

# **Sacramento River Temperature Task Group Meeting**

**September 25, 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 lake profiles
  - a. Lake profiles (Shasta, Trinity and Whiskeytown)\*\*\*
5. Next meeting

\*\*\*handouts

## Storages

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

		Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	
Trinity		698	618	561	532	534	540	575	643	708	727	698	513	360
	Elev.	2205	2195	2190	2191	2192	2198	2209	2218	2221	2217	2187	2156	
Whiskeytown		236	230	230	225	206	206	206	206	238	238	238	238	238
	Elev.	1207	1207	1205	1199	1199	1199	1199	1209	1209	1209	1209	1209	
Shasta		1342	1176	1120	1159	1230	1351	1552	1877	2025	1863	1470	1105	889
	Elev.	901	896	899	905	915	929	950	959	949	923	895	875	
Folsom		381	339	292	287	291	305	365	488	629	711	694	601	543
	Elev.	394	386	385	386	388	398	415	432	441	439	429	422	
New Melones		553	487	467	472	477	482	494	505	482	436	363	276	193
	Elev.	855	850	851	853	854	856	859	854	843	825	801	773	
San Luis		226	177	115	134	260	425	478	567	532	443	390	229	114
	Elev.	383	393	416	446	478	497	511	507	501	487	467	451	
<b>Total</b>		3027	2784	2808	2998	3310	3669	4287	4614	4419	3851	2962	2338	


## Monthly River Releases (TAF/cfs)

Trinity	TAF	40	23	18	18	18	17	18	36	92	47	28	28
	cfs	680	373	300	300	300	300	300	600	1,498	783	450	450
Clear Creek	TAF	9	12	12	12	12	11	12	11	12	9	7	7
	cfs	150	200	200	200	200	200	200	190	190	150	120	120
Sacramento	TAF	298	283	208	200	200	180	200	304	523	654	619	507
	cfs	5007	4600	3500	3250	3250	3250	3250	5114	8500	11000	10071	8250
American	TAF	83	86	47	50	49	44	49	59	92	89	130	97
	cfs	1402	1400	796	805	800	800	800	1000	1500	1500	2117	1575
Stanislaus	TAF	9	35	12	12	13	12	16	34	33	21	18	16
	cfs	150	577	200	200	213	214	268	563	531	350	300	267

## Trinity Diversions (TAF)

	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
Carr PP	38	41	24	1	8	3	1	37	35	37	160	129
Spring Crk. PP	34	30	19	12	3	3	8	8	30	30	152	120

## Delta Summary (TAF)

	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
Tracy	38	45	46	152	190	66	160	45	63	100	45	38
USBR Banks	0	0	0	0	0	0	0	0	0	28	0	0
Contra Costa	6.4	7	8.4	9.2	9.2	7	7	6.4	6.4	6.4	4.9	5.6
<b>Total USBR</b>	44	52	54	161	199	73	167	51	70	134	50	44
<b>Total Export</b>	154	241	254	354	389	276	285	96	99	201	108	104
<b>COA Balance</b>	-183	-183	-83	-47	-47	0	0	0	0	0	-60	-95
<b>Old/Middle River Std.</b>												
<b>Old/Middle R. calc.</b>	-2,476	-3,005	-3,399	-4,541	-4,930	-3,786	-3,520	-1,181	-1,440	-2,805	-1,763	-1,724
<b>Computed DOI</b>	3009	3595	3496	3497	6279	7096	8313	7194	6312	4236	3091	2993
<b>Excess Outflow</b>	0	602	0	0	1773	0	1204	1311	2310	0	0	0
<b>% Export/Inflow</b>	31%	42%	49%	62%	53%	43%	35%	15%	16%	31%	19%	19%
<b>% Export/Inflow std.</b>	65%	65%	65%	65%	65%	45%	35%	35%	35%	35%	65%	65%

## Hydrology

	Trinity	Shasta	Folsom	New Melones
<b>Water Year Inflow (TAF)</b>	363	2,675	981	343
Year to Date + Forecasted % of mean	30%	48%	36%	32%

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.

9/4/2014

Temperature and Release Summary for Shasta and Trinity - August 2014

(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 8/31 Ccr	Igo	Shasta Generation El 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	71.5	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	79.0	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	53.0	(0.4)	52.6	57.3	54.8	58.5	59.7	60.4	62.0	52.6	56.6	58.9	6,414	533	7,363	81.5	77.9	77.8	74.7
28	53.3	(0.5)	52.8	58.0	54.1	58.4	59.2	60.1	62.1	52.6	55.7	59.0	7,041	18	7,089	83.0	78.6	79.9	75.5
29	53.5	(0.4)	53.1	57.3	54.1	58.0	58.4	59.2	60.9	53.1	55.4	58.8	6,297	328	7,249	82.0	75.5	75.7	73.2
30	53.7	(0.4)	53.3	58.1	54.5	57.8	58.4	59.0	60.4	53.4	55.6	58.6	6,530	36	6,970	79.0	75.0	77.0	69.6
31	53.9	(0.4)	53.5	57.9	54.5	58.0	58.9	59.5	60.8	53.6	55.9	58.9	6,781	14	6,903	81.5	75.5	78.0	69.9
Avg	53.5		52.7	57.2	54.8	57.9	59.1	59.7	61.6	52.8	56.1	58.6	6,061	1,742	7,665	80.6	76.2	76.6	73.3
Tot cfs													187,882	53,999	237,619				
Tot af													372,664	107,107	471,317				

# = 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 8/31/2014 56.0.

## Temperature and Release Summary for Shasta and Trinity - September 2014

(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	Dgc	Shasta Generation EI 815	Spring Crk Powerplant Release	Keswick Total Release	RDD	BSF	RDB	LWS
Aug	53.5		52.7	57.2	54.8	57.9	59.1	59.7	61.6	52.8	56.1	58.6		6,061	1,742	7,665	80.6	76.2	76.6	73.3
Sep																				
1	54.2	(0.4)	53.8	57.9	54.6	58.0	58.7	59.5	61.0	54.1	55.8	58.8	57.0	6,480	14	6,900	88.0	77.9	81.0	70.7
2	54.1	(0.3)	53.8	57.9	54.6	58.0	58.9	59.5	61.0	54.8	55.9	58.8	57.5	7,122	14	6,900	81.0	75.5	78.0	72.2
3	54.5	(0.2)	54.3	57.9	55.1	58.1	59.0	59.6	61.1	54.5	56.3	58.8	57.2	6,416	14	6,588	81.0	78.1	79.9	69.4
4	54.8	(0.2)	54.6	57.9	55.1	58.1	58.8	59.4	60.6	54.5	56.2	58.4	56.6	6,218	14	6,600	88.5	78.0	81.2	66.9
5	55.0	(0.1)	54.9	57.9	55.3	58.0	58.8	59.3	60.5	54.4	59.5	58.3	56.6	6,139	16	6,393	77.5	73.5	73.2	67.6
6	55.2	(0.2)	55.0	57.9	55.4	58.3	59.4	60.0	61.2	54.6	56.8	58.5	56.9	6,146	18	6,150	79.0	73.0	74.5	68.5
7	55.5	0.4	55.9	57.9	55.8	58.5	59.5	60.0	61.4	54.7	56.9	58.5	57.2	5,724	14	6,139	77.5	71.7	73.7	68.7
8	55.8	0.6	56.4	58.0	56.1	58.6	59.7	60.3	61.4	54.8	57.2	58.5	57.1	5,672	39	6,148	76.0	70.8	71.1	67.4
9	57.3	(0.6)	56.7	57.8	56.2	58.8	59.8	60.4	61.5	55.1	57.3	58.4	57.3	4,080	32	5,894	75.0	69.4	70.8	68.7
10	56.7	(1.3)	55.4	58.0	56.7	58.9	60.0	60.4	61.7	55.1	57.7	58.6	57.4	4,697	21	5,901	79.5	73.2	76.0	69.4
11	57.2	0.3	57.5	58.0	56.2	59.1	60.3	60.8	62.1	55.0	57.6	58.4	57.4	4,117	15	5,623	79.0	73.7	75.5	71.0
12	57.8	(2.1)	55.7	57.9	56.7	59.1	60.1	60.6	62.4	54.8	57.8	58.5	57.3	3,684	14	5,636	80.5	73.4	77.1	71.0
13	58.1	(2.2)	55.9	57.4	56.7	59.3	60.5	61.0	62.4	54.7	57.8	58.7	57.0	3,578	125	5,690	81.5	75.1	77.8	69.7
14	59.8	(2.9)	56.9	58.0	56.9	59.4	60.7	61.1	62.6	54.5	58.3	58.8	58.1	2,909	14	5,562	82.0	75.3	77.3	70.8
15	58.7	(2.1)	56.6	57.9	57.4	59.7	61.1	61.6	63.2	54.5	58.6	58.7	58.6	3,428	14	5,492	80.0	75.6	77.7	71.1
16	59.4	(2.3)	57.1	57.9	57.8	59.9	61.1	61.5	63.0	53.8	58.7	57.9	57.9	3,157	14	5,499	75.5	70.8	72.0	66.5
17	59.2	(2.0)	57.2	57.9	57.6	59.8	60.8	61.1	62.6	54.4	58.6	58.0	55.7	3,013	14	5,494	75.5	72.5	73.5	67.9
18	59.1	(1.4)	57.7	57.5	58.0	60.0	61.5	62.0	63.1	52.1	58.9	58.2	53.9	3,377	198	5,553	76.5	73.6	72.8	63.7
19	60.1	(1.5)	58.6	57.6	58.3	60.1	61.3	61.7	63.4	52.0	59.5	58.4	53.2	3,017	225	5,379	80.5	74.2	76.5	66.5
20	58.6	(1.0)	57.6	58.4	58.5	60.5	62.1	62.6	63.8	52.0	59.9	58.5	53.1	3,143	35	5,319	78.0	72.8	74.5	70.2
21	59.9	(1.7)	58.2	58.1	58.8	60.8	62.2	62.7	64.2	52.2	60.0	58.6	53.6	2,898	14	5,326	77.5	71.4	72.4	70.7
22	59.7	(1.5)	58.2	58.0	58.8	60.8	62.0	62.4	63.9	51.9	59.9	58.5	53.2	3,260	14	5,108	74.5	69.5	71.1	67.8
23	60.2	(1.3)	58.9	58.2	59.1	61.2	62.1	62.4	63.7	52.0	60.1	58.2	53.8	2,859	22	5,115	75.0	70.0	71.8	65.8
24		0.0																		
25		0.0																		
26		0.0																		
27		0.0																		
28		0.0																		
29		0.0																		
30		0.0																		
31		0.0																		
Avg	57.4		56.4	57.9	56.8	59.3	60.4	60.9	62.3	53.9	58.1	58.5		4,397	40	5,844	79.1	73.4	75.2	68.8
Tot cfs														101,134	914	134,409				
Tot af														200,599	1,813	266,600				

# = Station out of service

^ - estimated (7 hours or less available)

? = Avg. includes estimated data

! = 17 hours or less of readings

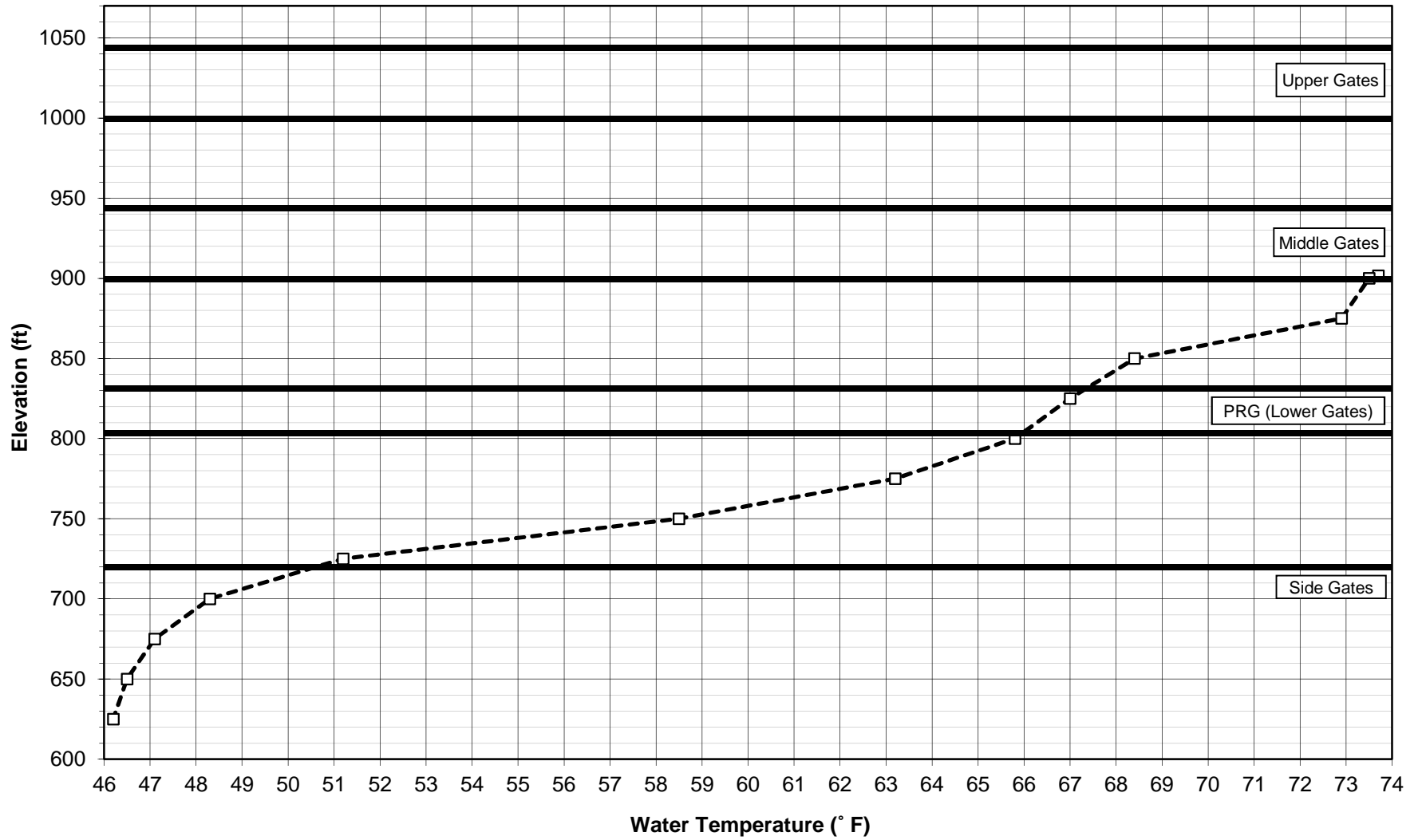
&amp; = 18 to 23 hours of reading

ND = No hourly readings or incorrect

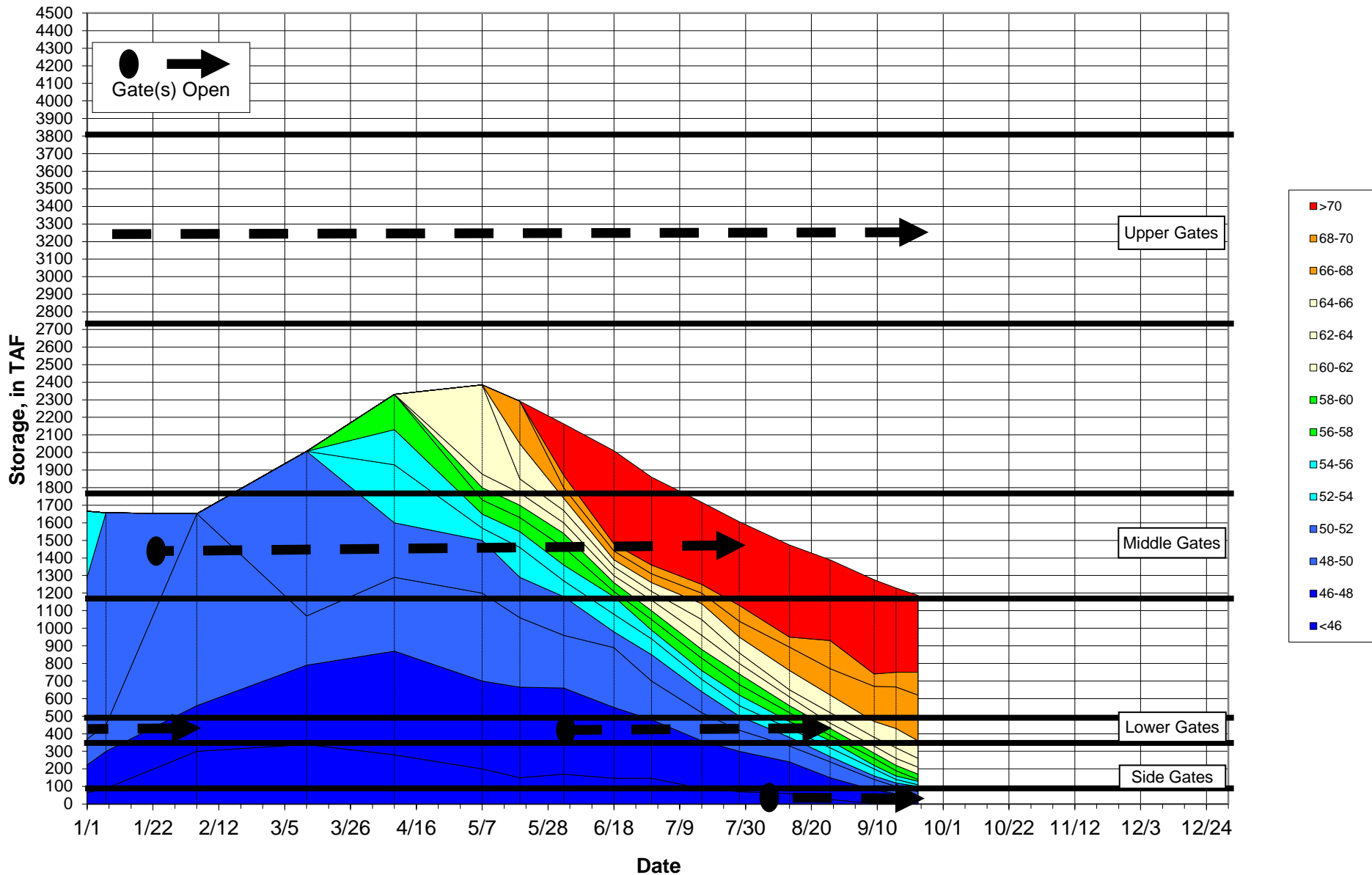
Control Point: Balls Ferry 3/1/2014 to 3/27/2014 56.0; Clear Creek 3/28/2014 to 4/24/2014 58.0; Clear Creek 4/25/2014 to present 56.0.

PRELIMINARY

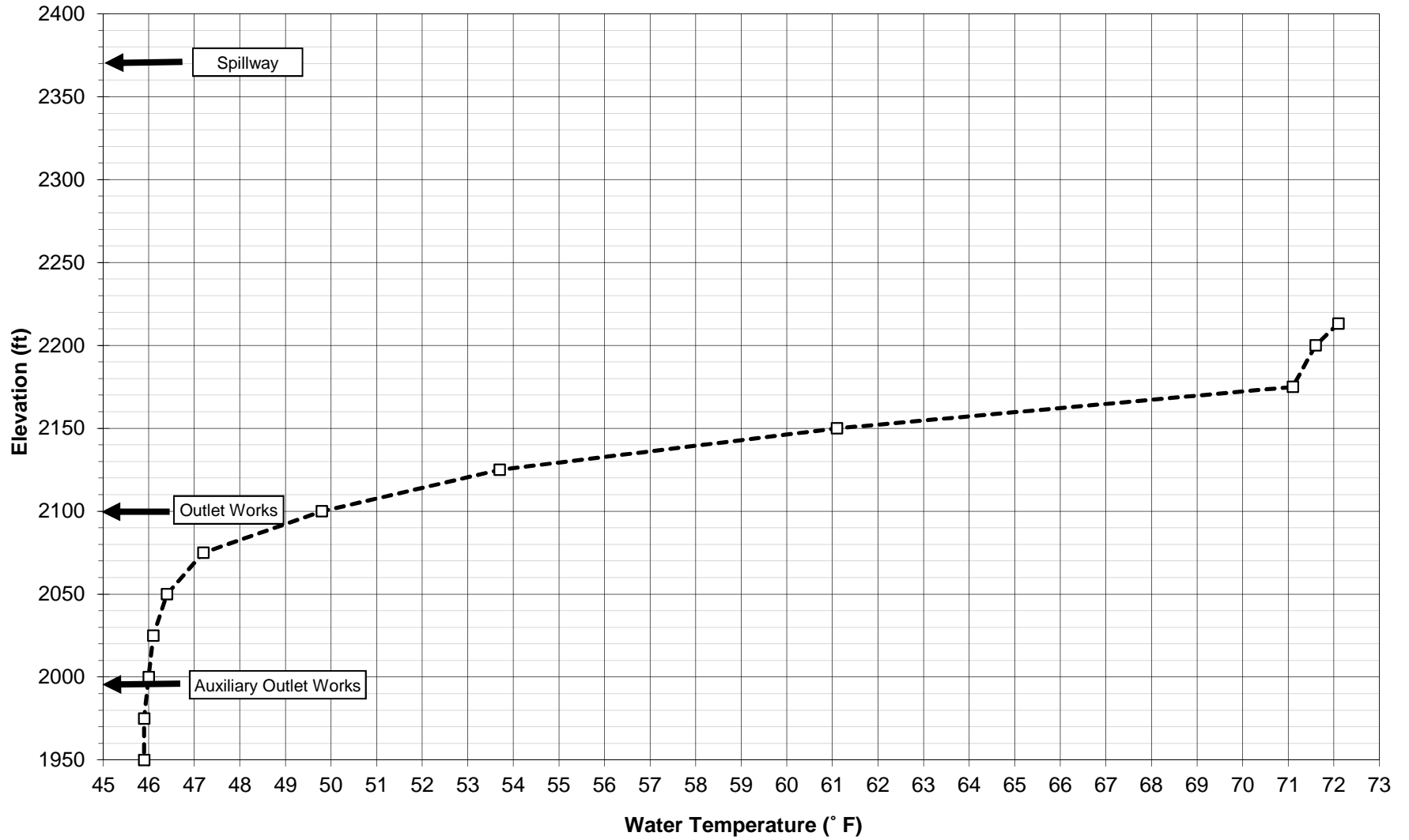
Lake Shasta Temperature Profile - 9/23/14



# Lake Shasta Isothermobaths - 2014 (Water Temperature, in ° F)



Trinity Lake Temperature Profile - 9/11/14







Whiskeytown Lake Temperature Profile - 9/16/14

