

American River Group

Thursday August 17, 2017 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

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

- Seasonal American River seasonal temperature performance, Folsom EOM September storage

Storage/Release Management Conditions:

- Projected storage conditions: Good storage conditions projected going into the fall

Temperature Management:

- Management Challenge: summer water temperature control. iCPMM modelling suggests schedule 19, with a Watt Ave target of 65 degrees.
- Due to modeling limitations, manage fall temperatures based on cold-water-pool volumes and conditions at the time
- Continue exercising real-time management capabilities

UNITED STATES DEPARTMENT OF THE INTERIOR
U.S. BUREAU OF RECLAMATION-CENTRAL VALLEY PROJECT-CALIFORNIA

DAILY CVP WATER SUPPLY REPORT

AUGUST 14, 2017

RUN DATE: August 15, 2017

RESERVOIR RELEASES IN CUBIC FEET/SECOND

RESERVOIR	DAM	WY 2016	WY 2017	15 YR MEDIAN
TRINITY	LEWISTON	449	442	450
SACRAMENTO	KESWICK	10,159	9,606	10,488
FEATHER	OROVILLE (SWP)	8,000	7,000	4,500
AMERICAN	NIMBUS	4,267	3,616	2,733
STANISLAUS	GOODWIN	252	1,508	252
SAN JOAQUIN	FRIANT	453	350	348

STORAGE IN MAJOR RESERVOIRS IN THOUSANDS OF ACRE-FEET

RESERVOIR	CAPACITY	15 YR AVG	WY 2016	WY 2017	% OF 15 YR AVG
TRINITY	2,448	1,625	1,113	1,960	121
SHASTA	4,552	2,828	3,353	3,803	134
FOLSOM	977	564	392	833	148
NEW MELONES	2,420	1,362	559	2,090	153
FED. SAN LUIS	966	255	39	766	300
TOTAL NORTH CVP	11,363	6,634	5,456	9,452	142
MILLERTON	520	313	293	465	149
OROVILLE (SWP)	3,538	2,138	2,075	1,913	89

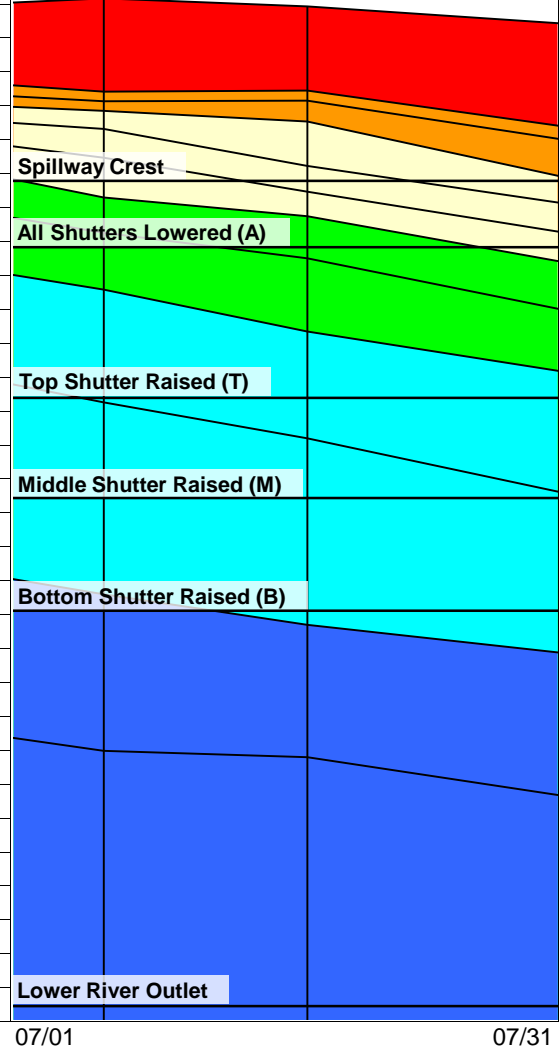
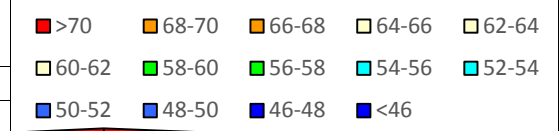
ACCUMULATED INFLOW FOR WATER YEAR TO DATE IN THOUSANDS OF ACRE-FEET

RESERVOIR	CURRENT WY 2017	DRIEST WY 1977	WETTEST WY 1983	15 YR AVG	% OF 15 YR AVG
TRINITY	2,195	201	2,826	1,284	171
SHASTA	9,509	2,280	10,347	5,129	185
FOLSOM	7,298	317	6,295	2,528	289
NEW MELONES	2,788	0	2,660	997	280
MILLERTON	4,108	297	4,365	1,541	267

ACCUMULATED PRECIPITATION FOR WATER YEAR TO DATE IN INCHES

RESERVOIR	CURRENT WY 2017	DRIEST WY 1977	WETTEST WY 1983	AVG (N YRS)	% OF AVG	LAST 24 HRS
TRINITY AT FISH HATCHERY	43.88	13.75	55.19	31.73 (55)	138	0.00
SACRAMENTO AT SHASTA DAM	99.36	17.28	112.58	61.51 (60)	162	0.00
AMERICAN AT BLUE CANYON	134.41	15.70	103.88	66.02 (42)	204	0.00
STANISLAUS AT NEW MELONES	49.97	0.00	45.33	27.24 (39)	183	0.00
SAN JOAQUIN AT HUNTINGTON LK	78.88	17.20	81.70	41.68 (42)	189	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
Jun	62.3	56.6	55.9	57.5	58.6	59.5	73.6	6959	-	-	-	-	-	-	-	-	-	
07/01	63.9	59.7	56.7	58.8	60.3	61.4	? 71.4	4245	953	A	13	A	36	A	51			
07/02	64.1	59.9	56.7	58.7	60.5	61.7	73.0	4230	954	A	14	A	34	A	52			
07/03	64.1	59.8	56.8	59.0	60.6	61.8	? 74.2	3858	955	A	14	A	32	A	54			
07/04	63.9	59.9	56.9	59.1	60.8	62.0	75.8	3845	955	A	13	A	33	A	54			
07/05	63.6	59.6	57.1	59.1	60.6	61.7	? 73.8	3852	956	A	22	A	14	A	63			
07/06	63.7	60.8	57.2	59.4	61.1	62.2	? 79.8	3848	956	A	37	A	30	A	33			
07/07	64.1	61.8	57.2	59.8	61.5	62.8	? 86.2	3849	955	A	13	A	34	A	53			
07/08	64.0	61.7	57.3	59.7	61.5	62.9	86.0	3849	954	A	30	A	14	A	57			
07/09	63.8	63.3	57.4	59.7	61.3	62.6	81.9	3850	952	A	11	A	33	A	56			
07/10	63.6	62.7	57.5	59.8	61.5	62.8	? 79.5	3849	950	A	35	A	35	A	30			
07/11	63.3	64.0	57.6	59.9	61.6	62.8	? 75.8	3847	947	A	13	A	31	A	56			
07/12	62.9	63.0	57.7	60.1	61.7	62.9	? 75.8	3802	945	A	13	A	33	A	54			
07/13	62.9	64.0	57.8	60.1	61.7	62.9	? 76.7	3846	943	A	13	A	33	A	54			
07/14	62.9	66.5	57.9	60.1	61.7	62.9	77.6	3853	939	A	33	A	14	A	53			
07/15	62.7	65.6	58.1	60.3	61.8	63.0	? 81.5	3851	937	A	11	A	31	A	58			
07/16	63.0	65.7	58.2	60.5	62.1	63.5	? 86.9	3852	934	A	30	A	17	A	53			
07/17	62.9	65.8	58.3	60.4	62.1	63.4	83.2	3853	932	A	17	A	42	A	42			
07/18	62.2	66.9	58.4	60.5	62.0	63.1	75.5	3847	927	A	14	A	35	A	51			
07/19	61.3	66.4	58.5	60.7	62.2	63.2	? 74.2	3850	924	A	43	A	19	A	38			
07/20	60.9	66.4	58.6	60.6	62.1	63.2	? 74.6	3850	921	A	15	A	47	A	38			
07/21	61.1	66.2	58.8	60.8	62.3	63.4	76.4	3847	918	A	47	A	12	A	41			
07/22	61.5	65.5	58.8	60.9	62.5	63.6	80.0	3827	915	A	10	A	45	A	45			
07/23	62.0	64.9	59.0	61.0	62.7	63.9	83.3	3847	913	A	47	A	39	A	14			
07/24	61.8	64.6	59.1	61.0	62.6	63.7	76.2	3850	909	A	15	A	41	A	43			
07/25	61.6	66.8	59.2	61.3	62.8	63.8	74.5	3854	906	A	44	A	15	A	41			
07/26	62.2	67.0	59.4	61.3	62.8	63.9	? 76.0	3850	901	A	40	A	48	A	12			
07/27	62.6	67.5	59.4	61.5	63.0	64.1	80.5	3847	897	A	31	A	14	A	54			
07/28	61.7	67.8	59.5	61.6	63.1	64.3	? 81.1	3848	894	A	39	A	50	A	12			
07/29	61.5	67.2	59.7	61.7	63.1	64.2	? 76.9	3848	890	A	44	A	16	A	40			
07/30	62.1	67.1	59.8	61.8	63.3	64.3	77.4	3852	887	A	41	A	42	A	17			
07/31	? 62.0	66.6	59.0	61.9	63.3	64.4	? 77.2	3846	883	A	19	A	43	A	37			
Jul	62.7	64.3	58.2	60.4	61.9	63.1	78.2	3872										
								Total AF	238098									



Legend

- ? = 1-9 hours of data missing
- ! = 10 or more hours of data missing
- # = Station out of service
- Blue box = Monthly Averages

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

Notes

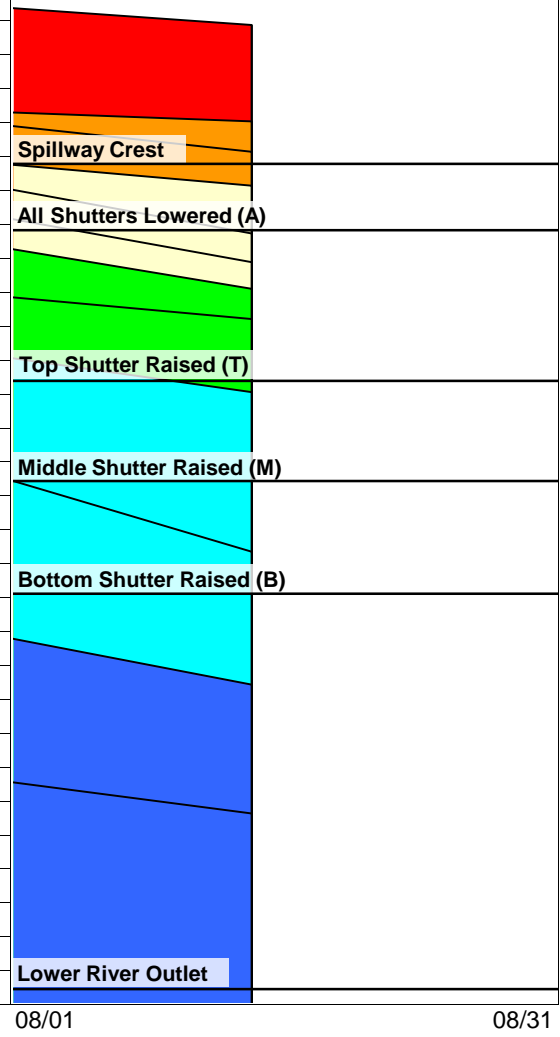
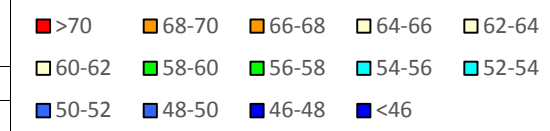
- ¹ AFD is a weighted average using hourly flow values
- ²
- ³
- ⁴

= Unit Outage

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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	62.7	64.3	58.2	60.4	61.9	63.1	78.2	3872	-	-	-	-	-	-	-	-		
08/01	62.3	68.4	58.7	61.7	63.3	64.6	? 81.5	3848	880	A	33	A	26	A	41			
08/02	62.8	65.4	59.7	61.1	62.6	63.9	? 83.9	3849	878	A	10	A	50	A	40			
08/03	62.9	64.7	59.9	61.8	63.3	64.3	? 83.7	3925	875	A	9	A	49	A	41			
08/04	62.1	65.1	59.9	61.8	63.2	64.2	81.3	3810	872	A	11	A	49	A	39			
08/05	60.9	65.7	59.6	61.9	63.4	64.3	? 76.7	3802	867	A	18	A	44	A	37			
08/06	62.7	64.1	59.7	61.6	63.1	64.2	? 72.0	3802	863	A	20	A	39	A	41			
08/07	61.4	65.7	59.9	61.8	63.2	64.1	71.9	3803	860	A	21	A	40	A	40			
08/08	61.4	66.3	60.0	62.0	63.4	64.4	? 73.0	3810	856	A	20	A	37	A	44			
08/09	62.0	66.1	60.1	62.0	63.5	64.5	71.1	3804	852	A	23	A	36	A	40			
08/10	62.6	64.2	59.7	62.1	63.5	64.5	73.0	3805	848	A	31	A	36	A	33			
08/11	62.8	64.4	59.7	61.9	63.4	64.6	75.6	4688	845	A	35	A	23	A	42			
08/12	62.0	64.3	59.8	61.9	63.3	64.4	75.6	3762	842	A	34	A	23	A	43			
08/13	63.3	63.9	59.8	62.0	63.4	64.3	? 72.1	3655	838	A	36	A	24	A	40			
08/14	64.6	64.1	59.9	61.9	63.4	64.3	68.6	3616	833	A	38	A	16	A	46			
08/15																		
08/16																		
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08/29																		
08/30																		
08/31																		
Aug	62.4	65.2	59.7	61.8	63.3	64.3	75.7	3856										
								Total AF	107065									



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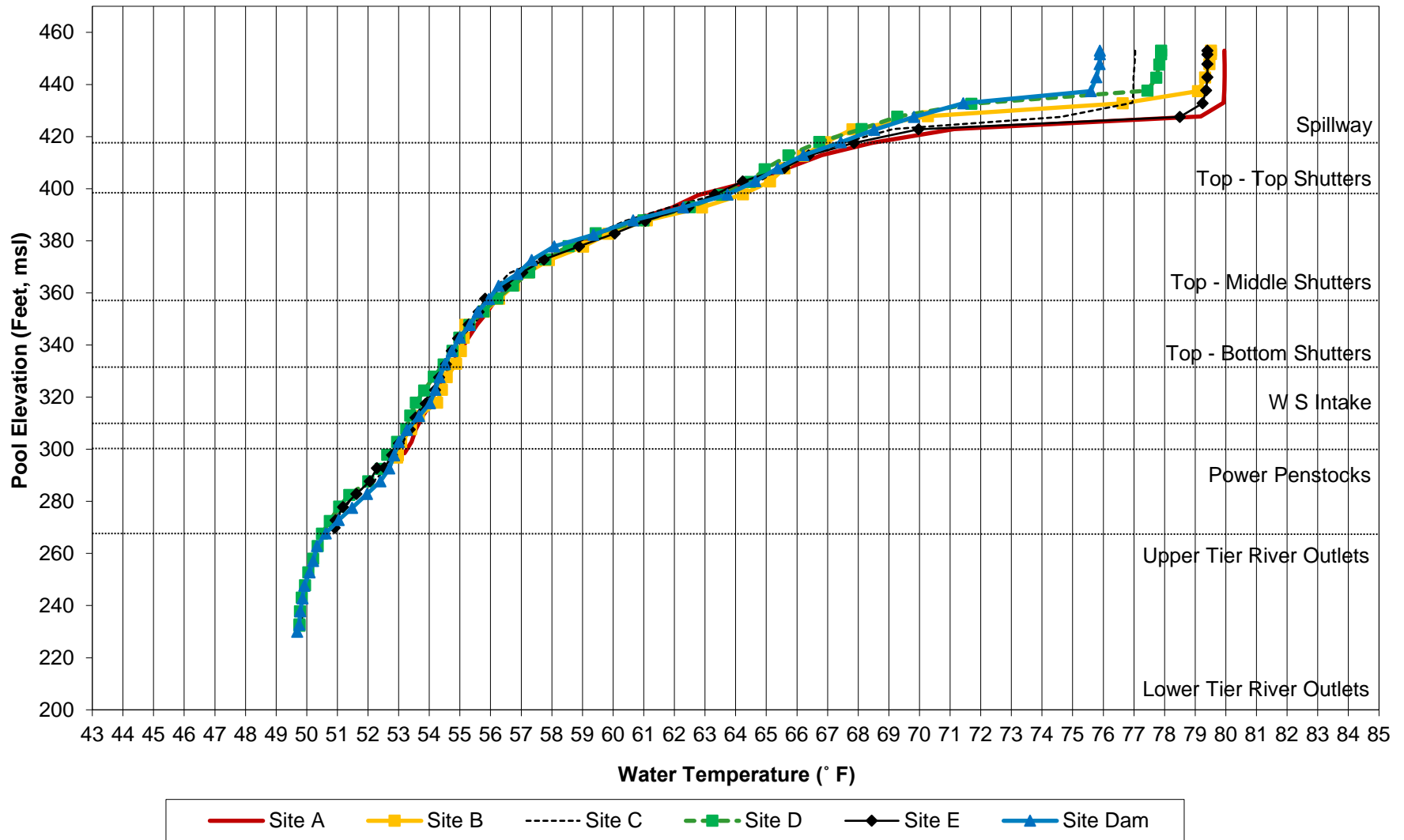
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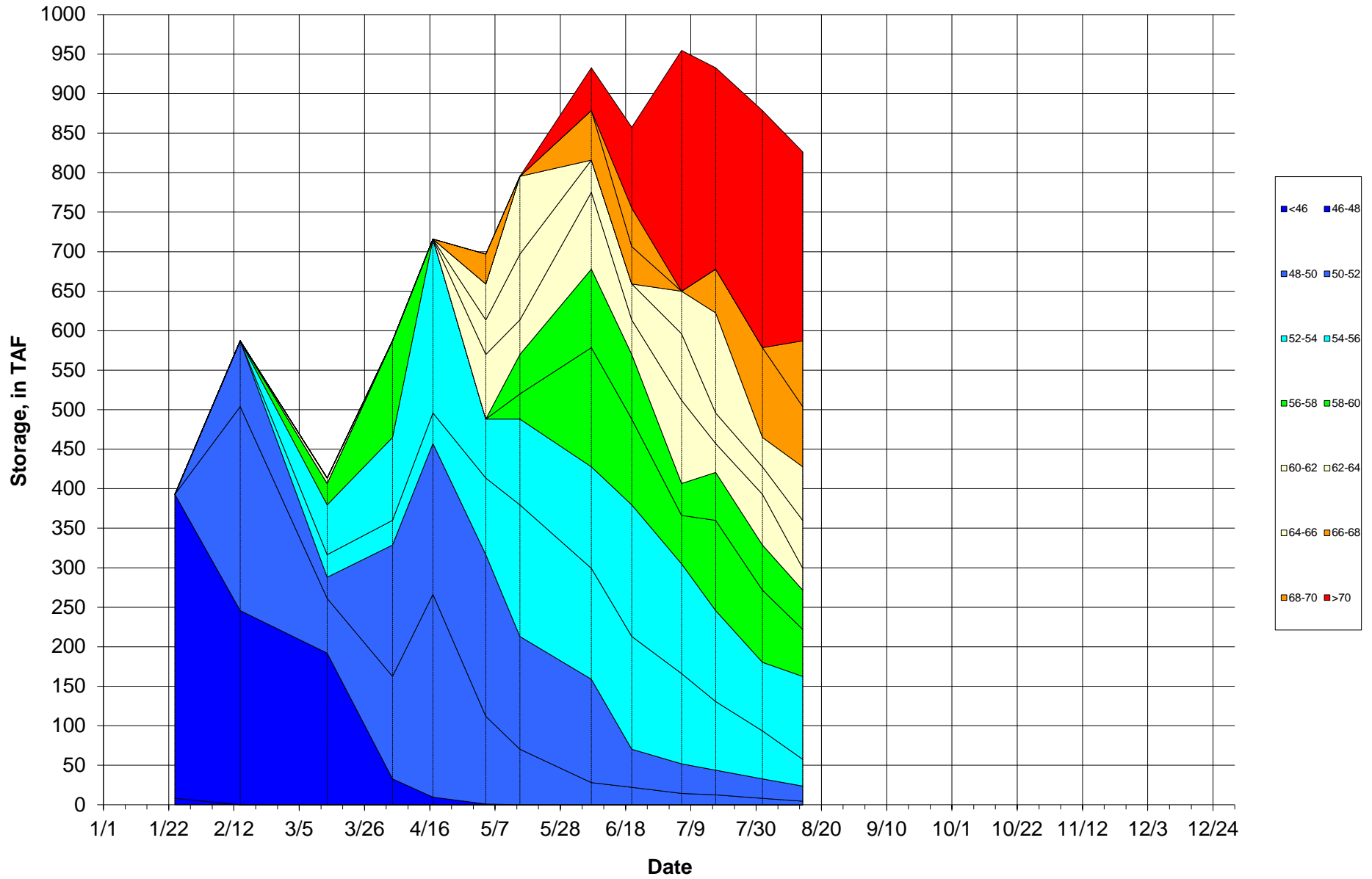
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Folsom Lake Temperature Profiles: 14-Aug-2017



Folsom Lake Isothermobaths - 2017 (Water Temperature, in ° F)

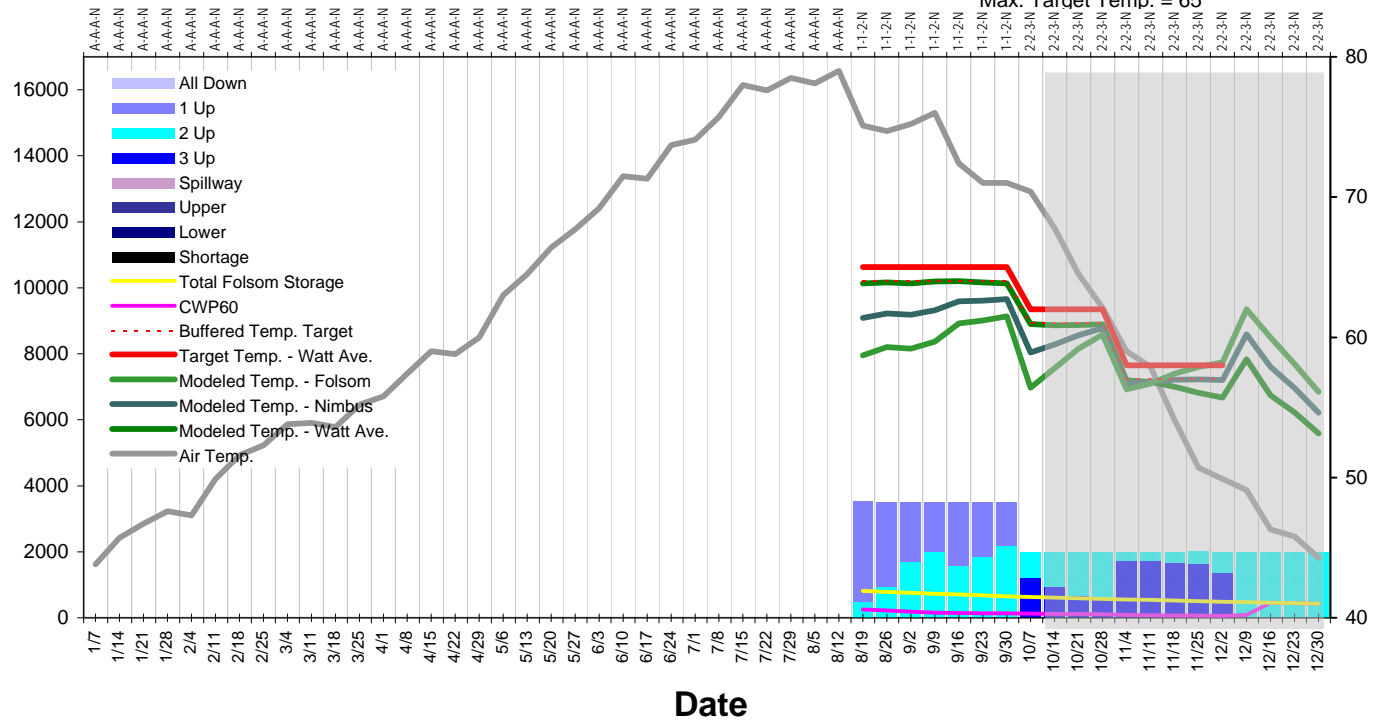


August 2017 90%-Exceedance Outlook

USBR Pred.

Temperature Schedule = 19
 9/30 - CWP<60° (TAF, Constraint = 0) = 140
 9/30 - Folsom Storage (TAF) = 652
 Number of Excursions = 0
 Max. Target Temp. = 65°

Release (cfs) / Volume (TAF)



Temperature (°F)

DRAFT August 2017

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			
Folsom	883	757	633	545			
	Elev.	445	432	422			

Monthly River Releases (cfs)

American	3500	3500	2000			
MRR	1750	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			
Folsom	883	777	669	590			
	Elev.	447	436	427			

Monthly River Releases (cfs)

American	3500	3500	2500			
MRR	1750	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.