

Sacramento River Temperature Task Group (SRTTG) Meeting

March 26, 2020 | 1:00 – 3:00 pm

Meeting Summary

Participants

Chris Laskodi, Yurok Tribe	Jonathan Williams, CDFW
Craig Anderson, USFWS	Josh Israel, Reclamation
Crystal Davis-Fadtke, CDFW	Julie Leimbach, Kearns & West
Diane Riddle, SWRCB	Ken Kundargi, CDFW
Duane Linander, CDFW	Liz Kiteck, Reclamation
Elissa Buttermore, Reclamation	Matt Johnson, CDFW
Eric Danner, Southwest Fisheries Science Center	Miles Daniels, Southwest Fisheries Science Center
Erica Meyers, CDFW	Mike Harris, CDFW
George Kautsky, Hoopa Valley Tribe	Mike Prowatzke, WAPA
James Gilbert, NMFS	Mike Wright, Reclamation
Jim Earley, USFWS	Paige Uttley, CDFW
Jim Smith, USFWS	Randi Field, Reclamation
Jo Anna Beck, Reclamation	Stephen Maurano, NMFS
John Hannon, Reclamation	Suzanne Manugian, Reclamation

Key Discussion Topics with Summary of Outcomes and Agreements

Action Items

1. Randi – Send SRTTG Tier Management ppt. in pdf form.
2. Randi and Josh - Work with George Kautsky, Hoopa Valley Tribe to address requested information on BiOp effects on Trinity objectives and including this topic in future SRTTG meetings.
3. Reclamation staff - Work with SWRCB to 1) Respond to the anticipated SWRCB letter (expected in the next week), and 2) Randi send SRTTG Shasta Cold Water Pool Management guidance document.
4. Diane Riddle, SWRCB - outline specific information needed by SWRCB.
5. Randi - Update agenda items and materials for April SRTTG meeting including 1) Include an update on evaluation / assessment of tier 2 and 3; and 2) Move the Summary of Temperature Dependent Egg Mortality by the Southwest Fisheries Science Center to agenda item #6c subset of temperature management agenda.

1. Introductions

2. Meeting Purpose and Objectives

Randi reviewed the meeting purpose and objectives. 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. 2020 Meeting Logistics

The SRTTG will meet by teleconference during the COVID-19 shelter-in-place orders.

4. Long Term Operations Implementation

Overall, there is not a lot of inflow and Reclamation expects to have relatively low storage in Shasta Reservoir at the end of the season.

Tiered Temperature Management

Reclamation and NMFS have been working to establish protocols for implementation of the temperature tiers related to the American River framework. This is an iterative process, which is still under development. Biological targets for this framework are under development. Randi will send the SRTTG a power point describing the proposed protocols for implementation and the example framework.

Tiered Temperature Management Through a Biological Lens

Josh Israel, Reclamation, reported on the biological element of the development of the temperature management tiers. A group of biologists met to look at the temperature tier selection and discussed: 1) historical redd construction timing, 2) hypotheses of temperature sensitivities during the hatch and incubation period of Chinook eggs, 3) approach to moving within tier selection space to protect greater numbers of eggs, and 4) considered how to use recent research to inform selection of a temperature management approach.

The biology group recognized that the weeks of the temperature management period are not equal; there are variable amount of eggs in the gravel in different weeks. There may be a way to select a temperature management approach that improves egg incubation survival and reduces temp dependent mortality.

Temporal Distribution of Redds and Temperature Management Window

Miles Daniels and Eric Danner, Southwest Fisheries Science Center (Science Center), presented the Temperature Management Window Figure (provided a supplement to the Agenda Packet).

The group discussed the following points:

- Figures are to be used as a reference for the SRTTG to inform management decisions.
- It is important to differentiate between the couple months between first observance of redds and the period of highest egg density.
- The mortality of eggs decreases as the temperature management window widens to either side of, based on historical average, August 8. To optimize temperature dependent survival, manage for that entire curve to be under 53.5°F or lower. If 53.5°F is exceeded, then survival starts to drop.
- The subplots assume that all eggs are experiencing the same temperature. Comment were made to the Science Center that the timing of the temperature management window could include or exclude early and late spawners; that this tool could be used inadvertently to select run timing; or as a genetic selection tool for weeding out particular characteristics for different runs.

5. Hydrology Update

Randi provided an overview of the hydrology, including Storage/Release Management Conditions and Temperature Management. See SRTTG Agenda Packet for full details.

5a. Storage/Release Management Conditions

Long-term conservative (hydrology) projections suggest lower Shasta storage volumes. All the snowpack and precipitation projections are indicating a fairly poor inflow for the season. Reclamation does not expect storage to recover in this type of water year.

5b. Temperature management

Long term conservative (hydrology) projections suggest Reclamation will be unable to reach a TCD configuration that exclusively uses the upper gates. Reclamation is trying to build cold water pool reserves. Shasta Reservoir TCD has an elevation restriction due to structural requirements which limits the use of the upper TCD gates exclusively. Exclusive use of the upper TCD gates helps to build and maintain cold water pool. However, to date this year, Shasta has not accumulated enough storage to utilize only those upper TCD gates which limits Reclamation's ability to meet temperature performance for the rest of the season.

6. Operations Update and Forecasts

6a. Storage / Release Management Conditions

Randi reviewed the CVP Northern System Operations Outlooks; overall the outlook is dry. Please see agenda packet for more detailed information.

- The 90% inflow exceedance probability outlooks are still considered the most confident actual outcome, the 50% inflow exceedance probability outlooks are unrealistic given the current hydrology.
- In the 90% inflow exceedance probability operation outlook; June is the month with the highest releases; they are for Delta requirements.
- Based on the March 1st hydrology information, Reclamation balanced water resources by moving a greater amount of Shasta water in June to meet Delta requirements. This was a shift from historical patterns. However, at this point Folsom Reservoir has improved its storage.

Trinity River and SRTTG Temperature Management

George Kautsky renewed a request to clarify the relationship between SRTTG temperature management and SWRCB regulations for Trinity and the Trinity ROD and to address the Trinity temperature management in future SRTTG meetings. George said the Trinity ROD contains special emphasis for the SRTTG to make special efforts to manage temperature in the Trinity in dry years. Randi offered to present information which address George's concerns for the April SRTTG meeting.

Operational Requirements

Liz Kiteck reported that Reclamation is waiting for April 1 hydrology to determine if water year 2020 is a Shasta critical water year.

Reclamation is planning to operate to the new BiOp requirements but there is still uncertainty as to the state's operational requirements. For now, Reclamation assumes the State is operating to the BiOp also. If the state is moving to a different requirement, then more coordination between Reclamation and the State will be required.

6b. Temperature Management

Randi Field reviewed temperatures, trends, Lake Shasta cold water pool volume, TCD configuration, and Lake Shasta isothermal baths. Please see agenda packet for more detailed information.

Preliminary Temperature Analysis

Model runs bounding the tiering system with two model runs with CCR target temperature at 53.5°F and 56°F were presented; these do not represent proposed temperature management operations. The preliminary simulation results show the temperature target at 53.5°F run cannot maintain the temperature for the entire temperature management season. This is highlighted by the end of September cold water pool volume less than 400 TAF, the early side gate use, and the rising temperatures at the end of the simulation above target thresholds. The simulation targeting 56°F yields an achievable fall temperature (i.e. end of September cold water pool volume is greater than 400 TAF) and later side gate use. Both simulations show cooler temperatures at the beginning of the temperature management period due to the elevation/TCD constraints.

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

Matt Johnson, CDFW reported:

Fish Monitoring - Crews are conducting fishery monitoring work with guidance from CDFW.

Redd Counts and Juvenile Stranding - As of last week, crews suspended work in response to the COVID-19 shelter-in-place directive. Prior to the suspension, crews had not encountered any new shallow redds constructed from late fall-run Chinook salmon.

Carcass Surveys - Carcass survey crews are still working weekly on the survey from Balls Ferry to Keswick 3 days / week. The crews have not encountered fall-run Chinook salmon; they did find a clipped pre-spawn winter-run Chinook salmon and confirmed tag results. If crews encounter a spawned-out female, they will estimate when eggs were deposited. USFWS anticipates conducting the carcass survey work. Carcass surveys are joint effort between USFWS and CDFW.

Schedule

- TBD – redd dewatering and shallow redd monitoring crews go back to work.
- Until May 1 – fall-run Chinook salmon carcass surveys.
- April 27 - May 1 – start winter-run Chinook carcass survey.
- May 1 or TBD – initiating the weekly aerial winter-run Chinook salmon redd surveys.

8. Fish Distribution / Forecasts

Jim Smith, USFWS, reported:

Livingston Stone National Fish Hatchery - The USFWS and Livingston Stone National Fish Hatchery (LSNFH) are trying to figure out their workload under COVID-19 restrictions. USFWS have been collecting winter-run broodstock and moving them into LSNFH. Jim has not heard about any trouble getting winter-run broodstock but has not received information on collection.

Steelhead - Anecdotal information shows that lots of steelhead are in the peak spawning period in the Upper Sacramento River.

9. Seasonal Topics

Anderson Cottonwood Irrigation District (ACID) Diversion Dam

ACID is planning to install their diversion dam flashboards starting March 30th and will be complete April 13th at the latest. Reclamation will not have to reduce releases further for ACID to install the flashboards; they can install them at 5,000 cfs.

SWRCB

Diane Riddle, SWRCB, stated that the SWRCB will likely be sending a letter to Reclamation in the next week requesting analysis of different scenarios. The letter will address: 1) Need for a new protocol for temperature planning under order 90-5 and 2) Moving the compliance point upstream and process including approval by the SWRCB.

Diane said that we are running out of time for the planning of related issues. She suggested that SWRCB join meetings about complying with the BiOp to make sure that the BiOp and Order 90-5 are as integrated.

Randi and Josh responded that the guidance documents for the Shasta Cold Water Pool Management are ready to share and will likely address the SWRCB needs.

10. Discussion Topics

Funding Opportunities

There is a notice of funding opportunities on grants.gov, search on salmon and the grant opportunities should come up.

Summary of The Temperature-Dependent Egg Mortality

Miles Daniels presented the Southwest Fisheries Science Center results from the RAFT model of Reclamation's two bookend scenarios. Please see the results of these model runs on the last page of the March SRTTG Agenda packet.

The RAFT model results were consistent with Reclamation's temperature modeling results for the 53.5°F run showing temperatures rising over 53°F.

Uncertainty due to the side gate operation is not included in the RAFT model run, so the mortality would probably be higher. If Reclamation loses temperature control earlier in the season, that will increase temperature-dependent mortality estimates.

Randi confirmed that Reclamation has initiated the first meet and confer meeting under "Drought and Dry year Actions" (years Tier 3 or 4). Reclamation will provide an update on the outcome of these meetings at the next SRTTG meeting.

11. Review Action Items

Julie Leimbach, Kearns & West reviewed the Action Items.

12. Next Meeting Scheduling

The next SRTTG teleconference will be held on the 4th Thursday of next month, April 23.