

# Outlook: Water Year 2023 Summit County

May 23, 2023

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**COLORADO RIVER DISTRICT**  
PROTECTING WESTERN COLORADO WATER SINCE 1937



# Hydro Headlines:

## *‘From Drought to Flood’*

### **2023 Winter: widespread wet and cold**

Above average precipitation, *below* average temperatures

Record-setting 31 atmospheric river events

Record setting low Lake Powell and Lake Mead storage levels

### **2023 WY Outlook – mixed signals**

Change to El Nino ending ‘triple dip’

Water Year forecast 148% of average unregulated inflow into Lake Powell (range 133%-170%)

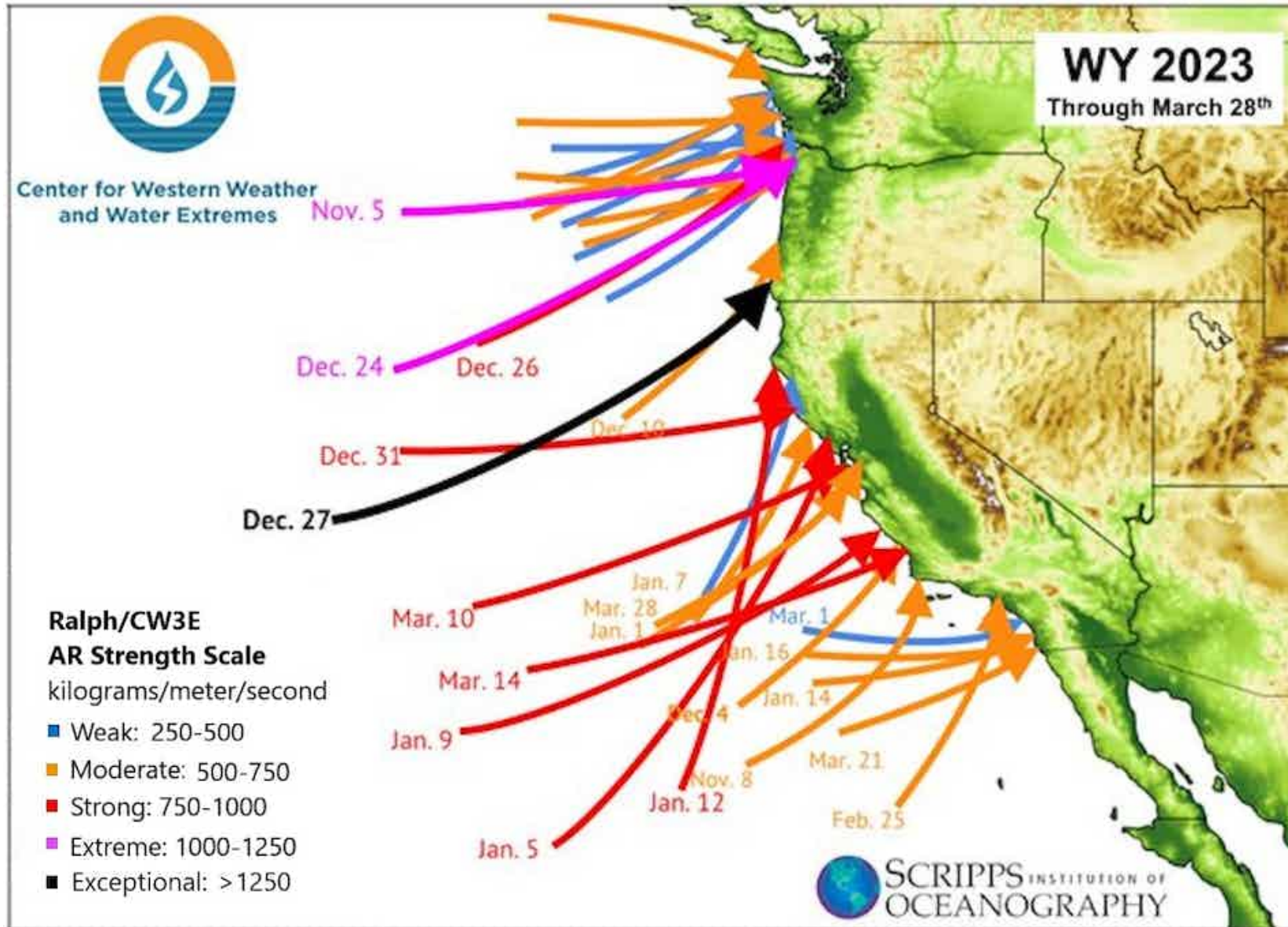
Lower Basin – Tier 2a shortage in 2023

Wolford Mtn reservoir within top operational range

Blue Mesa to rebound significantly from record low

Granby Reservoir projected to spill

# Epic parade of storms



## Atmospheric Rivers:

**31 total**

- 1 exceptional
- 2 extreme
- 6 strong
- 15 moderate
- 7 weak

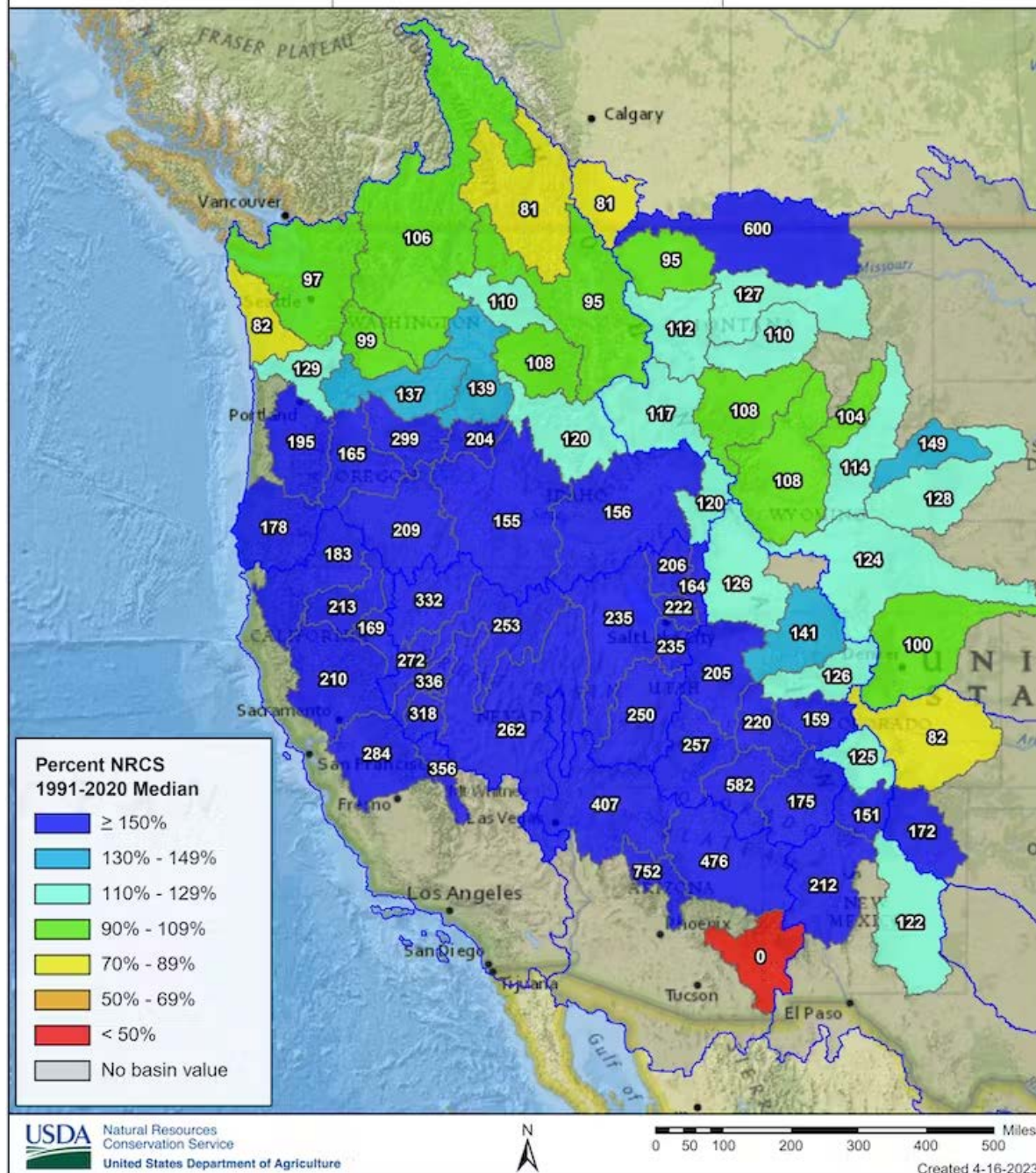
# Epic snows



Mammoth Mountain, March 2023  
*credit: Peter Morning*



Lake Tahoe, February 2023  
*credit: Scott Gaffney*



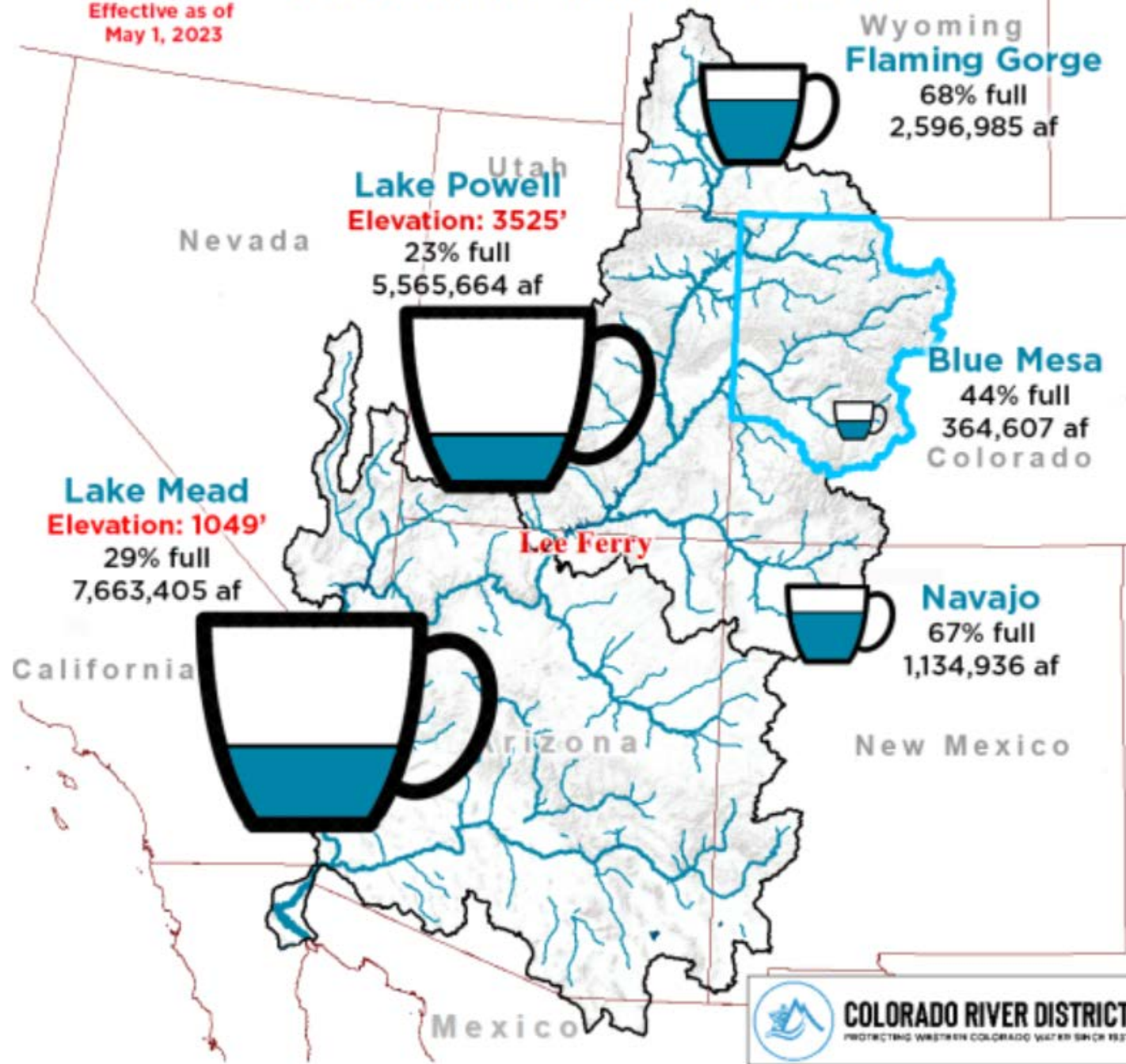
## Widespread impacts:

### Across the Western US

- Above average snows
- Below average temps
- Late peak
- Records set in Great basin and Sierra Nevada

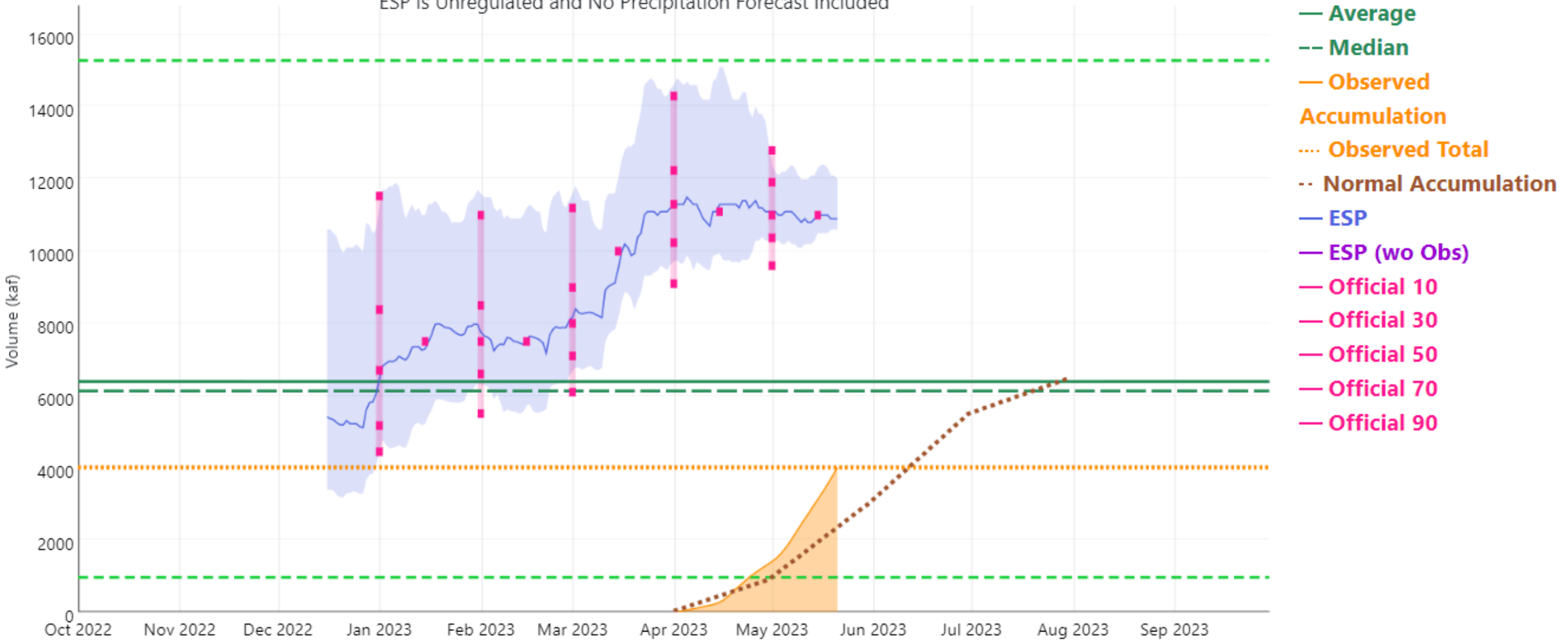
# Colorado River Basin

Effective as of  
May 1, 2023



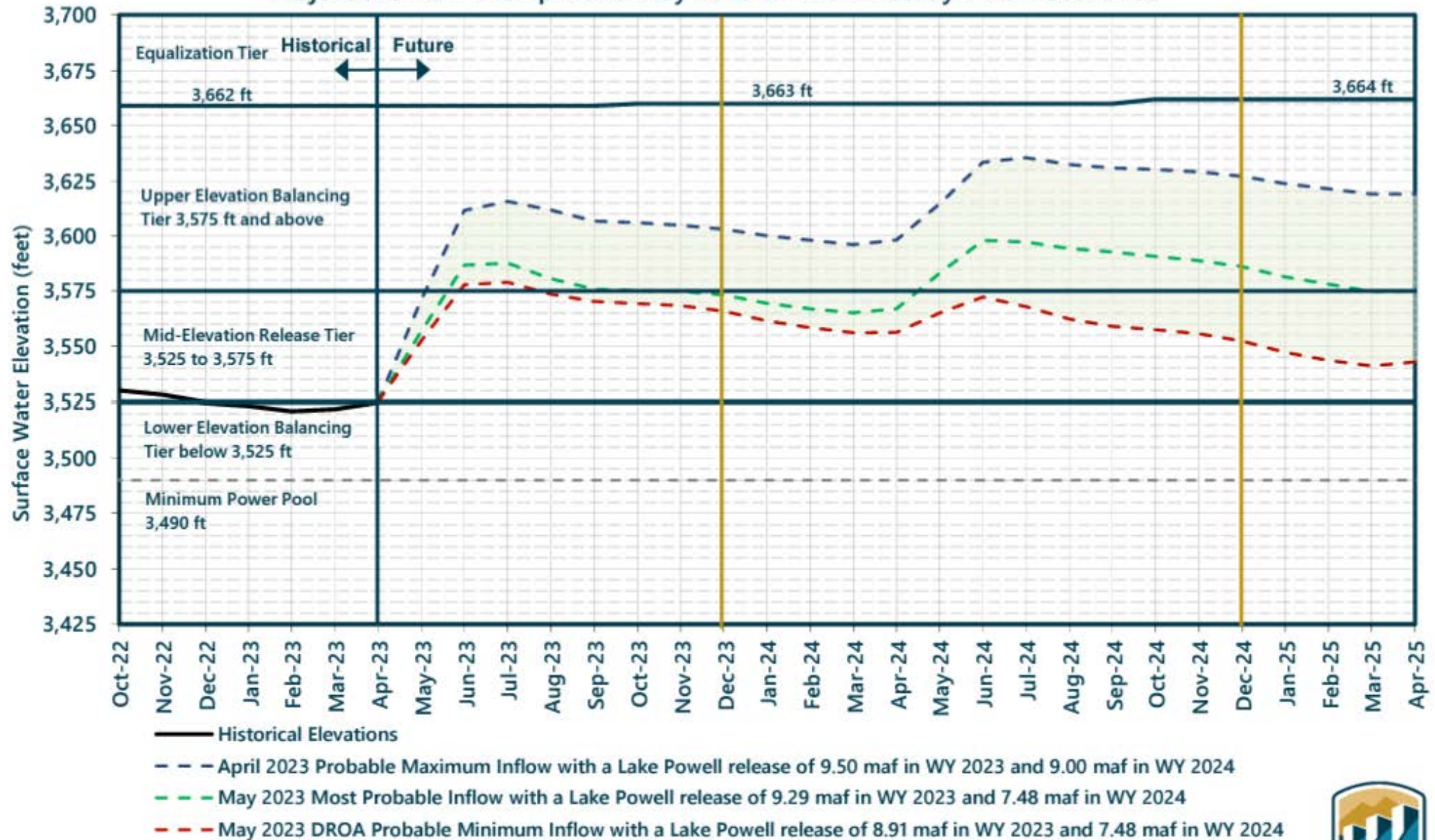
# Water Supply Forecast

**Colorado - Lake Powell, Glen Cyn Dam, At (GLDA3)**  
**Period: Apr-Jul, Official 50% Forecast (2023-05-15): 11000 kaf (172% Average, 179% Median)**  
ESP is Unregulated and No Precipitation Forecast Included



# Lake Powell End of Month Elevations<sup>1</sup>

Projections from the April and May 2023 24-Month Study Inflow Scenarios



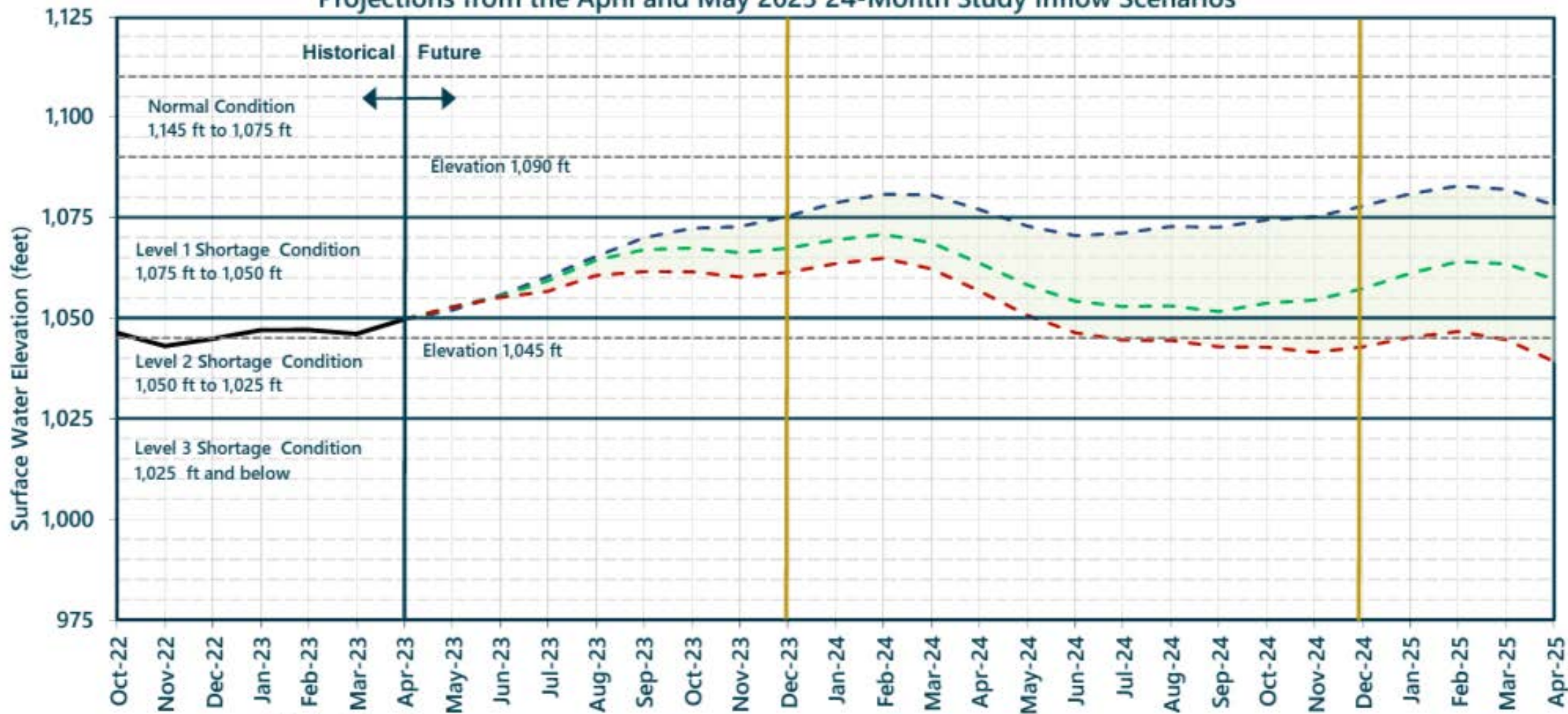
<sup>1</sup> Projected Lake Powell end of month physical elevations from the latest 24-Month Study inflow scenarios. The Drought Response Operations Agreement (DROA) is available online at: <https://www.usbr.gov/dcp/finaldocs.html>.





# Lake Mead End of Month Elevations<sup>1</sup>

Projections from the April and May 2023 24-Month Study Inflow Scenarios



— Historical Elevations

- - - April 2023 Probable Maximum Inflow with a Lake Powell release of 9.50 maf in WY 2023 and 9.00 maf in WY 2024

- - - May 2023 Most Probable Inflow with a Lake Powell release of 9.29 maf in WY 2023 and 7.48 maf in WY 2024

- - - May 2023 DROA Probable Minimum Inflow with a Lake Powell release of 8.91 maf in WY 2023 and 7.48 maf in WY 2024

<sup>1</sup> Projected Lake Mead end of month physical elevations from the latest 24-Month Study inflow scenarios.

The Drought Response Operations Agreement (DROA) is available online at: <https://www.usbr.gov/dcp/finaldocs.html>.

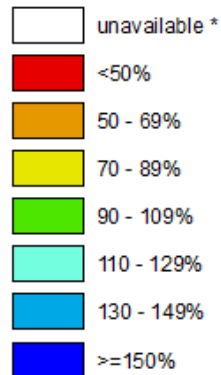


**Colorado**  
**SNOTEL Current Snow Water Equivalent (SWE) % of Normal**

**May 22, 2023**

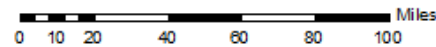
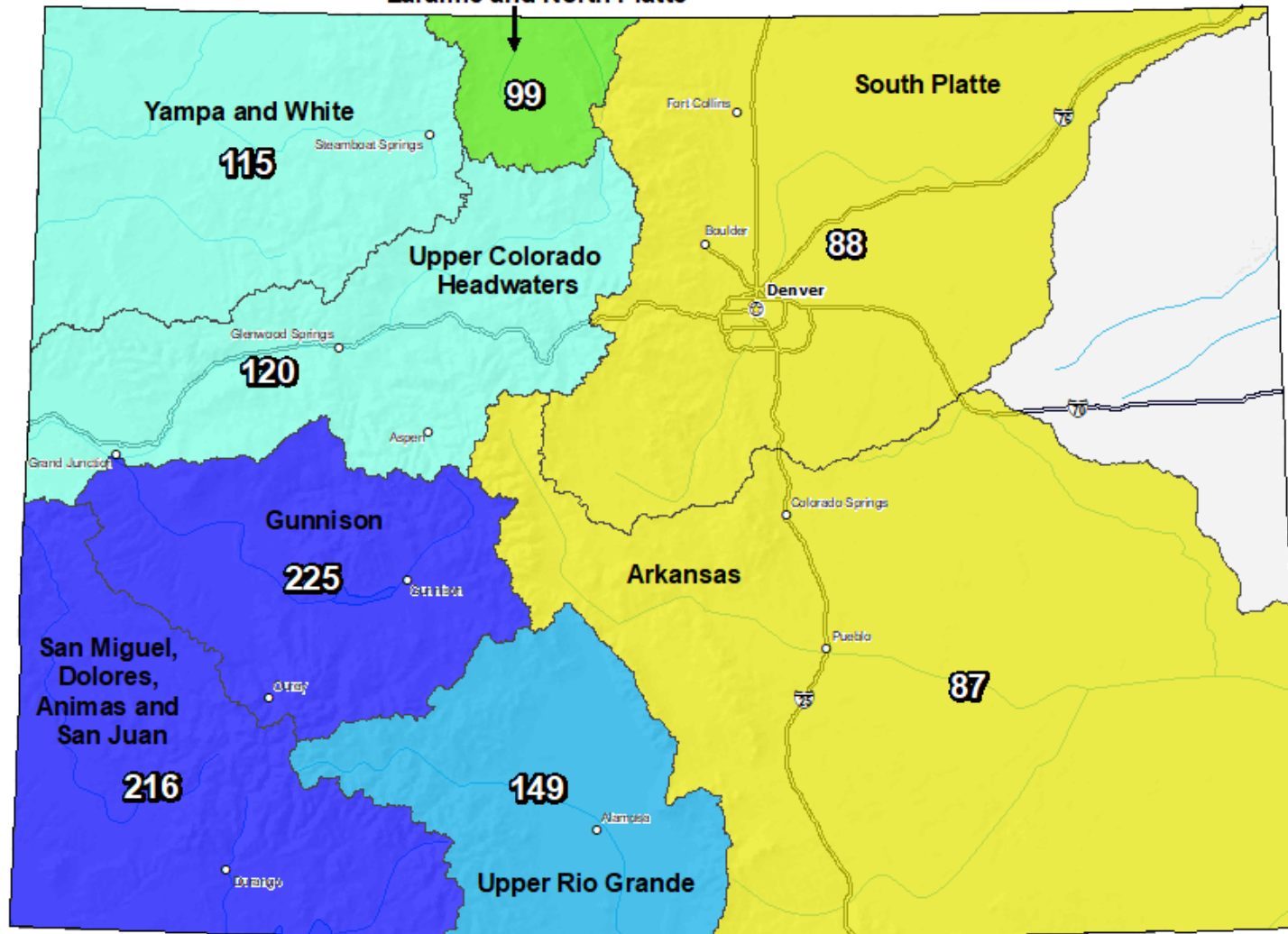
Laramie and North Platte

Current Snow Water Equivalent (SWE) Basin-wide Percent of 1991-2020 Median



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

*Provisional Data  
 Subject to Revision*

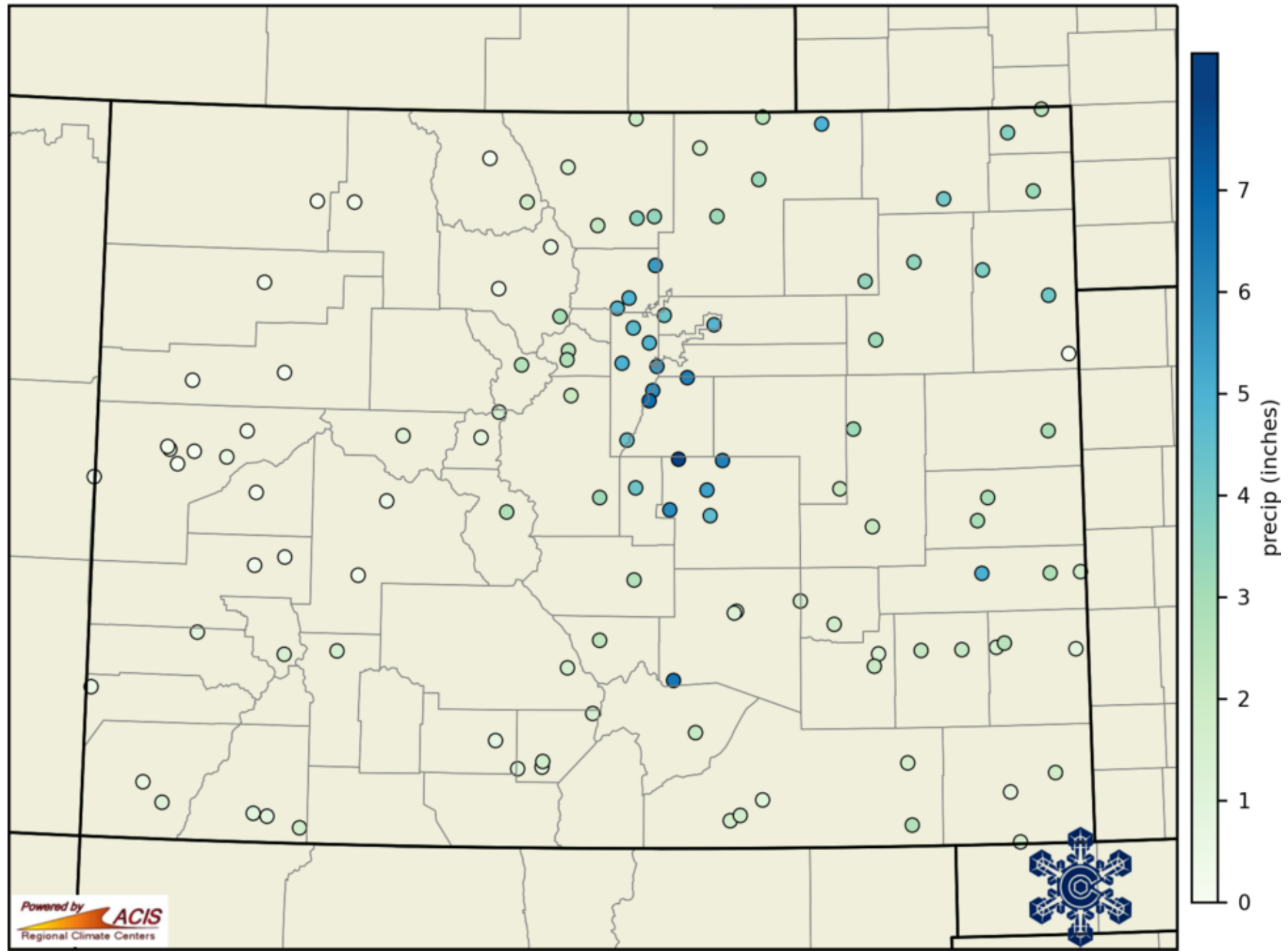


The snow water equivalent percent of normal represents the current snow water equivalent found at selected SNOTEL sites in or near the basin compared to the average value for those sites on this day. Data based on the first reading of the day (typically 00:00).

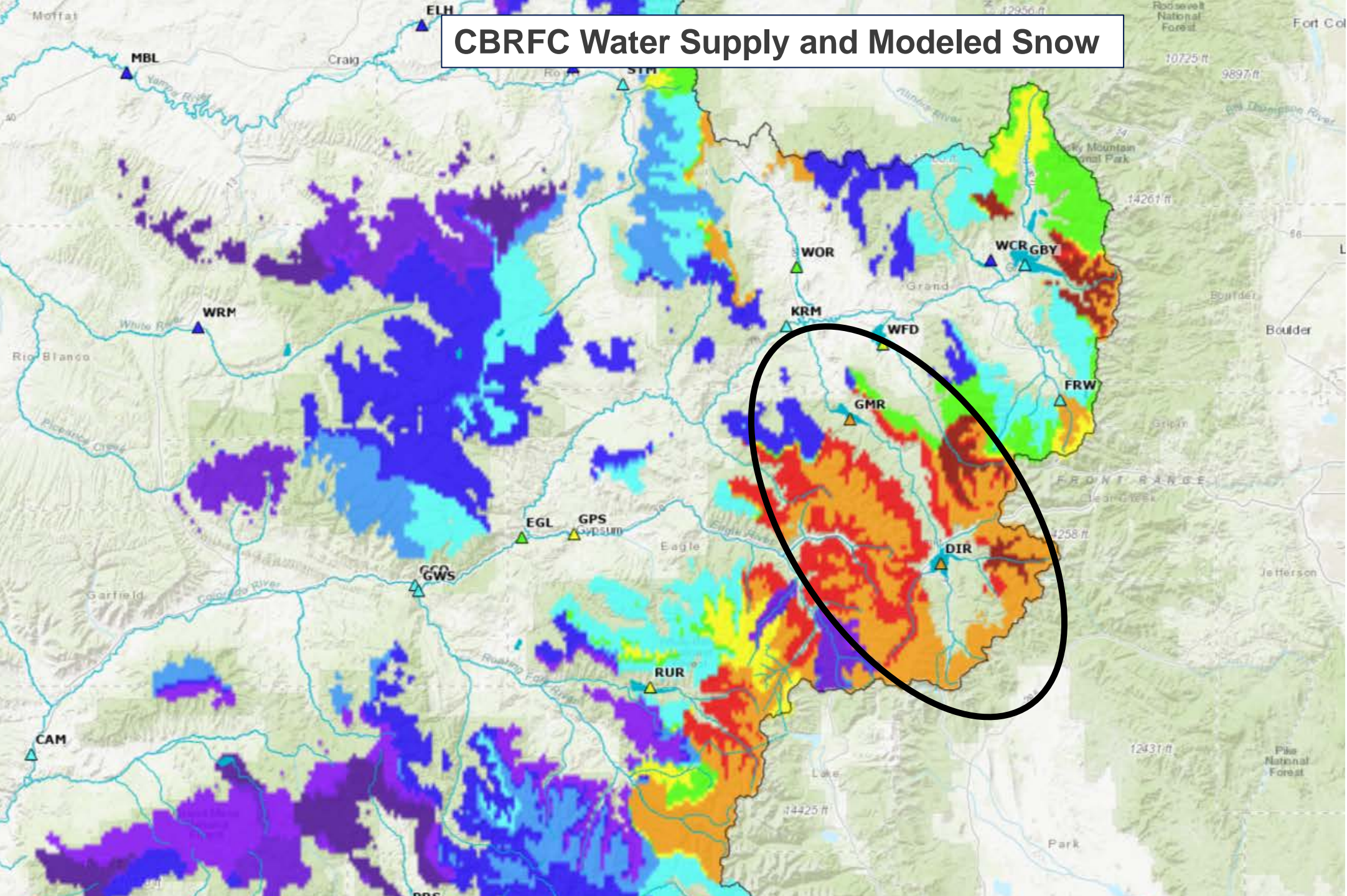
Prepared by:  
 USDA/NRCS National Water and Climate Center  
 Portland, Oregon  
<https://www.nrcs.usda.gov/wps/portal/nrcs/home/>



Colorado precipitation in previous 14 days: 08 May 2023-22 May 2023



# CBRFC Water Supply and Modeled Snow

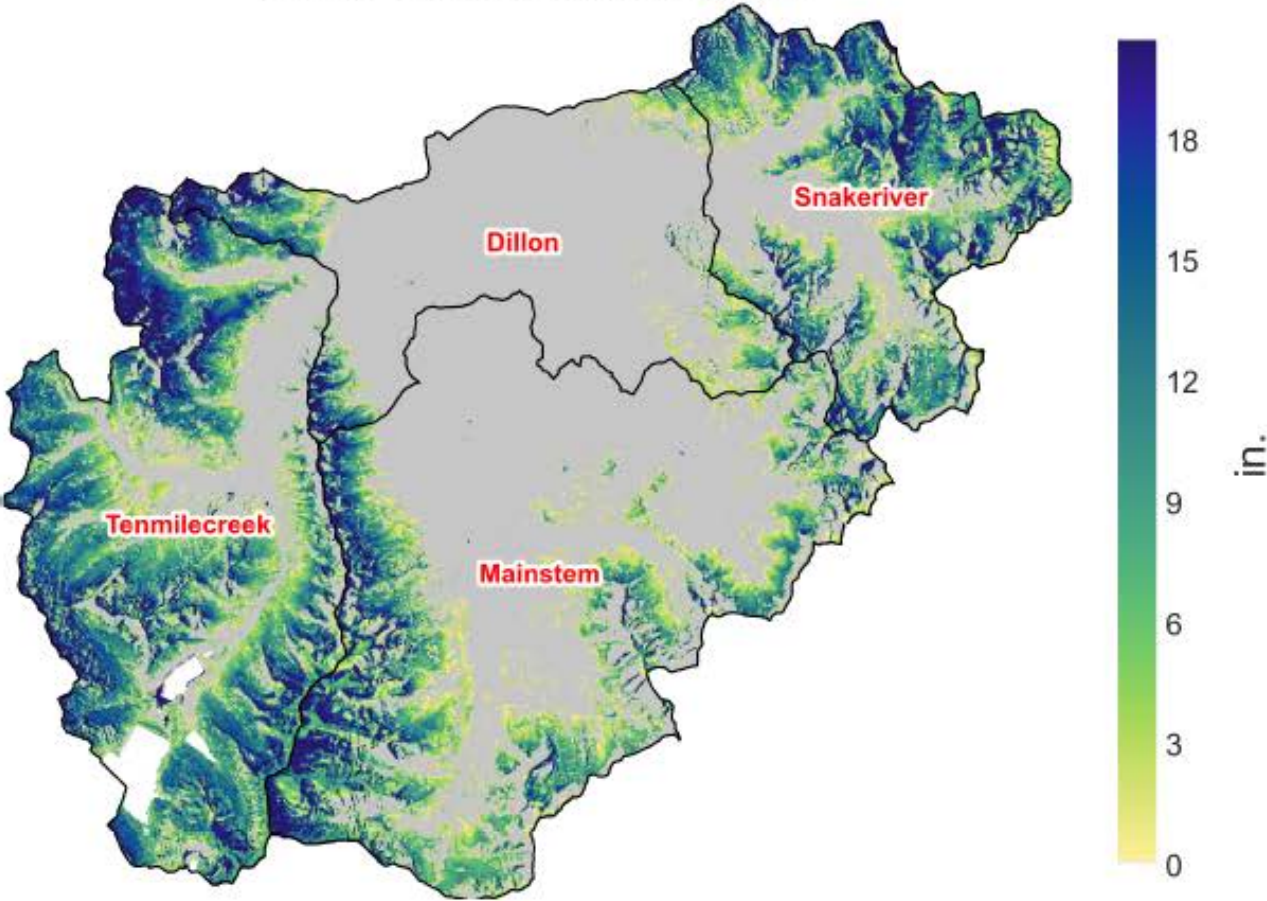


## % Median SWE

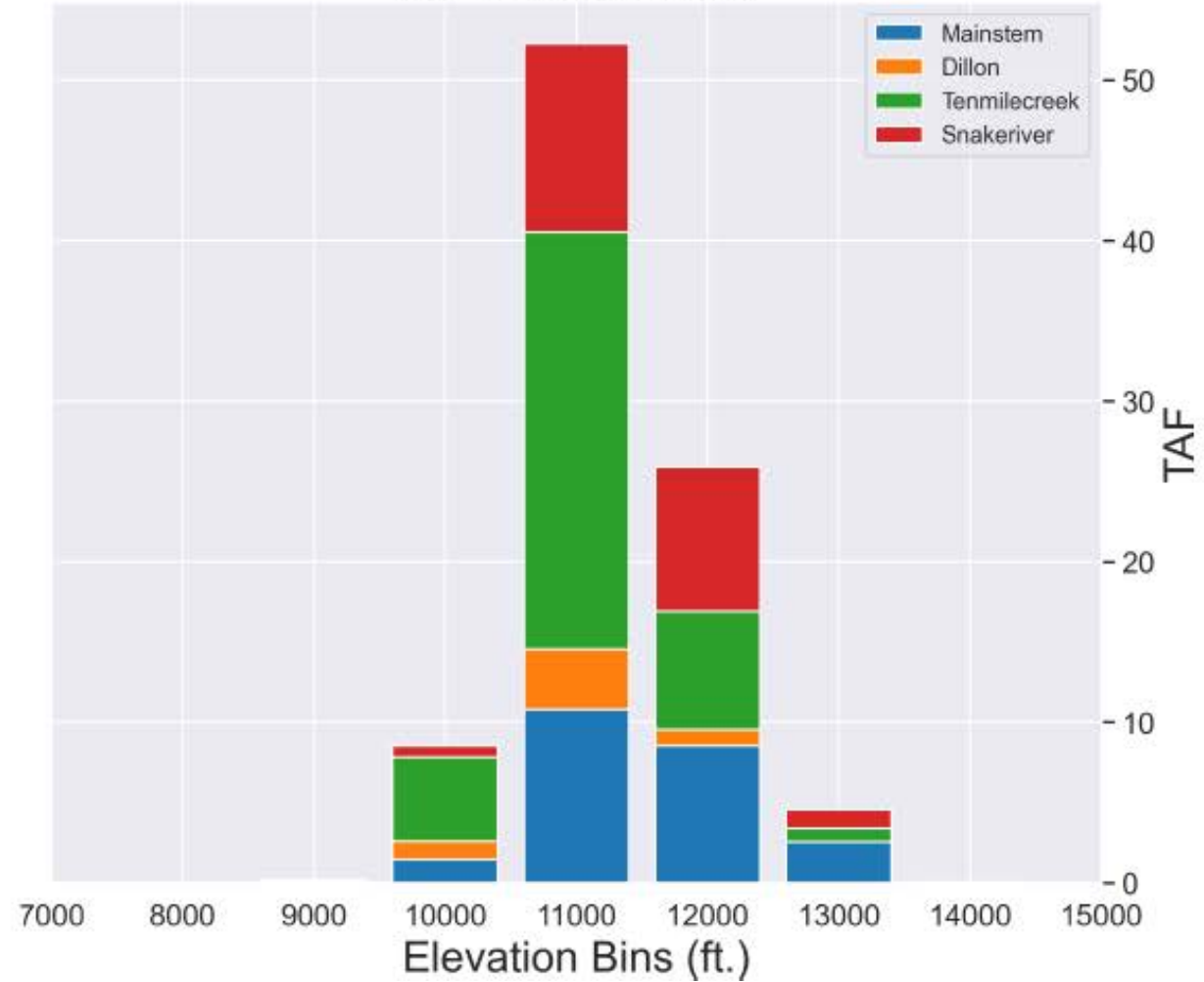
- >500%
- 300-500%
- 200-300%
- 150-200%
- 130-150%
- 110-130%
- 100-110%
- 90-100%
- 70-90%
- 50-70%
- 30-50%
- 0-30%

# Airborn Snow Observatories, Inc. Blue River Basin May 16, 2023 Modeling Report

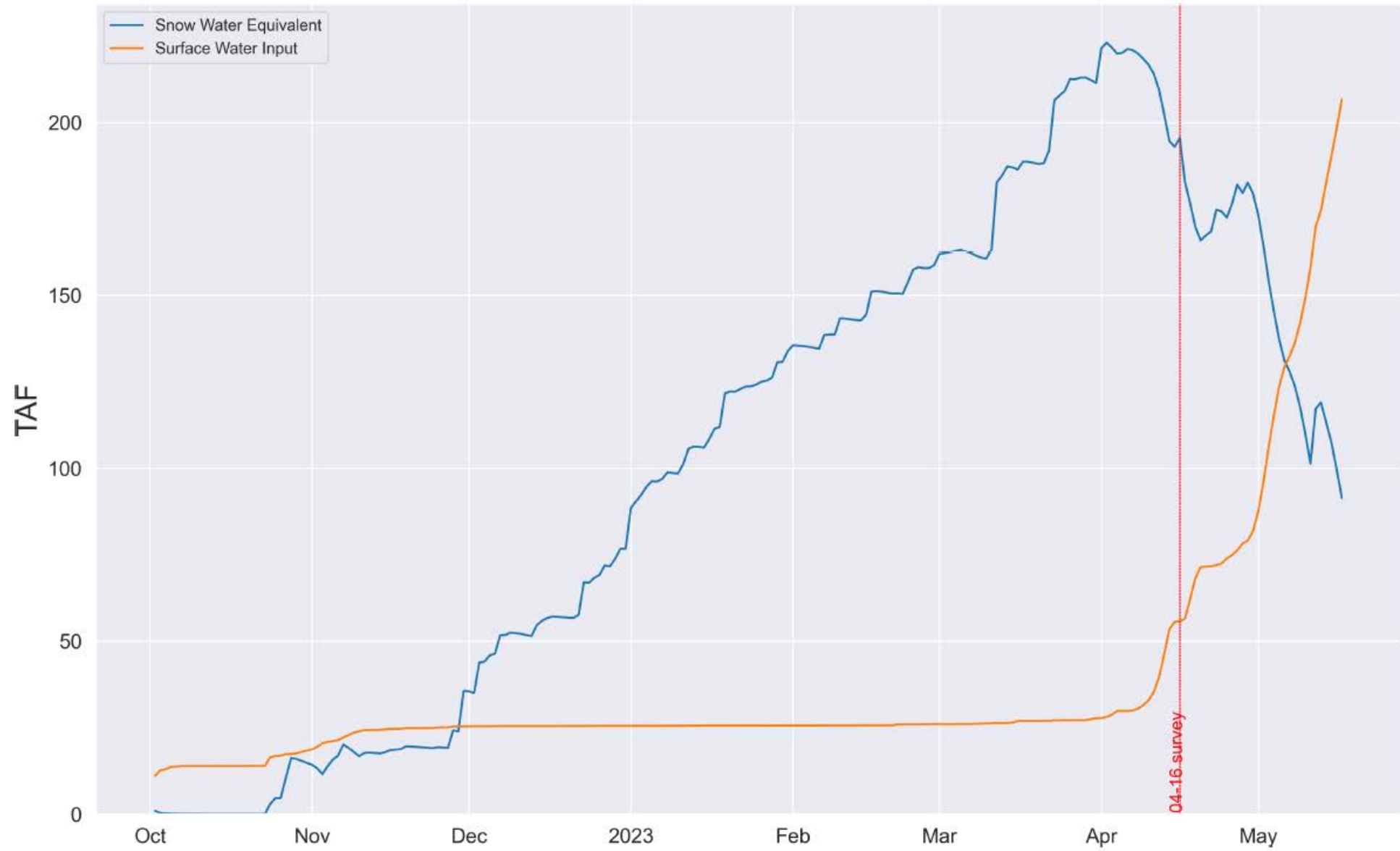
Snow Water Equivalent (in.)



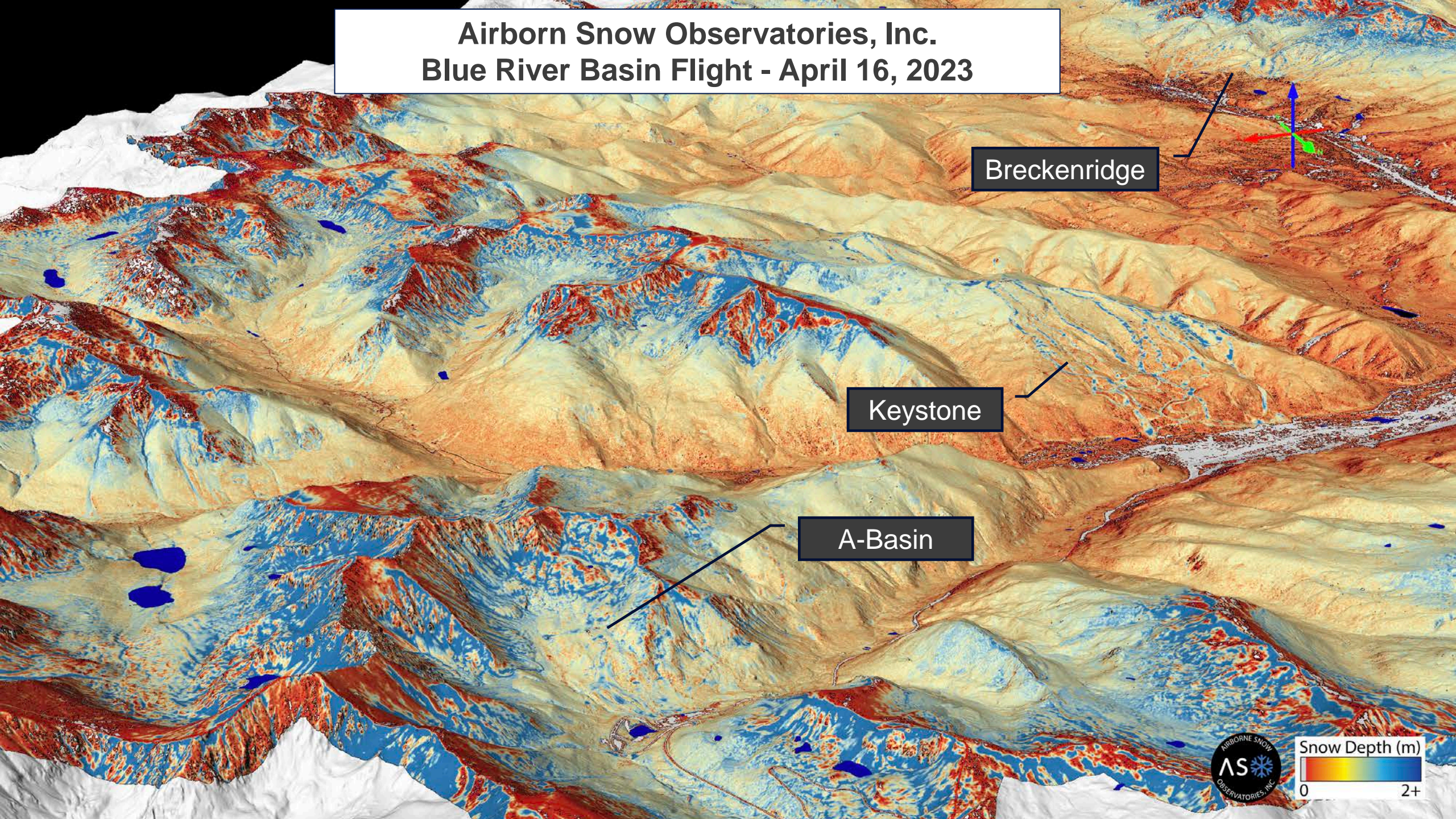
Total Snow Water Equivalent (TAF)  
per Elevation band



# Airborn Snow Observatories, Inc. Blue River Basin May 16, 2023 Modeling Report



**Airborne Snow Observatories, Inc.  
Blue River Basin Flight - April 16, 2023**

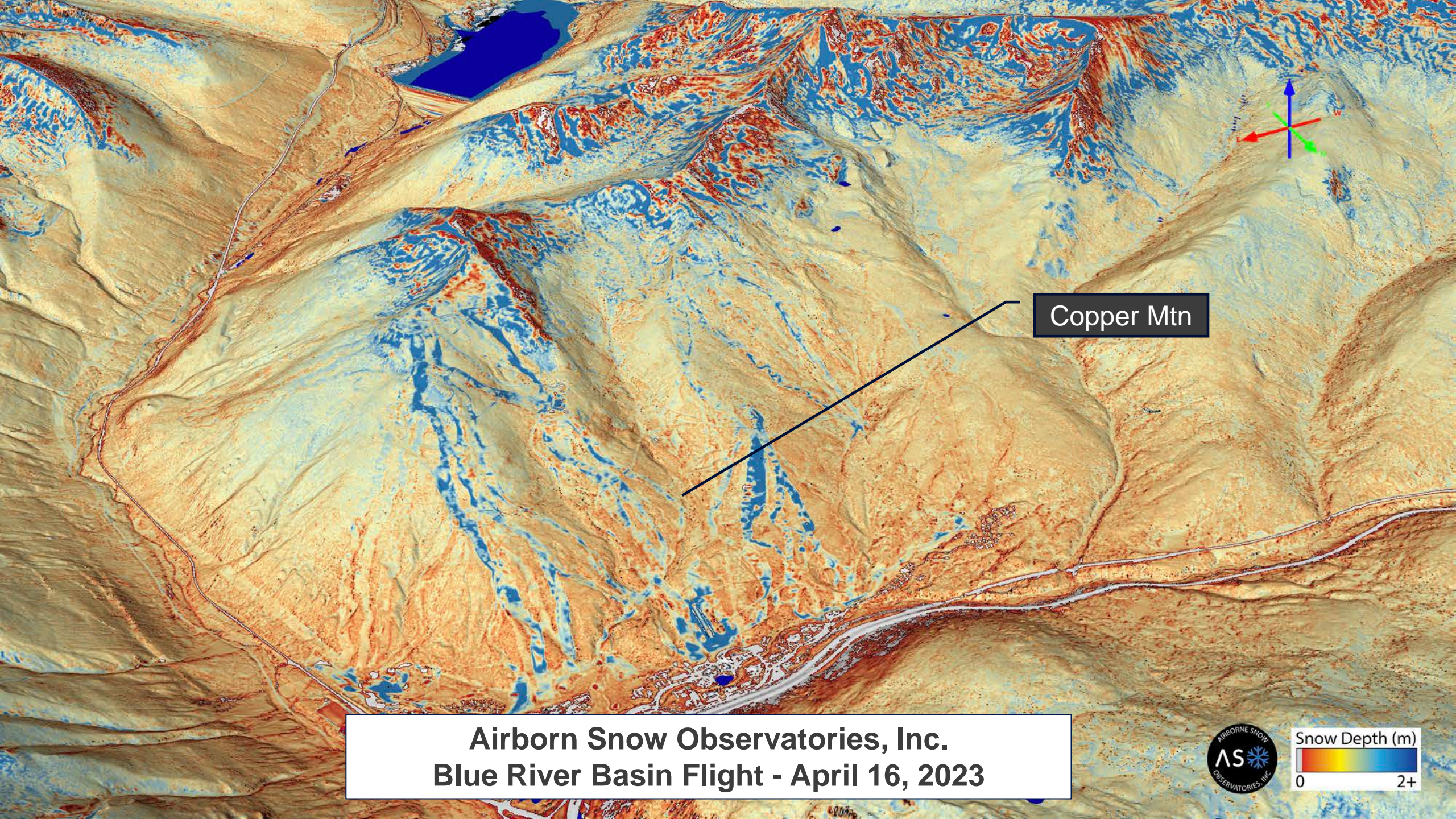


Breckenridge

Keystone

A-Basin





Copper Mtn

**Airborn Snow Observatories, Inc.**  
**Blue River Basin Flight - April 16, 2023**



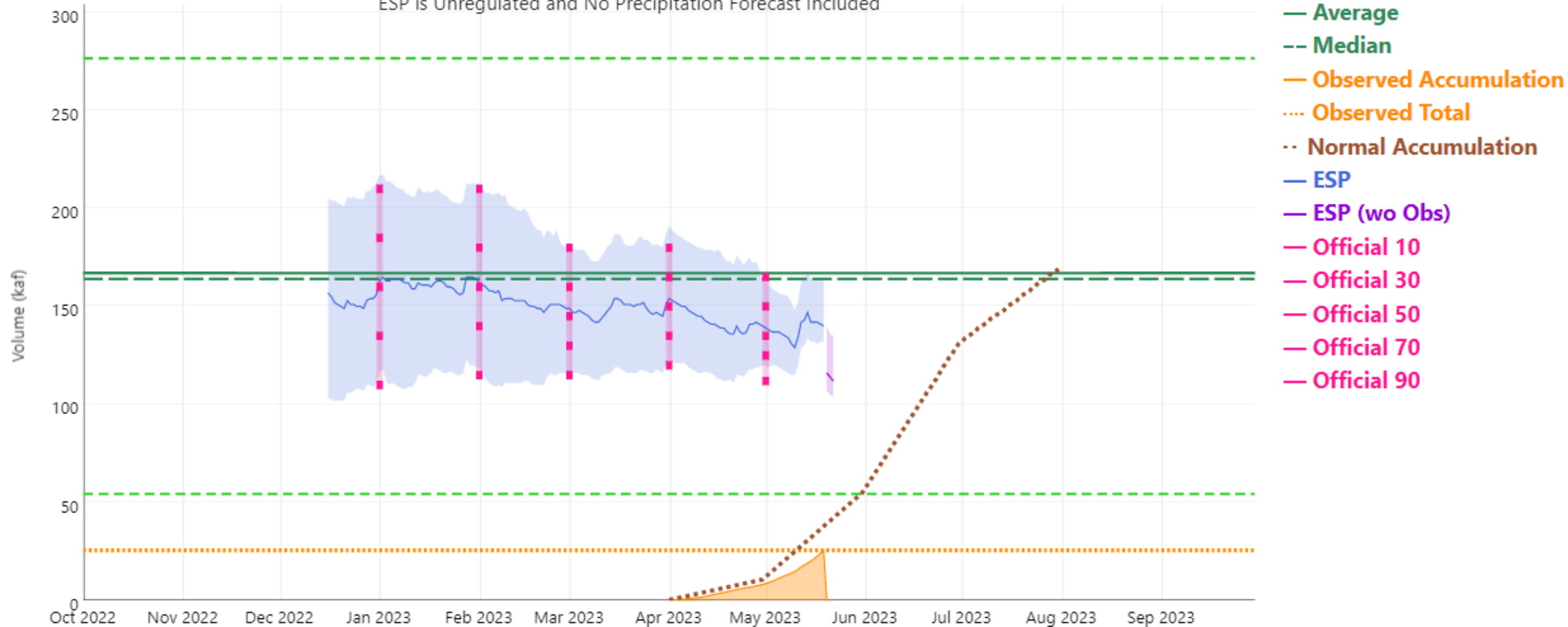


# Water Supply Forecast

## Blue - Dillon Reservoir (DIRC2)

Period: Apr-Jul, Official 50% Forecast (2023-05-01): 135 kaf (81% Average, 82% Median)

ESP is Unregulated and No Precipitation Forecast Included

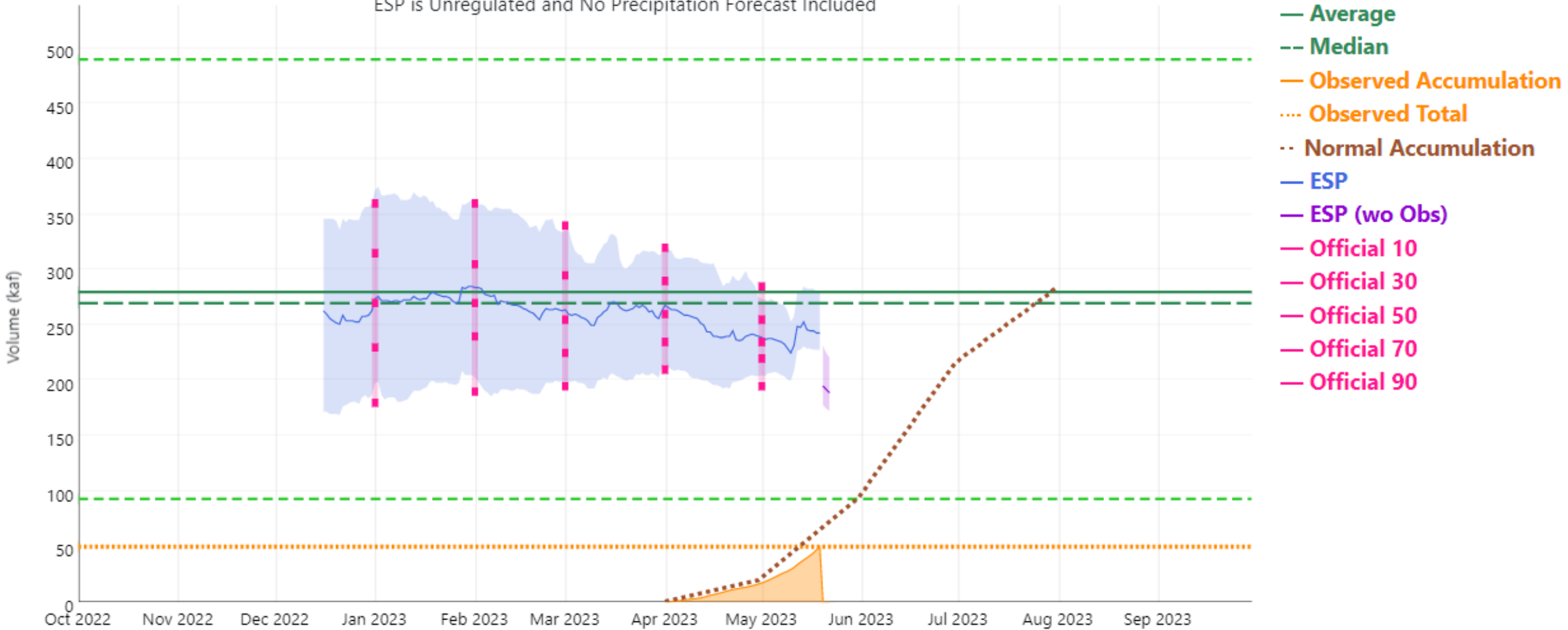


# Water Supply Forecast

Blue - Green Mtn Reservoir (GMRC2)

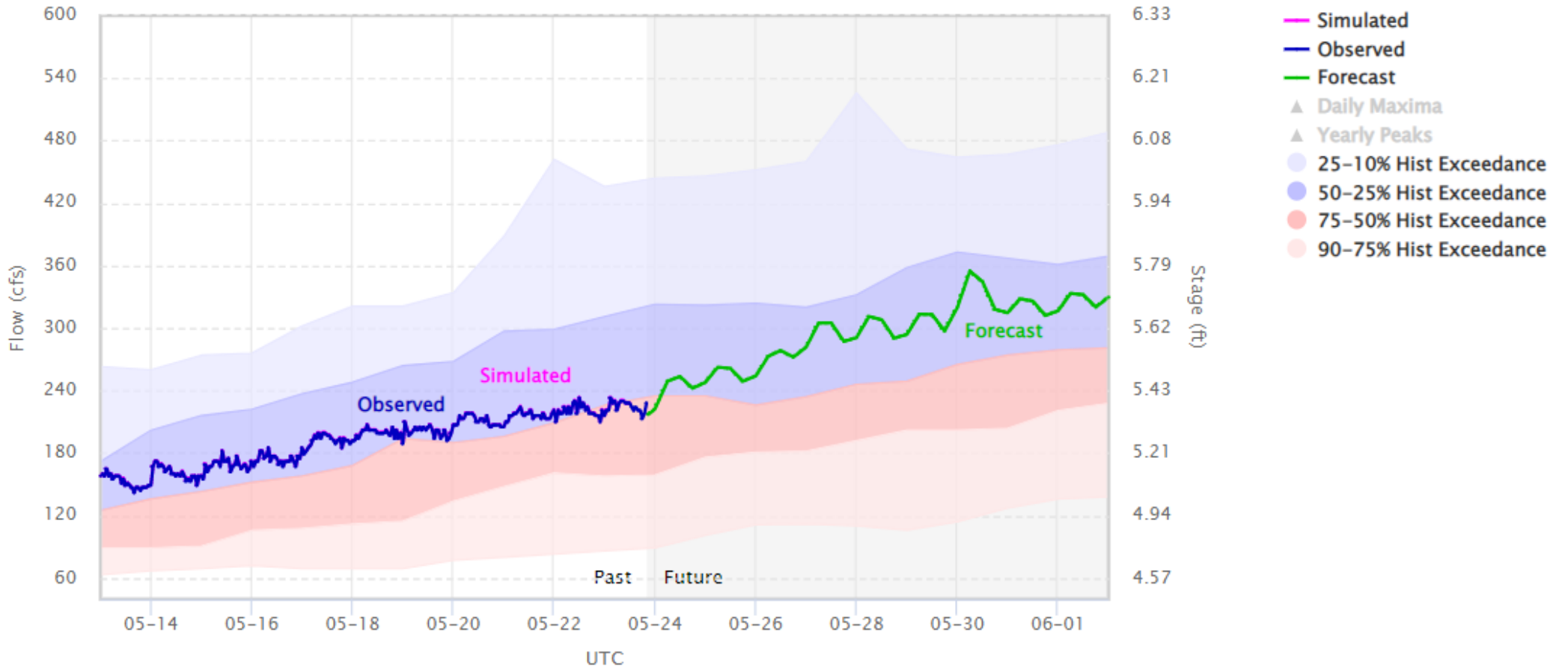
Period: Apr-Jul, Official 50% Forecast (2023-05-01): 235 kaf (84% Average, 87% Median)

ESP is Unregulated and No Precipitation Forecast Included



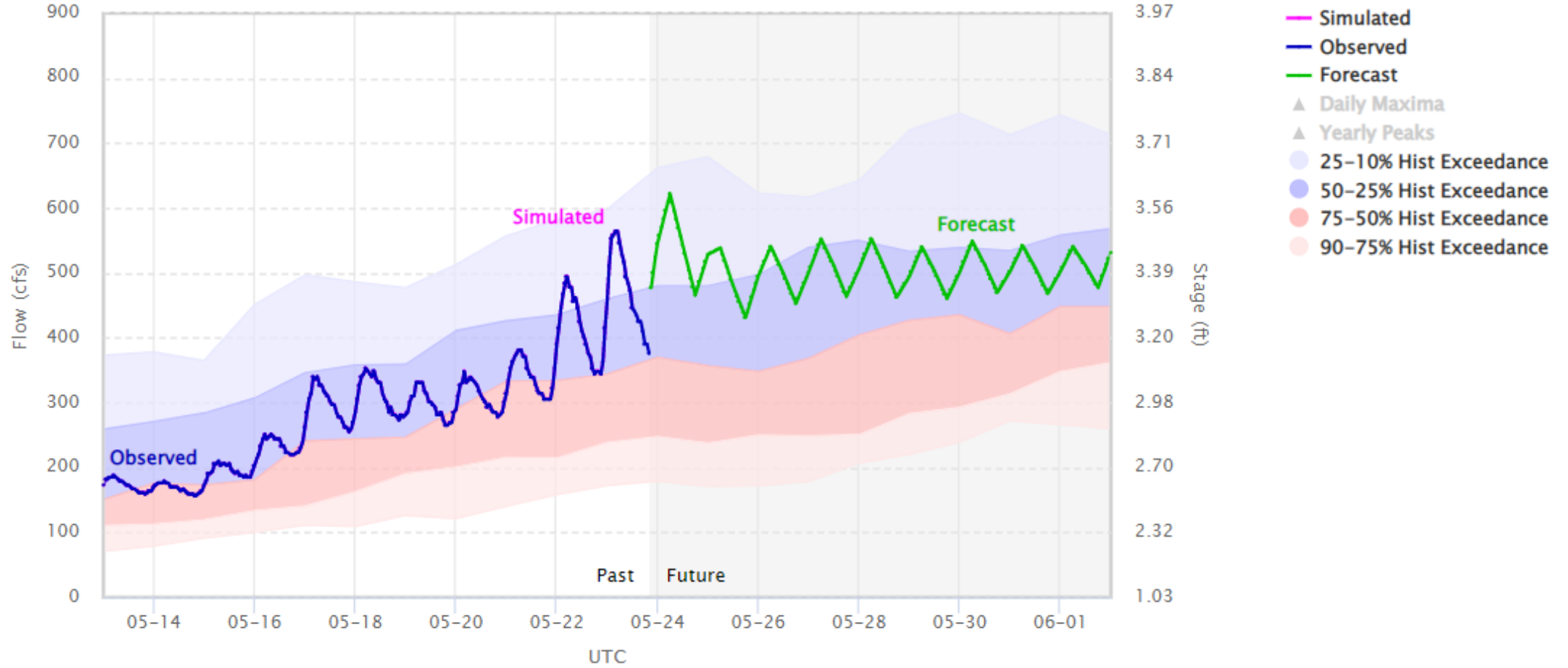
# Forecast Hydrograph – Blue – Dillon, Nr (BSWC2) – NOAA/CBRFC

Fcst Date: 05/23/15Z – Latest Ob: 5.39 ft, 228 cfs (05/23/20Z) – Flood: 7.0 ft, 1014 cfs – Action: 6.6 ft, 753 cfs



# Forecast Hydrograph – Tenmile Ck – Frisco, N Tenmile Ck, Blo (TCFC2) – NOAA/CBRFC

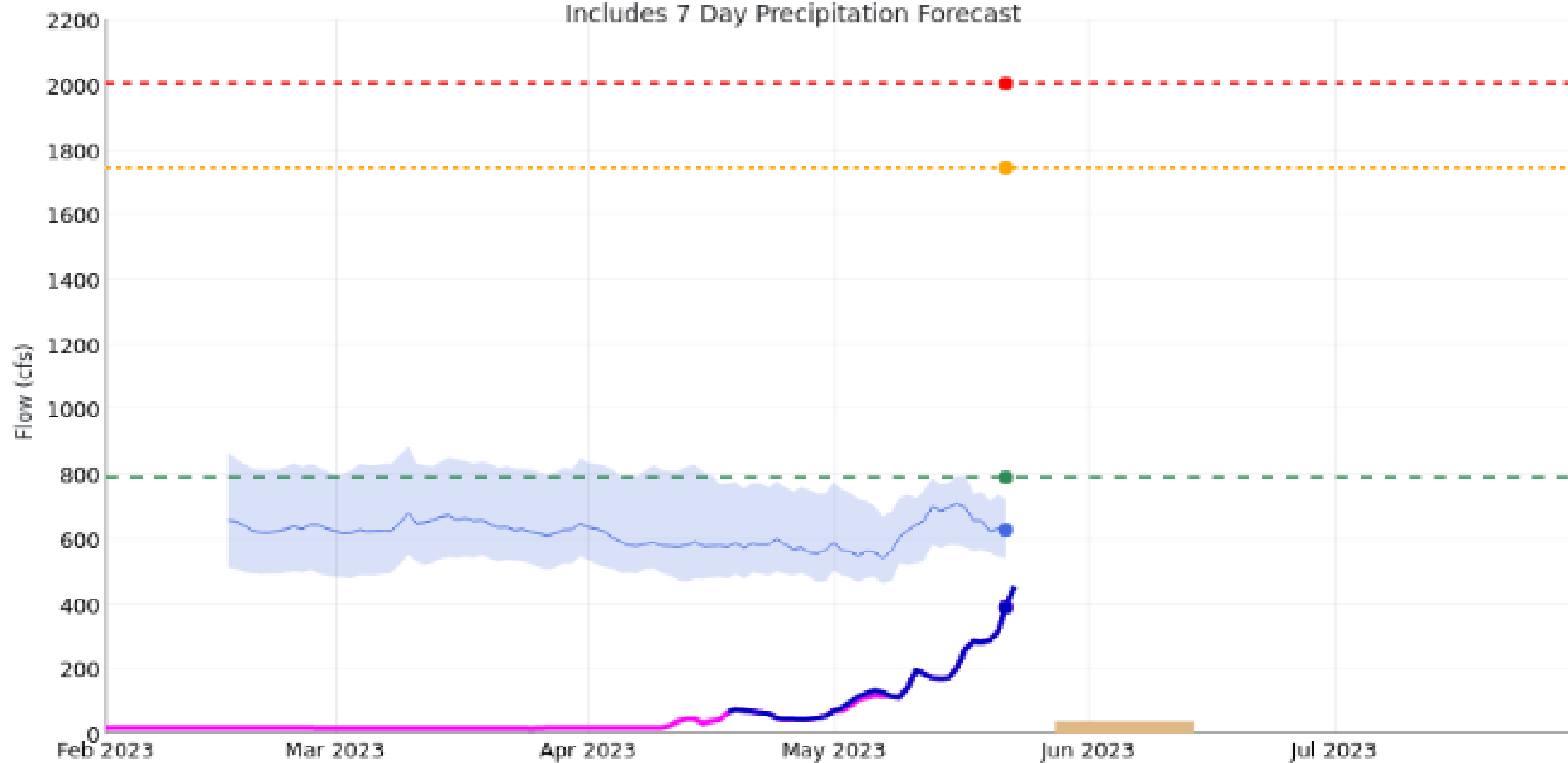
Fcst Date: 05/23/15Z – Latest Ob: 3.15 ft, 376 cfs (05/23/20Z) – Flood: 5.0 ft, 2005 cfs – Action: 4.8 ft, 1746 cfs



### Tenmile Ck - Frisco, N Tenmile Ck, Blo (TCFC2)

ESP 50% Forecast (2023-05-22): 629 cfs

Includes 7 Day Precipitation Forecast



2023/05/22:

**Average:** 791

**Flood:** 2005

**Bankfull:** 1746

**ESP:** 629

**Simulated:** 391

**Observed:** 390

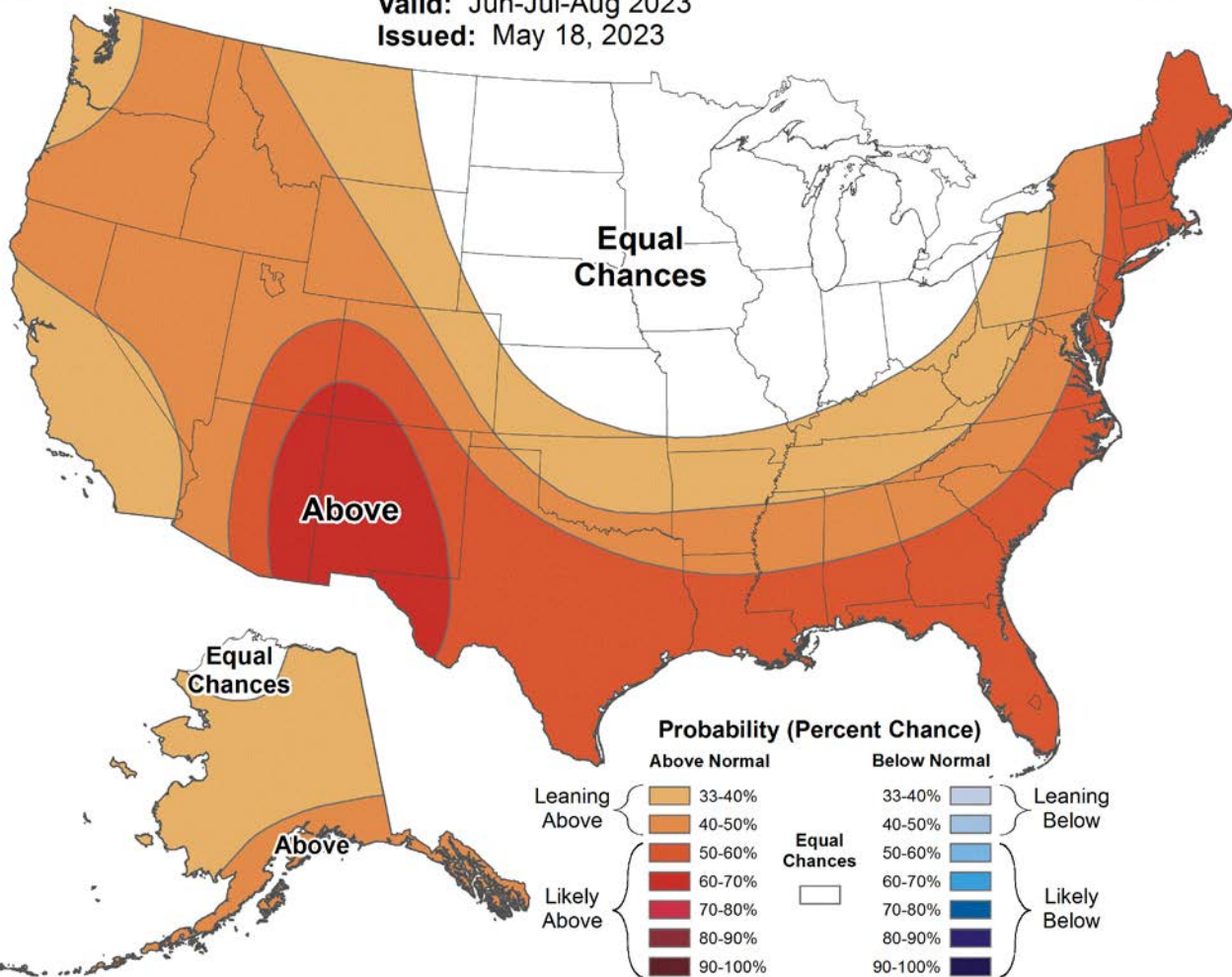




# Seasonal Temperature Outlook



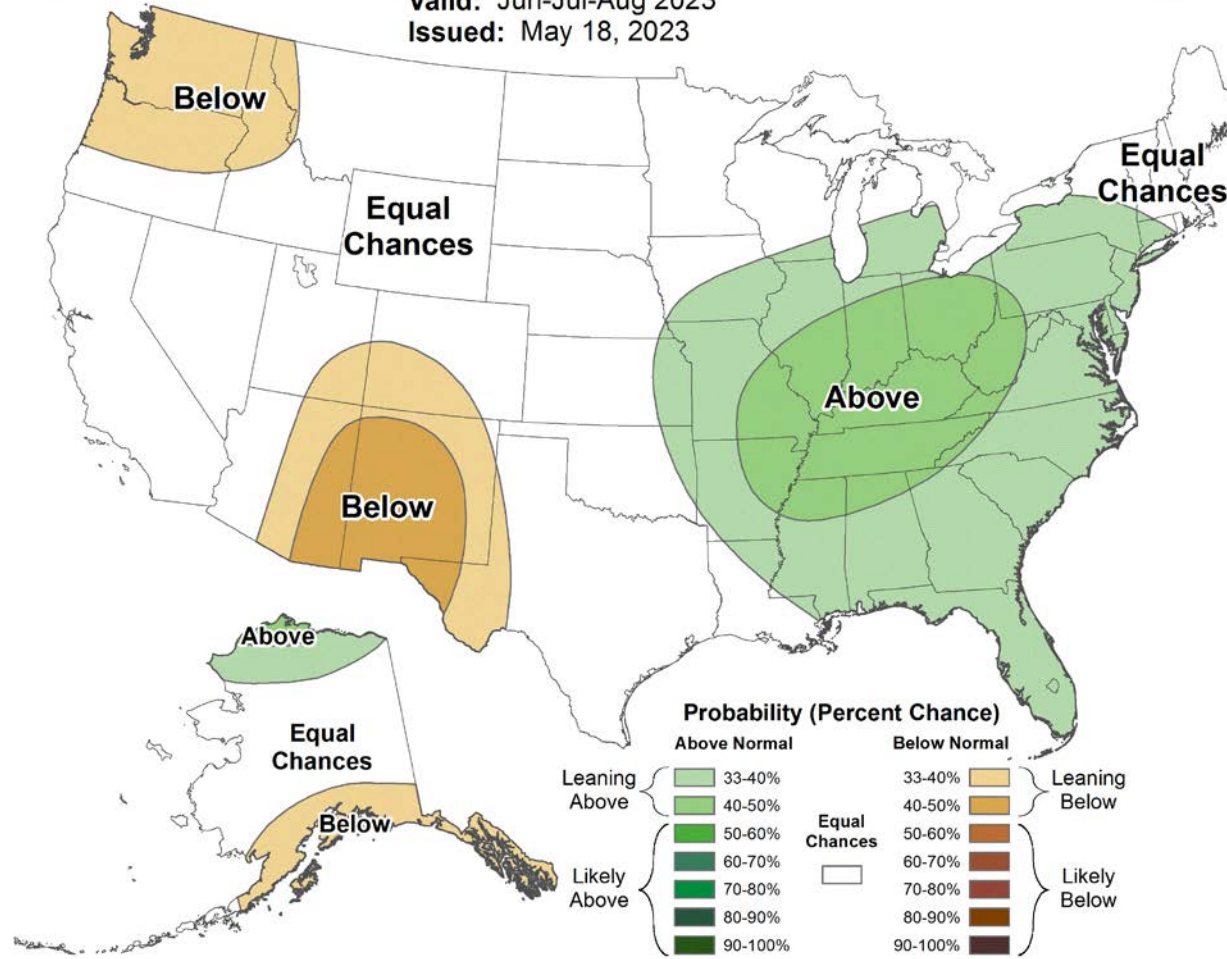
Valid: Jun-Jul-Aug 2023  
Issued: May 18, 2023



# Seasonal Precipitation Outlook



Valid: Jun-Jul-Aug 2023  
Issued: May 18, 2023





[coloradoriverdistrict.org](http://coloradoriverdistrict.org)



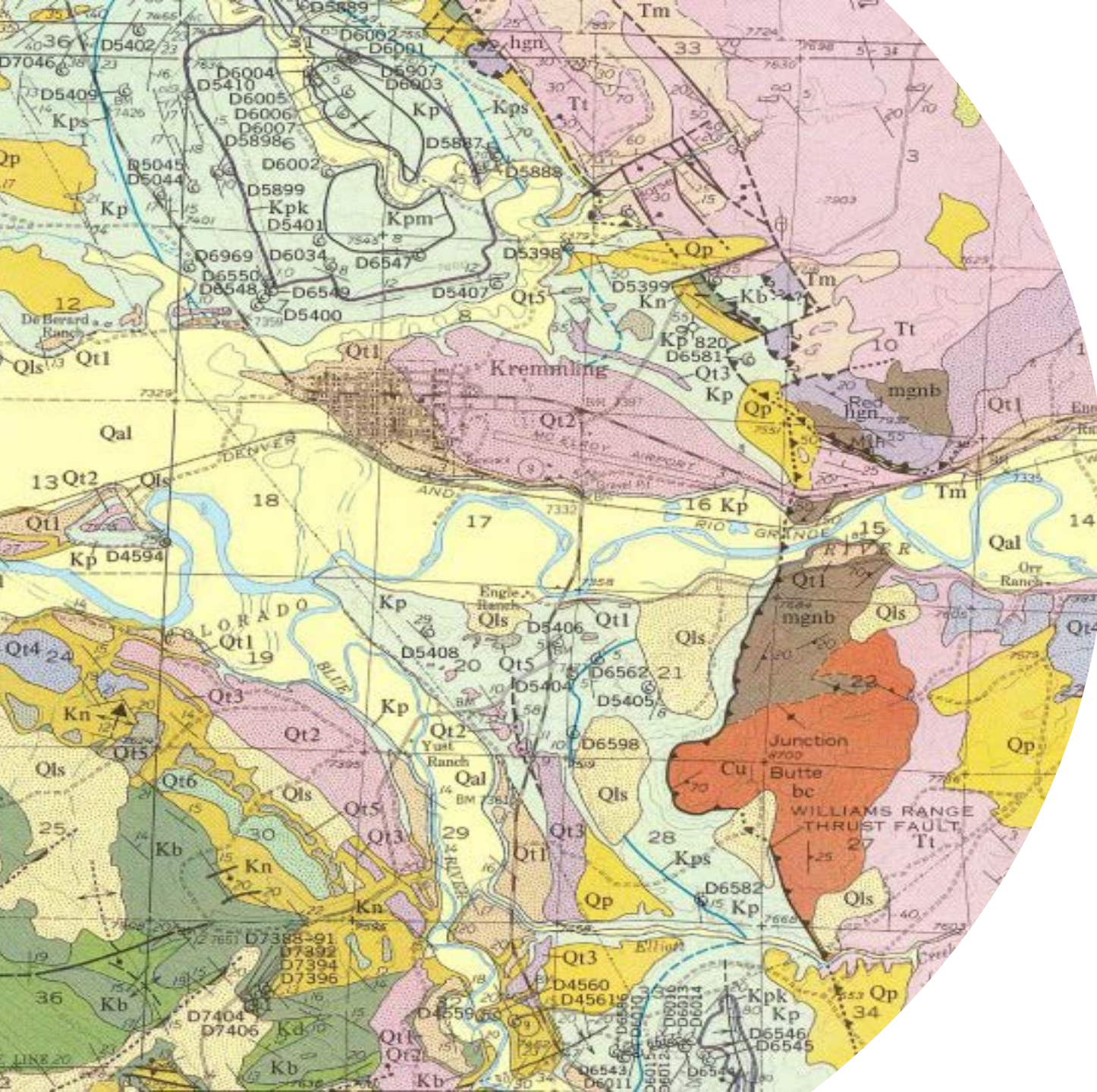
Colorado River District



@ColoradoWater



ColoradoRiverDistrict



## 2023 Runoff Forecasts

- Kremmling **112%**
- Fraser **113%**
- Granby **110%**
- Willow Creek **177%**
- Wolford **110%**
- Williams Fork **100%**
- Green Mountain **87%**

## 2023 Operations

- Willow Creek Reservoir
  - 27 Kaf Spill 500 cfs – 930 cfs May 4
  - 54 Kaf Pumped to Granby
- Granby Reservoir
  - 100 af Spill in July (May 1 AOP)
  - 167 Kaf Pumped to Shadow Mtn
- Wolford Mountain Reservoir
  - 300 cfs CROS Release (500 cfs likely)
- Williams Fork Reservoir
  - 17 cfs Release
- Green Mountain Reservoir
  - 100 cfs Power Release
  - Physical Fill



# Colorado River Compact Accounting

## Lee Ferry, AZ

