Sacramento River Group Temperature Management Plan Ad Hoc Summary

April 30, 2026

Participants

- California Department of Fish and Wildlife (CDFW): Erica Meyers, Crystal Rigby
- California Department of Water Resources (DWR):
- Defenders of Wildlife: Ashley Overhouse
- Friends of the River: Devon Pearse
- Jacobs: Tapash Das
- MBK Engineers: Catherine Morales-Sandoval, Anne Williams
- National Oceanic and Atmospheric Administration (NOAA): Miles Daniels, Kyra Fitz
- Nor-Cal Guides & Sportsmen's Association (NCGASA): James Stone
- Pacific States Marine Fisheries Commission (PSMFC): Jamie Chelberg
- State Water Resources Control Board (SWRCB): Matthew Holland, Diane Riddle, Craig Williams
- Sacramento River Settlement Contractors (SRSC): Thaddeus Bettner
- Sunzi Consulting: Yung-Hsin Sun
- UCSC: James Gilbert
- U.S. Bureau of Reclamation (USBR):Mandy Migura, Andrea Hamilton, Tom Patton, Mechele Pacheco, Alex Vaisvil, Kevin Thielen, Emelia Barnum
- U.S. Fish and Wildlife Service (USFWS): Robert Null
- Westlands Water District (WWD): Bradley Cavallo, Alan Rosenthal
- Western Area Power Administration (WAPA): Erik Mork
- Yurok Tribe: Chris Laskodi
- Kearns & West (K&W): Julie Leimbach, Mary Beth Day

Summary of Actions

Welcome, Agenda Review, and Purpose

Julie Leimbach, Kearns & West, welcomed all participants and reviewed the agenda.

Action Items

- Miles Daniels (SWFSC) to share model report; K&W to distribute to SRG
- Diane Riddle and Matt Holland (SWRCB) to clarify additional information requests, including requested scenarios to Tom Patton
    - Redd distribution
    - Side gate predictions and relation to TDM predictions late in the year
    - Comparison to prior year(s) with similar conditions, if possible
- Kyra Fitz (NMFS) to raise to FAWOG member the possibility of discussing delaying temperature drop to 53.5 depending on timing of fish returns
- Reclamation to consider incorporating the following feedback
    - Rerun TDM model to include data through 2025
    - Here is the link to the model Reclamation used: https://www.cbr.washington.edu/sacramento/fishmodel/eggtofry. Additional information on model assumptions can be found at the link. The draft report describes the model inputs used.
    - Clarify assumed conditions for embryo vs. alevin plots in TDM attachment as well as any further interpretation of variables that may be producing the differences (if possible)
    - Individual years for redd distributions (not just averages)
    - Add benchmarks for % of redds emerged during Aug and Sept in shaping chart
    - Incorporate Science Center's TDM modeling

Temperature Management Plan Timeline

May 13, 2026	Comment deadline on the draft TMP
May 14, 2026	Potential ad hoc SRG Meeting if needed to discuss the transition to 53.5°F
Mid-May 2026	May 90% exceedance forecast released and to be incorporated into final TMP
May 28, 2026	Next scheduled SRG meeting; final TMP expected to be presented

Hydrology Update

Tom Patton, Reclamation, shared an update on current reservoir and river conditions.

- Storage at Shasta Reservoir is approximately 4.1–4.15 MAF. April inflows were slightly above 50% exceedance, and Reclamation was able to delay increasing releases during the month.
- Keswick Releases are currently at 6,000 cfs. A change order is anticipated to increase releases beginning Tuesday, with increases expected to continue through next week.
- Whiskeytown Reservoir storage is being topped off by diversions from the Trinity River. Trinity flows are on the way down after peaking approximately one week ago; Reclamation intends to hold off increasing diversions until mid-to-late May.
- Wilkins Slough flows are approximately 8,500 cfs. Reclamation is monitoring and will work to keep flows above 5,000 cfs.
- The Shasta Temperature Control Device (TCD) upper gates are fully open, skimming warmest surface water. Reclamation is working to conserve cold water pool and hold the upper gate configuration as long as possible.
- Downstream temperatures are currently below 58°F at Clear Creek. Conditions are somewhat warmer than typical for this time of year, but are expected to cool before exceeding 58°F.
- A small weather system is expected Sunday and Monday, potentially producing approximately 1" of runoff above Shasta and a similar amount in the Central Sierra above the American River, however, uncertainty is high. If realized, the storm may generate minor side flow into upper Sacramento River tributaries.
- Sacramento River flow increases for Delta purposes do not appear needed at this time. A potential need to increase flows in the second half of May for Delta purposes remains possible.

- Reclamation anticipates transitioning to 53.5°F target at CCR around mid-May.

Draft Temperature Management Plan Overview

Tom provided an overview of the draft 2026 Temperature Management Plan (TMP), which was circulated to the SRG the day prior to the meeting:

- 2026 has been initially categorized as a Bin 2A year, based on projected end-of-September storage of approximately 2.2 MAF. This is above 3.7 MAF threshold but reflected in cumulative year conditions, and the 90% exceedance CVP forecast.
- Reclamation is managing to 58°F at CCR currently as part of a shaped approach, with a planned transition to 53.5°F at CCR beginning mid-May, equating to approximately 56°F at Balls Ferry.
- The SRG Flow Planning workgroup met and Reclamation shared they had decided not to conduct additional pulse flows for 2026. Reasoning included temperature modeling results, projected end-of-September storage, and the volume of available cold water pool.
- The April 90% exceedance CVP forecast was the primary input for temperature modeling, summarized in Table 2 of the draft. Actual conditions were slightly wetter April with lower Keswick releases mean Shasta storage will end April a little higher than forecast.
- The first side gate opening is estimated for August 13 with the full side gate opening estimated for August 31. These dates are considerably earlier than in recent years, reflecting the low cold water pool. Temperatures are expected to rise once the final side gate is opened, which is a concern for fall-run Chinook salmon. Tom framed this as a shaped scenario — slightly higher temperatures early to preserve cold water, with higher temperatures later in the season.
- The estimated end-of-September cold water pool is 387 TAF, which is low compared to recent years and a primary driver of the early side gate timeline. If a late summer or early fall heat wave occurs, this trajectory could worsen.
- The final TMP is expected to be presented at or shortly after the May 28 SRG meeting, incorporating the May 90% exceedance forecast and updated conditions. The May forecast is anticipated for mid-May.
- A guidance document is being developed to clarify interpretation of the Bin classification table and flow charts. Action 5 of the 2025 ROD removed much of the explanatory language, making independent interpretation of Table 1 difficult.
- Reclamation also referenced a National Academy of Science presentation from the same morning discussing climate change, noting that this year's conditions may represent a preview of more frequent future scenarios, warranting consideration of how operations may need to adapt over time.

Temperature Dependent Mortality Discussion

Tom Patton and Alex Vaisvil, Reclamation, presented TDM analysis prepared by Elissa Buttermore, formerly Reclamation, with additional modeling provided by Miles Daniels of the SWFSC. Modeling used by Reclamation can be found at SacPas.

- Reclamations projected TDM 1–2% with the End-of-September cold water pool being at 387 TAF.

Questions & Discussion

- NMFS noted that the redd data used is through 2022 and asked if it was possible to have a run done with data through 2025. They explained that more data on different year types is better. Last year was unique because there were high flows out of Keswick, so the redds were at a higher elevation.
    - Reclamation confirmed that runs through 2025 would be possible in the future.
- SRSC asked whether the scenarios are described somewhere because each chart has different survival outcomes, but the descriptions are similar.
    - Reclamation clarified that Figure 1 is a hatching phase, and Figure 2 is at emergence. They will be providing additional background information in the document.
    - SRSC commented that it looks like different runs, not different stages.
    - Reclamation requested that they include this in their comments on the draft TMP.
- SWRCB asked for Reclamation the following before they provide comment on the draft TMP:
    - To explain the assumptions in the model runs in more detail as they would like to be able to provide input on the draft.
    - A timeline on updated 2025 redd distribution data.
    - Is the redd distribution an average?
    - More information on the side gate issue and whether there is confidence with TDM numbers given side gate issues.
- SWRCB acknowledged the difference between the hatching and emergence plots. They are interested in what conditions the embryos were exposed to as well as to which conditions alevin had at emergence. They are having a hard time reconciling TDM with the estimates of the small cold water pool and curious how the modeling compares to other similar years.
- Reclamation shared the tool used to evaluate the TDM: Fish Model.

    - The table in the report explains a lot of the inputs used.
    - Some assumptions are documented, and anyone can run the model.
- NMFS requested to see modeling produced by the SWFSC. Their model is different and it would be useful to compare.
    - Reclamation shared that they used to send out the output from the HEC5 for SWFSC to run through their models; however, they are using the WTMP now. They are still working on the interconnection between WTMP and the SWFSC modeling, but they are aligned and Reclamation has confidence in the output. They are more confident with the WTMP results. There is more accuracy, but still some uncertainty, especially after the side gates are pulled.
    - SWFSC agreed with Reclamation on the uncertainties and note it is good to have a crosscheck between the models.
        - SWFSC agreed to share the CEQUAL-W2 modeling that used data from Reclamation.
        - The reservoir models are predicting similar things with the side gates being pulled on August 18 and 28. This convergence is reassuring.
        - The only difference is between the Martin Model (stage independent) and the Anderson Model (stage dependent) for TDM projections. The Martin Model shows a mean TDM of 15% with a range of 3-40%. The Anderson Model shows a mean TDM of 5%.
        - There is a lot of uncertainty because it is early in the season.
    - Reclamation shared that the TDM modeling is run through SacPAS and can be replicated.
- SWRCB said that it would be helpful to get scenarios that look at a broader range similar to what the SWFSC looked at.
- NMFS commented that looking at shaping would be nice, specifically the number of redds that have emerged by date. It is easier to see that together and think about how many redds are left at different temperature points, especially in August and September.
    - Reclamation said that might be good to look at although they haven't in the past. If it's a later run, they could hold off dropping the temperature.