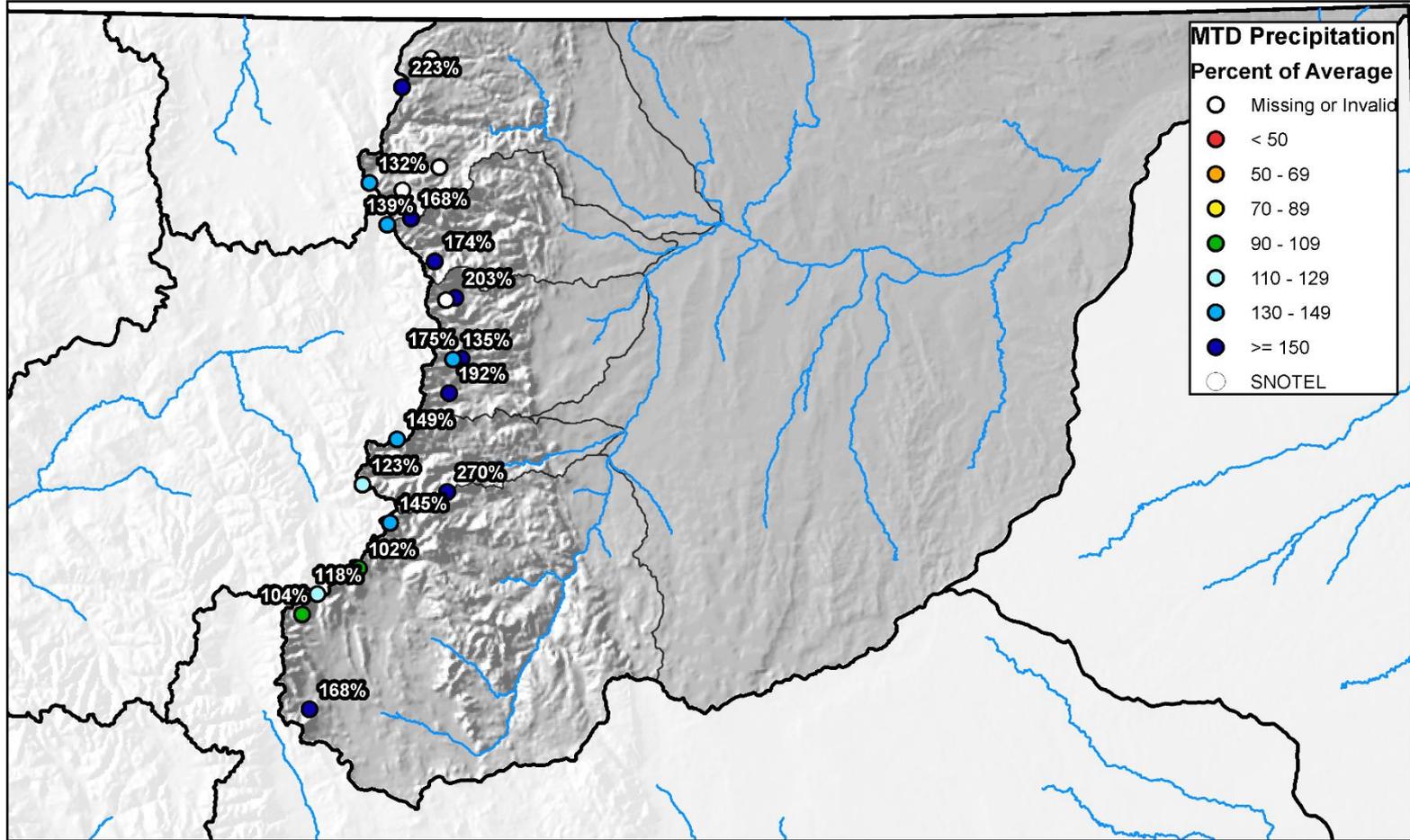
*Based on Provisional SNOTEL data as of Mar 17, 2021*

**February PREC**  
**142% of Average**  
**March to date PREC**  
**153% of Average**



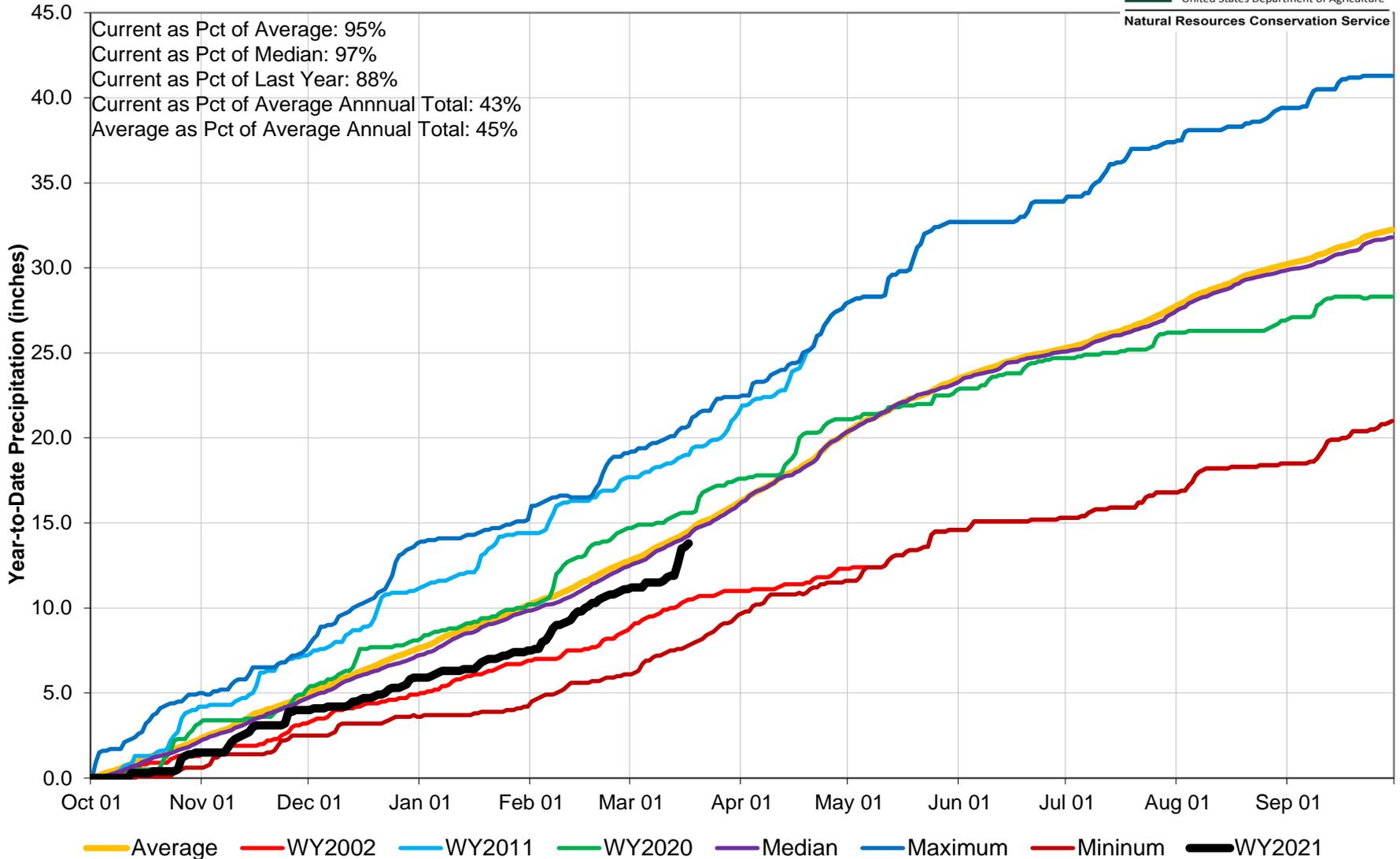
## South Platte River Basin Month to Date Precipitation Summary

Current as of Mar 17, 2021



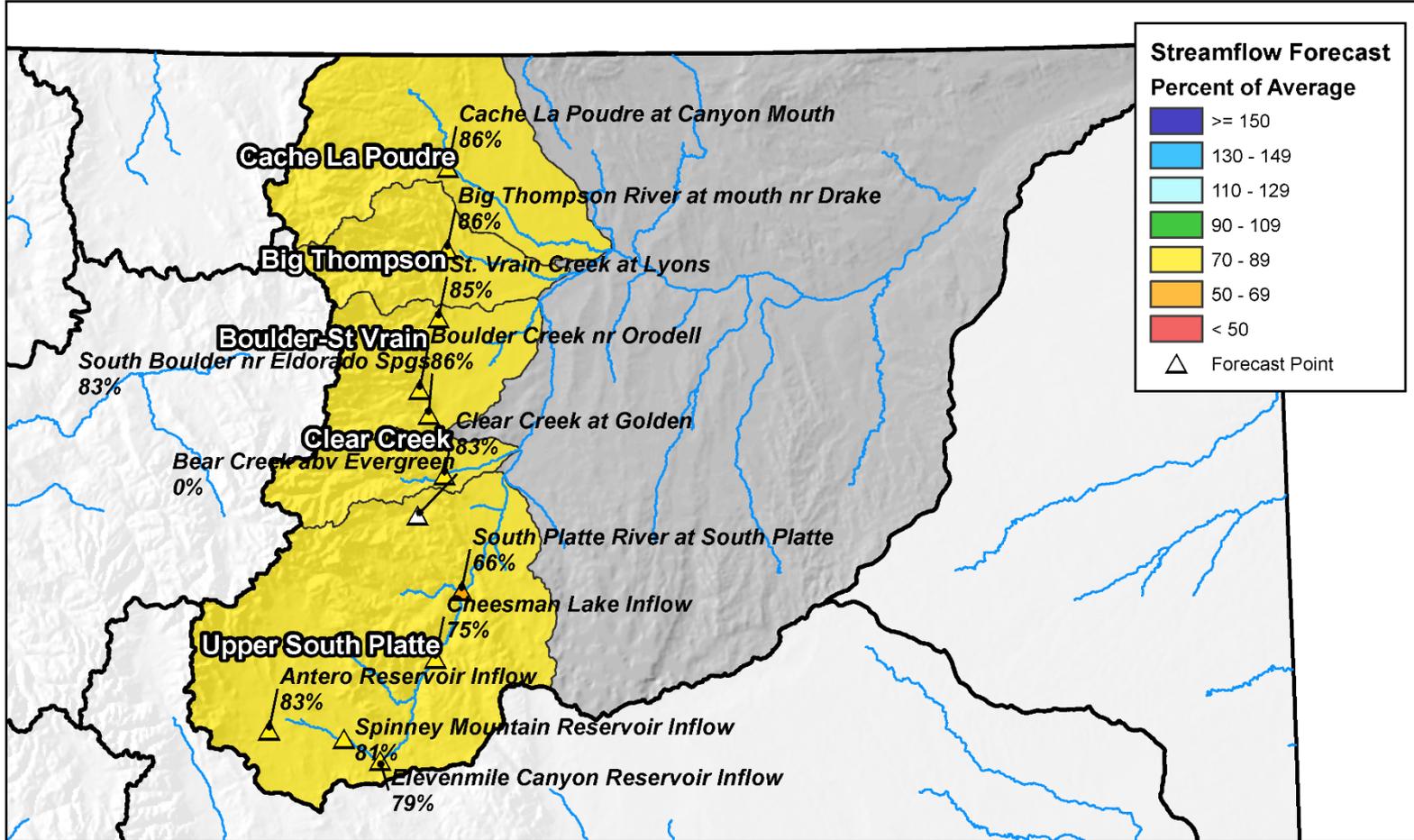
## South Platte River Basin High/Low Year-to-Date Precipitation Summary

*Based on Provisional SNOTEL data as of Mar 17, 2021*



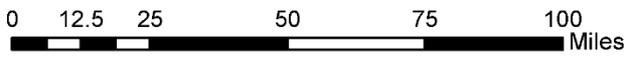
## South Platte River Basin Streamflow Forecast Summary

March 1, 2021



**Streamflow Forecast**  
Percent of Average

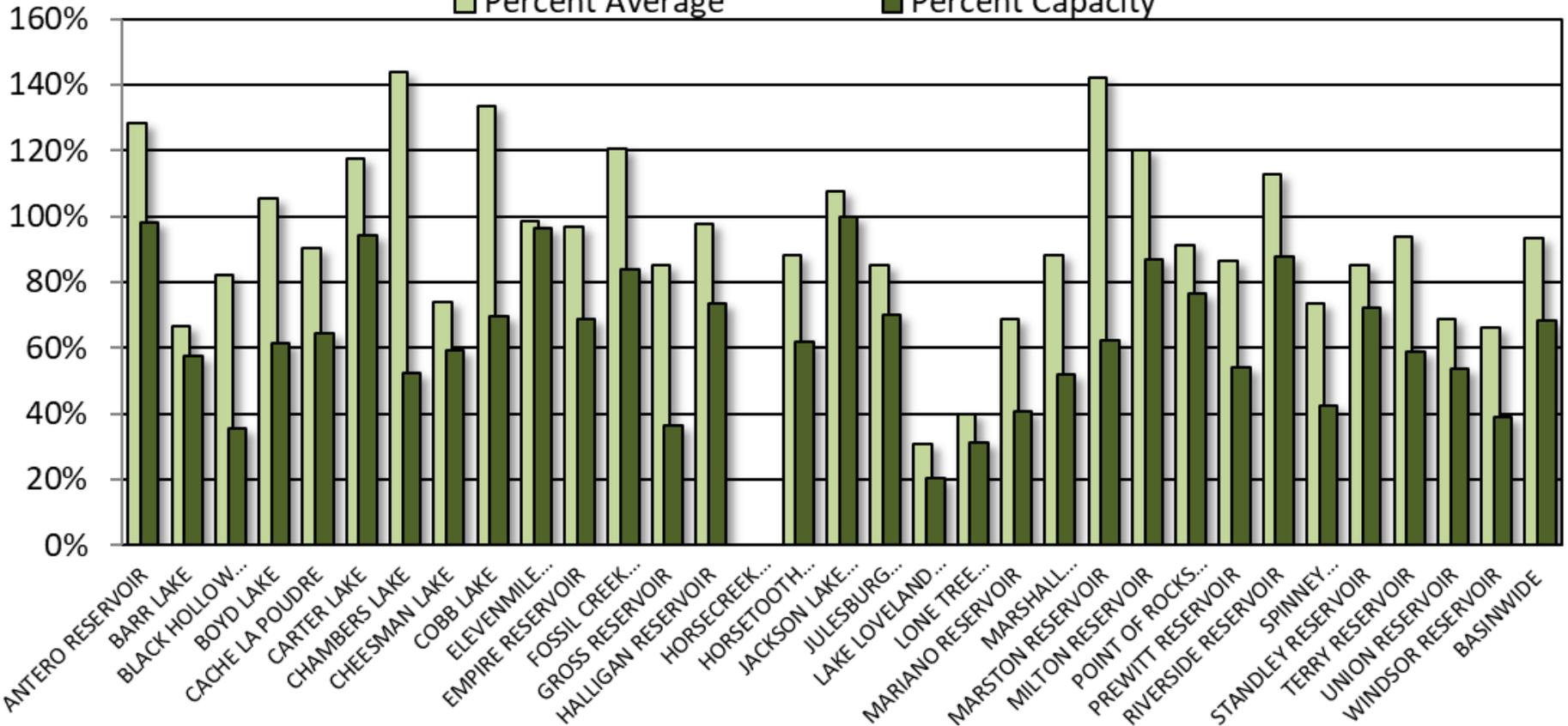
- >= 150
- 130 - 149
- 110 - 129
- 90 - 109
- 70 - 89
- 50 - 69
- < 50
- Forecast Point



## End of February Reservoir Storage

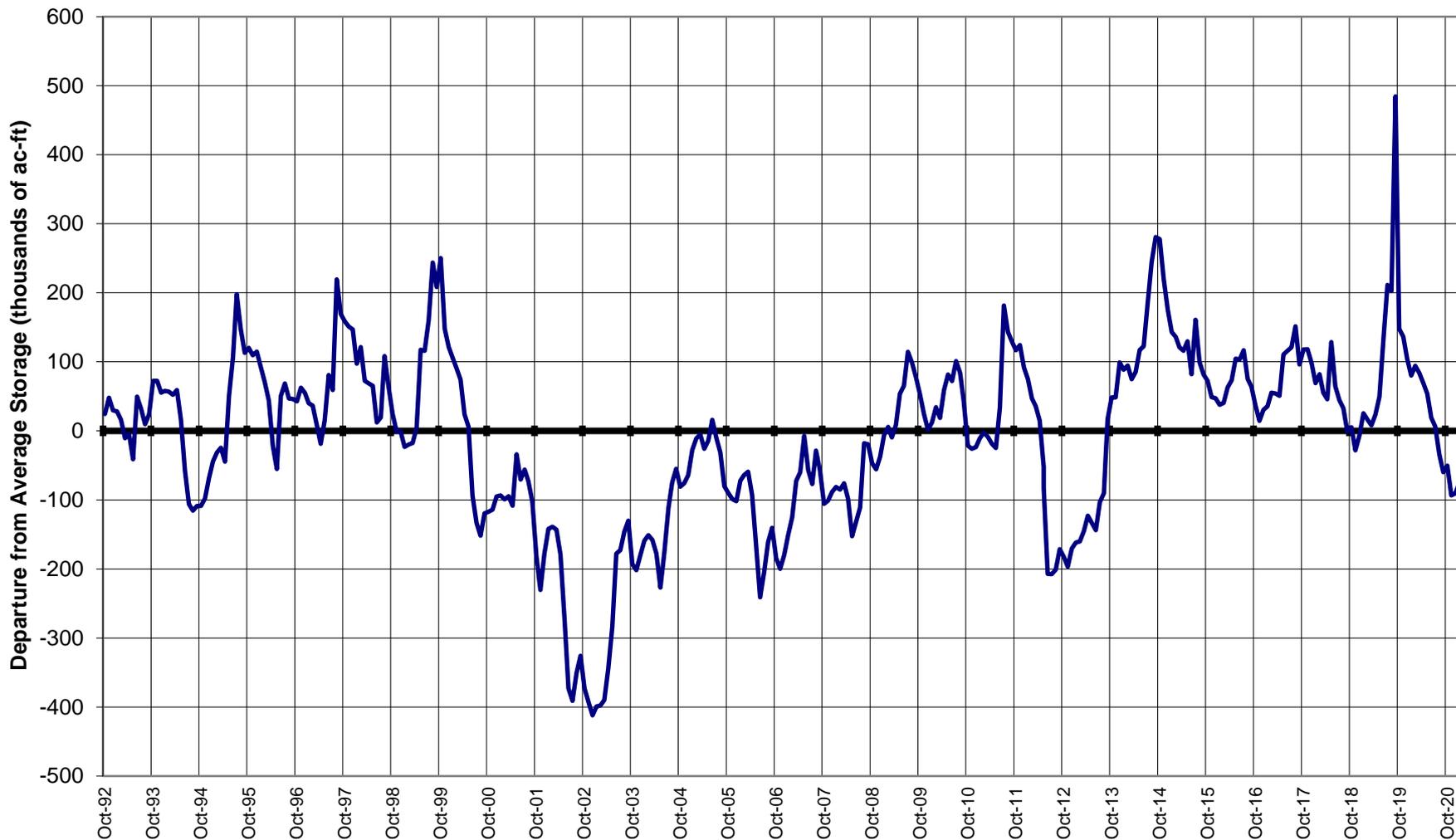
■ Percent Average

■ Percent Capacity





## SOUTH PLATTE RIVER BASIN Reservoir Storage Departure from Average

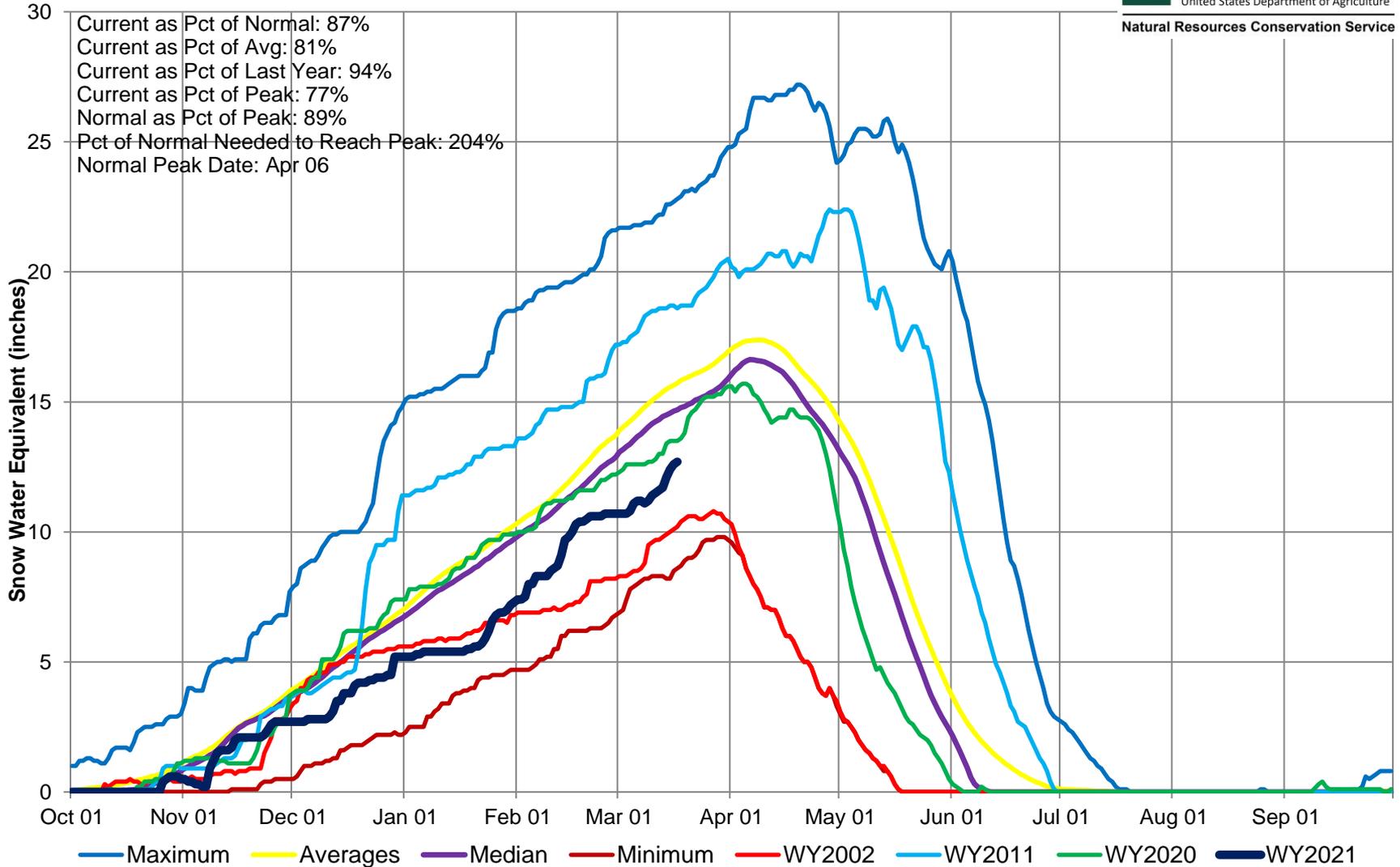






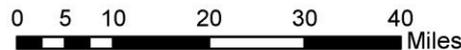
## Gunnison River Basin High/Low Snowpack Summary

*Based on Provisional SNOTEL data as of Mar 17, 2021*



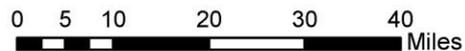
## Gunnison River Basin Snow Water Equivalent (SWE) Summary

Current as of Feb 12, 2021



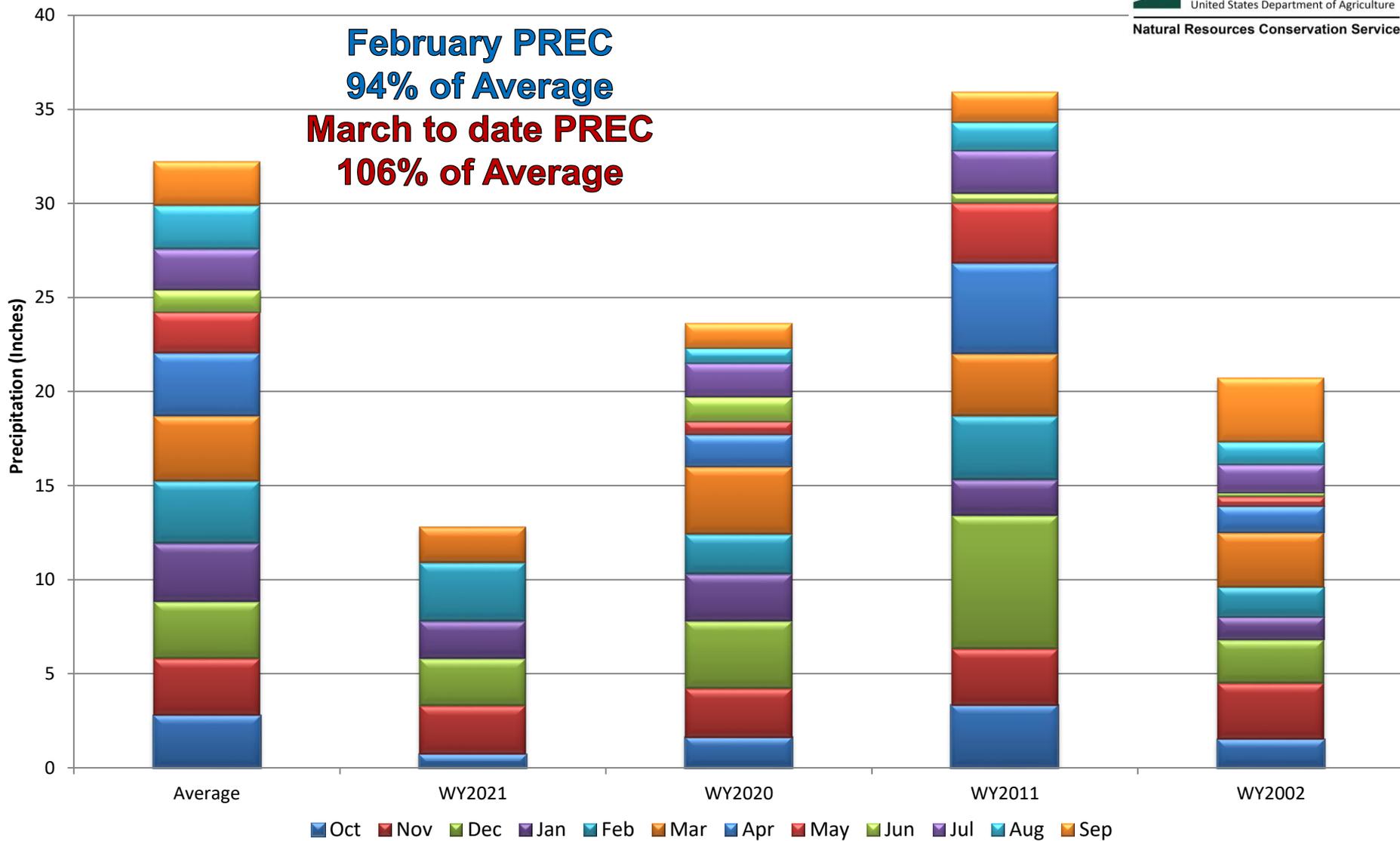
## Gunnison River Basin Snow Water Equivalent (SWE) Summary

Current as of Mar 17, 2021

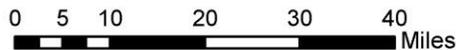
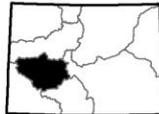
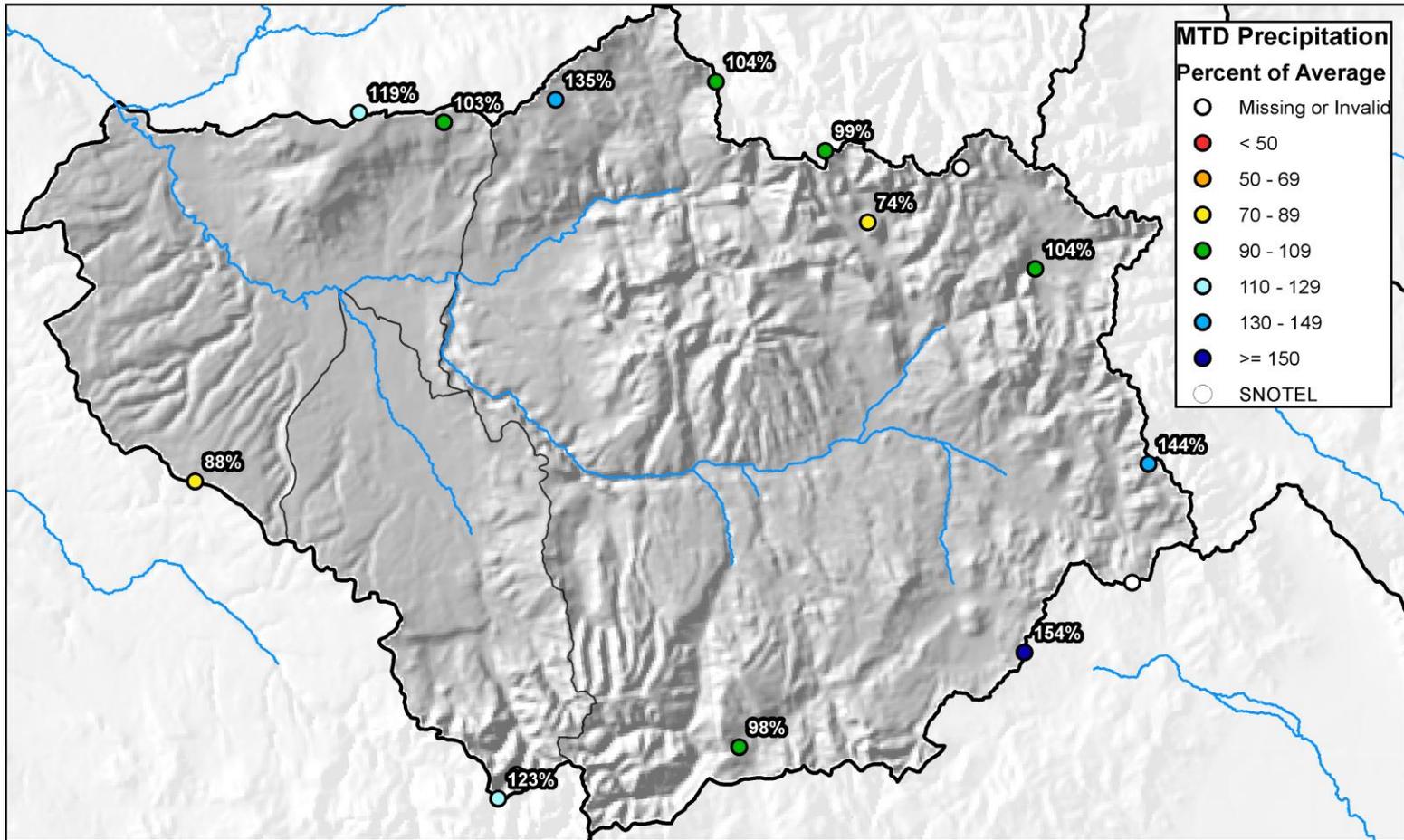


## Gunnison River Basin High/Low Monthly Precipitation Summary

*Based on Provisional SNOTEL data as of Mar 17, 2021*

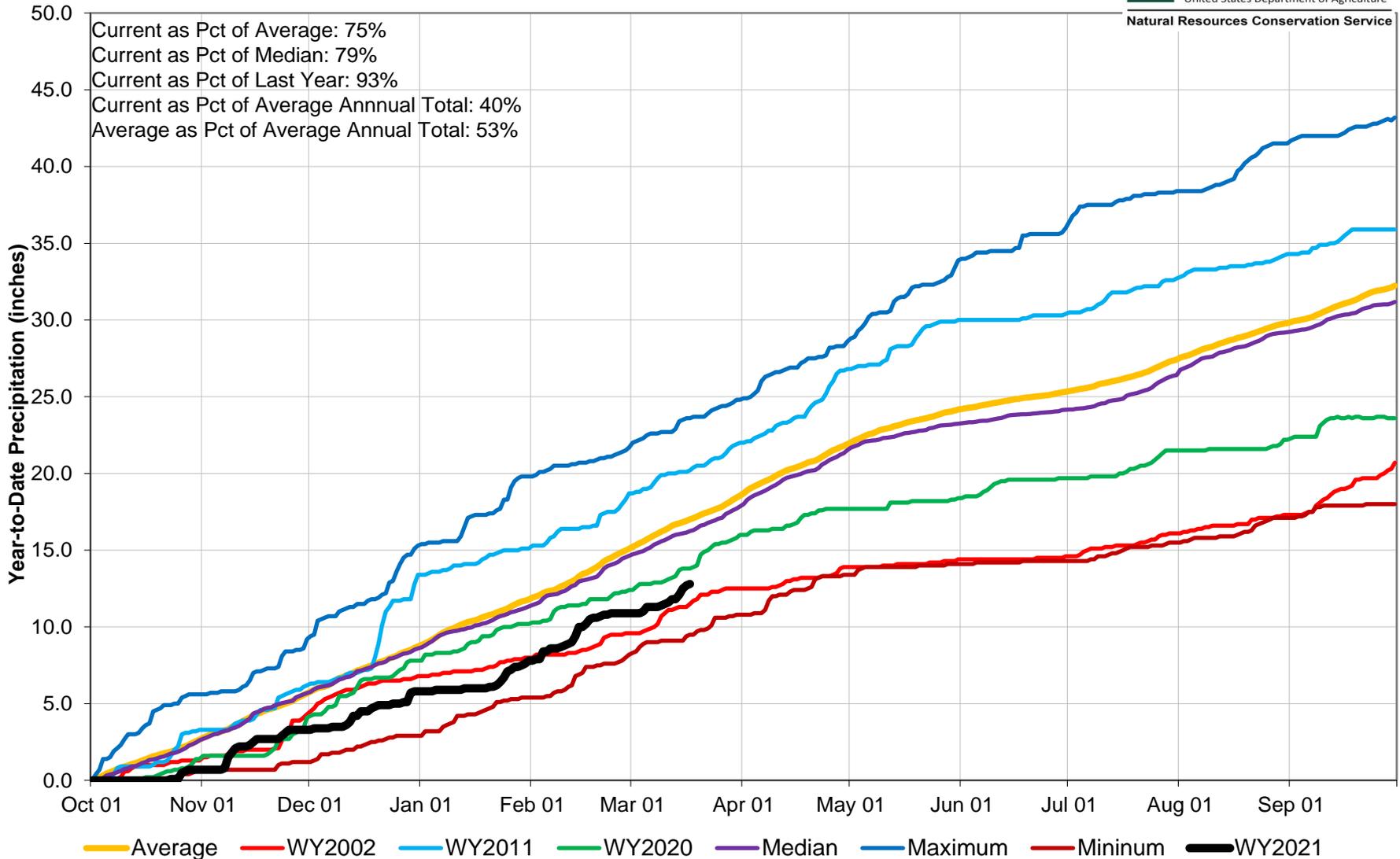


## Gunnison River Basin Month to Date Precipitation Summary Current as of Mar 17, 2021



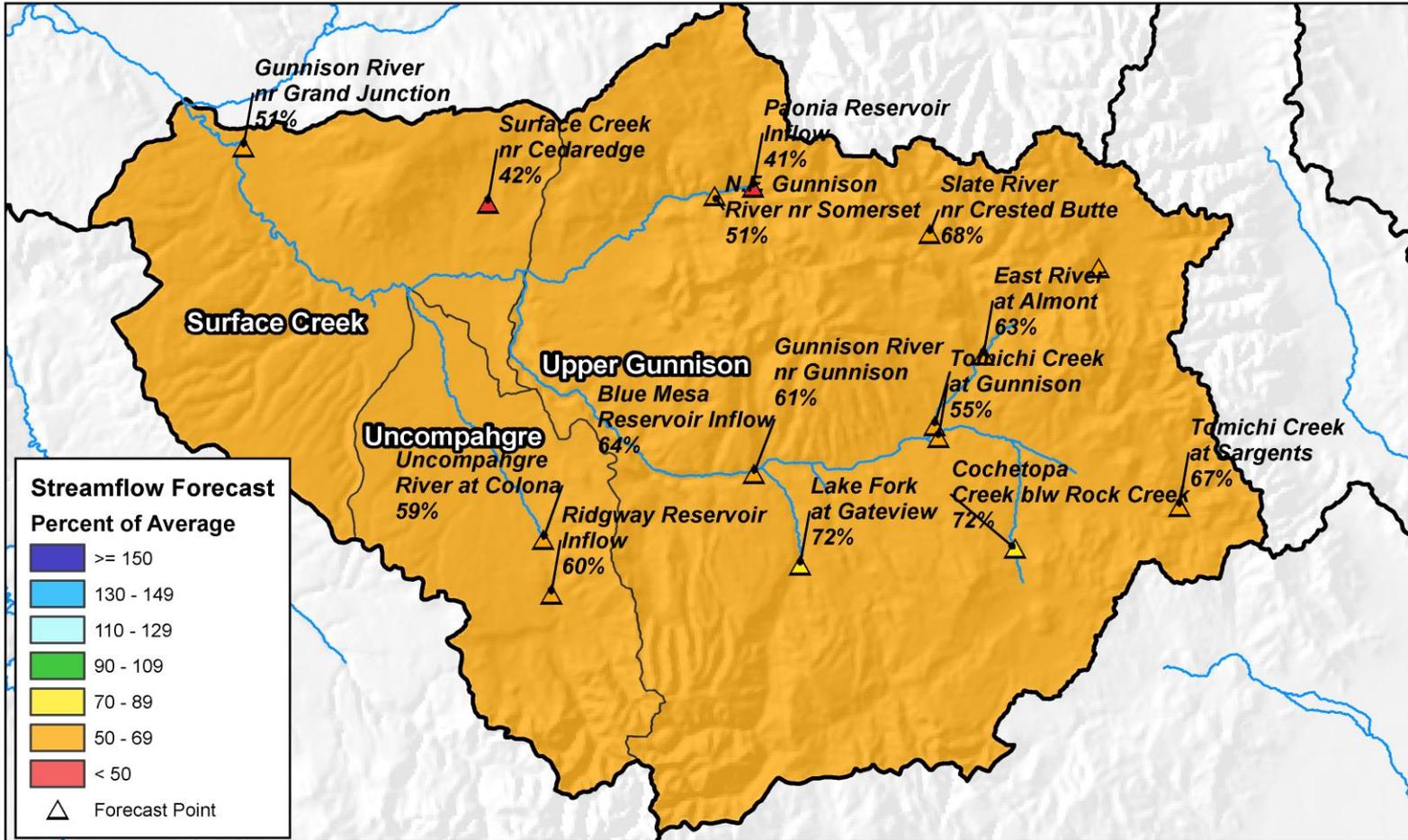
## Gunnison River Basin High/Low Year-to-Date Precipitation Summary

*Based on Provisional SNOTEL data as of Mar 17, 2021*



## Gunnison River Basin Water Supply Forecast Summary

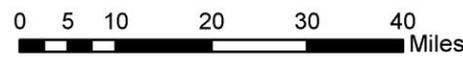
March 1, 2021



**Streamflow Forecast**  
Percent of Average

- >= 150
- 130 - 149
- 110 - 129
- 90 - 109
- 70 - 89
- 50 - 69
- < 50

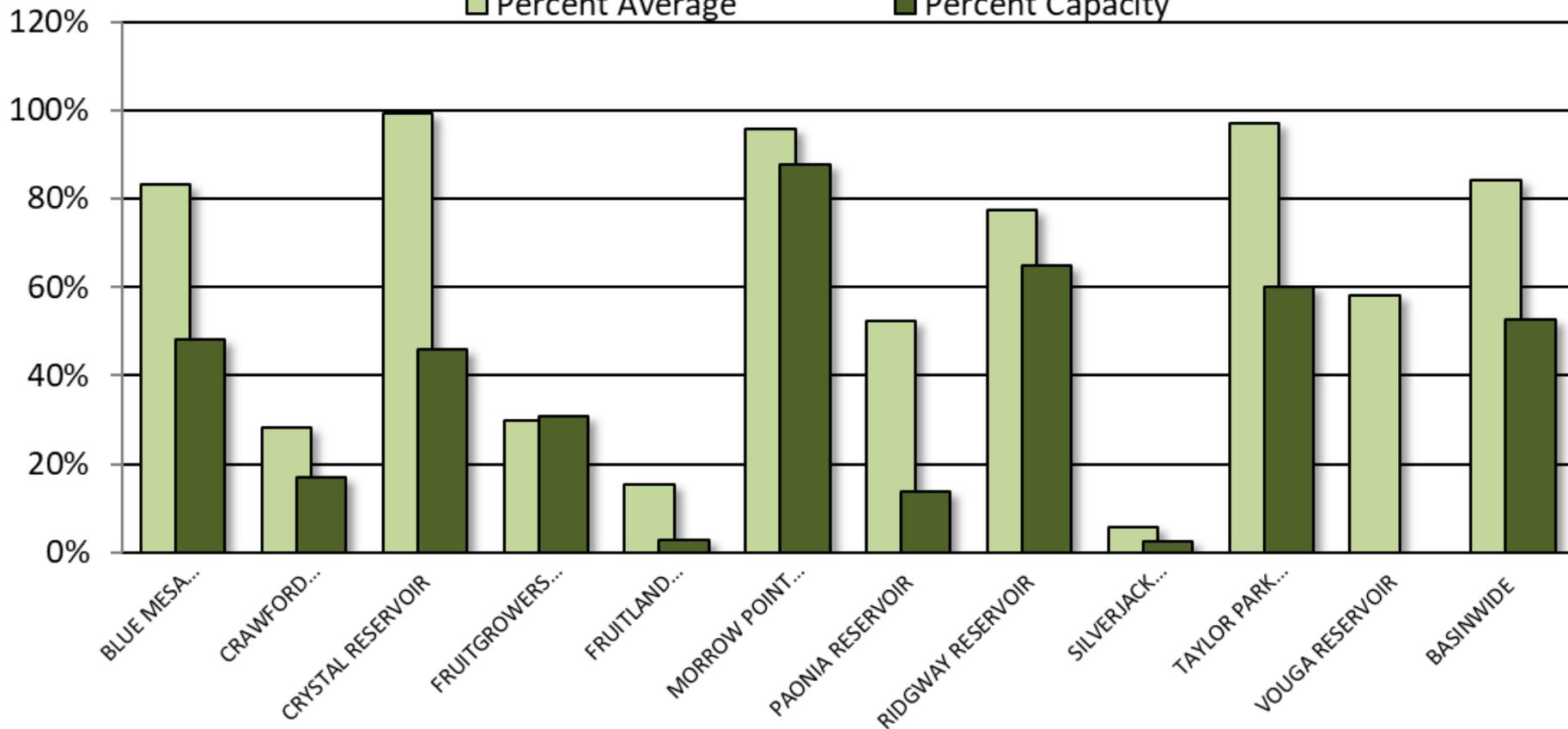
△ Forecast Point



## End of February Reservoir Storage

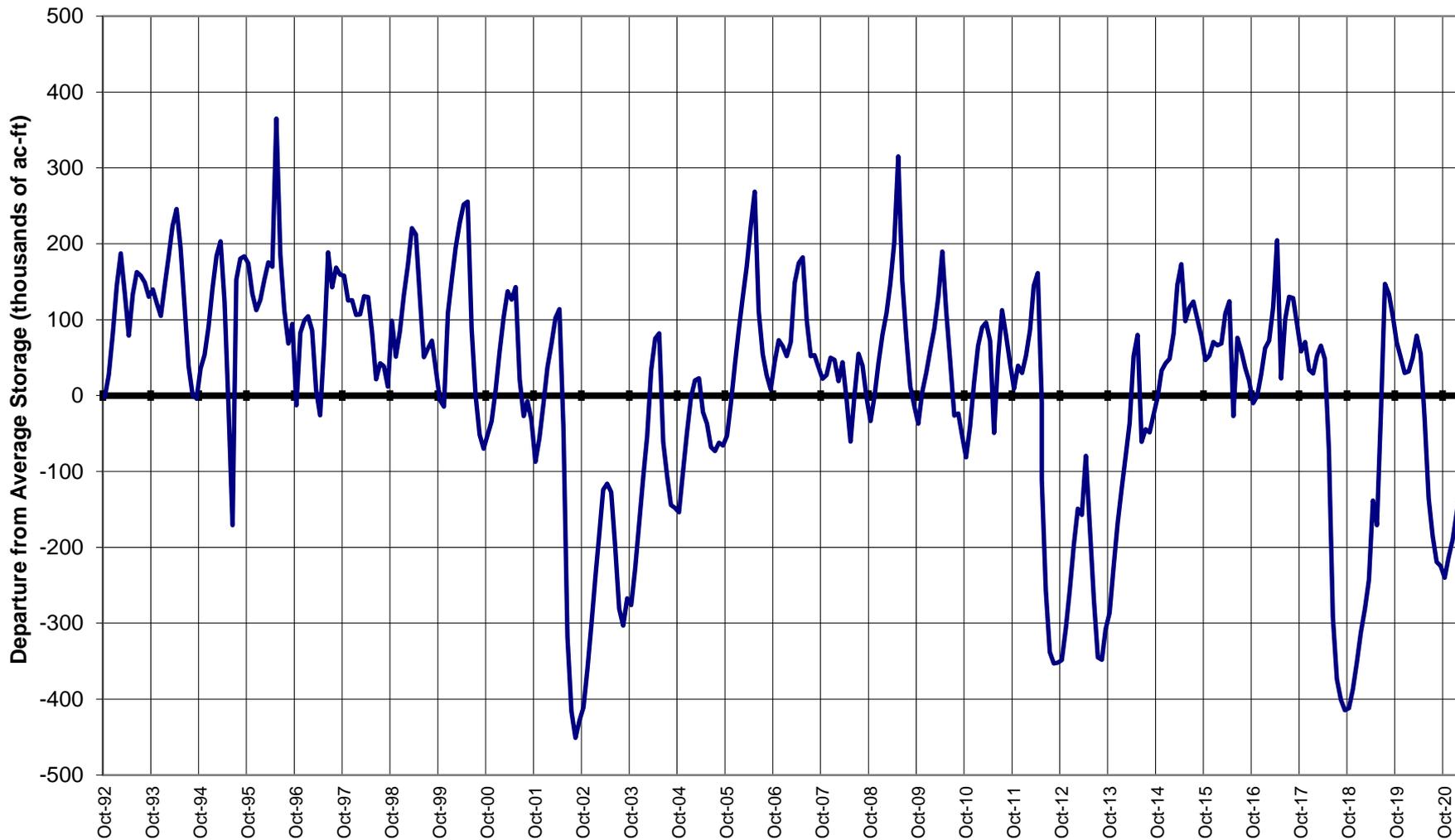
■ Percent Average

■ Percent Capacity





## GUNNISON RIVER BASIN Reservoir Storage Departure from Average

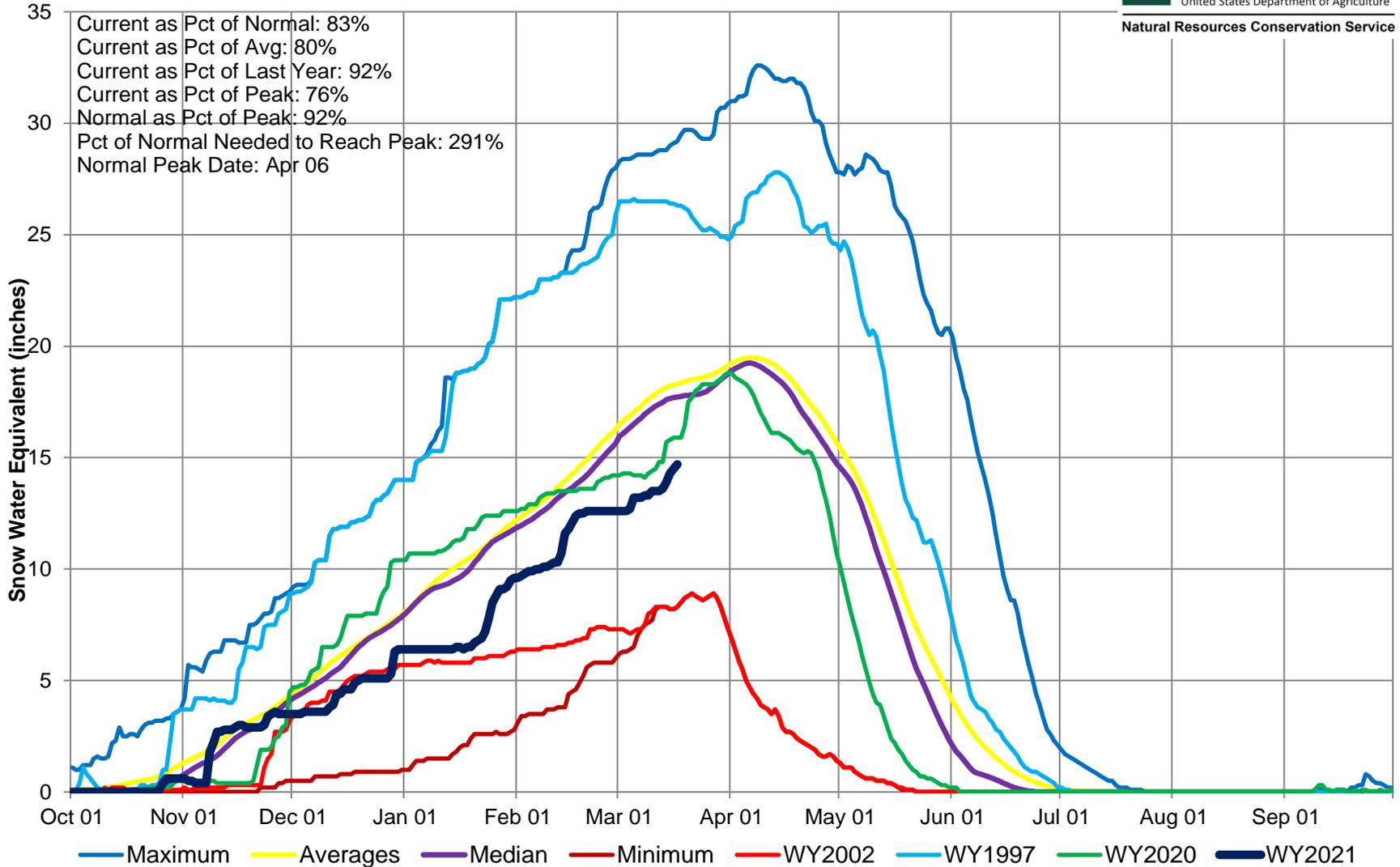






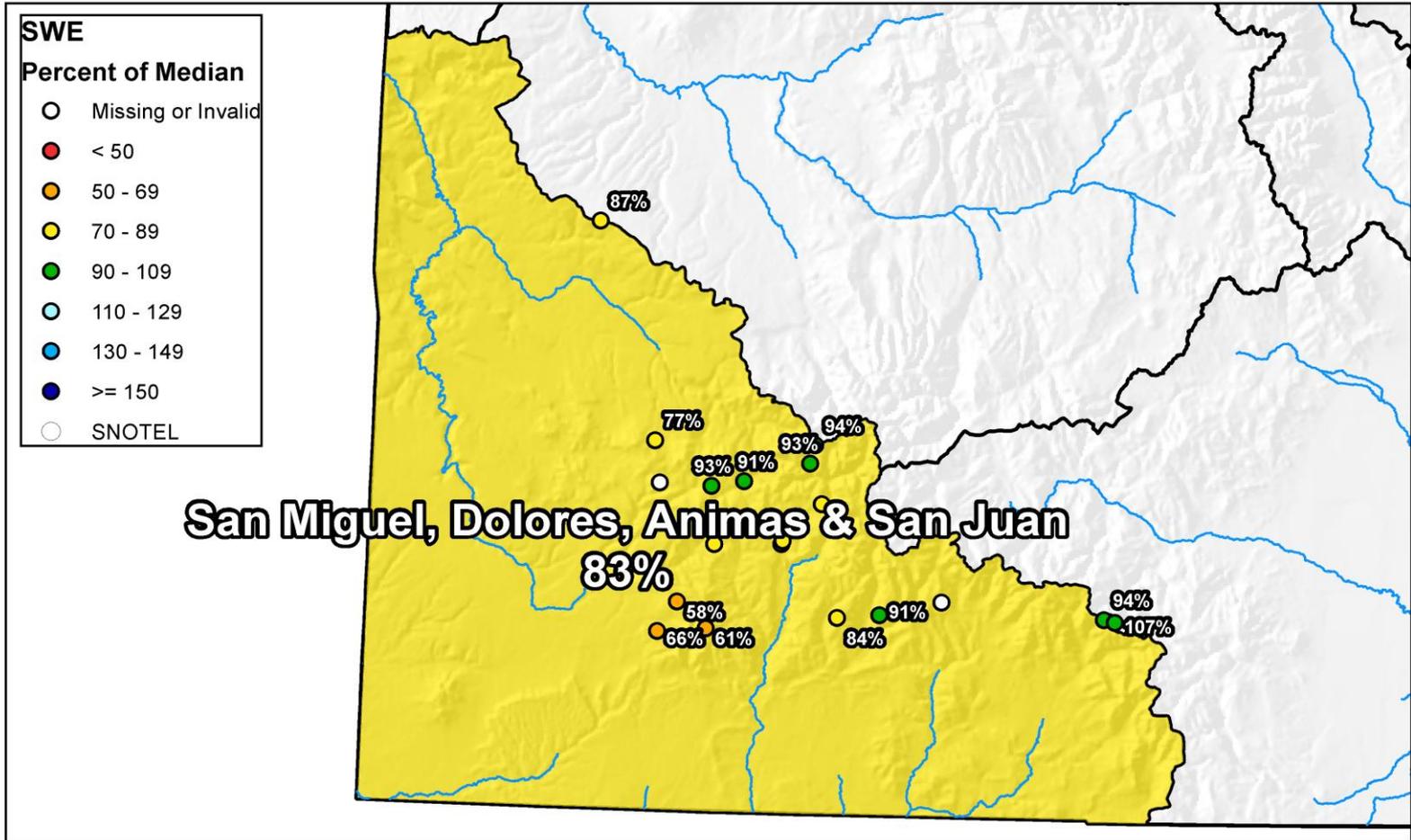
## San Miguel, Dolores, Animas and San Juan River Basins High/Low Snowpack Summary

*Based on Provisional SNOTEL data as of Mar 17, 2021*



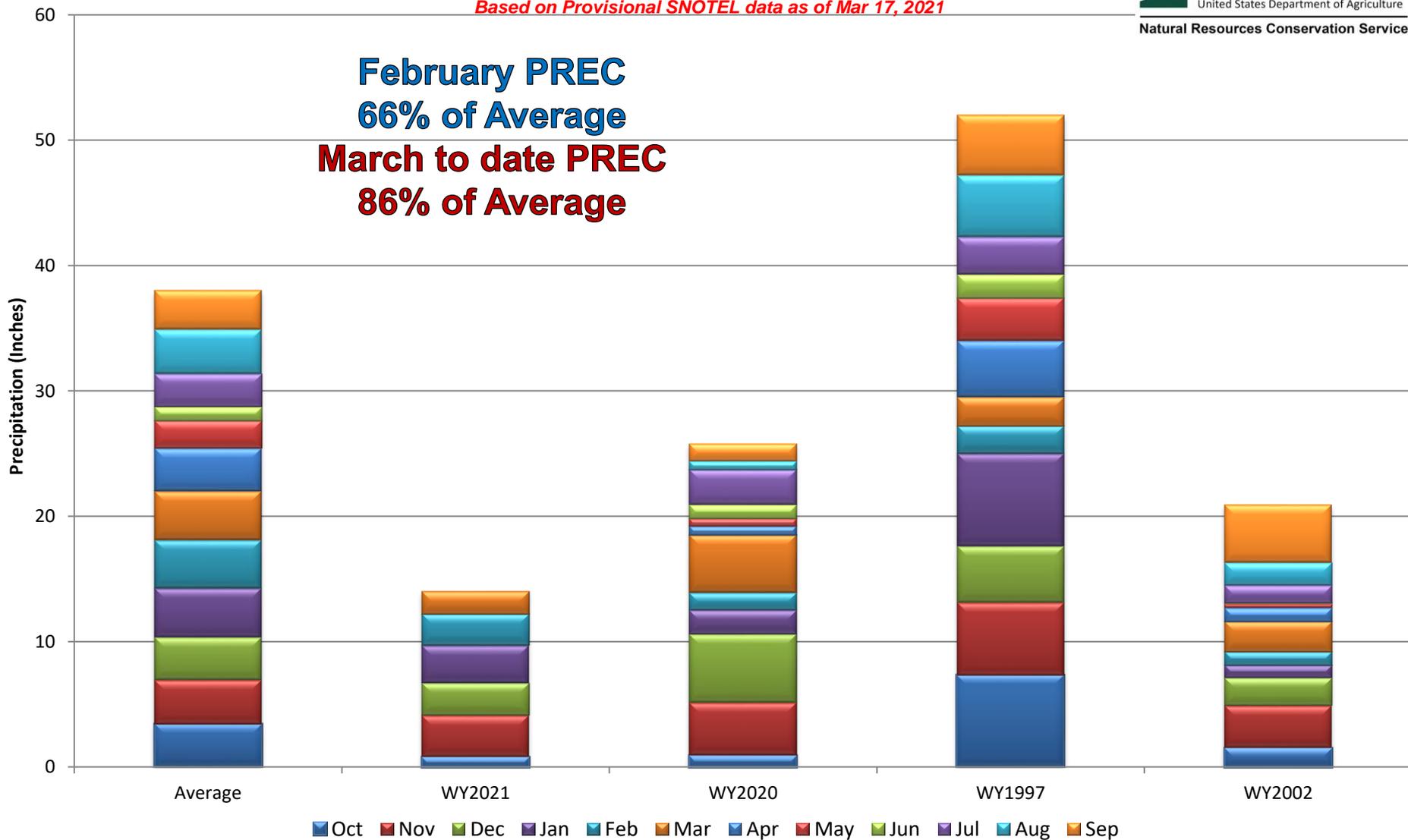
## San Miguel, Dolores, Animas, and San Juan River Basins Snow Water Equivalent (SWE) Summary

Current as of Mar 17, 2021

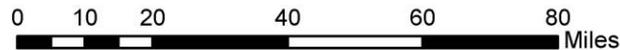
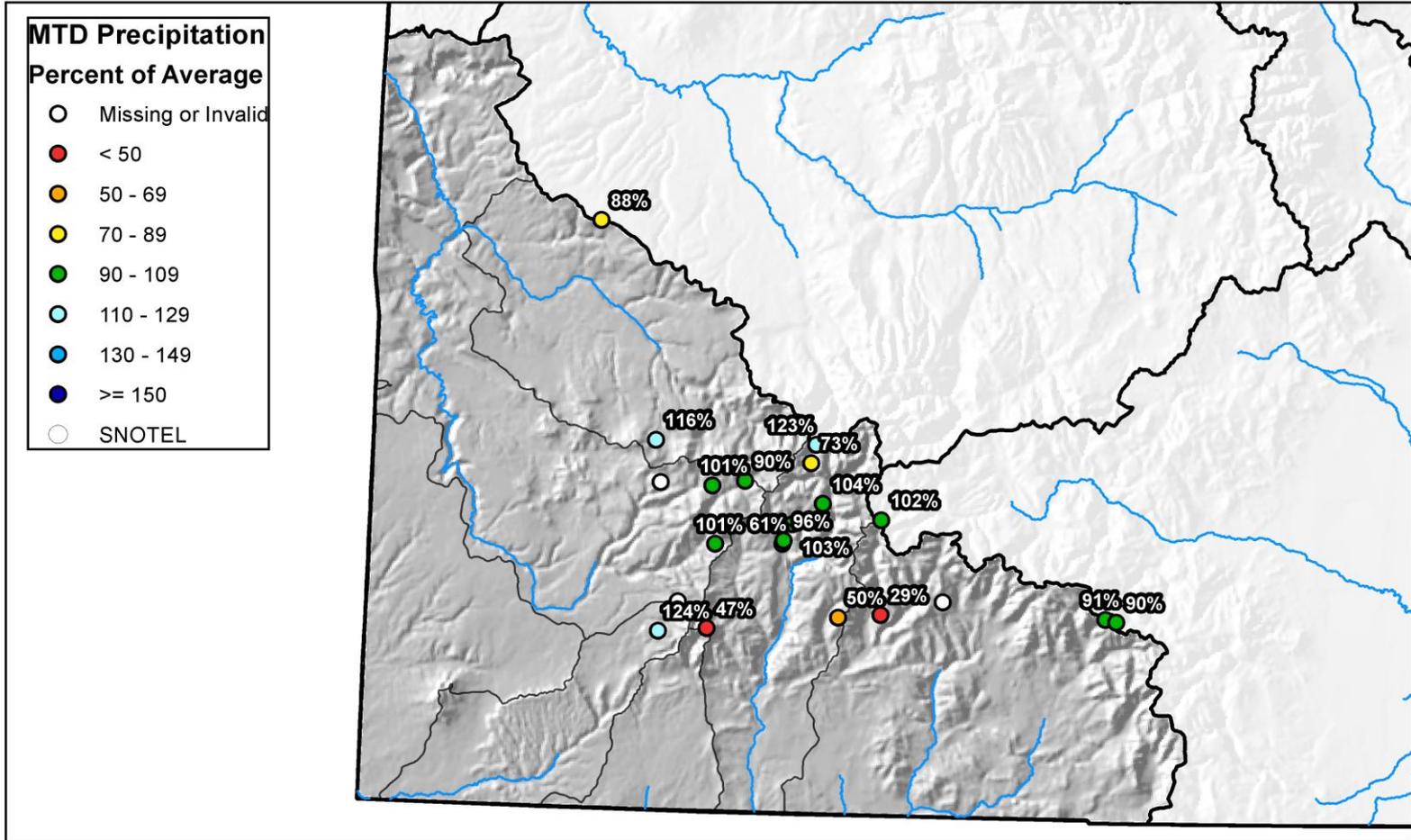


## San Miguel, Dolores, Animas and San Juan River Basins High/Low Monthly Precipitation Summary

*Based on Provisional SNOTEL data as of Mar 17, 2021*

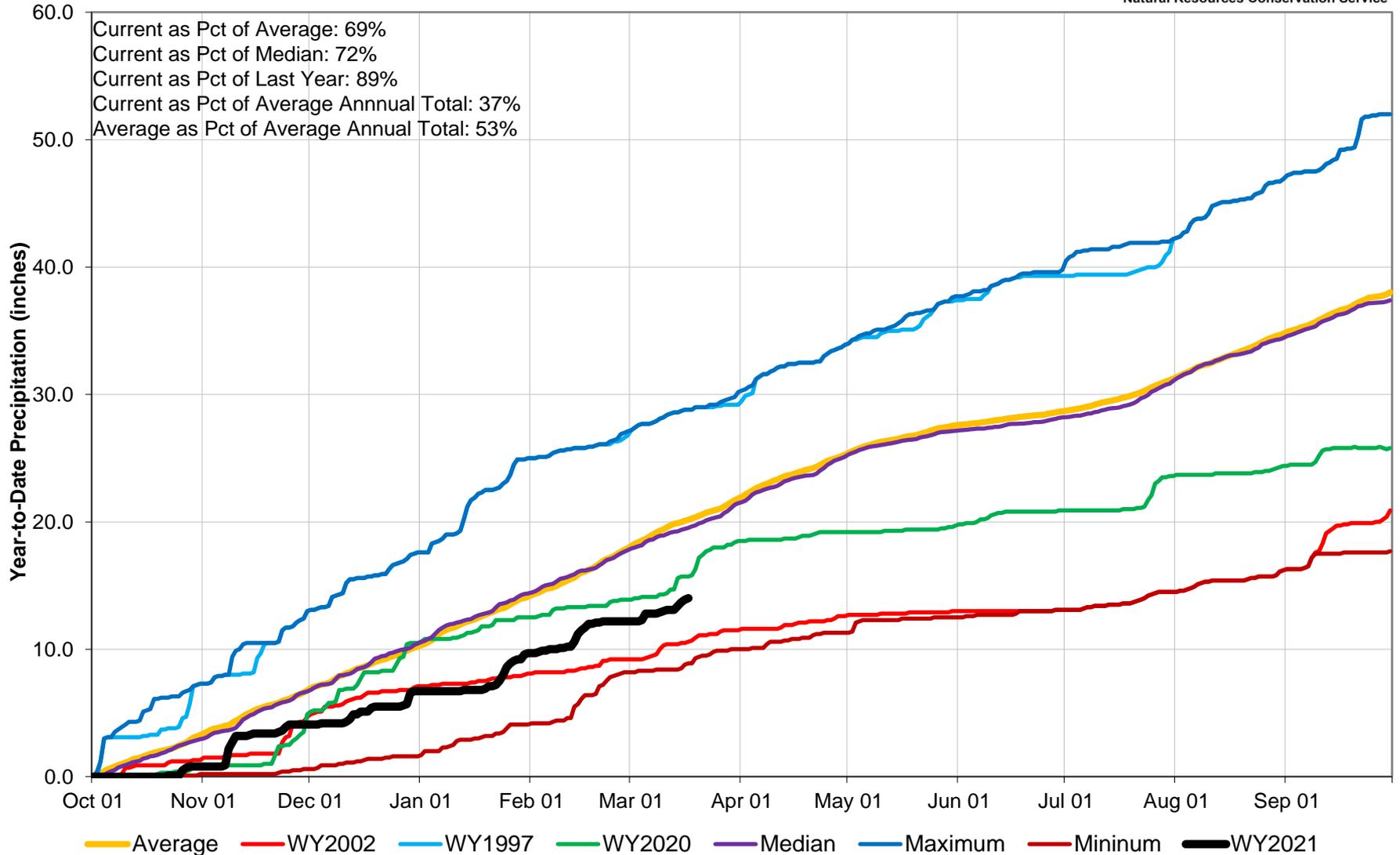


## San Miguel, Dolores, Animas, and San Juan River Basins Month to Date Precipitation Summary Current as of Mar 17, 2021



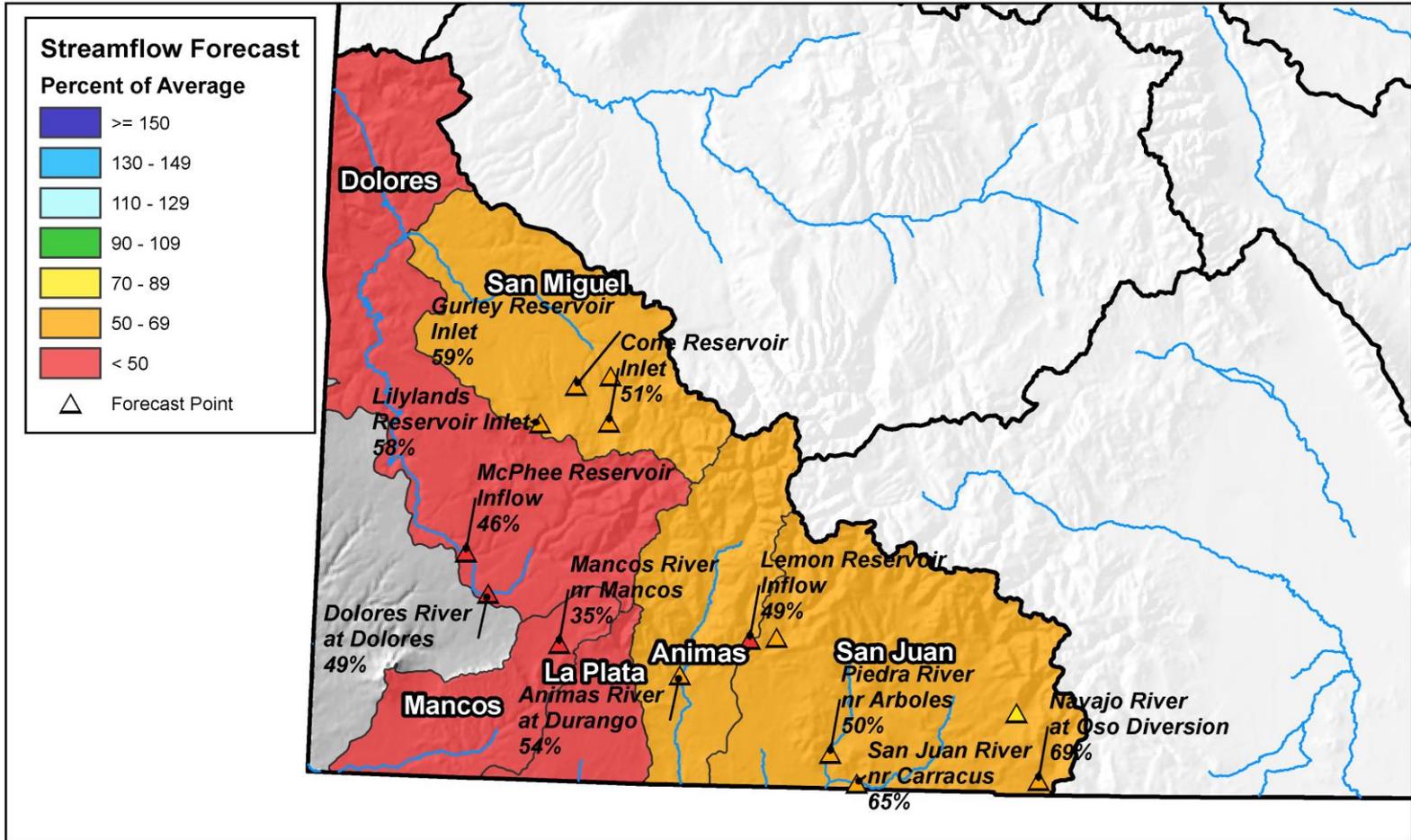
## San Miguel, Dolores, Animas and San Juan River Basins High/Low Year-to-Date Precipitation Summary

*Based on Provisional SNOTEL data as of Mar 17, 2021*



## San Miguel, Dolores, Animas, and San Juan River Basins Streamflow Forecast Summary

March 1, 2021



**Streamflow Forecast**  
Percent of Average

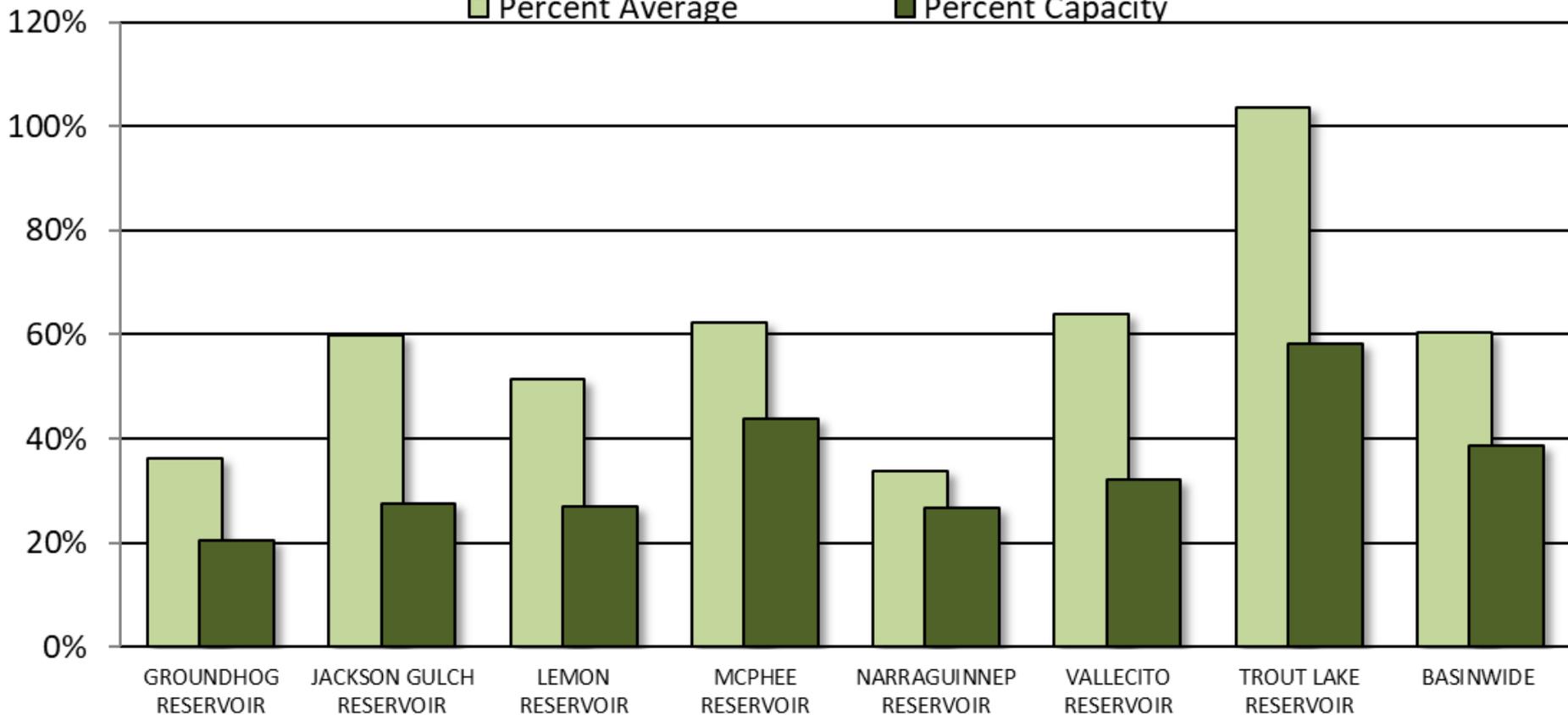
- $\geq 150$
- 130 - 149
- 110 - 129
- 90 - 109
- 70 - 89
- 50 - 69
- $< 50$

Forecast Point

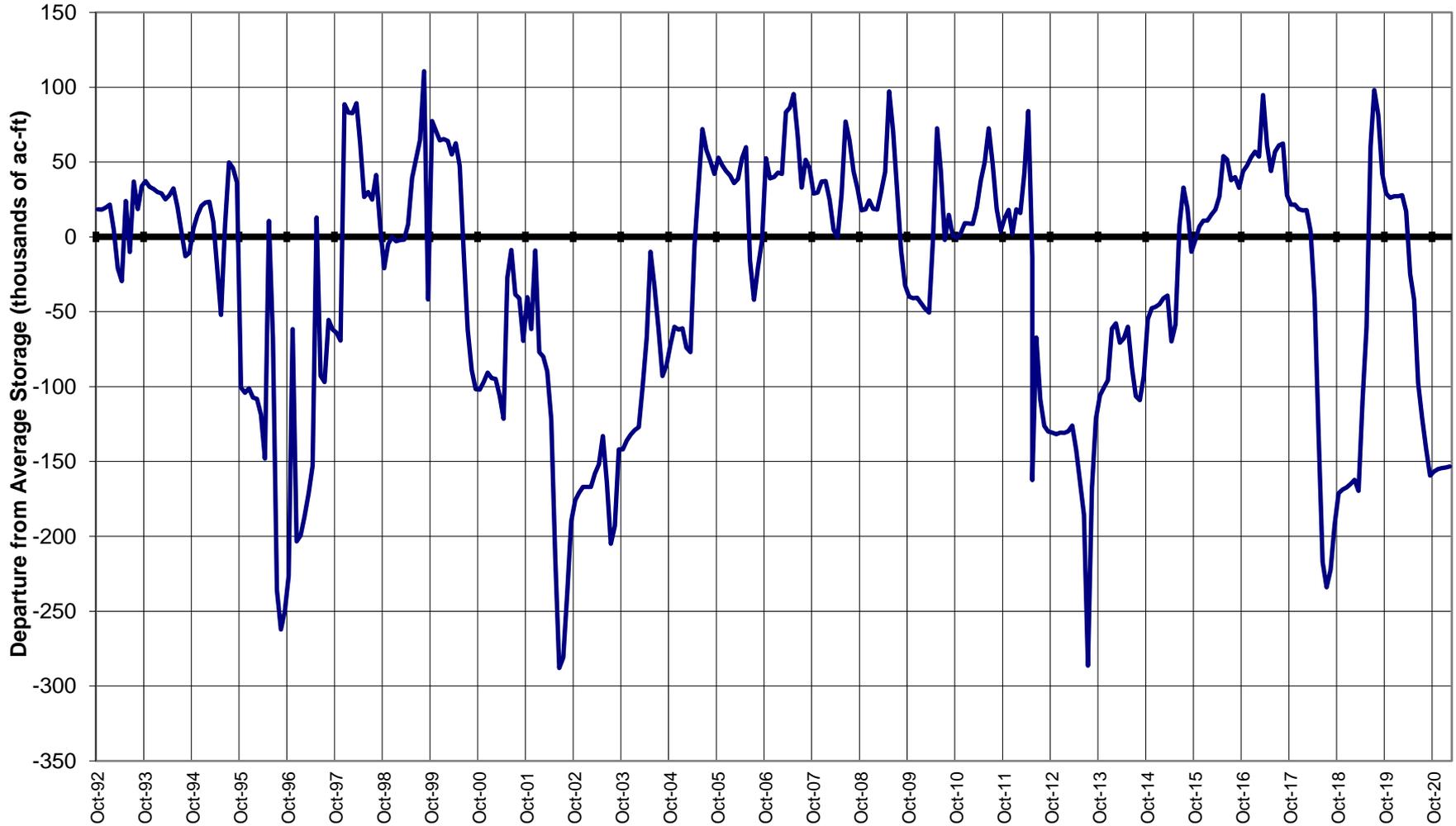


## End of February Reservoir Storage

■ Percent Average      ■ Percent Capacity

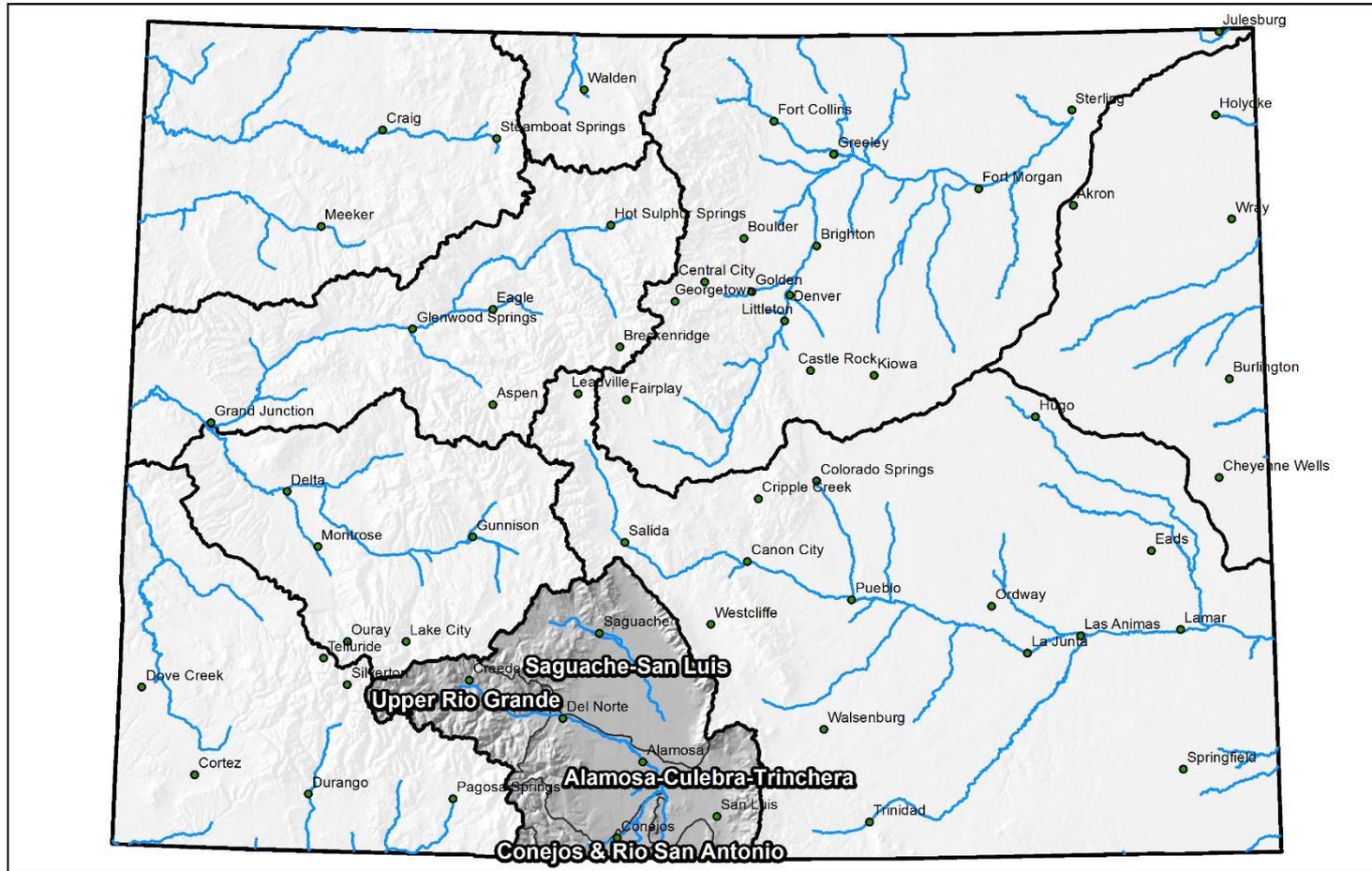


**SAN MIGUEL, DOLORES, ANIMAS AND SAN JUAN RIVER BASINS**  
**Reservoir Storage**  
**Departure from Average**



## Major Basin Summary

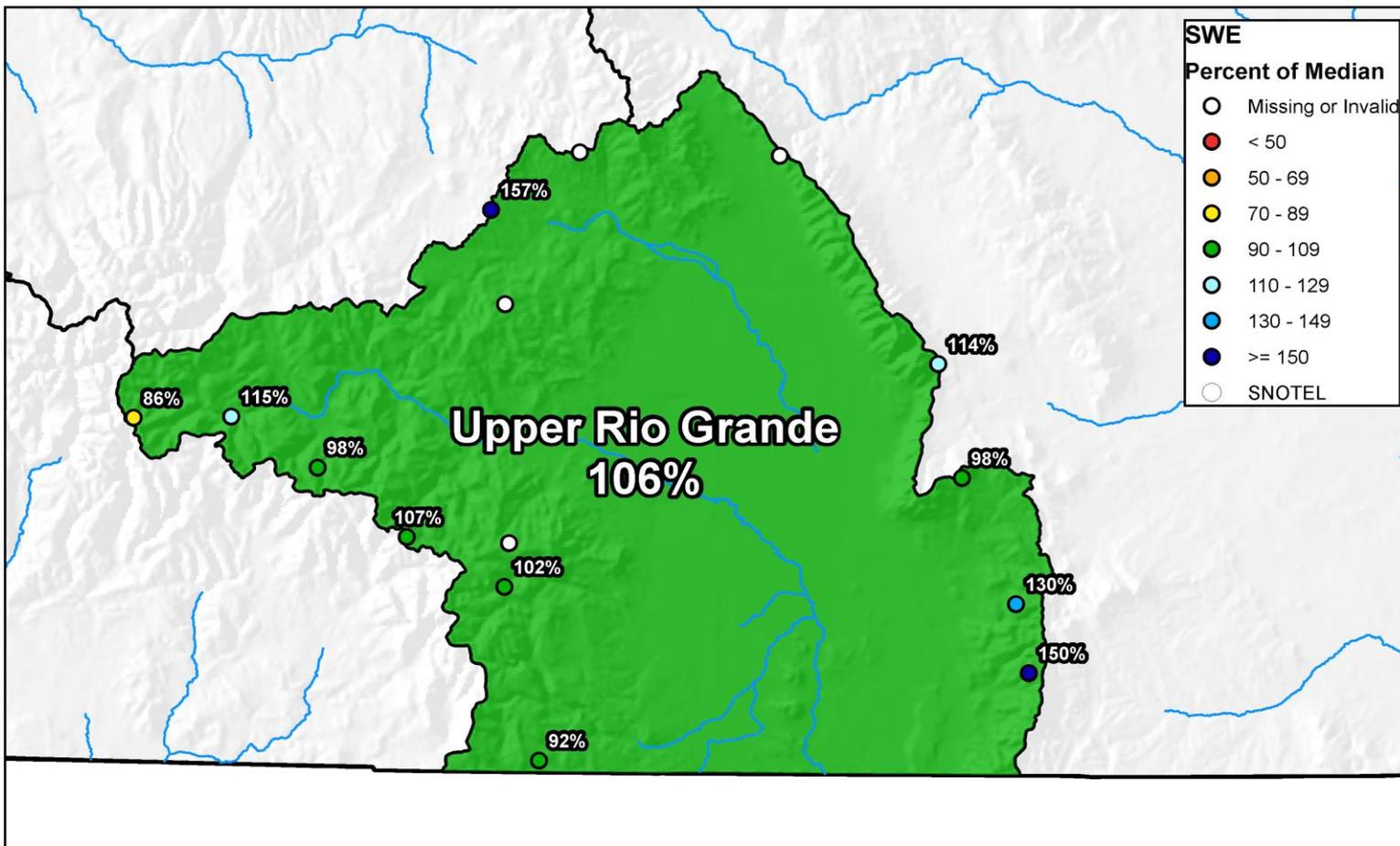
### Upper Rio Grande River Basin





## Upper Rio Grande River Basin Snow Water Equivalent (SWE) Summary

Current as of Mar 17, 2021



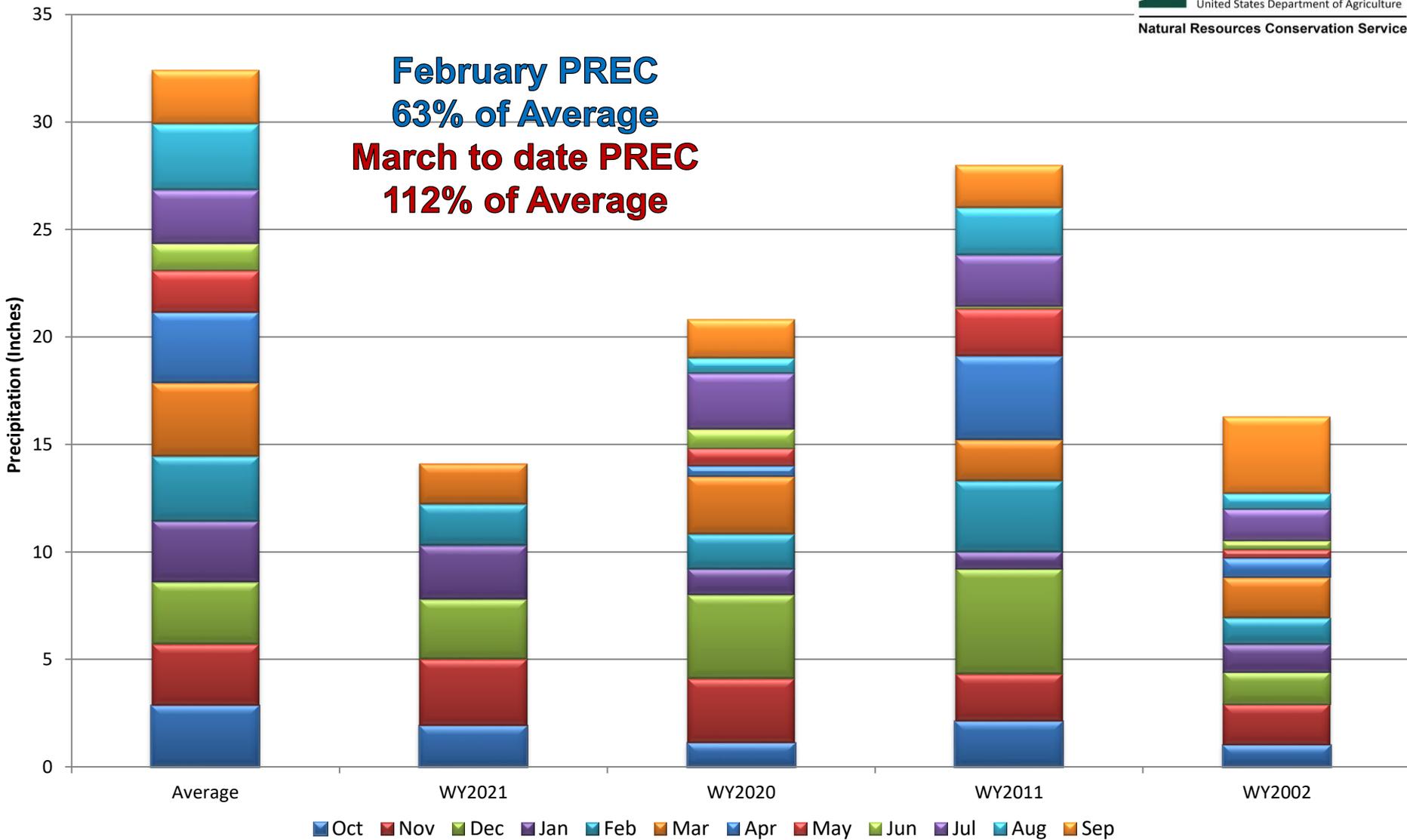


## Upper Rio Grande River Basin High/Low Monthly Precipitation Summary

*Based on Provisional SNOTEL data as of Mar 17, 2021*

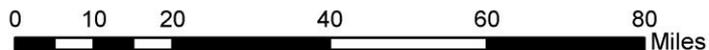
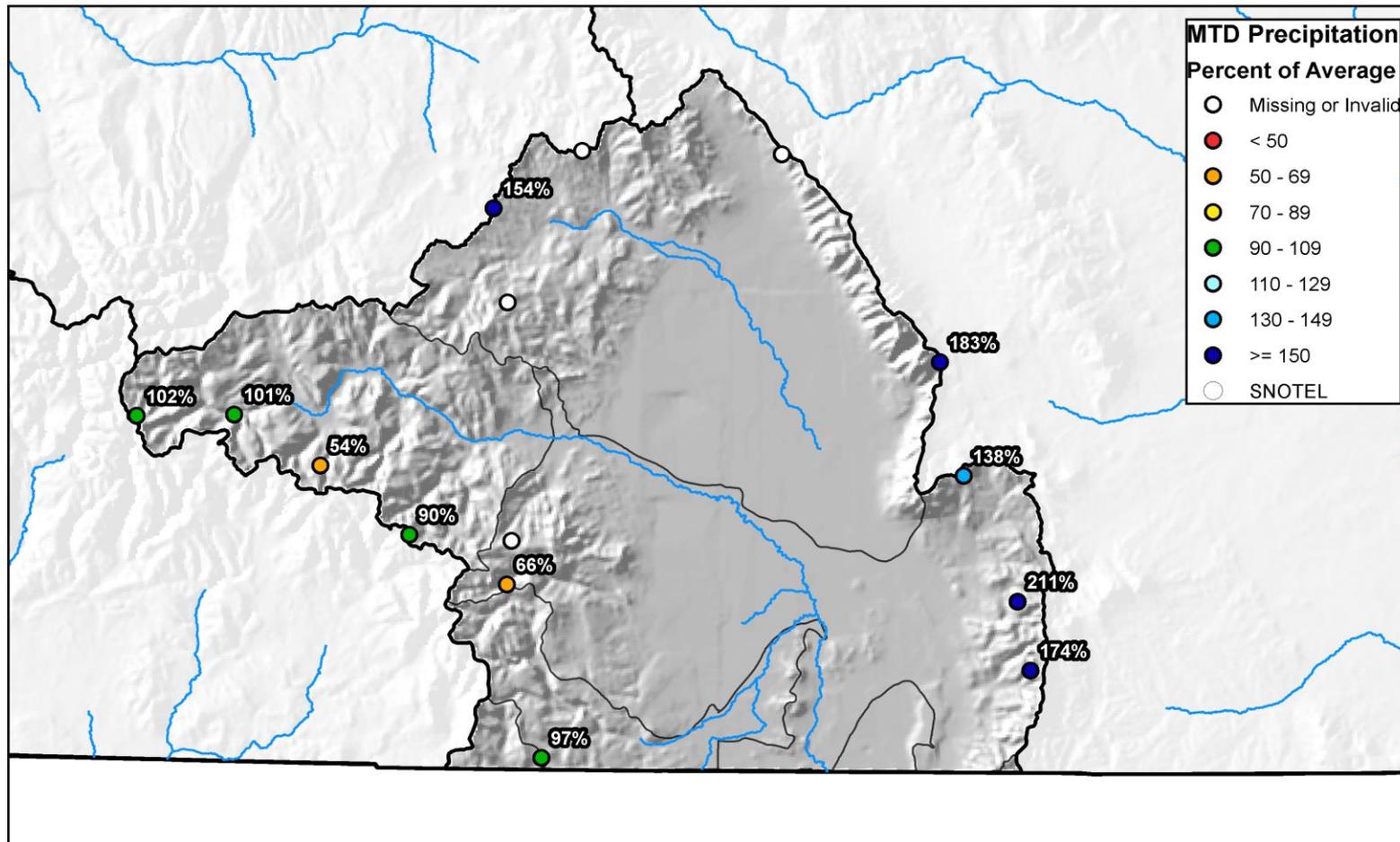


**February PREC**  
**63% of Average**  
**March to date PREC**  
**112% of Average**



## Upper Rio Grande River Basin Month to Date Precipitation Summary

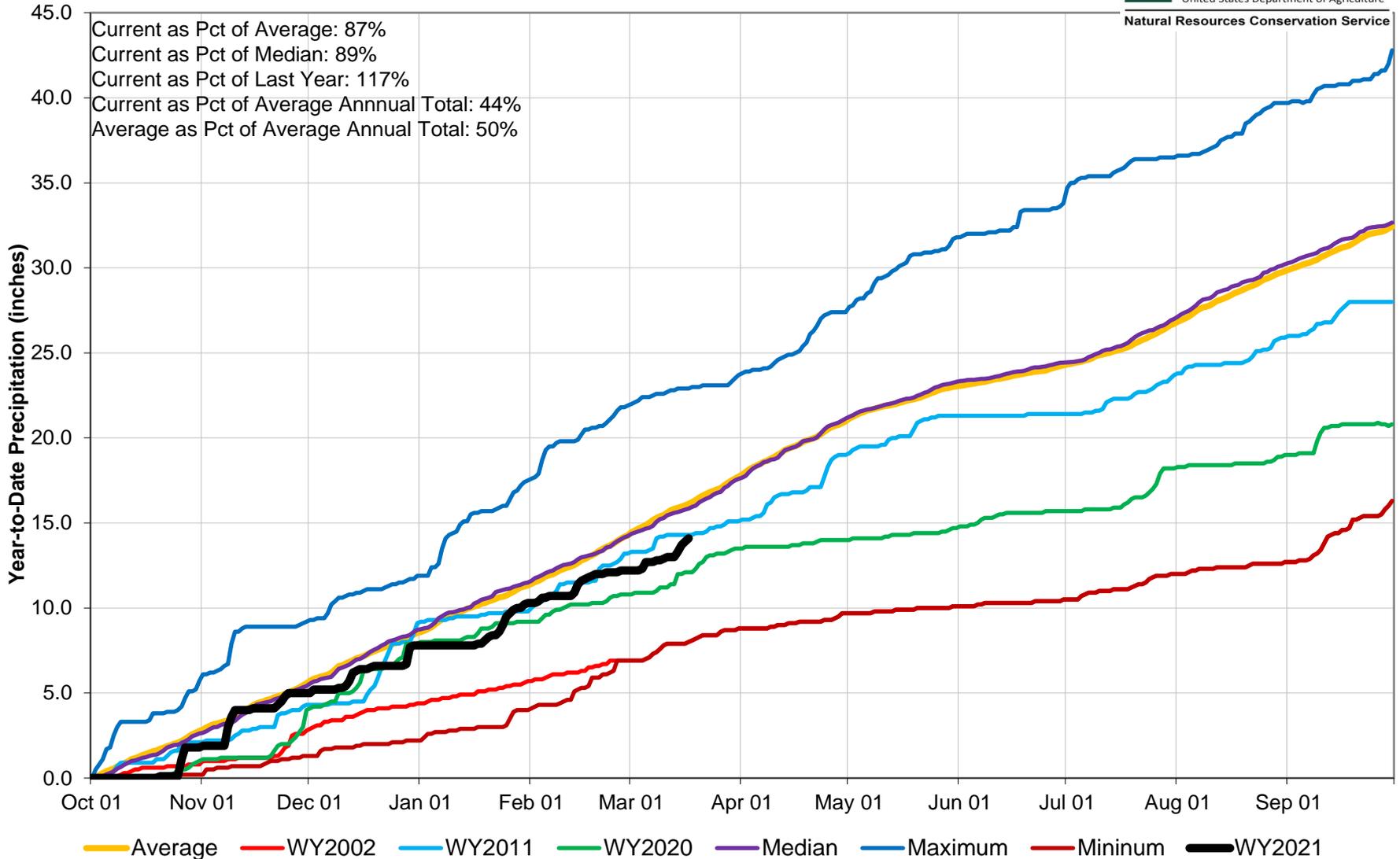
Current as of Mar 17, 2021





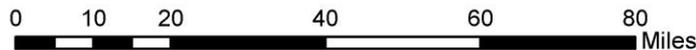
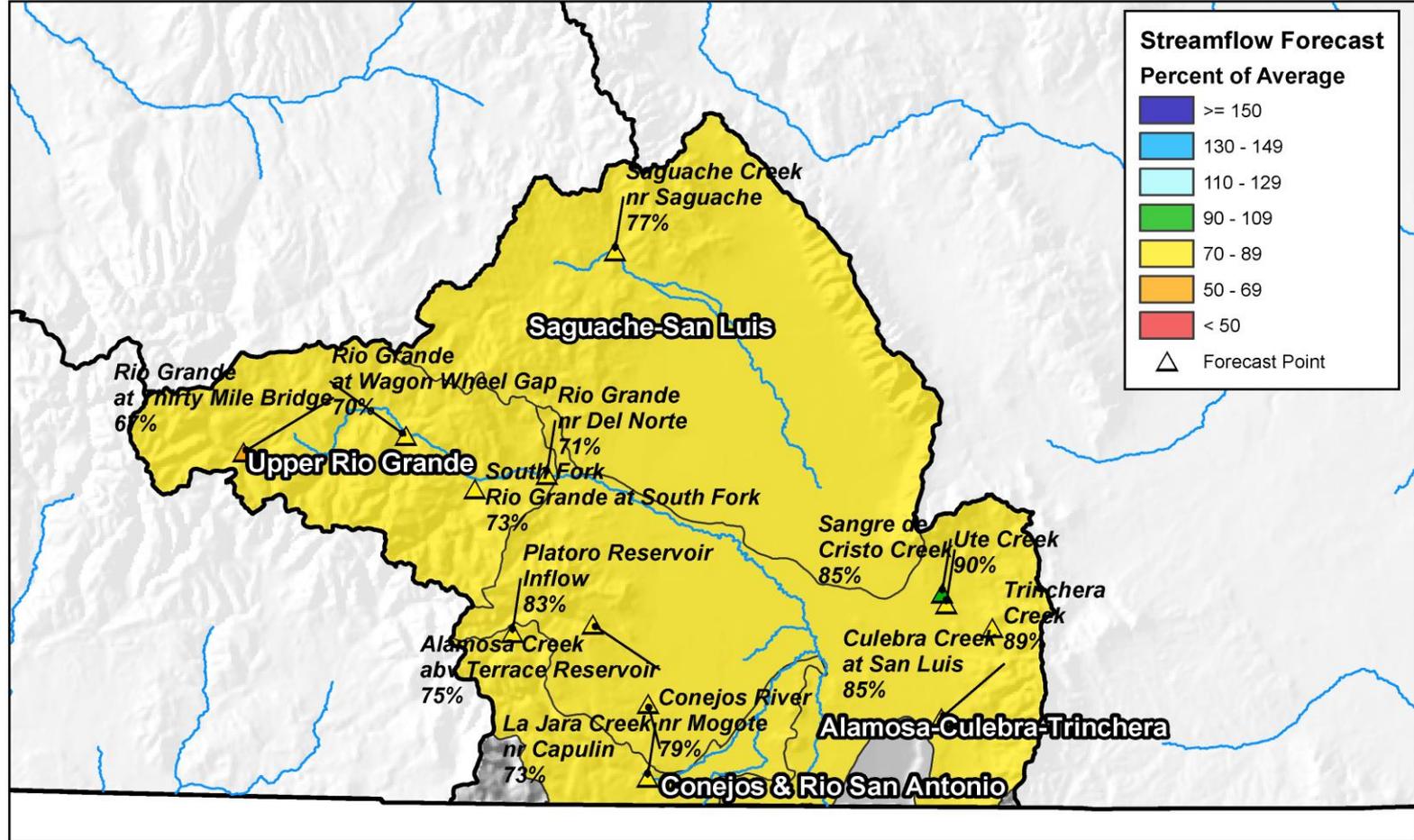
## Upper Rio Grande River Basin High/Low Year-to-Date Precipitation Summary

*Based on Provisional SNOTEL data as of Mar 17, 2021*



## Upper Rio Grande River Basin Streamflow Forecast Summary

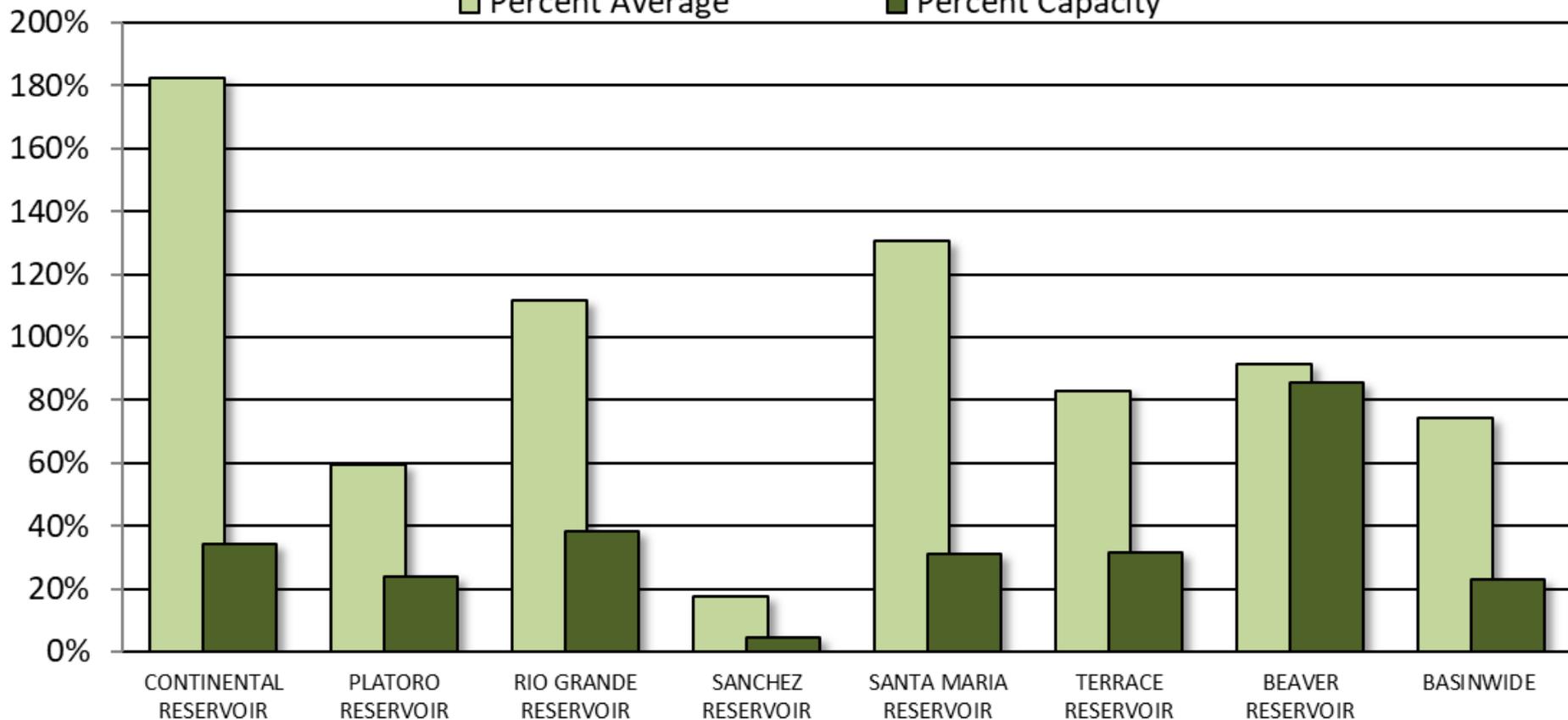
March 1, 2021



## End of February Reservoir Storage

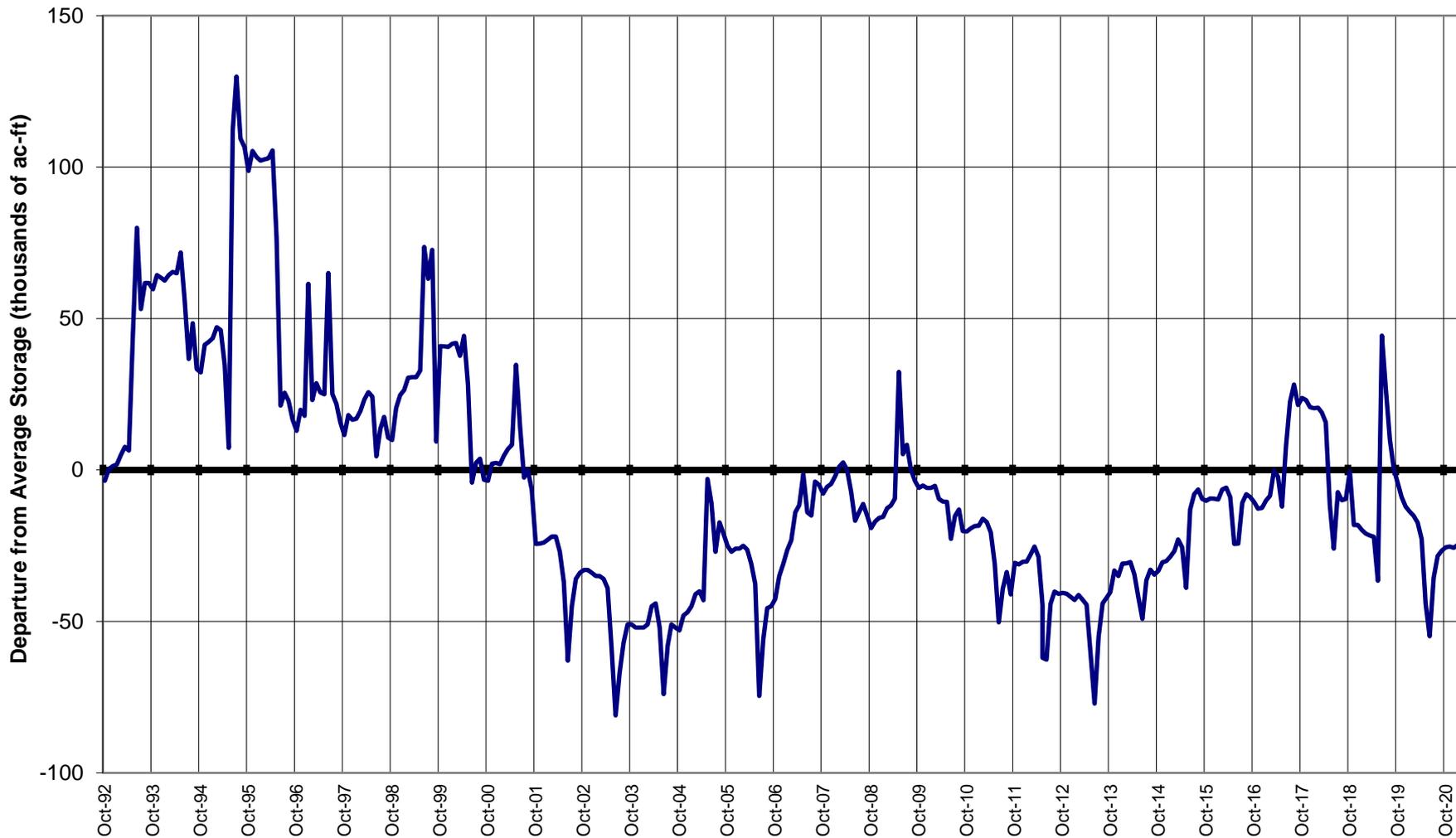
■ Percent Average

■ Percent Capacity



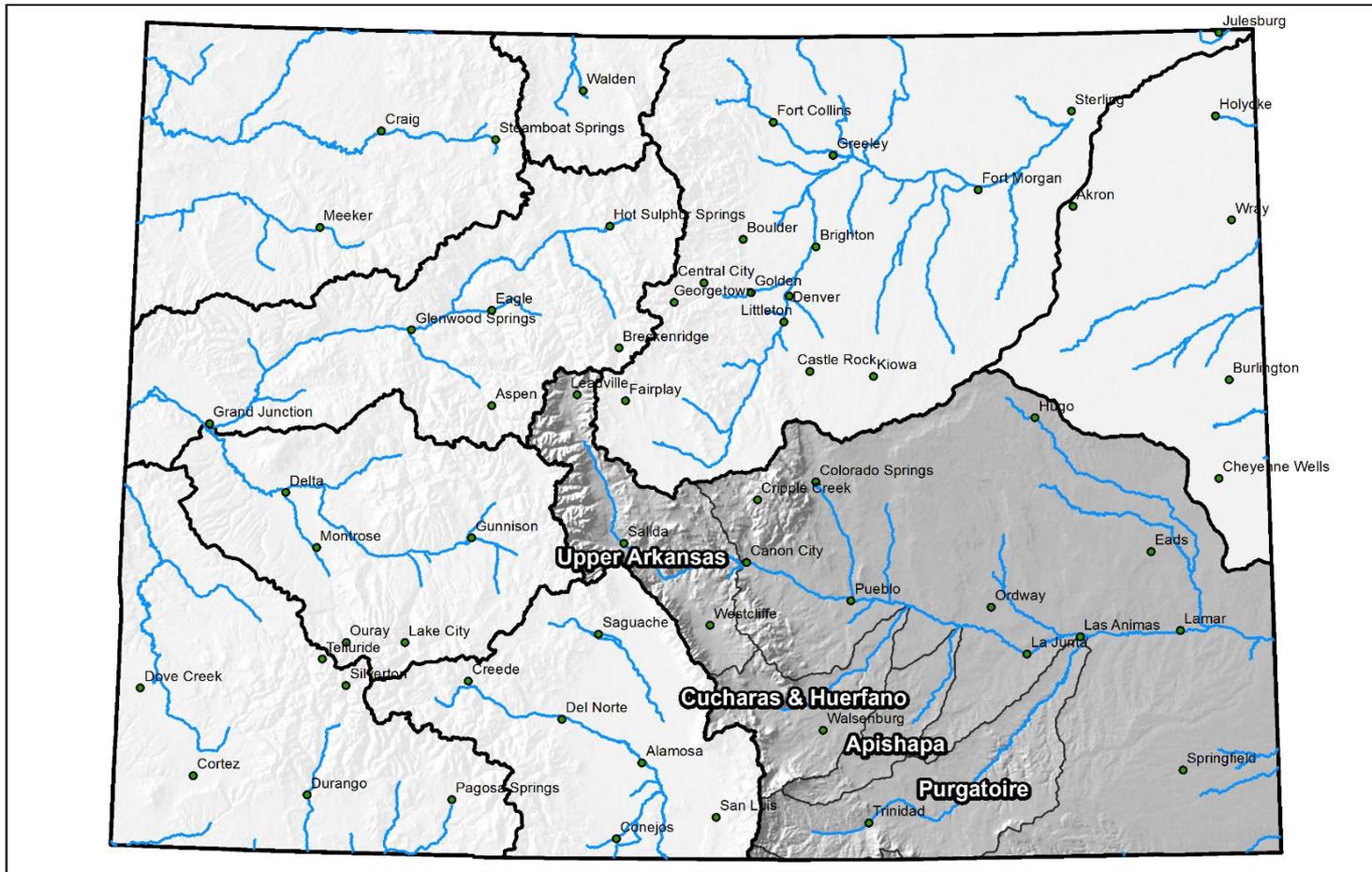


## UPPER RIO GRANDE BASIN Reservoir Storage Departure from Average



## Major Basin Summary

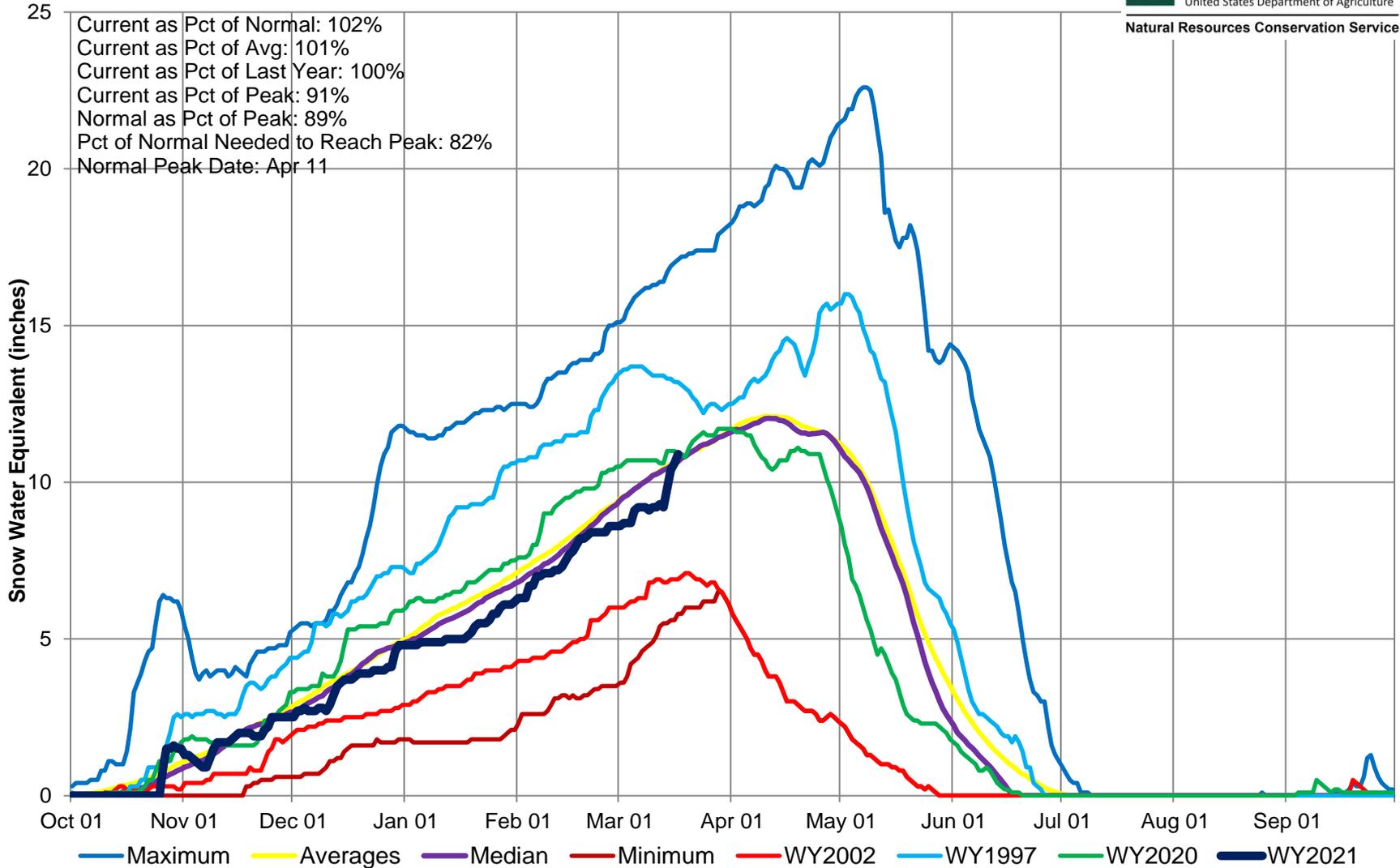
### Arkansas River Basin



## Arkansas River Basin High/Low Snowpack Summary

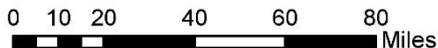
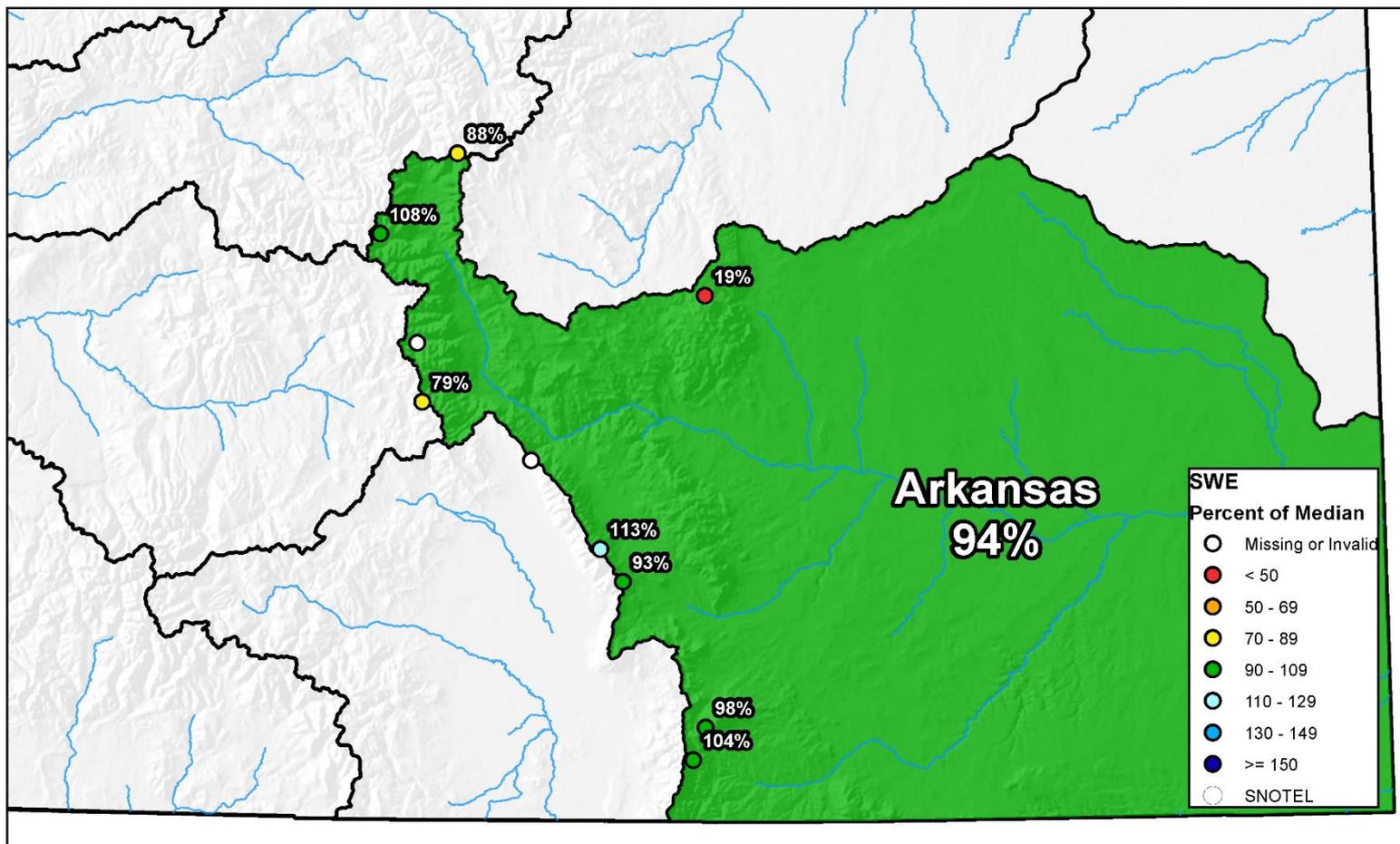
*Based on Provisional SNOTEL data as of Mar 17, 2021*

USDA  
United States Department of Agriculture  
Natural Resources Conservation Service



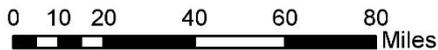
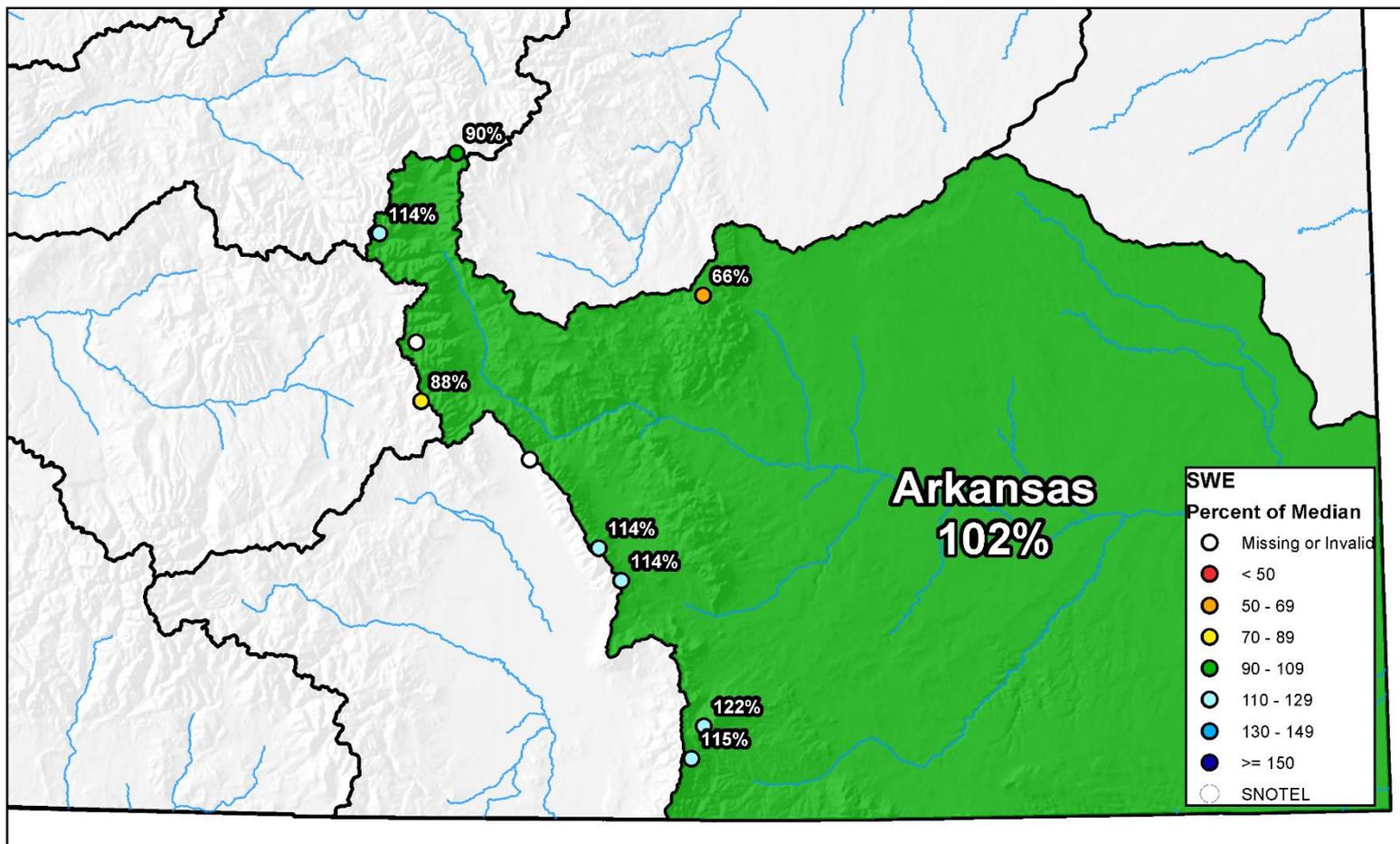
## Arkansas River Basin Snow Water Equivalent (SWE) Summary

Current as of Feb 12, 2021



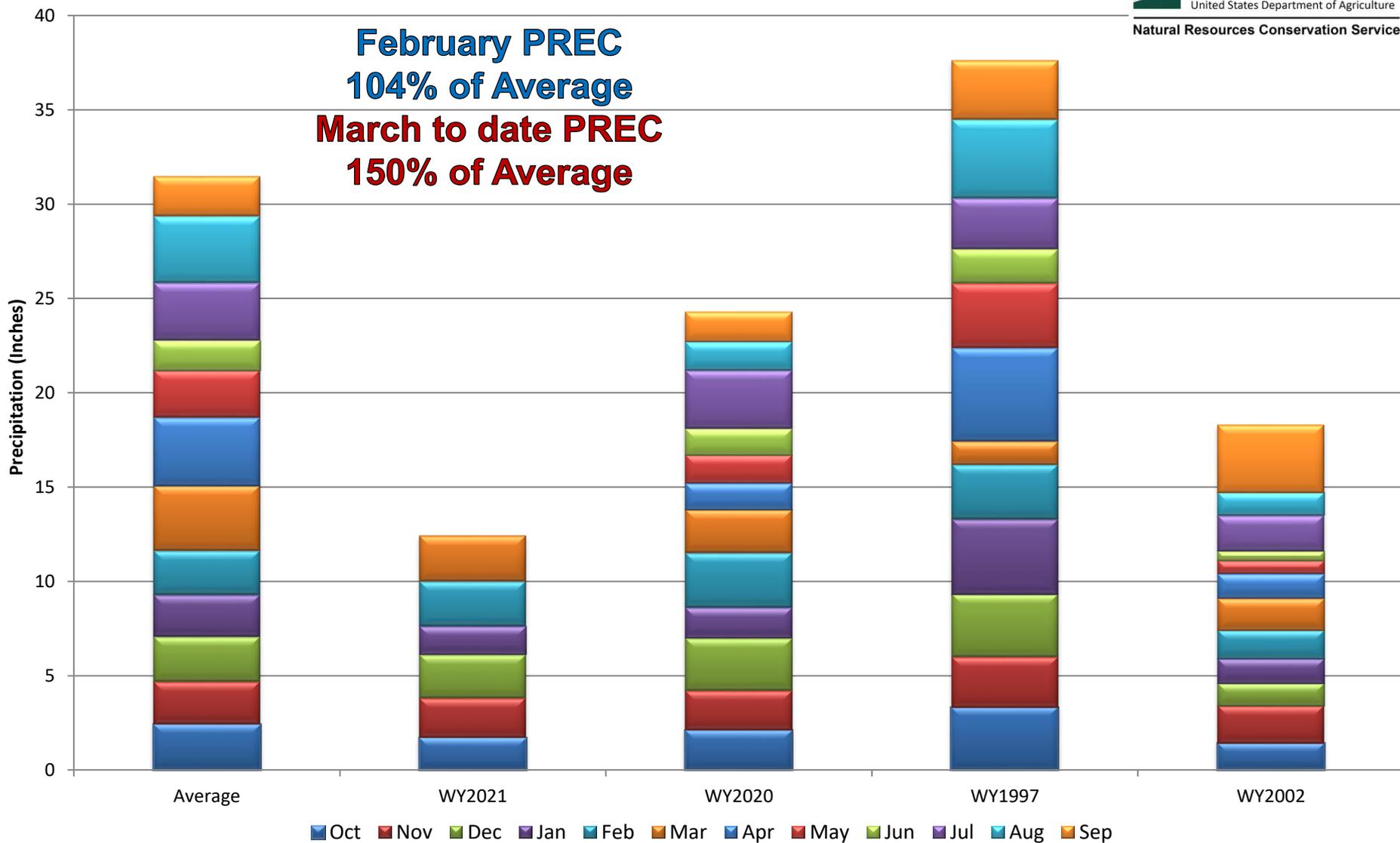
## Arkansas River Basin Snow Water Equivalent (SWE) Summary

Current as of Mar 17, 2021



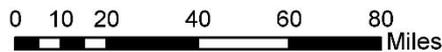
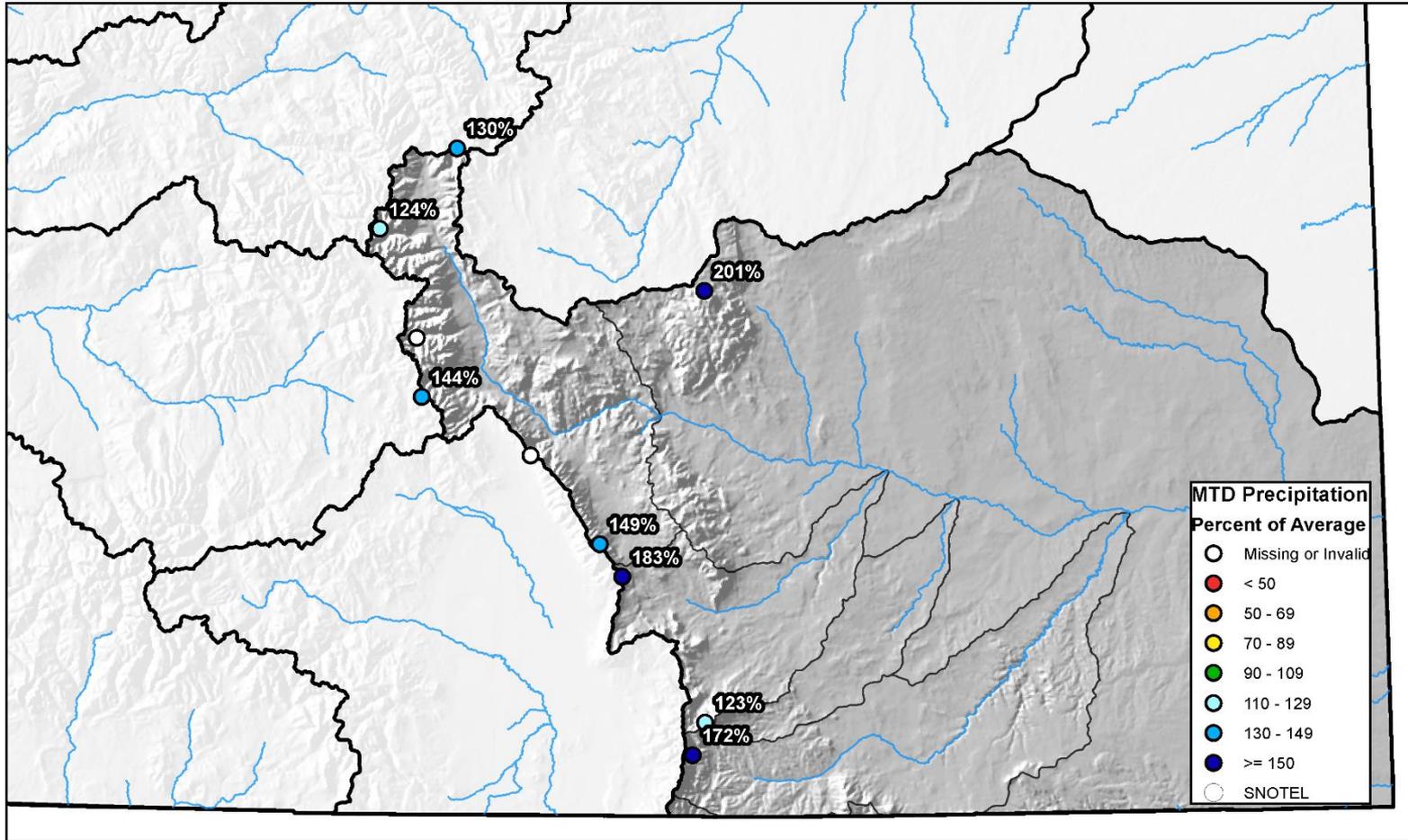
## Arkansas River Basin High/Low Monthly Precipitation Summary

*Based on Provisional SNOTEL data as of Mar 17, 2021*



## Arkansas River Basin Month to Date Precipitation Summary

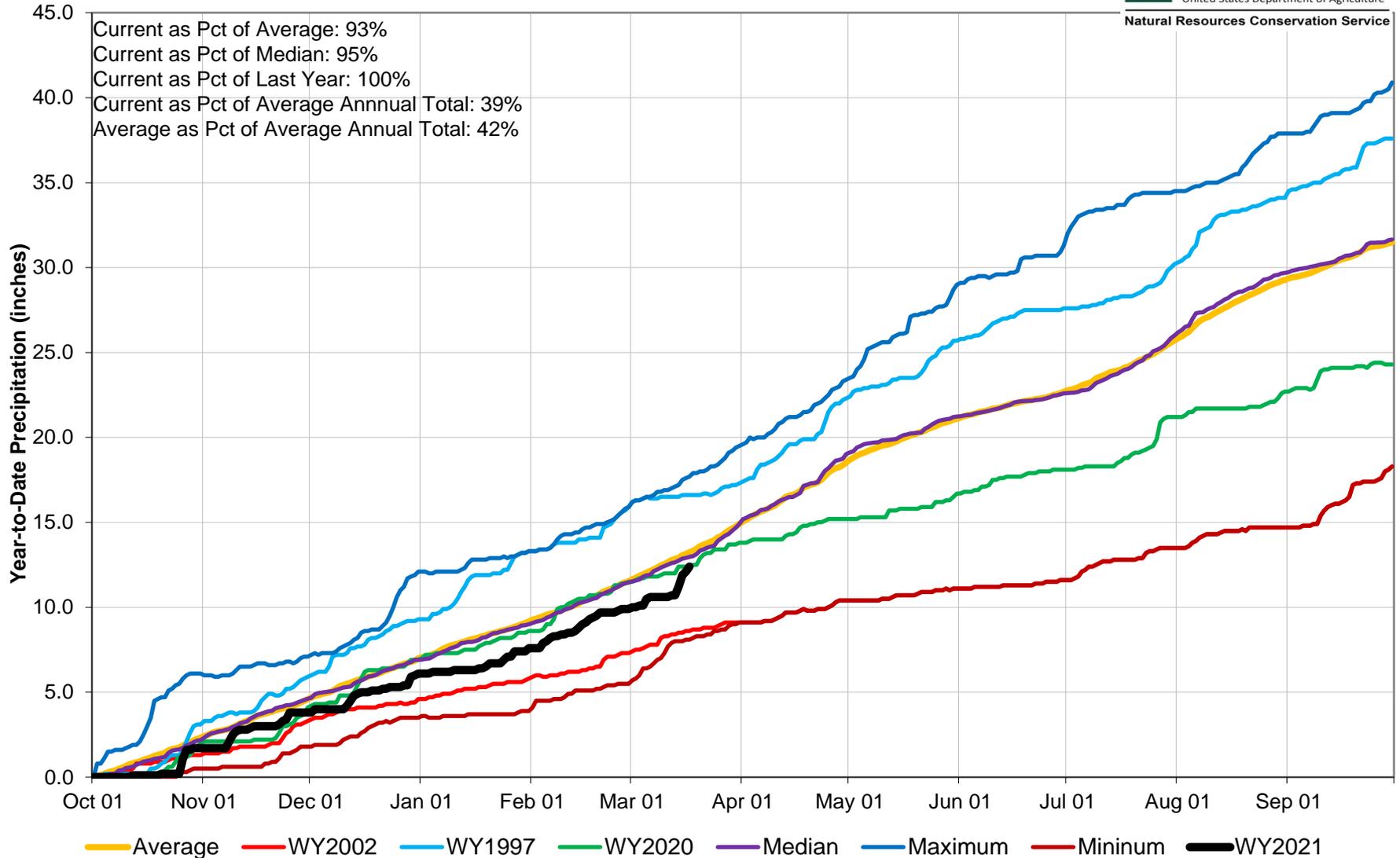
Current as of Mar 17, 2021





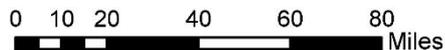
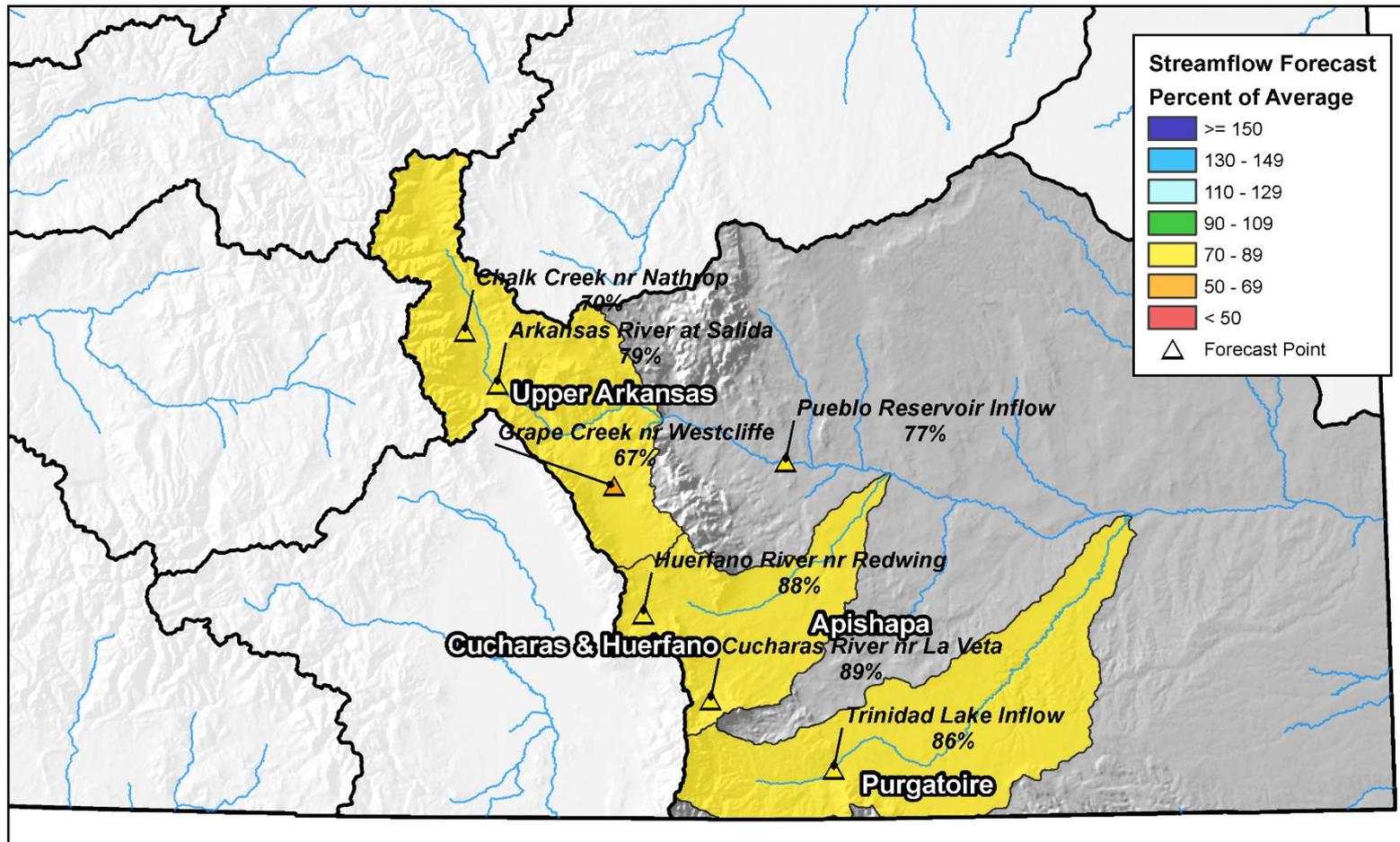
## Arkansas River Basin High/Low Year-to-Date Precipitation Summary

*Based on Provisional SNOTEL data as of Mar 17, 2021*



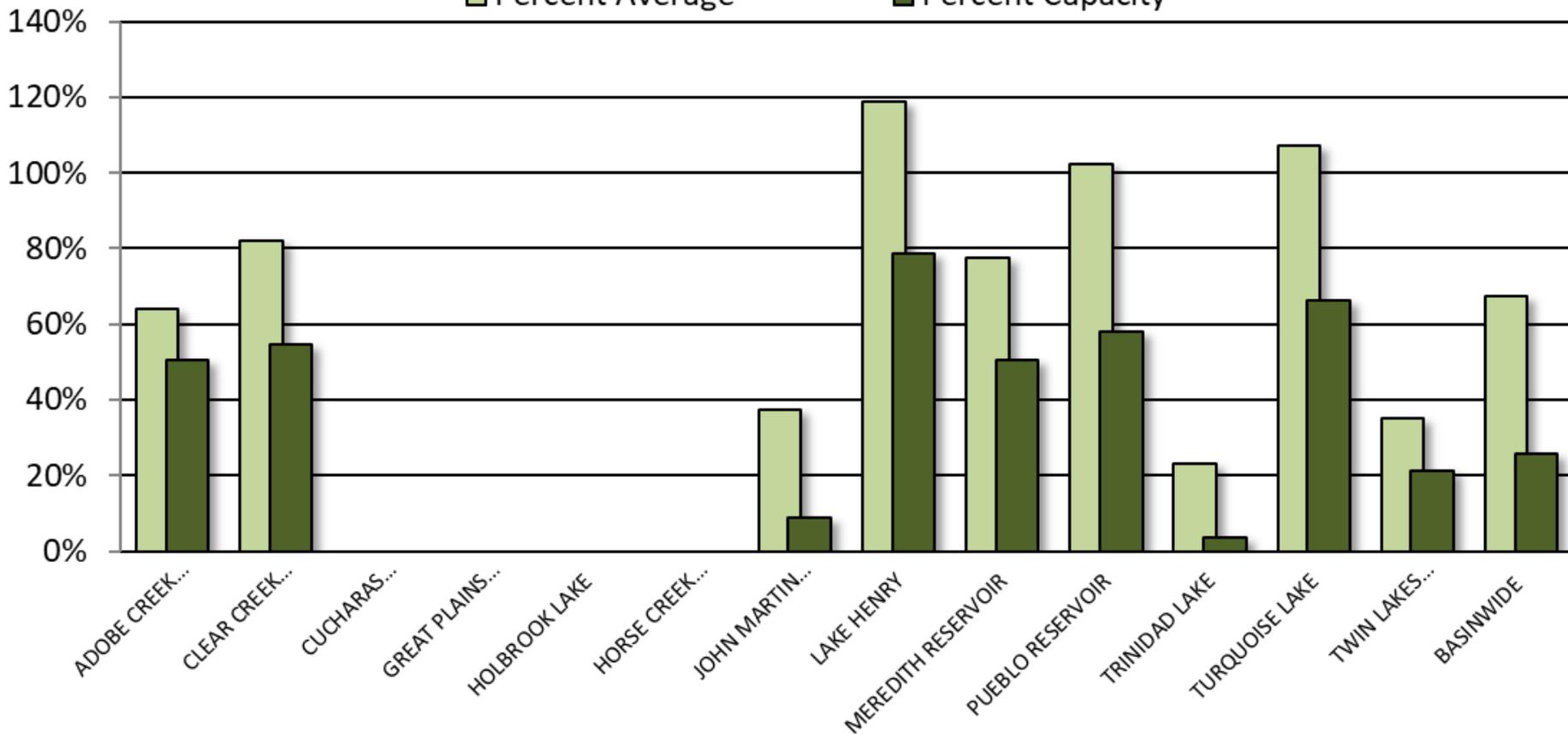
## Arkansas River Basin Streamflow Forecast Summary

March 1, 2021

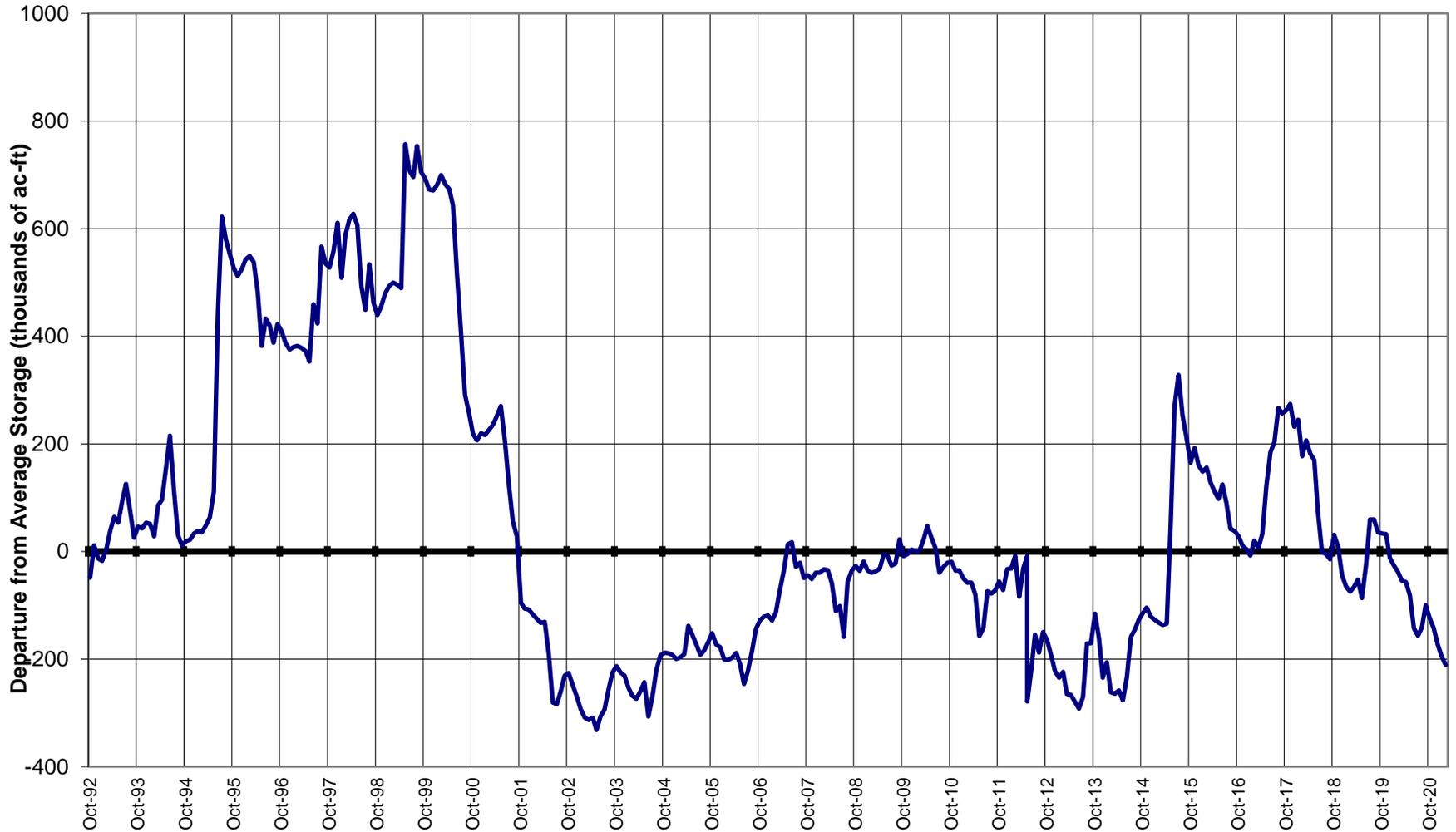


## End of February Reservoir Storage

■ Percent Average     
 ■ Percent Capacity

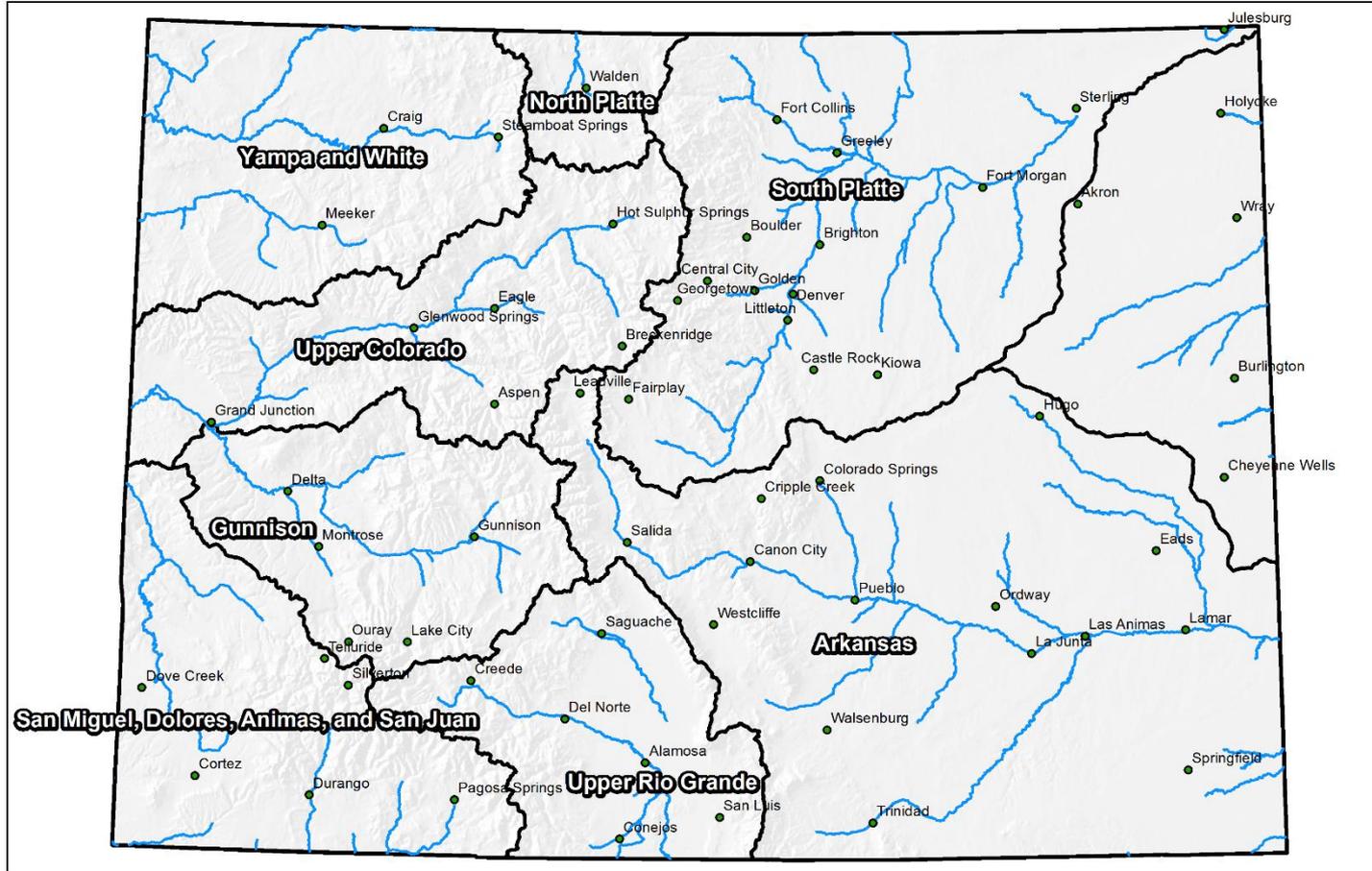


## ARKANSAS RIVER BASIN Reservoir Storage Departure from Average



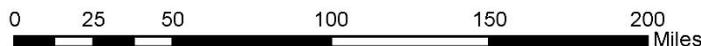
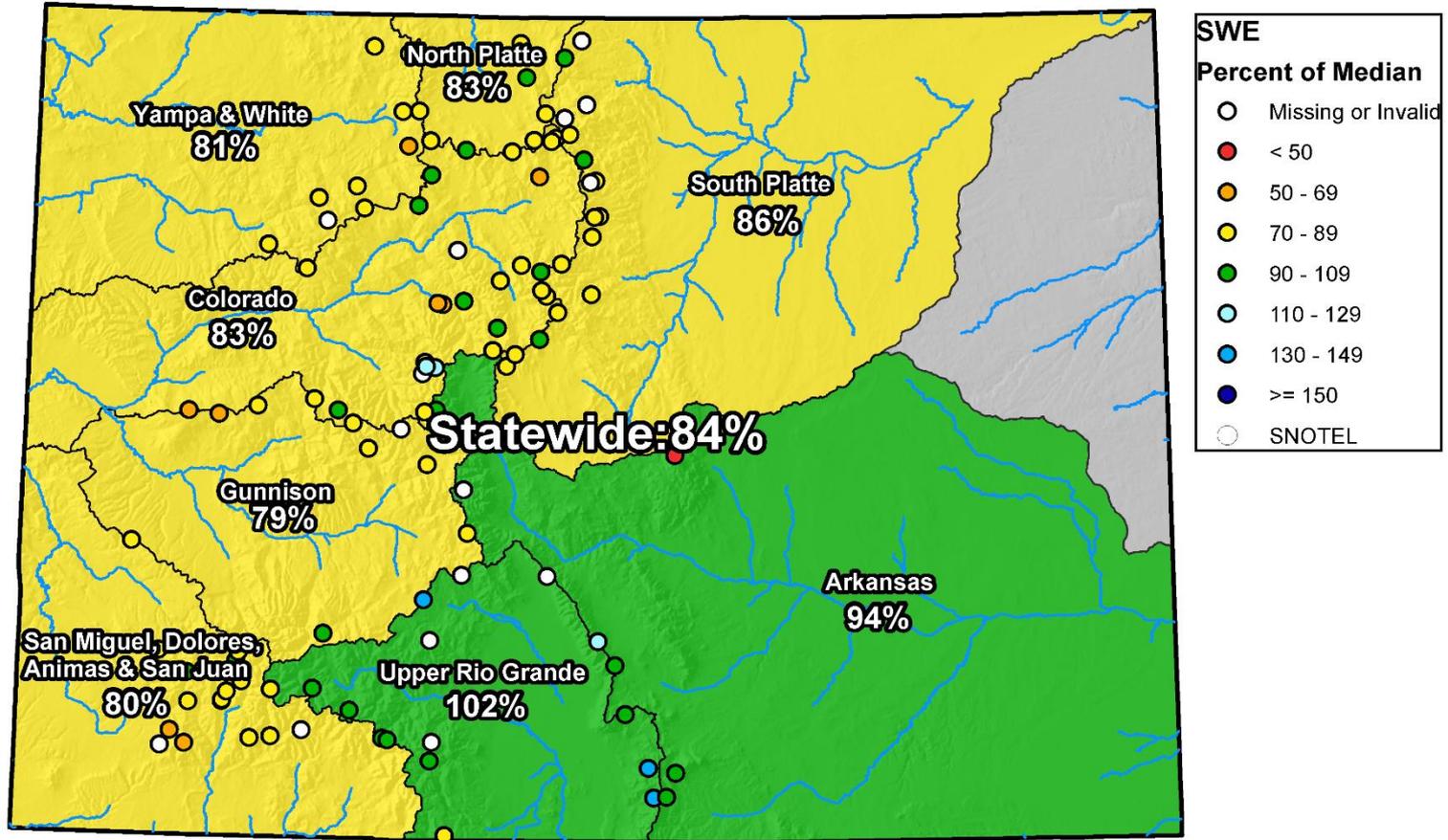
## Colorado Statewide Summary

### Colorado Major Basins



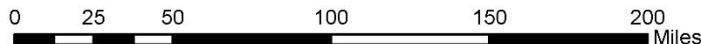
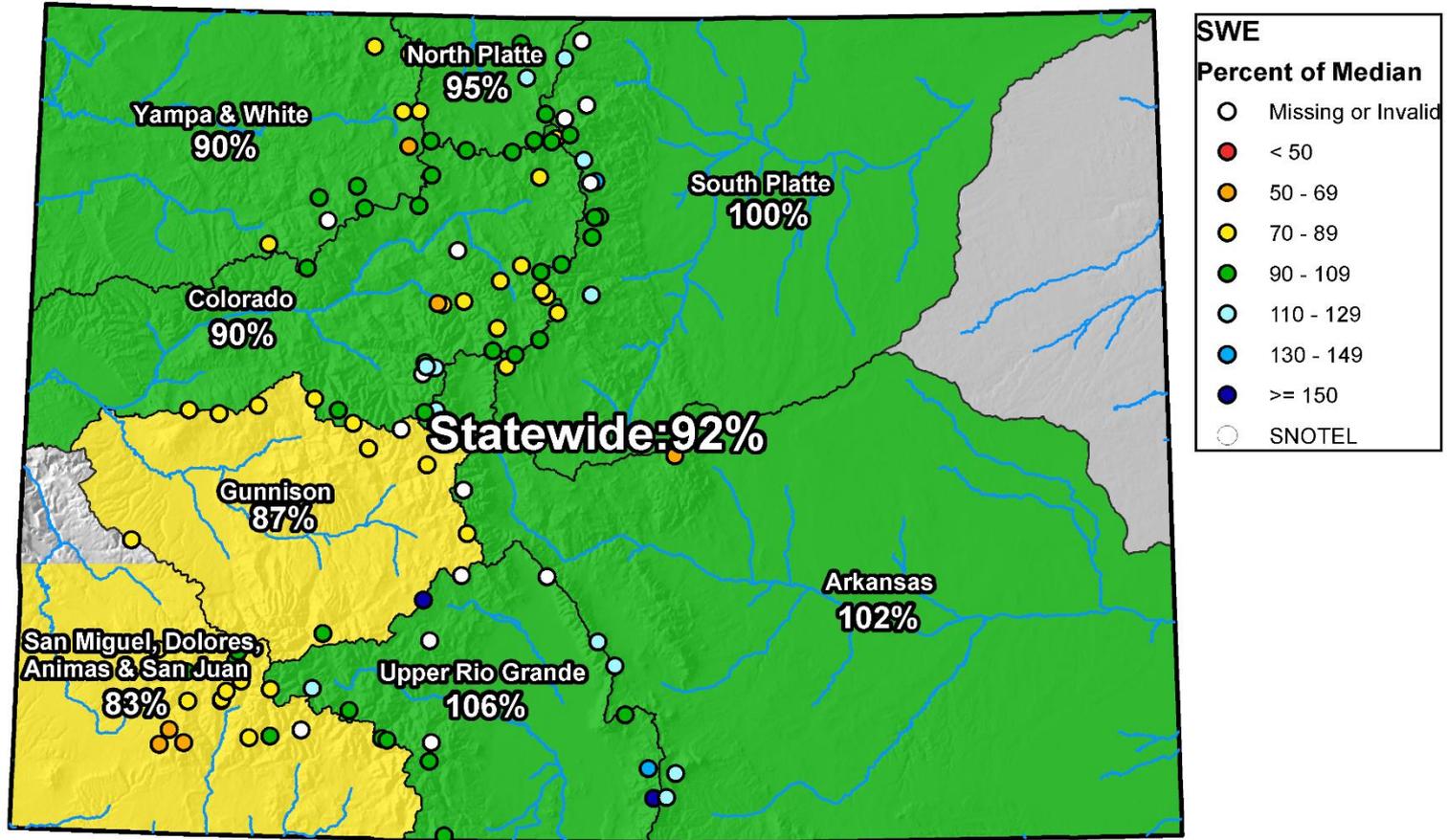
## Colorado SNOTEL Snow Water Equivalent (SWE) Update Map with Site Data

Current as of Feb 12, 2021



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

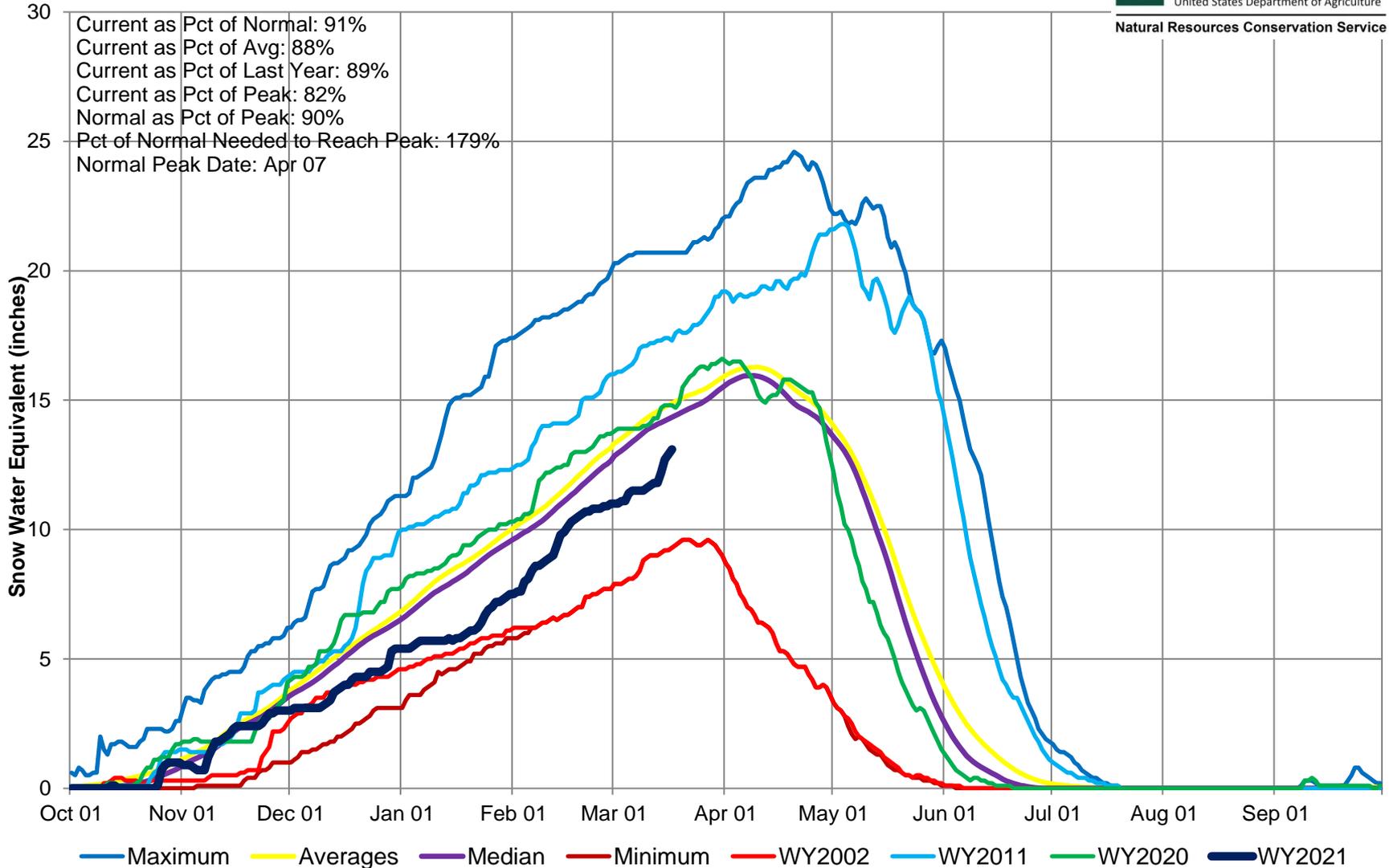
Current as of Mar 17, 2021



## Colorado Statewide High/Low Snowpack Summary

*Based on Provisional SNOTEL data as of Mar 17, 2021*

USDA  
United States Department of Agriculture  
Natural Resources Conservation Service



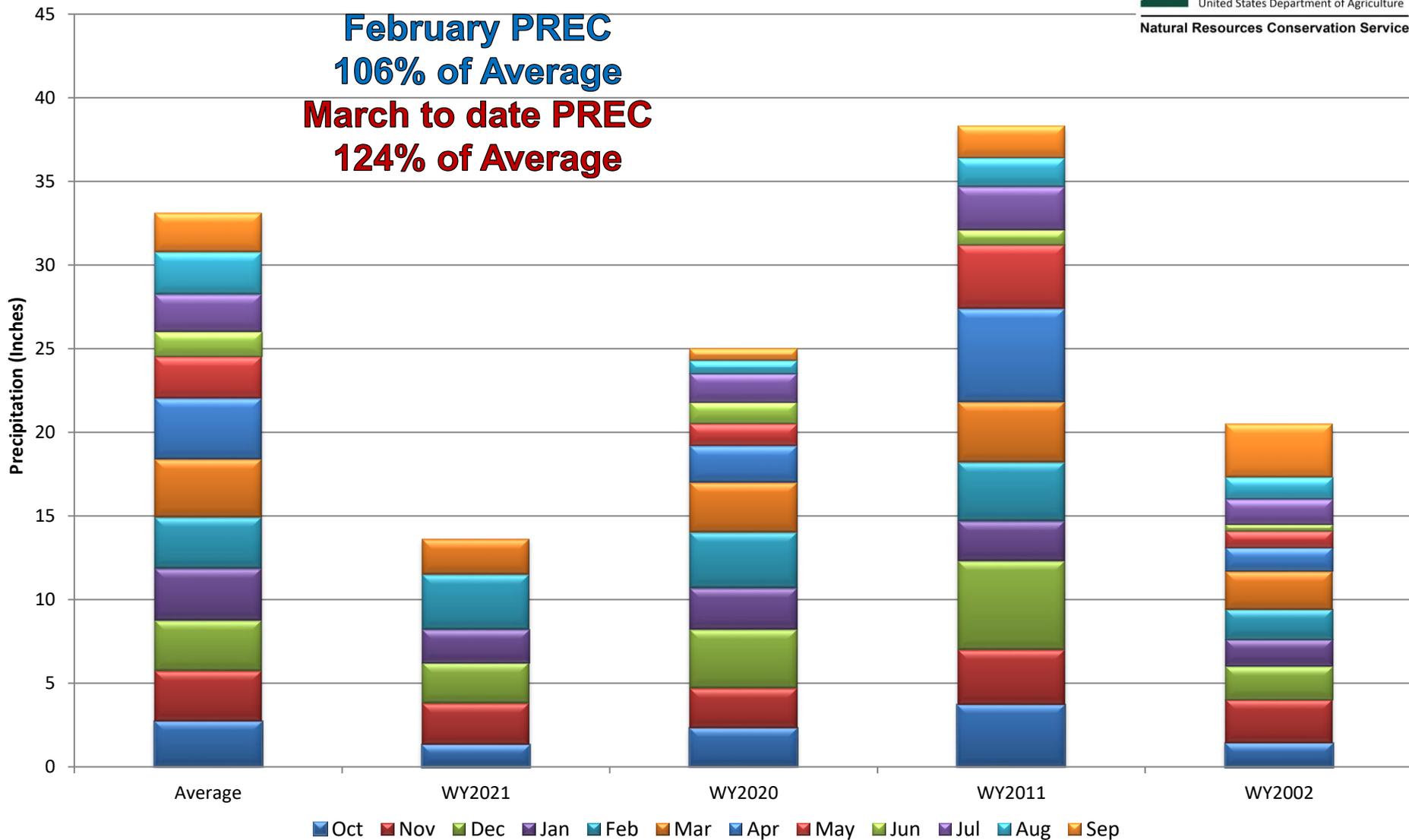


## Colorado Statewide High/Low Monthly Precipitation Summary

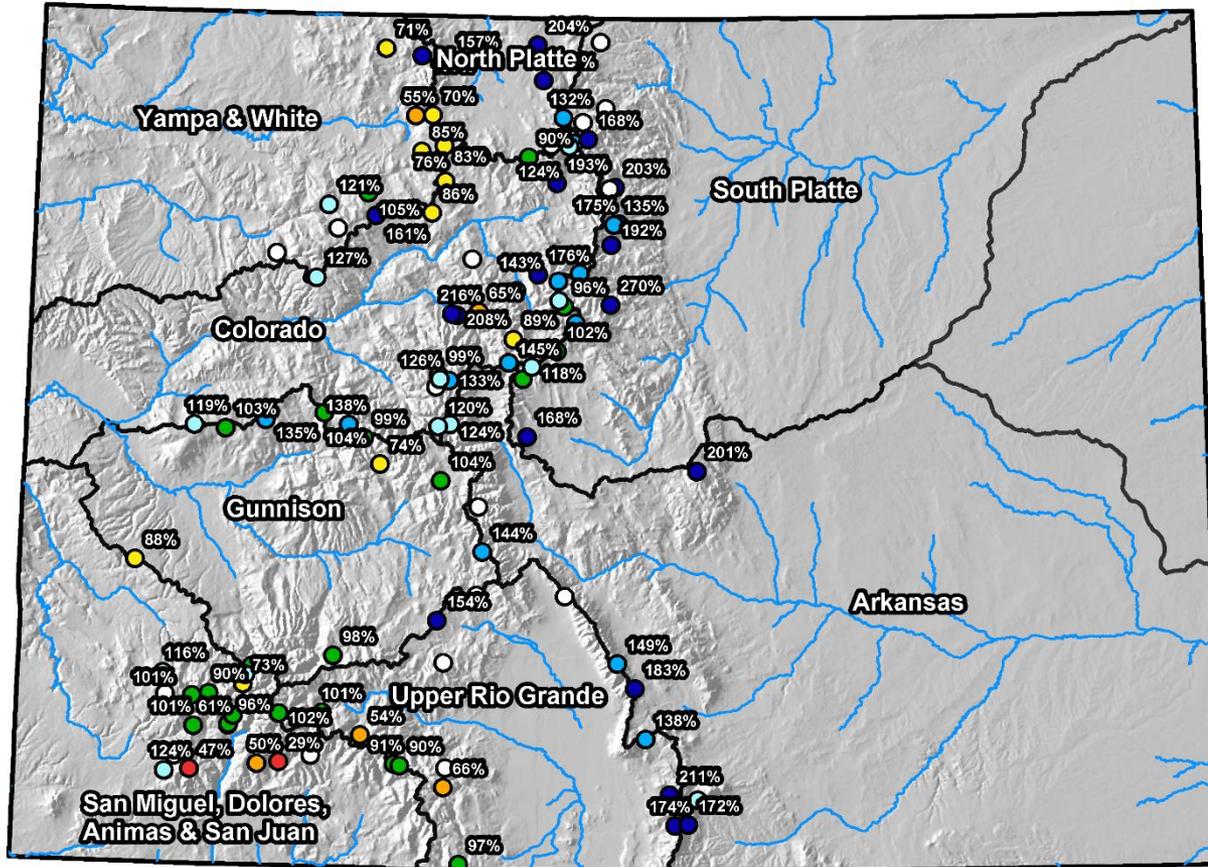
*Based on Provisional SNOTEL data as of Mar 17, 2021*



**February PREC**  
**106% of Average**  
**March to date PREC**  
**124% of Average**



## Colorado SNOTEL Month-to-Date Precipitation Current as of Mar 17, 2021



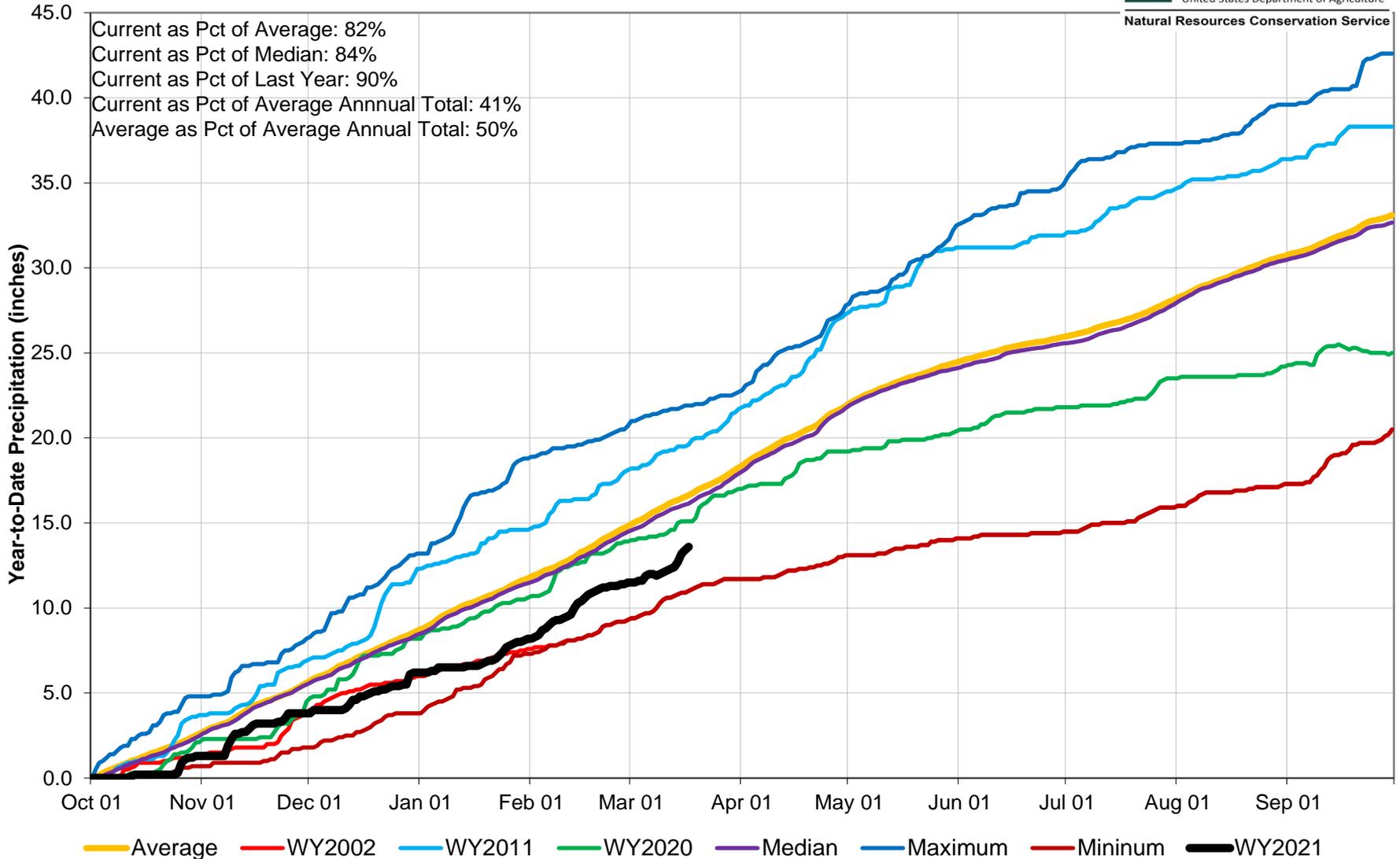
**MTD Precipitation  
Percent of Average**

- Missing or Invalid
- < 50
- 50 - 69
- 70 - 89
- 90 - 109
- 110 - 129
- 130 - 149
- >= 150
- SNOTEL

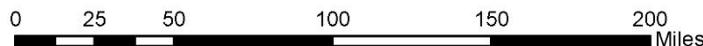
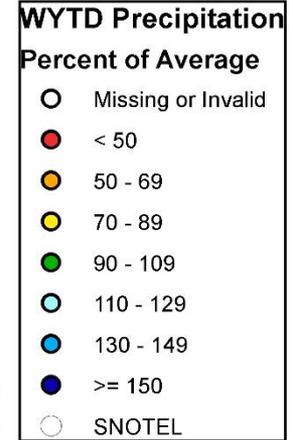
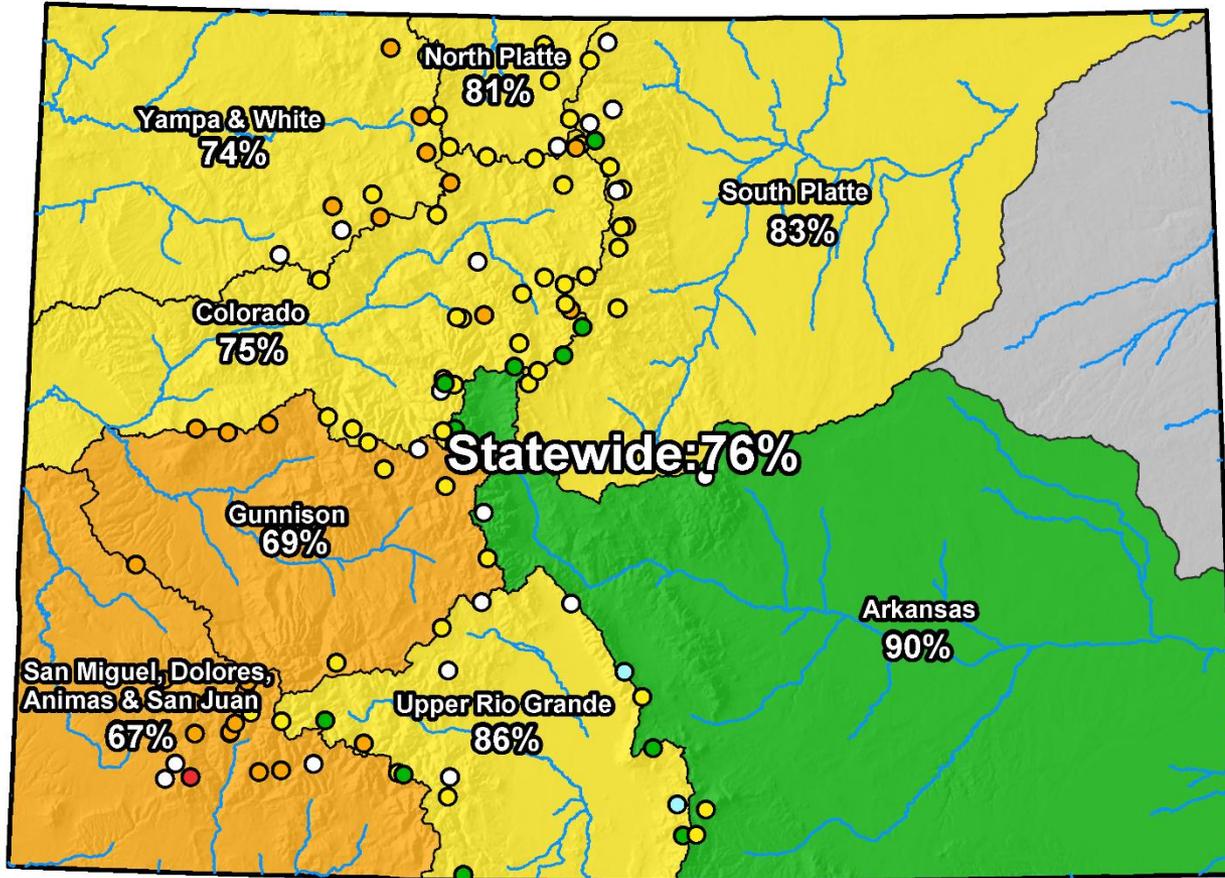


## Colorado Statewide High/Low Year-to-Date Precipitation Summary

*Based on Provisional SNOTEL data as of Mar 17, 2021*

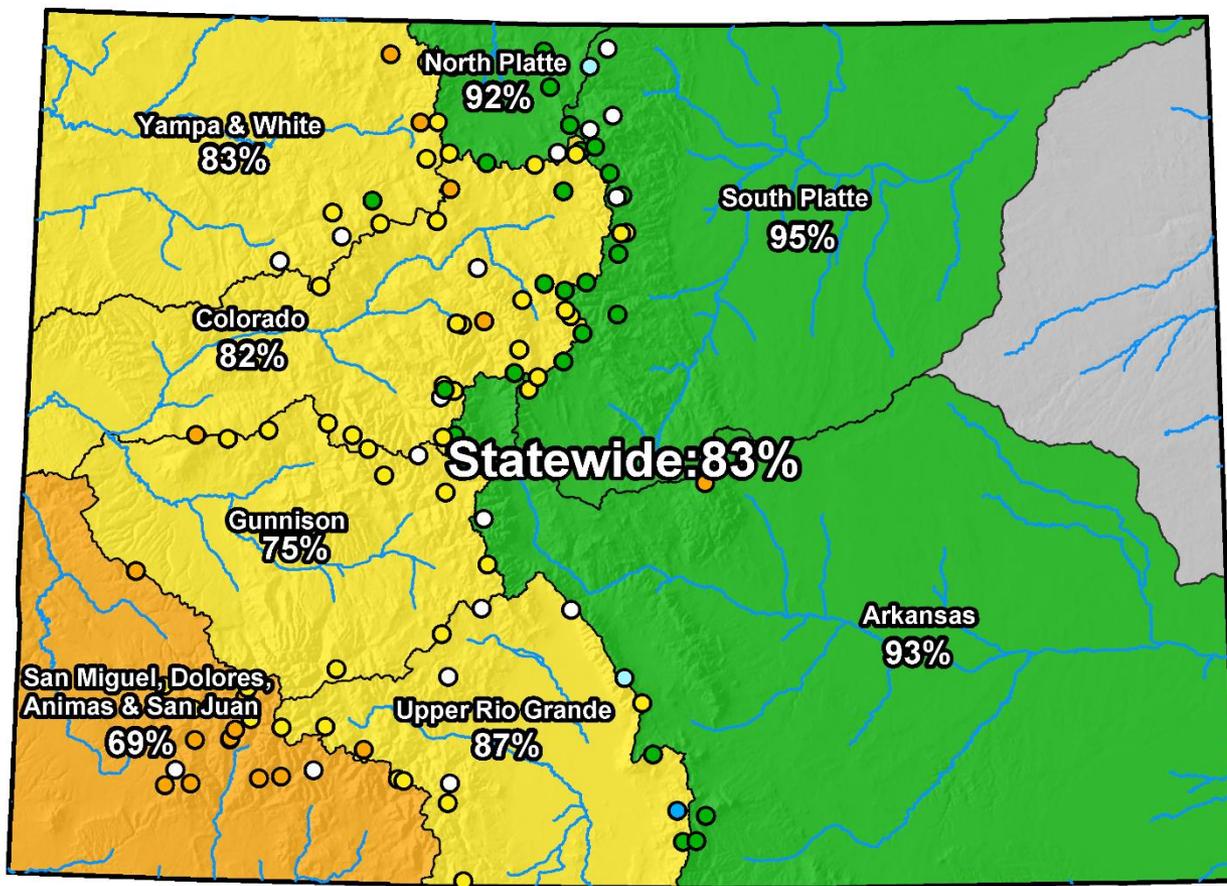


## Colorado SNOTEL Water Year to Date Precipitation Current as of Feb 12, 2021



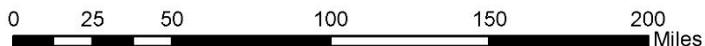
## Colorado SNOTEL Water Year to Date Precipitation

Current as of Mar 17, 2021

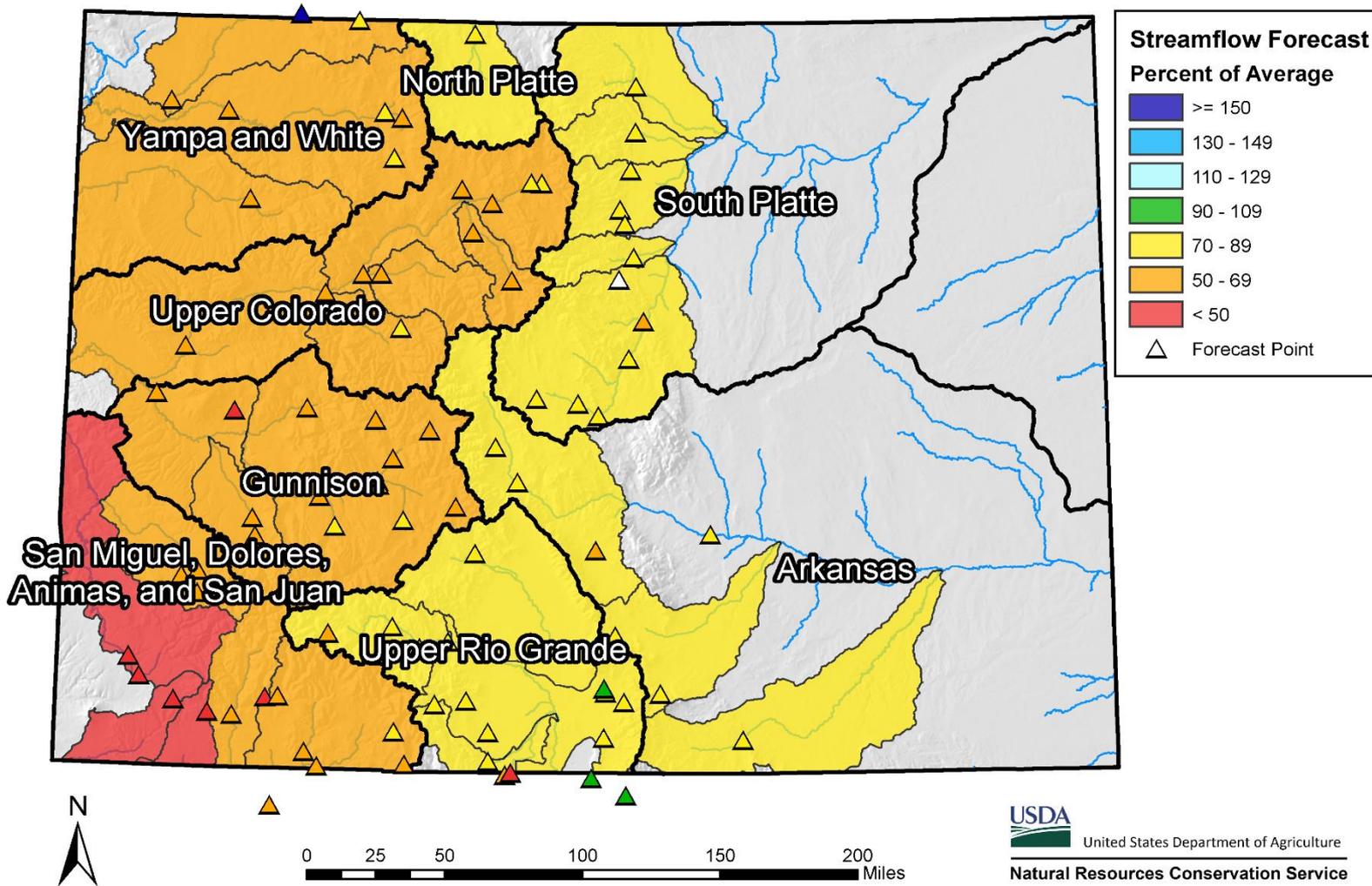


**WYTD Precipitation Percent of Average**

- Missing or Invalid
- < 50
- 50 - 69
- 70 - 89
- 90 - 109
- 110 - 129
- 130 - 149
- >= 150
- SNOTEL

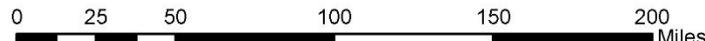
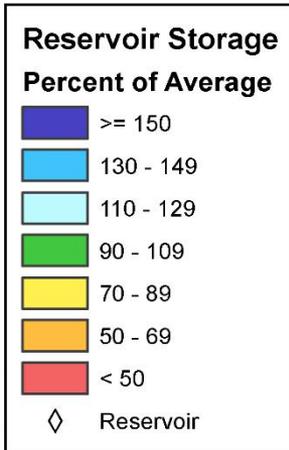
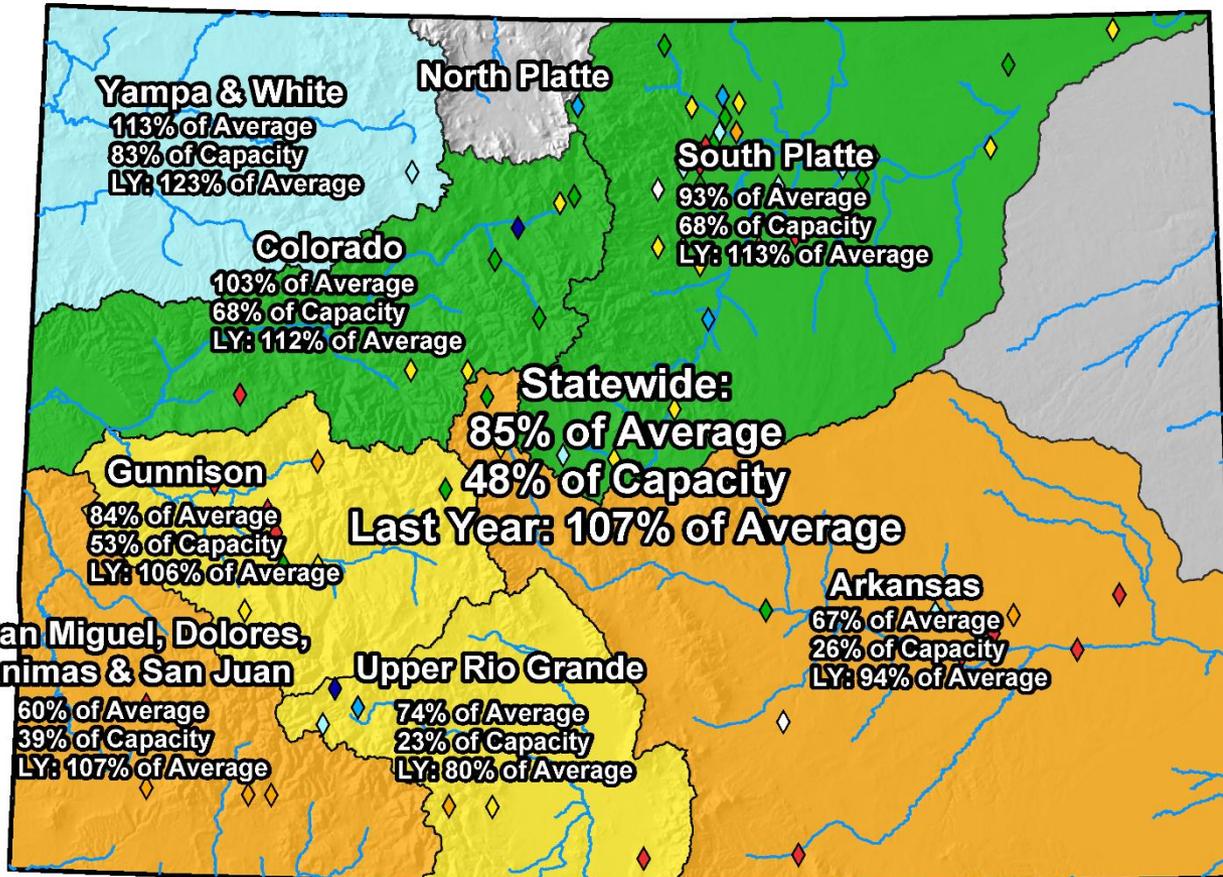


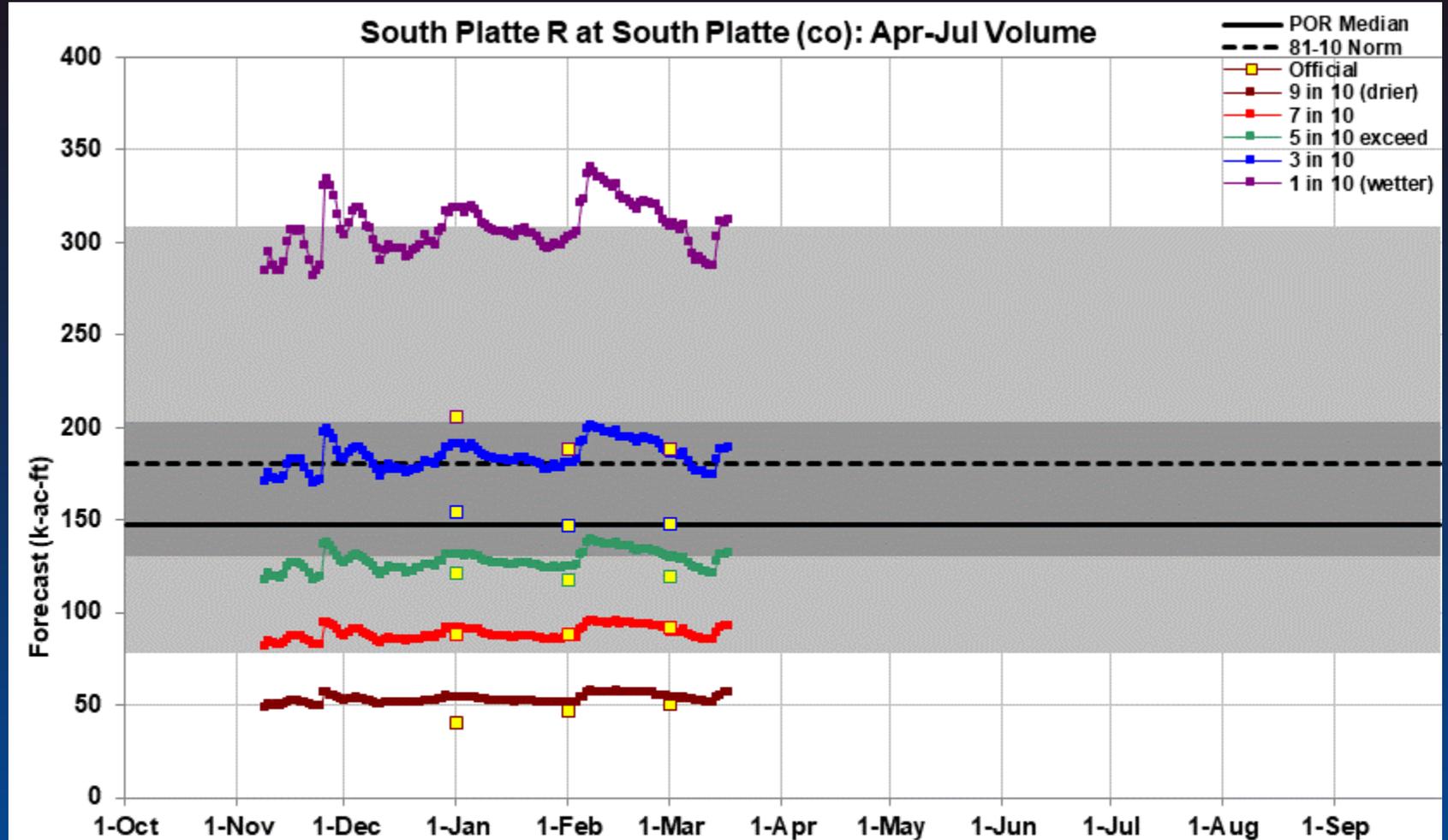
## Colorado Streamflow Forecasts Summary March 1, 2021



## Colorado Monthly Reservoir Storage Summary

End of February 2021

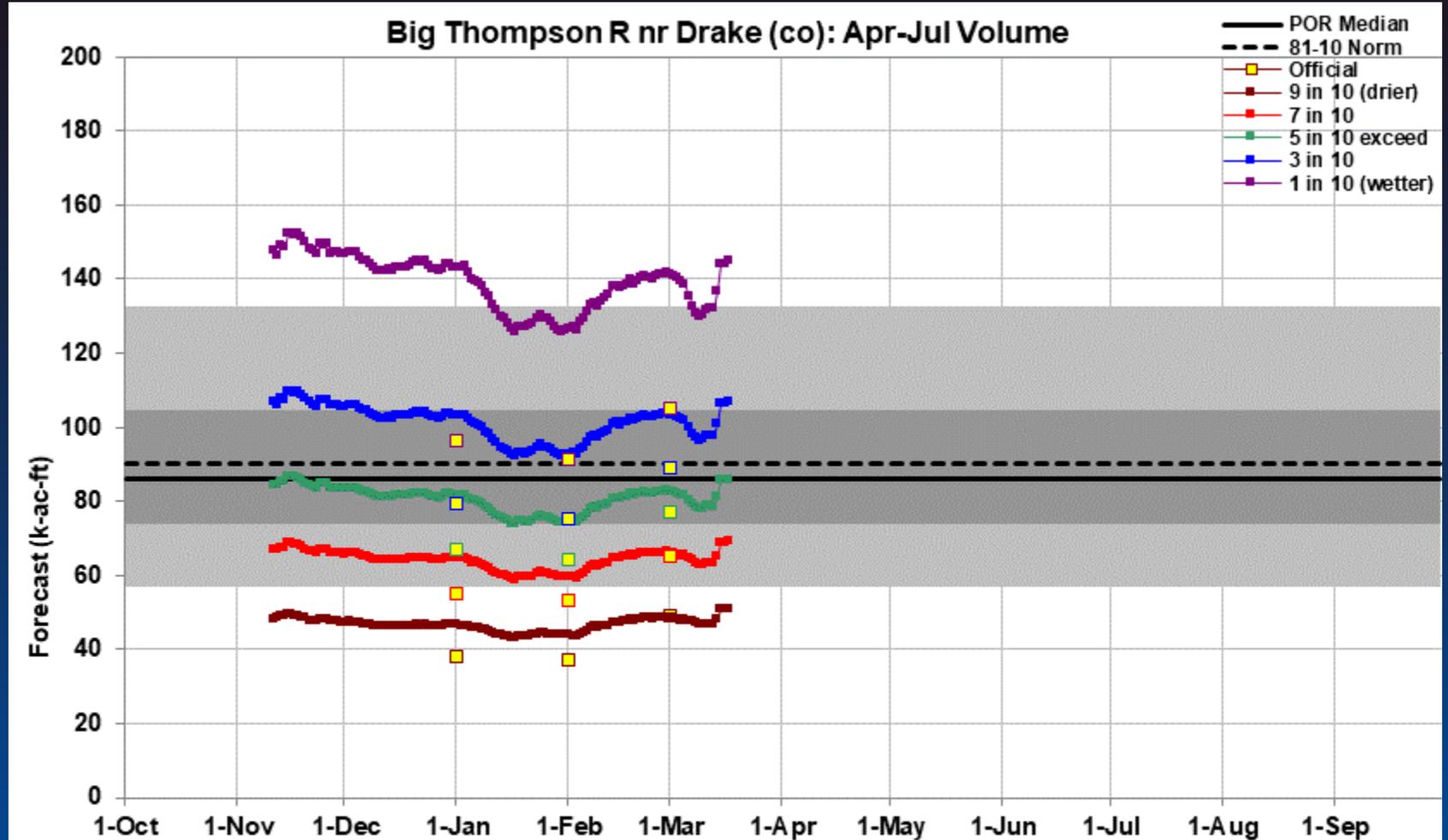




This is an automated product based solely on SNOTEL data, provisional data are subject to change. This product is a statistically based guidance forecast combining indices of snowpack and precipitation. **Yellow squares** are the official outlooks. **Gray background** is the historical period of record variability. This product does not consider climate information such as El Nino or short range weather forecasts, or a variety of other factors considered in the official forecasts. This product is not meant to replace or supercede the official forecasts produced in coordination with the National Weather Service. Science Contact: [Cara.s.McCarthy@por.usda.gov](mailto:Cara.s.McCarthy@por.usda.gov) [www.wcc.nrcs.usda.gov/ws/daily\\_forecasts.html](http://www.wcc.nrcs.usda.gov/ws/daily_forecasts.html)

Created 5:35 Mar 17 2021

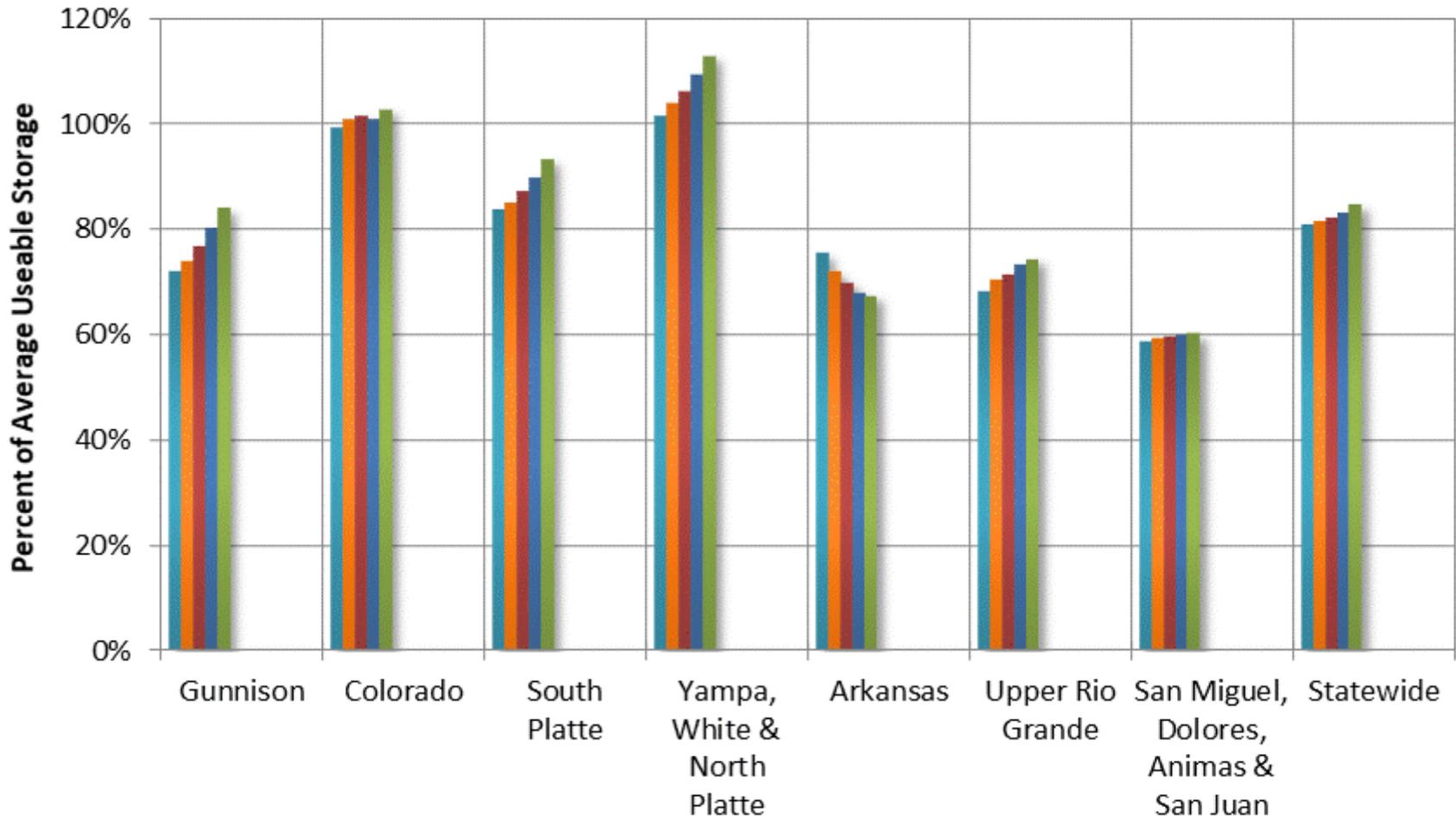




This is an automated product based solely on SNOTEL data, provisional data are subject to change. This product is a statistically based guidance forecast combining indices of snowpack and precipitation. **Yellow squares** are the official outlooks. **Gray background** is the historical period of record variability. This product does not consider climate information such as El Nino or short range weather forecasts, or a variety of other factors considered in the official forecasts. This product is not meant to replace or supersede the official forecasts produced in coordination with the National Weather Service. Science Contact: [Cara.s.McCarthy@por.usda.gov](mailto:Cara.s.McCarthy@por.usda.gov) [www.wcc.nrcs.usda.gov/ws/daily\\_forecasts.html](http://www.wcc.nrcs.usda.gov/ws/daily_forecasts.html)

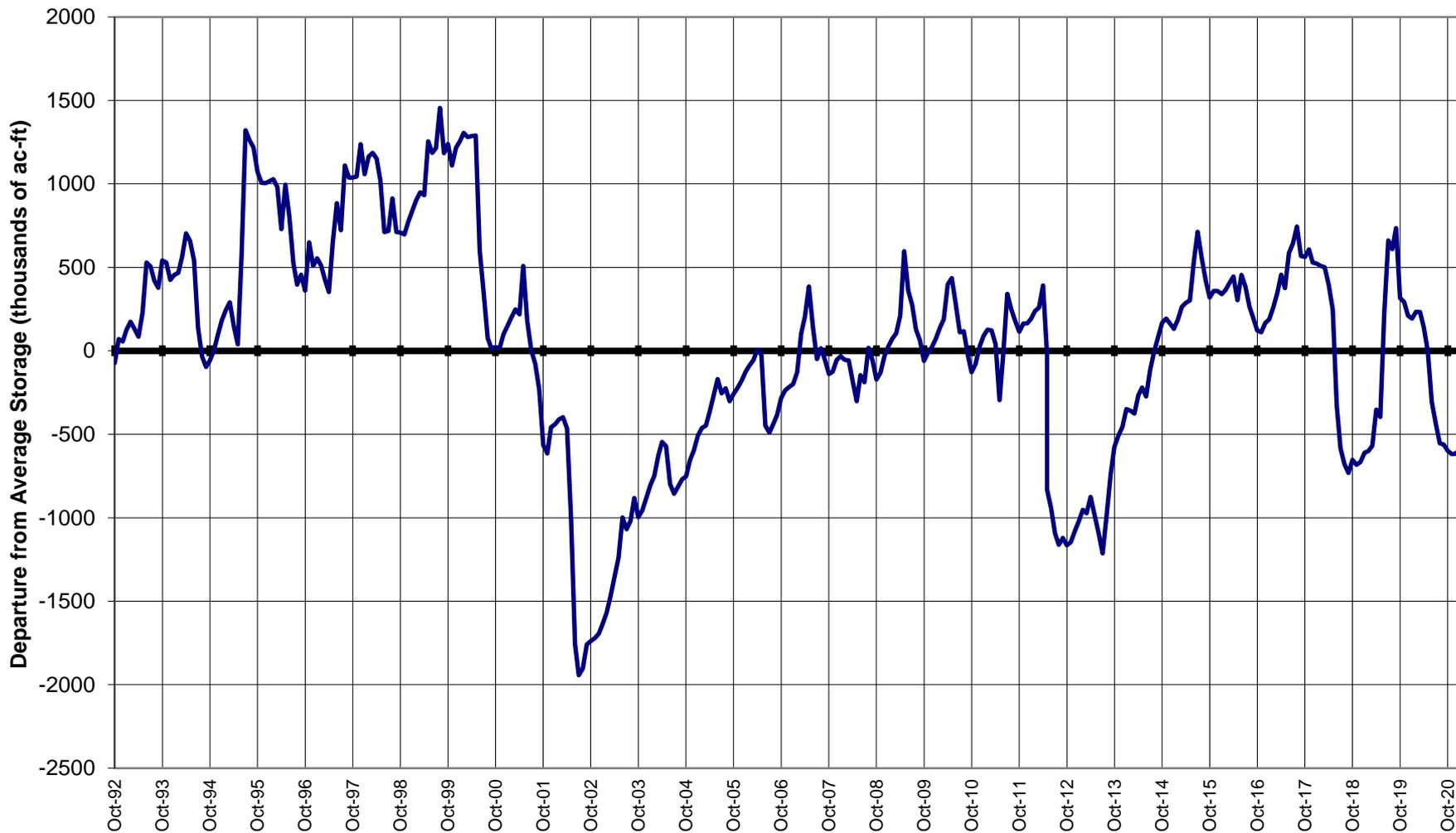
## Colorado Reservoir Storage

■ Oct-20    ■ Nov-20    ■ Dec-20    ■ Jan-21    ■ Feb-21    ■ Mar-21  
■ Apr-21    ■ May-21    ■ Jun-21    ■ Jul-21    ■ Aug-21    ■ Sep-21





## COLORADO STATEWIDE Reservoir Storage Departure from Average



# Summary

- **Mid-March storm provided much-needed boost to anticipated snowpack and water supply but fall far short of what is needed to make up for precip and soil moisture deficits**
  - 15% improvement in South Platte Snowpack
  - 12% improvement in Arkansas Snowpack
  - As little as a 5% improvement in Colorado River Basin Snowpack
- **Precipitation Statewide**
  - Since last month's presentation - a slight improvement in precipitation. Larger improvement in the northern half of the state and in the southern a very slight improvement.
- **Reservoir Storage increased 2% since last month to 85% of normal with basin-wide storage values remaining better in the northern half of the state nearer normal below normal in the southern half of the state.**
- **Streamflow forecasts indicate below normal runoff this spring and summer. Most recent storm will improve runoff prospects some but not as much as needed. Dry soils and low baseflows in rivers across the state are indicating that snowmelt runoff will likely produce lower runoff volumes than would commonly occur with current snowpack.**



# Water Availability Task Force Meeting

## March 18<sup>th</sup>, 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/>



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