

American River Group

Thursday, August 16th, 2018 1:30 PM
Central Valley Operation Office, Room 302
3310 El Camino Ave.
Sacramento, CA 95821

1. Fisheries Updates

2. Operations Forecast

3. Temperature Management

4. Discussion

CDFW:

a) Alternatives for weir installation date

b) Alternatives for a fall temperature target

5. Schedule Next Meeting

The next meeting is scheduled to take place on Thursday, September 20th, 2018

6. Adjourn

American River Summary Conditions – August (On-going):

- No unusual conditions or occurrences to report.

Storage/Release Management Conditions

- Releases to meet Delta needs over summer.

Temperature Management:

- We did have a few days with minor exceedance of the temperature objective. Shutter adjustments were made to bring temperatures back below the objective.

DAILY CVP WATER SUPPLY REPORT

AUGUST 15, 2018

RUN DATE: August 16, 2018

RESERVOIR RELEASES IN CUBIC FEET/SECOND

RESERVOIR	DAM	WY 2017	WY 2018	15 YR MEDIAN
TRINITY	LEWISTON	457	804	456
SACRAMENTO	KESWICK	9,596	10,138	10,138
FEATHER	OROVILLE (SWP)	7,000	6,000	5,500
AMERICAN	NIMBUS	3,647	3,417	2,748
STANISLAUS	GOODWIN	1,510	304	277
SAN JOAQUIN	FRIANT	350	434	350

STORAGE IN MAJOR RESERVOIRS IN THOUSANDS OF ACRE-FEET

RESERVOIR	CAPACITY	15 YR AVG	WY 2017	WY 2018	% OF 15 YR AVG
TRINITY	2,448	1,583	1,956	1,613	102
SHASTA	4,552	2,787	3,789	2,897	104
FOLSOM	977	548	828	544	99
NEW MELONES	2,420	1,394	2,087	1,853	133
FED. SAN LUIS	966	253	761	327	129
TOTAL NORTH CVP	11,363	6,566	9,421	7,234	110
MILLERTON	520	312	462	303	97
OROVILLE (SWP)	3,538	2,068	1,899	1,766	85

ACCUMULATED INFLOW FOR WATER YEAR TO DATE IN THOUSANDS OF ACRE-FEET

RESERVOIR	CURRENT WY 2018	WY 1977	WY 1983	15 YR AVG	% OF 15 YR AVG
TRINITY	538	201	2,828	1,202	45
SHASTA	3,377	2,286	10,356	4,957	68
FOLSOM	2,388	318	6,301	2,540	94
NEW MELONES	854	0	2,663	1,001	85
MILLERTON	1,282	298	4,374	1,545	83

ACCUMULATED PRECIPITATION FOR WATER YEAR TO DATE IN INCHES

RESERVOIR	CURRENT WY 2018	WY 1977	WY 1983	AVG (N YRS)	% OF AVG	LAST 24 HRS
TRINITY AT FISH HATCHERY	19.58	13.75	55.19	31.52 (56)	62	0.00
SACRAMENTO AT SHASTA DAM	38.67	17.28	112.58	61.19 (61)	63	0.00
AMERICAN AT BLUE CANYON	64.57	15.70	103.88	66.02 (43)	98	0.00
STANISLAUS AT NEW MELONES	21.01	0.00	45.33	27.08 (40)	78	0.00
SAN JOAQUIN AT HUNTINGTON LK	32.89	17.20	81.80	41.35 (43)	80	0.00

DATE	Mean Daily Temperatures (°F)							Release (CFS)	Storage (TAF)	Unit Shutter Position / Load Percentage						Isobath Plot		
	Water						Air			Nimbus	Folsom	Unit 1		Unit 2			Unit 3	
	NFA	ARP	AFD ¹	AHZ	AWP	AWB	CSU											
Jun	65.7	64.2	56.1	57.2	59.9	61.0	72.1	3391										
07/01	69.6	66.4	58.9	59.9	62.7	63.9	76.8	3829	836	A	33	A	15	A	52			
07/02	70.3	66.8	59.5	60.0	62.5	63.3	70.8	4245	830	A	52	A	34	A	14			
07/03	70.5	68.7	59.5	60.4	62.7	63.4	68.5	4344	823	A	18	A	47	A	35			
07/04	70.4	69.3	59.8	60.3	62.5	63.1	65.9	4346	816	A	12	A	35	A	52			
07/05	69.4	69.5	60.5	60.7	62.8	63.3	? 72.0	4684	808	A	49	A	35	A	16			
07/06	67.3	67.8	60.8	61.1	63.1	63.6	? 77.8	4845	801	A	34	A	48	A	18			
07/07	65.0	66.8	60.8	61.3	63.5	64.2	79.7	4846	795	A	28	A	28	A	44			
07/08	65.0	65.9	61.0	61.5	63.7	64.4	? 76.8	4844	789	A	46	A	40	A	14			
07/09	64.9	64.5	61.4	61.9	64.0	64.6	78.8	4845	783	A	27	A	29	A	44			
07/10	64.8	64.2	61.7	62.2	64.3	65.0	80.1	4846	777	A	46	A	36	A	18			
07/11	63.6	67.8	61.8	62.5	64.7	65.4	78.7	4847	770	A	17	A	46	A	37			
07/12	62.6	68.2	60.6	62.7	64.9	65.5	80.0	4848	764	T	16	A	36	A	49			
07/13	60.0	67.1	60.9	61.6	63.8	64.5	80.7	4845	757	T	16	A	46	A	38			
07/14	61.1	66.6	61.5	61.7	64.0	64.6	78.3	4845	751	T	11	A	36	A	53			
07/15	63.9	67.6	61.6	62.2	64.6	65.3	74.1	4846	744	T	11	A	44	A	46			
07/16	64.8	68.1	61.2	62.5	64.8	65.5	76.2	4846	736	T	20	A	36	A	44			
07/17	65.5	68.9	61.5	62.1	64.5	65.2	77.5	5003	729	T	17	A	39	A	43			
07/18	65.4	70.0	61.6	62.3	64.8	65.6	81.0	4846	721	T	20	A	34	A	46			
07/19	65.4	71.5	61.6	62.3	64.8	65.5	79.3	4846	714	T	24	A	41	A	36			
07/20	64.6	68.7	62.9	62.8	65.0	65.5	78.6	4847	699	T	12	A	43	A	44			
07/21	64.9	68.7	62.9	63.7	66.0	66.5	76.6	4846	692	T	19	A	45	A	37			
07/22	64.8	69.5	61.8	63.5	66.0	66.6	79.0	5203	685	T	27	A	30	A	42			
07/23	62.4	70.8	61.8	62.6	65.4	66.4	78.8	5121	678	T	36	A	13	A	51			
07/24	62.4	70.8	61.8	62.6	65.4	66.4	78.8	5121	678	T	36	A	13	A	51			
07/25	61.5	70.6	62.1	63.1	65.2	65.6	82.0	5150	672	T	34	A	14	A	52			
07/26	62.2	70.0	62.1	63.3	65.8	66.6	79.1	4847	666	T	35	A	12	A	54			
07/27	61.1	70.2	62.1	62.9	65.2	65.9	75.3	4847	659	T	36	A	29	A	36			
07/28	61.3	69.8	62.5	63.1	65.1	65.7	76.1	4845	652	T	33	A	29	A	37			
07/29	62.6	68.5	62.4	63.3	65.0	65.2	73.0	4842	645	T	36	A	32	A	31			
07/30	59.9	68.0	62.4	63.1	65.0	65.4	76.1	4848	638	T	39	A	36	A	24			
07/31	60.8	69.1	61.6	63.1	65.3	65.9	76.5	4844	631	T	41	T	13	A	45			
Jul	64.4	68.4	61.4	62.1	64.4	65.1	76.9	4800										
								Total AF	295153									

Legend

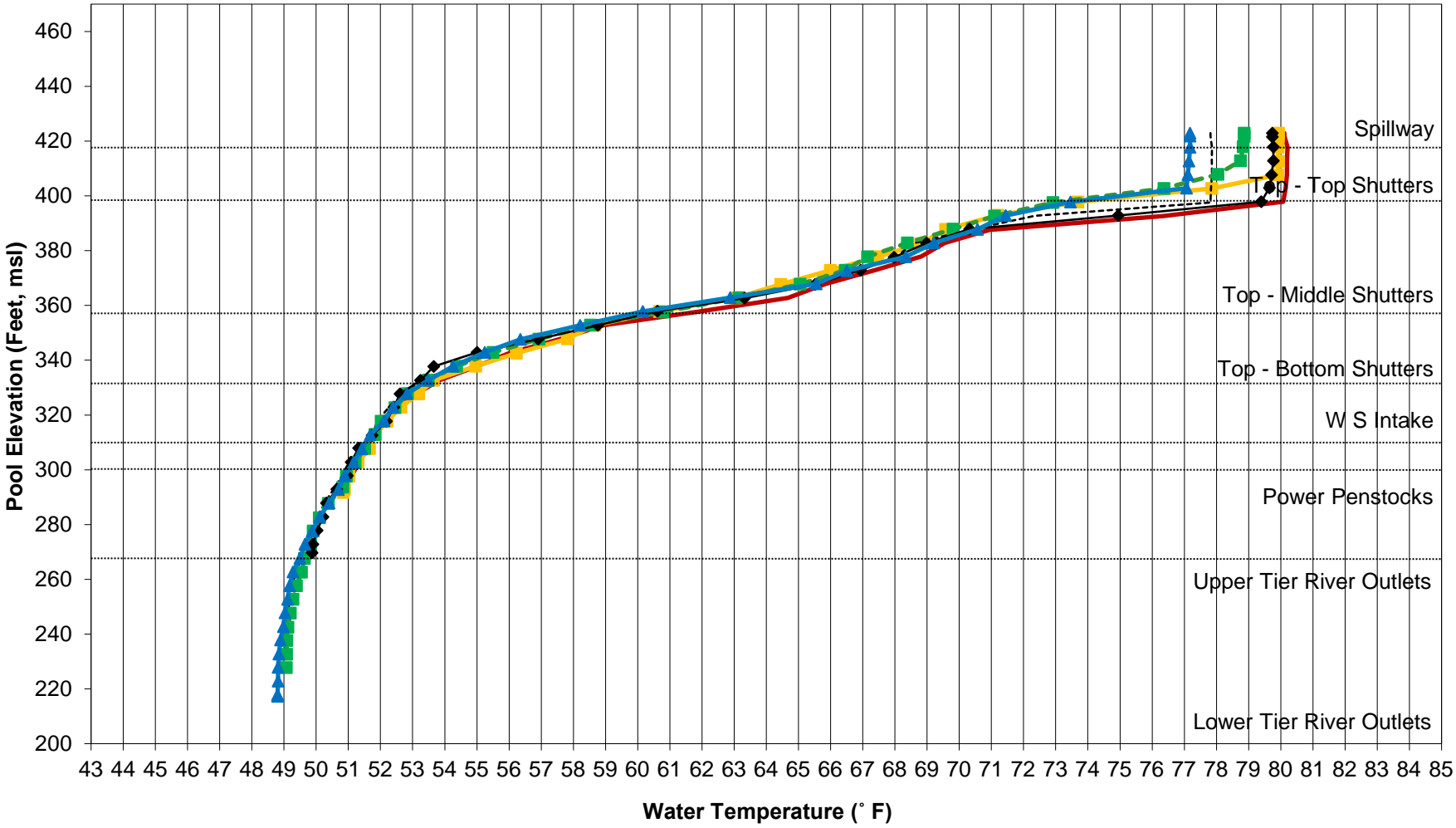
- ? = 1-9 hours of data missing
- I = 10 or more hours of data missing
- # = Station out of service
- ☐ = Monthly Averages

- A = All Shutters Lowered
- T = Top Shutter Raised
- M = Middle Shutter Raised
- B = Bottom Shutter Raised
- O = Unit Outage

Notes

- ¹ AFD is a weighted average using hourly flow values
- 2
- 3
- 4
- 5
- 6

Folsom Lake Temperature Profiles: 14-Aug-2018



Folsom Cold Water Pool

Folsom Reservoir: Cold Water Volume

Profile Date	Volume less than 58°F (TAF)
08/14/18	130.6

Proposed Power Generation Bypass/Lower River Outlet for Temperature Management

Date	Bypass/Lower River Outlet (cfs)	Temperature not to exceed downstream of Nimbus Dam (°F)	Cumulative Use of Cold Water Pool Volume (TAF)
N/A at this time			

DRAFT June 2018

90% Runoff Exceedance Outlook:

Inflow based on 90% historical average runoff for all months.

Federal End of the Month Storage/Elevation (TAF/Feet)

		Aug	Sep	Oct	Nov	Dec	
Folsom	631	508	455	398	348	308	
	Elev.	417	411	403	395	388	

Monthly River Releases (cfs)

American	3200	1811	1500	1500	1500	
MRR	1750	1750				

50% Runoff Exceedance Outlook:

Inflow based on 50% historical average runoff for all months.

Federal End of the Month Storage/Elevation (TAF/Feet)

		Aug	Sep	Oct	Nov	Dec	
Folsom	631	483	394	346	317	306	
	Elev.	414	402	395	390	388	

Monthly River Releases (cfs)

American	3551	2642	2000	2000	2000	
MRR	1750	1750				

Please note:

CVP actual operations do not follow any forecasted operation or outlook; actual operations are based on real-time conditions.

CVP operational forecasts or outlooks consider general system-wide dynamics and do not necessarily address specific watershed/tributary details.

CVP releases represent monthly averages.

CVP operations are updated monthly as new hydrology information is made available December through May.

Shaded area represents less confident hydrologic inputs of the future water year.

Aug 2018 90%-Exceedance Outlook

USBR Pred.

Temperature Schedule = 26

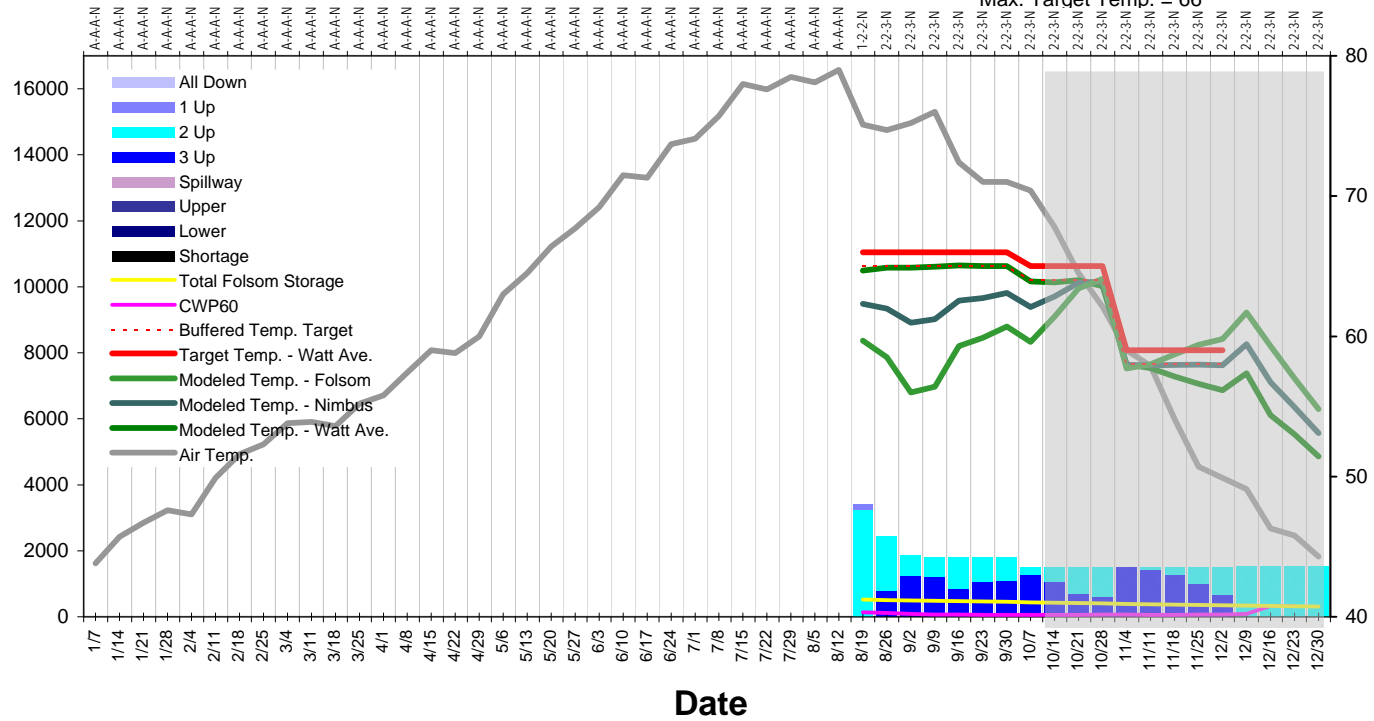
9/30 - CWP<60° (TAF, Constraint = 0) = 58

9/30 - Folsom Storage (TAF) = 451

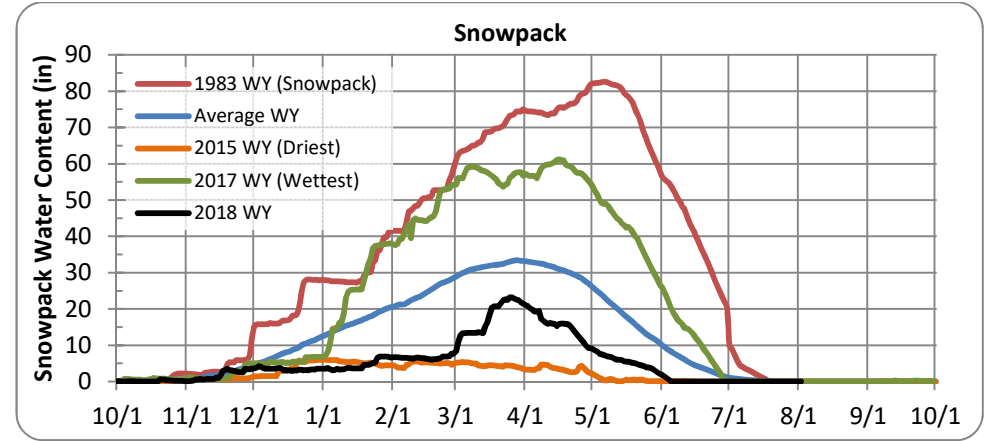
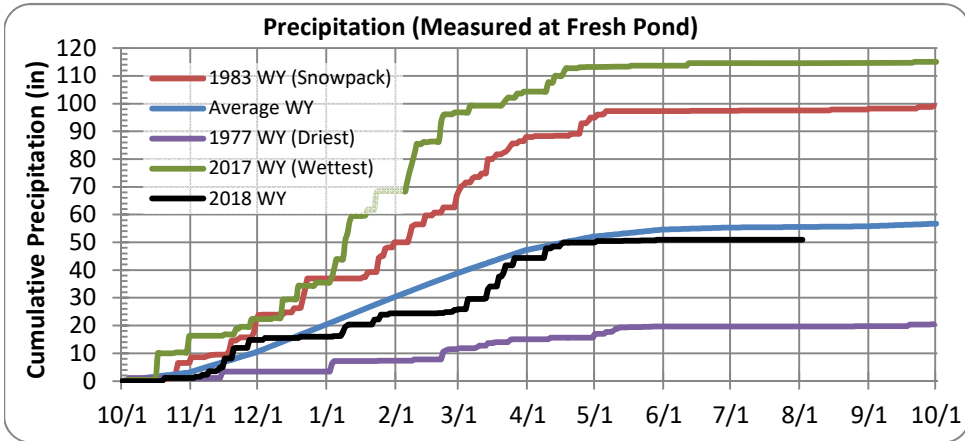
Number of Excursions = 0

Max. Target Temp. = 66°

Release (cfs) / Volume (TAF)



Temperature (°F)



Month	Current WY	Hist. avg.	% of avg.
Oct	1.09	3.30	33%
Nov	13.75	6.87	200%
Dec	1.19	9.14	13%
Jan	8.36	9.55	88%
Feb	1.24	9.50	13%
Mar	18.72	9.06	207%
Apr	5.53	4.84	114%
May	1.01	2.97	34%
Jun	0.00	0.79	0%
Jul		0.08	
Aug		0.20	
Sep		1.02	
Total	50.89	57.32	89%

FRESH POND PRECIPITATION

August precipitation through 08/02/18 07:00 is .00 in., which is 0% of the August average of .20". Precip for the water year to date is 50.89" which is 91% of average to date (56.11) and 89% of the entire water year average of 57.32".

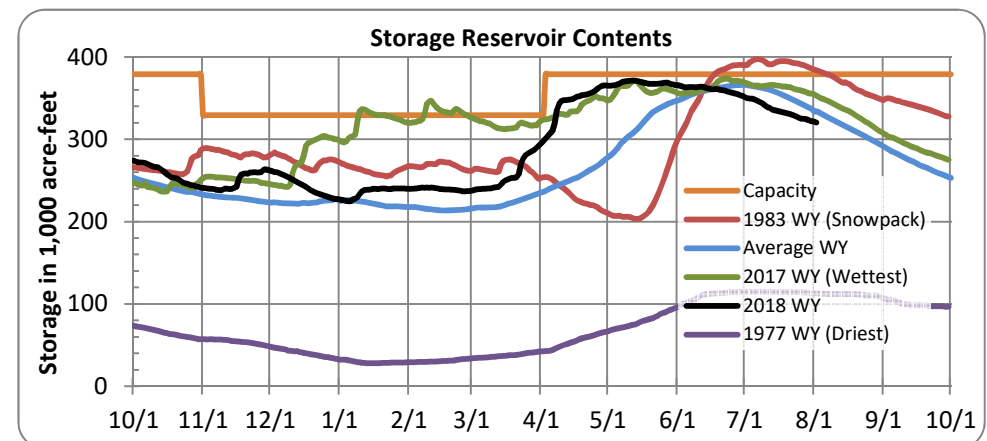
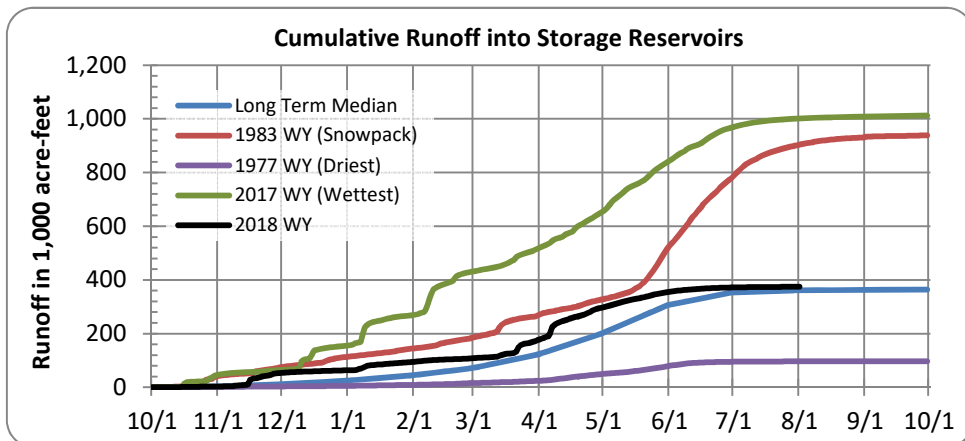
RUNOFF and SNOWPACK WATER CONTENT

Runoff into the storage reservoir basins is 104% of median to date through Aug 01. The snowpack is 0% of average at selected snow sensors.

SMUD STORAGE RESERVOIRS

	Historical average		Now (2018)		1 year prior		Capacity ¹ acre-feet	Winter acre-feet
	acre-feet	% full	acre-feet	% full	acre-feet	% full		
Loon Lake Reservoir	57,902	83%	55,464	80%	61,873	89%	69,309	69,309
Ice House Reservoir	38,616	89%	36,819	85%	37,607	87%	43,496	34,855
Union Valley Reservoir	227,634	86%	228,112	86%	253,638	95%	266,369	225,046
Total Reservoir Storage	324,151	86%	320,396	85%	353,117	93%	379,174	329,210

¹ Data listed here are always % of maximum capacity with gates closed
As of today, Union Valley gates are CLOSED, Ice House gates are CLOSED.
Robbs Peak gates are CLOSED



SMUD Upper American River Project Update

Conditions – 16 August 2018:

August precipitation through 8/14/2018 7:00:00 AM is .00 in., which is 0% of the August average of .20". Precip for the water year to date is 50.89" which is 91% of average to date (56.19") and 89% of the entire water year average of 57.32".

Reservoir storage for Loon Lake, Union Valley and Ice House Reservoirs is currently at 81% capacity (307,761 acre feet). Last year today, storage was at 89% (337,085 acre feet). Total capacity of the three reservoirs is 379,174 acre feet.

The SMUD reservoirs are at 100% of historical average at this date (14 July historical average – 307,536 acre feet / 81% capacity). The reservoirs have decreased in volume by 2% since last week.

During the month of July 2018 SMUD released from the Upper American River Project reservoirs approximately 46,863 acre feet of water, with average flows at 762 cfs below Chili Bar.

So far in August (August 1-13), we have released 17,431 AF, at flows of ~676 cfs below Chili Bar on average.

Runoff into the storage reservoir basins is 104% of median to date through Aug 13. The snowpack is 0% of average at selected snow sensors.

PCWA MFP OPERATIONS OVERVIEW for American River Operations Group August 16, 2018

- ❖ **French Meadows Storage = 97,000 AF of 135,000 AF = ~72% Capacity**
 - MFAR above FM Inflow (R24) = ~1 cfs

- ❖ **Hell Hole Storage = 120,000 AF of 207,590 AF = ~58% Capacity**
 - Five Lakes Inflow (R23) = ~2 cfs
 - Rubicon Inflow (R22) = ~1 cfs

- ❖ **Combined Storage (FM+HH) = 217,000 AF/342,590 AF = 63% Capacity = 92% of Average**
 - **1975-2016 AVERAGE for August 16th = 236,000 AF**

- ❖ **POWER GENERATION** –Running MFPH & RAPH ~16 hrs/day.

- ❖ **MFAR @ R11**: Last 8 days AVG= 800 cfs; Peak=1,100 cfs; Min=650 cfs

DRAFT DATA - Subject to Change

Year	Expected Green Eggs (Assumes 4,500 eggs/female)	After Temperature Impacts	After Flow and Habitat Impacts	% Loss after Temp Impacts	% Loss with Flow and Habitat Impacts
BY 2013	122,080,500	110,491,407	66,294,844	9.49%	45.70%
BY 2014	55,129,500	39,259,749	38,081,956	28.79%	30.92%
BY 2015	31,032,000	29,664,637	27,588,112	4.41%	11.10%
BY 2016	23,589,000	20,388,355	12,233,013	13.57%	48.14%
BY 2017	16,776,000	13,014,590	9,110,213	22.42%	45.69%

Potential American River Fall-run In-River Production

