BUREAU OF RECLAMATION

American River Group Notes

Conference Line: +1 (321) 209-6143; Access Code: 985 598 947#
Webinar: Join Microsoft Teams Meeting
Thursday, March 20, 2025

Action Items

Chris Hammersmark

1. Share the Water Forum proposal document with Kearns & West for distribution to the ARG.

Craig Addley

1. Compile rotary screw trap data ahead of the 3/25/2025 ad hoc meeting.

Kearns & West

1. Redistribute the meeting handout with any revised materials received.

All

1. Coordinate with their respective agencies on items to prioritize for the spring pulse flow meeting on Tuesday, 3/25/2025.

Introductions

1. USBR: Brian Mahardja, Brian Willard, Carolyn Bragg, Drew Loney, Kevin Thielen, Liz Kiteck, Mechele Pacheco, Myrna Girald Perez, Peggy Manza, Randi Field, Zarela Guerrero
2. NMFS: Barb Byrne, Rachael Alcala, Paula Higginson
3. USFWS: Paul Cadrett
4. CDFW: Andrew Gaan, Crystal Rigby, Duane Linander, Emily Fisher, Gary Novak, Jennifer O'Brien
5. DWR: John Ford
6. SWRCB: Claudia Bucheli, Natalie Niepagen
7. California State Parks: N/A

8. EBMUD: I-Pei Hsiu
9. City of Sacramento: Anne Sanger
10. Sacramento County: N/A
11. Environmental Council of Sacramento: N/A
12. City of Folsom: N/A
13. City of Roseville: N/A
14. Cramer Fish Sciences: Jamie Sweeney
15. PCWA: Ben Barker
16. PSMFC: Hunter Morris
17. SMUD: Tyler Belarde
18. USACE: Casey Nyquist
19. cbec Eco Engineering: Chris Hammersmark
20. Watercourse Engineering: Mike Deas
21. Water Forum: Erica Bishop
22. Water Districts: Greg Zlotnick, Paul Helliker
23. Regional Water Authority (RWA): N/A
24. Shingle Springs Band of Miwok Indians: N/A
25. CSUS: Dede Birch
26. Kleinschmidt Group: Craig Addley, Vanessa Martinez
27. WAPA: N/A
28. BKS Law Firm: Jennifer Buckman
29. Sunzi Consulting: Yung-Hsin Sun
30. Other: Caileen Yu, Eric Mork

Announcements

- N/A

Housekeeping

- N/A

Fisheries Update

CDFW Updates

1. Carcass Surveys
    a. N/A
2. Chinook spawning
    a. N/A
3. Redd surveys
    a. N/A
4. Nimbus Hatchery Operations Update
    a. Nimbus Hatchery recently released over 2 million Chinook salmon fry into the lower American River for parentage-based tagging. The fish were approximately 36 mm in length.
    b. CDFW's mitigation and production enhancement fish are being moved to the outdoor raceways.
    c. CDFW finished steelhead spawning on 2/25/2025. Roughly 1.4 million green eggs were collected.
    d. Survival to egg stage was about 94%.

Questions/Comments

1. N/A

Cramer Fish Sciences Updates

1. LAR Steelhead Spawning and Stranding Surveys
    a. A total of 41 new redds have been observed through 3/5/2025, including:
        i. 29 steelhead redds;
        ii. 10 Chinook redds;
        iii. 1 lamprey redd;
        iv. 2 unknown redds were unable to be measured due to angler activity.
    b. The majority of steelhead redds were found in Nimbus Basin (54%) and approximately 18% have been observed in the newly restored River Bend side channel.

c. The majority of stranding was recorded at Paradise Beach, likely from the effect of the backflow from the Sacramento River when high flows were occurring.

d. Cramer rescued 1,569 Chinook salmon and 12 steelhead. The pool area totaled 2,008 square meters.

e. Pool temperatures and dissolved oxygen levels were relatively suitable, with only one pool having marginal water quality (6 mg/L dissolved oxygen).

f. Cramer began post-project effectiveness monitoring snorkel surveys at the restoration sites in late February. Juvenile salmonids have been present at all surveyed sites.

g. Cramer is performing snorkel surveys in the Ancil Hoffman alcove and side channel for the first time. Juvenile salmonids have already been observed, and the next survey will be conducted the week of 3/24/2025.

2. Dissolved Oxygen (DO) Update

    a. The most recent DO data download was performed on 3/3/2025.

    b. DO levels are suitable for juvenile salmonid rearing.

Questions/Comments

1. BKS Law Firm asked if lamprey eat everything else in the river.

    a. Cramer responded that typically when lamprey come up to spawn, they're not feeding.

    b. PSMFC added that lamprey attach to salmon when they're in the ocean but are not parasitic in freshwater.

    c. USFWS added that during most of their juvenile life, they are living in the mud and filter-feeding. Also, they are a parasite that does not kill their host.

2. BKS Law Firm asked if lamprey both spawn and have juveniles in the American River, do they remain in the American River for their lifespan?

    a. Cramer responded that they can check on an answer to this question. Juvenile lamprey spend roughly 3-7 years in freshwater before migrating to the ocean. Adult lamprey will spend 1-3 years in the ocean before migrating back into freshwater to spawn.

PSMFC Updates

1. Rotary Screw Traps (RSTs) are currently online and expected to be continuously operated 7 days per week.

2. No sampling occurred from 3/15 – 3/17/2025 due to large debris from the storm.
    a. On 3/24 and 3/18/2025, only one RST was in operation.
3. As of 3/18/2025, a total of 123,981 fall-run, 17 winter-run, and 6 spring-run length-at-date (LAD) Chinook salmon have been sampled.
4. On 3/19/2025, approximately 1,500 fall run Chinook salmon were caught at the RST site. On 3/20/2025, catch numbers dropped to 350 Chinook salmon. This decrease is expected to continue through March.
5. As of 3/18/2025, a total of 13 fry (measuring approximately 28 mm) and 2 smolt O. mykiss have been sampled.
6. The highest number of Chinook salmon catch occurred on 3/7/2025.
7. The majority of Chinook salmon are averaging 38-39 mm.

Questions/Comments

1. N/A

Operations Forecast

SMUD

1. March 2025 precipitation totals 7.6 inches through 3/20/2025. Total average March precipitation is 9.27 inches.
2. Precipitation totals for WY 2025 are 40.89 inches, or 92.5% of average to date.
3. Total reservoir storage is 72.6% full at approximately 275 TAF.
4. Snowpack is 71.4% of average at selected snow sensors.
5. Runoff into the storage reservoir basins is 118.3% of median as of 3/18/2025.
6. Chili Bar daily average releases are forecasted at the following flow rates:
    a. March: 2,430 cfs
    b. April: 2,745 cfs
    c. May: 2,724 cfs
7. For the past couple of weeks, recreational flows have been occurring 6 days per week below the Chili Bar powerhouse.
8. As runoff declines, SMUD will be conducting summer power flows for recreational purposes.

Questions/Comments

1. N/A

PCWA

1. Storage at French Meadows is currently 76 TAF, or 56% capacity.
2. Storage at Hell Hole is currently 111 TAF, or 53% capacity.
3. Combined storage totals 187 TAF, or 55% capacity. This represents 104% of the 15-year average.
4. Middle Fork American River (MFAR) daily average releases are approximately 2,000 cfs.
5. North Fork American River (NFAR) daily average releases are approximately 4,400 cfs.
6. Snowpack levels are approximately 121% of average.
7. PCWA has an outage planned for 4/1 – 5/31/2025 to conduct annual maintenance. To prepare, they are moving water from French Meadows to Hell Hole.
8. Total precipitation for Lake Spaulding during WY25 through 3/19/2025 was 63.63 inches, or 118% of average.
    a. February precipitation totaled 22.5 inches.
    b. March precipitation through 3/19/2025 totaled 11.8 inches.

Questions/Comments

1. N/A

Central Valley Operations

USBR

1. Precipitation for February totaled 16.7 inches.
2. March precipitation has totaled 5.4 inches as of 3/17/2025.
3. Current Water Year 2025 precipitation totals approximately 48.6 inches as of 3/17/2025.
4. Folsom storage levels are approximately 629 TAF as of 3/16/2025.
5. Accumulated inflow at Folsom for WY 2025 to date is nearly 1.07 MAF, or 87% of the 15-year average.
6. Accumulated precipitation for the American River at Blue Canyon as of 3/16/2025 is nearly 58 inches, or 115% of the 15-year average.
7. Forecasts for 3/23 – 3/27/2025 are showing air temperatures to be 80-90% Above Normal.

8. The controlling Minimum Release Requirement (MRR) for March is 1,334 cfs.
9. At the 50% inflow/runoff exceedance operations forecast, the monthly American River release levels expected to be:
    a. March: 3,300 cfs
    b. April: 3,000 cfs
    c. May: 4,100 cfs
10. At the 90% inflow/runoff exceedance operations forecast, the monthly American River release levels are anticipated to be:
    a. March: 3,300 cfs
    b. April: 2,431 cfs
    c. May: 1,768 cfs

Questions/Comments

1. NMFS asked how much capacity one unit of the Temperature Control Device (TCD) can handle for the overall release.
    a. USBR responded that they are sorting through mechanical challenges, so moving all the water through one penstock is not a possibility at the current time. USBR is trying to make that happen but there is not a timeline in place right now.

Discussion

Spring Pulse Flow

1. USBR presented the following criteria for a spring pulse flow on the American River, taken from the December 2024 LTO PA:
    a. Peak flow: 3x the March MRR (regardless of whether the pulse flow occurs in April or May), but no higher than 4,000 cfs.
    b. Duration: 2 days
2. USBR requests that ARG representatives from the fishery agencies draft a spring pulse flow schedule.

Questions/Comments

1. NMFS asked if there is time to discuss the pulse flow during this meeting (i.e., the March ARG meeting) or if USBR would prefer to receive draft pulse flow plans via email.
    a. USBR responded that time is limited during today's meeting because the second portion of the WTMP presentation is also on the agenda. USBR is open to coordinating offline, or receiving proposals and having an informal discussion about them.
2. NMFS asked about time constraints and if April or May is more ideal, or if they think it's likely that flood control releases will be taking place regardless.
    a. USBR responded that it's difficult to determine the exact timing at this point. The current conditions they are working with include: a very high likelihood of above-average temperatures, upstream construction activity, and an upstream outage. Therefore, it's hard to determine what the actual flow levels will be.
3. Kearns & West asked for a deadline for agencies to send a proposal to USBR.
    a. USBR will need a week to review any proposals, so they must be submitted at least a week prior to the proposed start date of the pulse flow.
4. CDFW asked if: a) there is a total volume specified for the pulse flow, and b) there is flexibility around planning for multiple peak flows versus a single peak flow.
    a. USBR said a total volume is not specified in the Long-Term Operations (LTO) Proposed Action (PA).
5. Kleinschmidt Group asked about the status of the Voluntary Agreement settlement flows, and if there was any intent to coordinate those with the spring pulse flow.
    a. BKS Law Firm noted that the State Board has not yet adopted the voluntary agreements. Therefore, the matter will not be relevant for this year.
6. ARG members stated a preference for meeting internally with their respective agencies before discussing potential straw proposals.
    a. The ARG agreed to schedule a follow up ad hoc meeting on 3/25/2025 at 10 a.m.
7. Kleinschmidt Group asked if any ARG members have access to historical RST data and if it might be helpful in planning.
    a. CDFW, cbec, and Water Forum suggested looking at past data points shared by PSMFC, CDFW, and Cramer.
    b. PFMFC has data on the CalFish and EDI webpages dating back to 2013.

Presentation: Central Valley Project (CVP) Water Temperature Modeling Platform (WTMP), Session 2

1. Detailed information about the Central Valley Project (CVP) can be found on the project website.
2. The WTMP's Model Technical Committee (MTC) provides a communal approach for collaborative model development with an open and transparent environment.
3. Peer reviews of the WTMP have been largely positive thus far.
4. Framework Selection and Design
    a. Modeling Framework – a software system that brings together different modeling components and workflows under the same umbrella to use a common set of tools.
    b. Ideal Usage
        i. The goal for the WTMP was to bring historical observations and forecast the conditions and the planning workflows into the same modeling framework using the same/similar preprocessing operations.
        ii. Modelers will be able to choose the most appropriate model for their specific question while populating the common set of data coming from the preprocessing operations.
        iii. Once modeling workflows are completed, the modeling outputs will be passed back through the common, shared set of post-processing scripts for consistency and efficiency in analyzing the end products.
    c. Framework requirements fall into the following categories:
        i. Efficiency
        ii. Workflow
        iii. Reporting
    d. Various existing frameworks were analyzed for satisfactory fulfillment of the requirements. The USACE Hydrologic Engineering Center (HEC) Watershed Analysis Tool (WAT) was selected as the best option.
        i. The WAT is not tied to one specific model; different models can be incorporated through existing or custom-built extensions.
        ii. The WAT can be further customized through software plug-ins.

5. Model Selection, Calibration and Verification, and Uncertainty
    a. Two models were chosen:
        i. CE-QUAL-W2 (reservoir model)
        ii. HEC-ResSim (system/river model)
    b. The calibration is good for the temperature models; all of the hydrodynamic variables are very close.
    c. The calibration allows for different system characteristics for river and small-to-large reservoirs.
    d. Forecast uncertainty can come from the model, from external input, or a compounding of the two.
    e. In a calibrated model, uncertainty can come from model conceptualization, model development, data development, and parameter estimation from calibration/validation.
6. Data Management System (DMS) and Workflow
    a. Modeling data needs include:
        i. Initial conditions, e.g., a temperature profile
        ii. Boundary conditions, e.g., the temperature of the water coming into the reservoir
        iii. Calibration data, e.g., historical data
    b. The DMS manages the data from sources to model input.
    c. Workflow applications include short-term/seasonal forecasting and long-term planning.
    d. Summary reports and DSS output for graphing and analysis are provided in the Study Tree.
7. Parallel Analysis
    a. The presenters will share results from this analysis at the April ARG meeting.
    b. Results sharing are meant to compare WTMP results with those of the legacy tools with the intention of building understanding and confidence in future users of the WTMP.

Question/Comments

1. Kleinschmidt Group asked for timing clarification for WTMP implementation on the American River.

a. Sunzi Consulting said the timing is still in active discussion and will be shared once available.

Next Meeting

The ARG will meet virtually on Tuesday, March 25 at 10 a.m. to discuss spring pulse flow planning.

The next regularly scheduled ARG meeting is on Thursday, April 17. The meeting will be virtual.