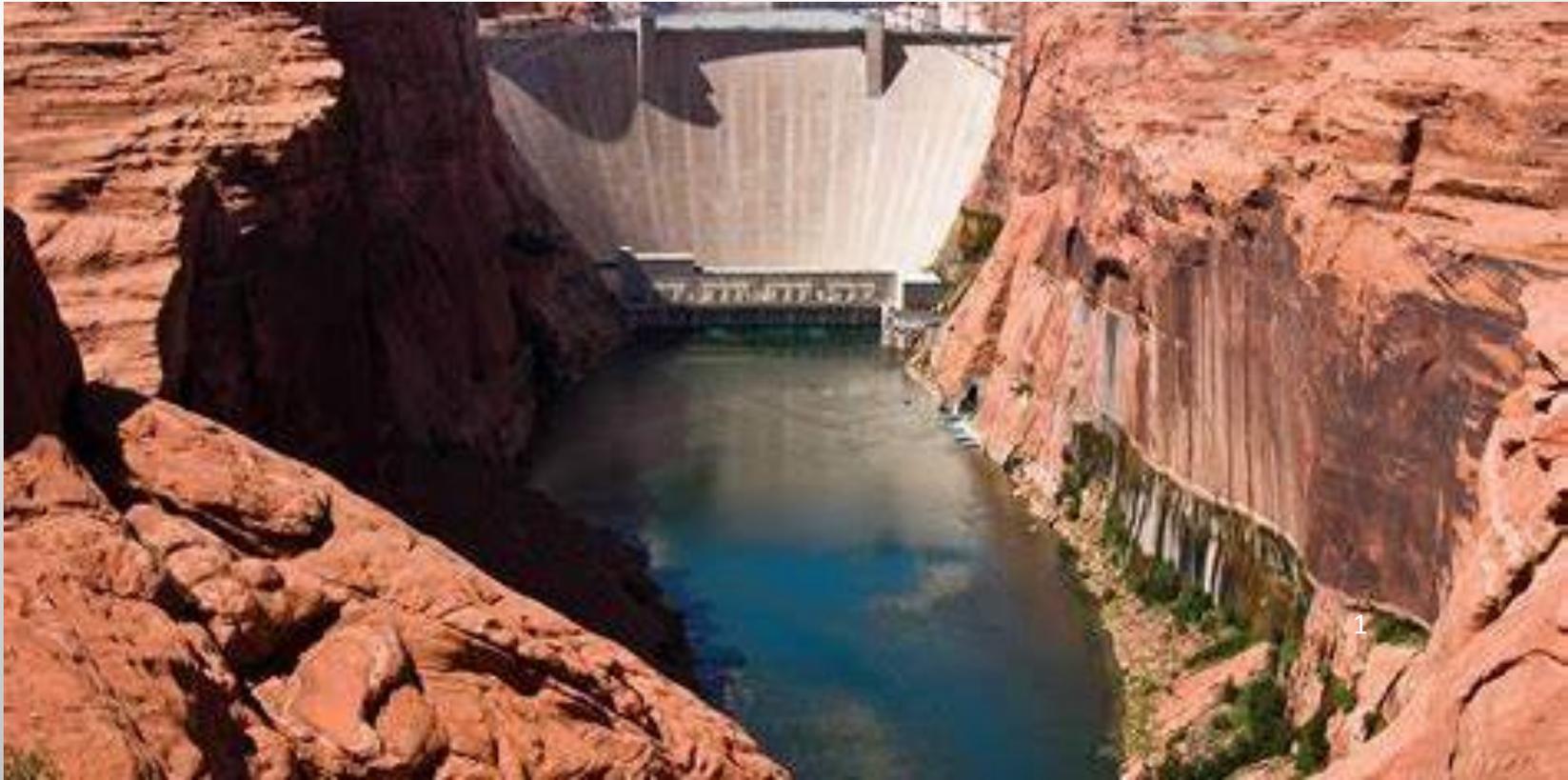


# Colorado River: Senior Priorities and Shortage Implications for Agriculture



Bart Fisher, President  
Palo Verde Irrigation District

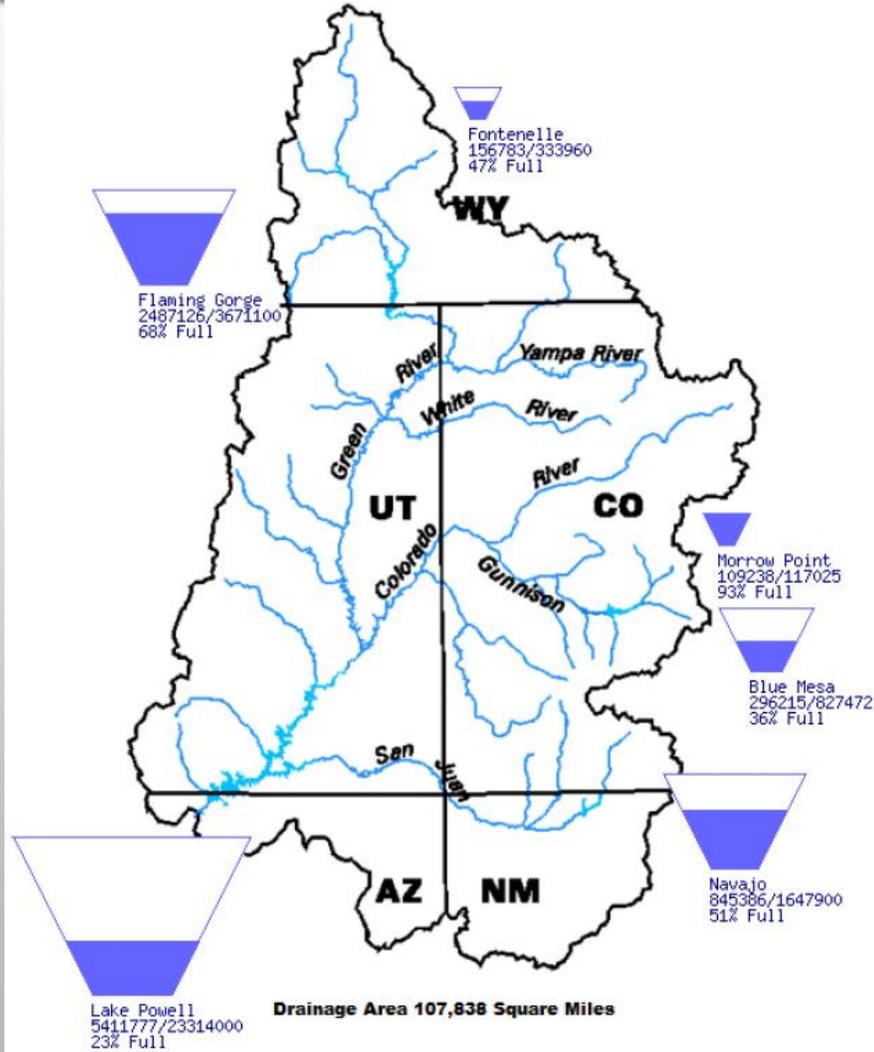


# Current Reservoir System Storage

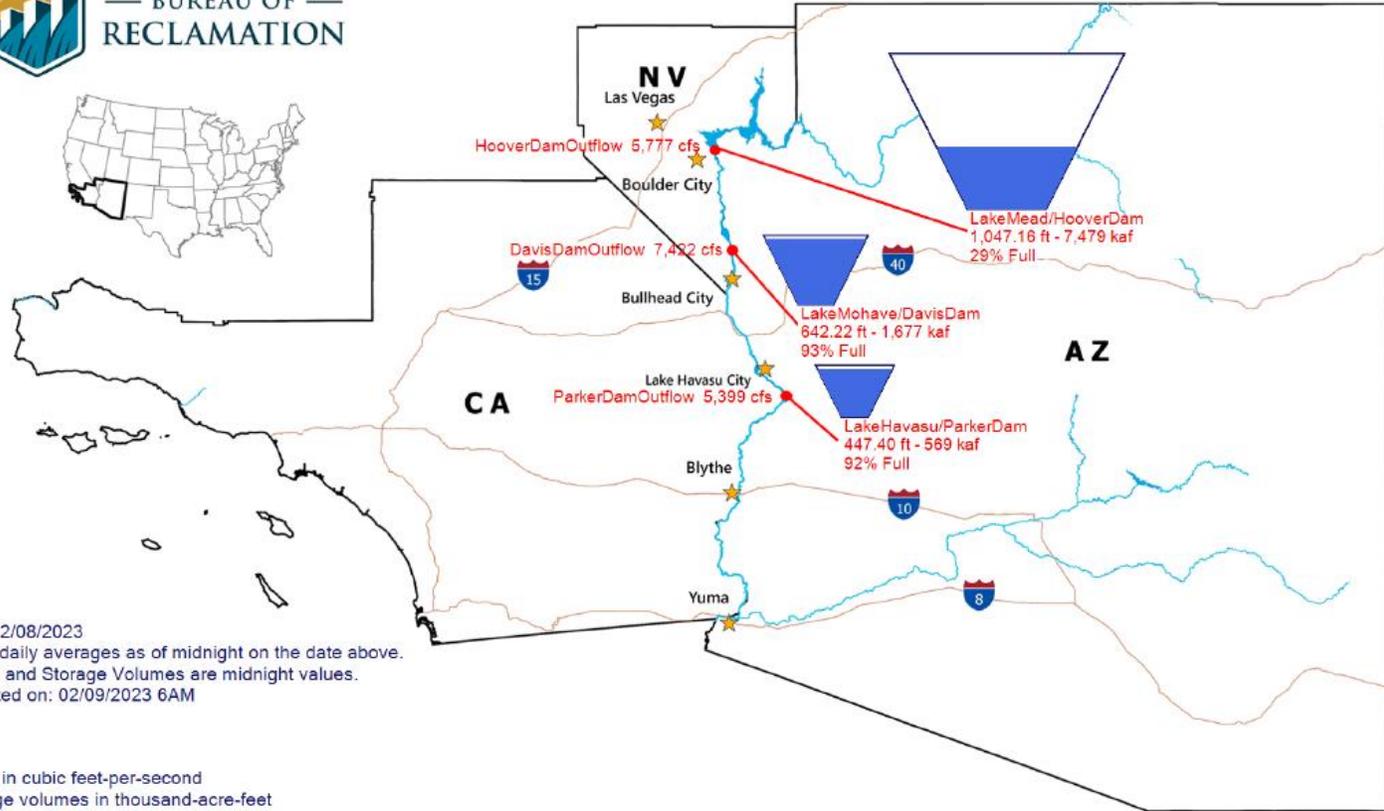
(As of February 8<sup>th</sup>)

Data Current as of:  
02/08/2023

## Upper Colorado River Drainage Basin



BUREAU OF RECLAMATION

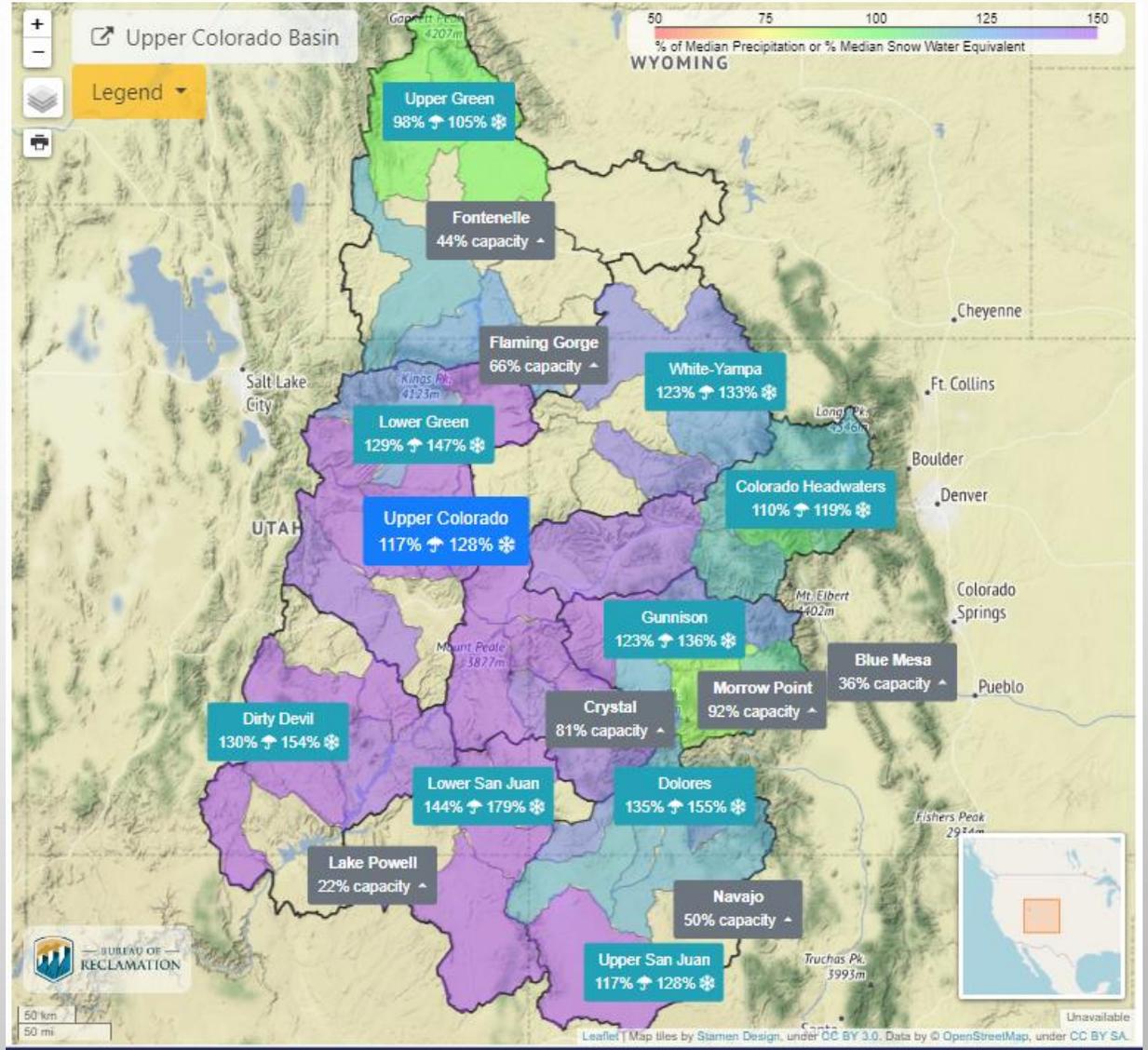
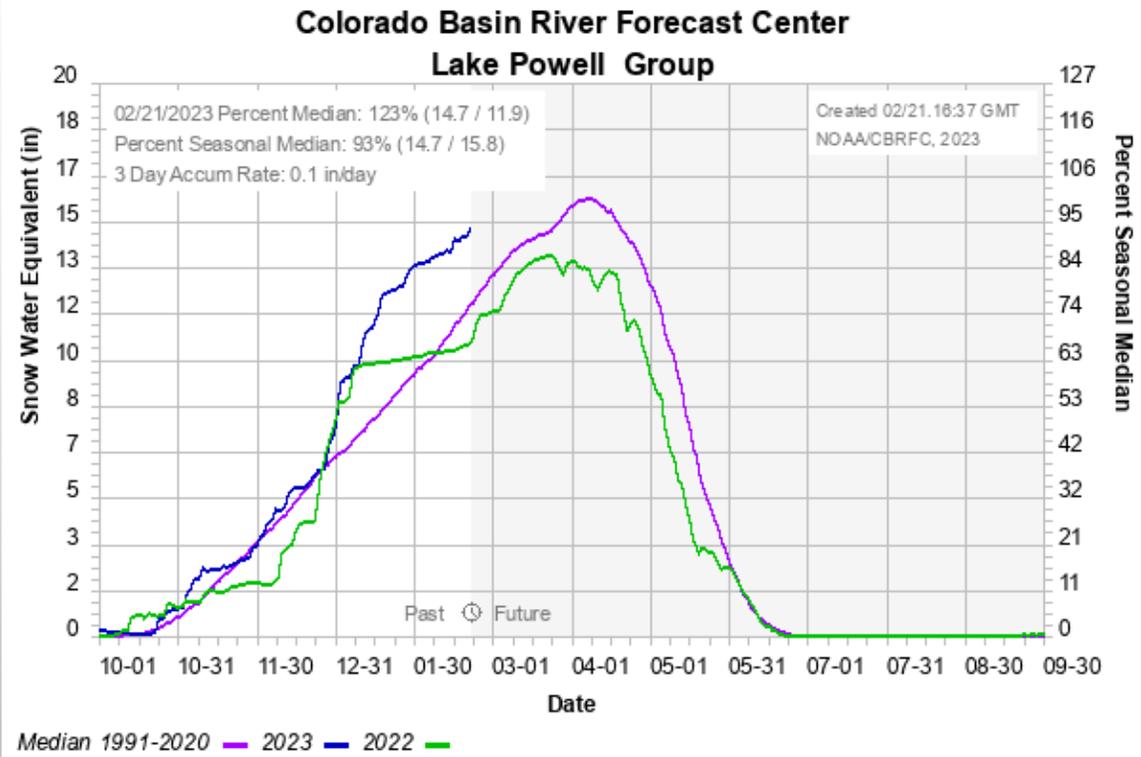


Data for: 02/08/2023  
 Flows are daily averages as of midnight on the date above.  
 Elevations and Storage Volumes are midnight values.  
 Last updated on: 02/09/2023 6AM

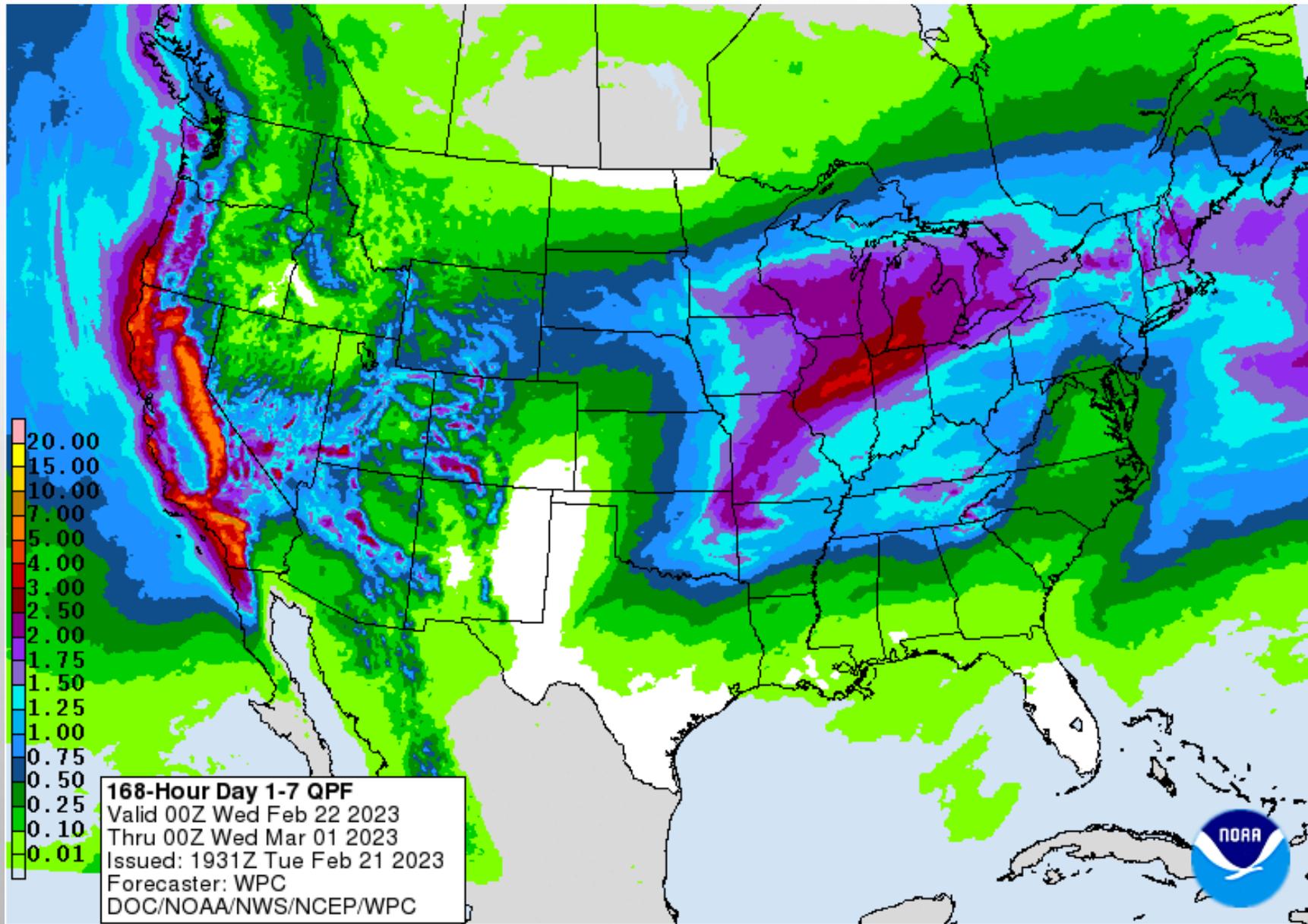
LEGEND:  
 cfs: Flows in cubic feet-per-second  
 kaf: Storage volumes in thousand-acre-feet  
 ft: Elevations in feet above mean-sea-level

# CURRENT SNOW WATER EQUIVALENT

## (AS OF FEBRUARY 21<sup>ST</sup>)

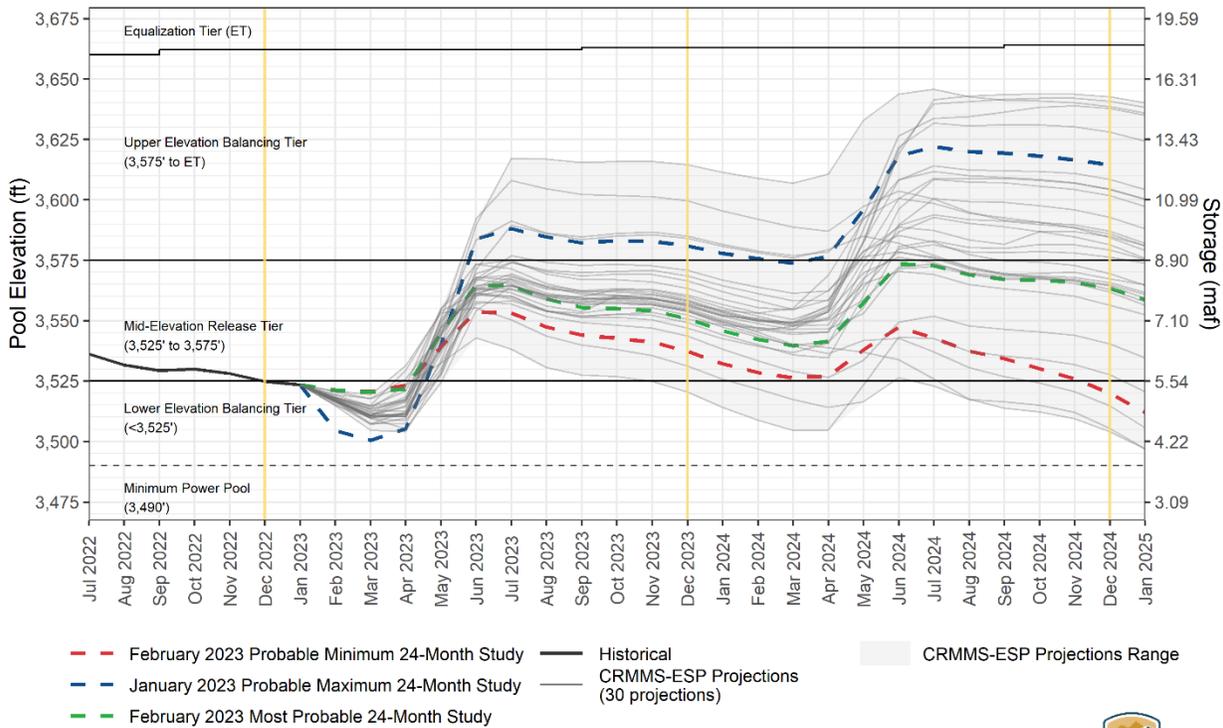


# FORECASTED STORMS



# Lake Powell and Lake Mead Forecast Operations (Through February 2025)

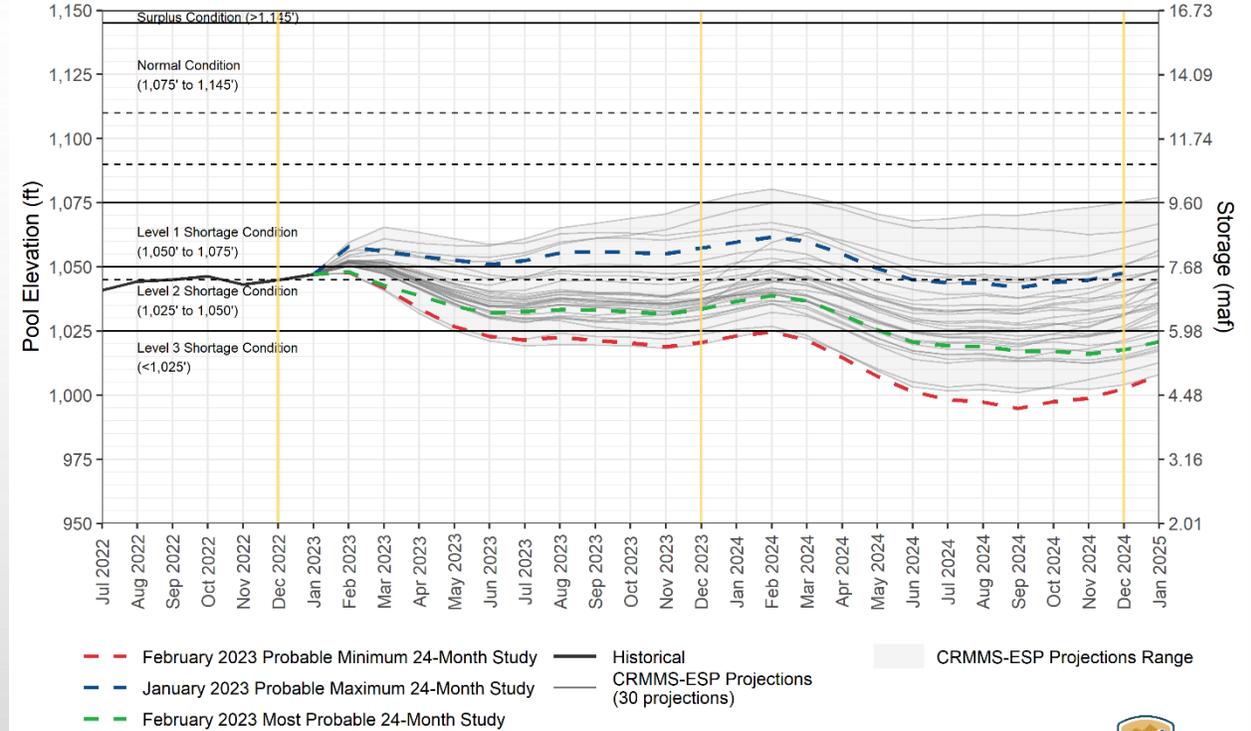
Lake Powell End-of-Month Elevations<sup>1</sup>  
CRMMS Projections from January and February 2023



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



Lake Mead End-of-Month Elevations<sup>1</sup>  
CRMMS Projections from January and February 2023



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



# COMPARISON OF MODELING FRAMEWORKS

## SIX-STATE SEIS MODELING FRAMEWORK

### • LAKE POWELL OPERATIONS

- MINOR ADJUSTMENTS TO OPERATING TIERS.
- FIXED ANNUAL RELEASES FROM GLEN CANYON DAM.
- POTENTIAL FOR DROUGHT OPERATIONS RELEASES FROM UPSTREAM FACILITIES.
- REDUCE RELEASES TO HARD-PROTECT POWELL ELEVATION 3,500'.

### • LAKE MEAD OPERATIONS

- ASSESSMENT OF EVAPORATION & SYSTEM LOSSES OF 1.543 MAFY WHEN MEAD IS <1,145'.
- MAXIMUM SHORTAGE REDUCTIONS AND DCP CONTRIBUTIONS MOVED UP TO MEAD ELEVATION 1,050' (1.375 MAFY).
- ADDITIONAL REDUCTIONS OF UP TO 0.450 MAFY WHEN MEAD <1,030'.

### • TOTAL PROPOSED REDUCTIONS = 3.368 MAFY

## CALIFORNIA SEIS MODELING FRAMEWORK

### • LAKE POWELL OPERATIONS

- MINOR ADJUSTMENTS TO OPERATING TIERS.
- RANGE OF ANNUAL RELEASES FROM GLEN CANYON DAM BASED UPON POWELL STORAGE.
- REQUIREMENT FOR DROUGHT OPERATIONS RELEASES FROM UPSTREAM FACILITIES.
- REQUIREMENT FOR UPPER BASIN WATER CONSERVATION ACTIVITIES.
- REDUCE RELEASES TO HARD-PROTECT POWELL ELEVATION 3,500'.

### • LAKE MEAD OPERATIONS

- IMPLEMENT EXISTING 2007 ISG REDUCTIONS, DCP, AND M323 CONTRIBUTIONS (UP TO 1.375 MAFY)
- BELOW MEAD ELEVATION 1,145' ADD 1.0 MAFY OF ADDITIONAL PROTECTION VOLUME.
- BETWEEN MEAD ELEVATIONS 1,025'-1,000' ADD INCREASING PROTECTION VOLUMES UP TO 0.950 MAFY.

### • TOTAL PROPOSED REDUCTIONS = 3.325 MAFY

### Lake Powell

	07 GL, DCP, Minutes	California Proposal	Six State Proposal
3,700' Full Pool	Equalization Tier	Equalization Tier	Equalization Tier
3,666'			
3,575'	Upper-Elevation Balancing Tier: Balance releases between 7 and 9 MAF based on Mead elevation and inflow	Upper-Elevation Balancing Tier: Rules per 2007 Guidelines Recovery possible for DROA/LB 480	Upper-Elevation Balancing Tier: Rules per 2007 Guidelines
3,550'	Mid-Elevation Release Tier: Release 7.48 or 8.23 MAF	Mid-Elevation Release Tier: Rules per 2007 Guidelines. Implement up to 100 KAFY demand management	Mid-Elevation Release Tier: Fixed 7.48 MAF release
3,525'		Lower Elevation Balancing Tier: Release 7.48 to 7.0. Releases can be reduced below 7.0 to keep Powell above elevation 3,500'. Implement up to 500 KAFY demand management and 500 KAFY DROA releases	Lower Elevation Tier: Fixed 7.0 MAF release, no balancing releases. Reduce releases as necessary to protect 3,500'.
3,500'	Lower Elevation Balancing Tier: Balance between 7.0 and 9.5 MAF		
Min. Power 3,490'			
3,475'			
3,370'			
Dead Pool			

### Lake Mead

	07 GL, DCP, Minutes	California Proposal	Six State Proposal
1,220' Full Pool	Normal Condition: No mandatory reductions, ICS can be recovered with fewer limitations	Normal Condition: No mandatory reductions	Normal Condition: No mandatory reductions
1,145'		Annual reductions of <b>1 MAF</b> : CA - 400 KAF AZ - 560 KAF NV - 40 KAF	Annual reductions for 1.543 MAF. Assessed to all contractors proportionally
1,090'	Tier 0: 241 KAF	Tier 0: 241 KAF + 1.0 MAF = <b>1.241 MAF</b>	Tier 0: 241 KAF + 1.543 MAF = <b>1.784 MAF</b>
1,075'		Tier 1 Shortage: DCP/Shortage reductions of 612 KAF + 1.0 MAF = <b>1.612 MAF</b>	Tier 1 Shortage: DCP/Shortage reductions of 612 KAF + 1.543 MAF = <b>2.155 MAF</b>
1,050'	Tier 2 Shortage: 721 - 1,188 KAF	Tier 2 Shortage: DCP/Shortage reductions of 721 - 1,188 KAF + 1.0 MAF = <b>1.721 to 2.188 MAF</b>	Tier 3 DCP/Shortage reductions of 1.375 MAF + 1.543 MAF = <b>2.918 MAF</b>
1030'		Tier 3 Shortage/DCP reductions of 1.375 MAF + 1.0 MAF + 150 KAF = <b>2.525 MAF</b>	Tier 3 DCP/Shortage reductions of 1.375 MAF + 1.543 MAF + 250 KAF = <b>3.168 MAF</b>
1,025'	Tier 3 Shortage: LB/MX shortage 625 KAF. With DCP contributions: 1,375 KAF. States reconult on additional reductions	1.375 MAF + 1.0 MAF + 300 KAF = <b>2.675 MAF</b>	Tier 3 DCP/Shortage reductions of 1.375 + 1.543 MAF + 450 KAF = <b>3.368 MAF</b>
1,020'		1.375 MAF + 1.0 MAF + 500 KAF = <b>2.875 MAF</b>	
1,015'		1.375 MAF + 1.0 MAF + 750 KAF = <b>3.125 MAF</b>	
1,010'		1.375 MAF + 1.0 MAF + 950 KAF = <b>3.325 MAF</b> . Reduce releases further as necessary to protect 1,000'.	
1,005'			
1,000'			
950' Min. Power			
895' Dead Pool			