American River Group Notes

Conference Line: +1 (321) 209-6143; Access Code: 985 598 947#
Webinar: Join Microsoft Teams Meeting
Thursday, October 16, 2025

Action Items

1. **Kevin** to include Peggy Manza, Paula Higginson, Myrna Girald Perez, Brian Mahardja, Zarela Guerrero to discussion/study plans for Dissolved Oxygen.
2. **Kevin** to share update Folsom Temperature profiles - Complete
3. **Kirsten** to send updates to Dissolved Oxygen surveys.

Attendance

1. USBR: Kevin Thielen, Myrna Girald-Perez, Randi Field, Ryan Lucas, Spencer Marshall, Alexander Vaisvil, Mechele Pacheco, Carolyn Bragg, Brian Mahardja, Peggy Manza, Drew Loney, John (Wes) Harrison
2. NMFS: Paula Higgenson
3. USFWS: Erika Holcombe, Craig Anderson
4. CDFW: Emily Fisher, Nick Bauer, Travis Apgar, Jason Julienne, Crystal Rigby
5. DWR: John Ford
6. SWRCB: Claudia Bucheli, Natalie Niepagen, Nick Cahill
7. California State Parks: N/A
8. EBMUD: I-Pei Hsiu
9. City of Sacramento: Brian Sanders
10. Sacramento County: N/A
11. Environmental Council of Sacramento: N/A
12. City of Folsom: Marcus Yasutake
13. City of Roseville: N/A

14. Cramer Fish Sciences: Kirsten Selheim
15. PCWA: Benjamin Barker, Darin Reintjes
16. PSMFC: Hunter Morris, Logan Day
17. SMUD: Megan Peers
18. USACE: N/A
19. Verdantas Eco Engineering: Chris Hammersmark
20. Watercourse Engineering: Mike Deas
21. Water Forum: Ashlee Casey
22. Water Districts: N/A
23. Regional Water Authority (RWA): N/A
24. Shingle Springs Band of Miwok Indians: N/A
25. CSUS: N/A
26. Kleinschmidt Group: Vanessa Martinez
27. WAPA: Vanessa Armentrout, Michael Prowatzke
28. BKS Law Firm: Jennifer Buckman
29. Sunzi Consulting: Yung-Hsin Sun
30. Kearns & West: Karis Johnston, Mia Schiappi
31. Other: Rod Hall

Announcements

- NA

Housekeeping

- NA

Fisheries Update

CDFW Updates

- Carcass surveys began 10/14/25 and there have been many fish observed and a few carcasses were collected. They will share more official results at the next ARG meeting in November.

Cramer Fish Sciences (Cramer) Updates
Kirsten Selheim provided updates on ongoing Dissolved Oxygen (DO) monitoring occurring on the American River.

- The loggers below Folsom Dam are measuring low DO which increases the stress level for salmonids
- The lake is stratified, and water is being released from the bottom of the lake to help with temperature, however, this water is low in DO.
- The Lake Natoma discharge and flow through the radial gates are ways to manage DO as it comes out of Lake Natoma.
    - Discharge is usually low in DO.
    - Spill from the top of the radial gates is a way to manage the DO.
- Nimbus Basin north bank at the powerhouse is showing the worst DO.
- Cramer and Reclamation have been coordinating on the proportion of the flow coming from the powerhouse to help mitigate the low DO. They are working to understand how spill changes impact DO as water comes down from Nimbus Basin. Cramer is observing that DO increases as more spill occurs from the radial gates and as the flow from the powerhouse DO increases.
- There is riffle near the southern main part of the channel that spawning occurs and is a specific biological concern for the DO levels.
    - As of 10/16/25 current DO at the south end of the main channel DO is between 8 and 9 and the north bank is at 7-7.9 milligrams per liter dissolved oxygen.
- Reclamation increased spill out of gate 1 to help with DO levels.
    - They are committed to the 7 milligrams per liter during spawning season.
- Cramer and Reclamation will be working on future DO studies in this area.
- Cramer will be going out over the next couple weeks to measure the loggers and will share as data becomes available.

PSMFC Updates
- No Updates.

Operations Forecast

SMUD
Megan Peers provided an operational update on SMUD facilities.

- The cumulative precipitation is slightly below average at around 58% of average. 2.3 inches have fallen in October
- Snowpack is currently measuring at 0.52 inches of SWE, which is above the average of 0.12 for this time of year.
- Reservoir storage is currently above average, and they plan to hold more water for operational flexibility.
- Additional detailed information is available in the meeting handout.

PCWA
Ben Barker provided an operational update on PCWA facilities.

- PCWA operations are currently in fall outage from 10/01-10/31 and will come back online on 11/1/25
- Current releases are being held at the FERC minimum of 65 cfs.
- Over the last 7 days the running average due to the storm event was 250 cfs but will drop to 200 cfs. This will translate into 250 cfs going into Folsom.
- Combined storage is high for this time of year at 185 TAF between French Meadows and Hell Hole.
- The plan is to run 30 TAF –15 TAF in November and 15 TAF in December

Central Valley Operations

Kevin Thielen, Reclamation CVO, provided operational updates for the CVP operations on the American River.

- American River releases at Nimbus Dam are at 1,068 cfs. This is below the 15 year median value of 1,401 cfs.
- Storage at Folsom Reservoir is slightly above average due to storm events
    - Accumulated inflows at Folsom have contributed to storage at 123% of the fifteen-year average
- American River at Blue Canyon gage is having an issue and reporting data; however, this is likely a malfunction or under roof as we know there has been precipitation and it is not reflected in the gage data record.
- 2026 Water Year
    - There was a precipitation event around the first of October
    - Inflow and outflow are reflective of precipitation and power generation

    - There is a decline in storage at Folsom Reservoir throughout October due to releases for power generation.
    - From 9/29 – 10/1 line maintenance occurred at Nimbus and was off grid. It was still providing power to itself and the Sacramento Aquatic Center. Spill was through radial gates 1 and 18.
- Temperature
    - End of September was below the 68 F target.
    - The storms mixed with release blending put the operations behind on meeting the 65 F target but are now back into compliance.
    - On 10/14/25 a full blend occurred on Unit 1 and all shutters have been pulled.
    - Air temperatures have been cooler and that has helped the water temperatures.
- 50% Seasonal Outlook
    - The minimum storage 437 TAF as of 10/16/25 and will likely be slightly lower by the end of the month. It is possible there are additional inflows if any further precipitation events occur.
- 90% Seasonal Outlook
    - The minimum storage would be 411 TAF with less inflow.
    - Includes a March pulse.

Structured Decision Making (SDM) Updates

Brian Mahardja, Reclamation, provided an update on the outcomes of the structured decision making process for the American River power bypass. He provided a reminder of the SDM process that has occurred including defining the problem statement, defining objectives and alternatives, swing weighting, and final decision.

- The focus of the objectives were impacts to fall-run Chinook salmon, steelhead, and hydropower generation. There was an adult population index based on a recently built life cycle model to estimate impact for fall-run Chinook salmon. Steelhead effects were calculated using the Proposed Action temperature target of 65 F. Hydropower looked at the foregone hydropower generation in terms of dollars.
- There were six initial alternatives, that were developed in the last SDM meeting. Two additional alternatives (2b and 2c) were added and included in the SDM evaluation.

- Models used:
    - The model Reclamation created for this SDM included focused on fall-run Chinook salmon in-river effects such as temperature, pre-spawn mortality, spawn timing, and egg-to-fry survival.
    - Egg-to-fry Temperature Dependent Models (TDM)
        - Water Forum
        - SALMOD models
        - NMFS Model (referred to as the Martin Model in the meeting
- Model Results
    - Key takeaway – if it is cooler there will be less temperature dependent mortality and therefore a higher number of adults returning from this cohort in the future. The magnitude of temperature dependent mortality is dependent on which TDM that is used.
    - Four meteorological years were used – two cooler and two warmer
    - Water Forum model
        - Assumes least sensitivity towards higher temperature.
        - Would expect higher survival in the river and then higher returns
        - All power bypass alternatives perform better than the no bypass alternative. Specifically PB2C performs the best.
    - SALMOD
        - Assumes that fall-run Chinook salmon act similarly to winter-run Chinook salmon and are sensitive to any change in temperature.
        - Returns would be very low.
        - All power bypass alternatives perform better than the no bypass alternative. Specifically PB2C performs the best.
    - Martin Model
        - There are instances where no bypass performed better than some of the power bypass alternative (2017 meteorological conditions – PB 3 – 6)
- Swing Weighting

- Looked at options where either hydropower revenue, fall-run survival, and steelhead conditions were either maximized or minimized at the detriment to the others.
- Reclamation management chose Alternative PB 4. It ranked relatively high in utility score. The hydropower benefit and fish benefit contribution toward the utility score are roughly equal.
- Alternative PB 4 provides ~20 TAF of power bypass, ~51 days of optimum rearing conditions for steelhead in October and November and will cost ~$240,000 of hydropower generation.
- The schedule will provide 250 cfs of power bypass on Oct 21, 500 cfs on Nov. 28, 250 cfs on Nov. 7, with an end date of Nov 21.

Questions and Comments

- Water Forum asked why the best performance for hydropower generation was rated the highest.
    - Reclamation responded that this is the subjective portion of the process, and the decision makers have to decide where their priorities lie.
- Reclamation commented that their management team picked the alternative to provide equal consideration for fish and power.
- CDFW commented that because October has been relatively cool so far, if it is possible to get a higher bypass as hydropower may not be necessary.
    - Reclamation commented that this is a draft implementation. There is some leniency. An example would be that if Folsom Lake was completely de-stratified by November 1 and no additional temperature benefit was available; they may end the bypass early. Similarly, if river water temperatures were very high, they would do what they could to change courses for a better outcome.
- Reclamation also shared that there is a thermal shock risk if the power bypass begins too quickly. The rule of thumb is 100 – 150 cfs per day at the beginning of the bypass. If the water temperatures do tend to be cooler naturally, they will try to balance the need for bypass volume with insuring there is adequate bypass water for November. The goal is to be volume neutral with regards to the volume of water that bypasses the Folsom powerplant.
- CDFW asked if the power cost estimate they are trying to stay under is based on this year's estimates or past estimates?
    - Reclamation shared that they used last year's market pricing, however, pricing could look different this year. They explained that the choice was

based on impact as well—if there was minimal additional benefit to the fish compared to significant impact on hydropower generation.

CVP Water Temperature Modeling Platform (WTMP) Update

- The CVP WTMP Team presented an update on the rollout of the WTMP. The tool will be adopted according to the rollout process. Details can be found in the presentation slides shared with the ARG.
- Model Parameter:
    - Initial profile date: October 1, 2025
    - 90% exceedance forecast
    - Temperature target: ATSP 36
    - WTMP Models - 2011, 2014, 2017, 2020 meteorological data
    - ICPMM – 2014, 2020, and historical average
- Temperature results:
    - WTMP models ran slightly warmer than ICPMM
    - ICPMM applies a 1-degree buffer below temperature targets
    - WTMP targets the actual temperate schedule
    - Results are compared on weekly time steps, however there are limitations from ICPMM.
    - WTMP provides hourly and daily resolution for finer analysis
- Temperature observations by location:
    - Nimbus/Hazel Avenue – Models showed similar patterns with slight variations
        - Some exceedances above target during transition period in October and November
        - In November, all meteorological scenarios achieved temperatures below target by late November.
    - 2014 MET is consistently warmer in November
- Shutter Operations
    - ICPMM - Moved to all units/all shutters out on November 4th

        - ResSim - Moved to all units/all shutters out November 1st
        - WTMP - Moved to all units/all shutters out October 7th
- Variation by Meteorological Year (W2 model):
    - 2011: Moved to all units/all shutters out October 9th
    - 2014: Moved to all units/all shutters out October 7th
    - 2017: Moved to all units/all shutters out October 28th
    - 2020: Moved to all units/all shutters out October 8th
- Cold Water Pool
    - Isopleth plots show continued decrease in cold water pool
    - Top of reservoir cooling off as expected seasonally

Fish Hatchery Production

A participant asked the group if there were any statements to be made regarding the change in production at the Nimbus fish hatchery for 2026.

- Reclamation shared that their current funding to hatchery is $2.5 million but due to inflation and increased costs of operation, CDFW will only be producing approximately half of the fish traditionally produced.
    - There is no current opportunity for additional funding this year.
    - Reclamation has a different interpretation of mitigation obligations.
- CDFW shared that fish food costs had increased by 100% since 2020. Additionally, labor and contract services have increased significantly.
    - Historically 4 million fall-run Chinook and 450,000 steelhead were produced at the Nimbus Hatchery

Next Meetings

- Regular Monthly ARG Meeting - Thursday, November 20, 1:30-3:30