

## **American River Operations Group**

DRAFT Meeting Notes

Date 25 January 2010

### **Attendees**

Bonnie Van Pelt, Russ Yaworsky, Robert Chase, and Carol Nicolos, Reclamation; Colin Purdy and Robert Vincik, DFG; Nick Hindman and Beth Campbell, FWS; Felix E. Smith, SARA; Rod Hall, Water Forum; Ronald Pang, City of Sacramento; and Dave Ford, MCCFFF.

### **Handouts**

- Daily CVP Water Supply Report (Run Date January 25, 2010); link is <http://www.usbr.gov/mp/cvo/vungvari/dayrpt.pdf>
- Lower American River Carcass Survey 2009/2010

### **Fisheries Updates**

The 2009/2010 Central Valley (CV) steelhead spawning surveys began on December 15<sup>th</sup>, and as per Robert Chase's update they will continue bi-weekly through the end of April. The next scheduled survey is January 26<sup>th</sup>. Each survey consists of a two day downstream float in either a jet boat or cataraft. The survey reach consists of 14 river miles from Nimbus Dam to Watt Avenue. As of January 12<sup>th</sup>, there were a total of 27 adult steelhead (2 spawning pairs) and 16 redds surveyed. In general, there appears to be a pulse pattern in spawning activity. Approximately 25% of the redds were in the new spawning gravel areas. Painted rocks are used to mark the pots already surveyed to avoid double counting.

Robert Vincik reported on the carcass surveys (see HO). So far, 711 fall-run Chinook salmon have been surveyed; there were 600 adults and 111 grilse (16%). There were 96 heads taken for coded wire tag (CWT) recovery. The preliminary in-river population estimate is 3,693 (with grilse) and 3,118 (without grilse). The new salmon seen in the lower American River now are assumed to be late-fall-run Chinook (this should continue into February). CWT information will continue to be collected for incoming salmon one day a week through February. The fall-run survey will end on January 28.

The Central Valley Tagging Consortium is doing sensor tracking (acoustic tags) for CV steelhead all the way out to the ocean.

### **Operations**

Russ Yaworsky reported that releases are now at 1,550 cfs and are expected to remain at this level through early February. Storage in Folsom Reservoir is 295,000 AF with a possibility of  $\pm$ 325,000 AF by the end of the month. Last year at this time, storage in Folsom Reservoir was 227,000 AF. There was not a lot of change in reservoir storage due to the last series of storms, but these events did add to the snowpack levels (normal to above-normal snow pack for the region). The estimated end-of-May storage forecast is 550,000-600,000 AF (90% exceedence); and a filled reservoir (50% exceedence).

The Flow Management Standard specifies a drop in flows (15%) down to about 1,300 cfs beginning in February. Russ does not anticipate a change in flows at this time. Before any such decision is made, we would need to get a good handle on the snowpack.

Russ indicated that the last preliminary forecast was completed on January 14<sup>th</sup>, prior to the last series of storms. The final January forecast will be available at the end of January; however, it won't include an updated snow pack survey. The snow pack survey will occur in early February. The next 5 to 10 days are forecasted to be drier.

The temperature shutters are all up at this point. Russ would like to start placing the shutters in early February. The temperature shutters are lowered to help conserve cold water pool storage.

### **Next Meeting**

Date: Tuesday, 23 February 2010

Location: Central Valley Operations Office  
3310 El Camino Ave.  
Sacramento, CA 95821

Room: 302

Time: 1300

Notes by: Carol Nicolos and Bonnie Van Pelt

AGENDA  
American River Group

Date: Monday, January 25, 2010

Time: 1:00 PM

Location: Central Valley Operations Office  
3310 El Camino Ave.  
Sacramento, CA 95821

Room: Room 302

Update on Fish Monitoring - DFG and Reclamation (updates on SH Survey)

Operations Forecast - USBR

Temperature Management Plan - USBR

Status Reports - Group

Schedule Next Meeting

Adjourn

## Lower American River Carcass Survey 2009/2010

Fish found through 1/21/2010:

711 Total Chinook salmon surveyed

600 Adult

111 Grilse (~16% of total salmon count)

82 Marked

15 Recovered

96 Heads taken for CWT recovery

In River estimate:  $(M + 1) (C + 1) / (R + 1)$  M = marked; C = counted fish; R = recovered.

3,693 (with grilse)

3,118 (w/o grilse)

We are starting to see “fresh” salmon in the river and are assuming that these are late-fall-run Chinook coming into the LAR. The fall-run survey will end on January 28<sup>th</sup> but we will continue to collect CWT data on incoming salmon on a one day a week basis through February.

The population estimates are preliminary and subject to revision.

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

**DAILY CVP WATER SUPPLY REPORT**

JANUARY 24, 2010

RUN DATE: January 25, 2010

RESERVOIR RELEASES IN CUBIC FEET/SECOND

RESERVOIR	DAM	WY 2009	WY 2010	15YR MEDIAN
TRINITY	LEWISTON	302	301	300
SACRAMENTO	KESWICK	3,261	4,382	4,821
FEATHER	OROVILLE (SWP)	950	1,350	1,750
AMERICAN	NIMBUS	791	1,519	2,001
STANISLAUS	GOODWIN	181	206	293
SAN JOAQUIN	FRIANT	114	119	113

STORAGE IN MAJOR RESERVOIRS IN THOUSANDS OF ACRE-FEET

RESERVOIR	CAPACITY	15YR AVG	WY 2009	WY 2010	% OF 15 YR AVG
TRINITY	2,448	1,698	980	1,018	60
SHASTA	4,552	3,098	1,400	2,413	78
OROVILLE (SWP)	3,538	2,153	979	1,129	52
FOLSOM	977	450	227	295	66
NEW MELONES	2,420	1,681	1,161	1,208	72
FED. SAN LUIS	966	759	290	558	74
MILLERTON	520	314	211	233	74
TOT. N. CVP	11,360	7,686	4,058	5,492	71

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

RESERVOIR	CURRENT WY 2010	DRIEST WY 1977	WETTEST WY 1983	15 YR AVG	% OF 15 YR AVG
TRINITY	187	39	355	307	61
SHASTA	1,516	877	1,933	1,862	81
FOLSOM	347	135	1,364	664	52
NEW MELONES	195	0	487	246	80
MILLERTON	146	80	686	277	53

ACCUMULATED PRECIPITATION FOR WATER YEAR TO DATE IN INCHES

RESERVOIR	CURRENT WY 2010	DRIEST WY 1977	WETTEST WY 1983	AVG (N YRS)	% OF AVG	LAST 24 HRS
TRINITY AT FISH HATCHERY	17.26	4.40	22.06	17.57 ( 48 )	98	0.21
SACRAMENTO AT SHASTA DAM	35.02	5.34	36.98	31.18 ( 53 )	112	0.39
AMERICAN AT BLUE CANYON	28.12	7.78	46.59	31.86 ( 35 )	88	0.22
STANISLAUS AT NEW MELONES	14.72	0.00	19.31	12.79 ( 32 )	115	0.02
SAN JOAQUIN AT HUNTINGTON LK	20.43	5.10	36.30	19.82 ( 35 )	103	0.08

## Meeting Attendance Record

Date: 1300

Time: 1:55-10

Place: CVO

Subject of Meeting: ARG

Name	Organization	Phone Number
Carol Nicolas	BOR	916 989 7276
Rod Hall	WF	916-631-7643
Felix E. Smith	SARA	966-2081 felixsmith@bcglobal.net
Dave Fond	NCCFFP	916 967 3847
Robert Chase	BOR	530 528 0512
ROBERT VINCIG	DFG	916 358-2933
Colin Purdy	DFG	530 333 - 7749
Russ Yaworsky	USBR - CVO	916-979-0268
ROLAND PAWA	CITY OF SAC.	916-808-1309
Beth Campbell	USFWS	209-334-2968 x402



## **American River Operations Group**

DRAFT Meeting Notes

Date 23 February 2010

### **Attendees**

Bonnie Van Pelt, Russ Yaworsky, and Carol Nicolos, Reclamation; Robert Vincik, DFG; Beth Campbell, FWS; Felix E. Smith, SARA; Mike Laing, NCCFFF; Rod Hall, Water Forum; Paul Olmstead, SMUD; Ronald Pang, City of Sacramento; and Brian Ellrott, NMFS (phone).

### **Handouts**

- Daily CVP Water Supply Report (Run Date February 23, 2010); link is <http://www.usbr.gov/mp/cvo/vungvari/dayrpt.pdf>
- 90% and 50% Exceedance Outlook

### **Fishery Update**

Robert Vincik reported on the carcass survey: nothing new from last month; there have been 2,800 spawning fish (about 3,500 fish total including the hatchery fish). These numbers are basically the same as last year except there were about 15% grilse this year compared to 9% last year. Robert indicated they are seeing less late fall run fish (strays from Coleman National Fish Hatchery) this year compared to last year, which was expected. For example, this time last year they had counted 123 fish, whereas this year only 25 fish have been counted. They will complete the survey on March 1, 2010.

Bonnie Van Pelt reported the results of the Central Valley steelhead spawning survey: Between January 26-February 10, 2010, there have been 34 steelhead redds observed during the survey. A total of 50 redds since the survey began on December 29<sup>th</sup>. The data indicates the redds are concentrating in areas of Sailor Bar, the Sunrise side channel and Goethe Park.

There was a question regarding whether or not anyone was counting the number juveniles (out migrants) leaving the river. Robert Vincik commented that there are no active counts going on at this time due to funding issues and interest. However, Doug Threlhoff, USFWS, would like to get the Rotary Screw Trap surveys going again and Robert agreed to look into it.

There was a question from Brian Ellrott regarding whether or not scale samples are taken from Nimbus hatchery fish. Bonnie checked with Nimbus Hatchery personnel. She'll report to the group on this at the next meeting.

### **Operations**

Russ indicated that this year is classified as a dry year—inflows into Folsom have been 2,500 cfs for almost the entire month of February. Releases since the 18<sup>th</sup> of February have been at 1,300 cfs and are expected to remain at that level for the near future. This is very close to the minimum required release under the Flow Management Standard (FMS) of 1,295 cfs. Storage in Folsom Reservoir is at 373,000 AF, which is very close to last

year. Shasta Reservoir is in much better shape with storage at 3.2 million AF compared, to 1.6 MAF in 2009. As of February 9<sup>th</sup>, all middle and lower shutter are in place, so we are currently storing as much cold water as possible. The upper shutters cannot be put in place, until the storage is greater than 600,000 AF. Consistent with the flood control requirements, that level of storage isn't allowed until about mid-March, or later.

There are wide differences right now between the 90% and 50% forecasts, which is not unusual for this time of year; the actual numbers are actually somewhere between the two. The early predictions are based on the February 1 snow survey. The 90% forecast is similar to year 2008 end-of-May to September storage. The 50% forecast is indicative of good temperature conditions. Required Flows in March through May-- when end-of-May Folsom Reservoir storage is forecasted to be less than 700,000 AF, are either based on the Impaired Folsom Inflow Index (IFII)-based Required Flow, or the February Required Flow, whichever is less. Russ indicated that the flows going into March would approximate 1,400 cfs: 1,100 cfs based on 90% forecast, and 1,750 cfs based on the 50% forecast. The next inflow estimates will be available sometime around the 14<sup>th</sup> of March.

### **Other**

Paul Olmstead provided the upper basin precipitation update. In general, precipitation amounts have varied—only 2.8” in February, which is very low for the month. Now is usually the time when rainfall levels begin to taper off, but currently we are on track with last year's numbers; i.e., 76% of average to date, 49% of the entire water year. The snowpack is at 88% which is a reduction from the 100% we had a couple weeks ago. There is an approaching storm that should help. The storm is predicted to bring in 1-2” of rain in the valley and snow (up to 1 foot) in the mountains. This mirrors what happened last year at this time.

### **Next Meeting**

**Date:** Tuesday, 23 March 2010

**Location:** Central Valley Operations Office  
3310 El Camino Ave.  
Sacramento, CA 95821

**Room:** 302

**Time:** 1300

**Notes by:** Carol Nicolos and Bonnie Van Pelt

AGENDA  
American River Group

Date: Tuesday, February 23, 2010

Time: 1:00 PM

Location: Central Valley Operations Office  
3310 El Camino Ave.  
Sacramento, CA 95821

Room: Room 302

Update on Fish Monitoring - DFG and Reclamation

Operations Forecast - USBR

Temperature Management Plan - USBR

Status Reports - Group

Schedule Next Meeting

Adjourn

2

### Meeting Attendance Record

Date: 23 Feb

Time: \_\_\_\_\_

Place: \_\_\_\_\_

Subject of Meeting: ARG

Name	Organization	Phone Number
Bonnie VanPelt	Reclamation	bvanpelt@usbr.gov 916-989-7127
Russ Yaworsky	Reclamation	ryaworsky@usbr.gov 916-979-0268
PAUL OLMSTEAD	SMUD	palmste@smud.org 916-732-5716
Beth Campbell	FWS	elizabeth-campbell@fws.gov 209-334-2968 x 402
Rod Hall	Water Forum	rodmhall@comcast.net 916-631-7643

## Meeting Attendance Record

Date: 23 Feb 2010

Time: 1300

Place: CVO

Subject of Meeting: ARG

Name	Organization	Phone Number
CAROL NICOLAS	BOR	9897276
Brian ELLROTT	NMFS (phone)	
Felix E Smith	SARA	906-2081 tebe smith sbeglobal.net
MIKE LAING	NO CAL COUNCIL FEDERATION OF FLY FISHERS	MWLAING@AOL.COM 916-487-3283
ROLAND PANG	CITY OF SACRAMENTO	916-808-1309
ROBERT VINCIK	<del>SDR</del> CDFG	916 358-2933

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

**DAILY CVP WATER SUPPLY REPORT**

FEBRUARY 22, 2010

RUN DATE: February 23, 2010

RESERVOIR RELEASES IN CUBIC FEET/SECOND

RESERVOIR	DAM	WY 2009	WY 2010	15YR MEDIAN
TRINITY	LEWISTON	299	316	300
SACRAMENTO	KESWICK	3,262	3,350	5,295
FEATHER	OROVILLE (SWP)	950	1,350	4,500
AMERICAN	NIMBUS	773	1,272	3,780
STANISLAUS	GOODWIN	307	1,006	544
SAN JOAQUIN	FRIANT	82	0	107

STORAGE IN MAJOR RESERVOIRS IN THOUSANDS OF ACRE-FEET

RESERVOIR	CAPACITY	15YR AVG	WY 2009	WY 2010	% OF 15 YR AVG
TRINITY	2,448	1,783	1,002	1,140	64
SHASTA	4,552	3,413	1,638	3,226	95
OROVILLE (SWP)	3,538	2,295	1,117	1,327	58
FOLSOM	977	477	306	373	78
NEW MELONES	2,420	1,715	1,188	1,223	71
FED. SAN LUIS	966	830	327	714	86
MILLERTON	520	322	286	0	0
TOT. N. CVP	11,360	8,217	4,461	6,676	81

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

RESERVOIR	CURRENT WY 2010	DRIEST WY 1977	WETTEST WY 1983	15 YR AVG	% OF 15 YR AVG
TRINITY	326	53	686	471	69
SHASTA	2,377	1,099	3,929	2,753	86
FOLSOM	517	153	2,164	1,026	50
NEW MELONES	240	0	724	350	69
MILLERTON	224	96	1,071	390	57

ACCUMULATED PRECIPITATION FOR WATER YEAR TO DATE IN INCHES

RESERVOIR	CURRENT WY 2010	DRIEST WY 1977	WETTEST WY 1983	AVG (N YRS)	% OF AVG	LAST 24 HRS
TRINITY AT FISH HATCHERY	21.11	5.75	32.02	22.54 ( 48 )	94	0.00
SACRAMENTO AT SHASTA DAM	45.48	7.08	61.55	42.54 ( 53 )	107	0.00
AMERICAN AT BLUE CANYON	35.22	10.98	65.39	43.12 ( 35 )	82	0.00
STANISLAUS AT NEW MELONES	18.22	0.00	27.75	17.79 ( 32 )	102	0.32
SAN JOAQUIN AT HUNTINGTON LK	23.71	6.90	52.30	27.65 ( 35 )	86	0.00

**90%-Exceedance Outlook****End of the Month Storage/Elevation (TAF/Feet)**

		Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan
Folsom	322	364	456	532	575	456	364	326	320	301	273	264	317
	Elev.	398	411	420	426	411	398	392	391	387	382	381	390

**Monthly River Releases (cfs)**

American	1550	1386	1359	1328	2899	2281	1492	1000	1000	1200	1200	1000
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**50%-Exceedance Outlook****End of the Month Storage/Elevation (TAF/Feet)**

		Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan
Folsom	322	498	673	801	966	922	755	714	669	588	560	549	573
	Elev.	416	437	450	465	461	445	441	436	427	424	423	425

**Monthly River Releases (cfs)**

American	1550	2450	2600	2400	3158	4025	2003	2000	2500	2000	2000	2100
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## **American River Operations Group**

DRAFT Meeting Notes

Date 23 March 2010

### **Attendees**

Bonnie Van Pelt, Russ Yaworsky, Louis Moore, Dara Rodriguez and Carol Nicolos, Reclamation; Felix E. Smith, SARA; Rod Hall, Water Forum and Ronald Pang, City of Sacramento.

### **Handouts**

- Daily CVP Water Supply Report (Run Date March 23, 2010); link is <http://www.usbr.gov/mp/cvo/vungvari/dayrpt.pdf>
- 90% and 50% Exceedance Outlook as of March 1, 2010

### **Fishery Update**

According to Robert Vincik's carcass survey update (email correspondence to Bonnie Van Pelt), the adult fall-run Chinook salmon population estimate is 3,128. The draft end-of-year carcass survey report will be ready sometime in April.

Bonnie provided an update on the Central Valley Steelhead bi-weekly spawning survey (survey reach from Nimbus Dam to Watt Avenue). Since December 29, 2009, there have been 74 redds observed; redds are concentrating in areas where new spawning gravel has been placed at Sunrise, River Bend, and Sailor Bar. There will be one more survey this year at the beginning of April.

Through an email communication with Paul Olmstead, Bonnie reported on the precipitation for the Upper Basin through March 22, 2010: thus far, in March there has been 4.74" of precipitation; 58% of March average. Total precipitation to date is 36.37" which is 80% of average to date. Upper Basin Reservoir storage is at 60% capacity, which is about even with last year's numbers—historic average is 54%. Runoff into the storage reservoir basins is 45% of average. As of March 21<sup>st</sup>, the snowpack was 91% of average.

### **Operations**

Russ Yaworsky reported that current releases are at 1,100cfs (roughly equivalent to the minimum release requirements in the Flow Management Standard) and are expected to stay at this level through early April. Russ explained that Folsom Reservoir storage levels were 697,000 AF last year and as of March 23, 2010, storage in Folsom was at 524,000 AF (see Daily CVP Water Supply Report HO). This year Shasta storage is at 3.8 MAF (2.7 MAF last water year). Folsom lake inflow from October 1, 2009, through March 22, 2010, is about 15% less than during the same period of the previous year.

The 50/90% exceedance forecast is based on the March 1, 2010 runoff forecast (see Exceedance Outlook HO). The 90% forecast estimates end of March Folsom Reservoir storage at 522,000 AF and the 50% forecast estimates storage at 668,000 AF. Actual

storage levels are likely to track somewhere between the two, but right now they are definitely closer to the 90% forecast.

Russ stated that the preliminary forecast was completed March 16<sup>th</sup>/17<sup>th</sup> and that April's forecast would occur around the same time. Russ also commented that if we can't get the last pair of shutters in by the end of May it will be difficult to achieve a 68°F temperature target at Watt Avenue. Russ explained that this last pair of shutters cannot be installed until we have maintained storage in excess of 600,000 AF (the 90% exceedence forecast indicates an end-of-May storage of 588,000 AF).

There will be a two week outage in late April at Nimbus so the release water will be coming over the spillway, instead of through the power penstocks.

### **Other**

Rod Hall reported that the gravel work for Upper Sunrise is scheduled to begin in the fall (mid-September). Rod indicated that the Anadromous Fish Restoration Program (AFRP) is funding the re-watering of Sunrise side channel. They are hoping to use Sailor Bar gravel for the augmentation, but the cultural resources review is not complete. There will be 10K tons of gravel deposited, same as last year.

### **Next Meeting—Note: Change of Location**

Date:           **Thursday, 22 April 2010**

Location:      **Mid-Pacific Regional Office**  
                          **2800 Cottage Way**  
                          **Sacramento, CA 95821**

Room:           **C1003 (Cafeteria conference room)**

Time:            1:00 PM

Notes by:       Carol Nicolos and Bonnie Van Pelt

AGENDA  
American River Group

Date: Tuesday, March 23, 2010

Time: 1:00 PM

Location: Central Valley Operations Office  
3310 El Camino Ave.  
Sacramento, CA 95821

Room: Room 302

Update on Fish Monitoring - DFG and Reclamation

Operations Forecast - USBR

Temperature Management Plan - USBR

Status Reports - Group

Schedule Next Meeting

Adjourn

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

**DAILY CVP WATER SUPPLY REPORT**

MARCH 22, 2010

RUN DATE: March 23, 2010

RESERVOIR RELEASES IN CUBIC FEET/SECOND

RESERVOIR	DAM	WY 2009	WY 2010	15YR MEDIAN
TRINITY	LEWISTON	285	299	300
SACRAMENTO	KESWICK	3,252	3,259	4,814
FEATHER	OROVILLE (SWP)	800	1,350	1,750
AMERICAN	NIMBUS	1,201	1,093	3,735
STANISLAUS	GOODWIN	303	211	504
SAN JOAQUIN	FRIANT	136	804	267

STORAGE IN MAJOR RESERVOIRS IN THOUSANDS OF ACRE-FEET

RESERVOIR	CAPACITY	15YR AVG	WY 2009	WY 2010	% OF 15 YR AVG
TRINITY	2,448	1,870	1,161	1,256	67
SHASTA	4,552	3,635	2,752	3,763	104
OROVILLE (SWP)	3,538	2,465	1,853	1,555	63
FOLSOM	977	599	697	524	87
NEW MELONES	2,420	1,738	1,287	1,267	73
FED. SAN LUIS	966	893	409	864	97
MILLERTON	520	392	368	410	105
TOT. N. CVP	11,360	8,735	6,306	7,674	88

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

RESERVOIR	CURRENT WY 2010	DRIEST WY 1977	WETTEST WY 1983	15 YR AVG	% OF 15 YR AVG
TRINITY	459	71	1,136	640	72
SHASTA	3,026	1,322	6,373	3,597	84
FOLSOM	743	186	3,258	1,371	54
NEW MELONES	314	0	1,061	462	68
MILLERTON	428	106	1,485	534	80

ACCUMULATED PRECIPITATION FOR WATER YEAR TO DATE IN INCHES

RESERVOIR	CURRENT WY 2010	DRIEST WY 1977	WETTEST WY 1983	AVG (N YRS)	% OF AVG	LAST 24 HRS
TRINITY AT FISH HATCHERY	25.06	8.67	46.36	26.49 ( 48 )	95	0.20
SACRAMENTO AT SHASTA DAM	54.81	9.78	93.32	51.10 ( 53 )	107	0.02
AMERICAN AT BLUE CANYON	44.81	14.16	87.51	52.39 ( 35 )	86	0.00
STANISLAUS AT NEW MELONES	24.74	0.00	39.00	21.87 ( 32 )	113	0.00
SAN JOAQUIN AT HUNTINGTON LK	32.85	9.50	70.20	34.05 ( 35 )	96	0.00

as of 1 Mar 2010

**90%-Exceedance Outlook**

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

		Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb
Folsom	419	522	571	588	502	347	247	226	189	158	147	198	210
	Elev.	419	425	427	417	395	377	373	364	356	352	366	369

**Monthly River Releases (cfs)**

American	1200	1739	1714	2318	3231	2359	1143	1200	1200	1200	1000	2693
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**50%-Exceedance Outlook**

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

		Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb
Folsom	419	668	804	943	849	643	579	545	495	467	457	502	570
	Elev.	436	450	463	454	433	426	422	416	412	411	417	425

**Monthly River Releases (cfs)**

American	1200	2200	1750	3768	4599	2358	1750	2000	2000	2000	1750	3500
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## Meeting Attendance Record

Date: 23 Mar 2010      Time: 1300      Place: CVO Rm 302

Subject of Meeting: ARG

Name	Organization	Phone Number
Carol Nicolas	USBR	989-7276 cnicolas@usbr.gov
Bonnie Van Pelt	USBR	989-7127 brvanpelt@usbr.gov
ROLAND PANG	CITY OF SACRAMENTO	pang@cityofsacramento.org
Felix E. Smith	SARA	966-2081 felixsmith@sbcglobal.net
Rod Hall	Water Forum	rodinhall@comcast.net
Russ Yaworsky	Reclamation	ryyaworsky@usbr.gov
LOUIS MOORE	RECLAMATION	WMOORE@USBR.GOV
JARA RODRIGUEZ	U	JARA-RODRIGUEZ@FWS.GOV

## **American River Operations Group**

DRAFT Meeting Notes

Date 22 April 2010

### **Attendees**

Bonnie Van Pelt, Carol Nicolos, Josh Israel, and Russ Yaworsky (Central Valley Operations), Reclamation; Robert Vincik and Colin Purdy, DFG; Brian Ellrott, NMFS; Nick Hindman, USFWS; Paul Olmstead, SMUD; Felix E. Smith, SARA; Rod Hall and Tom Gohring, Water Forum; Chris Hammersmark, CBEC, Inc.; Mike Laing, Granite Bay Flycasters; and Dave Ford, NCCFFF

### **Handouts**

- Daily CVP Water Supply Report (Run Date April 22, 2010); link is <http://www.usbr.gov/mp/cvo/vungvari/dayrpt.pdf>
- 90% and 50% Exceedance Outlook as of April 22, 2010
- Preliminary Temperature Operation Plan Scenarios- April 22, 2010

### **Fishery Update**

According to Robert Vincik the carcass survey final report draft will be available next month for review. Robert will send the report out to the group. There will be some Jiboom Street hatchery fish releases made soon—this is a new requirement. Fish are released in-river and in net pen (in Bay area). Survival in net pens is believed to be higher—fish are at a larger size when released and food is not limited.

Bonnie provided an update on the Central Valley Steelhead bi-weekly spawning survey (survey reach from Nimbus Dam to Watt Avenue). Since December 29, 2009, there have been 79 redds observed; redds are concentrating in areas where new spawning gravel has been placed at Sunrise, River Bend, and Sailor Bar. The April 20<sup>th</sup> survey was the final survey of the season—no new redds were observed.

### **Iterative Temperature Model Presentation**

Chris Hammersmark, CBEC, Inc., provided an overview of the iterative temperature modeling approach. This modeling approach was part of the NMFS Biological Opinion issued on June 4, 2009. The tool was developed through Water Forum funding and is referred to as the Iterative Coldwater Pool Management Model (ICPMM). The ICPMM has been developed in coordination with NMFS (Brian Ellrott) and CVO (Russ Yaworsky). In December of 2009, a meeting of fishery biologists confirmed the validity of the temperature schedules used in the ICPMM to identify a temperature regime that best balances temperature protection for steelhead and fall-run Chinook salmon. There are 78 temperature schedules. The ICPMM runs on a weekly time step, while the temperature requirement in the biological opinion is a daily average at Watt Avenue. Although the model may indicate that a certain temperature can be achieved for a given week, it should be recognized that there will be day-to-day as well as diurnal variations around that weekly value. Several factors and issues of the ICPMM were discussed as follows: (1) the model is a good planning tool going into the temperature season, but it is

not a real-time operations model and thus cannot predict temperature regimes on a real-time basis due to the many factors that vary (physical) on a daily time step, as well as operationally throughout the season (e.g., inflow temperatures, inflow volume, ambient temperatures, manual operation of temperature shutters, Delta requirements, etc.); (2) the model was not designed to incorporate the destratification of Folsom Reservoir, thus it is not reliable beyond the second week of October; (3) because there is currently little confidence in the ability of the ICPMM to accurately model fall water temperatures, assurances, such as a specifying an end-of-September coldwater pool volume, could be used to ensure protection for fall-run Chinook salmon; and (4) the model uses “perfect” blending of releases among the penstocks to most efficiently utilize Folsom Reservoir storage - this blending is not operationally realistic. The model will need to constrain the blending to reflect more realistic shutter manipulations.

Russ indicated he likes to see 80,000-100,000 AF of cold water pool volume at < 60°F by the end of September going into the fall season; this means we are in good shape. Russ also indicated that he uses the temperature model as a check against the temperature profile information he receives monthly to make sure the projections are on track.

### **Operations**

Paul Olmstead, reported the following in his Upper Basin update:

- April precipitation as of April 21, 2010 is 6.0 inches, which is 122% of the April average of 4.92 inches. The precipitation for the water year to date is 45.82 inches, which is 89% of average to date (51.22 inches) and 80% of the entire water year average of 57.61 inches.
- Reservoir storage is 69% of capacity. Historical average storage is 63%. A year ago, we were at 70 % capacity.
- Runoff into the storage reservoir basins is 52% of median to date through April 20. The snowpack is 101% of average at selected snow sensors.

Russ Yaworsky reported that current releases are at 1,750 cfs (Flow Management Standard prescribed flow). From now and into June, relative increases in releases and snow melt will all factor into any Reservoir fill management decisions. Russ indicated that releases will likely range between 1,750 and 4,000 cfs this spring—we may actually fill now. Russ explained that Folsom Reservoir storage levels are 724,000 AF (104% of the 15-year average and that unlike last year Shasta storage is higher at approximately 4.3 million acre feet (MAF) versus 3.0 MAF last year (see Daily CVP Water Supply Report HO).

The 90% exceedance forecast is based on the April 1, 2010 runoff forecast (see Exceedance Outlook HO). The 90% forecast estimates end of April Folsom Reservoir storage at 698,000 AF, and the 50% forecast estimates storage at 756,000 AF (roughly a full pool at end of May). Actual storage levels are tracking closer to the 50% forecast, which makes sense given the current inflow conditions.

### **Temperature Management**

By the 14<sup>th</sup> of April, Russ reported we were able to lower the all sets of shutters in place (i.e., storage exceeded 600,000 AF). The profile used to run the temperature management scenarios is from April 15<sup>th</sup>. Based on the 90% exceedence outlook (See Preliminary Temperature Operation Plan Scenarios- April 22, 2010 HO) end-of May storage would approximate 820 TAF. Cold Water Pool (CWP) volume would range between 40-135 TAF by end-of-September with a target temperature ranging between 65° and 68°F. Russ stepped through the various scenarios and indicated that Scenario 1, at a target temperature of 68°F, could be achieved throughout the season, shutters are reserved for fall-run, and results in the largest end-of-September CWP volume (137 TAF < 60°F). Scenario 2, at a target temperature of 65°F would result in the target being exceeded and no shutters would be reserved for fall-run Chinook salmon spawning (44 TAF CWP volume). Scenario 3, with a target temperature of 67°F, fell in between the other two reserving some cold water for fall-run, achieving the target temperature throughout the season, and resulting in an end-of September CWP volume of 81 TAF.

**Next Meeting—Note: Change of Location**

Date:            **Thursday, 27 May 2010**

Location:      **Mid-Pacific Regional Office  
2800 Cottage Way  
Sacramento, CA 95821**

Room:           **C1003 (Cafeteria conference room)**

Time:            1:00 PM

Notes by:      Carol Nicolos and Bonnie Van Pelt

AGENDA  
American River Group

Date: Thursday, April 22, 2010

Time: 1:00 PM

Location: **Mid-Pacific Regional Office  
2800 Cottage Way  
Sacramento, CA 95821 (see map)**

Room: **C1003 (Cafeteria conference room)**

Iterative Temperature Modeling Approach Presentation - Water Forum

Operations Forecast - USBR

Temperature Management Plan - USBR

Update on Fish Monitoring - DFG and Reclamation

Status Reports - Group

Schedule Next Meeting

Adjourn

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

**DAILY CVP WATER SUPPLY REPORT**

APRIL 21, 2010

RUN DATE: April 22, 2010

RESERVOIR RELEASES IN CUBIC FEET/SECOND

RESERVOIR	DAM	WY 2009	WY 2010	15YR MEDIAN
TRINITY	LEWISTON	291	299	300
SACRAMENTO	KESWICK	6,512	4,627	6,512
FEATHER	OROVILLE (SWP)	3,000	800	3,000
AMERICAN	NIMBUS	3,220	1,743	3,776
STANISLAUS	GOODWIN	1,104	1,004	1,480
SAN JOAQUIN	FRIANT	152	1,103	211

STORAGE IN MAJOR RESERVOIRS IN THOUSANDS OF ACRE-FEET

RESERVOIR	CAPACITY	15YR AVG	WY 2009	WY 2010	% OF 15 YR AVG
TRINITY	2,448	1,987	1,249	1,419	71
SHASTA	4,552	3,953	3,006	4,282	108
OROVILLE (SWP)	3,538	2,709	2,088	1,929	71
FOLSOM	977	695	779	724	104
NEW MELONES	2,420	1,751	1,275	1,257	72
FED. SAN LUIS	966	869	401	866	100
MILLERTON	520	416	437	385	93
TOT. N. CVP	11,360	9,255	6,710	8,548	92

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

RESERVOIR	CURRENT WY 2010	DRIEST WY 1977	WETTEST WY 1983	15 YR AVG	% OF 15 YR AVG
TRINITY	641	103	1,390	847	76
SHASTA	3,703	1,537	7,780	4,314	86
FOLSOM	1,026	218	3,949	1,740	59
NEW MELONES	403	0	1,247	595	68
MILLERTON	601	116	1,836	717	84

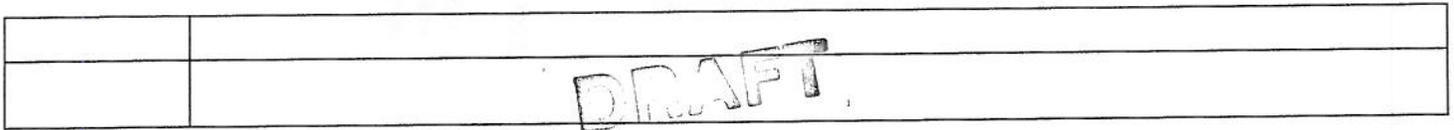
ACCUMULATED PRECIPITATION FOR WATER YEAR TO DATE IN INCHES

RESERVOIR	CURRENT WY 2010	DRIEST WY 1977	WETTEST WY 1983	AVG (N YRS)	% OF AVG	LAST 24 HRS
TRINITY AT FISH HATCHERY	32.16	9.27	50.99	29.14 ( 48 )	110	0.01
SACRAMENTO AT SHASTA DAM	62.99	11.04	104.29	56.87 ( 53 )	111	0.50
AMERICAN AT BLUE CANYON	58.83	15.64	96.22	58.89 ( 35 )	100	0.56
STANISLAUS AT NEW MELONES	29.83	0.00	42.10	24.65 ( 32 )	121	0.06
SAN JOAQUIN AT HUNTINGTON LK	40.29	11.50	75.30	38.67 ( 35 )	104	0.80

**Storages**

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

		Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	
Trinity	TAF	1303	1461	1447	1402	1288	1190	1115	1100	1085	1096	1131	1211	1324
	Elev.		2300	2299	2295	2285	2275	2268	2266	2264	2266	2269	2277	2288
Whiskeytown	TAF	214	238	238	238	238	238	237	206	206	206	206	206	206
	Elev.		1209	1209	1209	1209	1209	1209	1199	1199	1199	1199	1199	1199
Shasta	TAF	3869	4108	4037	3618	3067	2685	2494	2330	2320	2450	2645	2997	3437
	Elev.		1052	1049	1033	1011	993	984	976	975	982	991	1008	1026
Folsom	TAF	562	698	786	726	573	494	452	380	297	251	271	347	495
	Elev.		439	448	442	425	416	410	400	387	378	382	395	416
New Melones	TAF	1267	1232	1199	1130	1029	919	841	818	829	843	856	881	912
	Elev.		972	968	960	946	931	919	915	917	919	922	925	930
San Luis	TAF	881	727	484	282	130	41	170	292	482	704	794	815	777
	Elev.		504	481	442	400	353	358	375	406	441	461	468	472
<b>Total</b>			8464	8190	7396	6324	5566	5308	5126	5220	5550	5902	6456	7151



**Monthly River Releases (TAF/cfs)**

		Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Trinity	TAF	32	258	126	68	28	27	23	18	18	18	17	18
	cfs	540	4,189	2,120	1,102	450	450	373	300	300	300	300	300
Clear Creek	TAF	12	12	9	7	5	9	12	12	12	12	11	12
	cfs	200	200	180	120	85	150	200	200	200	200	200	200
Sacramento	TAF	268	461	684	784	599	387	400	268	200	200	180	200
	cfs	4500	7500	11500	12780	9750	6500	6500	4500	3250	3250	3250	3250
American	TAF	89	108	159	220	145	104	108	124	108	92	86	92
	cfs	1500	1750	2678	3574	2365	1750	1750	2090	1750	1500	1550	1500
Stanislaus	TAF	60	49	36	21	22	14	39	12	13	13	12	16
	cfs	1000	798	600	346	366	240	635	210	207	219	221	268

**Trinity Diversions (TAF)**

	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Carr PP	21	6	37	73	72	49	1	17	11	1	7	0
Spring Crk. PP	0	0	30	65	65	40	22	11	11	8	25	15

**Delta Summary (TAF)**

	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Tracy	48	49	180	260	260	256	255	252	263	134	100	130
USBR Banks	0	0	0	13	13	13	0	0	0	0	0	0
Contra Costa	6.4	6.4	6.4	4.9	5.6	6.4	7	8.4	9.2	9.2	7	7
<b>Total USBR</b>	<b>54</b>	<b>56</b>	<b>186</b>	<b>278</b>	<b>279</b>	<b>275</b>	<b>262</b>	<b>260</b>	<b>272</b>	<b>143</b>	<b>107</b>	<b>137</b>
<b>Total Export</b>	<b>96</b>	<b>99</b>	<b>259</b>	<b>485</b>	<b>519</b>	<b>469</b>	<b>537</b>	<b>463</b>	<b>534</b>	<b>277</b>	<b>207</b>	<b>267</b>
COA Balance	0	0	0	0	1	1	1	0	0	0	0	0
Old/Middle River Std.												
Old/Middle R. calc.	-91	-163	-2,921	-6,223	-6,650	-6,240	-6,511	-6,024	-6,727	-3,500	-2,794	-3,023
Computed DOI	12641	8475	7396	4994	3497	3043	4620	4505	5580	11940	13003	14706
Excess Outflow	1530	130	0	0	0	34	618	0	1074	5938	1603	3302
% Export/Inflow	9%	12%	27%	47%	58%	62%	65%	64%	65%	28%	22%	21%
% Export/Inflow std.	35%	35%	35%	65%	65%	65%	65%	65%	65%	65%	45%	35%

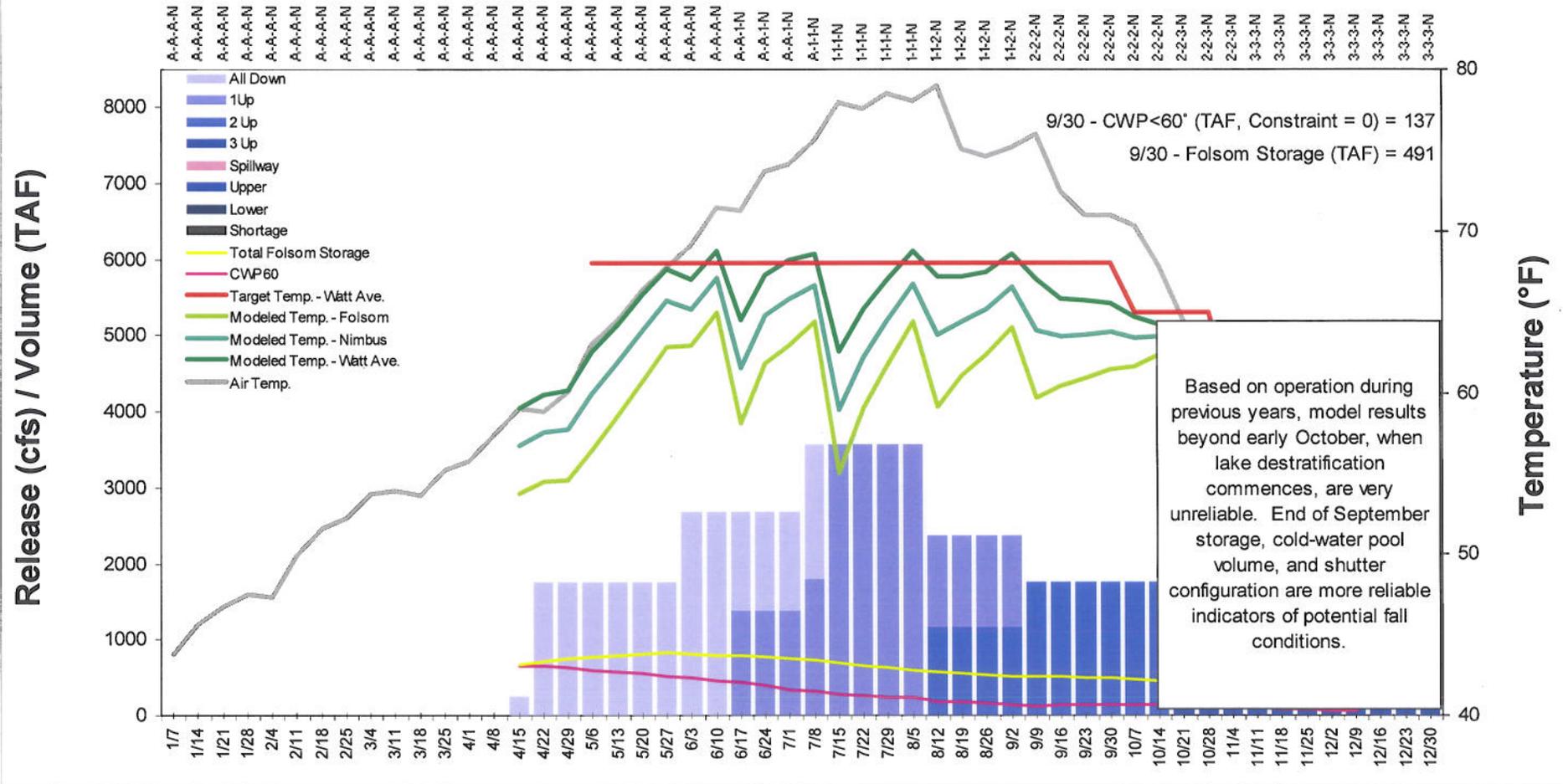
**Hydrology**

	Clair Engle	Shasta	Folsom	New Melones
Water Year Inflow (TAF)	1156	4,882	1,655	781
Year to Date + Forecasted % of mean	96%	88%	61%	74%

90%

# April 2010 90% -Exceedance

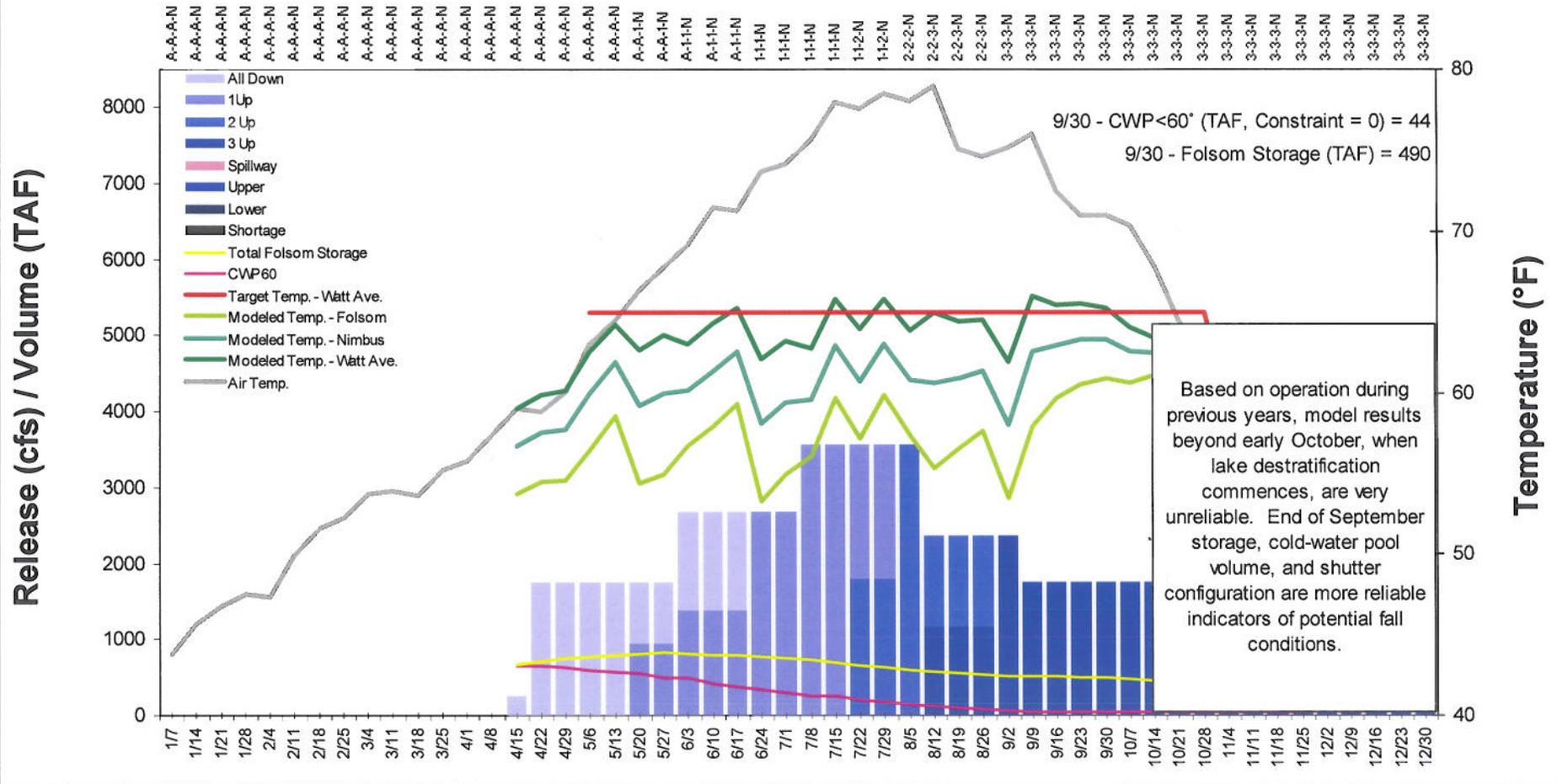
68°F Target



Scenario 1

# April 2010 90% -Exceedance

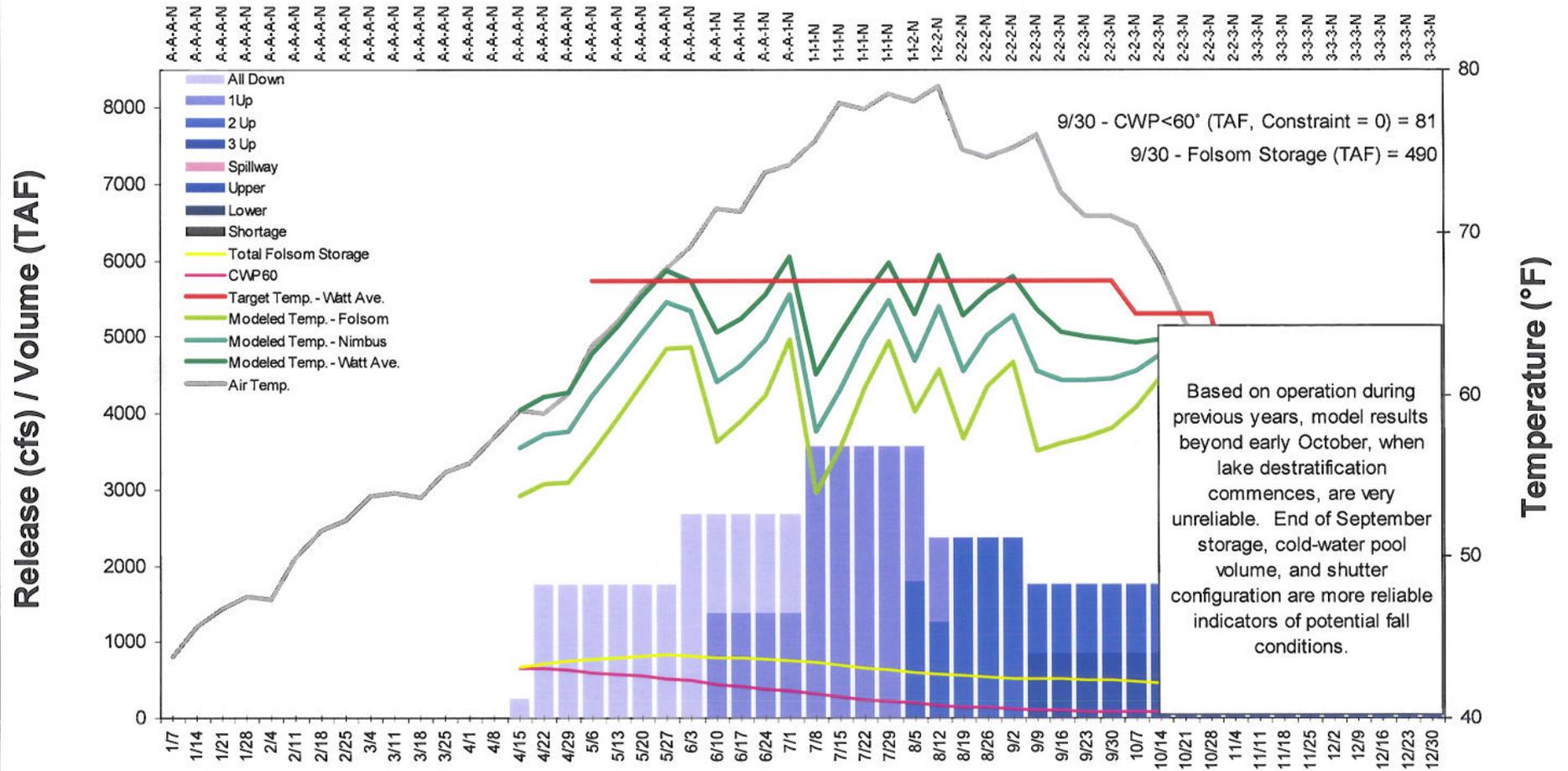
65°F Target



Scenario 2

# April 2010 90% -Exceedance

67°F Target



Scenario 3

**Preliminary Temperature Operation Plan Scenarios - April 22, 2010**

<b>Historical Conditions (2001-2009)</b>						
<b>Year</b>	<b>End of May</b>		<b>All Upper Shutters Lowered by</b>	<b>End of September</b>		<b>Watt Avenue Target (°F)</b>
	<b>Storage (TAF)</b>	<b>CWP Volume &lt; 58°F (TAF)</b>		<b>Storage (TAF)</b>	<b>CWP Volume &lt; 60°F (TAF)</b>	
2001	696	275	30 Mar	368	30	65-71
2002	822	455	04 Mar	510	50	65-69
2003	962	640	02 Apr	658	135	65-67
2004	635	300	05 Mar	376	30	69
2005	959	705	15 Mar	652	140	65
2006	928	670	29 Mar	639	125	65
2007	787	355	21 Mar	323	30	68
2008	617	250	None Lowered	270	25	69-70
2009	933	550	12Mar	412	60	67
<b>2010 90%-Exceedence Outlook</b>						
<b>20 2009 10</b>	820	470	14Apr	490	40-135	67-68?

**Temperature Operation Scenarios**

<b>Scenario</b>	<b>Target</b>	<b>Scenario Results<sup>1</sup></b>
<b>1</b>	<b>68°F @ Watt Ave</b>	Target is met throughout the temperature operation season; Lowest set of temperature shutters are reserved for fall-run; Operation results in the largest end-of-September cold-water pool volume.
<b>2</b>	<b>65°F @ Watt Ave</b>	Target is <b>NOT</b> met throughout the temperature operation season; Mean weekly Watt Avenue temperatures can be expected to exceed 66°F by early September; All sets of temperature shutters are raised before the end of September, none reserved for fall-run; Operation results in an end-of-September cold-water pool volume that is almost 70% less than Scenario 1.
<b>3</b>	<b>67°F @ Watt Ave</b>	Target is met throughout the temperature operation season; Lowest set of temperature shutters are not reserved for fall-run; Operation results in an end-of-September cold-water pool volume that is 40% less than Scenario 1.

<sup>1</sup> The temperature operation scenarios are based on the April 2010 90%-exceedence outlook, and 2001-2009 average weekly inflow temperature.

## Meeting Attendance Record

Date: 22 Apr 2010

Time: 1300

Place: Region

Subject of Meeting: ARG

Name	Organization	Phone Number
Carol Nicolos	USBR	cnicolos@usbr.gov 9897276
ROBERT VINCIK	CDFG	916 358-2933 rvincik@dfg.ca.gov
Tom Gohring	Water Forum	<del>777</del> 805-1998
MIKE LAING	FED OF FLY FISHERS GRANITE BAY FLYCASTERS	916-487-3283 MWLAING@AOL.COM
Dave Ford	Nor Cal Council Federation of Fly Fisher	96 9673847 davef17765@aol.
Colin Purdy	CDFG	(916)358 2832 cpurdy@dfg.ca.gov
BRIAN ELLROTT	NMFS	930-3612 brian.ellrott@nwr.gov
Russ Yaworsky	Reclamation	979-0268 rpyaworsky@usbr.gov
Rob Hall	Water Forum	916-631-7643 rodmhall@comcast.net
Felix Smith	SARA	986-2081 felixsmith@sbcglobal.net

## Meeting Attendance Record

Date: 22 Apr 2010Time: 1300Place: Region

Subject of Meeting: \_\_\_\_\_

Name	Organization	Phone Number
Nick Hindman	FWS	(916) 414-6543
Bonnie Van Pelt	BOR	916 989-7127
Paul Olmshead	SMUD	916-732-5716
Josh Israel	BOR <small>Please add to email list ja.israel@usbr.gov</small>	916 978 5030
CHRIS HAMMERSMARK	cbec, inc.	530 574-6079

## **American River Operations Group**

DRAFT Meeting Notes

Date 27 May 2010

### **Attendees**

Bonnie Van Pelt (Central CA Area Office), Claire Hsu (MP Regional Office) and Russ Yaworsky (Central Valley Operations), Reclamation; Robert Vincik and Colin Purdy, DFG; Brian Ellrott, NMFS; Nick Hindman, USFWS; Paul Olmstead, SMUD; Rod Hall, Water Forum; Chris Hammersmark, CBEC, Inc.; Dave Ford, MCCFFF; and Roland Pang, City of Sacramento.

### **Handouts**

- Daily CVP Water Supply Report (Run Date May 27, 2010); link is <http://www.usbr.gov/mp/cvo/vungvari/dayrpt.pdf>
- 90% and 50% Exceedance Outlook as of May 1, 2010
- Temperature Summary for Folsom Lake and Lower American River (includes lake profile)- May 2010
- Preliminary Temperature Operation Plan Scenarios- May 27, 2010

### **Fishery Update**

Robert Vincik completed the draft carcass survey final report—electronic copies were distributed through the list serv prior to the meeting. Robert reported on a point of interest from the rotary screw trap survey: a delta smelt was caught at RM 88.5 (above town of Knights Landing). Delta smelt have not been seen any further up river than RM 50 (near Rio Vista). Colin Purdy announced the Lower Yuba River Accord symposium, which is scheduled for June 29<sup>th</sup> at 8:30 AM (MP Regional Office cafeteria conference room). Brian explained that the draft Annual Temperature Management Plan had been submitted by Reclamation two weeks ago in compliance with the Reasonable and Prudent Alternatives (RPAs). NMFS asked that the May forecast be included along with iterative temperature modeling runs. The iterative temperature modeling will be compared to the single temperature runs that Russ has traditionally done.

### **Operations**

Paul Olmstead, reported the following in his Upper Basin update:

- April precipitation as of May 24, 2010 is 4.2 inches, which is 173% of the May average of 2.43 inches. The precipitation for the water year to date is 53.42 inches, which is 97% of average to date (51.83 inches) and 93% of the entire water year average of 57.61 inches.
- Reservoir storage is 64% of capacity. Historical average storage is 81%. A year ago, we were at 97% capacity.
- Runoff into the storage reservoir basins is 71% of median to date through May 23. The snowpack is 145% of average at selected snow sensors.

Russ Yaworsky indicated that current releases out of Nimbus are at approximately 5,000 cfs. This pattern of flow releases will continue through Memorial Day and Russ will reassess next Tuesday. Russ explained that Folsom Reservoir storage levels are at approximately 887,000 AF (110% of the 15-year average) and that unlike last year Shasta storage is higher at approximately 4.5 million acre feet (MAF)—that’s 111% of the 15-year average (see Daily CVP Water Supply Report HO). The inflow due to snow melt will require some increase in releases over the next month or so (Folsom is currently at 91% of capacity). These release changes will need to be coordinated with the safety of dams spillway project which is currently working in the spillway.

The 90% exceedance forecast is based on the May 1, 2010 runoff forecast (see Exceedance Outlook HO). The 90% forecast estimates end of May (EOM) Folsom Reservoir storage at approximately 894,000 AF, and the 50% forecast estimates EOM storage at 968,000 AF. Russ didn’t use the 90 or 50% exceedance forecasts for the temperature runs, but chose a modified 50% exceedance: EOM storage of 940 TAF and end-of-September storage of approximately 530 TAF (see the Preliminary Temperature Operation Plan Scenarios HO).

**Temperature Management**

Russ reported a monthly average May temperature at Watt Avenue of 55°F. All upper shutters were lowered as of April 14, 2010, which allows for the release of the warmest water possible. The cold water pool (CWP) is holding steady at this time. Four scenarios were run to look at the possible ways to meet the temperature target based on 2001-2009 inflow temperatures. Russ used a modified 50% exceedance forecast for Scenarios 1 and 2 (i.e., M-50% forecast) and were based on the traditional single model runs. Scenarios 3 and 4 utilized the Automated Temperature Section Procedure (ATSP)—individual schedule #'s associated with the model runs are indicated in parentheses in the table below. Scenario 4 incorporated a 1°F buffer to account for daily and weekly average temperatures that may exceed the 65°F target at Watt Avenue (i.e., M-50% + buffer).

	Maximum Temperature Target (°F) (schedule #)	Shutters reserved for Fall-Run (Y/N)	End-of-Sept. CWP vol. (TAF)	EOS Folsom Storage (TAF)	Forecast (type) <sub>1</sub>
Scenario 1	66	Y	108	531	M-50%
Scenario 2	65	N	63	531	M-50%
Scenario 3	65 (#14)	N	85	531	M-50%
Scenario 4	65 (#20)	N	71	531	M-50% (+ buffer)

<sup>1</sup> modified 50% exceedance = M-50  
 1°F buffer is factored into the model = (+ buffer)

The group discussed the 1°F temperature buffer and agreed that this was a reasonable implementation of ATSP. Brian Ellrott indicated that he would need to discuss the results of the temperature model runs with Garwin Yip as he is in charge of RPA activities that this has bearing on.

**Next Meeting**

Date: **Tuesday, 22 June 2010**

Location: **Central Valley Operations Office  
3310 El Camino Ave.  
Sacramento, CA 95821**

Room: 302

Time: 1:00 PM

Notes by: Bonnie Van Pelt

## Meeting Attendance Record

Date: 5/27/10 Time: 1:00 PM Place: MPRO

Subject of Meeting: ARG

Name	Organization	Phone Number
Bonnie Van Belt	USBR	tbewanbelts@usbr.gov 916-989-7127
ROBERT VINCIK	DFG	rvincik@dfg.ca.gov 916-358-2933
Colin Purdy	DFG	cpurdy@dfg.ca.gov 916 358-2832
Paul Olmstead	SMUD	polmste@smud.org 916-732-5716
CHRIS HAMMERSMARK	CBEC, INC	530 574-6079 C.HAMMERSMARK@CBECOENG.COM
BRIAN ELLROTT	NMFS	916 930 3612 brian.elliott@noaa.gov
Dave Ford	NCC FFF	davef17985@aol.com
Rod Hall	Water Forum	rodnhall@comcast.net
Nick Hindman	FWS	Nick-hindman@FWS.gov
ROLAND PANG	CITY OF SACRAMENTO	rpang@cityofsacramento.org
claire Hsu	USBR	CHsu@usbr.gov

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

**DAILY CVP WATER SUPPLY REPORT**

MAY 26, 2010

RUN DATE: May 27, 2010

RESERVOIR RELEASES IN CUBIC FEET/SECOND

RESERVOIR	DAM	WY 2009	WY 2010	15 YR MEDIAN
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AMERICAN	NIMBUS	3,437	4,810	3,437
STANISLAUS	GOODWIN	707	209	882
SAN JOAQUIN	FRIANT	209	0	290

STORAGE IN MAJOR RESERVOIRS IN THOUSANDS OF ACRE-FEET

RESERVOIR	CAPACITY	15YR AVG	WY 2009	WY 2010	% OF 15 YR AVG
TRINITY	2,448	2,064	1,291	1,513	73
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OROVILLE (SWP)	3,538	2,946	2,280	2,451	83
FOLSOM	977	804	942	887	110
NEW MELONES	2,420	1,756	1,333	1,284	73
FED. SAN LUIS	966	680	240	764	112
MILLERTON	520	427	510	0	0
TOT. N. CVP	11,360	9,355	6,961	8,954	96

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

RESERVOIR	CURRENT WY 2010	DRIEST WY 1977	WETTEST WY 1983	15 YR AVG	% OF 15 YR AVG
TRINITY	976	156	1,881	1,169	84
SHASTA	4,410	1,782	9,028	5,038	88
FOLSOM	1,494	264	4,851	2,200	68
NEW MELONES	563	0	1,575	791	71
MILLERTON	862	127	2,349	1,041	83

ACCUMULATED PRECIPITATION FOR WATER YEAR TO DATE IN INCHES

RESERVOIR	CURRENT WY 2010	DRIEST WY 1977	WETTEST WY 1983	AVG (N YRS)	% OF AVG	LAST 24 HRS
TRINITY AT FISH HATCHERY	33.33	12.52	54.59	30.77 ( 48 )	108	0.30
SACRAMENTO AT SHASTA DAM	68.50	17.02	112.07	60.11 ( 53 )	114	0.73
AMERICAN AT BLUE CANYON	63.64	15.64	103.28	62.91 ( 35 )	101	0.00
STANISLAUS AT NEW MELONES	32.22	0.00	45.33	26.19 ( 32 )	123	0.24
SAN JOAQUIN AT HUNTINGTON LK	41.68	16.30	80.80	41.23 ( 35 )	101	0.00

### 90%-Exceedance Outlook

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

		May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr
Folsom	823	894	834	635	546	492	419	354	308	327	403	552	688
	Elev.	458	453	432	422	415	406	396	389	392	403	552	688

#### Monthly River Releases (cfs)

American		4500	3929	4692	2927	2219	1750	1767	1750	1500	1550	1500	2448
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### 50%-Exceedance Outlook

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

		May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr
Folsom	823	968	931	744	657	572	522	494	483	513	609	674	802
	Elev.	465	462	444	435	425	419	416	414	418	429	437	450

#### Monthly River Releases (cfs)

American		4500	4615	4683	2996	2897	2000	2000	2000	2000	3000	4000	5000
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May 27, 2010

Summary for Folsom Lake and Lower American River - May 2010

Day	Mean Daily Water Temperature (° F)							Storage (TAF)	Release (cfs)	Sacramento Mean Daily Air Temperature (° F)		
	NFA	ARP	AFD	Penstock Units 1-3			AHZ	AWP	AWB		Folsom	Nimbus
1	49.5		52.4	A(0)	A(57)	A(43)	54.5	55.6	56.8	829.0	3,369	64
2	51.8		52.9	A(46)	A(0)	A(54)	54.7	55.7	56.8	834.0	3,413	68
3	53.2		52.5	A(26)	A(32)	A(42)	54.4	55.8	57.1	840.4	3,411	69
4	53.9		52.5	A(0)	A(54)	A(46)	55.3	56.0	57.1	847.0	3,422	67
5	53.6		52.6	A(51)	A(0)	A(49)	54.5	55.4	56.6	853.8	3,857	63
6	51.8		52.7	A(34)	A(29)	A(37)	54.0	54.7	55.6	857.0	4,863	65
7	51.7		52.5	A(28)	A(36)	A(36)	54.0	54.7	55.4	859.6	4,912	63
8	52.3		52.3	A(36)	A(39)	A(25)	53.8	54.8	55.6	861.4	4,675	63
9	52.5		52.3	A(25)	A(36)	A(39)	53.3	53.9	54.4	862.4	4,913	59
10	50.9		51.8	A(37)	A(22)	A(41)	52.7	53.1	53.4	865.7	4,898	54
11	49.8		53.2	A(28)	A(36)	A(36)	52.9	53.5	54.1	867.2	4,953	56
12	50.5		52.7	A(45)	A(31)	A(24)	54.2	55.2	55.9	868.6	4,975	66
13	52.5		52.5	A(46)	A(4)	A(50)	54.2	55.3	56.2	869.9	5,039	68
14	54.6		52.4	A(22)	A(39)	A(39)	54.0	55.2	56.2	868.9	4,704	68
15	55.6		52.5	A(20)	A(40)	A(40)	54.0	55.0	56.0	870.2	4,897	71
16	55.5		52.4	A(19)	A(41)	A(40)	53.9	54.8	55.6	872.5	4,894	65
17	54.3		52.6	A(25)	A(39)	A(36)	53.4	54.0	54.4	875.3	5,045	60
18	53.1		52.7	A(31)	A(37)	A(32)	53.7	54.5	55.2	878.0	4,919	66
19	52.6		52.5	A(34)	A(24)	A(42)	54.1	54.7	55.3	881.5	4,908	62
20	53.0		52.9	A(29)	A(34)	A(37)	53.9	54.7	55.4	884.7	4,868	62
21	52.9		52.3	A(33)	A(31)	A(36)	54.1	54.7	55.3	887.1	4,807	60
22	52.0		53.0	A(23)	A(37)	A(40)	53.5	54.1	54.7	888.2	4,859	56
23	51.6		53.3	A(22)	A(39)	A(39)	54.3	54.8	55.3	888.0	4,999	61
24	51.5		52.8	A(39)	A(37)	A(24)	54.2	54.7	55.2	887.2	4,917	62
25	51.4		53.4	A(49)	A(0)	A(51)	53.8	54.1	54.5	887.0	4,843	59
26	51.6		52.9	A(50)	A(0)	A(50)	54.4	55.1	55.7	887.5	4,810	62
27												
28												
29												
30												
31												
<b>Avg</b>	52.4		52.6				54.0	54.8	55.5		4,622	63
<b>Tot af</b>											238,352	

! Incomplete or estimated

# Station out of service

\* See notes on next page

N Data not recorded or collected

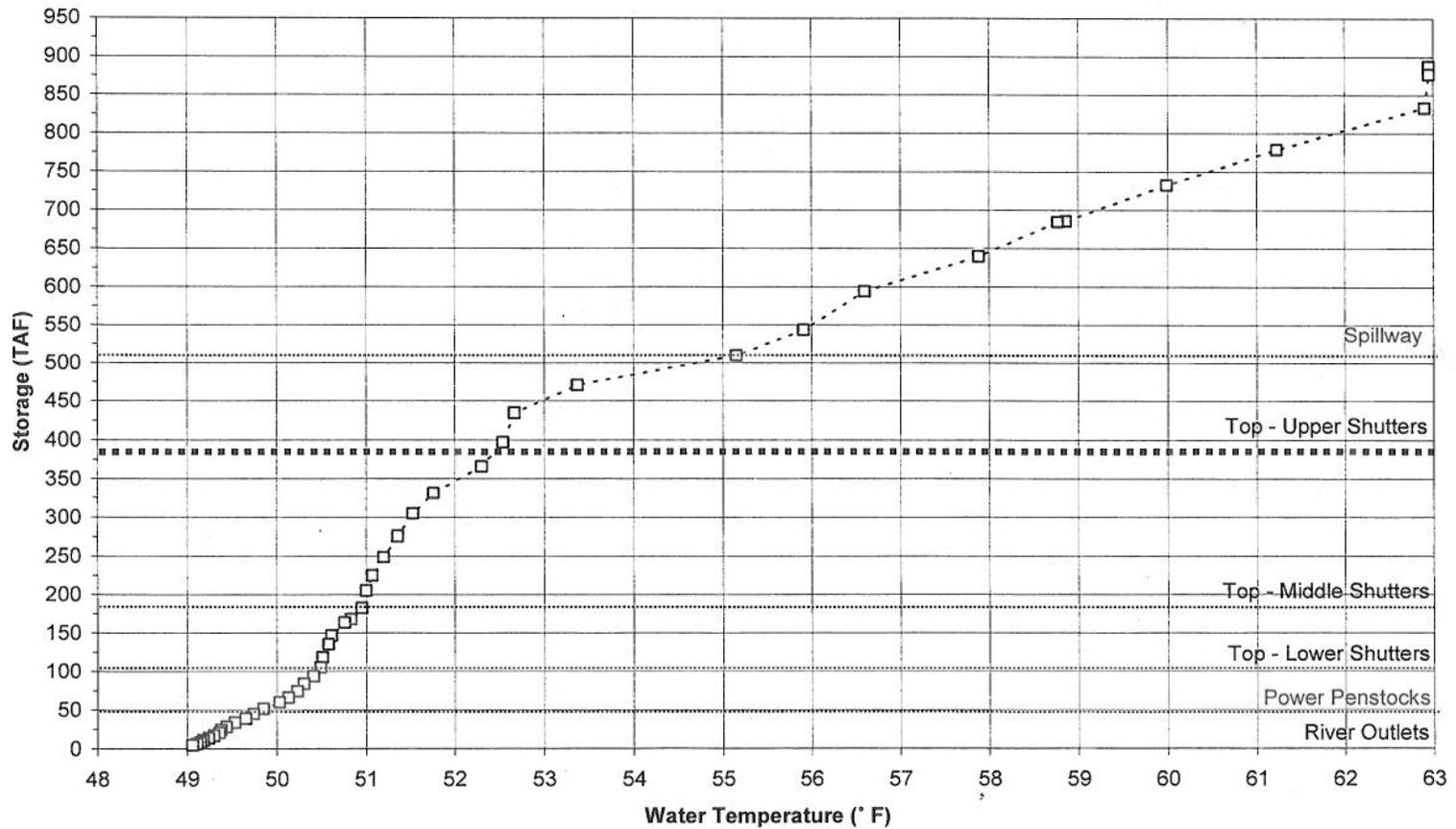
Shutter Position (U-Upper raised; M-Middle raised; L-Lower raised; A-All lowered; O-Unit Offline)

Penstock Unit Blending (value in parentheses represents approximate % total daily load)

**CDEC Station ID:**

- NFA - North Fork American River at Auburn Dam
- ARP - South Fork American River near Pilot Hill
- AFD - American River below Folsom Dam
- AHZ - American River at Hazel Avenue Bridge, below Nimbus Dam
- AWP - American River at William Pond Park
- AWB - American River below Watt Avenue Bridge

**Folsom Lake Temperature Profile  
May 21, 2010**



**Preliminary Temperature Operation Plan Scenarios - May 27, 2010**

<b>Historical Conditions (2001-2009)</b>						
<b>Year</b>	<b>End of May</b>		<b>All Upper Shutters Lowered by</b>	<b>End of September</b>		<b>Watt Avenue Target (°F)</b>
	<b>Storage (TAF)</b>	<b>CWP Volume &lt; 58°F (TAF)</b>		<b>Storage (TAF)</b>	<b>CWP Volume &lt; 60°F (TAF)</b>	
2001	696	275	30 Mar	368	30	65-71
2002	822	455	04 Mar	510	50	65-69
2003	962	640	02 Apr	658	135	65-67
2004	635	300	05 Mar	376	30	69
2005	959	705	15 Mar	652	140	65
2006	928	670	29 Mar	639	125	65
2007	787	355	21 Mar	323	30	68
2008	617	250	None Lowered	270	25	69-70
2009	933	550	12Mar	412	60	67
<b>2010 "Modified" 50%-Exceedence Outlook</b>						
2010	940 (June)	610	14Apr	530	60-110	65-66?

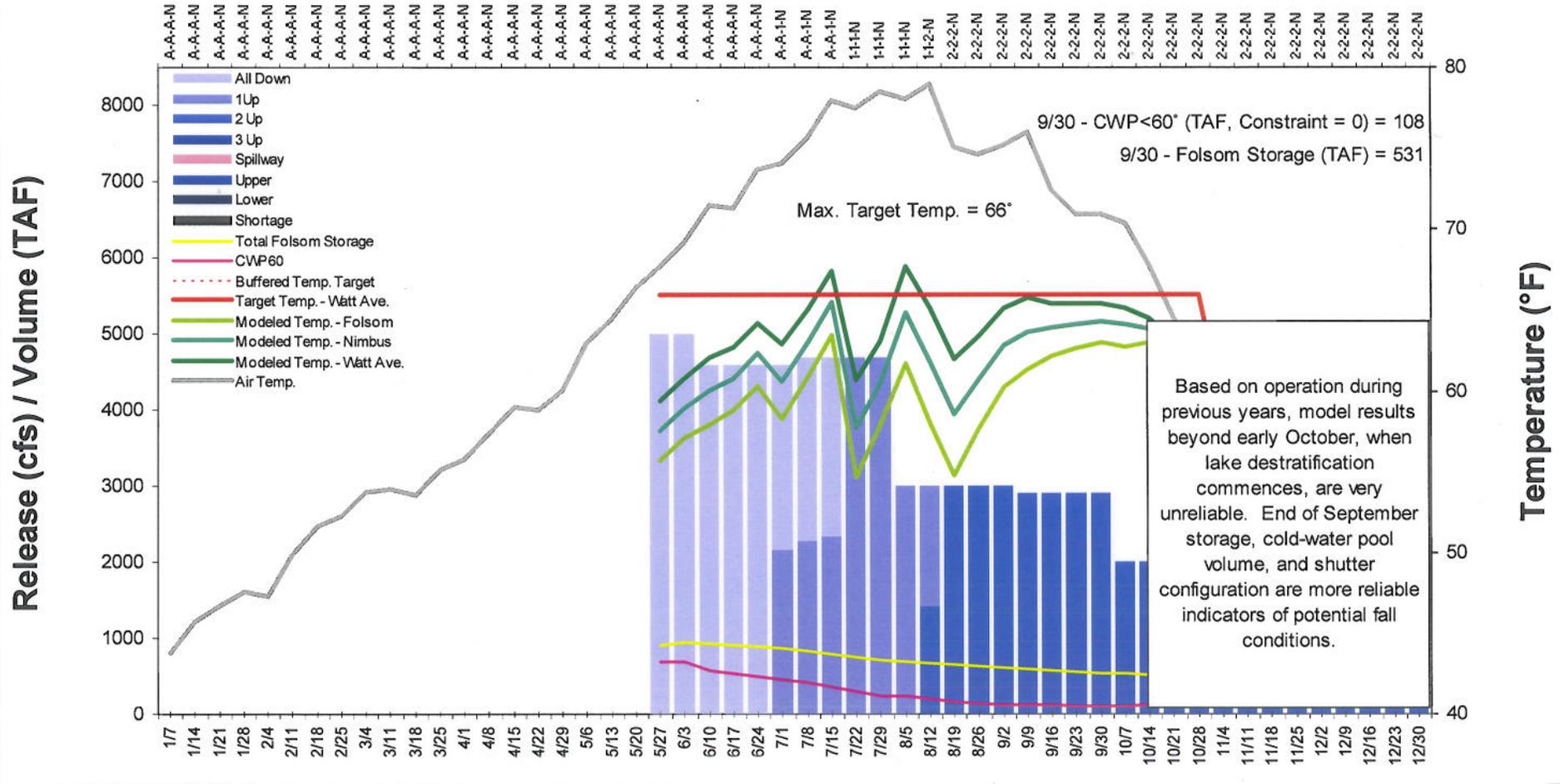
**Temperature Operation Scenarios**

<b>Scenarios</b>	<b>Target</b>	<b>Scenario Results<sup>1</sup></b>
<b>1</b>	<b>66°F @ Watt Ave</b>	Target is met throughout the temperature operation season; Lowest set of temperature shutters are reserved for fall-run.
<b>2</b>	<b>65°F @ Watt Ave</b>	Target is met throughout the temperature operation season; Lowest set of temperature shutters are NOT reserved for fall-run.; Operation results in an end-of-September cold-water pool volume that is about 70% less than Scenario 1.
<b>3-4</b>	<b>Iterative Model (iCPMM) Results</b>	Temperature analysis utilizing the Iterative version of the CPMM.

<sup>1</sup> The temperature operation scenarios are based on a May 2010 "Modified" 50%-exceedence outlook, and 2001-2009 average weekly inflow temperature.

# May 2010 "Modified" 50%-Exceedance Outlook

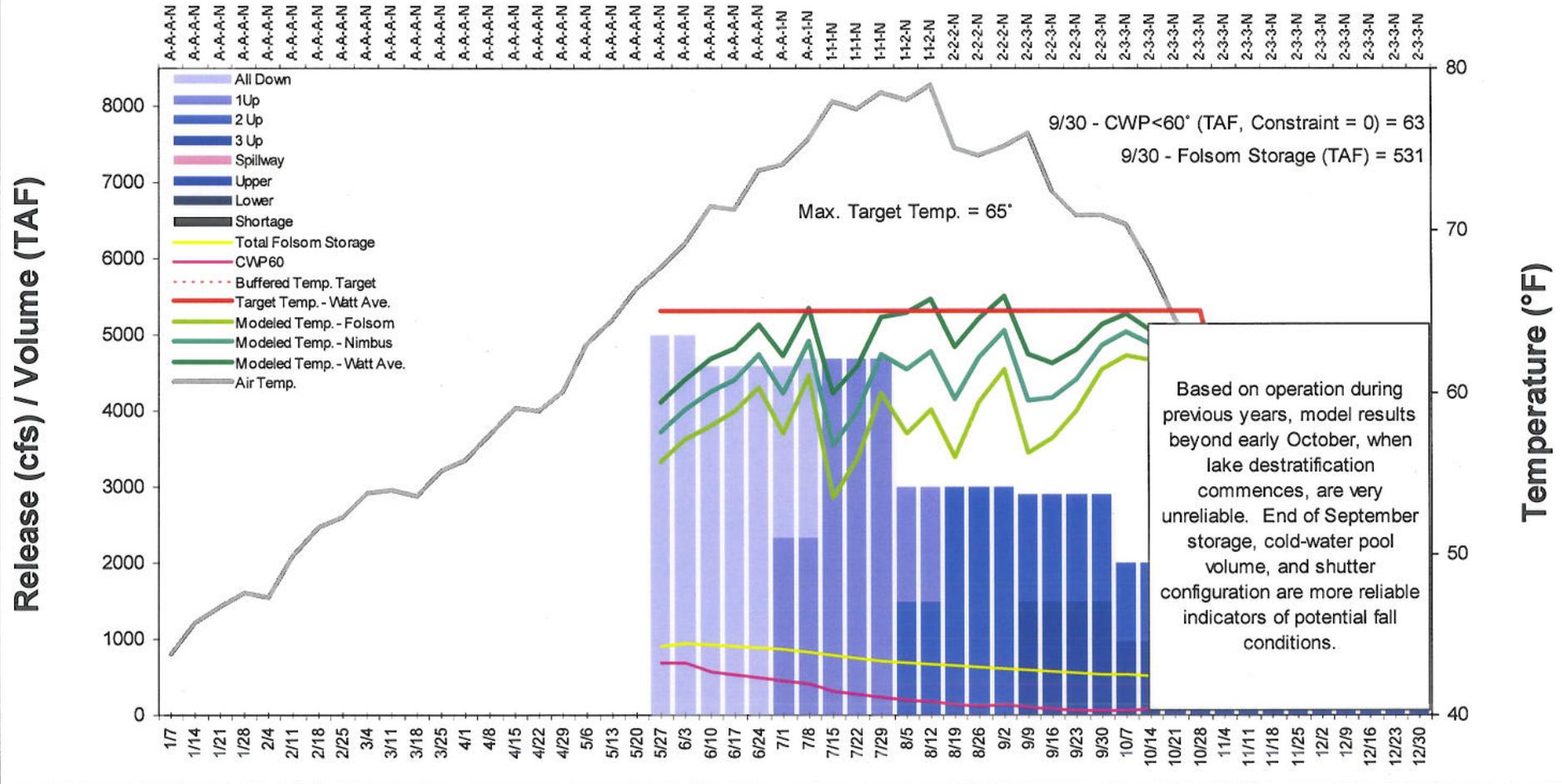
Watt Avenue Target - 66°F



Scenario 1

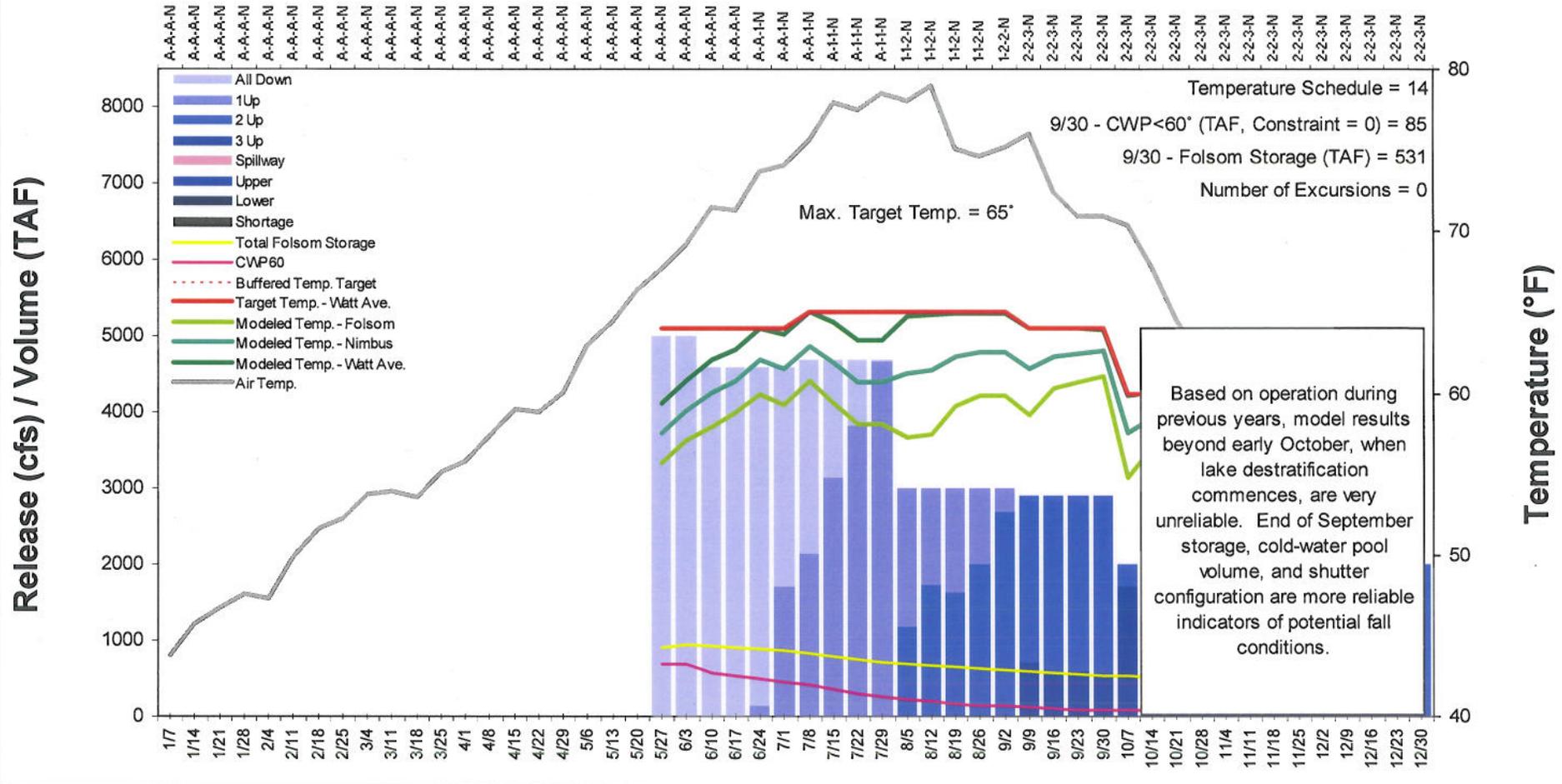
# May 2010 "Modified" 50%-Exceedance Outlook

Watt Avenue Target - 65°F



Scenario 2

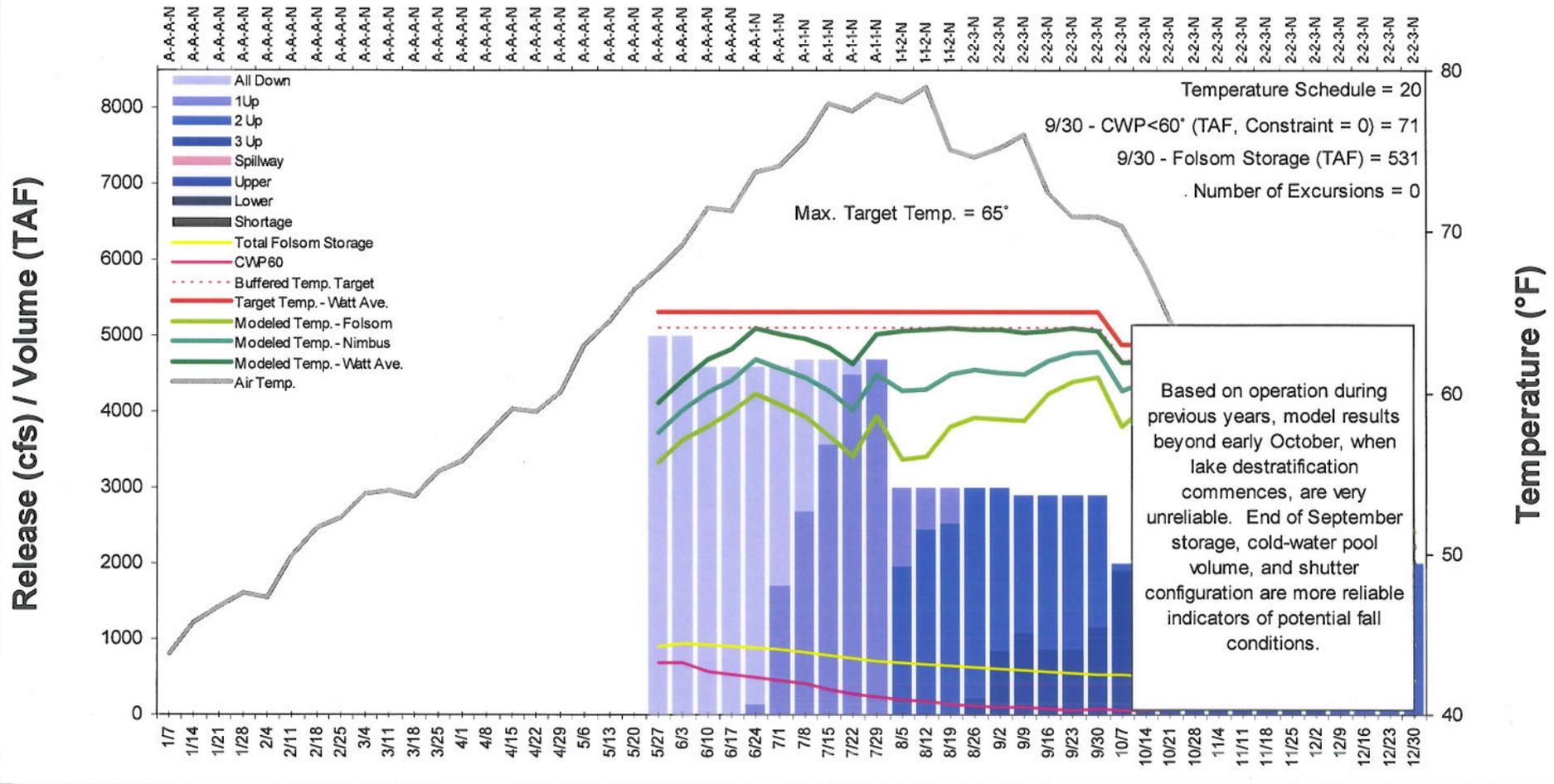
# May 2010 "Modified" 50%-Exceedance Outlook



Scenario 3

# May 2010 "Modified" 50%-Exceedance Outlook

1°F Temperature Buffer



Scenario 4

## **American River Operations Group**

DRAFT Meeting Notes

Date 22 June 2010

### **Attendees**

Bonnie Van Pelt, Russ Yaworsky (Central Valley Operations), Thomas Fitzhugh, and Carol Nicolos, Reclamation; Brian Ellrott, NMFS; Nick Hindman and Beth Campbell, USFWS; Paul Olmstead, SMUD; Felix E. Smith, SARA; Rod Hall, Water Forum; Ronald Pang, City of Sacramento.

### **Handouts**

- Upper American River Project (UARP) precipitation measured at Fresh Pond for water year 2010;
- Daily CVP Water Supply Report (Run Date June 22, 2010); link is <http://www.usbr.gov/mp/cvo/vungvari/dayrpt.pdf>;
- 90 and 50% exceedence forecast (End-of Month storage and lake elevation);
- Temperature Summary for Folsom Lake and Lower American River for May and June, 2010 (through June 21<sup>st</sup>), including Folsom Lake Temperature Profile (June 15, 2010); and
- Preliminary Temperature Operation Plan Scenarios- June 22, 2010

### **Fishery Update**

There were no fishery updates this month.

### **Precipitation**

Paul Olmstead, reported the following in his Upper Basin update:

- June precipitation as of 22 June is at 0.02 inches with the average for the month being 0.75 inches; this is 3% of the average for the month.
- Monthly precipitation totals for the year are at 57.37 inches with the average being 57.61; this is approximately 103% of average so far for the year.
- Reservoir storage is 97% of capacity and runoff is 97% of median. The snowpack is still at 90%.
- Current forecast is for some warming this week then a cooling back into the 80's (mild for this time of year) and no precipitation.

### **Operations**

Russ Yaworsky reported that current releases are at approximately 5,000 cfs and are scheduled to drop to 4,000 cfs by this Thursday, June 24th. The 15-year median is 3,500 cfs. There may be a need to increase the flows back up to approximately 5,000 cfs in July to meet delta outflow requirements and deliveries (see 90% exceedence forecast HO).

Folsom storage is at 115% of the 15 year median meaning it is at 929,000 AF as of 22nd June—storage capacity in Folsom is at 96%.

Shasta storage is looking much better than last year—4,350 TAF (114% of 15-year average).

**Temperature Management**

Water temperatures at Watt Avenue have been averaging approximately 55°F because of the cooler inflows. All upper penstock temperature shutters were lowered as of April 14<sup>th</sup>. Four model runs (scenarios) looked at the possible ways to meet the 65°F temperature target based on 2001-2009 average weekly inflow temperatures. Russ Yaworsky used a June 2010 modified 90% exceedence forecast for all four scenarios. Scenarios 3 and 4 are based on iCPMM model schedule #'s 10 and 19, respectively (see table below). Scenario 4 incorporated a 1°F buffer to account for daily and weekly average temperatures above and below the 65°F target at Watt Avenue. These scenarios are very similar to the ones presented to the group last month.

	Maximum Temperature Target (°F) (schedule #)	Shutters reserved for Fall-Run (Y/N)	End-of-Sept. CWP vol. (TAF)	EOS Folsom Storage (TAF)	Forecast (type) <sub>1</sub>
Scenario 1	66	Y	134	502	M-90%
Scenario 2	65	N	92	501	M-90%
Scenario 3	64 (#10)	N	94	501	M-90%
Scenario 4	65 (#19)	N	94	501	M-90% (+ buffer) <sub>2</sub>

<sup>1</sup> modified 90% exceedence = M-90

<sup>2</sup> 1°F buffer is factored into the model = (+ buffer)

Brian Ellrott indicated that NMFS accepts Scenario 1 (66°F target throughout the temperature season), to enable one last temperature shutter pull for fall-run Chinook salmon (no other scenario allowed for this last shutter pull). The group discussed the higher releases that are forecasted for the summer months (see 90% exceedence forecast HO). Consistent with the Reasonable and Prudent Alternative in the CVP/SWP Biological Opinion, Brian asked that discretionary releases be identified and accounted for in the Annual Temperature Management Plan (Plan). The Plan was submitted in May, initially; discretionary delivery options would need to be resubmitted in a revised Plan.

In the NMFS Biological Opinion (BO) (June 4, 2009) it states if the temperature exceeds 65°F at Watt Avenue for three consecutive days or if the temperature rises 3°F in one day then the ARG would have to meet to discuss options for what to do to get into compliance. NMFS agreed to get back to Reclamation on how they would approach the exceedence of the daily target once temperatures warm up in the range of the target temperature (65°F), and in consideration of this accepted baseline target of 66°F. The group also discussed the priority that is stated in the BO to use of the lowest water temperature control shutters to achieve the water temperature requirement for steelhead, and thereafter to provide cold water for fall-run Chinook salmon spawning.

## **Other**

Brian Ellrott indicated that his replacement will be Gary Sprague. Welcome Gary—we will miss you Brian.

The Sailor Bar gravel augmentation project is moving ahead even though cultural resources issues have not been resolved. A decision will have to be made regarding the issues soon in order to get contractor response on bids in time to begin construction on schedule.

## **Next Meeting**

**Date: Thursday, July 22, 2010**

**Location: Central Valley Operations Office  
3310 El Camino Ave.  
Sacramento, CA 95821**

**Room: 302**

**Time: 1:00 PM**

**Notes by: Carol Nicolos and Bonnie Van Pelt**

AGENDA  
American River Group

Date: Tuesday, June 22, 2010

Time: 1:00 PM

Location: Central Valley Operations Office  
3310 El Camino Ave.  
Sacramento, CA 95821

Room: 302

Update on Fish Monitoring - DFG

Operations Forecast - USBR

Temperature Management - USBR

Status Reports - Group

Schedule Next Meeting

Adjourn

**UARP Precipitation measured at Fresh Pond**  
amounts in inches

Water year 2010

	monthly amount	average	% average Water year
Oct	3.88	2.89	134%
Nov	1.97	7.53	26%
Dec	10.17	10.09	101%
Jan	9.36	10.67	88%
Feb	6.25	8.73	72%
Mar	8.19	8.14	101%
Apr	9.39	4.92	191%
May	8.14	2.43	335%
Jun	0.02	0.75	3%
Jul		0.19	0%
Aug		0.29	0%
Sept		0.98	0%
	57.37	57.61	100%

22-Jun-10  
Water year 2010

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

**DAILY CVP WATER SUPPLY REPORT**

JUNE 21, 2010

RUN DATE: June 22, 2010

RESERVOIR RELEASES IN CUBIC FEET/SECOND

RESERVOIR	DAM	WY 2009	WY 2010	15YR MEDIAN
TRINITY	LEWISTON	710	2,021	800
SACRAMENTO	KESWICK	10,888	10,932	13,060
FEATHER	OROVILLE (SWP)	2,000	1,000	3,500
AMERICAN	NIMBUS	2,971	4,972	3,524
STANISLAUS	GOODWIN	706	261	506
SAN JOAQUIN	FRIANT	199	354	304

STORAGE IN MAJOR RESERVOIRS IN THOUSANDS OF ACRE-FEET

RESERVOIR	CAPACITY	15YR AVG	WY 2009	WY 2010	% OF 15 YR AVG
TRINITY	2,448	2,055	1,282	1,731	84
SHASTA	4,552	3,828	2,920	4,357	114
OROVILLE (SWP)	3,538	2,909	2,150	2,709	93
FOLSOM	977	809	908	929	115
NEW MELONES	2,420	1,774	1,320	1,403	79
FED. SAN LUIS	966	519	64	646	124
MILLERTON	520	465	517	399	86
TOT. N. CVP	11,360	8,985	6,494	9,066	101

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

RESERVOIR	CURRENT WY 2010	DRIEST WY 1977	WETTEST WY 1983	15 YR AVG	% OF 15 YR AVG
TRINITY	1,315	187	2,430	1,341	98
SHASTA	4,864	1,958	9,686	5,397	90
FOLSOM	1,877	293	5,570	2,438	77
NEW MELONES	769	0	2,181	935	82
MILLERTON	1,323	172	3,277	1,339	99

ACCUMULATED PRECIPITATION FOR WATER YEAR TO DATE IN INCHES

RESERVOIR	CURRENT WY 2010	DRIEST WY 1977	WETTEST WY 1983	AVG (N YRS)	% OF AVG	LAST 24 HRS
TRINITY AT FISH HATCHERY	34.21	13.69	54.65	31.58 ( 48 )	108	0.00
SACRAMENTO AT SHASTA DAM	69.76	17.27	112.33	61.33 ( 53 )	114	0.00
AMERICAN AT BLUE CANYON	67.03	15.64	103.88	63.98 ( 35 )	105	0.00
STANISLAUS AT NEW MELONES	33.24	0.00	45.33	26.56 ( 32 )	125	0.00
SAN JOAQUIN AT HUNTINGTON LK	42.81	17.20	81.40	41.97 ( 35 )	102	0.00

### 90%-Exceedance Outlook

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

		Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Folsom	905	845	644	553	497	425	359	313	333	408	557	693	656
	Elev.	454	433	423	416	407	397	389	393	404	423	439	435

#### Monthly River Releases (cfs)

American		3929	4725	2960	2253	1750	1767	1750	1500	1550	1500	2448	4500
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### 50%-Exceedance Outlook

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

		Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Folsom	905	786	668	628	538	488	460	449	479	561	657	786	962
	Elev.	448	436	432	421	415	411	410	414	424	435	448	465

#### Monthly River Releases (cfs)

American		6000	3581	2232	2981	2000	2000	2000	2000	3250	3500	5000	4000
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Summary for Folsom Lake and Lower American River - June 2010

Day	Mean Daily Water Temperature (° F)							Storage (TAF)		Release (cfs)		Sacramento Mean Daily Air Temperature (° F)
	NFA	ARP	AFD	Penstock Units 1-3			AHZ	AWP	AWB	Folsom	Nimbus	
1	55.7	52.2	53.1	A(35)	A(38)	A(27)	54.3	55.3	56.3	908.0	4,897	69
2	56.6	52.5	53.0	A(25)	A(40)	A(35)	54.9	55.7	56.7	912.3	4,884	74
3	57.0	52.9	53.0	A(40)	A(36)	A(24)	55.0	56.1	57.2	917.3	4,851	75
4	55.2	52.2	53.2	A(43)	A(13)	A(44)	54.9	55.8	56.8	923.9	4,901	74
5	54.0	52.6	53.1	A(22)	A(39)	A(39)	55.0	56.1	57.3	929.2	4,893	78
6	56.0	53.3	53.1	A(45)	A(44)	A(11)	55.1	56.4	57.7	938.2	4,880	79
7	57.1	53.6	53.3	A(30)	A(35)	A(35)	55.5	56.1	57.2	943.3	6,661	75
8	57.5	54.1	53.3	A(33)	A(33)	A(34)	54.6	55.4	56.4	943.8	7,994	72
9	57.6	53.9	53.5	A(33)	A(34)	A(33)	54.7	55.4	56.2	943.9	7,966	70
10	56.5	53.4	53.8	A(33)	A(34)	A(33)	54.8	55.5	56.2	945.0	7,858	66
11	56.2	53.2	53.9	A(33)	A(34)	A(33)	54.9	55.7	56.5	943.5	7,934	73
12	56.8	54.0	54.2	A(33)	A(33)	A(34)	55.4	56.2	57.0	942.1	7,900	77
13	57.6	54.6	54.1	A(34)	A(33)	A(33)	55.5	56.4	57.3	941.2	7,771	81
14	58.5	55.2	54.2	A(33)	A(33)	A(34)	55.5	56.3	57.2	938.8	7,721	79
15	59.1	55.6	54.3	A(34)	A(34)	A(32)	55.5	56.2	57.1	935.0	8,066	72
16	59.2	N	54.6	A(33)	A(34)	A(33)	55.7	56.5	57.3	931.9	7,372	70
17	58.4	N	54.6	A(35)	A(37)	A(28)	56.0	56.7	57.6	931.5	6,429	73
18	58.1	N	54.4	A(28)	A(38)	A(34)	56.0	56.9	57.8	931.0	5,714	67
19	57.8	N	54.9	A(40)	A(41)	A(19)	56.0	56.8	57.7	930.1	5,139	65
20	58.1	N	55.1	A(22)	A(42)	A(36)	56.5	57.4	58.2	929.2	4,966	68
21	58.4	N	54.8	A(38)	A(40)	A(22)	56.7	57.6	58.6	928.6	4,972	73
22												
23												
24												
25												
26												
27												
28												
29												
30												
<b>Avg</b>	57.2	53.6	53.9				55.4	56.2	57.2		6,370	73
<b>Tot af</b>											265,325	

! Incomplete or estimated  
 # Station out of service  
 \* See notes on next page

N Data not recorded or collected  
 Shutter Position (U-Upper raised; M-Middle raised; L-Lower raised; A-All lowered; O-Unit Offline)  
 Penstock Unit Blending (value in parentheses represents approximate % total daily load)

**Summary for Folsom Lake and Lower American River - May 2010**

Day	Mean Daily Water Temperature (° F)						Storage (TAF)	Release (cfs)	Sacramento Mean Daily Air Temperature (° F)				
	NFA	ARP	AFD	Penstock Units 1-3			AHZ	AWP		AWB	Folsom	Nimbus	
1	49.5	48.5	52.4	A(0)	A(57)	A(43)	54.5	55.6	56.8	829.0	3,369	64	
2	51.8	49.4	52.9	A(46)	A(0)	A(54)	54.7	55.7	56.8	834.0	3,413	68	
3	53.2	50.2	52.5	A(26)	A(32)	A(42)	54.4	55.8	57.1	840.4	3,411	69	
4	53.9	51.0	52.5	A(0)	A(54)	A(46)	55.3	56.0	57.1	847.0	3,422	67	
5	53.6	50.5	52.6	A(51)	A(0)	A(49)	54.5	55.4	56.6	853.8	3,857	63	
6	51.8	50.5	52.7	A(34)	A(29)	A(37)	54.0	54.7	55.6	857.0	4,863	65	
7	51.7	50.0	52.5	A(28)	A(36)	A(36)	54.0	54.7	55.4	859.6	4,912	63	
8	52.3	50.3	52.3	A(36)	A(39)	A(25)	53.8	54.8	55.6	861.4	4,675	63	
9	52.5	49.3	52.3	A(25)	A(36)	A(39)	53.3	53.9	54.4	862.4	4,913	59	
10	50.9	48.2	51.8	A(37)	A(22)	A(41)	52.7	53.1	53.4	865.7	4,898	54	
11	49.8	48.8	53.2	A(28)	A(36)	A(36)	52.9	53.5	54.1	867.2	4,953	56	
12	50.5	48.3	52.7	A(45)	A(31)	A(24)	54.2	55.2	55.9	868.6	4,975	66	
13	52.5	48.6	52.5	A(46)	A(4)	A(50)	54.2	55.3	56.2	869.9	5,039	68	
14	54.6	50.6	52.4	A(22)	A(39)	A(39)	54.0	55.2	56.2	868.9	4,704	68	
15	55.6	51.1	52.5	A(20)	A(40)	A(40)	54.0	55.0	56.0	870.2	4,897	71	
16	55.5	51.4	52.4	A(19)	A(41)	A(40)	53.9	54.8	55.6	872.5	4,894	65	
17	54.3	50.4	52.6	A(25)	A(39)	A(36)	53.4	54.0	54.4	875.3	5,045	60	
18	53.1	51.3	52.7	A(31)	A(37)	A(32)	53.7	54.5	55.2	878.0	4,919	66	
19	52.6	49.7	52.5	A(34)	A(24)	A(42)	54.1	54.7	55.3	881.5	4,908	62	
20	53.0	50.7	52.9	A(29)	A(34)	A(37)	53.9	54.7	55.4	884.7	4,868	62	
21	52.9	49.9	52.3	A(33)	A(31)	A(36)	54.1	54.7	55.3	887.1	4,807	60	
22	52.0	50.1	53.0	A(23)	A(37)	A(40)	53.5	54.1	54.7	888.2	4,859	56	
23	51.6	49.4	53.3	A(22)	A(39)	A(39)	54.3	54.8	55.3	888.0	4,999	61	
24	51.5	48.2	52.8	A(39)	A(37)	A(24)	54.2	54.7	55.2	887.2	4,917	62	
25	51.4	47.9	53.4	A(49)	A(0)	A(51)	53.8	54.1	54.5	887.0	4,843	59	
26	51.6	48.8	52.9	A(50)	A(0)	A(50)	54.4	55.1	55.7	887.5	4,810	62	
27	51.0	49.0	53.3	A(48)	A(0)	A(52)	54.2	54.7	55.2	892.5	4,951	58	
28	50.1	49.7	53.4	A(44)	A(38)	A(18)	54.5	55.0	55.6	897.7	4,934	60	
29	51.2	49.5	53.3	A(22)	A(38)	A(40)	55.0	55.9	56.7	901.1	4,784	70	
30	53.7	50.3	53.0	A(37)	A(24)	A(39)	54.8	56.0	57.1	902.7	4,537	72	
31	55.3	50.6	52.7	A(25)	A(39)	A(36)	54.7	55.4	56.2	905.4	4,874	71	
<b>Avg</b>	52.4	49.7	52.7				54.1	54.9	55.6			4,653	64
<b>Tot af</b>												286,114	

! Incomplete or estimated  
 # Station out of service  
 \* See notes on next page

N Data not recorded or collected  
 Shutter Position (U-Upper raised; M-Middle raised; L-Lower raised; A-All lowered; O-Unit Offline)  
 Penstock Unit Blending (value in parentheses represents approximate % total daily load)

**CDEC Station ID:**

**NFA** - North Fork American River at Auburn Dam

**ARP** - South Fork American River near Pilot Hill

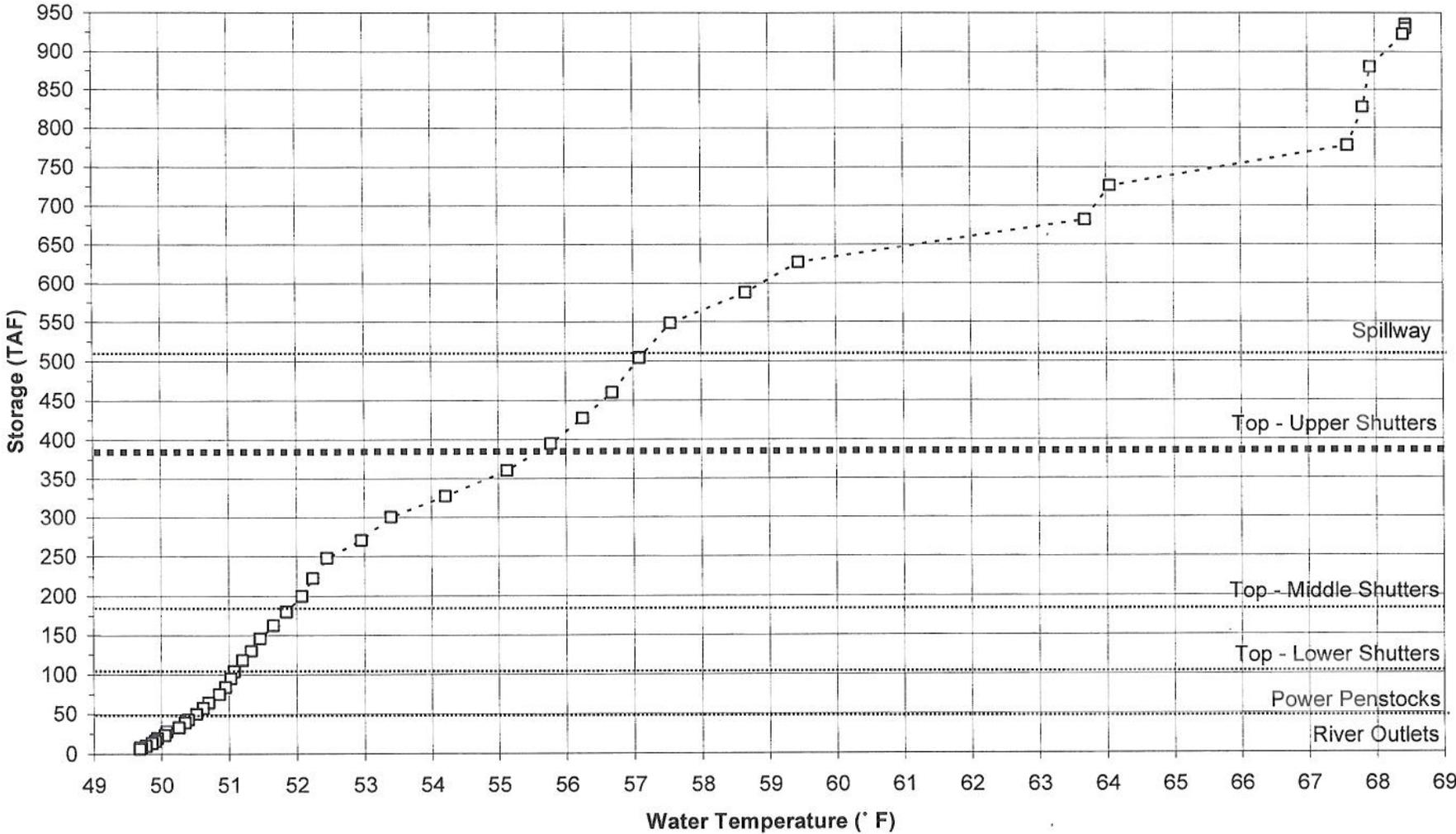
**AFD** - American River below Folsom Dam

**AHZ** - American River at Hazel Avenue Bridge, below Nimbus Dam

**AWP** - American River at William Pond Park

**AWB** - American River below Watt Avenue Bridge

Folsom Lake Temperature Profile  
June 15, 2010



**Preliminary Temperature Operation Plan Scenarios - June 22, 2010**

Historical Conditions (2001-2009)						
Year	End of May		All Upper Shutters Lowered by	End of September		Watt Avenue Target (°F)
	Storage (TAF)	CWP Volume < 58°F (TAF)		Storage (TAF)	CWP Volume < 60°F (TAF)	
2001	696	275	30 Mar	368	30	65-71
2002	822	455	04 Mar	510	50	65-69
2003	962	640	02 Apr	658	135	65-67
2004	635	300	05 Mar	376	30	69
2005	959	705	15 Mar	652	140	65
2006	928	670	29 Mar	639	125	65
2007	787	355	21 Mar	323	30	68
2008	617	250	None Lowered	270	25	69-70
2009	933	550	12Mar	412	60	67
2010 "Modified" 90%-Exceedence Outlook						
2010	905	580	14Apr	530 500	90-130	65-66?

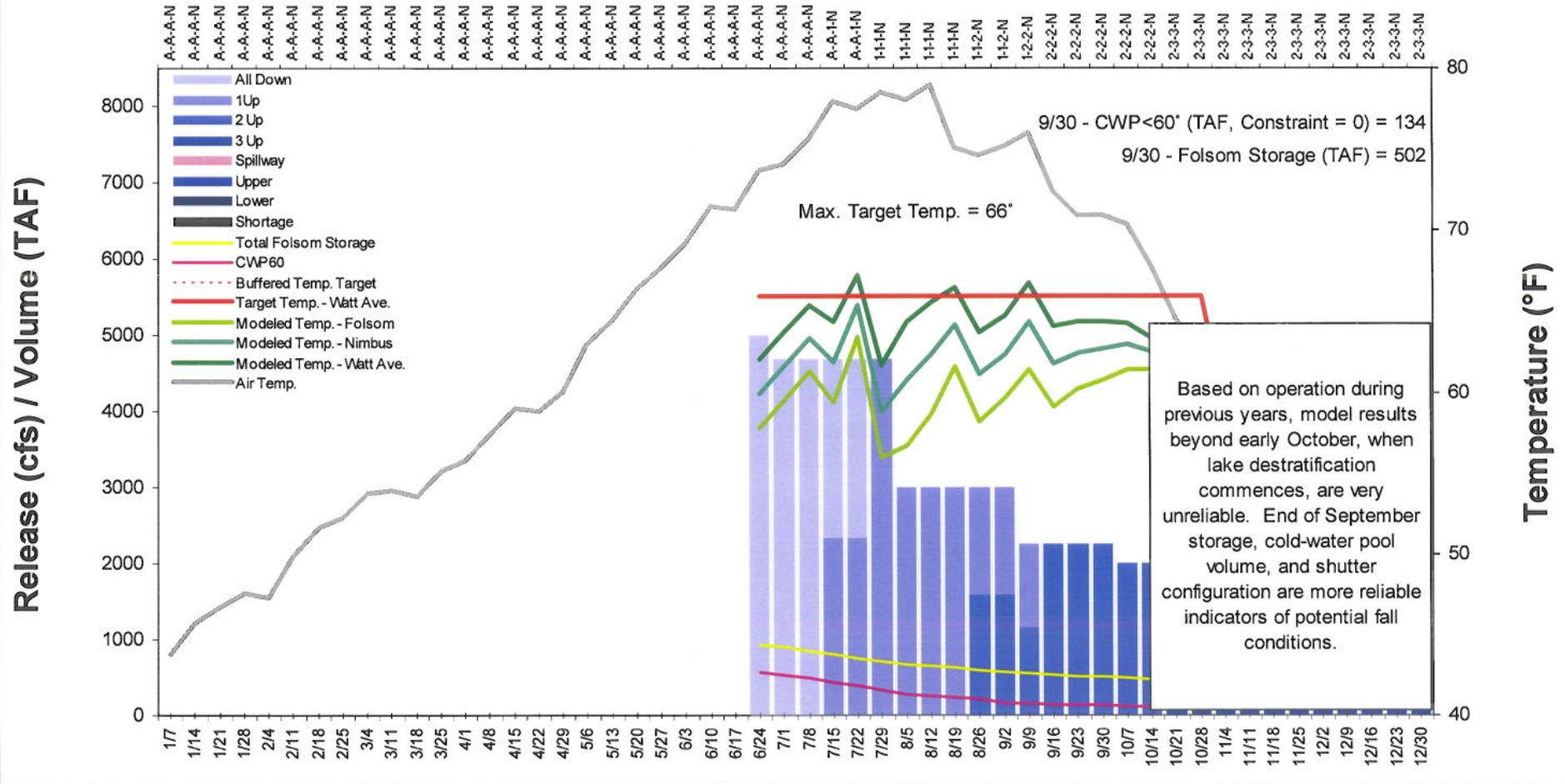
**Temperature Operation Scenarios**

Scenarios	Target	Scenario Results <sup>1</sup>
1	66°F @ Watt Ave	Target is met throughout the temperature operation season; Lowest set of temperature shutters are reserved for fall-run.
2	65°F @ Watt Ave	Target is met throughout the temperature operation season; Lowest set of temperature shutters are NOT reserved for fall-run; Operation results in an end-of-September cold-water pool volume that is more than 30% less than Scenario 1.
3	Iterative Model (iCPMM) Results	Temperature analysis utilizing the Iterative version of the CPMM w/o temperature target buffer; Lowest set of temperature shutters are NOT reserved for fall-run.
4	Iterative Model (iCPMM) Results	Temperature analysis utilizing the Iterative version of the CPMM w/1°F temperature target buffer; Lowest set of temperature shutters are NOT reserved for fall-run.

<sup>1</sup> The temperature operation scenarios are based on a June 2010 "Modified" 90%-exceedence outlook, and 2001-2009 average weekly inflow temperature.

# June 2010 "Modified" 90% -Exceedance Outlook

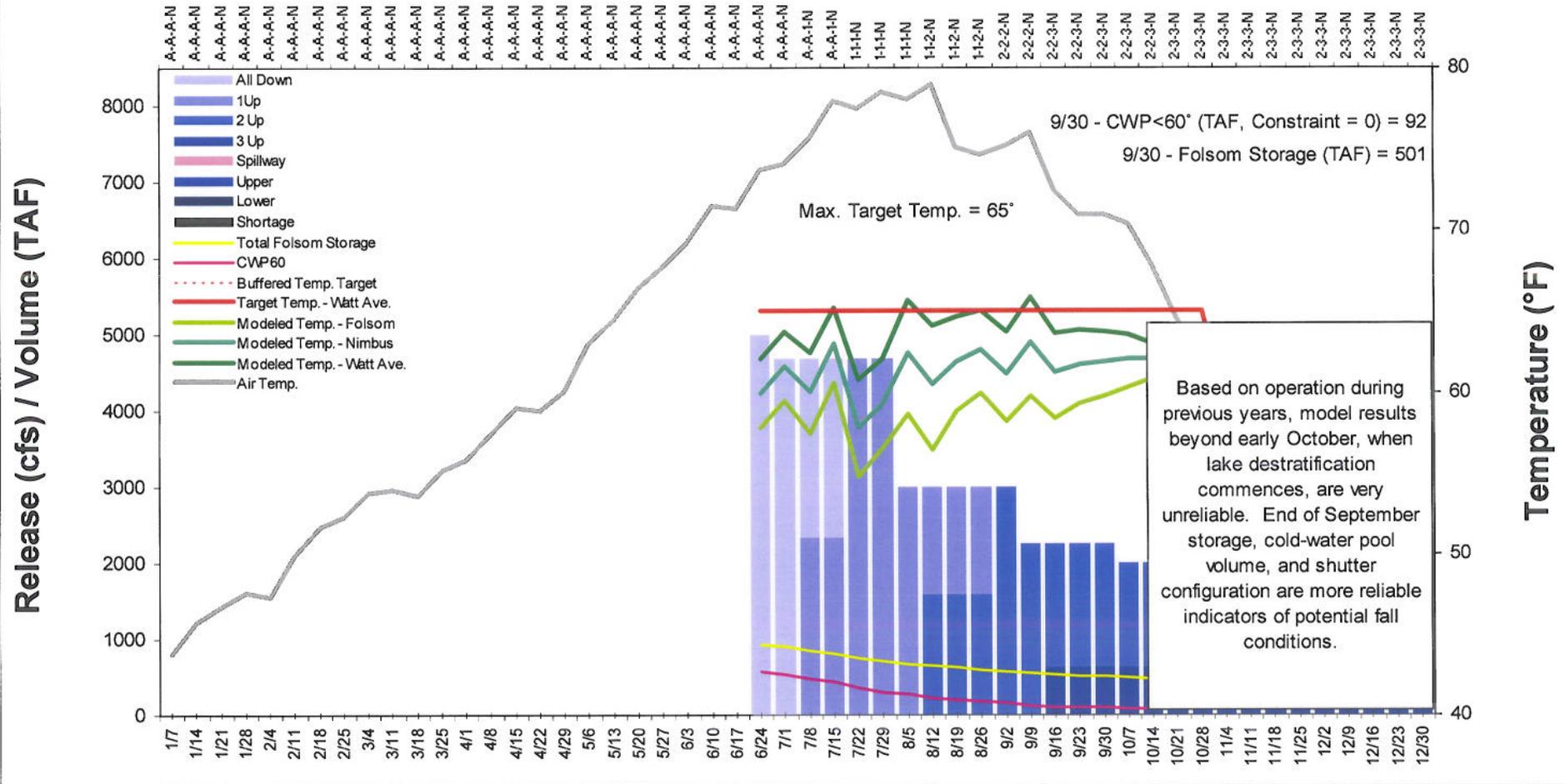
Watt Avenue Target - 66°F



Scenario 1

# June 2010 "Modified" 90% -Exceedance Outlook

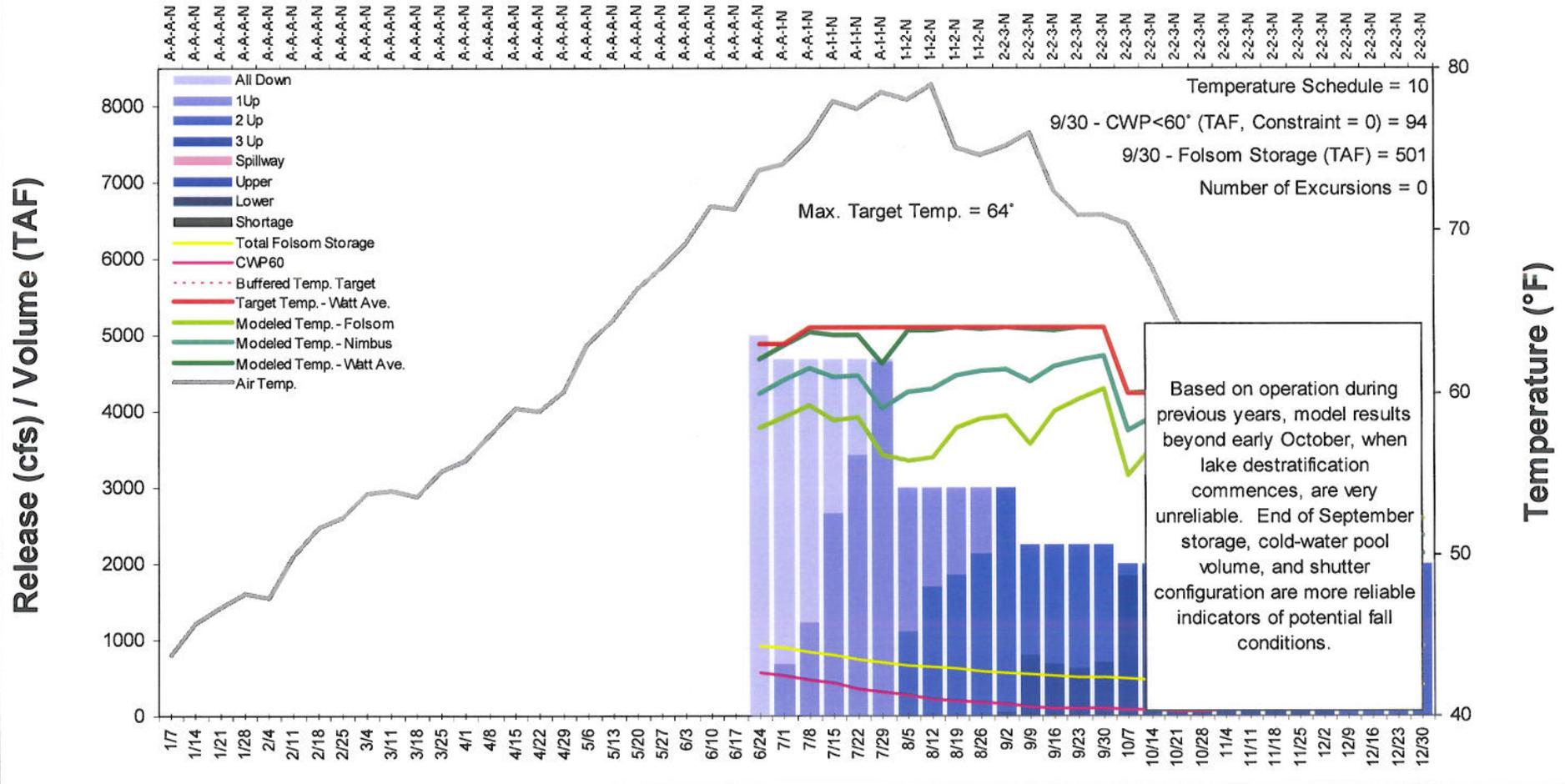
Watt Avenue Target - 65°F



Scenario 2

# June 2010 "Modified" 90% -Exceedance Outlook

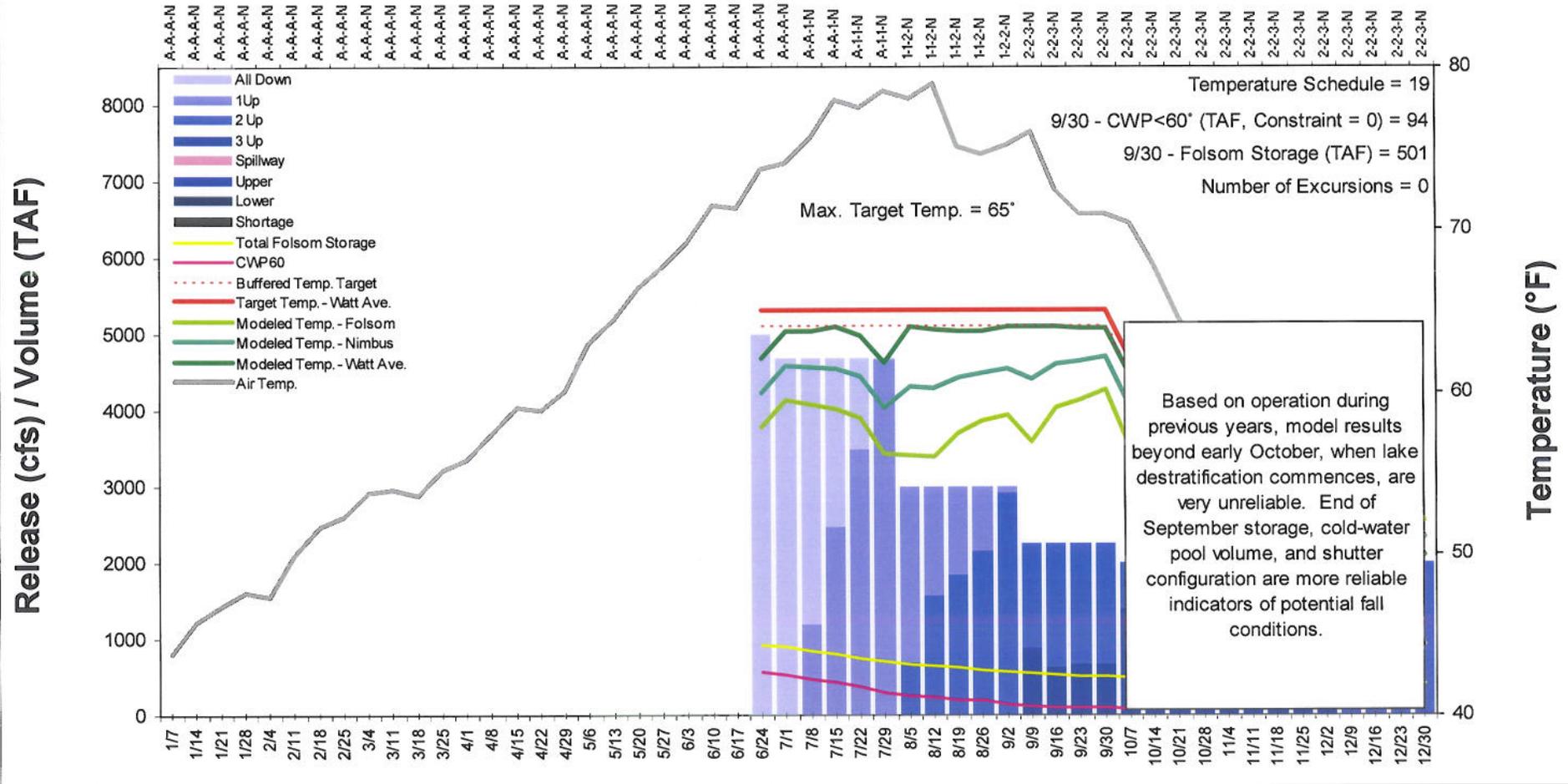
No Target Buffer



Scenario 3

# June 2010 "Modified" 90% -Exceedance Outlook

1°F Temperature Buffer



## Meeting Attendance Record

Date: 22 June 2010      Time: 1300      Place: CVO  
 Subject of Meeting: Amer. River Group

Name	Organization	Phone Number
✓ Carol Nicolas	USBR	989-7276 cnicos@usbr.gov
✓ Rod Hall	Water Forum	916-631-7643 rodhall@comcast.net
ROLAND PANG	CITY OF SACRAMENTO	916-808-1309 rpang@cityofsacramento.org
✓ Felix Smith	SARA	916-466-2081 felixsmith@stbcglobal.net
✓ Russ Yaworsky	USBR	916-979-0268 ryaworsky@usbr.gov
✓ Paul Olmstead	SMUD	916-732-5716 polmste@smud.org
✓ Tam FitzHugh	USBR	916-978-5979 tfitzhugh@usbr.gov
✓ Nick Hindman	FWS	916-414-6543 nick.hindman@fws.gov
✓ BRIAN ELLIOTT	NMFS	916 930 3612 brian.elliott@noaa.gov
✓ Beth Campbell	FWS	209 334 2968 x 402 beth.elizabeth.campbell@fws.gov
✓ Bonnie Van Pelt	USBR	

## **American River Operations Group**

DRAFT Meeting Notes

Date 22 July 2010

### **Attendees**

Bonnie Van Pelt, Russ Yaworsky (Central Valley Operations), Thomas Fitzhugh, Josh Israel, Claire Hsu, and Carol Nicolos, Reclamation; Brian Ellrott and Gary Sprague, NMFS; Nick Hindman and Beth Campbell, USFWS; Colin Purdy, DFG; Rod Hall, Water Forum; Paul Olmstead, SMUD; Dave Ford, NCCFFF; and Gary Estes, American River Watershed Institute

### **Handouts**

- Upper American River Project (UARP) precipitation measured at Fresh Pond for water year 2010;
- Daily CVP Water Supply Report (Run Date July 22, 2010); link is <http://www.usbr.gov/mp/cvo/vungvari/dayrpt.pdf>;
- Temperature Summary for Folsom Lake and Lower American River, June 2010 and July 1 – 21 2010, including Folsom Lake Temperature Profile (July 19, 2010); and
- Preliminary Temperature Operation Plan Scenarios based on preliminary 50% exceedence outlook and 2001-2009 average weekly inflow temperature- July 22, 2010

### **Fishery Update**

There were no fishery updates this month. Rod Hall reported that the gravel augmentation work at Sailor Bar will begin (in-river) September 13-24<sup>th</sup>. He stated that flows less than 2,000 cfs would be optimal. Through this effort, Reclamation will place 10,000 tons of gravel at lower Sailor Bar. They will also be placing rock in the incised channel—rewatering of the side channel.

### **Precipitation**

Paul Olmstead, reported the following in his Upper Basin update:

- July precipitation as of 22 July is at 0.00 inches with the average for the month being 0.19 inches; this is 0% of the average for the month.
- Water year totals to date are 57.37 inches with the average being 56.28 inches (102% of average to date). We are at 100% of the entire water year average of 57.61 inches.
- Reservoir storage is 97% of capacity with an historical average storage of 86%. One year ago, we had 95% capacity.
- Runoff into the reservoir basins is 103% of the median through July 18. Snowpack is currently at 59% of average at selected snow sensors.
- Runoff is receding to normal base flow rates and the weather looks clear and warm with no anticipated thundershower activity expected this week.

### **Operations**

Russ Yaworsky reported that releases for the month of July have been approximately 4,000 cfs until today when they were increased to 4,500 cfs because of downstream demands. Russ expects releases to be maintained to this level into early August. Storage is at approximately 825,000 AF as of midnight last night which is 117% of the 15-year average; last year Folsom was at 681,000 AF at this time. Water storage is higher than average, in the Upper Basin, as well; Shasta is at approximately 4 MAF of storage (118% of the 15-year average) compared to 2.5 MAF last year. The Feather River and New Melones are still below normal.

**Temperature Management**

The temperature summary profile for Watt Avenue (see HO) shows temperatures below 62°F for most of the month of July. In June, temperatures averaged 58°F due to the mild temperatures experienced in the Sacramento Valley. The upper temperature shutters on penstock Unit #1 were raised on July 21<sup>st</sup> in anticipation of blending operations beginning the weekend of July 24th.

We are currently operating to a mean daily temperature at Watt Avenue of 66°F, as per the Temperature Management Plan that was submitted to National Marine Fisheries Service (NMFS). The temperature scenarios outlined below are tracking close to the scenarios presented at the June ARG meeting and are based on the July 19<sup>th</sup> profile run using a 50% exceedance outlook forecast (see HO). Scenarios 3 and 4 are based on iCPMM modeling runs and the schedule numbers that correspond are noted in the first column of the table below:

Summary of Temperature Plan Scenarios

	Maximum Temperature Target (°F) (schedule #)	Shutters reserved for Fall-Run (Y/N)	End-of-Sept. CWP vol. (TAF)	EOS Folsom Storage (TAF)	Forecast (type) <sub>1</sub>
Scenario 1	66	Y	122	567	M-50%
Scenario 2	65	N	86	567	M-50%
Scenario 3	65 (#14)	N	111	567	M-50%
Scenario 4	65 (#20)	N	85	567	M-50% (+ buffer) <sub>2</sub>

<sup>1</sup> modified 50% exceedance = M-50

<sup>2</sup> 1°F buffer is factored into the model = (+ buffer)

As seen in the table above, Scenario #1 is the only profile that would reserve the lower set of shutters for fall-run Chinook salmon spawning. Russ explained that we could accomplish Scenario #2, but the shutters would not be reserved for fall-run. The scenarios included a graphic to show the week that a lower shutter may need to be raised (see individual scenarios in HO). In all three scenarios (#'s 2-4) where the shutters are not able to be reserved the lower shutters would need to be raised again prior to the onset of fall-run Chinook spawning. Russ is anticipating flows for September to approximate the Flow Management Standard at between 2,000-2,500 cfs.

**Other**

A concern was raised regarding fishermen wading into the stream where fish are spawning. Dave Ford wanted to know if we could put ropes out similar to what other states do in addition to signs asking people not to wade into the spawning area. Rod Hall mentioned that there are signs out at Sailor Bar currently.

Brian Ellrott introduced his replacement, Gary Sprague. Gary's responsibilities will include the American River and up to the Feather River. Brian clarified the concern raised at last month's meeting regarding the fact that we are not currently going to be able to meet the temperature criteria in the BO (65° F at Watt Avenue) and that the recommended target of 66° F (Annual Temperature Management Plan) would be our target during the current temperature season for purposes of the exceedance criteria; i.e., coordination on how to bring temperature back into compliance is triggered when there is a 1° F exceedance for three consecutive days, or a 3° F exceedance for one day as per the June 4, 2009 Biological Opinion. Brian also said NMFS would need to see discretionary deliveries identified in the Plan as early in the season as possible to ensure that these can be a consideration if the forecast shows we will not meet the temperature target. Russ and Brian discussed the remedy for this in the current Plan and decided that a discussion of the discretionary/non-discretionary deliveries would need to be included and an explanation of how the temperature forecast is based on the final allocations made in May/June and used to complete the temperature season modeling runs and projections.

Paul Olmstead raised the group's awareness about the release of the State Water Resources Control Board Delta Flow Criteria Draft Report, which was released on July 21st. He recommended that everyone read the report as it may have an impact on LAR flows and temperatures.

### **Post-meeting Update**

Paul Olmstead sent the group the link to the Delta Flow Criteria Draft Report via email: [http://www.waterboards.ca.gov/waterrights/water\\_issues/programs/bay\\_delta/deltaflow/docs/draft\\_report072010.pdf](http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/deltaflow/docs/draft_report072010.pdf).

After the discussion regarding flows in the LAR during September when the gravel augmentation project will be done, Rod followed up with Dave Leitaker, DFG, who will be operating the equipment. Dave said that doing the work at 2,000 – 2,500 cfs is probably ok, but that anything higher would be problematic. Hopefully, flows will not exceed this range, and will preferably be a little lower.

### **Next Meeting**

**Date: Tuesday, August 24, 2010**

**Location: Central Valley Operations Office  
3310 El Camino Ave.  
Sacramento, CA 95821**

Room: 302

Time: 1:00 PM

Notes by: Bonnie Van Pelt and Carol Nicolos

AGENDA  
American River Group

Date: Thursday, July 22, 2010

Time: 1:00 PM

Location: Central Valley Operations Office  
3310 El Camino Ave.  
Sacramento, CA 95821

Room: Room 302

Update on Fish Monitoring - DFG and Reclamation (updates on SH Survey)

Operations Forecast - USBR

Temperature Management Plan - USBR

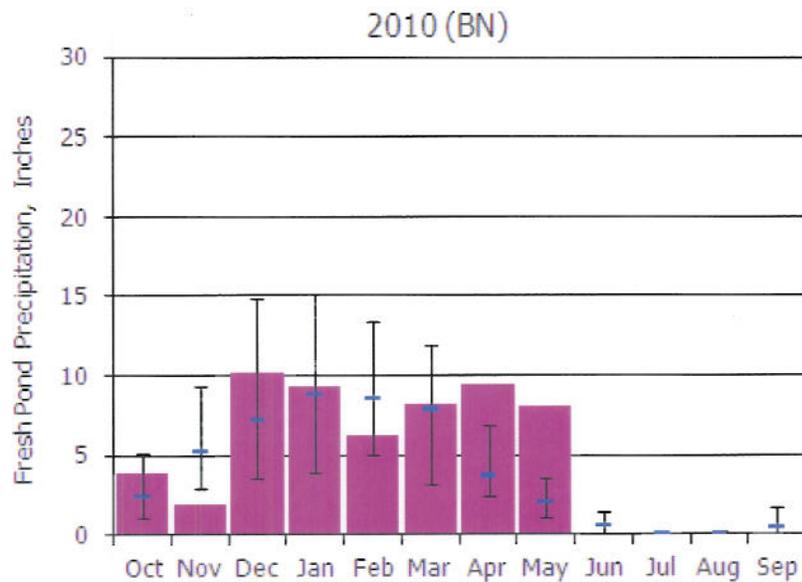
Status Reports - Group

Schedule Next Meeting

Adjourn

## Fresh Pond Precipitation

Month	2010 WY	Hist. avg.	% of avg.
Oct	3.88	2.89	134%
Nov	1.97	7.53	26%
Dec	10.17	10.09	101%
Jan	9.36	10.67	88%
Feb	6.25	8.73	72%
Mar	8.19	8.14	101%
Apr	9.39	4.92	191%
May	8.14	2.43	335%
Jun	0.02	0.75	3%
Jul	0.00	0.19	0%
Aug	—	0.29	—
Sep	—	0.98	—
<b>Total</b>	<b>57.37</b>	<b>57.61</b>	<b>100%</b>



This month's value is the total through yesterday; the average amount is the historical average for total precipitation each month; and "to date" means through yesterday.

July precipitation through 0700 hrs 07/22/10 is **0.00 in.**, which is 0% of the July average of 0.19". Precip for the water year to date is 57.37" which is 102% of average to date (56.28") and 100% of the entire water year average of 57.61".

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

**DAILY CVP WATER SUPPLY REPORT**

JULY 21, 2010

RUN DATE: July 22, 2010

RESERVOIR RELEASES IN CUBIC FEET/SECOND

RESERVOIR	DAM	WY 2009	WY 2010	15YR MEDIAN
TRINITY	LEWISTON	422	762	450
SACRAMENTO	KESWICK	13,113	11,836	14,739
FEATHER	OROVILLE (SWP)	7,000	5,500	5,500
AMERICAN	NIMBUS	5,013	3,991	3,532
STANISLAUS	GOODWIN	403	318	379
SAN JOAQUIN	FRIANT	233	0	257

STORAGE IN MAJOR RESERVOIRS IN THOUSANDS OF ACRE-FEET

RESERVOIR	CAPACITY	15YR AVG	WY 2009	WY 2010	% OF 15 YR AVG
TRINITY	2,448	1,940	1,188	1,759	91
SHASTA	4,552	3,371	2,481	3,992	118
OROVILLE (SWP)	3,538	2,578	1,686	2,532	98
FOLSOM	977	706	681	825	117
NEW MELONES	2,420	1,722	1,249	1,393	81
FED. SAN LUIS	966	340	2	466	137
MILLERTON	520	358	477	0	0
TOT. N. CVP	11,360	8,079	5,601	8,435	104

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

RESERVOIR	CURRENT WY 2010	DRIEST WY 1977	WETTEST WY 1983	15 YR AVG	% OF 15 YR AVG
TRINITY	1,493	194	2,731	1,419	105
SHASTA	5,140	2,138	10,109	5,670	91
FOLSOM	2,050	299	6,123	2,576	80
NEW MELONES	881	0	2,568	1,024	86
MILLERTON	1,642	246	4,067	1,569	105

ACCUMULATED PRECIPITATION FOR WATER YEAR TO DATE IN INCHES

RESERVOIR	CURRENT WY 2010	DRIEST WY 1977	WETTEST WY 1983	AVG (N YRS)	% OF AVG	LAST 24 HRS
TRINITY AT FISH HATCHERY	34.21	13.70	55.19	31.83 ( 48 )	107	0.00
SACRAMENTO AT SHASTA DAM	69.76	17.28	112.58	61.81 ( 53 )	113	0.00
AMERICAN AT BLUE CANYON	67.09	15.70	103.88	64.23 ( 35 )	104	0.00
STANISLAUS AT NEW MELONES	33.29	0.00	45.33	26.65 ( 32 )	125	0.00
SAN JOAQUIN AT HUNTINGTON LK	42.85	17.20	81.40	42.34 ( 35 )	101	0.00

July 22, 2010

Summary for Folsom Lake and Lower American River - July 2010

Day	Mean Daily Water Temperature (° F)									Storage (TAF)	Release (cfs)	Sacramento Mean Daily Air Temperature (° F)
	NFA	ARP	AFD	Penstock Units 1-3			AHZ	AWP	AWB	Folsom	Nimbus	
1	64.4	N	55.9	A(39)	A(25)	A(36)	58.1	59.1	60.2	921.4	3,894	72
2	64.3	N	56.1	A(36)	A(41)	A(23)	58.3	59.3	60.3	918.9	3,895	75
3	64.4	N	56.0	A(27)	A(32)	A(41)	58.4	59.4	60.5	916.6	3,895	77
4	64.2	N	56.3	A(42)	A(36)	A(22)	58.5	59.6	60.8	913.6	3,903	79
5	64.7	N	56.5	A(24)	A(32)	A(44)	58.4	59.6	60.9	910.5	3,896	80
6	64.9	N	56.7	A(23)	A(41)	A(36)	58.8	59.7	60.8	906.6	3,890	71
7	65.1	N	56.8	A(42)	A(36)	A(22)	58.7	59.8	60.9	902.2	3,894	74
8	65.6	N	57.0	A(38)	A(14)	A(48)	59.0	60.0	61.2	897.8	3,899	74
9	67.0	N	57.1	A(32)	A(42)	A(26)	59.3	60.3	61.5	893.1	3,843	76
10	68.7	N	57.3	A(30)	A(29)	A(41)	59.4	60.7	62.0	887.7	3,940	81
11	68.8	N	57.4	A(31)	A(44)	A(25)	59.6	60.6	61.9	882.1	4,010	79
12	68.6	N	57.7	A(33)	A(26)	A(41)	59.7	60.7	61.9	876.5	4,056	73
13	67.8	N	58.1	A(38)	A(24)	A(38)	59.7	60.7	61.8	870.2	3,965	76
14	68.3	N	58.1	A(48)	A(37)	A(15)	60.1	61.1	62.2	864.7	3,914	80
15	68.2	N	! 58.2	A(37)	A(25)	A(38)	60.7	61.5	62.7	860.0	3,957	86
16	70.6	N	! 58.3	A(37)	A(23)	A(40)	60.8	62.0	63.3	854.4	3,965	85
17	70.3	N	59.0	A(40)	A(37)	A(23)	60.9	61.8	63.1	848.7	4,010	82
18	71.1	N	59.0	A(37)	A(24)	A(39)	61.1	62.2	63.5	843.4	3,958	81
19	70.3	N	59.2	A(23)	A(40)	A(37)	61.3	62.4	63.6	836.2	3,965	81
20	69.5	N	59.5	A(38)	A(37)	A(25)	61.3	62.2	63.3	830.9	4,009	76
21	68.9	N	* 59.1	U(11)	A(42)	A(47)	61.4	62.2	63.1	824.9	3,991	70
22												
23												
24												
25												
26												
27												
28												
29												
30												
31												
Avg	67.4		57.6				59.7	60.7	61.9		3,940	77
Tot af											164,129	

! Incomplete or estimated

# Station out of service

\* See notes on next page

N Data not recorded or collected

Shutter Position (U-Upper raised; M-Middle raised; L-Lower raised; A-All lowered; O-Unit Offline)

Penstock Unit Blending (value in parentheses represents approximate % total daily load)

**Summary for Folsom Lake and Lower American River - June 2010**

Day	Mean Daily Water Temperature (° F)							Storage (TAF)	Release (cfs)	Sacramento Mean Daily Air Temperature (° F)		
	NFA	ARP	AFD	Penstock Units 1-3			AHZ	AWP	AWB		Folsom	Nimbus
1	55.7	52.2	53.1	A(35)	A(38)	A(27)	54.3	55.3	56.3	908.0	4,897	69
2	56.6	52.5	53.0	A(25)	A(40)	A(35)	54.9	55.7	56.7	912.3	4,884	74
3	57.0	52.9	53.0	A(40)	A(36)	A(24)	55.0	56.1	57.2	917.3	4,851	75
4	55.2	52.2	53.2	A(43)	A(13)	A(44)	54.9	55.8	56.8	923.9	4,901	74
5	54.0	52.6	53.1	A(22)	A(39)	A(39)	55.0	56.1	57.3	929.2	4,893	78
6	56.0	53.3	53.1	A(45)	A(44)	A(11)	55.1	56.4	57.7	938.2	4,880	79
7	57.1	53.6	53.3	A(30)	A(35)	A(35)	55.5	56.1	57.2	943.3	6,661	75
8	57.5	54.1	53.3	A(33)	A(33)	A(34)	54.6	55.4	56.4	943.8	7,994	72
9	57.6	53.9	53.5	A(33)	A(34)	A(33)	54.7	55.4	56.2	943.9	7,966	70
10	56.5	53.4	53.8	A(33)	A(34)	A(33)	54.8	55.5	56.2	945.0	7,858	66
11	56.2	53.2	53.9	A(33)	A(34)	A(33)	54.9	55.7	56.5	943.5	7,934	73
12	56.8	54.0	54.2	A(33)	A(33)	A(34)	55.4	56.2	57.0	942.1	7,900	77
13	57.6	54.6	54.1	A(34)	A(33)	A(33)	55.5	56.4	57.3	941.2	7,771	81
14	58.5	55.2	54.2	A(33)	A(33)	A(34)	55.5	56.3	57.2	938.8	7,721	79
15	59.1	55.6	54.3	A(34)	A(34)	A(32)	55.5	56.2	57.1	935.0	8,066	72
16	59.2	N	54.6	A(33)	A(34)	A(33)	55.7	56.5	57.3	931.9	7,372	70
17	58.4	N	54.6	A(35)	A(37)	A(28)	56.0	56.7	57.6	931.5	6,429	73
18	58.1	N	54.4	A(28)	A(38)	A(34)	56.0	56.9	57.8	931.0	5,714	67
19	57.8	N	54.9	A(40)	A(41)	A(19)	56.0	56.8	57.7	930.1	5,139	65
20	58.1	N	55.1	A(22)	A(42)	A(36)	56.5	57.4	58.2	929.2	4,966	68
21	58.4	N	54.8	A(38)	A(40)	A(22)	56.7	57.6	58.6	928.6	4,972	73
22	59.0	N	54.9	A(13)	A(44)	A(43)	56.7	57.7	58.8	927.9	4,889	79
23	60.0	N	55.0	A(43)	A(33)	A(24)	56.7	57.8	59.0	926.6	4,476	78
24	60.5	N	55.2	A(33)	A(26)	A(41)	57.0	57.9	58.9	927.5	3,971	72
25	60.6	N	55.4	A(21)	A(41)	A(38)	57.2	58.3	59.4	927.1	3,910	73
26	61.0	N	55.3	A(44)	A(35)	A(21)	57.6	58.9	60.1	926.7	3,902	79
27	62.4	N	55.4	A(22)	A(38)	A(40)	58.0	59.1	60.5	925.6	3,906	85
28	63.4	N	55.5	A(44)	A(36)	A(20)	57.9	59.3	60.8	925.2	3,909	86
29	64.5	N	55.8	A(28)	A(28)	A(44)	57.9	59.2	60.6	924.2	3,935	81
30	63.8	N	55.8	A(26)	A(40)	A(34)	58.2	59.2	60.5	923.1	3,956	75
<b>Avg</b>	58.6	53.6	54.3				56.0	56.9	58.0		5,687	75
<b>Tot af</b>											338,424	

! Incomplete or estimated

# Station out of service

\* See notes on next page

N Data not recorded or collected

Shutter Position (U-Upper raised; M-Middle raised; L-Lower raised; A-All lowered; O-Unit Offline)

Penstock Unit Blending (value in parentheses represents approximate % total daily load)

**NOTES:**

Jul 21 – The upper set of temperature shutters on penstock unit #1 was raised.

**CDEC Station ID:**

**NFA** - North Fork American River at Auburn Dam

**ARP** - South Fork American River near Pilot Hill

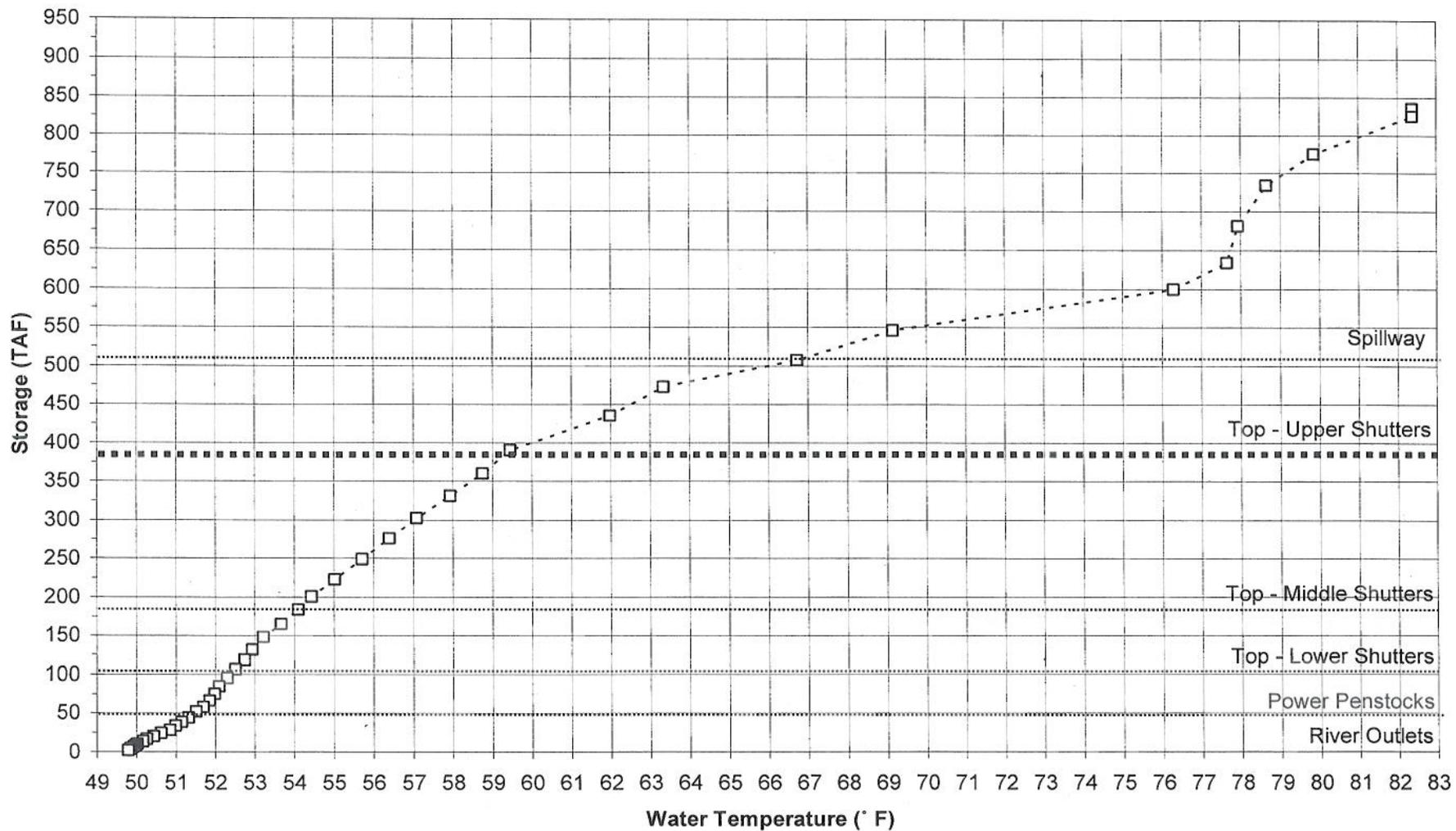
**AFD** - American River below Folsom Dam

**AHZ** - American River at Hazel Avenue Bridge, below Nimbus Dam

**AWP** - American River at William Pond Park

**AWB** - American River below Watt Avenue Bridge

### Folsom Lake Temperature Profile July 19, 2010



**Preliminary Temperature Operation Plan Scenarios - July 22, 2010**

Historical Conditions (2001-2009)						
Year	End of May		All Upper Shutters Lowered by	End of September		Watt Avenue Target (°F)
	Storage (TAF)	CWP Volume < 58°F (TAF)		Storage (TAF)	CWP Volume < 60°F (TAF)	
2001	696	275	30 Mar	368	30	65-71
2002	822	455	04 Mar	510	50	65-69
2003	962	640	02 Apr	658	135	65-67
2004	635	300	05 Mar	376	30	69
2005	959	705	15 Mar	652	140	65
2006	928	670	29 Mar	639	125	65
2007	787	355	21 Mar	323	30	68
2008	617	250	None Lowered	270	25	69-70
2009	933	550	12Mar	412	60	67
2010 50%-Exceedence Outlook						
2010	905	580	14Apr	570	120	66

**Model Results of Temperature Operation Scenarios<sup>1 2</sup>**

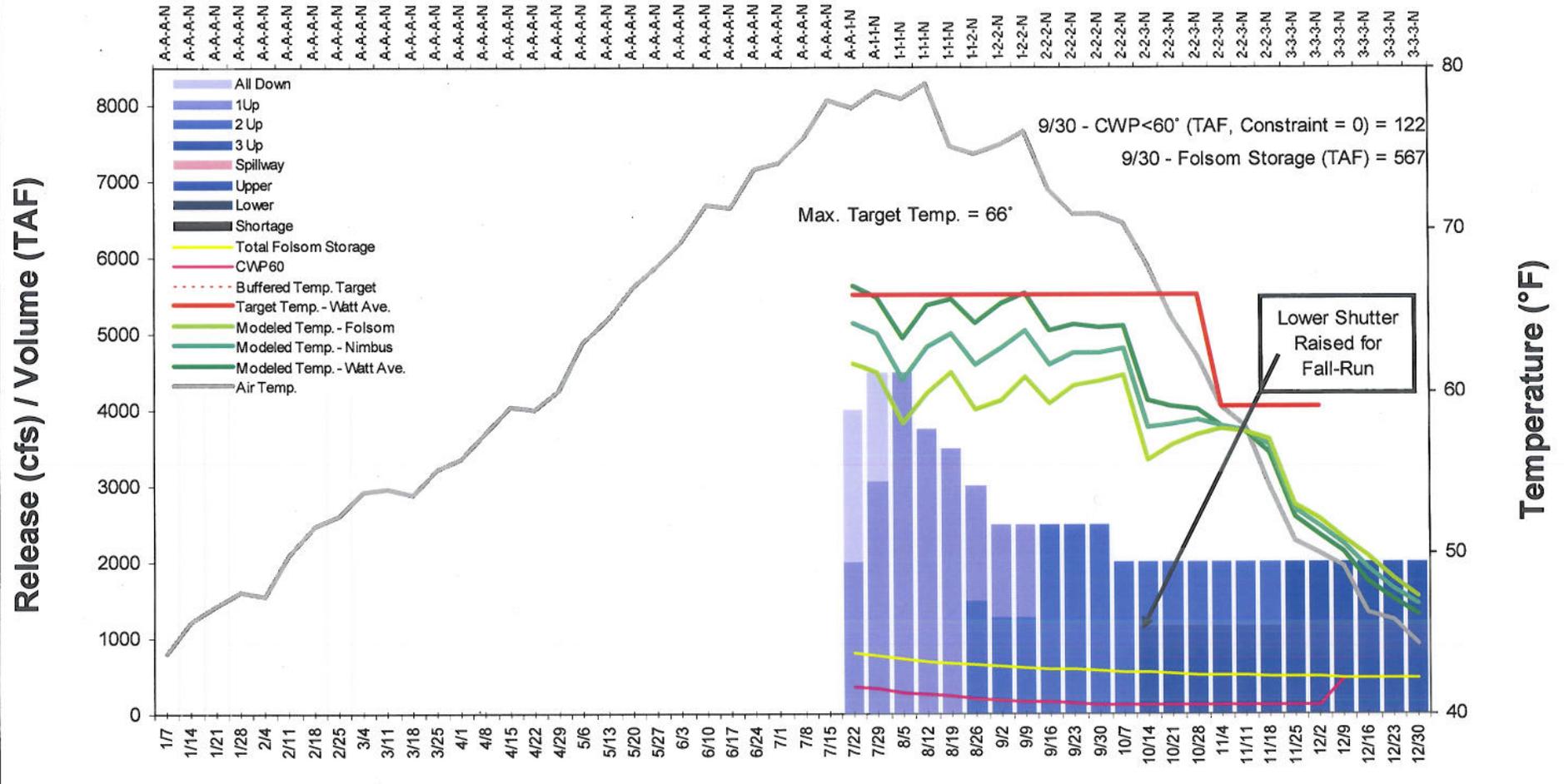
Scenarios	Target	Scenario Results
<b>1</b>	<b>66°F @ Watt Ave</b>	Target is met throughout the temperature operation season; Lowest set of temperature shutters are reserved for fall-run.
<b>2</b>	<b>65°F @ Watt Ave</b>	Target is met throughout the temperature operation season; Lowest set of temperature shutters are <b>NOT</b> reserved for fall-run; Operation results in an end-of-September cold-water pool volume that is more than 30% less than Scenario 1.
<b>3</b>	<b>Iterative Model (iCPMM) Results</b>	Temperature analysis utilizing the Iterative version of the CPMM w/o <b>temperature target buffer</b> ; Lowest set of temperature shutters are <b>NOT</b> reserved for fall-run.
<b>4</b>	<b>Iterative Model (iCPMM) Results</b>	Temperature analysis utilizing the Iterative version of the CPMM w/ <b>1°F temperature target buffer</b> ; Lowest set of temperature shutters are <b>NOT</b> reserved for fall-run.

<sup>1</sup> The temperature operation scenarios are based on a preliminary July 2010 50%-exceedence outlook, and 2001-2009 average weekly inflow temperature.

<sup>2</sup> Based on project operation during previous years, model results beyond early October are unreliable due to fall weather's influence on timing and rate of lake de-stratification. Folsom Lake storage, cold-water pool volume, and penstock-shutter configurations at the end of September are more reliable indicators of potential fall conditions.

# July 2010 50%-Exceedance Outlook

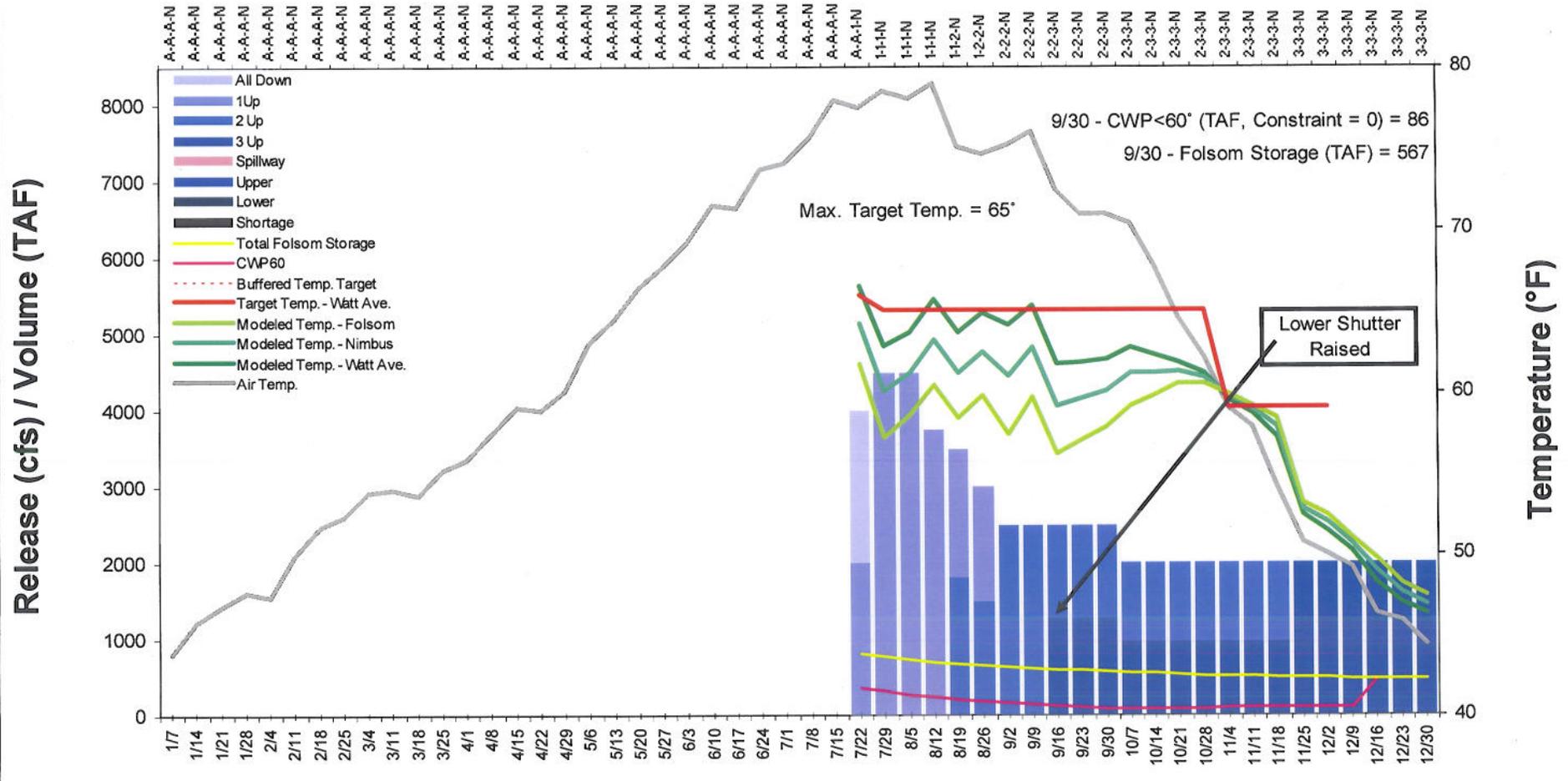
Watt Avenue Target - 66°F



Scenario 1

# July 2010 50%-Exceedance Outlook

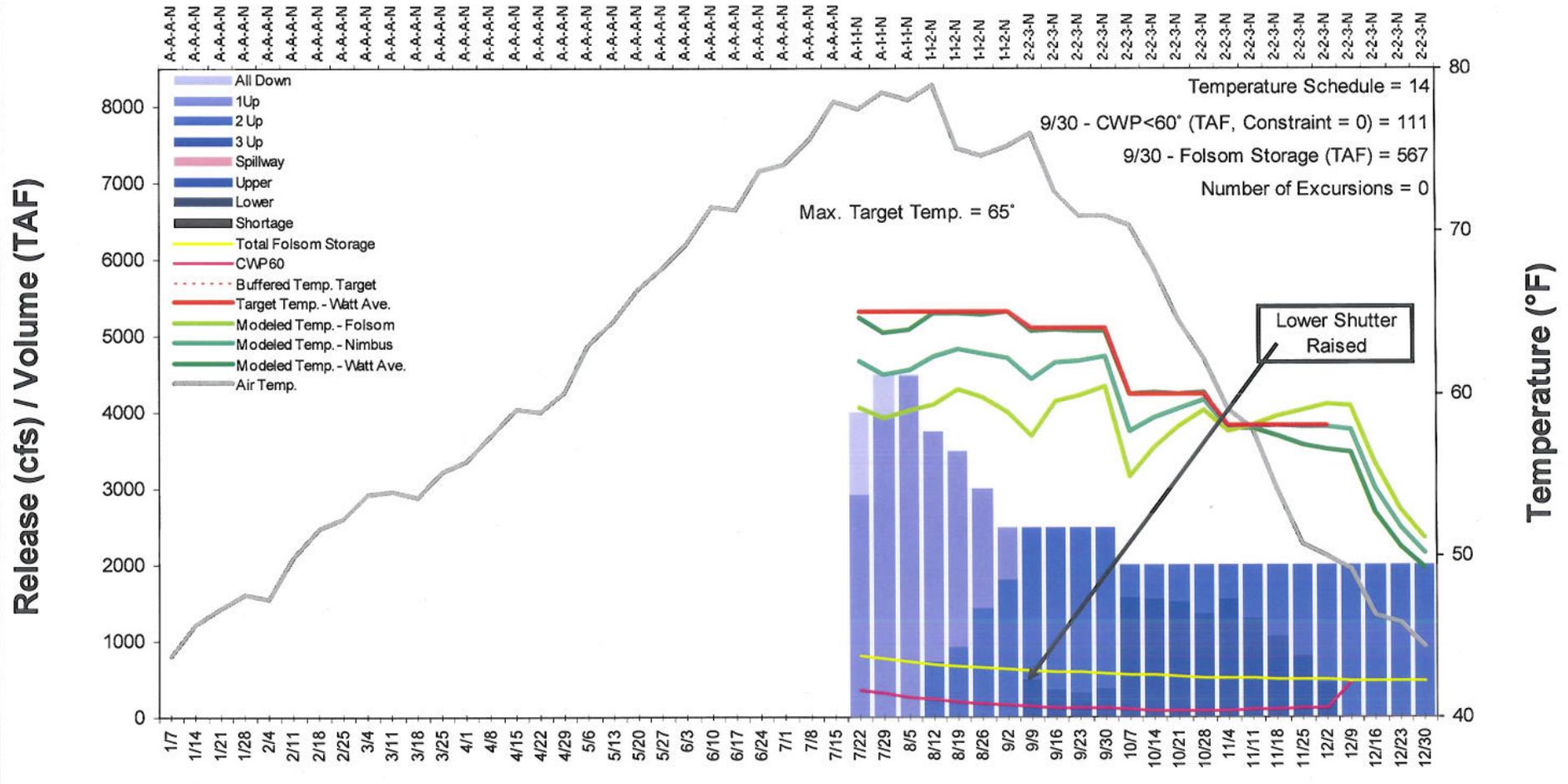
Watt Avenue Target - 65°F



Scenario 2

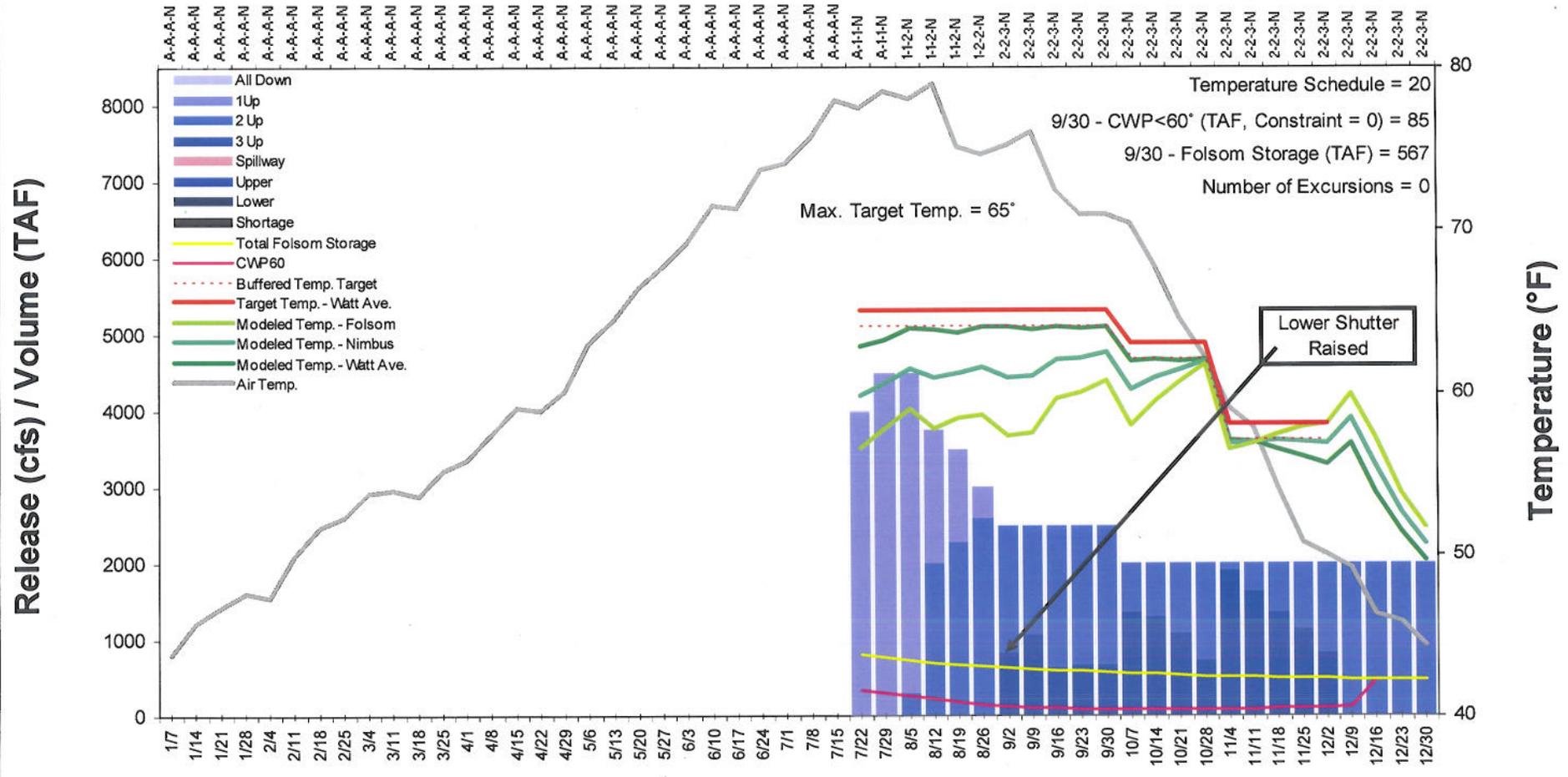
# July 2010 50%-Exceedance Outlook

No Buffer



# July 2010 50%-Exceedance Outlook

1°F Buffer



Scenario 4

## Meeting Attendance Record

Date: 22 July 2010

Time: 1300

Place: CUO 302

Subject of Meeting: ARG

Name	Organization	Phone Number
Carol Nicolas	USBR	cnicolas@usbr.gov
Dave Fob	NCC FFF	davef17965@aol.com
GARY ESTES	ARWI	(530) 889-9025 gary32@dy4135.net
Bernie Van Relt	USBR	bvanpelt@usbr.gov 916-989-7127
Russ Yaworsky	USBR	ryaworsky@usbr.gov 916-979-0268
Paul Olmstead	SMUD	palmste@smud.org 916-732-5716
Nick Anderson	FWS	Nick-ANDERSON@FWS.gov 916-414-6543
Rod Hall	Water Forum	rodhall@comcast.net
Josh Israel	USBR	jaisrael@usbr.gov
Claire Hsu	USBR	chhsu@usbr.gov



## **American River Operations Group**

DRAFT Meeting Notes

Date 24 August 2010

### **Attendees**

Bonnie Van Pelt, Russ Yaworsky (Central Valley Operations), Claire Hsu, John Hannon, Louis Moore and Carol Nicolos, Reclamation; Gary Sprague, NMFS; Nick Hindman and Dan Cox, USFWS; Paul Olmstead, SMUD; Robert Vincik, CDFG; Mike Laing, NCCF/GBF; Rod Hall, Water Forum; Jerry Toenyas, Northern California Power Agency (NCPA); Jonas Minton, Planning and Conservation League (PCL); Brent ten Pas, NCPA; and Gary Estes, American River Watershed Institute

### **Handouts**

- August Agenda
- Daily CVP Water Supply Report (Run Date August 24, 2010); link is <http://www.usbr.gov/mp/cvo/vungvari/dayrpt.pdf>;
- Temperature Summary for Folsom Lake and Lower American River (through Aug. 23<sup>rd</sup> and July 2010), including Folsom Lake Temperature Profile (August 17, 2010); and
- Preliminary Temperature Operation Plan Scenarios (50% exceedence outlook)—August 24, 2010

### **Fishery Update**

Robert Vincik reported that the Nimbus Hatchery Fish Passage Project DEIR/DEIS would hopefully be released by end of September. Through a contract with Reclamation and Pacific States Marine Fisheries Commission Robert indicated that DFG would be working with Stan Allen the program manager to personnel for the fall carcass survey.

Nick Hindman, Bruce Oppenheim, and John Hannon checked isolation pools for stranded fish when the releases were at 3,500 cfs; there were no cold water fish stranded. The survey occurred on Wednesday, August 3<sup>rd</sup> in seven locations from Nimbus Dam to Paradise Beach. The higher water temperatures (74° F) in these side channels likely encouraged avoidance by juvenile salmonids. Nick noted a 6 inch difference in water level from 3,500 to 4,000 cfs. Note: it was conceded that this drop in elevation probably was not attributed to the 500 cfs drop alone—no baseline measurement prior to the release change (communication after meeting with Bruce Oppenheim).

The gravel augmentation project at lower Sailor Bar is scheduled to begin on September 13<sup>th</sup>.

### **Operations**

Russ Yaworsky reported that releases are currently at 1,750 cfs and this is expected to remain unchanged through Labor Day. After Labor Day, the Flow Management Standard (FMS) drops to 1,500 cfs. Since we have been able to meet Delta outflow requirements and depletions have been low due to the mild weather conditions, we will likely remain at 1,500 through October. Russ indicated that he believed the flows would be

approximately 2,000 cfs from November-December based on the information he has thus far regarding end-of-September storages. The FMS prescribes a Four Reservoir Index (FRI), which is calculated as the combined end-of-September storage in four reservoirs – French Meadows, Union Valley, Hell Hole, and Folsom Reservoirs. The mean monthly release (projected) through August is approximately 2,600 cfs.

Robert Vincik presented a concern regarding the release cut to 1,500 cfs after Labor Day. Rob Titus had relayed that the length of the flow decrease to 1,500 cfs would possibly expose juvenile steelhead rearing habitat forcing these fish into areas where they would be more vulnerable to predation. Robert agreed to discuss the time frame for the release change with Rob after the meeting; i.e., what is the critical time frame to provide protection for juvenile steelhead rearing?

Folsom Reservoir storage was approximately 669,000 AF as of midnight August 23<sup>rd</sup>, which is 110% of the 15-year average (see Daily CVP Water Supply Report HO). Shasta storage is approximately 3.6 million AF; 122% of the 15-year average. End-of-September storage is expected to be approximately 610,000 AF. Because of high carry-over storage, there is a higher probability that releases may exceed power plant capacity (approximately 5,000 cfs with the Unit 2 outage) this coming rain/flood season. Northern Central Valley Project storage is nearly twice that of last year at 7.5 million AF (i.e., 105% of the 15-year average).

**Temperature Management**

Temperatures at Watt Avenue have averaged 63.6° for August (see temperature summary HO). Three pairs of temperature shutters have been raised since the July meeting. In the coming months we may start blending more from penstock unit 3. Russ projected that there is a 50/50 chance that a pair of lower shutters would need to be raised prior to Chinook salmon spawning. Reclamation is currently operating according to a 66° F temperature target at Watt Avenue (see Scenario # 1). The four temperature scenarios included in the HOs were based on the August 17<sup>th</sup> temperature profile and are summarized below. Scenarios 1 and 2 were inputted manually. Scenarios 3 and 4 are based on iCPMM computer-generated modeling runs and the schedule numbers that correspond are noted in the first column of the table below in parentheses.

	Maximum Temperature Target (°F)	Shutters reserved for Fall-Run (Y/N)	End-of-Sept. CWP vol. (TAF)	EOS Folsom Storage (TAF)	Forecast (type) <sub>1</sub>
Scenario 1	66	Y	129	613	M-50%
Scenario 2	65	N	112	613	M-50%
Scenario 3	65 (#15)	N	122	613	M-50%
Scenario 4	65 (#19)	N	102	613	M-50% (+ buffer) <sub>2</sub>

<sup>1</sup> modified 50% exceedence = M-50

<sup>2</sup> 1°F buffer is factored into the model = (+ buffer)

The model results for the temperature operation scenarios were very close to what was described last month. Once again, temperature Scenario 1 has an increased probability in

comparison to the other three scenarios, that a lower pair of shutters could be reserved for fall run Chinook salmon spawning. All scenarios incorporate a 1,750 cfs release through October.

### **Other**

The El Dorado Water and Power Authority (EDWPA) proposed a supplemental water rights project as per its El Dorado-SMUD Cooperation Agreement. The proposed project is to establish permitted water rights allowing diversion of water (up to 40,000 AF) for consumptive use from the American River basin to meet planned future water demands in the El Dorado Irrigation District and the Georgetown Divide Public Utility District service areas, as well as other areas located within El Dorado County that are outside of these service areas. Robert Vincik indicated that CDFG will be providing comments on the Draft Environmental Impact Report for this supplemental water rights project.

### **Post-meeting update**

Reclamation will also be providing comments on EDWPA supplemental water rights project.

We met to discuss flow reduction options after Labor Day. Russ explained the reasons that a reduction to a flow of 1,500 cfs (vs. staying at 1,750 cfs) would be advantageous from an operations standpoint (increased cold water pool storage and Reservoir reserve going into November). Reservoir inflow is extremely low (90% exceedence). The fishery agencies' representatives agreed with a reduction to 1,500 cfs through September with a reassessment of the temperature conditions and inflows as per the updated profiles presented at the September ARG meeting.

Flows have been proposed to be dropped to 1,000 cfs to install the hatchery weir pickets. This would be for a short duration (about 6 hours).

### **Next Meeting**

**Date: Thursday, September 30, 2010**

**Location: Central Valley Operations Office  
3310 El Camino Ave.  
Sacramento, CA 95821**

**Room: 302**

**Time: 1:00 PM**

**Notes by: Bonnie Van Pelt and Carol Nicolos**

AGENDA  
American River Group

Date: Tuesday, August 24, 2010

Time: 1:00 PM

Location: Central Valley Operations Office  
3310 El Camino Ave.  
Sacramento, CA 95821

Room: Room 302

Update on Fisheries Monitoring - DFG and Reclamation

Operations Forecast - USBR

Temperature Management Plan - USBR

Status Reports - Group

Schedule Next Meeting

Adjourn

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

**DAILY CVP WATER SUPPLY REPORT**

AUGUST 23, 2010

RUN DATE: August 24, 2010

RESERVOIR RELEASES IN CUBIC FEET/SECOND

RESERVOIR	DAM	WY 2009	WY 2010	15YR MEDIAN
TRINITY	LEWISTON	963	470	450
SACRAMENTO	KESWICK	9,935	9,287	9,500
FEATHER	OROVILLE (SWP)	2,000	6,000	5,000
AMERICAN	NIMBUS	2,962	1,983	2,002
STANISLAUS	GOODWIN	225	202	285
SAN JOAQUIN	FRIANT	216	324	260

STORAGE IN MAJOR RESERVOIRS IN THOUSANDS OF ACRE-FEET

RESERVOIR	CAPACITY	15YR AVG	WY 2009	WY 2010	% OF 15 YR AVG
TRINITY	2,448	1,781	1,063	1,669	94
SHASTA	4,552	2,914	2,017	3,564	122
OROVILLE (SWP)	3,538	2,228	1,414	2,144	96
FOLSOM	977	606	482	669	110
NEW MELONES	2,420	1,634	1,172	1,323	81
FED. SAN LUIS	966	222	11	285	128
MILLERTON	520	282	352	347	123
TOT. N. CVP	11,360	7,157	4,745	7,510	105

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

RESERVOIR	CURRENT WY 2010	DRIEST WY 1977	WETTEST WY 1983	15 YR AVG	% OF 15 YR AVG
TRINITY	1,525	204	2,842	1,438	106
SHASTA	5,375	2,338	10,432	5,920	91
FOLSOM	2,148	325	6,351	2,690	80
NEW MELONES	942	0	2,678	1,084	87
MILLERTON	1,825	314	4,449	1,718	106

ACCUMULATED PRECIPITATION FOR WATER YEAR TO DATE IN INCHES

RESERVOIR	CURRENT WY 2010	DRIEST WY 1977	WETTEST WY 1983	AVG (N YRS)	% OF AVG	LAST 24 HRS
TRINITY AT FISH HATCHERY	34.21	13.76	56.20	32.08 ( 48 )	107	0.00
SACRAMENTO AT SHASTA DAM	69.76	17.28	114.16	62.17 ( 53 )	112	0.00
AMERICAN AT BLUE CANYON	67.14	15.70	103.88	64.52 ( 35 )	104	0.00
STANISLAUS AT NEW MELONES	33.29	0.00	45.73	26.79 ( 32 )	124	0.00
SAN JOAQUIN AT HUNTINGTON LK	42.85	17.50	83.00	42.66 ( 35 )	100	0.00

## Nicolos, Carol J

---

**From:** Van Pelt, Bonnie L  
**Sent:** Tuesday, August 24, 2010 9:29 AM  
**To:** Nicolos, Carol J  
**Subject:** FW: Upper Basin Update August 2010

Carol,

For the ARG meeting today...Paul's upper basin updates. Thanks. Bonnie

---

**From:** Paul Olmstead [mailto:[palmste@smud.org](mailto:palmste@smud.org)]  
**Sent:** Tuesday, August 24, 2010 9:10 AM  
**To:** Van Pelt, Bonnie L  
**Subject:** Upper Basin Update August 2010

Bonnie – For the AROG today.

An update

August precipitation through 0700 hrs 08/19/10 is 0.00 in., which is 0% of the August average of 0.29 in. Precipitation for the water year to date is 57.61 in. which is 100% of average to date (56.51 inches) and 100% of the entire water year average of 57.61 inches.

Reservoir storage is 86% of capacity. Historical average storage is 75%. A year ago, we were at 85 % capacity.

Runoff into the storage reservoir basins is 103% of median to date through August 18. The snowpack is 0% of average at selected snow sensors.

Runoff outlook

Runoff is receding to normal base flow rate. Mild conditions in the UARP with no anticipated thundershower activity anticipated this week.

*Paul Olmstead  
Water and Power Resource Specialist  
Sacramento Municipal Utility District  
916-732-5716*

August 24, 2010

Summary for Folsom Lake and Lower American River - August 2010

Day	Mean Daily Water Temperature (° F)							Storage (TAF)	Release (cfs)	Sacramento Mean Daily Air Temperature (° F)		
	NFA	ARP	AFD	Penstock Units 1-2-3			AHZ	AWP	AWB		Folsom	Nimbus
1	66.3	62.6	61.8	U(14)	A(39)	A(47)	62.6	63.2	64.2	747.7	4,048	76
2	66.6	63.5	61.2	U(29)	A(44)	A(27)	63.4	63.9	64.8	741.3	3,934	75
3	64.8	63.8	60.3	U(42)	A(19)	A(39)	62.9	63.9	65.0	735.4	3,962	77
4	64.0	N	60.9	U(34)	A(39)	A(27)	62.0	63.1	64.2	730.2	3,475	75
5	63.2	N	60.5	U(41)	A(30)	A(29)	62.5	63.1	64.0	725.9	3,422	71
6	64.1	N	* 59.2	U(44)	A(40)	M(16)	62.5	63.2	64.3	721.3	3,403	74
7	64.2	N	58.7	U(17)	A(43)	M(40)	61.9	63.0	64.3	716.9	3,446	73
8	64.7	N	57.7	U(0)	A(37)	M(63)	60.9	62.0	63.3	712.1	2,998	70
9	65.5	N	61.0	U(35)	A(55)	M(10)	60.8	61.4	62.7	707.0	2,986	73
10	64.2	N	59.3	U(44)	A(39)	M(17)	62.2	62.8	63.6	704.0	2,967	71
11	64.2	N	* 57.3	U(66)	U(34)	M(0)	61.8	62.7	63.7	700.5	2,436	67
12	64.6	N	57.4	U(65)	U(34)	M(1)	61.1	62.6	64.0	696.7	2,496	75
13	65.0	N	57.6	U(62)	U(38)	M(0)	60.1	61.7	63.4	693.3	2,478	76
14	65.4	N	57.8	U(56)	U(43)	M(1)	60.3	61.4	62.8	690.3	2,489	72
15	65.9	N	57.3	U(38)	U(45)	M(17)	60.4	61.6	62.9	686.8	2,516	74
16	66.6	N	57.4	U(49)	U(33)	M(18)	60.1	61.7	63.2	682.7	2,456	79
17	65.3	N	57.5	U(25)	U(52)	M(23)	59.7	61.1	62.7	680.1	2,490	73
18	63.7	N	57.4	U(38)	U(39)	M(23)	59.9	61.3	62.5	678.5	2,069	73
19	62.9	N	58.3	U(39)	U(58)	M(3)	60.2	61.8	63.2	676.7	1,943	78
20	62.8	N	58.6	U(50)	U(50)	M(0)	59.9	61.8	63.6	675.2	1,992	76
21	61.9	N	58.7	U(45)	U(54)	M(1)	60.4	61.4	62.5	673.8	1,993	68
22	61.5	N	58.9	U(54)	U(45)	M(1)	61.0	62.2	63.2	671.5	1,987	73
23	62.5	N	59.0	U(53)	U(46)	M(1)	61.2	62.8	64.3	668.6	1,983	80
24												
25												
26												
27												
28												
29												
30												
31												
<b>Avg</b>	64.3	63.3	58.9				61.2	62.3	63.6		2,781	74
<b>Tot af</b>											126,880	

! Incomplete or estimated  
 # Station out of service  
 \* See notes on next page

N Data not recorded or collected  
 Shutter Position (U-Upper raised; M-Middle raised; L-Lower raised; A-All lowered; O-Unit Offline)  
 Penstock Unit Blending (value in parentheses represents approximate % total daily load)

**Summary for Folsom Lake and Lower American River - July 2010**

Day	Mean Daily Water Temperature (° F)							Storage (TAF)	Release (cfs)	Sacramento Mean Daily Air Temperature (° F)		
	NFA	ARP	AFD	Penstock Units 1-3			AHZ	AWP	AWB		Folsom	Nimbus
1	64.4	58.9	55.9	A(39)	A(25)	A(36)	58.1	59.1	60.2	921.4	3,894	72
2	64.3	59.7	56.1	A(36)	A(41)	A(23)	58.3	59.3	60.3	918.9	3,895	75
3	64.4	59.6	56.0	A(27)	A(32)	A(41)	58.4	59.4	60.5	916.6	3,895	77
4	64.2	59.5	56.3	A(42)	A(36)	A(22)	58.5	59.6	60.8	913.6	3,903	79
5	64.7	60.8	56.5	A(24)	A(32)	A(44)	58.4	59.6	60.9	910.5	3,896	80
6	64.9	61.1	56.7	A(23)	A(41)	A(36)	58.8	59.7	60.8	906.6	3,890	71
7	65.1	61.5	56.8	A(42)	A(36)	A(22)	58.7	59.8	60.9	902.2	3,894	74
8	65.6	62.7	57.0	A(38)	A(14)	A(48)	59.0	60.0	61.2	897.8	3,899	74
9	67.0	64.6	57.1	A(32)	A(42)	A(26)	59.3	60.3	61.5	893.1	3,843	76
10	68.7	64.3	57.3	A(30)	A(29)	A(41)	59.4	60.7	62.0	887.7	3,940	81
11	68.8	64.8	57.4	A(31)	A(44)	A(25)	59.6	60.6	61.9	882.1	4,010	79
12	68.6	64.6	57.7	A(33)	A(26)	A(41)	59.7	60.7	61.9	876.5	4,056	73
13	67.8	64.1	58.1	A(38)	A(24)	A(38)	59.7	60.7	61.8	870.2	3,965	76
14	68.3	65.0	58.1	A(48)	A(37)	A(15)	60.1	61.1	62.2	864.7	3,914	80
15	68.2	64.6	! 58.2	A(37)	A(25)	A(38)	60.7	61.5	62.7	860.0	3,957	86
16	70.6	65.1	! 58.3	A(37)	A(23)	A(40)	60.8	62.0	63.3	854.4	3,965	85
17	70.3	67.2	59.0	A(40)	A(37)	A(23)	60.9	61.8	63.1	848.7	4,010	82
18	71.1	65.3	59.0	A(37)	A(24)	A(39)	61.1	62.2	63.5	843.4	3,958	81
19	70.3	68.1	59.2	A(23)	A(40)	A(37)	61.3	62.4	63.6	836.2	3,965	81
20	69.5	66.7	59.5	A(38)	A(37)	A(25)	61.3	62.2	63.3	830.9	4,009	76
21	68.9	64.5	* 59.1	U(11)	A(42)	A(47)	61.4	62.2	63.1	824.9	3,991	70
22	68.8	65.8	59.3	U(17)	A(45)	A(38)	61.3	62.0	63.1	817.4	4,446	74
23	68.9	65.4	59.3	U(20)	A(38)	A(42)	61.1	61.9	63.0	810.6	4,444	78
24	68.6	64.8	59.6	U(18)	A(46)	A(36)	61.3	62.0	63.1	803.4	4,440	78
25	70.6	66.3	59.9	U(18)	A(45)	A(37)	! 61.4	62.2	63.3	795.4	4,381	74
26	69.0	67.6	59.2	U(29)	A(34)	A(37)	N	62.2	63.1	787.7	4,389	69
27	68.4	64.2	59.9	U(26)	A(40)	A(34)	N	61.6	62.5	781.3	4,384	72
28	69.2	62.9	60.0	U(28)	A(33)	A(39)	N	61.9	62.8	774.2	4,313	72
29	67.7	63.3	60.2	U(29)	A(41)	A(30)	! 61.8	62.3	63.2	767.6	4,358	75
30	66.2	63.4	60.3	U(29)	A(33)	A(38)	61.8	62.5	63.5	760.9	4,460	75
31	65.6	63.9	60.9	U(25)	A(41)	A(34)	62.2	62.7	63.6	753.7	4,347	75
<b>Avg</b>	67.7	63.9	58.3				60.2	61.2	62.3		4,087	76
<b>Tot af</b>											251,326	

! Incomplete or estimated  
# Station out of service  
\* See notes on next page

N Data not recorded or collected  
Shutter Position (U-Upper raised; M-Middle raised; L-Lower raised; A-All lowered; O-Unit Offline)  
Penstock Unit Blending (value in parentheses represents approximate % total daily load)

**NOTES:**

Jul 21 – The upper set of temperature shutters on penstock unit #1 was raised.

Aug 6 – The upper and middle sets of temperature shutters on penstock unit #3 were raised.

Aug 11 – The upper set of temperature shutters on penstock unit #2 was raised.

**CDEC Station ID:**

**NFA** - North Fork American River at Auburn Dam

**ARP** - South Fork American River near Pilot Hill

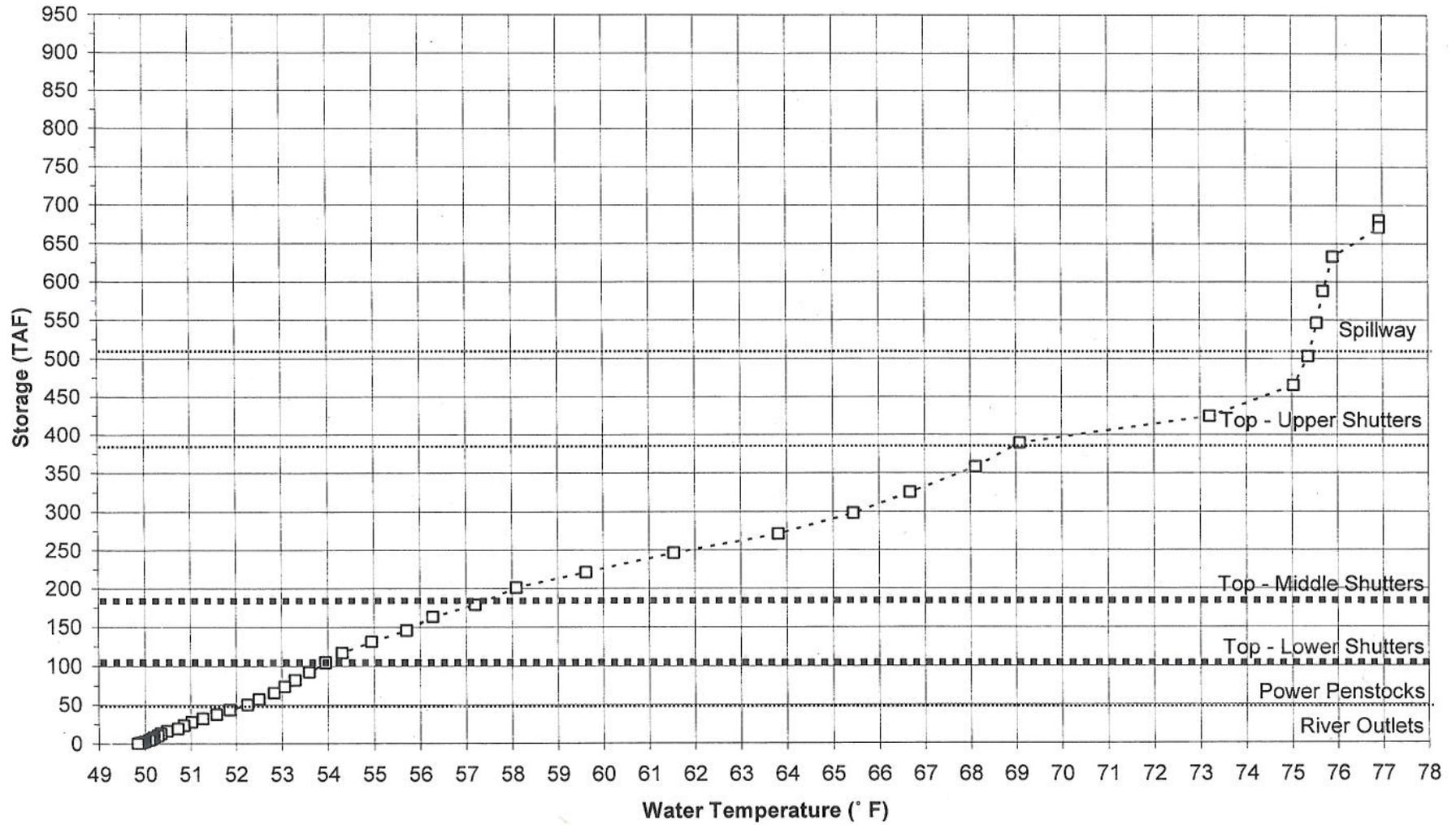
**AFD** - American River below Folsom Dam

**AHZ** - American River at Hazel Avenue Bridge, below Nimbus Dam

**AWP** - American River at William Pond Park

**AWB** - American River below Watt Avenue Bridge

### Folsom Lake Temperature Profile August 17, 2010



**Preliminary Temperature Operation Plan Scenarios - August 24, 2010**

Year	Historical Conditions (2001-2009)					Watt Avenue Target (°F)
	End of May		All Upper Shutters Lowered by	End of September		
	Storage (TAF)	CWP Volume < 58°F (TAF)		Storage (TAF)	CWP Volume < 60°F (TAF)	
2001	696	275	30 Mar	368	30	65-71
2002	822	455	04 Mar	510	50	65-69
2003	962	640	02 Apr	658	135	65-67
2004	635	300	05 Mar	376	30	69
2005	959	705	15 Mar	652	140	65
2006	928	670	29 Mar	639	125	65
2007	787	355	21 Mar	323	30	68
2008	617	250	None Lowered	270	25	69-70
2009	933	550	12Mar	412	60	67
<b>2010 50%-Exceedence Outlook</b>						
2010	905	580	14Apr	610	125	66

**Model Results of Temperature Operation Scenarios<sup>1 2</sup>**

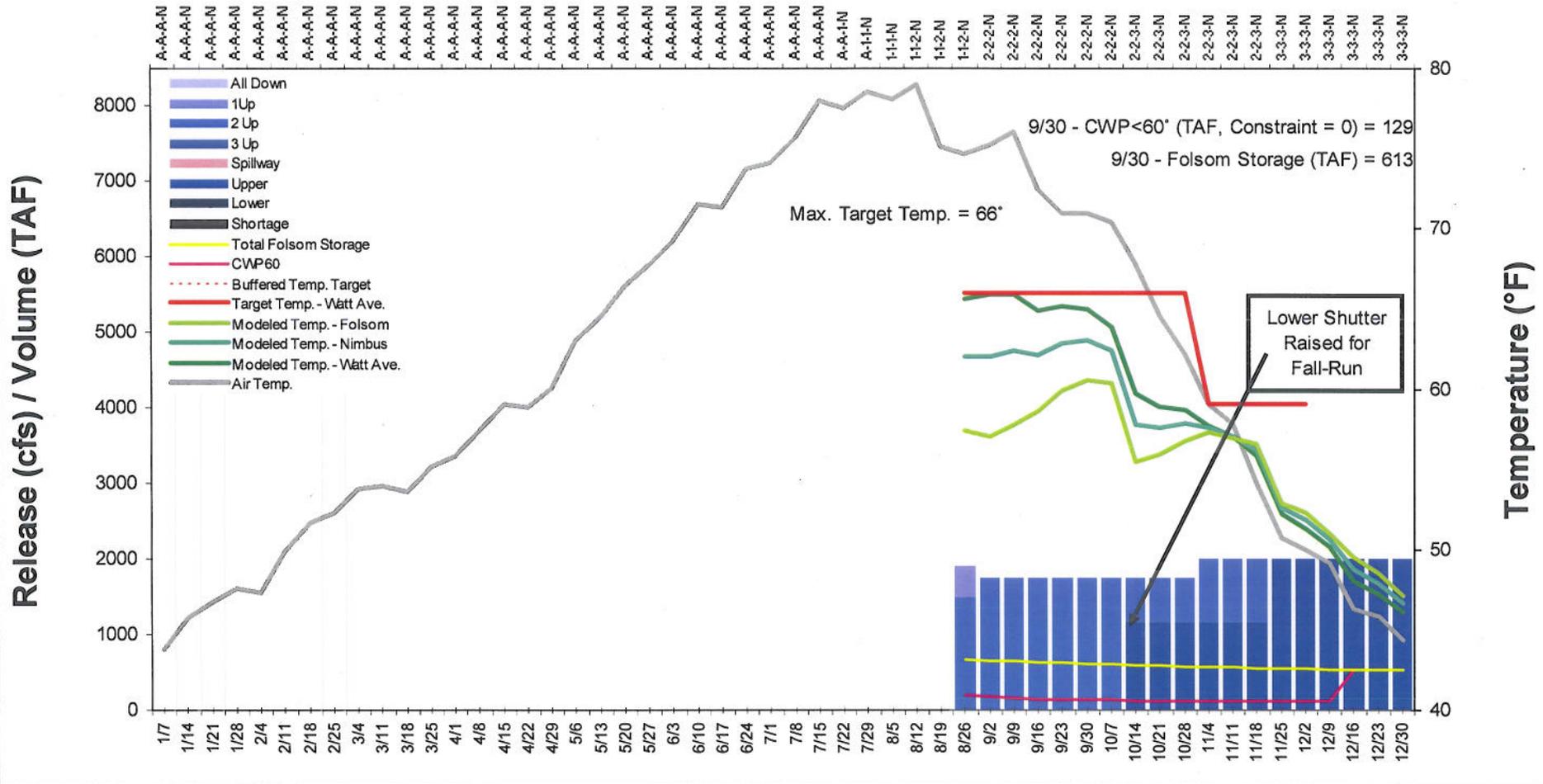
Scenarios	Target	Scenario Results
1	66°F @ Watt Ave	Target is met throughout the temperature operation season; Lowest set of temperature shutters are reserved for fall-run.
2	65°F @ Watt Ave	Target is met throughout the temperature operation season; Lowest set of temperature shutters are <b>NOT</b> reserved for fall-run.
3	Iterative Model (iCPMM) Results	Temperature analysis utilizing the Iterative version of the CPMM w/o temperature target buffer; Lowest set of temperature shutters are <b>NOT</b> reserved for fall-run.
4	Iterative Model (iCPMM) Results	Temperature analysis utilizing the Iterative version of the CPMM w/1°F temperature target buffer; Lowest set of temperature shutters are <b>NOT</b> reserved for fall-run.

<sup>1</sup> The temperature operation scenarios are based on a preliminary August 2010 50%-exceedence outlook, and 2001-2009 average weekly inflow temperature.

<sup>2</sup> Based on project operation during previous years, model results beyond early October are unreliable due to fall weather's influence on timing and rate of lake de-stratification. Folsom Lake storage, cold-water pool volume, and penstock-shutter configurations at the end of September are more reliable indicators of potential fall conditions.

# August 2010 50% -Exceedance Outlook

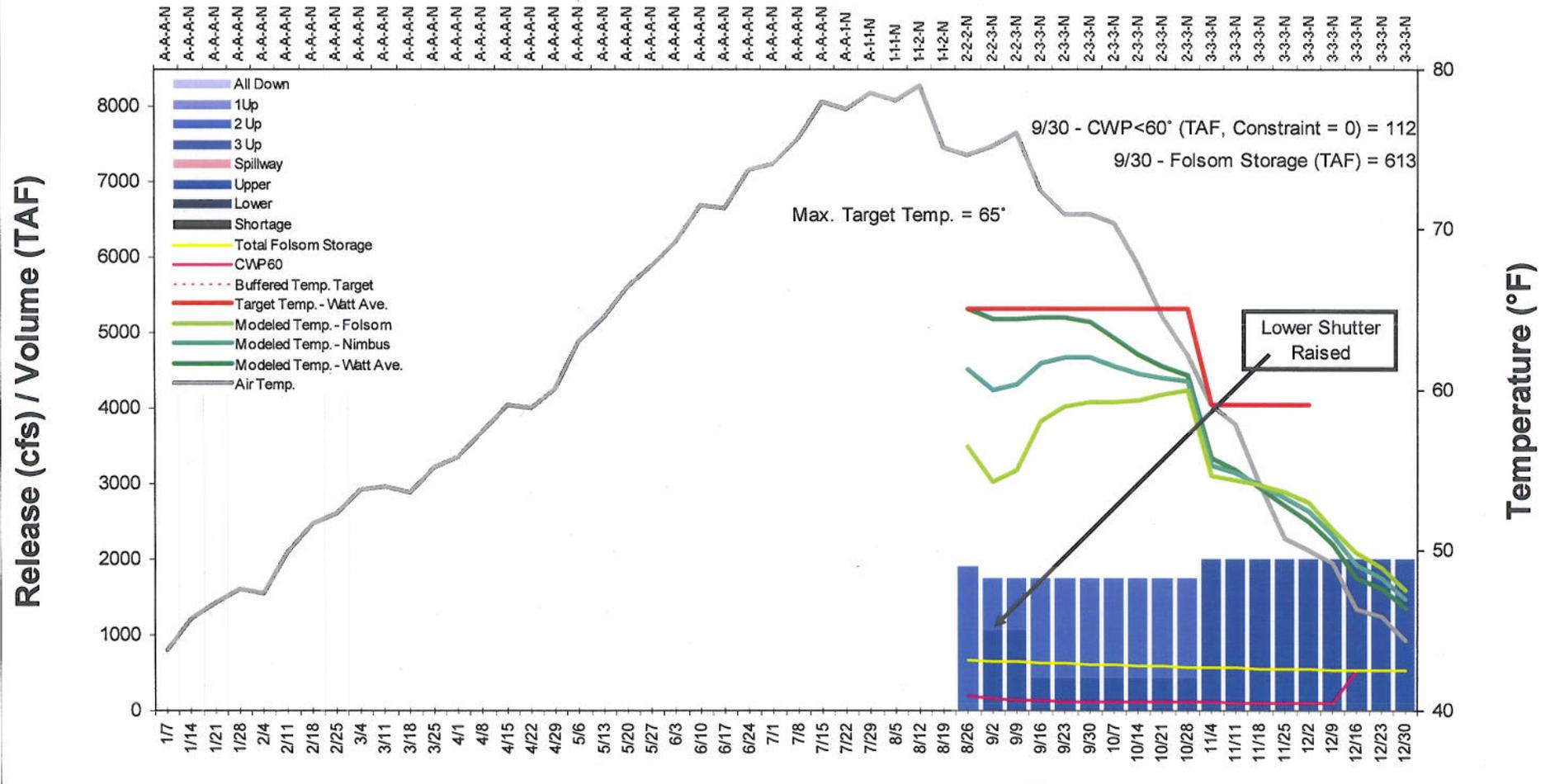
Watt Avenue Target - 66°F



Scenario 1

# August 2010 50% -Exceedance Outlook

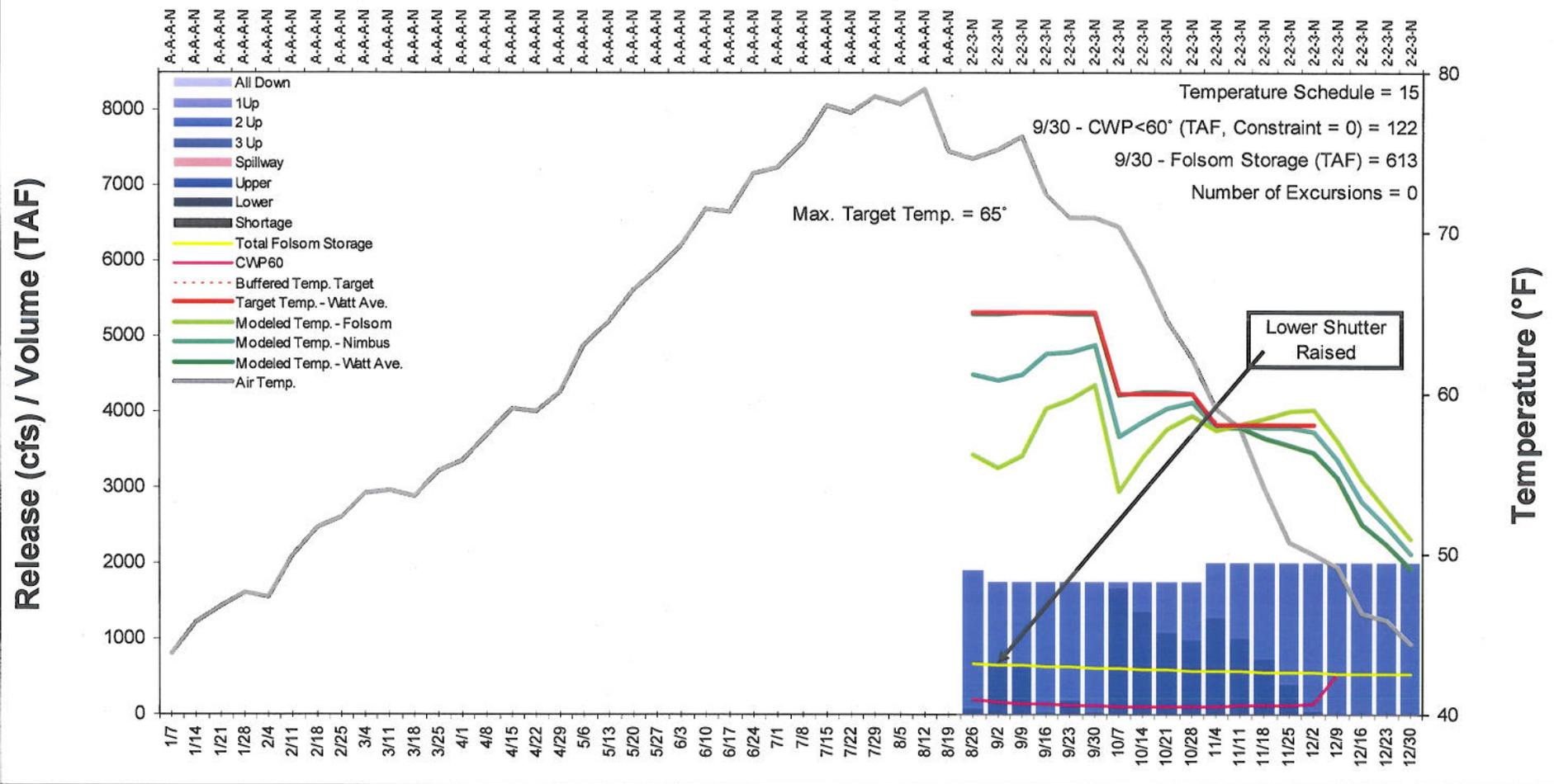
Watt Avenue Target - 65°F



Scenario 2

# August 2010 50% -Exceedance Outlook

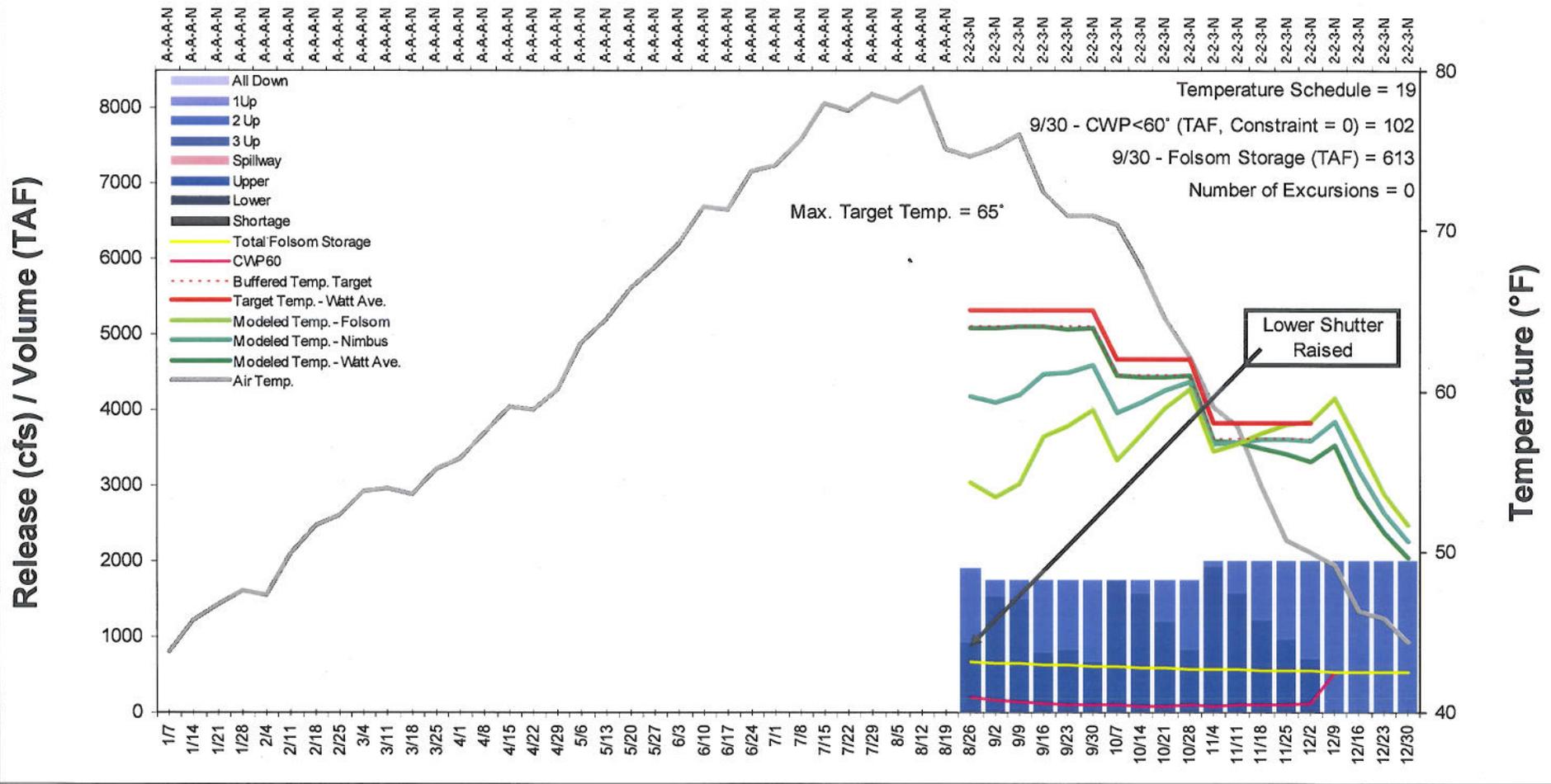
1750 cfs - No Buffer



Scenario 3

# August 2010 50% -Exceedance Outlook

1750 cfs - 1°F Buffer



## Meeting Attendance Record

Date: 24 Aug 2010

Time: 1300

Place: CVO Rm 302

Subject of Meeting: ARG

Name	Organization	Phone Number
Carol Nicolas	USBR	916 989 7276 cnicolas@usbr.gov
Gary Sprague	NMFS	916 930 3615 Gary.Sprague@NOAA.gov
<del>Robert</del> Vincik	DFG	916 358-2933 MVINCIK@dfg.ca.gov
GARY ESTES	ARWI CA EXTREME PRECIP SYMPOSIUM	530-889-9025 gary32@dg4135.us
Russ Yaworsky	Reclamation - CVO	916-979-0268 ryaworsky@usbr.gov
Bonnie Van Pelt	Reclamation - CCAO	916 989-7129 bvanpelt@usbr.gov
Nick Hindman	FWS	916 414-6543 nick.hindman@fws.gov
Dan Cox	FWS	916 414-6539 dan_cox@fws.gov
Paul Olmstead	SMUD	916-732-5714 polmste@smud.org
Brent Ten Pas	WCOA	781-4283 brent.tenpas@nepa.com

## Meeting Attendance Record

Date: 24 Aug

Time: 1300

Place: CUO Rm 302

Subject of Meeting: \_\_\_\_\_

Name	Organization	Phone Number
Jerry Toenyes	NCPA	916 785 4397
MIKE LAING	NO CAL FED OF FLYFISHERS GRANITE BAY FLYCASTERS	916-487-3283 MW LAING@AOL.COM
Rod Hall	Water Forum	916-631-7643
John Hannon	USBR	916-978-552x
Claire Hsu	USBR	916-978-5085
LOUIS MOORE	USBR	916-978-5106
Jonas Minton	PCL	916 719-4049

## **American River Operations Group**

DRAFT Meeting Notes

Date 30 September 2010

### **Attendees**

Bonnie Van Pelt, Russ Yaworsky (Central Valley Operations), Claire Hsu, John Hannon, Josh Israel, and Carol Nicolos, Reclamation; Gary Sprague, NMFS; Nick Hindman and Beth Campbell, USFWS; Paul Olmstead, SMUD; Rob Titus, DFG; Mike Laing, NCCFFF; Felix Smith, SARA; and Rod Hall, Water Forum.

### **Handouts**

- September Agenda
- Daily CVP Water Supply Report (Run Date September 30, 2010); link is <http://www.usbr.gov/mp/cvo/vungvari/dayrpt.pdf>;
- Temperature Summary for Folsom Lake and Lower American River September 1 – 29, and August 2010, including Folsom Lake Temperature Profile (September 20, 2010); and
- Preliminary Temperature Operation Plan Scenarios 50% exceedence outlook – September 30, 2010

### **Fishery Update**

Robert Vincik reported prior to the meeting that they are currently installing screw traps at Knights Landing; will check for fish on October 5th. Screw traps at Moulton and Tisdale Weirs have been fishing since July and have not seen any emigrating salmon to date. The carcass survey is scheduled to begin October 18, so DFG plans to have Pacific States Marine Fisheries Commission staff hired and outfitted by that time.

### **Precipitation**

Paul Olmstead reported the following in his Upper Basin precipitation update:

- September precipitation through 0700 hours 08/27/2010 is 0.01”, which is 1% of the September average of 0.98”.
- Precipitation for the water year to date is 57.38” and is 100% of average to date (56.51”) and 100% of the entire water year average of 57.61”.
- Reservoir storage is 73% of capacity. Historical average storage is 61%. Last year at this time we were at 71% capacity.
- Runoff into the storage reservoir basins is 0% of median to date through September 27, and the snowpack is 0% of average at selected snow sensors. In terms of the outlook, runoff is base flow.
- Temperature outlook: It will be unseasonably warm the next few days. There is no anticipated precipitation or thunderstorm activity this week.

### **Operations**

Russ Yaworsky reported that releases are currently at 1,500 cfs. This is the prescribed Flow Management Standard (FMS) minimum flow for the month of October based on the Four Reservoir Index; i.e., end of September storage in French Meadows, Union Valley,

Hell Hole, and Folsom Reservoirs. According to the Daily CVP Water Supply Report HO:

- Folsom Reservoir storage is approximately 625,000 AF; 114% of the 15-year average.
- Shasta Reservoir storage is approximately 3.3 million AF; 125% of the 15-year average.
- North Central Valley Project storage is 7.1 million AF; 107% of the 15-year average.

FMS flows are prescribed to increase to 2,000 cfs in November and December.

According to Russ, we are on target to hit the bottom of the flood pool elevation (~426 feet) by mid-November (see <http://www.usbr.gov/mp/cvo/data/Sep50b2.pdf>).

### **Folsom Unit Outages**

Expected Folsom outages:

- Unit 2 outage will occur from September 11, 2010 – May 2011 for unit uprating and transformer replacement. This outage will not affect temperatures, but reduces release capabilities from 8,000 to 5,000 cfs through the powerhouse.
- Unit 1 outage to replace the transformer has been rescheduled for January 1, 2011, through February 4, 2011, and will further reduce releases from 5,000 to 2,500 cfs. If required, release greater than 2,500 cfs will be through the spillway or river outlets.
- Unit 1 WAPA line outage will occur from October 25 through November 5. During the line outage, the unit will be operating at no-load, or at a constant release of about 250 cfs.
- Unit 3 should be available through next spring.

### **Temperature Management**

Russ reported that penstock unit 1's upper shutter is currently raised and unit 3 has the upper and middle shutters raised in blending operations. The average temperature at Watt Avenue is 64.7° F as of September 29th. Russ plans to keep the shutters in this general configuration until outage occurs on Unit 1.

Russ completed one temperature modeling run for the remaining months of the year—50% exceedence outlook “Preliminary Temperature Operation Plan” HO. Modeling results beyond early October are unreliable; thus Russ will use Folsom Lake storage, cold water pool volume, and penstock shutter configurations at the end of September to help project fall conditions. End of September storage is projected to be approximately 624,000 AF with a cold water pool volume of 132,000 AF. In coordination with the WAPA line outage, and if conditions warrant, Russ anticipates raising the lower shutter of Unit 1 on or about October 25th, for fall-run Chinook salmon spawning. Due to the cold water pool volume and storage conditions, there is no anticipated need for a power bypass this year.

### **General Discussion**

Rob Titus commented on the conditions being favorable for us to possibly increase flows to 1,750 cfs to optimize juvenile steelhead rearing success. Rob's rationale for requesting the flow increase is that there are favorable conditions this year and he'd like to see a high probability of survival in the existing population to ensure a strong year class. Gary Sprague asked Rob if there had been any indication of stress in the fish population that would lead us to conclude the fish are being limited by habitat availability/temperatures. Rob hadn't heard of any incidences of the lower-intestinal bacterial infection "rosy anus," which would suggest thermal stress. However, he agreed to check in with the hatchery to see if there had been any instances of the bacterial infection noted in recent weeks. Russ explained that the savings in carryover storage (15,000 AF)—resulting from flows at 1,500 cfs for the months of September and October, would help to ensure adequate cold water pool storage and Reservoir reserve going into November. Nick Hindman agreed to ask the members of the B2it group next week whether it would be possible to support additional flows (250 cfs above 1,500 cfs) down the American River from the B2 water account.

When asked whether DFG planned to do any monitoring for juvenile steelhead this year, Rob Titus explained that DFG had already obligated funds/personnel to a hooking mortality study scheduled to begin next summer. The three year study proposes to look at hooking mortality as a function of water temperature-- both hatchery and wild fish will be tagged acoustically. Rob Titus also mentioned Robert Chase's application for a DFG scientific collecting permit to acoustically tag steelhead smolts at Nimbus Hatchery. The group agreed that Robert should present the proposal to the ARG, minimally for informational purposes and coordination, given the clearinghouse function of the group for studies addressing operational questions related to the LAR.

Rod Hall provided an update on the gravel augmentation project that was completed at the end of September. Rod explained that they had designed a rearing channel and spawning channel. They ended up running short on gravel by approximately 10-20%. In total, there were approximately 10,000 tons of gravel was used for spawning and another 5,000 tons for the rearing channels.

**Next Meeting—Please note change in date and time**

Date: **Monday, November 1, 2010**

Location: Central Valley Operations Office  
3310 El Camino Ave.  
Sacramento, CA 95821

Room: 302

Time: **2:00 PM**

Notes by: Bonnie Van Pelt and Carol Nicolos

AGENDA  
American River Group

Date: Thursday, September 30, 2010

Time: 1:00 PM

Location: Central Valley Operations Office  
3310 El Camino Ave.  
Sacramento, CA 95821

Room: Room 302

Update on Fish Monitoring - DFG

Operations Forecast - USBR

Folsom U-1 WAPA line outage (Oct 25 through Nov 5)—In addition to U-2  
outage (Sep through May)

Temperature Management Plan - USBR

Status Reports - Group

Schedule Next Meeting

Adjourn

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

**DAILY CVP WATER SUPPLY REPORT**

SEPTEMBER 29, 2010

RUN DATE: September 30, 2010

RESERVOIR RELEASES IN CUBIC FEET/SECOND

RESERVOIR	DAM	WY 2009	WY 2010	15 YR MEDIAN
TRINITY	LEWISTON	447	468	450
SACRAMENTO	KESWICK	5,587	6,616	7,444
FEATHER	OROVILLE (SWP)	2,000	5,000	3,000
AMERICAN	NIMBUS	1,757	1,513	1,732
STANISLAUS	GOODWIN	700	202	224
SAN JOAQUIN	FRIANT	164	0	210

STORAGE IN MAJOR RESERVOIRS IN THOUSANDS OF ACRE-FEET

RESERVOIR	CAPACITY	15YR AVG	WY 2009	WY 2010	% OF 15 YR AVG
TRINITY	2,448	1,617	923	1,562	97
SHASTA	4,552	2,660	1,776	3,325	125
OROVILLE (SWP)	3,538	2,034	1,340	1,760	87
FOLSOM	977	549	413	625	114
NEW MELONES	2,420	1,574	1,110	1,276	81
FED. SAN LUIS	966	281	196	366	130
MILLERTON	520	226	351	0	0
TOT. N. CVP	11,360	6,681	4,418	7,154	107

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

RESERVOIR	CURRENT WY 2010	DRIEST WY 1977	WETTEST WY 1983	15 YR AVG	% OF 15 YR AVG
TRINITY	1,540	224	2,887	1,449	106
SHASTA	5,641	2,618	10,784	6,186	91
FOLSOM	2,253	355	6,535	2,809	80
NEW MELONES	1,009	0	2,745	1,147	88
MILLERTON	1,932	376	4,697	1,844	105

ACCUMULATED PRECIPITATION FOR WATER YEAR TO DATE IN INCHES

RESERVOIR	CURRENT WY 2010	DRIEST WY 1977	WETTEST WY 1983	AVG (N YRS)	% OF AVG	LAST 24 HRS
TRINITY AT FISH HATCHERY	35.16	16.35	58.10	32.81 ( 48 )	107	0.00
SACRAMENTO AT SHASTA DAM	70.53	26.43	116.50	63.39 ( 53 )	111	0.00
AMERICAN AT BLUE CANYON	67.25	18.16	104.31	65.53 ( 35 )	103	0.00
STANISLAUS AT NEW MELONES	33.29	0.00	46.58	27.15 ( 32 )	123	0.00
SAN JOAQUIN AT HUNTINGTON LK	42.85	17.60	84.40	43.66 ( 35 )	98	0.00

September 30, 2010

Summary for Folsom Lake and Lower American River - September 2010

Day	Mean Daily Water Temperature (° F)									Storage (TAF)	Release (cfs)	Sacramento Mean Daily Air Temperature (° F)
	NFA	ARP	AFD	Penstock Units 1-2-3			AHZ	AWP	AWB	Folsom	Nimbus	
1	62.8	N	58.9	U(30)	U(40)	M(30)	62.2	64.0	65.6	654.9	1,731	78
2	62.9	N	58.7	U(2)	U(66)	M(32)	62.1	64.2	65.9	653.2	1,734	84
3	63.4	N	58.9	U(67)	U(2)	M(31)	61.6	63.5	65.4	651.8	1,762	82
4	62.8	N	59.2	U(27)	U(43)	M(30)	61.4	63.0	64.8	650.0	1,733	78
5	63.1	N	59.3	U(1)	U(62)	M(37)	61.9	63.2	64.9	648.9	1,744	77
6	63.5	N	59.0	U(37)	U(34)	M(29)	62.0	63.3	64.8	647.3	1,741	76
7	62.7	N	59.4	U(39)	U(31)	M(30)	61.1	62.8	64.4	645.2	1,696	74
8	61.8	N	59.1	U(38)	U(33)	M(29)	61.4	61.6	62.5	643.5	1,531	66
9	60.6	N	60.5	U(41)	U(41)	M(18)	61.3	62.4	63.2	642.1	1,472	66
10	60.7	N	* 59.2	U(64)	O(0)	M(36)	61.8	62.8	64.1	640.7	1,481	71
11	61.1	N	59.8	U(69)	O(0)	M(31)	61.8	63.2	64.7	641.1	1,467	73
12	61.9	N	60.1	U(71)	O(0)	M(29)	62.0	63.5	65.0	640.0	1,463	74
13	62.1	N	60.2	U(69)	O(0)	M(31)	61.6	62.7	64.1	638.2	1,492	70
14	63.9	N	60.1	U(68)	O(0)	M(32)	62.2	63.1	64.1	636.7	1,498	70
15	64.7	N	60.1	U(64)	O(0)	M(36)	62.2	63.3	64.7	635.6	1,537	72
16	62.4	N	* 60.2	U(60)	O(0)	M(40)	62.1	63.5	64.9	635.7	1,405	75
17	61.2	N	59.9	U(63)	O(0)	M(37)	62.3	63.7	65.2	635.0	1,540	74
18	60.8	N	59.9	U(52)	O(0)	M(48)	62.4	63.9	65.5	634.9	1,523	74
19	60.9	N	59.6	U(53)	O(0)	M(47)	62.7	63.1	64.3	633.5	1,522	68
20	63.8	N	59.8	U(51)	O(0)	M(49)	62.4	63.6	64.9	631.7	1,453	73
21	62.4	N	59.6	U(48)	O(0)	M(52)	61.9	63.3	64.6	631.4	1,437	67
22	60.7	N	59.5	U(44)	O(0)	M(56)	61.8	62.4	63.4	631.0	1,433	67
23	59.5	N	60.1	U(48)	O(0)	M(52)	61.8	62.6	63.9	630.5	1,489	68
24	59.4	N	59.5	U(49)	O(0)	M(51)	62.4	63.1	64.5	629.6	1,482	71
25	59.6	N	60.2	U(48)	O(0)	M(52)	62.0	63.4	65.1	629.2	1,477	74
26	60.1	N	60.0	U(52)	O(0)	M(48)	62.2	63.3	64.9	627.9	1,470	77
27	60.3	N	60.3	U(51)	O(0)	M(49)	62.1	63.4	65.1	626.8	1,476	79
28	60.1	N	59.8	U(41)	O(0)	M(59)	62.3	63.7	65.4	626.1	1,454	82
29	60.1	N	59.8	U(39)	O(0)	M(61)	62.4	63.9	65.8	625.1	1,513	85
30												
Avg	61.7		59.7				62.0	63.2	64.7		1,543	74
Tot af											88,772	

! Incomplete or estimated

N Data not recorded or collected

# Station out of service

Shutter Position (U-Upper raised; M-Middle raised; L-Lower raised; A-All lowered; O-Unit Offline)

\* See notes on next page

Penstock Unit Blending (value in parentheses represents approximate % total daily load)

**Summary for Folsom Lake and Lower American River - August 2010**

Day	Mean Daily Water Temperature (° F)							Storage (TAF)	Release (cfs)	Sacramento Mean Daily Air Temperature (° F)		
	NFA	ARP	AFD	Penstock Units 1-2-3			AHZ	AWP	AWB		Folsom	Nimbus
1	66.3	62.6	61.8	U(14)	A(39)	A(47)	62.6	63.2	64.2	747.7	4,048	76
2	66.6	63.5	61.2	U(29)	A(44)	A(27)	63.4	63.9	64.8	741.3	3,934	75
3	64.8	63.8	60.3	U(42)	A(19)	A(39)	62.9	63.9	65.0	735.4	3,962	77
4	64.0	63.1	60.9	U(34)	A(39)	A(27)	62.0	63.1	64.2	730.2	3,475	75
5	63.2	62.7	60.5	U(41)	A(30)	A(29)	62.5	63.1	64.0	725.9	3,422	71
6	64.1	62.8	* 59.2	U(44)	A(40)	M(16)	62.5	63.2	64.3	721.3	3,403	74
7	64.2	61.6	58.7	U(17)	A(43)	M(40)	61.9	63.0	64.3	716.9	3,446	73
8	64.7	64.1	57.7	U(0)	A(37)	M(63)	60.9	62.0	63.3	712.1	2,998	70
9	65.5	65.1	61.0	U(35)	A(55)	M(10)	60.8	61.4	62.7	707.0	2,986	73
10	64.2	64.2	59.3	U(44)	A(39)	M(17)	62.2	62.8	63.6	704.0	2,967	71
11	64.2	63.4	* 57.3	U(66)	U(34)	M(0)	61.8	62.7	63.7	700.5	2,436	67
12	64.6	63.8	57.4	U(65)	U(34)	M(1)	61.1	62.6	64.0	696.7	2,496	75
13	65.0	64.0	57.6	U(62)	U(38)	M(0)	60.1	61.7	63.4	693.3	2,478	76
14	65.4	62.9	57.8	U(56)	U(43)	M(1)	60.3	61.4	62.8	690.3	2,489	72
15	65.9	64.1	57.3	U(38)	U(45)	M(17)	60.4	61.6	62.9	686.8	2,516	74
16	66.6	65.1	57.4	U(49)	U(33)	M(18)	60.1	61.7	63.2	682.7	2,456	79
17	65.3	63.4	57.5	U(25)	U(52)	M(23)	59.7	61.1	62.7	680.1	2,490	73
18	63.7	61.9	57.4	U(38)	U(39)	M(23)	59.9	61.3	62.5	678.5	2,069	73
19	62.9	60.5	58.3	U(39)	U(58)	M(3)	60.2	61.8	63.2	676.7	1,943	78
20	62.8	60.7	58.6	U(50)	U(50)	M(0)	59.9	61.8	63.6	675.2	1,992	76
21	61.9	59.9	58.7	U(45)	U(54)	M(1)	60.4	61.4	62.5	673.8	1,993	68
22	61.5	60.6	58.9	U(54)	U(45)	M(1)	61.0	62.2	63.2	671.5	1,987	73
23	62.5	62.1	59.0	U(53)	U(46)	M(1)	61.2	62.8	64.3	668.6	1,983	80
24	62.8	62.5	58.3	U(23)	U(54)	M(23)	61.5	63.6	65.2	667.4	1,747	84
25	62.3	60.3	58.1	U(68)	U(1)	M(31)	61.3	63.8	65.8	667.4	1,709	89
26	64.2	59.7	59.2	U(46)	U(54)	M(0)	60.7	62.9	65.1	666.3	1,705	77
27	62.6	62.3	58.8	U(29)	U(55)	M(16)	61.5	63.0	64.4	664.4	1,727	73
28	60.6	60.8	59.5	U(55)	U(44)	M(1)	61.6	62.1	63.1	662.6	1,722	69
29	60.4	60.7	59.8	U(45)	U(54)	M(1)	61.5	62.7	63.8	660.5	1,733	69
30	61.7	60.6	59.8	U(57)	U(43)	M(0)	61.5	62.7	64.0	658.2	1,727	71
31	61.7	59.6	59.8	U(43)	U(55)	M(2)	62.3	63.2	64.5	656.5	1,736	73
<b>Avg</b>	63.7	62.3	58.9				61.3	62.5	63.8		2,509	74
<b>Tot af</b>											154,263	

! Incomplete or estimated

# Station out of service

\* See notes on next page

N Data not recorded or collected

Shutter Position (U-Upper raised; M-Middle raised; L-Lower raised; A-All lowered; O-Unit Offline)

Penstock Unit Blending (value in parentheses represents approximate % total daily load)

**NOTES:**

Aug 6 – The upper and middle sets of temperature shutters on penstock unit #3 were raised.

Aug 11 – The upper set of temperature shutters on penstock unit #2 was raised.

Sep 10 – Folsom penstock unit #2 is scheduled to be out-of-service through May 30, 2011.

Sep 16 – Fish hatchery pickets installed.

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**CDEC Station ID:**

**NFA** - North Fork American River at Auburn Dam

**ARP** - South Fork American River near Pilot Hill

**AFD** - American River below Folsom Dam

**AHZ** - American River at Hazel Avenue Bridge, below Nimbus Dam

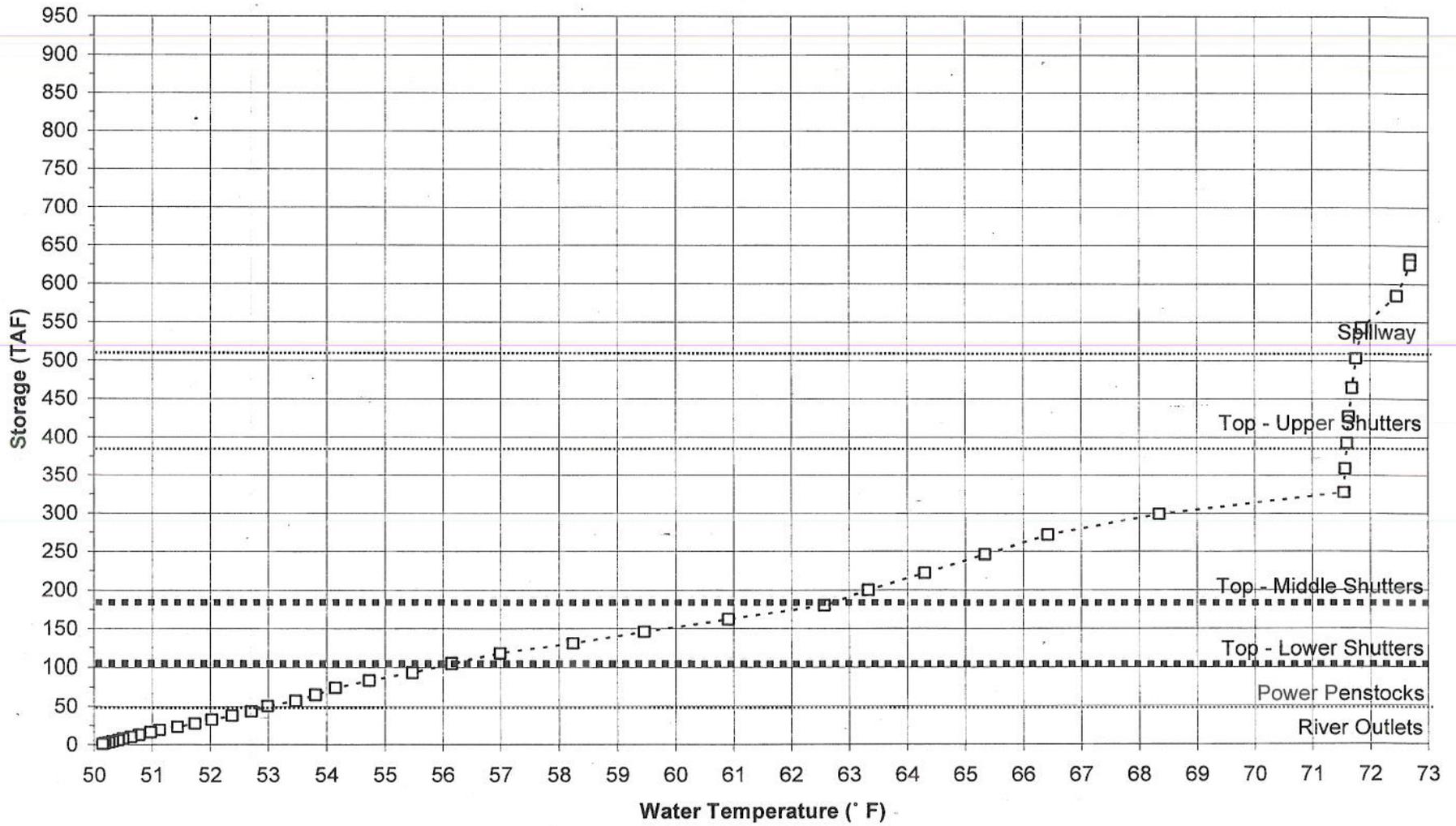
**AWP** - American River at William Pond Park

**AWB** - American River below Watt Avenue Bridge

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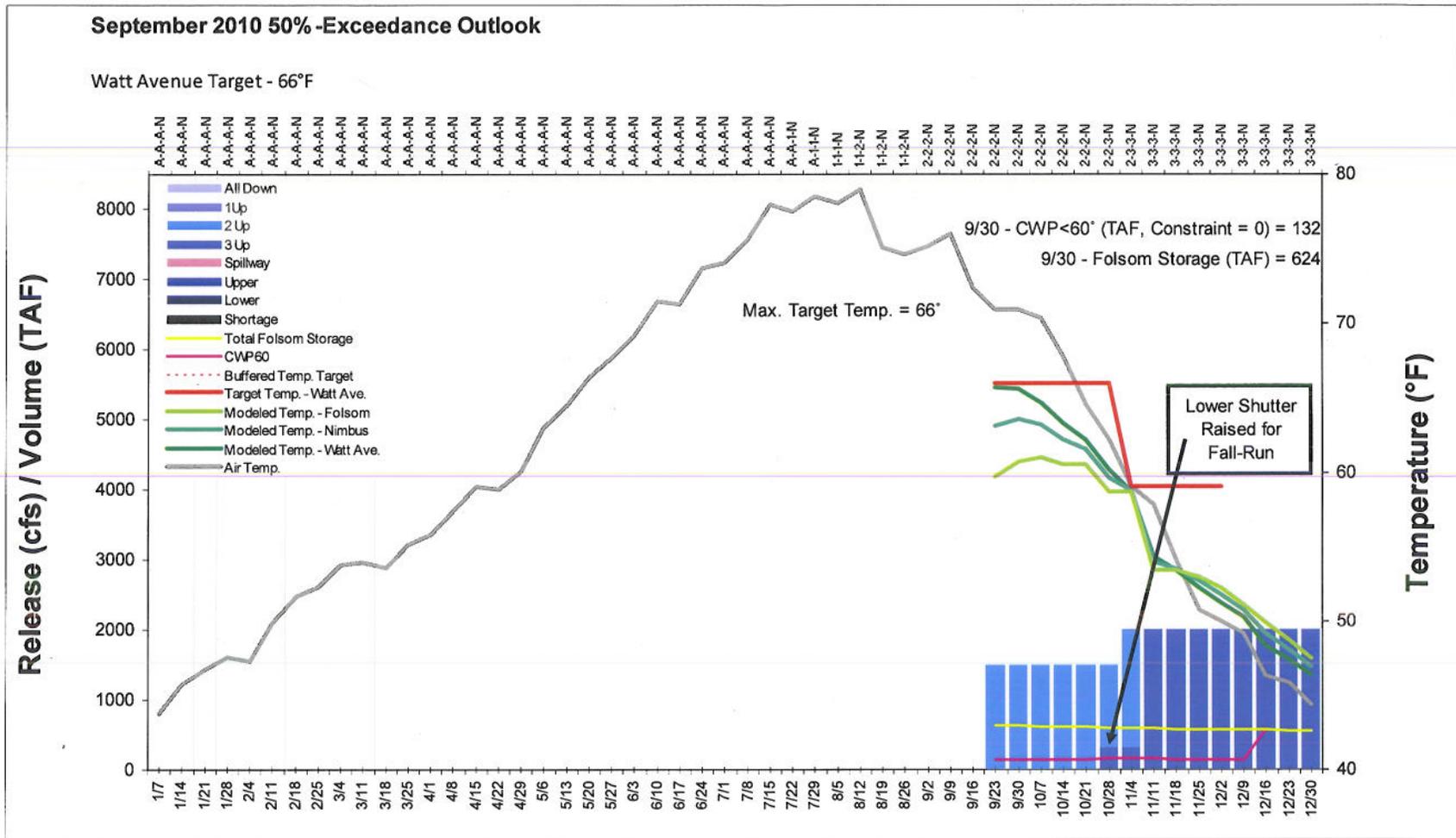
### Folsom Lake Temperature Profile September 20, 2010



**Preliminary Temperature Operation Plan - September 30, 2010**

<b>Historical Conditions (2001-2009)</b>						
<b>Year</b>	<b>End of May</b>		<b>All Upper Shutters Lowered by</b>	<b>End of September</b>		<b>Watt Avenue Target (°F)</b>
	<b>Storage (TAF)</b>	<b>CWP Volume &lt; 58°F (TAF)</b>		<b>Storage (TAF)</b>	<b>CWP Volume &lt; 60°F (TAF)</b>	
2001	696	275	30 Mar	368	30	65-71
2002	822	455	04 Mar	510	50	65-69
2003	962	640	02 Apr	658	135	65-67
2004	635	300	05 Mar	376	30	69
2005	959	705	15 Mar	652	140	65
2006	928	670	29 Mar	639	125	65
2007	787	355	21 Mar	323	30	68
2008	617	250	None Lowered	270	25	69-70
2009	933	550	12Mar	412	60	67
<b>2010 50%-Exceedence Outlook</b>						
2010	905	580	14Apr	624	132	66

## Model Results of Temperature Operation Scenario<sup>1 2</sup>



<sup>1</sup> The temperature operation scenario uses a preliminary September 2010 50%-exceedance operation's outlook, and 2001-2009 average weekly inflow temperature.

<sup>2</sup> Based on project operation during previous years, model results beyond early October are unreliable due to fall weather's influence on timing and rate of lake de-stratification. Folsom Lake storage, cold-water pool volume, and penstock-shutter configurations at the end of September are more reliable indicators of potential fall conditions.

## Meeting Attendance Record

Date: 30 Sep 2010

Time: 1300

Place: CVO Rm 302

Subject of Meeting: ARG

Name	Organization	Phone Number
Carol Nicolos	BOR	cnicolos@usbr.gov (916) 989-7276
Felix Smith	SARA	felixsmith@sbcglobal.net 916-966-2081
Gary Sprague	NMFS	916 - 936 - 3615
Rod Hall	Water Forum	916 - 631 - 2643
Paul Olmstead	SMWS	palmste@smws.org 916 - 732 - 5716
Russ Yzworsky	CVO	ryzworsky@usbr.gov 916 - 979 - 0268
Bonnie Van Pelt	BOR	bovanpelt@usbr.gov 916 - 989 - 7127
Claire Hsu	BOR	chsu@usbr.gov 916 - 978 - 5085
MIKE LAING	N CAL COUNCIL FED OF FLY FISHERS	
Beth Campbell	USFWS	elizabeth-campbell@fws.gov 209 334-2968 x 402

### Meeting Attendance Record

Date: 9-30-2010

Time: 1300

Place: CVO Km302

Subject of Meeting: ARG

Name	Organization	Phone Number
John Hannon	USBR	916-978-5524
Josh Brael	USBR	916-978-5030
Nick Hindman	FWS	916-414-6543
Rob Titus	DFG	916-227-6390