

Sacramento River Temperature Task Group (SRTTG) Call
Thursday, September 24, 2015 | 1:00 p.m. – 1:30 p.m.

MEETING SUMMARY

Participants:

- Mike Berry, DWR
- Jason Roberts, CDFW
- Ken Emanuel, SWRCB
- Rich Satkowski, SWRCB
- Diane Riddle, SWRCB
- Dan Kratville, CDFW
- Duane Linander, CDFW
- Brycen Swart, NMFS
- Garwin Yip, NMFS
- Seth Naman, NMFS
- Thuy Washburn, USBR (Facilitator)

Note-taking:

- Gia Brazil, Kearns & West

Action Items:

- Reclamation will evaluate on September 25 whether to open the second side gate on September 25 or September 26.

Fisheries Update

There are some September spawners that are spring or fall run. CDFW is marking those redds for the foreseeable future (until October). CDFW staff was in the field on September 24 re-measuring the at-risk winter-run redds at Posse Ground Boat Ramp to see if the 200 cfs flow reduction resulted in any dewatering.

Operations Update

Reclamation reduced flows the morning of September 24 from 7,000 cfs to 6,800 cfs. The Delta salinity is still an issue. TCD still has one side gate open and two PRGs (4 and 5) closed.

Trinity Snap Shot and Summary (see handout)

Reclamation is bypassing through the auxiliary outlet at Trinity at ~1300 cfs through the outlet and ~400 cfs through the power plant. Reclamation will probably put more through the auxiliary outlet depending on temperatures at Douglas City, but Spring Creek Tunnel diversions are decreasing, which will reduce flows through the auxiliary outlet. The 400 cfs coming through the power outlet is for power generation as well as blending and the current blend is about right. As the lake lowers, Reclamation will cut power generation completely, they are exercising caution about going to full auxiliary in order to try to stretch the timeframe.

Temperature Summary (see handout)

Douglas City is running just below 56° F. It was running above 56° F the previous few days, but on September 23 Reclamation got it down to 55.8° F. They will keep watching the temperature and continue targeting 56° F.

CCR and SAC Trends (see handout)

Reclamation has been trying to keep the TCD weighted average at 55° F but it has been slowly increasing (~0.2°F). Clear Creek (CCR) is at 57.5° F. On September 23 it was 57.3° F due to the cooler ambient temperatures. SAC is still at ~57° F (September 23 it was 56.5° F). TCD is continuing to creep up about 0.1-0.2°F, so in 2-3 days (September 26-27) we will be cutting it close for temperature targets. Reclamation recommends thinking about opening the other side gate and blending water there as the next step. There is not a good projection for closing the PRGs. 2009 was a very similar year in terms of storage level and cold water pool and it took three weeks to complete the cycle of closing all the PRGs. In 2008 there was less storage, less water, and a warmer temperature profile. Reclamation closed all middle gates and all the PRGs on September 2, 2008, and went with the two side gates through rest of season. The temperatures we are managing for this year at CCR were in the same range in 2008 for quite some time, much earlier than we are contemplating this year. The model is having some difficulty due to sensitivities to the ambient conditions. This means we probably need to fine tune which unit is running with which PRG.

Reclamation has been looking at some older data from Shasta for comparison to this year. 2008-2009 brackets where we are with the current snapshot in terms of overall volume and cold water positioning at the gates. Reclamation has been using this to try to better understand how much time there is between actions.

The effects of the increasing TCD weighted average may be muted at CCR because of cooler air temperatures. Reclamation has also been backing off of the Spring Creek Tunnel diversion. So KWK might be a better gauge; KWK is running at 56° F and CCR is at ~57-57.5° F. Spring Creek Tunnel temperature from Whiskeytown is ~58° F (higher than the mixed release), but it is cooling everyday (about 0.3-0.4°F drop since about September 17). This will change the dynamics when the release of water through the tunnel is changed. If we see a warm set of days, an increase in temperature at Keswick and down to CCR may result.

When the second side gate is pulled the initial drop will be ~1° F if we do nothing in terms of the units. Right now, unit 5 is predominant (the coolest) and units 1-4 are similar to each other in temperature at 56° F. Once Reclamation opens the side gates, it will start moving and prioritizing some of the other units to draw warm water so the drop is only about 0.3°F cooler, then gradually move toward the center of the lake again.

Reclamation recommends opening the second side gate on September 25 or 26 because the TCD weighted average is creeping up; on September 23 it was at 57.3° F and on September 24 it was up an additional 0.2°F. Reclamation observes this measure daily and the controllers have all the units at their disposal, so there can be quick reprioritization if needed. Reclamation will meet again on September 25 to determine which day to open the side gate. They will monitor over the weekend and likely do the PRG modifications on Monday, September 28.

Next Meeting

The next meeting of the SRTTG is scheduled for October 1 at 1:00 p.m.

Sacramento River Temperature Task Group Meeting

September 24, 2015

1:00 pm

Conference Line: 877-718-6527

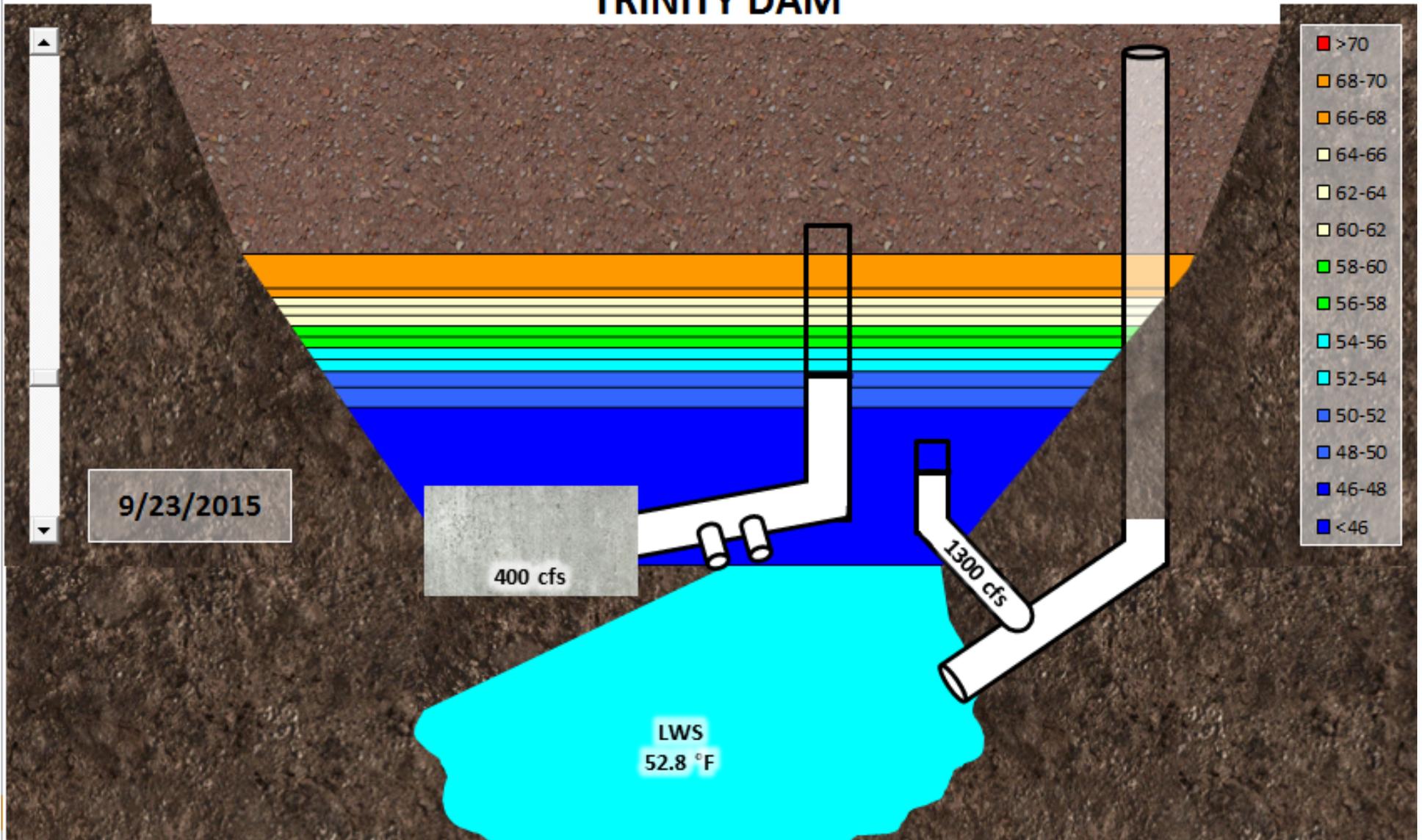
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Agenda

1. Introductions
2. Fishery update
3. Operation update
 - a. Trinity Snap shot and summary ***
 - b. Temperature Summary ***
 - c. CCR and SAC trend***
4. Next meeting

***handout

TRINITY DAM



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

SEPTEMBER 2015

TRINITY LAKE DAILY OPERATIONS

RUN DATE: September 24, 2015

DAY	ELEV	STORAGE		COMPUTED* INFLOW C.F.S.	POWER	RELEASE - C.F.S.		EVAPORATION		PRECIP INCHES (1)
		1000 ACRE-FEET IN LAKE	CHANGE			SPILL	OUTLET	C.F.S.	INCHES (1)	
		679.9								
1	2,213.45	674.5	-5.4	94	1,678	0	1,096	44	.22	.00
2	2,212.66	669.2	-5.3	-29	1,550	0	1,040	53	.27	.00
3	2,211.97	664.6	-4.6	98	1,339	0	1,027	53	.27	.00
4	2,211.30	660.1	-4.4	184	1,319	0	1,053	47	.24	.00
5	2,210.56	655.3	-4.9	299	1,765	0	945	44	.23	.00
6	2,209.81	650.4	-4.9	195	1,773	0	848	48	.25	.00
7	2,209.07	645.6	-4.8	225	1,783	0	847	23	.12	.00
8	2,208.22	640.1	-5.5	381	1,794	0	1,324	34	.18	.00
9	2,206.99	632.1	-7.9	224	1,609	0	2,555	47	.25	.00
10	2,205.66	623.7	-8.5	-169	1,673	0	2,382	47	.25	.00
11	2,204.71	617.7	-6.0	-114	1,653	0	1,217	46	.25	.00
12	2,204.05	613.5	-4.2	89	1,757	0	386	42	.23	.00
13	2,203.27	608.6	-4.9	12	1,574	0	854	46	.25	.00
14	2,202.64	604.7	-3.9	30	1,489	0	487	33	.18	.00
15	2,201.77	599.3	-5.4	-205	1,675	0	834	7	.04	.12
16	2,200.99	594.5	-4.8	115	1,748	0	773	22	.12	.02
17	2,200.27	590.1	-4.4	191	1,742	0	676	0	.00	.43
18	2,199.44	585.0	-5.1	-122	1,749	0	663	20	.11	.00
19	2,198.78	581.0	-4.0	18	1,197	0	822	20	.11	.00
20	2,198.13	577.1	-3.9	-121	651	0	1,171	37	.21	.00
21	2,197.50	573.3	-3.8	-200	525	0	1,149	34	.19	.00
22	2,196.91	569.7	-3.5	-29	521	0	1,199	32	.18	.00
23	2,196.28	566.0	-3.7	-132	427	0	1,294	37	.21	.00
TOTALS			-113.8	1,034	32,991	0	24,642	816	4.36	.57
ACRE-FEET			-113,800	2,051	65,438	0	48,877	1,619		

COMMENTS:

* COMPUTED INFLOW IS THE SUM OF CHANGE IN STORAGE, RELEASES AND EVAPORATION.

(1) EVAPORATION AND PRECIPITATION RECORDS TAKEN FROM STATION AT TRINITY RIVER HATCHERY.

SUMMARY

RELEASE (ACRE-FEET)		PRECIPITATION	
POWER	65,438	OUTLET	48,877
SPILL	0	TOTAL	114,315
		THIS MONTH =	.57
		JULY 1, 2015 TO DATE =	2.51

Temperature and Release Summary for Shasta and Trinity - September 2015

(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	Bsf	Jlf	Bnd	Rdb	Lws	Control Point 4/1 Ccr	Igo	Sac	Dgc	Shasta Generation El 815	Spring Crk Powerplant Release	Keswick Total Release	RDD	BSF	RDB	LWS	
Aug	53.9		52.3	58.7	55.4	58.6	60.0	60.7	62.4	53.1	56.9	58.4	56.3	57.0	5,354	1,374	6,854	81.3	75.9	76.1	70.5	
Sep																						
1	53.5	(1.2)	52.3	58.8	55.2	58.8	59.9	60.6	62.1	53.7	56.9	59.5	56.2	56.5	4,912	1,322	6,904	79.5	73.3	75.0	69.5	
2	53.3	(1.0)	52.3	58.8	54.8	58.3	59.5	60.4	62.0	53.6	56.3	59.1	55.7	56.0	5,409	1,250	6,901	77.5	72.3	72.5	64.4	
3	53.3	(1.1)	52.2	58.8	54.9	58.2	59.4	60.2	61.6	53.5	56.5	59.2	55.9	55.6	5,609	1,198	6,908	74.0	71.0	70.1	62.9	
4	53.5	(1.3)	52.2	58.8	54.7	57.7	58.7	59.5	61.0	53.6	56.1	58.9	55.6	55.1	5,791	1,162	6,909	71.5	67.5	69.1	57.8	
5	53.8	(1.2)	52.6	58.7	54.6	57.1	57.9	58.6	59.8	53.9	55.9	58.5	55.5	55.0	5,536	1,397	6,902	73.0	68.4	70.0	56.5	
6	54.0	(1.1)	52.9	58.7	54.5	57.4	58.1	58.7	59.7	53.6	56.0	58.7	55.4	55.4	6,099	1,103	6,910	78.5	69.6	72.0	60.9	
7	54.4	(1.4)	53.0	58.6	54.8	57.3	58.3	58.9	60.0	53.5	56.2	58.5	55.7	55.6	5,600	1,394	6,904	78.5	71.5	74.0	65.1	
8	54.3	(1.2)	53.1	58.6	55.1	57.8	58.8	59.4	60.5	53.6	56.6	58.6	56.1	55.7	5,673	1,239	6,905	81.0	73.9	75.5	68.6	
9	54.1	(1.0)	53.1	58.6	55.5	58.1	59.2	59.8	61.0	53.8	56.9	58.6	56.4	55.0	4,936	1,531	6,905	82.0	75.1	78.0	69.6	
10	54.2	(0.8)	53.4	58.6	55.3	58.5	59.5	60.2	61.4	53.8	56.9	58.8	56.3	55.0	6,059	857	6,905	84.5	78.0	82.4	71.2	
11	54.5	(1.0)	53.5	59.1	55.1	58.1	59.4	60.1	61.7	53.6	56.6	59.1	56.0	55.2	6,288	14	6,943	85.5	79.5	81.4	74.7	
12	54.8	(1.0)	53.8	58.5	54.9	57.5	58.4	59.0	60.2	53.7	56.2	59.0	55.7	55.4	5,397	331	6,908	83.0	72.7	74.5	71.9	
13	55.0	(1.1)	53.9	58.5	55.0	57.7	58.6	59.1	59.7	53.4	56.5	59.1	56.1	55.5	5,801	1,242	6,907	83.0	75.6	76.9	71.5	
14	54.1	(0.8)	53.3	58.5	55.3	57.3	58.2	59.0	59.9	53.1	56.0	58.1	55.6	54.4	6,270	1,001	6,903	72.5	69.0	69.4	60.8	
15	54.4	(1.0)	53.4	58.5	54.9	57.0	57.5	57.9	58.5	52.6	56.0	58.0	55.5	53.6	5,102	1,514	6,693	64.5	64.4	63.7	55.3	
16	55.1	(1.0)	54.1	58.6	54.7	55.6	56.2	56.8	57.6	52.4	55.0	57.0	54.8	52.4	4,733	1,398	6,670	57.0	56.9	59.2	47.8	
17	54.7	(0.5)	54.2	58.6	55.0	56.8	57.2	57.7	57.8	52.2	56.2	58.5	55.9	54.1	4,826	1,409	6,686	68.5	63.5	65.8	56.8	
18	55.3	(0.8)	54.5	58.5	55.8	57.3	58.6	59.1	59.9	52.4	57.0	58.8	56.6	53.9	4,866	1,383	6,760	76.0	65.9	68.6	57.8	
19	55.0	(0.8)	54.2	58.5	55.9	57.9	59.2	59.7	60.5	53.1	57.2	59.1	56.7	54.8	5,036	1,479	6,709	78.0	68.7	70.5	62.4	
20	55.2	(0.8)	54.4	58.4	55.9	58.2	59.5	60.1	61.0	53.5	57.5	59.2	56.9	56.5	5,975	937	6,709	77.5	71.1	73.8	66.8	
21	55.0	(0.6)	54.4	58.3	56.0	58.3	59.6	60.3	61.4	53.6	57.5	59.2	56.9	57.2	5,339	1,589	6,687	80.5	72.4	75.9	67.1	
22	55.1	(0.8)	54.3	58.2	56.1	58.4	59.7	60.3	61.5	53.2	57.6	58.9	57.0	56.8	4,847	1,262	6,690	76.0	69.8	72.7	64.5	
23	55.3	(0.9)	54.4	58.2	55.9	58.2	59.4	60.0	61.2	52.8	57.3	58.6	56.7	55.8	5,054	939	6,706	73.0	67.1	69.6	62.3	
24		0.0																				
25		0.0																				
26		0.0																				
27		0.0																				
28		0.0																				
29		0.0																				
30		0.0																				
		0.0																				
Avg	54.4		53.5	58.6	55.2	57.7	58.7	59.4	60.4	53.3	56.6	58.7	56.1	55.2	5,442	1,172	6,827	76.3	70.3	72.2	63.7	
Tot cfs															125,158	26,951	157,024					
Tot af															248,251	53,457	311,457					

? = Average includes 1-9 estimated hourly readings

! = No Average (10-17 hours missing)

& = No Average (18 to 23 hours missing)

= Station out of service

ND = No hourly readings or incorrect

% = Data will be down loaded from site at later date by NCAO staff.

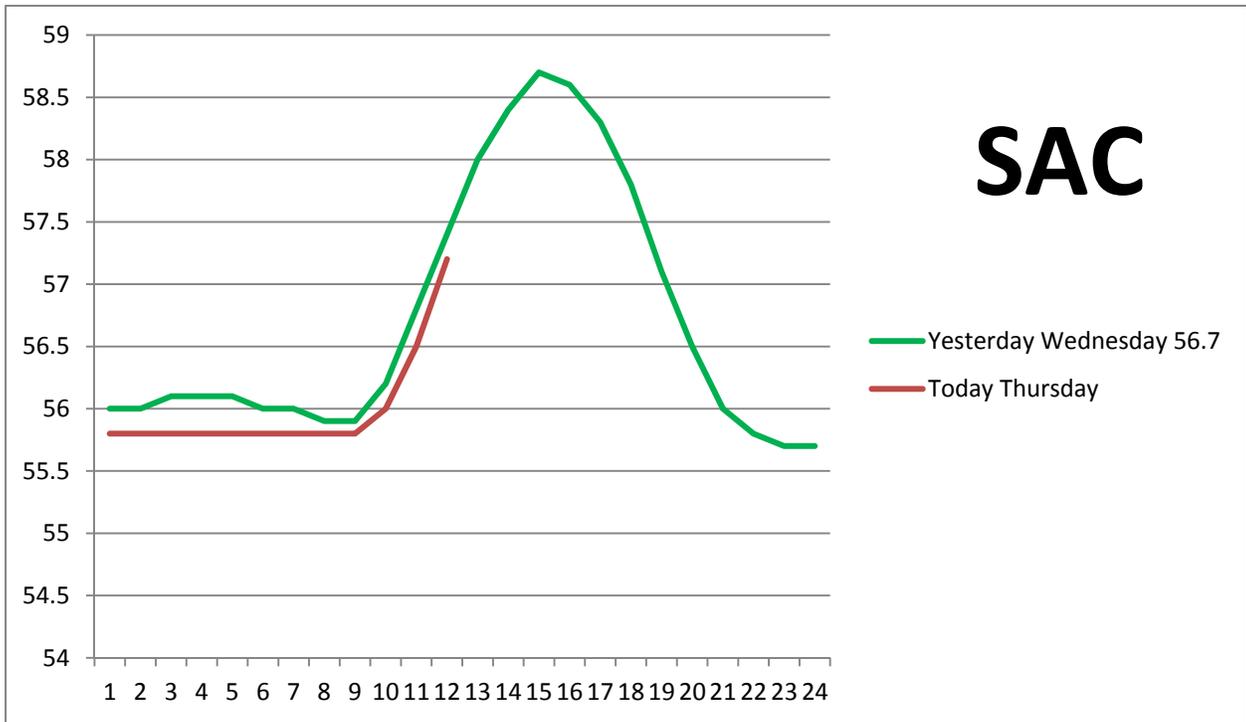
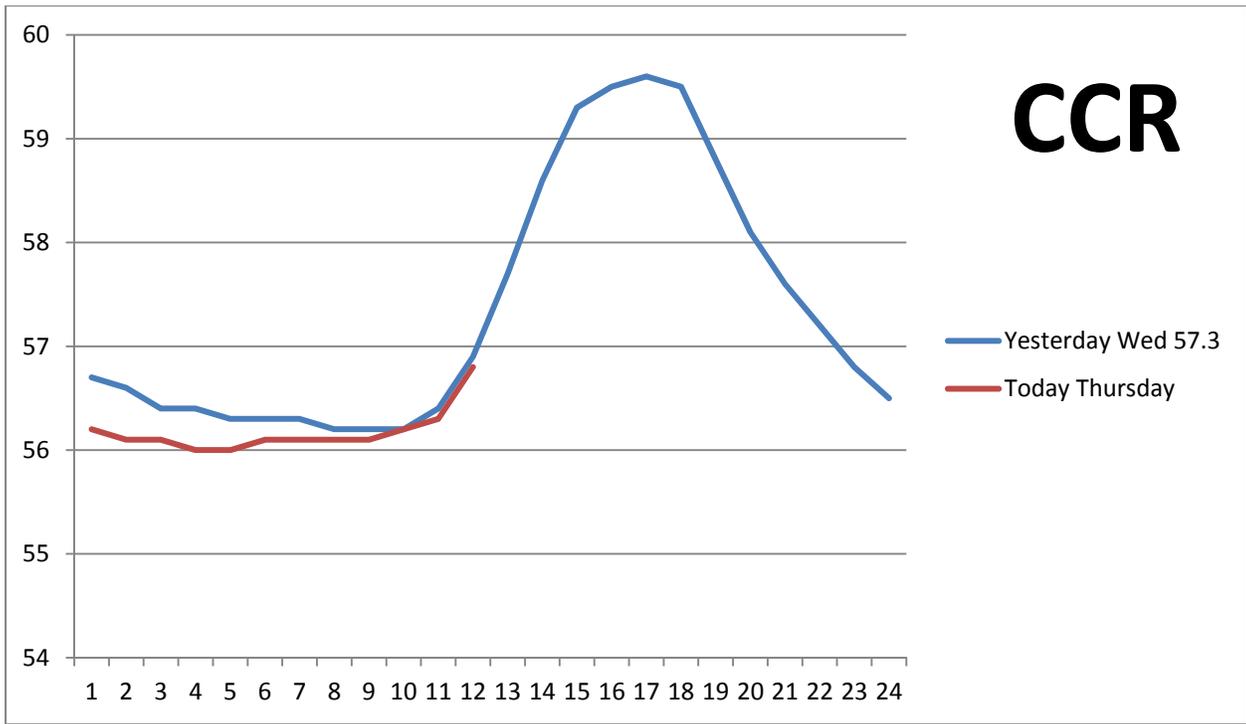
When available:

^ = Redding Air Temp Record High

* = Redding Air Temp Record Low

Control Point: Clear Creek 4/1/2015 to 4/17/2015 at 56.0 degrees; 4/18/2015 to 5/14/2015 at 58.0 degrees; 5/15/2015 to 6/4/2015 56.0; 6/5/2015 to present 58.0 degrees.

PRELIMINARY



Sacramento River Temperature Task Group Meeting

September 24, 2015

1:00 pm

Conference Line: 877-718-6527

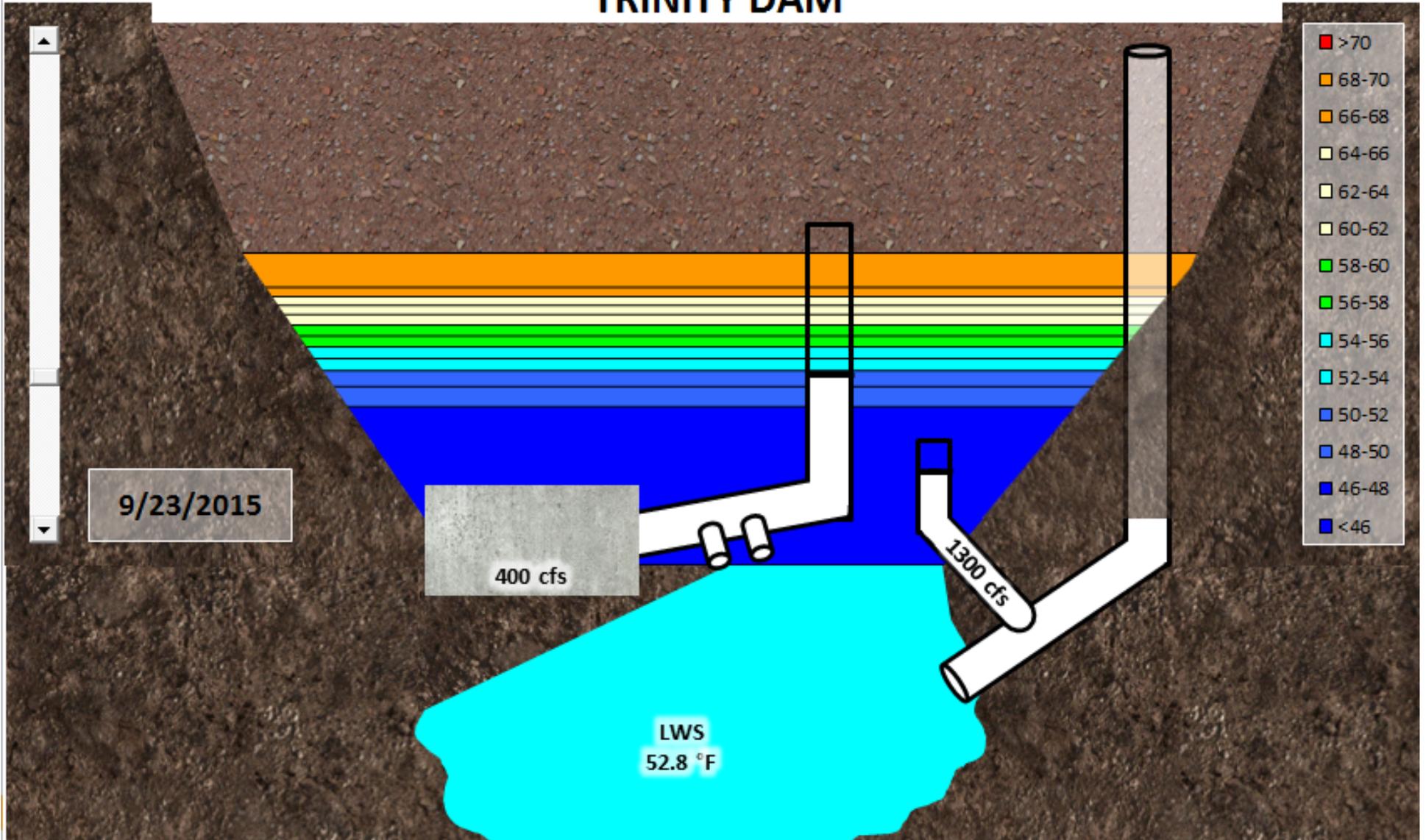
Pass code: 1954134

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Sep																						
1	53.5	(1.2)	52.3	58.8	55.2	58.8	59.9	60.6	62.1	53.7	56.9	59.5	56.2	56.5	4,912	1,322	6,904	79.5	73.3	75.0	69.5	
2	53.3	(1.0)	52.3	58.8	54.8	58.3	59.5	60.4	62.0	53.6	56.3	59.1	55.7	56.0	5,409	1,250	6,901	77.5	72.3	72.5	64.4	
3	53.3	(1.1)	52.2	58.8	54.9	58.2	59.4	60.2	61.6	53.5	56.5	59.2	55.9	55.6	5,609	1,198	6,908	74.0	71.0	70.1	62.9	
4	53.5	(1.3)	52.2	58.8	54.7	57.7	58.7	59.5	61.0	53.6	56.1	58.9	55.6	55.1	5,791	1,162	6,909	71.5	67.5	69.1	57.8	
5	53.8	(1.2)	52.6	58.7	54.6	57.1	57.9	58.6	59.8	53.9	55.9	58.5	55.5	55.0	5,536	1,397	6,902	73.0	68.4	70.0	56.5	
6	54.0	(1.1)	52.9	58.7	54.5	57.4	58.1	58.7	59.7	53.6	56.0	58.7	55.4	55.4	6,099	1,103	6,910	78.5	69.6	72.0	60.9	
7	54.4	(1.4)	53.0	58.6	54.8	57.3	58.3	58.9	60.0	53.5	56.2	58.5	55.7	55.6	5,600	1,394	6,904	78.5	71.5	74.0	65.1	
8	54.3	(1.2)	53.1	58.6	55.1	57.8	58.8	59.4	60.5	53.6	56.6	58.6	56.1	55.7	5,673	1,239	6,905	81.0	73.9	75.5	68.6	
9	54.1	(1.0)	53.1	58.6	55.5	58.1	59.2	59.8	61.0	53.8	56.9	58.6	56.4	55.0	4,936	1,531	6,905	82.0	75.1	78.0	69.6	
10	54.2	(0.8)	53.4	58.6	55.3	58.5	59.5	60.2	61.4	53.8	56.9	58.8	56.3	55.0	6,059	857	6,905	84.5	78.0	82.4	71.2	
11	54.5	(1.0)	53.5	59.1	55.1	58.1	59.4	60.1	61.7	53.6	56.6	59.1	56.0	55.2	6,288	14	6,943	85.5	79.5	81.4	74.7	
12	54.8	(1.0)	53.8	58.5	54.9	57.5	58.4	59.0	60.2	53.7	56.2	59.0	55.7	55.4	5,397	331	6,908	83.0	72.7	74.5	71.9	
13	55.0	(1.1)	53.9	58.5	55.0	57.7	58.6	59.1	59.7	53.4	56.5	59.1	56.1	55.5	5,801	1,242	6,907	83.0	75.6	76.9	71.5	
14	54.1	(0.8)	53.3	58.5	55.3	57.3	58.2	59.0	59.9	53.1	56.0	58.1	55.6	54.4	6,270	1,001	6,903	72.5	69.0	69.4	60.8	
15	54.4	(1.0)	53.4	58.5	54.9	57.0	57.5	57.9	58.5	52.6	56.0	58.0	55.5	53.6	5,102	1,514	6,693	64.5	64.4	63.7	55.3	
16	55.1	(1.0)	54.1	58.6	54.7	55.6	56.2	56.8	57.6	52.4	55.0	57.0	54.8	52.4	4,733	1,398	6,670	57.0	56.9	59.2	47.8	
17	54.7	(0.5)	54.2	58.6	55.0	56.8	57.2	57.7	57.8	52.2	56.2	58.5	55.9	54.1	4,826	1,409	6,686	68.5	63.5	65.8	56.8	
18	55.3	(0.8)	54.5	58.5	55.8	57.3	58.6	59.1	59.9	52.4	57.0	58.8	56.6	53.9	4,866	1,383	6,760	76.0	65.9	68.6	57.8	
19	55.0	(0.8)	54.2	58.5	55.9	57.9	59.2	59.7	60.5	53.1	57.2	59.1	56.7	54.8	5,036	1,479	6,709	78.0	68.7	70.5	62.4	
20	55.2	(0.8)	54.4	58.4	55.9	58.2	59.5	60.1	61.0	53.5	57.5	59.2	56.9	56.5	5,975	937	6,709	77.5	71.1	73.8	66.8	
21	55.0	(0.6)	54.4	58.3	56.0	58.3	59.6	60.3	61.4	53.6	57.5	59.2	56.9	57.2	5,339	1,589	6,687	80.5	72.4	75.9	67.1	
22	55.1	(0.8)	54.3	58.2	56.1	58.4	59.7	60.3	61.5	53.2	57.6	58.9	57.0	56.8	4,847	1,262	6,690	76.0	69.8	72.7	64.5	
23	55.3	(0.9)	54.4	58.2	55.9	58.2	59.4	60.0	61.2	52.8	57.3	58.6	56.7	55.8	5,054	939	6,706	73.0	67.1	69.6	62.3	
24		0.0																				
25		0.0																				
26		0.0																				
27		0.0																				
28		0.0																				
29		0.0																				
30		0.0																				
		0.0																				
Avg	54.4		53.5	58.6	55.2	57.7	58.7	59.4	60.4	53.3	56.6	58.7	56.1	55.2	5,442	1,172	6,827	76.3	70.3	72.2	63.7	
Tot cfs															125,158	26,951	157,024					
Tot af															248,251	53,457	311,457					

? = Average includes 1-9 estimated hourly readings

! = No Average (10-17 hours missing)

& = No Average (18 to 23 hours missing)

= Station out of service

ND = No hourly readings or incorrect

% = Data will be down loaded from site at later date by NCAO staff.

When available:

^ = Redding Air Temp Record High

* = Redding Air Temp Record Low

Control Point: Clear Creek 4/1/2015 to 4/17/2015 at 56.0 degrees; 4/18/2015 to 5/14/2015 at 58.0 degrees; 5/15/2015 to 6/4/2015 56.0; 6/5/2015 to present 58.0 degrees.

PRELIMINARY

