



— BUREAU OF —  
RECLAMATION

# Sacramento River Temperature Task Group Ad Hoc Meeting Summary

May 30, 2024

## Members Attending

- Bureau of Reclamation (Reclamation): Derek Rupert, Elissa Buttermore, Karissa Bridges, Liz Kiteck, Lisa Elliot, Tom Patton
- U.S. Fish and Wildlife Service (USFWS): Bill Poytress, Craig Fleming, Kaitlin Dunham, Matt Brown, Tanya Sommer
- California Department of Fish and Wildlife (CDFW): Colby Hause, Crystal Rigby, Tracy Grimes
- National Marine Fisheries Service (NMFS): Stephen Maurano
- Southwest Fisheries Science Center (SWFSC): James Gilbert
- California Department of Water Resources (DWR): Kevin Reece, Ryon Kurth
- California State Water Resources Control Board (SWRCB): Claudia Bucheli, Craig Williams, Diane Riddle, Jeff Laird, Matt Holland
- Sacramento River Settlement Contractors (SRSC): Mike Deas, Lee Bergfeld
- Western Area Power Administration (WAPA): Jeff Trow
- Yurok Tribe: Chris Laskodi
- The following Sacramento River Temperature Task Group (SRTTG) members did not have a representative present: Hoopa Tribe.
- Kearns & West Facilitation Team: Victoria Pebbles and Jack Hughes.

## Summary of Recommendations and Actions

### Recommendations for Shasta Planning Group Consideration

- The SRTTG supports the draft TMP after Reclamation makes the following agreed upon changes:

- Where the TMP states on page 1 “In a Tier 1 year, there is more than 2.8 MAF of total storage in Shasta Reservoir at the beginning of May, and Reclamation can meet 53.5°F at Sacramento River at Clear Creek (CCR)”, replace “total storage” with “cold-water pool”.
- In Table 6, change the mistyped “End of September CWP storage less than 56°F” value in the “no pulse” scenario to 893 TAF from 983 TAF.
- Correct the sentence that reads SRTTG recommended delaying the start of the temperature management season until May 25. Replace "May 25" with "May 24"

## **Actions**

- Reclamation will make the above changes in the TMP and forward the revised TMP to the SPG.
- Reclamation agreed to distribute the final TMP to the SRTTG when it sends it to SWRCB and other relevant agencies.
- SWRCB will convey its review of the final TMP to Kearns & West to share with the SRTTG.
- Any Shasta Planning Group (SPG) changes to the final TMP that might be made after the SRTTG meeting will be conveyed by Terra Alpaugh of Kearns & West to the SRTTG facilitation team (e.g., Victoria Pebbles and Jack Hughes) to convey back to the SRTTG.
- WAPA will reach out to Kearns & West to schedule an SRTTG orientation meeting for new representatives.

## **Topics**

### **Welcome and Purpose**

Victoria Pebbles, Kearns & West, welcomed all participants. The objective of the ad hoc meeting was to discuss the Draft 2024 Temperature Management Plan (TMP) and provide input to Reclamation. The purpose of the SRTTG is as follows:

Sacramento River Temperature Task Group (SRTTG) consists of agency representatives having direct interest in cold water pool management on the Sacramento River and meets at least monthly February through October. The purpose of the SRTTG is to “share operational information monthly and improve technical dialogue to inform the development and the implementation of an annual Temperature Management Plan (TMP) for the Sacramento River.” The TMP is developed by the U.S. Bureau of Reclamation (Reclamation) in accordance with California State Water Resources Control Board Water Rights Order 90-5 to assist with improving and stabilizing Chinook salmon populations in the Sacramento River.

### **Report Out from Shasta Planning Group**

Victoria Pebbles, Kearns and West, read a message from the SPG. The SPG convened on May 28,

2024, to review the latest modeling and SRTTG's proposed next steps in TMP development. The SPG was comfortable with the approach the SRTTG had been taking and will meet again on June 3, 2024 with the intent to agree on the final TMP to submit to the State Water Resources Control Board.

## **Hydrology Update**

Tom Patton, Reclamation gave the following hydrology and operations updates relevant to the meeting's objective of discussing the draft TMP:

- There is currently an 8,700 cfs release at Keswick Dam, and Reclamation has scheduled a small reduction to 8,500 cfs on June 2, 2024.
- Storage at Shasta Lake was still a little above 4.3 MAF and slowly reducing.
- Warm temperatures are forecasted including some triple digit temperatures in Redding for the first week of June.
- Reclamation opened Middle Gate 5 and closed Upper Gate 5. There are currently three upper and two middle gates open.
- There was a 50.6°F average Temperature Control Device (TCD) temperature and 53.2°F temperature on May 29.
- Trinity Record of Decision (ROD) flows were down to around 2,650 cfs below Lewiston Dam.
- The Clear Creek pulse flow is complete. Flows are down to 200 cfs and will be reduced to a normal summertime flow of 150 cfs. Reclamation will schedule a second pulse flow on Clear Creek in mid-June.

## **Science and Modeling Updates**

James Gilbert, Southwest Fisheries Science Center presented temperature dependent mortality (TDM) modeling results. At the May 23, 2024 SRTTG meeting, SRTTG members expressed an interest in seeing how SWFSC TDM modeling compared to Reclamation's modeling. The SWFSC evaluated TDM for the following four scenarios discussed at the May 23, 2024 meeting of the SRTTG:

- Run 1: Temperature management (53.5°F at CCR) without a pulse flow using a 90% May forecast and 25% May meteorology.
- Run 2: Temperature management (53.5°F at CCR) with a pulse flow using a 90% May forecast and 25% May meteorology.
- Run 3: Temperature management (56°F at Balls Ferry) with a pulse flow using a 90% May forecast and 25% May meteorology.
- Run 4: Temperature management (53.5°F at CCR) with a pulse flow using a 50% May forecast and 25% May meteorology.

Gilbert gave an overview of the modeling assumptions. Runs 1-3 assumed 90% exceedance forecast and the same release schedule at Keswick Dam from June to November. Run 4 used a modified release schedule that follows the 50% exceedance forecast. All models were run through the CE-QUAL-W2 Shasta and Keswick models and the RAFT temperature model for the upper Sacramento River. All gate and operation inflows were based on Reclamation's forecasting HEC5Q model. The TDM for the resulting downstream water temperatures were based on the stage independent model. All simulations were run with the meteorological time series and inflow tributary temperature from Shasta Reservoir taken from the historical record for year 2016.

Gilbert summarized the results of the models, noting that there were not many differences between the scenarios results. The results showed a 1 to 2% TDM. The temperatures in Run 4 stayed cooler later in the year, and TDM went from 2% to 1%. Reclamation's model showed more incremental warming between Shasta and Keswick than SWFSC's model. Reclamation noted that SWFSC's results looked very similar to its own and that it included SWFSC's results in the final TMP. There were no additional concerns or questions from the SRTTG on modeling results.

### **Revised 2024 TMP**

The SRTTG discussed changes made to the draft TMP based on feedback from previous SRTTG meetings.

#### ***Draft Language Regarding Variable Flows in Summer and Rapid Flow Reductions in Fall; and Temperature Control and Temperature Targets***

The group first discussed language added to the TMP to reflect intent of stabilizing flows and minimizing large fluctuations in flows during peak spawning in July and August when eggs are incubating in gravel. Reclamation presented the following updated language:

Reclamation will attempt to minimize the magnitude of July flows, during the peak of winter-run spawning, to the extent they are able. In addition to fisheries benefits (reduced dewatering and slower reduction of the cold-water pool), this could conserve Shasta storage in the fall, since less flow will be required to keep late redds watered.

The SRTTG then discussed draft language to reflect the intention to manage to 53.5 °F at CCR through October 31, 2024. The draft language was as follows:

The SRTTG has an interest in better understanding the needs of fall-run chinook and improving the tools to manage conditions for fall run. Maximizing carryover storage and coldwater pool can improve temperature conditions for fall-run spawning (which historically runs from September through December, peaking in October) and subsequent egg incubation. Minimizing the drop in the stage of the river (from peak summer flows, to fall and winter flows) reduces winter-run redd dewatering, and in turn allows for earlier stabilization of fall flows to minimize fall-run redd dewatering. Development and integration of decision support tools to forecast TDM and redd dewatering, for both runs simultaneously, would benefit future temperature management plans.

## ***Other Changes***

The SRTTG then discussed additional corrective changes to the draft TMP.

- Reclamation noted that language still needed to be corrected in the TMP where it states that there is 2.8 MAF of “total storage” that classifies this as a Tier 1 year. “Total storage” should read “cold-water pool” and will be corrected as CDFW suggested.
- Table 6 of the TMP, Reclamation will be amended to correct a typographical error: end of September CWP storage less than 56°F under the “no pulse” scenario” will be changed from the erroneous value of 983 TAF to 893 TAF.
- Based on SRTTG recommendation at its May 23 meeting, Reclamation stated that it would get a change order to begin temperature management targeting 53.5°F on the Sacramento River at Clear Creek (CCR) on May 24, 2024. The TMP stated May 25 as SRTTG’s recommended starting day.
  - Reclamation noted that it would correct the date to read May 24 in the final TMP.

Victoria Pebbles asked if there were any additional changes or divergent opinions on the TMP. No one on the SRTTG voiced any additional concerns or opinions. Reclamation stated that it would make the changes discussed and forward the revised TMP to the SPG which was meeting on June 3, 2024 to discuss the TMP. If the SPG recommended the revised TMP as final, Reclamation would submit that final TMP to SWRCB and transmit it to the relevant federal regulatory agencies (NMFS and USFWS). Reclamation agreed to distribute the final TMP to the SRTTG at that time. SWRCB clarified that it does not approve the TMP through the SPG; it has an independent review process. SWCRB explained that it might conditionally approve the TMP as it has in previous years.

SWRCB offered to inform Kearns & West of the result of its review at which point, Kearns & West will convey this information to the SRTTG. Terra Alpaugh, Kearns & West, will be present at the SPG meeting and can help relay any additional changes the SPG might make to the TMP to the SRTTG facilitation team to convey back to the SRTTG. Reclamation will work with Kearns & West to make the final TMP document accessible to 508 standards.

## ***Questions and Comments***

- USFWS asked whether Table 6 contained an error where it listed July 27 as the first side gate use for the 50% exceedance scenario.
  - Reclamation responded that there was a different flow regime for that scenario that prompts different simulated operations. The accretion and depletions are also different and are perhaps more important. The final side gate opens on September 3 as in other model runs. It is also significant that there is a larger cold-water pool in this scenario.

## **Adjourn**