

American River Group

1:30 PM – 3:30 PM

Conference Line: [+1 321-209-6143](tel:+13212096143) **Access Code:** 192 737 800#

Webinar: [Join Microsoft Teams Meeting](#)

Thursday, October 15, 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. Power Bypass Proposal
5. Next Meeting: Thursday, November 19, 1:30-3:30pm

SMUD Upper American River Project Update

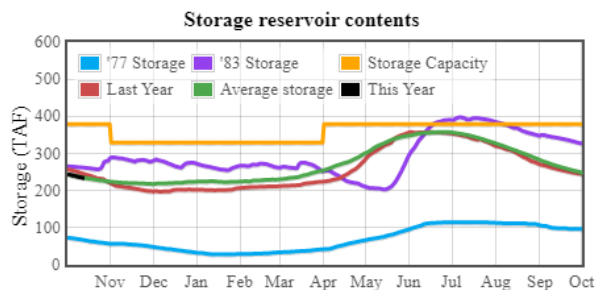
Conditions – 13 October 2020:

Happy new water year! October precipitation through 10/13/2020 7:00:00 AM is .00 in., which is 0% of the October average of 3.30". Precip for the water year to date is .00" which is 0% of average to date (1.38") and 0% of the entire water year average of 57.32". There is 0.2" rain forecasted in the basin over the next 2 weeks.

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

- 238,568 acre feet (September 15, 2020 storage: 255,555 acre feet)
- 61.6% capacity
- 98% of historical average (13 October historical average: 238,568 AF / 62.9%)
- 2% decrease in storage since last week

October 13 reservoir storage: (Figure 1)



- Loon Lake: 41,245 AF
- Ice House: 26,054 AF
- Union Valley: 166,404 AF

Last year today, storage was at 64.5% (244,643 AF). *Total non-winter capacity: 379,174 AF.

Chili Bar releases into the South Fork American River

September 2020 releases:

- Daily average flow: 616 cfs
- Total releases: 36,636 AF

October 2020 releases (Oct 1-12):

- Daily average flow so far: 594 cfs
- Total releases so far: 14,127 AF

Runoff into the storage reservoir basins is 31% of median to date through Oct 12. The snowpack is 0% of average at selected snow sensors.

Runoff Forecast (in cfs, daily average forecast) (Figure 2)

BASIN	Fri Oct 16	17-Oct	18-Oct	19-Oct	20-Oct	21-Oct
SFA above Slab	31.0	31.3	31.3	31.3	31.3	31.2
Slab Creek	49.3	49.5	49.7	49.9	50.1	50.3
Combined South Fork	80	81	81	81	81	82

PCWA MFP OPERATIONS OVERVIEW for American River Operations Group (Real Time Data as of October 14, 2020)

- ❖ **French Meadows Storage = 68,000 AF of 136,405 AF = 50% Capacity**
 - MFAR above FM Inflow (R24) = ~1 cfs
- ❖ **Hell Hole Storage = 96,000 AF of 207,590 AF = 46% Capacity**
 - Five Lakes Inflow (R23) = ~1 cfs
 - Rubicon Inflow (R22) = ~1 cfs
- ❖ **Combined Storage (FM+HH) = 164,000 AF/342,590 AF = 48% Capacity; 88% of Average**
- ❖ **MFAR @ R11: 8 day daily average ~240 cfs**
- ❖ **PCWA annual MFP maintenance outage:**
 - Middle Fork/Ralston 10/1/2020 06:00 – 10/30/2020 19:00
 - Oxbow Powerhouse 10/1/2020 06:00 – 11/13/2020 17:00

2020 Water Year Dashboard

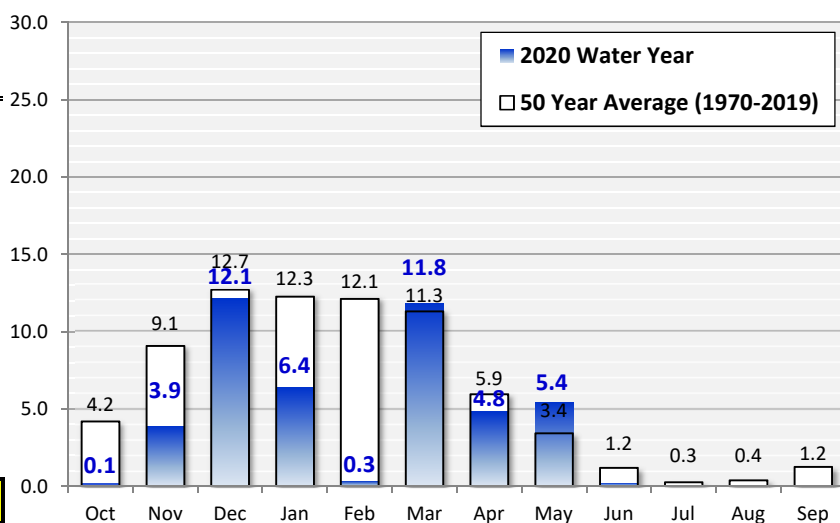


Updated through: October 14, 2020

Lake Spaulding Precipitation

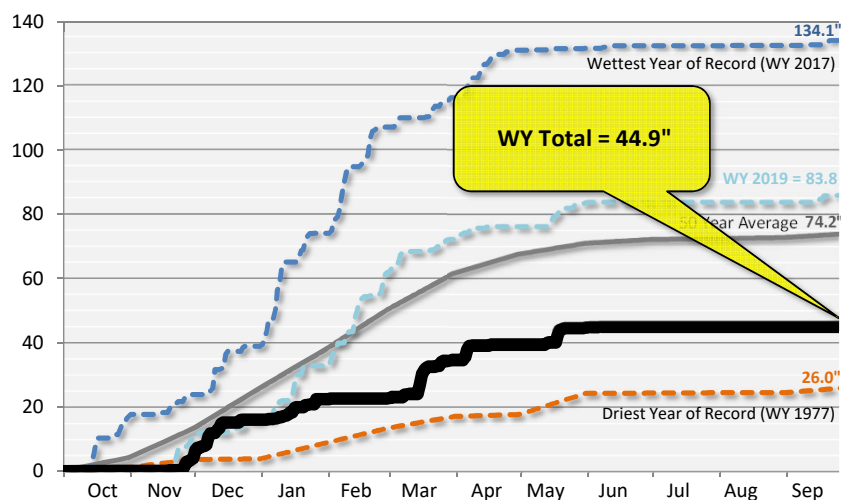
Monthly Totals (values in inches of precipitation):

	Historical Average ^{2/}	Actual This Year	Percent of Average
October	4.17	0.13	3%
November	9.07	3.85	42%
December	12.70	12.11	95%
January	12.26	6.36	52%
February	12.11	0.32	3%
March	11.31	11.82	104%
April	5.94	4.79	81%
May	3.41	5.40	158%
June	1.18	0.16	14%
July	0.25	0.00	0%
August	0.37	0.00	0%
September	1.23	0.00	0%
October		44.9 inches	



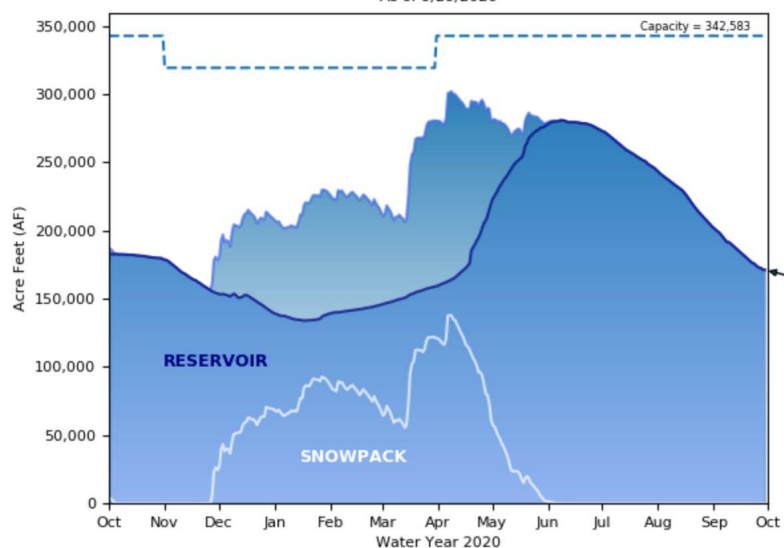
Cumulative Totals (values in inches of precipitation):

Through Month of:	Historical Cumulative Average ^{2/}	Accumulation to Date	% of Average to Date
October	4.17	0.13	3%
November	13.24	3.98	30%
December	25.94	16.09	62%
January	38.20	22.45	59%
February	50.32	22.77	45%
March	61.63	34.59	56%
April	67.57	39.38	58%
May	70.99	44.78	63%
June	72.16	44.94	62%
July	72.42	44.94	62%
August	72.79	44.94	62%
September	74.02	44.94	61%



MFP Reservoir and Snowpack Storage

As of 9/29/2020



American River Summary Conditions – October (On-going)

- October has been fairly warm, above average conditions to date. A cooling trend is projected for next week.

Storage/Release Management Conditions

- Releases currently at 1,500 cfs for fall attraction to the American River.

Temperature Management:

- Middle and Upper shutters on Units 2 and 3 have been raised. Bottom shutters on Unit 1 have been raised. Unit 3 is currently out on annual maintenance.
- We had 3 days exceeding 68 Sep 5-7 owing to a short but very hot period. Releases were increased to offset the heat and temperatures at Watt Ave dropped below 68 degrees on Sep 8.
- No temperature exceedences above 68 degrees in October. Beginning today, we are targeting 65 degrees. There may be a slight delay in reaching 65 degrees due to staff availability to adjust shutters at Folsom, but colder water is on its way now.
- Power bypass proposal has been submitted for Reclamation review. We will discuss that further later on in this meeting.

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

DAILY CVP WATER SUPPLY REPORT

OCTOBER 14, 2020

RUN DATE: October 15, 2020

RESERVOIR RELEASES IN CUBIC FEET/SECOND

RESERVOIR	DAM	WY 2020	WY 2021	15 YR MEDIAN
TRINITY	LEWISTON	431	415	446
SACRAMENTO	KESWICK	8,373	6,043	6,504
FEATHER	OROVILLE (SWP)	2,450	2,450	2,450
AMERICAN	NIMBUS	2,690	1,510	1,510
STANISLAUS	GOODWIN	464	569	464
SAN JOAQUIN	FRIANT	365	432	352

STORAGE IN MAJOR RESERVOIRS IN THOUSANDS OF ACRE-FEET

RESERVOIR	CAPACITY	15 YR AVG	WY 2020	WY 2021	% OF 15 YR AVG
TRINITY	2,448	1,366	2,004	1,324	97
SHASTA	4,552	2,361	3,375	2,132	90
FOLSOM	977	430	662	395	92
NEW MELONES	2,420	1,343	2,027	1,520	113
FED. SAN LUIS	966	324	406	387	120
TOTAL NORTH CVP	11,363	5,824	8,474	5,758	99
MILLERTON	520	255	310	163	64
OROVILLE (SWP)	3,538	1,648	2,121	1,587	96

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

RESERVOIR	CURRENT WY 2021	WY 1977	WY 1983	15 YR AVG	% OF 15 YR AVG
TRINITY	1	4	5	3	15
SHASTA	79	106	111	89	89
FOLSOM	27	31	49	28	96
NEW MELONES	13	----	22	20	65
MILLERTON	36	17	91	28	128

ACCUMULATED PRECIPITATION FOR WATER YEAR TO DATE IN INCHES

RESERVOIR	CURRENT WY 2021	WY 1977	WY 1983	AVG (N YRS)	% OF AVG	LAST 24 HRS
TRINITY AT FISH HATCHERY	0.10	0.13	0.39	0.50 (58)	20	0.00
SACRAMENTO AT SHASTA DAM	0.20	0.07	0.24	0.90 (63)	22	0.00
AMERICAN AT BLUE CANYON	0.00	0.87	0.73	0.91 (45)	0	0.00
STANISLAUS AT NEW MELONES	0.00	----	0.30	0.40 (42)	0	0.00
SAN JOAQUIN AT HUNTINGTON LK	0.00	1.20	0.00	0.68 (45)	0	0.00

DATE	Mean Daily Temperatures (°F)							Release (CFS)	Storage (TAF)	Unit Shuter Position / Load Percentage						Isobath Plot				
	Water						Air			Percentage										
	NFA	ARP	AFD ¹	AHZ	AWP	AWB	CSU			Nimbus	Folsom	Unit 1		Unit 2						
Aug	62.5	62.3	63.2	65.6	66.9	67.1	78.6	2547								>70 68-70 66-68 64-66 62-64 60-62 58-60 56-58 54-56 52-54 50-52 48-50 46-48 <46				
09/01	61.7	59.2	64.5	66.2	67.5	67.5	71.2	2024	476	T	55	M	22	M	23	Spillway Crest All Shutters Lowered (A) Top Shutter Raised (T) Middle Shutter Raised (M) Bottom Shutter Raised (B) Lower River Outlet				
09/02	62.5	62.4	64.8	66.4	67.4	67.2	69.8	2010	473	T	57	M	20	M	23					
09/03	63.1	63.8	64.8	66.6	67.9	67.7	71.7	2011	470	T	57	M	21	M	22					
09/04	61.4	61.8	64.2	66.8	68.1	68.0	75.0	2011	469	T	37	M	40	M	23					
09/05	61.6	61.9	64.4	66.8	68.3	68.5	81.5	2010	468	T	35	M	45	M	20					
09/06	60.5	61.5	64.4	66.7	68.1	68.4	86.3	2010	467	T	34	M	46	M	20					
09/07	59.4	60.6	64.6	66.7	68.1	68.2	86.2	2014	465	T	38	M	41	M	21					
09/08	59.3	59.9	64.6	66.5	67.3	67.4	81.8	2011	463	T	36	M	40	M	24					
09/09	! -	58.5	? 64.5	66.0	66.6	66.1	72.5	2012	461	T	34	M	39	M	27					
09/10	! -	59.3	65.0	65.7	66.1	65.5	69.0	2011	458	T	45	M	19	M	36					
09/11	! -	59.0	65.2	65.7	66.3	65.7	69.3	2009	456	T	46	M	33	M	21					
09/12	! -	59.2	65.1	66.1	66.6	66.0	71.2	2005	454	T	44	M	22	M	34					
09/13	! -	59.1	65.2	66.1	66.6	66.2	71.5	2014	453	T	48	M	38	M	15					
09/14	! -	59.6	65.0	66.2	66.9	66.4	69.8	2013	451	T	43	M	1	M	56					
09/15	! -	59.4	65.2	66.4	67.2	66.8	71.5	2009	449	T	42	M	0	M	57					
09/16	! -	59.0	65.2	66.4	67.3	67.1	72.6	1972	447	T	46	M	1	M	54					
09/17	# -	60.2	65.2	66.6	67.4	67.3	72.6	1489	446	T	41	M	1	M	59					
09/18		60.2	60.6	65.3	66.5	67.4	67.2	1756	444	T	49	M	1	M	51					
09/19		60.0	59.3	65.6	66.9	67.7	67.4	1805	443	T	49	M	1	M	50					
09/20		60.3	59.6	65.3	67.0	67.9	67.6	1795	442	T	43	M	1	M	57					
09/21		60.7	60.5	65.1	66.9	67.9	67.5	1788	440	T	45	M	0	M	55					
09/22		60.7	59.3	65.3	66.8	67.8	67.6	1768	439	T	40	M	1	M	60					
09/23		61.3	59.4	65.0	66.9	67.7	67.4	1770	437	T	33	M	0	M	66					
09/24		62.5	60.3	65.0	66.9	68.0	67.8	1769	435	T	32	M	32	M	36					
09/25		62.4	60.6	65.3	66.7	67.5	67.3	1767	434	T	37	M	46	M	17					
09/26		62.3	60.0	65.4	67.0	67.8	67.4	1770	432	T	36	M	40	M	24					
09/27		62.8	60.5	64.9	67.2	68.1	67.8	1770	430	T	23	M	23	M	54					
09/28		63.1	61.2	65.0	67.0	68.0	67.8	1766	427	T	25	M	34	M	41					
09/29		63.1	60.3	65.3	67.0	67.8	67.6	1768	425	T	26	M	50	M	25					
09/30		62.7	60.3	65.1	66.7	67.6	67.5	1759	423	T	27	M	28	M	45					
-																				
Sep	61.5	60.2	65.0	66.6	67.5	67.3	74.0	1890									09/01	09/30		
Total AF							112434													

Legend

- ? = 1-9 hours of data missing
- ! = 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

D A T E	Mean Daily Temperatures (°F)							Release (CFS)	Storage (TAF)	Unit Shuter Position / Load Percentage						Isobath Plot				
	Water						Air			Percentage										
	NFA	ARP	AFD ¹	AHZ	AWP	AWB	CSU			Nimbus	Folsom	Unit 1		Unit 2		Unit 3				
Sep	61.5	60.2	65.0	66.6	67.5	67.3	74.0	1890								>70 68-70 66-68 64-66 62-64 60-62 58-60 56-58 54-56 52-54 50-52 48-50 46-48 <46 Spillway Crest All Shutters Lowered (A) Top Shutter Raised (T) Middle Shutter Raised (M) Bottom Shutter Raised (B) Lower River Outlet				
10/01	62.2	59.6	65.1	66.8	67.6	67.2	75.8	1712	423	T	24	M	45	M	31					
10/02	62.4	60.1	65.3	66.7	67.4	66.9	74.3	1761	420	T	25	M	27	M	48					
10/03	63.3	58.9	65.4	66.6	67.2	66.8	73.6	1760	418	T	27	M	52	M	22					
10/04	63.8	59.3	65.2	66.5	67.3	66.9	74.3	1760	416	T	21	M	22	M	57					
10/05	63.7	59.3	65.6	66.5	67.2	66.7	71.8	1763	413	T	30	M	70	M	1					
10/06	63.7	58.5	65.6	66.5	67.1	66.6	72.3	1634	411	T	30	M	70	M	1					
10/07	64.2	58.7	65.4	66.6	67.2	66.7	69.2	1510	409	T	26	M	74	M	0					
10/08	63.4	58.0	65.4	66.4	66.2	65.4	62.8	1507	407	T	30	M	70	M	0					
10/09	62.4	57.4	65.5	66.2	66.5	65.5	63.4	1510	405	T	31	M	69	M	1					
10/10	62.2	58.2	65.4	65.9	66.5	65.9	65.2	1513	403	T	32	M	68	M	0					
10/11	62.8	58.4	65.5	66.3	66.7	66.1	66.5	1512	401	T	26	M	74	M	0					
10/12	62.6	57.9	65.5	66.4	66.7	65.9	66.4	1508	399	T	26	M	74	M	0					
10/13	62.2	56.6	65.3	66.4	66.8	66.2	69.6	1511	397	T	18	M	82	M	1					
10/14	62.4	58.6	63.6	66.5	67.1	66.7	74.9	1510	395	M	22	M	77	M	1					
10/15										B		M		M						
10/16																				
10/17																				
10/18																				
10/19																				
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10/27																				
10/28																				
10/29																				
10/30																				
10/31																				
Oct	63.0	58.6	65.3	66.4	67.0	66.4	70.0	1605								10/01	10/31			

Legend

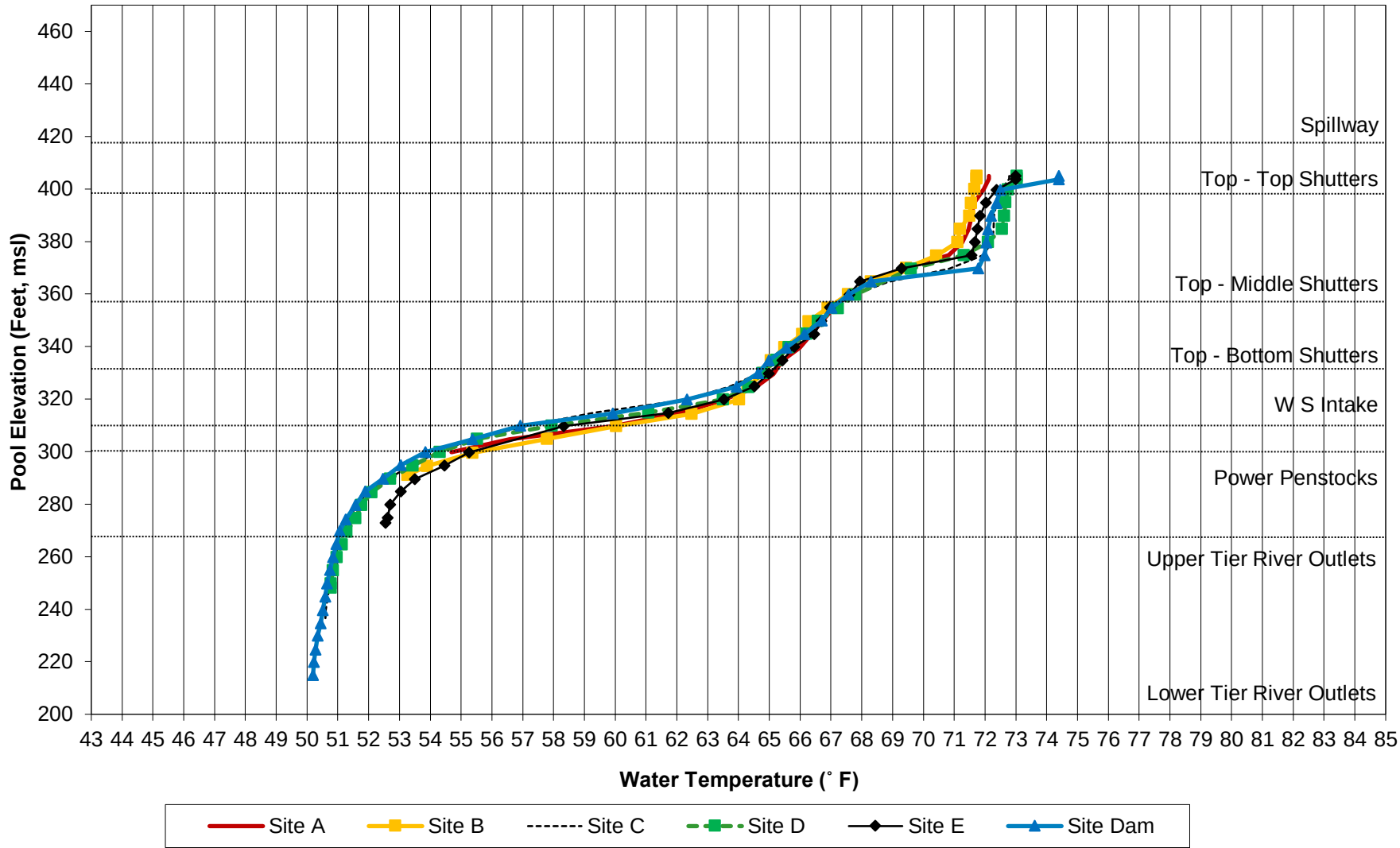
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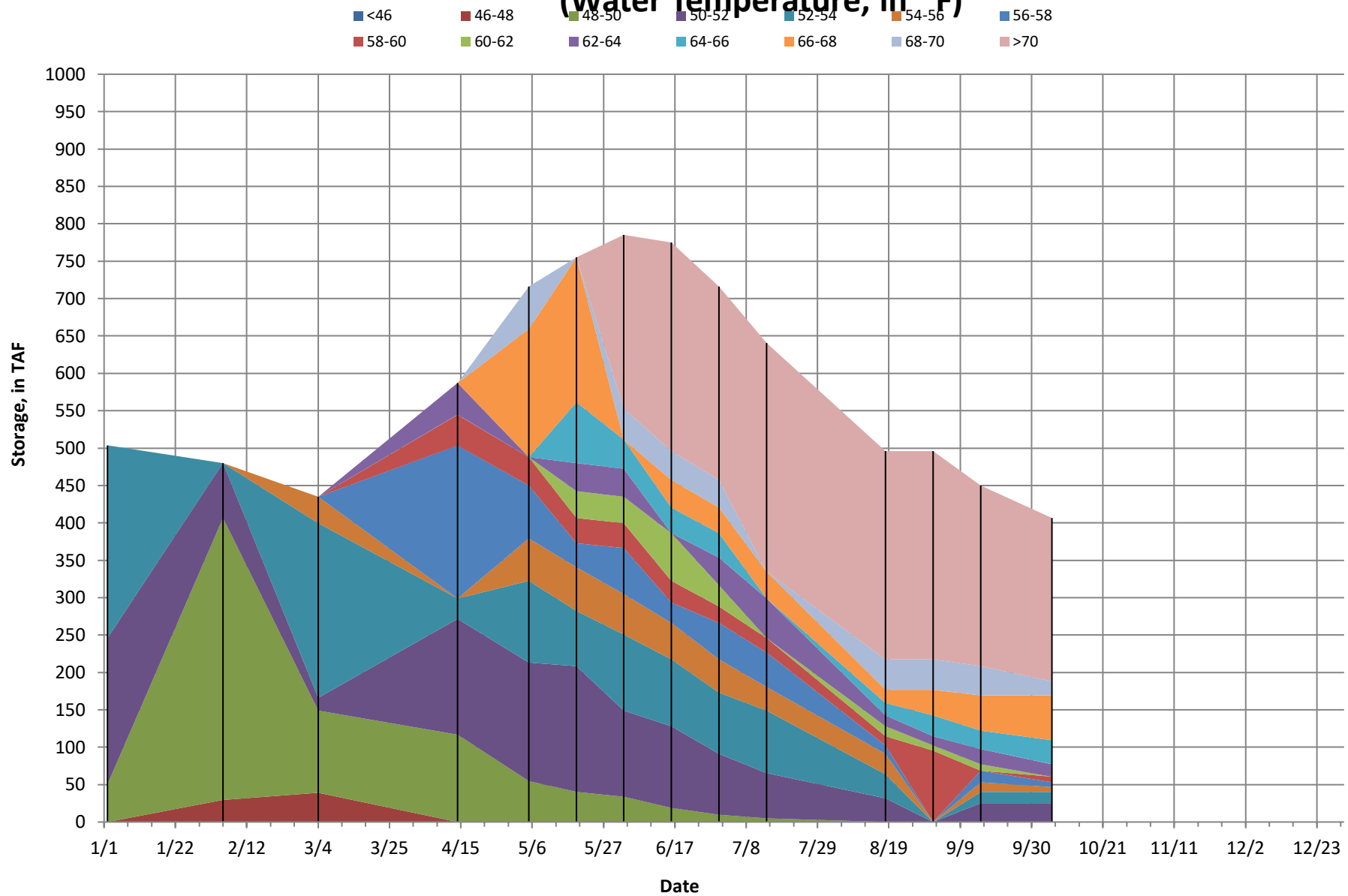
Notes

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

Folsom Lake Temperature Profiles: 06-Oct-2020



(Water Temperature, in ° F)



Folsom Cold Water Pool

Folsom Reservoir: Cold Water Volume

Profile Date	Volume less than 58°F (TAF)
10/06/20	53.2

Penstock Elevation (ft)	Volume (TAF)	Approximate Max. Temp (F)
327	83	64.3

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)

DRAFT October 2020

90% Runoff Exceedance Outlook:

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

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

		Oct	Nov	Dec			
Folsom	423	370	338	314			
Elev.		399	393	390			

Monthly River Releases (cfs)

American	1500	1250	1250			
MRR	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)

		Oct	Nov	Dec			
Folsom	423	406	406	426			
Elev.		404	404	407			

Monthly River Releases (cfs)

American	1500	1502	1500			
MRR	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.

Oct 2020 Updated 90%-Exceedance Outlook

9/30 - CWP<60° (TAF, Constraint = 0) = <35

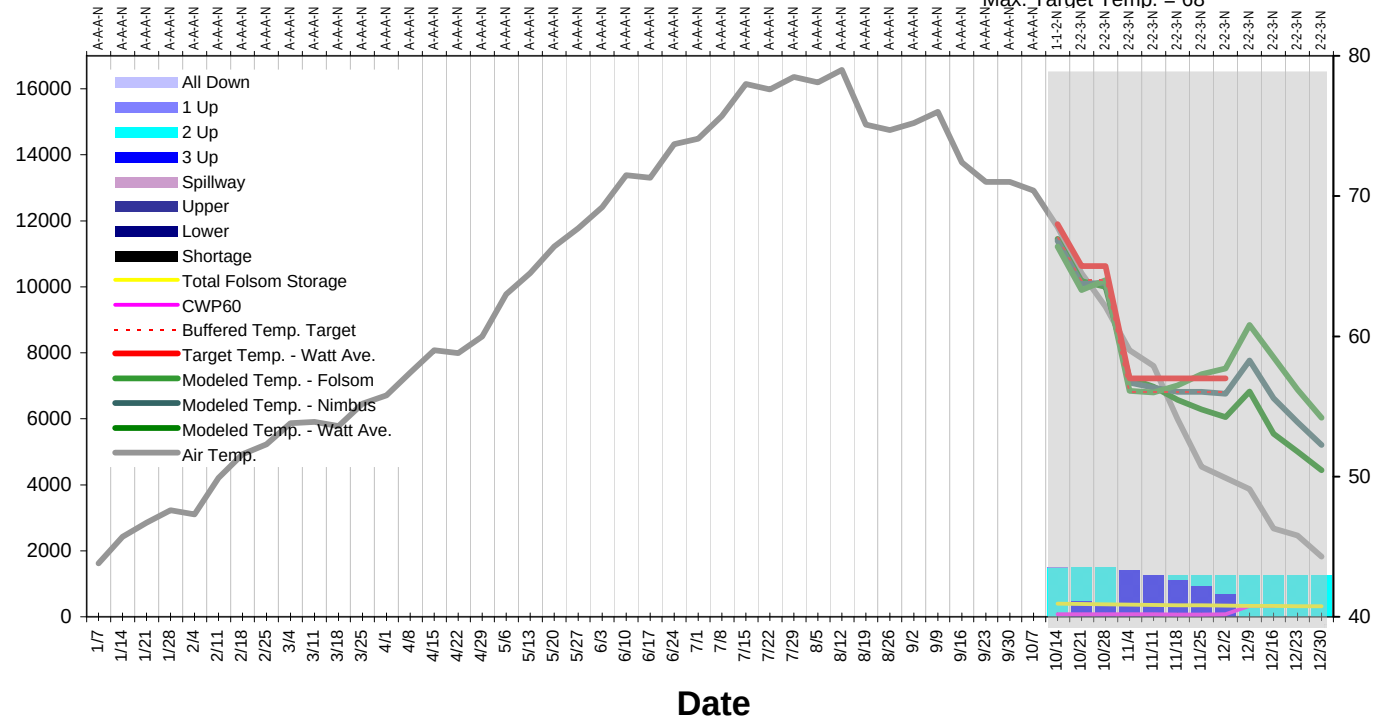
9/30 - Folsom Storage (TAF) = 0

Number of Excursions = 2

USBR Pred.

Max. Target Temp. = 68°

Release (cfs) / Volume (TAF)



Temperature (°F)