



Colorado River Commission of Nevada

Hydrology and Water Use Update

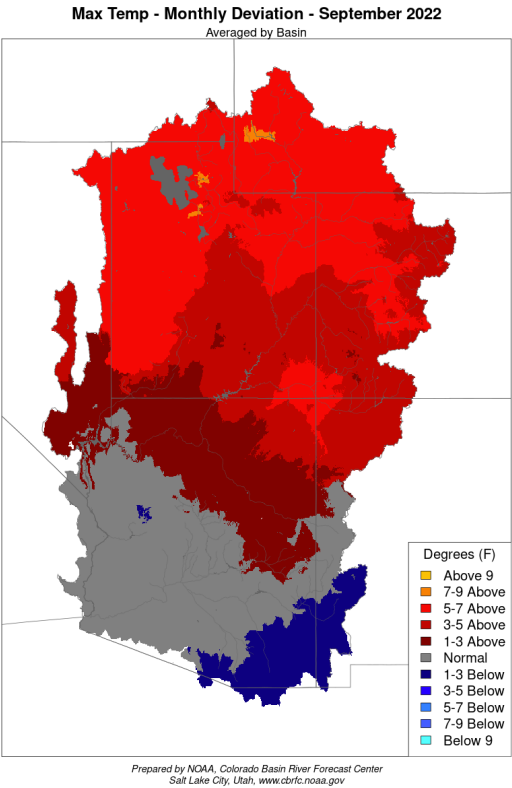
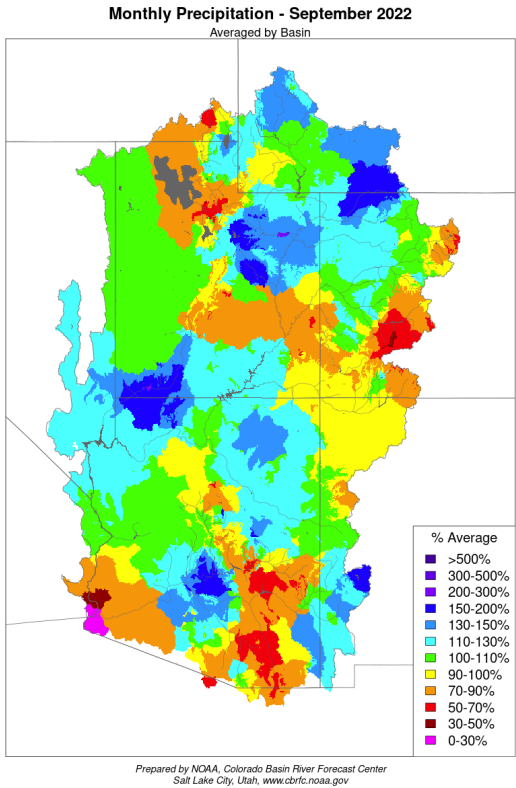
Warren Turkett

October 11, 2022





Precipitation and Temperature



Lake Powell %Average Precipitation Water Year 2022

Area	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Water Year
UC-Powell	127	45	206	51	62	84	68	76	146	135	131	101	100



Unregulated Inflow, Current and Projected Reservoir Status

Projected unregulated inflow to Lake Powell Acre-Feet % Average

Water Year 2023	8,100,000	84%
April thru July 2023	5,485,000	86%

Reservoir	Current Elevation	Current Storage Acre-Feet	Current % Capacity	Projected Actual Elevation on 1/1/2024 ¹
Lake Mead	1,045.2	7,337,000	28%	1,023.9
Lake Powell	3,529.5	5,808,000	25%	3,525.2

Data retrieved October 3, 2022

¹ Based on Reclamation's September 2022 24 Month Study Most Probable Inflow.



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
Unused Allocation Available for Banking	49,832 (17%)

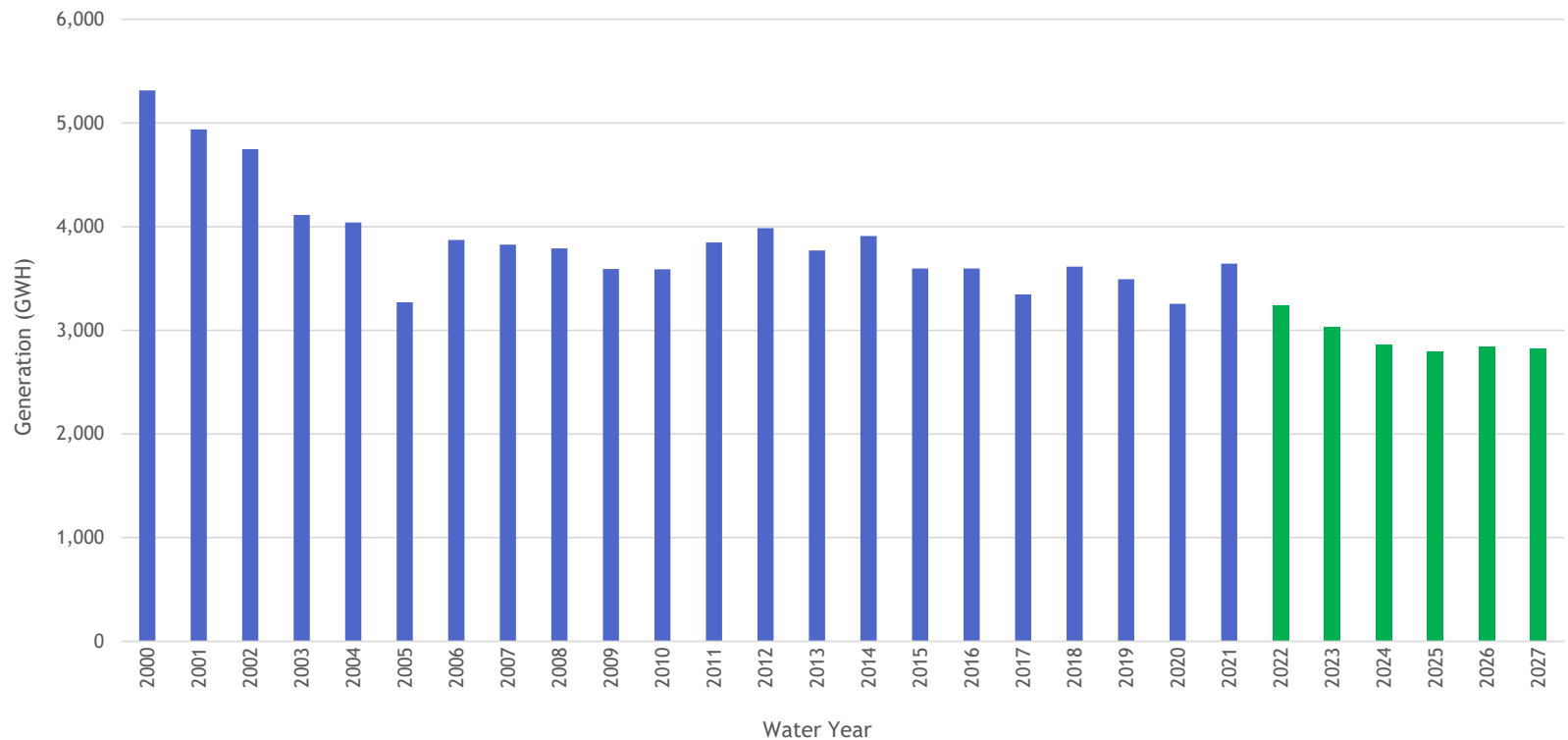
2022 January - August Southern Nevada Water Use

Acre-Feet

Nevada Annual Allocation	300,000
2022 Drought Contingency Plan contribution	-8,000
Interim Guidelines Shortages	-13,000
Diversions	327,261
Return Flow Credits	159,500
Consumptive Use	167,760
Banked Water (through end of 2021)	2,250,684



Historical and Forecast of Hydropower Generation at Hoover



Historical generation at Hoover Dam in blue and forecasted generation from Reclamation's September 2022 CRMMS model in green.



Summary

Lake Powell

- Water year 2022¹ received 100% of average precipitation in the upper basin.
- The observed unregulated inflow for water year 2022 was 63% of average (6.1 maf).
- Unregulated inflow for water year 2023 is forecasted to be 84% of average.

Lake Mead

- On August 16, Reclamation announced the 2023 operating conditions for Lake Powell and Lake Mead. In 2023, Lake Powell will start with an initial release of 7 million acre-feet and Lake Mead will operate in a Level 2a Shortage Condition.

Nevada Water Supply

- Southern Nevada has about 9 years of water supply banked.²
- **In 2021, southern Nevada used 57,832 af less than its annual allocation.**

Storage	Current Elevation (f)	% Capacity	Change since last year
Lake Mead	1,045.2	28%	-22.5 ft
Lake Powell	3,529.5	25%	-15.8 ft

Data retrieved October 3, 2022.

¹ Water year is defined as October through September.

² Based on 2021 consumptive use and storage volumes through 2021.

Hydrology Report – October 2022

UPDATE ON DISCUSSIONS

- **General Update on Negotiations**

The Commissioner of Reclamation requested in June of 2022, that the seven basin states come up with reductions in the use of Colorado River water ranging from 2–4-million-acre feet and to have a plan by mid-August. The states were not able to come to agreement by August, but discussions have continued.

The Executive Director and the Senior Assistant Director attended a water conference in Santa Fe, New Mexico on September 21-23 that was attended by SNWA and the main negotiators on water issues among the seven basin states and the federal government. The conference was informative and allowed parties to voice their concerns, challenges, and frustrations. The conference discussion included candid conversation, some tense discussion, and a recognition that action needed to occur in the near term.

Negotiations have continued, and there has been some movement regarding making reductions in uses of the river in 2023. As an example of the discussions and some willingness to take cuts in 2023, attached is a letter from the Colorado River Board of California, dated October 5, 2022, expressing a willingness to take 400,000-acre feet cuts in 2023, which is about a 9% cut from their allocation. Negotiations are scheduled to continue.

HYDROLOGY UPDATE

Upper Basin Precipitation and Temperature

September received 101% average precipitation in the upper basin bringing this year’s cumulative precipitation to 100% of average. The last four months of above average precipitation will hopefully improve soil moisture. Temperatures in September were 3 to 7 degrees above average in the upper basin.

- **Upper Basin Snowpack and Runoff**

Snowpack last winter peaked about two weeks earlier than expected. The snowpack peaked on March 23rd with 88% of the seasonal peak. The observed runoff was measured at 63% of average, which was reduced by dry soil conditions. The upper basin is getting colder and starting to receive the year’s first snow.

- **Current Reservoir Status**

As of October 3, 2022, Lake Mead is at a current elevation of 1,045.2 feet and has about 7.3 million acre-feet in storage (28% capacity). As of October 3, 2022, Lake Powell is at a current elevation of 3,529.5 feet and has about 5.8 million acre-feet in storage (25% capacity). Since this time last year, Lake Mead has decreased in elevation about 23 feet and Lake Powell has decreased about 16 feet. Total system storage for the upper and lower basin is around 19.5 million acre-feet (33% capacity).

- **2022 Reservoir Operations and Drought Operations**

In calendar year 2022, there will be a Level 1 shortage under the 2007 Guidelines and there will be a required Drought Contingency Plan contribution for Nevada and Arizona. Accordingly, in 2022, Nevada will be required to reduce consumptive use by 13,000 acre-feet under the 2007 Interim Guidelines and 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 2022. 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 2022, which will save the equivalent of about 8 feet in elevation in Lake Mead.

In response to declining runoff and lowering lake levels the 500+ plan was initiated with the purpose of storing an additional 500,000 acre-feet in Lake Mead during each of the next two years to prevent reaching critical elevations. Efforts are still ongoing to reach the 500+ plan.

On May 3, Reclamation announced two drought response actions to protect Lake Powell due to the potential risk of falling below power pool. Flaming Gorge Reservoir was scheduled to release an additional 500 thousand acre-feet to Lake Powell and 480 thousand acre-feet will be left in Lake Powell by reducing the releases to Lake Mead. The combined actions are expected to increase Lake Powell's elevation by approximately 16 feet.

On June 14, the commissioner for Reclamation at the Senate hearing on western drought announced to the basin states that 2 to 4 million acre-feet of water reductions are needed next year as part of an emergency plan. The seven basin states and the Bureau of Reclamation are currently in discussions to address what further actions can be implemented to protect critical levels at both Lake Powell and Lake Mead.

On August 16, Reclamation released the results of the August 24 Month Study, which is used to determine the operations of the upcoming water year for both reservoirs. The August 24 Month Study projected the January 1, 2023, elevation for Lake Powell to be below 3,525 feet elevation indicating next year will be operated in the Lower Elevation Balancing Tier with an initial release of 7.0 million acre-feet. Lake Mead was projected to be below 1,050 feet and above 1,045 feet, indicating a Level 2a Shortage Condition for the lower basin. Thus, in 2023, Nevada will have a 17,000 acre-feet reduction from the 2007 Interim Guidelines and an 8,000 acre-feet Drought Contingency Plan contribution in calendar year 2023. 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	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

Figure 1. The reductions and contributions for calendar year 2023 based on the August 2022 24 Month Study.

- **Water Use in Southern Nevada**

Southern Nevada’s consumptive use in January through July of 2022 was 167,760 acre-feet. 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 Projection**

Reclamation uses computer models to forecast reservoir elevations based on planned water use and anticipated runoff. The most current model (September 24 Month Study Most Probable Inflow) is forecasting Lake Mead to be at a projected elevation of 1,023.9 feet by the end of calendar year 2023.



October 5, 2022

Deputy Secretary of the Interior Tommy Beaudreau
Assistant Secretary for Water and Science Tanya Trujillo
U.S. Bureau of Reclamation Commissioner Camille Calimlim Touton

Dear Deputy Secretary Beaudreau, Assistant Secretary Trujillo, and Commissioner Touton:

Thank you for your leadership and collaboration as we work together to stabilize the Colorado River Basin amidst an unprecedented, climate change-driven drought stretching over two decades. Given dire drought conditions across the region and dangerously low reservoir levels, we firmly believe that **all water users within the Basin must take immediate voluntary actions** to stabilize water supplies in the Basin's major reservoirs.

California water agencies that utilize Colorado River water supplies propose to conserve up to an additional 400,000 acre-feet of water in Lake Mead each year, beginning in 2023 and running through 2026. This water, which would otherwise be used by California's communities and farms, will meaningfully contribute to stabilizing the Colorado River reservoir system.

We have identified a collection of proposed water conservation and water use reduction opportunities that would yield approximately 400,000 acre-feet of System Conservation water supplies that could be retained in Lake Mead each year through 2026. California's Colorado River water agencies are also prepared to create and store additional quantities of Intentionally Created Surplus water supplies in Lake Mead pursuant to the 2007 Interim Shortage Guidelines, under future favorable hydrologic and water supply conditions.

In order to enable this water conservation, our agencies will need to utilize funding opportunities provided by the Inflation Reduction Act and other federal programs. Each of the California agencies involved in developing this package of proposed conserved water supplies will also require your support in developing agreements for funding, potential intra- and inter-state coordination, water use accounting, and in obtaining necessary board and agency approvals over the coming weeks and months.

The State of California and its Colorado River agencies appreciate the collaboration of the Department of the Interior and Reclamation to stabilize the Salton Sea, which has been shrinking due to California's existing water conservation actions and will further shrink when additional conservation actions are taken. Voluntary water conservation actions outlined in this

letter depends on a clear federal commitment to contribute meaningfully to stabilization efforts at the Salton Sea.

California has long been a leader in water conservation within the Colorado River Basin, including through the nation's largest agricultural to urban water conservation and transfer program, the Quantification Settlement Agreement, and through billions of dollars in investments in agricultural and urban water conservation. In fact, through a variety of activities, California's water agencies have voluntarily conserved nearly 2.0 million acre-feet of water supplies in Lake Mead since 2007 that has added more than twenty feet to Lake Mead elevations and aided other Lower Basin water users from experiencing previously agreed upon shortage reductions that would have otherwise occurred as early as 2015.

Most recently, our water agencies have been committed to constructive participation in discussions among the basin states that began even before to the Commissioner's call in June for urgent voluntary water conservation. While a broad multi-state agreement to conserve water across the Basin has not been reached, the California agencies propose to take voluntary action now to conserve water in coming months. It is California's intention that this proactive voluntary action builds on existing agreements, contracts, compacts, and water rights to catalyze broader basin-wide conservation and helps to avoid protracted litigation that might otherwise result from regulatory or mandated actions.

California and its Colorado River agencies believe that it is imperative for the Department of the Interior and Reclamation to immediately reengage the seven Basin States, Tribes, and Mexico in efforts to identify additional water conservation and water use reduction activities to stabilize the Colorado River reservoir system. Additionally, California and the agencies look forward to working with you and others across the Basin with respect to the administrative actions identified in Reclamation's August 16, 2022, News Release.

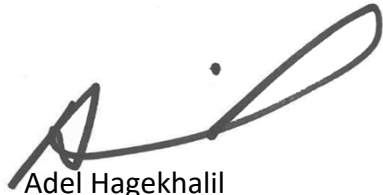
Sincerely,



Peter Nelson
Chair
Colorado River Board of California



Enrique Martinez
General Manager
Imperial Irrigation District



Adel Hagekhalil
General Manager
The Metropolitan Water District of
Southern California



James Barrett
General Manager
Coachella Valley Water District

A handwritten signature in black ink, appearing to read "Bart Fisher". The signature is fluid and cursive, with the first name "Bart" and the last name "Fisher" clearly distinguishable.

Bart Fisher
President
Palo Verde Irrigation District Board
of Trustees

CC: California Secretary for Natural Resources Wade Crowfoot
California Department of Water Resources Director Karla Nemeth
Colorado River Basin States Principals