

August 27, 2020

**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, September 9, 2020
Time: 10:00 a.m.
Place: Pursuant to Governor Newsom's Executive Order N-29-20 issued on March 17, 2020, this meeting will be held virtually via Zoom Webinar. Board members will receive instructions separately. The public are welcome to attend. Attendees may access this meeting using the following: Webinar Link: <a href="https://us02web.zoom.us/j/84923202655">https://us02web.zoom.us/j/84923202655</a> Telephone: US: +1 669 900 9128, enter Meeting ID: 849 2320 2655, followed by #; then press # again to connect.

The Colorado River Board of California welcomes any comments from members of the public pertaining to items included on this agenda and related topics. If members of the public wish to make a comment regarding items on the agenda, there are three options for consideration: (1) Public comments may be submitted by electronic mail, and **should be addressed to the Board's Chairman, Mr. Peter Nelson, at [crb@crb.ca.gov](mailto:crb@crb.ca.gov) and will be accepted up until 10:00 a.m. on the day of the meeting;** (2) During the meeting, members of the public may submit comments by participating in the Zoom Webinar and utilizing the "Q&A" feature in the control panel; **or** (3) By calling into the Zoom Webinar using the telephone number above and pressing \*9 to "Raise Hand." 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 from individuals with disabilities are required, such persons should provide a request at least 24 hours in advance of the meeting by electronic mail to the Board's staff member, Mr. Brian Alvarez at [balvarez@crb.ca.gov](mailto:balvarez@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, or 818-500-1625. A copy of this Notice and Agenda may be found on the Colorado River Board's web page at [www.crb.ca.gov](http://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





Minutes of Meeting  
COLORADO RIVER BOARD OF CALIFORNIA  
Wednesday, August 12, 2020

A meeting of the Colorado River Board of California (Board) was held virtually on Wednesday, August 12, 2020, using the Zoom Webinar meeting platform.

Board Members and Alternates Present:

David DeJesus (MWD Alternate)	Glen D. Peterson (MWD)
James Hanks (IID)	David R. Pettijohn (LADWP)
Jeanine Jones (DWR Designee)	John Powell, Jr. (CVWD Alternate)
Henry Kuiper (Public Member)	David Vigil (DFW Alternate)
Peter Nelson, Chairman (CVWD)	Mark Watton (SDCWA Alternate)

Board Members and Alternates Absent:

Evelyn Cortez-Davis (LADWP Alternate)	Christopher Hayes (DFW Designee)
Dana B. Fisher, Jr. (PVID)	Jim Madaffer (SDCWA)
Norma Sierra Galindo (IID Alternate)	Jack Seiler (PVID Alternate)

Others Present:

Steven Abbott	Lindia Liu
Brian Alvarez	Henry Martinez
Justina Gamboa-Arce	Kara Mathews
Jim Barrett	Jenny McCarthy
Daniel Bunk	Aaron Mead
Michael Coleman	Brea Mohamed
Melissa Baum-Haley	Dylan Mohamed
Christopher Harris	Jessica Neuwerth
Bill Hasencamp	Vic Nguyen
Michael Hughes	Angela Rashid
Sarai Jimenez	Ivory Reyburn
Lisa Johansen	Kelly Rodgers
Lori Jones	Shanti Rosset
Rich Juricich	Tom Ryan
Eric Katz	Tina Shields
Jessie Khaya	Zach Stevens
Larry Lai	Jay Weiner
Laura Lamdin	Meena Westford
Tom Levy	Jerry Zimmerman

## **CALL TO ORDER**

Chairman Nelson announced the presence of a quorum and called the meeting to order at 10:05 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 June 10, 2020, meeting minutes. Mr. Kuiper moved that the minutes be approved, seconded by Mr. Peterson. By roll-call vote, the minutes were unanimously approved.

## **COLORADO RIVER BASIN WATER REPORTS**

### **Colorado River Basin Report**

Mr. Juricich reported that as of August 3<sup>rd</sup>, the water level at Lake Powell was 3,606.00 feet with 12.33 million-acre feet (MAF) of storage, or 51% of capacity. The water level at Lake Mead was 1,084.57 with 10.39 MAF of storage, or 40% of capacity. The total system storage was 30.56 MAF, or 51% of capacity, which is 2.2 MAF less than system storage at this time last year.

Mr. Juricich reported that as of August 3<sup>rd</sup>, the unregulated inflow into Lake Powell for Water Year 2020 was 6.3 MAF, or 58% of normal and the Water Year-2020 forecasted April to July inflow to Lake Powell is 3.73 MAF, or 52% of normal. For Water Year-2020, the observed July inflow to Lake Powell was 0.26 MAF, or 24% of normal and the August to Lake Powell is 0.26 MAF, or 53% of normal. The precipitation to date is 83%.

Mr. Juricich reported that the precipitation conditions in June and July were very dry throughout the Basin, with exception to Eastern Utah, Western Colorado, and Wyoming.

Mr. Juricich reported that as of August 6<sup>th</sup>, the Brock and Senator Wash regulating reservoirs captured 86,230 AF and 44,114 AF, respectively. He also reported that the excess deliveries to Mexico through August 6<sup>th</sup>, were 48,349 AF. He noted that the excess flows were

higher than this time last year most likely due to significant storms that occurred in February and March. Mr. Juricich reported that as of August 3<sup>rd</sup>, the total amount of saline drainage water bypassed to the Cienega de Santa Clara in Mexico was 80,004 AF.

### **Annual Operating Plan, Second Consultation**

Mr. Juricich reported that on July 23<sup>rd</sup>, the CRB staff participated in the second consultation for the Annual Operating Plan (AOP) hosted by the Bureau of Reclamation (Reclamation). He reported that it is anticipated that Lake Powell will be operated under the Upper Elevation Balancing Tier regime with a 9.0 MAF release from Lake Powell in 2021, noting that this contrasts with this year's release of 8.23 MAF. The final AOP consultation is scheduled for September 3<sup>rd</sup> at 10:00 a.m. PDT.

Mr. Juricich reported that the forecasted January 1<sup>st</sup> elevation in the August 24-Month Study is used to determine Lakes Powell and Mead operational tiers and releases. He added that in addition to the operational targets for the Interim Guidelines, the 24-Month Study also sets the targets for the Drought Contingency Plan (DCP). Reclamation will host a webinar on August 14<sup>th</sup> at 10:00 a.m. PDT to discuss the August 24-Month Study.

### **State and Local Report**

Ms. Jones, representing the California Department of Water Resources (DWR), reported that the State is currently going through the dry season. She noted that precipitation activity has been limited in Southern California, which would normally be experiencing monsoonal activity during this time of the year. Ms. Jones reported that significant dryness on the North Coast has been causing concern with the State's Water Resources Control Board. She noted the Russian River system has experienced its third driest winter and the State Board has approved a temporary urgency petition for flows in that watershed.

Ms. Jones reported that the National Oceanic and Atmospheric Administration (NOAA) has released an early forecast of the ENSO conditions for fall and winter that indicate that the conditions may be transitioning to La Nina conditions. She noted that the ENSO forecast is early and more will be known by November. She added that La Nina conditions may be an indicator of dry precipitation conditions in Southern California but has no predictive capability for Northern California. Ms. Jones reported that reservoir storage is doing well thanks to the prior year's wet conditions.

Mr. Peterson, representing the Metropolitan Water District of Southern California (MWD), reported, that MWD's water use is down most likely due to the COVID-19 pandemic and the cost of water.

## **PRESENTATION BY BUREAU OF RECLAMATION – CRSS 101**

Ms. Jessie Khaya with Reclamation provided a summary of the Colorado River Simulation System (CRSS) model, which is Reclamation's official long-term planning model. Ms. Khaya explained Reclamation's operational decision-making hierarchy, which explained how Reclamation utilizes various RiverWare Operations Models such as CRSS, Mid-term Operations Probabilistic Model (MTOM), and the 24-Month Study to make decisions over varying time horizons.

Ms. Khaya explained that the CRSS model is used to make long-term decisions, up to 50 to 60 years, while the MTOM and 24-Month Study are utilized to make decisions over a shorter time horizon, 1 to 2 year projections for the 24-Month Study and 5 years for the MTOM. She stated that the 24-Month Study model is used to determine the tier determinations for the AOP and provide projections of current reservoir conditions. The 24-Month Study is a deterministic model, while the CRSS model and MTOM are probabilistic models. The 24-Month Study produces one single hydrologic trace. She explained that a deterministic model is a model that's output is fully determined by the parameter values, inputs, and initial conditions. She further explained that a deterministic model has only one set of assumptions run through the model and outputs one set of results every time the model is run. Probabilistic models perform several simulations and provide a range of output. The CRSS model runs 112 hydrologic traces, while the MTOM runs 35 traces.

Ms. Khaya provided a detailed description of the assumptions and inputs used with the three operations models. She stated the operations for the 24-Month Study are input manually and is provided by the operators of the various reservoirs in the Basin, which carefully monitor the hydrologic systems of their respective reservoirs and have a good idea how to model the reservoir's water supply. Ms. Khaya explained that the MTOM and 24-Month Study models use the unregulated inflow forecasts provided by the Colorado Basin Forecast Center (CBRFC) for Upper Basin inflow. To model inflows in the CRSS model, various natural flow scenarios are utilized such as the historical hydrology and the paleo record, which is derived from Basin tree-ring data.

Ms. Khaya stated that for the MTOM and 24-Month Study, Basin demands are incorporated into the unregulated inflow forecasts provided by the CBRFC. She explained that the inflow forecast incorporate estimates of Upper Basin demands. For the Lower Basin demands, these models rely on the official approved and operational schedules.

However, for the CRSS model, Basin demands are explicitly modeled. The Upper Basin demands are based on the 2007 Upper Colorado River Commission (UCRC) Upper Basin scheduled depletion-demands. Ms. Khaya explained that since the model analyzes scenarios over a long-term horizon, the general operational schedules are used as inputs for Lower Basin demands.

Ms. Khaya stated that the CRSS model is a comprehensive model developed by Reclamation in the early 70's and was initially developed in Fortran and converted to the RiverWare software in the 90's. It is the primary tool that Reclamation uses for analyzing future river and reservoir conditions for planning. CRSS has been used to update official modeling projections three to two times a year looking out over a five-year time span, provide analysis and make decisions for environmental impact statements, Minute 323, Tribal Basin Study and the DCP. She added that CRSS is a probabilistic model that excels at comparative analysis. The model analyzes the impacts of various policies and provides a range of potential future conditions, such as reservoir elevations, releases, and energy generation every time the model is run.

Ms. Khaya reported that Reclamation utilizes specific reservoir operating policies for Upper and Lower Basin reservoirs. In the Upper Basin, the reservoirs are operated in accordance with each reservoirs respective Record of Decision (ROD). In addition, the Upper Basin reservoirs are operated in accordance with the 2007 Interim Guidelines, which coordinates the operations between Lakes Powell and Mead, as well as the Upper Basin DCP. The model runs an approximation of those drought response operations that were agreed to in the Upper Basin DCP and does not model the demand management plan. For Lower Basin operations, the reservoirs are also operated in accordance with the 2007 Interim Guidelines with shortages applied at specific Lake Mead elevations and also incorporates the Intentionally Created Surplus (ICS) logic, key elements of Minute 323 that were agreed upon in the Binational Water Scarcity Plan, as well as the Lower Basin DCP.

Ms. Khaya explained the assumptions and inputs necessary to model the Basin's future water supply in CRSS. She stated that the performance of the model is most sensitive to assumptions about future water supply. She noted that there is uncertainty in the projected future hydrology in the Basin and research suggest that this uncertainty is likely to increase. Future water supply scenarios can be developed using different methods and inflow datasets to account for different levels of uncertainty such resampling the historical hydrologic record or inflow datasets developed using Basin tree-ring data. Ms. Khaya reported that the official projections are developed using supply scenarios that resample the full historical record, known as the Full Hydrology, spanning from 1906 to 2018 and a subset of the Fully Hydrology known as the Stress Test Hydrology, which spans from 1988 to 2018. She noted that the average annual natural flow at Lee Ferry for the full historical hydrology dataset (i.e., 1906-2018) is about 14.3 MAF, while the average annual natural flow at Lee Ferry for the Stress Test Hydrology (i.e., 1988-2018) is 13.8 MAF. She added that the temperatures in the Basin during the Stress Test period are warmer and research studies have shown that the increasing temperature trend during this period has impacted the Basin's runoff efficiency.

Ms. Khaya reported that to develop future demand scenarios Reclamation has been working with the Basin's water users to incorporate future water demands. She noted that currently, CRSS utilizes the 2007 UCRC depletion-demand schedule and is currently working to



incorporate the 2016 updated UCRC depletion schedule. Ms. Khaya noted that the 2016 schedule is lower than the 2007 depletion schedule but the demands ramp up as they approach 2060. She added that the Lower Basin demands have been developed in coordination with the Lower Basin States, key water users and Mexico and are derived from the 2007 Interim Guidelines Final Environmental Impact Statement schedules which water users update, when available.

Ms. Khaya displayed a chart showing projections for Lake Powell based on the April 2020 CRSS model run. She explained that the chart showed the 10<sup>th</sup> to 90<sup>th</sup> percentiles, as well as the historical and median projected Lake Powell pool elevation using the Full and Stress Test Hydrology. She also displayed the results of the 5-Year Table which provides the probabilities of various reservoir system conditions for Lakes Powell and Mead over a 5-year period. The 5-year table is updated with the results of Reclamation's official modeling runs in January, April, and August. Ms. Khaya reiterated that Reclamation is working on incorporating the 2016 UCRC demand schedule into the CRSS model and is also working with Lower Basin water users to update demands out through 2070.

Chairman Nelson remarked that Ms. Khaya and her colleagues at Reclamation are a great resource for learning and understanding the CRSS model. Board member Mr. Peterson asked for more clarity regarding the large range of future possibilities developed by the CRSS model. Ms. Khaya responded that the range is large due to the different water supply scenarios employed within the model. She added that there is no agreement in the scientific community about how to create a supply scenario that would give us the most accurate view of the future. Mr. Peterson also inquired about how the model incorporates the snow that is produced during cloud seeding. Ms. Khaya explained that the impacts of cloud seeding activities are incorporated into the natural flow record. She explained that the natural flow record uses gauged water use data and backs out human involvement in the Basin, such as reservoir operations from the dataset.

### **Interim Guidelines Review Status**

Mr. Dan Bunk with Reclamation provided a brief update on Reclamation's review of the effectiveness of the 2007 Interim Guidelines, also known as 7.D Review. Mr. Bunk reported that the 7.D Review Report refers to section 7.D of the 2007 Interim Guidelines and requires the Department of Interior (DOI) to evaluate the effectiveness of the 2007 Guidelines before Reclamation can work on the next set of interim operating guidelines for the post-2026 period. He stated that it is important to review the current operations under the 2007 Interim Guidelines before determining its replacement. The intent of the provision is for Reclamation to perform the review in coordination with its partners and stakeholders. Mr. Bunk stated that in December 2019, at the Colorado River Water Users Association Conference, Secretary Bernhardt reported that the DOI would begin the review early, although the requirement and guidelines state that the review should commence by the end of this year. He stated that Reclamation has already begun its review and anticipated completing the review by the end of this calendar year. Mr. Bunk added that Secretary

Bernhardt instructed Reclamation that review should also be inclusive of partners such as the basin states, tribes, NGOs, and other federal agencies.

Mr. Bunk reported that the goals of the review are to evaluate the effectiveness of the 2007 Interim Guidelines and to document Reclamation's operational experience since the guidelines were adopted in late 2007. He added that Reclamation hosted webinars in March to a wide range of stakeholders to propose the scope and provide our initial approach to the review. He stated that Reclamation received an excellent range of input and comments that is currently available on Reclamation's website. He stated that Reclamation is working to refine its approach based on the comments.

Mr. Bunk reported that Reclamation also met with a technical workgroup of consulting Basin states and representatives and key water district to discuss the draft outline for the 7.D Review Report. He noted that workgroup provided feedback and comments which Reclamation is taking into consideration for incorporation into the draft product. Reclamation is currently working through the comments received and anticipates releasing a draft report for review by the technical workgroup by the end of September.

## **STATUS OF COLORADO RIVER BASIN PROGRAMS**

### **Status of Minute No. 323 Implementation**

Ms. Neuwerth reported that the Environmental Work Group (EWG) for Minute No. 323 met via webinar on July 21<sup>st</sup>. Ms. Neuwerth noted that, under the Minute, 210,000 AF of water for environmental purposes is committed in equal parts by NGOs, the U.S. federal government, and the Mexican federal government. Through Water Year-2020, only NGO water has been delivered to restoration sites, but Ms. Neuwerth noted that the EWG is currently reviewing a potential request for approximately 35,000 AF of Mexican federal water, to be delivered to the river channel in Reach 4 of the Delta. Ms. Neuwerth reported that this water would be delivered through canals directly to areas with the most restored habitat to maximize the ecological impact of the water. Ms. Neuwerth noted that the feasibility of this potential water delivery is still being assessed by the EWG and Mexican section of the International Boundary and Water Commission, known as CILA.

Finally, Ms. Neuwerth reported that the EWG is continuing efforts to restore and maintain habitat, with approximately 290 acres of habitat planned for completion in 2020 and 2021.

### **Status of the Salinity Control Program**

Mr. Juricich updated the Board on the status of Paradox Valley Unit (PVU) of the Salinity Control Program. The PVU EIS is expected to be available for public comments soon. In April,

Reclamation restarted the brine injection operations at PVU for a six-month test, but after 1-month decided to halt the test and complete an ongoing analysis of the March 4, 2019 M<sub>w</sub> 4.5 earthquake in the Paradox Valley before resuming the test. Currently the decision to restart the injection is a policy one. Mr. Juricich showed on a chart that a significant drop in salt load in the Dolores River in tons per day when the well restarted. When the well was shut down once again, the salt load dropped. Reclamation is seeing a decline even with the well not in operation, which may be due to lower hydrology. Mr. Juricich reported that Reclamation may not restart the well until November.

### **Status of the Glen Canyon Dam Adaptive Management Program**

Ms. Neuwerth reported that the Technical Work Group (TWG) of the Glen Canyon Dam Adaptive Management Program met via webinar on June 23-24. The TWG discussed the draft Triennial Work Plan and Budget for FY 2021-2023, which directs approximately \$11 million in funding for research and monitoring efforts below Glen Canyon Dam. Ms. Neuwerth noted that the Program's funding source for FY2021 remains uncertain. Ms. Neuwerth reported that the TWG recommended approval of the draft budget and work plan, which would subsequently be considered by the Adaptive Management Work Group (AMWG) at its August 19-20 meeting.

Ms. Neuwerth noted that invertebrate production flows, or "bug flows" were still occurring at Glen Canyon Dam. These low steady weekend dam releases started on May 1<sup>st</sup> and continue through August 31<sup>st</sup>. Ms. Neuwerth reported that these flows don't change monthly or weekly release volumes from the dam. In response to a question from Mr. Harris, Ms. Neuwerth noted that while a fall high flow experiment (HFE) release from Glen Canyon Dam is possible this year, sediment input from tributaries was currently far below the level needed to trigger an HFE.

### **Lower Colorado River Multi-Species Conservation Program**

Ms. Neuwerth reported that the Steering Committee for the Lower Colorado River Multi-Species Conservation Program (LCR MSCP) met via webinar on June 24<sup>th</sup>. The Steering Committee approved the *Final Implementation Report, FY-2021 Workplan and Budget, FY-2019 Accomplishment Report*. Ms. Neuwerth noted that this report describes FY2019 activities, activities underway in FY2020, and those activities planned for FY2021. Ms. Neuwerth reported that one of the covered activities under the LCR MSCP is change in flow along the Lower Colorado River which occurs as a result of transfers, storage in Lake Mead, or other actions. Ms. Neuwerth reported that a small group of LCR MSCP permittees is currently drafting a supplemental memo to the U.S. Fish and Wildlife Service to provide additional detail on the changes in flow that occurred in 2019 and to develop an annual monitoring process to track reductions in flow in future years.

## **ANNOUNCEMENTS**

### **Lake Powell Pipeline Project Environmental Impact Statement**

Mr. Juricich provided an update on the Board's efforts to review and draft comments for the Draft Environmental Impact Statement for the Lake Powell Pipeline (LPP) project. The proposed LPP project is a 140-mile, 69-inch-diameter water delivery pipeline that would begin at Lake Powell, located in the upper basin of the Colorado River, and terminate at Sand Hollow Reservoir near St. George, Utah, located in the lower basin of the Colorado River. The UBWR proposes building the LPP in order to convey up to approximately 86,000 AF of additional water supplies to Washington County in extreme southwestern Utah to meet future water demands, diversify the regional water supply portfolio, and for water supply reliability enhancement. Mr. Juricich explained that Board staff are meeting with California agencies to share draft DEIS comments, and Board staff are having additional discussions with the Lower Basin and other basin states about potential comments on the EIS.

Board Member Peterson asked how the energy production impacts in Glen Canyon Dam relate to the Upper Basin native fish recovery efforts. Mr. Harris explained that any reduction in power generation at Glen Canyon Dam could financially impact the Upper Basin Development Fund. Ms. Neuwerth responded that the Upper Basin Fund provides funding for several programs including the Upper Basin Native Fish Recovery Program, salinity control, etc.

### **Status of the Development of the Next Set of Interim Operating Guidelines**

Mr. Juricich summarized work by Board staff to prepare and work with the California agencies on development of the next set of operational guidelines for Lake Powell and Lake Mead. Staff have been meeting via webinars with member agency technical staff and to continue to collect, analyze and prepare topical issue technical information, data, and discussion papers; and working with the agencies to identify critical needs. Board staff have also been developing modeling expertise and experience in the utilization of Reclamation's CRSS model. Finally, Board staff continue to track ongoing related activities of the other six Basin states, agencies, and other stakeholder groups.

### **Salton Sea Management Program**

Mr. Juricich announced that on August 19, 2020, the State Water Resources Control Board will conduct a webinar-based public workshop on the Phase I 10-Year Salton Sea Management Program. Information updates will be provided by state agencies implementing the program and there will be an opportunity for the public to comment on the 2019 Annual Report released on February 24, 2020.

### **California's Water Resilience Report**

Mr. Juricich described the released of Governor Newsom’s final California Water Resilience Portfolio on July 28, 2020. The portfolio serves as the Administration’s blueprint for equipping California to cope with more extreme droughts and floods, rising temperatures, declining fish populations, over-reliance on groundwater and other challenges. The portfolio outlines 142 state actions to help build a climate-resilient water system in the face of climate change.

### **Next Scheduled Board Meeting**

Finally, Mr. Harris noted that the next meeting of the Colorado River Board would be held on September 9<sup>th</sup> and would also be held virtually using the Zoom Webinar meeting platform.

### **ADJOURNMENT**

With no further items to be brought before the Board, Chairman Nelson adjourned the meeting at 11:29 a.m.



8/31/2020

## LOWER COLORADO WATER SUPPLY REPORT

River Operations  
Bureau of Reclamation

Questions: [BCOOWaterops@usbr.gov](mailto:BCOOWaterops@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	48%	11,743	3,599.93	13,500
* LAKE MEAD	40%	10,347	1,084.02	12,000
LAKE MOHAVE	93%	1,685	642.51	13,100
LAKE HAVASU	94%	580	448.01	10,000
TOTAL SYSTEM CONTENTS **	50%	29,722		
As of 8/30/2020				
SYSTEM CONTENT LAST YEAR	54%	32,295		
* 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	85%	1,949		
Painted Rock Dam	0%	0	530.00	0
Alamo Dam	13%	132	1,123.08	48
Forecasted Water Use for Calendar Year 2020 (as of 8/31/2020) (values in kaf)				
NEVADA			265	
SOUTHERN NEVADA WATER SYSTEM				231
OTHERS				34
CALIFORNIA			4,098	
METROPOLITAN WATER DISTRICT OF CALIFORNIA				824
IRRIGATION DISTRICTS				3,259
OTHERS				15
ARIZONA			2,470	
CENTRAL ARIZONA PROJECT				1,414
OTHERS				1,055
TOTAL LOWER BASIN USE				6,832
DELIVERY TO MEXICO - 2020 (Mexico Scheduled Delivery + Preliminary Yearly Excess <sup>1</sup> )				1,558
OTHER SIGNIFICANT INFORMATION				
UNREGULATED INFLOW INTO LAKE POWELL - AUGUST MID-MONTH FORECAST DATED 8/17/2020				
		MILLION ACRE-FEET		% of Normal
FORECASTED WATER YEAR 2020		6.175		57%
PRELIMINARY OBSERVED APRIL-JULY 2020		3.758		52%
JULY OBSERVED INFLOW		0.290		27%
AUGUST INFLOW FORECAST		0.095		19%
		Upper Colorado Basin	Salt/Verde Basin	
WATER YEAR 2020 PRECIP TO DATE		80% (23.0")	86% (22.6")	
CURRENT BASIN SNOWPACK		NA% (NA)	NA% (NA)	

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

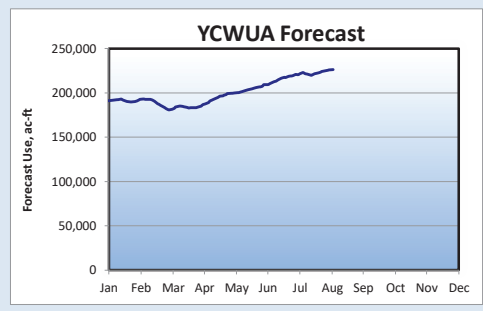
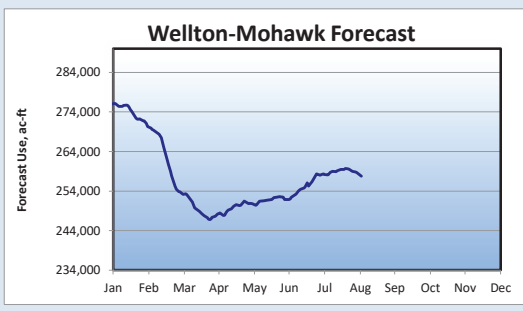
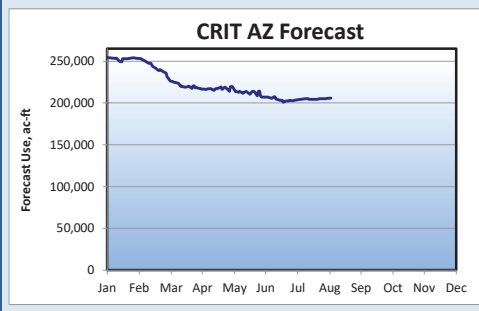
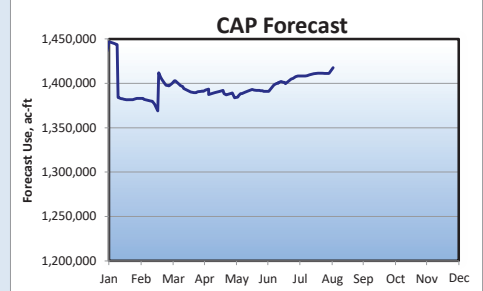
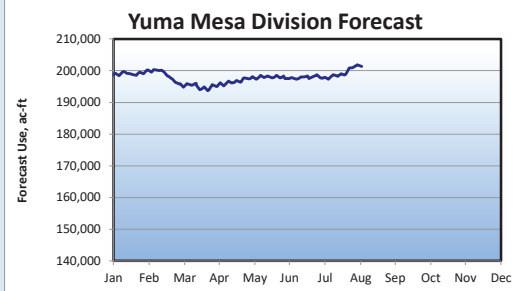
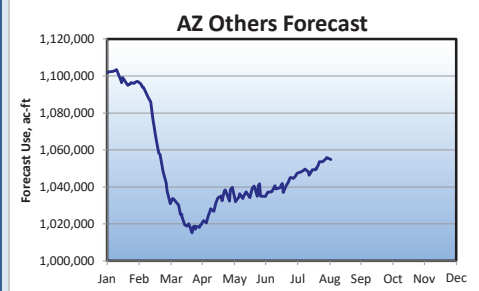
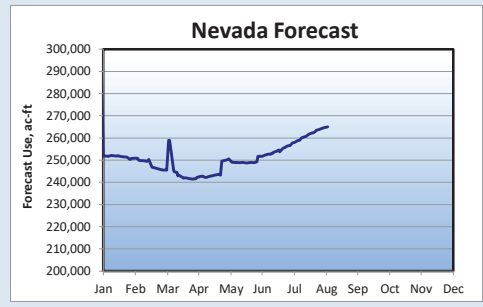
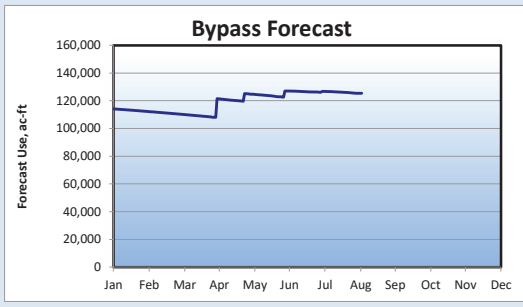
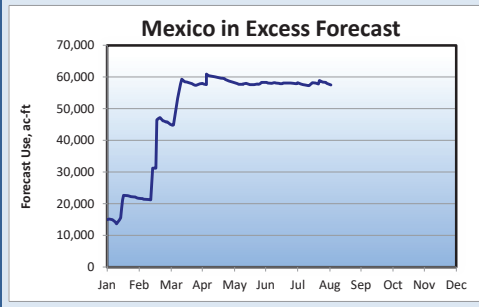
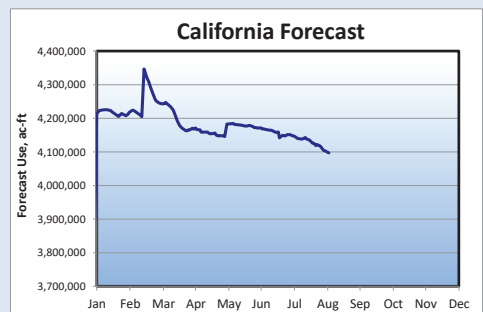
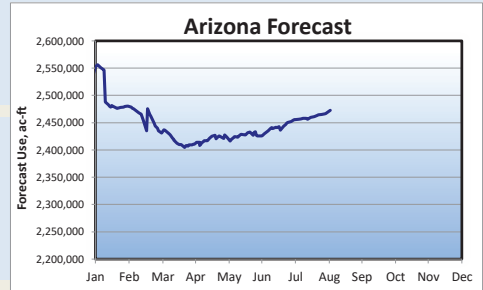
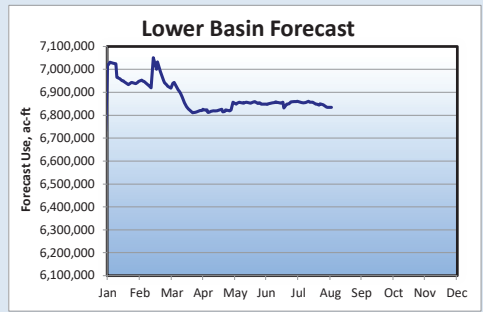


— BUREAU OF —  
RECLAMATION  
INTERIOR REGION 8: LOWER COLORADO BASIN  
CY 2020

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

<b>WATER USE SUMMARY</b>	<b>Use To Date CY 2020</b>	<b>Forecast Use CY 2020</b>	<b>Approved Use <sup>2</sup> CY 2020</b>	<b>Excess to Approval CY 2020</b>
ARIZONA	1,589,141	2,472,592	2,432,794	39,798
CALIFORNIA	2,793,283	4,096,703	4,096,703	0
NEVADA	186,128	264,987	264,987	0
<b>STATES TOTAL <sup>3</sup></b>	<b>4,568,552</b>	<b>6,834,282</b>	<b>6,794,484</b>	<b>39,798</b>
ACCOUNTABLE DELIVERIES TO MEXICO	1,173,567	1,557,475	1,500,000	57,475
TO MEXICO IN SATISFACTION OF TREATY (including downward delivery) <sup>4</sup>	1,123,729	1,500,000		
TO MEXICO IN EXCESS OF TREATY <sup>5</sup>	49,838	57,475		
WATER BYPASSED PURSUANT TO IBWC MINUTE NO. 242 <sup>6</sup>	86,765	125,426		
<b>TOTAL LOWER BASIN &amp; MEXICO</b>	<b>5,828,884</b>	<b>8,517,183</b>		

<sup>1</sup> Incorporates 80 daily reporting stations which may be revised after provisional data reports are distributed by the USGS. Use to date has been updated through May for users reporting monthly, and is estimated based on schedule for users reporting annually.  
<sup>2</sup> These values reflect adjusted apportionments. See Adjusted Apportionment calculation on each state page.  
<sup>3</sup> 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.  
<sup>4</sup> Includes downward adjustment(s) to Mexico's annual delivery schedule for the creation of Mexico's Recoverable Water Savings and/or Mexico's Water Reserve.  
<sup>5</sup> Mexico excess forecast is based on actual-to-date and the 5-year average for the period 2014-2018 for remainder of the year.  
<sup>6</sup> Bypass forecast is based on actual-to-date and the average for the period 1990-2018 for the remainder of the year.



Graph notes: January 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 Robert 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.





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/under-run 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/under-run of entitlement. Dash in this column indicates water user has a consumptive use entitlement.

ARIZONA WATER USERS  
 FORECAST OF END OF YEAR 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	Use		To Date	Diversion	Diversion
	CY 2020	CY 2020	CY 2020	CY 2020	CY 2020	CY 2020	CY 2020	CY 2020
ARIZONA PUMPERS	10,604	14,074	14,074	---	16,315	21,654	21,654	0
LAKE MEAD NRA, AZ - Diversions from Lake Mead	38	64	64	---	38	64	64	0
LAKE MEAD NRA, AZ - Diversions from Lake Mohave	141	204	204	---	141	204	204	0
DAVIS DAM PROJECT	2	2	2	---	11	15	15	0
BULLHEAD CITY	4,600	7,307	8,122	---	7,228	11,468	12,720	-1,252
MOHAVE WATER CONSERVATION DISTRICT	494	656	656	---	738	979	979	0
BROOKE WATER LLC	219	326	323	---	328	489	484	5
MOHAVE VALLEY IDD	10,514	15,566	16,516	---	19,470	28,826	30,585	-1,759
FORT MOJAVE INDIAN RESERVATION, AZ	25,179	33,819	44,550	---	46,628	62,628	82,500	-19,872
GOLDEN SHORES WATER CONSERVATION DISTRICT	209	278	278	---	314	417	417	0
HAVASU NATIONAL WILDLIFE REFUGE	2,572	3,235	3,563	---	21,428	29,198	41,820	-12,622
LAKE HAVASU CITY	5,269	8,245	8,928	---	8,501	13,301	14,400	-1,099
CENTRAL ARIZONA PROJECT (CAP)	806,235	1,417,720	---	---	806,235	1,417,720	---	---
TOWN OF PARKER	285	418	433	---	587	880	916	-36
COLORADO RIVER INDIAN RESERVATION, AZ	163,093	206,020	246,946	---	338,190	467,359	512,102	-44,743
EHRENBURG IMPROVEMENT ASSOCIATION	172	228	228	---	240	319	319	0
CIBOLA VALLEY <sup>1</sup>	10,468	14,058	15,219	---	14,637	19,655	21,270	-1,615
CIBOLA NATIONAL WILDLIFE REFUGE	11,070	14,264	14,264	0	17,855	23,005	23,005	0
IMPERIAL NATIONAL WILDLIFE REFUGE	2,580	3,799	3,799	0	4,162	6,128	6,128	0
BLM PERMITEES (PARKER DAM TO IMPERIAL DAM)	570	756	756	0	876	1,163	1,163	0
CHA CHA, LLC	715	1,111	1,365	---	1,099	1,708	2,100	-392
BEATTIE FARMS	603	812	722	---	928	1,251	1,110	141
YUMA PROVING GROUND	343	466	474	---	343	466	474	-8
GILA MONSTER FARMS	2,652	3,808	5,257	---	4,663	6,678	9,156	-2,478
WELLTON-MOHAWK IDD	182,238	257,755	278,000	-20,245	258,206	380,336	412,965	-32,629
BLM PERMITEES (BELOW IMPERIAL DAM)	50	66	66	0	77	102	102	0
CITY OF YUMA	9,455	14,829	16,401	-1,572	16,327	25,677	27,500	-1,823
MARINE CORPS AIR STATION YUMA	903	1,312	1,360	---	903	1,312	1,360	-48
UNION PACIFIC RAILROAD	18	27	29	---	32	48	48	0
UNIVERSITY OF ARIZONA	529	796	896	---	529	796	896	-100
YUMA UNION HIGH SCHOOL DISTRICT	81	121	150	---	108	162	200	-38
DESERT LAWN MEMORIAL	15	20	20	---	21	28	28	0
NORTH GILA VALLEY IRRIGATION DISTRICT	7,619	10,724	12,165	---	29,369	42,769	44,200	-1,431
YUMA IRRIGATION DISTRICT	25,878	37,526	38,701	---	47,274	69,174	71,700	-2,526
YUMA MESA IDD	113,007	153,128	143,893	---	154,899	222,259	239,280	-17,021
UNIT "B" IRRIGATION DISTRICT	14,457	20,064	20,888	---	17,023	24,923	29,400	-4,477
FORT YUMA INDIAN RESERVATION	1,128	1,497	1,497	---	1,731	2,298	2,298	0
YUMA COUNTY WATER USERS' ASSOCIATION	174,438	226,214	186,507	---	239,412	324,412	282,000	42,412
COCOPAH INDIAN RESERVATION	620	1,174	1,651	---	742	1,592	2,530	-938
RECLAMATION-YUMA AREA OFFICE	78	103	103	---	78	103	103	0
RETURN FROM SOUTH GILA WELLS	---	---	---	---	---	---	---	---
<b>TOTAL ARIZONA</b>	<b>1,589,141</b>	<b>2,472,592</b>	<b>2,474,070</b>		<b>2,077,686</b>	<b>3,211,566</b>	<b>3,283,195</b>	
CAP	806,235	1,417,720	---	---	---	1,417,720	---	---
ALL OTHERS	782,906	1,054,872	1,089,070	---	---	1,793,846	1,898,195	---
YUMA MESA DIVISION, GILA PROJECT	146,504	201,378	171,610	29,768	---	334,202	---	---

**ARIZONA ADJUSTED APPORTIONMENT CALCULATION**

Arizona Basic Apportionment	2,800,000
System Conservation Water - Pilot System Conservation Program <sup>2</sup>	(400)
System Conservation Water - Colorado River Indian Tribes (CRIT) <sup>3</sup>	(50,000)
System Conservation Water - Fort McDowell Yavapai Nation (FMYN) <sup>4</sup>	(10,000)
Creation of Extraordinary Conservation ICS - CRIT (Estimated) <sup>5,7</sup>	(3,736)
Creation of Extraordinary Conservation ICS - MVIDD (Estimated) <sup>6,7</sup>	(6,137)
Arizona DCP Contribution <sup>8</sup>	(192,000)
CAWCD -Voluntary Contribution to Lake Mead (Estimated)	(104,933)
Total State Adjusted Apportionment	2,432,794
Excess to Total State Adjusted Apportionment	39,798

**Estimated Allowable Use for CAP**

**1,522,653**

<sup>1</sup> Includes the following water users within the Cibola Valley: Cibola Valley IDD, Arizona Game and Fish Commission, GSC Farm, LLC, Red River Land Company, LLC, Western Water, LLC, and the Hopi Tribe.  
<sup>2</sup> 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.  
<sup>3</sup> 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.  
<sup>4</sup> CAP water being conserved by FMYN pursuant to SCIA No. 19-XX-30-W0658, which will remain in Lake Mead to benefit system storage. In accordance with this SCIA and Section 3.b of the Lower Basin Drought Contingency Plan Agreement, the Bureau of Reclamation intends to apply 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.  
<sup>5</sup> CRIT has been approved to create up to 3,736 AF of Extraordinary Conservation (EC) ICS in 2020. The actual amount of EC ICS created by CRIT will be based on final accounting and verification.  
<sup>6</sup> MVIDD has been approved to create up to 6,137 AF of EC ICS in 2020. The actual amount of EC ICS created by MVIDD will be based on final accounting and verification.  
<sup>7</sup> When combined with the approved EC ICS creation amounts of other ICS creators in the state of Arizona, the total amount of EC ICS approved for creation in the state of Arizona is approximately 153,000 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 and Section IV.B of the Lower Basin Drought Contingency Operations (LBOs), the total amount of EC ICS that may be created by the states of Arizona, California, and Nevada in 2020 will be limited to 625,000 AF.  
<sup>8</sup> In accordance with Section III.B.1.a of LBOs, the state of Arizona shall make an annual DCP Contribution in the total amount of 192,000 AF. In accordance with the Agreement Regarding Lower Basin Drought Contingency Plan Obligations, it is currently anticipated that the required DCP Contribution will be made through reductions in consumptive use by the Central Arizona Water Conservation District.

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



INTERIOR REGION 8: LOWER COLORADO BASIN  
CY 2020

NOTE:

- Diversions and uses that are pending approval are noted in *red italics*.
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- 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.

CALIFORNIA WATER USERS  
FORECAST OF END OF YEAR 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	Approved	Excess to
	To Date	Use	Use	Estimated		To Date	Diversion	Diversion
	CY 2020	CY 2020	CY 2020	CY 2020	CY 2020	CY 2020	CY 2020	CY 2020
CALIFORNIA PUMPERS	1,279	1,697	1,697	---	2,321	3,081	3,081	0
FORT MOJAVE INDIAN RESERVATION, CA	5,322	6,947	8,996	---	9,891	12,911	16,720	-3,809
CITY OF NEEDLES (includes LCWSP use)	748	1,250	1,605	-355	1,365	2,071	2,261	-190
METROPOLITAN WATER DISTRICT	445,062	823,498	---	---	447,018	826,378	---	---
COLORADO RIVER INDIAN RESERVATION, CA	2,436	3,233	3,233	---	4,035	5,355	5,355	0
PALO VERDE IRRIGATION DISTRICT	280,962	354,026	419,768	---	570,712	783,712	856,000	-72,288
YUMA PROJECT RESERVATION DIVISION	25,825	39,765	50,582	---	52,868	81,583	96,858	-15,275
YUMA PROJECT RESERVATION DIVISION - INDIAN UNIT	---	---	---	---	29,166	42,181	46,058	-3,877
YUMA PROJECT RESERVATION DIVISION - BARD UNIT	---	---	---	---	23,702	39,402	50,800	-11,398
YUMA ISLAND PUMPERS	1,649	2,188	2,188	---	2,979	3,954	3,954	0
FORT YUMA INDIAN RESERVATION - RANCH 5	532	818	832	---	963	1,477	1,501	-24
IMPERIAL IRRIGATION DISTRICT <sup>1</sup>	1,785,211	2,499,801	2,640,300	-140,499	1,782,905	2,524,578	2,715,352	---
SALTON SEA SALINITY MANAGEMENT	0	0	0	0	0	0	0	---
COACHELLA VALLEY WATER DISTRICT	243,578	362,578	394,000	-31,422	255,392	379,423	406,654	---
OTHER LCWSP CONTRACTORS	484	642	642	---	794	1,054	1,054	0
CITY OF WINTERHAVEN	47	63	63	---	73	97	97	0
CHEMEHUEVI INDIAN RESERVATION	148	197	197	---	8,544	11,340	11,340	0
<b>TOTAL CALIFORNIA</b>	<b>2,793,283</b>	<b>4,096,703</b>			<b>3,139,860</b>	<b>4,637,014</b>	<b>4,980,930</b>	

CALIFORNIA ADJUSTED APPORTIONMENT CALCULATION

California Basic Apportionment	4,400,000
System Conservation Water - Pilot System Conservation Program <sup>2</sup>	(145)
IID Creation of Extraordinary Conservation ICS - Stored in Lake Mead (Estimated) <sup>3</sup>	(1,579)
IID Creation of Additional Conserved Water (Estimated) <sup>4</sup>	(23,421)
MWD Creation of Extraordinary Conservation ICS (Estimated) <sup>5</sup>	(278,152)
<b>Total State Adjusted Apportionment</b>	<b>4,096,703</b>
Excess to Total State Adjusted Apportionment	0

**Estimated Allowable Use for MWD 1,101,650**

<sup>1</sup> As shown here, IID's Approved Diversion and Estimated Use values reflect the maximum amount of Colorado River water available to IID in 2020.

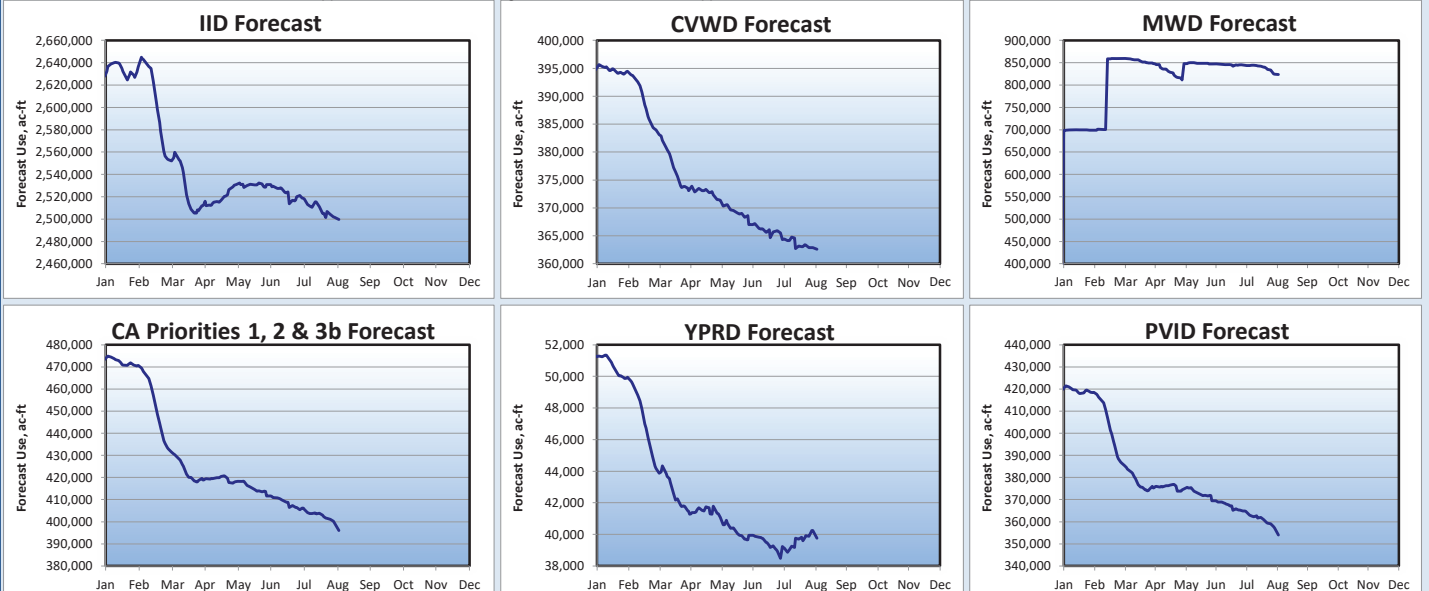
<sup>2</sup> System Conservation Water to be conserved by the City of Needles pursuant to System Conservation Implementation Agreement No. 15-XX-30-W0596, executed under the Pilot System Conservation Program. This water will remain in Lake Mead to benefit system storage.

<sup>3</sup> IID has been approved to create up to 62,000 AF of Extraordinary Conservation (EC) ICS in 2020; however, due to limitations set forth in the California ICS Agreement, may only store up to 1,579 AF in its Lake Mead ICS Account. Creation and storage of EC ICS by IID in excess of 1,579 AF will require an executed amendment to the California ICS Agreement, which has not occurred as of the date of this forecast. The actual amount of EC ICS created by IID and stored in its Lake Mead ICS Account will be based on final accounting and verification.

<sup>4</sup> In its CY 2020 water order, IID has indicated that it intends to create up to a total of 25,000 AF of "Additional Conserved Water" for purposes including, but not limited to, the creation of ICS for storage in Lake Mead. As noted above, IID may only use up to 1,579 AF of "Additional Conserved Water" for the creation and storage of EC ICS in its Lake Mead ICS Account. Storage of "Additional Conserved Water" as EC ICS in excess of this amount will require an executed amendment to the California ICS Agreement, which has not occurred as of the date of this forecast. The actual amount of "Additional Conserved Water" created by IID in 2020 will be based on final accounting and verification.

<sup>5</sup> MWD has been approved to create up to 450,000 AF of EC ICS in 2020, less the amount of EC ICS created by IID, and further limited to the amount that, when added to the EC ICS created by the states of Arizona and Nevada, does not exceed 625,000 AF. The actual amount of EC ICS created by MWD will be based on final accounting and verification.

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





INTERIOR REGION 8: LOWER COLORADO BASIN  
CY 2020

NOTE:

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- 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.

NEVADA WATER USERS  
FORECAST OF END OF YEAR 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	Excess to
	To Date	Use	Use	Estimated				
	CY 2020	CY 2020	CY 2020	CY 2020	CY 2020	CY 2020	CY 2020	CY 2020
ROBERT B. GRIFFITH WATER PROJECT (SNWS)	312,707	452,037		---	312,707	452,037		---
LAKE MEAD NRA, NV - Diversions from Lake Mead	481	940	1,500	---	481	940	1,500	-560
LAKE MEAD NRA, NV - Diversions from Lake Mohave	166	317	500	---	166	317	500	-183
BASIC MANAGEMENT INC.	3,560	6,512	8,208	---	3,560	6,512	8,208	-1,696
CITY OF HENDERSON (BMI DELIVERY)	11,325	19,020	15,878	---	11,325	19,020	15,878	3,142
NEVADA DEPARTMENT OF WILDLIFE	8	12	12	0	706	1,088	1,000	---
PACIFIC COAST BUILDING PRODUCTS INC.	633	987	928	---	633	987	928	59
BOULDER CANYON PROJECT	130	172	172	---	226	300	300	0
BIG BEND WATER DISTRICT	1,859	3,470	4,822	---	3,812	7,054	10,000	-2,946
FORT MOJAVE INDIAN TRIBE	1,692	2,563	4,020	---	2,527	3,827	6,000	-2,173
LAS VEGAS WASH RETURN FLOWS	-146,433	-221,043	-226,075	---				
<b>TOTAL NEVADA</b>	<b>186,128</b>	<b>264,987</b>	<b>253,997</b>	<b>0</b>	<b>336,143</b>	<b>492,082</b>	<b>488,346</b>	<b>-4,357</b>
SOUTHERN NEVADA WATER SYSTEM (SNWS)	166,274	230,994				452,037		
ALL OTHERS	19,854	33,993				40,045		
NEVADA USES ABOVE HOOVER	182,577	258,954				481,201		
NEVADA USES BELOW HOOVER	3,551	6,033				10,881		

**Tributary Conservation Intentionally Created Surplus (ICS)**

Southern Nevada Water Authority (SNWA) Creation of Tributary Conservation ICS (Approved) <sup>1</sup> 43,000

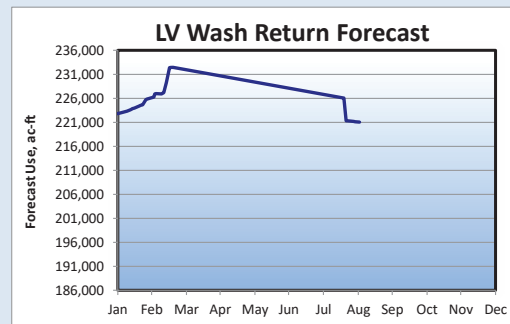
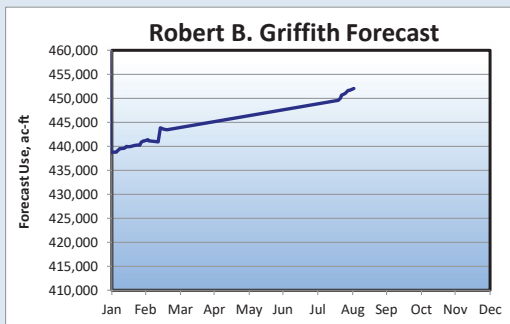
**NEVADA ADJUSTED APPORTIONMENT CALCULATION**

Nevada Basic Apportionment 300,000  
 SNWA Creation of Extraordinary Conservation (EC) ICS (Estimated) <sup>2</sup> (35,013)  
 Total State Adjusted Apportionment 264,987  
 Excess to Total State Adjusted Apportionment 0

<sup>1</sup> SNWA has been approved to create up to 43,000 AF of TC ICS in 2020. The actual amount of TC ICS created by SNWA will be based on final accounting and verification.

<sup>2</sup> SNWA has been approved to create up to 100,000 AF of EC ICS in 2020. The actual amount of EC ICS created by SNWA will be based on final accounting and verification.

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

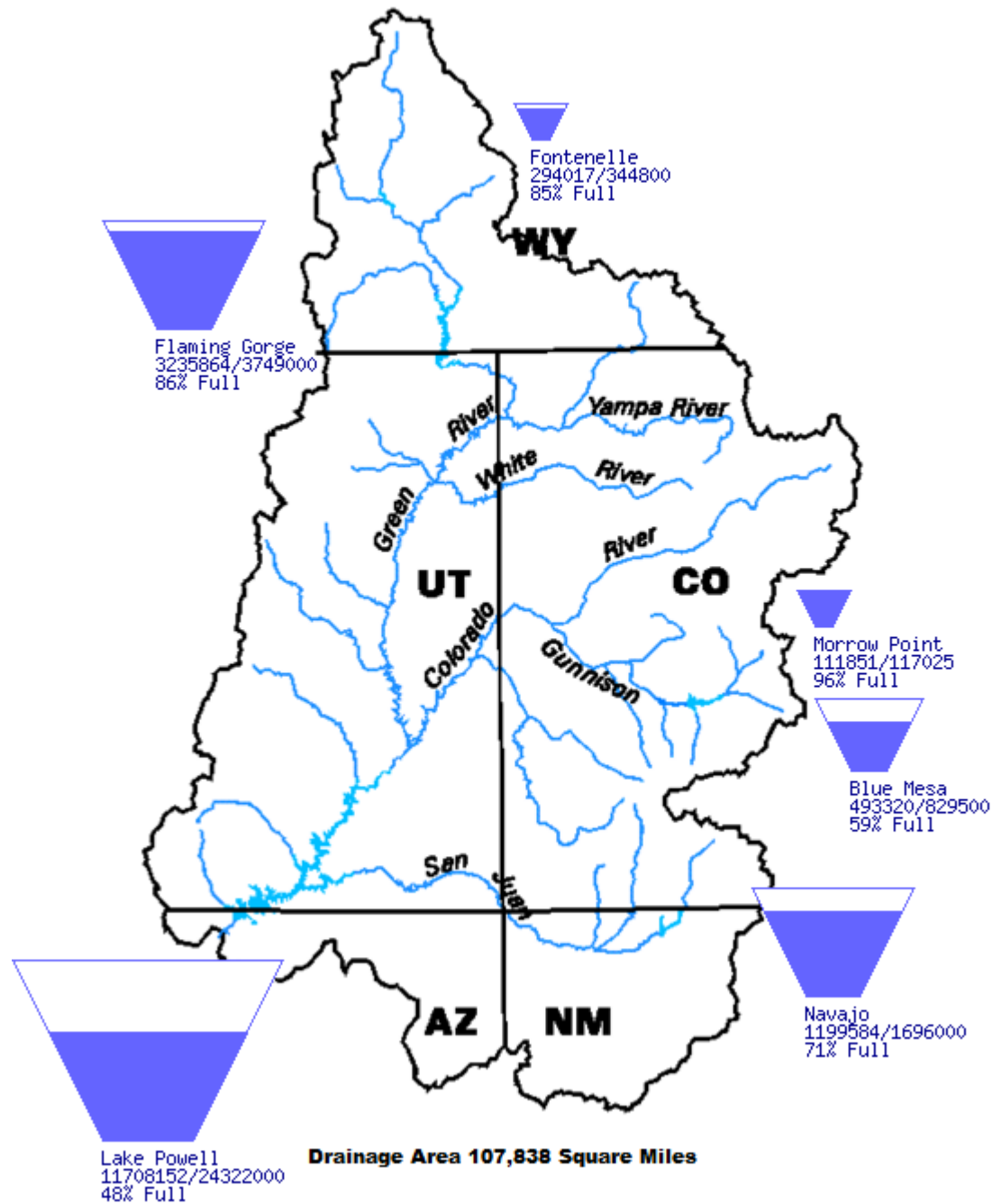


# Upper Colorado Region Water Resources Group

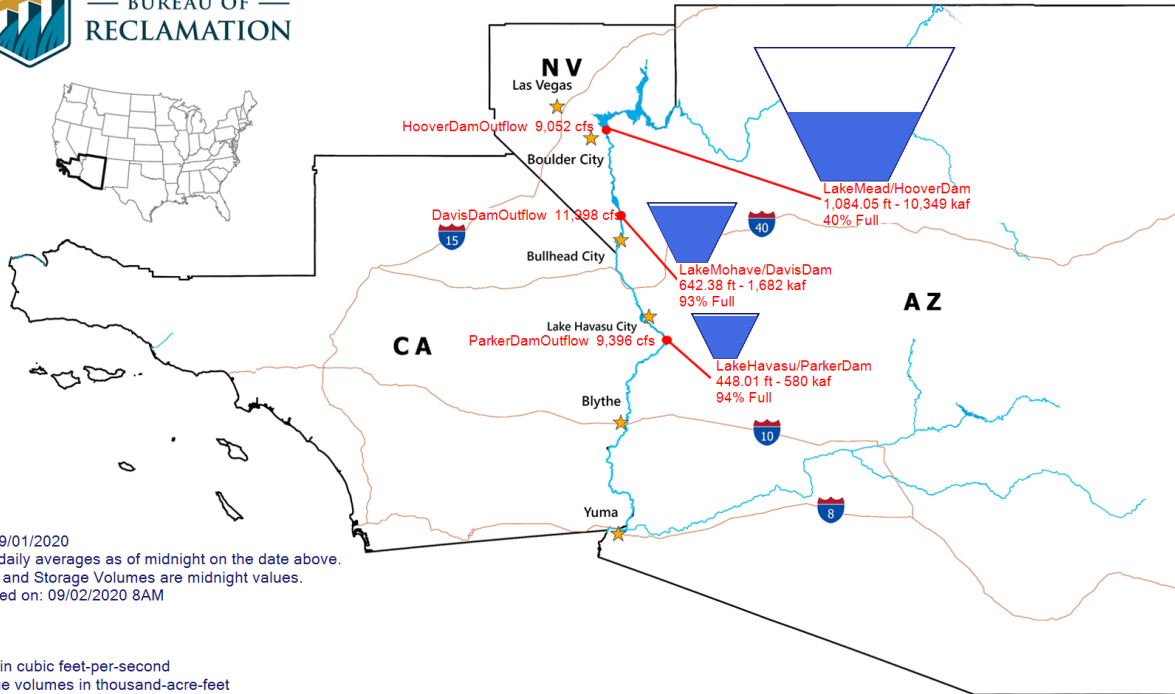
## River Basin Tea-Cup Diagrams

Data Current as of:  
09/01/2020

### Upper Colorado River Drainage Basin



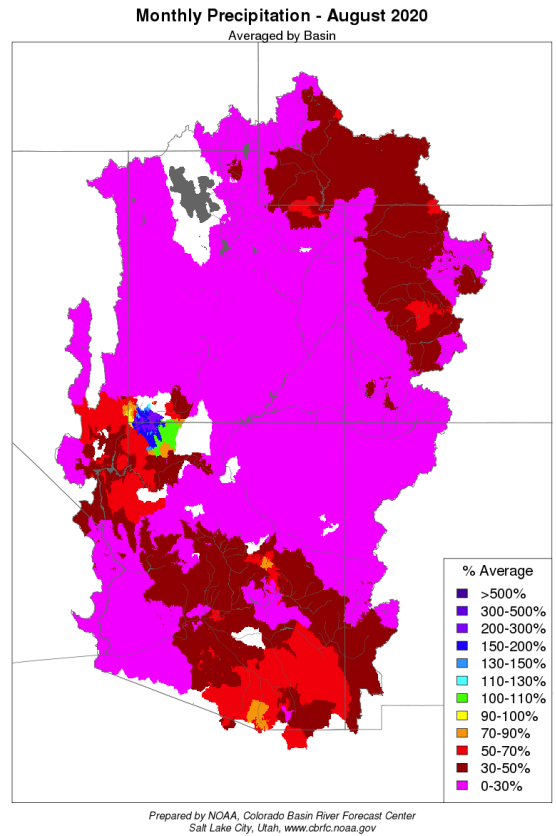
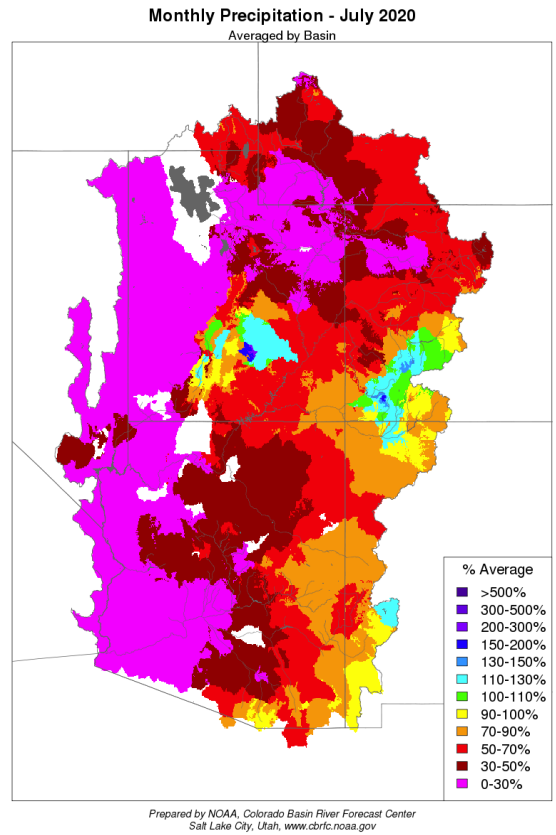
# Lower Colorado River Teacup Diagram



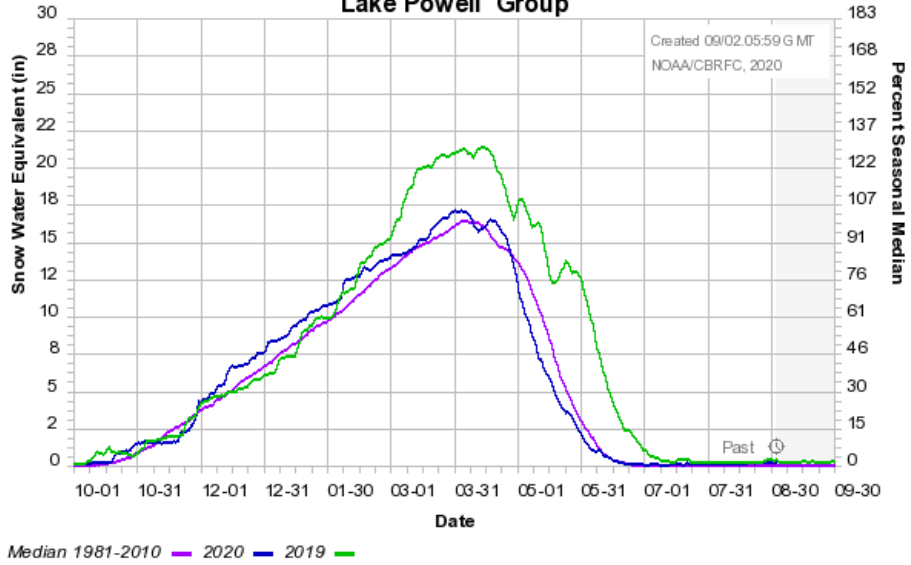
Data for: 09/01/2020  
 Flows are daily averages as of midnight on the date above.  
 Elevations and Storage Volumes are midnight values.  
 Last updated on: 09/02/2020 8AM

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

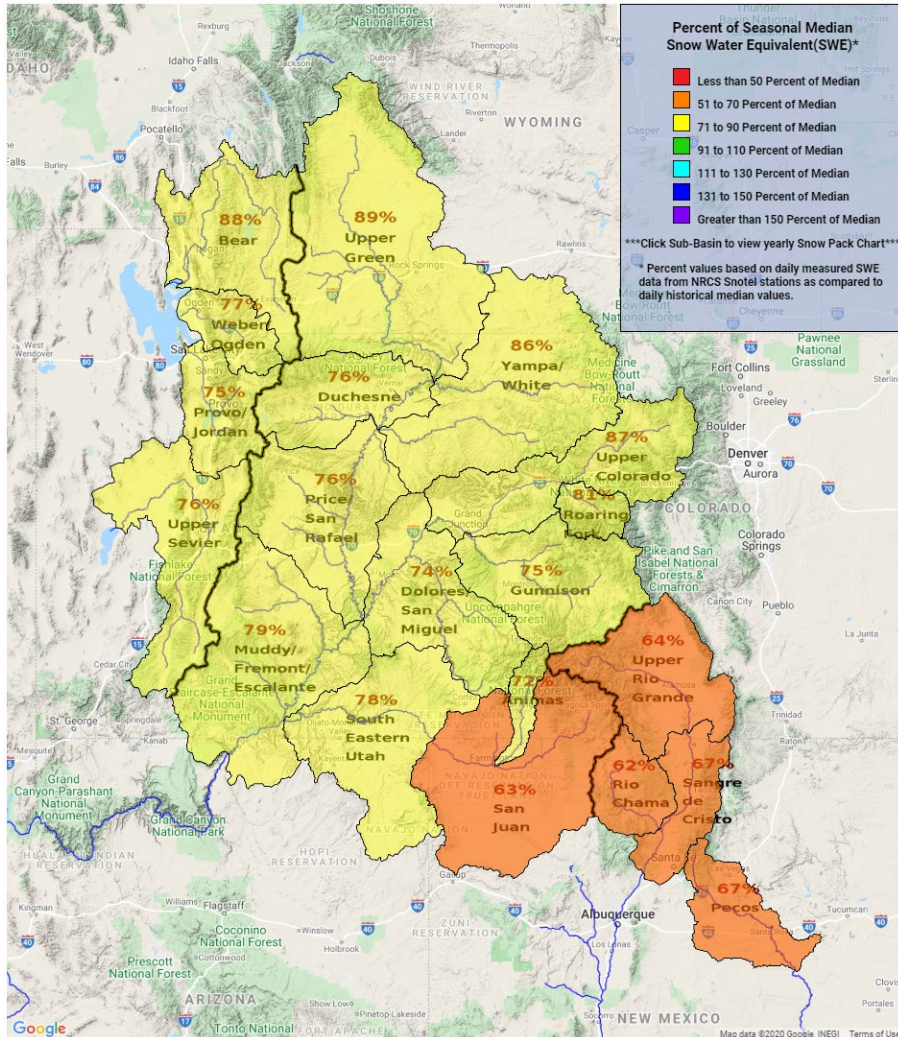
# NOAA National Weather Service Monthly Precipitation Map July and August 2020



## Colorado Basin River Forecast Center Lake Powell Group

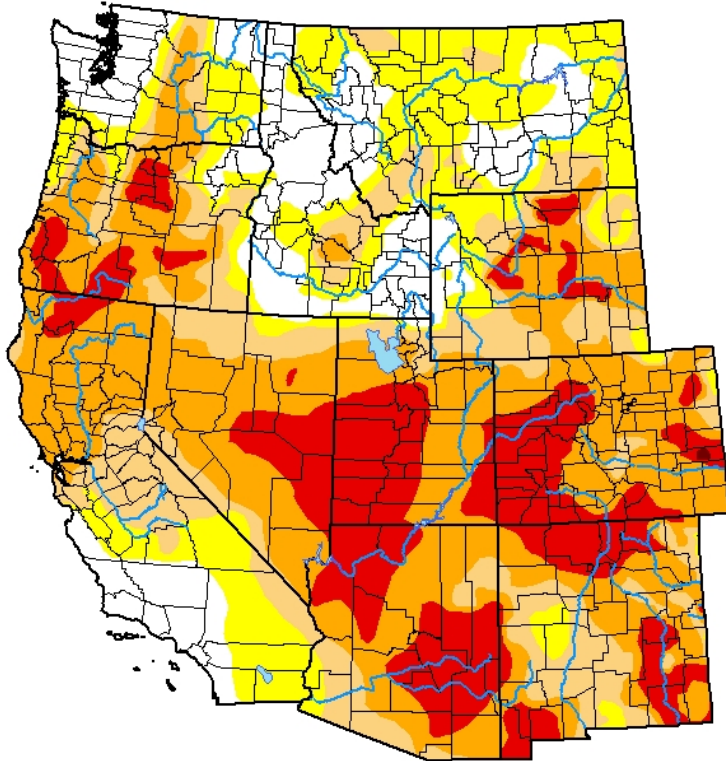


## Snow Pack Conditions Map Upper Colorado Region



**U.S. Drought Monitor  
West**

**September 1, 2020**  
(Released Thursday, Sep. 3, 2020)  
Valid 8 a.m. EDT



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	14.82	85.18	67.60	49.49	18.03	0.03
<b>Last Week</b> <small>08-25-2020</small>	17.08	82.92	66.93	48.09	16.88	0.03
<b>3 Months Ago</b> <small>06-02-2020</small>	36.99	63.01	40.09	17.84	2.97	0.00
<b>Start of Calendar Year</b> <small>12-31-2019</small>	59.17	40.83	18.17	7.12	0.00	0.00
<b>Start of Water Year</b> <small>10-01-2019</small>	68.40	31.60	16.32	3.16	0.00	0.00
<b>One Year Ago</b> <small>09-03-2019</small>	62.58	37.42	11.22	1.07	0.00	0.00

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>*

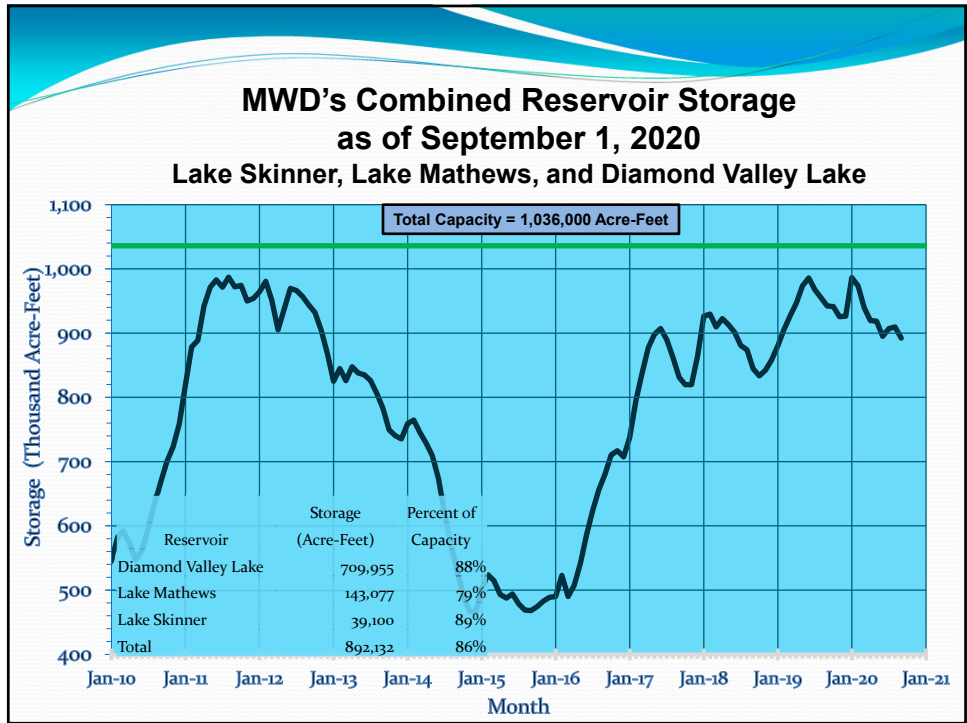
Author:

Richard Tinker  
CPC/NOAA/NWS/NCEP

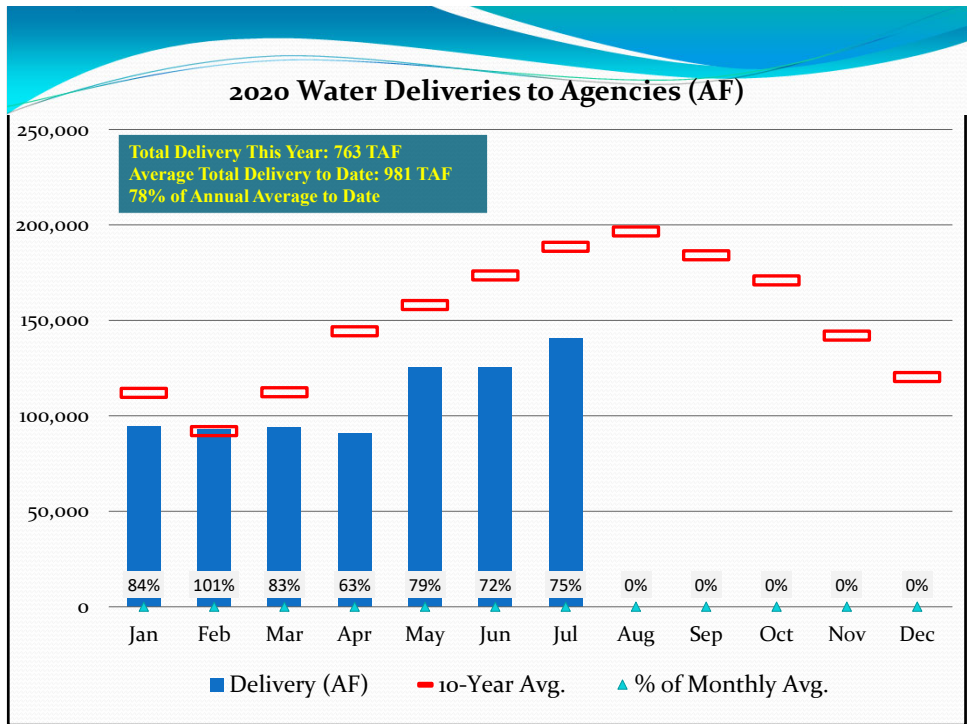


[droughtmonitor.unl.edu](https://droughtmonitor.unl.edu)

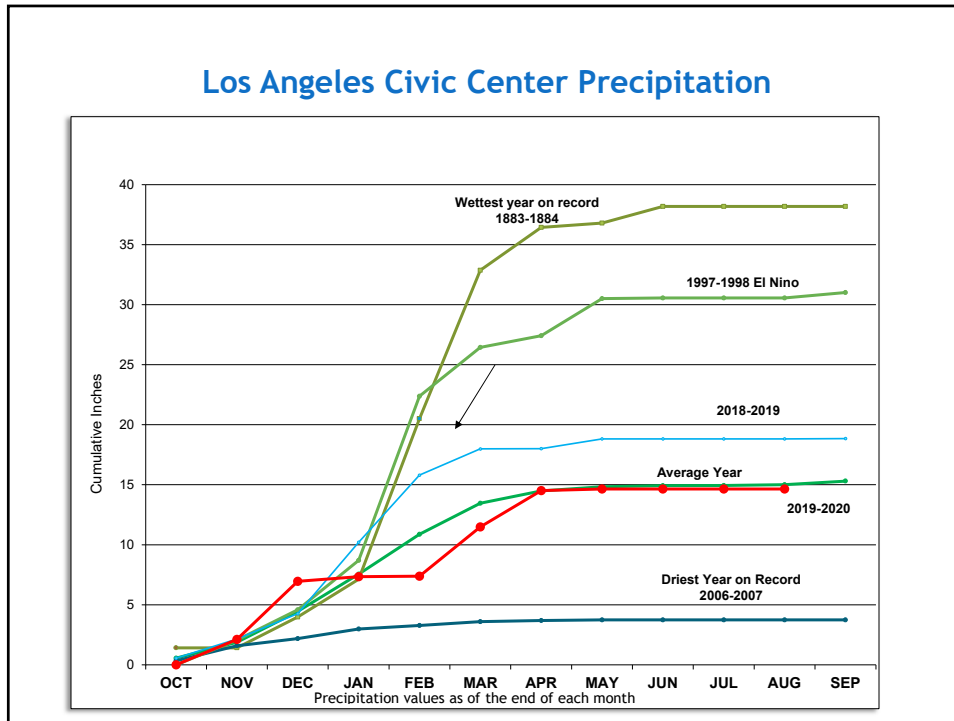




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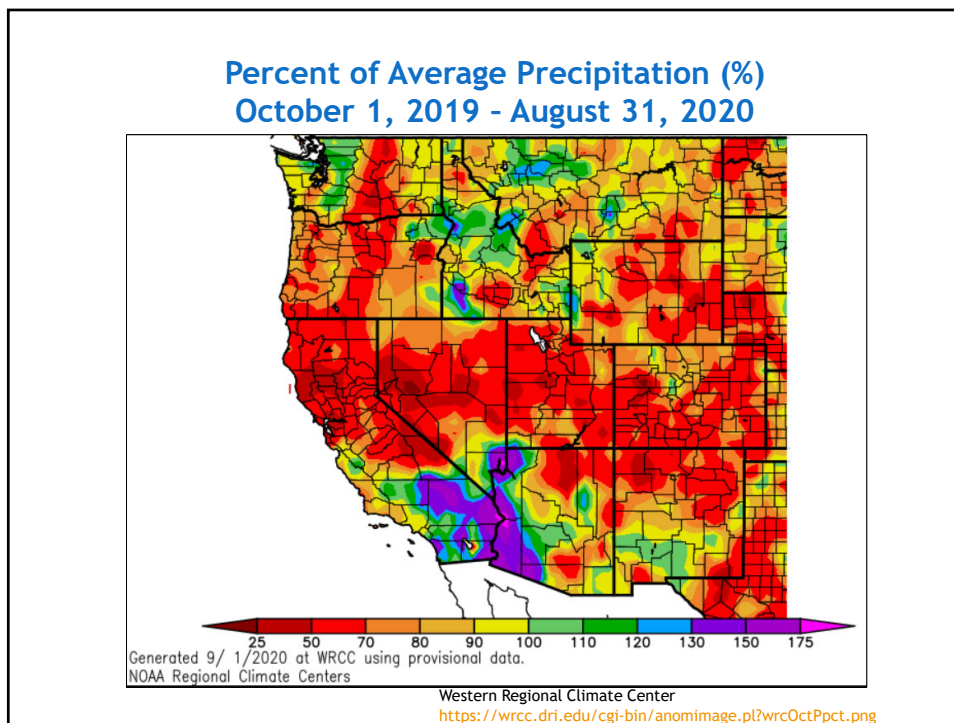
1

### Precipitation at Six Major Stations in Southern California

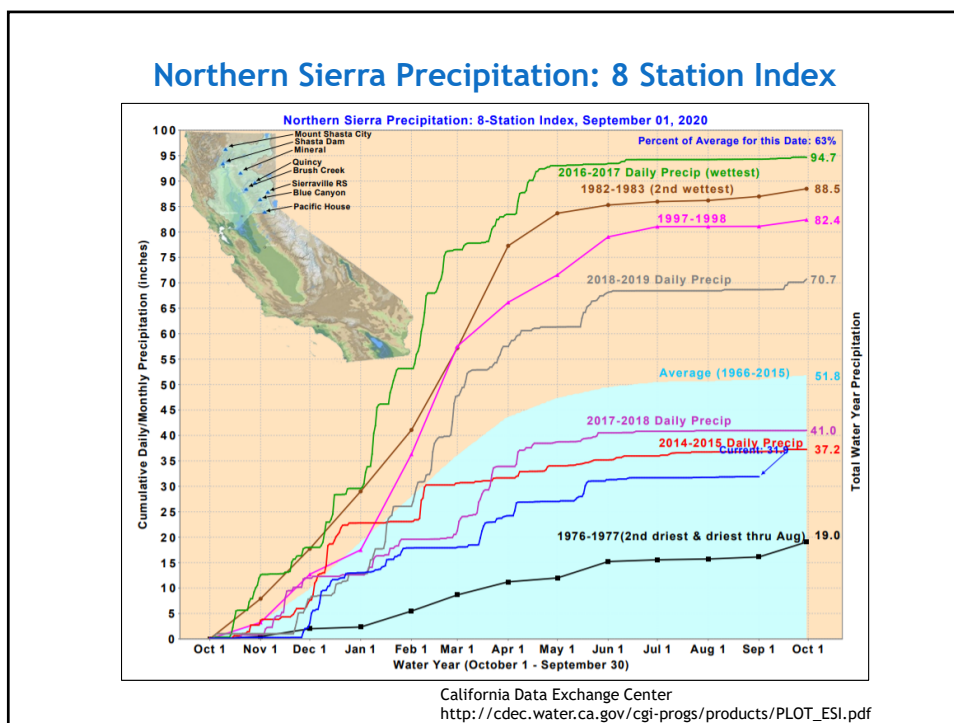
From October 1, 2019 to August 31, 2020

Station	Precipitation in inches		Average to Date	Percent of Average
	Aug	Oct 1 to Aug 31		
San Luis Obispo	0.01	9.60	22.18	43%
Santa Barbara	0.00	11.22	17.57	64%
Los Angeles	0.00	14.65	14.92	98%
San Diego	0.00	13.60	9.98	136%
Blythe	0.00	2.92	3.42	85%
Imperial	0.00	2.00	2.59	77%

2

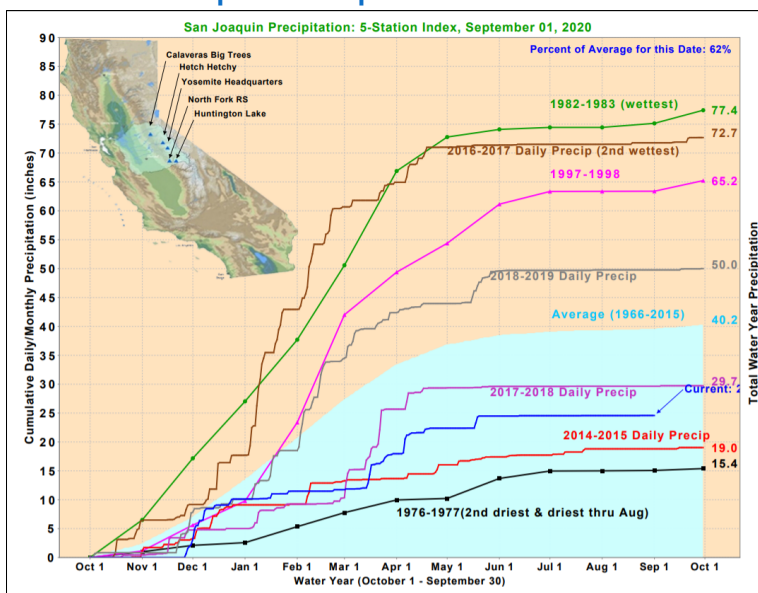


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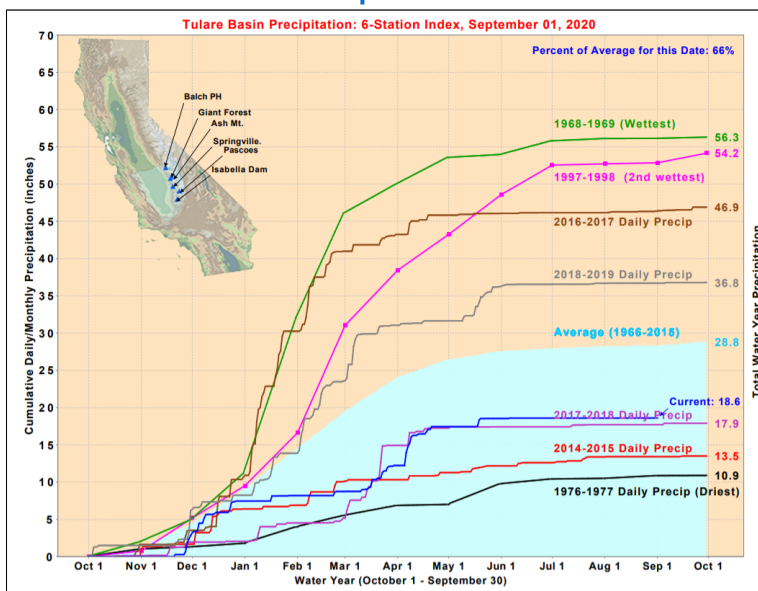
### San Joaquin Precipitation: 5 Station Index



California Data Exchange Center  
[http://cdec.water.ca.gov/cgi-progs/products/PLOT\\_FSI.pdf](http://cdec.water.ca.gov/cgi-progs/products/PLOT_FSI.pdf)

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### Tulare Basin Precipitation: 6 Station Index



California Data Exchange Center  
[http://cdec.water.ca.gov/cgi-progs/products/PLOT\\_TSI.pdf](http://cdec.water.ca.gov/cgi-progs/products/PLOT_TSI.pdf)

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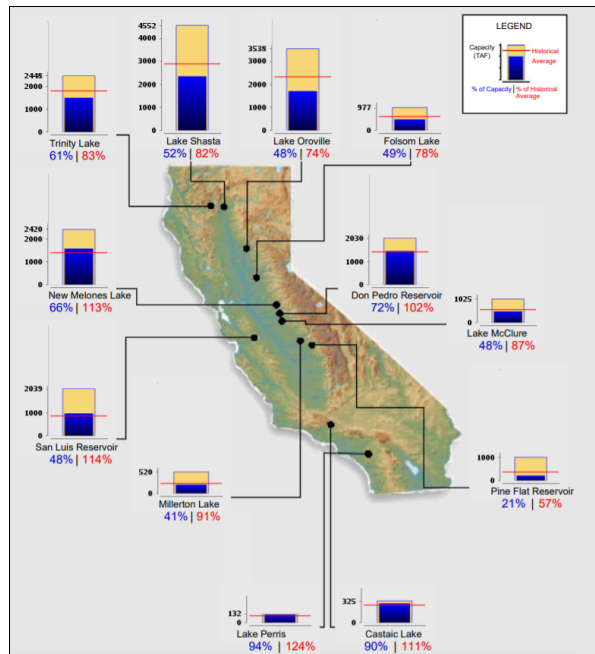
### Comparison of SWP Water Storage

Reservoir	Capacity	2019 Storage (acre-feet)		2020 Storage (acre-feet)	
		As of Sep 2	% of Cap.	As of Aug 31	% of Cap.
Frenchman	55,475	47,812	86%	37,625	68%
Lake Davis	84,371	70,398	83%	56,324	67%
Antelope	22,564	19,816	88%	17,977	80%
Oroville	3,553,405	2,605,603	73%	1,705,516	48%
<b>TOTAL North</b>	<b>3,715,815</b>	<b>2,743,629</b>	<b>74%</b>	<b>1,817,442</b>	<b>49%</b>
Del Valle	39,914	38,336	96%	33,780	85%
San Luis	2,027,835	1,231,007	61%	974,253	48%
Pyramid	169,901	167,908	99%	166,681	98%
Castaic	319,247	283,807	89%	292,153	92%
Silverwood	74,970	72,121	96%	69,117	92%
Perris	132,164	111,599	84%	124,169	94%
<b>TOTAL South</b>	<b>2,764,031</b>	<b>1,904,778</b>	<b>69%</b>	<b>1,660,153</b>	<b>60%</b>
<b>TOTAL SWP</b>	<b>6,479,846</b>	<b>4,648,407</b>	<b>72%</b>	<b>3,477,595</b>	<b>54%</b>

As of May 22, 2020, the Table A allocations for SWP contractors is 20%.

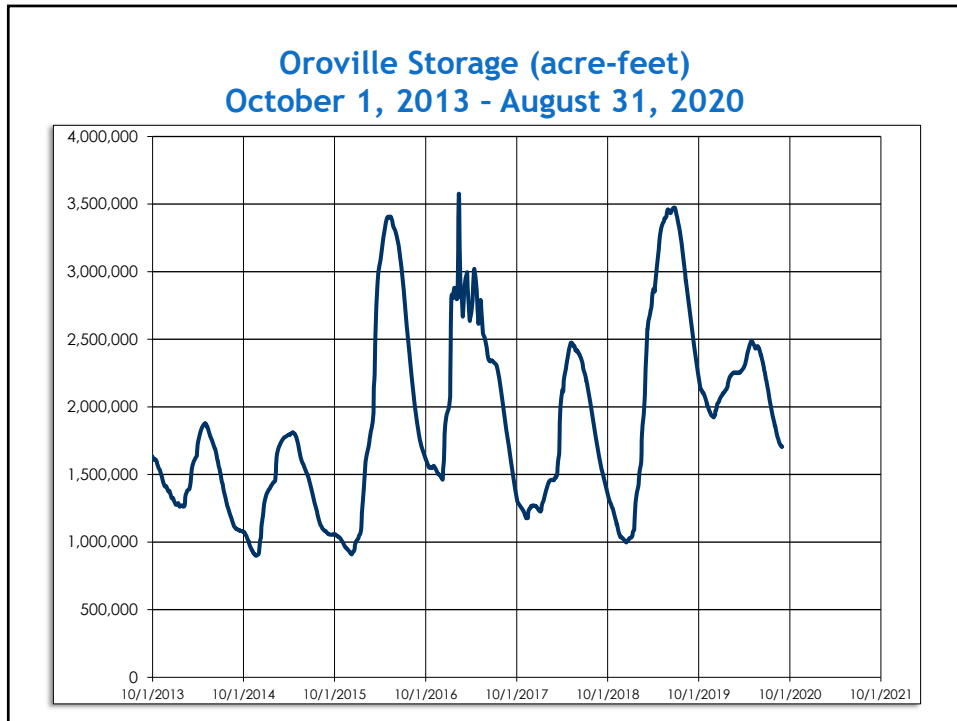
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### Reservoir Current Conditions as of August 31, 2020



California Data Exchange Center  
<https://cdec.water.ca.gov/reportapp/javareports?name=rescond.pdf>

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