

Upper Sacramento Scheduling Team

Spring Pulse Flow Planning Subgroup

Wednesday, February 24, 2021, 11:00-12:00 p.m.

Meeting Summary

Participants

Agency	Attendees
Reclamation	Elissa Buttermore, Suzanne Manugian, Tom Patton
USFWS	Jim Earley, Charlie Chamberlain
NMFS	Flora Cordoleani, Cyril Michel, Stephen Maurano
CDFW	Bill Poytress, Ken Kundargi
DWR	Kevin Reece
SWRCB	Michael Macon
SRSC	Anne Williams
Kearns & West	Terra Alpaugh, Alyson Scurlock

Action Items

- All to provide feedback on the flow spreadsheet, including if 2016 or 2018 is preferable to use as a practice year, and on how to narrow down the current list of pulse flow scenarios.
- Tom to consider updating Figures 8 and 9 from the 2020 Seasonal Report for the Shasta Cold Water Pool Management to share with the USST.
- Suzanne to continue working with historic flow data.
- K&W to postpone the full-group USST invites until April and schedule weekly subgroup meetings in place.

Key Discussion Topics with Summary of Perspectives, Outcomes, and Agreements

Meeting Objectives

1. Review February forecast
2. Review updated pulse flow scenarios and next steps

February 90% Forecast

Reclamation reviewed their final 2021 February 90% forecast and reported that Shasta storage is low so they will focus on conserving as much water as possible over the next few months. Reclamation also presented an updated flow spreadsheet that incorporates the final 2021 February 90% forecast numbers as well as historic forecasted data from 2016 and 2018. Historic data can be used to walk through the process of implementing a spring pulse flow this year if conditions remain dry.

Perspectives and questions shared by subgroup members included:

- SRSC said they will want to better understand what goes into the April and May forecast including how the numbers fit with the timing of springtime diversions.
 - Reclamation reviewed the flow spreadsheet and pointed out the forecasted Keswick releases, Shasta EOM storage, and net accretions and depletions. DWR provides a gross value of overall accretions and depletions, and Reclamation uses that to estimate the accretions and depletions between Keswick and Wilkins Slough.
- NMFS observed that the Shasta EOM storage in 2018 decreased from the February 90% forecast to the March 90% forecast, and then increased from the March 90% forecast to the April 90% forecast. Forecasted Keswick releases in 2018 also decreased as the forecasts were updated. NMFS asked if this pattern was due to temperature management.
 - Reclamation posited that more water needed to be released initially to meet downstream needs due to drier conditions. There was likely rain in March that created wetter conditions where Reclamation did not need to release as much water.
 - NMFS said it makes sense to keep meeting even though it is a dry year just in case it rains a lot in March. The 2016 and 2018 February 90% forecasts suggested there would not be water for spring pulse flow, but the subsequent 2016 March 90% forecast and 2016 and 2018 April 90% forecasts would have allowed for a spring pulse flow.
- NMFS said that Figures 8 and 9 in the 2020 Seasonal Report for Shasta Cold Water Pool Management are useful for providing context on historic Shasta storage and Keswick releases for dry water year types in comparison to the current year. NMFS suggested that Reclamation could update the figures and share with the USST if it would be helpful.
 - Reclamation said they could do that for the next USST meeting.

Understanding Travel Times and Pulse Length Relationships

NMFS described the relationship between different pulse lengths and fish migration through the Sacramento River. NMFS presented how 2, 3, and 4-day pulse lengths interacted with four groups of tagged fish that were released in the April/May timeframe of 2016, 2017, 2019, and 2020.

Perspectives and questions shared by subgroup members included:

- SRSC asked if it is good for fish to use the floodplain in wet years.
 - NMFS said fish using the floodplain is widely regarded as beneficial.
- DWR said they appreciate the slides NMFS put together. DWR observed that a longer pulse seems more beneficial overall but suggested that anything would be helpful in a dry water year.
 - NMFS suggested that a lot of cost benefits need to be assessed such as running a sensitivity analysis.
- USFWS asked what kind of flows activate the floodplains and how that compares to proposed pulse flow volumes.
 - NMFS said releases that result in flows of 10,000 cfs or 10,800 cfs at Wilkins Slough are being included in the pulse flow scenarios; in comparison, it takes about 22,000 cfs to activate the weirs.

Update on Pulse Flow Scenarios

Reclamation presented the updated pulse flow scenarios, an updated flow spreadsheet with example scenarios built in, and a metadata spreadsheet that shows what parameters correlate with each variable.

Perspectives and questions shared by subgroup members included:

- Reclamation asked for feedback from the group on removing the 2-day pulse duration option to narrow down the current list of 42 scenarios.
 - NMFS said 2-day pulses could be useful to include for different years and that they would rather narrow down the pulse magnitude options because 10,000 cfs and 10,800 cfs are pretty close together. They realize that proposal may be complicated by the fact that 10,000 cfs is included in the Proposed Action, while NMFS' work has suggested 10,800 cfs.
 - Reclamation said they would like to keep both pulse magnitudes for now to create a case-study since this year will be a learning process.
- DWR said the pulse flow scenarios and spreadsheets were impressive and they would need time to look through it.
- NMFS suggested that a lot of the scenarios are built off of inputs on a monthly timescale and asked if it matters what days in the month the spring pulse flow occurs.
 - Reclamation said that it does not matter what day you put the spring pulse flow from the spreadsheet perspective. There is the ability to put the spring pulse flow where you want in the daily tab, but it wraps back into the summary statistics on a monthly basis.
- Reclamation asked if there is a point where the group would be concerned about when to start the spring pulse flow.
 - Reclamation said that the monthly data sets the stage and then situations on the ground will inform when to start the spring pulse flow, such as a storm event.
 - NMFS pointed out that the guidance documents say that Reclamation's operations should be notified two weeks in advance so it might not be possible to take advantage of storm events with the current guidelines. NMFS suggested the group could start deciding when would be ideal to implement an April or May spring pulse flow in the next month or two based on historic fish passage and hydrology data.
 - Reclamation suggested matching water year type to water year type for historic hydrology would be a good place to start.

Preparing for Full USST Meetings on Spring Pulse Flows

- The subgroup will continue to meet weekly before convening the full USST (tentatively scheduled for April). The goal is to present a Pulse Flow Operations Plan at the SRTTG March meeting.
- Suzanne will continue work with historic flow data.

Next Meeting: Wednesday, March 3, 9:30-11:00 a.m.