



Hydrology Update

Board Meeting
February 16, 2023

Bart Leeftang, P.E.





Status: February 13, 2023

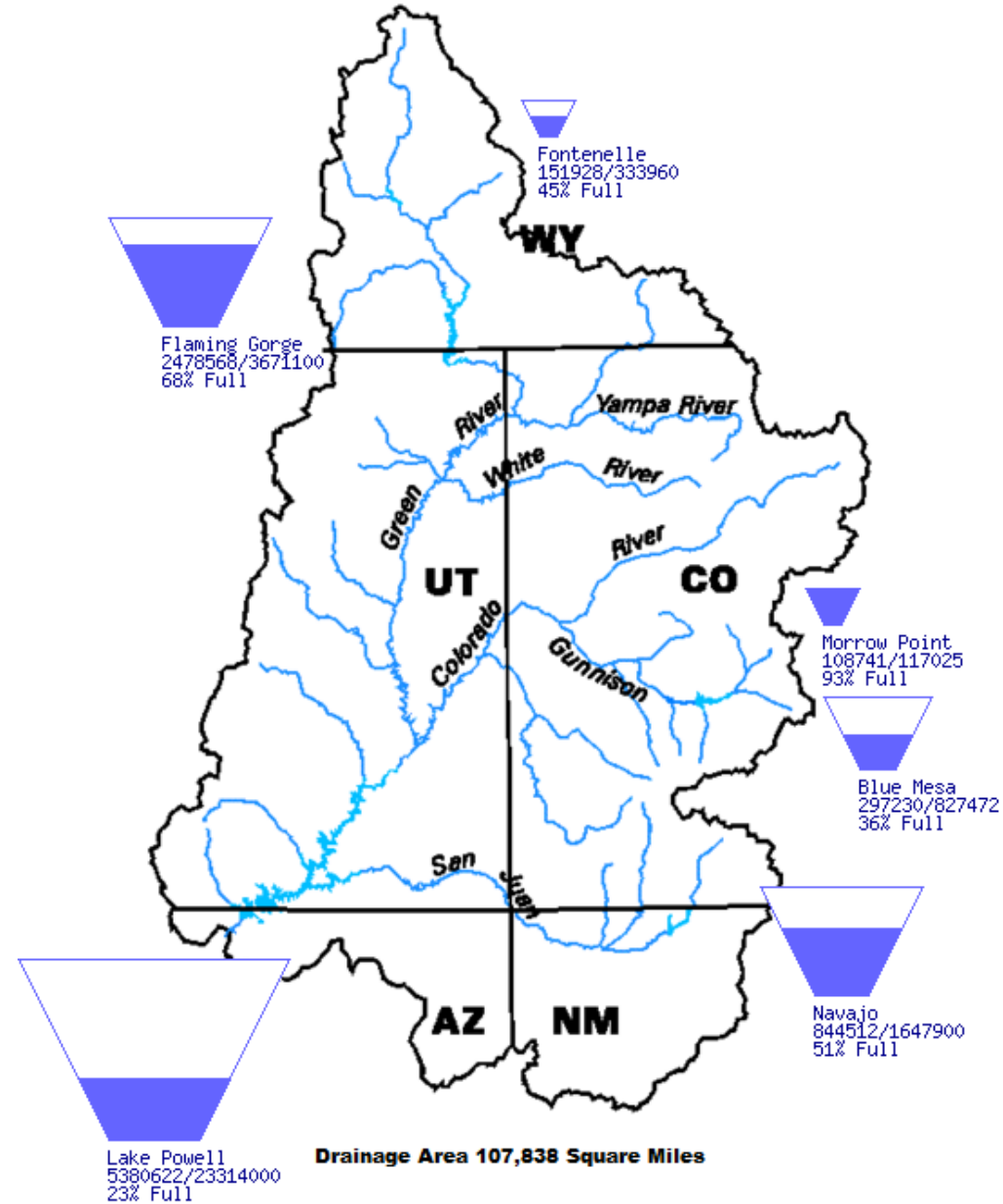
Reservoir	Percent Full	Content (MAF)	Elevation (feet)
Lake Powell	23%	5.393	3,522.33
Lake Mead	29%	7.503	1,047.49
Total System Content	33%	19.035	NA
Total System Content (one year ago)	36%	21.703	NA

WATER YEAR 2023 PRECIPITATION TO DATE	118%
CURRENT BASIN SNOWPACK	130%





Upper Colorado River Drainage Basin

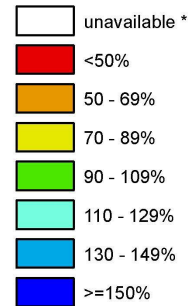




Utah SNOTEL Current Snow Water Equivalent (SWE) % of Normal

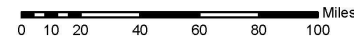
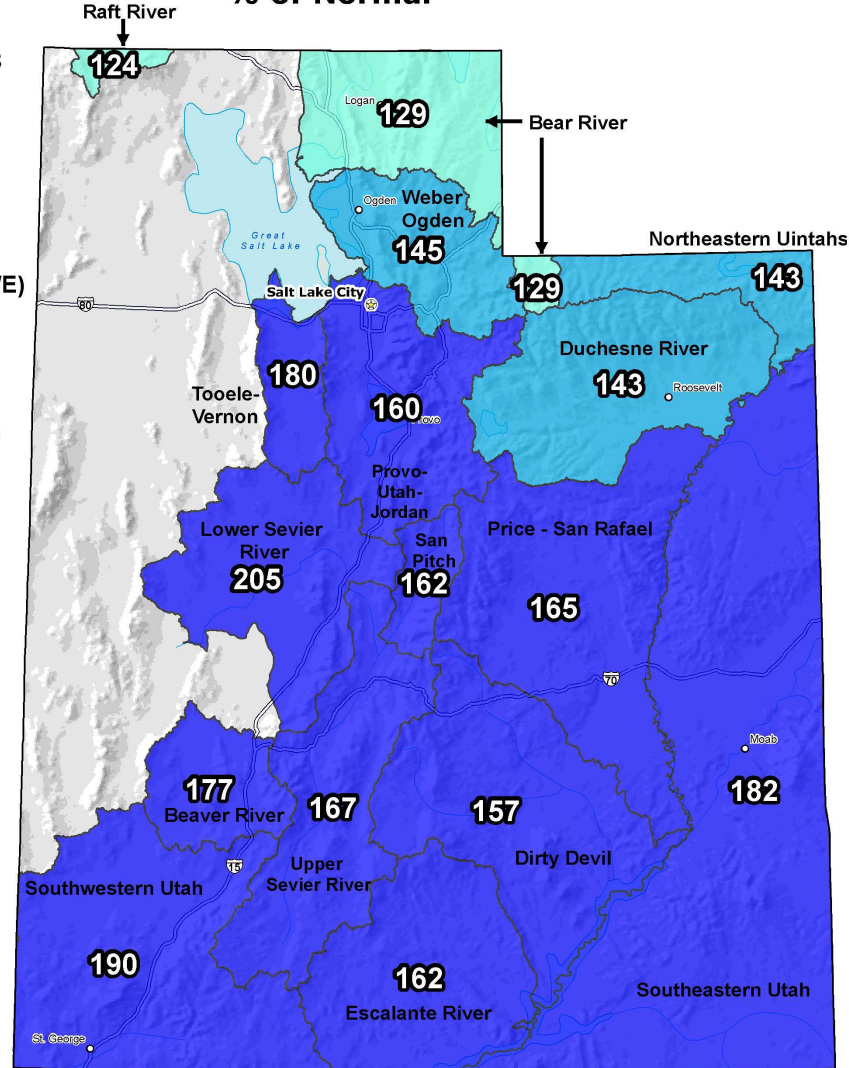
Feb 16, 2023

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/wcc/home/>



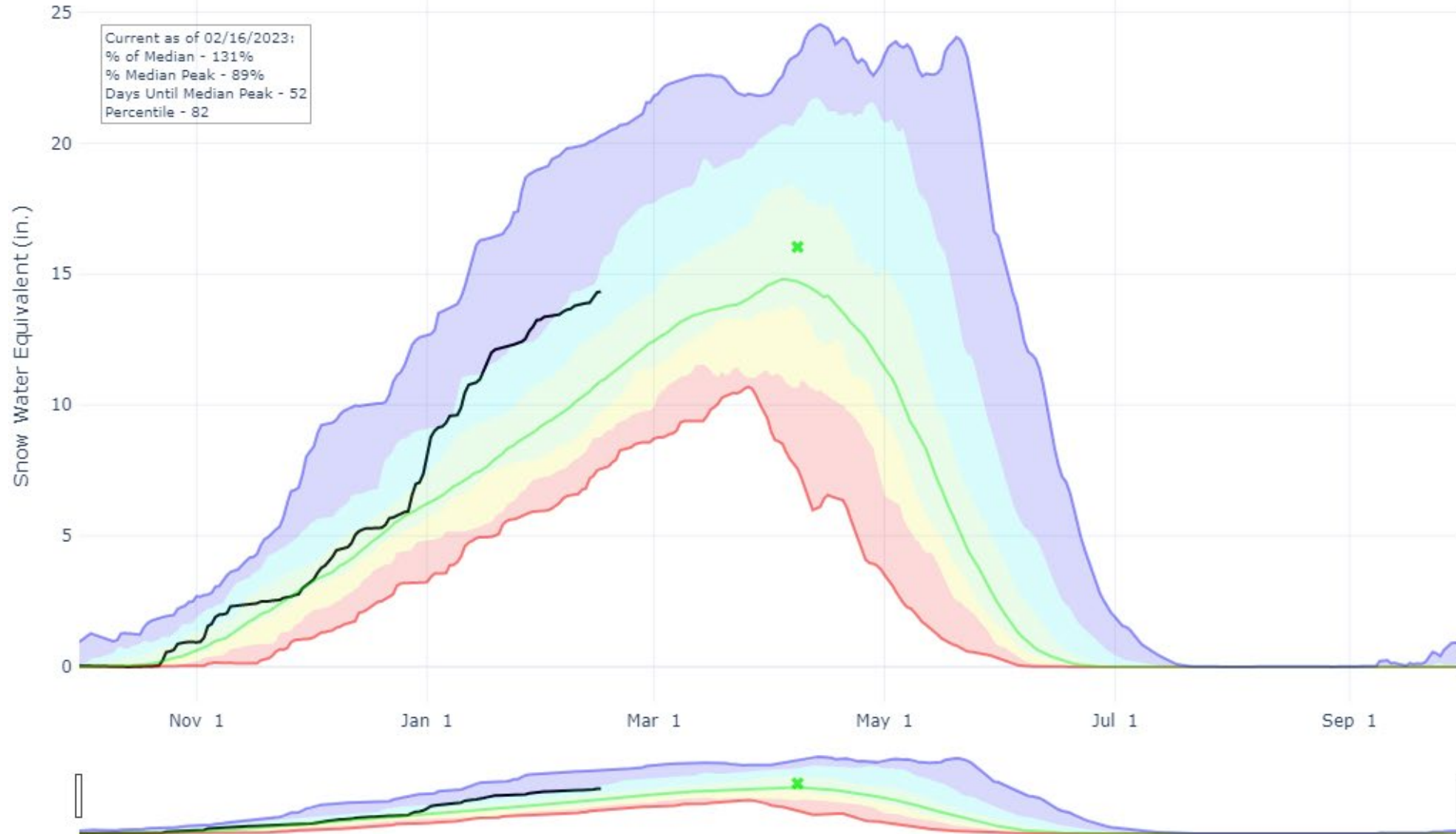
SNOW WATER EQUIVALENT IN UPPER COLORADO REGION

Reset Range

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

Station List

Current as of 02/16/2023:
% of Median - 131%
% Median Peak - 89%
Days Until Median Peak - 52
Percentile - 82



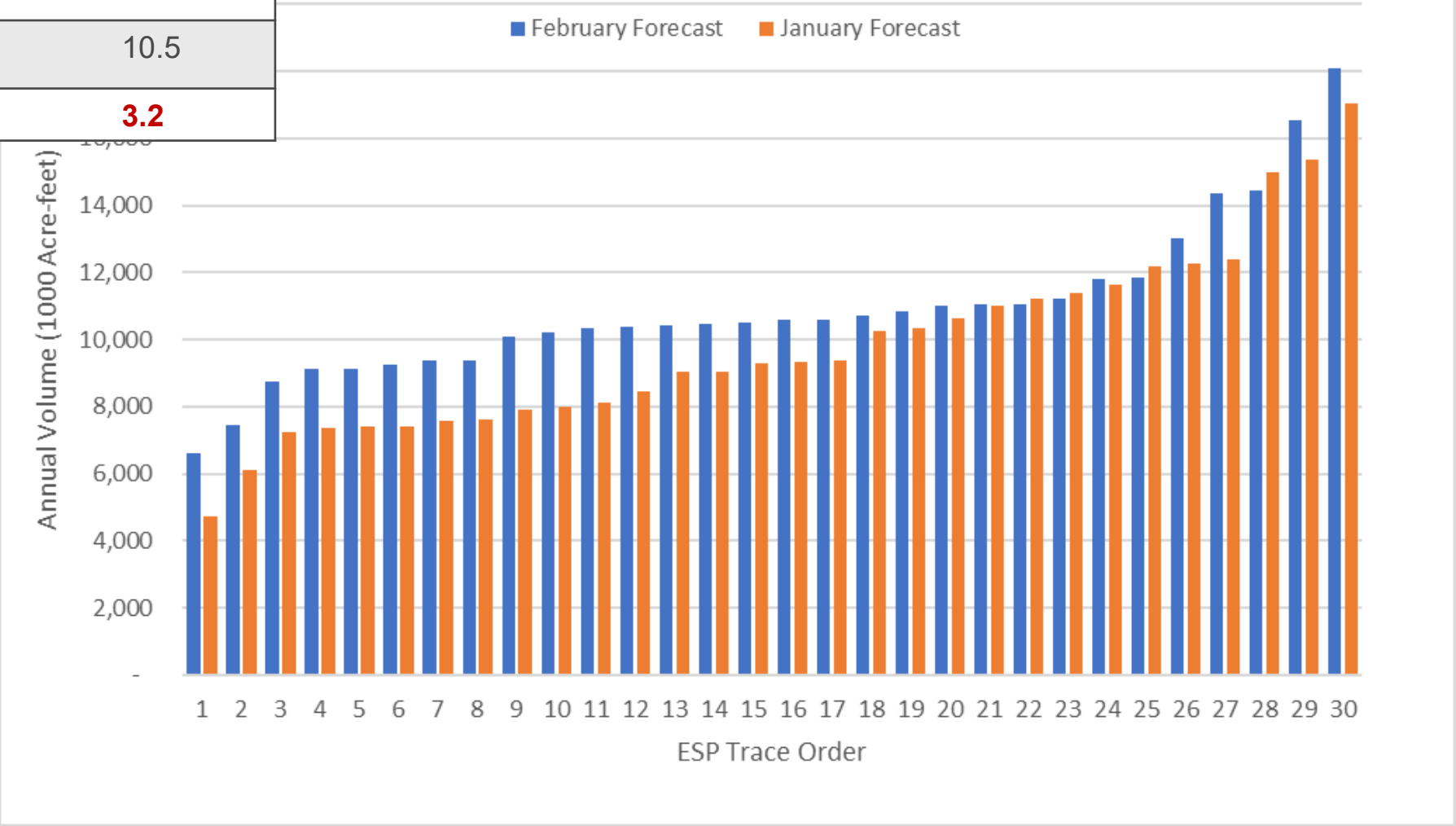
- ✕ Median Peak SWE
- Max
- Median (POR)
- Median ('91-'20)
- Min
- Stats. Shading
- 2023 (130 sites)
- 2022 (130 sites)
- 2021 (130 sites)
- 2020 (131 sites)
- 2019 (131 sites)
- 2018 (131 sites)
- 2017 (131 sites)
- 2016 (131 sites)
- 2015 (131 sites)
- 2014 (131 sites)
- 2013 (131 sites)
- 2012 (131 sites)
- 2011 (131 sites)
- 2010 (126 sites)
- 2009 (120 sites)
- 2008 (119 sites)
- 2007 (117 sites)
- 2006 (117 sites)
- 2005 (117 sites)
- 2004 (113 sites)





Month (Median Unregulated Lake Powell Inflow)	Volume (MAF)
December	7.3
January	9.3
February	10.5
Total Increase:	3.2

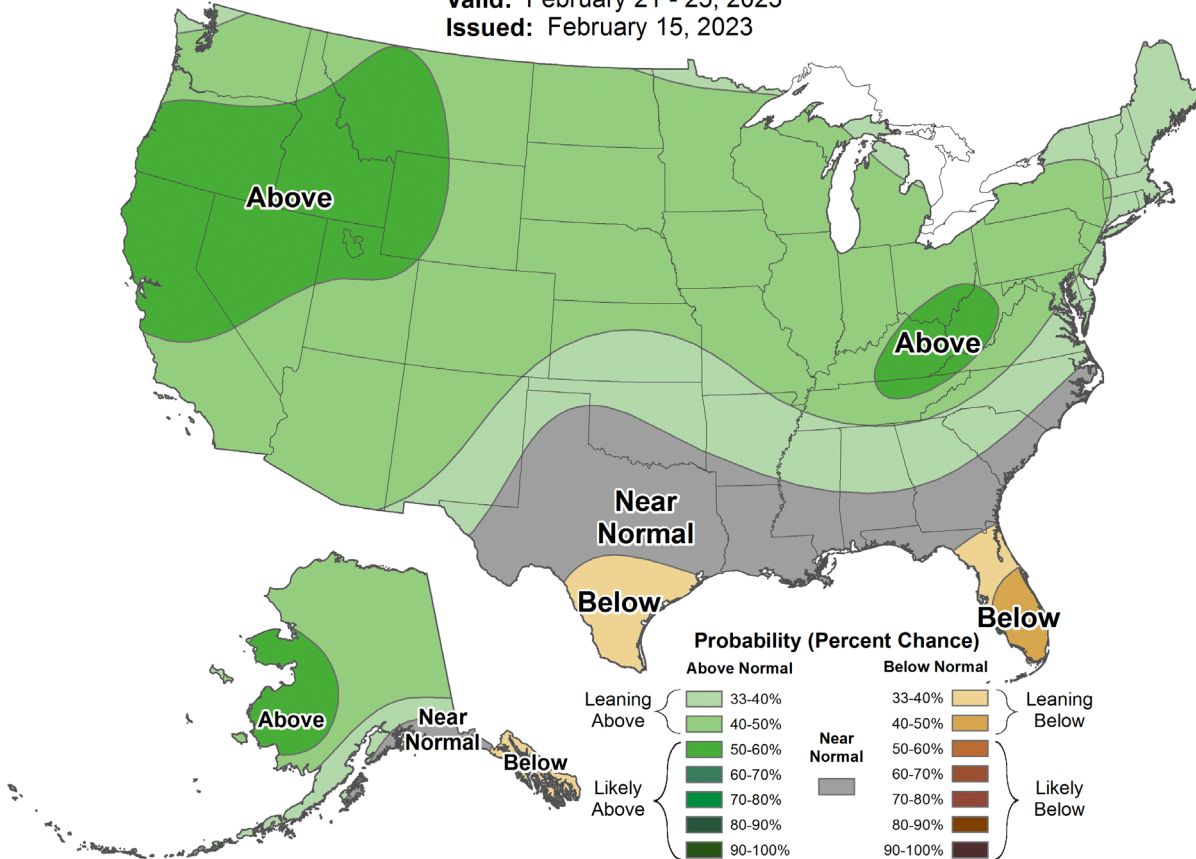
2023 Lake Powell Unregulated Inflow





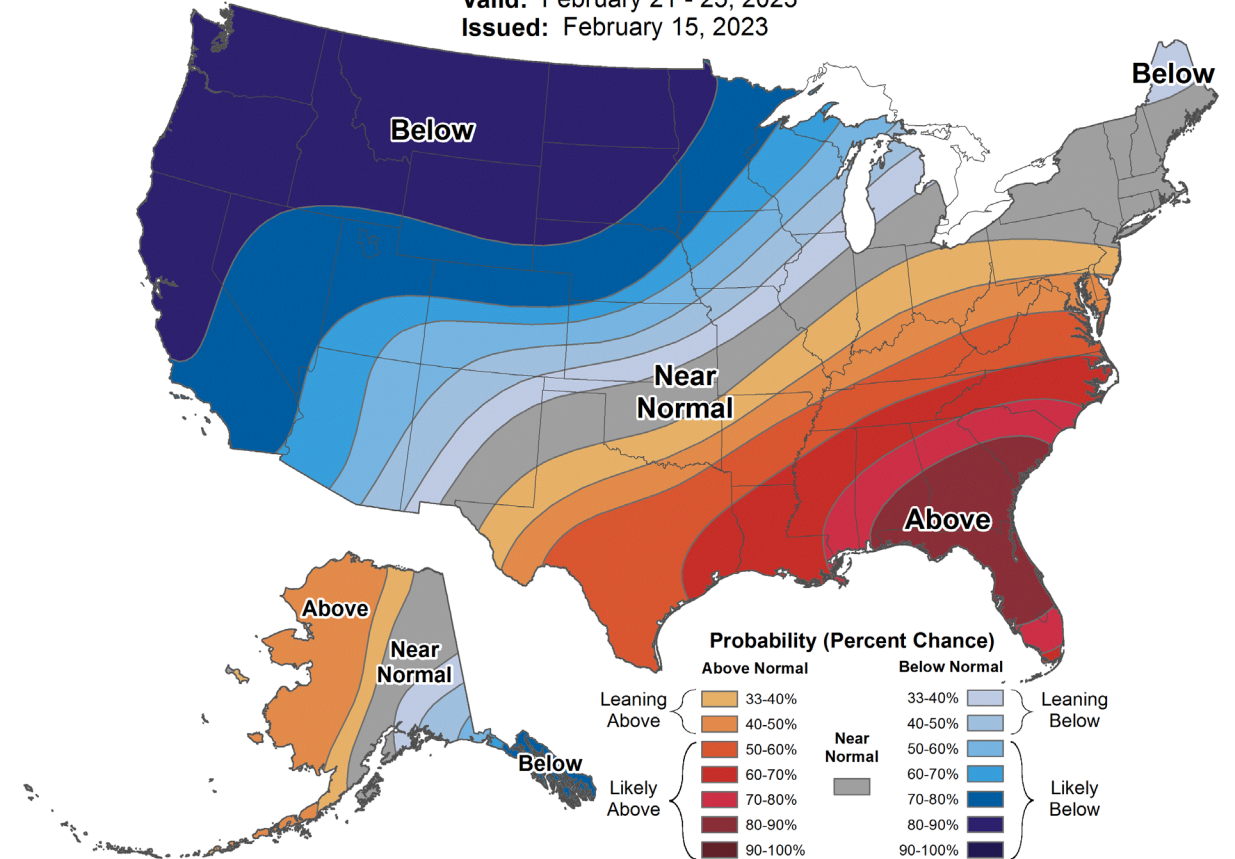
6-10 Day Precipitation Outlook

Valid: February 21 - 25, 2023
Issued: February 15, 2023



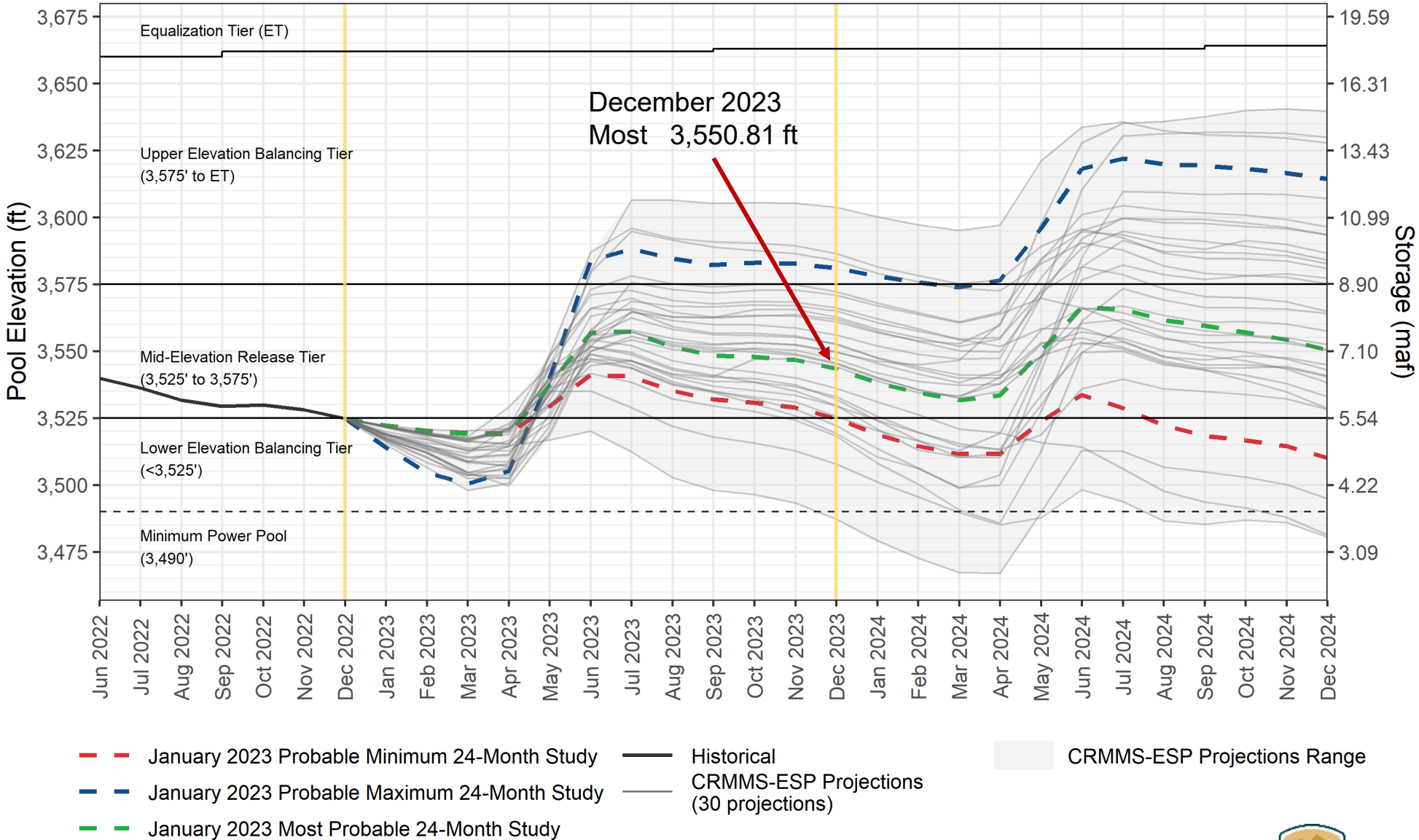
6-10 Day Temperature Outlook

Valid: February 21 - 25, 2023
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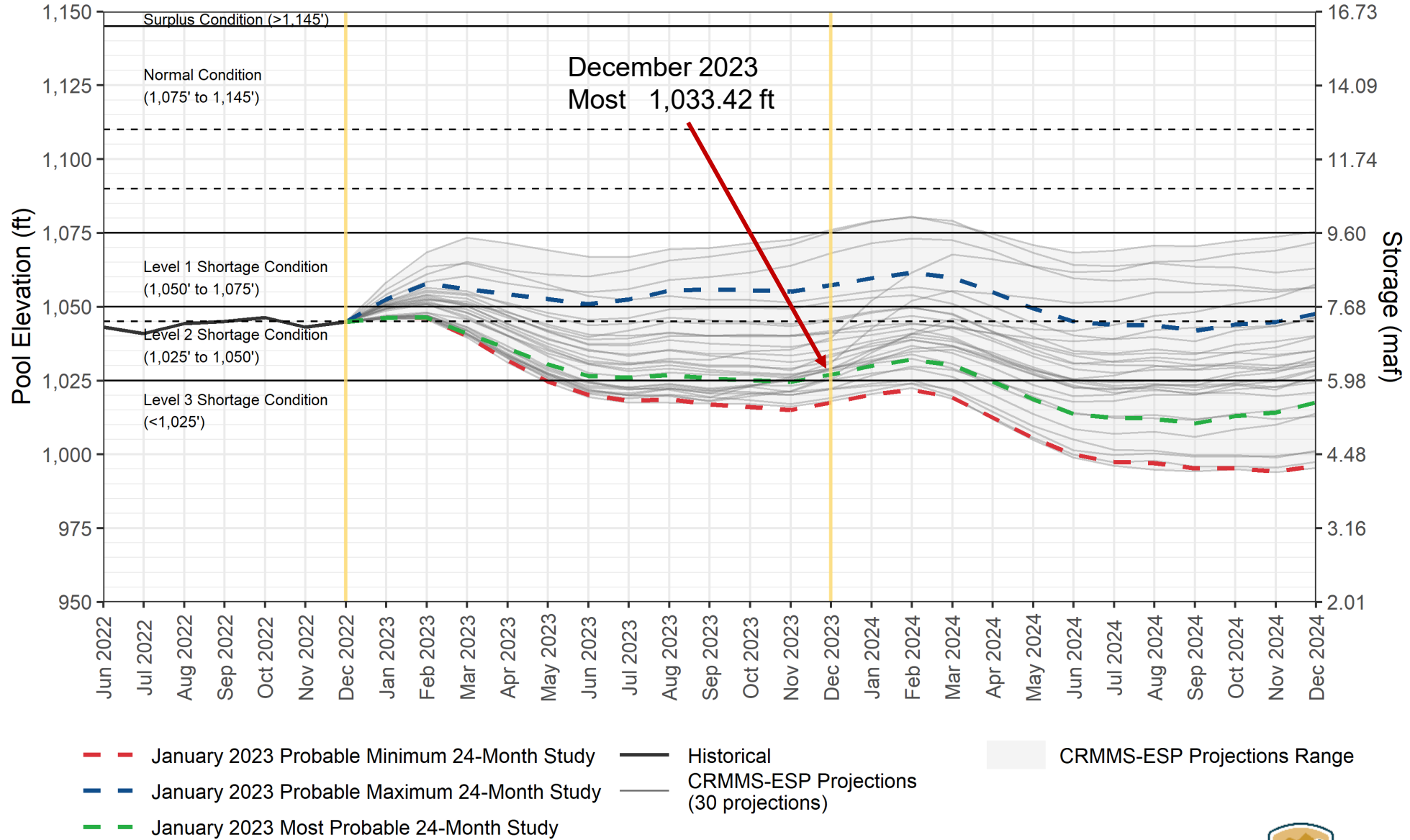
Lake Powell End-of-Month Elevations¹
CRMMS Projections from January 2023



¹ Projected Lake Powell end-of-month physical elevations from the latest CRMMS-ESP and 24-Month Study inflow scenarios.



Lake Mead End-of-Month Elevations¹
CRMMS Projections from January 2023



¹ Projected Lake Mead end-of-month physical elevations from the latest CRMMS-ESP and 24-Month Study inflow scenarios.



Lake Mead
February 15, 2023
Elevation 1,047.58





Precipitation Forecasts

Precipitation (in)
during the period:

Thu, 16 FEB 2023 at 00Z

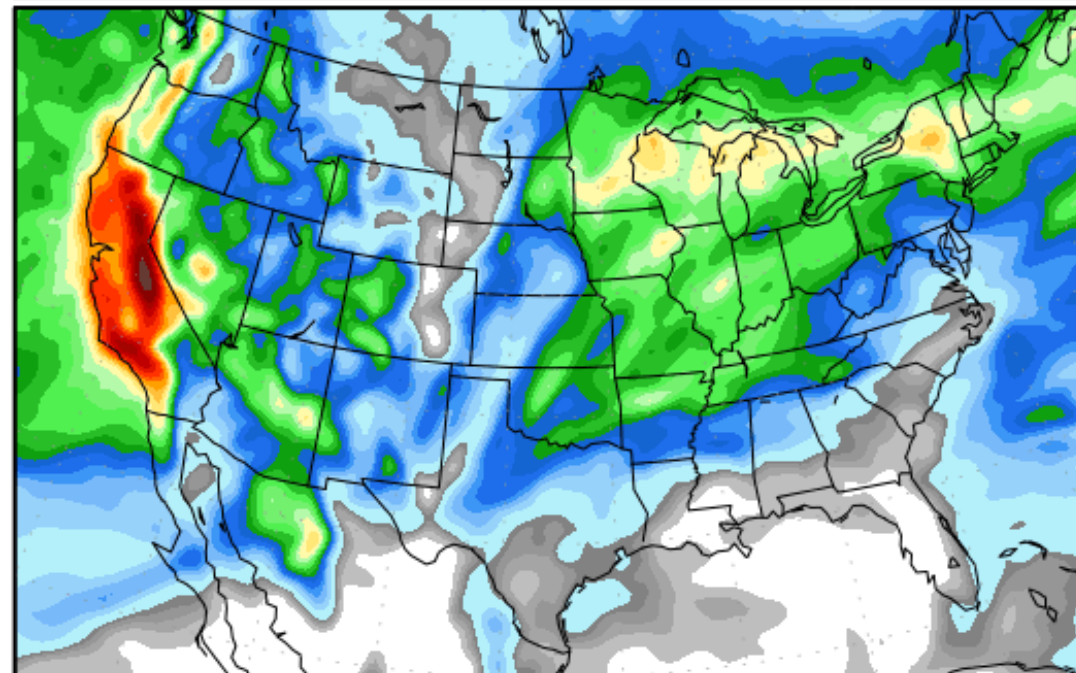
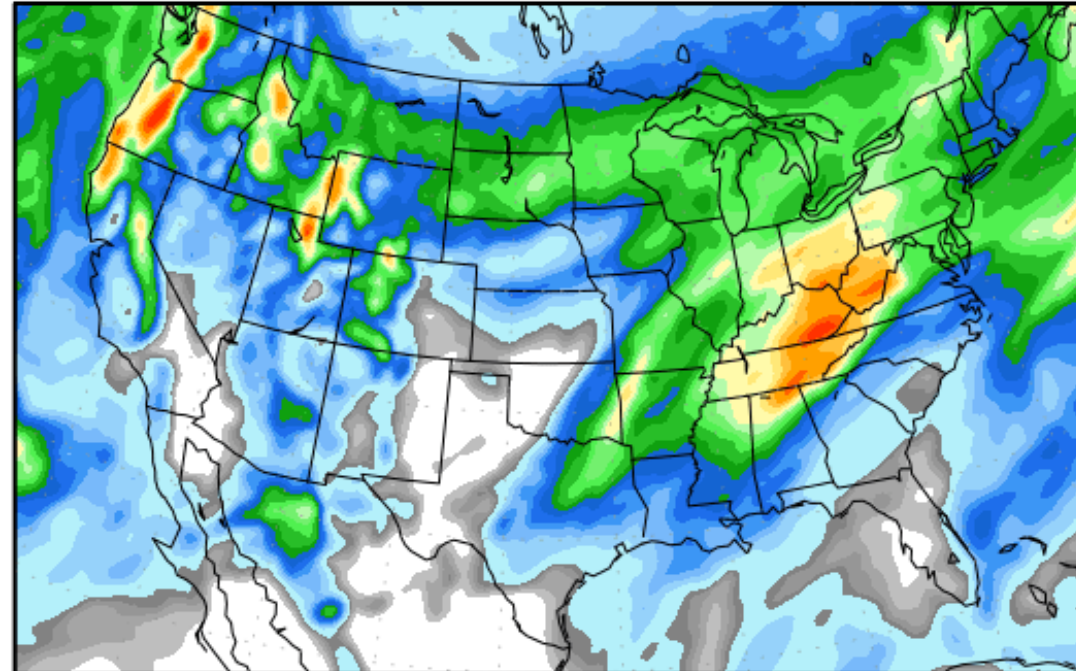
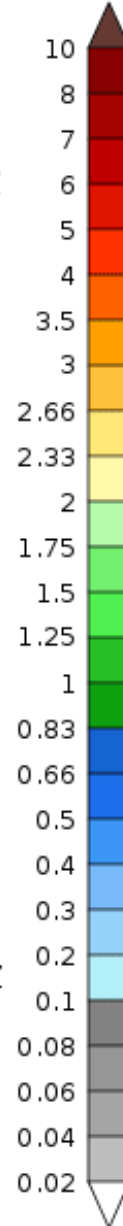
-to-

Fri, 24 FEB 2023 at 00Z

Fri, 24 FEB 2023 at 00Z

-to-

Sat, 04 MAR 2023 at 00Z





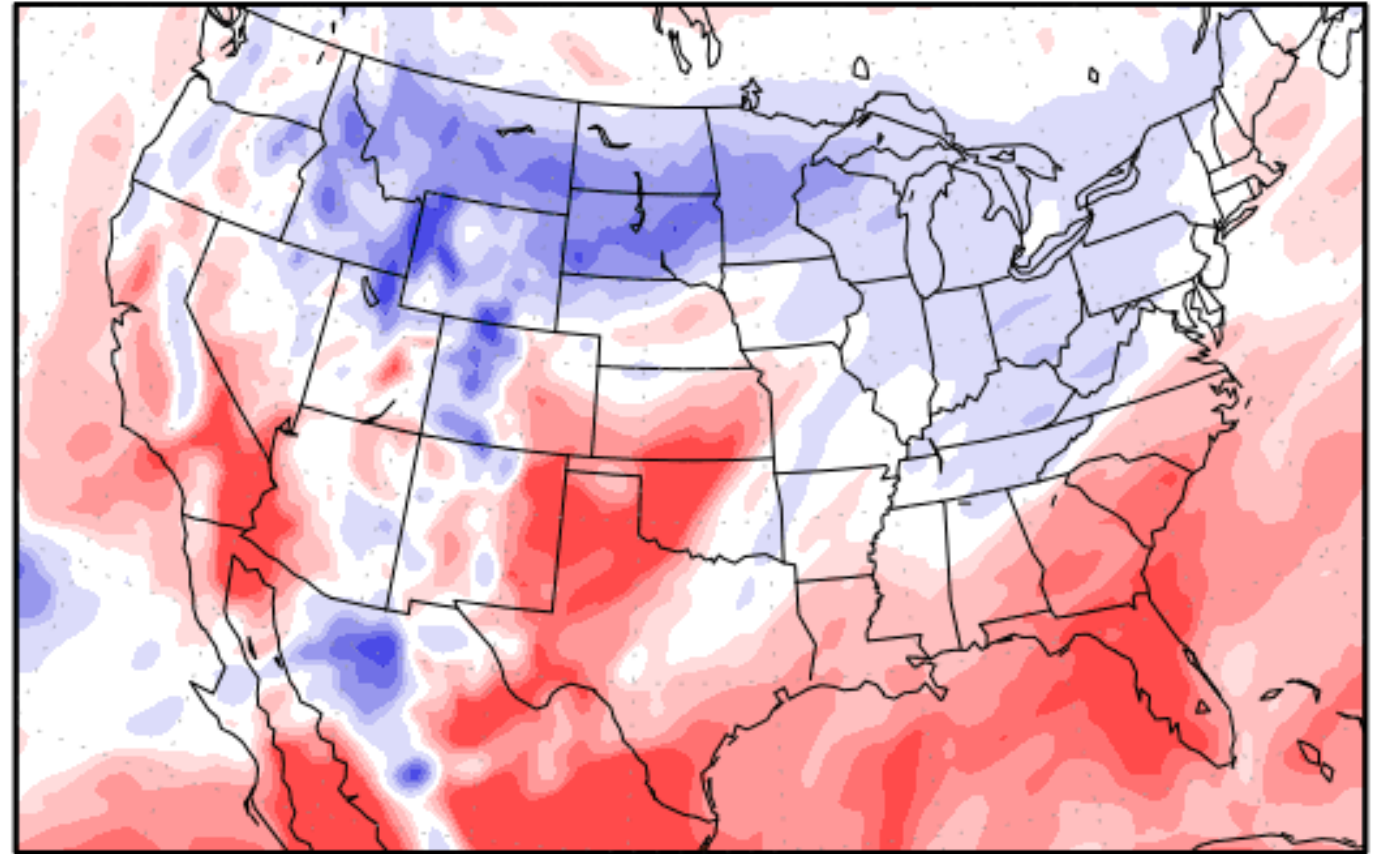
Precipitation (% of normal)
during the first period:

Thu, 16 FEB 2023 at 00Z

-to-

Fri, 24 FEB 2023 at 00Z

800
600
400
300
150
75
50
25
10
5



Precipitation forecasts from the National Centers for Environmental Prediction.
Normal rainfall derived from Xie-Arkin (CMAP) Monthly Climatology for 1979-2003.
Forecast Initialization Time: 00Z16FEB2023

GrADS/COLA



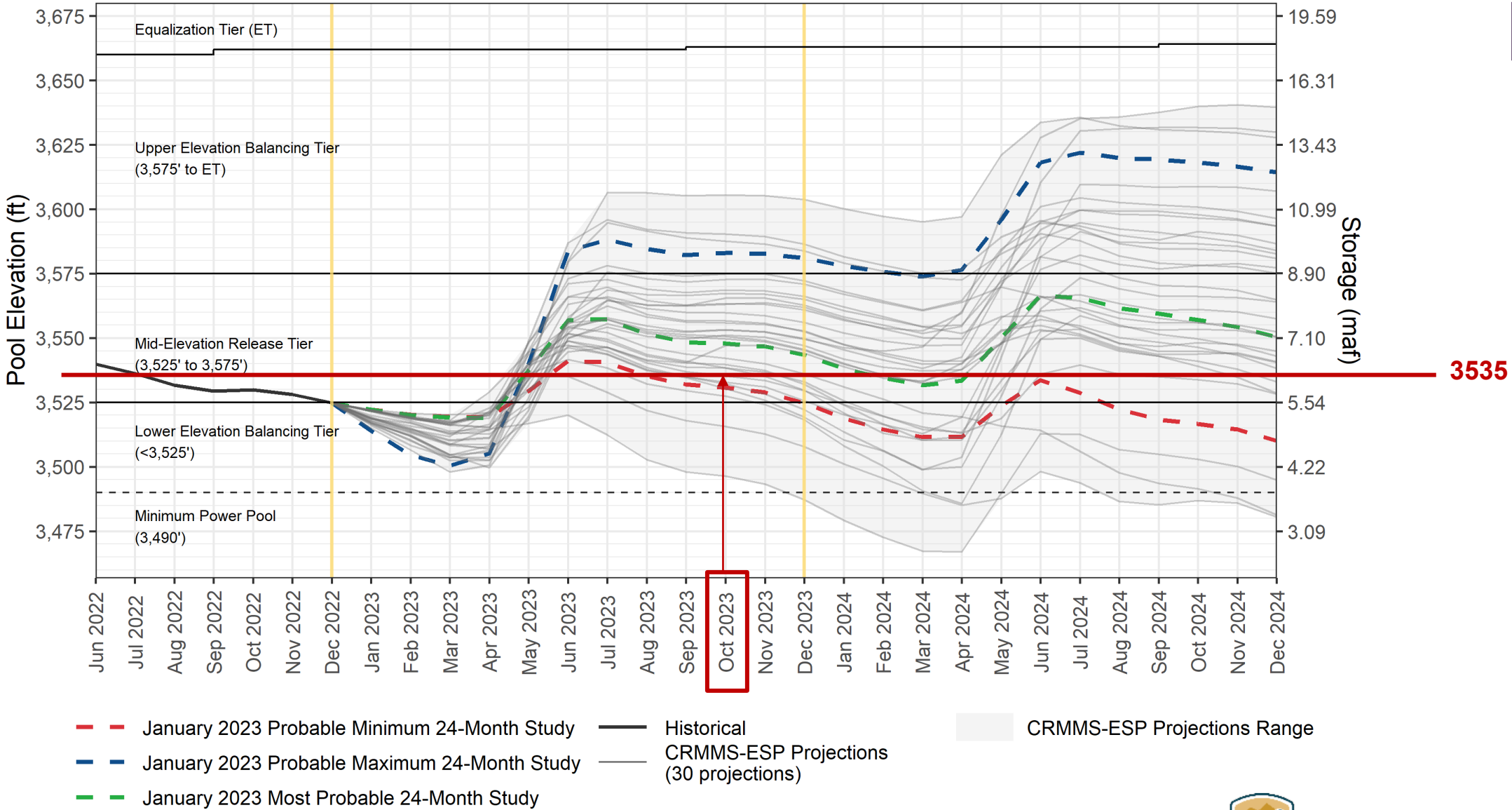


2023 Lake Powell Operations and Drought Response Operations Agreement (DROA) Intersect





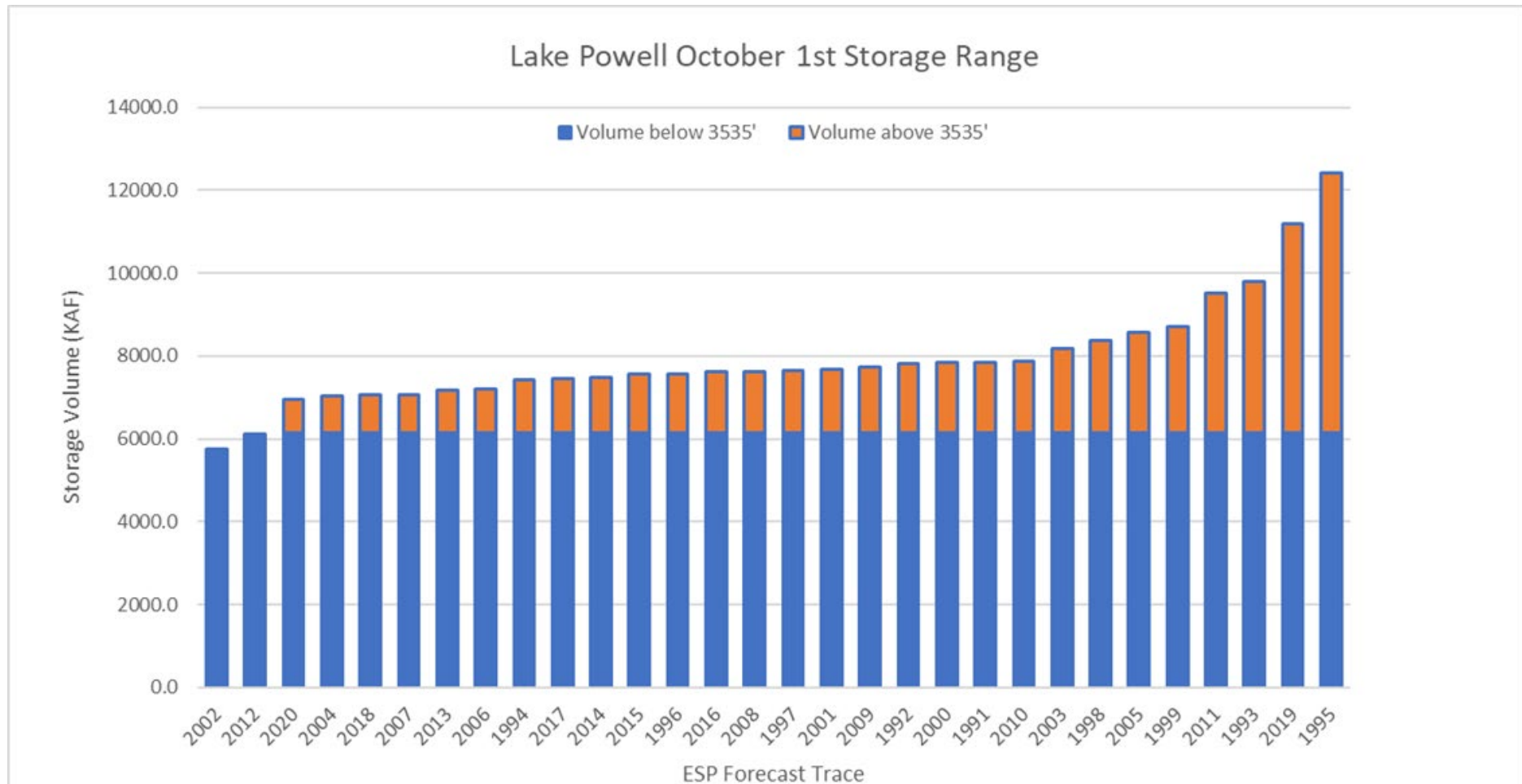
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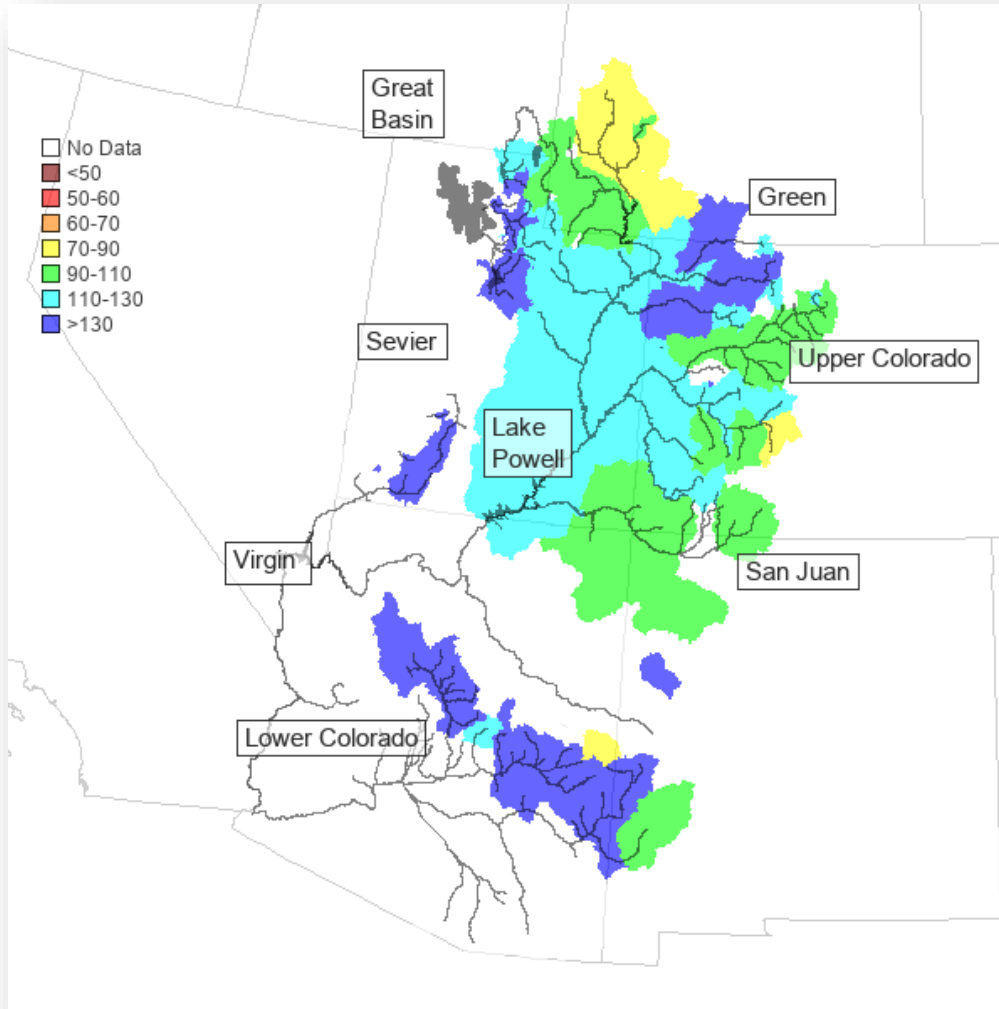
CBRFC Traces Resulting in Lake Powell Balancing



- February CBRFC forecast show 28 of 30 traces balancing
- Current Reclamation DROA accounting results mining of Lake Powell
- **50% (330 KAF) of DROA water in Lake Powell being released from Glen Canyon Dam to Lake Mead**
- Lake Powell mining mitigation through DROA recovery

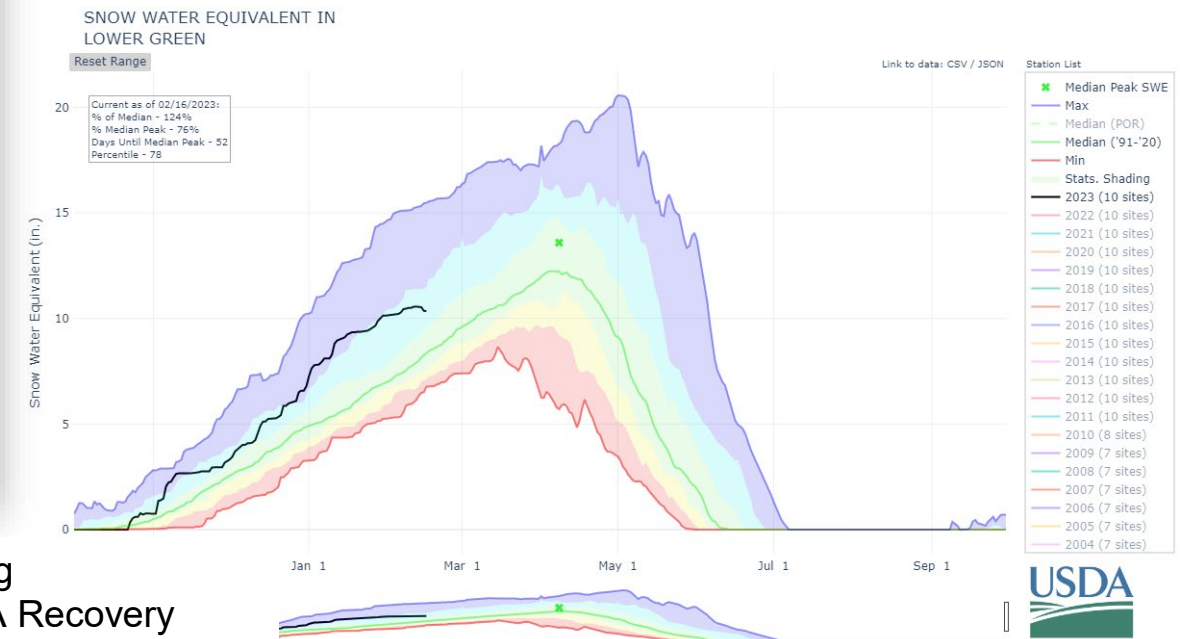
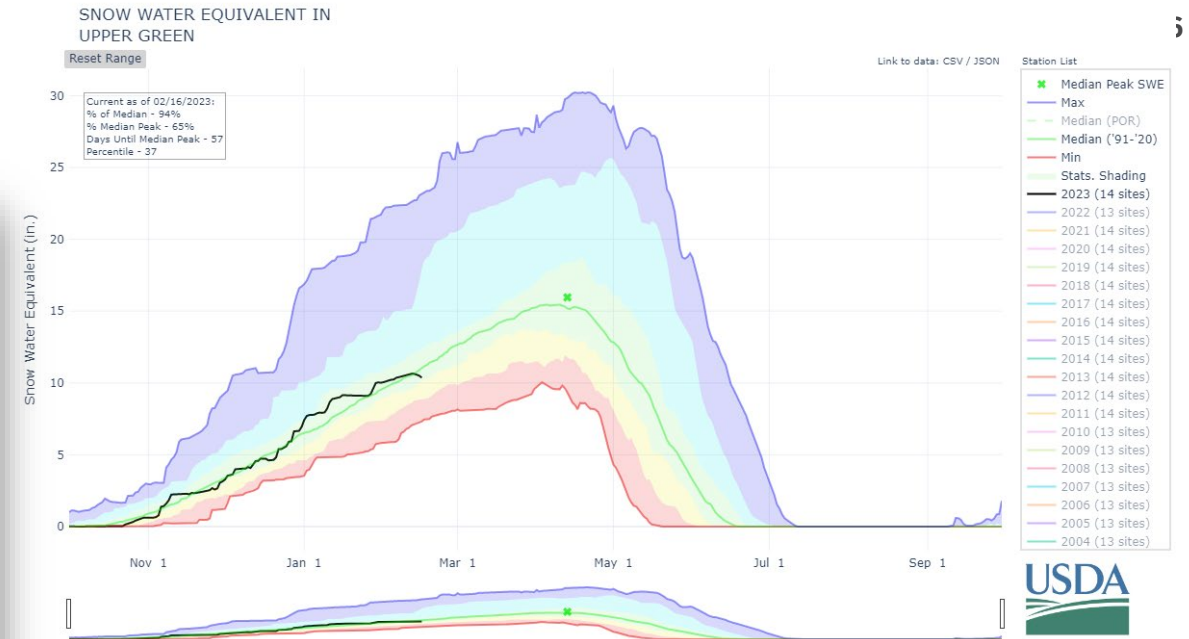


Green River Drainage Drier than the Rest of the UB



THE COLORADO RIVER AUTHORITY OF UTAH

- Worst Case – Good Hydrology Elsewhere = Large Balancing
- Poor Green River Hydrology = Reduced Possibility of DROA Recovery





Summary

- Overall promising hydrologic conditions - high likelihood of large increase in Lake Powell elevations
- Ongoing wet trend
- Concern regarding operational impacts of DROA on Lake Powell (ie balancing/mining)
- Concern regarding limited ability to recover DROA in Flaming Gorge by September 30, 2023
- California experiencing improved conditions in the State Water Project
- Arizona experiencing favorable hydrologic conditions on Colorado River tributaries

