

## Sacramento River Temperature Task Group (SRTTG) Meeting

July 28, 2022, | 1:00 PM – 2:45 PM

### Meeting Summary

#### *Participants*

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Bill Poytress, USFWS  
Craig Anderson, USFWS  
Craig Fleming, USFWS  
Craig Williams, SWRCB  
Charles Chamberlain, USFWS  
Chris Laskodi, Yurok Tribe  
Claudia Bucheli, SWRCB  
Crystal Rigby, CDFW  
Diane Riddle, SWRCB  
Elissa Buttermore, Reclamation  
Eric Danner, SWFSC  
Erica Meyers, CDFW  
Garwin Yip, NMFS  
Gary Zhao, CDFW  
Jeff Laird, SWRCB  
James Gilbert, SWFSC  
Jo Anna Beck, Reclamation  
John Hannon, Reclamation  
Kaitlin Dunham, USFWS  
Kristin White, Reclamation

Kevin Reece, DWR  
Kristal Davis-Fadtke, CDFW  
Lee Bergfeld, SRSC  
Liz Kiteck, Reclamation  
Marry Suppiger, Reclamation  
Matt Brown, USFWS  
Matt Holland, SWRCB  
Michael Harris, CDFW  
Michael Macon, SWRCB  
Michael Prowatzke, WAPA  
Michael Wright, Reclamation  
Mike Ford, DWR  
Miles Daniels,  
Stephen Maurano, NMFS  
Seth Naman, NMFS  
Vanessa Kollmar, CDFW

##### *Facilitation Team*

Terra Alpaugh, Kearns & West  
Adam Fullerton, Kearns & West  
Maria Bone, Kearns & West

### Key Discussion Topics with

#### Summary of Recommendations and Outcomes

#### Action Items

1. Matt Brown, USFWS – will find out how the refuges can utilize the flexibility in water flows from Shasta Reservoir to address water needs in August.
2. Kearns and West - will include discussion of the Cold Water Bypass- in the next meeting agenda and coordinate written communications as needed prior to the next meeting.

#### Welcome, Agenda Review, and Purpose

Adam Fullerton, Kearns and West, welcomed all participants and mentioned the addition of agenda items regarding updates from the Shasta Planning Group and Discussion of the Shasta Reservoir Cold Water Power Bypass.

## Purpose and Objective

The purpose of the SRTTG is to “share operational information monthly and improve technical dialogue on the implementation of the temperature management plan.” Reclamation provides “a draft temperature management plan to the SRTTG in April for its review and comment, consistent with WRO 90-5.”

## Prior Action Items

- Adam Fullerton, Kearns and West - will include a discussion of the Southwest Fisheries Science Center (SWFSC) modeling approach on a future agenda.
  - The SWFSC reported that the modeling approach has not been discussed at the Shasta Planning Group (SPG) and since it is later in the season now it is probably not necessary to have further discussions of the approach this year.
- Tom Patton, Reclamation - will add Seth Naman (NMFS) and Chris Laskodi (Yurok Tribe) to the Trinity temperature profile distribution list.
  - Complete
- Tom Patton will schedule a Trinity River Temperature Task Group (TRTTG) meeting in July.
  - The first meeting will be held on Friday, July 29, 2022 from 10:00 am-12:00pm PST.
- All SRTTG members will contact the KW team if they would like to join TRTTG.
  - Complete

## Update from Shasta Planning Group (SPG)

- SPG and SRTTG Process Protocols

Reclamation’s Bay Delta Office (BDO), Central Valley Office (CVO), National Marine Fisheries Service (NMFS), and Kearns & West about communications and process for the SPG and SRTTG.

Howard Brown, NMFS clarified that developing process for communications was in response to the confusion of communication between SRTTG and the SPG earlier in the season regarding SPG’s request for SRTTG’s input on redd distribution assumptions for the model.

The group developed proposed SPG and SRTTG Communications Protocols and Roles as follows:

- Communications Protocols:
  - When there is feedback or direction from the Shasta Planning Group, they will provide written direction via email to the whole SRTTG. They can either send it directly to the full group or to the facilitation team who will disseminate it.
  - The SRTTG agenda will have a standing item for a SPG report back. The SPG can delegate lead(s) who attend both meetings to provide a verbal update.
- SPG and SRTTG Roles:
  - The SPG is the decision-making body for Shasta temperature operations. SRTTG provides technical input to inform temperature management, providing input on plans set by Reclamation and the SPG, primarily on gate operations but also sometimes on releases (i.e., flow adjustments within the range of what is feasible while still meeting other requirements).
  - Any changes to Reclamation's requirements (including senior water right deliveries and Delta requirements) to support decreased flow releases will be discussed through the SPG and/or among the Directors; they may seek feedback from SRTTG on specific scenarios if appropriate and necessary
- Water Users Request to SPG

Kristin White, Reclamation and member of the SPG, provided an update on the Water Users request for an additional 250 cfs flow release out of Shasta Reservoir.

- The SPG followed the process for responding to the flow request as outlined in the Interim Operations Plan (IOP) as follows:
  - The Water Users requested increasing Shasta Reservoir flow releases from 4,500 cfs to 4,750 cfs through July and into August to meet three beneficial uses (not in priority order):
    - Refuges,
    - Non-permanent crops, and
    - Permanent crops.
  - The SPG elevated the request to the Director level due to litigation
  - The Directors did not come to a decision. In the event that the Directors do not decide, per IOP, NMFS has final authority.
  - NMFS denied the Water Users' request for increased flows from Shasta Reservoir.
  - Reclamation operators said they would consider flexibility of Shasta Reservoir flow releases in August while maintaining a monthly average of 4,500 cfs.
- Discussion of Water for USFWS Refuges
  - USFWS asked whether Reclamation will release additional water from Shasta Reservoir to the refuges for the protection of endangered species.
  - Reclamation responded that:
    - The Water Users request for additional flows included additional water for refuges. However, NMFS denied that request for additional water.
    - Water needs in the refuges will be addressed on the coordination call. It is unclear how coordination of water diversions will be implemented given the priority of senior water rights holders and how the flexibility for flow modifications in August will be utilized.
    - Reclamation solicited input from the refuges about how they might use flexibility of Shasta Reservoir releases in August. This information will be helpful in the coordination call.

### **Discussion of Shasta Cold Water Bypass & Next Steps**

- Process and Roles for Shasta Cold Water Power Bypass
  - Reclamation said they will use the same process as for the Folsom Cold Water Bypass as follows:
    - Determination of feasibility
    - Determination of benefits
      - The SRTTG will provide technical input on the benefits of the Shasta Cold Water Bypass.
      - The SPG will discuss the Shasta Cold Water Bypass at the next meeting, Friday July 29<sup>th</sup>. However, according to this process the SPG will not be making a decision on the Shasta Cold Water Bypass.
    - Determination of impacts to hydropower
    - Proposal for consideration by Reclamation's Regional Director developed by Reclamation staff based on feasibility, benefits, and impacts on hydropower.

- Next Steps
  - The PRGs will need to be closed soon, which would trigger the decision on whether to use the Shasta Cold Water Bypass.
  - SWRCB suggested discussing the Shasta Cold Water Bypass by email in between SRTTG meetings.
  - Reclamation agreed but acknowledged that it is difficult to plan too far ahead. For WY 2022 Reclamation was unsure when to solicit SRTTG's technical input due to the rapidly changing Shasta Reservoir temperature profiles, which would affect the benefits of the Shasta Cold Water Bypass.
- Key Conditions and Questions to Inform Use of the Shasta Cold Water Bypass
  - The fisheries agencies, via NMFS, asked Reclamation (in a 7/27/22 email and follow up comment in this SRTTG meeting) to describe the potential feasibility and efficacy of a cold water bypass at this time for reducing downstream temperatures. NMFS suggested that an assessment of key conditions for any year will help inform benefits of the Shasta Cold Water Bypass including:
    - Assessment of Shasta Reservoir stratification scenarios under which Shasta Cold Water Bypass provides the highest benefits.
    - Assessment of temperature benefits of using the river outlets including the lower river outlets. Would this be beneficial even under optimal cold water pool conditions. When using the side gates, there's still leakage coming through the PRGs and, even the middle gates. Due to that leakage is it possible that the river outlets, despite their higher, elevation, within Shasta Reservoir might yield colder water?
      - Reclamation stated that there may be conditions appropriate for using the river outlet gate depending on Shasta Reservoir cold water storage and the river water temperatures.
      - It is hard to assess the effects of using the river outlets on river temperatures with our existing modeling tools. Experimentation to evaluate the effect of using different gates may provide understanding of options for future years.
- Shasta and Trinity Reservoir Storage Comparisons
  - Trinity Reservoir - 40% less storage than in 2021
  - Shasta Reservoir - 10% more storage than in 2021
  - Reclamation responded that the difference in storage is due to hydrology for two reasons:
    - Inflow to Trinity Reservoir is very low this year and follows record low inflow from 2021.
    - Shasta Reservoir flow releases have also been significantly lower in 2022 than in 2021.

## **Hydrology, Operations, Forecasts, and Temperature Management**

### **Coordinated Operations Agreement Update**

- Northern Sierra Precipitation Index as of 7/27/22 is 41.3 inches which is 79% of average for the date.
- Shasta Reservoir storage and accumulated inflow are 61% of the 15 year average, accumulated precipitation is 69% of the 15 year average.
- Gate Operations

- Side gate 1 was opened on 7/18/22, side gate 2 was opened on 7/25/22, all PRGs are open, middle gates are closed.
- A Remote Operated Vehicle (ROV) inspected the middle gates 2 and 5 and discovered they were not seated properly and Reclamation operators closed them. There was debris alongside the side gates but the debris was not impeding function. Reclamation plans to conduct an annual ROV inspection to make sure the gates seat properly.
- Reclamation plans to start closing PRGs as needed to reduce water release temperatures.
  - SWRCB asked if there is a timeline for gate closures historically and this year.
    - Reclamation replied there is not a timeline to close gates and although the information has been collected, it is not likely useful for this year because of decreased flow releases.
- River Temperatures
  - There is some missing temperature data due to issues with the SAC Gage, but those issues have been resolved.
  - Sacramento River Mean Daily Temperatures are doing well overall.
  - Trinity River temperatures are warm near Helena and are warming down the river.
- Reservoir Temperature Profiles
  - The Shasta Reservoir Profile is similar to past meetings but the cold water pool continues to decrease. Shasta Lake Cold Water Pool Volume is similar to WY 2015 and WY 2014.
  - Trinity Lake profile shows continued warming.
  - The next monthly profiles will be provided in early August.
  - Whiskeytown Lake profile shows that there is little cold water remaining, but this is typical for this time of year.

### **Coordinated Operations Agreement Update**

- The SRTIG did not address the COA during this meeting.

### **Temperature Management and Temperature Dependent Mortality Modeling**

- SWFSC reported that July's modeling results are similar compared to previous June model results.
  - Assumptions:
    - Consistent assumptions: All of the temperature targets are identical to previous SWFSC model runs; July 20-July 26 using standard 4,500 cfs release in a 16-week window length
    - Changed assumptions: Air temperature is not identical. Inflow was higher than forecasted and outflow was lower than forecasted.
  - Results: Differences between June and July Model Runs
    - TDM dropped due to less hot weather and higher inflows.
    - TDM mortality rates dropped 5-6% from the July 1 model run, in line with the planning model, all likely attributable to lower releases, lower temperatures and higher inflow.
    - The grayed-out part of the graph depicts the attempt at blending the lower and side gates. There will be a sequential release of the PRGs.
- Thiamine Deficiency Modeling
  - SWFSC reported on thiamine deficiency modeling done in collaboration with USFWS, CDFW, UC Davis, and others on the effects of thiamine on winter-run Chinook populations.

- The model shows that 55% of the winter-run population for WY 2022 will be effected by thiamine deficiency, which is slightly higher than WY 2021. Low levels of thiamine in eggs is an important issue that can impact half the population as they move downstream, mainly impacting the late-stage fry.

**River Fish Monitoring: 1) carcass surveys 2) Redd counts 3) stranding and dewatering surveys**

- CDFW reported on fish monitoring updates:
  - Carcass surveys have collected 1,311 winter-run so far, which is 1,000 fish lower than average. Last year during this time there were 3,800 carcasses.
  - Redd counts are at 400 observed, primarily upstream of Highway 44 near the SAC gauge, similar distribution to last year.
  - There is no data on stranded juveniles. Juveniles are moving downstream and flows have been constant.
  - Tracking 48 shallow redds, 7 of 48 redds are in very shallow water. Some spawning in very shallow water, which is of greatest concern.
  - Prespawn mortality was 2.5%

**Fish Distribution/Forecasts: 1) Estimated percentage of the population upstream of Red Bluff Diversion Dam for steelhead winter-run, and spring-run Chinook salmon 2) Sampling at rotary screw traps at Red Bluff Diversion Dam 3) Steelhead update 4) Livingston Stone Hatchery**

- USFWS reported that they have seen a handful of winter-run Chinook salmon fry at the Red Bluff Diversion Dam RSTs. Other sampling is slow as is typical for this time of year.
- Livingston Stone Hatchery - No update provided. There was no Livingston Stone Hatchery representative present on the call. No update provided.

**Adjourn**