

Sacramento River Temperature Task Group Meeting

August 28, 2014

1:00 pm

Conference Line: 877-718-6527

Pass code: 1954134

Agenda

1. Introductions
2. Fishery update
3. Hydrology & Operations update
 - a. 90% forecasts ***
 - b. Sacramento Temperature Summary Table ***
4. Discussion of recent temperature model runs
 - a. Temperature studies packet ***
5. Next meeting

***handouts

August 90%

Storages

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

		Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	
Trinity		865	707	642	585	556	558	564	599	667	732	751	722	537
	Elev.	2218	2209	2199	2195	2195	2196	2202	2212	2222	2224	2220	2191	
Whiskeytown		238	238	230	230	225	206	206	206	238	238	238	238	
	Elev.	1209	1207	1207	1205	1199	1199	1199	1199	1209	1209	1209	1209	
Shasta		1575	1287	1122	1066	1105	1176	1297	1498	1823	1971	1810	1416	1052
	Elev.	910	896	891	895	901	910	925	947	956	946	919	890	
Folsom		406	361	317	270	265	270	284	344	467	609	691	673	580
	Elev.	397	390	382	381	382	384	394	412	429	438	437	426	
New Melones		626	523	439	419	424	429	435	446	457	435	389	316	215
	Elev.	862	844	839	840	842	843	846	848	843	832	813	781	
San Luis		289	175	133	71	90	217	382	427	516	480	391	337	177
	Elev.	369	372	383	407	438	471	490	505	501	494	480	460	
Total		3291	2884	2641	2665	2856	3167	3519	4136	4464	4269	3702	2799	

State End of the Month Reservoir Storage (TAF)

Oroville		1252	1044	988	910	941	992	1070	1225	1454	1669	1599	1427	1101
	Elev.	671	662	650	655	663	675	696	725	749	742	722	679	
San Luis		168	124	186	326	490	641	803	970	1052	1038	1051	951	895
Total San Luis (TAF)		457	299	319	397	580	857	1184	1397	1567	1518	1442	1288	1071

Monthly River Releases (TAF/cfs)

Trinity	TAF	28	27	23	18	18	18	17	18	36	92	47	28
	cfs	450	450	373	300	300	300	300	300	600	1,498	783	450
Clear Creek	TAF	7	9	12	12	12	12	11	12	11	12	9	7
	cfs	120	150	200	200	200	200	200	200	190	190	150	120
Sacramento	TAF	507	298	283	208	200	200	180	200	304	523	654	619
	cfs	8250	5007	4600	3500	3250	3250	3250	3250	5114	8500	11000	10071
American	TAF	97	85	86	47	50	49	44	49	59	92	89	130
	cfs	1575	1430	1400	796	805	800	800	800	1000	1500	1500	2117
Stanislaus	TAF	16	14	35	12	12	13	12	16	34	33	21	18
	cfs	267	240	577	200	200	213	214	268	563	531	350	300
Feather	TAF	123	74	61	48	49	49	44	49	48	86	119	215
	cfs	2000	1250	1000	800	800	800	800	800	800	1400	2000	3500

Trinity Diversions (TAF)

	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
Carr PP	129	36	41	24	1	8	3	1	37	35	37	160
Spring Crk. PP	120	34	30	19	12	3	3	8	8	30	30	152

Delta Summary (TAF)

	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
Tracy	38	45	45	46	152	190	58	160	45	63	99	45
USBR Banks	0	0	0	0	0	0	0	0	0	0	28	0
Contra Costa	5.6	6.4	7	8.4	9.2	9.2	7	7	6.4	6.4	6.4	4.9
Total USBR	44	51	52	54	161	199	65	167	51	70	133	50
State Export	60	110	189	200	193	190	211	118	45	29	68	58
Total Export	104	161	241	254	354	389	276	285	96	99	201	108
COA Balance	-282	-191	-191	-91	-55	-55	0	0	0	0	0	-59

Old/Middle River Std.												
Old/Middle R. calc.	-1,724	-2,526	-3,005	-3,399	-4,541	-4,930	-3,786	-3,520	-1,181	-1,440	-2,805	-1,763

Computed DOI	2993	3009	3595	3496	3497	6279	7096	8313	7194	6312	4236	3091
Excess Outflow	0	0	602	0	0	1773	0	1204	1311	2310	0	0
% Export/Inflow	19%	32%	42%	49%	62%	53%	43%	35%	15%	16%	31%	19%
% Export/Inflow std.	65%	65%	65%	65%	65%	65%	45%	35%	35%	35%	35%	65%

Hydrology

Water Year Inflow (TAF)	Trinity	366	Shasta	2,636	Folsom	972	New Melones	322
Year to Date + Forecasted % of mean	30%	48%	36%	30%				

CVP actual operations do not follow any forecasted operation or outlook; actual operations are based on real-time conditions.

CVP operational forecasts or outlooks represent general system-wide dynamics and do not necessarily address specific watershed/tributary details.

CVP releases or export values represent monthly averages.

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

8/8/2014

Temperature and Release Summary for Shasta and Trinity - July 2104

(Updated twice a week November through April)

Day	Sacramento River Water Temperatures in Degrees F Collected from CDEC (California Data Exchange Center) except for TCD, SPP and Control Point												Mean Daily Release in CFS			Mean Daily Air Temp Degrees F			
	TCD Wt. Avg.	SHD minus TCD (Diff)	Shd	SPP Wt. Avg	Kwk	Control Point 3/1 to 3/27 Bsf	Jlf	Bnd	Rdb	Lws	Control Point 3/28 to 7/31 Ccr	Igo	Shasta Generation EI 815	Spring Crk Powerplant Release	Keswick Total Release	RDD	BSF	RDB	LWS
Jun	54.7		52.5	54.0	54.5	56.8	58.8	59.3	62.1	52.2	55.9	55.4	7,888	1,192	8,972	79.2	76.5	77.4	68.7
Jul																			
1	53.3	(2.7)	50.6	56.3	? 54.3	57.6	59.5	60.2	63.8	52.9	55.9	57.8	7,145	2,501	9,244	87.5	83.2	83.0	78.8
2	53.5	(2.9)	50.6	56.3	54.3	57.2	59.1	59.7	63.0	52.4	55.8	58.0	5,733	3,109	9,251	84.0	81.1	80.4	78.0
3	53.2	(2.9)	50.3	56.5	54.7	57.1	59.2	59.8	63.0	52.6	56.0	58.1	6,195	3,174	9,248	84.5	81.0	80.2	76.2
4	53.3	(2.9)	50.4	56.6	54.4	57.4	59.3	60.0	63.0	52.7	55.8	58.2	6,856	2,906	9,252	84.5	81.1	80.3	75.2
5	52.8	(2.6)	50.2	56.6	54.5	57.0	58.8	59.3	62.4	52.6	55.8	57.8	6,216	3,185	9,243	80.5	77.2	77.2	75.4
6	52.8	(2.6)	50.2	56.7	54.4	57.0	58.8	59.4	62.2	52.4	55.7	57.7	6,296	3,096	9,242	84.5	80.3	81.5	76.4
7	53.1	(2.9)	50.2	56.7	54.1	57.0	58.7	59.3	62.1	52.1	55.5	58.0	6,238	3,172	9,263	86.5	79.2	80.1	80.0
8	53.5	(3.3)	50.2	56.8	54.2	57.0	57.8	58.5	61.3	51.1	55.1	57.1	6,200	2,961	9,253	86.0	79.1	82.5	77.8
9	52.7	(2.3)	50.4	56.8	53.9	56.8	58.3	58.8	61.3	51.9	55.3	58.4	6,133	2,970	9,217	90.0	83.5	80.7	80.6
10	52.1	(1.5)	50.6	56.8	54.0	56.7	58.8	59.4	62.2	52.0	55.4	58.1	7,072	2,329	9,077	83.0	79.6	78.8	77.9
11	52.1	(1.4)	50.7	56.8	54.0	56.9	58.5	59.2	62.6	52.6	55.2	58.3	6,820	2,523	9,204	82.0	78.6	77.8	76.5
12	52.1	(1.4)	50.7	56.8	53.8	56.7	58.4	59.0	62.2	52.3	55.2	58.4	6,887	2,303	9,285	84.0	80.4	79.5	78.0
13	52.6	(1.1)	51.5	56.8	54.0	56.8	58.7	59.3	62.7	52.0	55.3	58.6	7,034	2,308	9,238	87.5	82.5	80.8	79.1
14	52.3	(1.5)	50.8	56.8	54.3	57.0	59.0	59.6	63.0	52.2	55.7	58.4	7,315	2,266	9,359	90.5	86.5	87.7	79.0
15	52.3	(1.6)	50.7	56.8	53.9	56.8	58.4	59.1	62.7	52.4	55.1	57.7	6,782	2,285	9,221	85.0	81.6	81.3	80.9
16	52.7	(1.6)	51.1	56.8	53.8	56.6	58.0	58.7	61.5	52.3	54.9	58.1	7,056	2,355	9,193	84.0	79.5	78.3	80.1
17	52.5	(1.5)	51.0	56.8	54.0	56.6	58.2	58.8	62.1	53.0	55.2	58.5	7,045	2,382	9,230	81.0	78.7	76.6	81.2
18	52.8	(1.5)	51.3	56.9	54.1	57.1	58.7	59.3	62.6	53.1	55.4	58.8	6,717	2,460	9,207	82.0	79.0	78.4	80.0
19	53.4	(2.0)	? 51.4	57.0	54.4	57.2	59.0	59.6	62.8	53.3	55.7	58.9	6,756	2,420	9,277	83.5	79.9	78.9	81.7
20	53.5	(2.1)	51.4	57.0	54.8	57.5	59.5	60.1	63.3	52.5	56.2	59.0	6,709	2,402	9,275	84.5	79.6	78.9	78.3
21	52.9	(1.8)	51.1	57.1	54.8	57.5	58.8	59.5	62.7	52.4	55.8	58.2	7,299	2,270	9,300	77.0	73.2	72.8	70.1
22	52.3	(1.6)	50.7	57.2	54.2	57.0	58.1	58.6	61.6	52.1	55.5	58.2	6,997	2,238	9,039	77.5	74.8	74.7	69.6
23	52.7	(1.8)	50.9	57.2	53.8	56.9	58.4	59.0	62.1	52.3	55.2	58.4	7,196	2,256	9,250	75.0	74.1	73.0	69.7
24	52.5	(1.4)	51.1	57.2	54.1	56.4	58.1	58.6	61.6	52.2	55.4	58.4	6,674	2,610	9,297	80.0	76.5	78.4	70.1
25	52.7	(1.4)	51.3	57.2	54.0	56.9	58.5	59.0	61.8	52.4	55.4	58.5	6,967	2,411	9,307	87.5	79.5	79.6	73.1
26	52.9	(1.4)	51.5	57.1	54.1	56.7	58.3	58.8	62.0	52.1	55.4	58.6	7,132	2,419	9,285	84.5	80.1	81.7	75.6
27	53.1	(1.8)	51.3	57.1	54.3	56.9	58.0	58.6	61.5	51.7	55.4	58.1	6,729	2,405	9,277	88.5	83.0	82.6	75.8
28	53.3	(1.4)	51.9	57.0	54.1	57.0	58.6	59.1	61.5	51.9	55.6	58.6	7,558	2,160	9,246	85.5	80.7	81.5	78.0
29	53.7	(1.9)	51.8	57.0	54.6	57.3	58.9	59.5	62.2	52.3	55.9	58.7	6,480	2,419	8,758	85.5	81.4	81.8	79.2
30	52.8	(1.4)	51.4	57.0	54.8	57.6	59.5	60.1	62.9	52.3	56.2	58.6	6,391	2,079	8,902	88.0	83.3	84.0	77.7
31	53.2	(1.8)	51.4	56.9	54.6	57.8	59.7	60.3	63.2	52.4	56.3	59.0	6,176	2,276	8,838	90.0	85.0	84.7	79.8
Avg	52.9		50.9	56.9	54.2	57.0	58.7	59.3	62.4	52.3	55.6	58.3	6,736	2,537	9,203	84.3	80.1	79.9	77.1
Tot cfs													208,804	78,650	285,278				
Tot af													414,163	156,002	565,849				

= Station out of service ^ - estimated (7 hours or less available) ? = Avg. includes estimated data
 ! = 17 hours or less of readings & = 18 to 23 hours of reading ND = No hourly readings or incorrect

Control Point: Balls Ferry 3/1/2014 to 3/27/2014 56.0; Clear Creek 3/28/2014 to 4/24/2014 58.0; Clear Creek 4/25/2014 to 7/31/2014 56.0.

Temperature and Release Summary for Shasta and Trinity - August 2104

(Updated twice a week November through April)

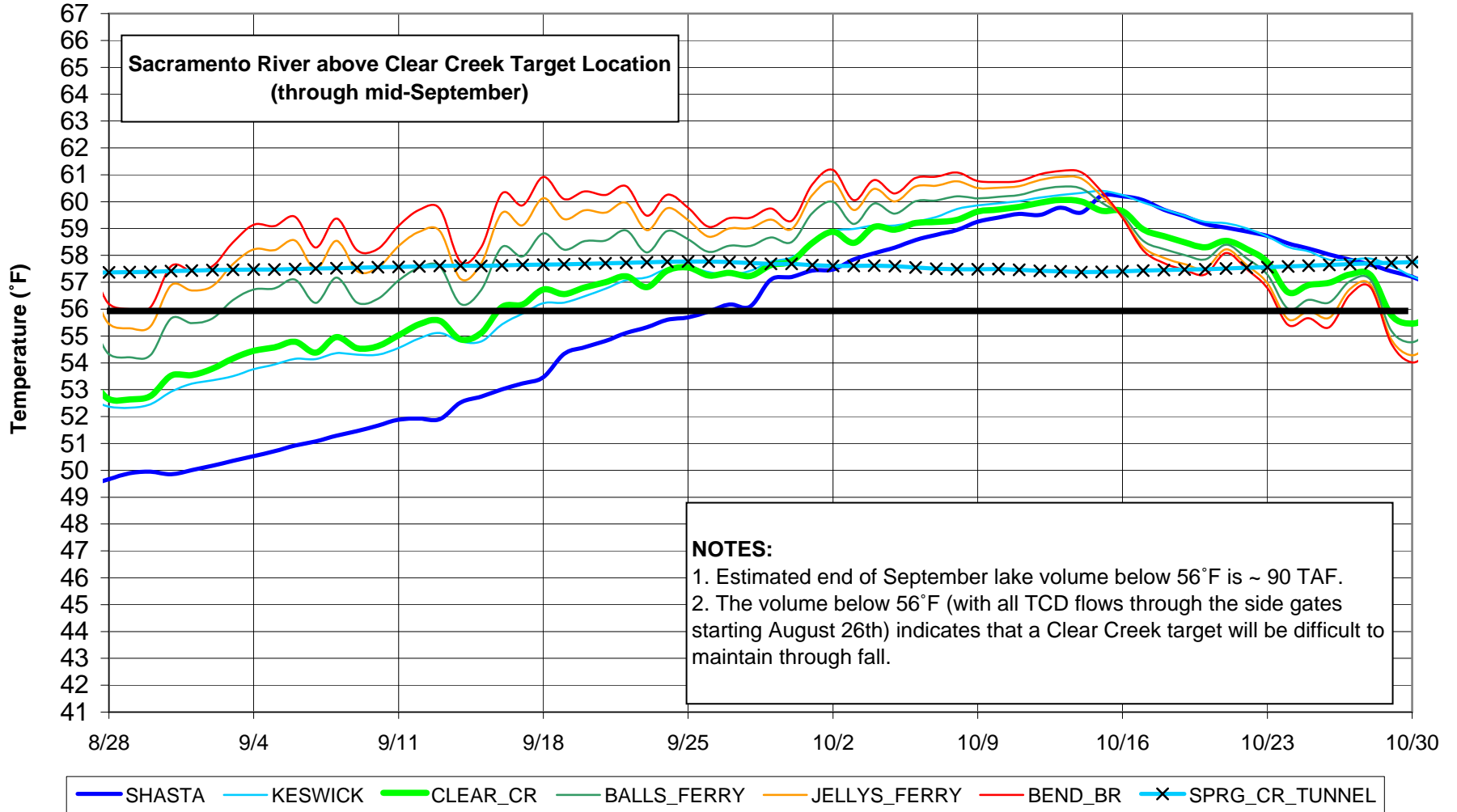
Day	Sacramento River Water Temperatures in Degrees F Collected from CDEC (California Data Exchange Center) except for TCD, SPP and Control Point												Mean Daily Release in CFS			Mean Daily Air Temp Degrees F			
	TCD Wt. Avg.	SHD minus TCD (Diff)	Shd	SPP Wt. Avg	Kwk	Control Point 3/1 to 3/27 Bsf	Jlf	Bnd	Rdb	Lws	Control Point 3/28 to Ccr	Igo	Shasta Generation EI 815	Spring Crk Powerplant Release	Keswick Total Release	RDD	BSF	RDB	LWS
Jul	52.9		50.9	56.9	54.2	57.0	58.7	59.3	62.4	52.3	55.6	58.3	6,736	2,537	9,203	84.3	80.1	79.9	77.1
Aug																			
1	53.2	(1.4)	51.8	57.0	54.4	57.6	59.1	59.8	63.0	52.6	55.8	58.6	7,207	1,982	8,563	88.0	83.7	84.8	76.9
2	53.4	(0.5)	52.9	57.0	54.5	57.4	58.9	59.6	62.4	52.5	55.8	58.6	6,374	2,609	8,630	86.0	81.8	83.0	77.3
3	53.8	(1.6)	52.2	57.0	54.6	57.4	58.9	59.4	61.9	52.3	56.0	58.4	6,479	2,378	8,638	80.0	75.8	76.2	75.9
4	53.9	(1.5)	52.4	57.0	54.6	57.3	58.1	58.7	61.1	52.3	55.6	57.9	7,530	1,830	8,581	78.0	74.1	73.4	74.7
5	54.1	(1.8)	52.3	57.0	54.5	56.5	56.9	57.4	58.9	51.9	55.2	57.3	6,086	2,357	8,640	69.5	69.4	70.8	69.4
6	54.8	(1.8)	53.0	57.2	54.4	56.7	58.0	58.1	58.8	52.4	55.8	58.6	7,684	1,467	8,424	79.5	75.2	73.9	75.9
7	54.5	(1.5)	53.0	57.1	54.9	57.2	58.8	59.3	61.8	52.1	56.2	58.9	7,513	1,082	8,407	85.0	81.2	79.8	76.5
8	53.6	(1.2)	52.4	57.1	55.3	57.7	59.6	60.2	62.7	52.3	56.5	58.9	6,211	2,242	8,149	85.0	81.4	80.2	75.5
9	52.6	(1.2)	51.4	57.1	55.1	58.0	59.9	60.6	63.0	52.8	56.8	58.9	6,080	2,419	7,979	84.5	79.3	78.2	75.6
10	53.0	(1.3)	51.7	57.1	54.4	57.9	59.4	60.2	62.9	52.8	55.9	58.6	5,768	2,282	7,987	82.0	78.0	76.4	75.5
11	53.6	(0.9)	52.7	57.1	54.5	57.6	58.5	59.3	62.1	52.8	55.7	58.5	5,620	2,432	8,047	82.0	78.2	78.1	76.5
12	53.1	(0.9)	52.2	57.1	54.8	57.5	58.5	59.1	60.9	52.5	55.8	58.0	5,277	2,562	7,767	77.0	73.8	74.3	71.8
13	53.5	(1.5)	52.0	57.1	54.7	57.8	58.9	59.4	61.0	52.8	56.1	58.4	5,567	2,265	7,570	75.5	71.3	71.7	69.2
14	53.1	(1.1)	52.0	57.1	54.8	58.0	59.2	59.9	61.6	53.2	56.3	58.6	5,259	2,034	7,570	78.5	74.9	76.2	69.8
15	53.7	(1.2)	52.5	57.1	54.8	58.2	59.3	60.0	61.8	53.2	56.3	58.4	5,773	2,224	7,351	80.5	75.8	77.5	72.7
16	53.6	(1.0)	52.6	57.1	54.9	58.1	59.2	60.0	61.8	53.2	56.3	58.6	5,331	2,301	7,381	82.5	77.0	78.8	73.8
17	53.8	(1.3)	52.5	57.1	55.3	58.5	59.5	60.0	61.7	53.4	56.7	58.4	5,251	2,207	7,380	80.5	75.8	77.7	73.6
18	53.3	0.1	53.4	57.1	55.3	58.3	59.4	60.1	61.8	53.4	56.6	58.3	5,064	2,557	7,382	80.0	74.8	75.4	73.5
19	53.4	(1.0)	52.4	57.1	55.1	58.4	59.6	60.2	61.8	53.1	56.7	58.4	5,161	2,119	7,126	79.5	74.6	74.3	73.2
20	53.6	(0.8)	52.8	57.1	54.8	58.4	59.7	60.5	62.3	53.3	56.4	58.8	5,440	1,933	7,117	77.5	73.4	72.8	73.2
21	53.1	(0.5)	52.6	57.1	55.0	58.3	59.5	60.2	62.2	53.4	56.5	58.9	5,340	2,264	7,143	79.5	75.1	75.0	73.2
22	53.2	(0.3)	52.9	57.1	54.9	58.5	59.8	60.5	62.2	53.4	56.5	58.7	5,415	1,813	7,177	77.5	74.8	74.7	70.0
23	53.4	(0.4)	53.0	57.1	55.2	58.5	59.5	60.2	62.0	52.6	56.6	58.7	5,097	2,116	7,205	80.5	77.0	78.5	72.0
24	53.8	(0.4)	53.4	57.1	54.8	58.4	59.5	60.1	61.8	52.5	56.4	58.5	6,171	1,424	7,216	82.0	74.7	75.2	71.8
25	54.0	(0.3)	53.7	57.2	55.0	58.4	59.3	60.0	61.8	52.3	56.3	58.6	5,669	1,318	7,201	78.5	73.7	73.5	70.4
26	53.3	(0.2)	53.1	57.3	55.2	58.3	59.3	59.9	61.5	52.7	56.5	58.5	6,452	853	7,414	79.5	75.6	75.0	71.9
27		0.0																	
28		0.0																	
29		0.0																	
30		0.0																	
31		0.0																	
Avg	53.6		52.6	57.1	54.8	57.9	59.1	59.7	61.7	52.8	56.2	58.5	5,955	2,041	7,771	80.3	76.2	76.4	73.5
Tot cfs													154,819	53,070	202,045				
Tot af													307,083	105,264	400,756				

= Station out of service ^ - estimated (7 hours or less available) ? = Avg. includes estimated data
 ! = 17 hours or less of readings & = 18 to 23 hours of reading ND = No hourly readings or incorrect

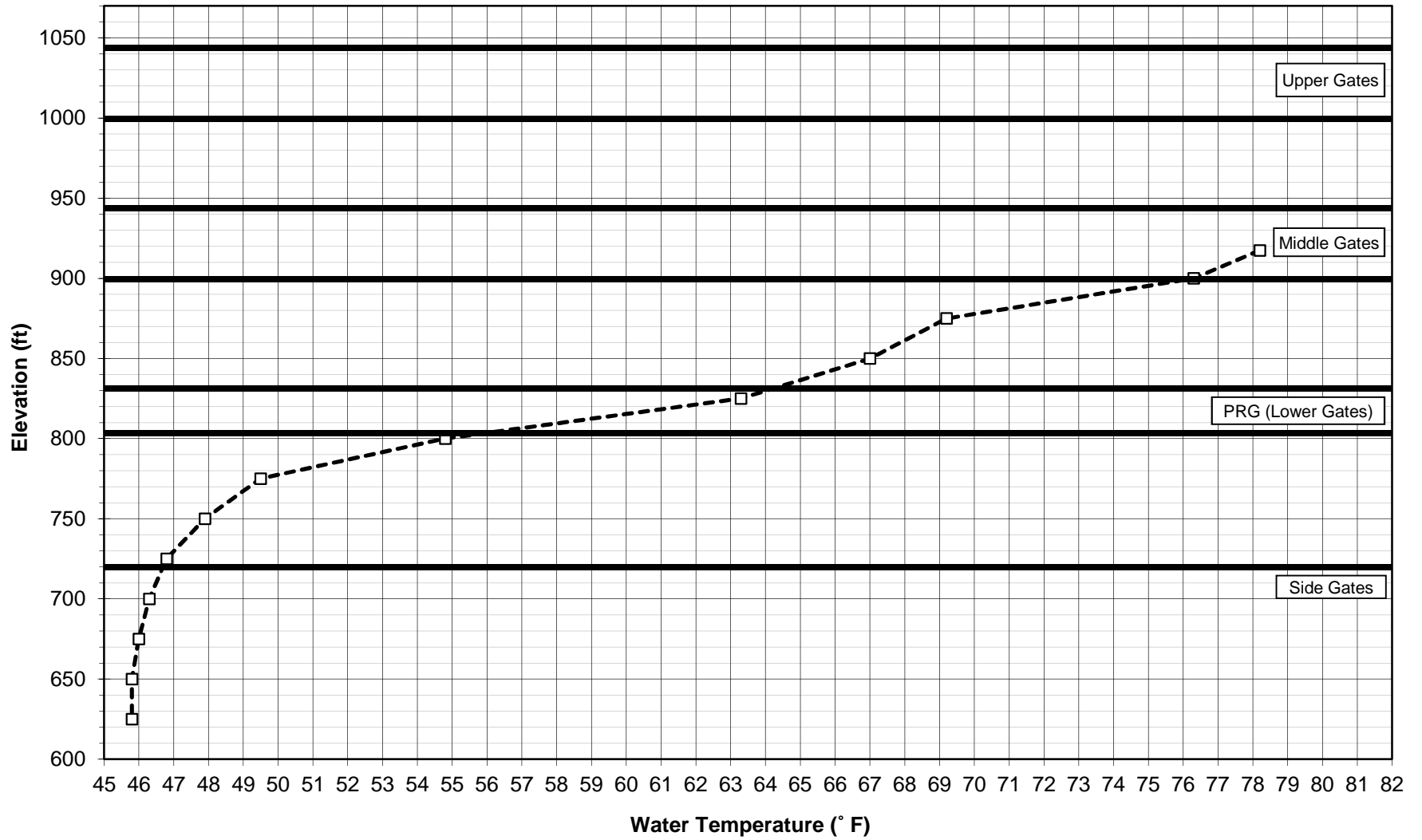
Control Point: Balls Ferry 3/1/2014 to 3/27/2014 56.0; Clear Creek 3/28/2014 to 4/24/2014 58.0; Clear Creek 4/25/2014 to present 56.0.

PRELIMINARY

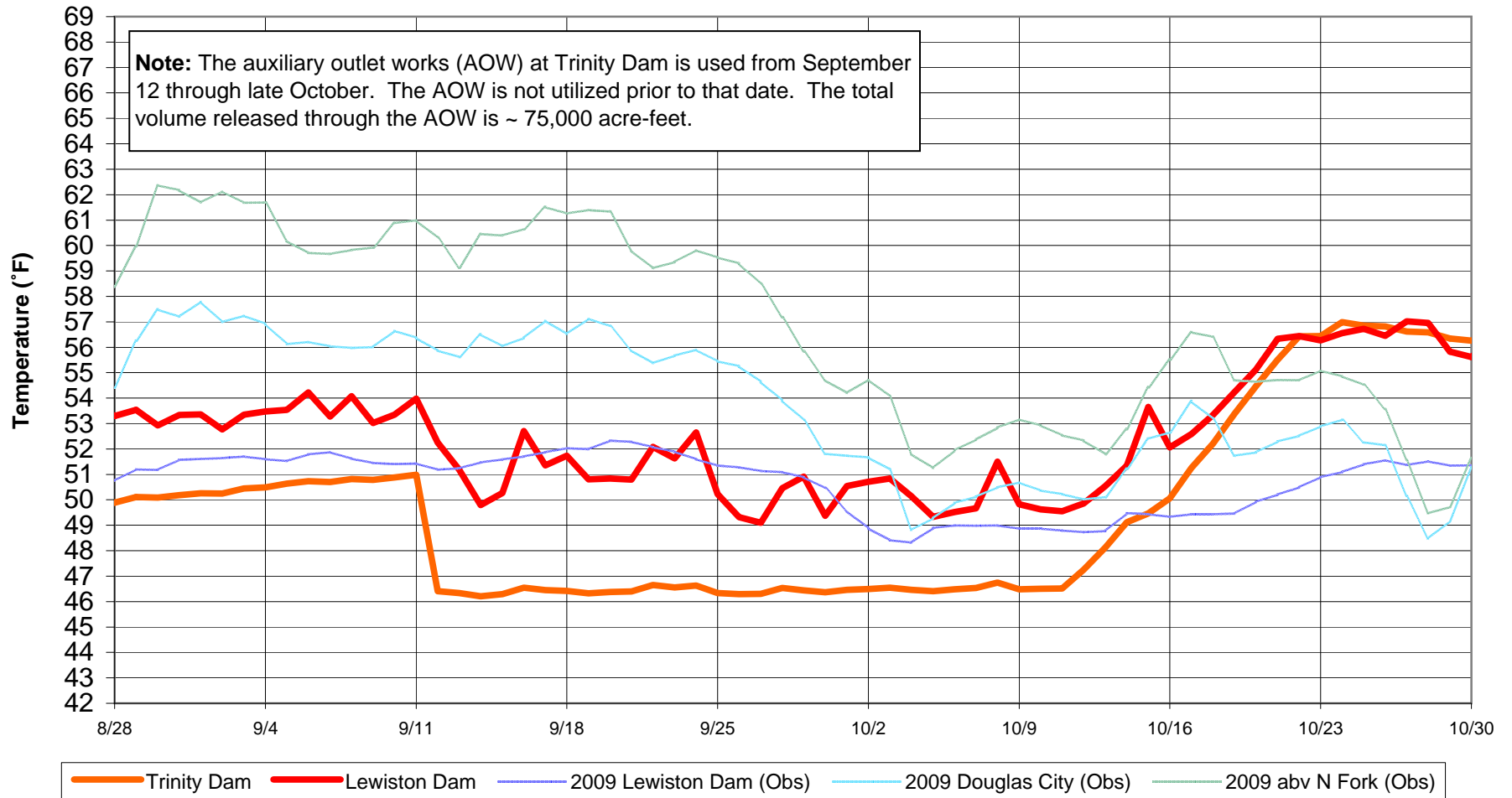
Sacramento River Modeled Temperature 2014 August 90%-Exceedance Outlook



Lake Shasta Temperature Profile - 8/26/14



**Trinity River - 2014 August 90%-Exceedance Outlook
"Critically Dry Year" Release Schedule
Mean Daily Water Temperature**



Clear Creek - Igo Modeled Temperature 2014 August 90%-Exceedance Outlook

