

## Sacramento River Temperature Task Group (SRTTG) Meeting

May 28, 2020 | 1:00 – 3:00 pm

### Meeting Summary

#### *Participants*

Chris Laskodi, Yurok Tribe	Ken Kundargi, CDFW
Craig Williams, SWRCB	Liz Kiteck, Reclamation
Crystal Davis-Fadtke, CDFW	Matt Brown, USFWS
Diane Riddle, SWRCB	Matt Johnson, CDFW
Elissa Buttermore, Reclamation	Michael Macon, SWRCB
Eric Danner, Southwest Fisheries Science Center	Miles Daniels, Southwest Fisheries Science Center
Garwin Yip, NMFS	Mike Harris, CDFW
James Gilbert, Southwest Fisheries Science Center	Mike Prowatzke, WAPA
Jim Earley, USFWS	Mike Wright, Reclamation
Jim Smith, USFWS	Randi Field, Reclamation
Jo Anna Beck, Reclamation	Vadim Demchuk, SWRCB
John Hannon, Reclamation	Sheena Holley, CDFW
Jonathan Williams, CDFW	Stephen Maurano, NMFS
Josh Israel, Reclamation	Suzanne Manugian, Reclamation
Julie Leimbach, Kearns & West	

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

#### **May Action items**

1. Randi Field – Follow up with George Kautsky, Hoopa Tribe when he is available.
2. Reclamation – Put on the June SRTTG agenda - Science Center share their graphics for their temperature modeling.
3. Diane Riddle, SWRCB – Respond to Reclamation’s final Temperature Management Plan within 10 days of its release, which is June 1.
4. Josh Israel – Provide updates on the modeling outputs for Scenario 148 from the Anderson temperature dependent mortality model. Eric might be able to run the Anderson model. Josh will follow up to run through the Anderson model with SacPAS and work with the same timeline proposed by NMFS. Start with the May model runs and email out the results.
5. Randi Field – Send Miles and Eric the DSS file.
6. Miles Daniels – Towards the end of the temperature management season compare temperature-dependent egg mortality using the observed 2020 vs. simulated (i.e. 2012-2019) redd distribution in time and space. [Check on this action item regarding whether SWFSC predicts redd distribution and whether they used an average from several years.]
7. Randi Field - Distribute information on Shasta Critical Year determination as soon as she receives it from Reclamation management.
8. Randi Field - Solicit topics from SRTTG each Monday and convene or cancel standing Tuesday SRTTG interim meetings as appropriate.
9. Jim Smith – send the SRTTG an update on the fisheries data.

## **1. Introductions**

Randi Field took roll call.

## **2. Purpose and Objectives**

Randi Field discussed the goal of having a professional meeting and thanked Matt Johnson and Jim Smith for their collaborative effort and good communication on the winter-run spawning detection.

The Sacramento River Temperature Management Plan is developed and monitored as part of State Water Board Order 90-5, the 2019 Proposed Action of the Coordinated Long-Term Operation of the CVP and SWP, and NMFS Biological Opinion Reasonable and Prudent Measures. Reclamation's objective is to solicit feedback from agencies on the Sacramento River temperature management and operations.

## **3. Prior Action Items**

Julie and Randi reviewed Prior Action Items and status, including:

1. Reclamation – Meet with George Kautsky, Hoopa re: Trinity agenda items for the May meeting. – Randi reached out to George Kautsky but has not heard back. He is not in the meeting today. Randi will follow up.
2. Reclamation – Set up a meeting with SWRCB technical staff. – Completed.
3. Reclamation – Set up a submeeting with SRTTG participants to review theory of approach for manual procedure for temperature tier selection protocol. – Completed.
4. Reclamation - Start crafting the rationale for air temperature conditions in relation to 10% meteorology to include in the Temperature Management Plan. – Completed.
5. Jim Smith - Send current numbers on broodstock at Livingston Hatchery – Completed.

## **4. 2020 Meeting Logistics**

Due to the COVID-19 directives and public health concerns, Randi is cancelling the summer field tours and alternate meeting locations for SRTTG. Regular monthly meetings will continue through the summer months. Interim weekly Tues. meetings are scheduled for this period and will be used as needed. Randi invited proposed topics for the interim weekly Tues. meetings to be emailed to her as necessary.

## **5. Communications**

Reclamation submitted a Draft Temperature Management Plan on April 30 and submitted a final Plan on May 20. There are 10 days for SWRCB to object to the Plan. By SWRCB calculation, SWRCB will provide a reply by June 1, 2020.

## **6. Long Term Operations Implementation – Update**

Overall, there is not a lot of projected inflow and Reclamation expects to have relatively low storage in Shasta Reservoir at the end of the season. Despite a dry start, we had some recovery in late March and early April. Based on the “rule-of-thumb” relationship graphics we would anticipate sustained 54-56° F at CCR May through October.

## **7. Hydrology Update**

Randi provided an overview of the hydrology, including Storage/Release Management

Conditions and Temperature Management. See SRTTG Agenda Packet for full details. Over the course of the beginning of the temperature management period, Reclamation made several attempts to reduce releases from Shasta Reservoir but some of the required Delta actions interfered. Because of the flow ramping rates from Shasta Reservoir during this period, it took from March 6-14 to decrease releases 1,000 cfs from Shasta.

## **8. Operations Update and Forecasts**

### ***8a. Storage / Release Management Conditions***

Reclamation is currently increasing Shasta releases to meet Delta requirements and demands. This year's poor hydrology will result in lower Shasta storage at the end of the water year. Reclamation is in an active state of temperature management control. Reclamation has opened three upper TCD gates and three middle TCD gates in an effort to use coldwater reserves to manage downstream temperatures.

May experienced wide swings in meteorological conditions resulting in daily average changes from 20 to 30°F shifts. The mean daily water temperatures have been jumping around quite a bit and Randi has been trying to operate to take advantage of the cooler air temperatures by modifying operations to conserve coldwater during the periods of cooler air temperatures.

It takes approximately 3 days for Reclamation's operations to respond downstream to meet the temperature management criteria. Reclamation has missed some temperature targets at Balls Ferry; water temperature was measured at 0.2° F warmer than the temperature target. Randi stated the possibility to have some difficulty meeting temperature targets and being slightly above 56° F for three consecutive days, but not beyond due to a cooler weather pattern. Randi is frequently monitoring the downstream temperatures. The temperatures are looking good at the CCR gage and she is trying to ride a conservative edge for the temperatures measured at Balls Ferry. The SRTTG clarified that the Temperature Management Plan/Proposed Action includes a 3-day grace period in which Reclamation can exceed the target temperature.

### ***b. Temperature Management***

Randi reminded everyone it is likely the temperature model is underpredicting the temperature in the late fall (shaded portion of the graphics) and that Reclamation uses the historical end of September cold water pool and in-river temperature performance relationships to supplement the output to determine more confident projections of temperature performance.

The most recent model results for Scenario 148 show a potential for pushing out the first use of the sidegate to August 16, which is closer to average timing. Based on this model scenario, we could expect cooler waters and then warming in the system as we move towards the end of the temperature management season.

Due to Reclamation's anticipated seasonal actions, they are expecting good temperature conditions for the temperature management season in the Trinity River and Clear Creek.

### ***Coldwater Pool at Shasta Reservoir***

2013 shows a similar storage pattern while 2005 tracks more closely to the coldwater pool volume for 2020. The difference between years 2005, 2013, and Scenario 148 has caused some concern about how Shasta Reservoir is tracking to the modeled Scenario 148. Reclamation is

working on developing an additional comparison model using CEQUAL-W2 to assess confidence in Scenario 148. Reclamation is working with Sacramento River Settlement Contractors.

#### *Coldwater Pool Volume $\leq 49^\circ F$*

Garwin Yip reported if actual cold water pool had more than a 10% deficit compared to simulated, then Reclamation would end the pilot operational study, and go back to straight temperature compliance at Balls Ferry. What would be done, if anything, if there was a greater than 10% deficit between actual and simulated cold water pool volume? Randi said Reclamation incorporated in the Temperature Management Plan this component for reassurance that cold water pool follows what was expected to happen into the future. Reclamation is committed to presenting this information and reassessing if straying too far from the 10% deficit line. [Post-meeting clarification: Garwin Yip's discussion summarized utilization of a 10% cold water pool deficit as an "off-ramp" in prior years pilot studies where temperatures were targeted at CCR.]

NMFS and Reclamation have agreed to establish a tracking mechanism to compare actual and simulated Shasta Coldwater Pool Volume  $\leq 49^\circ F$ . Reclamation clarified that this tracking mechanism has also been integrated into the 2020 Temperature Management Plan and Reclamation is committed to reassessing if Shasta coldwater pool volume strays too far from the 10% deficit line.

#### *Shasta Critical Water Year Type Selection*

SWRCB's requested: 1) that Reclamation identify potential changes in Reclamation's operations and forecast if Reclamation does not identify this water year as a Shasta Critical Year. 2) notification of the decision on the Shasta Critical Water Year selection as soon as possible and before June SRTTG meeting.

The current inflow to the basin is close to the 3.2 MAF, which is the threshold for selection of a Shasta Critical Water Year Type. Reclamation is still evaluating any potential changes to its operations and its water delivery contracts. Randi expects to receive direction from management by the June SRTTG meeting.

#### ***c. Temperature Dependent Mortality***

Miles Daniels, Southwest Fisheries Science Center, reported on the Summary Document for temperature-dependent egg mortality (SRTTG Packet, page 32). The model run is for Reclamation scenario run May 27th, 2020. The SRTTG considered the following:

- Reclamation is using the 2012 – 2019 redd distribution data from the boat and aerial surveys to inform the Anderson model runs.
- Consider options of 1) Towards the end of the season, compare the actual v. 2012-2019 redd distribution data. 2) Apply a courser scale to compare the actual v. simulated portion of the population of redd distribution in different reaches in relation to the CDFW boat and aerial survey redd distribution data.
- In some years the estimate of redd distribution is more sensitive.
- The redd distribution in time will play a bigger role when using the Anderson model because it has a truncated temperature sensitive window compared to the Martin model. The effects can be more severe.

Reclamation agreed to 1) run the RAFT model results through the Anderson Model, 2) add the Science Center Anderson Model temperature modeling and graphics to the June SRTTG agenda, and 3) provide updates on the modeling results.

NMFS agreed to start comparing temperature-dependent egg mortality using the observed 2020 vs. simulated (i.e. 2012-2019) redd distribution in time and space.

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

Matt Johnson, CDFW and Jim Smith, USFWS reported that:

- As previously informed: CDFW and USFWS detected active winter-run Chinook spawning on May 15<sup>th</sup> and communicated this to SRTTG. SRTTG, after convening on May 18<sup>th</sup>, agreed to commence the beginning of the temperature management period on May 15<sup>th</sup>.
- Completed first aerial redd survey May 26. Upstream of ACID, they found 8 redds.
- Shallow boat-based surveys have yet to detect any shallow redds anywhere. Pretty good shape as far as redds go. Currently-detected redds are not in any jeopardy of being dewatered.
- Carcass encounters are up to 42 fish as of May 27, 35% ad-clip rate.
- It's too early to tell what this run is going to be; it has been a bit of a slow start.
- No stranding surveys for juveniles have taken place.
- Status of steelhead emigration– The Red Bluff Diversion Dam rotary screw traps have not been in operation for awhile, and therefore, steelhead emigration is unknown for this year. However, typically, the USFWS does not see steelhead emergence until June and July as very small fry.

## **10. 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 Hatchery.**

Jim Smith and Matt Brown, USFWS reported:

- To date, Livingston Stone Hatchery spawned 6 fish - 4 injected with thiamine and 2 injected with saline solution.
- One fish was spawned as part of the jumpstart program from Battle Creek. USFWS provided information on the first spawned out female.

## **11. Seasonal Topics**

None.

## **12. Discussion**

None.

## **13. Review Action Items**

Julie Leimbach, Kerns & West reviewed the Action Items.

#### **14. Next Meeting Scheduling**

The next SRTTG teleconference will be held on the 4<sup>th</sup> Thursday of next month, June 25, 2020. Meetings will continue as teleconferences.

The SRTTG will continue hosting the interim weekly meetings and cancel as needed. On Monday morning, Randi will solicit topics of concern. If Randi doesn't receive any topics from the SRTTG participants, she will cancel the interim weekly Tues. meeting.

Diane Riddle, SWRCB, stated that they would be interested in having interim meetings on the following topics if they take place:

- If there is a decline in the Shasta Reservoir's coldwater pool that wasn't projected
- Any update on Reclamation's selection on Shasta Critical Year that will affect temperature management.

Randi said that she would distribute information on Shasta Critical Year selection as soon as she receives it from Reclamation management.