



— BUREAU OF —
RECLAMATION

American River Group

1:30 PM – 3:30 PM

Conference Line: 1.415.594.5500 Access Code: 490-125-520#

Webinar: <https://join.me/kearnswest>

Thursday, August 20, 2020

Agenda

1. Introductions
2. Operations Forecast
 - a. SMUD
 - b. PCWA
 - c. Central Valley Operations
3. Central Valley Operations
 - a. Temperature Management
 - b. Exceedance Forecast & Temperature Schedules
4. Discussion
 - a. Annual Report Outline and Schedule
 - b. Fisheries Management Discussion Recap
5. Next Meeting: Thursday, September 17, 1:30-3:30pm

SMUD Upper American River Project Update

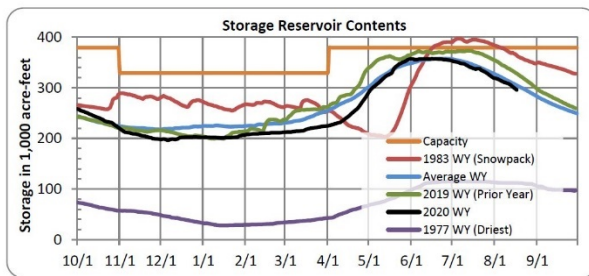
Conditions – 18 August 2020:

August precipitation through 8/18/2020 7:00:00 AM is .00 in., which is 0% of the August average of .20". Precip for the water year to date is 35.48" which is 63% of average to date (56.22") and 62% of the entire water year average of 57.32".

Combined reservoir storage for Loon Lake, Union Valley and Ice House Reservoirs

- 293,548 acre feet
- 77% capacity
- 97% of historical average (18 August historical average: 303,508 AF / 80%)
- 4% decrease in storage since last week

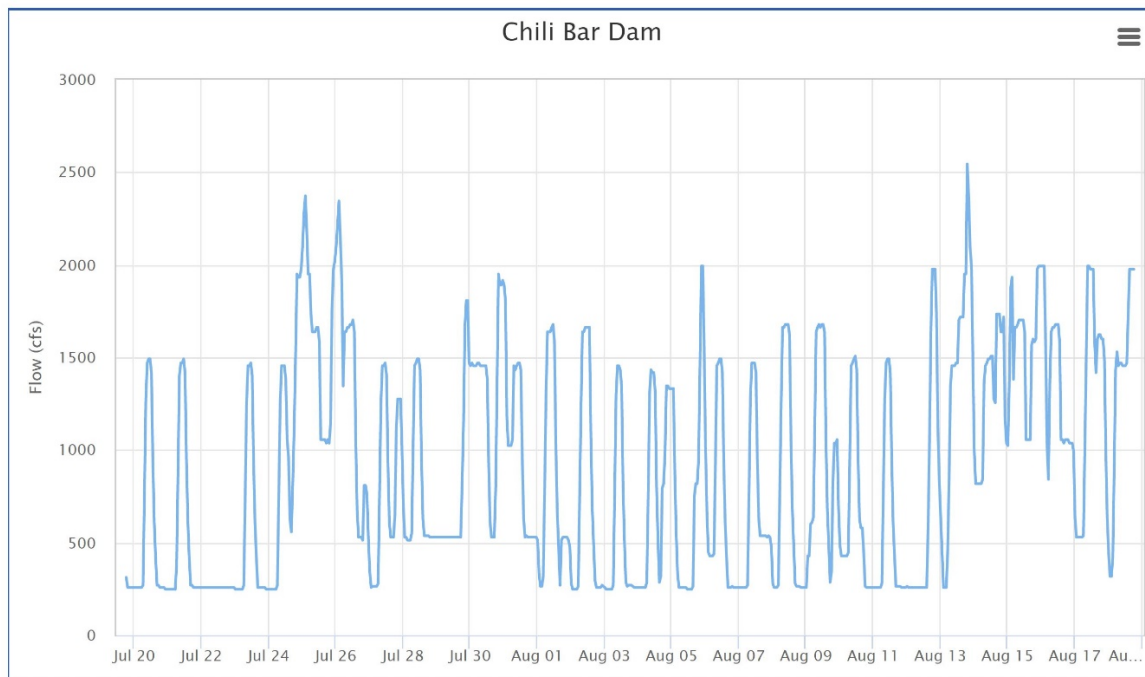
Individual reservoir storage: (Figure 1)



- Loon Lake: 49,006 AF
- Ice House: 27,700 AF
- Union Valley: 216,842 AF

Last year today, storage was at 87% (328,307 AF). *Total non-winter capacity: 379,174 AF.

Chili Bar releases into the South Fork American River (Figure 2):



Runoff into the storage reservoir basins is 69% of median to date through Aug 17. The snowpack is 0% of average at selected snow sensors.

Runoff Forecast (in cfs, daily average forecast) (Figure 3)

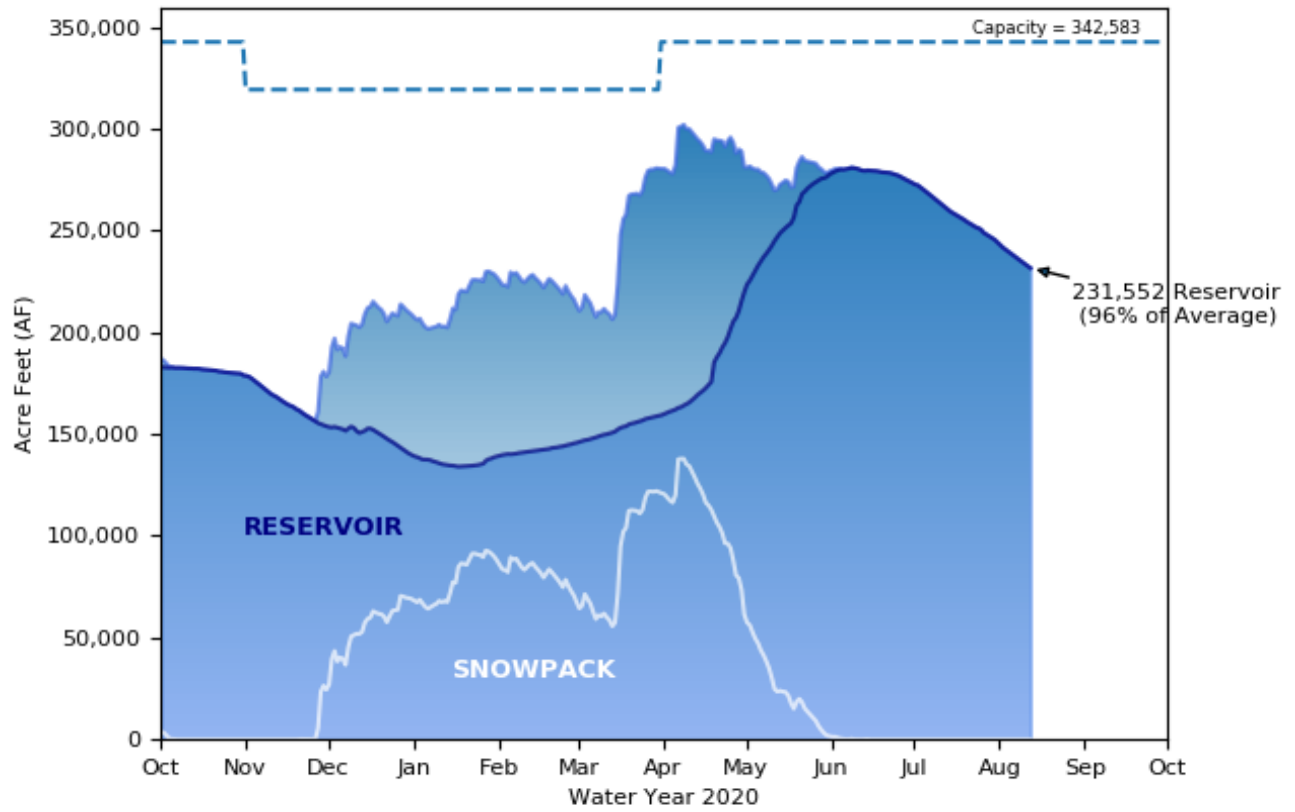
<i>BASIN</i>	Fri 21-Aug	22-Aug	23-Aug	24-Aug	25-Aug	26-Aug
SFA above Slab	20.8	20.8	20.7	20.7	20.6	20.5
Slab Creek	75.9	76.3	76.8	77.3	77.6	78.1
Combined South Fork	97	97	98	98	98	99

PCWA MFP OPERATIONS OVERVIEW for American River Operations Group (Real Time Data as of August 18, 2020)

- ❖ **French Meadows Storage = 91,000 AF of 136,405 AF = 67% Capacity**
 - MFAR above FM Inflow (R24) = ~1 cfs
- ❖ **Hell Hole Storage = 130,000 AF of 207,590 AF = 62% Capacity**
 - Five Lakes Inflow (R23) = ~1 cfs
 - Rubicon Inflow (R22) = ~1 cfs
- ❖ **Combined Storage (FM+HH) = 221,000 AF/342,590 AF = 65% Capacity; 95% Average**
- ❖ **POWER PRODUCTION – 20+ HRS per day**
- ❖ **MFAR @ R11: 7 day daily average ~800 cfs**
- ❖ PCWA initiated Transfer releases to Folsom Reservoir on August 15, 2020. The Agency is transferring 20,000 AF of MFP water through September 30, 2020. The average daily increase in flows over the transfer period ranges between 150-200 cfs.
- ❖ Hell Hole Dam Core Raise Project – Construction will be complete within the next month.

MFP Reservoir and Snowpack Storage

As of 8/12/2020



NFAR Inflow Temperatures into Folsom Reservoir



American River Summary Conditions – August (On-going)

- To date August has been quite hot. Nights have been staying quite warm. Many stayed above 70 degrees which hindered the cooling achieved over night by the river.

Storage/Release Management Conditions

- Releases currently at 2,500 cfs to support Delta needs.

Temperature Management:

- Per Temperature Schedule 35 July Objective is 68 F at Watt Ave Bridge
- Middle and Upper shutters on Units 2 and 3 have been raised.

DAILY CVP WATER SUPPLY REPORT

AUGUST 19, 2020

RUN DATE: August 20, 2020

RESERVOIR RELEASES IN CUBIC FEET/SECOND

RESERVOIR	DAM	WY 2019	WY 2020	15 YR MEDIAN
TRINITY	LEWISTON	447	456	450
SACRAMENTO	KESWICK	11,011	9,965	10,187
FEATHER	OROVILLE (SWP)	7,500	2,800	4,000
AMERICAN	NIMBUS	3,348	2,517	2,735
STANISLAUS	GOODWIN	500	206	252
SAN JOAQUIN	FRIANT	419	433	348

STORAGE IN MAJOR RESERVOIRS IN THOUSANDS OF ACRE-FEET

RESERVOIR	CAPACITY	15 YR AVG	WY 2019	WY 2020	% OF 15 YR AVG
TRINITY	2,448	1,558	2,151	1,548	99
SHASTA	4,552	2,763	3,787	2,448	89
FOLSOM	977	543	785	498	92
NEW MELONES	2,420	1,419	2,069	1,596	112
FED. SAN LUIS	966	261	500	216	83
TOTAL NORTH CVP	11,363	6,544	9,292	6,306	96
MILLERTON	520	311	438	227	73
OROVILLE (SWP)	3,538	1,994	2,827	1,737	87

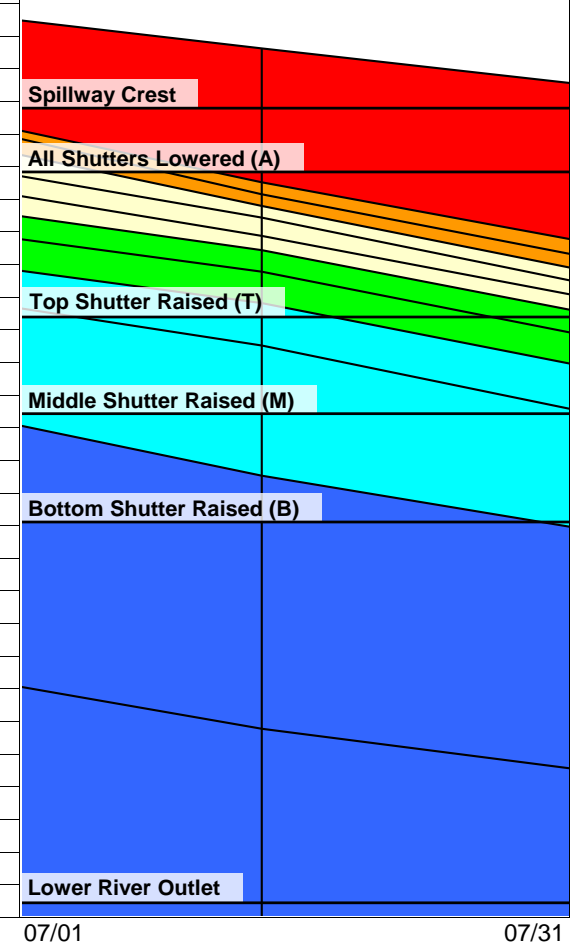
ACCUMULATED INFLOW FOR WATER YEAR TO DATE IN THOUSANDS OF ACRE-FEET

RESERVOIR	CURRENT WY 2020	WY 1977	WY 1983	15 YR AVG	% OF 15 YR AVG
TRINITY	456	202	2,836	1,152	40
SHASTA	3,042	2,323	10,395	4,923	62
FOLSOM	1,409	320	6,328	2,590	54
NEW MELONES	601	---	2,671	1,017	59
MILLERTON	862	307	4,412	1,541	56

ACCUMULATED PRECIPITATION FOR WATER YEAR TO DATE IN INCHES

RESERVOIR	CURRENT WY 2020	WY 1977	WY 1983	AVG (N YRS)	% OF AVG	LAST 24 HRS
TRINITY AT FISH HATCHERY	20.54	13.75	55.19	31.48 (58)	65	0.00
SACRAMENTO AT SHASTA DAM	34.51	17.28	112.58	61.27 (63)	56	0.00
AMERICAN AT BLUE CANYON	39.50	15.70	103.88	65.99 (45)	60	0.00
STANISLAUS AT NEW MELONES	22.35	---	45.34	27.33 (42)	82	0.00
SAN JOAQUIN AT HUNTINGTON LK	28.25	17.50	82.80	41.45 (45)	68	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	Unit 1	Unit 2			Unit 3	Unit 4	Unit 5	Unit 6		Unit 7	
Jun	67.6	65.8	59.2	62.6	64.1	64.6	73.7	2581										
07/01	68.6	70.6	61.7	64.6	65.6	65.7	75.3	3551	711	T	15	A	18	A	67			
07/02	68.5	71.7	61.7	64.5	65.3	65.4	69.7	3521	706	T	16	A	58	A	27			
07/03	67.3	70.7	62.0	64.7	65.5	65.5	70.1	3502	701	T	15	A	22	A	63			
07/04	65.9	69.7	62.6	64.8	65.8	65.9	77.5	3496	696	T	15	A	53	A	32			
07/05	65.2	69.7	62.8	65.2	66.2	66.4	79.3	3497	691	T	14	A	33	A	53			
07/06	64.8	69.7	62.0	65.4	66.2	66.3	74.3	3493	686	T	21	A	62	A	17			
07/07	64.6	69.3	62.3	65.3	66.0	65.9	72.7	3783	681	T	19	A	40	A	40			
07/08	64.3	70.1	62.7	65.1	65.9	66.0	78.4	3972	674	T	20	A	35	A	44			
07/09	64.8	70.8	63.4	65.5	66.2	66.3	78.3	3971	668	T	15	A	42	A	43			
07/10	65.3	70.3	63.7	66.1	67.0	67.0	81.9	3968	662	T	16	A	47	A	37			
07/11	65.3	68.0	63.8	66.3	67.1	67.3	83.8	3968	658	T	18	A	54	A	29			
07/12	65.1	68.3	63.8	66.6	67.5	67.5	82.9	3966	652	T	20	A	33	A	47			
07/13	64.9	68.6	63.1	66.2	67.3	67.3	76.7	3965	646	T	27	A	34	A	40			
07/14	65.9	69.4	63.6	66.1	66.7	66.7	72.2	3966	640	T	22	A	62	A	16			
07/15	67.3	70.7	63.3	66.4	67.4	67.3	73.3	3964	633	T	25	A	35	A	39			
07/16	68.2	72.1	63.6	66.1	66.8	66.8	72.0	3974	627	T	27	A	55	A	18			
07/17	68.2	69.7	63.3	66.0	66.8	66.7	72.8	3997	620	T	30	A	30	A	41			
07/18	68.6	68.5	63.8	65.9	66.7	66.7	76.8	3977	614	T	30	A	23	A	48			
07/19	68.0	68.9	63.9	66.3	67.2	67.2	74.4	3968	608	T	30	A	53	A	16			
07/20	68.3	68.9	63.4	66.4	67.2	67.0	70.1	3979	602	T	34	A	47	A	20			
07/21	69.2	68.8	63.6	65.9	66.7	66.5	69.8	3993	595	T	37	A	21	A	42			
07/22	68.6	69.3	63.8	65.6	66.6	66.5	69.5	3527	590	T	35	A	36	A	29			
07/23	67.1	70.9	61.3	66.1	66.9	66.8	71.3	3477	584	T	35	T	26	T	40			
07/24	67.9	69.6	59.7	64.7	66.4	66.8	72.2	3424	579	T	44	T	31	T	25			
07/25	67.7	66.3	59.9	63.1	64.3	64.6	73.3	3418	576	T	16	T	21	T	62			
07/26	68.8	65.6	60.2	62.8	64.2	64.5	76.7	3218	573	T	32	T	54	T	14			
07/27	68.9	67.8	60.5	63.0	64.3	64.6	76.4	2996	569	T	37	T	42	T	21			
07/28	68.4	67.1	60.7	63.4	64.7	65.0	75.3	2993	565	T	17	T	21	T	62			
07/29	68.7	68.3	61.1	63.6	64.8	65.2	76.9	2999	560	T	63	T	20	T	17			
07/30	67.5	65.6	61.4	64.0	65.0	65.3	75.2	2996	557	T	17	T	64	T	19			
07/31	65.6	63.6	61.5	64.2	65.3	65.5	74.3	2995	555	T	17	T	22	T	60			
Jul	67.0	69.0	62.4	65.2	66.1	66.2	74.9	3629										
							Total AF	223167										



Legend

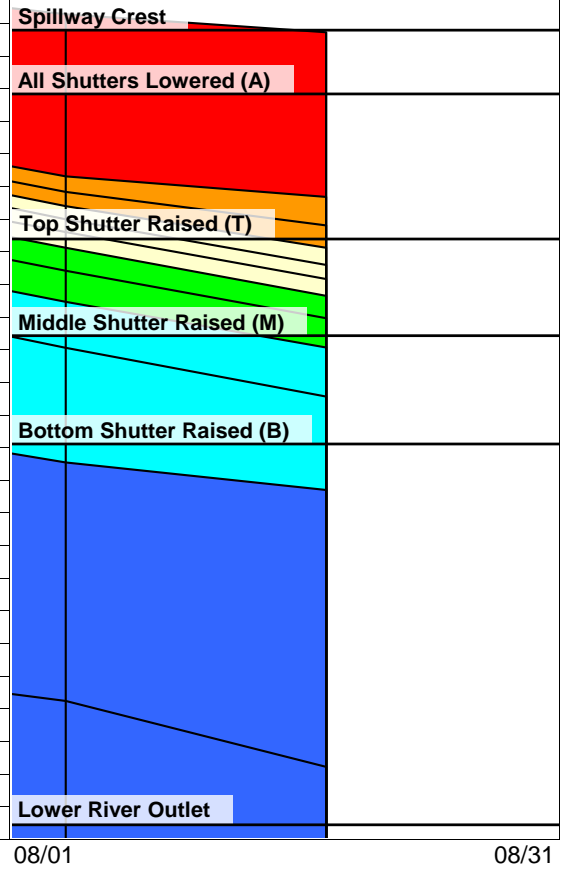
- ? = 1-9 hours of data missing
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- # = Station out of service
- = Monthly Averages

- A = All Shuttters 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

DATE	Mean Daily Temperatures (°F)							Release (CFS)	Storage (TAF)	Unit Shuter Position / Load Percentage						Isobath Plot	
	Water					Air	Nimbus			Folsom	Unit 1		Unit 2		Unit 3		
	NFA	ARP	AFD ¹	AHZ	AWP	AWB		CSU									
Jul	67.0	69.0	62.4	65.2	66.1	66.2	74.9	3629									
08/01	63.3	64.4	61.9	64.3	65.4	65.6	75.3	3009	551	T	46	T	37	T	17		
08/02	63.8	64.9	62.1	64.5	65.7	65.9	76.2	3012	547	T	15	T	65	T	20		
08/03	64.9	65.6	62.3	64.9	66.1	66.3	78.3	3009	543	T	19	T	23	T	58		
08/04	65.3	66.7	62.7	64.9	66.2	66.4	73.8	3006	538	T	56	T	27	T	17		
08/05	65.2	65.6	62.9	65.3	66.1	66.1	67.6	3008	534	T	18	T	62	T	20		
08/06	64.3	65.0	63.2	65.6	66.7	66.5	69.8	2698	531	T	19	T	14	T	67		
08/07	65.1	66.1	63.5	65.6	66.9	67.1	74.8	2540	527	T	45	T	36	T	19		
08/08	65.9	65.9	63.6	66.0	67.5	67.8	77.8	2509	524	T	22	T	60	T	18		
08/09	66.0	66.2	64.0	66.4	67.9	68.3	80.8	2500	521	T	43	T	38	T	19		
08/10	66.5	65.9	64.1	66.6	68.1	68.5	78.5	2528	518	T	22	T	47	T	31		
08/11	66.5	66.5	64.4	66.7	67.6	67.8	71.4	2543	514	T	51	T	19	T	30		
08/12	66.4	66.9	62.7	67.0	68.1	68.1	75.8	2538	510	T	52	M	30	T	18		
08/13	66.5	64.8	62.9	66.6	68.2	68.6	84.3	2546	508	T	20	M	29	T	51		
08/14	65.9	62.4	62.3	66.3	67.7	68.3	87.6	2547	506	T	18	M	37	T	45		
08/15	63.8	61.9	!	-	65.8	67.8	68.4	91.3	2547	505	T	39	M	41	T	20	
08/16	62.0	61.2	!	-	66.3	67.4	67.7	92.7	2536	504	T	15	M	47	T	38	
08/17	61.1	62.3	62.3	65.6	67.7	68.6	88.5	2517	502	T	35	M	50	T	14		
08/18	60.9	61.1	62.4	65.2	67.0	?	67.5	89.3	2523	501	T	22	M	50	T	28	
08/19	59.3	59.7	61.5	65.8	66.7	67.0	87.0	2517	498	T	30	M	48	M	22		
08/20																	
08/21																	
08/22																	
08/23																	
08/24																	
08/25																	
08/26																	
08/27																	
08/28																	
08/29																	
08/30																	
08/31																	
Aug	64.3	64.4	62.9	65.8	67.1	67.4	80.0	2665									
							Total AF	100428									



Legend

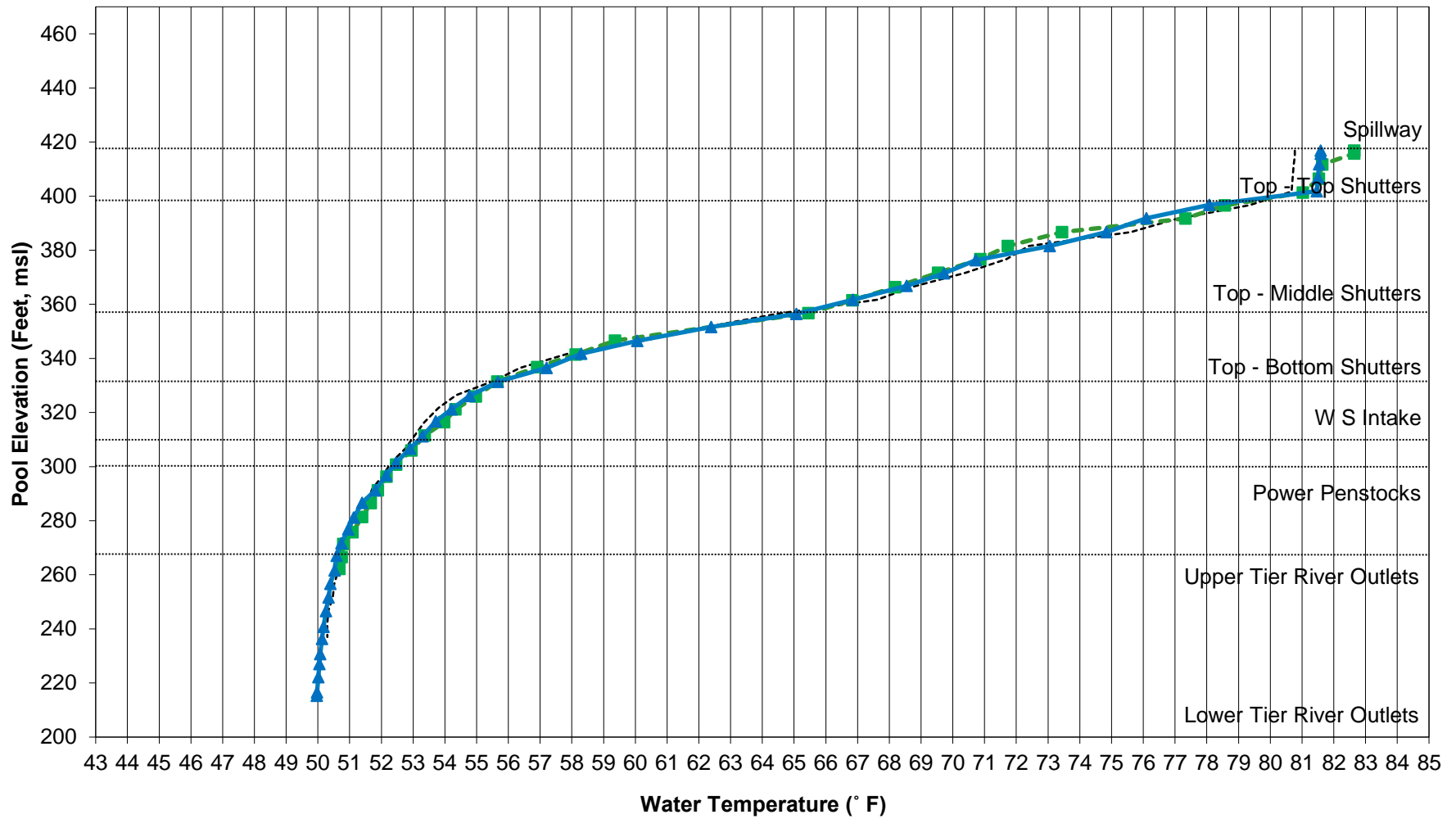
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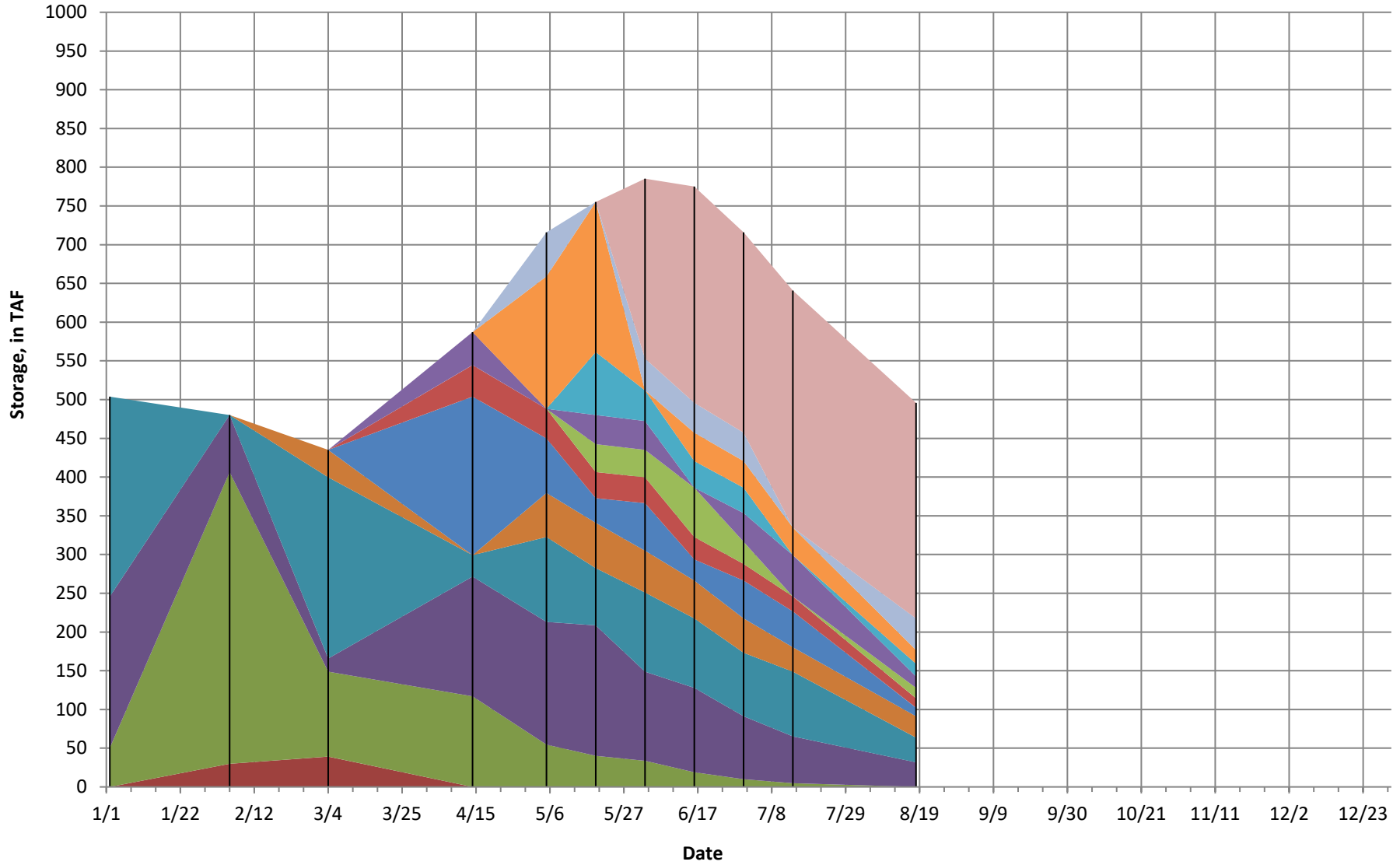
Folsom Lake Temperature Profiles: 18-Aug-2020



Folsom Lake Isothermobaths - 2020

(Water Temperature, in ° F)

- <46
- 46-48
- 48-50
- 50-52
- 52-54
- 54-56
- 56-58
- 58-60
- 60-62
- 62-64
- 64-66
- 66-68
- 68-70
- >70



Folsom Cold Water Pool7

Folsom Reservoir: Cold Water Volume

Profile Date	Volume less than 58°F (TAF)
8/18/20	102.3

Penstock Elevation (ft)	Volume (TAF)	Approximate Max. Temp (F)
327	83	54.8

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)

DRAFT August 2020

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	Jan
Folsom	555	456	381	374	364	363	377
		411	400	399	398	398	400

Monthly River Releases (cfs)

American	2503	2004	752	876	888	800
MRR	1541	1541	725	725	725	

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	Jan
Folsom	555	462	432	415	415	435	509
	Elev.	412	408	405	405	408	418

Monthly River Releases (cfs)

American	2500	1500	1500	1502	1500	1250
MRR	1541	1541	725	725	725	

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.