

Hydrology Report – February 2023

UPDATE ON DISCUSSIONS

- **General Update on Negotiations for Near Term Actions**

The Secretary of the Interior's office issued a Register Notice for the preparation of a Supplemental Environmental Impact Statement (SEIS) to revise the December 2007 Record of Decision for the 2007 Interim Guidelines (Interim Guidelines) to create additional operational flexibility over the next few years, including potentially releasing less than 7 million-acre feet from Glen Canyon Dam. Proposals from the Basin States were due to Reclamation by January 31, 2023, to provide Reclamation sufficient time to analyze them and prepare a draft SEIS in spring. Unfortunately, the 7 Basin States were unable to submit a unified proposal to Reclamation by that deadline. Reclamation received a six-Basin State "Consensus Based Modeling Alternative" (CBMA) from Nevada, Arizona, Colorado, Utah, New Mexico, and Wyoming and a separate proposal from California on January 31, 2023. Both proposals seek to protect Lake Powell elevation at 3500ft and Lake Mead elevation at 1000ft. However, unlike the California proposal, the CBMA includes modeling for approximately 1.5MAF of lower basin evaporation and system losses or what is referred to as "Infrastructure Protection Volumes" and additional reduction volumes above those proposed in the California proposal.

Despite the submittal of separate proposals between the 6 Basin States and California, the States are continuing to negotiate to develop common ground. Reclamation is intending to publish a draft SEIS in April and a final SEIS by the end of summer.

HYDROLOGY UPDATE

- **Upper Basin precipitation and Temperature**

In January, strong storms delivered 169% of average precipitation for the month, which increased the cumulative precipitation to 123% of average for the year. Upper basin temperatures in January were 3-5 degrees below normal resulting in good conditions for snowpack accumulation.

- **Upper Basin Snowpack and runoff**

Current basin snowpack accumulation is 129% of the seasonal median. The forecasted runoff was increased to 109% of average for the year due to above average snowpack conditions. Snowpack is currently the 5th highest in the last 30 years.

- **Current reservoir status**

As of February 6, 2023, Lake Mead is at a current elevation of 1,046.9 feet and has about 7.5 million acre-feet in storage (29% capacity). As of February 6, 2023, Lake Powell is at a current elevation of 3,522.9 feet and has about 5.4 million acre-feet in storage (23% capacity). Since this time last year, Lake Mead has decreased in elevation about 20 feet and Lake Powell has decreased about 8 feet. Total system storage for the upper and lower basin is around 19.0 million acre-feet (33% capacity).

- **2023 Reservoir Operations and Drought Operations**

In calendar year 2023, there is a Level 2a shortage under the 2007 Guidelines and there is a required Drought Contingency Plan contribution for Nevada and Arizona. Accordingly, in 2023, Nevada's consumptive use will be reduced by 17,000 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 2023. Those amounts are significantly larger than Nevada's obligations. The total combined volumes for Arizona, Nevada, and Mexico are 721,000 acre-feet in calendar year 2023, which will save the equivalent of about 10 feet in elevation in Lake Mead. The reductions and contributions for calendar year 2023 are highlighted in Figure 1.

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	<i>Lower Basin States + Mexico</i>	AZ	NV	CA	Mexico	AZ Total	NV Total	CA Total	Lower Basin States Total	Mexico Total	<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 - 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

Figure 1. The reductions and contributions for calendar year 2023.

- Water Use in Southern Nevada**

Southern Nevada’s consumptive use in January through December of 2022 was 223,607 acre-feet, which is a 7.7% decrease in water use compared to last year. In 2021, southern Nevada consumed less Colorado River water than its 300,000 acre-feet entitlement: specifically, 49,832 (17%) acre feet less. The Southern Nevada Water Authority stored the unused water in Lake Mead to help maintain critical lake levels. This stored water is accessible to southern Nevada in the future if necessary. The Southern Nevada Water Authority has been aggressively reducing consumptive uses through turf removal and conservation programs allowing thus far over 2.3 million acre-feet in total to be stored for future use.

- **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 January 24 Month Study is forecasting Lake Mead to end the calendar year between 1,026.9 to 1,017.5 feet in elevation.

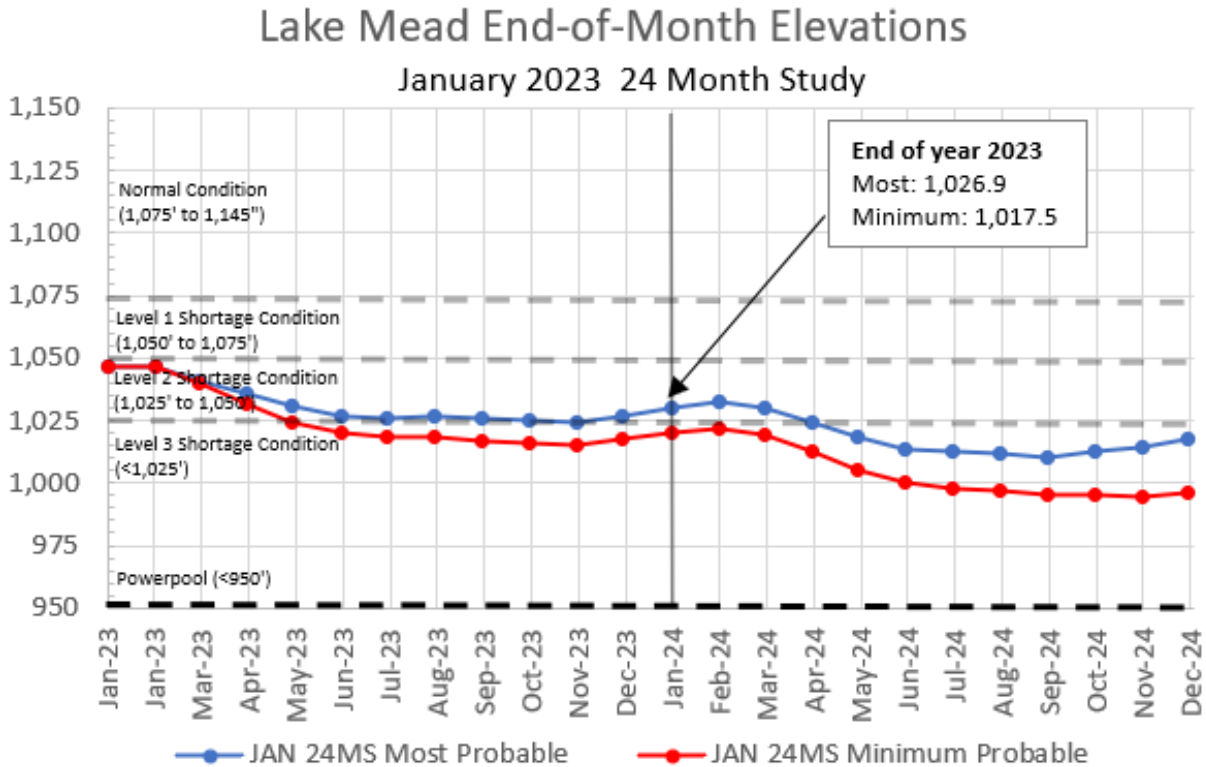


Figure 2. Reclamations January 24 Month Study projections for Lake Mead.

- **Reclamation's Lake Powell Projection ²**

Reclamations January 24 Month Study is forecasting Lake Powell's elevation to be between 3,543.4 and 3,524.7 feet by the end of the year (Figure 3).

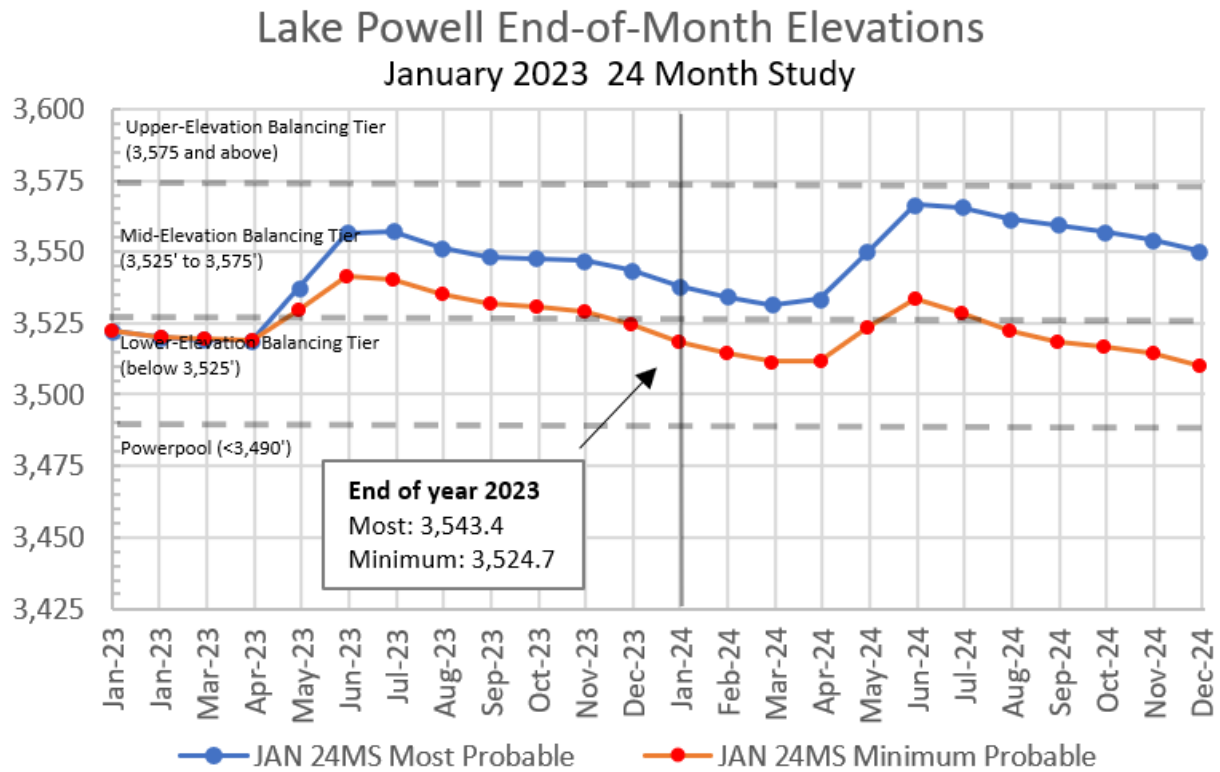


Figure 3. Reclamations January 24 Month Study projections for Lake Powell.

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

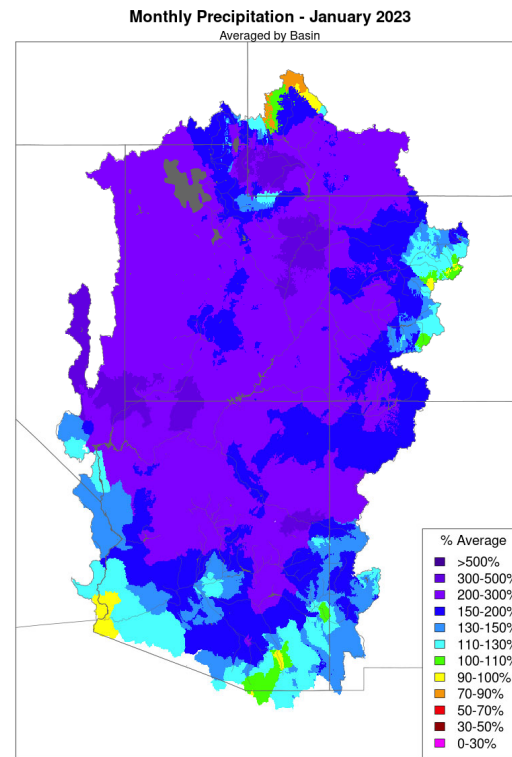
Warren Turkett

February 14, 2023

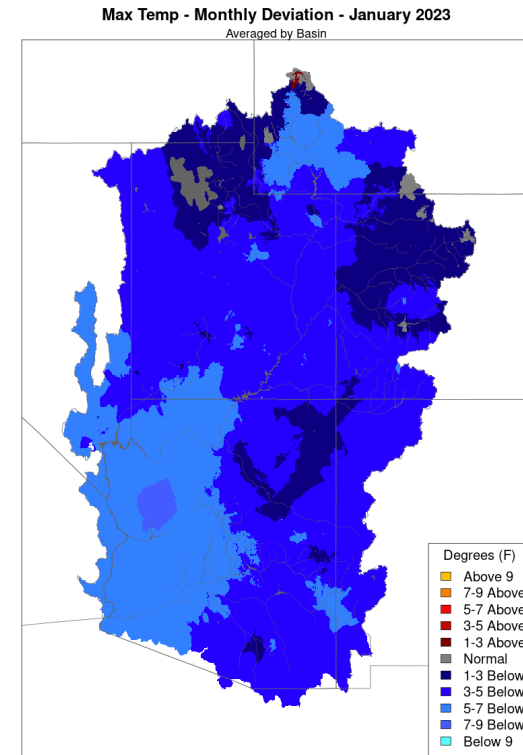




Precipitation and Temperature



Prepared by NOAA, Colorado Basin River Forecast Center
Salt Lake City, Utah, www.cbrfc.noaa.gov



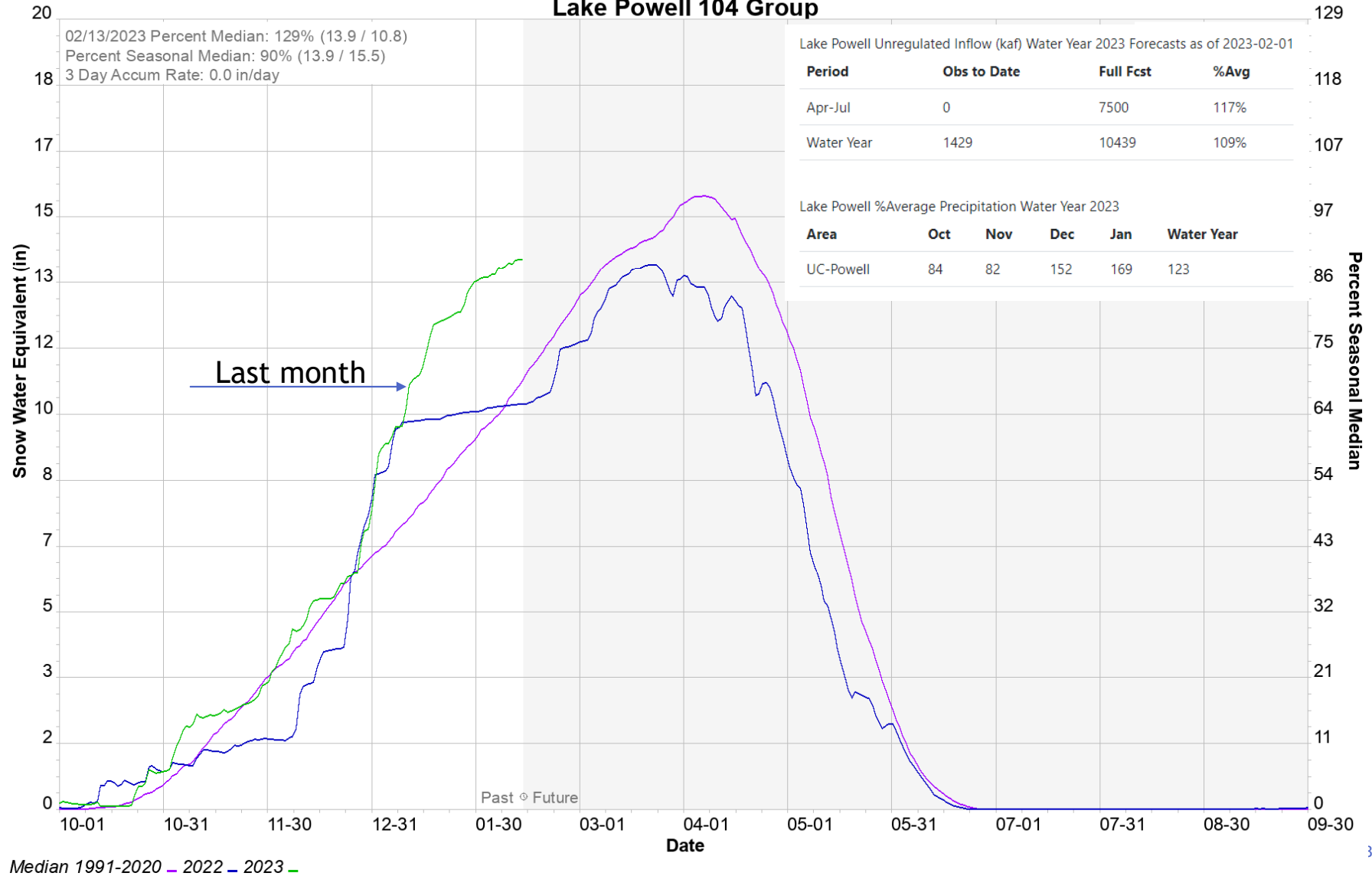
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Lake Powell %Average Precipitation Water Year 2023

Area	Oct	Nov	Dec	Jan	Water Year
UC-Powell	84	82	152	166	122

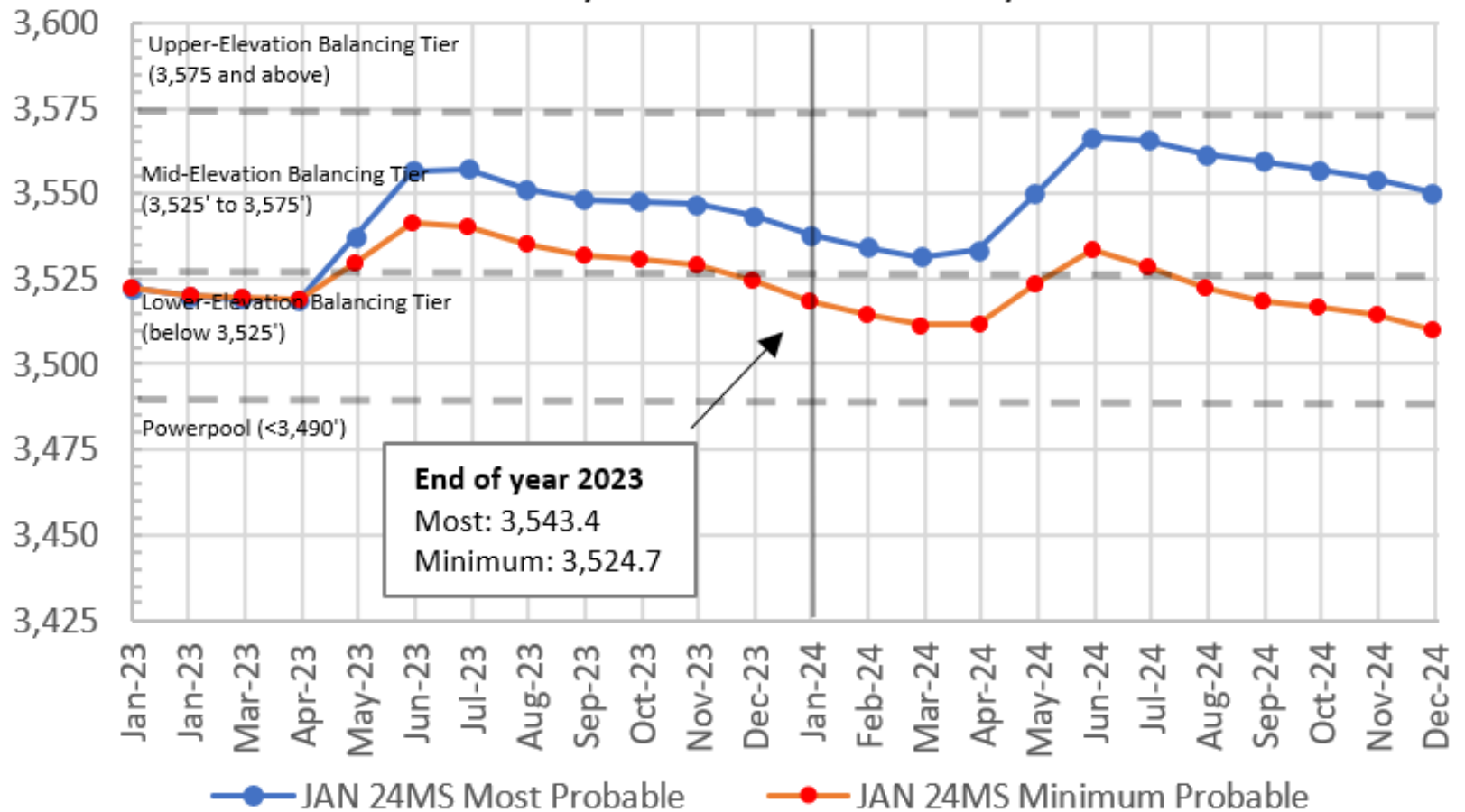


Colorado Basin River Forecast Center Lake Powell 104 Group





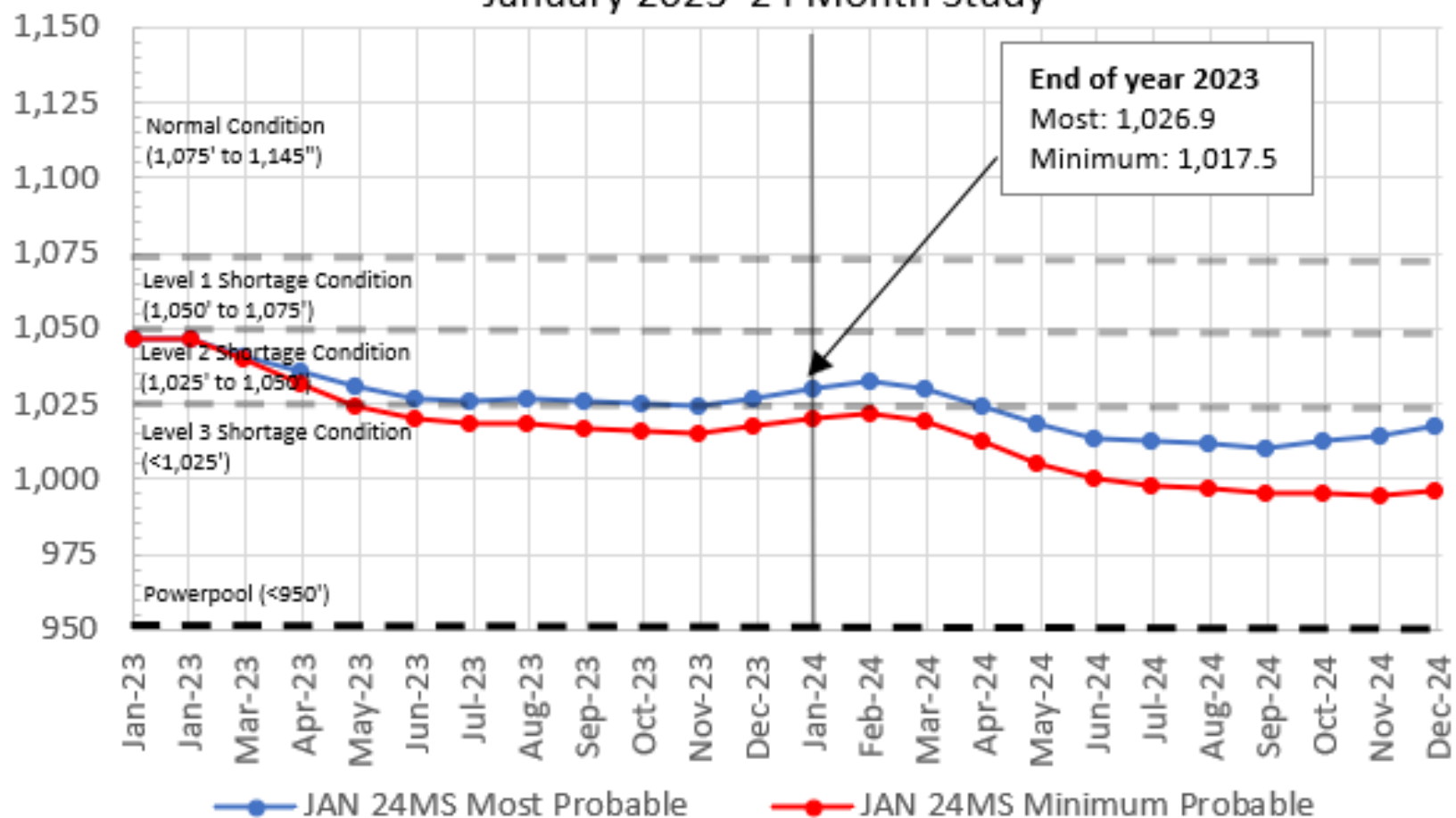
Lake Powell End-of-Month Elevations January 2023 24 Month Study





Lake Mead End-of-Month Elevations

January 2023 24 Month Study





Water Use In Southern Nevada

2021 Southern Nevada Water Use

Acre-Feet

Nevada Annual Allocation	300,000
2021 Drought Contingency Plan contribution	-8,000
Diversions	481,079
Return Flow Credits	238,911
Consumptive Use	242,168
Remaining	49,832 (17%)

2022 Southern Nevada Water Use¹

Acre-Feet

Nevada Annual Allocation	300,000
2022 Drought Contingency Plan contribution	-8,000
Interim Guidelines Shortages	-13,000
Diversions	465,691
Return Flow Credits	242,083
Consumptive Use	223,607
Remaining	55,393 (18%)

¹ Water use data for 2022 is provisional.



Negotiations and Updates

Supplemental Environmental Impact Statement for 2007 Guidelines

- 6 Basin States (Nevada, Arizona, Colorado, Utah, New Mexico, Wyoming) submitted a Consensus Based Modeling Alternative (CBMA) to Reclamation on January 31, 2023, proposing a robust set of modeling assumptions for Reclamation to evaluate and incorporate in the development of the SEIS.
- California submitted a separate alternative for Reclamation to consider on January 31, 2023, that differs from the above 6 state proposal most particularly in the absence of approximately 1.5 MAF of infrastructure protection volume assessments based on evaporation and system losses in the lower basin.
- Both the 6-State CBMA and the California alternative seek to protect Lake Powell and Lake Mead at 3500 and 1000 feet respectively.
- Reclamation plans to consider the submitted proposals and issue a draft SEIS in April, allow for a public comment period and publish a Record of Decision to be released over the summer.
- Despite the current proposal differences, the 7 Basin States are still continuing to negotiate towards a 7-state consensus alternative.