



Sacramento River Group Summary

August 27, 2026

Participants

- California Department of Fish and Wildlife (CDFW): Travis Apgard, Jamie Ebenal, Tracy Grimes, Matt Johnson Michael Memeo, Erica Meyers, Ryan Revnak
- California Department of Water Resources (DWR): Mike Ford, Ryon Kurth, Kevin Reece, Gary Zhao
- Contra Costa Water District: Barb Byrne
- Friends of the River: Devon Pearse
- MBK Engineers: Lee Bergfeld, Catherine Morales-Sandoval
- National Oceanic and Atmospheric Administration (NOAA): Kyra Fitz, James Gilbert, Sam Pyros
- State Water Resources Control Board (SWRCB): Travis Dennis, Matthew Holland, Jeff Laird, Craig Williams
- Sacramento River Settlement Contractors (SRSC): Mike Deas
- San Luis-Delta Mendota Water Authority: Scott Petersen
- Save CA Salmon: Kasil Willie
- U.S. Bureau of Reclamation (USBR): Luke Davis, Lisa Elliot, Randi Field, Andrea Hamilton, Josh Israel, Ryan Lucas, Mandy Migura, Tom Patton, Janice Pinero, Rod Wittler
- U.S. Fish and Wildlife Service (USFWS): Craig Anderson, Kaitlin Dunham, Bill Poytress
- Westlands Water District (WWD): Bradley Cavallo
- Western Area Power Administration (WAPA): Eric Mork
- Yurok Tribe: Chris Laskodi
- Kearns & West (K&W): Terra Alpaugh, Mia Schiappi, Anna Rossi

Summary of Actions

Welcome, Agenda Review, and Purpose

Mia Schiappi, Kearns & West, welcomed all participants.

SRG Guidance Document Update

Mia Schiappi provided a brief update on the SRG Guidance Document on behalf of Mandy Migura, Reclamation. Reclamation is continuing to make progress on the document and would like to recognize and thank everyone who provided comments. Reclamation recognized the emphasis on the Shasta Framework and is revising the SRG Guidance Document to be more reflective of the Shasta Reservoir seasonal actions. This is a more comprehensive document and will supersede several topic-focused documents. When revisions are completed, SRG will have another opportunity to review and provide comments. If anyone has any questions about the SRG Guidance Document, reach out to Mandy Migura (kmigura@usbr.gov).

Hydrology Update

Tom Patton, Reclamation, provided the latest forecast and implications for the Sacramento River system, and reported on current hydrologic conditions and dam operations. Patton's update was modified to limit repetition from the ad hoc meeting and to accommodate additional presentations. Patton presented the information contained in the meeting packet shared with the SRG. Sections below correspond to groups of graphs, images, and tables in the meeting packet provided by Reclamation.

Current Storage, Releases, Water Temperatures, and Current Operations: Daily CVP Water Supply as of July 22, 2026.

- Precipitation:
 - The Northern Sierra 8-Station Index is 97% of average today, which is just below average for this time in the water year. During summertime, there are minimal changes but may see some shift and cooler temperatures with any rain.
- Reservoir Releases:
 - Keswick Dam releases to the Sacramento River are approximately 9,500 cfs. Reclamation is planning to ramp down to 9,000 cfs tomorrow, 8/28, 8,500 cfs on Sunday, 8/30, and further still to 8,000 cfs on Monday, 8/31. Moving into September, release will be 8,000 cfs, as estimated, and Reclamation may work to decrease further.
 - Starting tomorrow, 8/28, Reclamation plans to reduce diversions from Trinity significantly. Spring Creek Power Plant will be reduced to about 500 cfs daily average. Warmer water coming in to Keswick from Spring Creek through Whiskeytown should drop off significantly and help to cool down the river.
 - Lewiston Reservoir releases to the Trinity River are 450 cfs.

- There have been additional flow requests on the Trinity. Reclamation has sent out a change order to increase flows on the Trinity starting tomorrow, 8/28, increasing from 450 cfs to 1,200 cfs with a plan to hold that until around 9/21. This amounts to about 35,000 AF additional volume. Reclamation is targeting 2,800 cfs at Klamath (KNK gage).
- Clear Creek releases are holding at 100 cfs. Releases will ramp up in 25 cfs increments starting next week.
- CVP Storage and Inflow:
 - Reservoir storage is at 125% of the 15-year average for Trinity, 103% at Shasta, 97% at Folsom, and 116% at New Melones.
 - Reservoir storage is coming down for the year, trending toward 2.6 MAF for the end of August. 2.3 MAF of storage is anticipated for the end of the water year.
- Temperature Management:
 - Reclamation made several TCD changes this month to get the coldest set point. The coldest configuration is having both side gates open and all PRGs closed.
 - There is still some anomalous data around penstock temperatures. Reclamation is exploring the cause, including potential leakage and uniqueness of the year with high storage and side gates open early. The plan is to keep things static and monitor any changes.
 - Spring Creek Power Plant is warm at 58.5°F. Reclamation has eased off diversions to try lowering temperatures.
 - Sacramento River at Clear Creek (CCR) temperatures have been trending above 53.5°F since 8/8 and is at 54°F.
 - At Balls Ferry, temperatures are staying below 56°F.
 - Downstream, IGO, Clear Creek and Trinity remain cool.
 - Mean daily temperature trends for the Sacramento River are relatively flat, with a slow trend upward. The 10-day weather forecast trends to highs in the 80s and lows in the 50s. Ideally, that does not change but there is a chance of a late heat wave during the water year or starting in October.
 - Trinity River is cool. Reclamation will monitor the impact of increased flows on river temperatures.

Reservoir Profiles and Cold-Water Pool: Graphs on Isothermobaths-2026, Graphs on Cold Water Pool Volume, Percent Exceedances (1998-2025):

- Shasta Reservoir:

- Temperature profiles for Shasta Reservoir are collected weekly throughout the season. The most recent profile was taken 8/25 and is trending as expected with the lower-level side gates open.
- Water leaving the TCD is about 52°F.
- Shasta's isothermobath plot is trending down, steeply, as expected.
- Cold water pool volumes are below average across all three profiles. The $\leq 52^{\circ}\text{F}$ volume dropped below the 2015 drought year mark and is trending toward the 2022 drought year. The $\leq 50^{\circ}\text{F}$ volume has dropped below both drought year markers. The $\leq 48^{\circ}\text{F}$ volume is trending below both drought years.
- Shasta is at 75% exceedance marks for $\leq 52^{\circ}\text{F}$, while the $\leq 50^{\circ}\text{F}$ and the $\leq 48^{\circ}\text{F}$ are trending above 95% exceedance.
- Trinity Lake:
 - All the volume plots for Trinity Lake look good and there are no issues expected in terms of temperature management.
- Whiskeytown Lake:
 - The Whiskeytown profile is as expected for this time of year, with the cold water pool decreasing.

Outlooks:

- The Climate Prediction Center outlook, issued 8/20, shows slightly increased chances of above average temperatures for most of California in September.
- The September precipitation outlook shows an above normal precipitation chance. This may be impacted by potential tropical hurricane activity, which may increase cloud cover while keeping temperatures from dropping too low.
- The October-December seasonal outlook shows elevated temperatures with above average chances.

Sacramento River Modeled Temperature, 2026 August Exceedance Water Outlook:

- For 50% exceedance, flows on the Sacramento River are at around 12,600 cfs which is on the higher side. In reality, flows have trended toward 11,300-11,400 cfs for August. Flows will move toward 3,250 TAF/cfs through the Winter with increases later.
- Storage is estimated at 2.35 MAF for the end of the water year for Shasta. Trinity diversion may lower this estimate. Reclamation will explore reducing Keswick flows over the fall to keep more water in Shasta.
- The 90% exceedance temperature run was completed on 8/11. The model run was previously presented at the ad hoc meeting on 8/20. The model projects 55°F in the first half of September. Operational changes have been made to reduce

temperatures, so cooling will be primarily reliant on weather conditions. Temperatures are trending at 56°F from mid-September through October at CCR.

- There were recommendations to use a stepwise approach to adjusting the temperature target at CCR. This temperature run helps show that potential progression.

Questions and Discussion

- CDFW noted that the July SRG meeting discussion led to recommendations to drop flows earlier in the fall. They asked if that approach was being explored as a way to hold water in storage.
- Reclamation shared that they are exploring other changes to flows. Right now, they are using real time conditions and ramping down as quickly as possible. Reclamation would like to work with the American River and Folsom to get flows down. As Reclamation works through the fall flows process, they are looking at options to reduce flows quicker depending on real-time conditions.
- CDFW followed up to note that the exports are still at the maximum for the Delta. CDFW indicated preference for conversation about reducing or delaying diversions to try to decrease mortality risk. The release temperature at Keswick is very near 53.5°F. CDFW reflected that the SRG has indicated the modeling had been optimistic for the water year and expressed a widespread frustration at having no cold water left to manage for cold water reach spawning. CDFW cited that the initial mistake was found on 8/5 and discussions were not held until 8/27, a long period in which discussions and action could have been taken. CDFW acknowledged that collaboration is challenging, but hopes the current situation emphasizes the importance of improving interagency collaboration.
- Reclamation responded that they have been very focused on these challenges throughout the season and acknowledged that early season predictions were more optimistic than in recent months. Reclamation noted that the signs toward less optimistic outcomes were shared with SRG. While this is not the forum yet, Reclamation will bring SRG back together for a “hindcast”, a discussion about the water year, what happened, and what influenced current conditions. Right now, Reclamation is focused on conserving upstream water and ramping down flows. Reclamation is balancing those choices with other demands, so the plan is to stretch the remaining cold water pool as long as possible in a year where multiple factors have compounded against ideal conditions.
- CDFW reiterated the increased collaboration in the future may be helpful to address challenges early.

- CDFW asked about the Shasta Dam and Lake - Sacramento River Basin graph from US Army Corps. They asked for clarity on why the inflow line drops into the negative in early September.
 - Reclamation clarified that the reservoir elevation was about a foot lower than estimated when recalibrated. Inflow is calculated based on releases known and change in storage. For the reservoir to drop significantly in a short period, there had to be negative inflow calculated. In terms of storage, this represents about a 23,000 AF adjustment.
 - CDFW followed up to ask if there is one elevation measurement taken for the entire reservoir.
 - Reclamation confirmed that there is only one measuring device for Shasta. Some reservoirs have more issues than others, based on age of measuring device. The Shasta measuring device is recalibrated regularly.
 - CDFW followed up to ask about impacts from external factors, like a strong wind, that could impact elevation readings.
 - Reclamation clarified that this is an issue for all reservoirs and the average of elevation readings typically evens out over the course of several days.
- CDFW also asked about the temperature profiles, which seem to indicate cooling at the surface and warming at the bottom.
 - Reclamation shared that cold water is being pulled from the penstocks at the 815 ft elevation. On CDEC, there is data from the temperature probes at each penstock. Combined with the TCD and released to the river results in the warming. This is typical for this time of year compared to historically dry years. Throughout the fall, Reclamation will continue to track every week.
- CDFW asked if Reclamation would be sharing multiple temperature models to review, including the stair-step approach, as indicated in the FAWOG meeting notes.
 - Reclamation clarified that there is not a specific model for the stair-step approach. Reclamation is concerned that the model would be misleading, given the one presented is projecting colder than reality. During the ad hoc meeting, Mechele Pacheco, Reclamation, shared the run at 56°F and discussed what a 55°F run would look like. Reclamation will do more runs in the future and work to understand the cold bias happening.
 - CDFW followed up to note that the data still may be helpful, even with bias, to help inform trade-offs discussions for fall run.
 - Reclamation also clarified that there is no intention to warm the river. Reclamation is planning to hold 53.5°F for as long as possible, but they expect the TCD to warm without any intervention.

- Reclamation requested that the conversation be tabled for the time being to ensure time for the remaining agenda topics. They recommended CDFW also engaged their FAWOG representative to bring discussion to the FAWOG meeting next week.

Fall Flows Report Out: Scenarios Tool

Catherine Morales-Sandoval, MBK Engineers, presented a tool for comparing different fall flow scenarios. The data is informed by Reclamation's GitHub data and CDFW's redds surveys. Every time CDFW updates their surveys, the tool will update. The tool shows different conditions of dewatering and exposure to temperature above 56°F and has flexibility to explore how flows impact dewatering, what redds will be dewatered, and best dates to start flow changes

Morales-Sandoval interpolated the river miles associated with redds location to create river sections. The tool also summarizes the number of redds dewatered within each section. Target Keswick releases can be changed for October and November to show potential impacts. Based on current flow patterns, the tool indicates 41 redds will be dewatered. Morales-Sandoval has run one scenario and has a few more to share during Tuesday's meeting. If people are interested in other scenarios or modifications to the tool, they can reach out (morales-sandoval@mbkengineers.com).

Questions

- USFWS commented that, to support fall Chinook, flow scenarios would need to extend beyond November. Though that is spawning season, fish do not emerge until December, meaning dropping flows in December would lead to dewatering.
 - CDFW shared that their October spawns aren't emerging until the new year. Most of the fall-run Chinook spawn in October and November and are dewatered in November.
 - USFWS said they maintain a minimum of 60 days from spawning, with fry emerging as early as December at Coleman Fish Hatchery.
 - CDFW followed up to share that a possible scenario could include ramping down well before October, noting shallow fall-run Chinook were predicted at 7,200 cfs which is typical year to year.
- SWRCB wanted to discuss if 56°F was an adequate representation of TDM risk. They inquired if the TDM landscape could be applied to estimate TDM for each of the redds that may or may not be dewatered.
 - Kearns & West indicated that this feedback would be helpful. While 56°F is important, it is up to the technical leads to indicate if another marker would be needed. A partner would be required to add a TDM layer to the tool.
 - MBK Engineers also asked about how the information would be used for decision-making. Catherine used the mortality curve of eggs exposed to

temperatures above 56°F, which is near 90%. They inquired if the estimated percent mortality for each redd in the model would support flow release decision-making. They also added a reminder that the tool is estimating outcomes, and it would be helpful for the group to be mindful in decision-making which inputs are estimated versus observed.

- CDFW noted that the question being answered is less about a hard temperature threshold and more about what percent of redds are being considered “to save” when thinking about reducing flow for TDM and the tradeoffs for the population as a whole. The impact needs to be seen at a greater level than shallow redds to make these decisions.
- CDFW noted that the flows shown in the tool are lower than the scenarios presented. Typically, there is a need for lower flows in the fall that cannot be met because of external factors. Is there a way to add or determine what the different, inflexible boundaries are to better explore how to move water as this would alleviate attribution of water costs to keeping redds wet when that was never an option to begin with due to compounded factors.
 - MBK Engineers responded that they are working with the SRSC to see if they are able to push diversions into November, how much flows can be reduced in October, and the impacts to November. With that data, the scenarios will be more realistic about what is possible.

CDFW Sacramento River Fish Monitoring Update

Jamie Ebenal, CDFW, provided an update on CDFW’s fishing monitoring.

- To date, 642 fish have been handled from carcasses, indicating an estimated 4,556 redds in the water.
- There are 108 shallow redds, of which 5 have been dewatered.
- Spawn timing is nearly identical to last year. The estimated date to emergence is shorter.
 - The first 1% of winter-run Chinook emergence from gravel was seen.
 - CDFW is estimating complete emergence for all winter-run will be early-November.

Questions and Discussion

- SWRCB asked if CDFW has any products that have cumulative distribution of emergence states.
 - CDFW responded that the CalFishFile tracks cumulative distribution and is downloaded. CDFW updates the data, on average, once a week. When emergence begins, emergence is calculated for each reach. All of this data can be found on the “Spawn by week by year” tab. CDFW encouraged participants to reach out if they have questions about the data.

USFWS Fish Conditions, Forecasts and Hatchery Updates

Kaitlin Dunham, USFWS, shared an update on winter-run Chinook at Livingston Stone National Fish Hatchery.

- 75 winter-run Chinook have spawned for the Keswick program and 52 spawned for the Battle Creek program.
 - There are three females that could still spawn, but they are behind schedule.
- USFWS are taking juveniles into the hatchery. Outside, there are 11 spring-run females and 8 spring-run males on station. USFWS estimated they will spawn sometime in mid-October or mid-November.
- Hatchery temperatures are averaging 53°F.

Bill Poytress, USFWS, shared a brief update on juvenile fish at Red Bluff.

- Winter-run passage is increasing as flows decrease. The decrease in flows also increases trap efficiency.
 - Catch numbers have been increasing, with recent drop in the last few days, which is typical for this time in the season and due to the full moon.

TDM Updates

Lisa Elliot, Reclamation, provided brief updates on TDM modeling since the 8/20 SRG ad hoc meeting.

- Since the SRG ad hoc meeting, the 55°F (Scenario C) has been added.
 - The percent mortality for Scenario C ranged from 17.9% to 34.9%, depending on survey data, source, and dependence.
 - Figure 6 was added, which shows the timing of weekly cumulative percentages of winter-run Chinook redds that have emerged under the proposed 2026 TMP scenarios.
 - Scenario A shows 50% emergence around 9/28. At a higher temperature target, emergence is about a week earlier (scenario B). Scenario C is in-between.

James Gilbert, NOAA, also provided updates on the SWFSC TDM modeling.

- Another week of observed data has been added since the SRG ad hoc meeting. The data shows slight warming in monthly temperatures, equivalent to a few tenths of a degree in September and October.
- SWFSCs TDM results are reflective of Reclamation's. Percentages of TDM are within 2% of the data shared at the ad hoc meeting.

Questions and Discussion

- SWRCB asked if there would be additional TDM estimates for the rest of the temperature management season.

- Reclamation confirmed that they will continue to look at scenarios and do modeling, continuing to coordinate with Lisa to present this information to the group. Reclamation will take input in the future, however they do not see multiple iterations of the current scenarios.
- SWRCB also asked if there were plans to integrate TDM into the fall flows meetings.
- SWFSC responded that they would inquire with Miles Daniels, SWFSC, about that possibility.

TDM Model Assumptions Table Update

Mia Schiappi provided an overview of the TDM model assumptions table. The objective of updating the assumptions table is to ensure consistency across TDM modeling documentation throughout the water year. Schiappi reminded SRG that the objectives of the table were shared a few weeks ago and SRG members were asked to provide comments. Substantive recommendations were received, particularly about including biological aspects of TDM.

Kearns & West will work on drafting a revised table to address the comments and recommendations received. Once complete, the new table will be shared with SRG for further comment. There will be a meeting to workshop the table before it is finalized. Due to the substance of comments received, a new timeline will need to be drafted and shared with SRG.

Additional Announcement & Review Action Items

Mia Schiappi asked participants if there were any other comments they would like to share before closing the meeting.

- DWR asked for confirmation that there is not a request for input on the temperature compliance threshold, and SRG members should not provide technical feedback.
 - Kearns & West confirmed that based on information provided in the SRG meeting it appears that conversation was primarily taking place in the FAWOG meetings, however, if there is technical feedback they would like to have on record, they could provide it here.
 - DWR followed up to share that, from a technical perspective, they support the effort to keep temperatures cool in a way that supports winter-run Chinook.

The next SRG meeting is scheduled for Thursday, September 24.

Adjourn