BUREAU OF RECLAMATION

Sacramento River Group - Spring Pulse Flow Planning Subgroup Meeting Summary

Monday, March 10, 2025, 9:00–10:00 a.m.

Participants

- CDFW: Travis Apgar, Crystal Rigby, Tracy Grimes, Erica Meyers, Gang (Gary) Zhao, Colby Hause, Jason Roberts
- DWR: Ryon Kurth, John Ford
- NMFS: Stephen Maurano, Garwin Yip
- SWFSC: Cyril Michel, Flora Cordoleani
- SWRCB: Jeff Laird, Claudia Bucheli
- SRSC: Yuen Lenh, Anne Williams, Mike Deas (Watercourse Engineering)
- USBR: Elissa Buttermore, Tom Patton, Chase Ehlo
- USFWS: Bill Poytress, Matt Brown, Craig Anderson, Charles Chamberlain, Kaitlin Dunham, Craig Fleming, Brett Galyean, Robert Null, Emily Van Seeters
- WAPA: Jeffrey Trow
- Kearns & West: Terra Alpaugh, Trisha Madayag
- ACID: Daniel Ruiz

Action Items

- K&W to share the slides from Cyril Michel's presentation on 2024 Pulse Flows
- Reclamation to coordinate with USFWS regarding potential flood control releases in mid-March.
- Reclamation and SWFSC to coordinate with information to share to the group prior to the 3/27 SRG meeting.

Key Discussion Topics with Summary of Perspectives and Outcomes

Meeting Objectives

- Review language describing spring pulse flow in new PA
- Share outcomes and any lessons learned from last year's pulse flows
- Provide operations update and explore implications for a spring pulse flow
- Review planning process steps and deliverables; develop an approach for the '25 season planning process

Reflections on 2024 Pulse Flows

Cyril Michel, SWFSC, presented the results from the three, four-day pulse flows implemented in April and May 2024. SWFSC analyzed and compared both outmigration survival of the pulse and control groups and how many extra fish started migration during the pulses than would have likely started under non-pulse conditions. Full results are available in the slides circulated separately; insights included:

- The first pulse, 4/23/2024 to 4/26/2024, occurred when the other tributaries were high, resulting in exceptional outmigration conditions during that period for non-pulse and pulse groups. The Feather River was implementing a pulse flow during the same period which acted as an effect multiplier by providing higher flows in the lower Sacramento River and Delta.
- The second and third pulses, 5/7/2024 to 5/10/2024 and 5/21/2024 to 5/24/2024, showed significant improvements in survival between the non-pulse and pulse groups.
- Most of the survival gains in those second and third pulses occurred in the Upper Sacramento, whereas there were no noticeable improvements in the lower Sacramento and Delta regions. During the third pulse flow, there was a drop in Feather River flows, which probably attenuated the survival impacts in that the fish encountered lower flows in the Lower Sacramento and Delta. This was flagged as a potential issue for the group to consider in its planning, with the goal of scheduling Sacramento pulses so they are synchronized with higher Feather River flows and also with pulses from the Stanislaus arriving in the Delta.
- The pulses appear to have increased the number of outmigrants starting their migration during that period by 50%.
- Last year, the last hatchery release occurred on April 12th, so the pulse flows were too late to benefit hatchery fish. This year, the group could look at pulse flow timing that would coincide with releases.
- SWFSC suggested continuing to use weather forecasts to inform the pulse scheduling, leveraging existing storms/freshet events and avoiding heat waves whenever possible.

Questions shared by subgroup members included:

- SRSC asked whether Shasta was encroached in the flood space last spring when the first pulse release was made (i.e., was the first release a flood control release or a formal pulse flow?).
    - Reclamation confirmed that Shasta was not encroached in the flood space last spring, although storage levels were high in the reservoir; therefore, all three of last year's releases were counted as pulse flow releases, not flood control releases.
- USFWS asked about the passage of non-hatchery fish at Red Bluff and inquired whether including hatchery fish in the analysis would yield similar or different insights compared to the observed 50% increase in certain fish reaching the Bay.
    - SWFSC responded that including hatchery fish in the analysis could be attempted but noted that most hatchery releases had already occurred when the study period began. Testing both scenarios is an option.
    - USFWS confirmed that the last hatchery release in the Upper Sacramento was on April 12, after which fish were being trucked to the Bay

Operations Update

Reclamation provided an update on the current conditions and operations with a focus on the effects of recent and forecasted storms.

- Colder storms are anticipated in the next two weeks; while much of the precipitation will come as snow, there will still be some runoff.
- Shasta storage is currently at 3.6 million acre feet (MAF), which is below the flood diagram by about 100 thousand acre feet (TAF). As it gets wetter, the flood diagram requires more flood space, so the storm early next week will result in encroachment into the flood space. It is too early to start filling Shasta so Reclamation will probably increase releases to 10,000 to 15,000 cfs.
- If there is interest in an early (e.g., mid-late March) pulse flow to coincide with hatchery releases, Reclamation could coordinate the timing of their flood releases to achieve that. Those flows would not count against the 150 TAF volume available for pulse releases.
- The current release to Clear Creek from Whiskeytown Dam is 300 cfs. Clear Creek release will ramp down to 275 cfs by March 15.

Planning Interests & Considerations

The facilitator asked the group to discuss the interest expressed in the February 27 SRG Meeting regarding syncing pulse flows with hatchery releases and asked what the timing needs for those releases would be. Participants shared their considerations and planning interests.

General Interests

- NMFS shared that their understanding of the new Proposed Action is that it provides more latitude and empowerment for agencies to consider pulse flows with the lens of how they may provide multi-species benefits (e.g., to spring run, fall run, and geomorphic resources).

Hatchery Release-related Considerations

- CDFW shared their desire to prioritize using the allocated 150 TAF of pulse water to support listed spring-run Chinook, which are on the brink of extirpation in the Upper Sacramento. If there is a secondary benefit to fall-run hatchery Chinook, they support that, but they would not want to use pulse water in March at the expense of later pulses that would benefit spring-run more. NMFS supported CDFW's prioritization.
- USFWS reported that tagging started last week for fall-run Chinook from Battle Creek, but tagging 100% of 400,000 fish will take time. Hatchery fish from Battle Creek are expected to be released in mid-April, and there are still millions of fish from CDFW with an expected release date of mid-May.
    - CDFW noted that the hatchery release schedule mentioned seems to be similar to last year's pulse flow schedule for spring-run Chinook, particularly for the CDFW fish.
    - USFWS confirmed that a mid-May pulse would be in alignment with the CDFW fish.
    - SWFSC noted that shifting the first pulse one week earlier than last year might allow it to coincide with the April Battle Creek hatchery release. SWFSC reminded the group that SWFSC sensitivity analysis established that pulse releases between mid-April and the end of May are scientifically justifiable.
    - USFWS noted as a consideration that a pulse flow during that period could have less optimal impacts on the striper run.
- SWFSC inquired about the need for a late March pulse flow.
    - USFWS clarified that there will be a small March hatchery release, but there is more focus needed on the second half of the Battle Creek fish release in April.
    - Reclamation will coordinate with USFWS regarding potential flood control releases in mid-March.

Infrastructure-related Considerations

- Reclamation noted that ACID's diversion dam installation is planned to start ~March 31. They try to keep flows as low as possible for about two weeks to support a safe installation. A flood encroachment release in mid-March would need to be carefully managed to avoid conflicts with the dam installation and to maintain optimal flow conditions.

2025 Pulse Flow Process

Elissa Buttermore, USBR, shared the initial proposed schedule of the 2025 Pulse Flow Process. The proposed schedule, included as an appendix to this summary, aims to gather the modeling and assessment information for discussion at the 3/27 SRG meeting, with additional coordination and follow-up meetings scheduled only if necessary.

- CDFW confirmed that the schedule works for them and that their main concern was that pulse flow water (i.e., the designated 150 TAF) is not used in March and is kept to support wild fish migration in April and May.
- Other participants did not indicate any concerns with this general schedule and approach.

APPENDIX: Initial Proposed SRG Schedule

- March 10 - SRG meeting
- March 17 - Tom provides operational information
- March 18-21 - Cyril runs modeling
- March 22 - Cyril send model result to Reclamation and Reclamation develops draft assessment/ops plan document and sends to SRG
- March 27 - SRG meets
- April 1 - Tom does operations updates and sends to Cyril
- April 3 - Cyril sends model updates to Reclamation
- April 4 - Reclamation develops final draft ops plan/assessment and distributes to SRG and SHOT
- TBD - additional SRG meeting if necessary. Continued coordination between hatchery, Reclamation, UCSC acoustic tagging team. SHOT meets to discuss pulse flow before Reclamation needs to schedule pulse flow.
- early or mid-April: final pulse flow ops plan/assessment distributed
- April 24 - SRG meets to discuss draft Temperature Management Plan and updates on pulse flow actions
- May 22 - SRG meets to discuss final Temperature Management Plan which may include TDM analysis of pulse and no pulse scenarios like we did last year.