

**Sacramento River Temperature Task Group (SRTTG) Call**  
**Thursday, Aug 13, 2015 | 1:00 p.m. – 2:00 p.m.**

**MEETING SUMMARY**

**Participants:**

- Tricia Bratcher, CDFW
- Eric Danner, NMFS
- Ken Emanuel, SWRCB
- Tim Hayden, Yurok Tribe
- Bob Hughes, CDFW
- Josh Israel, USBR
- Beth Lawson, CDFW
- Scott Ligare, SWRCB
- Tom Patton, Western
- Joe Pisciotto, CDFW
- Diane Riddle, SWRCB
- Jim Smith, FWS
- Stacey Smith, USBR
- Brycen Swart, NMFS
- Thuy Washburn, USBR
- Rod Wittler, USBR
- Garwin Yip, NMFS
- Paul Zedonis, USBR

**Note-taking:**

- Kelsey Rugani, Kearns & West

**Action Items**

- Reclamation to communicate with the SRTTG about any operational changes and potential release variations prior to them occurring so agencies can adapt and prepare themselves accordingly.
- Reclamation to coordinate internally so staff know when any operational changes and potential release variations might occur.
- Reclamation to compare how the Temperature Control Device (TCD) 2015 numbers compare to 2014 and to the Temperature Management Plan.
- Reclamation to delete the five diagonal penstocks in the TCD diagrams to avoid future confusion.
- Reclamation to look into Clear Creek temperatures including bypasses on Trinity and report back to the SRTTG.
- Reclamation to add that the storages input was taken on the same date the profile was taken in the temperature model notes.

**Key Discussion Topics with Summary of Outcomes and Agreements:**

***Fisheries Update***

FWS has been capturing more than ten winter-run juveniles daily for the past three to four days at the Red Bluff Diversion Dam rotary screw traps. FWS is not sure why the increase is occurring.

CDFW reported winter-run adults are well past the peak of in-river spawning (although some fish are spawning). The FWS completed winter-run spawning last week at Livingston Stone National Fish Hatchery (LSNFH). Water temperature during the curtain insulation has remained consistent and they have had no issues as a result of the installation. LSNFH took inventory of 80 females and approximately 370,000 eggs after the last day of spawning. The first 23 females and approximately

100,000 eggs are in tanks. Large chillers will be put in place next week in case they are needed later in the season. Temperatures at the hatchery average between 50-52°F.

### ***Operations Update – Shasta Dam TCD Configuration***

Reclamation advised that Shasta TCD curtain installation began on August 3. The current status is that units 5, 4 and 3 are complete. Installation of units 1 and 2 is on hold since those middle gates are still used for temperature management. By having 1 and 2 uncovered, warm water is mixing with cool water and keeping temperatures consistent and not having to unnecessarily draw on the cold water pool. Units 1 and 2 will likely be covered in two to three weeks. Installation has been quick and has gone smoothly.

Reclamation noted that the curtains are designed to cover the middle gate. The effectiveness of the curtains has not been evaluated at this time.

### ***Operations Update – Temperature Summary***

Reclamation advised that Keswick (KWK) is running at 7,200 cfs and Wilkin Slough is running at 3,800 cfs. Reclamation advised that releases from Folsom will be reduced starting August 14. Delta pumping is at 300 cfs per day.

Reclamation advised that Western Electric Coordinating Council (WECC) Model Validation Testing started on August 10 and will be completed on August 15, at the latest. This testing is required to occur every four years by North American Electric Reliability Corporation (NERC). Reclamation advised that during testing, releases will vary at KWK and have varied. The flows did vary from 6,890 to 8,000 cfs during the testing. The testing is expected to be complete by tomorrow. Saturday at the latest.

The TCD-weighted average temperature has run about 54°F and Sacramento River above Clear Creek (CCR) has been around 56.5°F.

**Action:** Reclamation to communicate with the SRTTG about any operational changes and potential release variations prior to them occurring so agencies can adapt and prepare themselves accordingly.

**Action:** Reclamation to coordinate internally so staff know when any operational changes and potential release variations might occur.

### ***Operations Update - TCD 2014 and 2015 Snap Shot***

Reclamation reviewed an updated Shasta Lake Profile with new information. At this point in 2014, all five middle gates were closed and three PRG gates were open. In 2015, three middle gates are closed and three PRG gates are open. Reclamation shared that on August 8, 2014, all of the side gates were open. In 2015, since there is cooler water behind the PRG gates, those gates will continue to be used until it is time to close all the middle gates.

**Action:** Reclamation to compare TCD 2015 numbers to 2014 and to the Water Temperature Plan.

**Action:** Reclamation to delete the five diagonal penstocks in the TCD diagrams to avoid future confusion.

### ***Operations Update - Temperature Model***

Reclamation summarized five new temperature model runs. The first showed the 2015 July 50% Local 3-Month Temperature Outlook (L3MTO). The graph showed the same temperature releases from June through August at 7,250 cfs, September at 6,500 cfs, October at 5,000 cfs and November at 4,000 cfs. The profiles were taken on August 4<sup>th</sup> and 5<sup>th</sup> and the data were pulled from the July 16<sup>th</sup> L3MTO update. Reclamation noted that the L3MTO is updated once a month so an August update has not been released. The first model was run on August 7. This graph shows CCR targeting 57°F and is on track for what Reclamation has been modeling.

The second graph used the July 8<sup>th</sup> model run information to show that the models did not vary dramatically between months. Reclamation explained that this model indicates that the side gates are pushed out later on at Shasta.

The third graph uses a 10% L3MTO Outlook instead of 50%. Reclamation clarified that the increase in temperature at Shasta around the October 3<sup>rd</sup> date was due to drops in temperature at Shasta and Reclamation making adjustments to make the temperature warmer. This graph used numbers from August through October 2003 and November 1999.

Reclamation explained that the last graph compares the 50% and 10% L3MTO. The 10% Outlook shows temperatures trending warmer, but even if the 10% Outlook occurs, Reclamation predicts that the 57°F can be achieved with some adjustments.

Reclamation noted that the side gates will likely be opened in late September.

Reclamation also noted that the last graph includes the increased Trinity release to accommodate the Hoopa Boat Dance which will be occurring on August 16.

**Action:** Reclamation to look into Clear Creek temperatures including bypasses on Trinity and report back to the SRTTG.

**Action:** Reclamation to add that the storages input was taken on the same date the profile was taken in the temperature model notes.

### ***Next meeting***

The next meeting of the SRTTG is scheduled for August 20<sup>th</sup> at 1:00 p.m.

# **Sacramento River Temperature Task Group Meeting**

**Aug 13, 2015**

**1:00 pm**

**Conference Line: 877-718-6527**

**Pass code: 1954134**

## **Agenda**

1. Introductions
2. Fishery update
3. Shasta TCD Curtain Update
4. Operation update
  - a. Temperature Summary \*\*\*
  - b. TCD 2014 and 2015 Snap Shot\*\*\*
  - c. Temperature Model \*\*\*
5. Next meeting

\*\*\*handout

Temperature and Release Summary for Shasta and Trinity - August 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	
Jul																						
Aug																						
1	53.4	(1.8)	51.6	58.6	54.8	58.5	60.4	61.2	63.0	54.5	56.8	58.6	56.1	61.1	5,313	1,330	6,889	88.0	81.8	79.6	78.8	
2	53.8	(1.9)	51.9	58.6	54.8	58.3	59.8	60.8	63.1	53.7	56.0	57.8	55.5	60.1	5,472	1,330	6,908	84.5	79.7	77.8	74.4	
3	52.6	(1.2)	51.4	58.7	54.5	58.0	59.7	60.4	62.0	54.2	56.3	58.6	55.8	59.4	5,693	1,358	6,917	84.0	78.2	77.3	73.1	
4	53.4	(1.2)	52.2	58.7	54.8	58.0	59.3	60.1	61.9	53.4	56.0	57.8	55.8	59.6	5,187	1,565	6,915	78.5	71.5	71.0	70.6	
5	55.0	(1.5)	53.5	58.8	54.5	57.5	58.8	59.5	61.2	53.2	55.7	57.8	55.3	57.6	5,313	1,562	6,916	78.0	73.8	73.5	68.3	
6	54.7	(1.7)	? 53.0	58.8	55.3	57.6	58.9	59.5	61.1	53.5	56.2	58.1	55.9	57.5	5,409	1,543	6,916	82.5	76.3	76.7	69.8	
7	53.9	(1.7)	52.2	58.8	56.0	58.4	60.3	60.8	62.1	53.4	57.4	58.5	#	58.7	5,397	1,516	6,914	84.5	79.2	80.5	72.1	
8	53.9	(2.0)	51.9	58.8	55.8	58.9	60.9	61.1	63.3	53.0	57.4	58.2	#	57.2	5,423	1,545	6,914	81.0	74.8	75.1	68.1	
9	53.2	(1.7)	51.5	58.8	55.6	58.7	60.5	61.3	63.3	52.8	57.2	58.2	#	56.6	5,333	1,279	6,938	81.5	76.2	77.1	66.0	
10	52.4	(1.3)	51.1	58.8	55.3	58.7	60.2	61.0	62.8	52.5	56.8	57.8	#	56.3	5,031	1,350	6,885	80.5	75.2	75.7	66.6	
11	53.4	(1.9)	51.5	58.8	54.4	58.4	59.9	60.7	62.6	52.9	56.2	58.2	55.4	57.0	5,347	1,107	6,861	80.0	75.9	74.6	69.7	
12	53.5	(1.8)	51.7	58.8	54.0	57.7	59.0	59.8	62.0	53.0	55.6	58.2	55.0	57.9	5,104	1,175	6,756	77.5	72.8	73.4	68.7	
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31																						
Avg	53.6		52.0	58.8	55.0	58.2	59.8	60.5	62.4	53.3	56.5	58.2	55.6	58.3	5,335	1,388	6,894	81.7	76.3	76.0	70.5	
Tot cfs															64,022	16,660	82,729					
Tot af															126,988	33,045	164,093					

? = Average includes 1-9 estimated hourly readings

! = No Average (10-17 hours missing)

& = No Average (18 to 23 hours missing)

When available:

# = Station out of service

ND = No hourly readings or incorrect

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

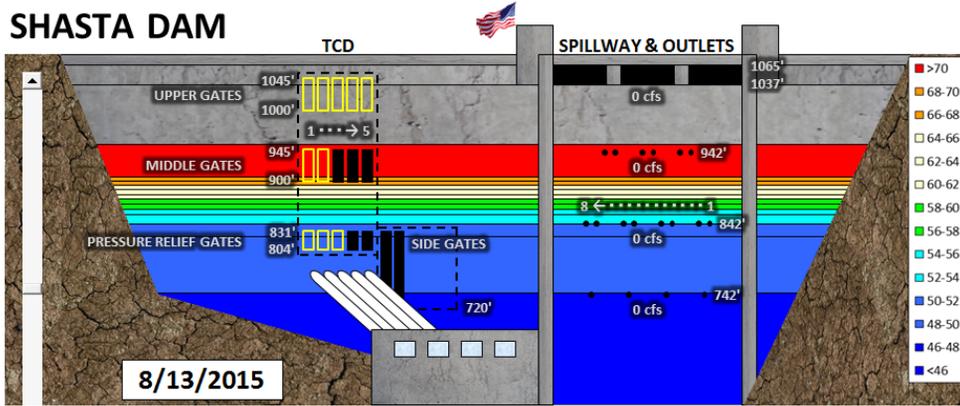
^ = Redding Air Temp Record High

\* = Redding Air Temp Record Low

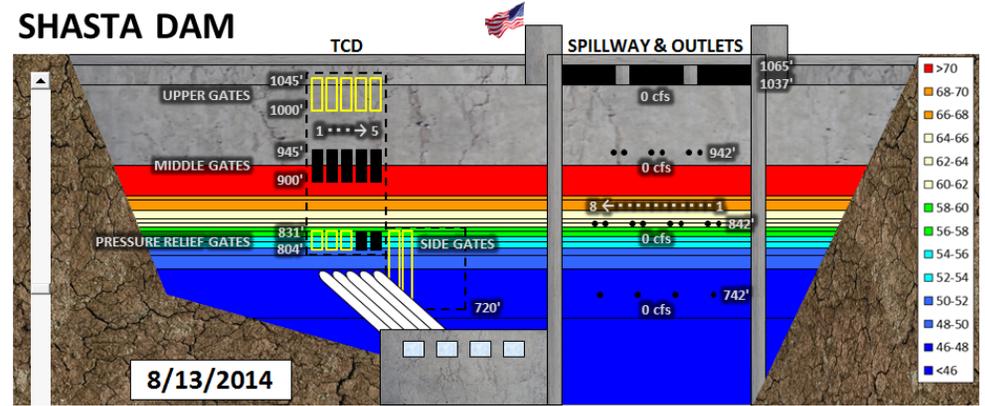
Control Point: Clear Creek 4/1/2015 to 4/17/2015 at 56.0 degrees; 4/18/2015 to 5/14/2015 at 58.0 degrees; 5/15/2015 to 6/4/2015 56.0; 6/5/2015 to present 58.0 degrees.

PRELIMINARY

# SHASTA DAM

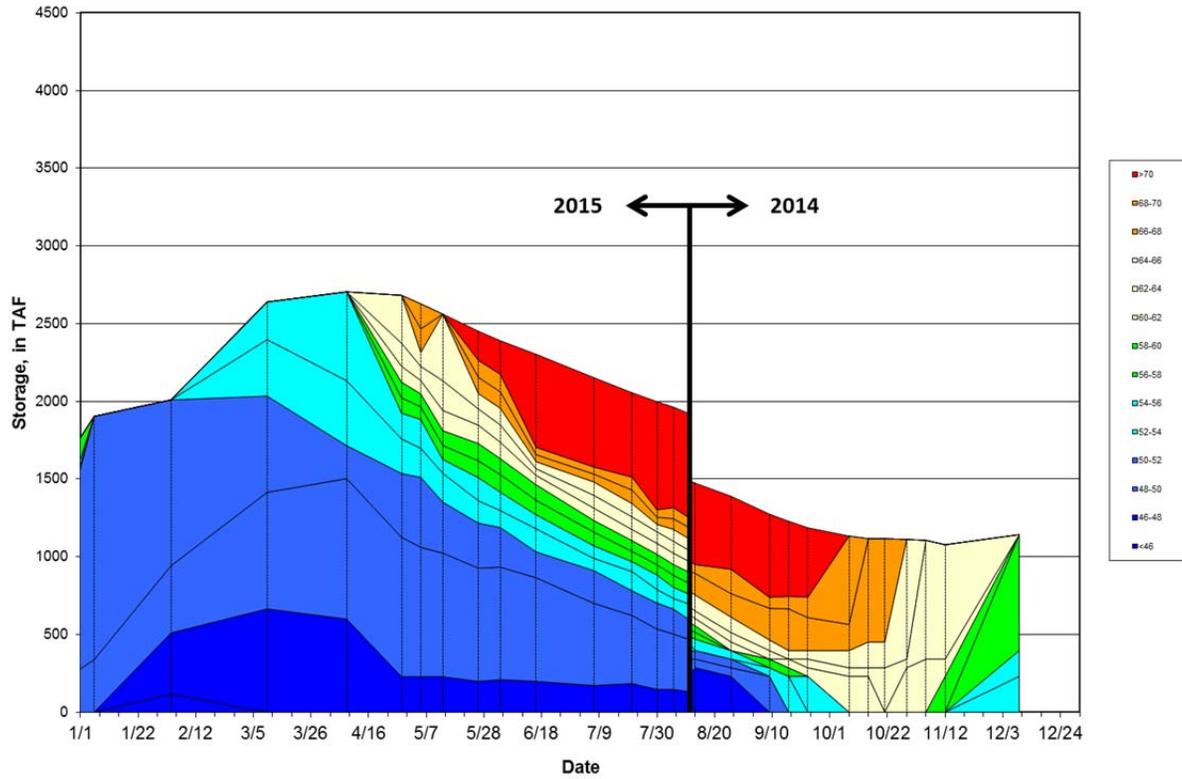


# SHASTA DAM

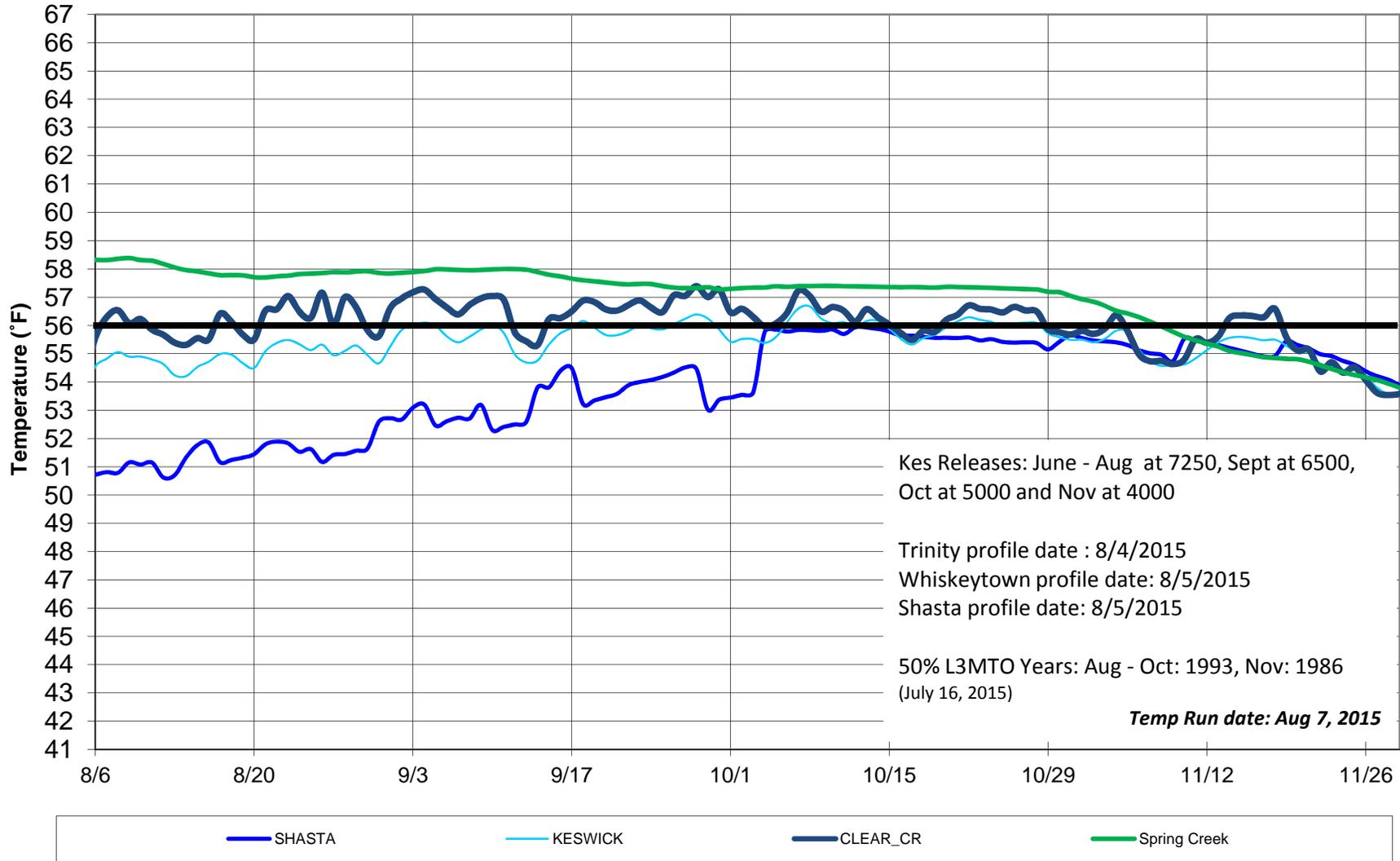


\*NOTE: Yellow outline indicates open position, Solid Black indicates closed position.

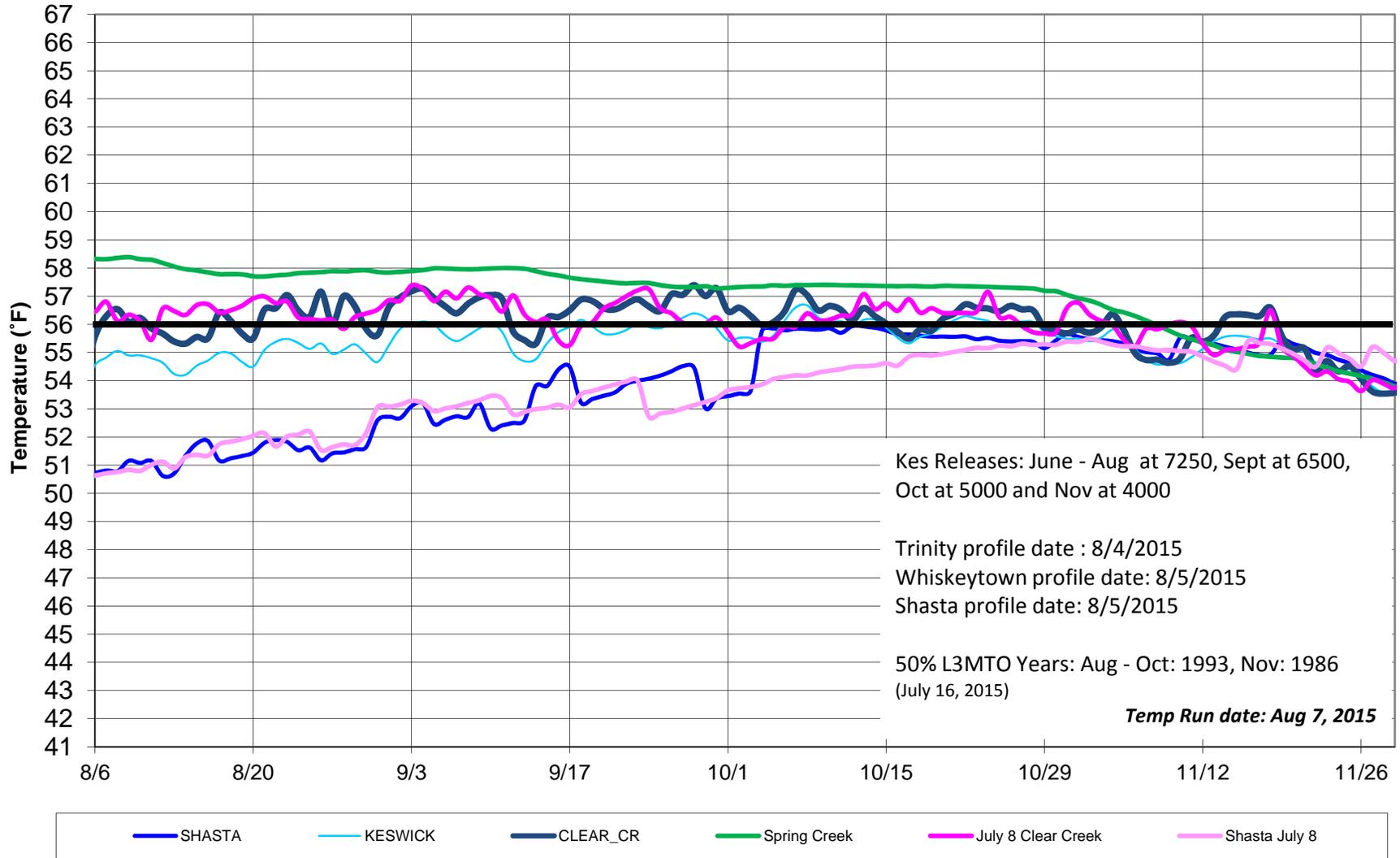
Lake Shasta Isothermographs  
(Water Temperature, in ° F)



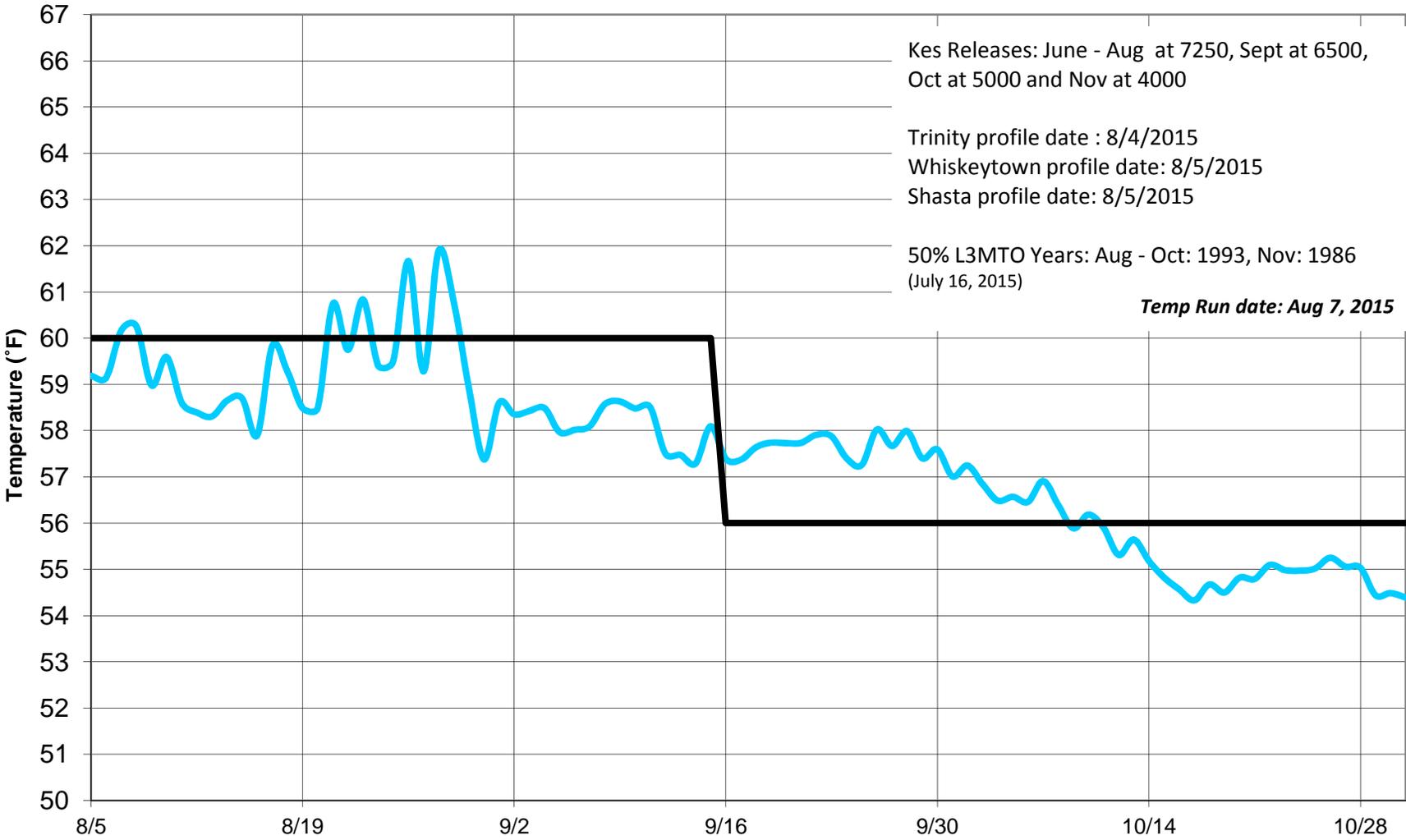
**Sacramento River Modeled Temperature  
2015 July 90%-Exceedance Outlook - 50% L3MTO  
Approximately 57 degree at CCR**



**Sacramento River Modeled Temperature  
2015 July 90%-Exceedance Outlook - 50% L3MTO  
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### Clear Creek - Igo Modeled Temperature 2015 Aug 90%-Exceedance Outlook



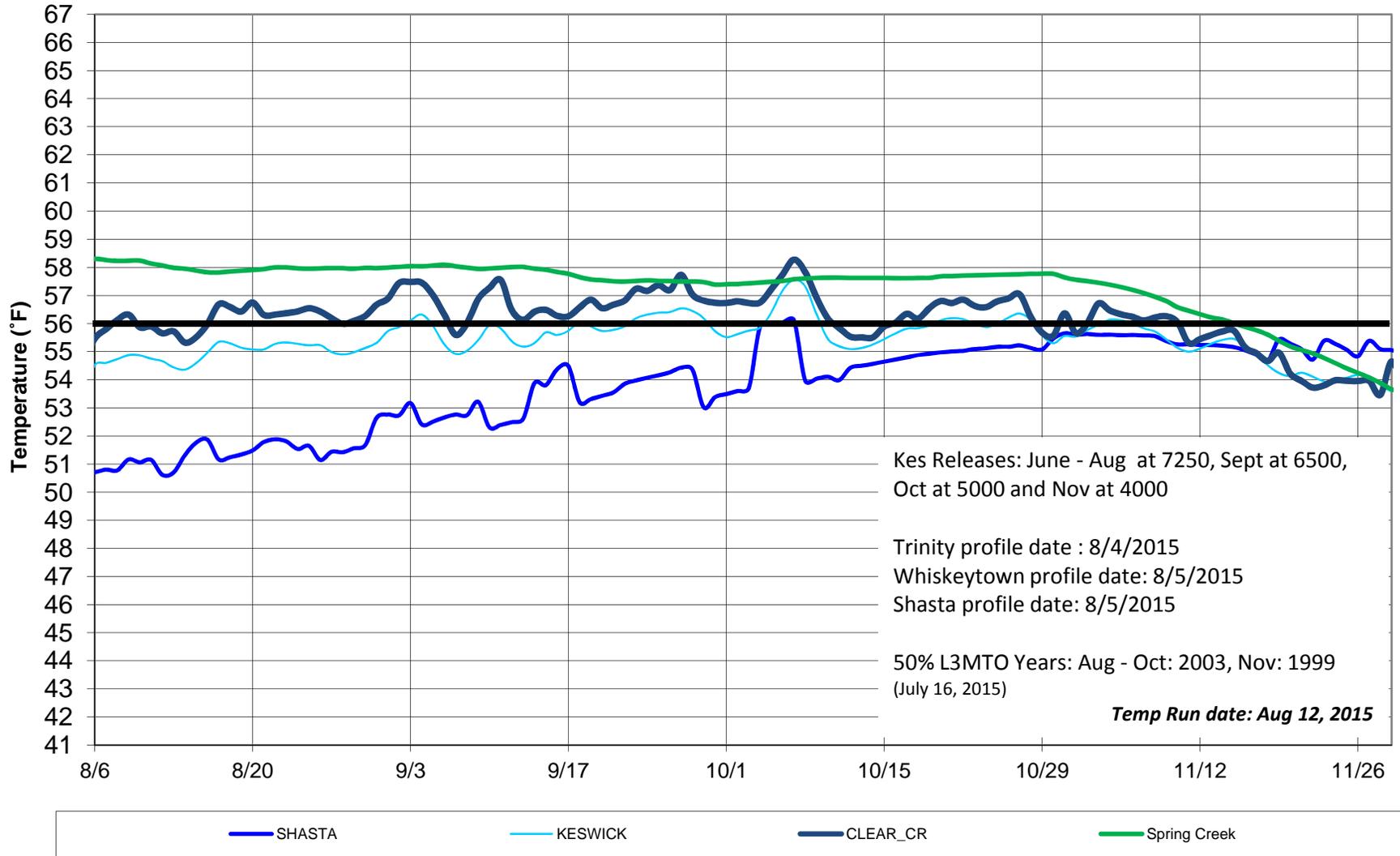
Kes Releases: June - Aug at 7250, Sept at 6500,  
Oct at 5000 and Nov at 4000

Trinity profile date : 8/4/2015  
Whiskeytown profile date: 8/5/2015  
Shasta profile date: 8/5/2015

50% L3MTO Years: Aug - Oct: 1993, Nov: 1986  
(July 16, 2015)

*Temp Run date: Aug 7, 2015*

**Sacramento River Modeled Temperature  
2015 July 90%-Exceedance Outlook - 10% L3MTO  
Approximately 57 degree at CCR**



**Sacramento River Modeled Temperature  
2015 July 90%-Exceedance Outlook - 10% L3MTO  
Approximately 57 degree at CCR**

