



Upper Sacramento Scheduling Team, Fall Flow Planning Subgroup Meeting Summary

Tuesday, August 27, 2024, 1:00–2:30 p.m.

Participants

- CDFW: Colby Hause, Crystal Rigby, Doug Killam, Tracy Grimes, Travis Apgar
- DWR: Mike Ford, Ryon Kurth
- NMFS: Stephen Maurano, Sam Pyros
- USBR: Chase Ehlo, Derek Rupert, Elissa Buttermore, Karissa Bridges, Peggy Manza, Tom Patton
- SRSC: Lenh Yuen
- SWRCB: Craig Williams, Jeff Laird
- USFWS: Bill Poytress, Matt Brown
- Metropolitan Water District: Corey Phillis
- USGS: Brian Healy
- Kearns & West: Eva Spiegel, Terra Alpaugh

Action Items

- Chase Elho (Reclamation) to share presentation slides with K&W to distribute.
- Tom Patton (Reclamation) to add scenarios to alternative spreadsheet that reflect a larger drop in flows in September.
- KW to cancel Sept 10 and Sept 24 meetings. On October 1, USST to decide whether to proceed with biweekly or weekly meetings going forward.
- Tom Patton (Reclamation) to continue to produce and distribute alternatives analysis spreadsheet weekly.

Action Items Review from 8/20

The group discussed updates on action items from the prior week.

- Action item 1: The group will receive presentations in the coming weeks from Chase Ehlo (Reclamation) and Corey Phillis (MWD) and by Mark Gard; they will share their latest research/analysis with the USST on 8/27 and 9/3 respectively. Update: Chase Ehlo (Reclamation) and Corey Phillis (MWD) gave first presentation.
- Action item 2: Kearns & West to extend the 8/27 and 9/3 meetings to 90 minutes to accommodate presentations. Update: Meetings extended.
- Action item 3: Kearns & West to contact Doug Killam (CDFW) to request cumulative % of redds emerged by week, based on historical averages. Update: Terra Alpaugh and Doug Killam in discussion on this.
- Action item 4: Tom Patton (Reclamation) to share the final August forecast and update the alternatives spreadsheet with those numbers by end of the week. Update: Tom Patton to share this today.
- Action item 5: Tom Patton (Reclamation) to use 250 cfs as standard buffer amount. Update: this buffer is being implemented.
- Action item 6: Lisa Elliot (Reclamation) to use two as the average expansion number in the Dewatering Estimate calculations. Update: This expansion factor is being implemented.
- Action item 7: Participants invited to provide additional updates to the "Flow Interests and Constraints 2024" spreadsheet. Update: None.

Fishery Monitoring Update

- CDFW reported that this year is unusual because of the large survival of hatchery winter run Chinook fish from 2022–2023. Therefore, there are numerous two-year-old "grilse" fish returning to spawn. These grilse fish are spawning in late August and will therefore, emerge in late October to late November.
- CDFW reported that they are currently tracking 16 shallow redds, many in Section 2 in Redding near the Sundial Bridge area. One redd (the 17th) has already emerged.
- CDFW reported that aerial monitoring flights were limited in July due to maintenance. These flights showed 24 deep and shallow redds on the River in both shallow and deep water.

- CDFW reported that their spawned female carcass count is currently 147, the second lowest carcass count total since monitoring began in 2003. With the expansion factor calculated at 2.75 for this year, they assume there are about 400 redds total. Therefore, 1% of redds this year will be about 4 redds. CDFW reminded the group that the expansion rate is a calculated number based on recapture rates, which vary from year to year based on turbidity, flows, etc. The average expansion rate across many years is 2, which is a good place to start when estimating total numbers of redds earlier in the season.
- Reclamation reported that Pacific States provided data from August 8, 2024 that showed 15 shallow water redds. Since that time, Pacific States has identified an additional shallow water redd in Painter's Riffle in 23 inches of water.
- CDFW reported that emergence dates are based on temperature, and emergence estimates will be updated with actual temperatures as season progresses. Actual emergence dates replace earlier forecasted emergence dates as the season progresses.

Operations Update and Alternative Spreadsheet

- The new SacPAS website is anticipated to launch September 7.
- Reclamation reported that flows were cut early this morning from 11,000 cfs to 10,500 cfs. Flows will be further reduced early on August 28 to 10,000 cfs. Wilkins Slough is currently at 8,700 cfs. Diversions are currently decreasing, and Reclamation will continue to track actual flows and decrease releases as needed to keep Freeport as steady as possible.
- Reclamation said that the updated Fall Flows Reduction Spreadsheet sent on August 26 incorporated scenarios based on the August forecast. A further refined update was sent on August 27. If storage drops below 2.8-million-acre feet at Shasta at the end of September, it will trigger base flows of 4,000 cfs at Keswick later in the fall. Rice decomp demand will need to be incorporated into the flow estimates as the largest flow draw for decomp will happen in the second half of October. Flows will likely need to be 7,000 cfs to keep Wilkins from drying up.
 - Keswick is currently at 10,500 cfs. Flows will be reduced more in the second half of the month. The August 50% number is a bit higher than 10,000 cfs to reflect what Reclamation is observing in the field.
 - Projection for September is 8,000–9,000 cfs, as they will still need to meet fall X2 requirements. If diversions have decreased enough during this period, they could cut flows further, possibly down as far as 6,000 cfs. Reclamation will add scenarios that reflect that possibility to the spreadsheet for next week.

- Projection for October has flows in the 6,000–6,500 cfs range. Fall X2 requirements will still be in place, but they can reduce flows because exports will be decreased. This is when rice decomp demand will ramp up.
- Projection for November is 4,000–4,500 cfs. However, given the amount of storage, they have the flexibility to keep flows above 5,000 cfs in early November if needed for redds.

Special Presentation: 'Value of information as a tool to assess flow actions and minimize impacts to Chinook Salmon in the Sacramento River'

Chase Ehlo (Reclamation) presented the findings of the study conducted in partnership with Lisa Elliot, Corey Phillis, Brian Healy, Michael Beakes, Jenna Paul and Alex Vaisvil. The study focused on Shasta and Keswick Dams and impacts of fall flow actions.

- Ehlo emphasized that the study examined if reducing or eliminating scientific uncertainty would improve the outcome of management decisions. They looked at the value of perfect information, i.e., the difference between the expected rate of return if uncertainty is resolved and if it is not resolved.
- The study focused on the goal of determining preferred timing and rate of fall flow reductions to best balance a potential tradeoff between redd dewatering of Winter-run and Fall-run Chinook Salmon, while maximizing Shasta storage.
- The study's three objectives were:
 - Maximum Winter-run juvenile production index
 - Maximum Fall-run juvenile production index
 - Minimum water costs to preserve cold water pool.
- Identified sources of uncertainty for the study were:
 - What are the sizes of the spawning populations when the action takes place?
 - What is the strength of the density dependence on spawners to fry recruitment?
- The study tested four hypotheses and determined that if all three objectives are equally weighted, a fall-run focused flow schedule is the preferred alternative to best deliver on all three objectives across all hypotheses. This outcome suggests that uncertainty is not an impediment to making a good decision. If the Winter-run objective is weighted more heavily than Fall-run or water cost, the baseline

and both runs-focused flow alternatives are favored. Uncertainty was still not an impediment for selecting an alternative.

- The study's key takeaway was that the top ranked alternative was a function of the weighting of the objectives. If those are known (i.e., if the decisionmakers' values are well-defined), scientific uncertainty is not an impediment to a good decision.
- The team stressed that this was a rapid prototype approach and there are additional steps they can take to impose more realistic constraints or tradeoffs, do sensitivity analysis on known sources, and refine the decision context and objectives. They noted that one opportunity would be to incorporate the updated Gard relationships for dewatering.