

Colorado River Water Supply Report May 2023

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CAWCD Board Meeting
May 4, 2023

1

Colorado River Water Supply Report



YOUR WATER. YOUR FUTURE.

Colorado River Water Supply Report

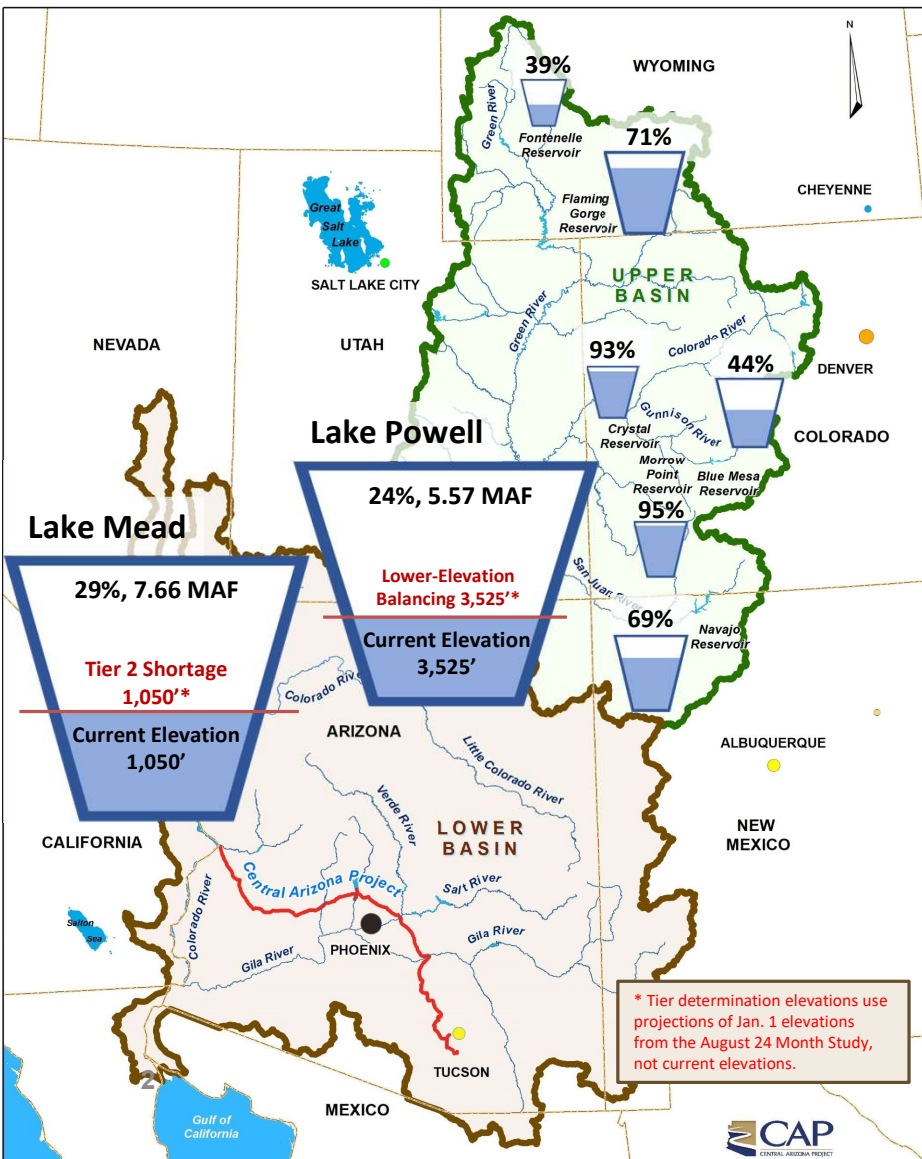
As of May 1, 2023

System Contents: 19.85 MAF

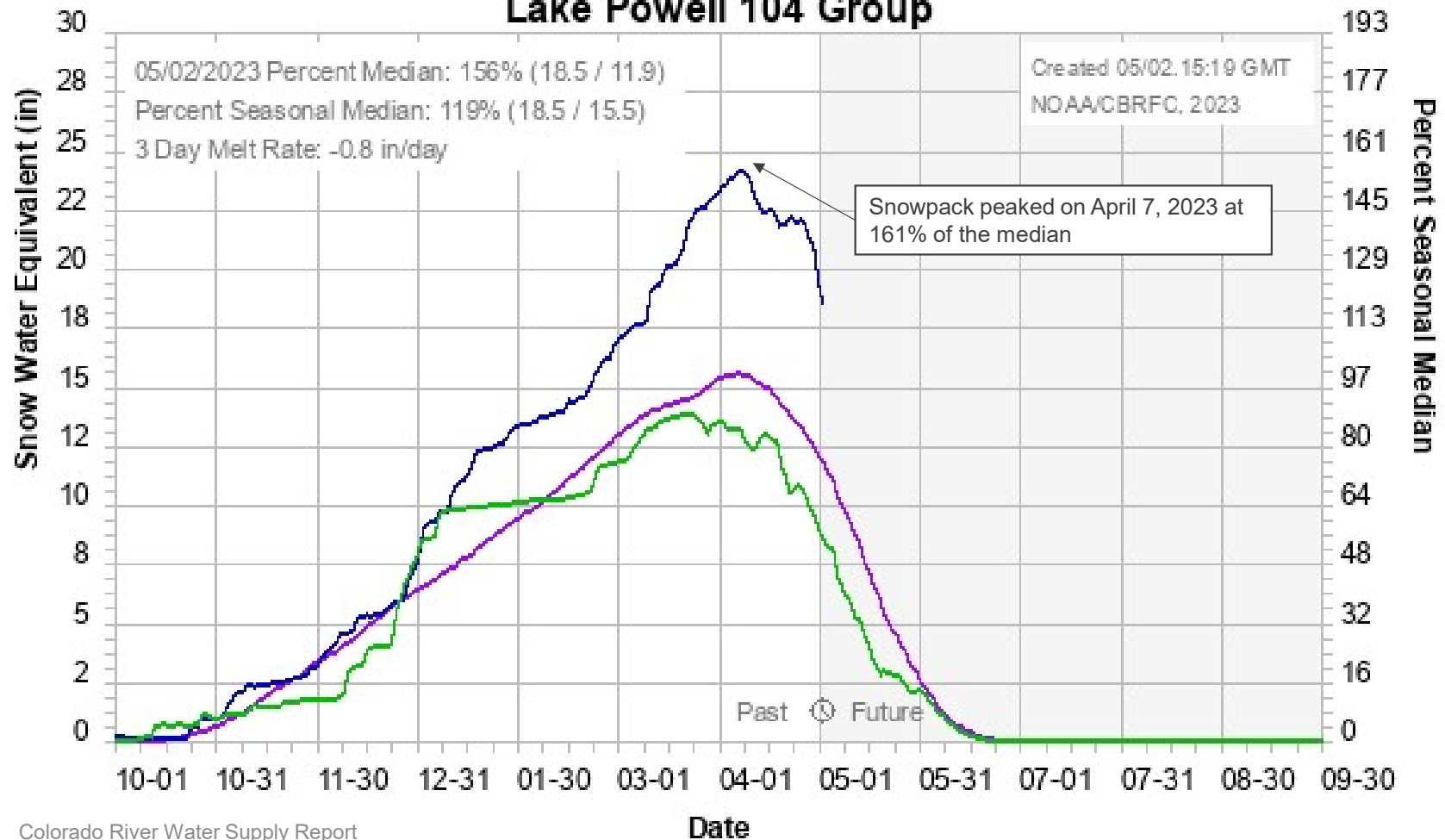
Last Year System Contents: 20.45 MAF

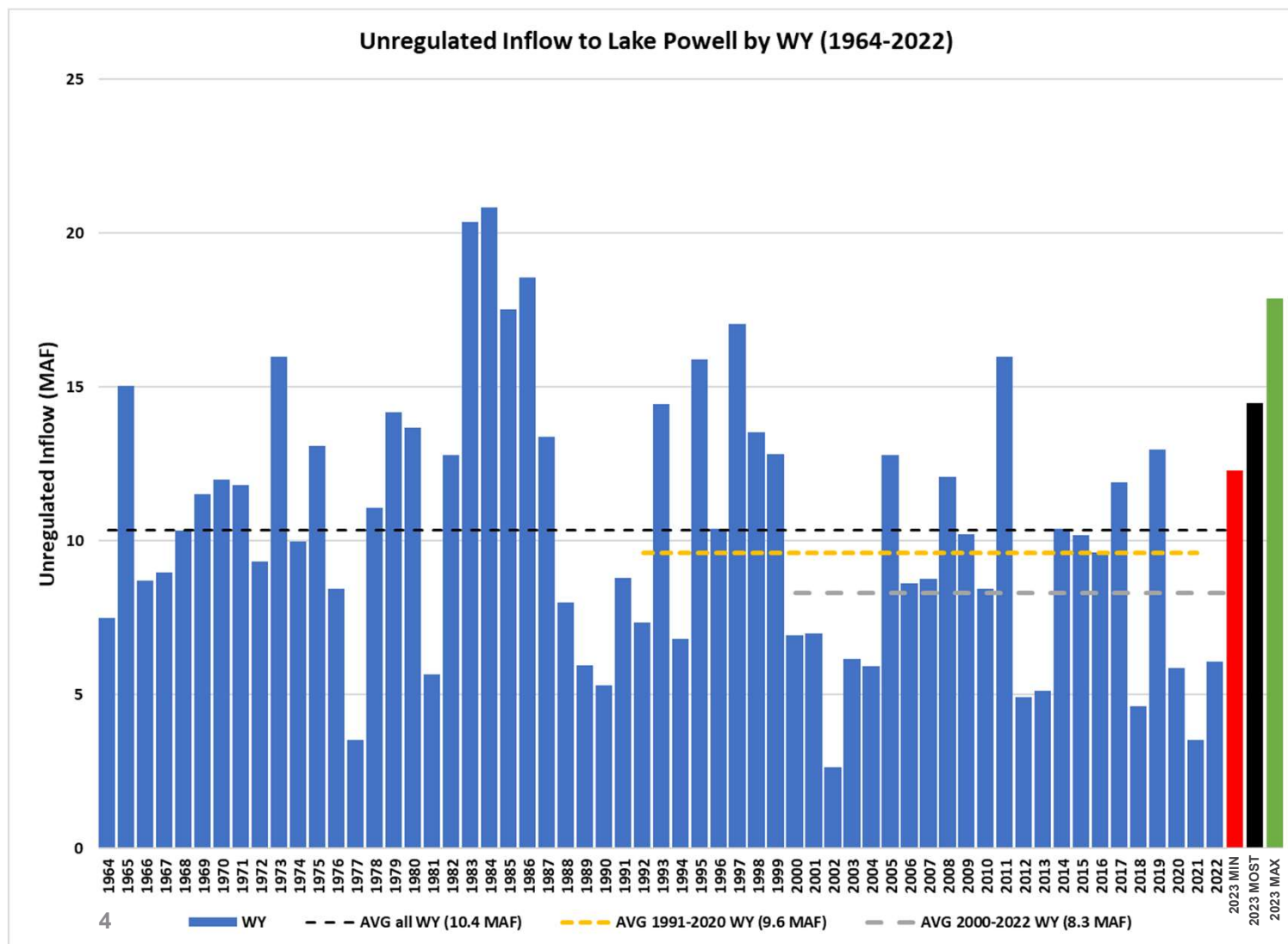
Reservoir Capacities (MAF)			
Reservoir	Current	Change*	Maximum
Lake Mead	7.66	+ 0.24	26.12
Lake Powell	5.57	+ 0.21	23.31
Flaming Gorge Reservoir	2.60	+ 0.14	3.67
Fontenelle Reservoir	0.13	+ 0.01	0.33
Navajo Reservoir	1.14	+ 0.25	1.65
Blue Mesa Reservoir	0.36	+ 0.06	0.82
Morrow Point Reservoir	0.11	0.00	0.12
Crystal Reservoir	0.02	0.00	0.02

*With respect to previous month's report



Colorado Basin River Forecast Center Lake Powell 104 Group





Water Year 2023 Forecast¹

Apr Min Prob = 12.27 MAF (128%)

Apr Most Prob = 14.47 MAF (151%)

Apr Max Prob = 17.86 MAF (186%)

Water Year 2023 Forecast

Mid-April Most Probable Update =
14.27 MAF (149%)



YOUR WATER. YOUR FUTURE.

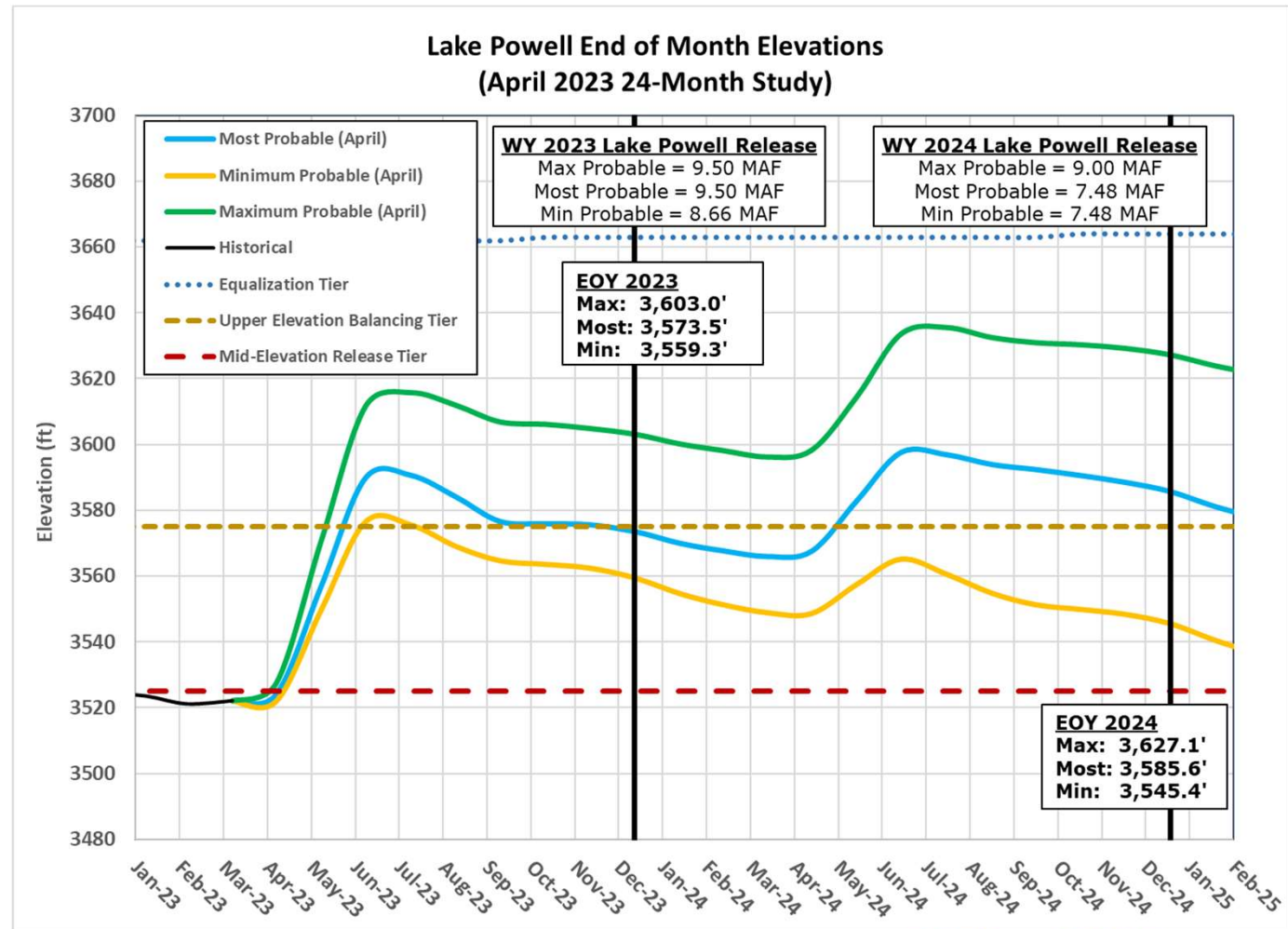
¹Water Year statistics are based on the 30-year period of record from 1991-2020, Average 1991-2020 – 9.60 maf

April 2023 24-Month Study Assumptions

- WY 2023 Glen Canyon Dam release was initially set to 7.0 MAF
- In April, Reclamation evaluated hydrologic conditions and determined that balancing releases are appropriate as per 2007 Interim Guidelines
- DROA releases from Flaming Gorge were suspended March 2023
- Reclamation has initiated DROA recovery as of March 2023
- Operational neutrality of 480 KAF was removed such that balancing releases were based on physical elevations of Powell and Mead and not on effective elevations

Lake Powell April 2023 24-Month Study

- Lake Powell releases increased to 9.5 MAF in WY2023, with balancing releases evaluated each remaining month of the water year
- WY2023 Max is 9.5 MAF, Min is 8.66 MAF



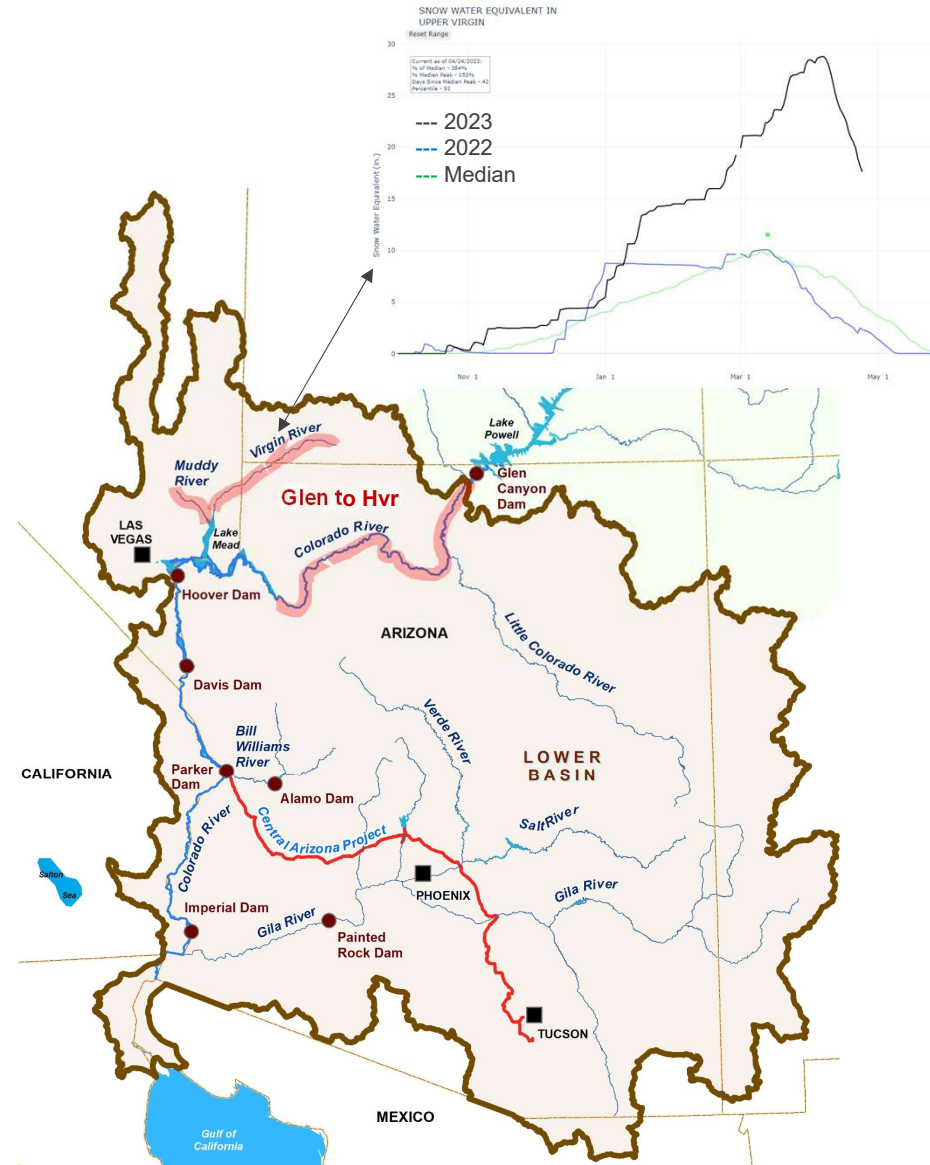
April 2023 24-Month Study Assumptions

	Glen to Hvr	
	5-year Average	April 24-MS CBRFC Adj
April 2023	60.1	188.8
May 2023	36.6	142.0
June 2023	21.8	72.7

All values in thousand acre-feet
Bold are values in April 24-MS

Additional activities that could impact Lake Mead elevations:

- Intervening flows (Glen Canyon to Hoover Dam) uses CBRFC forecast, instead of 5-year average



April 2023 24-Month Study Assumptions

	Glen to Hvr		Gains Abv Pkr		
	5-year Average	April 24-MS CBRFC Adj	5-year Average	Bill Williams Inflow Est.	April 24-MS Total Abv Pkr
April 2023	60.1	188.8	6.6	37.5	44.1
May 2023	36.6	142.0	3.6	38.7	42.3
June 2023	21.8	72.7	10.1	37.5	47.6

All values in thousand acre-feet
Bold are values in April 24-MS

Additional activities that could impact Lake Mead elevations:

- Lake Mead intervening flows (Glen Canyon to Hoover Dam) uses CBRFC forecast, instead of 5-year average
- Alamo Dam Releases are anticipated to go up to 140 KAF- reducing the need for releases from Lake Mead



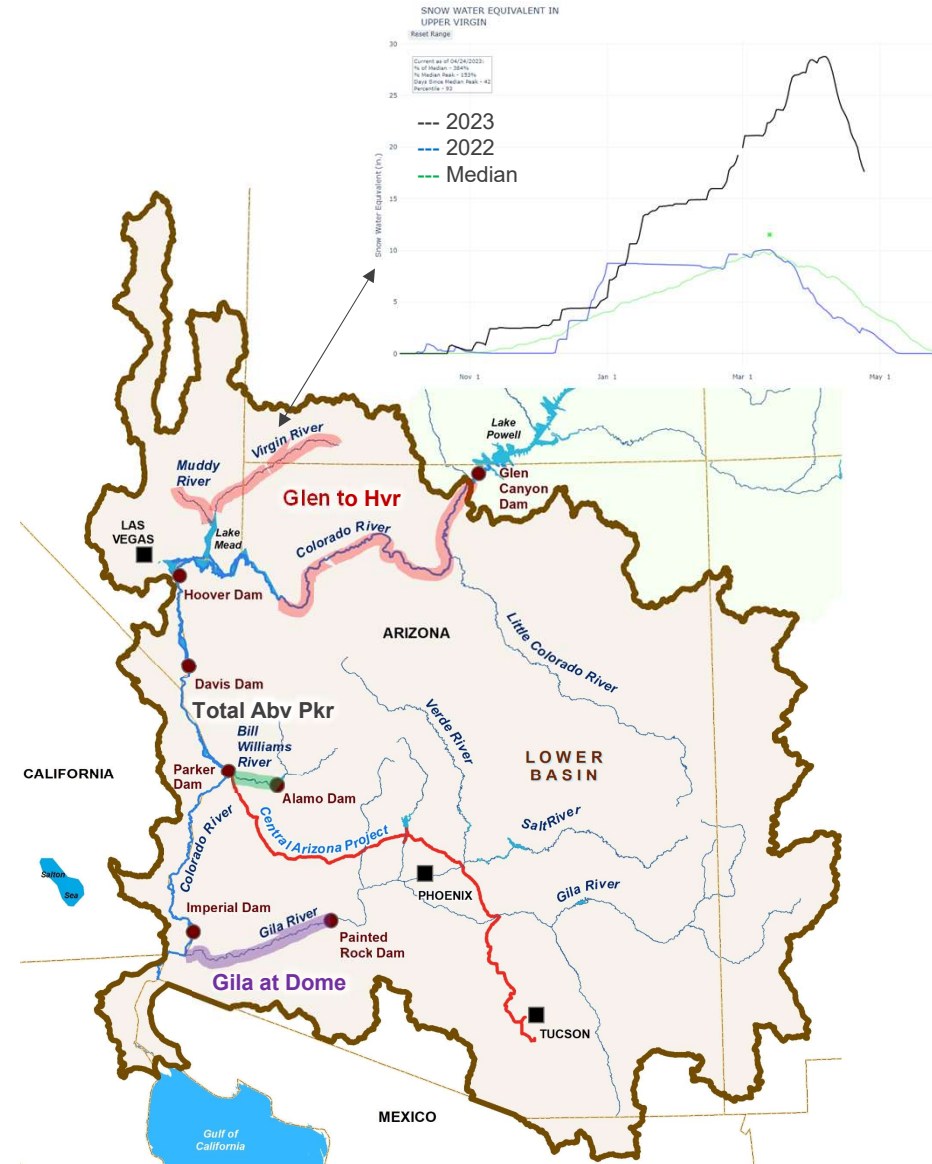
April 2023 24-Month Study Assumptions

	Glen to Hvr		Gains Abv Pkr			Gila at Dome
	5-year Average	April 24-MS CBRFC Adj	5-year Average	Bill Williams Inflow Est.	April 24-MS Total Abv Pkr	April 24-MS Inflow Est.
April 2023	60.1	188.8	6.6	37.5	44.1	0.0
May 2023	36.6	142.0	3.6	38.7	42.3	31.0
June 2023	21.8	72.7	10.1	37.5	47.6	35.6

All values in thousand acre-feet
Bold are values in April 24-MS

Additional activities that could impact Lake Mead elevations:

- Lake Mead intervening flows (Glen Canyon to Hoover Dam) uses CBRFC forecast, instead of 5-year average
- Alamo Dam Releases are anticipated to go up to 140 KAF- reducing the need for releases from Lake Mead
- Painted Rock Dam releases are anticipated to go to 8,000 af/day, potentially reducing the need for releases from Lake Mead.



Additional Water Modeled Under 500 Plus Plan

(as modeled in the April 2023 Most Probable 24-Month Study)

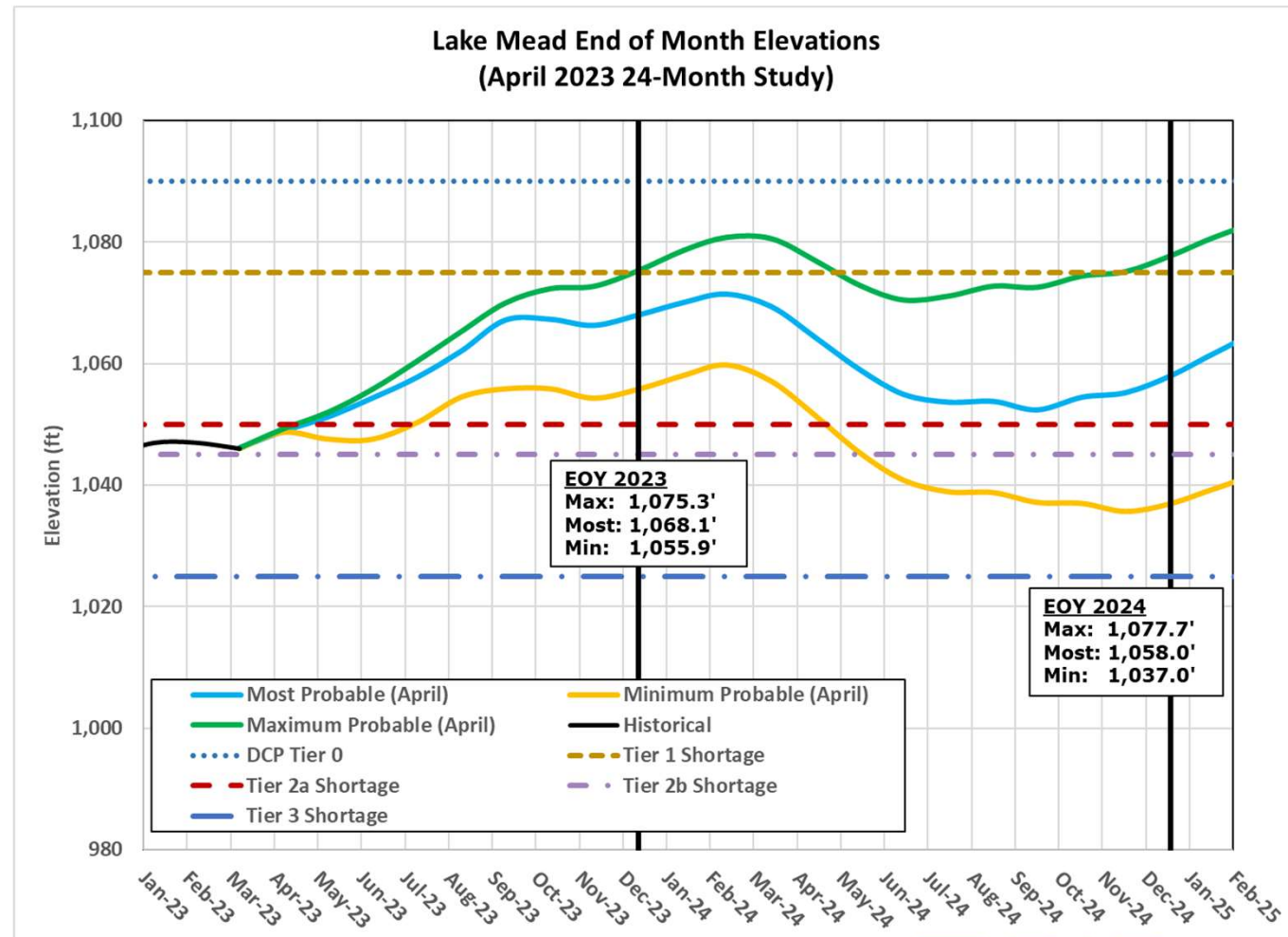
Conservation Activity (volumes in AF)	2021	2022 (Provisional)	2023 (Projected)
CAP ICS delivery offset	6,147	15,876	-10,900
GRIC System Conservation	40,000	58,837	125,000
GRIC ICS creation	0	78,565	0
CRIT System Conservation	4,685	4,685	0
CAWCD System Conservation	0	87,794	0
YMIDD System Conservation	0	8,523	13,670
MVIDD System Conservation	0	9,531	12,819
FMYN System Conservation	0	0	13,933
MWD ICS delivery offset and/or creation	58,134	58,211	107,347
PVID System Conservation	12,305	52,789	58,400
CVWD System Conservation	0	9,083	0
SNWA ICS creation	12,832	28,330	44,000
Annual Total (Non-Shortage/DCP)	134,103	412,224	364,269
Cumulative Total	134,103	546,327	910,596

- 2023 volumes reflect executed agreements under the 500+ Plan and LC Conservation Program and current operational projections and are subject to change.
- Additional conservation activities are being considered. After new agreements are finalized and executed, these additional activities will be included in Reclamation's operational planning and modeling.



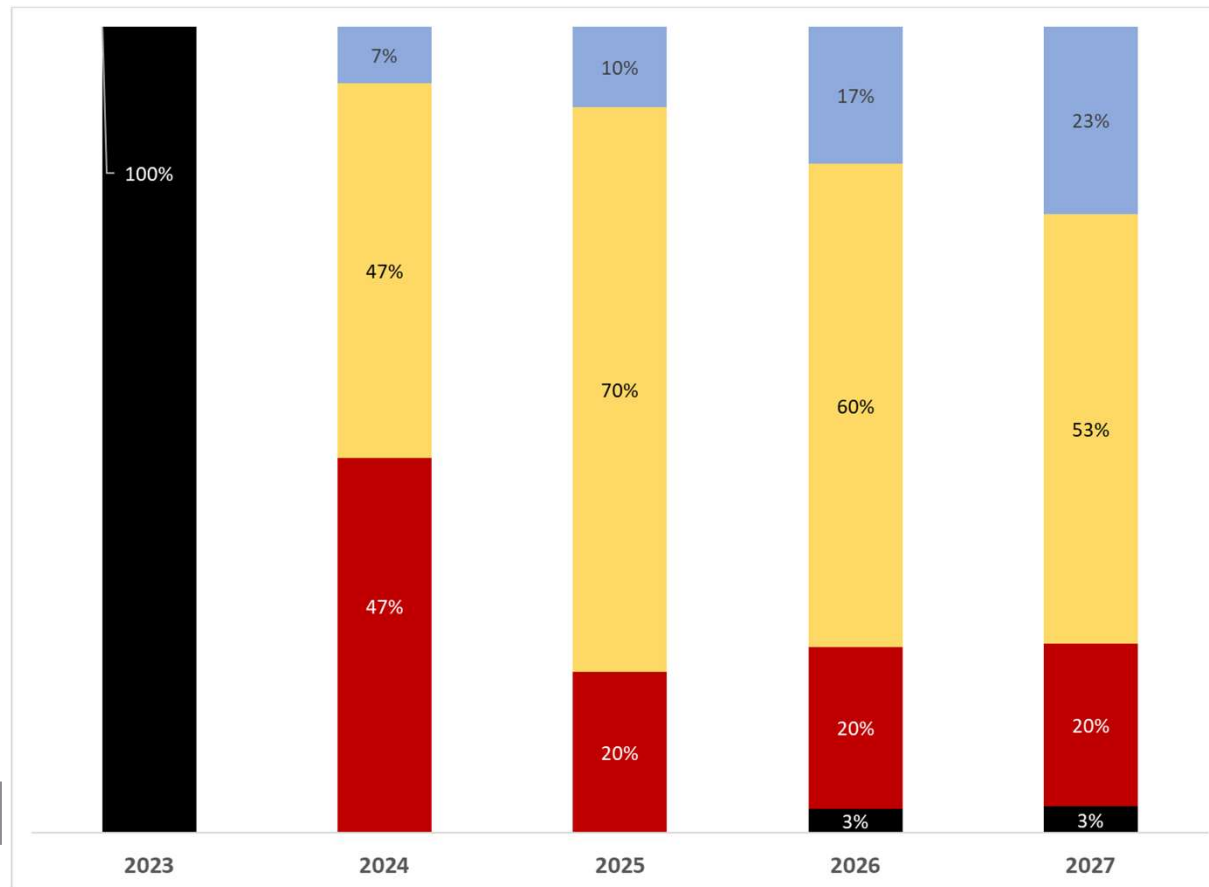
Lake Mead April 2023 24-Month Study

- Lake Mead will operate in Tier 2a Shortage condition in 2023
- Lake Mead is currently projected to be in Tier 1 for 2024
- Tier determinations are based on physical elevations



Powell 5-Year Release Probabilities for 2023-27: April 2023 CRMMS Model Run

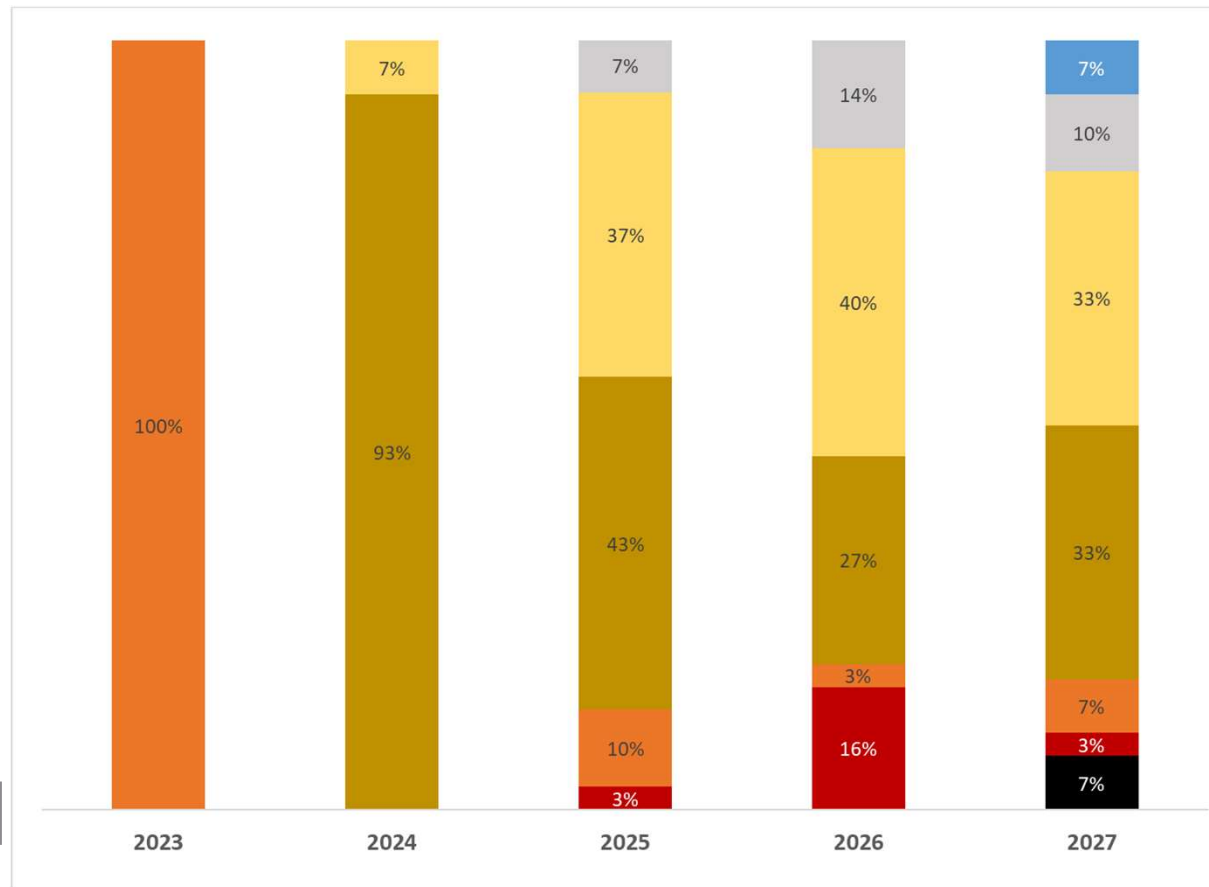
CBRFC Calibration Period Hydrology 1991 – 2020



Legend	
Equalization	> 8.23 MAF
Upper Elevation Balancing	7.0 - 9.0 MAF
Mid Elevation Release	7.48/8.23 MAF
Lower Elevation Balancing	7.0 - 9.5 MAF

Mead 5-Year Release Probabilities for 2023-27: April 2023 CRMMS Model Run

CBRFC Calibration Period Hydrology 1991 – 2020



Pool Elevation	Legend	Arizona Supply
$\geq 1,145'$	Surplus	2.800 MAF
$> 1,090'$ and $\leq 1,145'$	Normal	2.800 MAF
$> 1,075'$ and $\leq 1,090'$	Tier 0	2.608 MAF
$\geq 1,050'$ and $\leq 1,075'$	Tier 1	2.288 MAF
$> 1,045'$ and $< 1,050'$	Tier 2a	2.208 MAF
$\geq 1,025'$ and $\leq 1,045'$	Tier 2b	2.160 MAF
$< 1,025'$	Tier 3	2.080 MAF

Probability of Reaching Critical Elevations in Any Month: April 2023 CRMMS Model Run

Lake Powell		WY 2023	WY 2024	WY 2025	WY 2026	WY 2027
Less than 3,525 feet	Jan-23	100%	37%	30%	23%	17%
	Apr-23	100%	0%	0%	3%	3%
Less than 3,490 feet (minimum power pool)	Jan-23	0%	10%	10%	20%	13%
	Apr-23	0%	0%	0%	0%	0%
Lake Mead		2023	2024	2025	2026	2027
Less than 1,020 feet	Jan-23	17%	33%	40%	40%	50%
	Apr-23	0%	0%	0%	3%	7%
Less than 1,000 feet	Jan-23	0%	13%	13%	13%	13%
	Apr-23	0%	0%	0%	0%	0%
Less than 950 feet (minimum power pool)	Jan-23	0%	0%	0%	0%	0%
	Apr-23	0%	0%	0%	0%	0%

Source: U.S. Bureau of Reclamation

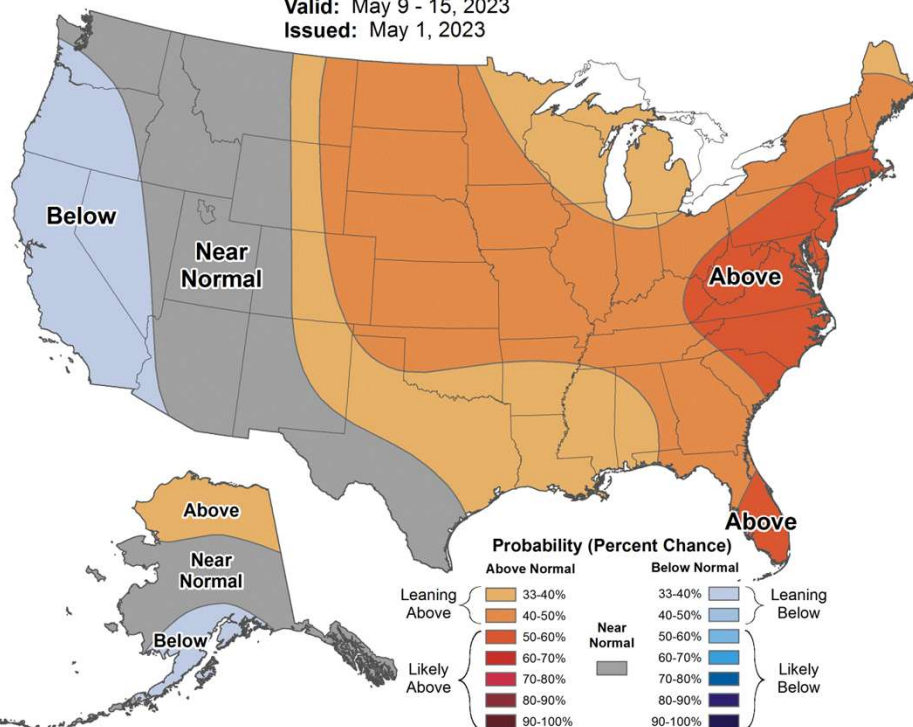
Hydrology Period: 1991-2020

8 to 14 Day Temperature and Precipitation Outlook



8-14 Day Temperature Outlook

Valid: May 9 - 15, 2023
Issued: May 1, 2023



8-14 Day Precipitation Outlook

Valid: May 9 - 15, 2023
Issued: May 1, 2023

