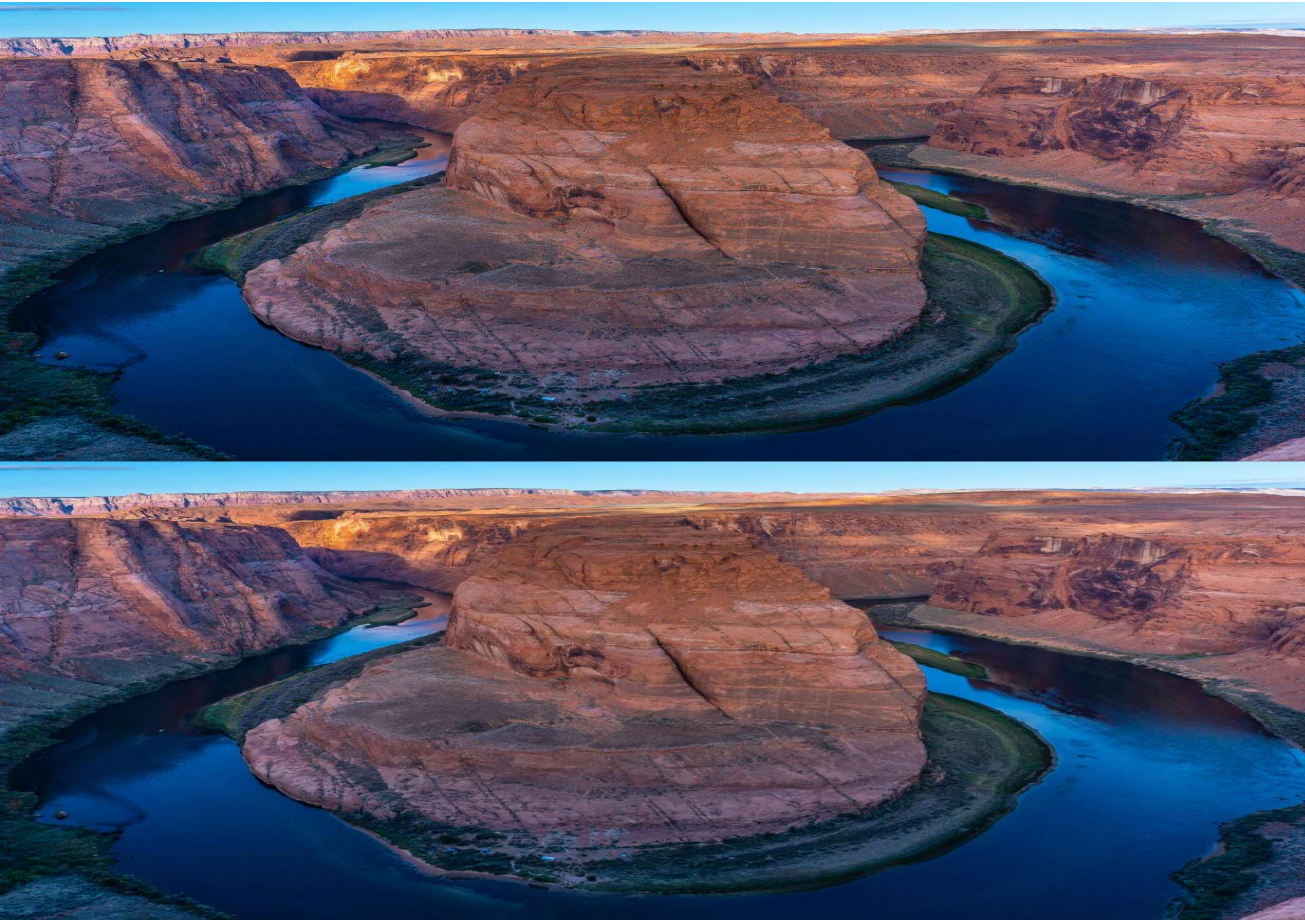




— BUREAU OF —
RECLAMATION

Current Conditions and Projected Operations in the Lower Colorado River Basin

San Diego IRWM Regional Advisory Committee Meeting
October 4, 2023

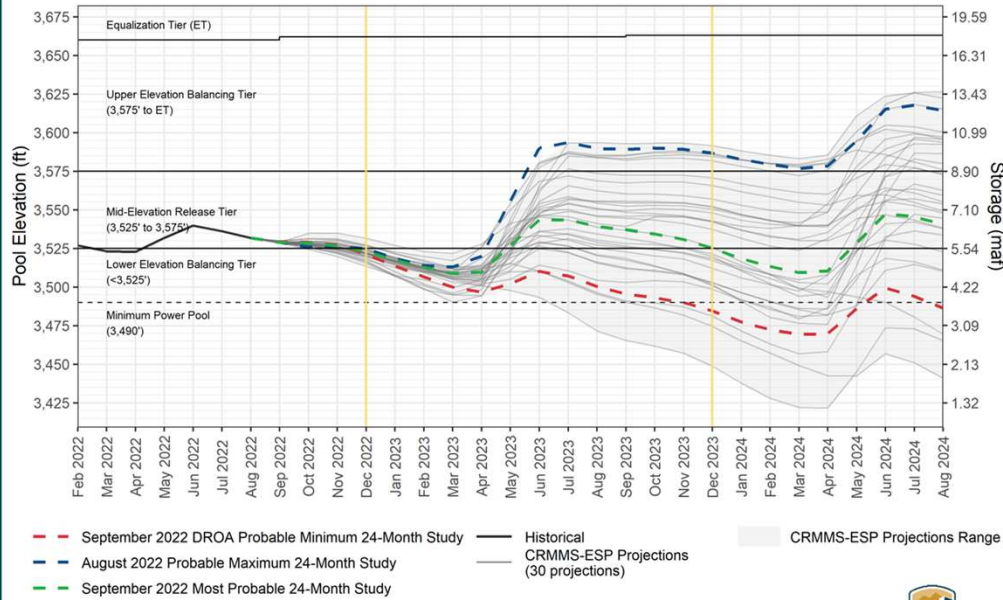


Hydrology and Projected Operations



September 2022 Elevation Projections

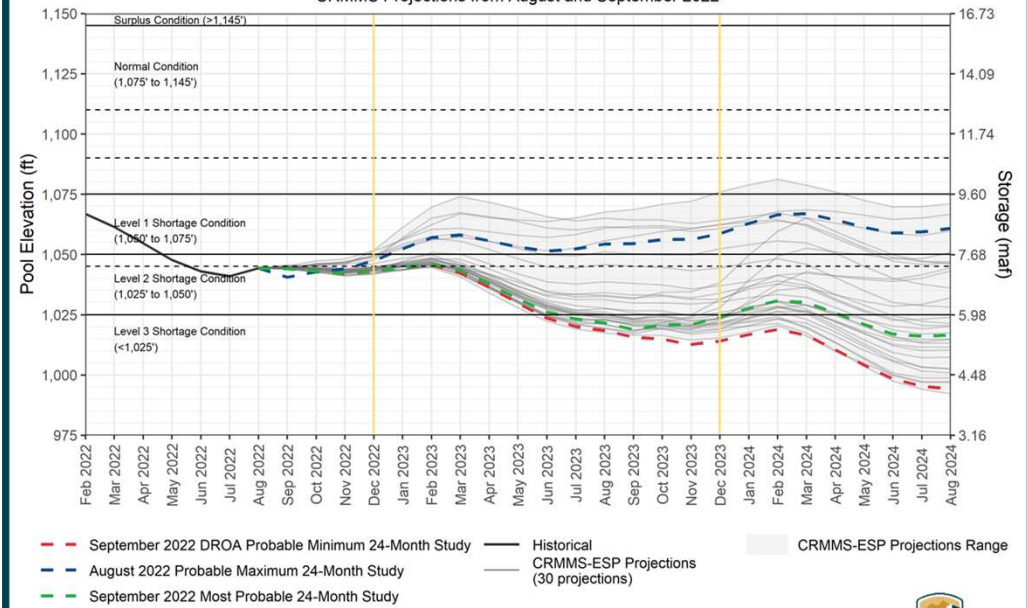
Lake Powell End-of-Month Elevations¹
CRMMS Projections from August and September 2022



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 August and September 2022

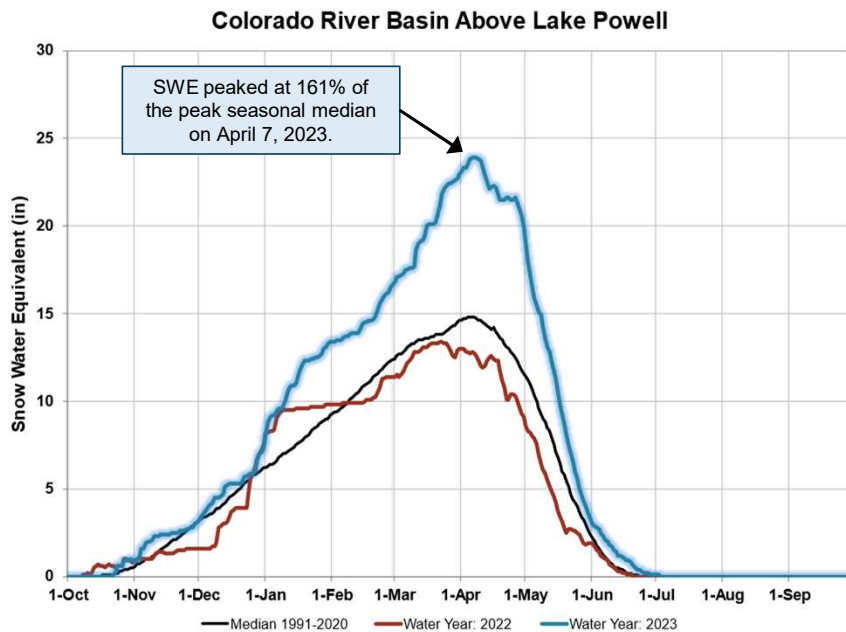


¹ Projected Lake Mead end-of-month physical elevations from the latest CRMMS-ESP and 24-Month Study inflow scenarios.



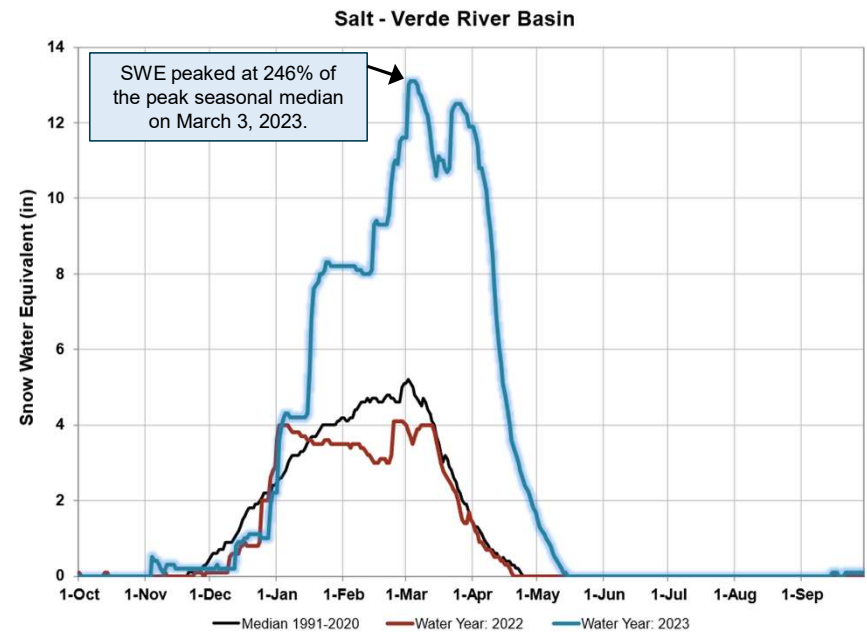
Water Year 2023 Precipitation & Snowpack¹ as of October 2, 2023

Upper Colorado River Basin



WY 2023 Precipitation - 113%

Salt - Verde River Basin



WY 2023 Precipitation - 132%



¹ Percent of normal precipitation is based on an arithmetic mean, or average; percent of normal snowpack is based on the median value for a given date. Water Year statistics are based on the 30-year period from 1991-2020..

Lower Basin Side Inflows – WY/CY 2023^{1,2}

Intervening Flow from Glen Canyon to Hoover Dam

	Month in WY/CY 2023	5-Year Average Intervening Flow (kaf)	Observed Intervening Flow (kaf)	Observed Intervening Flow (% of Average)	Difference From 5-Year Average (kaf)
Observed	October 2022	77	94	122%	17
	November 2022	63	18	29%	-45
	December 2022	72	63	87%	-9
	January 2023	75	103	137%	28
	February 2023	71	46	65%	-25
	March 2023	97	226	234%	129
	April 2023	60	243	405%	183
	May 2023	37	185	505%	148
	June 2023	22	62	282%	40
	July 2023	55	61	112%	6
	August 2023	86	112	131%	27
	September 2023	72	128	177%	56
Projected	October 2023	77			
	November 2023	63			
	December 2023	72			
	WY 2023 Totals	786	1,341	171%	555
	CY 2023 Totals	786	1,378	175%	592

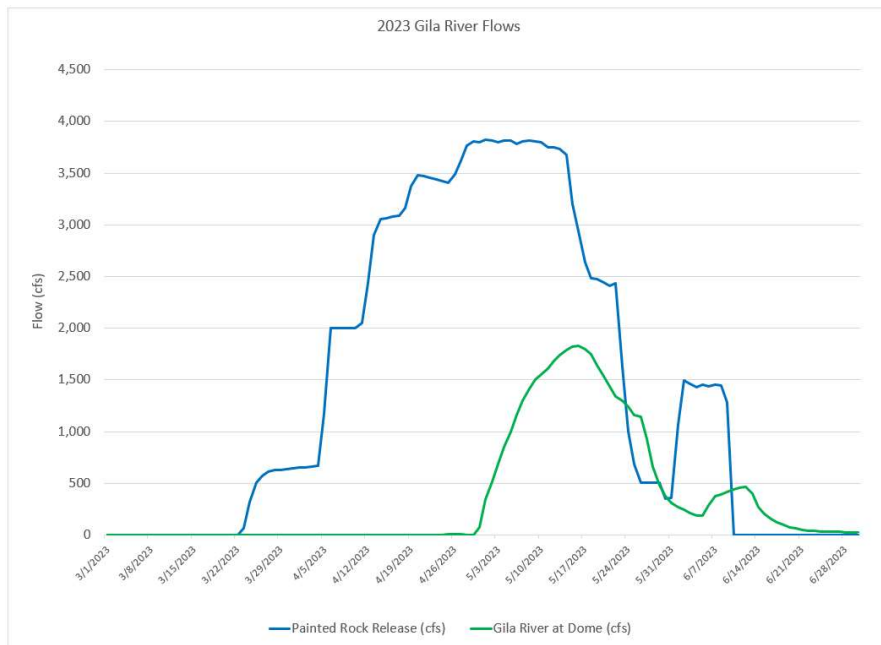
¹ Values were computed with the LC's gain-loss model for the most recent 24-month study.

² Percents of average are based on the 5-year mean from 2018-2022.



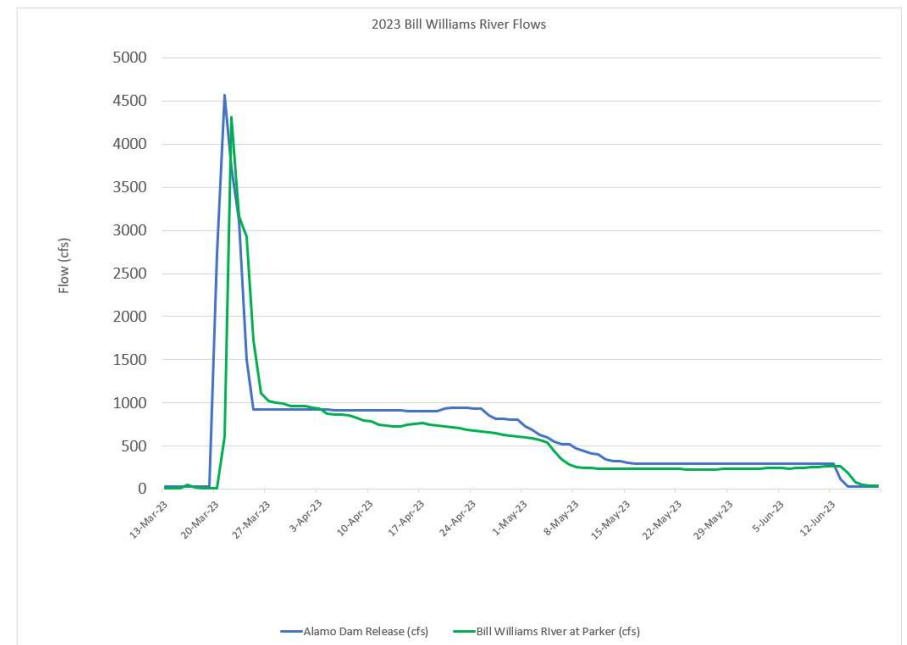
Tributary Inflow Below Lake Mead

Painted Rock Dam - Gila River



Release – 329 kaf
Reached Confluence – 87 kaf

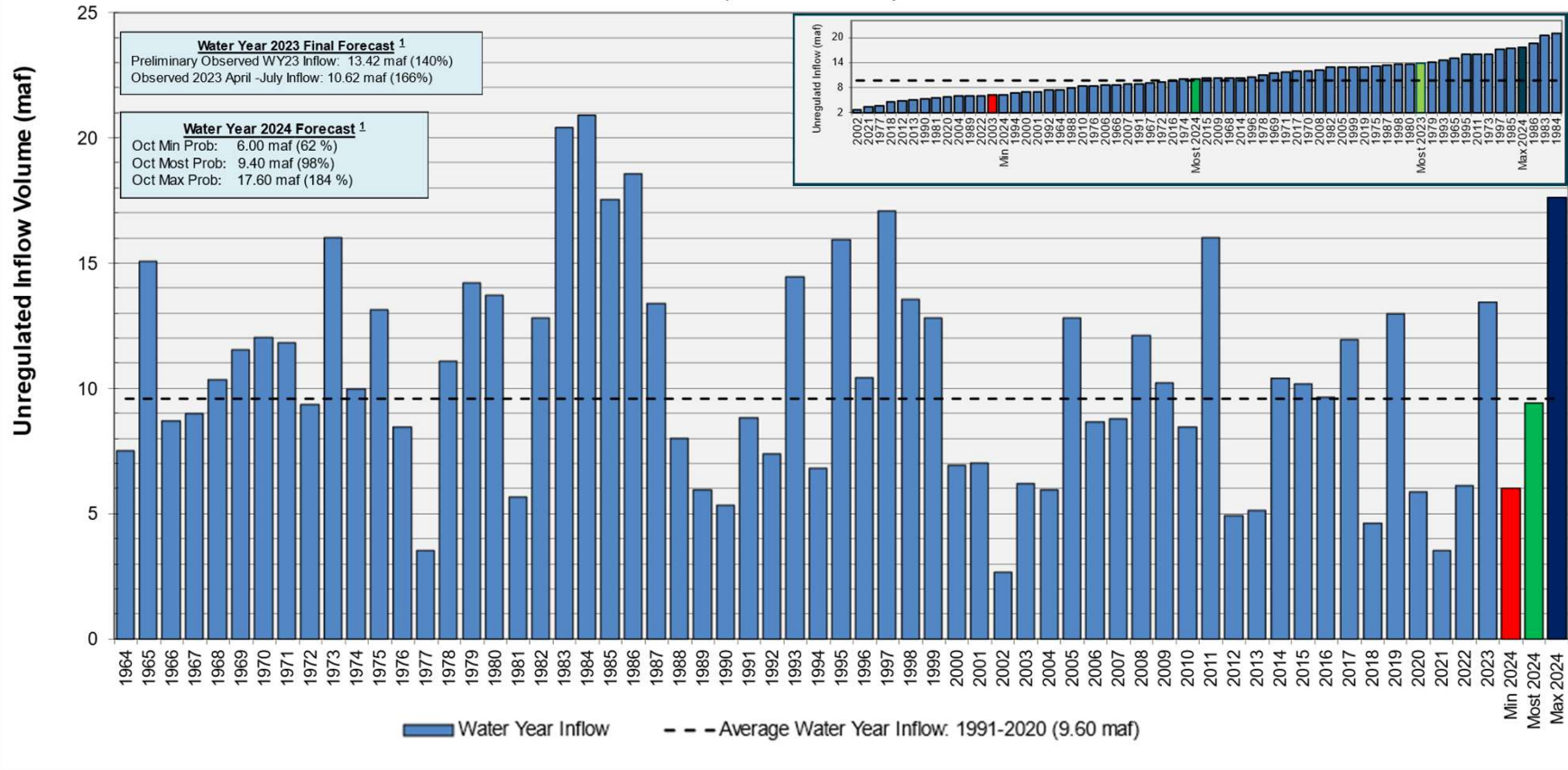
Alamo Dam – Bill Williams River



Release – 134 kaf
Reached Lake Havasu – 108 kaf



Lake Powell Water Year Unregulated Inflow as of October 2, 2023 Comparison with History



¹Water Year statistics are based on the 30-year period of record from 1991-2020.



Lake Powell & Lake Mead Operational Table

Lake Mead Operating Condition Determination for CY 2024¹

Lake Powell			Lake Mead		
Elevation (feet)	Operation According to the Interim Guidelines	Live Storage (maf) ¹	Elevation (feet)	Operation According to the Interim Guidelines	Live Storage (maf) ¹
3,700	Equalization Tier Equalize, avoid spills or release 8.23 maf	24.3	1,220	Flood Control Surplus or Quantified Surplus Condition Deliver > 7.5 maf	25.9
3,636 - 3,666 (2008-2026)	Upper Elevation Balancing Tier² Release 8.23 maf; if Lake Mead < 1,075 feet, balance contents with a min/max release of 7.0 and 9.0 maf	15.5 - 19.3 (2008-2026)	1,200 (approx.) ²	Domestic Surplus or ICS Surplus Condition Deliver > 7.5 maf	22.9 (approx.) ²
3,575			1,145		15.9
3,568.57 ft Jan 1, 2024 Projection	Mid-Elevation Release Tier Release 7.48 maf; if Lake Mead < 1,025 feet, release 8.23 maf	9.5	1,105	Normal or ICS Surplus Condition Deliver ≥ 7.5 maf	11.9
			1,075		9.4
3,525	Lower Elevation Balancing Tier Balance contents with a min/max release of 7.0 and 9.5 maf	5.9	1,050	Shortage Condition Deliver 7.167 ³ maf	7.5
3,490			1,025	Shortage Condition Deliver 7.083 ³ maf	5.8
3,370			1,000	Shortage Condition Deliver 7.0 ⁴ maf Further measures may be undertaken ⁷	4.3
		0	895		0

**1,065.27 ft
Jan 1, 2024
Projection**

Diagram not to scale

¹ Acronym for million acre-feet

² This elevation is shown as approximate as it is determined each year by considering several factors including Lake Powell and Lake Mead storage, projected Upper Basin and Lower Basin demands, and an assumed inflow.

³ Subject to April adjustments which may result in a release according to the Equalization Tier

⁴ Of which 2.48 maf is apportioned to Arizona, 4.4 maf to California, and 0.287 maf to Nevada

⁵ Of which 2.40 maf is apportioned to Arizona, 4.4 maf to California, and 0.283 maf to Nevada

⁶ Of which 2.32 maf is apportioned to Arizona, 4.4 maf to California, and 0.280 maf to Nevada

⁷ Whenever Lake Mead is below elevation 1,025 feet, the Secretary shall consider whether hydrologic conditions together with anticipated deliveries to the Lower Division States and Mexico is likely to cause the elevation at Lake Mead to fall below 1,000 feet. Such consideration, in consultation with the Basin States, may result in the undertaking of further measures, consistent with applicable Federal law.



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
1,075 - 1050	320	13	50	383	192	8	0	30	512	21	0	533	80	613
1,050 - 1,045	400	17	70	487	192	8	0	34	592	25	0	617	104	721
1,045 - 1,040	400	17	70	487	240	10	200	76	640	27	200	867	146	1,013
1,040 - 1,035	400	17	70	487	240	10	250	84	640	27	250	917	154	1,071
1,035 - 1,030	400	17	70	487	240	10	300	92	640	27	300	967	162	1,129
1,030 - 1,025	400	17	70	487	240	10	350	101	640	27	350	1,017	171	1,188
<1,025	480	20	125	625	240	10	350	150	720	30	350	1,100	275	1,375

2024 Reductions + Contributions



2024 Reductions + Contributions

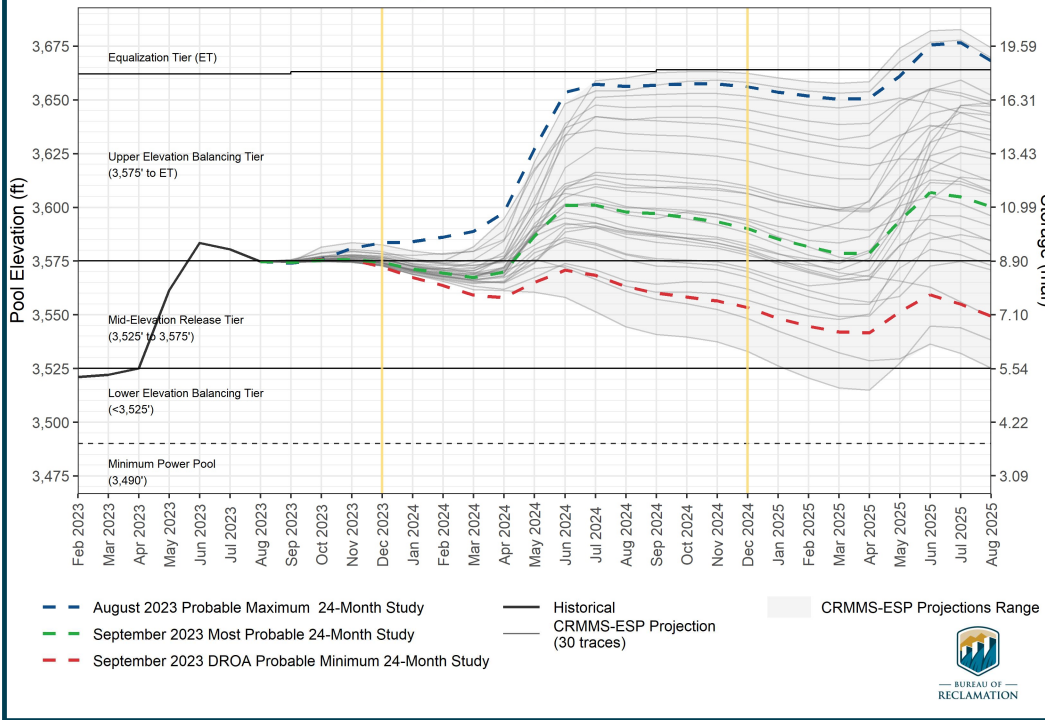


The Secretary of the Interior will take affirmative actions to implement programs designed to create or conserve 100,000 acre-ft per annum or more of Colorado River System water to contribute to conservation of water supplies in Lake Mead and other Colorado River reservoirs in the lower basin. All actions taken by the United States shall be subject to applicable law, including availability of appropriations.

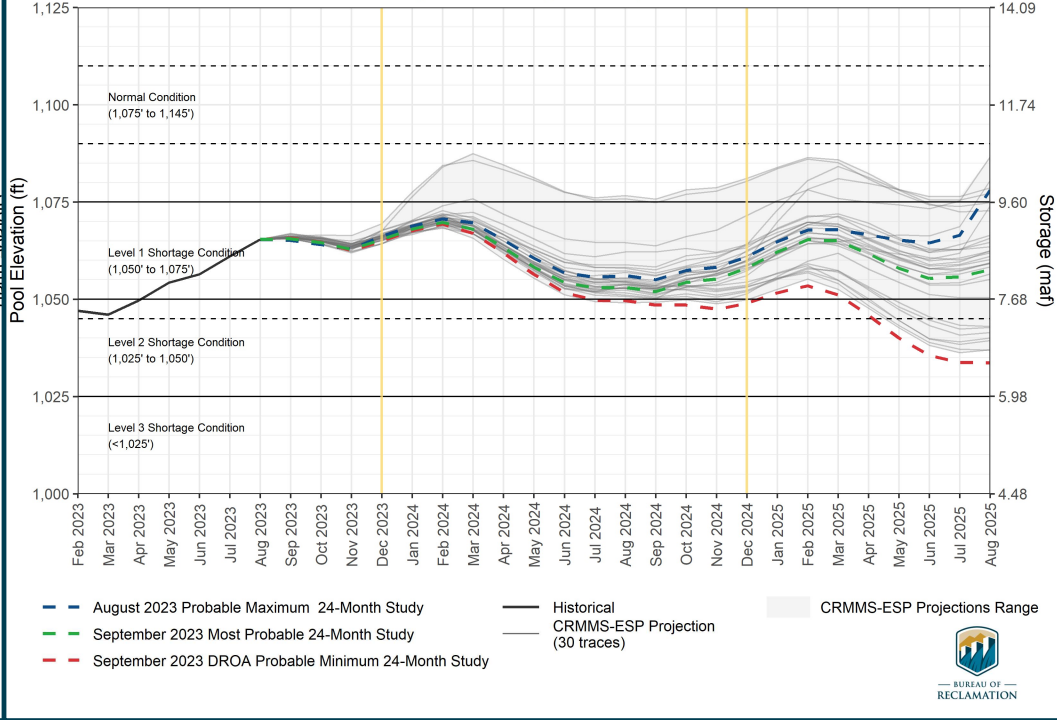


September 2023 Elevation Projections

Lake Powell End-of-Month Elevations
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Lake Mead End-of-Month Elevations
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Summary

- Wet conditions in the Upper and Lower Colorado River Basins in WY 2023 improved reservoir conditions
 - Lake Powell will operate WY 2024 in the Mid-Elevation Release Tier with an annual release of 7.48 maf
 - Lake Mead will operate CY 2024 in a Level 1 Shortage Condition with water savings contributions under the Lower Basin DCP and Minute 323 BWSCP
- Much uncertainty remains regarding future conditions



Questions / Discussion

For more information:

<https://www.usbr.gov/lc/riverops.html>



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