

American River Group

Thursday June 21, 2018 1:30 PM

Central Valley Operation Office, Room LL-20

3310 El Camino Ave.

Sacramento, CA 95821

1. Fisheries Updates

2. Operations Forecast

3. Temperature Management

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

- Folsom maximum storage was higher than last year at 956 taf.

Storage/Release Management Conditions:

- Releases to meet Delta needs over summer.

Temperature Management:

- Beginning this years temperature management operations.

DAILY CVP WATER SUPPLY REPORT

JUNE 20, 2018

RUN DATE: June 21, 2018

RESERVOIR RELEASES IN CUBIC FEET/SECOND

RESERVOIR	DAM	WY 2017	WY 2018	15 YR MEDIAN
TRINITY	LEWISTON	2,517	602	2,000
SACRAMENTO	KESWICK	9,541	11,305	11,066
FEATHER	OROVILLE (SWP)	2,500	1,650	3,500
AMERICAN	NIMBUS	6,240	3,328	3,938
STANISLAUS	GOODWIN	2,754	602	449
SAN JOAQUIN	FRIANT	7,828	410	308

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	1,798	2,215	1,813	101
SHASTA	4,552	3,555	4,280	3,773	106
FOLSOM	977	775	920	889	115
NEW MELONES	2,420	1,506	2,146	1,923	128
FED. SAN LUIS	966	477	908	592	124
TOTAL NORTH CVP	11,363	8,111	10,469	8,990	111
MILLERTON	520	411	440	475	116
OROVILLE (SWP)	3,538	2,642	2,342	2,337	88

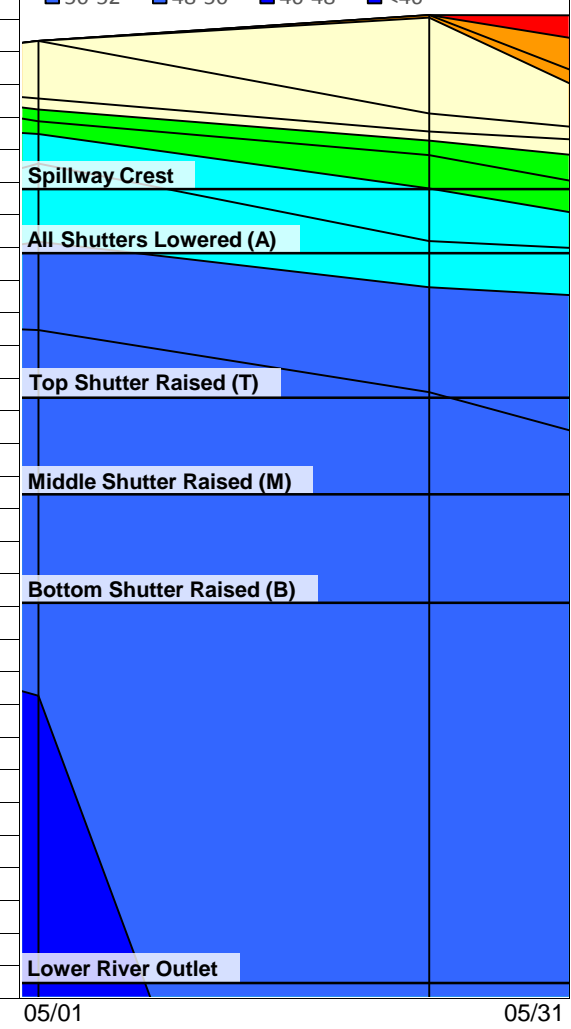
ACCUMULATED INFLOW FOR WATER YEAR TO DATE IN THOUSANDS OF ACRE-FEET

RESERVOIR	CURRENT WY 2018	WY 1977	WY 1983	15 YR AVG	% OF 15 YR AVG
TRINITY	522	186	2,417	1,127	46
SHASTA	3,046	1,952	9,669	4,562	67
FOLSOM	2,187	293	5,546	2,315	94
NEW MELONES	723	0	2,161	866	83
MILLERTON	1,054	169	3,245	1,195	88

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	19.56	13.69	54.65	31.10 (56)	63	0.00
SACRAMENTO AT SHASTA DAM	38.67	17.27	112.33	60.49 (61)	64	0.00
AMERICAN AT BLUE CANYON	64.57	15.64	103.88	65.51 (43)	99	0.00
STANISLAUS AT NEW MELONES	21.01	0.00	45.33	26.89 (40)	78	0.00
SAN JOAQUIN AT HUNTINGTON LK	32.85	17.20	81.40	40.77 (43)	81	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						
Apr	51.0	50.2	51.4	51.6	53.2	53.8	59.4	8678									
05/01	52.2	52.5	? 52.7	52.8	55.6	56.7	61.7	1962	874	A	63	A	16	A	20		
05/02	53.2	52.3	! -	53.1	56.2	57.6	62.3	2052	880	A	19	A	58	A	23		
05/03	54.7	52.2	? 52.7	53.2	56.2	57.8	61.2	1948	884	A	64	A	17	A	19		
05/04	56.0	53.0	# -	53.8	56.9	58.3	66.3	1951	888	A	18	A	64	A	19		
05/05	57.3	52.5	51.4	54.0	56.5	57.8	65.5	1954	892	A	17	A	67	A	17		
05/06	57.6	53.8	51.7	53.3	56.2	57.5	61.4	1951	896	A	64	A	17	A	19		
05/07	58.7	55.4	51.7	53.8	57.0	58.4	? 67.9	1927	900	A	26	A	58	A	16		
05/08	59.7	55.4	51.5	54.1	57.8	59.5	69.0	1714	905	A	17	A	10	A	72		
05/09	60.4	55.6	51.9	53.9	57.6	59.5	65.9	1693	910	A	68	A	15	A	16		
05/10	61.1	55.7	51.9	54.4	57.1	59.2	66.6	2629	913	A	16	A	58	A	26		
05/11	60.8	56.1	52.1	54.1	56.8	58.1	? 68.8	3131	914	A	10	A	37	A	53		
05/12	60.6	55.5	52.4	53.9	56.8	57.9	68.8	2773	916	A	17	A	63	A	20		
05/13	60.2	55.8	52.2	54.0	57.0	58.1	61.5	2319	918	A	16	A	14	A	70		
05/14	60.9	55.4	52.3	54.2	57.3	58.5	60.5	1916	922	A	60	A	20	A	20		
05/15	60.9	55.3	52.3	54.5	57.6	59.0	60.8	1729	926	A	2	A	71	A	26		
05/16	59.9	53.9	52.7	55.0	56.8	57.7	58.5	1727	930	A	62	A	19	A	18		
05/17	59.1	55.2	52.4	54.3	58.0	59.3	63.2	1740	934	A	18	A	63	A	19		
05/18	60.0	55.5	52.4	54.2	57.8	59.5	64.4	1749	939	A	18	A	17	A	65		
05/19	60.3	55.7	52.6	54.7	58.2	59.8	62.6	1751	942	A	19	A	62	A	19		
05/20	60.0	55.3	52.6	55.3	58.1	59.5	60.7	1749	946	A	60	A	19	A	22		
05/21	60.6	55.4	52.7	55.6	58.8	60.3	63.9	1771	950	A	28	A	54	A	18		
05/22	60.0	56.7	52.8	55.0	58.4	60.4	62.6	2369	953	A	2	A	20	A	78		
05/23	59.4	57.7	52.9	55.2	57.9	59.1	60.6	2648	953	A	1	A	45	A	53		
05/24	60.4	57.7	53.0	55.0	57.7	58.9	60.7	2963	953	A	55	A	34	A	11		
05/25	59.6	55.3	53.3	55.0	56.8	57.4	58.3	3037	956	A	17	A	68	A	15		
05/26	59.0	55.9	53.2	54.0	56.4	57.5	62.7	3179	956	A	59	A	23	A	19		
05/27	60.0	57.3	53.1	54.3	57.0	58.1	69.3	3354	955	A	12	A	43	A	45		
05/28	62.0	57.2	53.3	54.7	57.5	58.7	76.8	3347	955	A	58	A	27	A	15		
05/29	63.6	56.1	53.3	54.8	57.8	59.3	78.8	3370	956	A	11	A	54	A	35		
05/30	61.5	56.4	53.5	54.7	57.1	58.1	63.2	3367	956	A	43	A	10	A	47		
05/31	60.4	57.6	54.2	54.9	57.2	57.9	60.5	3372	955	A	53	A	35	A	12		
May	59.3	55.3	52.6	54.3	57.2	58.6	64.3	2359									
									Total AF	145074							



Legend

- ? = 1-9 hours of data missing
- ! = 10 or more hours of data missing
- # = Station out of service
- Light Blue Box = 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

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						
May	59.3	55.3	52.6	54.3	57.2	58.6	64.3	2359									
06/01	60.3	58.5	53.9	55.1	57.7	58.5	67.4	3372	953	A	13	A	48	A	39		
06/02	60.8	58.0	53.7	55.4	58.3	59.5	76.0	3372	953	A	37	A	11	A	52		
06/03	61.6	58.4	54.0	55.3	58.2	59.6	80.1	3367	952	A	49	A	39	A	13		
06/04	62.6	59.1	54.1	55.3	58.2	59.5	73.7	3348	950	A	12	A	50	A	39		
06/05	61.8	60.1	54.5	55.5	58.3	59.3	67.8	3348	947	A	33	A	13	A	53		
06/06	61.0	62.3	54.4	55.6	58.2	59.2	64.2	3348	944	A	36	A	52	A	13		
06/07	62.5	60.1	54.7	55.8	58.6	59.5	66.2	3348	941	A	11	A	49	A	40		Spillway Crest
06/08	64.5	62.7	54.6	55.9	58.8	59.8	69.9	3347	937	A	12	A	32	A	56		All Shutters Lowered (A)
06/09	63.4	62.7	54.8	55.9	58.5	59.7	68.6	3348	934	A	45	A	41	A	15		
06/10	62.9	62.2	55.1	56.2	58.5	59.3	67.7	3344	929	A	33	A	51	A	16		
06/11	63.8	62.9	55.2	56.2	58.8	59.9	71.6	3345	924	A	1	A	53	A	47		
06/12	64.0	65.0	55.3	56.4	59.3	60.5	78.2	3348	921	A	20	A	30	A	51		
06/13	64.8	62.9	55.5	56.6	59.6	60.8	78.5	3355	919	A	36	A	39	A	25		Top Shutter Raised (T)
06/14	64.7	62.9	55.7	56.8	59.6	60.8	72.4	3348	916	A	13	A	49	A	38		
06/15	64.9	63.7	55.7	57.2	60.0	61.1	68.0	3347	913	A	14	A	36	A	50		
06/16	64.8	65.3	55.9	57.2	59.9	60.9	64.0	3348	908	A	49	A	37	A	14		Middle Shutter Raised (M)
06/17	64.5	65.1	56.3	57.2	59.7	60.4	64.5	3364	904	A	13	A	49	A	38		
06/18	65.2	65.3	56.3	57.2	60.0	61.0	70.3	3363	898	A	33	A	20	A	46		
06/19	67.1	66.7	56.5	57.5	60.4	61.5	72.1	3358	894	A	17	A	38	A	45		Bottom Shutter Raised (B)
06/20	68.4	67.5	56.7	57.7	60.5	61.6	69.7	3328	889	A	18	A	61	A	21		
06/21																	
06/22																	
06/23																	
06/24																	
06/25																	
06/26																	
06/27																	
06/28																	
06/29																	
06/30																	
-																	Lower River Outlet
Jun	63.7	62.6	55.2	56.3	59.1	60.1	70.5	3352									
Total AF								132983							06/01	06/30	

Legend

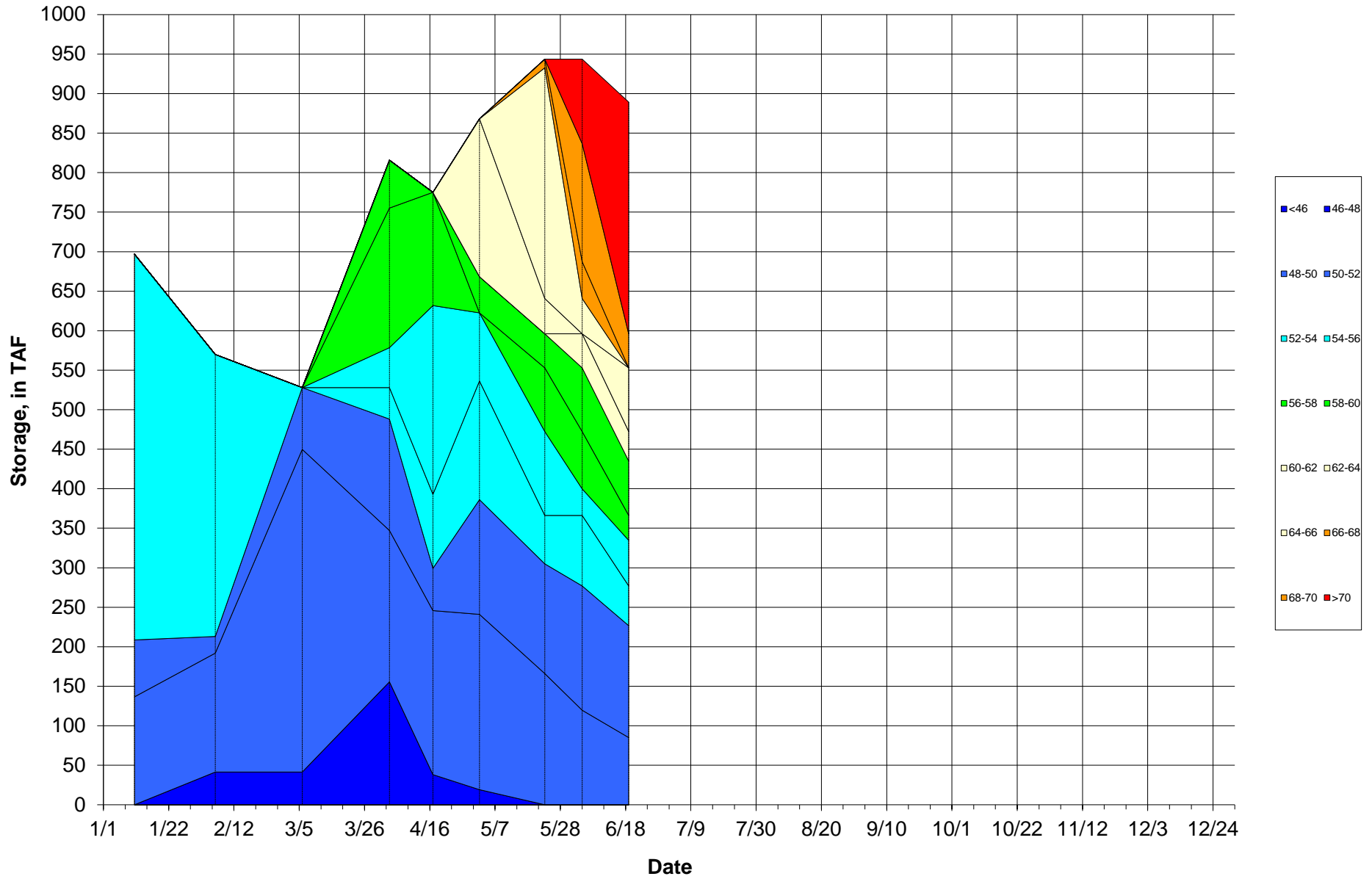
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Notes

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- ²
- ³
- ⁴
- ⁵
- ⁶

Folsom Lake Isothermobaths - 2018 (Water Temperature, in ° F)



Folsom Cold Water Pool

Folsom Reservoir: Cold Water Volume

Profile Date	Volume less than 58°F (TAF)
06/19/18	366.3

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			

Assumes Monthly average flows: April 8,500 cfs

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)

		Jun	Jul	Aug	Sep		
Folsom	955	855	591	447	394		
	Elev.	455	427	410	402		

Monthly River Releases (cfs)

American	3500	5068	3200	1811		
MRR	1750	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)

		Jun	Jul	Aug	Sep		
Folsom	955	866	726	624	572		
	Elev.	456	442	431	425		

Monthly River Releases (cfs)

American	3500	3500	2700	2000		
MRR	1750	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.

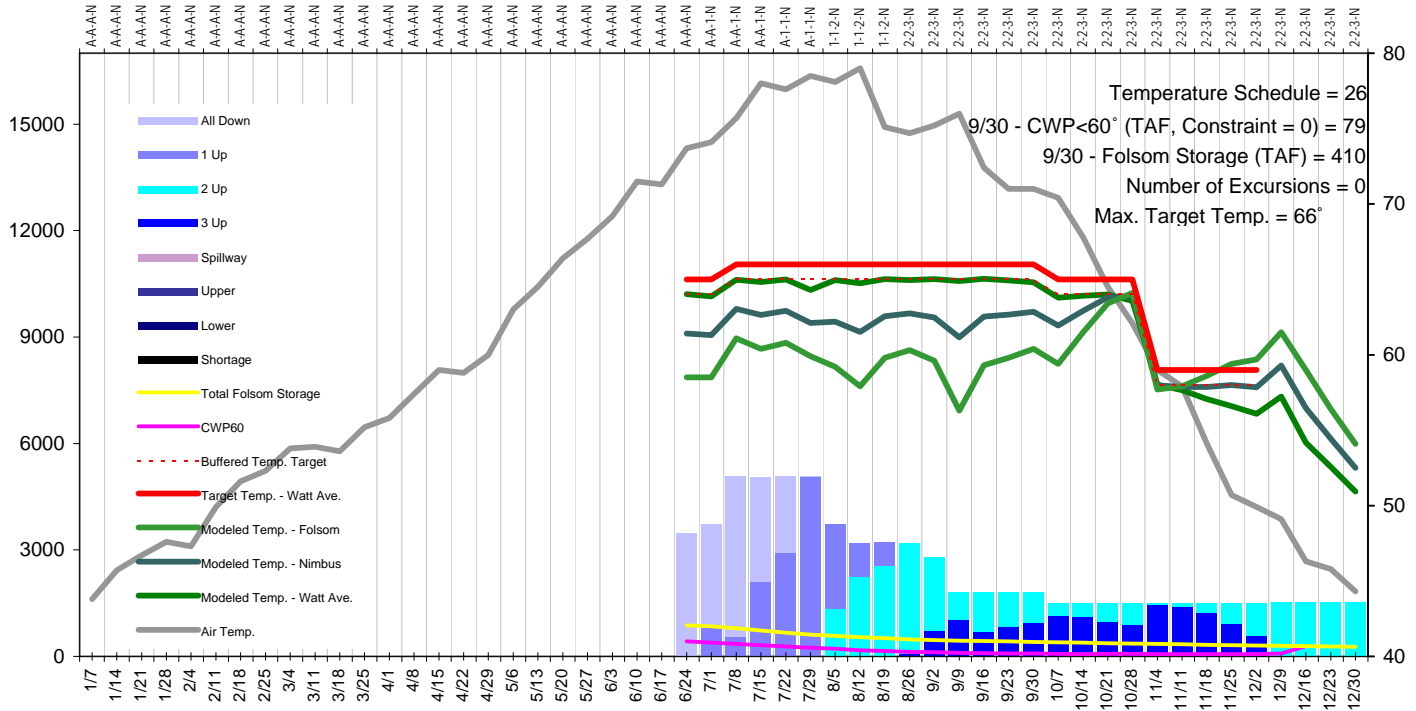
CVP operations are updated monthly as new hydrology information is made available December through May.

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

June 2018 90%-Exceedance Outlook

USBR Pred.

Release (cfs) / Volume (TAF)



Temperature (°F)

Release (cfs) / Volume (TAF)

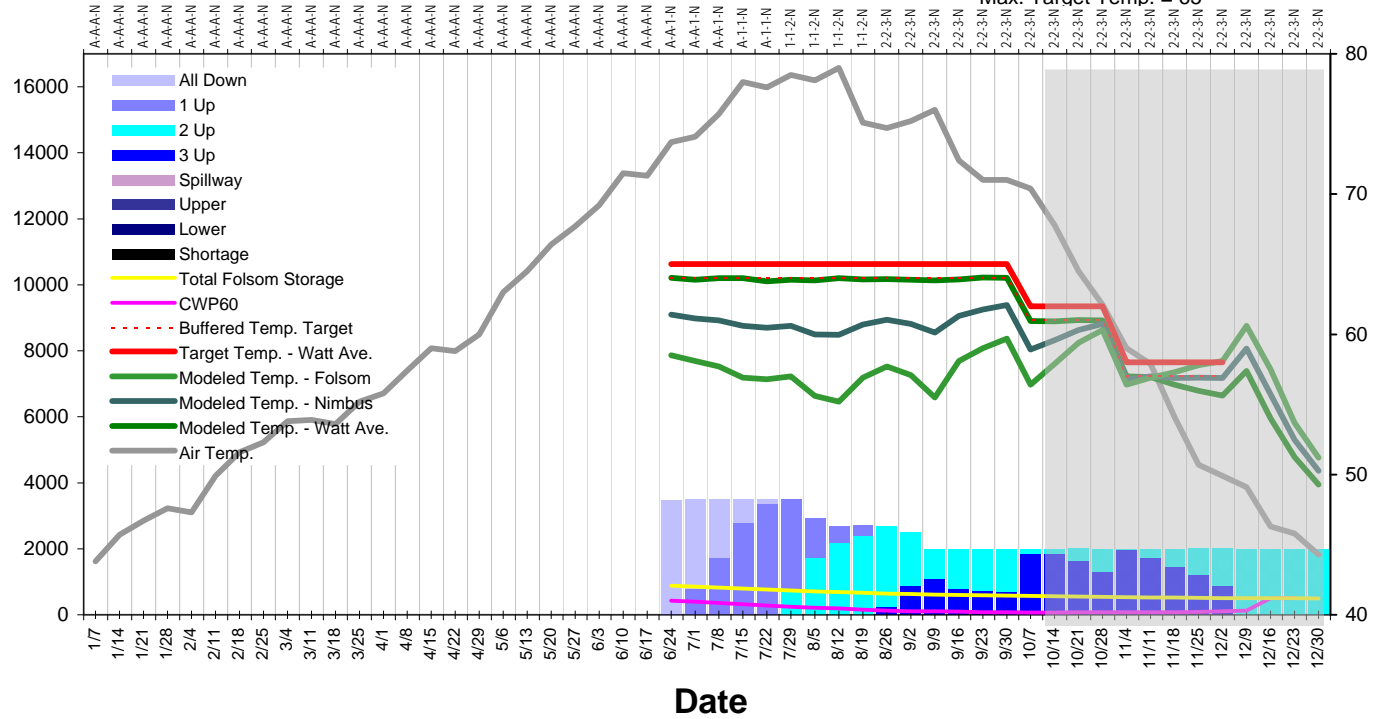
June 2018 50%-Exceedance Outlook

USBR Pred.

Temperature Schedule = 19
 9/30 - CWP<60° (TAF, Constraint = 0) = 74
 9/30 - Folsom Storage (TAF) = 581
 Number of Excursions = 0

Max. Target Temp. = 65°

Release (cfs) / Volume (TAF)



Temperature (°F)