

Hydrology Report – September 2023

UPDATE ON DISCUSSIONS

Draft Environmental Impact Statement (DEIS)

Reclamation is still on track to release a new draft SEIS this fall regarding actions through 2026 to address and respond to near term risks of declining hydrology on the river.

Post-2026 Guideline Negotiations

Reclamation is currently processing the scoping comments submitted in August by a voluminous number of stakeholders, including Basin States, water users, NGOs, tribes and others for long term operating guidelines to replace the 2007 Interim Guidelines which expire in 2026. Negotiations in the Basins are just beginning to take place.

HYDROLOGY UPDATE

Upper Basin Precipitation and Temperature

- In August, the upper basin received 123% of average precipitation bringing the cumulative precipitation to 111% of average for the year.
- Temperatures in August were below average on the west side of the Colorado River basin and warmer than average on the eastern portion of the basin. The National Weather Service is forecasting the upper basin to have above average temperatures through September.

Upper Basin Snowpack and runoff

- Upper basin snowpack peaked on April 7, 2023, with 24.1 inches of snow water equivalent or 155% of the seasonal median.
- The April through July runoff from snowpack was 166% of average and the full year's inflow into Lake Powell is forecasted at 142% of average.

Current reservoir status

- As of September 5, 2023, Lake Mead is at an elevation of 1,066.2 feet and has about 8.9 million acre-feet in storage (34% capacity).
- As of September 5, 2023, Lake Powell is at an elevation of 3,574.3 feet and has about 8.8 million acre-feet in storage (38% capacity).
- Since this time last year, Lake Mead has increased in elevation by about 22 feet and Lake Powell has increased by about 43 feet.
- Total system storage for the upper and lower basin is around 25.6 million acre-feet (44% capacity).

August 24 Month Study Determination

- Reclamation announced that Lake Powell will be operated in the Mid-Elevation Release Tier with a release of 7.48 million acre-feet in water year 2024.
- Lake Mead will operate in a Level 1 Shortage Condition in calendar year 2024.
- Accordingly, in 2024, Nevada's consumptive use will be reduced by 13,000 acre-feet under the 2007 Interim Guidelines and Nevada will make a Drought Contingency Plan contribution of 8,000 acre-feet.
- Arizona and Mexico are also required to take shortage and make a water savings contribution in 2024. Those amounts are significantly larger than Nevada's obligations.
- The total combined volumes for Arizona, Nevada, and Mexico are 613,000 acre-feet in calendar year 2024, which will save the equivalent of about 8 feet in elevation in Lake Mead. The reductions and contributions for calendar year 2024 are highlighted in Figure 1.

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 US: (2007 Interim Guidelines Shortages + DCP Contributions) Mexico: (Minute 323 Delivery Reductions + Binational Water Scarcity Contingency Plan Savings)					Total Combined Volumes
	AZ	NV	Mexico	Lower Basin States + Mexico	AZ	NV	CA	Mexico	AZ Total	NV Total	CA Total	Lower Basin States Total	Mexico Total	Lower Basin States + Mexico
1,090 - 1,075	0	0	0	0	192	8	0	41	192	8	0	200	41	241
1,075 - 1,050	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


 Tier 1

Figure 1. The reductions and contributions for calendar year 2024.

Water Use in Southern Nevada

- Southern Nevada's consumptive use in January through July of 2023 was 115,526 acre-feet, which is a 19% decrease in water use compared to 2022.

Reclamation's Lake Mead Projection²

- Reclamation uses computer models to forecast reservoir elevations based on planned water use and anticipated runoff. Figure 2 shows that the August 24 Month Study is forecasting Lake Mead to end the calendar year between 1,065.3 and 1,064.7 feet in elevation.

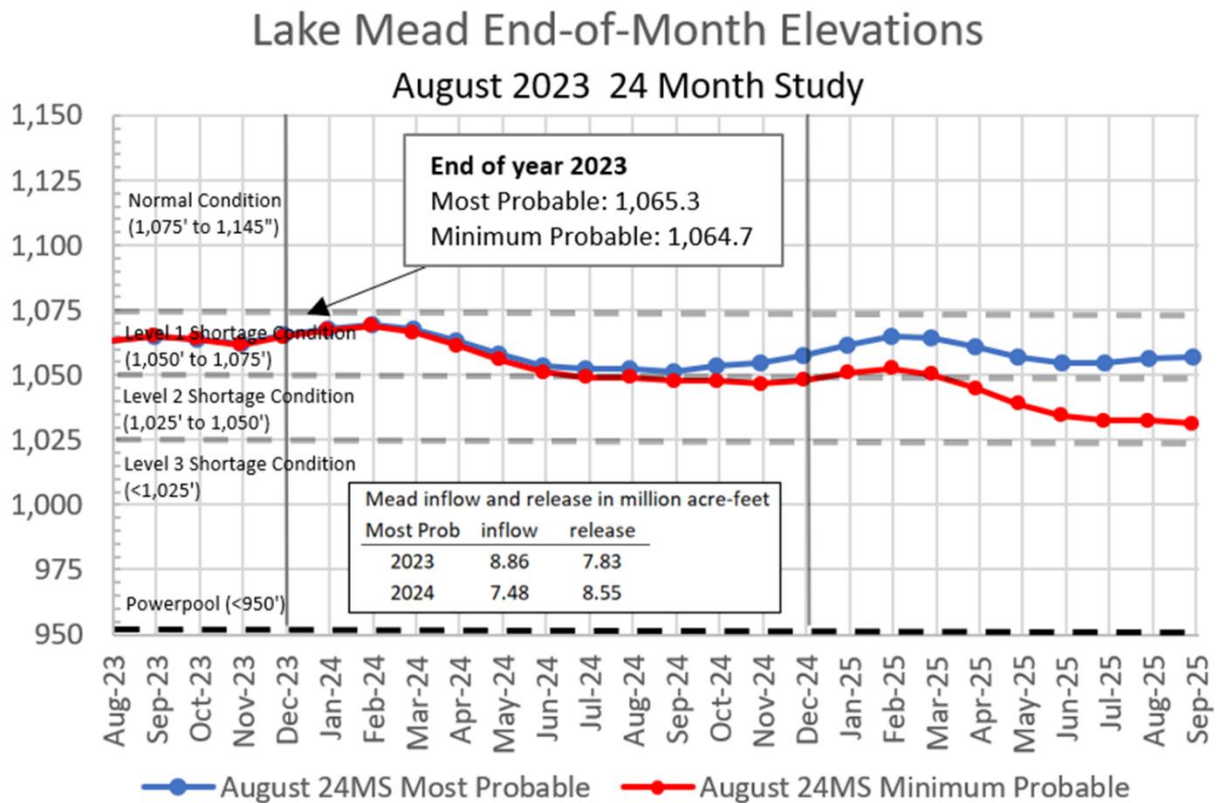


Figure 2. Reclamations August 24 Month Study projections for Lake Mead.

Reclamation’s Lake Powell Projection ²

- Reclamations August 24 Month Study is forecasting Lake Powell’s elevation to be between 3,573.7 and 3,568.8 feet by the end of the year (Figure 3).

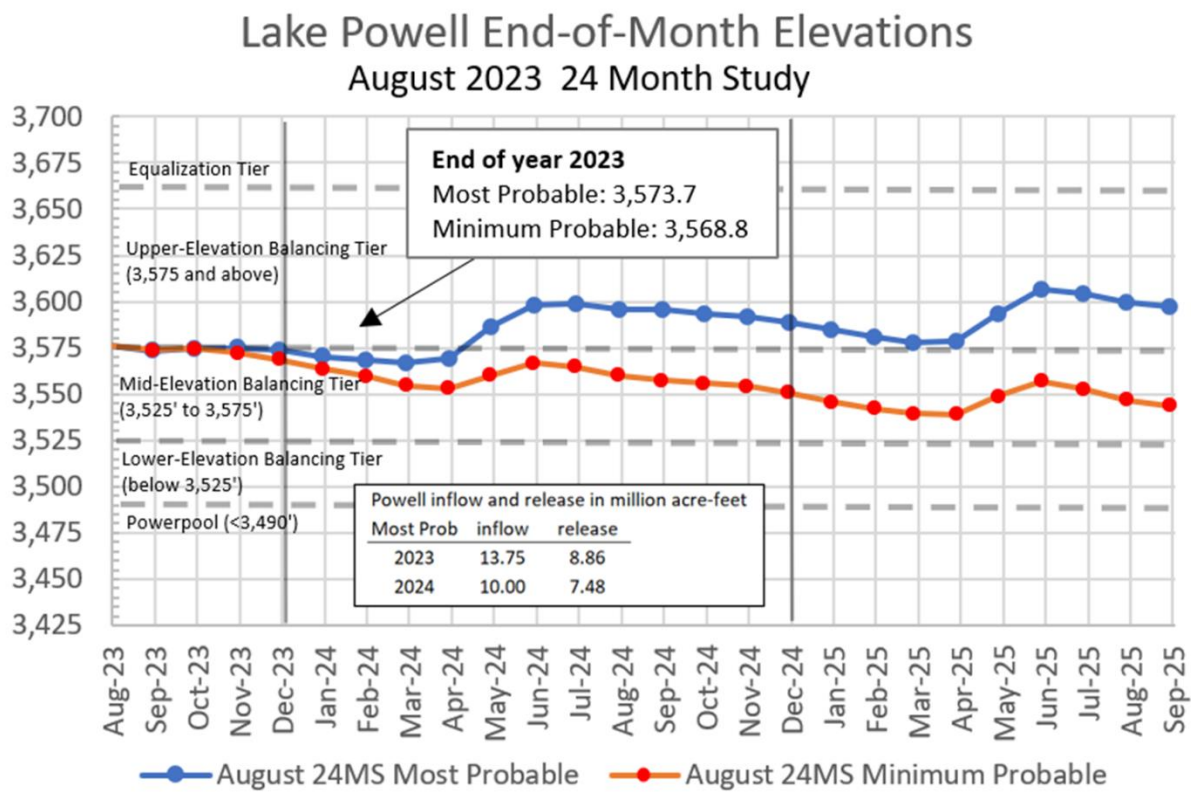


Figure 3. Reclamations June 24 Month Study projections for Lake Powell.

² Reclamation modeling assumes the current operational guidelines and planned conservation activities. Forecasts could improve by implementing additional actions.



Colorado River Commission of Nevada

Hydrology and River Updates

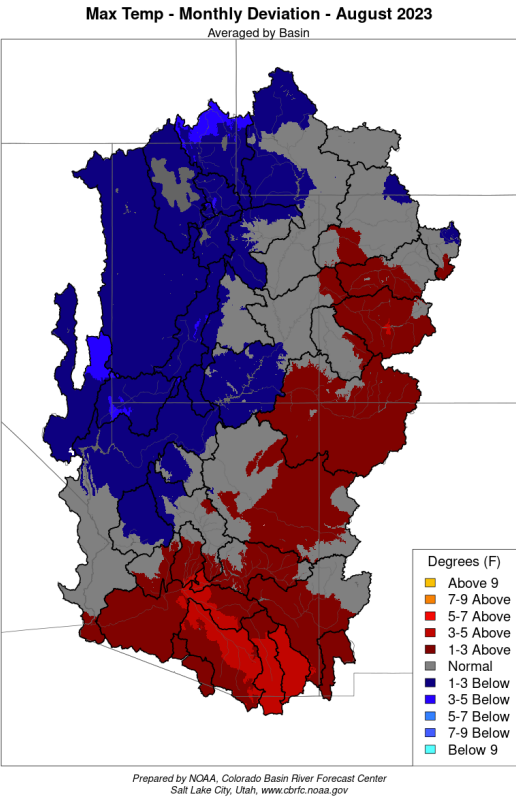
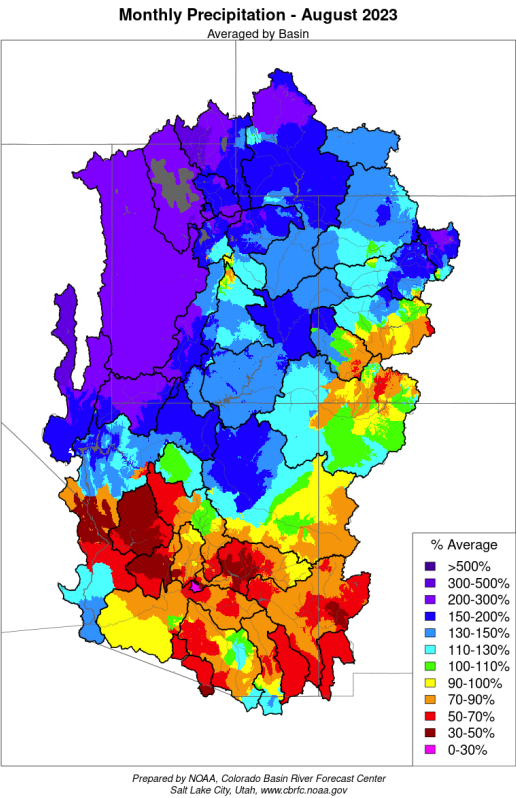
Warren Turkett

September 12, 2023





Precipitation and Temperature



Lake Powell %Average Precipitation Water Year 2023

Area	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Water Year
UC-Powell	84	82	152	170	102	183	67	67	136	47	123	112



August 24 Month Study Determination

Reclamation released the results of the August 24 Month Study, which is used to determine the upcoming years operations for both reservoirs.

- Lake Powell will be operated in the Mid-Elevation Release Tier with a release of 7.48 million acre-feet in water year 2024;
- Lake Mead will operate in a Level 1 Shortage Condition for the lower basin.
 - Nevada will have a 13,000 acre-feet reduction from the 2007 Interim Guidelines; and
 - An 8,000 acre-feet Drought Contingency Plan contribution in calendar year 2024.

The above average runoff this year contributed to an improvement in operations over the current Level 2 Shortage Conditions experienced last year.

Reclamation press release:

<https://www.usbr.gov/newsroom/news-release/4603>



2007 Interim Guidelines, Minute 323, Lower Basin Drought Contingency Plan, and Binational Water Scarcity Contingency Plan

Total Volumes (kaf)

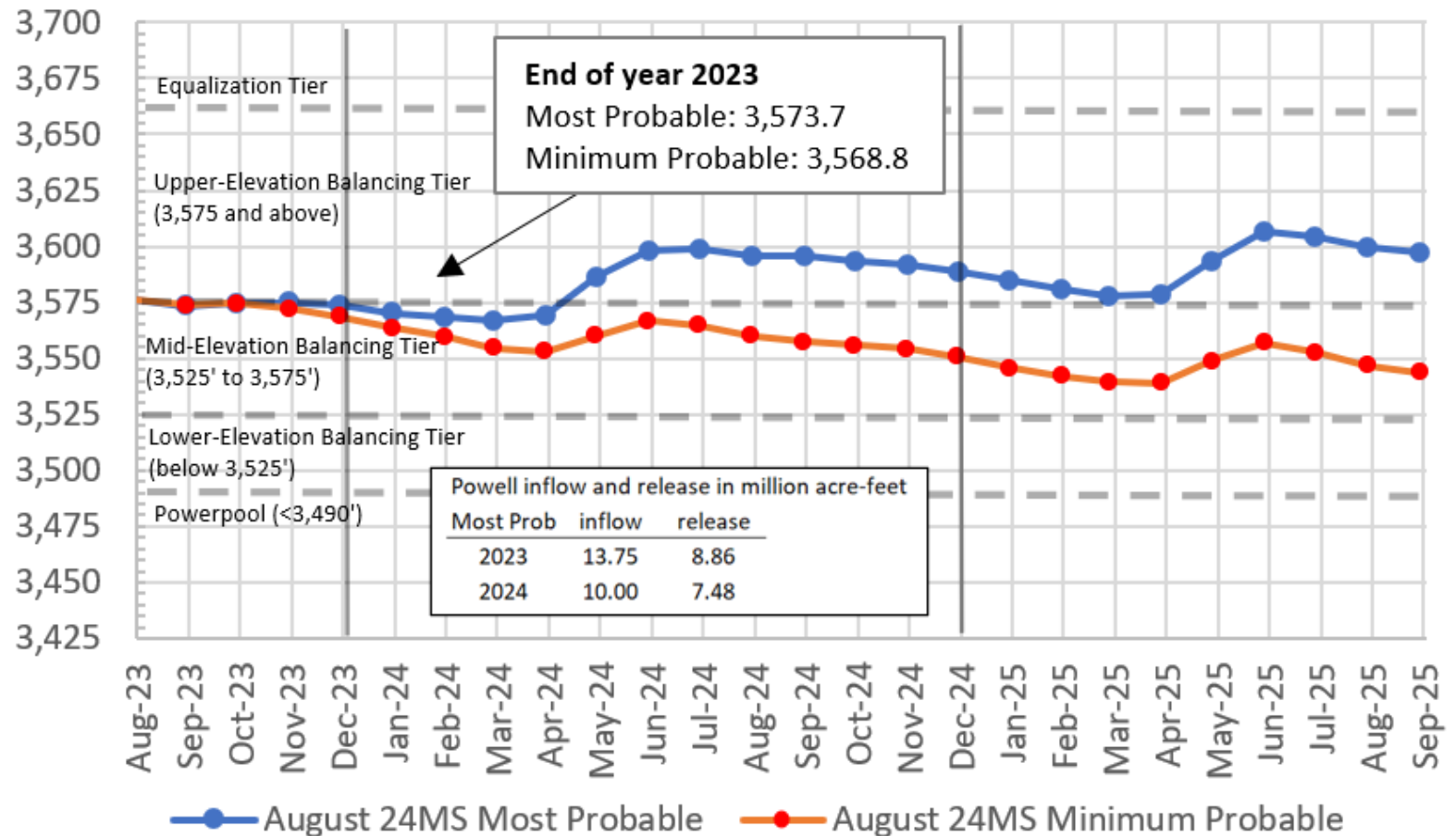

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On August 15, Reclamation released the August 24 Month Study which determined the upcoming years operations. Lake Mead in calendar year 2024 will be operated in a Level 1 Shortage Condition.



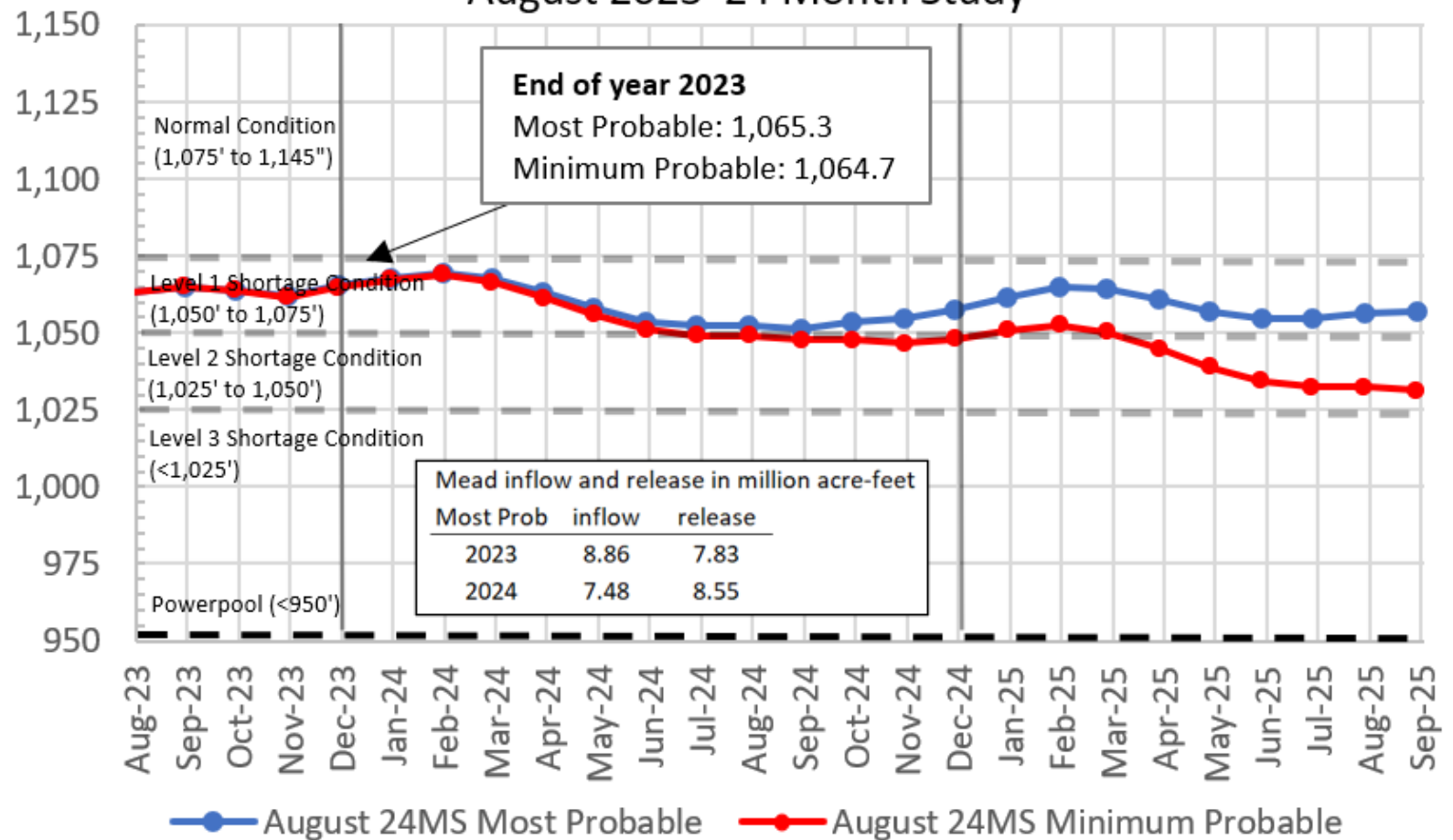
Lake Powell End-of-Month Elevations August 2023 24 Month Study





Lake Mead End-of-Month Elevations

August 2023 24 Month Study





Water Use In Southern Nevada

2023 January - July Southern Nevada Water Use¹

Acre-Feet

Nevada Annual Allocation	300,000
Drought Contingency Plan contribution	-8,000
Interim Guidelines Shortages	-17,000
Diversions	254,938
Return Flow Credits	139,412
Consumptive Use	115,526
¹ 2023 Consumptive use data is preliminary.	(-19% compared to last year)



Negotiations and Updates

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Post-2026 Federal Register Notice

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