

Colorado River Water Supply Report September 2023

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CAWCD Board Meeting
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Colorado River Water Supply Report



YOUR WATER. YOUR FUTURE.

Colorado River Water Supply Report

As of September 4th, 2023

System Contents: 25.62 MAF

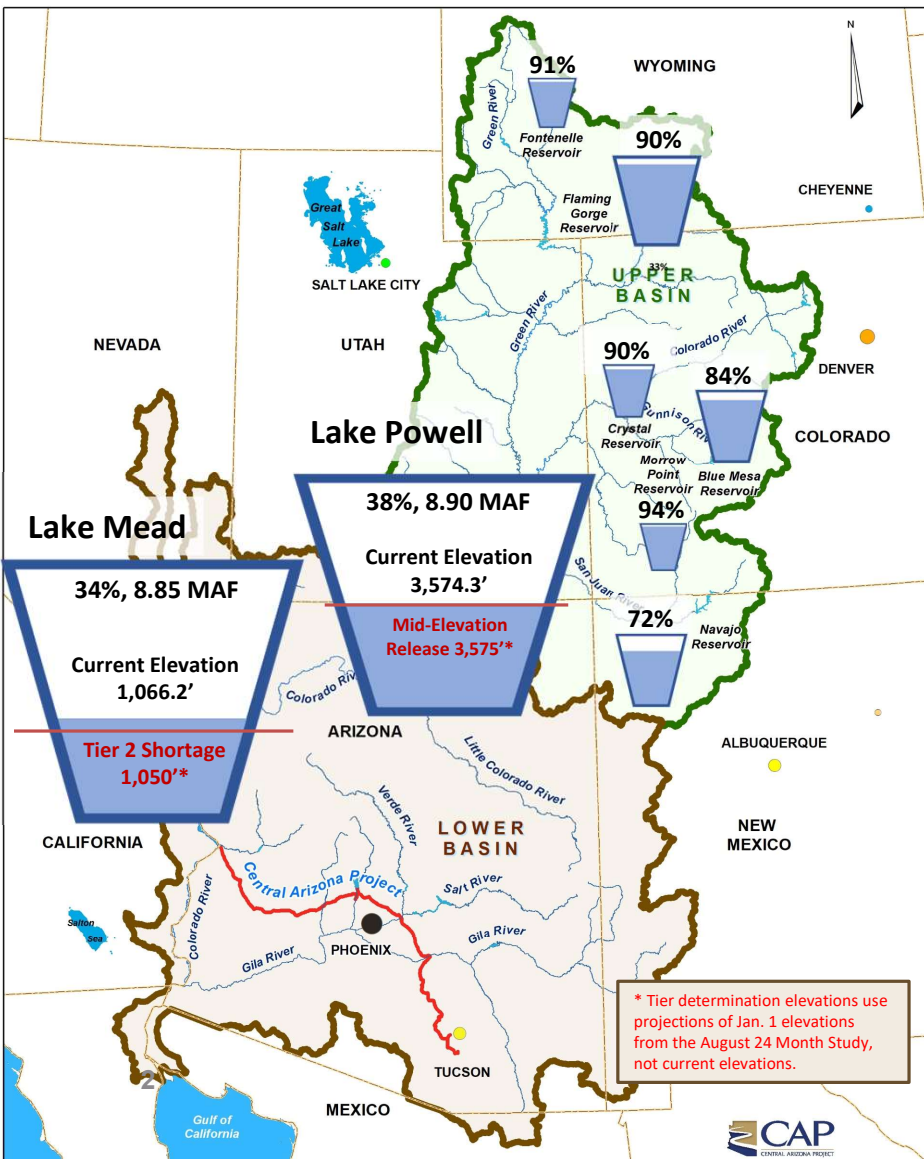
Last Year System Contents: 19.95 MAF

Reservoir Capacities (MAF)			
Reservoir	Current	Change*	Maximum
Lake Mead	8.90	+ 0.48	26.12
Lake Powell	8.85	- 0.64	23.31
Flaming Gorge Reservoir	3.29	- 0.03	3.67
Fontenelle Reservoir	0.30	- 0.01	0.33
Navajo Reservoir	1.19	- 0.08	1.65
Blue Mesa Reservoir	0.69	- 0.06	0.82
Morrow Point Reservoir	0.11	0.00	0.12
Crystal Reservoir	0.02	0.00	0.02

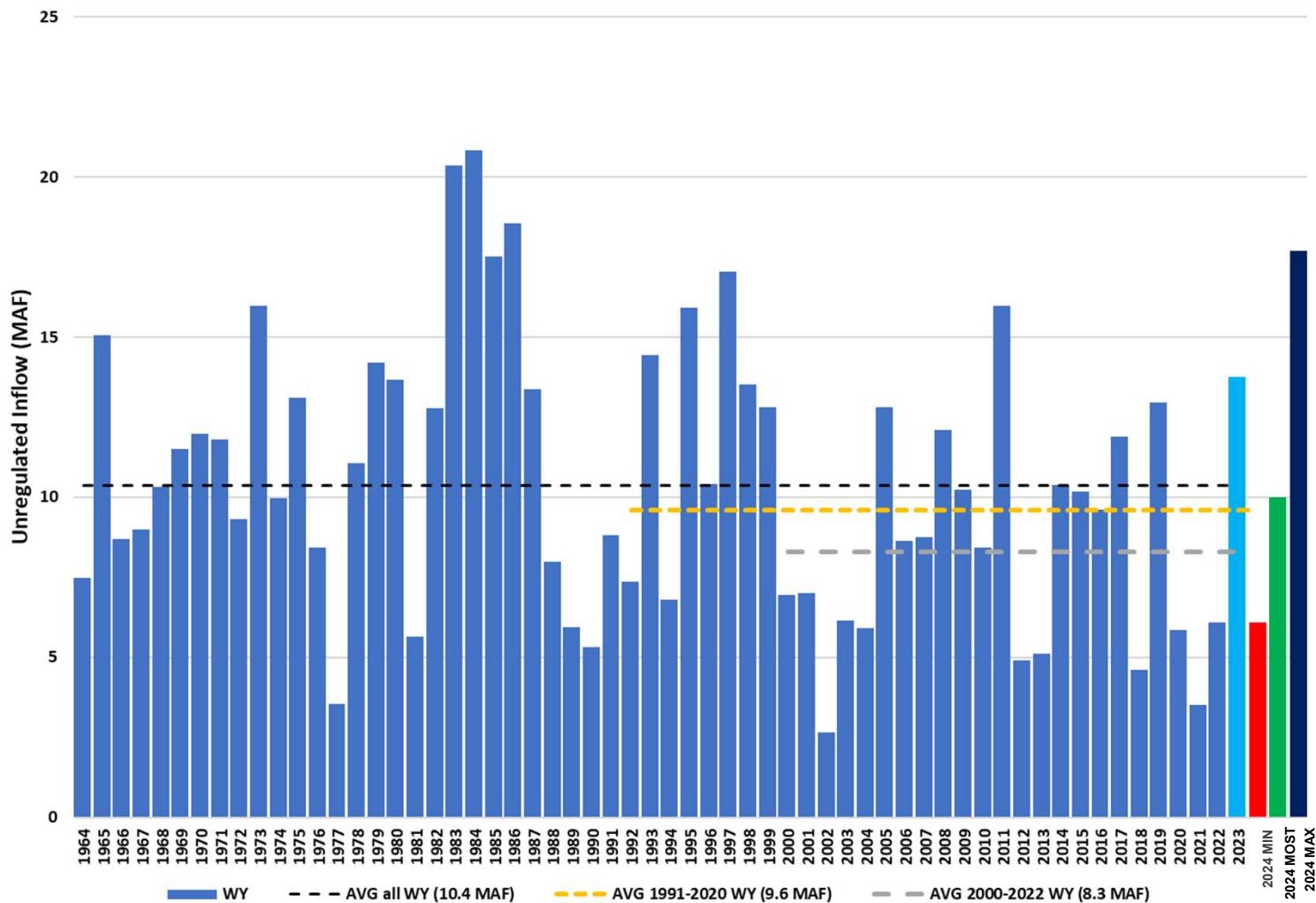
*With respect to previous month's report



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Unregulated Inflow to Lake Powell by WY (1964-2023)



Water Year 2023 Forecast¹
 August Min/Most/Max Probable
 = 13.75 MAF (143%)

September Update (Sep 1)
 Water Year 2023 = 13.59 MAF (141%)

Water Year 2024 Forecast¹
 Aug Min Prob = 6.10 MAF (64%)
 Aug Most Prob = 10.00 MAF (104%)
 Aug Max Prob = 17.70 MAF (184%)

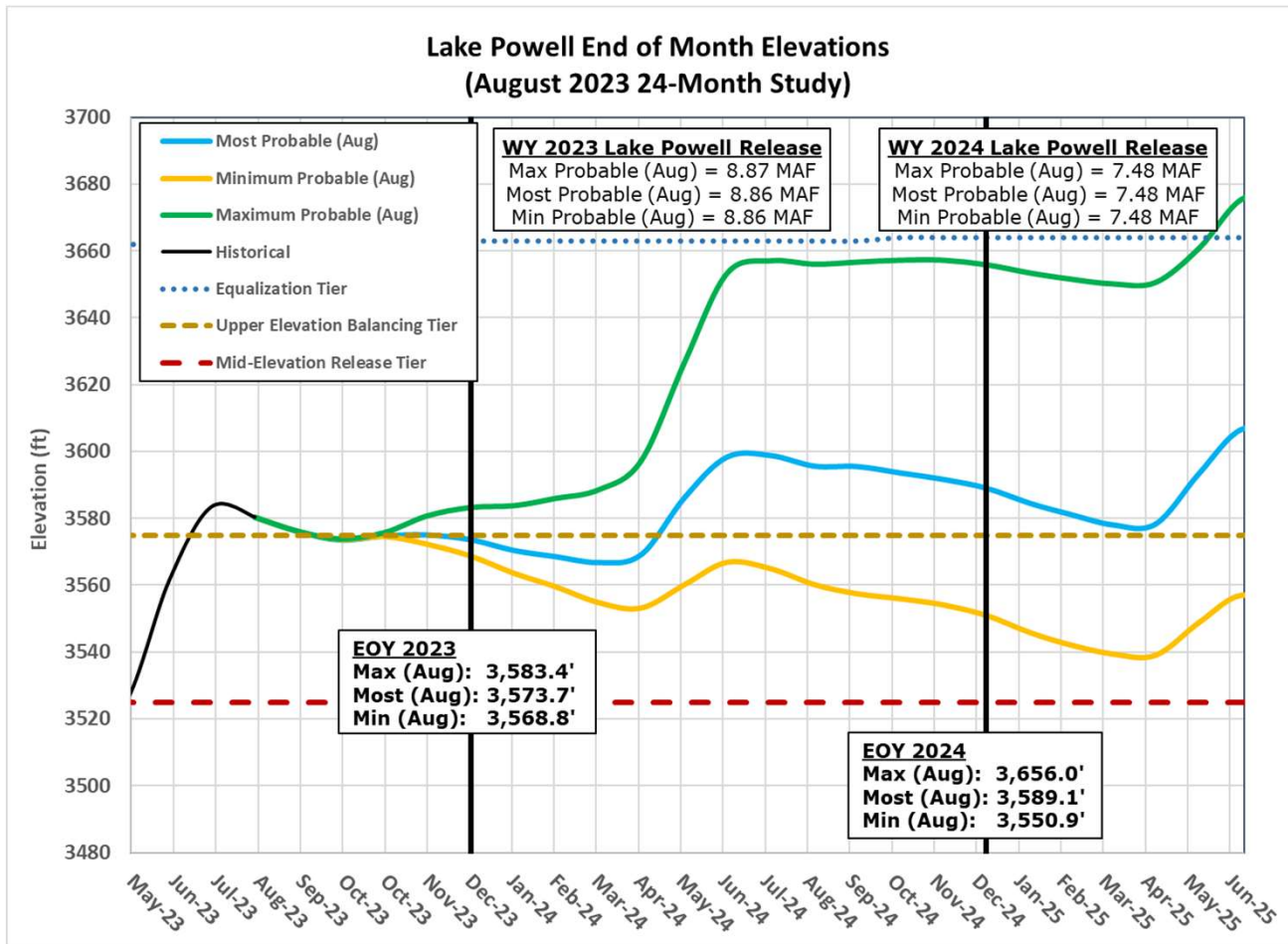


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¹Water Year statistics are based on the 30-year period of record from 1991-2020, Average 1991-2020 – 9.60 maf

Lake Powell August 2023 24-Month Study

- Lake Powell releases decreased to less than 9.0 MAF in WY2023, with balancing releases evaluated each remaining month of the water year
- Lake Powell will be in Mid-Elevation Release Tier for 2024 with a set release of 7.48 MAF



Drought Response Operations Agreement (DROA)

Completed DROA Volumes^{1,2}

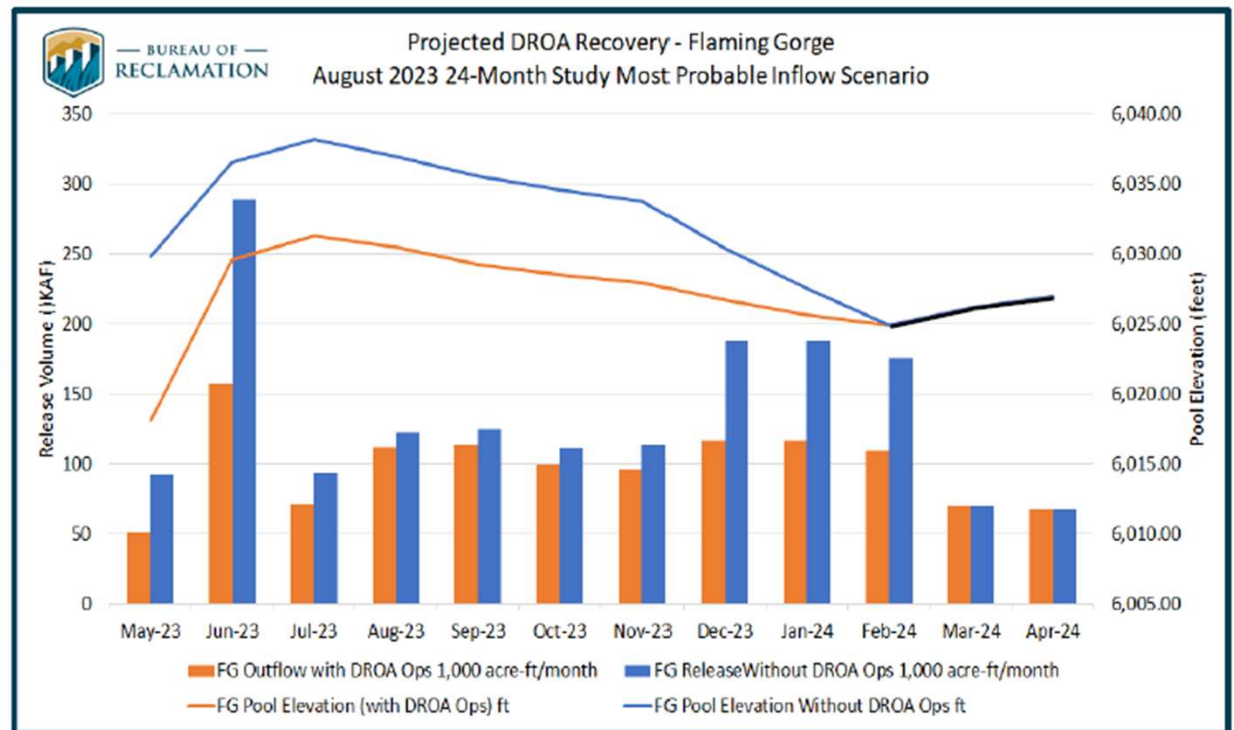
Reservoir	2021 DROA Volume (kaf)	2022 DROA Volume (kaf)	2023 DROA Volume (kaf) ⁴	Total DROA Volume (kaf)
Flaming Gorge	125	328 ³	-193	260
Blue Mesa	36	0	0	36
Navajo	0	0	0	0
Total DROA Volume (kaf)	161	328	-193	296

¹DROA operational year is from May through April.

²Positive values indicate Drought Response Operations Releases and negative values indicate Drought Response Operations Recovery

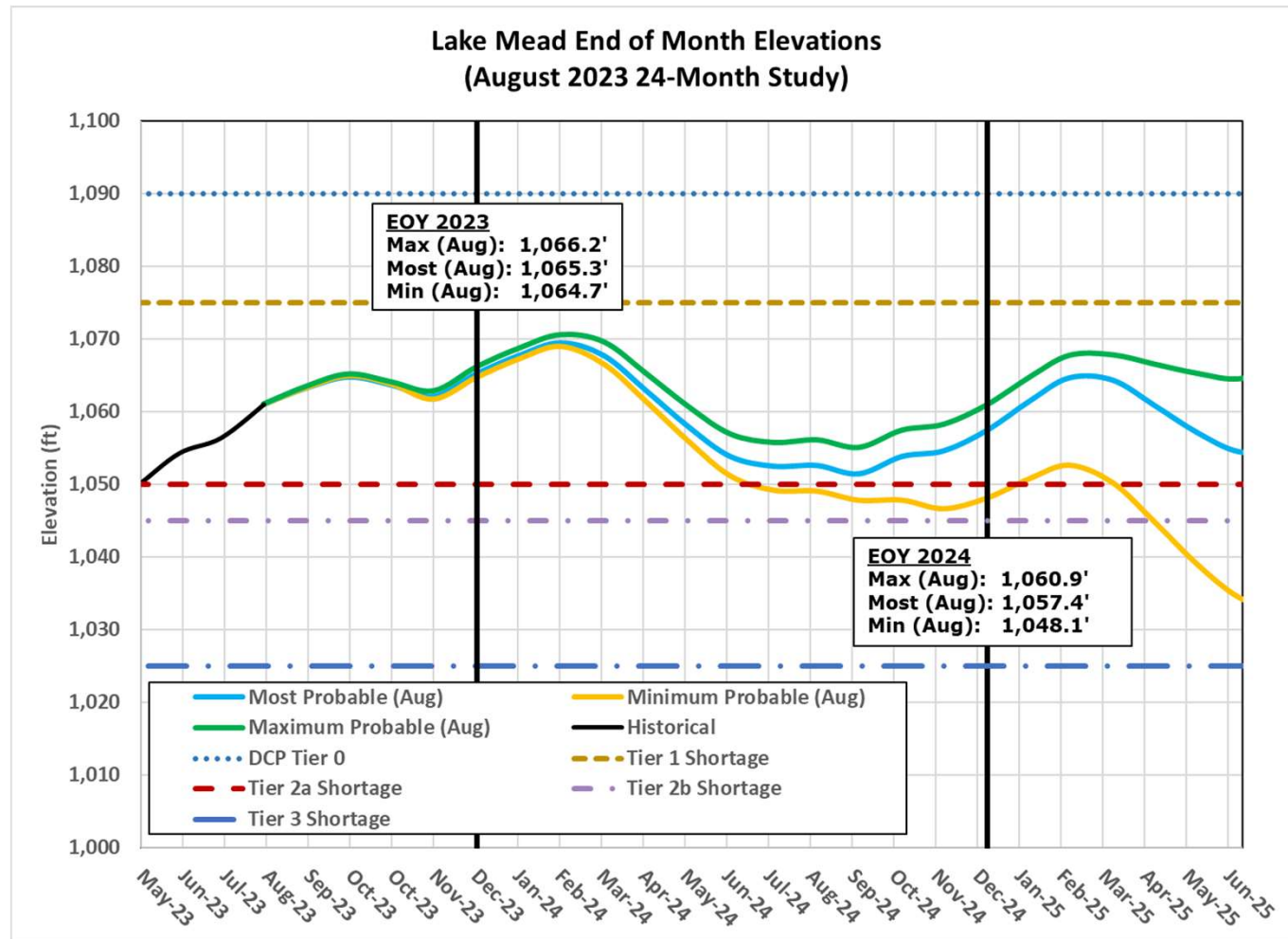
³463 kaf of DROA releases prior to DROA release suspension on March 6, 2023.

⁴DROA recovery through June 2023



Lake Mead August 2023 24-Month Study

- Lake Mead is operating in Tier 2a shortage condition in 2023
- Lake Mead will be in Tier 1 operating condition for 2024



**2007 Interim Guidelines, Minute 323, Lower Basin Drought Contingency Plan,
and Binational Water Scarcity Contingency Plan
Total Volumes (kaf)**

Lake Mead Elevation (feet msl)	2007 Interim Guidelines Shortages		Minute 323 Delivery Reductions	Total Combined Reductions	DCP Water Savings Contributions			Binational Water Scarcity Contingency Plan Savings	Combined Volumes by Country <i>US: (2007 Interim Guidelines Shortages + DCP Contributions)</i> <i>Mexico: (Minute 323 Delivery Reductions + Binational Water Scarcity Contingency Plan Savings)</i>					Total Combined Volumes	
	AZ	NV	Mexico	<i>Lower Basin States + Mexico</i>	AZ	NV	CA	Mexico	AZ Total	NV Total	CA Total	<i>Lower Basin States Total</i>	<i>Mexico Total</i>	<i>Lower Basin States + Mexico</i>	
1,090 - 1,075	0	0	0	0	192	8	0	41	192	8	0	200	41	241	Tier 0
1,075 - 1050	320	13	50	383	192	8	0	30	512	21	0	533	80	613	Tier 1
1,050 - 1,045	400	17	70	487	192	8	0	34	592	25	0	617	104	721	Tier 2a
1,045 - 1,040	400	17	70	487	240	10	200	76	640	27	200	867	146	1,013	Tier 2b
1,040 - 1,035	400	17	70	487	240	10	250	84	640	27	250	917	154	1,071	Tier 2c
1,035 - 1,030	400	17	70	487	240	10	300	92	640	27	300	967	162	1,129	Tier 2d
1,030 - 1,025	400	17	70	487	240	10	350	101	640	27	350	1,017	171	1,188	Tier 2e
<1,025	480	20	125	625	240	10	350	150	720	30	350	1,100	275	1,375	Tier 3

2024 Reductions + Contributions



Tier 0

Tier 1

Tier 2a

Tier 2b

Tier 2c

Tier 2d

Tier 2e

Tier 3

Executed System Conservation Agreements

Modeled in the August 2023 Most Probable 24-Month Study¹

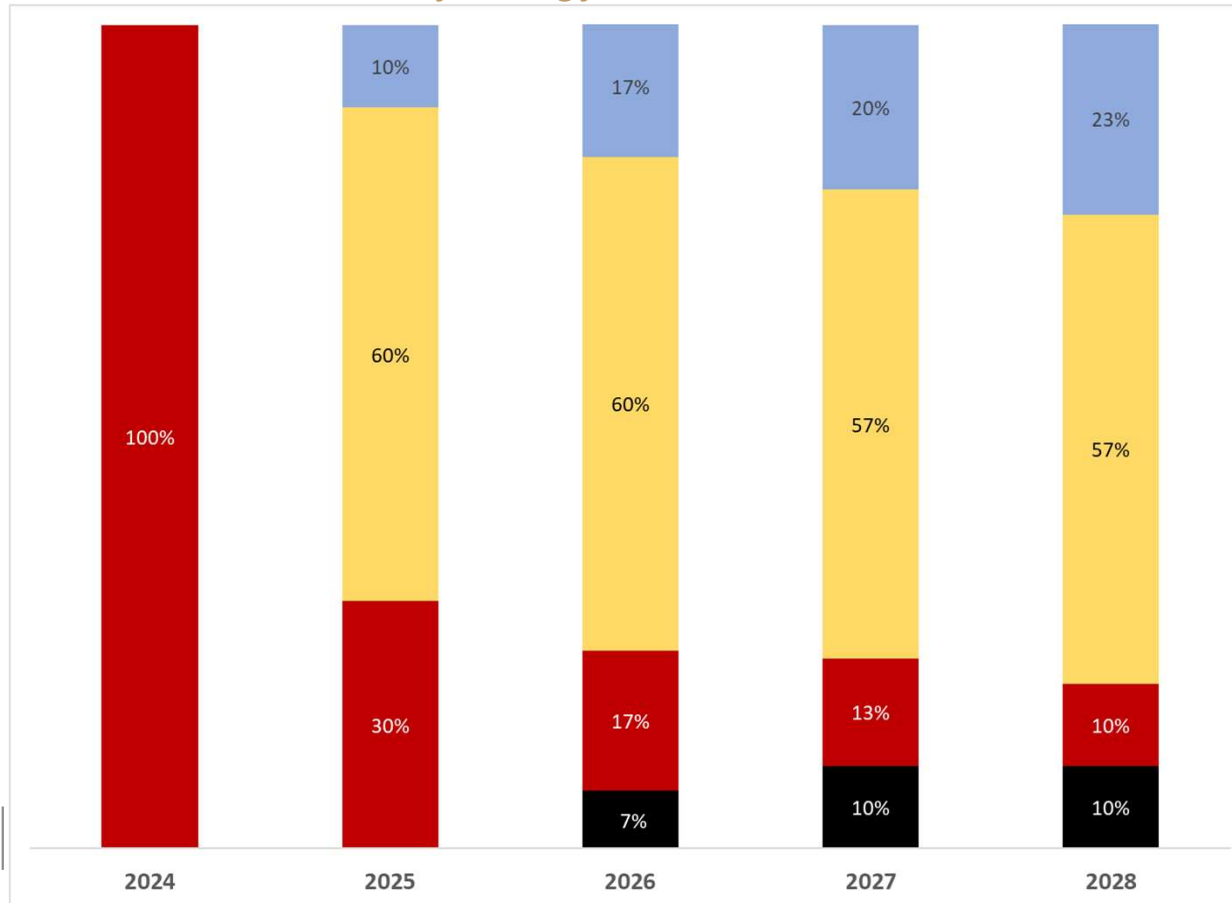
Conservation Activity (volumes in AF)	2023	2024	2025	Total
CAP System Conservation Agreements	141,400	127,400	126,400	395,200
Fort McDowell Yavapai Nation System Conservation	13,933	13,933	13,933	41,799
San Carlos Apache Tribe System Conservation	23,275	0	0	23,275
Coachella Groundwater System Conservation	35,000	35,000	35,000	105,000
GRIC System Conservation	91,950	125,000	125,000	341,950
Cibola Valley IDD System Conservation	2,700	0	0	2,700
Gabrych System Conservation	3,240	3,240	3,240	9,720
YMIDD System Conservation (500+ Plan) ²	13,670	0	0	13,670
MVIDD System Conservation (500+ Plan) ²	12,819	0	0	12,819
PVID System Conservation (500+ Plan) ²	58,400	39,800	0	98,200
Pilot System Conservation Program	645	545	545	1,735
242 Wellfield (Lower Basin DCP activity)	2,000	25,000	25,000	52,000
Annual Total (Non-Shortage/DCP)	399,032	369,918	329,118	1,098,068
Cumulative Total	399,032	768,950	1,098,068	

¹ Volumes reflect executed agreements and/or 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 modeling.

² New agreements under the LC Conservation Program are being developed.

Powell 5-Year Release Probabilities for 2024-28: August 2023 CRMMS Model Run

CBRFC Calibration Period Hydrology 1991 – 2020

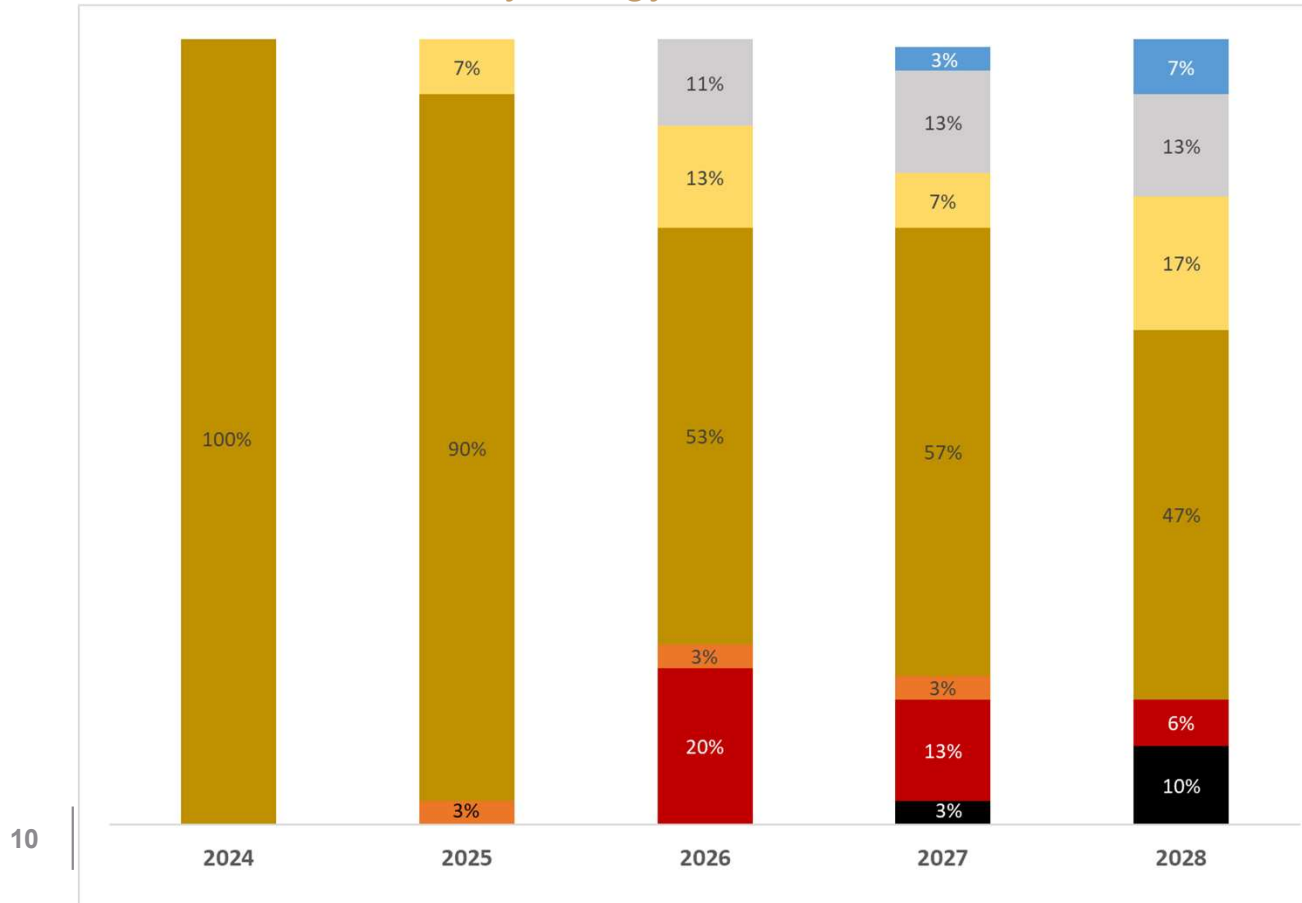


Legend	
Release Category	Releases
Equalization	> 8.23 MAF
Upper Elevation Balancing	7.0 - 9.0 MAF
Mid Elevation Release	7.48/8.23 MAF
Lower Elevation Balancing	7.0 - 9.5 MAF



Mead 5-Year Release Probabilities for 2024-28: August 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: August 2023 CRMMS Model Run

Lake Powell		WY 2024	WY 2025	WY 2026	WY 2027	WY 2028
Less than 3,525 feet	Apr-23	0%	0%	3%	3%	7%
	Aug-23	0%	7%	13%	13%	13%
Less than 3,490 feet (minimum power pool)	Apr-23	0%	0%	0%	0%	3%
	Aug-23	0%	0%	0%	0%	3%
Lake Mead		2024	2025	2026	2027	2028
Less than 1,020 feet	Apr-23	0%	0%	3%	7%	0%
	Aug-23	0%	0%	3%	10%	7%
Less than 1,000 feet	Apr-23	0%	0%	0%	0%	0%
	Aug-23	0%	0%	0%	0%	3%
Less than 950 feet (minimum power pool)	Apr-23	0%	0%	0%	0%	0%
	Aug-23	0%	0%	0%	0%	0%

Source: U.S. Bureau of Reclamation
Hydrology Period: 1991-2020