

**Sacramento River Temperature Task Group (SRTTG) Meeting**  
**August 27, 2020 | 1:00 – 3:00 PM**  
**Meeting Summary**

***Participants***

Allison Febbo, Reclamation	Lauren McNabb, CDFW
Charlie Chamberlain, USFWS	Lee Bergfield, MBK/SRSC
Chris Laskodi, Yurok Tribe	Lewis Bair, RD 108/SRSC
Craig Williams, SWRCB	Liz Kiteck, Reclamation
Diane Riddle, SWRCB	Matt Johnson, CDFW
Duane Linander, CDFW	Mike Harris, CDFW
Elissa Buttermore, Reclamation	Mike Wright, Reclamation
Eric Danner, NMFS	Miles Daniels, NMFS
Erica Meyers, CDFW	Randi Field, Reclamation
James Gilbert, NMFS	Stephen Maurano, NMFS
Jim Early, USFWS	Thad Bettner, Glenn Colusa Irrigation District/SRSC
Jo Anna Beck, Reclamation	Tom Patton, Reclamation
Jonathan Williams, CDFW	Vanessa Kollmar, CDFW
Justin Alvarez, Hoopa Valley Tribe	
Kristen Dalldorf, WAPA	
Kristin White, Reclamation	

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

**Action items**

1. Eric Danner, SFWSC will work with Randi to provide a table of temperature and temperature dependent mortality models and their assumptions for presentation next weekly SRTTG meeting. (This will be a draft and working document for discussion.)
2. Jim Earley will check with Taylor Lipscomb to see if he would give the update on the hatchery in the future. If he is not available to provide the update, the Red Bluff office will continue to provide the updates.
3. Randi Field – Agendize the topic of potential modifications of operations for potential extension of 54 degrees for weekly discussion topics through Sept. 21.

**1. Introductions**

Thanked everyone for professional discussions even when perspectives and opinions diverge.

Randi thanked the representatives from the Trinity River, representing Hoopa, Yurok, and NMFS Arcata office for talking with Reclamation two weeks ago about the Trinity River in relation to temperature management on the Sacramento River.

## 2. Purpose and Objectives

The objective and purpose of this meeting is to focus on Sacramento River temperature management.

## 3. Prior Action Items

Julie Leimbach, Kearns & West, and Randi reviewed Prior Action Items and status:

1. Randi Field – Set up new time for weekly SRTTG Update meetings. – *Complete.*
2. Randi Field – Post the final meeting notes & materials, and distribute the Upper Sacramento Scheduling Team guidance document. – *Complete.*
3. Randi Field and Josh Israel – Align schedules to distribute rotary screw trapping, carcass numbers, and other updates along with biweekly packets. – *Still coordinating this effort.*
4. Randi Field – Update Resources section of Upper Sacramento River Summary Conditions document to include information on how to access the Habitat Restoration Monitoring Surveys on the Sacramento River Forum website. – *Complete.*
5. Randi, Seth Naman, Chris Laskodi, and George Kautsky – Schedule a meeting to discuss operations on Trinity River. – *Complete.*
6. Reclamation – Follow up with request to address uncertainty in the temperature-dependent egg mortality models; - *Coordinating with model authors Anderson and Martin to align assumptions.*
7. Randi Field - Provide additional information on the differences between two temperature model runs. – *For list of further discussions for 2021.*
8. All – Provide comments to Reclamation on TCD Operations in early August before the next SRTTG meeting. – *Complete.*

## 4. Communications

Randi reviewed the following communications:

- July 31 – Reclamation sent a Sacramento River Temperature Management Plan addendum
- Aug 4 – State Board letter with conditional approval
- Aug 27 – Reclamation sent HEC5Q model runs to State Board
- Aug 28 or 31 – Pending letter from State Board

## 5. Long Term Operations Implementation – Update

Randi solicited updates from others on LTO implementation updates. There were none.

## 6. River Fish Monitoring: carcass surveys, redd counts, stranding and dewatering surveys and sampling at rotary screw traps

Matt Johnson reported the following:

- Carcass surveys as of Aug 24 – 3,630 carcasses, 1,518 adipose fin clipped for hatchery rate of 42%. Trending pretty close to 2019. Carcass survey is almost over; it usually goes until Sept. 1. Final estimate will be available in November.
- Aerial redd survey as of Aug 24 – 488 redds counted. 3 new redds detected. Pretty late spawning detected and the last winter-run redds won't be out of the gravel until the end of the temperature management season. In 2019 – 515 redds counted by this time of year. Last survey was Aug 18 and not sure about future survey schedules.
- Shallow redds – Tracking and counted 65 shallow redds. This time last year, there were 109 shallow redds (5 were ultimately dewatered).. Shallow redds are defined by construction in 20 inches of water or less.
- Crews are busy keeping up with the flow changes this week. They have seen one redd partially dewatered already. They are tracking 5-6 redds that are in 2-4 inches of water and those redds are not going to mature until early October so we are anticipating more redd dewatering due to flow reductions. There's the potential for much more redd dewatering in 2020 than previous years ( $\leq 5$  dewatered per year since 2013).

**7. Fish Distribution/Forecasts: Estimated percentage of the population upstream of Red Bluff Diversion Dam for steelhead, winter-run and spring-run Chinook salmon, steelhead update and Livingston Stone National Fish Hatchery.**

Jim Earley and Charlie Chamberlain provided the following updates:

- Red Bluff Diversion Dam – trapping winter-run Chinook juveniles now. The current estimated emigration is 45,000 juveniles at about 5% of the run. Sampling 7 days/week.
- Livingston Stone Hatchery – Last female spawned August 17<sup>th</sup>. They have concluded their spawning for the season.
- Taylor Lipscomb – Jim Earley is checking with Taylor to see if he would give the update on the hatchery in the future. If he is not available to provide the update, the Red Bluff office will continue to provide the updates.
- Genetic sampling on length-at-date juvenile winter-run Chinook salmon trapped at Red Bluff Diversion Dam – FWS is taking 7-10 genetic samples this season.
- FWS started conducting its annual August index snorkel survey count on Clear Creek – they started last week and have been out of the water due to unhealthy air. Counted 30 fish to date, which is a mediocre count for spring-run Chinook salmon on Clear Creek to date.

**8. Recommendations: Agencies provide feedback and information to Reclamation regarding fish monitoring/operations.**

Elissa Buttermore solicited feedback and input from agencies on fish monitoring and operations on the Sacramento River. The group asked some clarifying questions about what Reclamation was looking for in terms of recommendations. Reclamation clarified that they are looking for any comments and feedback on the current fish monitoring and operations for their current operation.

- NMFS – No comments at this time.
- USFWS – No comments at this time.
- CDFW – No comments at this time.
- Hoopa Valley Tribe – No comments at this time.
- Yurok Tribe – No comments at this time.
- Sacramento River Settlement Contractors – They had to leave early at 1:30 pm
- WAPA – No comments at this time.
- State Board – No comments at this time.
- Reclamation – No comments at this time.

## 9. Hydrology Update

Randi reviewed hydrology information in the packet including current precipitation, Daily CVP Water Supply Report, Upper Sacramento River Summary Conditions, and the CVP Northern System Operations Outlook (see SRTTG packet).

Beyond October, Reclamation uses historical information because there is no new hydrology information available until December. There is high confidence for September for both the 90 and 50% runoff exceedance outlook. However, from October – January, there is a lot of uncertainty because the runoff exceedance outlook is based on historical data.

Reclamation is looking at reducing releases from Keswick Dam to get down to the lowest release possible to conserve storage in Shasta for the following year.

In relation to Carr and Spring Creek Powerhouses, the wetter winter conditions have lower flow releases in the winter than in the summer and fall because Reclamation is trying to meet demands in other parts of the system.

Randi offered to answer any questions by phone or email on any of these data.

## 10. Operations Update and Forecasts

Randi presented the operations update and forecasts.

- Reclamation met temperature targets at the CCR gage and Balls Ferry reasonably well in August. They tried to manage water temperatures during the heat wave.
  - Reclamation experimented with a partial sidegate opening to see if they could reduce temperatures downstream. This resulted in a reduction of approximately .5 ° F (TCD weighted daily average) and reduction of 1 °F (at CCR) with the sustained side gate operation.
- Temperature at Igo
  - There are some gage data missing from the Igo station due to vandalism. Reclamation is taking temperature measurements with HOBO data logger. Shortly, that data will be incorporated into the report.
- Clear Creek
  - There was a miscommunication between Reclamation offices that resulted in

blending water which resulted in a loss of cold water in excess of 20,000 af. As of now, temperatures on Clear Creek have not exceeded the temperature threshold. The options for temperature management include configuring the facility to release water from the lowest elevation/coolest water and augmenting flows downstream. Downstream construction makes this last option difficult because higher flows would impede the construction.

- Electronic Monitoring - Reclamation is recommending deployment of electronic devices to gather real-time information in the areas where electronic monitoring is not currently deployed.

### **11. Trinity and Whiskeytown Updates**

- Conditions were considerably warmer on the Trinity River and they were exceeding the daily average Basin Plan objective. Conditions have cooled since then. The group discussed temperature management in mid-September when the threshold changes to 56 °F.
- Reclamation is pursuing maintenance activities, which have been delayed. There is an opportunity to shift resources to maintenance on Trinity Dam units, which would require taking out one of the powerhouse units. Under the reduced option, Reclamation would divert water without generating power, through the Auxiliary outlets. Taking out a unit for maintenance would reduce generation from mid-to end of Septemeber and cause water to be released through the Trinity auxiliary outlets. The maintenance may have some additional benefits for the system including potential cooling in the Trinity River that would further cool Whiskeytown Reservoir and into Clear Creek. Randi will provide information on these options as they become available to her.
- Douglas City threshold will be added to the table on SRTTG packet p. 14.

### **12. Storage/Release Management Conditions**

Randi reviewed storage and release management conditions.

- Mean daily temperatures decreased in response to the partial side gate opening and sustained side gate opening.
- Isothermobaths show there is well-defined stratification that is very usual and expected.
- Cold water pool volumes – less than 48 °F does a bit better than 2000. The conditions have improved enough that they have switched to another reference year.
- NEW – Shasta Lake Cold Water Pool Comparison by Year for Specified Date
- 2020 Shasta Cold Water Pool Volume shows that the actual conditions are playing out better than modeled in May and they see a bit of cushion and gives confidence in the direction Reclamation is headed and performance in the future.
- NEW – Trinity Cold Water Pool Volume – This shows a robust coldwater pool and comparisons by year to prior years to date.

### **13. Temperature Management**

Randi reviewed the temperature model results and recommended closing out Scenario 148 – Extend 54 °F.

- At the tail-end of August model predictions are fairly accurate.
- Scenario 148
  - Requires 460 TAF, which is feasible based on cold water pool volume.
- Scenario 148 – Extend 54 °F (Closeout)
  - Based on historical data, in order to achieve 54 °F, approximately 850 TAF is required. This does not appear feasible based on simulated cold water pool volumes (p. 45).
  - Recommends closing out Scenario 148 Extend 54 °F
- Reclamation suggested a discussion at the end of September on actual September coldwater pool. It may be possible to squeeze in more performance at 54 °F before transferring to the 56 °F target.
- The Trinity River model suggests slightly cooler temperatures right now. Reclamation does not have an explanation for that right now. They are not having concerns about temperature in the Trinity River at this time.

#### **14. Temperature-Dependent Mortality**

Elissa Buttermore reviewed summary temperature-dependent egg mortality based on the stage dependent and independent models.

- In these temperature-dependent mortality model runs, Reclamation is employing a very conservative value assumption for river temperature from Sept. 15 onward.
- The models are based on the average of 2007-2014 redd distribution data.

Eric Danner summarized the proposed concept for a modeling assumption table and soliciting input from the group on the approach and participants.

- Objective: Make a comparison of temperature-dependent mortality estimates
- Proposes to populate and share a table of all the different models, including all the assumptions, going into those models. Columns would address different temperature-dependent mortality runs showing the differences and the assumptions. This could make it easier to evaluate the differences between the model output and how that should be used to inform decision making.
- Existing Tables on Temperature and Temperature-Dependent Mortality Models and Assumptions
  - Reclamation's table
  - SWFSC draft table.
- Group input
  - MBK/SRSC – Sounds like it would be helpful to reduce confusion.

- State Board – Very supportive of documentation to better understand the assumptions in the model.
- Next Steps – SWFSC will work with Randi to share a draft with the group on next Wed. for an update.

Miles Daniels reviewed SWFSC estimated temperature-dependent egg mortality results (SRTTG packet p.51).

He identified different modeling assumptions:

- Using 2012 – 2019 redd distribution data
- In-river temperatures from Sept. 15 – Oct. 15 - Not using Reclamation’s conservative value assumption for river temperature from Sept. 15 onward.

### **15. Recommendations: Agencies provide feedback and information to Reclamation regarding temperature management operations**

Elissa Buttermore solicited recommendations from the agencies regarding temperature management and moving forward with Scenario 148.

- NMFS – Wants to understand the tradeoffs for fall flows. Planning to have a meeting and discussion tomorrow and will provide that feedback.
- FWS – If we were to look at where temperatures are at right now and the model predictions, are we able to really say with confidence that we have identified what we think is the likely case of temperature-dependent mortality?
  - SWFSC – If you look at the figures on SRTTG packet p. 51, they show that there has been fairly low temperature-dependent mortality to date because temperatures have been maintained for cooling purposes. If we provide a hindcast, we could see what eggs have experienced to date and then a forecast of what they will experience. For example, the eggs that have emerged may have experienced 5% temperature-dependent mortality and the future eggs that emerge might experience a different temperature-dependent mortality. Then they could average the percentages.
- CDFW – No recommendations at this time. CDFW is meeting tomorrow with NMFS to discuss some of these components. Is there a chance to make modifications in the end of September and early October to extend to 54 °F and when would be the earliest date for making those modifications? Is that something that the agencies should make recommendations on next Wed. call?
  - Reclamation will be providing more accurate information as we get towards the end of Sept. There will be opportunity to adapt operations and ask for recommendations from the SRTTG at that time.
- Hoopa Valley Tribe – Appreciate the addition of the Trinity-specific graphs as they discussed the other day. No further comments on operations.
- Yurok Tribe – No comments at this time.
- WAPA – No comments at this time.

- State Board – Concur with DFW and NMFS on discussing the issues as they get more certainty later in the season.
- Reclamation – No comments at this time.

#### **16. Seasonal Topics**

- Yurok Tribe update on the Clear Creek restoration construction, completion expected in September.
- B13 projects at Anderson River Park Phase 2 and 3 will be concluded for side channels this fall. If a contract goes through for South Cypress project, that might also happen this fall.

#### **17. Discussion**

None.

#### **18. Review Action Items**

Julie reviewed the action items.

#### **19. Next Meeting Scheduling**

The next SRTTG teleconference will be held on the 4<sup>th</sup> Thursday of next month, September 24, 2020.