

Sacramento River Temperature Task Group (SRTTG) Meeting
April 22, 2021 | 1:00 PM – 3:00 PM
Meeting Summary

Participants

Alessia Siclari, SWRCB	Kristin White, Reclamation
Alyson Scurlock, Kearns & West	Lee Bergfield, MBK Engineers/SRSC
Ammon Danielson, WAPA	Lewis Bair, SRSC
Bill Poytress, USFWS	Liz Kiteck, Reclamation
Chris Laskodi, Yurok Tribe	Matt Brown, USFWS
Craig Anderson, USFWS	Matt Holland, SWRCB
Craig Williams, SWRCB	Michael Macon, SWRCB
Diane Riddle, SWRCB	Mike Deas, Watercourse Engineering/SRSC
Doug Killam, CDFW	Mike Harris, CDFW
Drew Loney, Reclamation	Mike Prowatzke, WAPA
Elissa Buttermore, Reclamation	Mike Wright, Reclamation
Erica Meyers, CDFW	Miles Daniels, NMFS
Eric Danner, NMFS	Sheena Holley, CDFW
Garwin Yip, NMFS	Stephen Maurano, NMFS
George Kautsky, Hoopa Valley Tribe	Suzanne Manugian, Reclamation
James Gilbert, NMFS	Taylor Lipscomb, USFWS
Jim Earley, USFWS	Terra Alpaugh, Kearns & West
Jo Anna Beck, Reclamation	Thad Bettner, Glenn Colusa Irrigation District/SRSC
John Hannon, Reclamation	Tom Patton, Reclamation
Julie Leimbach, Kearns & West	Vanessa Kollmar, CDFW
Ken Kundargi, CDFW	
Kristal Davis, CDFW	

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

Action items

1. **Eric Danner/Miles Daniels/James Gilbert, SWFSC** - include representation of both transfer and retention of 150 TAF and 99% exceedance hydrology in next model runs to provide broader range of operations; provide modeling metadata documentation by the end of April 26 and share modeling results prior to next SRTTG meeting on April 28.
2. **Stephen Maurano, NMFS** - convene fisheries subgroup and report back about recommendations for power bypass scheduling.
3. **Thad Bettner, SRSC** - share SRSC water transfer information with Reclamation; Reclamation to include in future model runs.
4. **Tom Patton, Reclamation** - communicate any modifications to the management of the power bypass to the modelers.

5. **Taylor Lipscomb, USFWS** - keep in close communication with Reclamation if any changes are needed to the power bypass operations regarding temperatures for fish hauling.
6. **KW** - schedule ad hoc meeting on April 28 and weekly SRTTG meetings starting the week of May 3.

1. Introductions

Terra Alpaugh and Julie Leimbach, Kearns & West, welcomed everyone and reviewed the meeting agenda.

2. Purpose and Objective

In the Shasta Cold Water Pool Management Guidance Document, Reclamation “proposes to convene the Sacramento River Temperature Task Group (SRTTG), consisting of agency representatives having direct interest on cold water pool management on the Sacramento River, at least monthly February through October, 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.”

3. Prior Action Items

Addressed:

- **Tom** - check on 15-year median flow value for the Sacramento reservoir in the Daily CVP Water Supply Report in the meeting packet – *Complete*.
- **Tom** - check with group that generates Shasta profiles to see if more frequent profiles can be generated through April and to confirm what the QA/QC process is to ensure the resulting data is reliable; report back to SRTTG – *Complete*.
- **All** - email Jo Anna Beck (jbeck@usbr.gov), Reclamation if interested in Shasta TCD Performance Evaluation and Improvements, including joining the technical team – *Complete*.
- **KW** - redistribute the Shasta TCD charter and announcement with the meeting action items – *Complete*.
- **KW** - distribute the March 2021 Spring Pulse Flow Operations Plan – *Complete*.
- **KW and Reclamation** - discuss having an intermediary meeting in April to continue the discussion re: development of the Temperature Management Plan, the potential to incorporate additional scenarios, how to integrate learnings from NMFS’ modeling, and exploring the appropriate uses and limitations of the various tools for assessing operations and temperature management before the April 22 SRTTG meeting and let group know – *Complete: Ad Hoc SRTTG meeting was held on April 15.*

Outstanding:

- **KW and Tom Patton, Reclamation** - work with Tom to distribute Reclamation's Temperature Management Plan from last year and provide a draft Temperature Management Plan for this year prior to the April meeting – *Reclamation is working on providing a draft Temperature Management Plan to SRTTG members.*

Ongoing:

- **KW** - work with Tom to send out links to online data with the meeting summary – *Ongoing.*
- **Tom Patton, Reclamation** - continue to investigate to identify the regulatory document drives the 3,250 cfs flow requirement between March and August – *Ongoing.*

April 15 Ad Hoc Meeting Action Items:

- **Fisheries biologists** - provide input on impacts of power bypass duration and ramping rates in relation to effects on temperatures and temperature changes for fish – *Stephen Maurano, NMFS, reported out for fisheries subgroup. Recommendation: limit ramping rates to less than 5°F/day.*
- **Fisheries biologists** - research power bypass use in 2015 and temperature change effects on fish – *Stephen Maurano, NMFS, reported out for fisheries subgroup. Recommendation: temperature target for power bypass should be kept below 60°F (daily average) based on hatchery experience and literature recommendations.*
- **Fisheries biologists** - provide input on temperature relationships with thiamine deficiency – *Taylor Lipscomb, USFWS, reported out for fisheries subgroup – temperature relationship with thiamine deficiency is not well studied and the agent of thiamine deficiency issues is unknown; increased river temperatures during the migrating period may lead to exasperating thiamine issues.*

4. River Fish Monitoring: 1) carcass surveys 2) redd counts 3) stranding and dewatering surveys.

Doug Killam, CDFW, presented the river fish monitoring update.

- CDFW is waiting on the winter-run Chinook spawning season to commence in early May; few fish are expected until the end of May.
- A few winter-run Chinook were spotted in the late carcass survey which runs until the end of April; no aerial redd surveys are currently being conducted.
- Shallow redd monitoring is not being conducted due to increasing flows and no spawning activity.
- Weekly carcass surveys are being conducted in the upper 26 miles of the Sacramento River.

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.

Bill Poytress, USFWS, presented the fish distribution/forecasts update for Red Bluff Diversion Dam.

- USFWS crews are seeing sturgeon spawning activity but there are no juvenile or larvae yet.
- A few winter-run Chinook have emerged as flows have increased.
- The next biweekly report that includes fish passage values will be sent out on April 23.

Taylor Lipscomb, USFWS, presented the fish distributions/forecasts update for the Livingston Stone Hatchery.

- USFWS has continued broodstock collections at Keswick and Coleman.
- The first spawn is still 2-3 weeks out which aligns with the location of redds in the river.
- A lot of fish are in the ladder part of the trap which likely correlates with increased flows; as flows increase, fish show up in large numbers and hundreds of fish have showed up in the last few weeks.

6. Hydrology Update

Tom presented the hydrology update (refer to meeting materials). Key takeaways included:

- Not much has changed; conditions are still very dry.
- Releases out of Keswick are at 7,000 cfs and are increasing to 7,500 cfs on April 23 for downstream demands.
- Reclamation began a warm water power bypass on April 18; the bypass started with one outlet and is now up to three outlets; the full power bypass will begin on April 23.
- The April 21 Shasta profile shows about 60°F at the upper end of the lake; the power bypass may need to be reduced if the group wants to target less than 60°F at Clear Creek.
- Reclamation is scheduling a pulse flow on Clear Creek during the first week of May.
- Shasta storage has already peaked for the season and is trending downward with increased releases.

The group discussed the following:

- The April outlook shows Keswick releases increased 50 TAF from March.
 - Is that due to Reclamation increasing flows to meet Delta outflow requirements?
 - Reclamation – We think we can hold 7,500 cfs through the week of April 26; the monthly April release average is 6,000 cfs which is consistent with the outlook.
- If targeting 60°F at Clear Creek, we can expect Keswick to be about 59°F; there is only about only about 1°F difference during this time of year. Is the hatchery on warm water supply or is there a separate pipeline that keeps water cooler?

- USFWS – The hatchery is not on the power bypass; it receives water from the penstocks which provide cooler water; moderate temperatures are being observed currently at the hatchery.
- End date of power bypass – 60°F temperatures may negatively affect fish when they are packed into a small space for hauling from the Keswick trap.
 - Reclamation – The SRTTG can consider new information on a weekly basis to make recommendations for the end date of power bypass; Reclamation can reduce the bypass or shut it off completely.
 - USFWS – We have not noticed any adverse effects at the hatchery yet and no problems with transporting fish from 60°F temperatures at Coleman Fish Hatchery. Fish from Keswick will undergo a temperature acclimation process and USFWS will keep a close eye on how things are running at the trap and notify Reclamation if any changes to the power bypass are needed.

7. Operations Update and Forecasts

Tom Patton, Reclamation, presented the operations update and forecasts (refer to meeting materials). Key takeaways included:

- The Shasta cold water pool volume less than 52°F is much lower than the average and is at the 95% exceedance level.
- Trinity Lake and Whiskeytown Lake are starting to fill and warm up.
- Real-time conditions are tracking closer to the 90% exceedance forecast.
- Shasta end of September storage is estimated at 1.2 MAF and Trinity end of September storage is estimated at 600 TAF; there will be reduced diversions from Trinity Lake this year due to low storage.
- Keswick monthly river releases are about 6,000 cfs for April and 7,400 cfs for May; May river releases are likely on the low side as Reclamation might have to increase releases to support demands downstream and Delta needs.
- Keswick releases are ramping up and projected to peak around 10,000 cfs in July.

The group discussed the following comments:

- SWRCB – Recommended using 99% hydrology since hydrology has been drier than expected based on the 90% exceedance. What depletions are assumed in the forecasted Sacramento River releases in May-August? Does the forecast reflect any of the SRSC's voluntary reductions and transfers?
 - Reclamation – The forecast is based on DWR's valley wide accretions and depletions estimate and is adjusted based on real-time depletions. SRSC has provided their projected diversions but they are not specifically used in the forecast. SRSC's water transfer schedule will not be included in the forecast until it is finalized.
 - SRSC – Our water transfer schedule should be finalized over next two weeks; Reclamation is currently reviewing the proposals.

- SRSC – The water transfers and power bypass should be included in scenarios being considered for this year’s Temperature Management Plan. SRSC modeling has included water transfers; they can share the data with Reclamation. DWR includes SRSC’s diversions in their depletion estimate. They suggested that Reclamation review the documented SRSC accretions and depletions from 2014/2015 since it seemed to be a similar hydrologic year.

8. Temperature Management and Temperature Management Plan

Tom presented four scenarios Reclamation modeled for this year’s Temperature Management Plan (refer to meeting materials).

9. Temperature Dependent Mortality (TDM)

Miles Daniels, NMFS, presented the TDM update (see meeting materials).

10. Discussion and Recommendations: Agencies provide feedback and information to Reclamation regarding temperature management operations

Group members made the following recommendations:

- Recommend modeling runs reflect actual dates of power bypass, options for temperature targets, and any modifications to power bypass.
 - Reclamation to communicate any modifications to power bypass for consideration of modelers.
- Recommend limiting scenarios that include further diversions from Trinity River.
- Request for broader range of scenarios analyzed; recommend modeling 6,500 cfs or 7,500 cfs June through August and include water transfers of 150 TAF.
 - SWFSC will produce new model runs using the 99% exceedance hydrology and two representations of the 150 TAF transfer volume: one will retain the volume in the summer and release in the fall; the other will retain the volume throughout the entire simulation; distribute modeling metadata documentation by end of April 26 and new model results before next meeting on April 28.
- Recommend including a model run that shows 56°F cold water in October – peak spawning occurs late June through mid-July and most eggs are still in gravel in September.
- Recommend weekly SRTTG meetings.
 - KW will schedule an ad hoc meeting on April 28 and weekly SRTTG meetings starting the week of May 3.

11. Upper Sacramento Scheduling Team (USST) Update: 2021 Pulse Flow Operations Draft Plan

The updated pulse flow operations plan was provided via email due to time limitations.

12. Review Action Items

Julie Leimbach reviewed the action items.

13. Next Meeting Scheduling

The next monthly meeting will be held on the 4th Thursday of next month, May 27, 2021.