

Colorado River Basin Current Conditions and Operational Update

Las Vegas, NV December 15, 2022

Colorado River Basin Hydrology and Use

- 1906-2020 Long-Term Record
 - 16.0 maf average annual "natural flow"
 - 14.7 maf in the Upper Basin and 1.2 maf in the Lower Basin
 - Maximum Use in 2000 at 16.9 maf
- 2000-2020 Millennial Drought
 - 13.4 maf average annual "natural flow" (from historical record)
 - 12.5 maf in the Upper Basin and 0.9 maf in the Lower Basin
 - 15.0 maf average annual "use"
 - 4.4 maf in the Upper Basin and 10.6 maf in the Lower Basin
 - 1.6 maf deficit per year, cumulative 33.6 maf









Entering Current Drought December 1999



Notes

- Units: feet (ft); meter (m); million acre-feet (maf)
- Water stored in Dead Storage cannot be released or withdrawn from the reservoir and, therefore, is not available for use.
- Schematic is for illustrative purposes only and is not to scale.

Hydroclimatic conditions over time



----- Long term average

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- 10-year running average
- ----- Linear trend (1980-present)

Precipitation and temperature are from PRISM (https://prism.oregonstate.edu/); natural flow are from Bureau of Reclamation (https://www.usbr.gov/lc/region/g4000/NaturalFlow/current.html); runoff efficiency = natural flow / precipitation volume. Figure adapted from Udall and Overpeck (2017).







Current December 11, 2022



Notes

- Units: feet (ft); meter (m); million acre-feet (maf)
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Colorado River Basin Storage (as of December 11, 2022)

Reservoir	Percent Full	Storage (maf)	Elevation (feet)
Lake Powell	24%	5.66	3,526.97
Lake Mead	28%	7.22	1,043.56
Total System Storage	33%	19.12	

Total system storage was 37% of capacity, or 22.18 maf in storage, at this time last year.



Lake Powell Key Elevations





9-2007 Interim Guidelines SEIS Public Informational Webinars, November 29 and December 2, 2022

Glen Canyon Dam - November 21, 1963





10 - 2007 Interim Guidelines SEIS Public Informational Webinars, November 29 and December 2, 2022





Projected December 2023 Dry Hydrology from December CRMMS-ESP*



Notes

- * CRMMS Ensemble Output 2002-2003 Sequence (subject to change)
- Units: feet (ft); meter (m); million acre-feet (maf)
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Lake Powell End-of-Month Elevations¹

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











- BUREAU OF - RECLAMATION

Questions?



Extra Slides



Lake Mead Storage and Conservation¹



¹End of calendar year 2022 balances of U.S. ICS and Mexico's Water Reserve, system conservation water, and other voluntary contributions to Lake Mead are based on projections from the October 2022 24-Month Study and are subject to change.

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

Combined Volumes by Country **Binational** US: (2007 Interim Guidelines Shortages + 2007 Interim Minute 323 Total DCP Water Water Total DCP Contributions) Guidelines Delivery Combined Savings Combined Scarcitv Mexico: (Minute 323 Delivery Reductions + Shortages Reductions Reductions Contributions Contingency Volumes Lake Mead Binational Water Scarcity Contingency Plan Plan Savings Elevation Savings) (feet msl) Lower Lower Lower Basin ΑZ NV CA Basin Mexico Basin ΑZ NV Mexico ΑZ NV CA Mexico States + Total Total Total States Total States + Mexico Total Mexico 1,090 - 1,075 0 0 0 0 192 8 0 41 192 8 0 200 41 241 192 320 50 8 0 30 512 21 0 533 80 1,075 - 1050 13 383 613 1,050 - 1,045 400 192 8 17 70 487 0 34 592 25 0 617 104 721 1,045 - 1,040 400 17 240 10 200 70 487 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 10 17 70 487 240 300 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

Total Volumes (kaf)

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.



CY 2023 →