

November 26, 2019

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

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

Date: Wednesday, December 11, 2019
Time: 10:00 a.m.
Place: Skyview 3 Room
Bally's Las Vegas Hotel and Casino
3645 South Las Vegas Blvd.
Las Vegas, NV 89109

The Colorado River Board of California welcomes any comments from members of the public pertaining to items included on this agenda and related topics. Oral comments can be provided at the beginning of each Board meeting; while written comments may be sent to Mr. Peter Nelson, Chairperson, Colorado River Board of California, 770 Fairmont Avenue, Suite 100, Glendale, California, 91203-1068.

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

**Regular Meeting**  
**COLORADO RIVER BOARD OF CALIFORNIA**  
**Wednesday, December 11, 2019**  
**10:00 a.m.**

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

**1. Call to Order**

**2. Opportunity for the Public to Address the Board** (Limited to 5 minutes)

In accordance with California Government Code, Section 54954.3(a)

**3. Administration**

- a. Consideration and approval of the Minutes of the meeting held November 13, 2019 (Action)
- b. Consideration and approval of the Proposed Calendar-Year 2020 Board meeting schedule (Action)
- c. Review and consideration of Application for Lower Colorado Water Supply Project water (Action)

**4. Water Supply and Operations Reports**

- a. Colorado River Basin Report
- b. State and Local Reports

**5. Agency End-of-Year Reports**

**6. Staff Reports regarding Colorado River Basin Programs**

- a. Salinity Control Program Update – Don Barnett, Executive Director, Colorado River Basin Salinity Control Forum
- b. Basin States Climate and Hydrology Workgroup
- c. Washington D.C. Updates, Sara Tucker, Natural Resource Results LLC
- d. General announcements

**7. Executive Session**

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

- a. Litigation Update: *Save the Colorado et al v. U.S. Department of the Interior; and David Bernhardt, Secretary of the Interior*

**8. Other Business**

**9. Future Agenda Items/Announcements**

**Next Scheduled Board Meeting:**

January 15, 2019  
10:00 a.m.  
Sheraton Ontario Airport Hotel  
Orchid Room  
429 North Vineyard Avenue  
Ontario, California 91764

Minutes of Meeting  
COLORADO RIVER BOARD OF CALIFORNIA  
Wednesday, November 13, 2019

A meeting of the Colorado River Board (Board) of California was held on Wednesday, November 13, 2019 at the Sheraton Ontario Airport Hotel, 429 North Vineyard Avenue, Ontario, California 91764.

Board Members and Alternates Present:

David DeJesus (MWD Alternate)  
James Hanks (IID)  
Jeanine Jones (DWR Designee)  
Henry Kuiper (Public Member)  
Peter Nelson, Chairman (CVWD)

Glen D. Peterson (MWD)  
David Vigil (DFW Alternate)  
Mark Watton (SDCWA Alternate)

Board Members and Alternates Absent:

Nicole Neeman-Brady (Public Member)  
Evelyn Cortez-Davis (LADWP Alternate)  
Dana B. Fisher, Jr. (PVID)  
Norma Sierra Galindo (IID Alternate)  
Christopher Hayes (DFW Designee)

Jim Madaffer (SDCWA)  
David R. Pettijohn (LADWP)  
John Powell, Jr. (CVWD Alternate)  
Jack Seiler (PVID Alternate)

Others Present:

Steve Abbott  
Melissa Baum Haley  
Christopher Harris  
Michael Hughes  
Ned Hyduke  
Rich Juricich  
Laura Lamdin  
Tom Levy  
Kara Mathews  
Aaron Mead  
Dylan Mohamed

Jessica Neuwerth  
Ivory Reyburn  
Kelly Rodgers  
Shanti Rosset  
Gary Tavetian  
Jerry Zimmerman

## **CALL TO ORDER**

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

## **OPPORTUNITY FOR THE PUBLIC TO ADDRESS THE BOARD**

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

## **ADMINISTRATION**

Chairman Nelson asked for a motion to approve the October 9, 2019, Board 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. Harris reported that as of November 4<sup>th</sup>, the water level at Lake Powell was 3,612.85 feet with 13.02 million-acre feet (MAF) of storage, or 54% of capacity. The water level at Lake Mead was 1,082.74 feet with 10.23 MAF of storage, or 39% of capacity. Mr. Harris reported that the total system storage was 31.2 MAF, or 52% of capacity, which is about 3.5 MAF more than system storage at this same time last year.

Mr. Harris reported that the Observed Water Year-2019 Lake Powell inflow was 12.95 MAF, or 120% of normal. The Observed April to July 2019 Lake Powell inflow was 10.41 MAF, or 145% of normal. The October 2019 observed Lake Powell inflow was 0.27 MAF, or 52% of normal, and the November forecasted Lake Powell inflow is 0.35 MAF, or 74% of normal. To date, the Water Year-2020 precipitation is 66% of normal.

Mr. Harris reported that precipitation conditions in September throughout the Basin were very dry with exception to the Upper Green River Basin in Wyoming, and southern Arizona, due to good monsoonal activity. He noted that dry precipitation conditions persisted in October.

Mr. Harris reported that as of November 3<sup>rd</sup>, the Upper Basin reservoirs were close to capacity. He also reported on the regulatory storage conditions in the Lower Basin. In calendar year 2019, through October 31<sup>st</sup>, Brock and Senator Wash reservoirs captured 107,022 AF and

88,219 AF, respectively. Mr. Harris reported that as of October 2<sup>nd</sup>, excess flows to Mexico were 12,660 AF, and at this time last year the excess flows were about 6,500 AF.

As of October 2<sup>nd</sup>, the total bypassed to the Cienega de Santa Clara in Mexico was 70,984 AF, noting that Bypass flows have been discontinued for maintenance to the Main Outlet Drain Extension (MODE) canal. Mr. Harris reported that the MODE flows are being discharged into the Limitrophe division just below the Morelos Dam while Reclamation replaces concrete panels and perform other maintenance on the U.S. section of the MODE. He noted that Mexico is also performing maintenance activities on their section of the MODE down to the Cienega de Santa Clara. It is expected that most of the maintenance work should be completed by the first quarter of 2020. Mr. Harris explained that the Main Outlet Drain (MOD) and MODE canals are part of the Wellton-Mohawk Irrigation and Drainage District (WMIDD) saline drainage collection system and consist of a concrete canal that collects drainage in the WMIDD and conveys it along the river channel and then down past Morelos Dam on its way south to the Cienega de Santa Clara. The MODE also collects and conveys saline drainage from the Yuma County Water Users, Yuma Irrigation District, North Gila District, and Yuma Mesa Irrigation and Drainage District. Mr. Harris added that brine from the Yuma Desalting Plant is also discharged into the MODE, when the desalination is in operation.

### **State and Local Report**

Mr. Harris noted that as of November 5<sup>th</sup>, the drought conditions continue to persist in Arizona and the Four Corners Region. Ms. Jones, representing the California Department of Water Resources (CA DWR), reported that on November 6-8, CA DWR and the Scripps Institution of Oceanography, held its annual winter outlook workshop to discuss continued funding for long-term precipitation forecasting. She stated that to date, they have been able to fund several projects but noted that it takes a long time to get them up and running. Ms. Jones explained that one current project is focusing on experimental forecasting of high-pressure ridging patterns, like the “Ridiculously Resilient Ridge” that blocked precipitation from reaching California a few years ago. She noted that the forecast can extend up to six weeks and the results show that southern California is likely to be dry. Ms. Jones reported that Water Year-2020 has started off dry, noting the existence of a new “Blob”, which is characterized as a mass of unusually warm water in the Pacific Ocean off the coast of North America, that may impact weather patterns in the U.S.

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

#### **Minute No. 323 Implementation**

Mr. Harris provided an overview of the Mexican organizations involved in the implementation of Minute No. 323 which includes involvement of Mexican governmental participants, NGOs and academic institutions. Mr. Harris stated that CONAGUA, which is

equivalent to the Bureau of Reclamation, is headquartered in Mexico City and has field offices in Mexicali, Tijuana and Hermosillo. CONAGUA holds and manages the water rights of District No. 14, an irrigation district in the Mexicali Valley. Mr. Harris explained that CONAGUA has the authority to enter into water conservation and environmental programs, as well as water transfers. Board member Watton noted that CONAGUA works closely with District No. 14 in water delivery and management decisions. Mr. Harris added that the District No. 14 maintains a water trust that agricultural producers can utilize for the purchase and selling of water, noting that the Mexican NGO, Restaremos el Colorado, can purchase water on behalf of the “Delta Trust” to be utilized for environmental purposes.

The Mexican Section of the International Boundary and Water Commission (IBWC), CILA, is headquartered in Ciudad Juarez and is responsible for implementation and management of the U.S./Mexico 1944 Water Treaty. SEMARNAT is headquartered in Mexico City and is equivalent to the U.S. Department of the Interior and serves as a policy-level advisor to the Mexican delegation during Minute No. 323 meetings, particularly the Oversight Group meetings.

Mr. Harris stated that CONANP is the Mexican National Commission for Protected Areas, which is generally equivalent to the U.S. National Park Service. He noted that CONANP participates when there are implementation issues associated with the Biosphere Reserve and other sensitive environmental aspects of Minute No. 323 implementation, noting that a CONANP representative periodically attends some of the various workgroup meetings. CFE is the Mexican Federal Electricity Commission. It operates some federal power generation facilities and markets federal power for retail, with a similar role as the U.S. federal power marketing administrations (e.g., Western, Bonneville, etc.). CEA Baja and CEA Sonora are the state water commissions for the Mexican states of Baja California and Sonora and are equivalent to the CA DWR or Arizona Department of Water Resources. Both agencies are typically involved in many of the Minute No. 323 Workgroups.

Mr. Harris reported that Pronatura Noroeste, Audubon, and the Sonoran Institute are among the most active environmental NGOs operating in Mexico, noting that the Sonoran Institute is also a bi-national organization with interests in the U.S. and Mexico. Restaremos el Colorado is charged with interacting with the water trust in District No. 14 and acquiring, and then conveying discrete blocks of water for various conservation areas in the Delta region. Mr. Harris stated that the University of Baja California and El Colegio de la Frontera Norte provide academic support and research for the Environmental Workgroup.

Mr. Harris provided an additional update on the repair of the MODE canal. He stated that drainage water is being delivered to the Colorado River mainstem and that the saline drainage flows had recently reached the bridge crossing over the Colorado River near San Luis Rio Colorado at Southerly Internationally Boundary (SIB).

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

### **Status of the Salinity Control Forum**

Mr. Harris reported that the current chairman of the Salinity Control Forum and the Work Group chairman are now both from the state of California with Mr. William Hasencamp from Metropolitan serving as Forum Chair and Board Staff Mr. Rich Juricich serving as Work Group Chair. California is in a good spot as the Program moves forward. Mr. Juricich reported on the October meetings in Phoenix, Arizona among the Work Group, Forum and the Advisory Council.

Mr. Juricich reported that one of the main topics at the October meetings was the 2020 Triennial Review, which sets the salinity standards on the Colorado River. The Forum is looking at four different scenarios, ranging from 1.3 million tons of salinity removal to 2.3 million tons. The low end represents no additional projects beyond 2020 and the high end represents the maximum potential salinity control through 2040 assuming no funding limitations. The Review is expected to be completed in November of next year.

Mr. Juricich reported on the status of the Paradox Valley Unit EIS. The alternatives are 1) a new deep injection well, 2) evaporation ponds, or 3) zero-liquid discharge technology, which is a thermal process that separates water from the salt. In September, the cooperating agencies provided comments on the Administrative Draft EIS. The Draft EIS for public review is expected early December. Mr. Juricich added that the Basin States will have discussions to come up with a consensus on the preferred alternative. A special Forum meeting is expected as part of the upcoming CRWUA conference in December and another meeting in January to discuss the alternatives. A final EIS is expected in May of next year and a Record of Decision in June.

Mr. Juricich reported that the Paradox Valley Unit injection well has been shut down since March due to an earthquake while Reclamation continues their analysis of the seismic risks of restarting the project. Reclamation may wait to see what happens with the EIS on the new alternative before making a decision on the operation of the current injection well.

The Advisory Council received the annual briefing on accomplishments and activities of the federal agencies. The Forum and the Advisory Council adopted funding recommendations for the next several fiscal years, with the Basinwide Program at \$10.1 million per year, BLM's program at \$2 million per year, and NRCS at \$13 million per year.

### **Proposed Total Maximum Daily Load Listing for the Colorado River**

Mr. Juricich provided an update on the proposed listing recommendations from the Colorado River Basin Regional Water Quality Control Board (Regional Board). On September 27<sup>th</sup>, Regional Board proposed new total maximum daily load (TMDL) listings for the California



section of the Colorado River including total dissolved solids (TDS), specific conductivity (EC), manganese, and sodium. Mr. Juricich reported that Board staff and member agencies provided information to the Regional Board about the Colorado River Salinity Control Forum standards for TDS and the programs in place to control salinity. Mr. Juricich worked with Reclamation to provide Regional Board staff with the data they need to feel comfortable that the standards are set for the Colorado River, resulting in the removal of TDS, EC, and sodium from their proposed listing. A concern for some of the member agencies is that manganese and turbidity are still being included in the listing. Mr. Juricich reported that the Regional Board feels the secondary Maximum Contaminant Levels are appropriate standards for these two contaminants, but Board staff will continue to monitor the listing proposal.

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

Board Staff Ms. Neuwerth reported that the Technical Work Group (TWG) of the Glen Canyon Dam Adaptive Management Program met October 21-22 in Phoenix, Arizona. Ms. Neuwerth noted that the National Park Service had recently completed its Expanded Non-Native Aquatic Species Management Plan, which includes tools such as incentivized angler harvest, to manage populations of nonnative species such as green sunfish and brown trout. Ms. Neuwerth also reported that detections of larval razorback sucker in the Grand Canyon have declined significantly since peaking in 2014. Researchers believe this may be the result of a waterfall at the inlet to Lake Mead, which may serve as a barrier to upstream movement of fish from Lake Mead. Ms. Neuwerth noted that modifications to the habitat or augmentation of the razorback sucker population have been preliminarily discussed.

Ms. Neuwerth also reported that the TWG discussed potential experimental management actions available at Glen Canyon Dam in 2020 under the Long-Term Experimental and Management Plan (LTEMP). Depending on resource conditions and stakeholder input, 2020 experiments could include a spring high flow experiment (HFE), fall HFE, trout management flows, and “bug flows” to help the aquatic food chain.

Finally, Ms. Neuwerth noted that the Glen Canyon Dam Program would hold its Annual Reporting meeting in conjunction with a TWG meeting on January 14-16 in Phoenix, Arizona, where researchers will provide updates on the past year’s monitoring and research activities.

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

Ms. Neuwerth reported that the Steering Committee of the Lower Colorado River Multi-Species Conservation Program (LCR MSCP) met via teleconference on October 23<sup>rd</sup>. The group discussed an upcoming tour to celebrate the 15-year anniversary of the program, which will be held March 24-26, 2020, starting in Yuma, Arizona. Ms. Neuwerth noted that LCR MSCP researchers reported that several successful nests of the endangered southwestern willow

flycatcher were detected at Topock Marsh, producing 12 fledglings, and that over 14 northern Mexican gartersnakes had been detected over the past year, most of them at one of the program's conservation areas. Finally, Ms. Neuwerth reported that the LCR MSCP would hold its annual research meetings in January in Laughlin, Nevada.

In response to a question from Chairman Nelson, Ms. Neuwerth reported that southwestern willow flycatchers have not been detected nesting at LCR MSCP conservation areas, but that the birds do successfully nest along the Lower Colorado River, often in tamarisk. Ms. Neuwerth noted that the Colorado River Authority is currently funding a study to assess the status of tamarisk and the tamarisk beetle along the Lower Colorado River. Ms. Neuwerth reported that the tamarisk beetle has recently expanded south along the river to Imperial National Wildlife Refuge and has been known to defoliate areas occupied by the southwestern willow flycatcher. Mr. Harris noted that the beetles take several years to cause mortality to tamarisk.

## **ANNOUNCEMENTS**

### **Washington D.C. Updates**

Mr. Harris reported on the Salton Sea Summit hosted by the Pacific Institute & UC Riverside on October 17-18 in Palm Desert. The Summit addressed several challenges facing the Salton Sea, including ecosystem, water quality, air quality issues, and also explored opportunities and partnerships.

Mr. Harris reported that the Coachella Valley Water District (CVWD) received the 2019 Platinum Award for Utility Excellence from the Association of Metropolitan Water Agencies (AMWA). Mr. Harris noted that CVWD ranks high on AMWA's Ten Attributes of Effective Utility Management.

Mr. Harris reported on the Appropriation bills and the Senate Energy and Natural Resources Subcommittee on Water and Power. Mr. Harris noted that the USACE and EPA finalized the repeal of the Obama Administration's Waters of the U.S. rule. Mr. Harris also reported on the USFWS & NMFS updated Biological Opinions for the operation of the Central Valley Project.

## **ADJOURNMENT**

With no further items to be brought before the Board, Chairman Nelson adjourned the meeting at 11:05 a.m.



## Final Schedule 2020 Colorado River Board Meetings

Date	Location	Time	Board Materials
January 15	Ontario	10:00 am	<input type="checkbox"/> Notice <input type="checkbox"/> Board Folder <input type="checkbox"/> Executive Director's Report <input type="checkbox"/> Meeting Minutes
February 12	Ontario	10:00 am	<input type="checkbox"/> Notice <input type="checkbox"/> Board Folder <input type="checkbox"/> Executive Director's Report <input type="checkbox"/> Meeting Minutes
March 11	Imperial Irrigation District	10:00 am	<input type="checkbox"/> Notice <input type="checkbox"/> Board Folder <input type="checkbox"/> Executive Director's Report <input type="checkbox"/> Meeting Minutes
April 15	Ontario	10:00 am	<input type="checkbox"/> Notice <input type="checkbox"/> Board Folder <input type="checkbox"/> Executive Director's Report <input type="checkbox"/> Meeting Minutes
May 13	Ontario	10:00 am	<input type="checkbox"/> Notice <input type="checkbox"/> Board Folder <input type="checkbox"/> Executive Director's Report <input type="checkbox"/> Meeting Minutes
June 10	San Diego County Water Authority	10:00 am	<input type="checkbox"/> Notice <input type="checkbox"/> Board Folder <input type="checkbox"/> Executive Director's Report <input type="checkbox"/> Meeting Minutes
July 15	Ontario	10:00 am	<input type="checkbox"/> Notice <input type="checkbox"/> Board Folder <input type="checkbox"/> Executive Director's Report <input type="checkbox"/> Meeting Minutes
August 12	Ontario	10:00 am	<input type="checkbox"/> Notice <input type="checkbox"/> Board Folder <input type="checkbox"/> Executive Director's Report <input type="checkbox"/> Meeting Minutes
September 9	Ontario	10:00 am	<input type="checkbox"/> Notice <input type="checkbox"/> Board Folder <input type="checkbox"/> Executive Director's Report <input type="checkbox"/> Meeting Minutes
October 14	Coachella Valley Water District	10:00 am	<input type="checkbox"/> Notice <input type="checkbox"/> Board Folder <input type="checkbox"/> Executive Director's Report <input type="checkbox"/> Meeting Minutes
November 11	Ontario	10:00 am	<input type="checkbox"/> Notice <input type="checkbox"/> Board Folder <input type="checkbox"/> Executive Director's Report <input type="checkbox"/> Meeting Minutes
December 9	To be determined	TBD	<input type="checkbox"/> Notice <input type="checkbox"/> Board Folder <input type="checkbox"/> Executive Director's Report <input type="checkbox"/> Meeting Minutes



RESOLUTION  
of the  
COLORADO RIVER BOARD OF CALIFORNIA  
Regarding  
Potential Applicant to Receive  
Lower Colorado Water Supply Project Water  
2019-1

**WHEREAS**, the United States Congress, on November 14, 1986, enacted the Lower Colorado Water Supply Act (P.L. 99-655) (amended through P.L. 109-103), to authorize the construction and operation of the Lower Colorado Water Supply Project (Project) to provide a limited amount of Colorado River water to be made available on an exchange basis to entities in California, whose lands are located adjacent to the Colorado River, and who either do not have any, or do not have a sufficient, contractual entitlement to use Colorado River water; and

**WHEREAS**, the City of Needles has agreed to assume the administrative responsibility for Project beneficiaries in San Bernardino, Riverside, and Imperial Counties; and

**WHEREAS**, the Colorado River Board provides recommendations to the U.S. Bureau of Reclamation (Reclamation) regarding the eligibility of non-federal applicants to receive Project water; and

**WHEREAS**, the Colorado River Board on September 14, 2001, notified owners of property within the Colorado River flood plain and/or the accounting surface as delineated by the U.S. Geological Survey in California of the availability of Project water; and

**WHEREAS**, the staff of the Colorado River Board on December 11, 2019, submitted the eligible applicant to the Board for its recommendation;

**NOW, THEREFORE, BE IT RESOLVED THAT** the Colorado River Board hereby recommends a subcontract for Project water be offered to the applicant listed on the attachment and directs the Executive Director to forward the application to Reclamation with its recommendation with the following provisos:

- (1) The applicant appears to be eligible to receive Project water, as shown in the attached table and summarized below:

County	Numbers of Parcels	Current Use (AF/YR)	Future Use (AF/YR)	Total Use (AF/YR)
San Bernardino	1	1	1	2

- (2) At the time a subcontract is prepared, the annual quantity of water to be diverted, consumptively used, and returned will be refined to specify quantities of water to be reported in accordance with Article V in the Consolidated Decree in *Arizona v. California, et al.* entered March 27, 2006, (547 U.S. 150 (2006));

- (3) Reclamation should include provisions in the subcontract that the water to be put to reasonable beneficial use within a ten-year period of time, subject to renewal for another ten-year period.

**THE FOREGOING RESOLUTION** is approved and adopted by the Colorado River Board, this 11<sup>th</sup> day of December 2019.

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Peter Nelson, Chairman





12/2/2019

## 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	53%	12,851	3,611.20	10,600
* LAKE MEAD	40%	10,336	1,083.89	8,200
LAKE MOHAVE	93%	1,682	642.37	5,000
LAKE HAVASU	97%	604	449.21	2,900
TOTAL SYSTEM CONTENTS **	52%	31,206		
As of 12/1/2019				
SYSTEM CONTENT LAST YEAR	46%	27,316		
* 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	68%	1,556		
Painted Rock Dam	0%	0	530.00	0
Alamo Dam	11%	113	1,117.50	20
Forecasted Water Use for Calendar Year 2019 (as of 12/2/2019) (values in kaf)				
NEVADA			235	
SOUTHERN NEVADA WATER SYSTEM				209
OTHERS				26
CALIFORNIA			3,898	
METROPOLITAN WATER DISTRICT OF CALIFORNIA				505
IRRIGATION DISTRICTS				3,380
OTHERS				13
ARIZONA			2,552	
CENTRAL ARIZONA PROJECT				1,459
OTHERS				1,093
TOTAL LOWER BASIN USE				6,685
DELIVERY TO MEXICO - 2019 (Mexico Scheduled Delivery + Preliminary Yearly Excess <sup>1</sup> )				1,543
OTHER SIGNIFICANT INFORMATION				
UNREGULATED INFLOW INTO LAKE POWELL - DECEMBER FINAL FORECAST DATED 12/02/2019				
		MILLION ACRE-FEET		% of Normal
OBSERVED WATER YEAR 2019		10.410		145%
OBSERVED APRIL-JULY 2019		12.951		120%
NOVEMBER OBSERVED INFLOW		0.402		85%
DECEMBER INFLOW FORECAST		0.330		91%
		Upper Colorado Basin	Salt/Verde Basin	
WATER YEAR 2020 PRECIP TO DATE <sup>2</sup>		81% (4.6")	143% (6.3")	
CURRENT BASIN SNOWPACK <sup>2</sup>		120% (4.3")	665% (3.2")	

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

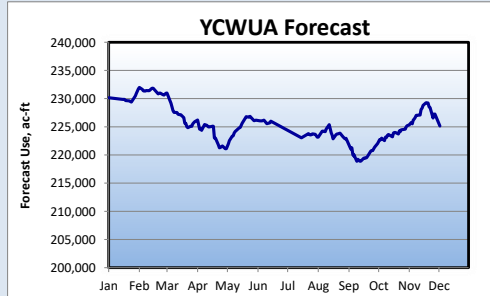
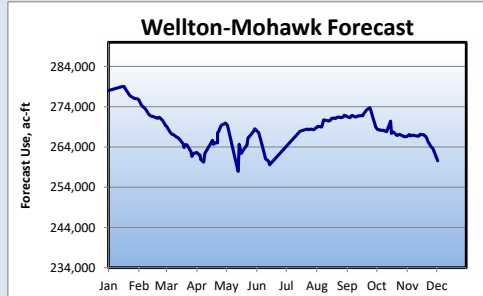
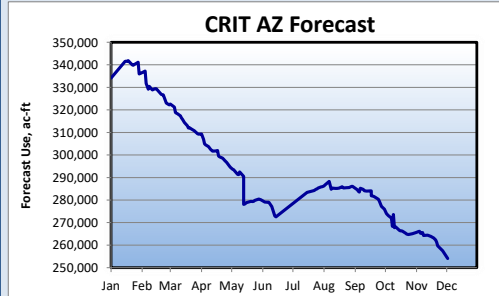
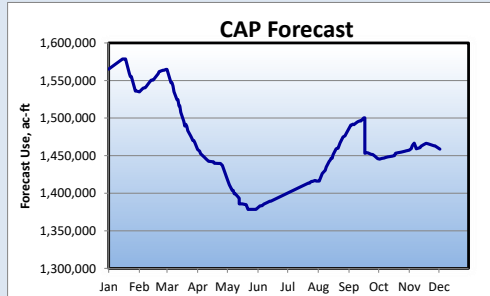
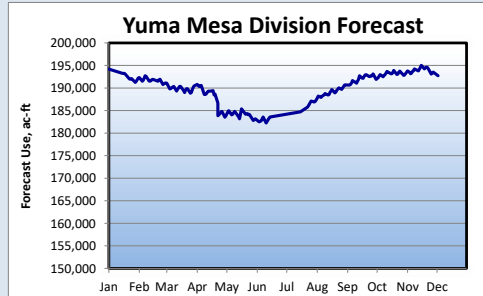
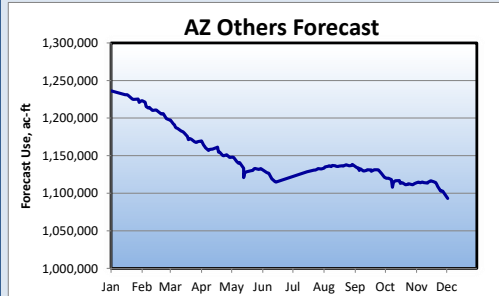
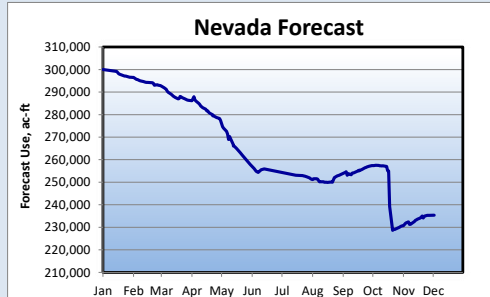
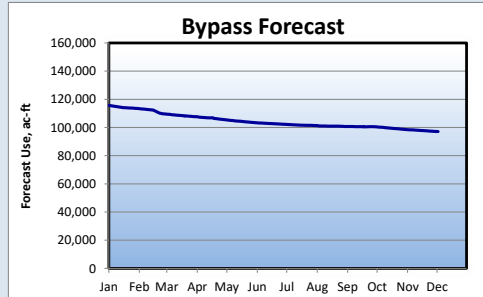
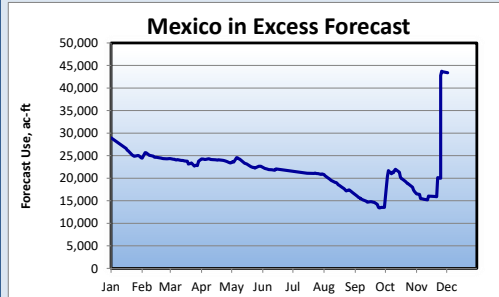
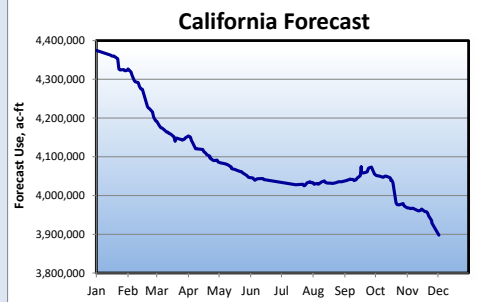
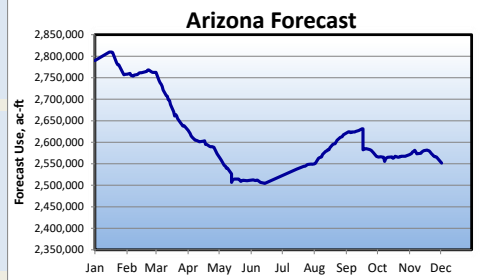
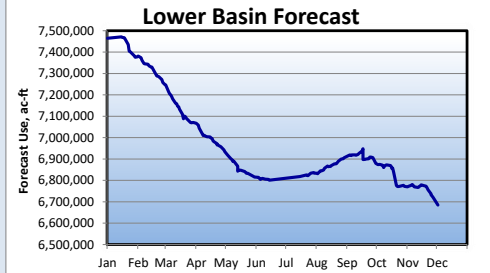
<sup>2</sup> Precipitation and snowpack values may vary significantly from week-to-week early in the water year.

**U.S. BUREAU OF RECLAMATION  
LOWER COLORADO REGION  
CY 2019**

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

<b>WATER USE SUMMARY</b>	<b>Use To Date CY2019</b>	<b>Forecast Use CY2019</b>	<b>Approved Use<sup>2</sup> CY2019</b>	<b>Excess to Approval CY2019</b>
ARIZONA	2,407,886	2,551,730	2,551,730	0
CALIFORNIA	3,719,795	3,897,715	3,897,715	0
NEVADA	230,143	235,347	235,347	0
<b>STATES TOTAL<sup>3</sup></b>	<b>6,357,824</b>	<b>6,684,792</b>	<b>6,684,792</b>	<b>0</b>
MEXICO IN SATISFACTION OF TREATY (Including downward delivery) TO MEXICO AS SCHEDULED	1,423,397	1,543,374	1,500,000	<b>43,374</b>
MEXICO IN EXCESS OF TREATY <sup>4</sup>	41,725	43,374		
BYPASS PURSUANT TO MINUTE 242 <sup>5</sup>	87,923	97,136		
<b>TOTAL LOWER BASIN &amp; MEXICO</b>	<b>7,869,144</b>	<b>8,325,302</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 for monthly reporters incorporates provisional data through September. Use to date for users reporting annually is estimated.  
<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> Mexico excess forecast is based on the 5-year average for the period 2013-2017.  
<sup>5</sup> Bypass forecast is based on the average for the period 1990-2017.



Graph notes: Jan 1 forecast use is scheduled use in accordance with the Annual Operating Plan's state entitlements, available unused entitlements, and overrun 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.

**U.S. BUREAU OF RECLAMATION  
LOWER COLORADO REGION  
CY 2019**

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

ARIZONA WATER USERS  
 FORECAST 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 CY2019	Use CY2019	Use CY2019	Estimated CY2019	To Date CY2019	Diversion CY2019	Diversion CY2019	Approved CY2019
ARIZONA PUMPERS	13,839	14,444	14,444	---	21,322	22,255	22,255	0
LAKE MEAD NRA, AZ - Diversions from Lake Mead	70	73	73	---	70	73	73	0
LAKE MEAD NRA, AZ - Diversions from Lake Mohave	183	196	196	---	183	196	196	0
DAVIS DAM PROJECT	2	2	2	---	19	20	20	0
BULLHEAD CITY	6,343	6,930	7,683	---	9,990	10,967	12,720	-1,753
MOHAVE WATER CONSERVATION DISTRICT	606	632	632	---	904	944	944	0
BROOKE WATER LLC	302	315	315	---	455	475	475	0
MOHAVE VALLEY IDD	19,044	20,280	21,464	---	35,267	37,552	39,746	-2,194
FORT MOJAVE INDIAN RESERVATION, AZ	32,515	33,560	44,550	---	60,212	62,148	82,500	-20,352
GOLDEN SHORES WATER CONSERVATION DISTRICT	257	268	268	---	385	402	402	0
HAVASU NATIONAL WILDLIFE REFUGE	2,466	2,539	3,563	---	20,564	21,425	41,820	-20,395
LAKE HAVASU CITY	7,282	7,882	8,928	---	11,745	12,713	14,400	-1,687
CENTRAL ARIZONA PROJECT	1,357,136	1,458,628		---	1,357,136	1,458,628		
TOWN OF PARKER	358	382	430	---	777	836	933	-97
COLORADO RIVER INDIAN RESERVATION, AZ	246,483	254,066	310,371	---	506,099	536,215	599,602	-63,387
EHRENBURG IMPROVEMENT ASSOCIATION	224	234	234	---	314	328	328	0
CIBOLA VALLEY <sup>1</sup>	15,005	15,661	15,661	---	20,973	21,891	21,891	0
CIBOLA NATIONAL WILDLIFE REFUGE	9,668	9,833	14,016	-4,183	15,592	15,858	22,605	-6,747
IMPERIAL NATIONAL WILDLIFE REFUGE	2,315	2,617	3,799	-1,182	3,736	4,223	6,128	-1,905
BLM PERMITEES (PARKER DAM to IMPERIAL DAM)	1,047	1,093	1,093		1,610	1,680	1,680	
CHA CHA, LLC	1,002	1,077	1,365	---	1,544	1,658	2,100	-442
BEATTIE FARMS	458	499	724	---	704	766	1,110	-344
YUMA PROVING GROUND	338	354	479	---	338	354	479	-125
GILA MONSTER FARMS	4,284	4,553	5,254	---	7,441	7,913	9,156	-1,243
WELLTON-MOHAWK IDD	250,084	260,554	278,000	-17,446	357,775	377,803	412,965	-35,162
BLM PERMITEES (BELOW IMPERIAL DAM)	93	97	97	0	142	148	148	0
CITY OF YUMA	12,143	13,348	15,962	-2,614	21,338	23,474	26,700	-3,226
MARINE CORPS AIR STATION YUMA	1,192	1,266	1,359	---	1,192	1,266	1,359	-93
UNION PACIFIC RAILROAD	22	24	24	---	44	48	48	0
UNIVERSITY OF ARIZONA	891	939	939	---	891	939	939	0
YUMA UNION HIGH SCHOOL DISTRICT	122	130	151	---	166	177	200	-23
DESERT LAWN MEMORIAL	16	17	17	---	22	23	23	0
NORTH GILA VALLEY IRRIGATION DISTRICT	9,374	9,781	12,141	---	38,328	40,747	44,200	-3,453
YUMA IRRIGATION DISTRICT	34,706	36,676	39,007	---	63,056	66,830	71,900	-5,070
YUMA MESA IDD	141,069	146,254	143,060	---	214,553	227,124	239,724	-12,600
UNIT "B" IRRIGATION DISTRICT	18,777	19,190	21,483	---	25,051	26,019	29,400	-3,381
FORT YUMA INDIAN RESERVATION	1,205	1,258	1,258	---	1,856	1,937	1,937	0
YUMA COUNTY WATER USERS' ASSOCIATION	216,134	225,149	230,166	---	310,457	331,747	360,400	-28,653
COCOPA INDIAN RESERVATION	744	838	1,691	---	899	1,044	2,580	-1,536
RECLAMATION-YUMA AREA OFFICE	87	91	91	---	87	91	91	0
RETURN FROM SOUTH GILA WELLS								
<b>TOTAL ARIZONA</b>	<b>2,407,886</b>	<b>2,551,730</b>	<b>2,649,287</b>		<b>3,113,237</b>	<b>3,318,937</b>	<b>3,522,474</b>	
CAP	1,357,136	1,458,628				1,458,628		
ALL OTHERS	1,050,750	1,093,102	1,200,990			1,860,309	2,074,177	
YUMA MESA DIVISION, GILA PROJECT	185,149	192,711	171,610	21,101		334,701		

**ARIZONA ADJUSTED APPORTIONMENT CALCULATION**

Arizona Basic Apportionment	2,800,000
Creation of Extraordinary Conservation ICS (Approved) <sup>2</sup>	(149,420)
System Conservation Water - Pilot System Conservation Program <sup>3</sup>	(41,328)
CAWCD Voluntary Contribution to Lake Mead (Estimated) <sup>4</sup>	(57,522)
<b>Total State Adjusted Apportionment</b>	<b>2,551,730</b>
Excess to Total State Adjusted Apportionment	0
<b>Estimated Allowable Use for CAP</b>	<b>1,516,150</b>

<sup>1</sup> Includes the following water users: Cibola Valley IDD; Arizona Game and Fish Commission; GSC Farms, LLC; Red River Land Company, LLC; Western Water, LLC; and the Hopi Tribe.

<sup>2</sup> Pursuant to the 2007 Interim Guidelines, the state of Arizona may create up to 100,000 AF of Extraordinary Conservation (EC) ICS annually. Pursuant to Section IV.B of Exhibit 1 to the *Lower Basin Drought Contingency Plan Agreement*, SNWA has committed to provide 50,000 AF of ICS creation capacity in 2019 for ICS creators in the state of Arizona. The following EC ICS creation amounts have been approved for 2019: CAWCD - up to 26,146 AF; Colorado River Indian Tribes (CRIT) - up to 6,274 AF; and Gila River Indian Community - up to 117,000 AF. Actual ICS creation amounts will be based on final accounting and verification.

<sup>3</sup> System Conservation Water to be conserved by Bullhead City, Fort McDowell Yavapai Nation, and CRIT pursuant to System Conservation Implementation Agreements executed under the Pilot System Conservation Program. This water will remain in Lake Mead to benefit system storage.

<sup>4</sup> By letter dated July 24, 2019, CAWCD notified Reclamation of its intent not to divert 85,953 AF of Arizona unused apportionment in 2019 to effect a voluntarily contribution to Lake Mead. This water will remain in Lake Mead to benefit system storage. The amount shown above is the **estimated** amount of voluntary contribution CAWCD will make based on the current forecast. This value is updated daily. The actual amount of CAWCD's voluntary contribution will be based on final accounting, and will be limited to the amount that, when added to CAWCD's consumptive use, does not result in an inadvertent overrun.

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

**U.S. BUREAU OF RECLAMATION  
LOWER COLORADO REGION  
CY 2019**

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

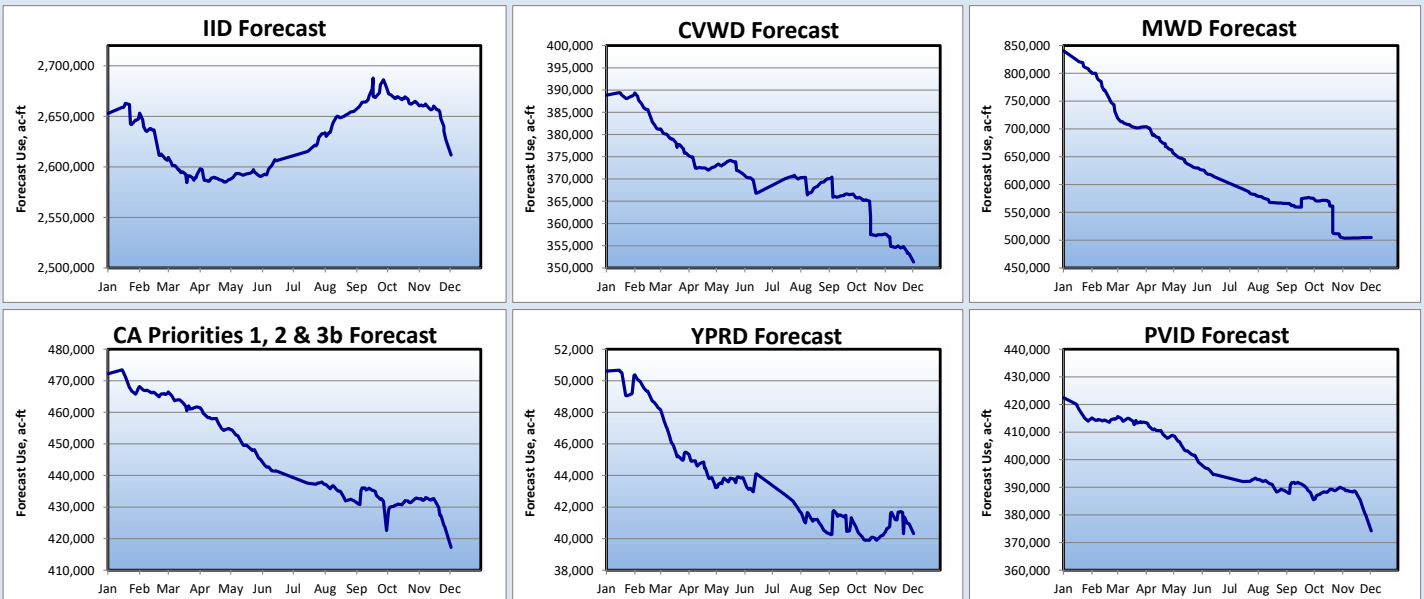
WATER USER	Use	Forecast	Estimated	Excess to	Diversion	Forecast	Approved	Excess to
	To Date	Use	Use	Use		To Date	Diversion	Diversion
	CY2019	CY2019	CY2019	CY2019	CY2019	CY2019	CY2019	CY2019
CALIFORNIA PUMPERS	1,748	1,824	1,824	---	3,162	3,300	3,300	0
FORT MOJAVE INDIAN RESERVATION, CA	5,342	5,613	8,996	---	9,929	10,432	16,720	-6,288
CITY OF NEEDLES (includes LCWSP use)	1,006	1,093	1,605	-512	1,768	1,890	2,261	-371
METROPOLITAN WATER DISTRICT	491,567	504,720	---	---	494,167	507,593	---	---
COLORADO RIVER INDIAN RESERVATION, CA	2,441	2,548	2,548	---	4,043	4,220	4,220	0
PALO VERDE IRRIGATION DISTRICT	363,322	374,219	422,468	---	777,488	821,036	856,000	-34,964
YUMA PROJECT RESERVATION DIVISION	38,209	40,316	47,045	---	77,064	82,523	98,928	-16,405
YUMA PROJECT RESERVATION DIVISION - INDIAN UNIT	---	---	---	---	40,285	42,938	46,128	-3,190
YUMA PROJECT RESERVATION DIVISION - BARD UNIT	---	---	---	---	36,779	39,585	52,800	-13,215
YUMA ISLAND PUMPERS	2,561	2,673	2,673	---	4,630	4,833	4,833	0
FORT YUMA INDIAN RESERVATION - RANCH 5	501	523	523	---	905	945	945	0
IMPERIAL IRRIGATION DISTRICT <sup>1</sup>	2,481,870	2,611,780	2,677,800	-66,020	2,461,216	2,603,023	2,781,074	---
SALTON SEA SALINITY MANAGEMENT	0	0	0	0	0	0	0	---
COACHELLA VALLEY WATER DISTRICT	330,205	351,338	388,837	-37,499	340,677	363,846	404,914	---
OTHER LCWSP CONTRACTORS	794	829	829	---	1,242	1,296	1,296	0
CITY OF WINTERHAVEN	64	67	67	---	95	99	99	0
CHEMEHUEVI INDIAN RESERVATION	165	172	172	---	10,865	11,340	11,340	0

**CALIFORNIA ADJUSTED APPORTIONMENT CALCULATION**

California Basic Apportionment	4,400,000
System Conservation Water - Pilot System Conservation Program <sup>2</sup>	(3,879)
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>	(60,421)
MWD Creation of Extraordinary Conservation ICS (Estimated) <sup>5</sup>	(436,406)
<b>Total State Adjusted Apportionment</b>	<b>3,897,715</b>
Excess to Total State Adjusted Apportionment	0

**Estimated Allowable Use for MWD** **941,126**

<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 2019.  
<sup>2</sup> System Conservation Water to be conserved by the City of Needles, the Coachella Valley Water District, and Bard Water District pursuant to System Conservation Implementation Agreements 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 2019; 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. The amount shown above is the **estimated** amount of EC ICS IID will create and store in its Lake Mead ICS Account based on the current forecast. This value is updated daily. 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, and will be limited to the amount that, when added to IID's consumptive use, does not result in an inadvertent overrun.  
<sup>4</sup> IID intends to use Additional Conserved Water for purposes including, but not limited to, the creation of ICS for storage in Lake Mead. As noted above, IID has been approved to create up to 62,000 AF of EC ICS in 2019, however, may only store up to 1,579 AF in its Lake Mead ICS Account. Storage of Additional Conserved Water 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 amount of Additional Conserved Water shown above is the **estimated** amount IID will create based on the current forecast. This value is updated daily. The actual amount of Additional Conserved Water created by IID in 2019 will be based on final accounting and verification, and will be limited to the amount that, when added to IID's consumptive use, does not result in an inadvertent overrun.  
<sup>5</sup> MWD has been approved to create up to 450,000 AF of EC ICS in 2019, 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 amount shown above is the **estimated** amount of EC ICS MWD will create based on the current forecast. This value is updated daily. The actual amount of EC ICS created by MWD will be based on final accounting and verification, and will be limited to the amount that, when added to MWD's consumptive use, does not result in an inadvertent overrun.



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

**U.S. BUREAU OF RECLAMATION  
LOWER COLORADO REGION  
CY 2019**

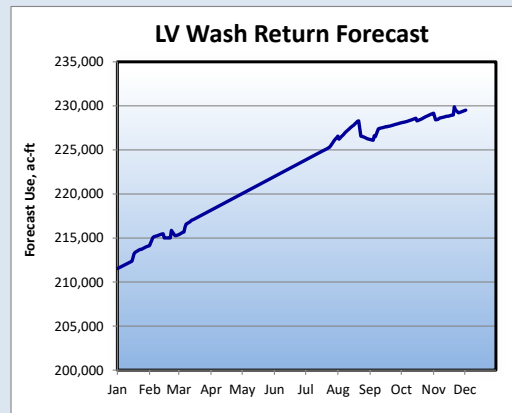
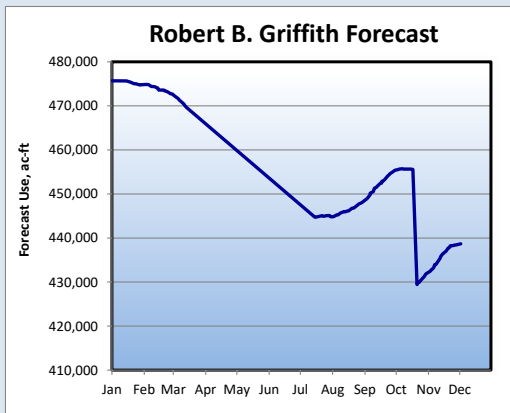
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NEVADA WATER USERS  
 FORECAST OF END OF YEAR CONSUMPTIVE USE  
 FORECAST BASED ON USE TO DATE AND APPROVED ANNUAL WATER ORDERS  
[Nevada Schedules and Approvals](#)  
[Historic Use Records \(Water Accounting Reports\)](#)

WATER USER	Use	Forecast	Estimated	Excess to	Diversion	Forecast	Approved	Excess to
	To Date CY2019	Use CY2019	Use CY2019	Estimated Use CY2019	To Date CY2019	Diversion CY2019	Diversion CY2019	Approved Diversion CY2019
ROBERT B. GRIFFITH WATER PROJECT (SNWS)	417,975	438,678		---	417,975	438,678		---
LAKE MEAD NRA, NV - Diversions from Lake Mead	437	524	1,500	---	437	524	1,500	-976
LAKE MEAD NRA, NV - Diversions from Lake Mohave	210	252	500	---	210	252	500	-248
BASIC MANAGEMENT INC.	4,962	5,628	8,208	---	4,962	5,628	8,208	-2,580
CITY OF HENDERSON (BMI DELIVERY)	12,337	13,342	15,878	---	12,337	13,342	15,878	-2,536
NEVADA DEPARTMENT OF WILDLIFE	9	10	12	-2	697	766	1,000	---
PACIFIC COAST BUILDING PRODUCTS INC.	836	916	928	---	836	916	928	-12
BOULDER CANYON PROJECT	166	173	173	---	287	300	300	0
BIG BEND WATER DISTRICT	2,052	2,345	4,619	---	4,451	5,073	10,000	-4,927
FORT MOJAVE INDIAN TRIBE	2,861	2,990	4,020	---	4,269	4,462	6,000	-1,538
LAS VEGAS WASH RETURN FLOWS	-211,702	-229,511	-228,082	---				
<b>TOTAL NEVADA</b>	<b>230,143</b>	<b>235,347</b>	<b>230,498</b>		<b>446,461</b>	<b>469,941</b>	<b>467,056</b>	
SOUTHERN NEVADA WATER SYSTEM (SNWS)	206,273	209,167				438,678		
ALL OTHERS	23,870	26,180				31,263		
NEVADA USES ABOVE HOOVER	225,230	230,012				460,406		
NEVADA USES BELOW HOOVER	4,913	5,335				9,535		
<b>Tributary Conservation Intentionally Created Surplus (ICS)</b>								
SNWA Creation of Tributary Conservation ICS (Approved) <sup>1</sup>		42,000						
<b>NEVADA ADJUSTED APPORTIONMENT CALCULATION</b>								
Nevada Basic Apportionment		300,000						
SNWA Creation of Extraordinary Conservation ICS (Estimated) <sup>2</sup>		(64,653)						
Total State Adjusted Apportionment		235,347						
Excess to Total State Adjusted Apportionment		0						

<sup>1</sup> SNWA has been approved to create up to 42,000 AF of Tributary Conservation (TC) ICS in 2019. The actual amount of TC ICS created by SNWA will be based on final accounting and verification.

<sup>2</sup> Pursuant to the 2007 Interim Guidelines, the state of Nevada may create up to 125,000 AF of Extraordinary Conservation (EC) ICS annually. SNWA has been approved to create up to 100,000 AF of EC ICS in 2019; however, pursuant to Section IV.B of Exhibit 1 to the *Lower Basin Drought Contingency Plan Agreement*, SNWA has committed to provide 50,000 AF of EC ICS creation capacity in 2019 for ICS creators in the state of Arizona. Should the state of Arizona fully utilize this 50,000 AF, the maximum amount of EC ICS that may be created by SNWA in 2019 is 75,000 AF. The amount shown above is the **estimated** amount of EC ICS SNWA will create based on the current forecast. This value is updated daily. The actual amount of EC ICS created by SNWA will be based on final accounting and verification.



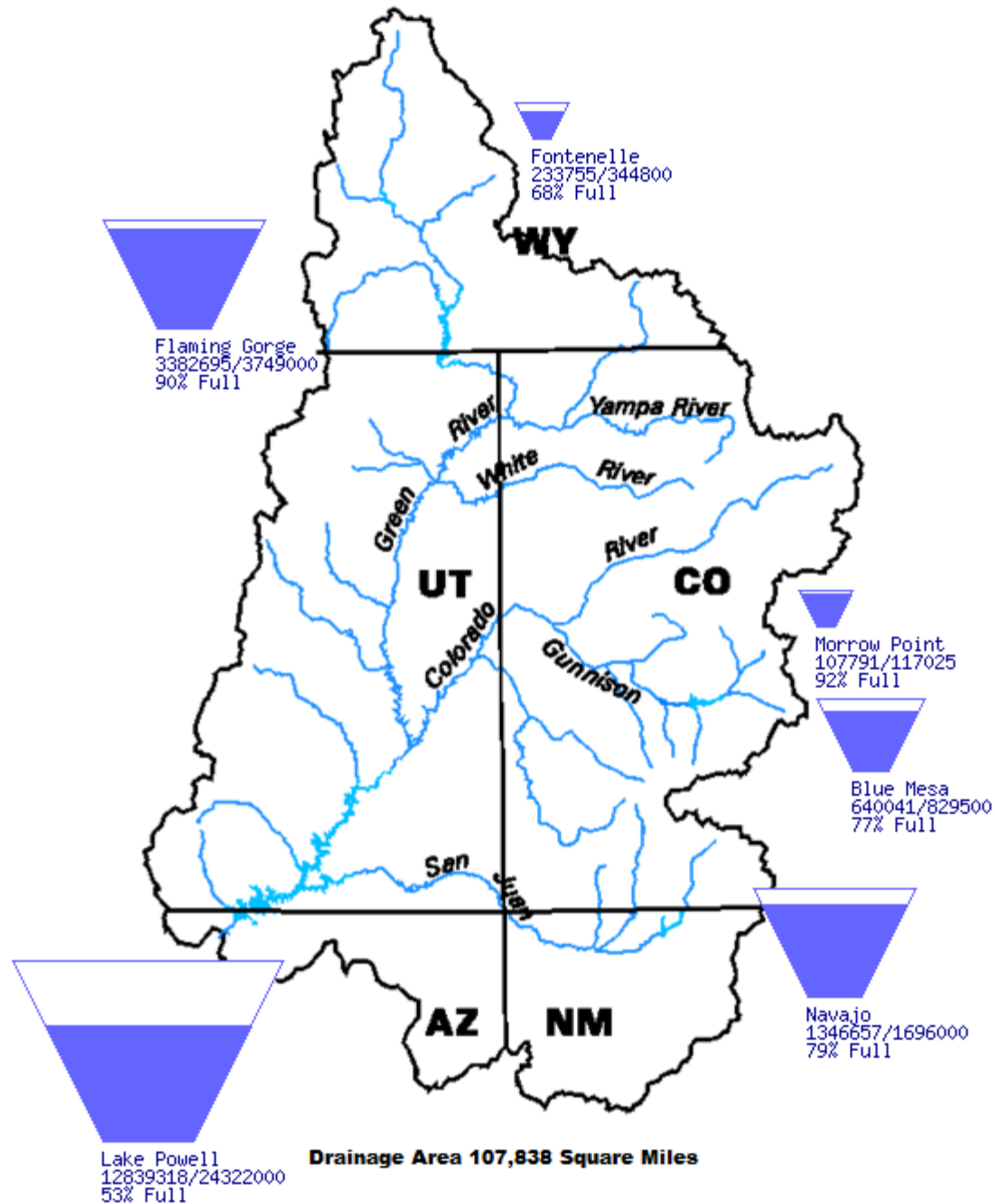
NOTES: Click on Nevada Schedules and Approvals above for incoming diversion schedules and approvals.

# Upper Colorado Region Water Resources Group

## River Basin Tea-Cup Diagrams

Data Current as of:  
12/02/2019

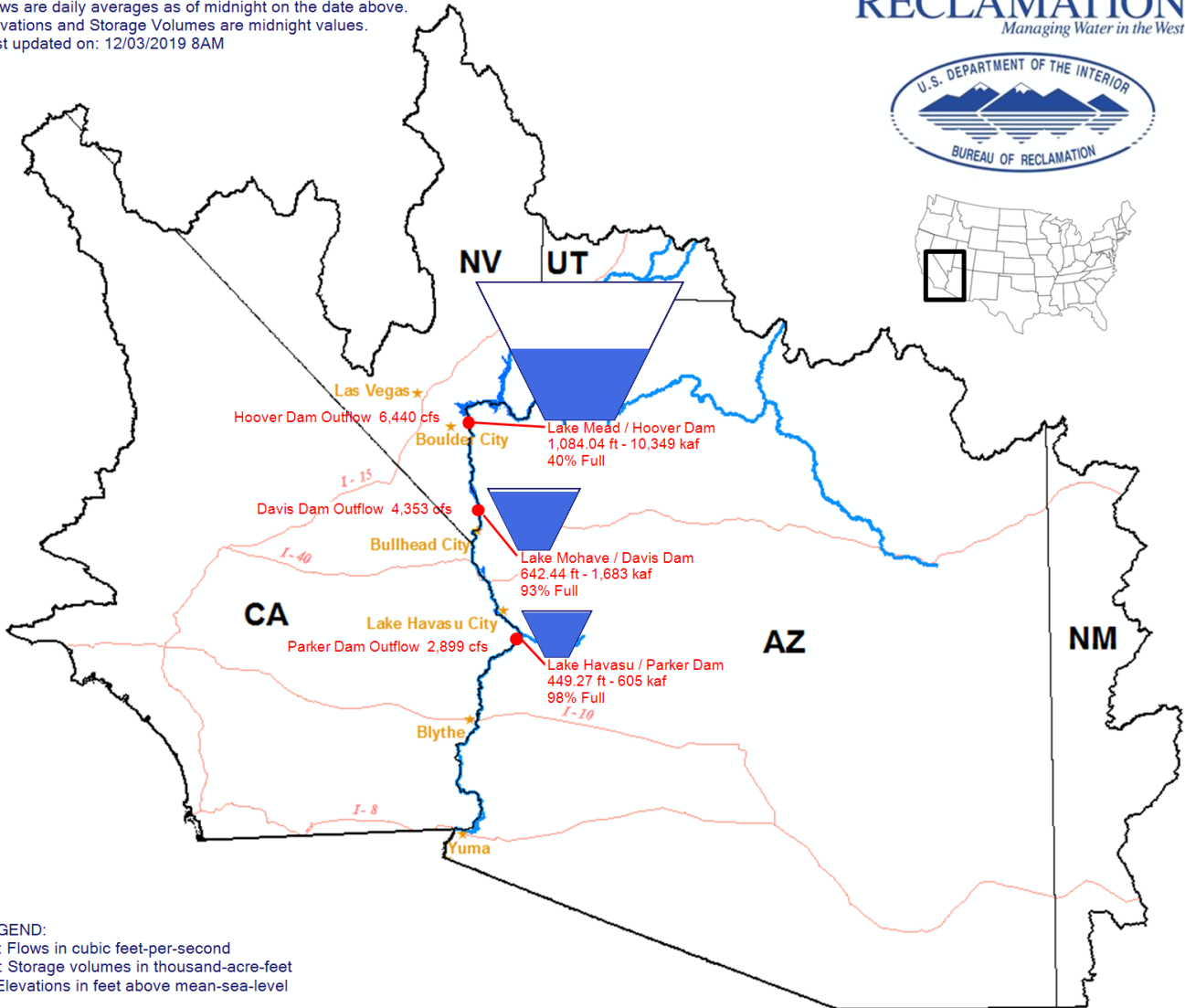
### Upper Colorado River Drainage Basin



# Lower Colorado River Teacup Diagram

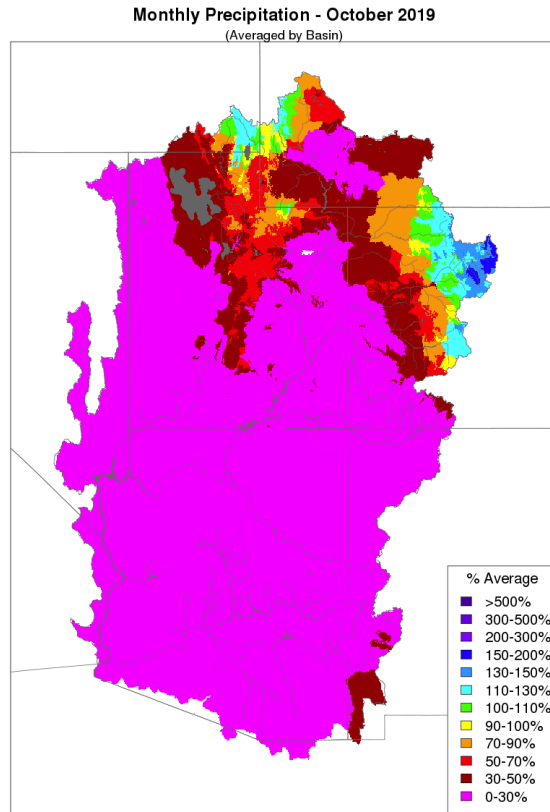
Data for: 12/02/2019  
 Flows are daily averages as of midnight on the date above.  
 Elevations and Storage Volumes are midnight values.  
 Last updated on: 12/03/2019 8AM

**RECLAMATION**  
*Managing Water in the West*

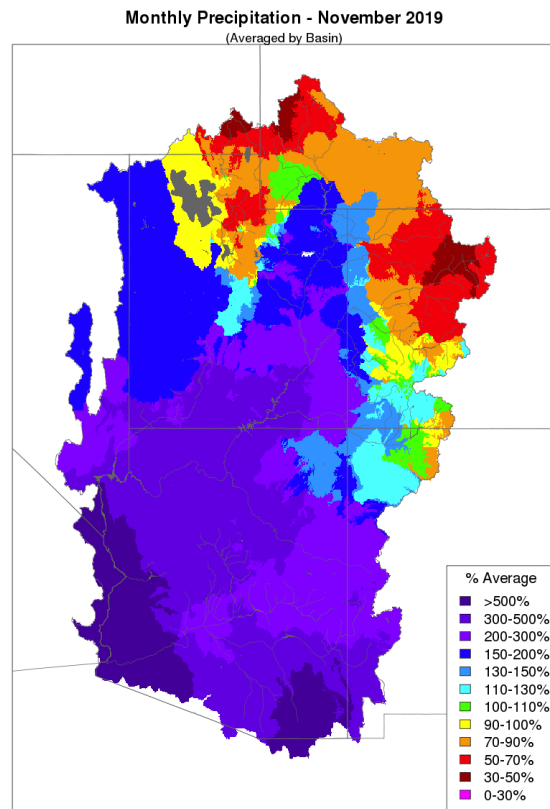


**LEGEND:**  
 cfs: Flows in cubic feet-per-second  
 kaf: Storage volumes in thousand-acre-feet  
 ft: Elevations in feet above mean-sea-level

# NOAA National Weather Service Monthly Precipitation Map October and November 2019



Prepared by NOAA, Colorado Basin River Forecast Center  
Salt Lake City, Utah, [www.cbrfc.noaa.gov](http://www.cbrfc.noaa.gov)

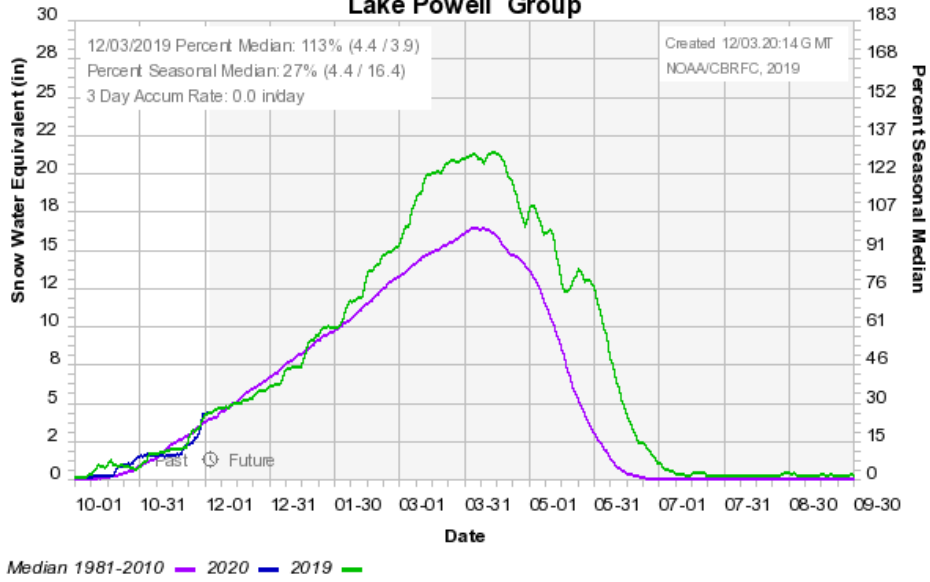


Prepared by NOAA, Colorado Basin River Forecast Center  
Salt Lake City, Utah, [www.cbrfc.noaa.gov](http://www.cbrfc.noaa.gov)

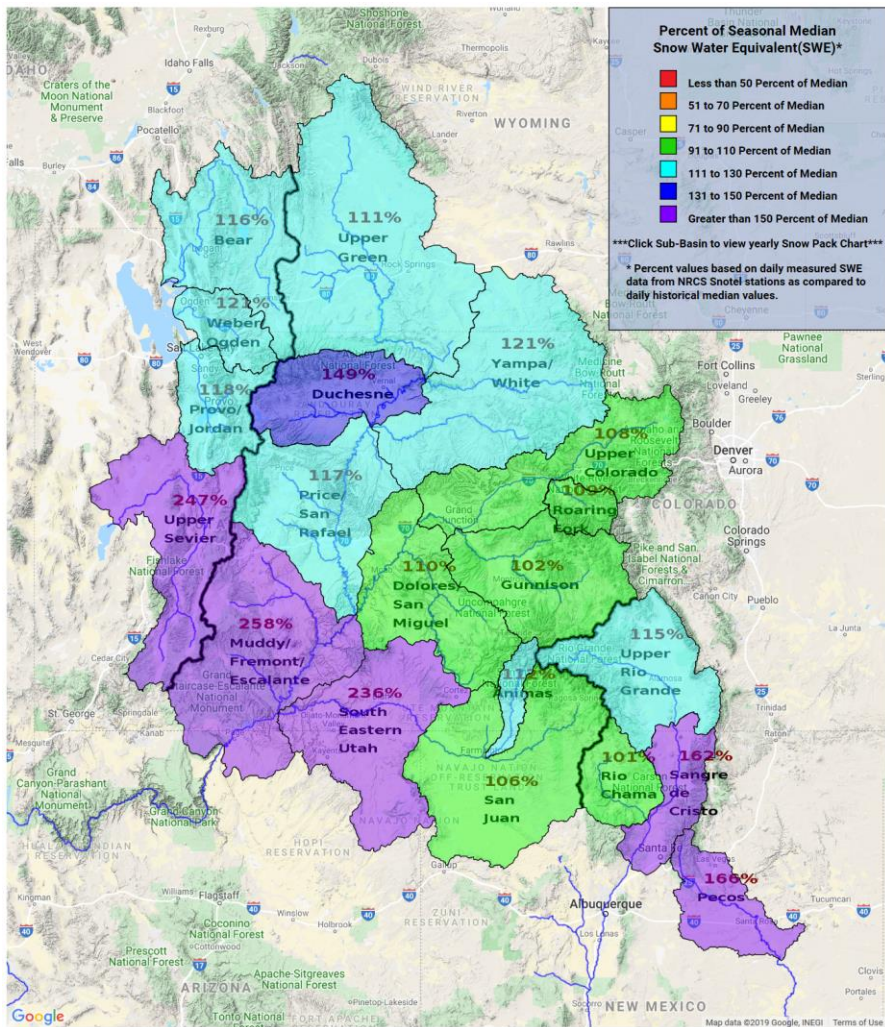


# Colorado Basin River Forecast Center

## Lake Powell Group

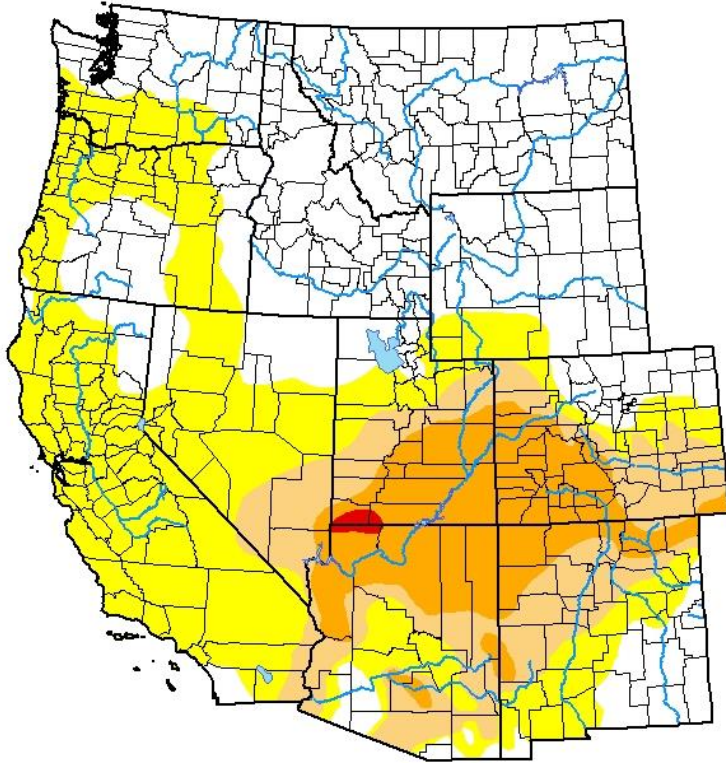


## Snow Pack Conditions Map Upper Colorado Region



**U.S. Drought Monitor  
West**

**November 26, 2019**  
(Released Wednesday, Nov. 27, 2019)  
Valid 7 a.m. EST



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	44.19	55.81	23.84	11.57	0.24	0.00
<b>Last Week</b> <i>11-19-2019</i>	53.04	46.96	24.52	11.78	0.24	0.00
<b>3 Months Ago</b> <i>08-27-2019</i>	71.53	28.47	10.10	1.07	0.00	0.00
<b>Start of Calendar Year</b> <i>01-01-2019</i>	28.03	71.97	53.25	27.22	8.35	2.88
<b>Start of Water Year</b> <i>10-01-2019</i>	68.40	31.60	16.32	3.16	0.00	0.00
<b>One Year Ago</b> <i>11-27-2018</i>	24.52	75.48	55.06	28.95	10.84	3.35

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:

Brad Rippey  
U.S. Department of Agriculture

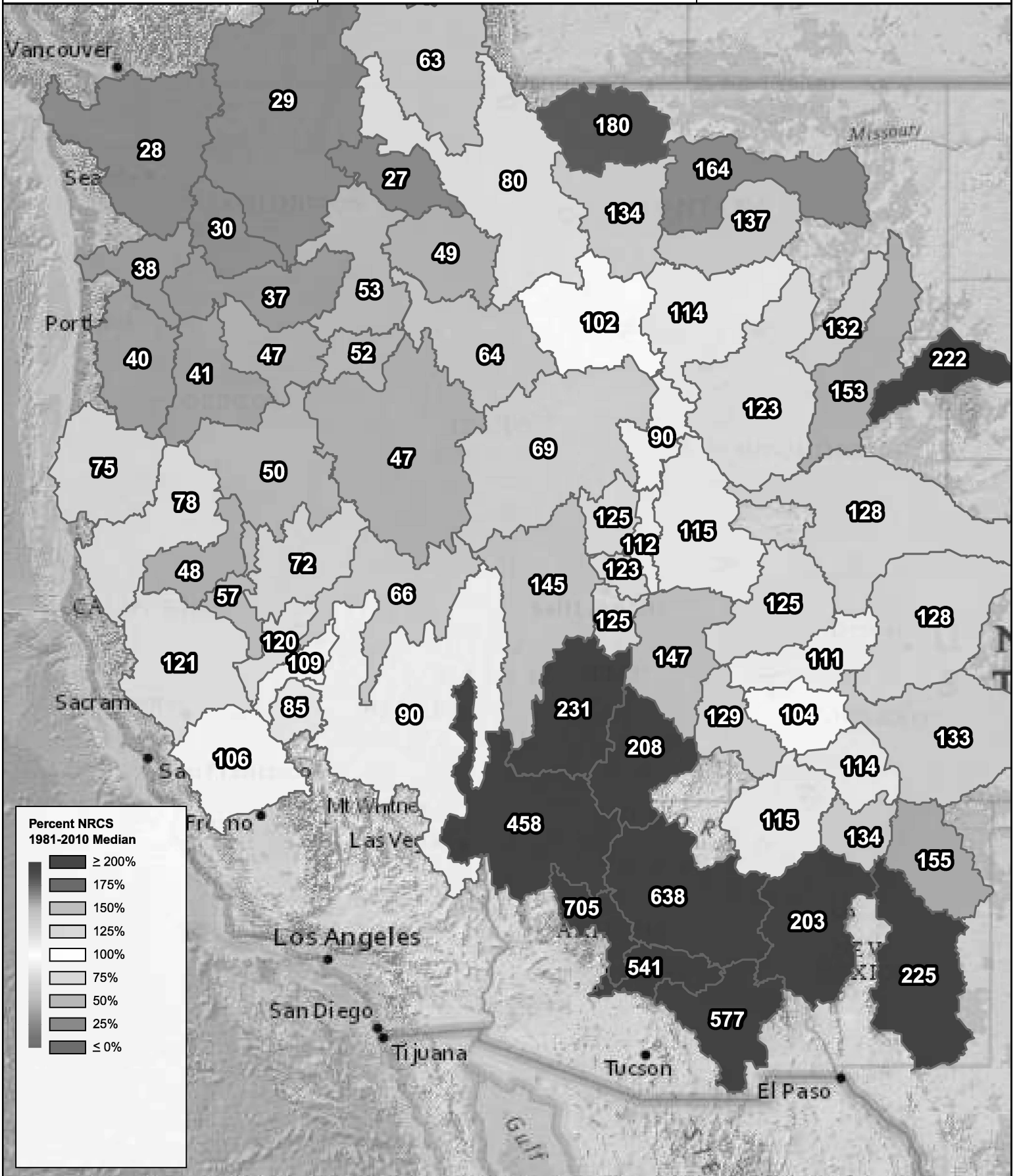


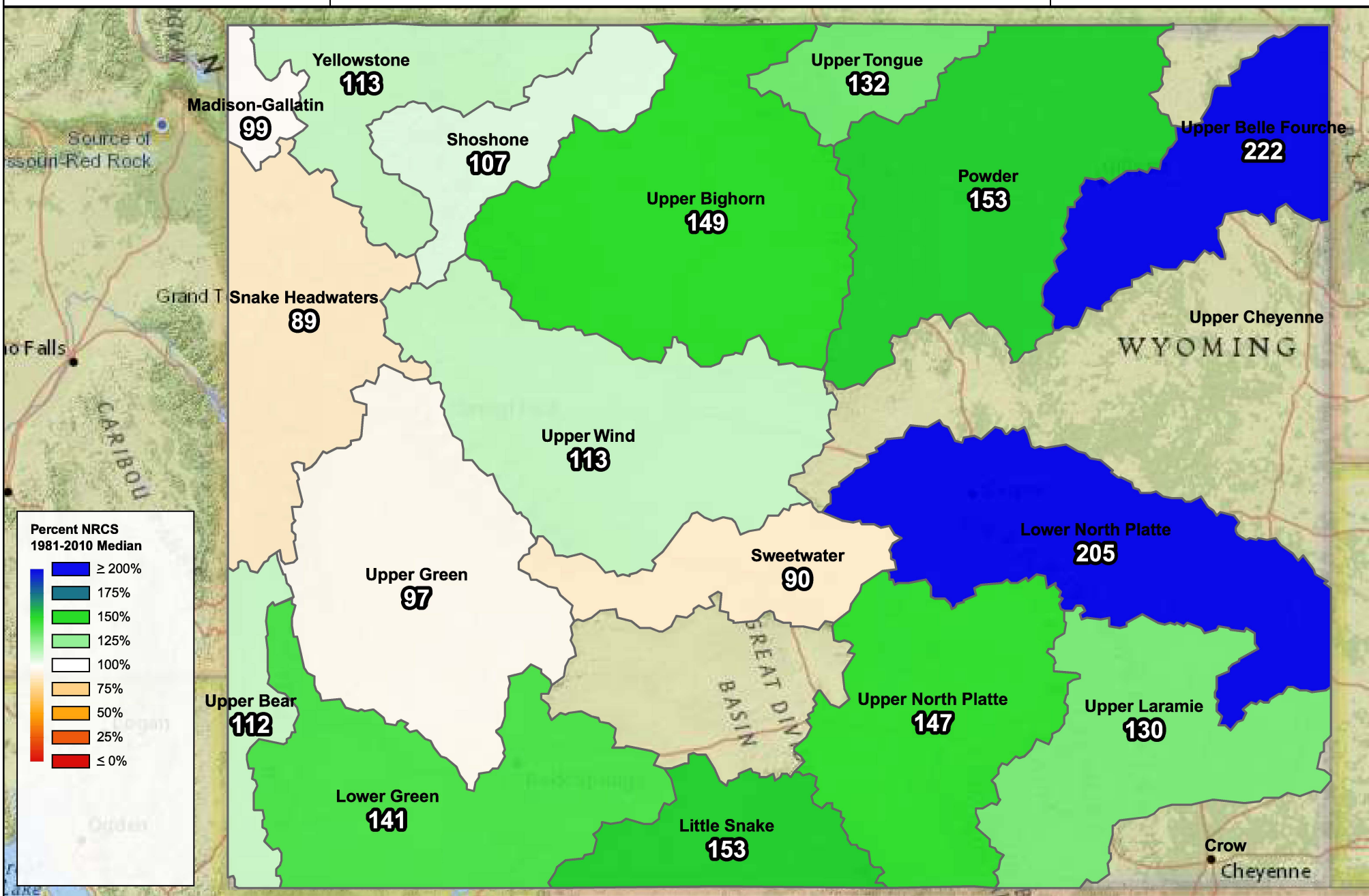
[droughtmonitor.unl.edu](https://droughtmonitor.unl.edu)

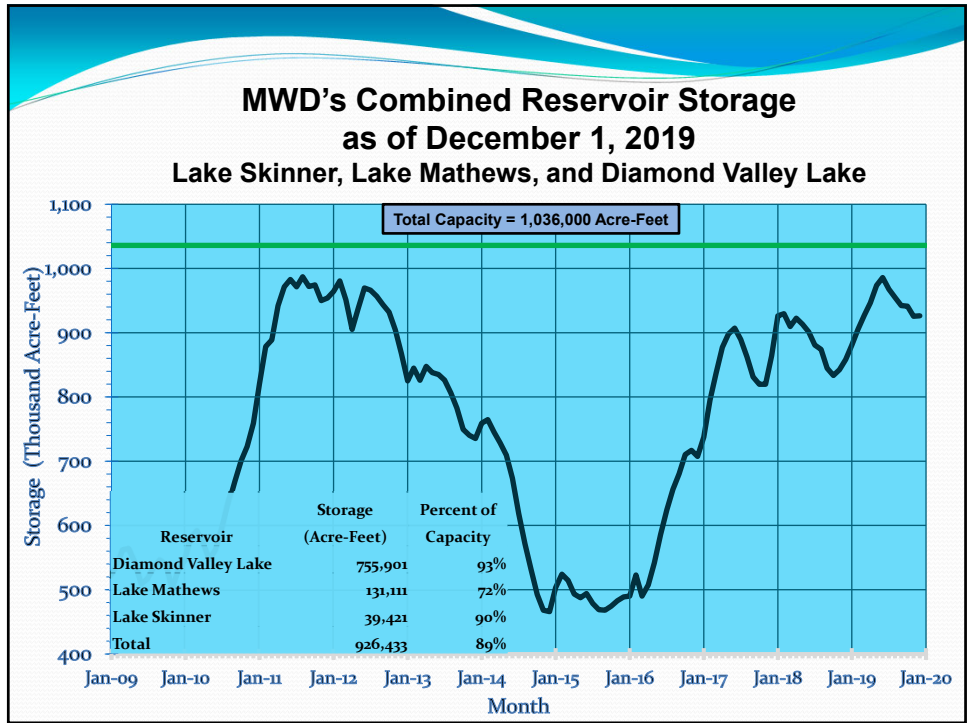
Snow Water Equivalent

Percent NRCS 1981-2010 Median

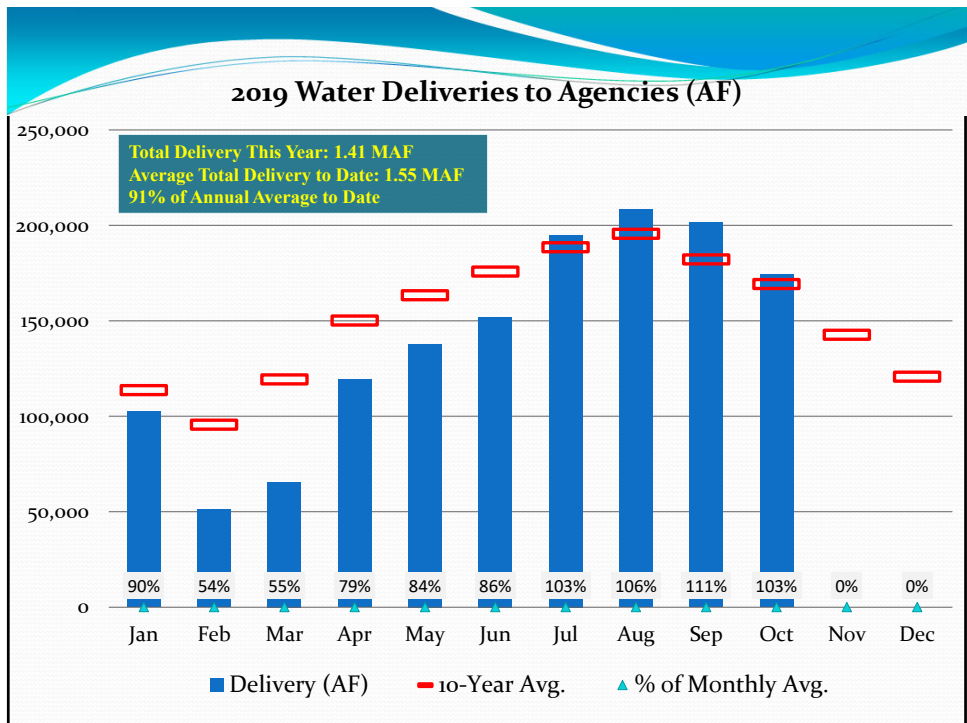
December 1st, 2019



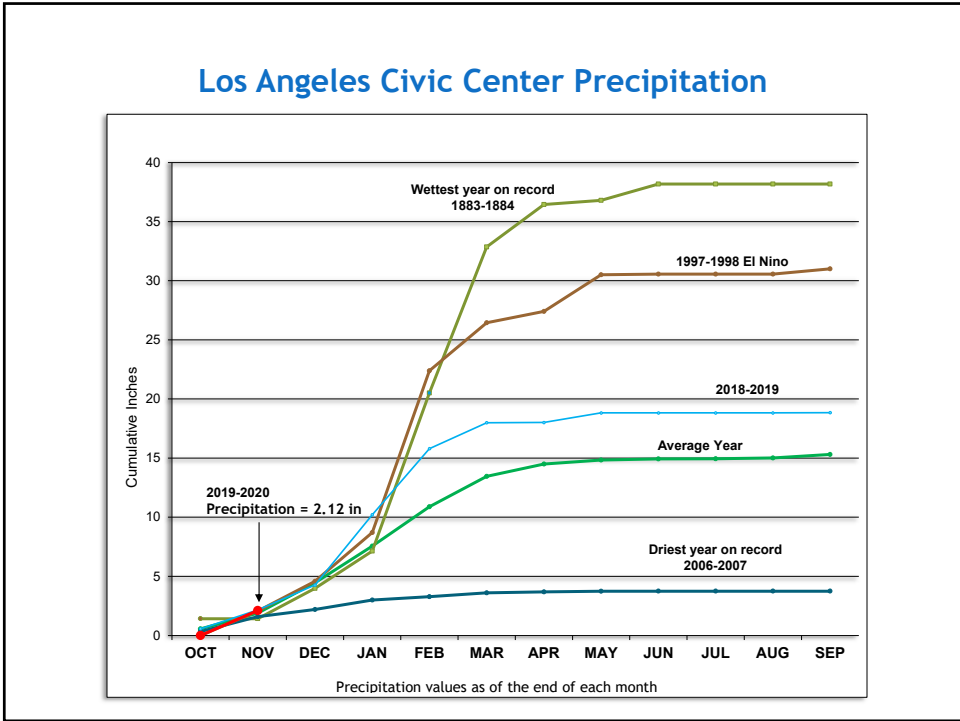




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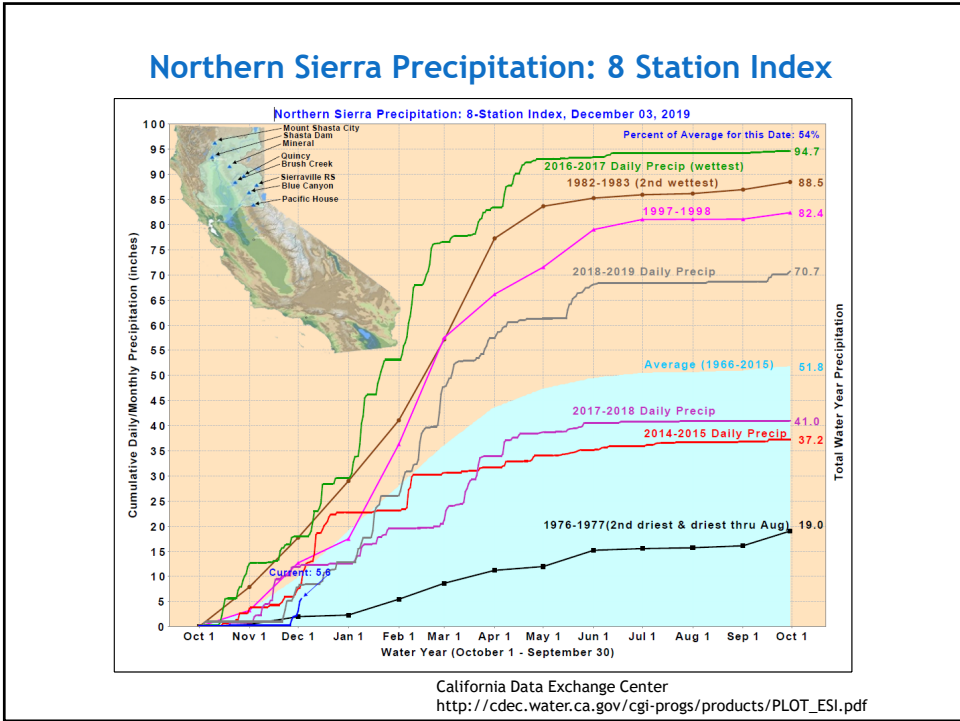
1

### Precipitation at Six Major Stations in Southern California

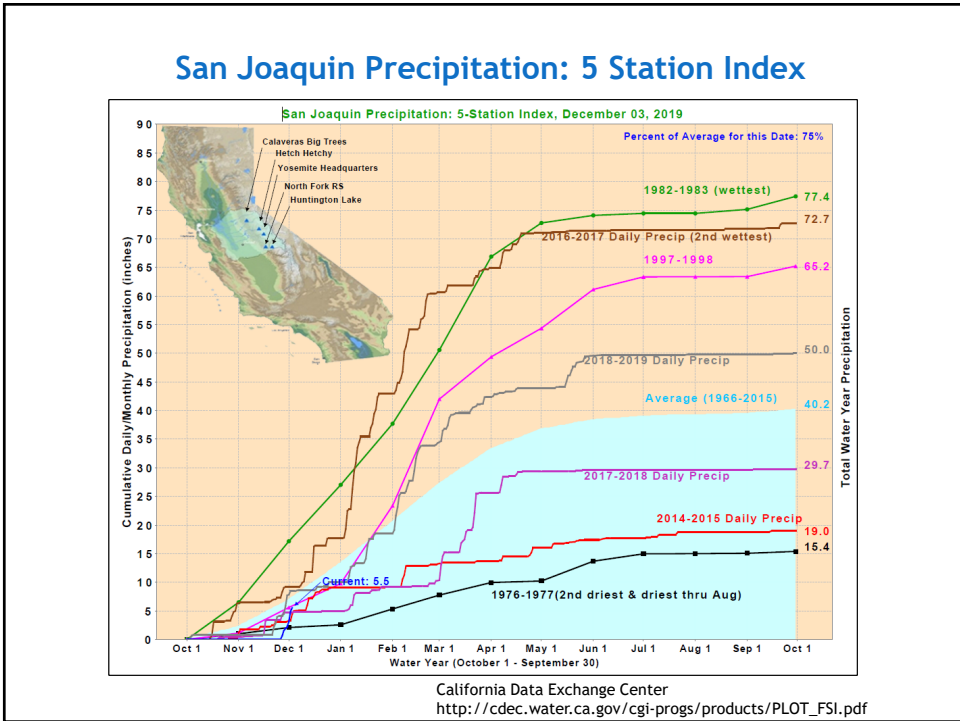
From October 1, 2019 to November 30, 2019

Station	Precipitation in inches		Average to Date	Percent of Average
	Oct	Oct 1 to Nov 30		
San Luis Obispo	1.34	1.34	3.05	44%
Santa Barbara	1.16	1.16	2.19	53%
Los Angeles	2.12	2.12	1.88	113%
San Diego	2.72	2.72	1.48	184%
Blythe	0.76	0.76	0.54	141%
Imperial	1.46	1.46	0.45	324%

2

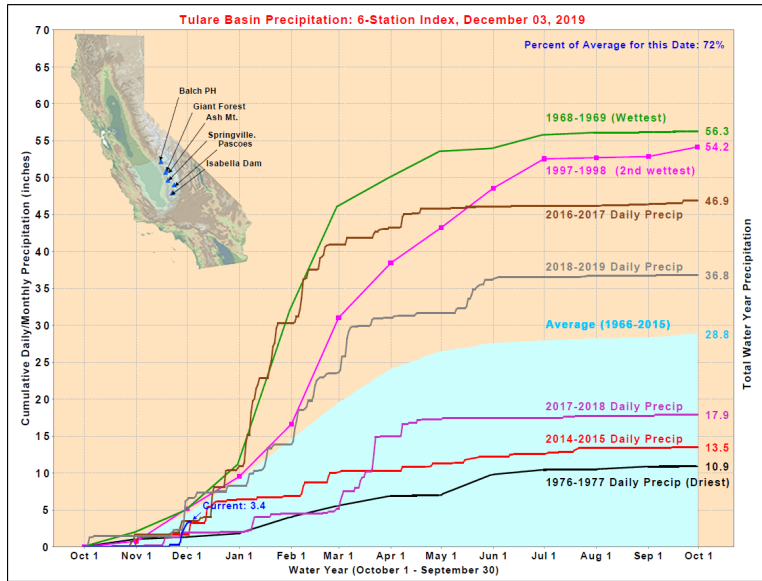


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### Tulare Basin Precipitation: 6 Station Index



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)

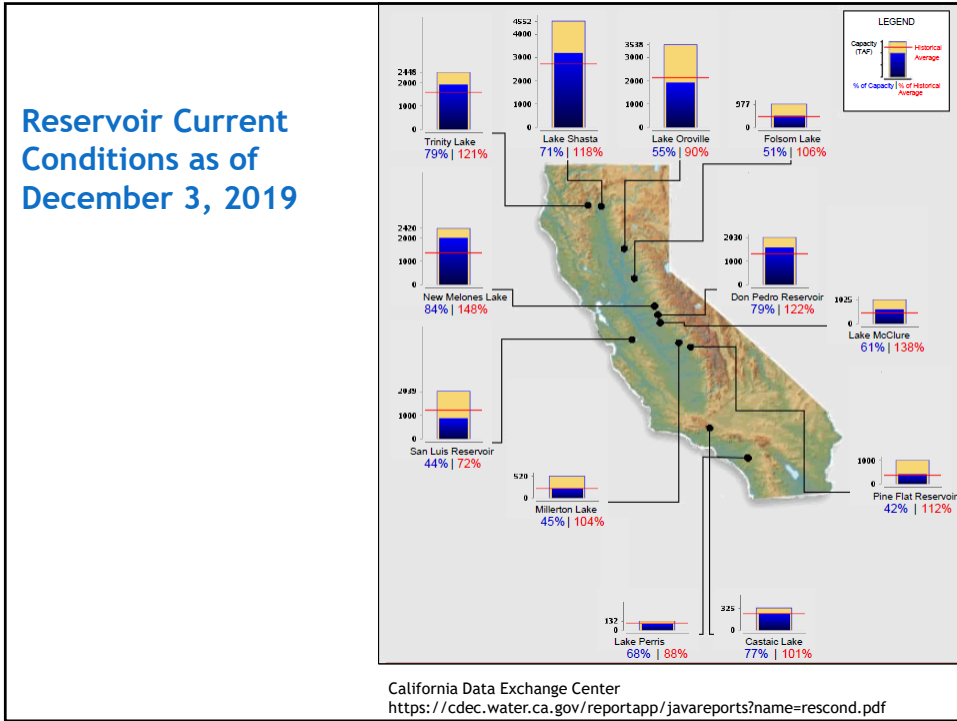
5

### Comparison of SWP Water Storage

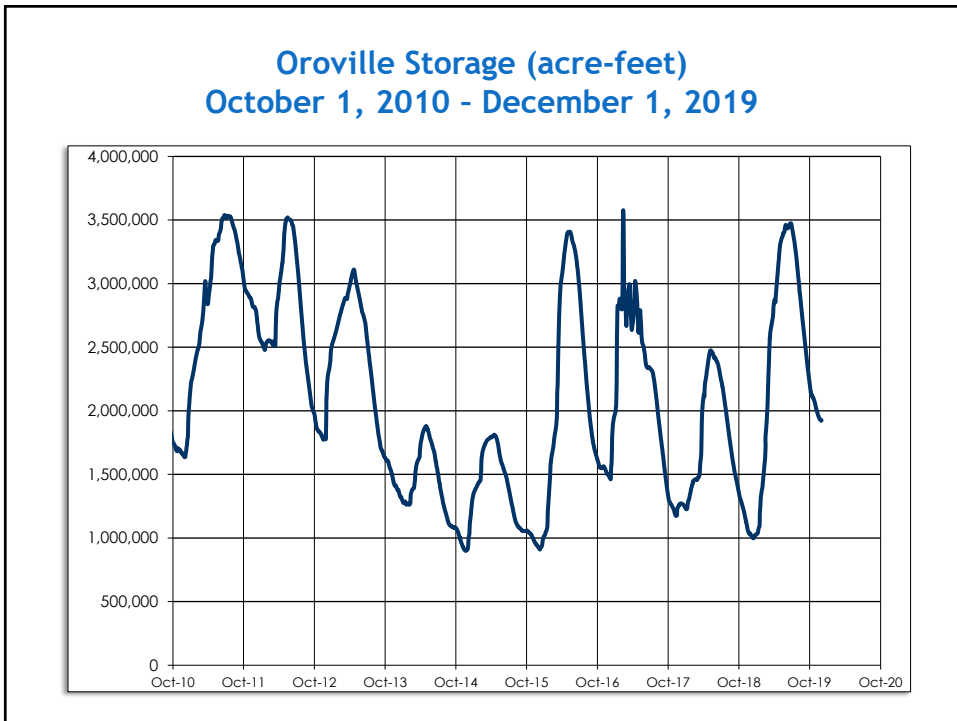
Reservoir	Capacity	2018 Storage (acre-feet)		2019 Storage (acre-feet)	
		As of Dec 1	% of Cap.	As of Dec 1	% of Cap.
Frenchman	55,475	41,181	74%	44,484	80%
Lake Davis	84,371	67,507	80%	63,883	76%
Antelope	22,564	14,703	65%	16,889	75%
Oroville	3,553,405	1,028,338	29%	1,925,258	54%
<b>TOTAL North</b>	<b>3,715,815</b>	<b>1,151,729</b>	<b>31%</b>	<b>2,050,514</b>	<b>55%</b>
Del Valle	39,914	25,140	63%	25,753	65%
San Luis	2,027,835	1,182,487	58%	885,859	44%
Pyramid	169,901	165,853	98%	166,426	98%
Castaic	319,247	262,024	82%	250,816	79%
Silverwood	74,970	68,372	91%	61,855	83%
Perris	126,841	59,049	47%	59,049	47%
<b>TOTAL South</b>	<b>2,758,708</b>	<b>1,762,925</b>	<b>64%</b>	<b>1,449,758</b>	<b>53%</b>
<b>TOTAL SWP</b>	<b>6,474,523</b>	<b>2,914,654</b>	<b>45%</b>	<b>3,500,272</b>	<b>54%</b>

6



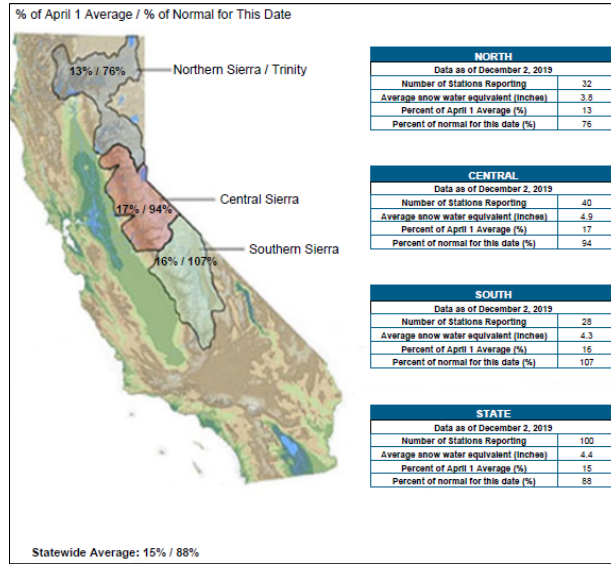


7



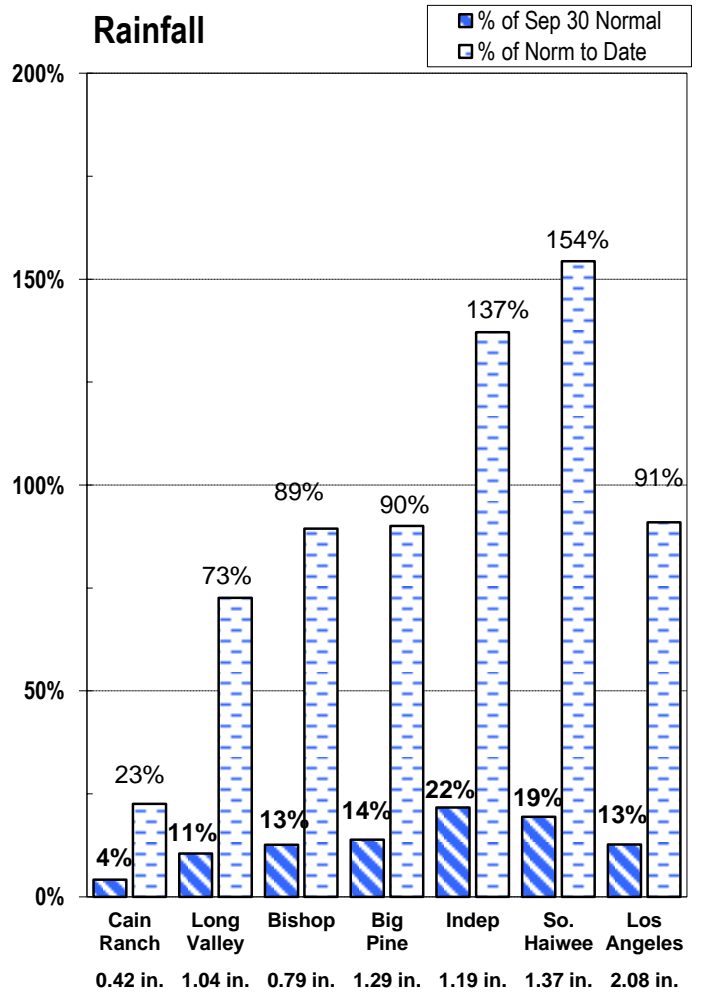
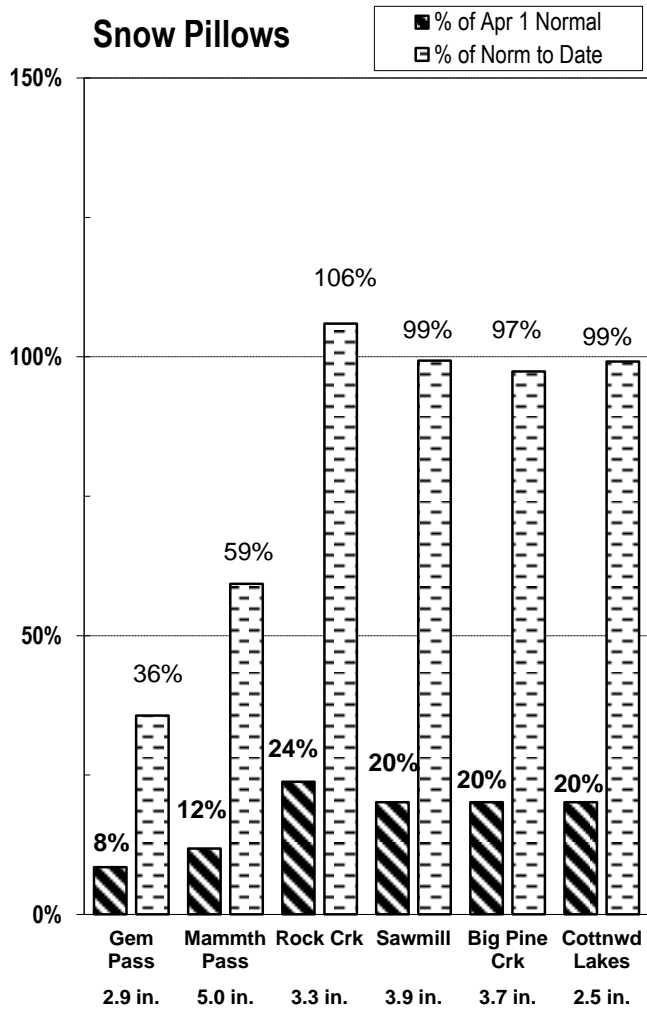
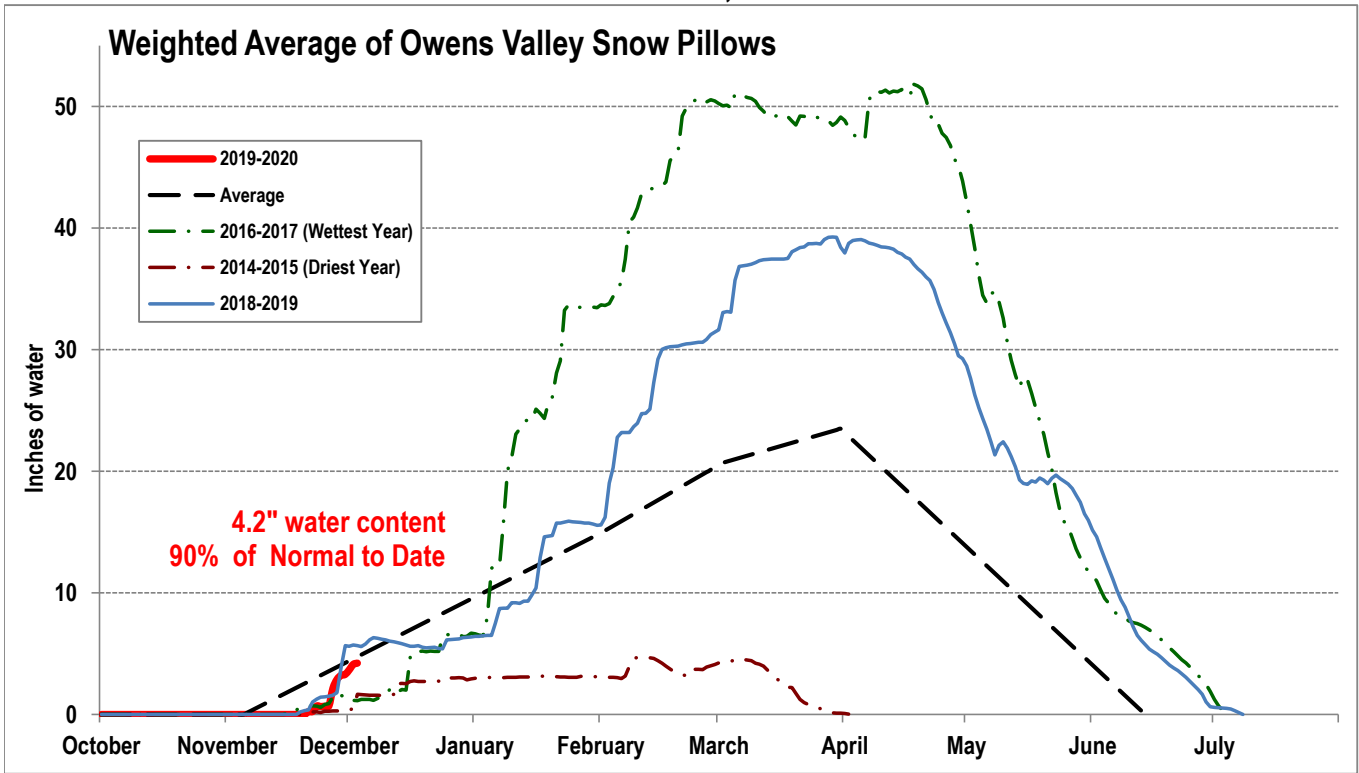
8

## Statewide Summary of Snow Water Content - December 3, 2019



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

# EASTERN SIERRA CURRENT PRECIPITATION CONDITIONS December 3, 2019



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