

December 1, 2022

**NOTICE OF REGULAR MEETING OF THE
COLORADO RIVER BOARD**

NOTICE IS HEREBY GIVEN pursuant to the call of the Chairperson, Peter Nelson, by the undersigned Executive Director of the Colorado River Board of California that a regular meeting of the Board Members is to be held as follows:

Date: Wednesday, December 14, 2022
Time: 10:00 a.m.
Place: Augustus III
Caesars Palace Las Vegas Hotel and Casino
3570 S Las Vegas Blvd
Las Vegas, NV 89109

The Colorado River Board of California welcomes any comments from members of the public pertaining to items included on this agenda and related topics. Members of the public may provide comments in the following ways: (1) Oral comments can be provided at the beginning of each Board meeting; and (2) Public comments may be submitted by electronic mail, addressed to the Board's Chairman, Mr. Peter Nelson, at crb@crb.ca.gov and will be accepted up until 10:00 a.m. on the day of the meeting. Please note, written submissions will be read aloud at the public comment period to the extent they fit within the five-minute time limit.

If accommodations for individuals with disabilities are required, such persons should provide a request at least 24 hours in advance of the meeting by electronic mail to Board staff at crb@crb.ca.gov.

Requests for additional information may be directed to: Mr. Christopher S. Harris, Executive Director, Colorado River Board of California, 770 Fairmont Avenue, Suite 100, Glendale, CA 91203-1068. A copy of this Notice and Agenda may be found on the Colorado River Board's web page at www.crb.ca.gov.

A copy of the meeting agenda, showing the matters to be considered and transacted, is attached.



Christopher S. Harris
Executive Director

Regular Meeting
COLORADO RIVER BOARD OF CALIFORNIA
Wednesday, December 14, 2022
10:00 a.m.

At the discretion of the Board, all items appearing on this agenda, whether or not expressly listed for action, may be deliberated upon and may be subject to action by the Board. Items may not necessarily be taken up in the order shown.

1. **Call to Order**
2. **Opportunity for the Public to Address the Board** (Limited to 5 minutes)
3. **Administration**
 - a. Consideration and approval of November 9, 2022, Board meeting Minutes (**Action**)
 - b. Consideration and approval of Calendar-Year 2023 Board meeting schedule (**Action**)
4. **Colorado River Basin and Local Water Supply Reports**
5. **Agency End-of-Year Reports**
6. **Colorado River Basin Programs Staff Reports**
6. **Executive Session¹**
7. **Other Business**
8. **Future Agenda Items/Announcements**

Next Scheduled Board Meeting: January 11, 2022
10:00 a.m., Pacific
(TBD)

¹ An Executive Session may be held by the Board pursuant to provisions of Article 9 (commencing with Section 11120) of Chapter 1 of Part 1 of Division 3 of Title 2 of the Government Code and Sections 12516 and 12519 of the Water Code to discuss matters concerning interstate claims to the use of Colorado River System waters in judicial proceedings, administrative proceedings, and/or negotiations with representatives from the other Basin states or federal government.

Minutes of Meeting
COLORADO RIVER BOARD OF CALIFORNIA
Wednesday, November 9, 2022

A meeting of the Colorado River Board of California (Board) was held on Wednesday, November 9, 2022, at the Sheraton Ontario Airport Hotel, 429 North Vineyard Avenue, Ontario, California 91764.

Board Members and Alternates Present:

David De Jesus (MWD Alternate)
Dana B. Fisher, Jr. (PVID)
John B. Hamby (IID)
Jeanine Jones (DWR Designee)
Peter Nelson, Chairman (CVWD)

Glen D. Peterson (MWD)
David R. Pettijohn, Vice Chairman (LADWP)
Jack Seiler (PVID Alternate)
David Vigil (DFW Alternate)

Board Members and Alternates Absent:

Gary Croucher (SDCWA Alternate)
Castulo Estrada (CVWD Alternate)
James Hanks (IID Alternate)
Christopher Hayes (DFW Designee)

Delon Kwan (LADWP Alternate)
Jim Madaffer (SDCWA)

Others Present:

Steve Abbott
Nick Bahr
Robert Cheng
Dennis Davis
JR Echard
Javier Gonzalez
Chris Harris
Bill Hasencamp
Ned Hyduke
Rich Juricich
Tom Levy
Aaron Mead
Jessica Neuwerth

Shana Rapoport
Brad Robinson
Kelly Rodgers
Alexi Schnell
Tina Shields
Gary Tavetian
Petya Vasileva
Mena Westford
Nathan Wu
Jerry Zimmerman

CALL TO ORDER

Chairman Nelson announced the presence of a quorum and called the meeting to order at 10:09 a.m.

OPPORTUNITY FOR THE PUBLIC TO ADDRESS THE BOARD

Chairman Nelson invited members of the audience to address the Board on items on the agenda or matters related to the Board. Hearing none, Chairman Nelson moved to the next item on the agenda.

ADMINISTRATION

Chairman Nelson asked for a motion to approve the September 14th and October 12th, 2022, Board meeting minutes. Mr. Hamby moved that the minutes be approved, seconded by Mr. Pettijohn. By roll-call vote, the minutes were unanimously approved.

Chairman Nelson reviewed the 2023 Board meeting schedule and stated it will be approved during the December Board meeting.

COLORADO RIVER BASIN WATER REPORTS

Colorado River Basin Report

Mr. Juricich reported that as of November 7th, the water level at Lake Powell was 3,529.70 feet with 5.82 million-acre feet (MAF) of storage, or 25% of capacity. The water level at Lake Mead was 1,045.29 feet with 7.35 MAF of storage, or 28% of capacity. The total system storage was 19.36 MAF, or 33% of capacity, which is 3.15 MAF less than system storage at this time last year.

Mr. Juricich reported that as of November 1st, for Water Year-2023 (WY-2023), the observed October inflow to Lake Powell was 0.44 MAF, or 97% of normal. The November inflow forecast to Lake Powell is 0.36 MAF, or 85% of normal.

Mr. Juricich reported on the current storm activity in northern and southern California, and in the Colorado River Basin. He also presented a graphic showing the calculated soil moisture

anomaly across the country. He noted the summer monsoon activity improved soil conditions in the Arizona and New Mexico.

Mr. Juricich reported that through the beginning of November, the Brock and Senator Wash regulating reservoirs captured 91,811 AF and 67,301 AF, respectively. He also reported that the excess deliveries to Mexico were 8,082 AF, compared to 28,025 AF this time last year. Finally, the total amount of saline drainage water bypassed to the Cienega de Santa Clara in Mexico was 125,456 AF.

October 24-Month Study

Mr. Juricich presented the October 24-Month Study results for Lakes Powell and Mead. He noted that the most probable projected release from Lake Powell in 2023 will be 7.0 MAF and an 8.19 MAF release in 2024. He added that the most probable projected elevations for Lakes Powell and Mead at the end of December 2023 is 3,525 feet and 1,025 feet, respectively.

Mr. Hasencamp commented that MWD is currently examining the impact of the 400 KAF plan that California proposed to the Bureau of Reclamation, noting that analyses show that by 2026 Lake Mead's elevation will be twenty feet higher because of the cumulative impacts of the California's DCP contribution and the 400 KAF plan.

State and Local Report

Board Member Jones, representing the California Department of Water Resources (DWR), reported that the recent storm activity was better than usual for this time of the year, noting that it is still early in the water year.

Board Member Peterson, representing The Metropolitan Water District of Southern California (MWD), reported that as of November 1st, MWD's reservoir storage is 62% of capacity and Colorado River aqueduct is operating on an eight-pump flow. He also noted that conservation in MWD's service area has been increasing.

Chairman Nelson, representing the Coachella Valley Water District (CVWD), reported that CVWD took three actions related to the Colorado River. The first action included signing a memorandum of understanding (MOU) between MWD, Southern Nevada Water Authority (SNWA), and Denver Water Authority on urban best management practices. He stated that in September CVWD started reducing groundwater recharge as part of its obligation toward the

500-plus plan. He stated that this action resulted in a documented savings of just over 9,000 AF. Lastly, he reported that the CVWD Board approved to submit a proposal under Reclamation's Inflation Reduction Act (IRA) program under item 1A, to conserve up to 35,000 AF of water a year for the next three years.

Board Member Jones reported that receiving regular reports about the status of the agencies' activities and programs during the CRB meeting is important to demonstrating activities in California and should be featured on the CRB website.

Colorado River Basin States Activities

Colorado River Basin Salinity Control Forum Work Group Meeting

Mr. Juricich summarized the outcomes of the Colorado River Basin Salinity Control Forum's (Forum) October 24-26 meeting held in South Lake Tahoe, California. The Forum provided policy feedback on several program topics including proposals on management and funding for the Lower Colorado River Basin Development Fund, Reclamation's proposed next steps for the Paradox Valley Unit (PVU), and the 2023 Triennial Review of Water Quality Standards for Salinity in the Colorado River System.

One of the key topics discussed at the October meeting was efforts to partially address a long-term shortfall of required cost-share dollars generated by the Lower Colorado River Basin Development Fund (LCRBDF). The Program Funding Committee recommended that the Forum authorize the exploration of reducing the required cost share in the Natural Resources Conservation Service EQIP Program expenditures from 30% to somewhere around 15%. The Forum directed the Funding Committee to further explore if the 15% value is sufficient to address the problem. Related to the LCRBDF, the Forum endorsed a proposal by the Work Group that recommends Reclamation use the latest information from the CRMMS and CRSS operations models when projecting future power revenue from Hoover, Parker, and Davis dams. Power revenue is currently the only source of funding to support the states cost share requirements under the Salinity Control Program and is deposited through the LCRBDF.

Mr. Harris asked if the Forum is considering how changes to the LCRBDF will affect long-term Program funding. Mr. Juricich responded that there is still a need for the Forum to address the long-term program funding. The cost-share adjustment proposed is not intended to be the final solution to the LCRBDF challenges.

Board Member Petersen asked if Arizona is paying into the Program. Mr. Juricich stated that having Arizona pay into the fund is part of the long-term solution. Right now, Arizona is not required to pay into the salinity program until after they pay back the CAP, which is not until around 2043 and that it may require legislation to allow CAP to put in funding to the LCRBDF.

Mr. Juricich also summarized activities by Reclamation regarding the PVU salinity control project, and next steps beyond the functional end of the existing brine deep injection well. Reclamation restarted injection of brine at PVU on June 1st as part of a six-month test injection plan. Five months into the test there have been no significant operational issues or seismic events. The injection test program will end on December 1st, and it is anticipated that Reclamation will shut down the injection well for several weeks to evaluate the effectiveness of the test and determine next steps. During the Forum meeting Reclamation outlined a process for moving forward with salinity control in Paradox Valley before the existing injection well has reached its end of life, which could be within the next several years. Reclamation is proposing to release a Statement of Objectives that would highlight the program goals and objectives for salinity control at Paradox Valley and solicit private industry to make proposals to provide a solution. Reclamation stated that a new Environmental Impact Statement would likely be needed to implement any new salt control activities in Paradox Valley. Reclamation has not provided a schedule for releasing the Statement of Objectives and the Forum requested to be part of the process.

Mr. Juricich summarized feedback from the Forum regarding key modeling assumptions for the 2023 Triennial Review of Water Quality Standards for Salinity in the Colorado River System. Modeling assumptions include projected cost effectiveness of program implementation, program implementation rates, program funding, future hydrology, and operations of the Paradox Valley Unit. Assumptions include a PVU operation at 65,000 tons/year through 2027 and would consider both full operation and no operation of PVU beyond 2027. Section 303 of the Clean Water Act amendments to the Federal Water Pollution Control Act requires that water quality standards are reviewed every three years by the Forum and are adopted by the water quality agencies of the seven basin states for inclusion in their state water quality standards.

Status of the Glen Canyon Dam Adaptive Management Program

Ms. Neuwerth reported that Technical Work Group of (TWG) of the Glen Canyon Dam Adaptive Management (GCDAMP) met virtually in October.

Ms. Neuwerth reported that smallmouth bass, a non-native predator in the Upper Basin, has been detected below Glen Canyon Dam to approximately 15 miles below the dam. There is much concern about the fish spreading throughout the Grand Canyon ecosystem. There are a number of activities going on to limit their spread and there may be a NEPA update for the LTEMP.

Ms. Neuwerth reported that releasing water through the bypass tubes at Glen Canyon Dam would yield cooler water and less entrainment of fish through the dam; however, this would have an impact on hydropower.

Ms. Neuwerth reported that spike flows, similar to ones that have been attempted in the Upper Basin, are being considered, as a means to disrupt smallmouth bass reproduction. Installation of nets and bubble nets to deter fish passage through the dam are also being considered.

Ms. Neuwerth reported that the National Park Service is conducting biweekly electrofishing throughout the Lees Ferry Region and there was a chemical treatment of a backwater where smallmouth bass were known to be located.

Ms. Neuwerth reported that monsoons brought enough sediment to trigger a potential high flow experiment (HFE); however, there were concerns that such an experiment would distribute smallmouth bass further downstream. Ms. Neuwerth reported that consideration of experiments will likely be conservative until more is learned about the potential effect on the non-native fish.

Status of the Lower Colorado River Multi-Species Conservation Program

Ms. Neuwerth reported that the Steering Committees of the Lower Colorado River Multi-Species Conservation Program (LCR MSCP) met on October 26.

Ms. Neuwerth reported that Reclamation provided an update regarding work with the U.S. Fish and Wildlife Service to increase coverage for reductions in flow to 1.574 MAF in areas covered by the LCR MSCP that currently have coverage for 800 KAF. The 800 KAF limit on reductions has not been reached in the past; however, more coverage could be needed to reduce flows to meet goals being considered. The coverage is necessary to account for environmental implications of leaving water in Lake Mead that would otherwise be flowing down the river. A Biological Opinion is currently being finalized.

Ms. Neuwerth reported that the Southern California Public Power Authority (SCPPA) is intending to withdraw from the LCR MSCP. SCPPA represents smaller power contractors but is not a power contractor itself. The smaller agencies will need to join the LCR MSCP's funding agreement. The withdrawal will be evaluated over the next six months.

Mr. Harris stated that The Metropolitan Water District of Southern California helped prepare the initial funding agreement and that he thinks we need to get the California parties together to figure out how to proceed. Ms. Neuwerth agreed and added that there are different pieces including the CESA permit, federal permit, and federal funding.

Ms. Neuwerth reported that there will be a Financial Work Group meeting in February to talk about future budgets for the program.

Mr. Harris inquired if there is a new program manager. Ms. Neuwerth responded that there is not yet a program manager and the program currently doesn't have a deputy program manager.

GENERAL ANNOUNCEMENTS AND UPDATES

Department of Interior Notice of Intent to Prepare a Supplemental Environmental Impact Statement

Mr. Harris discussed the October 28, 2022, Notice of Intent (NOI) published by the Department of Interior to Prepare a Supplemental Environmental Impact Statement (SEIS) for the December 2007 Record of Decision entitled Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lake Powell and Lake Mead. The NOI includes proposed alternatives to revise the December 2007 Record of Decision associated with the Colorado River Interim Guidelines. The 2007 Interim Guidelines provide operating criteria for Lake Powell and Lake Mead, including provisions designed to provide a greater degree of certainty to water users about timing and volumes of potential water delivery reductions for the Lower Basin States, and additional operating flexibility to conserve and store water in the system. The NOI outlines that, in order to ensure that Glen Canyon Dam continues to operate under its intended design, Reclamation may need to modify current operations and reduce annual Glen Canyon Dam downstream releases, thereby impacting downstream riparian areas and reservoir elevations at Lake Mead. Additionally, in order to protect Hoover Dam operations, system integrity, and public health and safety, Reclamation may need to also modify current operations,

potentially including additional water use reductions for the three Lake Mead shortage tiers and reducing annual Hoover Dam downstream releases.

Board Member Fisher stated that what is being proposed under the NOI may be what is used for the Post-2026 framework. Mr. Harris responded that he received feedback that the activities under the NOI could guide operations for the next decade. Mr. Harris stated that Board staff will work closely with the California agencies to develop a very thoughtful, comprehensive comment response package that California submits to Interior and provide our recommendations, suggested guidance, suggested activities, and alternatives. Comments are due by December 20th. Mr. Harris stated that he expects the other states to provide individual comments to the NOI.

Board Member Petersen asked what role Mexico will have in responding to the NOI. Mr. Harris stated that Mexico is not directly subject to the NOI, but that there are separate discussions going on with Mexico under the Treaty. Mr. Harris stated the intention is not to bring Mexico into this NEPA process, or the domestic basin states process, but that Reclamation would start now, or shortly after the first of the year, a similar parallel process with Mexico. A new minute to the treaty will probably be required, following on the heels of Minute 323, and is liable to take longer to work out than this NEPA process, for which Reclamation is contemplating having a ROD by summer 2023.

Mr. Harris stated that Western Area Power Administration has been asked by Reclamation to evaluate Glen Canyon Dam releases below seven million acre-feet as early as 2023. There's a desire on the part of Reclamation to adjust the tier of determinations for Lake Powell operations. Changes could be implemented as soon as summer of 2023, with releases out of Glen that could be less than seven million acre-feet.

Chairman Nelson asked what the potential low range of Glen Canyon Dam released could be. Mr. Harris responded that it could be as low as 5 million acre-feet. Reclamation is profoundly concerned about going on the river outlet works twenty-four/seven at Glen Canyon Dam. Mr. Harris stated that a 5 million acre-feet release would have a tremendous negative impact on storage downstream at Lake Mead.

Board Member Fisher asked if the Record of Decision needs to be completed by mid-2023. Mr. Harris responded that Reclamation is seeking to have a Record of Decision by the end of June 2023. Mr. Harris stated that if there is going to be a reduction of Glen Canyon Dam releases in 2023 it will be difficult to do that at the end of the water year.

Board Member Fisher stated that he is concerned about the likelihood of litigation by the Upper Basin states if Reclamation closely follows the Law of the River.

Chairman Nelson stated that California's response is to follow the Law of the River and follows the priority system, and not consider an ad hoc application of evaporative losses to the Lower Basin. Mr. Harris responded that there is full authority for the Secretary of Interior to manage losses under the existing framework of the Law of the River.

Mr. Hasencamp asked why Reclamation is only looking for authority to cover 2023 and 2024. Mr. Harris responded that the NOI lays out three time frames: 2023 and 2024, 2023 through 2026, and post-2026 for some period of time. Mr. Harris stated that while the focus is on Lake Powell, Lake Mead is facing significant challenges. Part of this is the uncertainty that of reaching consensus between the seven states. That is why Reclamation is proposing its own solution.

Mr. Cheng stated that this looks like it may be a more prescriptive solution and asked how that contrasts with California's voluntary proposal. Mr. Harris responded that within the current framework of the Law of the River, mandatory water use reductions to California are limited in their application. California has stepped up for this interim period at 400 KAF of additional water use reductions per year. Mr. Harris stated he believes Reclamation is supportive of the actions being taken by California. He stated that there is the possibility that someone would seek a legislative solution, and that California is watching that closely. Mr. Harris stated California's voluntary proposal dovetails quite nicely with the water supply reliability that California will end up with at the end of the day. California has an obligation to share the Lower Basin treaty burden with Arizona equally, as described in the Boulder Canyon Project Act. Ms. Neuwerth stated that Reclamation may support a combination of voluntary and mandatory actions. Mr. Harris stated that the proposed Reclamation alternative would consider how the Secretary's authority could complement a consensus-based alternative that may not sufficiently mitigate current and projected risks to the Colorado River System reservoirs. Mr. Harris stated that it doesn't appear that Arizona is able to implement additional voluntary cuts.

Mr. Harris stated he will schedule a time to work with the California agencies to discuss the NOI and California's response.

Supreme Court will reconsider Navajos' claim for more water from the Colorado River

Mr. Harris discussed that the U.S. Supreme Court has agreed to consider a dispute between the Navajo Nation and state and federal governments over the Tribe's claim for an annual Colorado River water supply. The Court agreed on November 4th, 2022, to review a 9th Circuit Court decision that held the Navajo Nation has a right to take more water from the Colorado River. The question presented by the Tribe is whether, given the United States' promise to provide the Navajo Nation sufficient water by entering into the treaties establishing the Navajo Reservation, coupled with the government's nearly exclusive statutory and regulatory control over the Colorado River, the United States has a fiduciary responsibility to the Navajo Nation to assess the Nation's water needs and develop a plan to meet them. The federal government and the states of Arizona, Colorado and Nevada argued in an October filing that the river's water is not an explicitly enumerated responsibility of the government regarding reservations. The case law "has made clear that Indian tribes may sue to enforce only those trust responsibilities that the United States has 'expressly accept[ed],'" they wrote.

Mr. Harris asked Mr. Abbott to provide additional background on the case. Mr. Abbott responded that this lawsuit began in 2003 when the Navajo Nation sued to challenge the interim surplus guidelines under NEPA and also sued the United States under a breach of trust claim asserting that the Navajo have a reserved right to water from the mainstream Colorado River in the Lower Basin and that the federal government needs to come up with a plan to figure out how much water the nation needs, and a plan to deliver it to them.

The Navajo amended their complaint to challenge the 2007 Interim Guidelines as well. The federal agencies moved to dismiss that claim. Many of the states, and in California, the agencies who have contracts, intervened in the case. Judge Snow dismissed the case saying they had no standing under NEPA because the Tribe had shown no injury. Judge Snow also dismissed the breach of trust claim saying there is no "there there" under the law and that the Supreme Court has exclusive jurisdiction to determine whether there is a reserved right to the Navajo reservation.

The case went back to the Ninth Circuit. The Ninth Circuit firmly dismissed any of the claims but sent it back to the district court to give the Navajo one last chance to plead a breach of trust finding. The Navajo proposed an amended complaint that focused exclusively on the Lower Colorado River Basin and asserting reserved water rights. Judge Snow dismissed the claim again saying the U.S. is not liable for breach of trust and that the Supreme Court has exclusive jurisdiction. The Navajo appealed. The Ninth Circuit ruled that the Navajo have stated a claim

for breach of trust and the Supreme Court doesn't have exclusive jurisdiction, the district court can decide these issues.

The Solicitor General's Office, on behalf of the federal defendants, petitioned for challenging the ruling on the breach of trust that it is contrary to Supreme Court cases as well to all of the other federal courts of appeal that have ruled on that issue. The state party intervenors filed a petition challenging the breach of trust ruling and also raised the issue that the Supreme Court has exclusive jurisdiction retained under the Arizona v. California decree to decide that issue. The U.S. filed a reply saying, that the latter issue doesn't need to be decided now, but agreed that the way the decree is written, water cannot be delivered to the Navajo Reservation out of the Colorado River unless the decree is amended. The Supreme Court granted both petitions, did not limit the issues to both the breach of trust and the exclusive jurisdiction of the Supreme Court will be briefed. The cases have been consolidated for briefing and oral argument. Opening briefs are due on December 19 for the federal defendants, and for the state party intervenors, the answering briefs are due in mid-January. The reply briefs are due in early February. Oral argument will be calendared for the March sitting. A decision from the Supreme Court is expected by the end of June 2023.

Washington, DC Updates

Inflation Reduction Act Implementation

Mr. Harris reported that on October 12th, the Department of the Interior (DOI) announced a funding opportunity through the IRA which includes \$4 billion for water management and conservation efforts in the Colorado River Basin and other areas experiencing similar levels of drought. Mr. Harris added that CVWD recently participated in this opportunity. He added that the announcement included the creation of Lower Colorado River Basin System Conservation and Efficiency program. He noted that system conservation proposal must create wet water in Lake Mead and will be funded at a set price based on the length of the agreement. Mr. Harris stated that the DOI will also solicit longer-term durable system efficiency projects in 2023, such as canal lining, re-regulating reservoirs, turf removal, salinity projects and other infrastructure.

Arizona Senator Kelly's Letter to DOI

Mr. Harris reported that on October 25th, Senator Mark Kelly (D-AR) wrote a letter urging the DOI to outline actions it can take to compel a Basin-wide agreement that ensures the stability of the Colorado River system. Mr. Harris stated that Senator Kelly also urged the DOI to withhold money for the Salton Sea drought mitigation until California agrees to use less of its share of the

Colorado River and to examine water losses in California due to evaporation and the state's reliance on surplus water credits to meet its conservation goals. California Natural Resources Agency (CNRA) Secretary Crowfoot responded to the Mr. Kelly's letter in an October 27 letter.

Reclamation Bipartisan Infrastructure Law Quarterly Update

Mr. Harris reported that Reclamation is hosting two information sessions on its implementation of the Bipartisan Infrastructure Law.

ADJOURNMENT

With no further items to be brought before the Board, Chairman Nelson adjourned the meeting at 11:24 a.m.

2023 Colorado River Board Meetings

Date	Location	Time
January 11	Ontario	10:00 a.m.
February 15	Ontario	10:00 a.m.
March 15	Ontario	10:00 a.m.
April 12	Ontario	10:00 a.m.
May 10	Ontario	10:00 a.m.
June 14	Ontario	10:00 a.m.
July 12	Ontario	10:00 a.m.
August 9	Ontario	10:00 a.m.
September 13	Ontario	10:00 a.m.
October 11	Ontario	10:00 a.m.
November 15	Ontario	10:00 a.m.
December 13	Las Vegas, Nevada	10:00 a.m.

12/5/2022

LOWER COLORADO WATER SUPPLY REPORT

River Operations
Bureau of Reclamation

Questions: BCOWaterops@usbr.gov

(702)293-8373

<http://www.usbr.gov/lc/region/g4000/weekly.pdf>

	PERCENT	Content 1000 ac-ft (kaf)	Elev. (Feet above mean sea level)	7-Day Release (CFS)
CURRENT STORAGE	FULL			
LAKE POWELL	24%	5,697	3,527.62	8,700
* LAKE MEAD	28%	7,194	1,043.12	9,200
LAKE MOHAVE	90%	1,621	640.14	8,000
LAKE HAVASU	91%	563	447.09	5,400
TOTAL SYSTEM CONTENTS **	33%	19,145		
As of 12/4/2022				
SYSTEM CONTENT LAST YEAR	37%	22,247		
*Percent based on capacity of 26,120 kaf or elevation 1,219.6 feet.				
**Total System Contents includes Upper & Lower Colorado River Reservoirs, less Lake Mead exclusive flood control space.				
Salt/Verde System	63%	1,444		
Painted Rock Dam	0%	0	530.00	0
Alamo Dam	9%	87	1,108.67	25
Forecasted Water Use for Calendar Year 2022 (as of 12/5/2022) (values in kaf)				
NEVADA			222	
SOUTHERN NEVADA WATER SYSTEM				208
OTHERS				14
CALIFORNIA			4,407	
METROPOLITAN WATER DISTRICT OF CALIFORNIA				1,133
IRRIGATION DISTRICTS				3,258
OTHERS				16
ARIZONA			2,016	
CENTRAL ARIZONA PROJECT				971
OTHERS				1,045
TOTAL LOWER BASIN USE				6,646
DELIVERY TO MEXICO - 2022 (Mexico Scheduled Delivery + Preliminary Yearly Excess ¹)				1,460
OTHER SIGNIFICANT INFORMATION				
UNREGULATED INFLOW INTO LAKE POWELL - DECEMBER FINAL FORECAST DATED 12/1/2022				
		MILLION ACRE-FEET		% of Normal
FORECASTED WATER YEAR 2023		7.700		80%
FORECASTED APRIL-JULY 2023		5.035		79%
NOVEMBER OBSERVED INFLOW		0.349		83%
DECEMBER INFLOW FORECAST		0.280		87%
		Upper Colorado Basin	Salt/Verde Basin	
WATER YEAR 2023 PRECIP TO DATE ²		92% (5.1")	143% (5.5")	
CURRENT BASIN SNOWPACK		110% (3.9")	48% (0.3")	

¹Delivery to Mexico forecasted yearly excess calculated using year-to-date observed and projected excess.

²Precipitation and snowpack values may vary significantly from week-to-week this early in the water year.

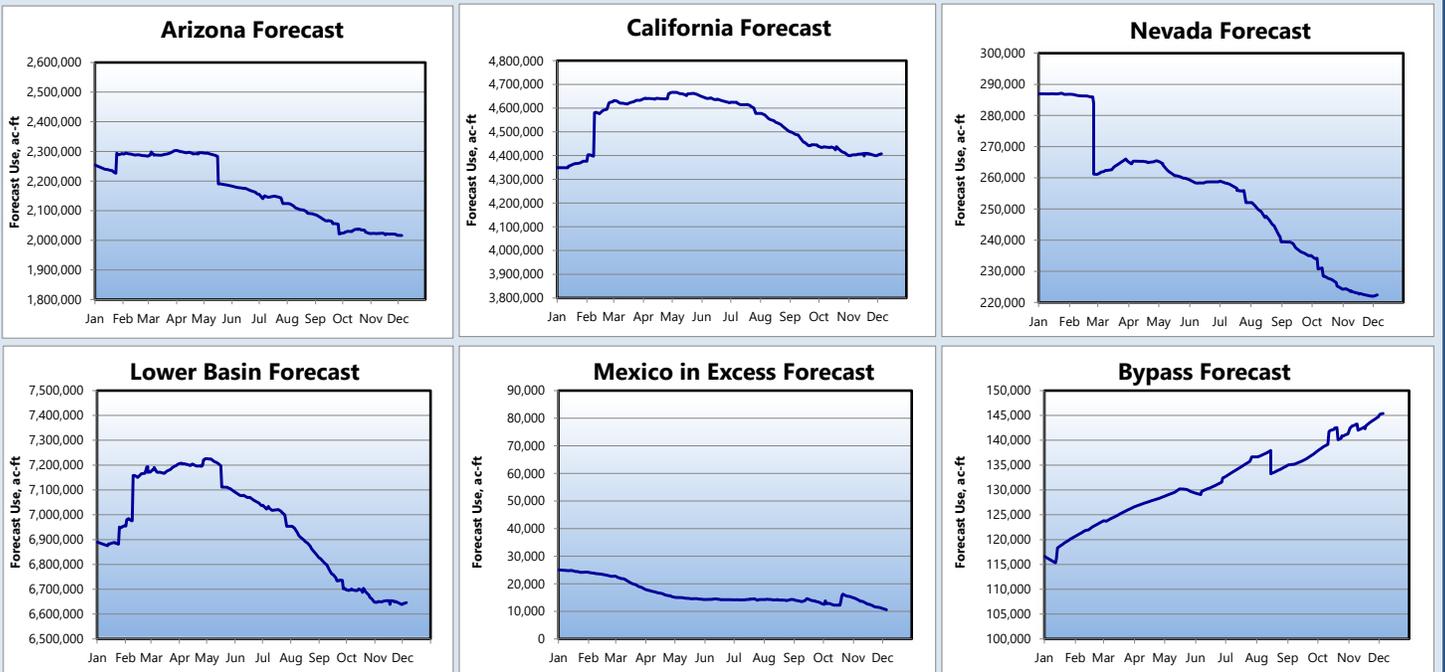


**LOWER COLORADO BASIN REGION
CY 2022**

ARIZONA, CALIFORNIA, NEVADA, MEXICO
 FORECAST OF END OF YEAR CONSUMPTIVE USE
 FORECAST BASED ON USE TO DATE AND APPROVED ANNUAL WATER ORDERS ¹
 (ACRE-FEET)

WATER USE SUMMARY	Use To Date CY 2022	Forecast Use CY 2022	Approved Use ² CY 2022	Excess to Approval CY 2022
Arizona	1,923,752	2,016,322	2,015,091	1,231
California	4,208,573	4,407,491	4,349,055	58,436
Nevada	217,185	222,444	222,444	0
States Total ³	6,349,510	6,646,257	6,586,590	59,667
Total Deliveries to Mexico in Satisfaction of Treaty Requirements ⁴	1,410,757	1,449,819	1,449,819	
Creation of Mexico's Recoverable Water Savings ⁵	30,000	30,000	30,000	
Creation of Mexico's Water Reserve ⁶	3,577	5,159	5,159	
Delivery of Mexico's Water Reserve ⁷	(34,977)	(34,977)	(34,977)	
Total to Mexico in Satisfaction of Treaty Requirements ⁸	1,409,357	1,450,000	1,450,000	
To Mexico in Excess of Treaty ⁹	8,438	10,560	25,039	
Water Bypassed Pursuant to IBWC Minute 242 ¹⁰	136,957	145,398	116,633	
Total Lower Basin & Mexico ¹¹	7,905,662	8,252,034	8,178,081	

¹ Incorporates 80 daily reporting stations which may be revised after provisional data reports are distributed by the USGS. Use to date is estimated for users reporting monthly and annually.
² These values reflect adjusted apportionments. See Adjusted Apportionment calculation on each state page.
³ Includes unmeasured returns based on estimated consumptive use/diversion ratios by user from studies provided by Arizona Department of Water Resources, Colorado River Board of California, and Reclamation.
⁴ Includes deliveries to Mexico at the Northerly International Boundary (including delivery from Mexico's Water Reserve), Southerly International Boundary, Limitrophe, and DiversionChannel Discharge; and diversions at Parker Dam for Emergency Delivery to Tijuana; does not include Creation of Mexico's Water Reserve or Creation of Mexico's Recoverable Water Savings.
⁵ Water deferred by Mexico pursuant to Section IV of IBWC Minute 323 and the *Joint Report of the Principal Engineers with the Implementing Details of the Binational Water Scarcity Contingency Plan in the Colorado River Basin* dated July 11, 2019. (Mexico's required Binational Water Scarcity Contingency Plan Contribution).
⁶ Water deferred by Mexico pursuant to Section V of IBWC Minute 323.
⁷ Delivery from Mexico's Water Reserve pursuant to Section V.E.13 of IBWC Minute 323.
⁸ In accordance with Section XI.G.2.D.1.a of the 2007 Interim Guidelines, a Tier 1 Shortage Condition will govern the operation of Lake Mead and the Lower Colorado River in 2022. In accordance with Section III.A of Minute 323, Mexico's scheduled deliveries incorporate the required reduction of 50,000 AF from its 1.5 million AF Colorado River water allotment. "Total Delivery to Mexico in Satisfaction of Treaty Requirements" adds in Mexico's Water Reserve and Mexico's Recoverable Water Savings creation and subtracts out Mexico's Water Reserve and Mexico's Recoverable Water Savings delivery.
⁹ Mexico excess forecast is based on the 5-year average for the period 2016-2020.
¹⁰ Bypass forecast is based on the average for the period 1990-2020.
¹¹ Includes States Total, Deliveries to Mexico in Satisfaction of Treaty, To Mexico in Excess of Treaty, and Water Bypassed Pursuant IBWC Minute 242.



Graph notes: January 1 forecast use is scheduled use in accordance with the Annual Operating Plan's state entitlements, available unused entitlements, and over-run paybacks. A downward sloping line indicates use at a lower rate than scheduled, upward sloping is above schedule, and a flat line indicates a use rate equal to schedule. Lower priority users such as CAP, MWD, and Robt.B.Griffith may adjust use rates to meet state entitlements as higher priority use deviates from schedule. Abrupt changes in the forecast use line may be due to a diversion schedule change or monthly updating of provisional realtime diversions.



LOWER COLORADO BASIN REGION
CY 2022

NOTE:
 • Diversions and uses that are pending approval are noted in *red italics*.
 • Water users with a consumptive use entitlement - **Excess to Estimated Use** column indicates overrun/underrun of entitlement. Dash in this column indicates water user has a diversion entitlement.
 • Water user with a diversion entitlement - **Excess to Approved Diversion** column indicates overrun/underrun of entitlement. Dash in this column indicates water user has a consumptive use entitlement.

ARIZONA WATER USERS

Forecast end of year diversion/consumptive use
 Forecast based on use to date and approved annual water orders

[Arizona Schedules and Approvals](#)
[Historic Use Records \(Water Accounting Reports\)](#)

WATER USER	Use	Forecast	Estimated	Excess to	Diversion	Forecast	Approved	Excess to
	To Date	Use	Use	Estimated	To Date	Diversion	Diversion	Approved
	CY 2022	CY 2022	CY 2022	CY 2022	CY 2022	CY 2022	CY 2022	CY 2022
Arizona Pumpers	6,145	6,382	6,382	---	9,453	9,818	9,818	0
Lake Mead NRA, AZ - Diversions from Lake Mead	56	59	77	---	56	59	77	-18
Lake Mead NRA, AZ - Diversions from Lake Mohave	204	219	227	---	204	219	227	-8
Bureau of Reclamation - Davis Dam Project	2	2	2	---	15	16	16	0
Bullhead City	6,492	7,130	8,699	---	10,019	11,029	13,730	-2,701
Mohave Water Conservation District	678	739	739	---	1,011	1,102	1,102	0
Mohave Valley I.D.D. ¹	11,108	11,928	15,059	---	20,568	22,083	27,879	-5,796
Fort Mojave Indian Reservation, AZ	39,516	40,457	44,550	---	73,178	74,920	82,500	-7,580
Golden Shores Water Conservation District	275	286	286	---	413	429	429	0
Havas National Wildlife Refuge	2,944	3,010	3,564	---	24,522	25,297	41,835	-16,538
EPCOR Water Arizona, Inc. - CSA No. 1	539	573	493	---	872	941	997	-56
Lake Havasu City	7,960	8,554	9,052	---	12,838	13,796	14,600	-804
Central Arizona Water Conservation District	903,593	971,066	---	---	903,593	971,066	---	---
Town of Parker	345	360	424	---	777	828	917	-89
EPCOR Water Arizona, Inc. - CSA No. 2 (formerly Brooke Water, LLC)	272	293	324	---	406	437	486	-49
Colorado River Indian Reservation, AZ	255,831	255,943	227,832	---	462,841	477,195	510,510	-33,315
Ehrenberg Improvement District	243	252	252	---	339	352	352	0
Arizona State Land Department	3,199	3,473	4,485	---	4,998	5,420	6,900	-1,480
Cibola Valley I.D.D.	5,314	5,322	5,323	---	7,433	7,443	7,443	0
Red River Land Co.	212	215	214	---	297	300	300	0
Hopi Tribe	3,058	3,058	3,059	---	4,278	4,278	4,278	0
GSC Farms, LLC	2,083	2,083	2,083	---	2,913	2,913	2,913	0
Arizona Game & Fish	2,017	2,029	2,029	---	2,821	2,838	2,838	0
Western Water, LLC	43	44	44	---	59	61	61	0
Bishop Family Trust	180	186	186	---	251	260	260	0
Cathcart	61	63	63	---	85	88	88	0
Cibola Sportsmans Club	135	139	139	---	188	194	194	0
Cibola National Wildlife Refuge	7,563	7,712	14,264	-6,552	12,197	12,437	23,005	-10,568
Imperial National Wildlife Refuge	2,880	3,152	3,799	-647	4,646	5,084	6,128	-1,044
BLM Permittees (Parker Dam to Imperial Dam)	1,201	1,247	1,247	0	1,848	1,919	1,919	0
Cha Cha, LLC	1,201	1,268	1,365	---	1,846	1,949	2,100	-151
Beattie Farms Southwest	603	647	722	---	928	994	1,110	-116
Yuma Proving Ground	441	465	524	---	441	465	524	-59
Gila Monster Farm	4,080	4,301	4,888	---	7,208	7,633	8,500	-867
Wellton-Mohawk Irrigation and Drainage District	248,218	253,084	278,000	-24,916	360,040	378,970	424,350	-45,380
BLM Permittees (Below Imperial Dam)	105	109	109	0	162	168	168	0
City of Yuma	13,098	14,126	15,833	-1,707	22,189	24,201	27,500	-3,299
U.S. Marine Corps Air Station Yuma	1,074	1,132	1,300	---	1,074	1,132	1,300	-168
Union Pacific Railroad	22	24	29	---	45	48	48	0
University of Arizona	776	800	852	---	776	800	852	-52
Yuma Union High School District	117	122	150	---	155	164	200	-36
Desert Lawn Memorial	25	26	26	---	36	37	37	0
North Gila Valley Irrigation District	8,542	8,645	10,674	---	38,777	40,867	43,500	-2,633
Yuma Irrigation District	33,195	34,723	39,569	---	60,206	63,603	73,000	-9,397
Yuma Mesa Irrigation and Drainage District	93,454	94,365	99,391	---	191,664	199,851	213,652	-13,801
Unit "B" Irrigation and Drainage District	14,602	14,479	14,900	---	25,983	26,854	29,400	-2,546
Fort Yuma Indian Reservation	1,867	1,939	1,939	---	2,872	2,983	2,983	0
Yuma County Water Users' Association	237,322	249,097	275,560	---	333,974	353,135	367,400	-14,265
Cocopah Indian Reservation	673	799	1,725	---	842	1,034	2,650	-1,616
Reclamation - Yuma Area Office	188	195	195	---	188	195	195	0
Total Arizona	1,923,752	2,016,322	2,082,558		2,612,525	2,757,905	2,941,181	
Central Arizona Project (CAP)	903,593	971,066				971,066		
All Others	1,020,159	1,045,256	1,102,648			1,786,839	1,961,271	
Yuma Mesa Division, Gila Project	135,191	137,733	149,634	-11,901		304,321		
Total 242 Well Field Pumping ²	40,289	42,773	56,129					

Footnotes: See next page.

ARIZONA ADJUSTED APPORTIONMENT CALCULATION

Arizona Basic Apportionment	2,800,000
Reduction for Tier 1 Shortage ³	(320,000)
Arizona DCP Contribution ^{4,5}	(192,000)
Creation of Extraordinary Conservation ICS - GRIC (Estimated) ^{5,6}	(78,565)
System Conservation Water - Pilot System Conservation Program ⁷	(500)
System Conservation Water - CRIT ⁸	(50,000)
System Conservation Water - CAP ⁹	(94,509)
System Conservation Water - CRIT ^{10,11}	(4,685)
System Conservation Water - FMYN ^{10,12}	(13,933)
System Conservation Water - GRIC ^{10,13}	(50,937)
System Conservation Water - MVIDD ^{10,14}	(9,592)
System Conservation Water - Reclamation (Estimated) ^{10,15}	(11,644)
System Conservation Water - YMIDD ^{10,16}	(8,544)
Delivery of ICS (CAWCD)	up to 50,000
Total State Adjusted Apportionment	2,015,091
Excess to Total State Adjusted Apportionment	1,231

Estimated Allowable Use for CAP 969,829

¹ Approved/forecasted values include up to 1,250 AF of diversion for domestic use pursuant to MVIDD's Subcontract No. 09-101 with the Mohave County Water Authority.

² In accordance with the Colorado River Water Conservation Letter Agreement 16-XX-30-W0603, Revision No. 1 (Revised Letter Agreement) between Reclamation and the Central Arizona Water Conservation District (CAWCD), pumping above the Historical Average Baseline (31,129 AF), up to 32,000 AF per year, will remain in Lake Mead as Colorado River System water.

³ In accordance with Section XI.G.2.D.1.a of the 2007 Interim Guidelines, a Tier 1 Shortage Condition will govern the operation of Lake Mead and the Lower Colorado River in 2022, resulting in a 320,000 AF reduction to the state of Arizona's Colorado River basic apportionment.

⁴ In accordance with Section III.B.1.a of *Lower Basin Drought Contingency Operations* (LBOs), the state of Arizona is required to make a DCP Contribution of 192,000 AF in 2022. In accordance with the *Agreement Regarding Lower Basin Drought Contingency Plan Obligations*, it is currently anticipated that the required DCP Contribution will be made by CAWCD through the simultaneous creation and conversion of Extraordinary Conservation (EC) ICS to DCP ICS and the creation of Non-ICS Water (reductions in consumptive use). CAWCD has an approved ICS Plan for the creation of up to 100,000 AF of EC ICS in 2022. The actual amount of EC ICS created by CAWCD and credited toward the DCP Contribution will be based on final accounting and verification.

⁵ When combined with the approved EC ICS creation amount for the Gila River Indian Community (GRIC), the total amount of EC ICS approved for creation in the state of Arizona in 2022 is 178,565 AF, which exceeds the state's annual creation limit set forth in Section XI.G.3.B.4 of the 2007 Interim Guidelines. In accordance with Section XI.G.3.B.4 of the 2007 Interim Guidelines and Section IV.B of LBOs, the total amount of EC ICS that may be created by the states of Arizona, California, and Nevada in 2022 will be limited to 625,000 AF. Additionally, the total amount of EC ICS, Binational ICS and DCP ICS accumulated in Arizona's ICS Accounts will be limited in accordance with Section IV.C. of LBOs.

⁶ CAP water being conserved by GRIC in 2022 to create EC ICS. The actual amount of EC ICS created by GRIC will be based on final accounting and verification.

⁷ The estimated amount of System Conservation Water that will be created by the City of Bullhead City pursuant to System Conservation Implementation Agreement (SCIA) No. 15-XX-30-W0587, as amended. This System Conservation Water will remain in Lake Mead to benefit system storage.

⁸ System Conservation Water to be created by CRIT pursuant to the *Agreement Among the United States of America, Through the Department of the Interior, Bureau of Reclamation, the State of Arizona, Through the Arizona Department of Water Resources, the Central Arizona Water Conservation District, and the Colorado River Indian Tribes to Fund the Creation of Colorado River System Water Through Voluntary Water Conservation and Reductions in use During Calendar Years 2020-2022*. This System Conservation Water will remain in Lake Mead to benefit system storage.

⁹ CAP water being conserved by certain CAP subcontractors pursuant to executed Compensated Conservation Agreements. Water conserved under these agreements will be left in Lake Mead for the benefit of system storage. In accordance with the Project Funding Agreement No. 1, the Bureau of Reclamation will contribute 15 percent of the funding and intends to apply 15 percent of the water conserved towards addressing the Secretary of the Interior's commitment pursuant to Section 3.b of the *Lower Basin Drought Contingency Plan Agreement* (LB DCP Agreement).

¹⁰ In accordance with the applicable system conservation agreements and Section 3.b of the LB DCP Agreement, the Bureau of Reclamation intends to apply all or a portion of this water towards the Secretary of the Interior's commitment to create or conserve 100,000 AF 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.

¹¹ System Conservation Water created by CRIT pursuant to SCIA No. 22-XX-30-W0729, which will remain in Lake Mead to benefit system storage.

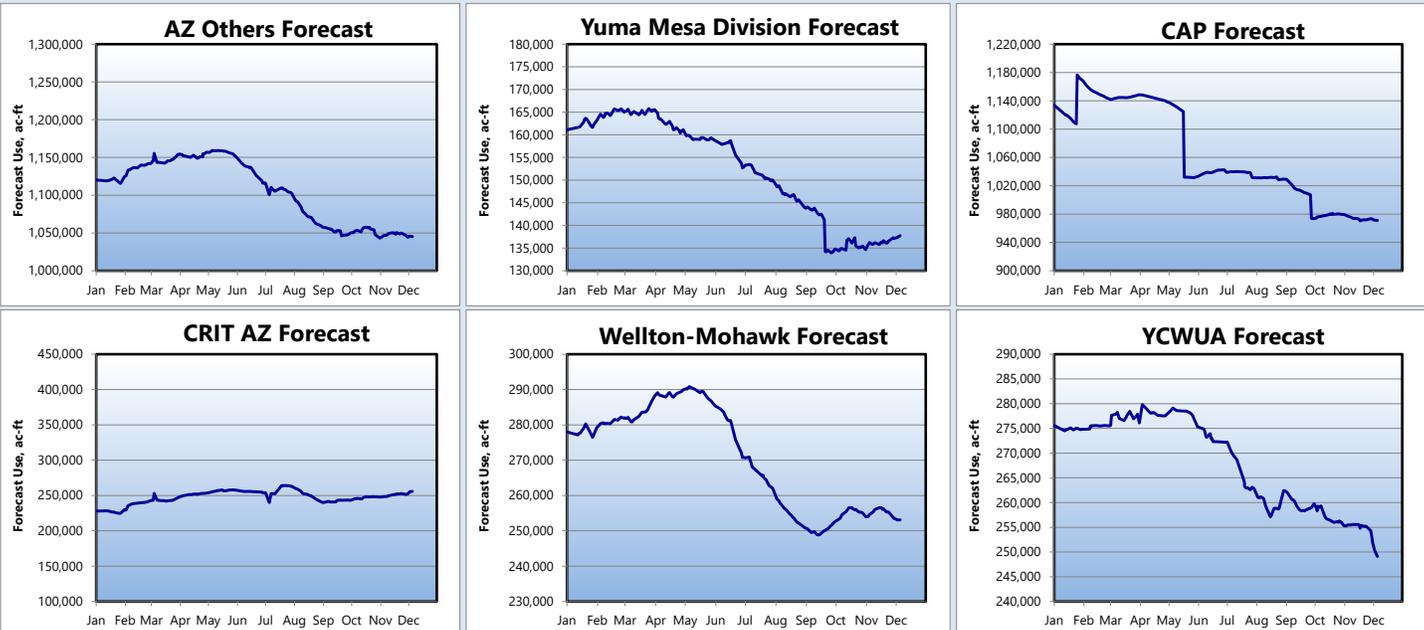
¹² CAP water being conserved by FMYN pursuant to SCIA No. 20-XX-30-W0688, which will remain in Lake Mead to benefit system storage.

¹³ CAP water being conserved by GRIC pursuant to SCIA No. 22-XX-30-W0724, which will remain in Lake Mead to benefit system storage.

¹⁴ System Conservation Water being created by MVIDD pursuant to SCIA No. 22-XX-30-W0725, which will remain in Lake Mead to benefit system storage.

¹⁵ System Conservation Water being created by additional pumping from the 242 Well Field Expansion pursuant to Letter Agreement No. 16-XX-30-W0603, Revision No. 1, which will remain in Lake Mead to benefit system storage.

¹⁶ System Conservation Water created by YMIDD Agreement No. 22-XX-30-W0728, which will remain in Lake Mead to benefit system storage.



NOTES: Click on Arizona Schedules and Approvals above for incoming diversion schedules and approvals.



LOWER COLORADO BASIN REGION
CY 2022

NOTE:
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CALIFORNIA WATER USERS

Forecast end of year diversion/consumptive use
 Forecast based on use to date and approved annual water orders
[California Schedules and Approvals](#)
[Historic Use Records \(Water Accounting Reports\)](#)

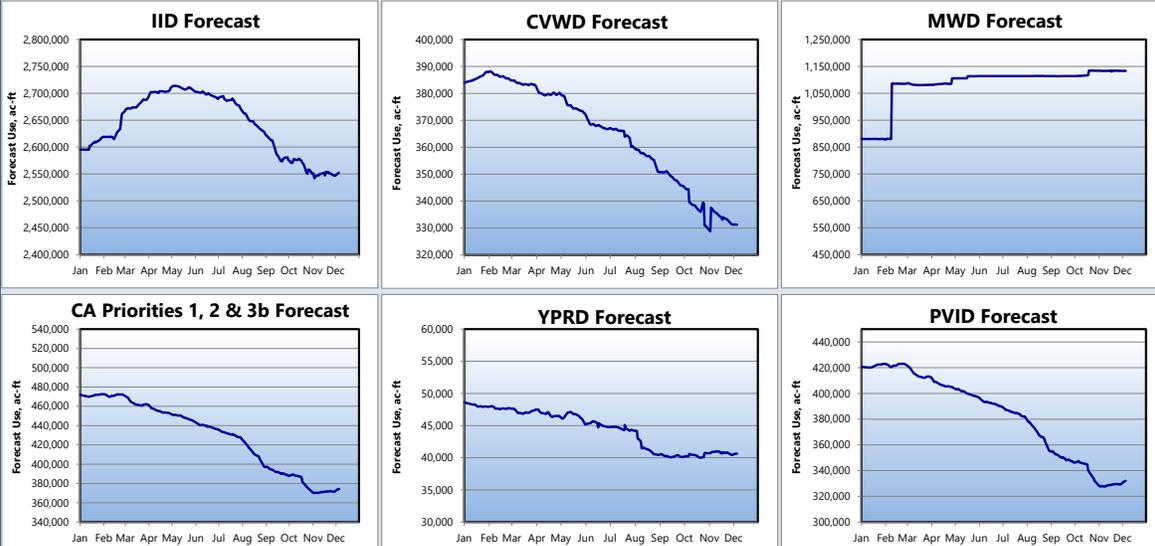
WATER USER	Use	Forecast	Estimated	Excess to	Diversion	Forecast	Excess to	Approved	Approved
	To Date	Use	Use	Use		To Date	Diversion		Diversion
	CY 2022	CY 2022	CY 2022	CY 2022	CY 2022	CY 2022	CY 2022	CY 2022	CY 2022
Fort Mojave Indian Reservation, CA	6,672	6,916	8,996	---	12,403	12,856	16,720	-3,864	
PPR No. 30 (Stephenson)	22	23	23	---	40	42	42	0	
PPR No. 38 (Andrade)	22	23	23	---	40	42	42	0	
City of Needles (includes LCWSP use)	1,247	1,325	1,605	-280	2,014	2,124	2,261	-137	
Chemehuevi Indian Reservation	176	183	183	---	10,918	11,340	11,340	0	
The Metropolitan Water District of Southern California	1,041,190	1,133,297	---	---	1,043,626	1,135,949	---	---	
Colorado River Indian Reservation, CA	4827	5,014	5,014	---	7,998	8,307	8,307	0	
Palo Verde Irrigation District	333,159	331,974	420,696	---	755,394	781,523	857,000	-75,477	
Lake Enterprises	1	1	1	---	1	1	1	0	
Yuma Project Reseravtion Division	39,271	40,637	49,577	---	78,665	83,033	98,635	-15,602	
Yuma Project Reservation Division - Bard Unit	---	---	---	---	36,893	39,070	51,500	-12,430	
Yuma Project Reservation Division - Indian Unit	---	---	---	---	41,772	43,962	47,135	-3,173	
Fort Yuma Indian Reservation - Ranch 5 (Surface Delivery)	1,105	1,151	1,194	---	1,998	2,081	2,160	-79	
Fort Yuma Indian Reservation - Other Ranches (Pumpers)	1,097	1,139	1,139	---	1,982	2,059	2,059	0	
Yuma Island Pumpers	1,568	1,629	1,629	---	2,837	2,947	2,947	0	
Imperial Irrigation District ¹	2,462,025	2,552,288	2,620,300	-68,012	2,516,440	2,616,074	2,719,536	---	
Coachella Valley Water District	315,590	331,267	384,000	-52,733	334,294	351,695	399,950	---	
Other LCWSP Contractors	542	563	563	---	873	907	907	0	
City of Winterhaven	59	61	61	---	85	88	88	0	
Total California	4,208,573	4,407,491	4,628,379		4,769,608	5,011,068	5,257,934		

CALIFORNIA ADJUSTED APPORTIONMENT CALCULATION

California Basic Apportionment	4,400,000
System Conservation Water - Pilot System Conservation Program ²	(145)
System Conservation Water - PVID Following Program ³	(50,800)
Creation of Extraordinary Conservation ICS by IID - Stored in Lake Mead (Estimated) ⁴	0
Creation of Extraordinary Conservation ICS by MWD (Estimated) ⁵	0
Total State Adjusted Apportionment	4,349,055
Excess to Total State Adjusted Apportionment	58,436

Estimated Allowable Use for MWD 1,074,861

¹ As shown here, IID's Approved Diversion and Estimated Use values reflect the maximum amount of Colorado River water available to IID in 2022. Note: This forecast may be updated to reflect up to 25,000 AF of water conserved and stored by IID pursuant to the IID-MWD Settlement and Release Agreement dated September 16, 2021.
² System Conservation Water to be conserved by the City of Needles pursuant to System Conservation Implementation Agreement No. 15-XX-30-W0596, executed under the Pilot System Conservation Program. This water will remain in Lake Mead to benefit system storage.
³ The estimated amount of System Conservation Water that will be created pursuant to Funding Agreement No. 21-XX-30-W0714 (Funding Agreement). This System Conservation Water will remain in Lake Mead to benefit system storage. In accordance with the Funding Agreement, the Bureau of Reclamation intends to apply 50 percent this water towards the Secretary of the Interior's commitment to create or conserve 100,000 AF or more per annum of System Conservation Water pursuant to Section 3.b of the *Lower Basin Drought Contingency Plan Agreement*.
⁴ IID has an approved ICS Plan for the creation of up to 62,000 AF of Extraordinary Conservation (EC) ICS in 2022; however, pursuant to Section 3 of the *California Agreement for the Creation and Delivery of Extraordinary Conservation Intentionally Created Surplus*, as amended, IID may accumulate a maximum of 50,000 AF of EC ICS in its Lake Mead ICS Account, and has reached this limit. The actual amount of EC ICS created by IID in 2022, if any, will be based on final accounting and verification.
⁵ MWD has an approved ICS Plan for the creation of up to 450,000 AF of EC ICS in 2022. The actual amount of EC ICS created by MWD in 2022 will be based on final accounting and verification, and will be limited to the amount that, when combined with the amount of EC ICS created by IID, does not exceed the maximum EC ICS creation capacity available to the state of California. In accordance with Section XI.G.3.B.4 and Section IV.B of *Lower Basin Drought Contingency Operations* (LBOps), the total amount of EC ICS that may be created by the states of Arizona, California, and Nevada in 2022 will be limited to 625,000 AF. Additionally, the total amount of EC ICS, Binational ICS and DCP ICS accumulated in California's ICS Accounts will be limited in accordance with Section IV.C. of LBOps.



NOTES: Click on California Schedules and Approvals above for incoming diversion schedules and approvals.



**LOWER COLORADO BASIN REGION
CY 2022**

NOTE:
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NEVADA WATER USERS

Forecast end of year diversion/consumptive use

Forecast based on use to date and approved annual water orders

[Nevada Schedules and Approvals](#)

[Historic Use Records \(Water Accounting Reports\)](#)

WATER USER	Use	Forecast	Estimated	Excess to	Diversion	Forecast	Approved	Approved
	To Date	Use	Use	Use	To Date	Diversion	Diversion	Diversion
	CY 2022	CY 2022	CY 2022	CY 2022	CY 2022	CY 2022	CY 2022	CY 2022
Robert B. Griffith Water Project (SNWS)	423,736	445,839		---	423,736	445,839		---
Lake Mead NRA, NV - Diversions from Lake Mead	547	633	1,500	---	547	633	1,500	-867
Lake Mead NRA, NV - Diversions from Lake Mohave	212	255	500	---	212	255	500	-245
Basic Management, Inc.	1,966	1,966	8,208	---	1,966	1,966	8,208	-6,242
City of Henderson (BMI Delivery)	5,675	5,675	15,878	---	5,675	5,675	15,878	-10,203
Nevada Department of Wildlife	2	3	12	-9	203	269	1,000	---
Pacific Coast Building Products, Inc.	833	892	928	---	833	892	928	-36
Boulder Canyon Project	168	175	175	---	289	300	300	0
Big Bend Water District	1,920	2,162	4,765	---	4,080	4,649	10,000	-5,351
Fort Mojave Indian Tribe	2,608	2,725	4,623	---	3,892	4,066	6,900	-2,834
Las Vegas Wash Return Flows	-220,482	-237,881	-228,466	---				
Total Nevada	217,185	222,444	271,446	-9	441,433	464,544	508,537	-25,778
Southern Nevada Water System (SNWS)	203,254	207,958				445,839		
All Others	13,931	14,486				18,705		
Nevada Uses Above Hoover	212,657	217,557				455,829		
Nevada Uses Below Hoover	4,528	4,887				8,715		

Tributary Conservation (TC) Intentionally Created Surplus (ICS)

Southern Nevada Water Authority (SNWA) Creation of TC ICS (Approved) ¹ 43,000

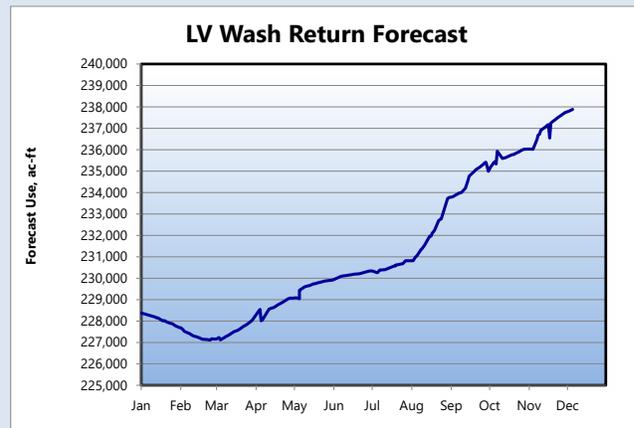
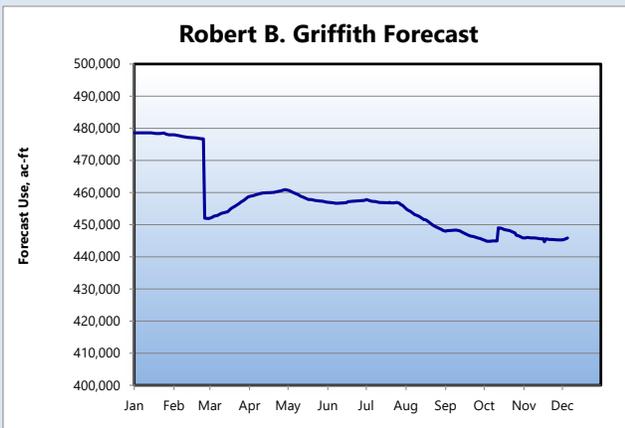
NEVADA ADJUSTED APPORTIONMENT CALCULATION

Nevada Basic Apportionment	300,000
Reduction for Tier 1 Shortage ²	(13,000)
Creation of Extraordinary Conservation ICS - SNWA (Estimated) ³	(64,556)
Total State Adjusted Apportionment	222,444
Excess to Total State Adjusted Apportionment	0

¹ SNWA has an approved ICS Plan for the creation of up to 43,000 AF of TC ICS in 2022. The actual amount of TC ICS created by SNWA in 2022 will be based on final accounting and verification.

² In accordance with Section XI.G.2.D.1.a of the 2007 Interim Guidelines, a Tier 1 Shortage Condition will govern the operation of Lake Mead and the Lower Colorado River in 2022, resulting in a 13,000 AF reduction to the state of Nevada's Colorado River basic apportionment.

³ SNWA has an approved ICS Plan for the creation of up to 100,000 AF of Extraordinary Conservation (EC) ICS in 2022. The actual amount of EC ICS created by SNWA in 2022 will be based on final accounting and verification. In accordance with Section XI.G.3.B.4 of the 2007 Interim Guidelines and Section IV.B of *Lower Basin Drought Contingency Operations* (LBOps), the total amount of EC ICS that may be created by the states of Arizona, California, and Nevada in 2022 will be limited to 625,000 AF. Additionally, the total amount of EC ICS, Binational ICS and DCP ICS accumulated in Nevada's ICS Accounts will be limited in accordance with Section IV.C. of LBOps.



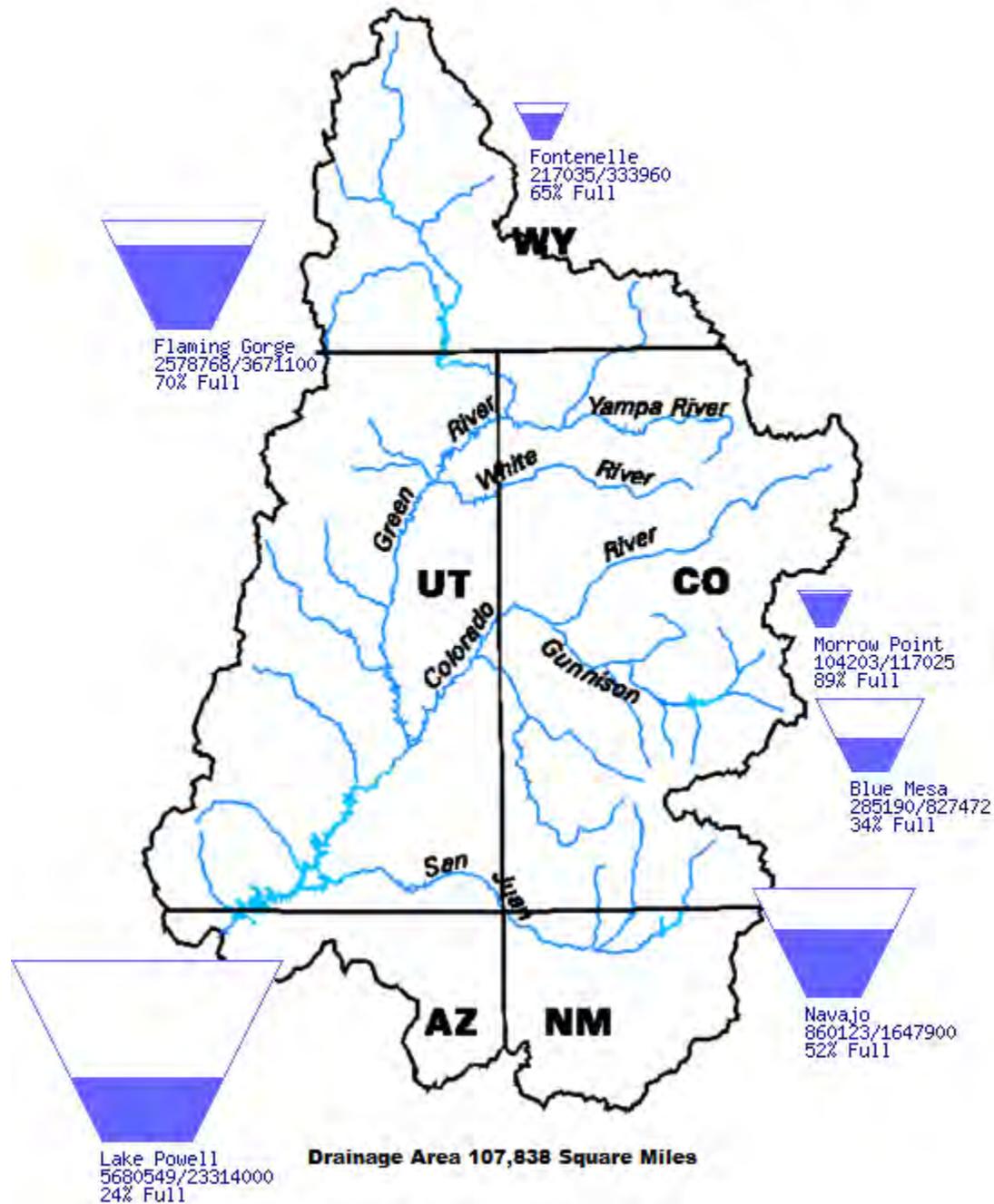
NOTES: Click on Nevada Schedules and Approvals above for incoming diversion schedules and approvals.

Upper Colorado Region Water Resources Group

River Basin Tea-Cup Diagrams

Data Current as of:
12/07/2022

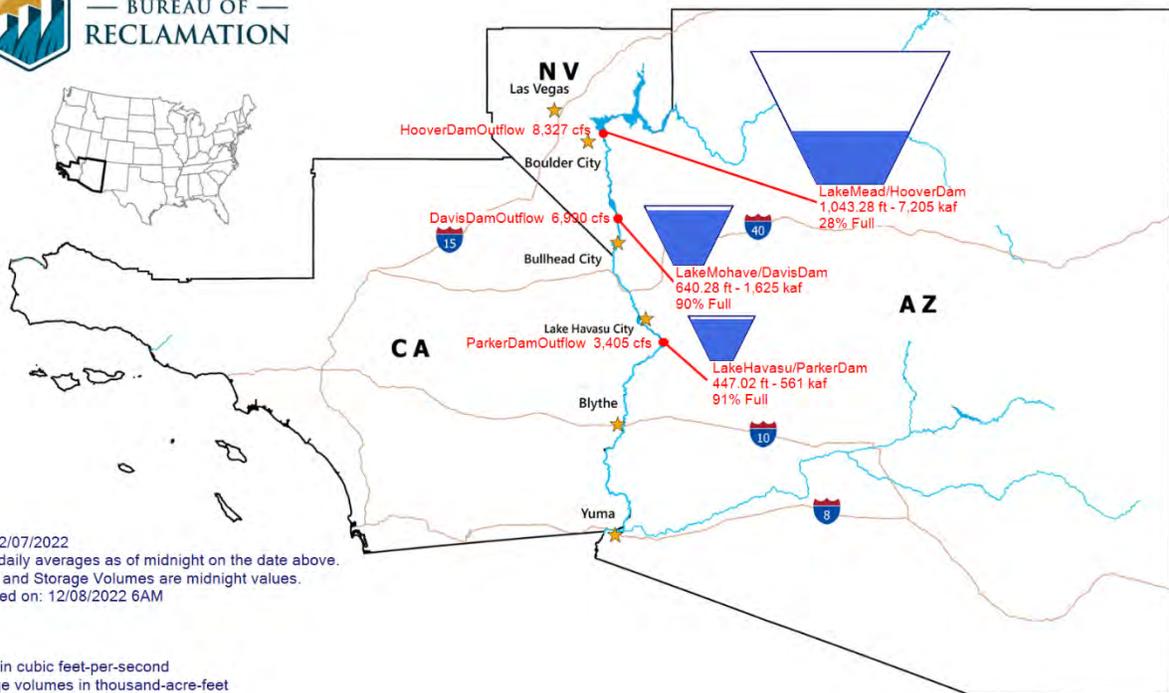
Upper Colorado River Drainage Basin



Lower Colorado River Teacup Diagram



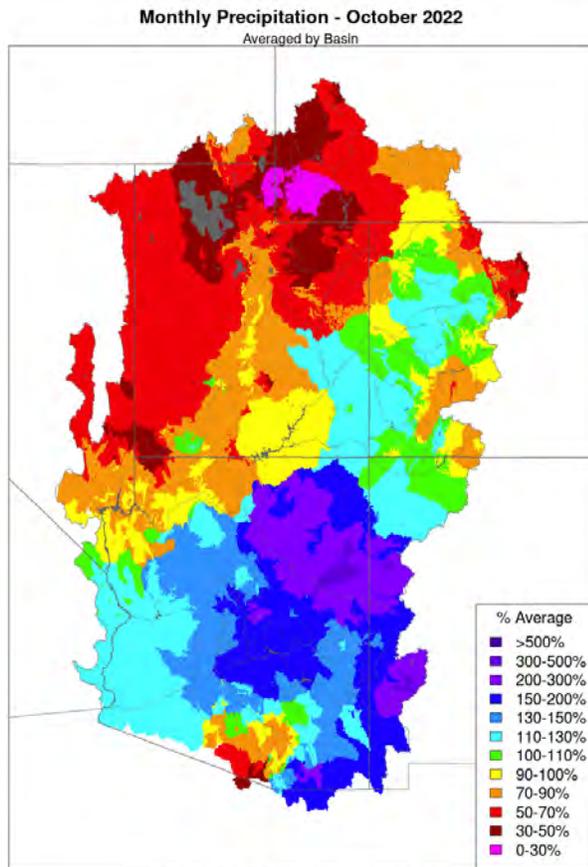
BUREAU OF RECLAMATION



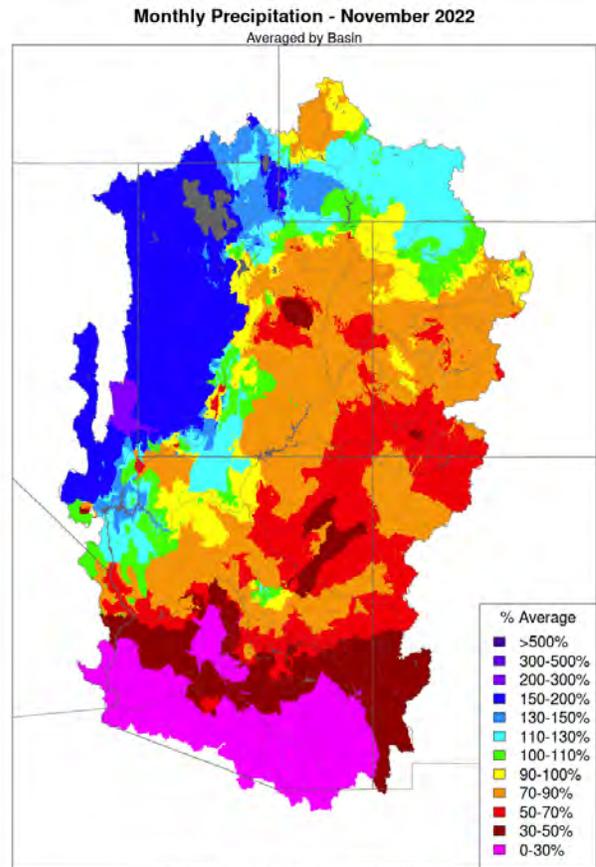
Data for: 12/07/2022
 Flows are daily averages as of midnight on the date above.
 Elevations and Storage Volumes are midnight values.
 Last updated on: 12/08/2022 6AM

LEGEND:
 cfs: Flows in cubic feet-per-second
 kaf: Storage volumes in thousand-acre-feet
 ft: Elevations in feet above mean-sea-level

NOAA National Weather Service Monthly Precipitation Map October and November 2022

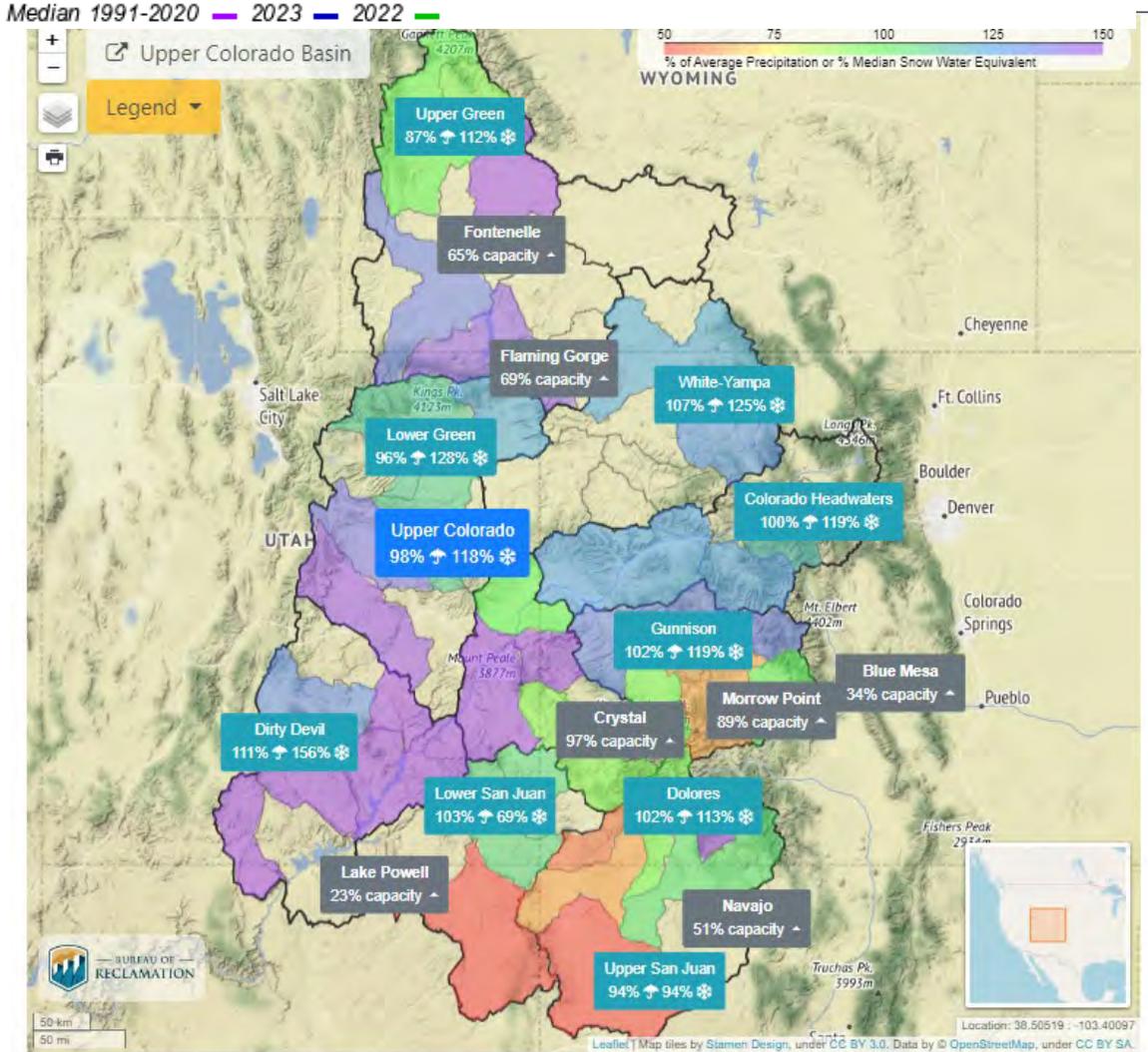
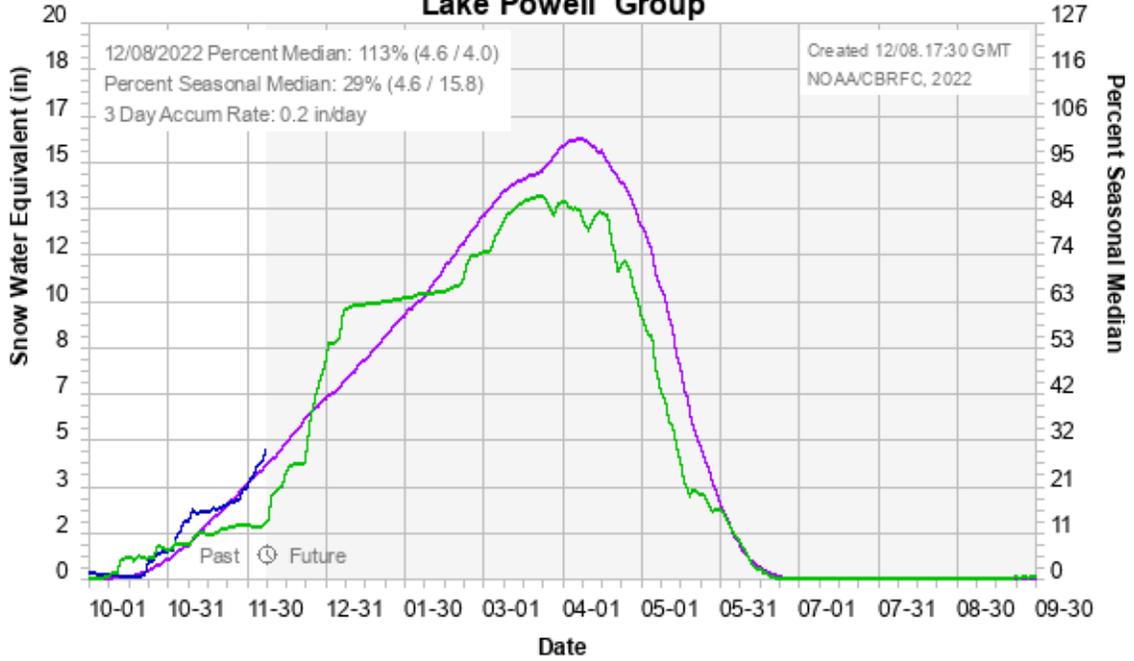


Prepared by NOAA, Colorado Basin River Forecast Center
Salt Lake City, Utah, www.cbrfc.noaa.gov



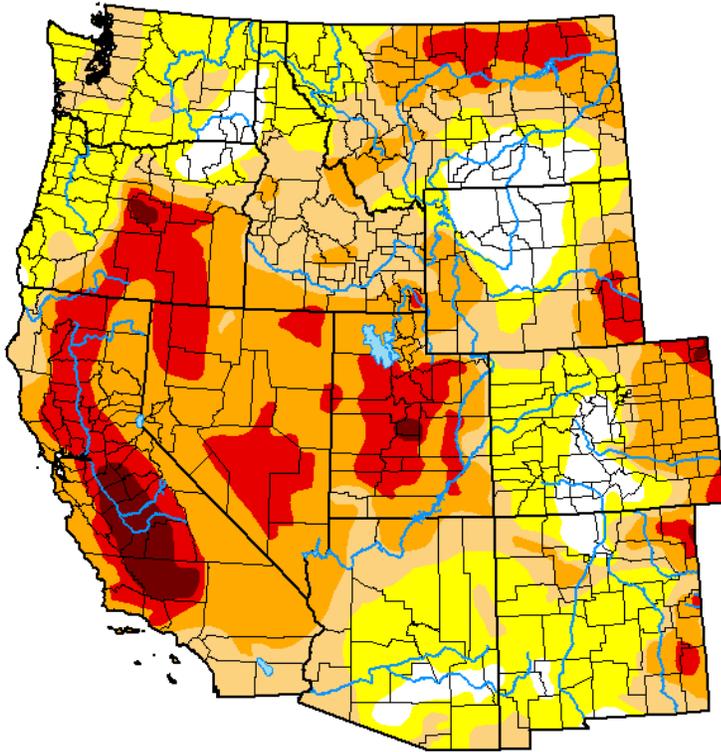
Prepared by NOAA, Colorado Basin River Forecast Center
Salt Lake City, Utah, www.cbrfc.noaa.gov

Colorado Basin River Forecast Center Lake Powell Group



**U.S. Drought Monitor
West**

December 6, 2022
(Released Thursday, Dec. 8, 2022)
Valid 7 a.m. EST



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	7.93	92.07	66.64	45.25	16.00	2.02
Last Week <i>11-29-2022</i>	6.58	93.42	68.74	44.88	17.62	2.02
3 Months Ago <i>09-06-2022</i>	11.81	88.19	68.39	49.06	18.91	2.63
Start of Calendar Year <i>01-04-2022</i>	3.68	96.32	89.29	64.90	23.85	3.94
Start of Water Year <i>09-27-2022</i>	3.89	96.11	73.90	47.71	19.37	2.63
One Year Ago <i>12-07-2021</i>	2.32	97.68	94.64	77.13	44.08	12.60

Intensity:

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

Author:

David Simeral
Western Regional Climate Center



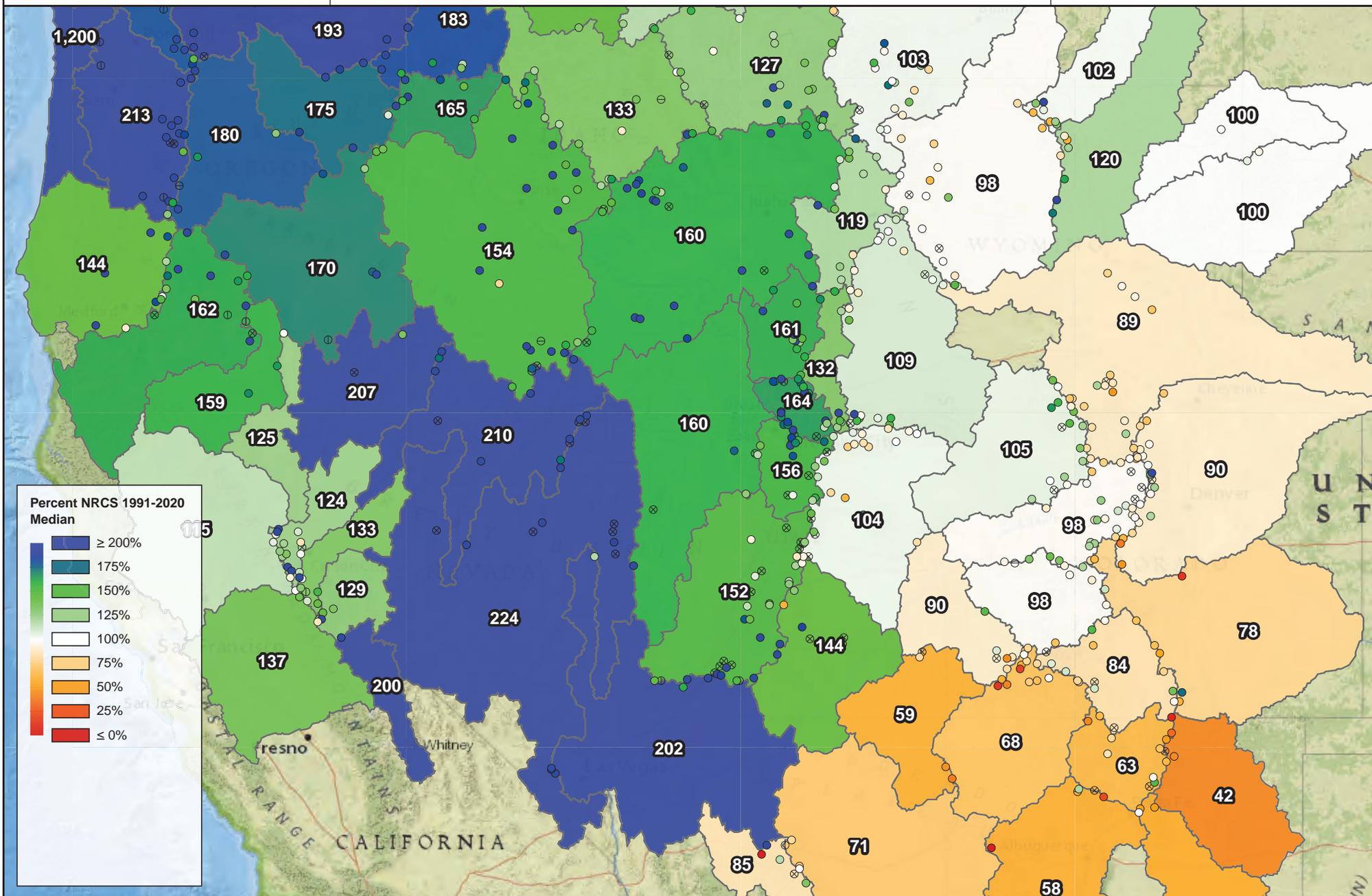
droughtmonitor.unl.edu

Snow Water Equivalent

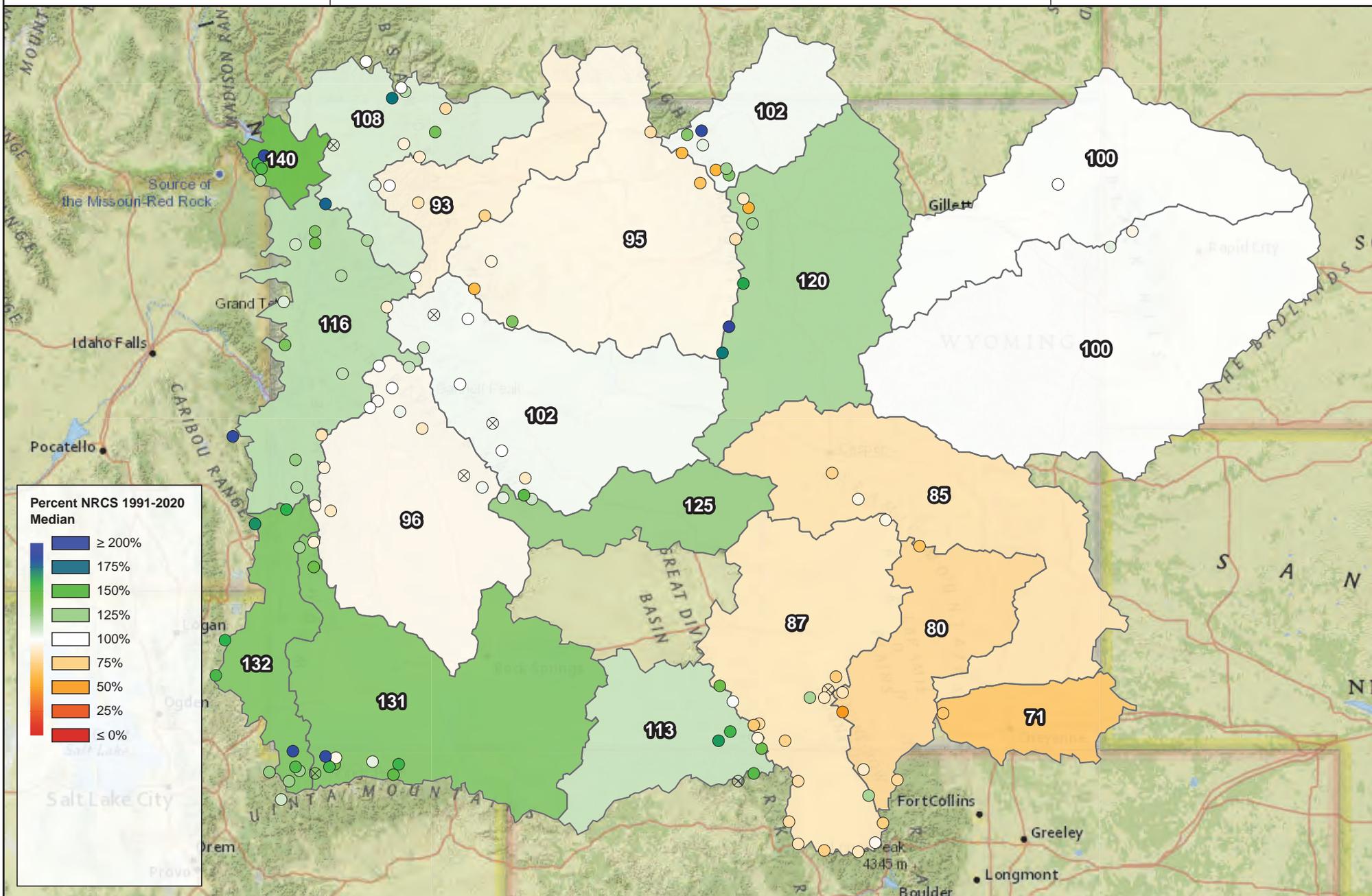
Westside SWE

December 1st, 2022

Percent NRCS 1991-2020 Median

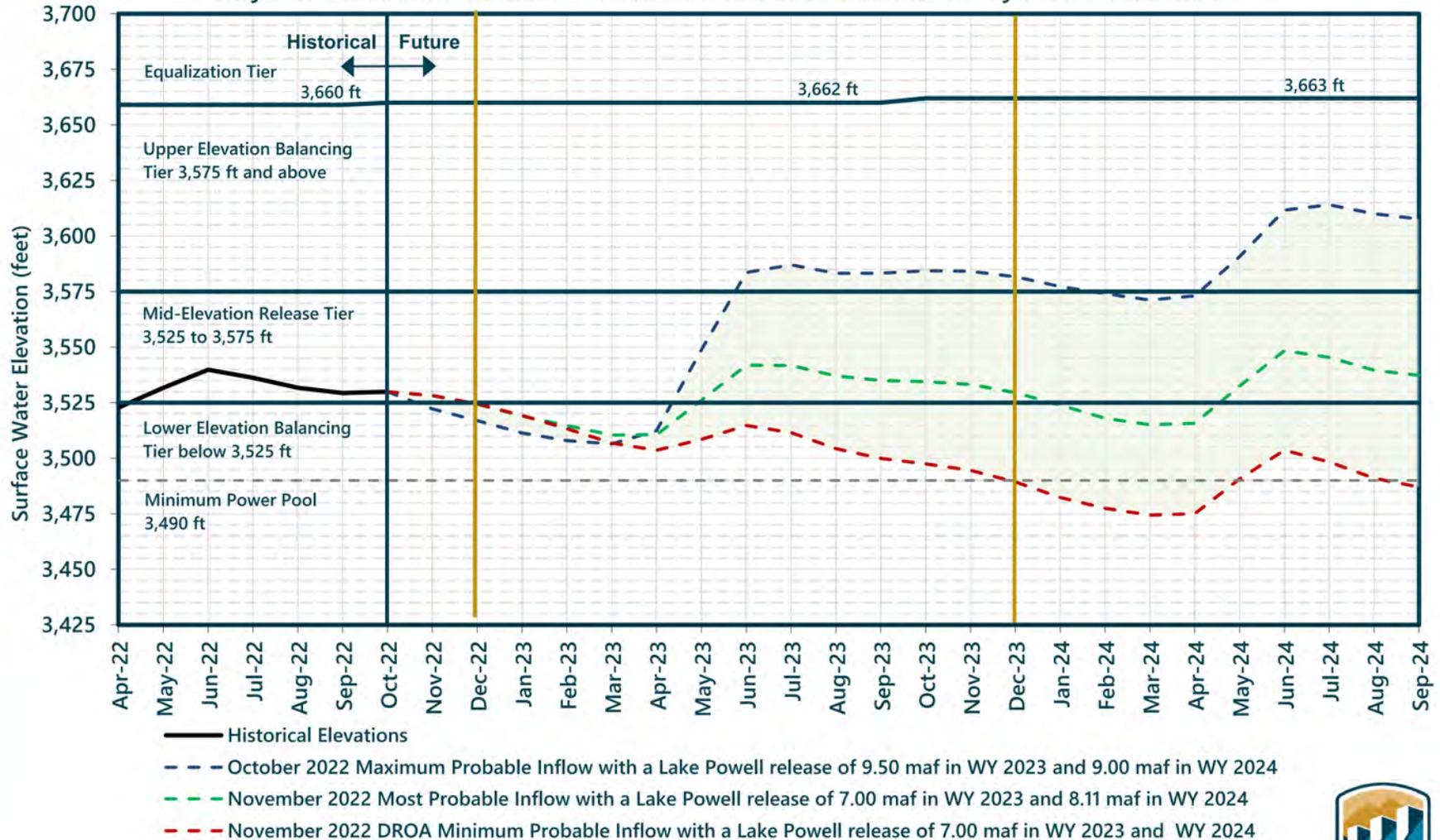


Percent NRCS 1991-2020 Median



Lake Powell End of Month Elevations¹

Projections from the October and November 2022 24-Month Study Inflow Scenarios



¹ Projected Lake Powell end of month physical elevations from the latest 24-Month Study inflow scenarios.
The Drought Response Operations Agreement (DROA) is available online at: <https://www.usbr.gov/dcp/finaldocs.html>.



Lake Mead End of Month Elevations¹

Projections from the October and November 2022 24-Month Study Inflow Scenarios



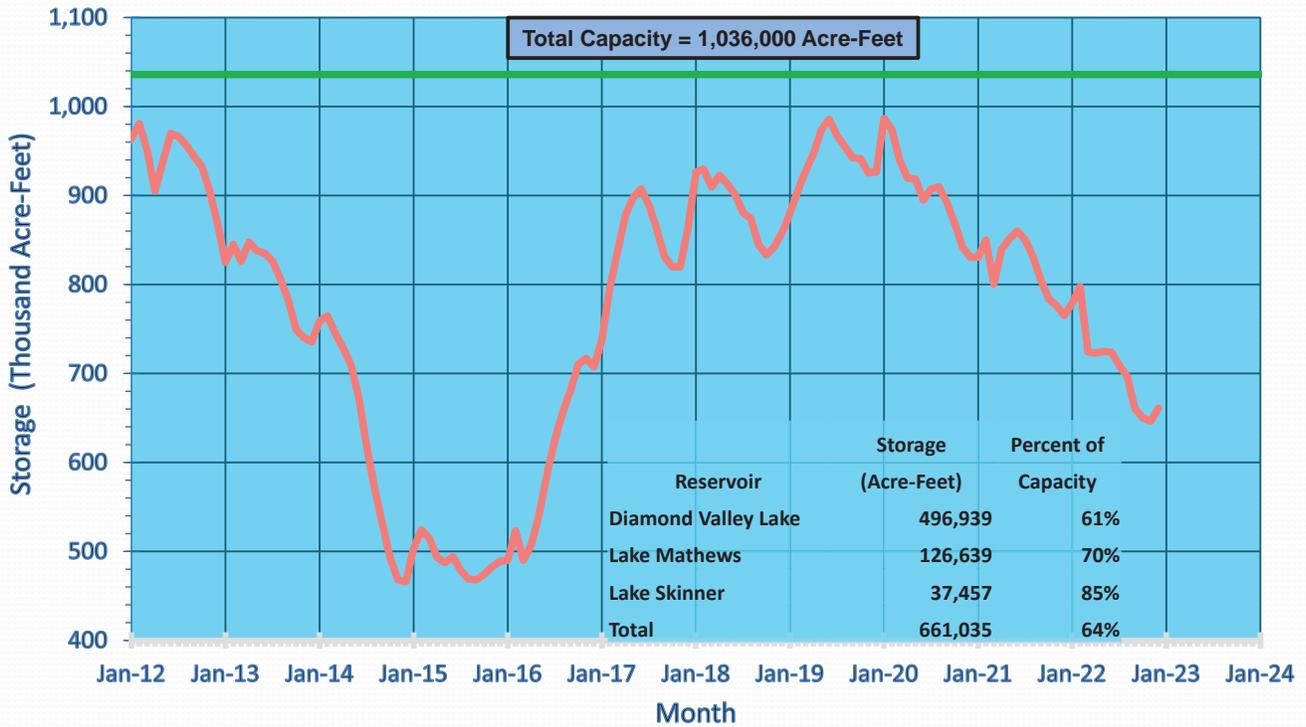
- Historical Elevations
- - - October 2022 Maximum Probable Inflow with a Lake Powell release of 9.50 maf in WY 2023 and 9.00 maf in WY 2024
- - - November 2022 Most Probable Inflow with a Lake Powell release of 7.00 maf in WY 2023 and 8.11 maf in WY 2024
- - - November 2022 DROA Minimum Probable Inflow with a Lake Powell release of 7.00 maf in WY 2023 and WY 2024

¹ Projected Lake Mead end of month physical elevations from the latest 24-Month Study inflow scenarios.
 The Drought Response Operations Agreement (DROA) is available online at: <https://www.usbr.gov/dcp/finaldocs.html>.

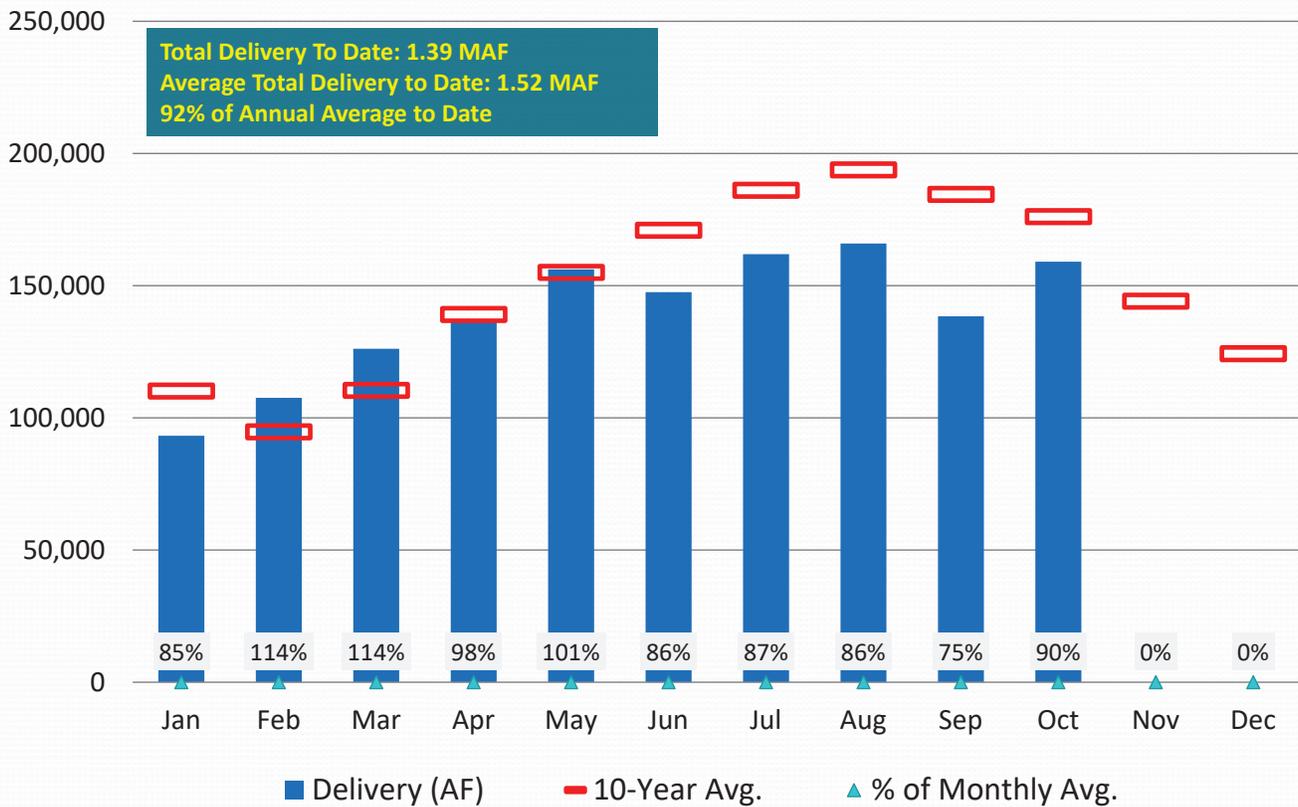


MWD's Combined Reservoir Storage as of December 1, 2022

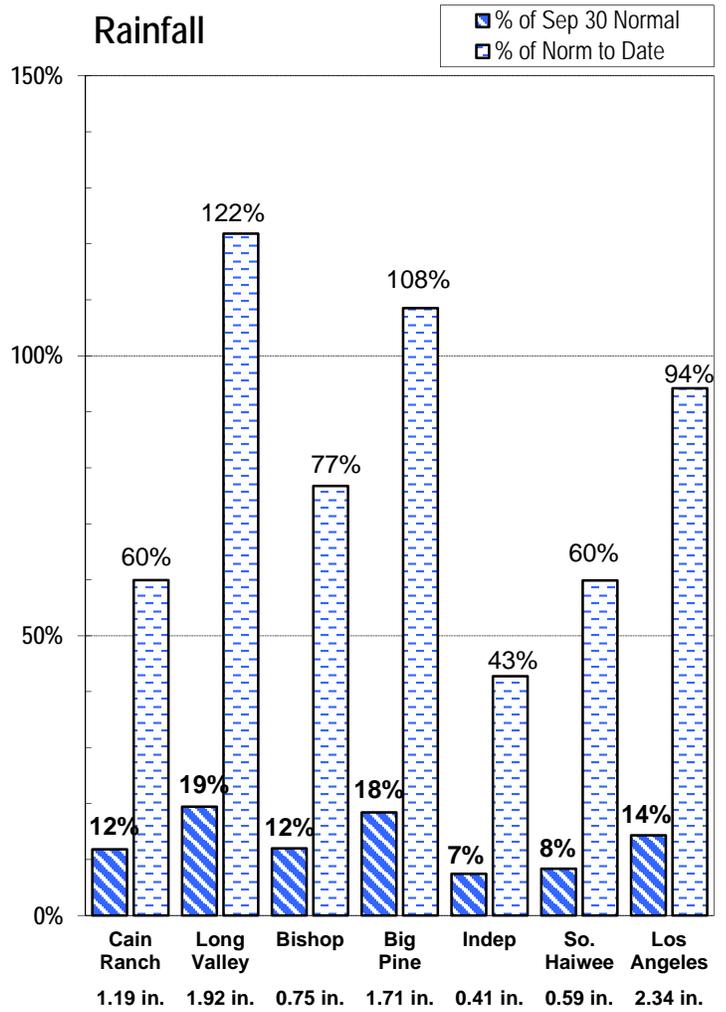
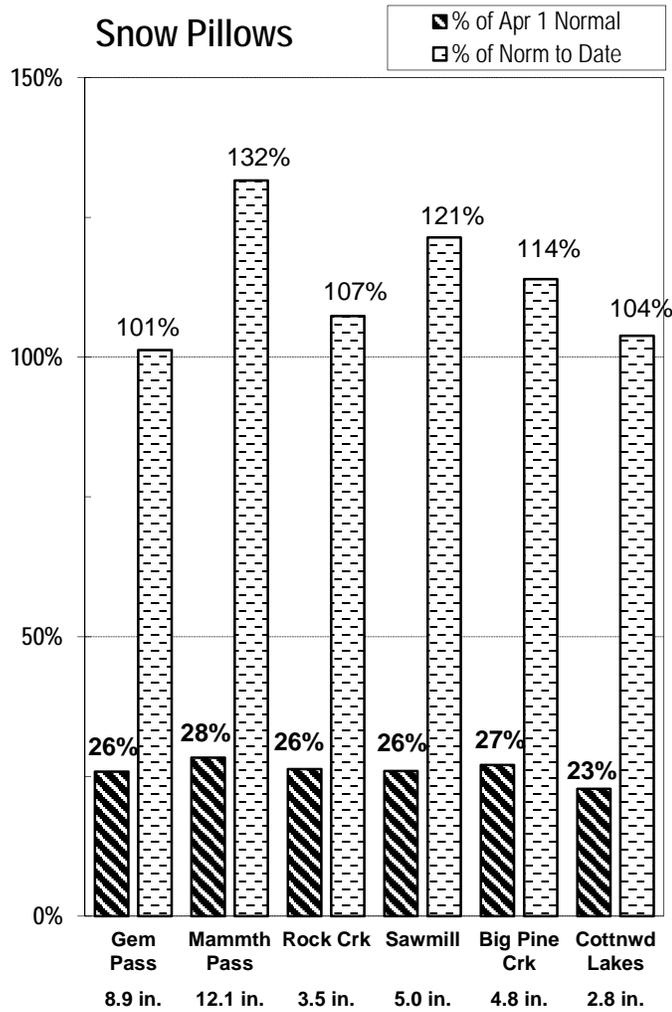
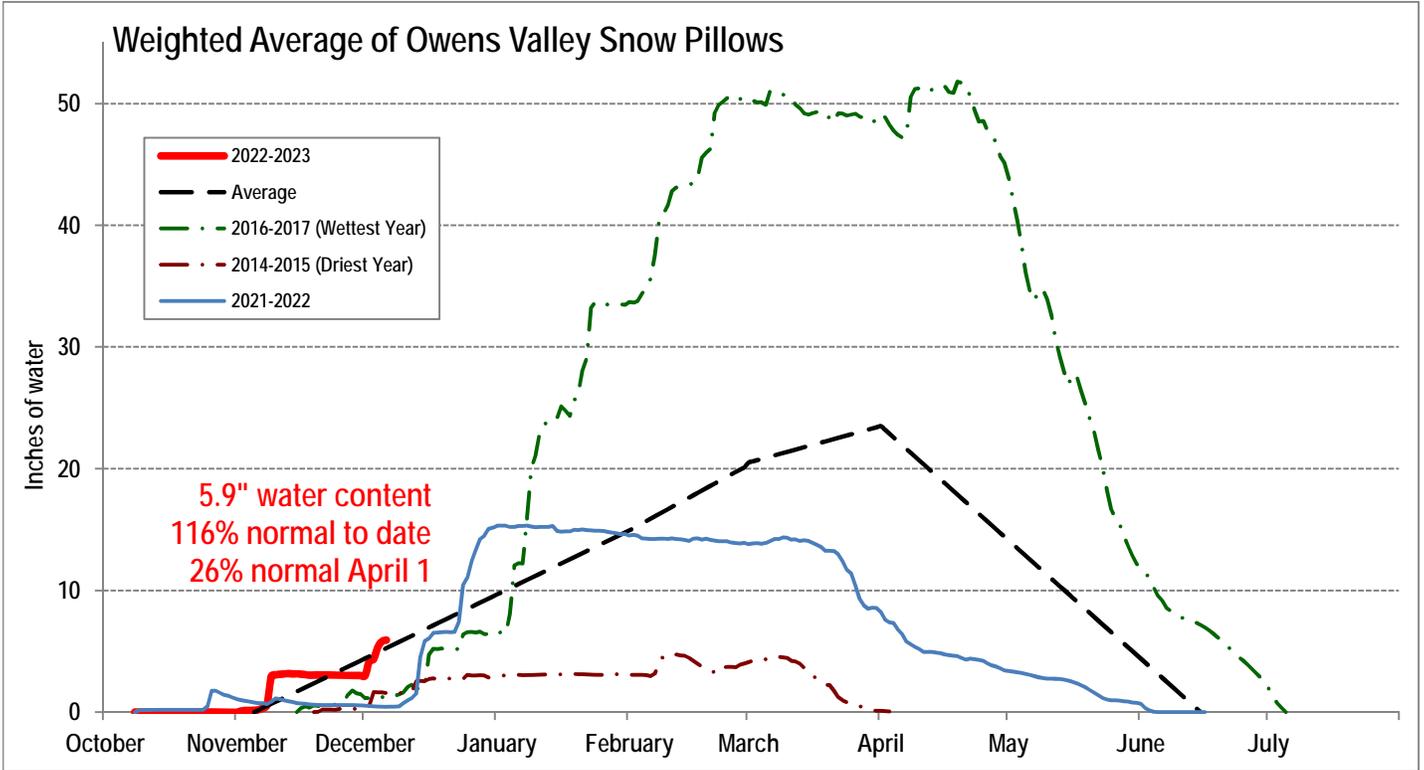
Lake Skinner, Lake Mathews, and Diamond Valley Lake



2022 Water Deliveries to Agencies (AF)



EASTERN SIERRA CURRENT PRECIPITATION CONDITIONS December 6, 2022



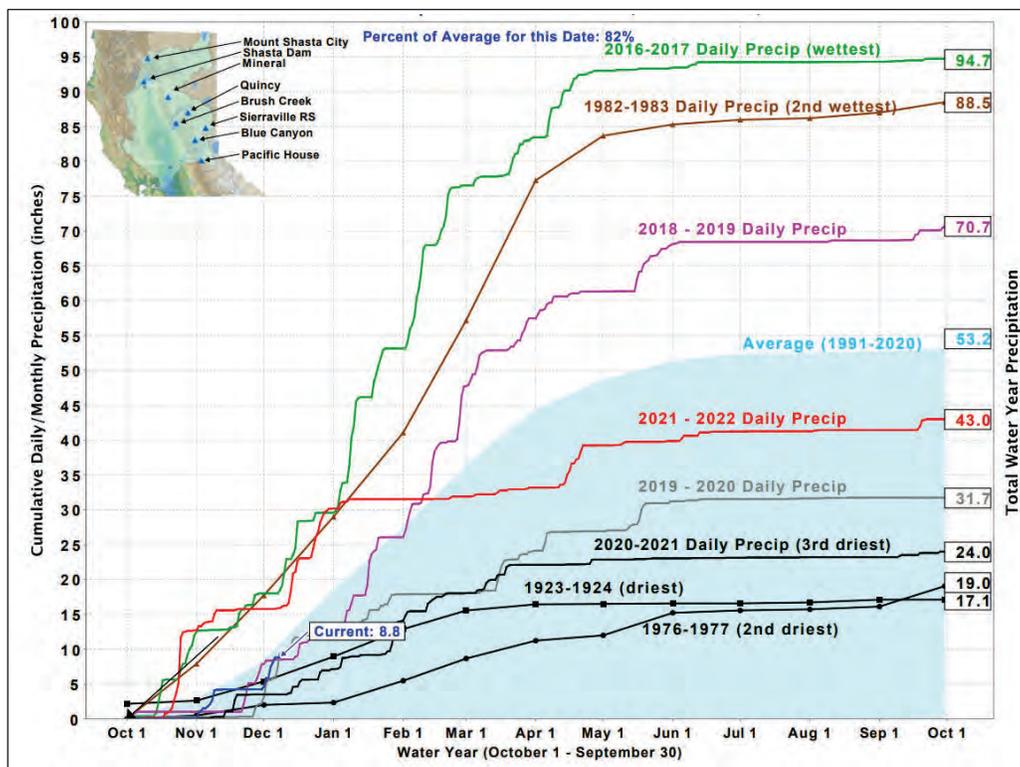
Measurement as Inches Water Content; Precipitation totals are cumulative for water year beginning Oct 1

Precipitation at Six Major Stations in Southern California

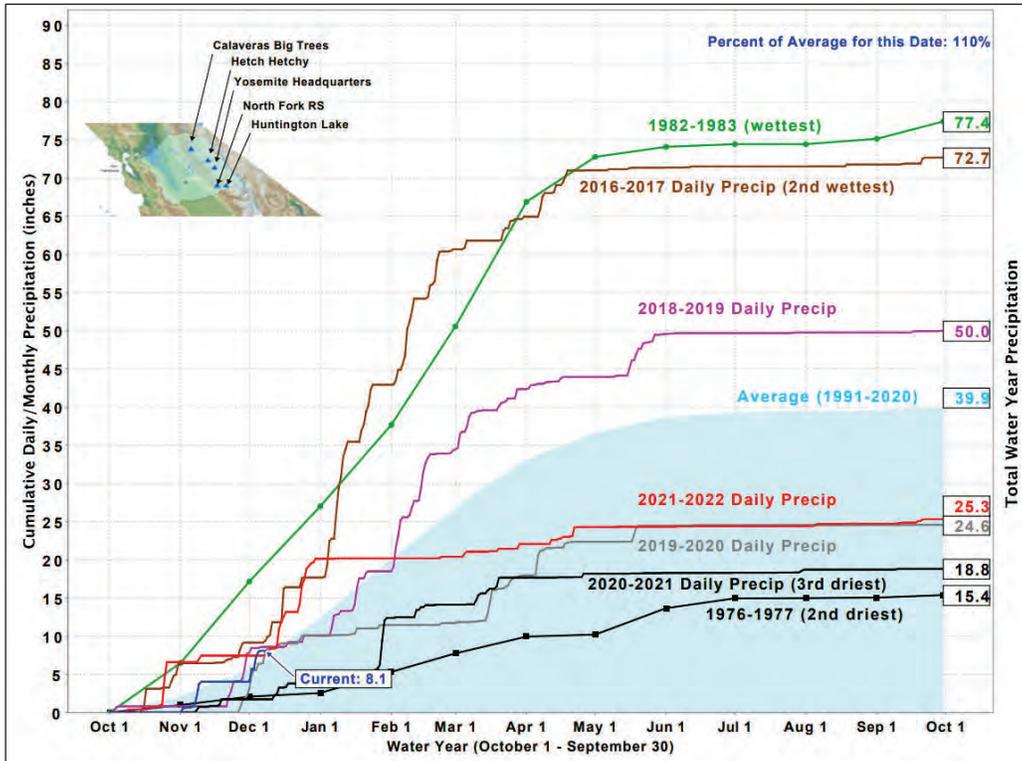
From October 1, 2022, to November 30, 2022

Station	Precipitation in inches		Average to Date	Percent of Average
	Nov	Nov 1 to Nov 30		
San Luis Obispo	0.57	0.57	3.05	19%
Santa Barbara	1.07	1.10	2.19	50%
Los Angeles	1.98	2.00	1.88	106%
San Diego	1.07	1.16	1.48	78%
Blythe	0.00	0.16	0.54	30%
Imperial	0.07	0.07	0.45	16%

Northern Sierra Precipitation: 8 Station Index

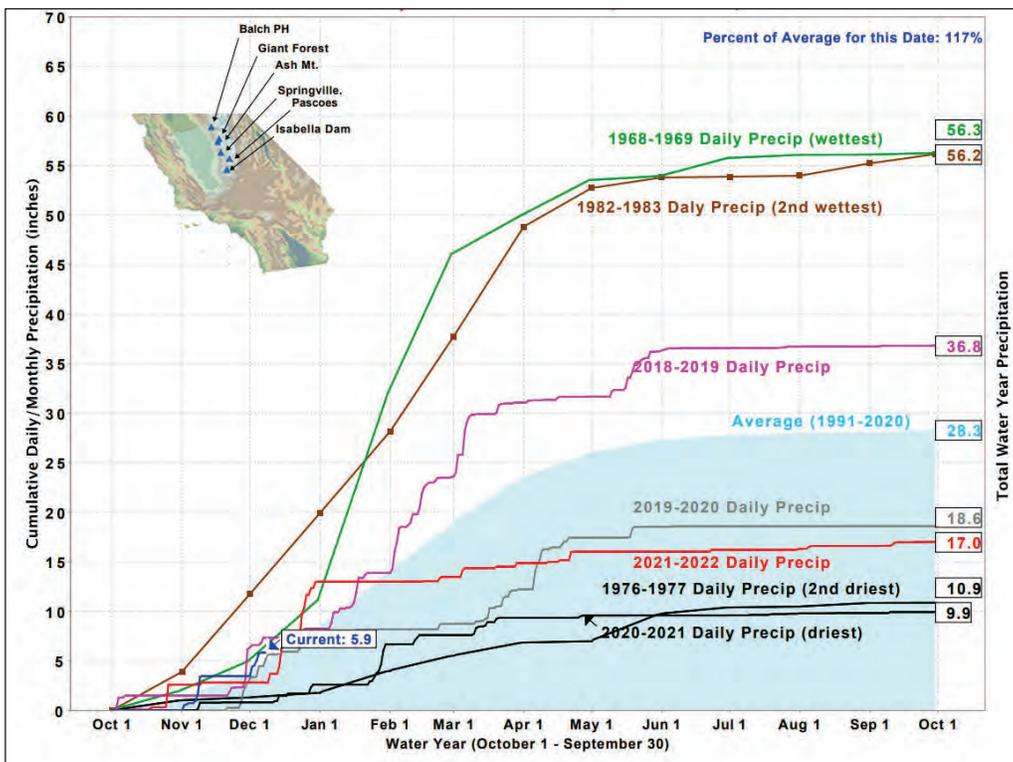


San Joaquin Precipitation: 5 Station Index



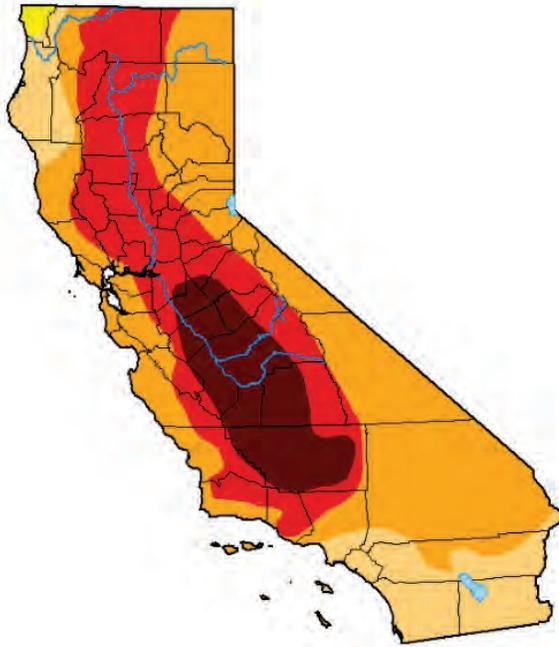
California Data Exchange Center
http://cdec.water.ca.gov/cgi-progs/products/PLOT_FSI.pdf

Tulare Basin Precipitation: 6 Station Index



California Data Exchange Center
http://cdec.water.ca.gov/cgi-progs/products/PLOT_TSI.pdf

U.S. Drought Monitor California



December 6, 2022
(Released Thursday, Dec. 8, 2022)
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	99.48	84.97	40.08	12.73
Last Week 11-29-2022	0.00	100.00	99.48	84.97	40.92	12.73
3 Months Ago 09-06-2022	0.00	100.00	99.76	97.52	40.18	16.57
Start of Calendar Year 01-04-2022	0.00	100.00	99.30	67.62	16.60	0.84
Start of Water Year 09-27-2022	0.00	100.00	99.76	94.01	40.91	16.57
One Year Ago 12-07-2021	0.00	100.00	100.00	92.43	80.28	28.27

Intensity

None	D2 Severe Drought
D0 Abnormally Dry	D3 Extreme Drought
D1 Moderate Drought	D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

Author

David Simeral
Western Regional Climate Center



droughtmonitor.unl.edu

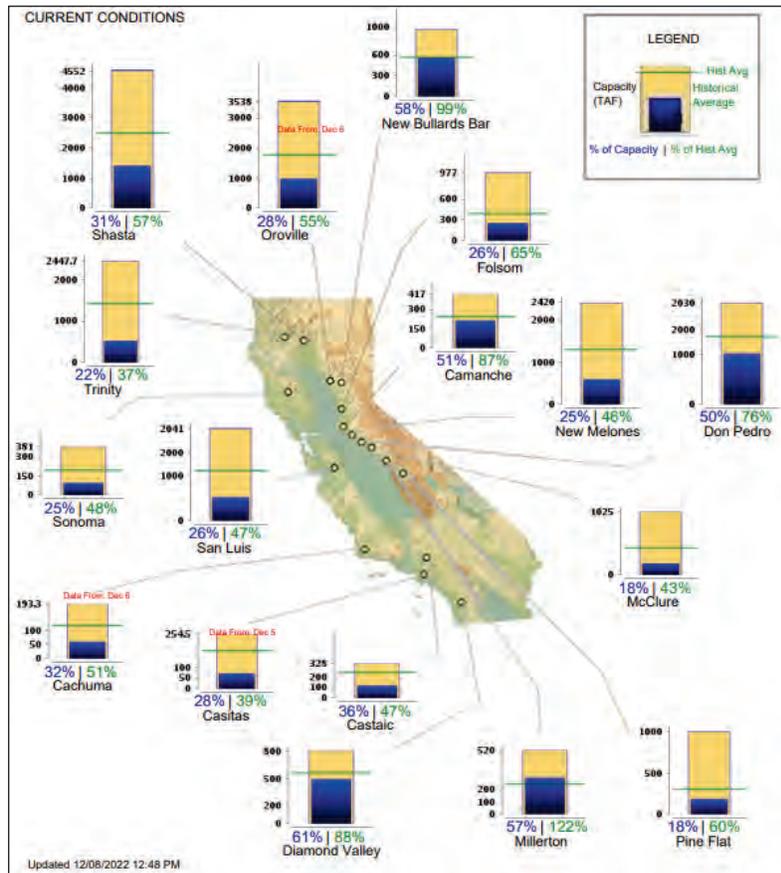
<https://droughtmonitor.unl.edu/Maps/MapArchive.aspx>

Comparison of SWP Water Storage

Reservoir	Capacity	2021 Storage (acre-feet)		2022 Storage (acre-feet)	
		As of Dec-1	% of Cap.	As of Dec-1	% of Cap.
Frenchman	55,475	28,622	52%	29,349	53%
Lake Davis	84,371	42,534	50%	38,444	46%
Antelope	22,564	14,111	63%	16,991	75%
Oroville	3,553,405	981,745	28%	964,990	27%
TOTAL North	3,715,815	1,067,012	29%	1,049,774	28%
Del Valle	39,914	39,337	99%	36,021	90%
San Luis	2,027,835	302,242	15%	514,028	25%
Pyramid	169,901	163,740	96%	165,232	97%
Castaic	319,247	94,178	30%	114,481	36%
Silverwood	74,970	68,735	92%	65,228	87%
Perris	132,614	108,793	82%	92,409	70%
TOTAL South	2,764,481	777,025	28%	987,399	36%
TOTAL SWP	6,480,296	1,844,037	28%	2,037,173	31%

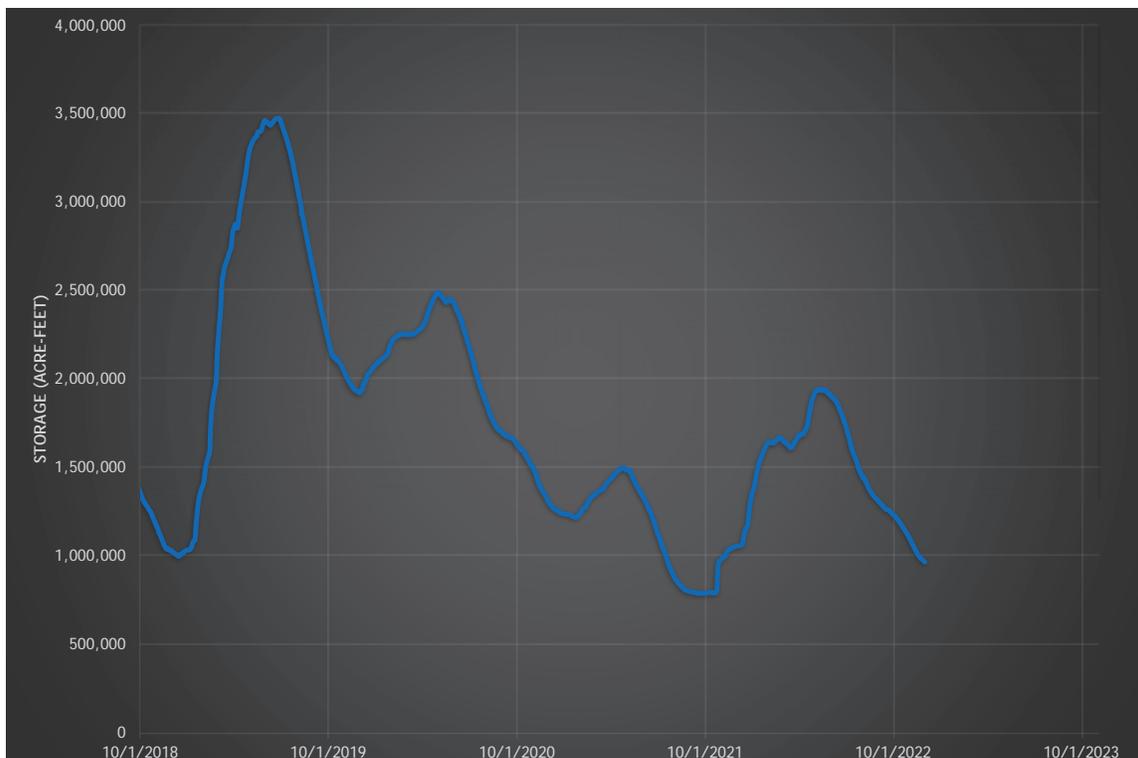
As of December 1, 2022, the initial Table A allocations for SWP contractors is 5%

CA Major Water Supply Reservoirs current conditions (as of December 6, 2022)



California Data Exchange Center
<https://cdec.water.ca.gov/resapp/RescondMain>

Oroville Reservoir Storage October 1, 2018 - November 30, 2022



Statewide Snow Water Content Current Regional Snowpack - 12/8/2022

% of April 1 Average / % of Normal for This Date



Statewide Average: 25% / 155%

NORTH	
Data as of December 8, 2022	
Number of Stations Reporting	32
Average snow water equivalent (Inches)	6.2
Percent of April 1 Average (%)	22
Percent of normal for this date (%)	147

CENTRAL	
Data as of December 8, 2022	
Number of Stations Reporting	55
Average snow water equivalent (Inches)	7.0
Percent of April 1 Average (%)	25
Percent of normal for this date (%)	146

SOUTH	
Data as of December 8, 2022	
Number of Stations Reporting	33
Average snow water equivalent (Inches)	7.0
Percent of April 1 Average (%)	30
Percent of normal for this date (%)	190

STATE	
Data as of December 8, 2022	
Number of Stations Reporting	120
Average snow water equivalent (Inches)	6.8
Percent of April 1 Average (%)	25
Percent of normal for this date (%)	155

California Data Exchange Center

<http://cdec.water.ca.gov/cgi-progs/products/swccond.pdf>

Inflation Reduction Act Funds Landmark Agreements to Accelerate Salton Sea Restoration

Federal, state and local leaders reach agreement, boost funding to address worsening drought crisis

Media Contact: Interior_Press@ios.doi.gov
Michelle Helm 702.293.8189 mhelms@usbr.gov
For Release: Nov 28, 2022

WASHINGTON -- The Department of the Interior today announced a historic agreement funded by the Inflation Reduction Act that will mitigate impacts from the worsening drought crisis impacting the Salton Sea in Southern California.

Established by Deputy Secretary Tommy Beaudreau and leaders from the California Natural Resources Agency, Imperial Irrigation District (IID) and Coachella Valley Water District (CVWD), the agreement will accelerate implementation of dust suppression and aquatic restoration efforts at the Salton Sea in Southern California. The agreement, which is set for consideration by the IID board of directors at its meeting tomorrow, will expedite implementation of the state's 10-year plan and enable urgent water conservation needed to protect Colorado River reservoir storage volumes amid persistent climate change-driven drought conditions.

"The Biden-Harris administration is committed to bringing every resource to bear to help manage the drought crisis and provide a sustainable water system for families, businesses and our vast and fragile ecosystems. This landmark agreement represents a key step in our collective efforts to address the challenges the Colorado River Basin is facing due to worsening drought and climate change impacts," said **Deputy Secretary Beaudreau**. "Historic investments from the Inflation Reduction Act will help to support the Imperial and Coachella Valley and the environment around the Salton Sea, as well as support California's efforts to voluntarily save 400,000 acre-feet a year to protect critical elevations at Lake Mead."

The Salton Sea, California's largest lake, is receding due to the drought crisis gripping the West and resulting necessary conservation actions in the Imperial Valley that have reduced inflows to the Sea. Exposed lakebed is contributing to harmful dust emissions to the surrounding environment and reducing important environmental habitat for wildlife.

Under the agreement, the Interior Department's Bureau of Reclamation will provide \$22 million in new funding through the Inflation Reduction Act in fiscal year 2023 to implement projects at the Sea, support staffing at the Torres Martinez Desert Cahuilla Indian Tribe, and conduct scientific research and management that contributes to project implementation.

Subject to the implementation of voluntary conservation actions proposed by IID and CVWD, Reclamation will also provide an additional \$228 million over the next four years to expedite existing projects and bolster staffing capacity at the water agencies to help deliver new projects.

This is in support of California's commitment to voluntarily conserve 400,000 acre-feet annually, starting in 2023. This \$250 million investment from the Inflation Reduction Act will complement the \$583 million in state funding committed to date.

"This agreement is a huge step forward," said **California Natural Resources Secretary Wade Crowfoot**. "It builds our momentum delivering projects at the Sea to protect communities and the environment and ensures that California's leadership conserving Colorado River water supplies doesn't come at the expense of local residents."

Under the agreement, the California Natural Resources Agency commits to accelerating project delivery through permit streamlining and use of its full contracting authority. It also commits to continue pursuing additional funding for projects to build on state funding already committed to Salton Sea Management Program implementation.

The Interior Department, IID and CVWD have agreed to establish programmatic land access agreements to enable state agencies to implement projects. In addition, the two water agencies will provide available future water supplies for new projects. This will enable California water agencies to commit to voluntarily reduce their water usage each year beginning in 2023 through 2026 to protect critical elevations in Lake Mead.

The Colorado River provides water to two countries, seven western states, 30 Tribal Nations and 40 million residents. It is currently experiencing the longest and worst drought on record, driven by hotter temperatures under climate change. Efforts continue in California and across the Colorado River Basin to find ways to stabilize water storage volumes in Lakes Powell and Mead. Reclamation and water agencies are working closely to take extraordinary actions to protect the Colorado River System.



United States Department of the Interior

BUREAU OF RECLAMATION
P.O. Box 25007
Denver, CO 80225-0007



IN REPLY REFER TO:

86- 60000
2.2.4.23

VIA ELECTRONIC MAIL

To: Colorado River Basin Partners and Stakeholders

Subject: Post-2026 Integrated Technical Education Workgroup

With the 2007 Interim Guidelines due to expire in 2026, Reclamation is preparing to initiate the formal process to develop successor long-term operating guidelines (i.e., the Post-2026 Process). As we prepare for that process, and because the Colorado River Basin (Basin) is facing unprecedented challenges, Reclamation has begun work to prepare a Supplemental Environmental Impact Statement (SEIS) to modify the 2007 Interim Guidelines. This parallel process will develop modified operating guidelines that may be needed before 2026 to protect system operations.

The information in this letter is related to the Post-2026 Process *only*, which is anticipated to officially begin in early 2023 through a Notice of Intent to Prepare an Environmental Impact Statement (EIS). Prior to this initiation, Reclamation is taking steps to finalize the technical framework that will support the Post-2026 Process and bring partners together to assist in their understanding of the technical approaches that Reclamation will be using as part of its analysis in the Post-2026 Process. As stated in the Federal Register notice for the Post-2026 Process published in June 2022, “in developing post-2026 guidelines in a nonstationary, drying system, a different approach toward addressing risk that employs planning methods that account for deep uncertainty must be taken. Such an approach should enhance the ability to identify robust policies that are better prepared to adapt to changing conditions.” Many activities in recent years have positioned Reclamation to achieve this goal, including the advancement of Basin climate science called for in Appendix U of the 2007 Interim Guidelines Final EIS, the use of new data and advanced decision science techniques during the 2012 Basin Study and subsequent research, and a commitment to improving modeling approaches and capabilities. These efforts have resulted in the development of a Decision Making under Deep Uncertainty planning framework and web application that will support the development and exploration of potential Post-2026 operating alternatives on an accessible, common platform. This approach is in alignment with Reclamation’s commitment to inclusivity, transparency, and using the best available science.

In an effort to ensure partners have a common and accurate understanding of the underlying tools and concepts needed to meaningfully participate in the development of post-2026 operating alternatives, **Reclamation invites your key staff to participate in the Post-2026 Integrated Technical Education Workgroup (ITEW)**. Reclamation’s goal is to assist interested partners from across the Basin to gain a better understanding of the technical tools and approaches that we anticipate using in the Post-2026 Process. Reclamation is actively seeking participation from Tribes, States, non-governmental organizations, and other federal agencies whose input will be critical to the successful development of new long-term operating guidelines. Although the initiation of the Post-2026 Process in early 2023 will

be focused on domestic activities, representatives from Mexico are also being asked to participate so that Mexico will have the same access to the important technical information and approaches that will be used for analysis of future operating decisions.

The purpose of the ITEW is for Reclamation to offer education about the models, data, and concepts used frequently in its studies, and to share information specifically about the technical framework that will support the Post-2026 Process. The ITEW will be a foundation for building technical capacity, a vehicle for ensuring that the same information is provided to all parties in a transparent manner, and a forum to help build inter-group technical understandings and relationships. Reclamation will not be using the ITEW to seek advice on tools or approaches and it will not be used as a venue for developing operating alternatives and the group is not being asked to reach consensus or provide consensus advice. Importantly, it will not replace Reclamation's commitment to providing technical support to individual stakeholders and groups upon request during the Post-2026 Process. The ITEW will be focused on sharing technical information. Reclamation is separately designing a partner-stakeholder engagement process on the overall Post-2026 Process; those efforts will provide many other opportunities and venues to engage with Reclamation on non-technical aspects of the Post-2026 effort.

Reclamation is planning an ITEW kickoff session on December 7, 2022 from 2:00 PM to 4:00 PM MST. This kickoff session will be conducted on a "virtual" basis and will provide an overview of subsequent ITEW sessions and broadly introduce the technical framework. We anticipate that subsequent sessions will occur every four to five weeks and will be a mix of virtual and in-person meetings. All information presented by Reclamation during these sessions will be recorded and made available online to the public. (Q&A sessions after prepared content will not be recorded.)

Please note that we welcome participation by all individuals identified by partners and stakeholders as needing technical information to support their full and informed participation throughout the Post-2026 Process, including alternative development, and we encourage participants to be committed to attending all sessions. This will help achieve the maximum potential benefit of the ITEW for specific partners and stakeholders and enhance Reclamation's ability to provide individualized technical support as requested.

We appreciate your interest and involvement in the Post-2026 Process and look forward to your key staff joining us on December 7, 2022. We ask that you send the name/s of staff that will be participating in the ITEW by December 5, 2022 to CRB-info@usbr.gov. If you have any questions do not hesitate to contact me (303-517-1160 or cjerla@usbr.gov).

Sincerely,

Carly Jerla
Post-2026 Program Manager



— BUREAU OF —
RECLAMATION

Notice of Intent to Prepare a Supplemental Environmental Impact Statement

Public Informational Webinars per 87 FR 69042
November 29 and December 2, 2022

Welcome

Camille Calimlim Touton, Commissioner Bureau of Reclamation



Overview

- **Purpose of the Scoping Webinars:**
 - Summarize information in the Notice of Intent to Prepare a Supplemental Environmental Impact Statement (SEIS) for December 2007 Record of Decision Entitled Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lake Powell and Lake Mead published in the Federal Register on November 17, 2022 (87 FR 69042)
 - Present a range of hydrology and operational scenarios that will inform the SEIS analysis
 - Provide an overview of potential alternatives currently being considered
 - Provide information on the SEIS schedule
- **Two webinars scheduled (with same content)**
 - Tuesday, November 29, 2022, at 10:00 a.m. to 12:00 p.m. MST
 - Friday, December 2, 2022, at 11:00 a.m. to 1:00 p.m. MST



3 - 2007 Interim Guidelines SEIS Public Informational Webinars, November 29 and December 2, 2022

Purpose of the Federal Register Notice

- Due to critically-low current reservoir conditions, and the potential for worsening drought which threatens critical infrastructure and public health and safety, the Department recognizes that operational strategies must be revisited
- Potential impacts of low runoff conditions in the coming winter (2022-23) pose unacceptable risks to operations of Glen Canyon and Hoover Dams
- Accordingly, modified operating guidelines need to be expeditiously developed through a Supplemental Environmental Impact Statement (SEIS)
- Development of modified operating guidelines will inform operations in 2023-24; and may also inform potential operations in 2025-26



4 - 2007 Interim Guidelines SEIS Public Informational Webinars, November 29 and December 2, 2022

Purpose of the Federal Register Notice, continued

- The Notice formally announces the request for input on the scope of the analysis, potential alternatives, and identification of relevant information and studies by December 20, 2022
- It does not interfere with, supplant, or supersede the separate post-2026 guidelines development process announced in a Federal Register Notice published on June 24, 2022 (87 FR 37884)



5 - 2007 Interim Guidelines SEIS Public Informational Webinars, November 29 and December 2, 2022

Colorado River – Current Conditions (as of November 28, 2022)



Lake Powell near Glen Canyon Dam



Lake Mead near Hoover Dam

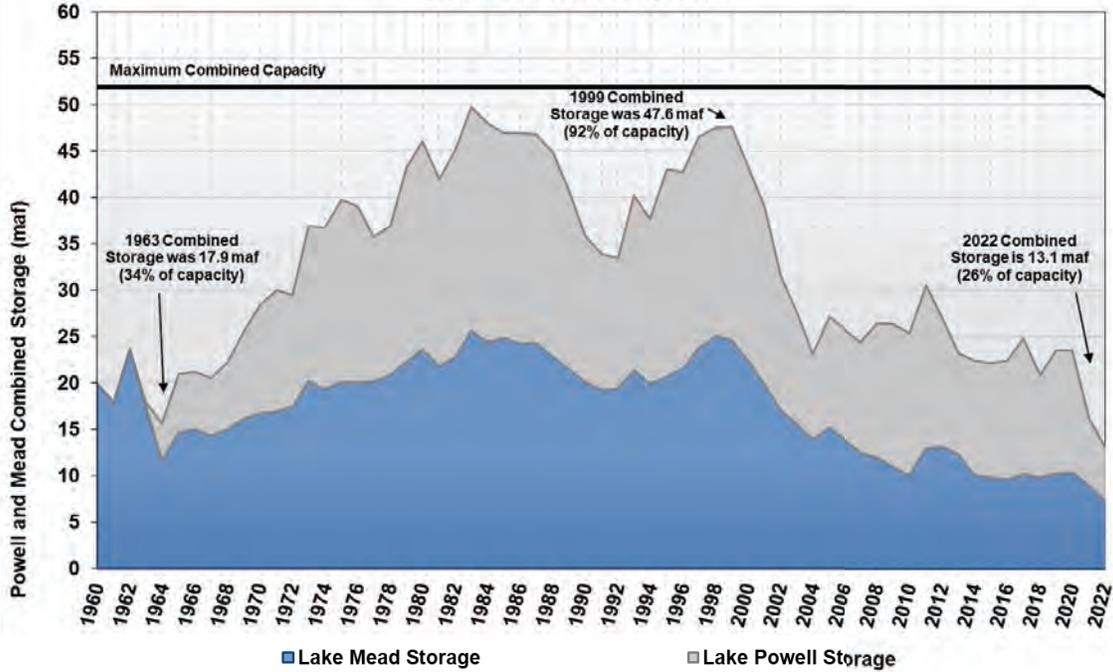
- Driest 23-year period on record (2000-2022)
- Low inflows 4 of the past 5 years (37 to 63% of average)
- Lake Powell and Lake Mead at historically low water levels
 - Lake Powell current elevation is 3,528 feet at 25% of capacity
 - Lake Mead current elevation is 1,043 feet at 28% of capacity



6 - 2007 Interim Guidelines SEIS Public Informational Webinars, November 29 and December 2, 2022

Lake Powell and Lake Mead End of Water Year Storage

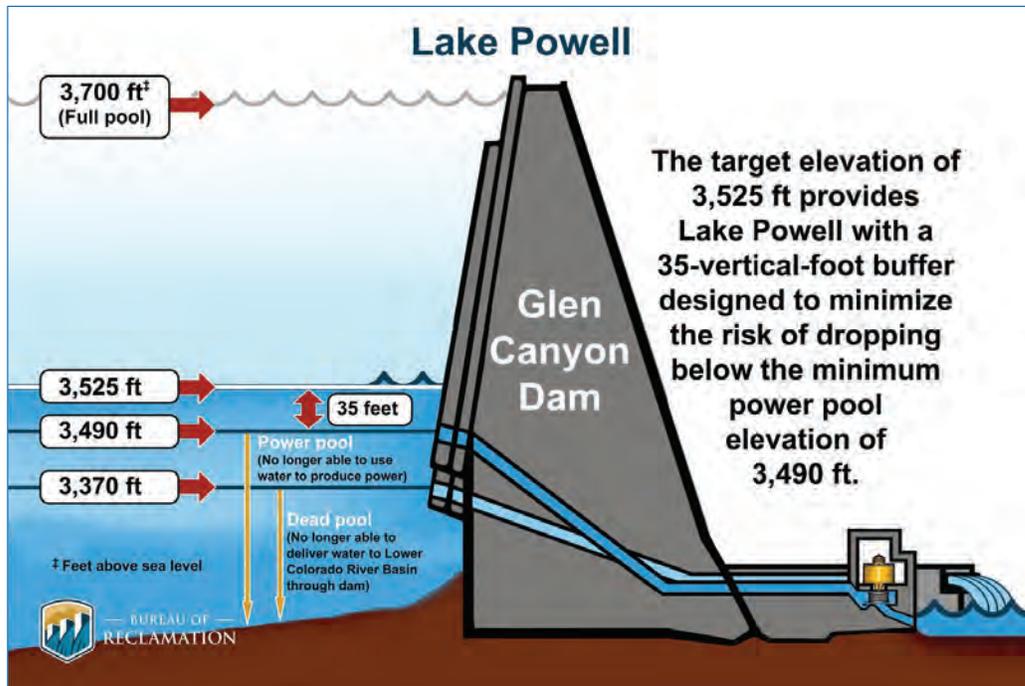
Water Years 1960 through 2022



7 - 2007 Interim Guidelines SEIS Public Informational Webinars, November 29 and December 2, 2022



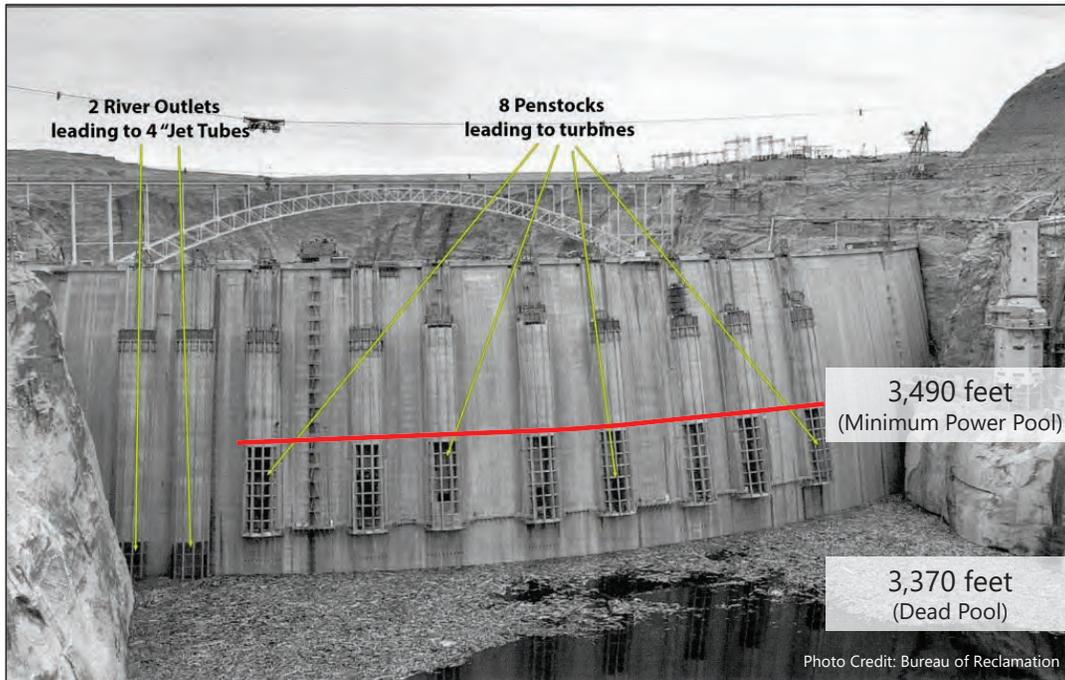
Lake Powell Key Elevations



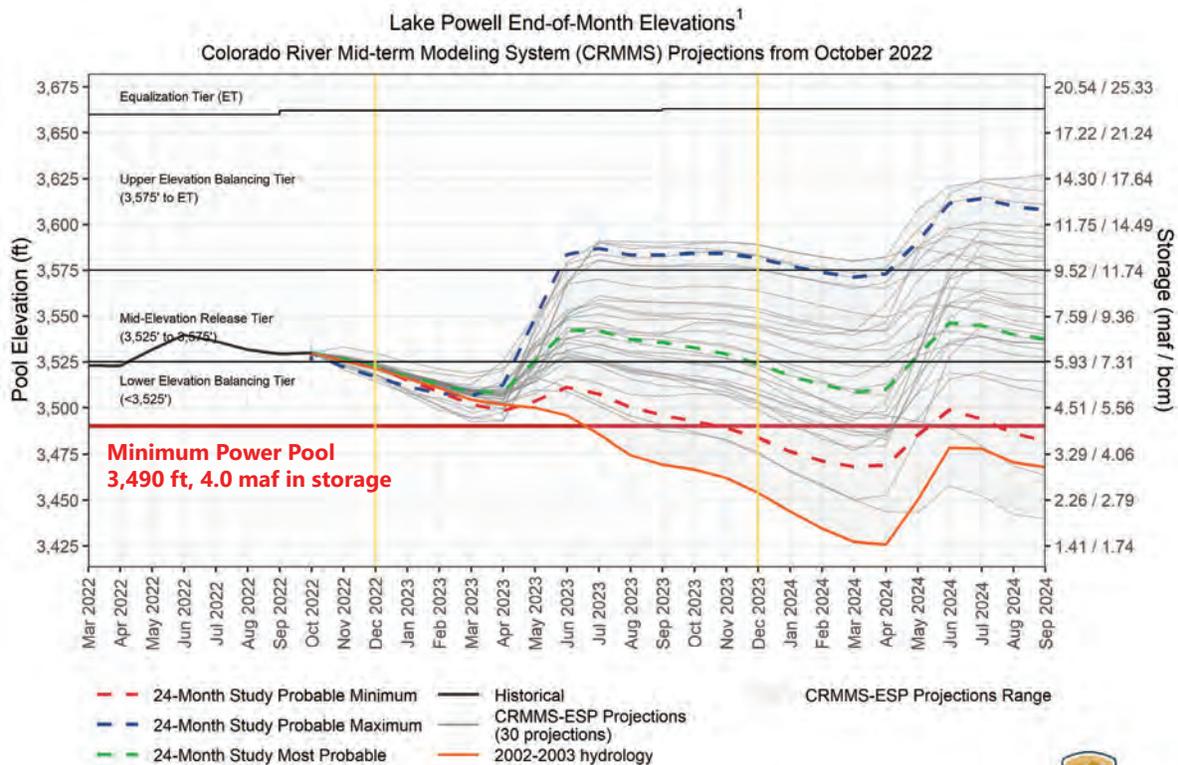
8- 2007 Interim Guidelines SEIS Public Informational Webinars, November 29 and December 2, 2022



Glen Canyon Dam - November 21, 1963



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

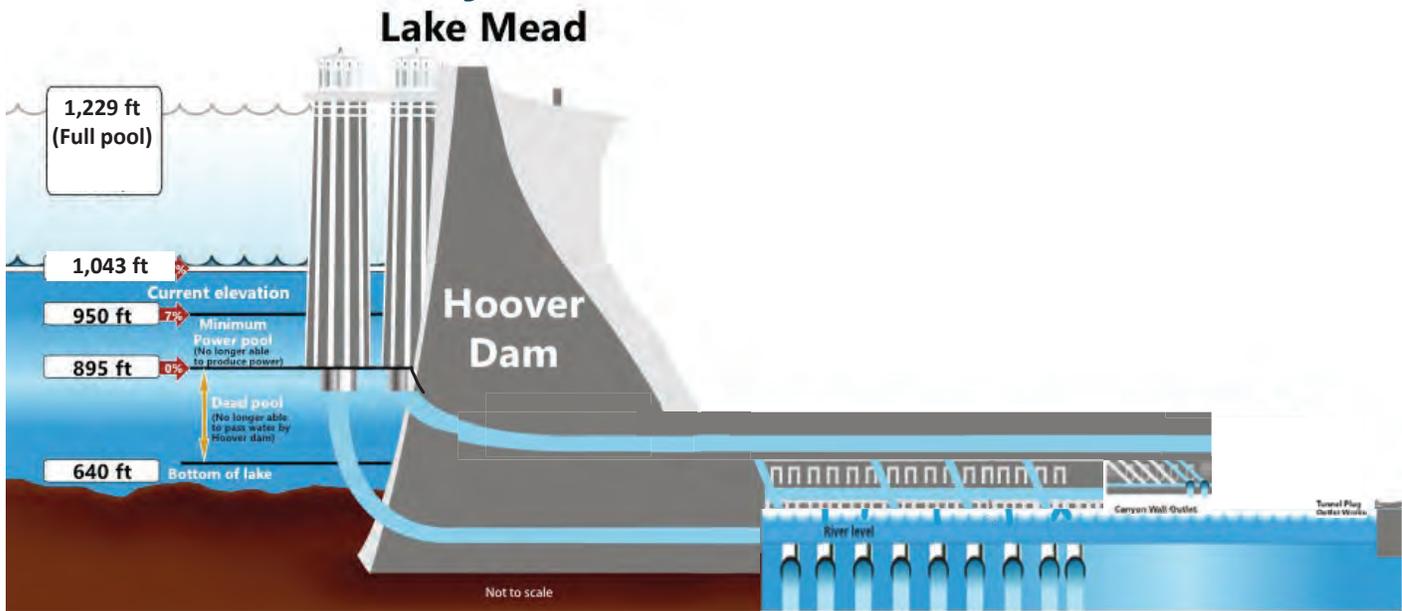


¹ Projected Lake Powell end-of-month physical elevations from the latest CRMMS-ESP and 24-Month Study inflow scenarios.



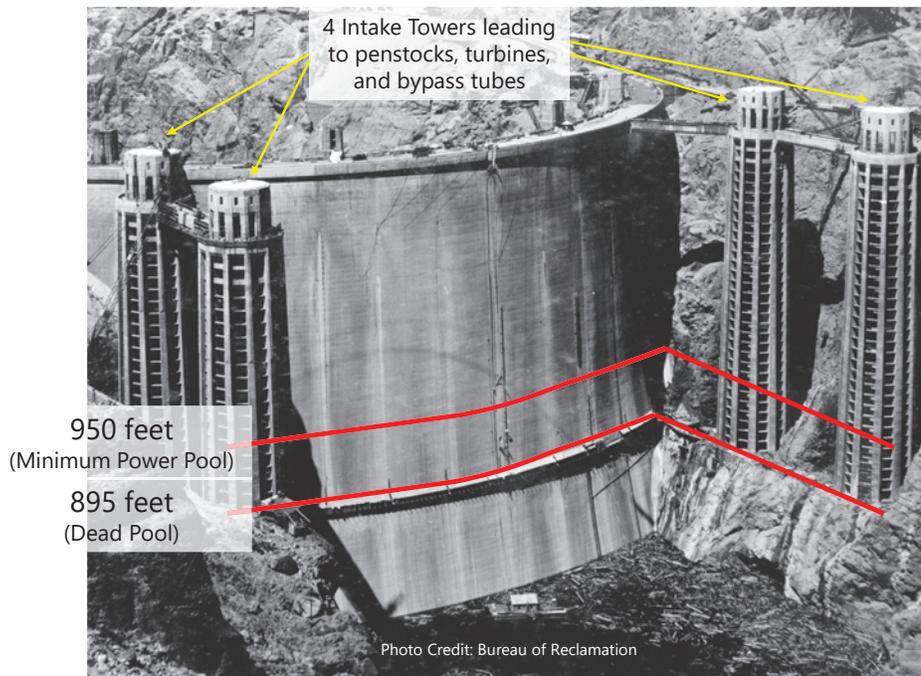
10 - 2007 Interim Guidelines SEIS Public Informational Webinars, November 29 and December 2, 2022

Lake Mead Key Elevations

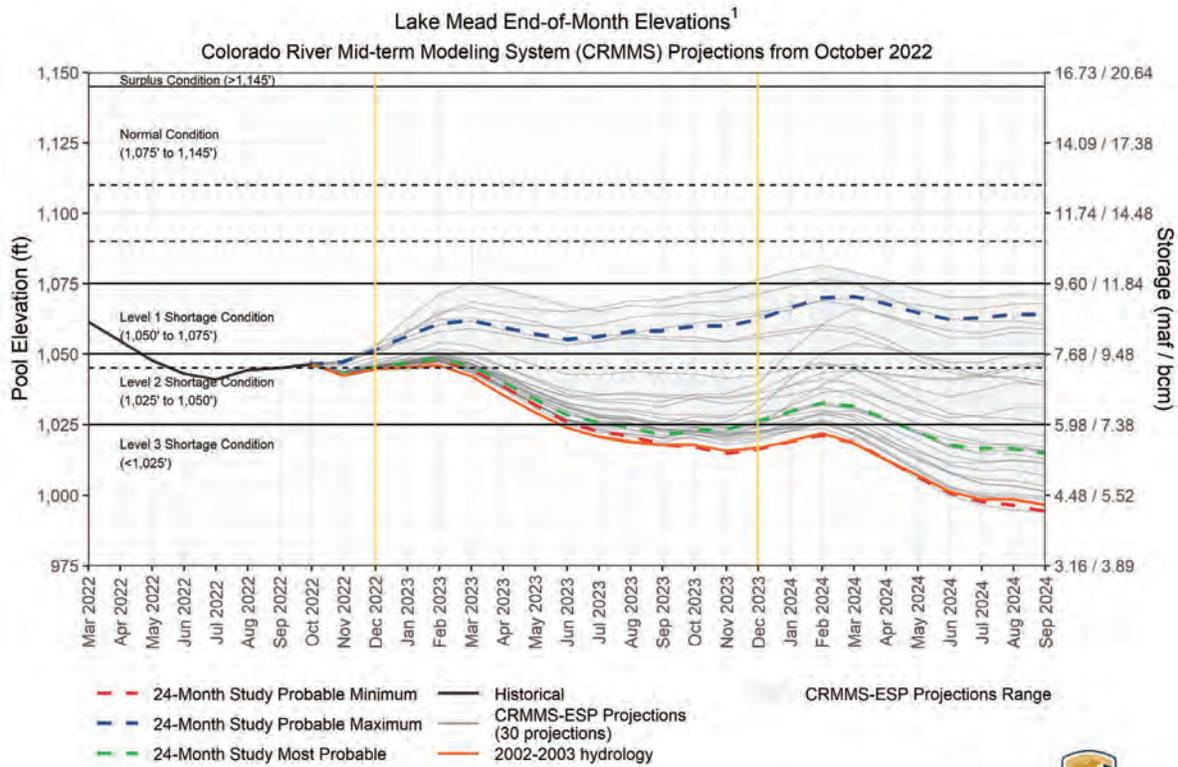


11 - 2007 Interim Guidelines SEIS Public Informational Webinars, November 29 and December 2, 2022

Hoover Dam – May 27, 1935



12 - 2007 Interim Guidelines SEIS Public Informational Webinars, November 29 and December 2, 2022



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



13 - 2007 Interim Guidelines SEIS Public Informational Webinars, November 29 and December 2, 2022

Overview of Preliminary Proposed Action

- Reclamation anticipates proposing modifications for the 2023-24 period (and potentially for subsequent years) to the following sections of the 2007 Interim Guidelines published at 73 FR 19881-92 (April 11, 2008):
 - Section 2D. Determination of Lake Mead Operation "Shortage Conditions"
 - Section 6C and 6D. Coordinated Operation of Lake Powell and Lake Mead "Mid-Elevation Release Tier" and "Lower Elevation Balancing Tier"
 - Section 7C. Implementation of Guidelines "Mid-Year Review"



14 - 2007 Interim Guidelines SEIS Public Informational Webinars, November 29 and December 2, 2022

Preliminary Alternatives

- **No Action**
 - Continued implementation of existing agreements that control operations of Glen Canyon and Hoover Dams
- **Framework Agreement Alternative**
 - Additional consensus-based actions that build on commitments and obligations developed by the Basin States, Tribes and non-governmental organizations as part of the 2019 DCPs
- **Reservoir Operations Modification Alternative**
 - A set of actions adopted pursuant to Secretarial authority under applicable federal law; could complement a consensus-based alternative that may not sufficiently mitigate current and projected risks to Colorado River System reservoirs



15 - 2007 Interim Guidelines SEIS Public Informational Webinars, November 29 and December 2, 2022

Low-flow Hydrology & Operational Scenarios

The following slides on low-flow hydrology and operational scenarios do not show alternatives to be analyzed, but instead show scenarios and trade-offs related to protecting various elevations at Lake Mead and Lake Powell to be considered as alternatives are developed for analysis in the SEIS.



16 - 2007 Interim Guidelines SEIS Public Informational Webinars, November 29 and December 2, 2022

Modeling Assumptions

- Modeling performed in the Colorado River Mid-term Modeling System (CRMMS) - September 2022
 - Future hydrology per September 2022 forecast using 30 Ensemble Streamflow Prediction (ESP) traces
- Modeling Assumptions for Approved Drought Response Actions
 - Drought Response Operations releases are 500 kaf from Flaming Gorge May 2022 through April 2023 from the Most Probable 24-Month Study
 - 2022 reduced Powell release of 480 kaf is operationally neutral (treated “as if” in Mead not Powell for tier determination and balance release)
 - 2022 DROA Plan (500 kaf through April 2023) is included in tier determination and balancing releases



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Modeling Scenarios

- Baseline – Official September 2022 CRMMS-ESP
- Protect 3,490' at Lake Powell
 - Protect 3,490' by reducing Powell's release each month during the water year (WY) so that Powell's elevation is at or above min power pool; method tries to release volume held back later in the WY
- Protect 3,490' at Lake Powell and 950' at Lake Mead
 - Protect 3,490' by reducing Powell's release months during the WY so that Powell's elevation is at or above min power pool; the method tries to release volume held back later in the WY
 - Protect 950' by reducing Mead's release each month so that Mead's elevation is at or above 950'; method does not try to release volume held back later in the calendar year (CY)
- Protect 3,490' at Lake Powell until Lake Mead reaches 950', then balance Powell and Mead storage with no minimum release
 - Once Mead reaches 950', Powell will not protect 3,490' and instead balance with no minimum release. After balancing, Mead will release balanced water downstream for Lower Basin and Mexico use.



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Individual Streamflow Trace Analyzed: 2002-2005 Lowest Powell EOY 2023 Storage in this 30-year period

- Ensemble Streamflow Prediction (ESP) trace uses climate (temperature and precipitation) timeseries from 2002-2005
 - 2023 ~ 2002 climate
 - 2024 ~ 2003 climate
 - 2025 ~ 2004 climate
 - 2026 ~ 2005 climate
- 80% of the ESP 2002-2005 streamflow trace is used to provide a lower trace than available in ESP

Lake Powell WY Unregulated Inflow

	2023	2024	2025	2026
% of Avg. (1991-2020)	24%	58%	61%	125%
WY Volume (kaf)	2,350	5,610	5,820	10,750



80% ESP Analysis – 2002-2005 Trace Lowest Powell EOY 2023 Storage in this 30-year period

Lake Powell WY Unregulated Inflow

	2023	2024	2025	2026
% of Avg. (1991-2020)	24%	58%	61%	125%
WY Volume (kaf)	2,350	5,610	5,820	10,750

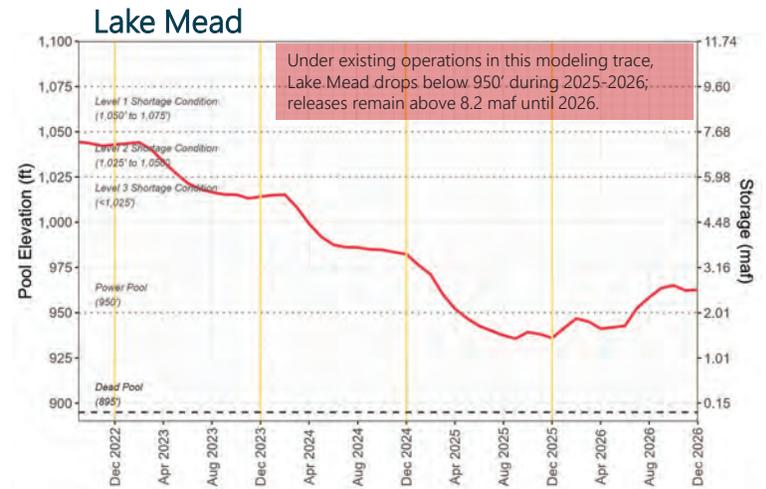
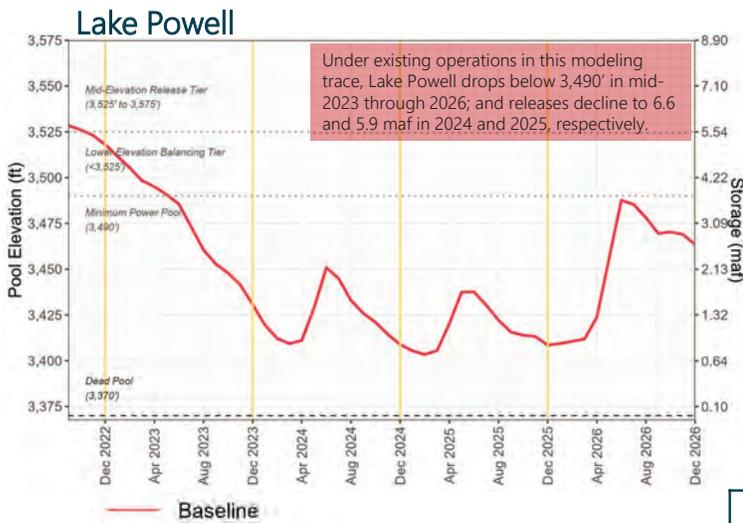
2023 is similar to:
2021 (3,500 kaf)

2024 and 2025 are similar to:
2020 (5,850 kaf) &
2022 (6,370 kaf)



80% ESP Analysis – 2002-2005 Trace Lowest Powell EOY 2023 Storage in this 30-year period

End-of-Month (actual) Pool Elevation



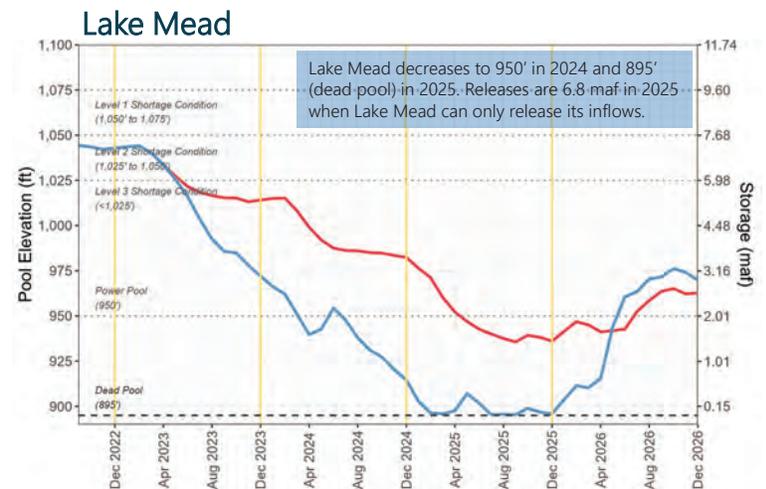
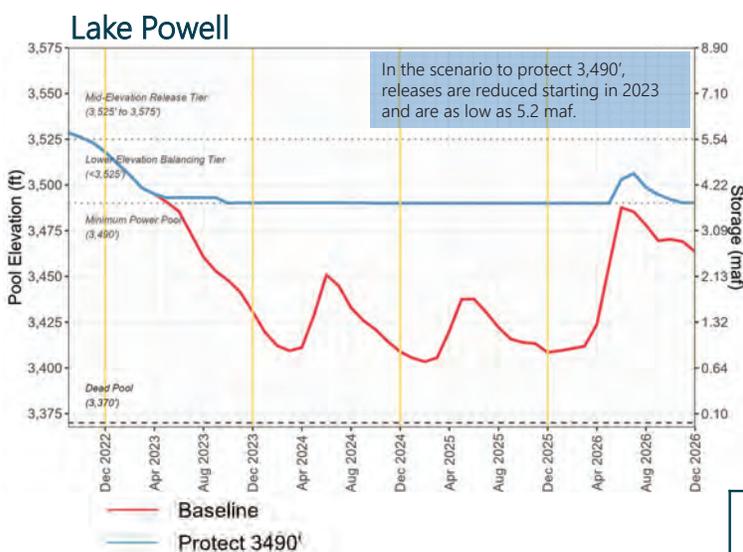
% of Avg. WY Powell Unreg. Inflow	2023	2024	2025	2026
	24%	58%	61%	125%

Scenario	Powell WY Release (maf)				Lees Ferry 10-yr Volume (maf)				Mead CY Release (maf)			
	23	24	25	26	23	24	25	26	23	24	25	26
Baseline	7.0	6.6	5.9	7.6	84.4	83.5	80.4	79.0	8.7	8.2	8.3	7.7

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80% ESP Analysis – 2002-2005 Trace Lowest Powell EOY 2023 Storage in this 30-year period

End-of-Month (actual) Pool Elevation



% of Avg. WY Powell Unreg. Inflow	2023	2024	2025	2026
	24%	58%	61%	125%

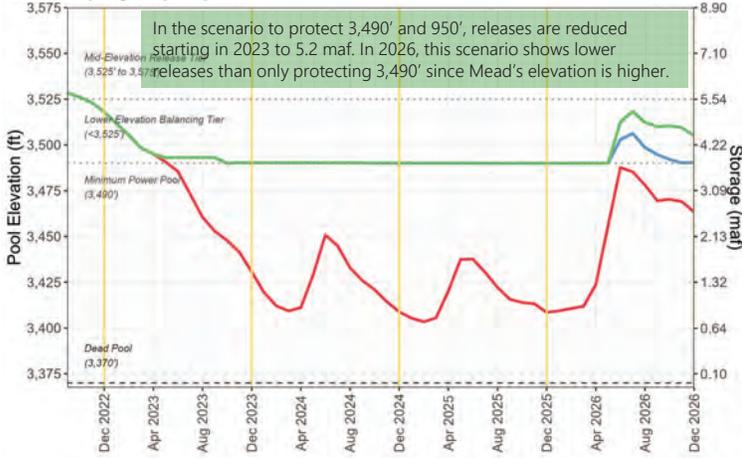
Scenario	Powell WY Release (maf)				Lees Ferry 10-yr Volume (maf)				Mead CY Release (maf)			
	23	24	25	26	23	24	25	26	23	24	25	26
Baseline	7.0	6.6	5.9	7.6	84.4	83.5	80.4	79.0	8.7	8.2	8.3	7.7
Protect 3,490'	5.2	5.7	5.5	9.2	82.6	80.9	77.4	77.6	8.7	8.2	6.8	7.7

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80% ESP Analysis – 2002-2005 Trace Lowest Powell EOY 2023 Storage in this 30-year period

End-of-Month (actual) Pool Elevation

Lake Powell

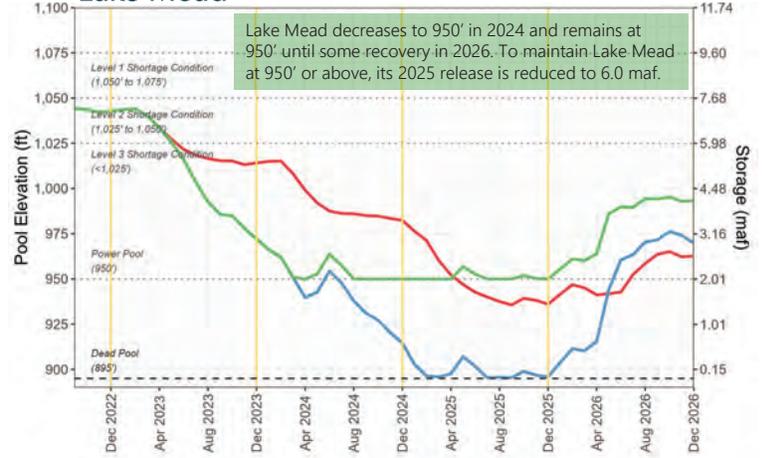


- Baseline
- Protect 3490'
- Protect 3490', 950'

% of Avg. WY Powell Unreg. Inflow	2023	2024	2025	2026
	24%	58%	61%	125%

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Lake Mead

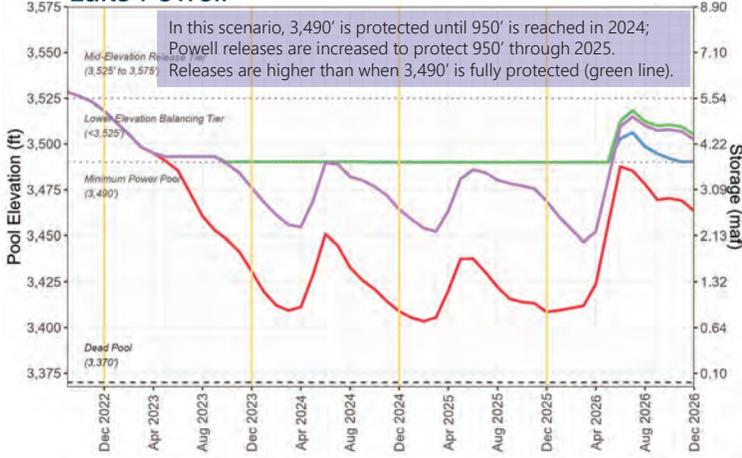


Scenario	Powell WY Release (maf)				Lees Ferry 10-yr Volume (maf)				Mead CY Release (maf)			
	23	24	25	26	23	24	25	26	23	24	25	26
Baseline	7.0	6.6	5.9	7.6	84.4	83.5	80.4	79.0	8.7	8.2	8.3	7.7
Protect 3,490'	5.2	5.7	5.5	9.2	82.6	80.9	77.4	77.6	8.7	8.2	6.8	7.7
Protect 3,490', 950'	5.2	5.7	5.5	8.4	82.6	80.9	77.4	76.8	8.7	6.7	6.0	7.7

80% ESP Analysis – 2002-2005 Trace Lowest Powell EOY 2023 Storage in this 30-year period

End-of-Month (actual) Pool Elevation

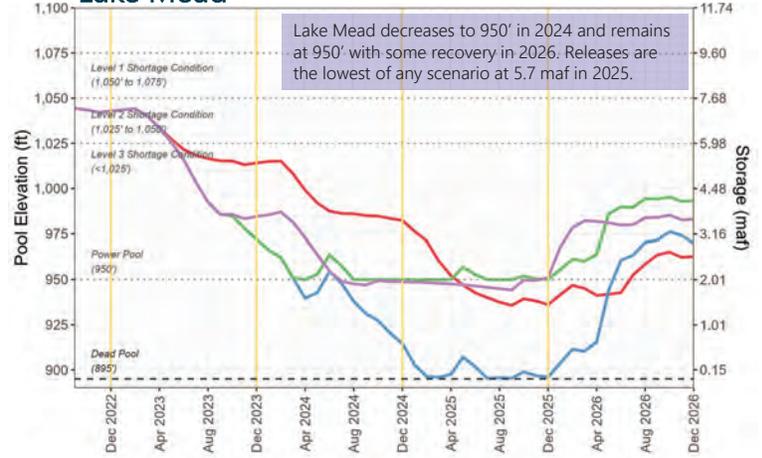
Lake Powell



- Baseline
- Protect 3490'
- Protect 3490', 950'
- Protect 3490', until 950' is Reached

% of Avg. WY Powell Unreg. Inflow	2023	2024	2025	2026
	24%	58%	61%	125%

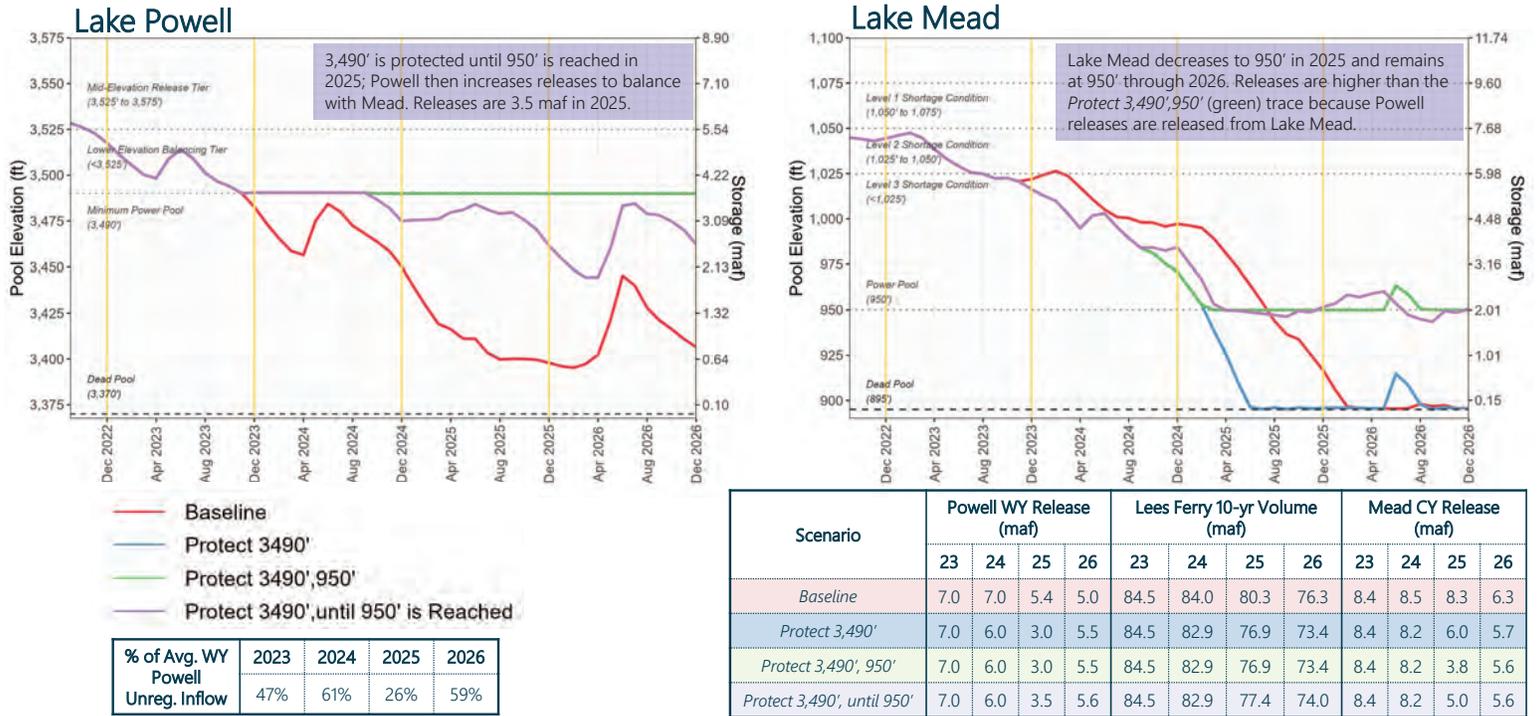
Lake Mead



Scenario	Powell WY Release (maf)				Lees Ferry 10-yr Volume (maf)				Mead CY Release (maf)			
	23	24	25	26	23	24	25	26	23	24	25	26
Baseline	7.0	6.6	5.9	7.6	84.4	83.5	80.4	79.0	8.7	8.2	8.3	7.7
Protect 3,490'	5.2	5.7	5.5	9.2	82.6	80.9	77.4	77.6	8.7	8.2	6.8	7.7
Protect 3,490', 950'	5.2	5.7	5.5	8.4	82.6	80.9	77.4	76.8	8.7	6.7	6.0	7.7
Protect 3,490', until 950'	5.2	6.2	5.6	8.0	82.6	81.4	78.0	77.0	8.7	8.0	5.7	7.5

Another example: Individual Streamflow Trace Analyzed – 80% ESP, 2000-2003 Trace Lowest Combined Powell + Mead Storage at EOY 2026 in this 30-year period

End-of-Month (actual) Pool Elevation



Summary of Modeling Scenarios

- **Baseline – Current Operations**
 - Lake Powell declines below min power pool (3,490') as early as spring/summer 2023 and Lake Mead declines below min power pool (950') with a risk of continued declining elevations at both reservoirs.
- **Protect 3,490' at Lake Powell**
 - By reducing Lake Powell's releases, Powell remains above min power pool; however, Lake Mead declines below min power pools and continues to decline to dead pool (895').
- **Protect 3,490' at Lake Powell and 950' at Lake Mead**
 - Remain above key elevations at Lake Powell and Lake Mead; however, reduced reservoir releases, and increased reductions in Lower Basin water deliveries would be needed
- **Protect 3,490' at Lake Powell until Lake Mead reaches 950', then balance Powell and Mead storage with no minimum release**
 - Key elevations are maintained with more flexibility in operations; however, reduced reservoir releases, and increased reductions in Lower Basin water deliveries would be needed



Preliminary Alternatives

- **No Action**
 - Describes continued implementation of existing operational agreements
- Framework Agreement Alternative
- Reservoir Operations Modification Alternative



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No Action Alternative

- Continued Full Implementation through 2026 of:
 - 2007 Interim Guidelines for operation of Lake Powell & Lake Mead
 - 2017 Minute 323 with Republic of Mexico
 - 2019 Drought Contingency Plan Contributions for Lower Basin States (AZ, CA, NV)
 - 2019 Drought Contingency Plan for the Upper Basin
 - 2019 Binational Water Scarcity Plan with Republic of Mexico



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**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) 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

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.



Anticipated Impacts of No Action

- Critically low elevations at Lakes Powell and Mead
- Water delivery and operations limitations
- Loss of hydropower production
- Flow limitations in the Grand Canyon
- Limited flows for ecological programs
- Reduced water availability to water users basin-wide
- U.S.-Mexico Water Treaty obligation



Preliminary Alternatives

- No Action
- **Framework Agreement Alternative**
 - **Additional consensus-based actions**
- Reservoir Operations Modification Alternative



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Framework Agreement Alternative overview

- An additional consensus-based set of actions that would build on existing commitments and obligations developed by the Basin States, Tribes, and non-governmental organizations as part of the 2019 DCP
- Reclamation would analyze any Framework Agreement Alternative in light of drier hydrology and extreme low flow scenarios
- Reclamation is hopeful that a "consensus alternative" could be developed as soon as possible



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Framework Agreement Alternative components

- Reclamation would evaluate scoping comments as part of this alternative
- Comments could focus on issues such as:
 - What elevations might be protected in Lake Powell and Lake Mead
 - How much water might be released from Lake Powell
 - How much water might be released from Lake Mead
 - How shortages might be defined for Lower Basin States



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Preliminary Alternatives

- No Action
- Framework Agreement Alternative
- Reservoir Operations Modification Alternative
 - A set of actions adopted pursuant to Secretarial authority under applicable federal law
 - Could complement a consensus-based alternative that may not sufficiently mitigate current and projected risks to Colorado River System reservoirs



Components of Reservoir Operations Modification Alternative

Considering protecting critical infrastructure and the range of potential poor hydrology, Reclamation could, for example, propose to:

- Protect elevation 3,500' at Lake Powell & elevation 1,000' at Lake Mead
 - Section 2D. Raise operating determination elevations and/or increase shortage reduction amounts in Lower Basin by as much as 2 maf (or more)
 - Section 6C. Release less than 7.0 million acre-feet (maf) of water from Lake Powell - initial estimates are to analyze releases reduce by 2 to 3 maf (or more)
 - Section 7C. Provide for potential mid-year reductions in the Lower Basin



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Overview of SEIS NEPA Schedule

- Federal Register published November 17, 2022
 - Please submit comments and input to CRinterimops@usbr.gov by December 20, 2022
- Anticipated Draft Supplemental EIS available for public review in Spring 2023
- Anticipated Final Supplemental EIS available for public review late Summer 2023



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QUESTIONS?

For more information visit:

<https://www.usbr.gov/ColoradoRiverBasin/SEIS.html>

Submit comments to: CRinterimops@usbr.gov



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RECLAMATION