

**EXECUTIVE DIRECTOR'S REPORT  
TO THE  
COLORADO RIVER BOARD OF CALIFORNIA**

April 14, 2021

**COLORADO RIVER BASIN WATER SUPPLY CONDITIONS REPORT**

As of April 5<sup>th</sup>, the surface water elevation at Lake Powell was 3,566.15 feet with 8.80 million-acre feet (MAF) of storage, or 36% of capacity. The surface water elevation at Lake Mead was 1,084.01 feet with 10.35 MAF of storage, or 40% of capacity. As of April 4<sup>th</sup>, the total system storage was 26.25 MAF, or 44% of capacity, which is about 4.69 MAF less than the total system storage at this same time last year.

As of March 1<sup>st</sup>, the Upper Basin reservoirs, excluding Lake Powell, ranged from 36% of capacity at Fontenelle Reservoir in Wyoming; 85% of capacity at Flaming Gorge Reservoir in Wyoming and Utah; 90% of capacity at Morrow Point, and 48% of capacity at Blue Mesa Reservoir in Colorado; and 62% of capacity at Navajo Reservoir in New Mexico.

As of April 2<sup>nd</sup>, the forecasted unregulated inflow into Lake Powell for Water Year (WY) 2021 is 4.90 MAF (45% of normal). The forecasted April through July 2021 runoff into Lake Powell for Water Year-2021 is 3.2 MAF (45% of normal). For WY-2021, the March observed Lake Powell inflow was 0.30 MAF (45% of normal), and the April Lake Powell inflow forecast is 0.40 MAF (38% of normal). To date, WY-2021 precipitation is 76% of normal and the current basin snowpack is 78% of normal in the Upper Colorado River Basin.

Colorado Basin River Forecast Center Webinar

On April 7<sup>th</sup>, the Colorado Basin River Forecast Center (CBRFC) held a webinar to review the Basin's current water supply conditions and forecasts. Very dry soil conditions continue to plague the Basin, threatening to impact water supply conditions as runoff season begins, with the worst soil conditions in the San Juan and Dolores Basins. Precipitation conditions in March were mixed, with above normal conditions in Colorado and portions of the Uintas, and near to below normal throughout the rest of the basin. Water Year-2021 precipitation conditions to date (October 2020 to April 2021), range from 70% to 85% of average in the Upper Basin and 50% to 60% of average in the Lower Basin. Temperatures in March were near to below normal, with the coolest temperature anomalies in the Lower Basin. Consequently, the cooler temperatures helped preserve the snowpack throughout the Basin. According to the California Department of Water



Resources, for Water Year 2021, the snowpack in the Northern and Central Sierra peaked at 70 percent of average, however rain is below 50 percent of average, which ties this year for the third driest year on record.

Warmer temperatures in early April spurred widespread snowmelt of 1 to 4 inches across the Upper Basin. Largely, the snowmelt occurred at elevations below 9,500 feet, across central and south Utah, as well as southwest Colorado. Less snowmelt occurred in Wyoming and higher elevations along the continental divide. As of April 6<sup>th</sup>, the Snow Water Equivalent (SWE) ranged from 55% of median in the Price/San Rafael Basin to 80% of median in the Upper Green, San Juan, and Upper Colorado Mainstem. In the Lower Basin, most of the snow has melted out. Forecasted water supply values continue to decline, with the Upper Basin ranging from 35% to 80% of normal and 0% to 35% of normal in the Lower Basin.

Over the week, weather models project a few weak storm systems impacting the Basin with normal seasonal temperatures across the northern portion of the Basin and for the remainder of the week. Temperatures will be seasonal across the northern basin and 5 to 10 degrees above normal the southern portion of the Basin. Within two weeks, model guidance suggests a storm system may impact the Basin mainly at the Continental Divide and the Front Range in Colorado.

The next Colorado River Basin Water Supply Briefing is scheduled on Friday, May 7<sup>th</sup> at 10:00 am MT.

#### Colorado River Mid-term Modeling System (CRMMS)

On April 7<sup>th</sup>, 2021, Reclamation provided an overview of the Colorado River Mid-term Modeling System (CRMMS) to the Stakeholder Modeling Work Group. Over the past year, Reclamation has been integrating its two Colorado River mid-term basin-wide models, the 24-Month Study model and the Mid-Term Operations probabilistic Model (MTOM), into a single modeling system. In March 2021, Reclamation completed this integration resulting in a new system, the Colorado River Mid-term Modeling System (CRMMS). CRMMS is a robust and flexible modeling system which improves and enhances Reclamation's mid-term modeling capabilities. It maintains the functionality of the 24-Month Study model and MTOM but brings them together in a single model system. This was done to make model development and maintenance more efficient, improve the process used to share deterministic and probabilistic information, and streamline the process for 24 Month Study, MTOM, and CRSS runs. Operational roll-out of CRMMS is a critical step in continually developing more efficient and effective modeling tools to support operational planning on the 1- to 5-year planning horizon and is an important first step in providing more regular probabilistic information associated with mid-term operations.



## COLORADO RIVER BASIN PROGRAM UPDATES

### Colorado River Basin Salinity Control Program

#### *Colorado River Basin Salinity Economic Impact Model*

On April 8<sup>th</sup>, 2021, Reclamation led a training of the Colorado River Basin Salinity Economic Impact Model (SEIM). The SEIM estimates the economic damages of salinity in municipal and agricultural service areas in the Lower Colorado River basin that either receive Colorado River water directly or as a blend of Colorado River water with local supplies. Elevated TDS concentrations from Colorado River water are compared with a baseline TDS concentration (defaulted to the U.S. EPA secondary drinking water quality standard of 500 mg/L) and therefore the model estimates relative salinity economic damages relative to the baseline rather than absolute costs. The SEIM is used to evaluate the effectiveness of alternative salinity management activities in the Upper Colorado River basin, which are documented in the Triennial Review of Water Quality Standards for Salinity Colorado River System. Several CRB member agencies participated in the training.

#### *Colorado River Basin Salinity Control Forum Work Group, State Representative Meetings*

The Colorado River Basin Salinity Control Forum Work Group has tentatively scheduled meetings of the Work Group State Representatives in late-April to review several ongoing activities. These include preparation of the 2023 Triennial Review of Water Quality Standards for Salinity Colorado River System, development of Salinity Control Program Fact Sheets, and providing recommendations to the U.S. Geological Survey on areas of future salinity control study.

### Weather Modification Program

The Board packet includes a comprehensive news article on the State of Utah's weather modification program. California's Six Agency Committee, Central Arizona Water Conservation District, and Southern Nevada Water Authority support an Upper Colorado River Basin weather modification program annually with the Colorado Water Conservation Board, Utah Division of Water Resources, Wyoming Water Development Office. The activities collectively benefit the water supply conditions in the Colorado River Basin. The news article highlights the benefits of the program within the State of Utah and acknowledges the support provided by the Lower Division states. The article can be accessed at <https://www.sltrib.com/news/2021/03/28/utah-is-leader-cloud/>.



## GENERAL ANNOUNCEMENTS AND UPDATES

### General Announcements

#### *Hoover Dam Solid Waste Disposal Site*

Beginning in January 2020, Board Staff have begun tracking activities associated with a solid waste disposal site located near Hoover Dam. The site was used as an uncontrolled solid waste site during construction activities for the Hoover Dam. From what Hoover Dam employees can ascertain, the original spoil pile was built up from muck, rock, and debris associated with the excavation of the Hoover Dam diversion tunnels in the early 1930s. It is also likely that excavated rock debris from the construction of the Hoover Dam Visitor's Center was deposited in this location. Removal of some debris was completed in 2019, including a BBQ grill frame, folding table, loose sheets of plywood, an air compressor, plastic drums, metal cabinets, wood slats, rubber hose, pipe and other asbestos containing material, orange safety cones, and picnic tables with benches.

The Bureau of Reclamation (Reclamation) reported that during a site inspection in 2018, solid waste was found to be distributed on top of the muck piles at the location. As a result of this finding, Reclamation's Lower Colorado River Basin Region took approximately 10 soil surface samples. The findings were compared to Soil Remediation Standards (SRS) from the Nevada Division of Environmental Protection (NDEP) and the Environmental Protection Agencies (EPA) Preliminary Remediation Goal Table. Samples exceeded reportable concentrations for arsenic, lead, and manganese. Upon determining that there was a reportable release, Reclamation notified NDEP on November 30, 2018. This site is identified by the NDEP through Facility ID Number: H-001021 and Spill Report Number:181130-01. Reclamation collected additional samples for total metals analyses from bottoms of the washes on August 8, 2019. Samples exceeded NDEP Soil Remediation Goals for the following metals: aluminum, antimony, arsenic and manganese. A map of the site is shown in Figure 1.

Reclamation prepared a Work Plan (November 19, 2019) which received concurrence with conditions from NDEP in a letter dated October 6, 2020, and both a draft Background Soil Sampling Plan and draft Water Quality Sampling and Analysis Plan (January 28, 2021) which received a concurrence with conditions from NDEP in a letter dated April 6, 2021. The first Semi-Annual Report from Reclamation (January 28, 2021) includes sampling data from a sand blast grit dumping area that identified the following additional pollutants: lead, cadmium, chromium. The next semi-annual report is due July 28, 2021.



Anticipated future work at the site will be completed in two phases and includes: completing a Hydrologic Assessment, limited removal of solid waste and implementation of erosion control measures. Work is anticipated to be completed by September 2023 subject to funding. In the concurrence with conditions, NDEP recommended that a Hydrologic Assessment model the peak discharges for a design storm (such as a 100-year flood) for portions of the site and that the assessment include, but not be limited to, predicted runoff volumes, velocities, and surface and subsurface pathways. Erosion control measures to be placed on the site include check dams, rock caps, wattles, and berms.

At the October 2019 meeting, the Boulder Canyon Project (BCP) Engineering and Operating Committee agreed to use \$1 million in carry-over funds for Phase I of the project. \$200,000 of the Phase I funding is designated for gathering information. Phase II is anticipated to cost \$4 million to \$5 million. The Phase II funding estimate is subject to change as plans are developed. Funding for Phase II has not yet been secured.

The Colorado River Commission of Nevada, the Metropolitan Water District of Southern California (MWD), Arizona Power Authority, Southern California Edison Company and Los Angeles Department of Water and Power, as Contractors of the BCP submitted a letter to Reclamation regarding the Hoover Dam solid waste site on May 28, 2020, requesting information pertaining to the history of waste disposal at the site, the firing range, groundwater data, and financing for the project. Reclamation has provided some of the information requested to the Engineering and Operating Committee. The necessity for further information gathering is subject to ongoing discussions.

MWD submitted comments on the Draft Work Plan on January 29, 2020, and on both the Background Soil Sample Plan and Water Quality Sampling Plan for Hoover Dam Solid Waste Site on January 6, 2021. NDEP has provided responses to these comments in letters dated October 2, 2020, and January 14, 2021. Reclamation is working to create a revised sampling plan to address these comments. Colorado River Board of California staff will continue to track the progress of this clean-up effort as it progresses.



Figure 1. Site Location (Image Source: Work Plan)



### Washington, D.C. Report

#### *Passage of \$1.9 Trillion Covid-19 Relief Package*

On Thursday, March 11th, the \$1.9 trillion pandemic relief package was signed into law. It also contained funding for water systems and their customers. The legislation makes explicit that \$350 billion in state and local government funding can be used for “necessary investments” in water and sewer. For Indian tribes, there is \$20 million to the Bureau of Indian Affairs for providing potable water and \$10 million to the Indian Health Service for potable water delivery.

#### *Cabinet Secretaries Confirmed*

On Wednesday, March 10th, Mr. Michael Regan was confirmed to serve as EPA Administrator by a bipartisan Senate vote of 66 to 34. Regan spent four years as secretary of the North Carolina



Department of Environmental Quality, where his record of fixing environmental problems faced by low-income residents and communities of color drew national attention.

On Monday, March 15th Congresswoman Deb Haaland was confirmed on a 54-40 Senate vote to serve as the Secretary of the Interior. Haaland was elected to Congress in 2018 to serve New Mexico's First Congressional District. An enrolled member of the Pueblo of Laguna and former chairwoman of the New Mexico Democratic Party, Ms. Haaland served throughout 2019 and 2020 as the vice chair of the House Natural Resources Committee and the chairwoman of the Subcommittee on National Parks, Forests and Public Lands.

### *President's Budget and Appropriations*

On April 9<sup>th</sup>, 2021, President Biden released a 'skinny' version of the Fiscal Year 2022 budget request to Congress; a more detailed budget is due later this Spring. This budget includes an \$11.2 billion request for EPA (21.3% increase over FY 21 enacted levels), \$17.4 billion for the Department of the Interior (16.3% increase over FY 21 enacted levels), and \$6.8 billion for the Army Corps of Engineers (a 12.9% decrease over FY 21 enacted levels).

With respect to western water, the budget supports the Bureau of Reclamation without stating a funding amount. It also states that it provides funding for programs, such as WaterSMART grants, to improve water conservation and energy efficiency. The budget also places an emphasis on drinking water and wastewater infrastructure by providing \$3.6 billion within the EPA for water infrastructure loans and grants (\$625 million increase over 2021 levels).

With the release of this 'skinny budget' Congress will kick off the appropriations process by holding hearings in respective subcommittees. This year's appropriations process will be different as earmarks have been revived and renamed as Community Project Funding. Both the House Interior and Environment, and Energy and Water Appropriations Subcommittees released specific guidance for members of Congress on Community Project Funding.

### *Infrastructure Package*

Last week, President Biden unveiled a wide-ranging \$2 trillion jobs and infrastructure plan. The administration is calling the proposal the American Jobs Plan, and among its many parts it includes \$111 billion for water systems. The plan also calls for \$50 billion to prepare the country's infrastructure for an era of severe floods, droughts, wildfires, and hurricanes.



### *Water Infrastructure Legislation*

The Senate Committee on Environment and Public Works advanced drinking water and wastewater legislation that would authorize up to \$35 billion, subject to appropriations. The bill includes authorization of \$14.7 billion over five years for both the Drinking Water and Clean Water State Revolving Funds. The bill also authorizes funding for lead pipe removal, asset management aid to small systems, workforce training, septic system repairs, and a report on water affordability.

The Senate Indian Affairs Committee advanced the Western Tribal Water Infrastructure Act, which would increase authorized spending on tribal drinking water systems to \$50 million annually (up from \$20 million) and expand the program. The federal government would fund 100 percent of the costs.

Republican Senators have reintroduced the Water Rights Protection Act to prevent the federal government from requiring the transfer of water rights as part of a permit or easement agreement. The bill has been introduced several times in response to a 2011 U.S. Forest Service proposal, later withdrawn, that would have required ski resorts operating on public land to transfer their water rights to the U.S. government.

\*\*\*







4/5/2021

# 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/q4000/weekly.pdf>

	PERCENT	Content 1000 ac-ft (kaf)	Elev. (Feet above mean sea level)	7-Day Release (CFS)
CURRENT STORAGE	FULL			
LAKE POWELL	36%	8,799	3,566.15	11,500
* LAKE MEAD	40%	10,346	1,084.01	15,700
LAKE MOHAVE	93%	1,683	642.44	16,000
LAKE HAVASU	92%	572	447.59	11,800
TOTAL SYSTEM CONTENTS **	44%	26,252		
As of 4/4/2021				
SYSTEM CONTENT LAST YEAR	52%	30,938		
* 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	76%	1,741		
Painted Rock Dam	0%	0	530.00	0
Alamo Dam	12%	117	1,118.65	25
Forecasted Water Use for Calendar Year 2021 (as of 4/5/2021) (values in kaf)				
NEVADA			262	
SOUTHERN NEVADA WATER SYSTEM				228
OTHERS				33
CALIFORNIA			4,478	
METROPOLITAN WATER DISTRICT OF CALIFORNIA				1,069
IRRIGATION DISTRICTS				3,392
OTHERS				18
ARIZONA			2,535	
CENTRAL ARIZONA PROJECT				1,406
OTHERS				1,129
TOTAL LOWER BASIN USE				7,275
DELIVERY TO MEXICO - 2021 (Mexico Scheduled Delivery + Preliminary Yearly Excess <sup>1</sup> )				1,460
OTHER SIGNIFICANT INFORMATION				
UNREGULATED INFLOW INTO LAKE POWELL - APRIL FINAL FORECAST DATED 4/2/2021				
		MILLION ACRE-FEET	% of Normal	
FORECASTED WATER YEAR 2021		4.897	45%	
FORECASTED APRIL-JULY 2021		3.200	45%	
MARCH OBSERVED INFLOW		0.297	45%	
APRIL INFLOW FORECAST		0.400	38%	
		Upper Colorado Basin	Salt/Verde Basin	
WATER YEAR 2021 PRECIP TO DATE		76% (14.0")	52% (8.7")	
CURRENT BASIN SNOWPACK		78% (12.4")	NA% (NA)	

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





**BUREAU OF  
RECLAMATION**  
**LOWER COLORADO BASIN REGION**  
**CY 2021**

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)

**WATER USE SUMMARY**

	Use To Date CY 2021	Forecast Use CY 2021	Approved Use <sup>2</sup> CY 2021	Excess to Approval CY 2021
ARIZONA	603,508	2,534,980	2,492,097	<b>42,883</b>
CALIFORNIA	840,426	4,478,364	4,398,276	<b>80,088</b>
NEVADA	39,919	261,794	338,206	<b>-76,412</b>
STATES TOTAL <sup>3</sup>	1,483,853	7,275,138	7,228,579	<b>46,559</b>
TOTAL DELIVERIES MEXICO IN SATISFACTION OF TREATY REQUIREMENTS <sup>4</sup>	425,440	1,421,660		
CREATION OF MEXICO'S RECOVERABLE WATER SAVINGS <sup>5</sup>	0	41,000		
CREATION OF MEXICO'S WATER RESERVE <sup>6</sup>	36,994	37,340		
TOTAL TO MEXICO IN SATISFACTION OF TREATY REQUIREMENTS	462,434	1,500,000		
TO MEXICO IN EXCESS OF TREATY <sup>7</sup>	22,591	38,000		
WATER BYPASSED PURSUANT TO IBWC MINUTE NO. 242 <sup>8</sup>	32,905	118,165		
TOTAL LOWER BASIN & MEXICO <sup>9</sup>	1,964,789	8,852,963		

<sup>1</sup> Incorporates 80 daily reporting stations which may be revised after provisional data reports are distributed by the USGS.

Use to date estimated for users reporting monthly and 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 deliveries to Mexico at the Northerly International Boundary, Southerly International Boundary, Limitrophe, and Diversion Channel 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.

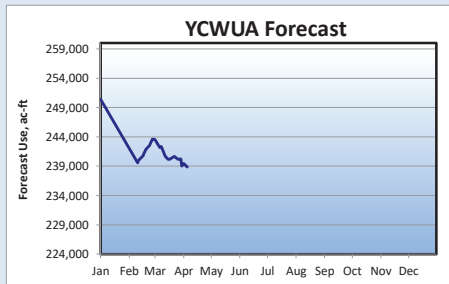
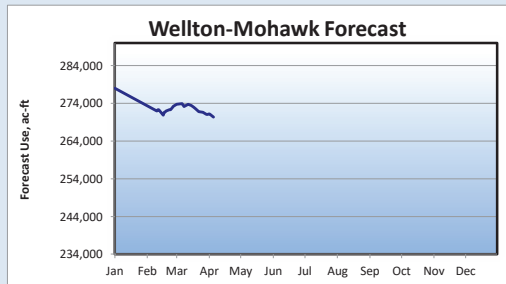
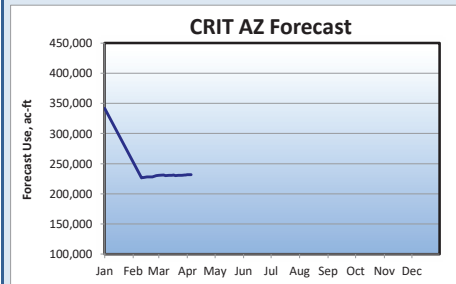
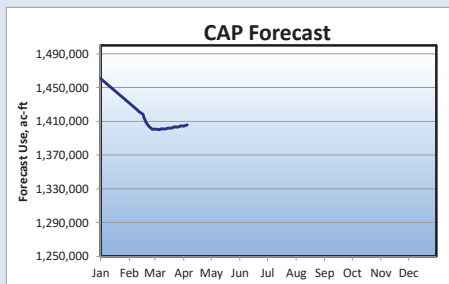
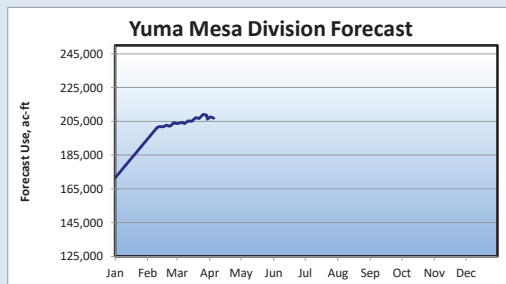
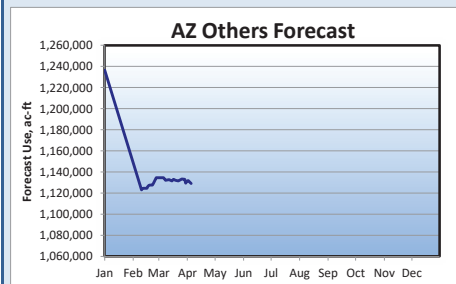
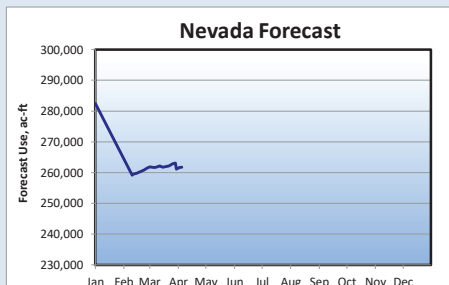
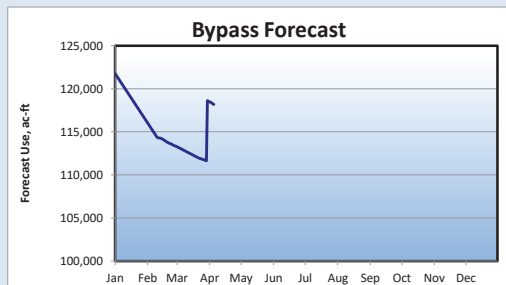
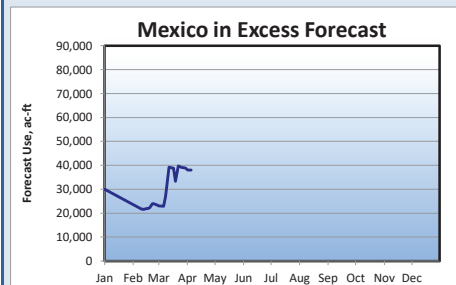
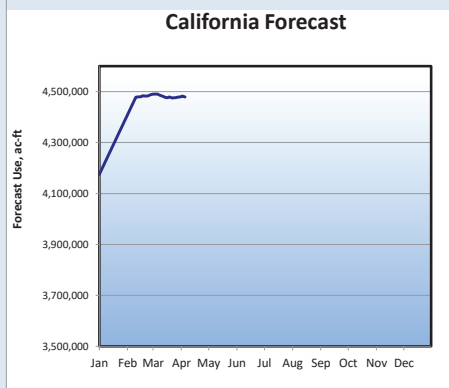
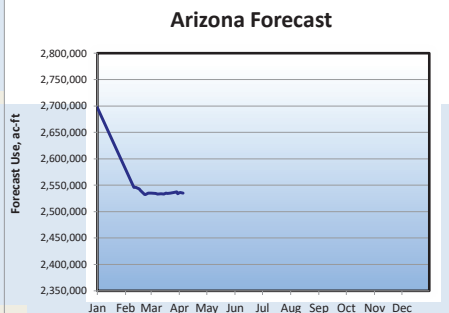
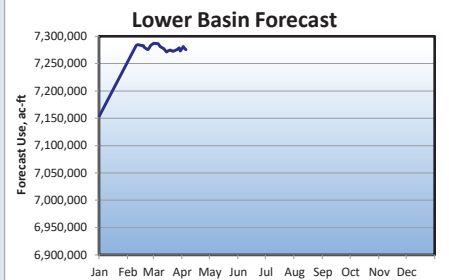
<sup>5</sup> Water deferred by Mexico pursuant to Section IV of IBWC Minute 323 and the Joint Report of the Principal Engineers with the Implementing Details of the Binational Water Scarcity Contingency Plan in the Colorado River Basin, dated July 11, 2019. (Mexico's required Binational Water Scarcity Contingency Plan Contribution).

<sup>6</sup> Water deferred by Mexico pursuant to Section V of IBWC Minute 323.

<sup>7</sup> Mexico excess forecast is based on the 5-year average for the period 2015-2019.

<sup>8</sup> Bypass forecast is based on the average for the period 1990-2019.

<sup>9</sup> 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.





**BUREAU OF  
RECLAMATION**  
**LOWER COLORADO BASIN REGION**  
**CY 2021**

**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/underun 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/underun 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 To Date CY 2021	Forecast Use CY 2021	Estimated Use CY 2021	Excess to Estimated Use CY 2021	Diversion To Date CY 2021	Forecast Diversion CY 2021	Approved Diversion CY 2021	Excess to Approved Diversion CY 2021
ARIZONA PUMPERS	3,676	15,512	15,512	---	5,430	22,912	22,912	0
LAKE MEAD NRA, AZ - Diversions from Lake Mead	9	70	70	---	9	70	70	0
LAKE MEAD NRA, AZ - Diversions from Lake Mohave	55	224	224	---	55	224	224	0
DAVIS DAM PROJECT	0	2	2	---	4	17	17	0
BULLHEAD CITY	1,619	8,067	8,163	---	2,542	12,561	12,720	-159
MOHAVE WATER CONSERVATION DISTRICT	160	676	676	---	239	1,010	1,010	0
BROOKE WATER LLC	75	324	323	---	113	487	485	2
MOHAVE VALLEY I.D.D.	3,457	15,802	15,932	---	6,401	29,262	29,503	-241
FORT MOJAVE INDIAN RESERVATION, AZ	7,723	43,867	44,550	---	14,302	81,235	82,500	-1,265
GOLDEN SHORES WATER CONSERVATION DISTRICT	68	286	286	---	101	427	427	0
HAVASU NATIONAL WILDLIFE REFUGE	556	3,395	3,564	---	4,622	37,949	41,835	-3,886
LAKE HAVASU CITY	1,813	8,914	9,021	---	2,925	14,378	14,550	-172
CENTRAL ARIZONA PROJECT	404,899	1,405,799	---	---	404,899	1,405,799	---	---
TOWN OF PARKER	86	446	430	---	171	913	917	-4
COLORADO RIVER INDIAN RESERVATION, AZ	36,671	231,655	226,280	---	95,937	504,243	509,647	-5,404
EHRENBURG IMPROVEMENT ASSOCIATION	55	232	232	---	77	325	325	0
CIBOLA VALLEY <sup>1</sup>	2,268	15,434	15,618	---	3,172	21,587	21,843	-256
CIBOLA NATIONAL WILDLIFE REFUGE	1,512	14,254	14,264	-10	2,439	22,989	23,005	-16
IMPERIAL NATIONAL WILDLIFE REFUGE	978	3,799	3,799	0	1,576	6,128	6,128	0
BLM PERMITEES (PARKER DAM to IMPERIAL DAM)	200	844	844	---	308	1,299	1,299	0
CHA CHA, LLC	209	1,329	1,365	---	322	2,045	2,100	-55
BEATTIE FARMS	119	711	722	---	182	1,093	1,110	-17
YUMA PROVING GROUND	61	516	516	---	61	516	516	0
GILA MONSTER FARMS	1,061	4,908	5,273	---	1,823	8,463	9,156	-693
WELLTON-MOHAWK IDD	46,129	270,343	278,000	-7,657	76,005	400,857	412,965	-12,108
BLM PERMITEES (BELOW IMPERIAL DAM)	18	74	74	0	27	114	114	0
CITY OF YUMA	2,211	14,519	16,201	-1,682	4,894	25,501	27,500	-1,999
MARINE CORPS AIR STATION YUMA	242	1,304	1,320	---	242	1,304	1,320	-16
UNION PACIFIC RAILROAD	6	29	29	---	13	48	48	0
UNIVERSITY OF ARIZONA	147	885	898	---	147	885	898	-13
YUMA UNION HIGH SCHOOL DISTRICT	20	150	150	---	27	200	200	0
DESERT LAWN MEMORIAL	5	23	23	---	8	33	33	0
NORTH GILA VALLEY IRRIGATION DISTRICT	1,390	10,745	11,563	---	7,778	42,205	44,200	-1,995
YUMA IRRIGATION DISTRICT	8,706	38,628	37,835	---	14,517	69,370	69,900	-530
YUMA MESA I.D.D.	22,561	157,354	150,455	---	36,010	242,355	242,080	275
UNIT "B" IRRIGATION DISTRICT	2,952	21,619	20,816	---	4,195	28,832	29,400	-568
FORT YUMA INDIAN RESERVATION	354	1,494	1,494	---	545	2,299	2,299	0
YUMA COUNTY WATER USERS' ASSOCIATION	50,893	238,854	242,377	---	76,434	352,221	360,400	-8,179
COCOPA INDIAN RESERVATION	490	1,666	1,686	---	500	2,294	2,585	-291
RECLAMATION-YUMA AREA OFFICE	54	227	227	---	54	227	227	0
RETURN FROM SOUTH GILA WELLS								
<b>TOTAL ARIZONA</b>	<b>603,508</b>	<b>2,534,980</b>	<b>2,555,314</b>		<b>769,106</b>	<b>3,344,677</b>	<b>3,400,968</b>	
<b>CAP</b>	<b>404,899</b>	<b>1,405,799</b>				<b>1,405,799</b>		
<b>ALL OTHERS</b>	<b>198,609</b>	<b>1,129,181</b>	<b>1,130,814</b>			<b>1,938,878</b>	<b>1,976,468</b>	
<b>YUMA MESA DIVISION, GILA PROJECT</b>	<b>32,657</b>	<b>206,727</b>	<b>199,853</b>	<b>6,874</b>		<b>353,930</b>		

**ARIZONA ADJUSTED APPORTIONMENT CALCULATION**

Arizona Basic Apportionment	2,800,000
System Conservation Water - Pilot System Conservation Program <sup>2</sup>	(360)
System Conservation Water - Colorado River Indian Tribes (CRIT) <sup>3</sup>	(50,000)
System Conservation Water - Fort McDowell Yavapai Nation (FMYN) <sup>4</sup>	(13,933)
System Conservation Water - Mohave Valley I.D.D. (MVIDD) <sup>5</sup>	(6,925)
Creation of Extraordinary Conservation ICS - CRIT (Estimated) <sup>6,8</sup>	(4,685)
Creation of Extraordinary Conservation ICS - GRIC (Estimated) <sup>7,8</sup>	(40,000)
Arizona DCP Contribution <sup>9</sup>	(192,000)
<b>Total State Adjusted Apportionment</b>	<b>2,492,097</b>
<b>Excess to Total State Adjusted Apportionment</b>	<b>42,883</b>
<b>Estimated Allowable Use for CAP</b>	<b>1,369,816</b>

<sup>1</sup> Includes the following water users within the Cibola Valley: Cibola Valley IDD, Arizona Game and Fish Commission, GSC Farms, Red River Land Co., Western Water, 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. 20-XX-30-W0688, 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 (LB DCP 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> System Conservation Water to be created by MVIDD pursuant to SCIA No. 20-XX-30-W0686, which will remain in Lake Mead to benefit system storage. In accordance with this SCIA and Section 3.b of the LB DCP Agreement, Reclamation intends to apply this water towards the Secretary'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>6</sup> CRIT has been approved to create up to 4,685 AF of Extraordinary Conservation (EC) ICS in 2021. The actual amount of EC ICS created by CRIT will be based on final accounting and verification.

<sup>7</sup> CAP water being conserved by GRIC in 2021 to create EC ICS. The actual amount of EC ICS created by GRIC will be based on final accounting and verification.

<sup>8</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 110,185 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* (LBOPs), the total amount of EC ICS that may be created by the states of Arizona, California, and Nevada in 2021 will be limited to 625,000 AF. Additionally, the total amount accumulated in Arizona's ICS accounts will be limited in accordance with Section IV.C. of LBOPs.

<sup>9</sup> In accordance with Section III.B.1.a of LBOPs, 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 by the Central Arizona Water Conservation District (CAWCD) through the creation of EC ICS by and reductions in consumptive use. CAWCD has been approved to create up to 60,500 AF of EC ICS in 2021. The actual amount of EC ICS created by CAWCD and credited toward the DCP Contribution will be based on final accounting and verification.

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





# BUREAU OF RECLAMATION

## LOWER COLORADO BASIN REGION CY 2021

### 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.

### 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 To Date CY 2021	Forecast Use CY 2021	Estimated Use CY 2021	Excess to Estimated Use CY 2021	Diversion To Date CY 2021	Forecast Diversion CY 2021	Approved Diversion CY 2021	Excess to Approved Diversion CY 2021
CALIFORNIA PUMPERS	347	1,466	1,466	---	627	2,646	2,646	0
FORT MOJAVE INDIAN RESERVATION, CA	1,244	7,801	8,996	---	2,313	14,500	16,720	-2,220
CITY OF NEEDLES (includes LCWSP use)	290	1,566	1,605	-39	453	2,250	2,261	-11
METROPOLITAN WATER DISTRICT	181,742	1,068,642	---	---	182,354	1,071,113	---	---
COLORADO RIVER INDIAN RESERVATION, CA	1,188	5,014	5,014	---	1,969	8,307	8,307	0
PALO VERDE IRRIGATION DISTRICT	48,992	407,940	428,620	---	147,205	846,538	865,000	-18,462
YUMA PROJECT RESERVATION DIVISION	7,642	46,344	50,244	---	16,491	90,401	96,884	-6,483
YUMA PROJECT RESERVATION DIVISION - INDIAN UNIT	---	---	---	---	8,170	42,493	45,384	-2,891
YUMA PROJECT RESERVATION DIVISION - BARD UNIT	---	---	---	---	8,321	47,908	51,500	-3,592
YUMA ISLAND PUMPERS	386	1,630	1,630	---	698	2,946	2,946	0
FORT YUMA INDIAN RESERVATION - RANCH 5	249	937	938	---	452	1,695	1,696	-1
IMPERIAL IRRIGATION DISTRICT <sup>1</sup>	525,408	2,560,744	2,622,800	-62,056	534,614	2,621,348	2,694,973	---
SALTON SEA SALINITY MANAGEMENT	0	0	0	0	0	0	0	---
COACHELLA VALLEY WATER DISTRICT	72,748	375,481	379,000	-3,519	74,985	386,439	390,812	---
OTHER LCWSP CONTRACTORS	125	527	527	---	218	922	922	0
CITY OF WINTERHAVEN	15	63	63	---	22	91	91	0
CHEMEHUEVI INDIAN RESERVATION	50	209	209	---	2,687	11,340	11,340	0
<b>TOTAL CALIFORNIA</b>	<b>840,426</b>	<b>4,478,364</b>			<b>965,088</b>	<b>5,060,536</b>	<b>5,164,598</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)
MWD Creation of Extraordinary Conservation ICS (Estimated) <sup>4</sup>	0
<b>Total State Adjusted Apportionment</b>	<b>4,398,276</b>
<b>Excess to Total State Adjusted Apportionment</b>	<b>80,088</b>

### Estimated Allowable Use for MWD

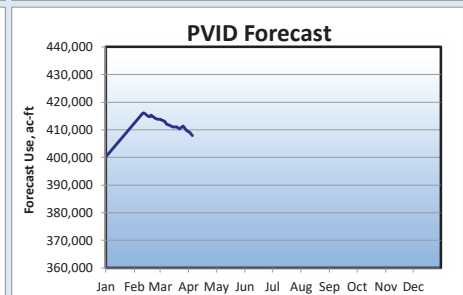
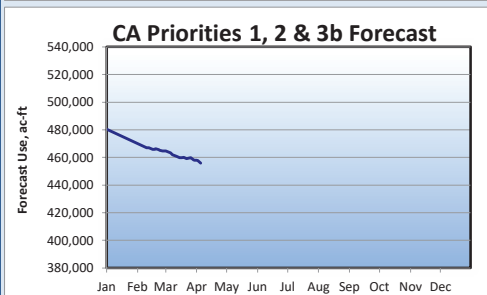
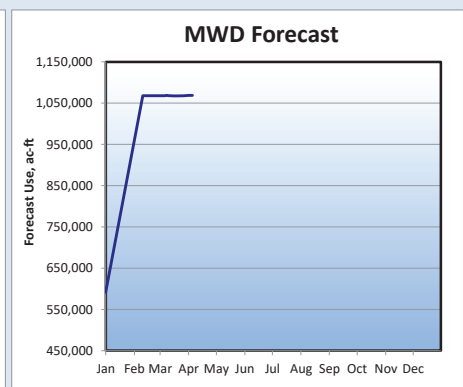
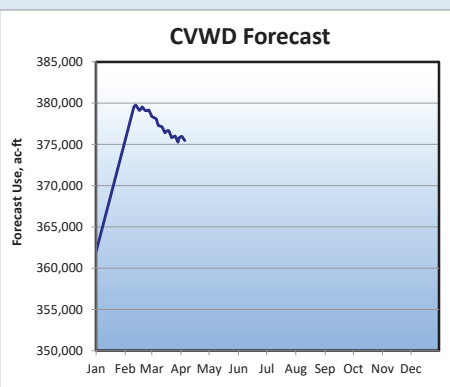
988,554

<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 2021.

<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 "Additional Conserved Water" in 2021 for purposes including, but not limited to, the creation of ICS. Due to limitations set forth in the California ICS Agreement, IID may currently only store up to 1,579 AF in its Lake Mead ICS Account. Should IID elect to use "Additional Conserved Water" to create and credit EC ICS to the ICS account of another California contractor through application of Section XI.G.3.B.8 of the 2007 Interim Guidelines, IID must first obtain written agreement of the contractor. The actual amount of "Additional Conserved Water" created by IID in 2021 will be based on final accounting and verification.

<sup>4</sup> MWD has been approved to create up to 450,000 AF of EC ICS in 2021, 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.





**BUREAU OF  
RECLAMATION**  
**LOWER COLORADO BASIN REGION**  
**CY 2021**

**NOTE:**

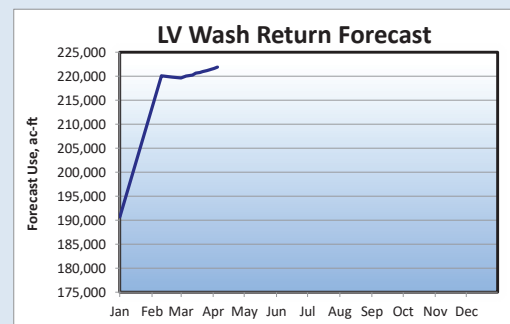
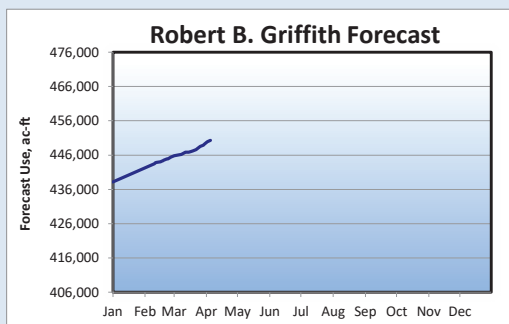
- Diversions and uses that are pending approval are noted in **red italics**.
- Water users with a consumptive use entitlement - **Excess to Estimated Use** column indicates overrun/underrun of entitlement. Dash in this column indicates water user has a diversion entitlement.
- Water user with a diversion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

**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 \(Water Accounting Reports\)](#)

<b>WATER USER</b>	<b>Use To Date CY 2021</b>	<b>Forecast Use CY 2021</b>	<b>Estimated Use CY 2021</b>	<b>Excess to Estimated Use CY 2021</b>	<b>Diversion To Date CY 2021</b>	<b>Forecast Diversion CY 2021</b>	<b>Approved Diversion CY 2021</b>	<b>Excess to Approved Diversion CY 2021</b>
ROBERT B. GRIFFITH WATER PROJECT (SNWS)	91,466	450,325	440,686	<b>9,639</b>	91,466	450,325	440,686	<b>9,639</b>
LAKE MEAD NRA, NV - Diversions from Lake Mead	217	1,445	1,500	---	217	1,445	1,500	-55
LAKE MEAD NRA, NV - Diversions from Lake Mohave	108	482	500	---	108	482	500	-18
BASIC MANAGEMENT INC.	1,344	7,995	8,208	---	1,344	7,995	8,208	-213
CITY OF HENDERSON (BMI DELIVERY)	3,735	14,227	15,878	---	3,735	14,227	15,878	-1,651
NEVADA DEPARTMENT OF WILDLIFE	3	12	12	0	225	994	1,000	---
PACIFIC COAST BUILDING PRODUCTS INC.	236	920	928	---	236	920	928	-8
BOULDER CANYON PROJECT	41	172	172	---	71	300	300	0
BIG BEND WATER DISTRICT	666	4,552	4,733	---	1,643	9,550	10,000	-450
FORT MOJAVE INDIAN TRIBE	327	3,556	4,020	---	489	5,309	6,000	-691
LAS VEGAS WASH RETURN FLOWS	-58,224	-221,892	-221,637	---				
<b>TOTAL NEVADA</b>	<b>39,919</b>	<b>261,794</b>	<b>255,000</b>	<b>9,639</b>	<b>99,534</b>	<b>491,547</b>	<b>485,000</b>	<b>6,553</b>
SOUTHERN NEVADA WATER SYSTEM (SNWS)	33,242	228,433				450,325		
ALL OTHERS	6,677	33,361				41,222		
NEVADA USES ABOVE HOOVER	38,926	253,686				476,688		
NEVADA USES BELOW HOOVER	993	8,108				14,859		

**Tributary Conservation (TC) Intentionally Created Surplus (ICS)**Southern Nevada Water Authority (SNWA) Creation of TC 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>	38,206
<b>Total State Adjusted Apportionment</b>	<b>338,206</b>
Excess to Total State Adjusted Apportionment	-76,412

<sup>1</sup> SNWA has been approved to create up to 43,000 AF of TC ICS in 2021. 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 2021. The actual amount of EC ICS created by SNWA will be based on final accounting and verification. The total amount accumulated in Nevada's ICS accounts will be limited in accordance with Section IV.C. of the *Lower Basin Drought Contingency Operations*.

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

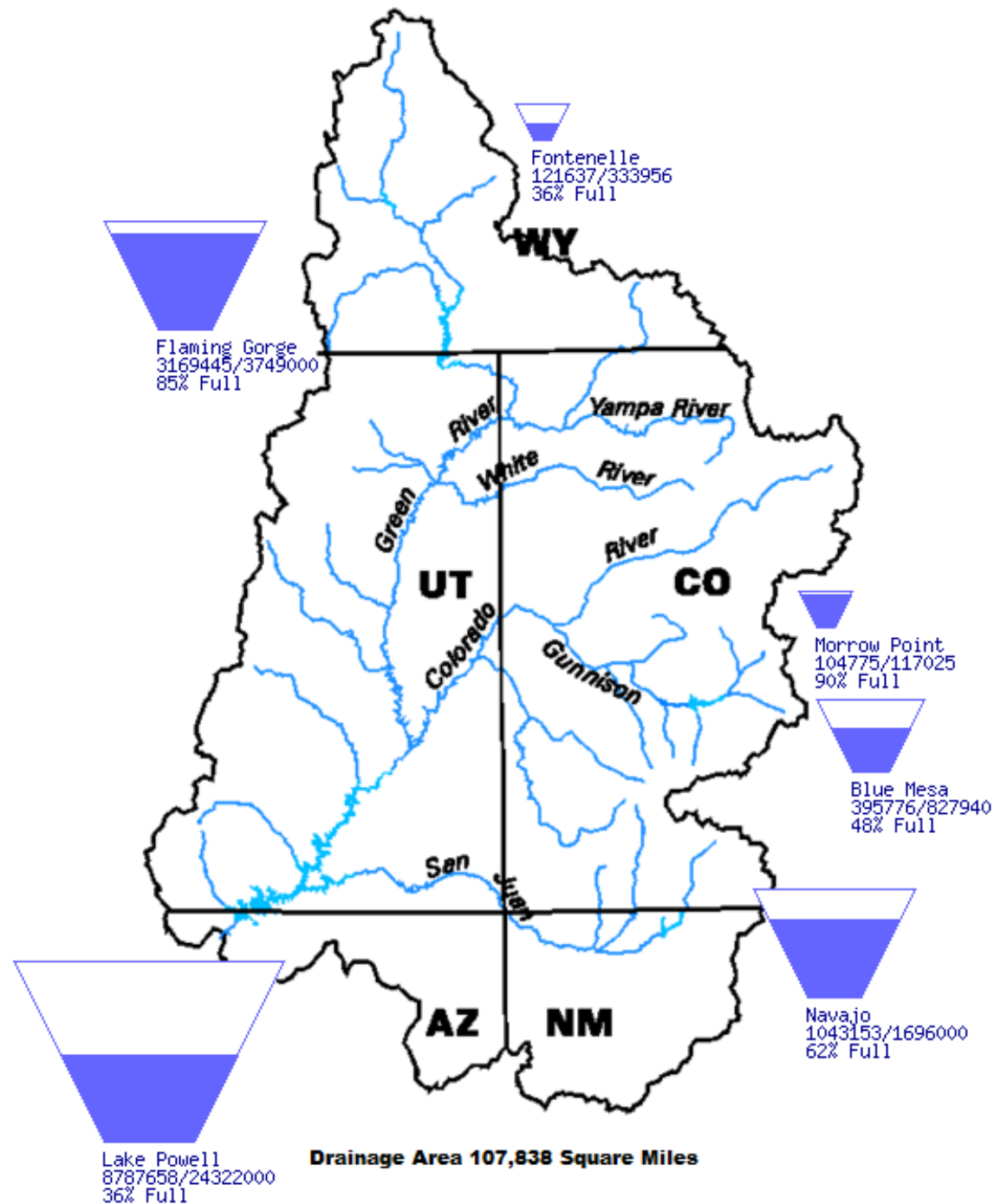


# Upper Colorado Region Water Resources Group

## River Basin Tea-Cup Diagrams

Data Current as of:  
04/05/2021

### Upper Colorado River Drainage Basin

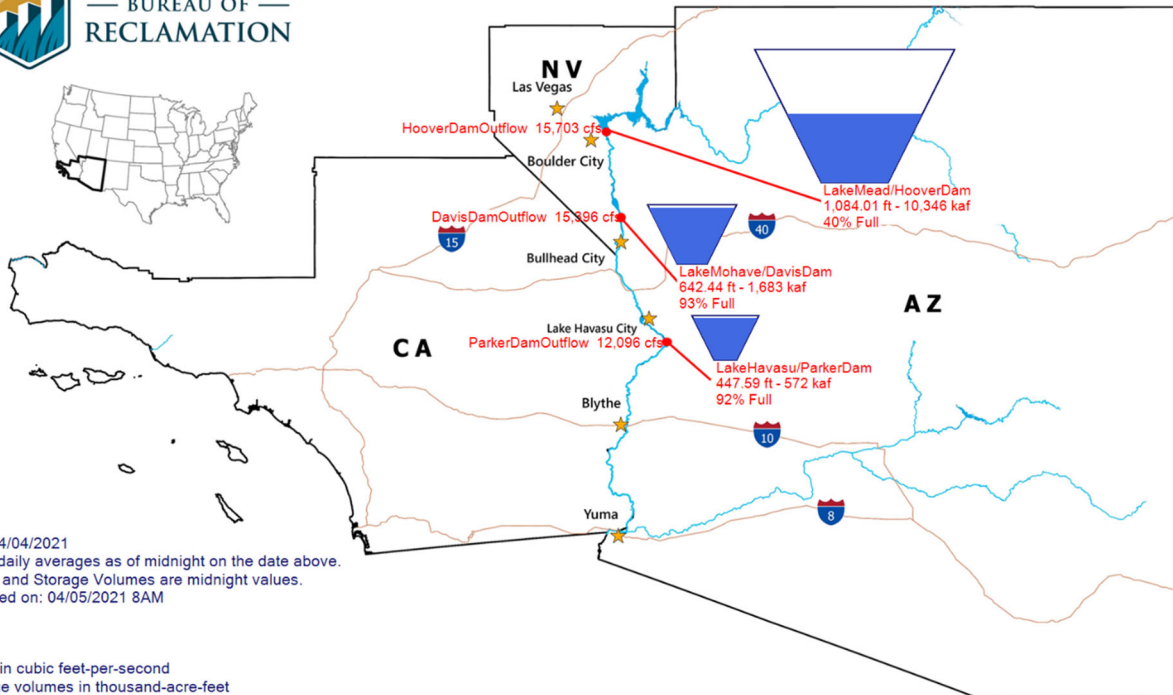




# Lower Colorado River Teacup Diagram



BUREAU OF  
RECLAMATION

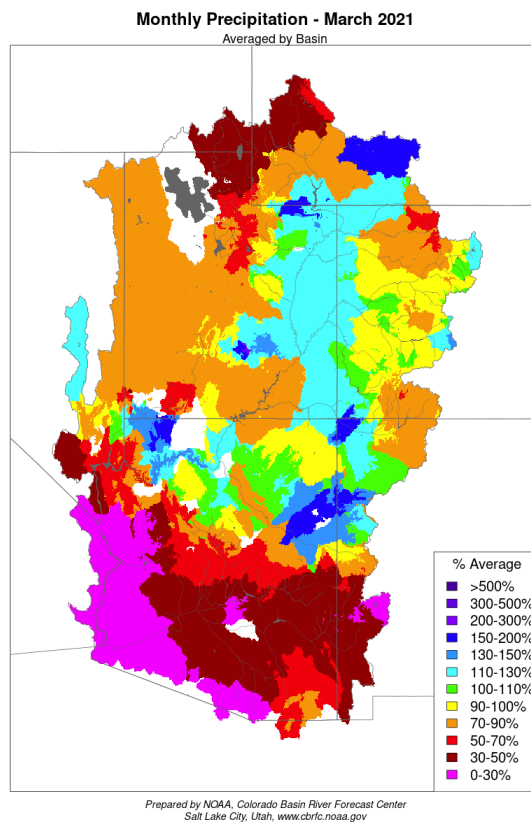
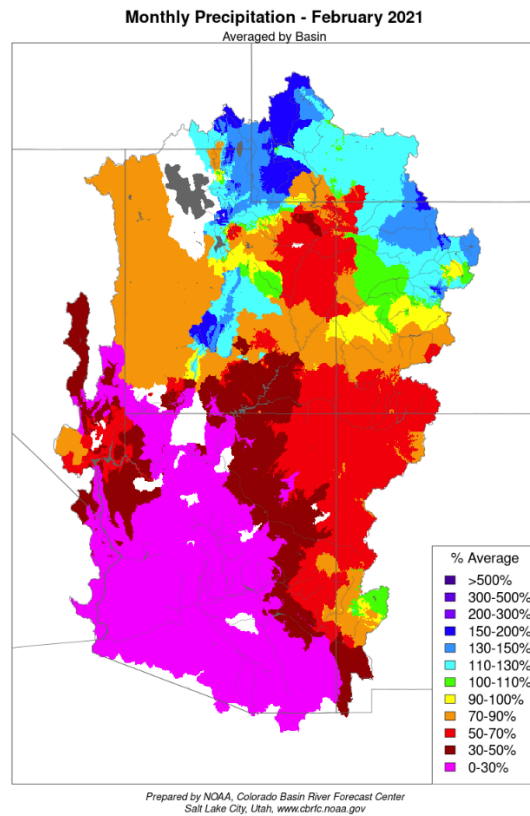


Data for: 04/04/2021  
Flows are daily averages as of midnight on the date above.  
Elevations and Storage Volumes are midnight values.  
Last updated on: 04/05/2021 8AM

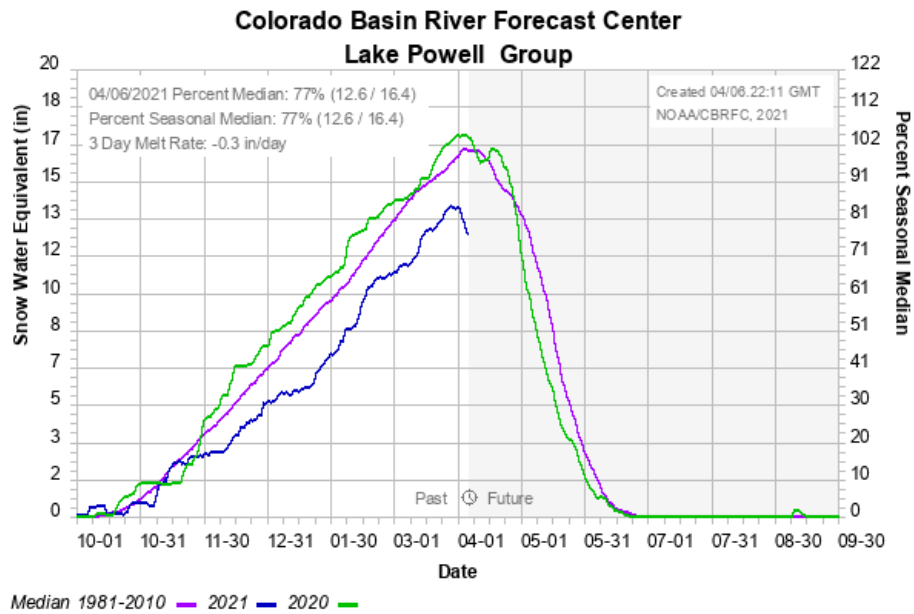
LEGEND:  
cfs: Flows in cubic feet-per-second  
kaf: Storage volumes in thousand-acre-feet  
ft: Elevations in feet above mean-sea-level



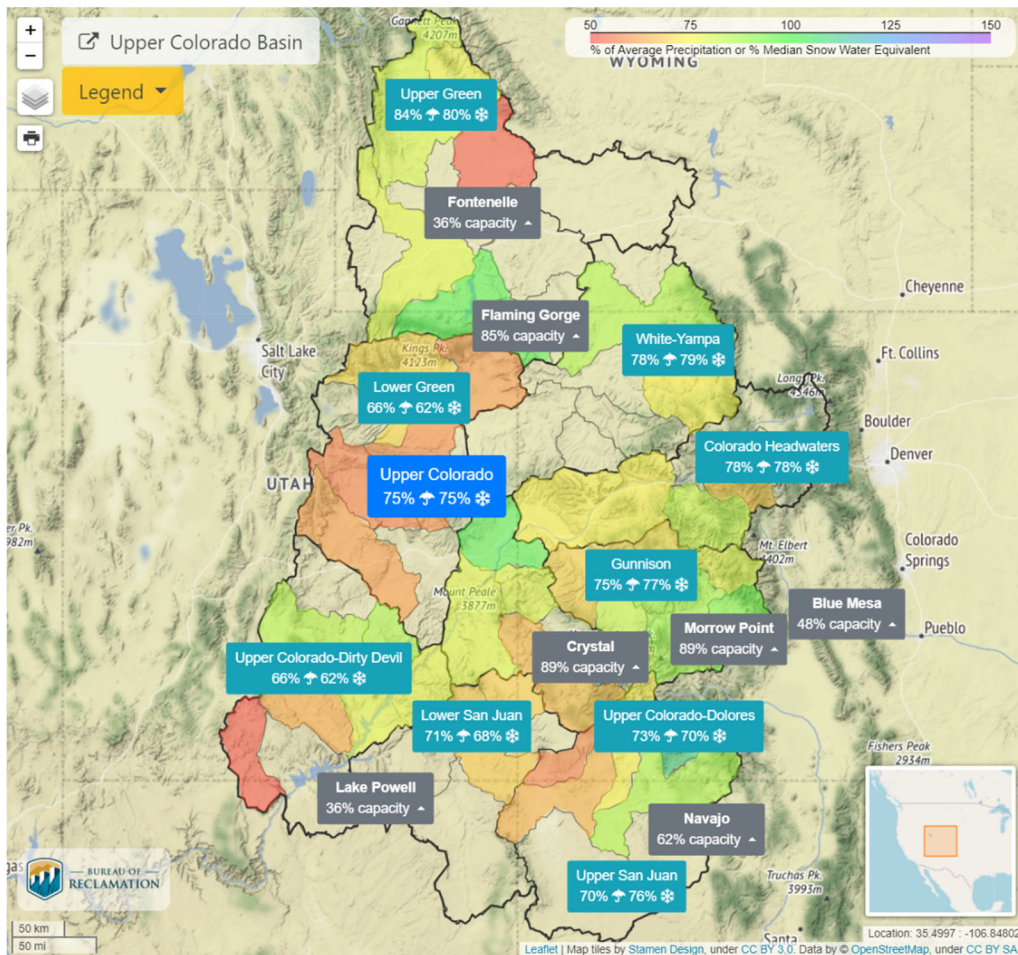
## NOAA National Weather Service Monthly Precipitation Map February and March 2021







### Snow Pack Conditions Map Upper Colorado Region





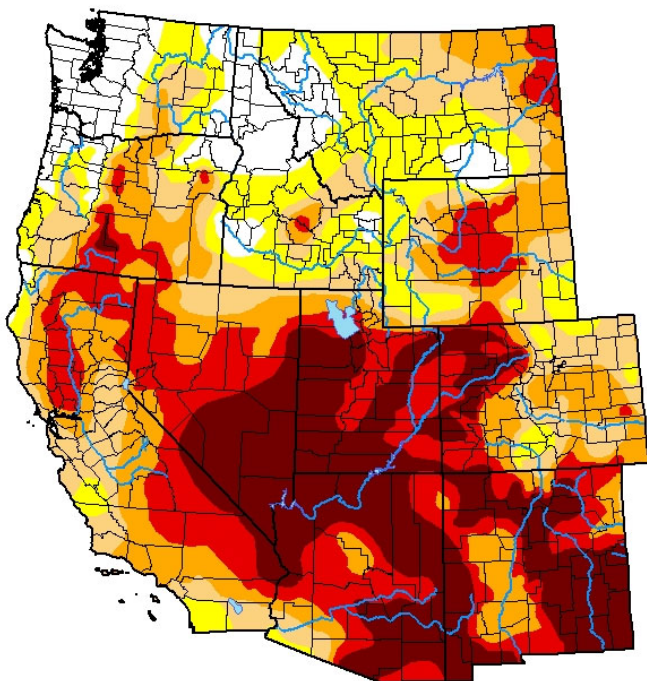
# USDA United States Drought Monitor Map

## U.S. Drought Monitor West

**April 6, 2021**

(Released Thursday, Apr. 8, 2021)

Valid 8 a.m. EDT



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	9.62	90.38	76.04	59.49	40.80	20.71
Last Week 03-30-2021	10.10	89.90	75.22	58.59	39.39	20.56
3 Months Ago 01-05-2021	11.89	88.11	78.01	64.59	46.50	22.16
Start of Calendar Year 12-29-2020	11.57	88.43	78.63	65.18	46.49	22.16
Start of Water Year 09-29-2020	8.51	91.49	76.07	54.55	33.11	2.31
One Year Ago 04-07-2020	52.56	47.44	27.90	4.48	0.00	0.00

### 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:

Deborah Bathke  
National Drought Mitigation Center



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

## Total Lower Division States Consumptive Use Colorado River

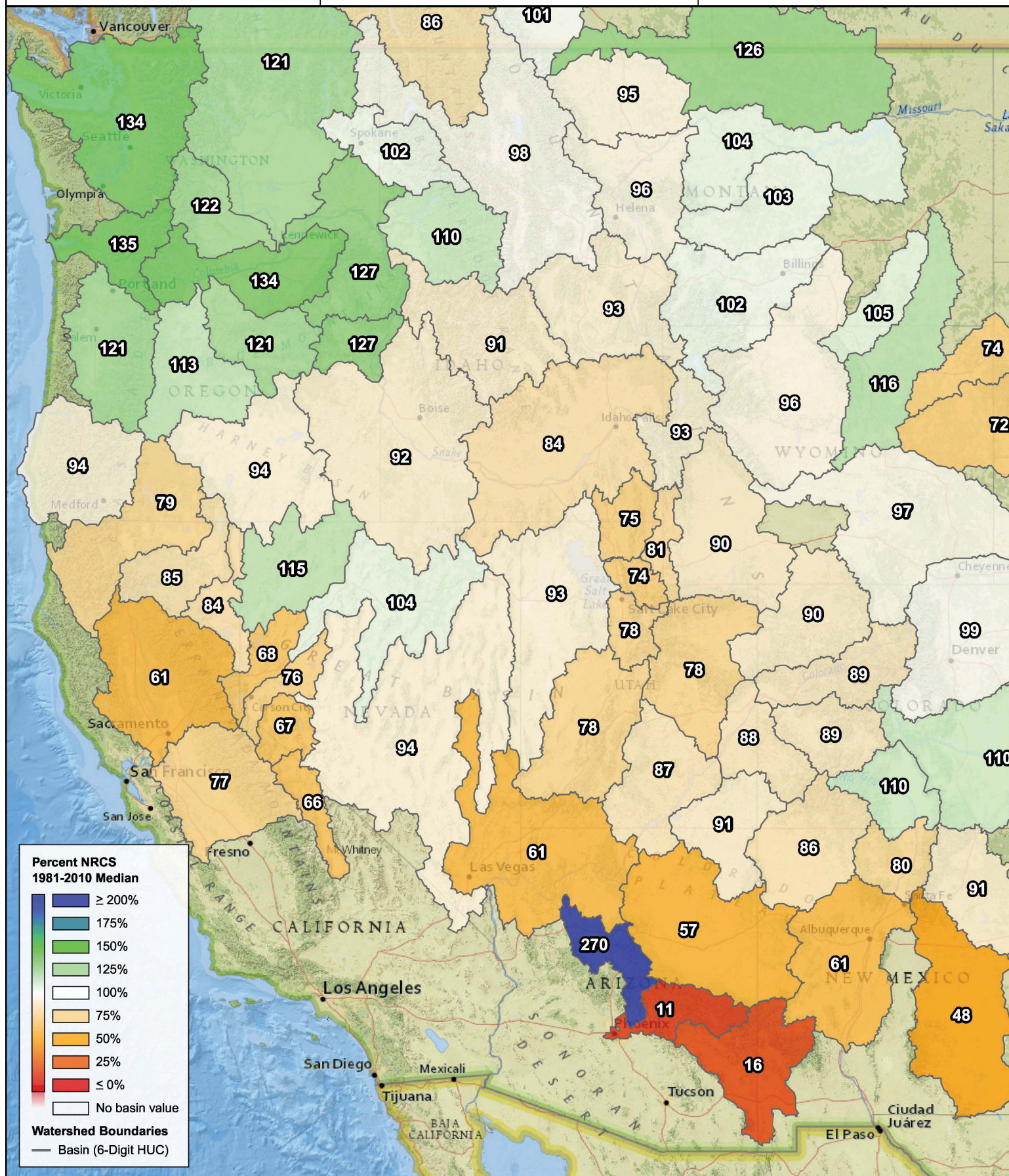




Snow Water Equivalent

Percent NRCS 1981-2010 Median

April 1st, 2021



Natural Resources  
Conservation Service  
United States Department of Agriculture



0 30 60 120 180 240 300 Miles

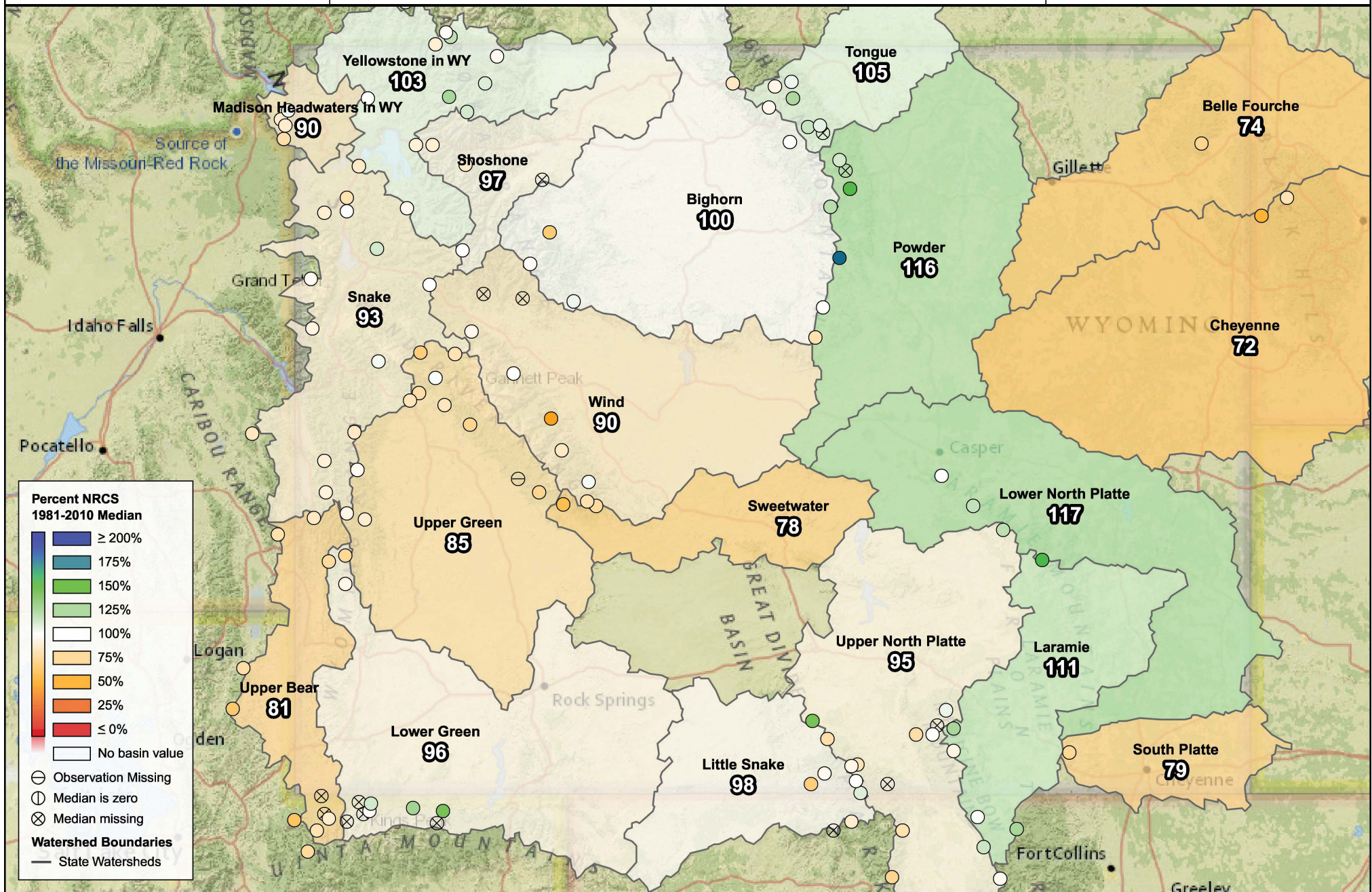
Created 4-06-2021



Snow Water Equivalent

Percent NRCS 1981-2010 Median

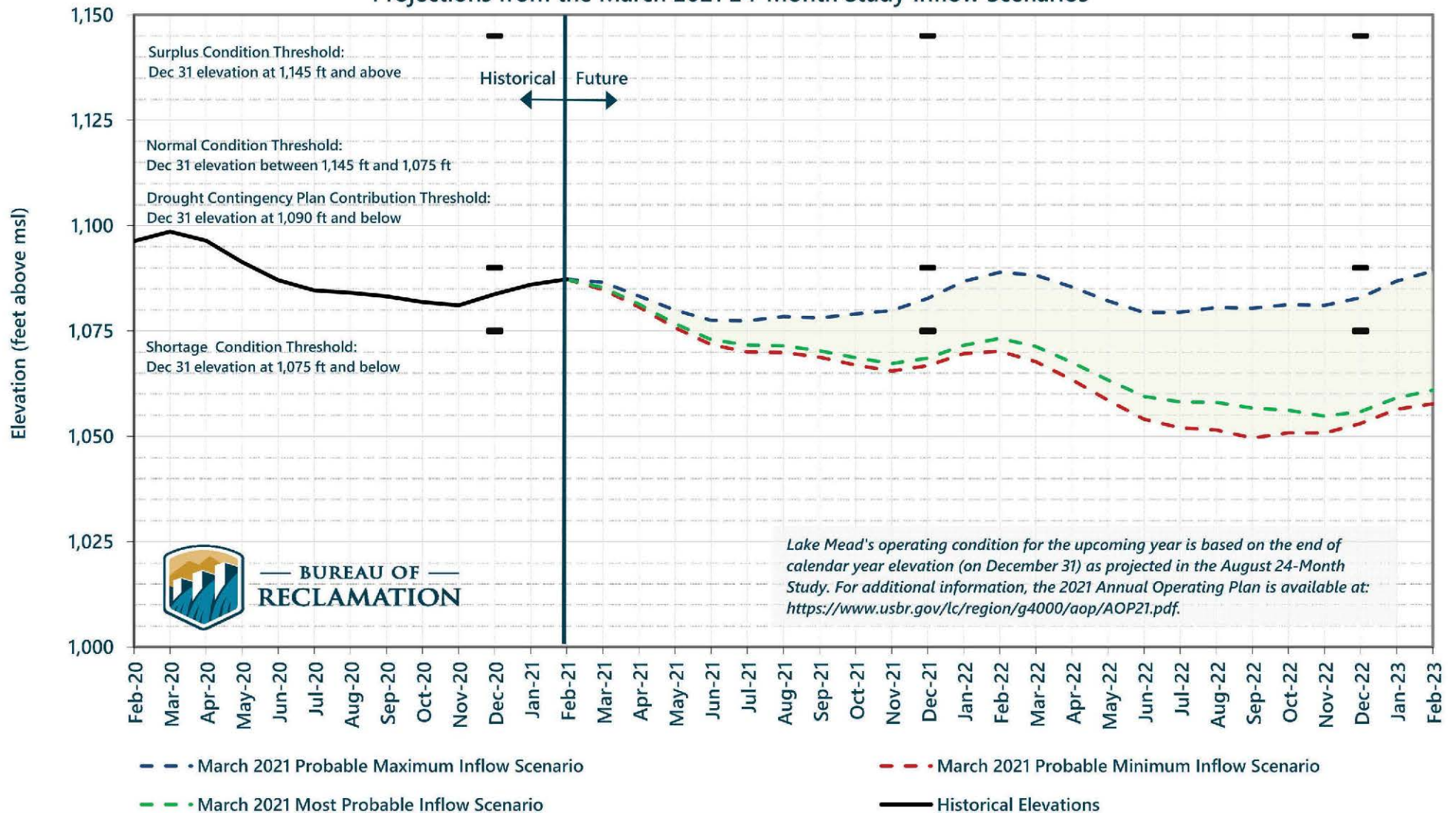
April 1st, 2021





# Lake Mead End of Month Elevations

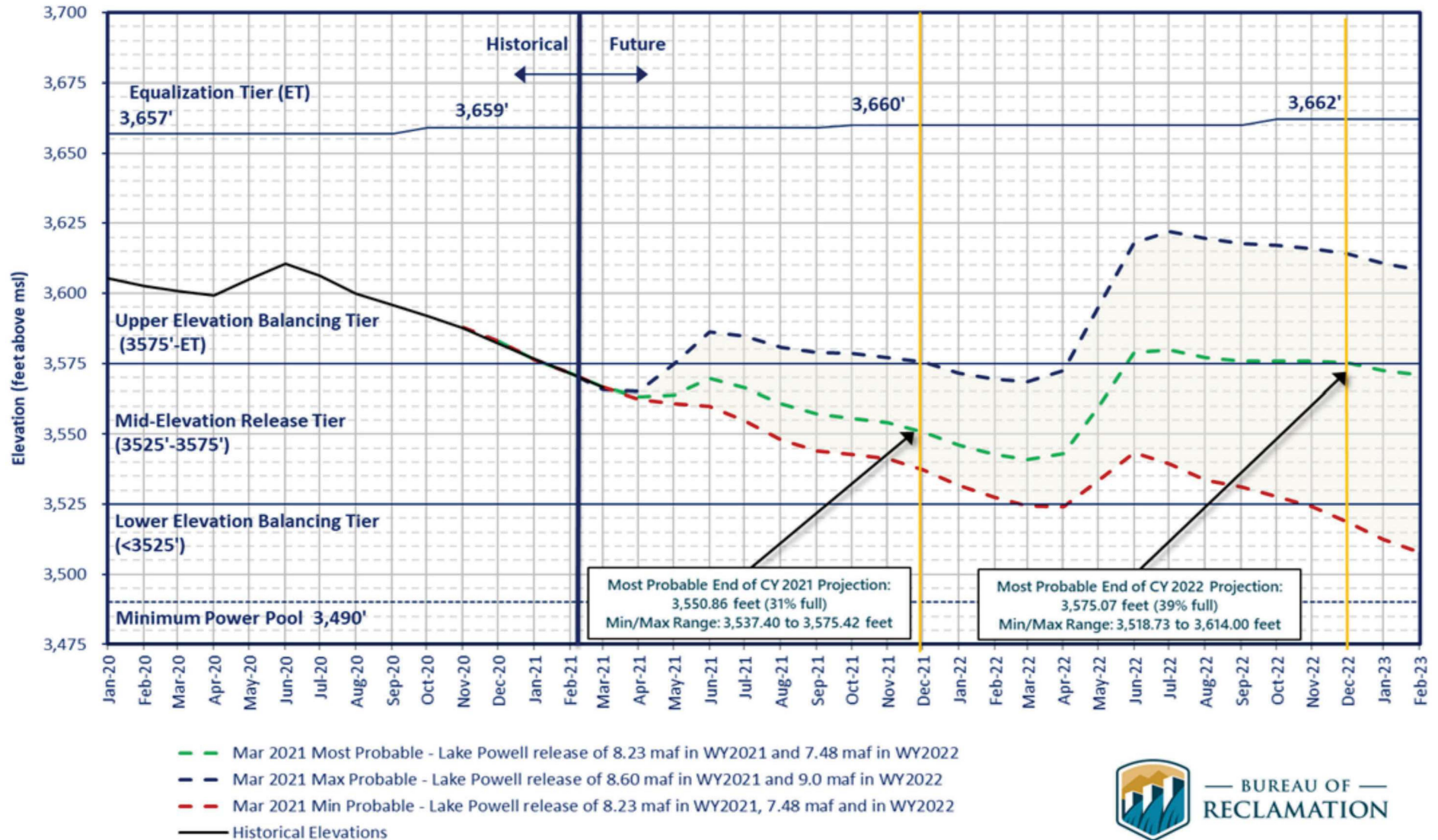
## Projections from the March 2021 24-Month Study Inflow Scenarios



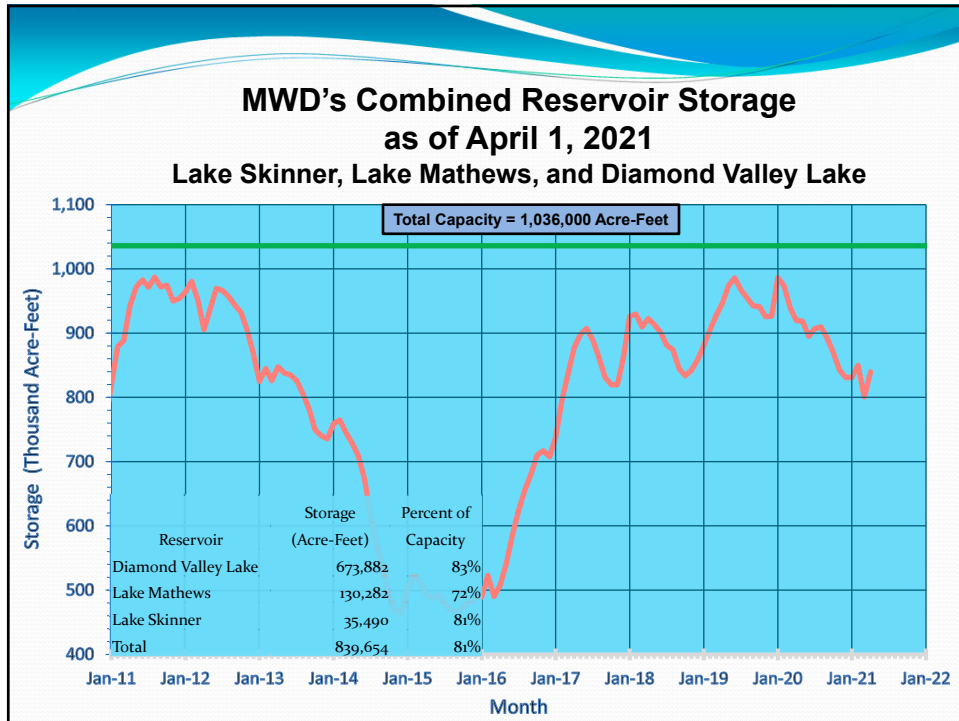


# Lake Powell End of Month Elevations

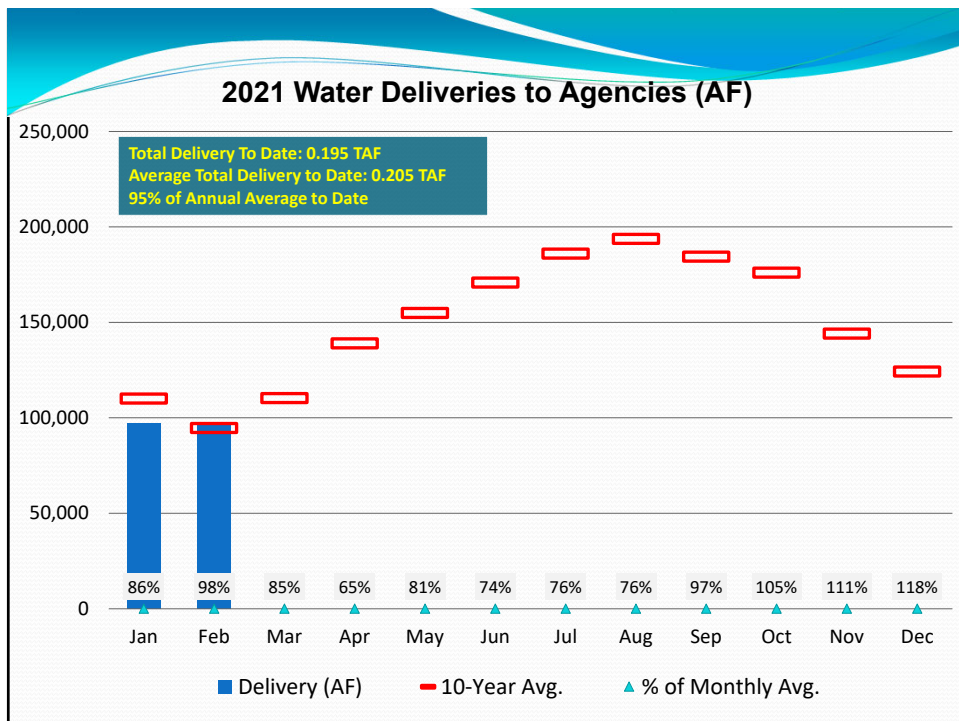
Historical and Projected based on March 2021 24-Month Study Inflow Scenarios





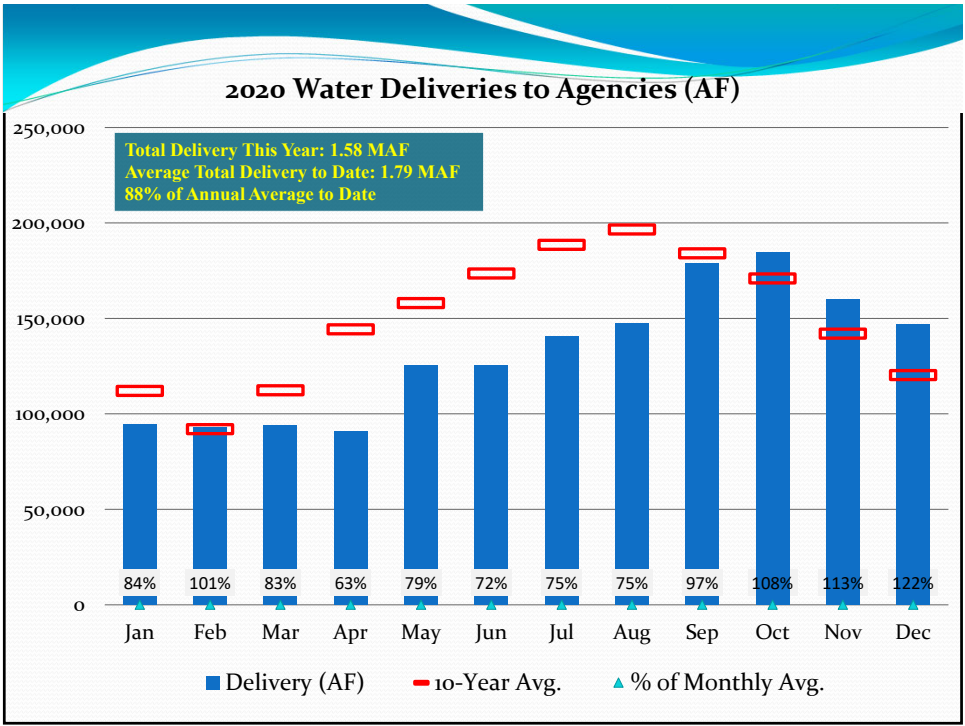


1



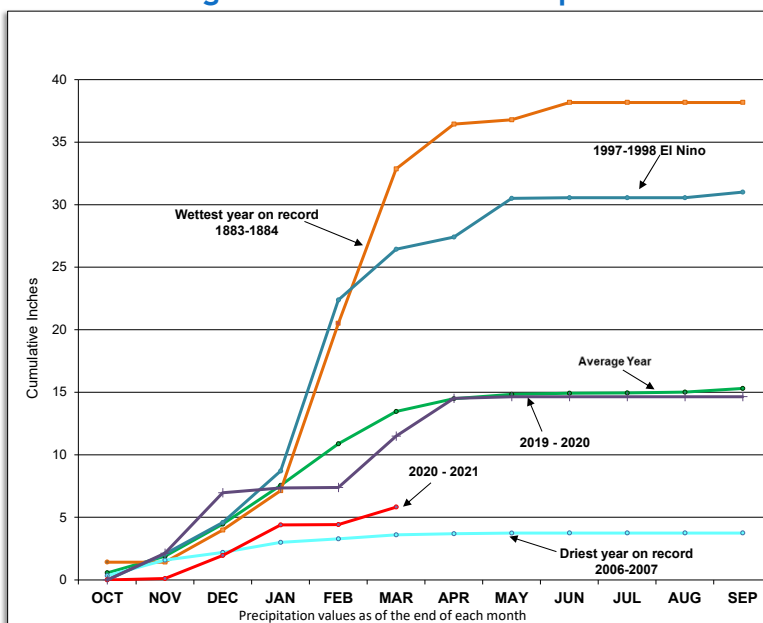
2







### Los Angeles Civic Center Precipitation



1

### Precipitation at Six Major Stations in Southern California

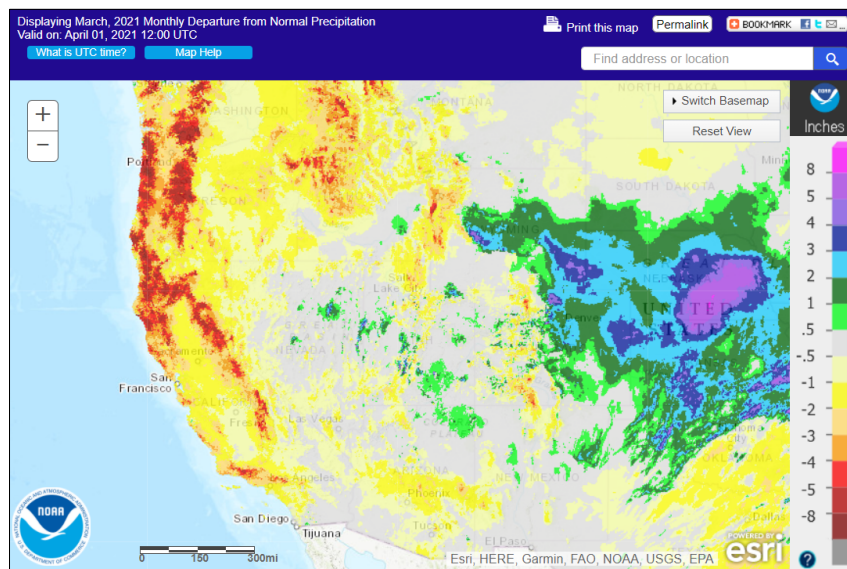
From October 1, 2020 to March 31, 2021

Station	Precipitation in inches		Average to Date	Percent of Average
	Mar	Oct 1 to Mar 31		
San Luis Obispo	0.69	8.30	20.07	41%
Santa Barbara	1.03	5.91	15.88	37%
Los Angeles	1.41	5.82	13.46	43%
San Diego	1.48	4.24	8.86	48%
Blythe	0.00	0.88	2.42	36%
Imperial	0.00	0.00	2.06	0%

2

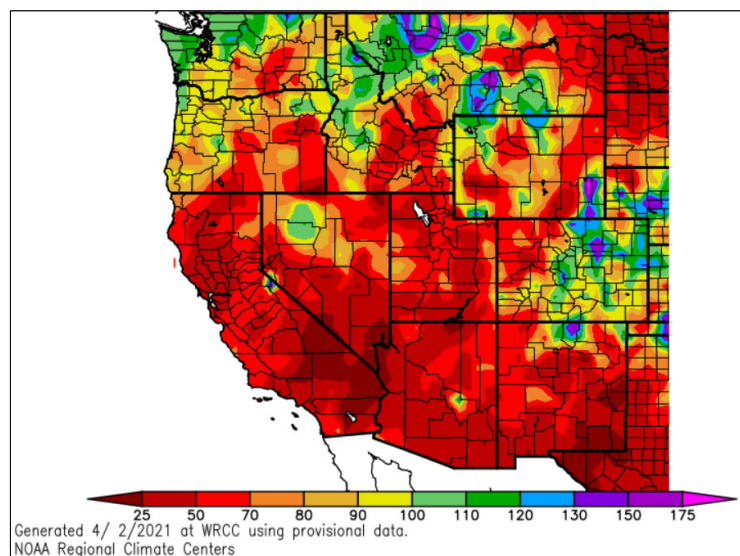


## Monthly Departure From Normal Precipitation (inches) March 2021



3

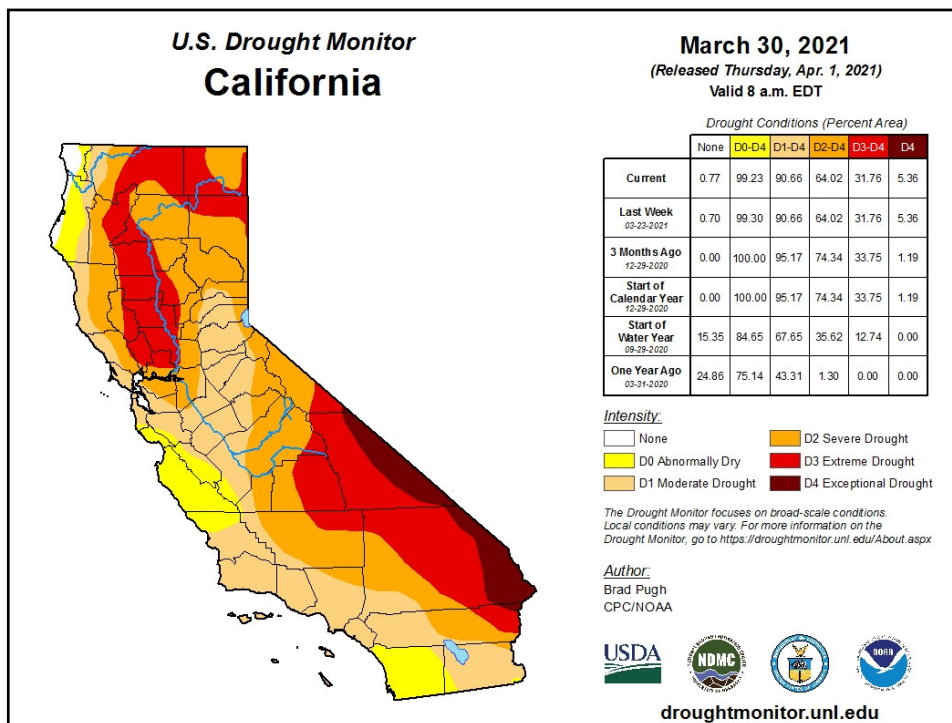
## Percent of Average Precipitation (%) 10/02/2020 - 04/01/2021



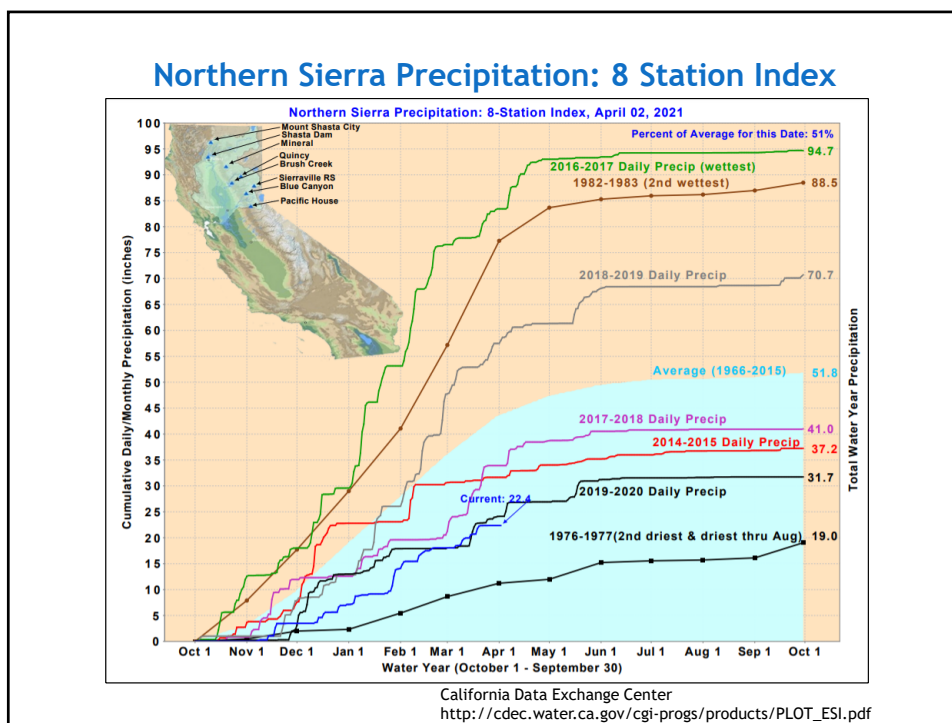
Western Regional Climate Center  
<https://wrcc.dri.edu/cgi-bin/anomimage.pl?wrc6mPpct.png>

4





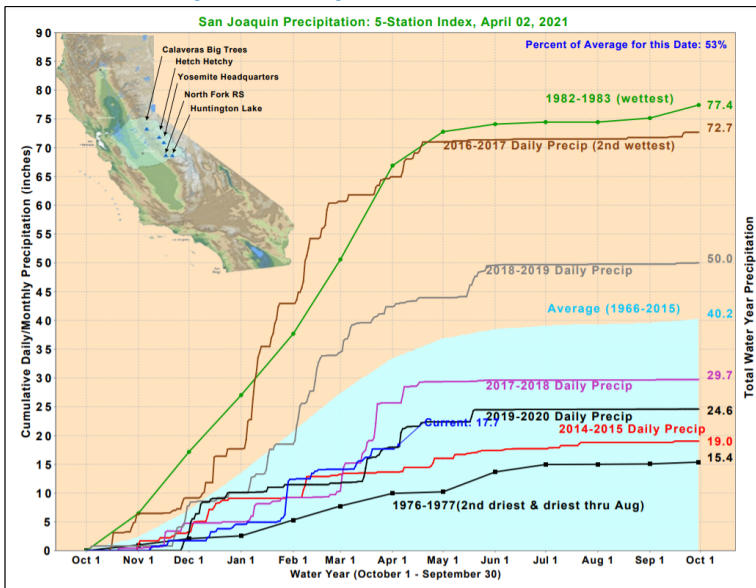
5



6



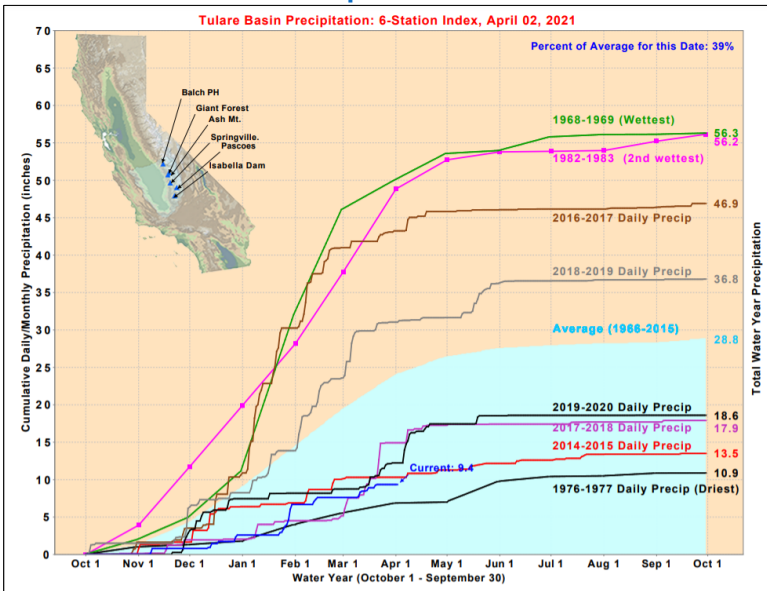
## San Joaquin Precipitation: 5 Station Index



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)

7

## 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)

8



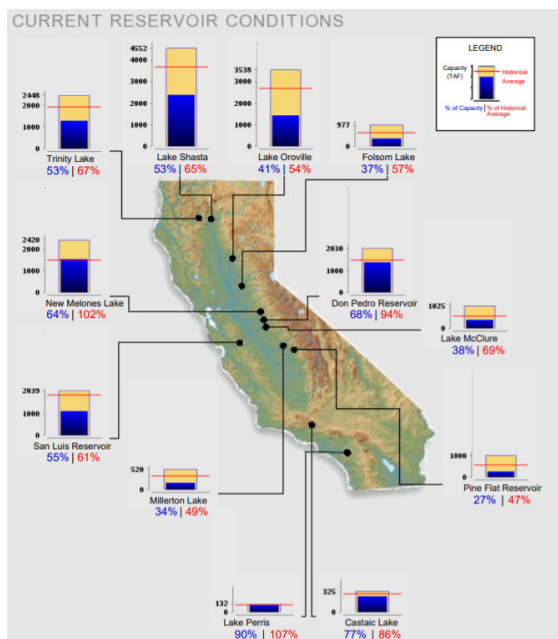
### Comparison of SWP Water Storage

Reservoir	Capacity	2020 Storage (acre-feet)		2021 Storage (acre-feet)	
		As of Apr 1	% of Cap.	As of Apr 1	% of Cap.
Frenchman	55,475	46,272	83%	36,480	66%
Lake Davis	84,371	63,192	75%	52,072	62%
Antelope	22,564	18,779	83%	13,935	62%
Oroville	3,553,405	2,297,840	65%	1,437,589	40%
<b>TOTAL North</b>	<b>3,715,815</b>	<b>2,426,083</b>	<b>65%</b>	<b>1,540,076</b>	<b>41%</b>
Del Valle	39,914	30,698	77%	32,161	81%
San Luis	2,027,835	1,514,685	75%	1,117,945	55%
Pyramid	169,901	165,168	97%	166,923	98%
Castaic	319,247	288,526	90%	249,697	78%
Silverwood	74,970	68,530	91%	67,135	90%
Perris	132,614	121,790	92%	118,893	90%
<b>TOTAL South</b>	<b>2,764,481</b>	<b>2,189,397</b>	<b>79%</b>	<b>1,752,754</b>	<b>63%</b>
<b>TOTAL SWP</b>	<b>6,480,296</b>	<b>4,615,480</b>	<b>71%</b>	<b>3,292,830</b>	<b>51%</b>

As of March 23, 2021, the Table A allocations for SWP contractors is 5%.

9

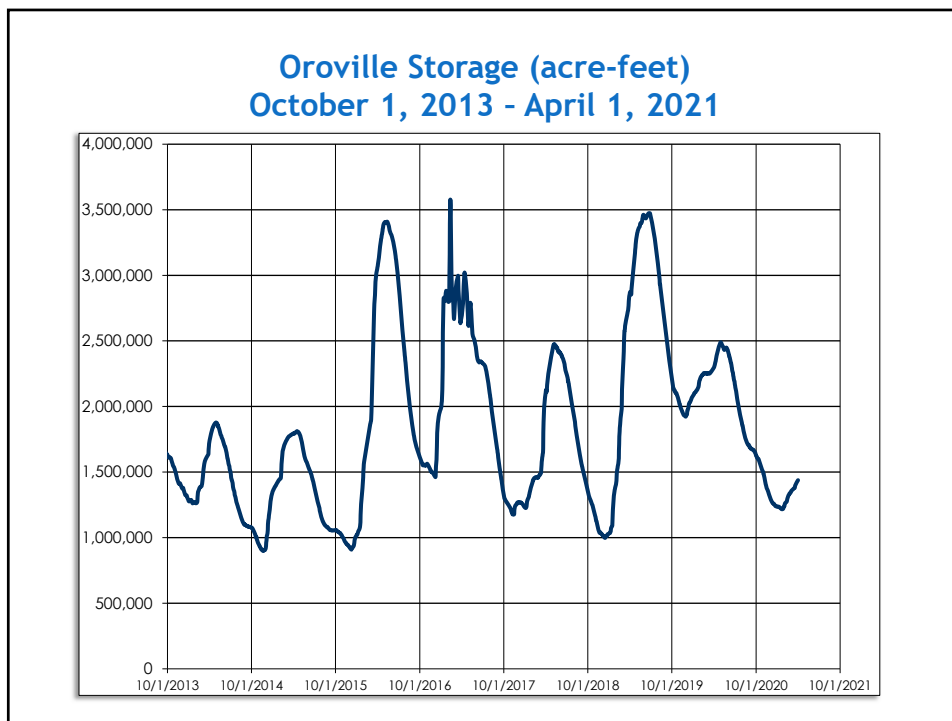
### Reservoir Current Conditions as of 04/02/2021



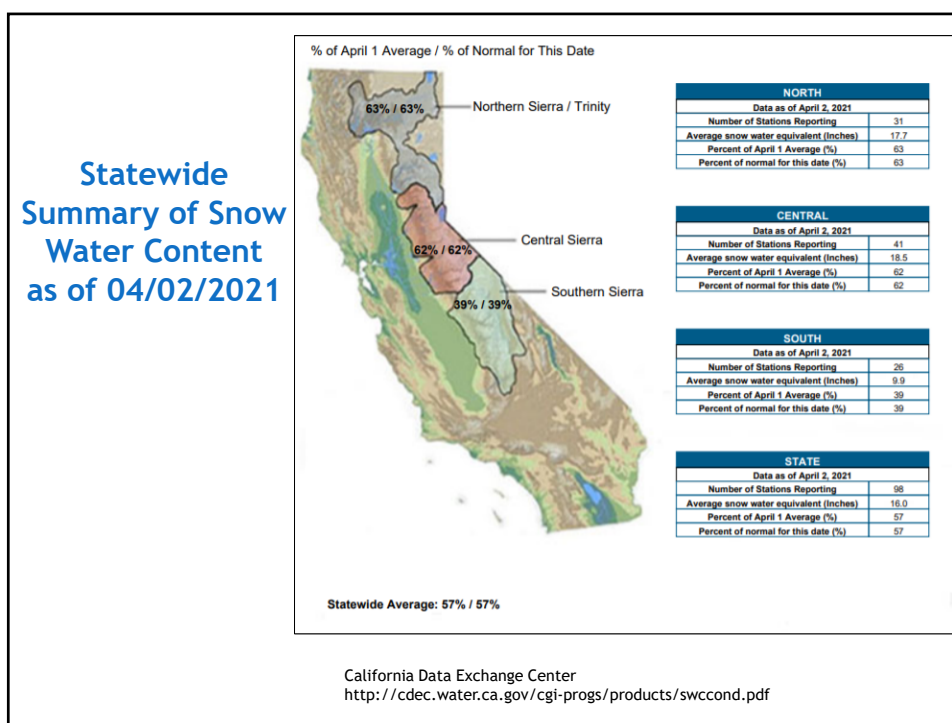
California Data Exchange Center  
<https://cdec.water.ca.gov/reportapp/javareports?name=rescond.pdf>

10





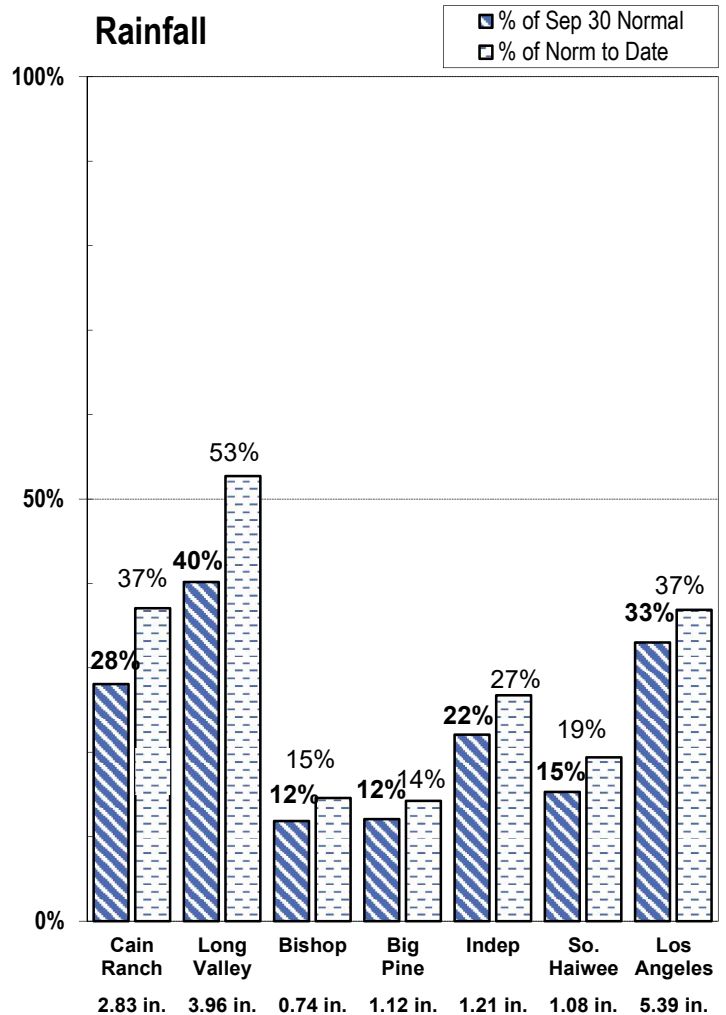
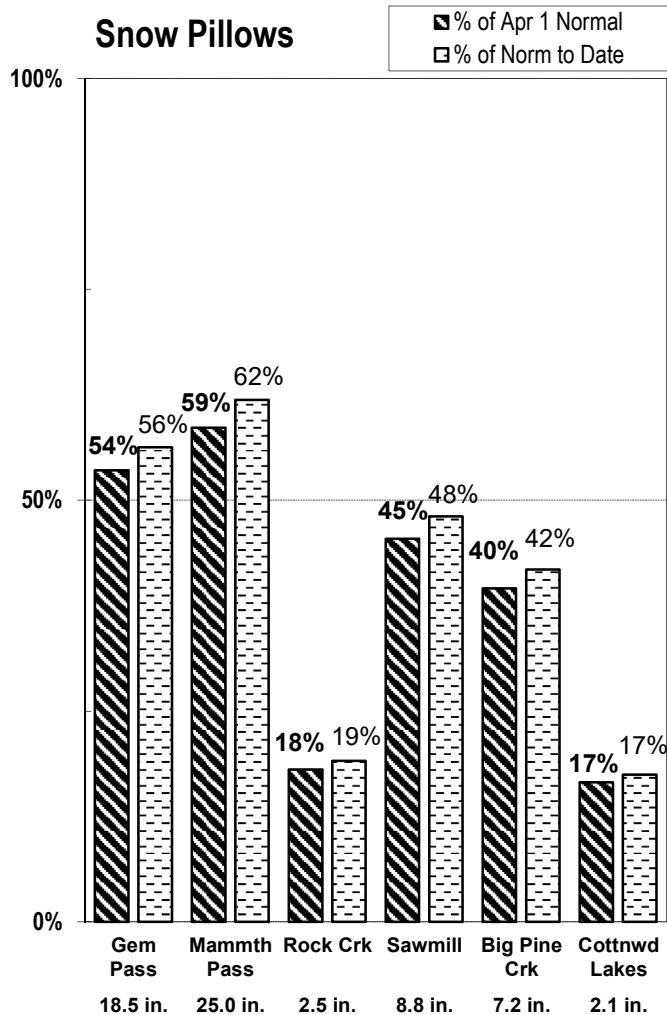
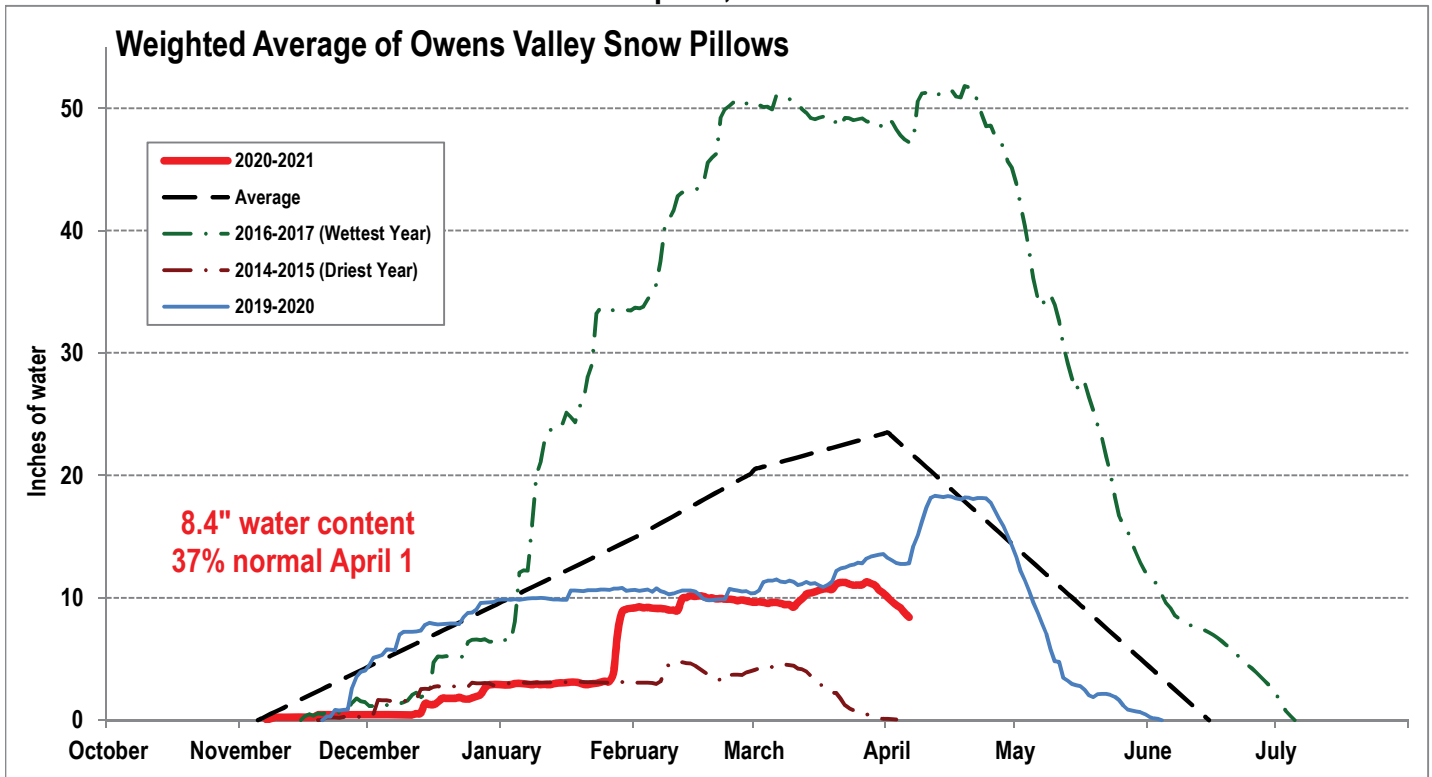
11



12



# EASTERN SIERRA CURRENT PRECIPITATION CONDITIONS April 6, 2021



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