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# American River Group

## Monthly Meeting Notes 6/18/20

### 1) Action Items

- Peggy Manza will inquire why releases from Nimbus dipped to 2491 cfs on 6/16 in the absence of a change order; will share response with CDFW and other interested ARG members.
- Chris Hammersmark will review the forecast and associated temperature schedules; until he weighs in, CVO will consider the June forecast and schedules “draft.”
- Peggy Manza will confer with USBR management on how to ensure the fisheries agencies understand the kind of information USBR will need to consider for implementing a power bypass and circle back with the fisheries agencies.

### 2) Introductions

- **USBR:** Carolyn Bragg, Mark Curney, Matt Di Loreto, John Hannon, Levi Johnson, Liz Kiteck, Peggy Manza, Spencer Marshall, Sarah Perrin, Ian Smith, Justin Thompson, Mike Wright
- **Water Forum:** Lilly Allen, Rod Hall, Chris Hammersmark
- **SMUD:** Ansel Lundberg
- **PCWA:** Ben Barker
- **PSMFC:** Cory Starr
- **WAPA:** Mike Prowatzke
- **SJWD:** Paul Heillker
- **CDFW:** Morgan Kilgour, Mike Healey, Duane Linander, Jeanine Phillips
- **NMFS:** Barb Byrne
- **USFWS:** Paul Cadrett
- **SWRCB:** Michael Macon, Reza Ghasemizade
- **EBMUD:** I-Pei Hsiu
- **Westlands:** Tom Boardman
- **City of Sacramento:** Brett Ewart, Brian Sanders, Anne Sanger
- **Sac State Aquatic Center:** Dede Birch
- **Kearns & West:** Terra Alpaugh

### 3) Presentation: Nimbus Fish Passage Project

Mark Curney, Project Manager of the Nimbus Fish Hatchery Fishway, presented on the project to improve fish passage. Refer to his slides for more detail on the two-part project, which includes construction of a new flume fishway and removal of the existing barrier weir.

In response to questions from ARG representatives, Mark provided additional information, including:



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- This year's construction schedule depends on how long the concrete pours take, but the contractor has the option of continuing work up until flood season officially starts. At that point, he will have to immediately demobilize the work in the shoal area. However, there are other aspects of the project he can continue to work on year-round.
- The Nimbus Fish Passage Project (Project) will be constructed in 2 to 3 phases of work, the Project's first two phases should be completed in late FY 2021 or early FY 2022. Mark expects completion in the 2021 calendar year, but that will depend on funding and weather conditions (flood season). Phase 3, the removal of the weir, is still several years out; the fish flume first must prove successful before the weir removal can be executed.
- In the new ladder, the water will flow from the hatchery down the flume at about 24 to 40 cfs and as deep as 4 to 6 feet.
- If the new flume does not attract fish, hatchery staff will test other approaches, potentially cracking a gate on Nimbus Dam to attract fish. The existing system will remain in place until the new one is confirmed to work.
- The hydraulic analysis tested the integrity of the fishway under a variety of flood releases, up to 160 thousand cubic feet per second (cfs). The new fishway will maintain its integrity under high velocities across that range of releases.

#### **4) Fisheries Update**

##### **a. CDFW**

CDFW did not provide an update at the June ARG meeting.

##### **b. CFS**

With Steelhead spawning season over, Cramer Fish Sciences did not provide an update at the June ARG meeting.

##### **c. PSMFC**

For details on the 2020 American River rotary screw trap catch, see pages two to three of the handout packet. Key insights included:

- Traps this year captured a total of 151,405 length-at-date (LAD) fall-run Chinook, 58 LAD late fall-run Chinook, 829 LAD spring-run Chinook, 203 LAD winter-run Chinook Salmon as well as 97 natural origin Steelhead button-up fry and 3 smolts.
- With the low daily catch of salmon, increasing temperatures, and large volumes of aquatic debris attributing to increased mortality, PSMFC decided to conclude their 2020 season as of 6/12/20. In the off-season, staff plan to address the debris overloading issue by improving barriers and asked the ARG to share any other suggestions to mitigate aquatic weeds. They will also improve signage around the traps for boaters and extend the trap anchor lines.
- PSMFC is sending its samples to the lab as the first step in developing its population estimates for the year; PSMFC is sending samples to both state and federal genetic



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labs for analysis. PSMFC observed that this appears to be an abnormal year, in which they saw more large LAD winter-run Chinook in February; PSMFC assumed that fish spawned outside the American were using the area.

## **5) Operations Forecast**

### **a. SMUD**

For details on the SMUD Operations on the upper American River, including precipitation, reservoir storage, releases, and runoff forecast, see page four of the handout packet.

SMUD, PCWA, and WAPA will be doing an extended presentation on operations at the August or September ARG meeting.

### **b. PCWA**

For details on PCWA operations, including precipitation, reservoir storage, and snow survey information, see pages five and six of the handout packet.

PCWA highlighted that it was issued its new 40-year FERC license on June 8, 2020 and will start implementing the new minimum instream flows required under the license on July 8, 2020.

PCWA also has a petition in to the SWRCB to release 20 TAF of water in July, August, and September as part of a thru-Delta transfer to Westlands. Water would flow July 15 to September 30. The transfer would be an increase in baseline deliveries, so while the increment of transfer water would average 100 to 200 cfs daily, the total on a given day would be driven by PCWA operational needs. The timing of the export of the transfer water in the Delta would remain out of PCWA's control.

### **c. City of Sacramento**

The City of Sacramento provided an update on the groundwater substitution transfer petition currently before the SWRCB on behalf of the City and several smaller parties. The comment period closed several days ago, and one of the comment letters was from USBR requesting that the City coordinate with other American River parties, which motivated this update. The transfer totals 18 TAF, 14 of which belong to the City, and would be available July thru November. The parties are working on an agreement with DWR to convey water to the State Water Contractors via the Harvey Banks pumping plant.

USBR cautioned that use of the Harvey Banks plant is unreliable after September and the City should not rely on the ability to make late season transfers, even though the BiOp says they are technically “allowed.”



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The City thanked USBR for its advice. It clarified that while the petition to the Board is to allow the transfer for the full five months, the City is negotiating two contracts – the first will be July to September, and the second will cover the late fall; the details of the second contract are still being negotiated.

**d. Central Valley Operations**

For details on June CVO operations, including precipitation, releases, and temperature management measures, see pages seven to eight of the handout packet.

CVO staff noted that, contrary to expectations, they have not this year had a shutter pull at Folsom to cool instream temperatures. Fluctuating air temperatures have kept the surface of the reservoir at acceptable temperatures thus far, but they do expect to have a shutter pull before the end of June.

The daily report shows quickly dropping inflows and storage paired with significantly less precipitation than last year.

**6) Central Valley Operations**

**a. Temperature Management**

CVO staff referred to pages nine through thirteen in the handouts in discussing temperature management. The Lower American River temperatures were cooled in mid-May by a colder precipitation event, then rose significantly at the end of the month to a one-day excursion above 67 degrees F (to 67.1 degrees F) at Watt Avenue on 5/27, before cooling again through the end of May and early June. USBR did not take any action on 5/27 because of the cooler air temperatures forecasted immediate thereafter. Currently, water is leaving Folsom around 59 degrees F, leaving Nimbus around 62 degrees F, and warming only slightly further as it moves downstream to Watt. Due to the recent higher flows, there has not been as much warming; the slower the flows, the more instream warming is anticipated.

CVO staff provided two explanatory notes on the information provided in the handout packet:

- The Isobath plot on the right side of the daily temperature data (pages 9 and 10 of the packet) is not a reliable source of information on the temperature profile in Folsom Reservoir. It is a crude depiction and put there as a general reference for operators. For reliable temperature data for water being released out of Folsom, look at the AFD column in the table.
- AHZ was previously the temperature station for water leaving Nimbus. As of 6/3/20, USGS moved that temperature sensor to the AFO station, which is slightly downstream and on the other side of the river. Historical data for water temperature leaving Nimbus on CDEC will still be found under AHZ, but going forward, the measurements will be found under AFO.



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CDFW asked for clarification on the latest release numbers for Nimbus, which were recorded at 2,491 cfs on 5/16. CVO staff confirmed that current releases are at 2,750 cfs and in the absence of a change order, should have been that high since 6/13; it appears the releases did reduce on 5/16, and operators released more in the following days to try to make up the lost flow. CVO staff agreed to inquire about the reason for the dip.

Like last month, the reservoir is fully stratified, and the six profile locations have very similar temperatures at all but two elevations: at 370 ft, there is a small difference between sites, and in the top twenty feet of the lake, the sites show temperature differences up to four degrees F, likely due to variation in shading or overall depth at each location.

The isothermobath diagram on page 12 reveals that the top of the lake is warming considerably, but the bottom of the lake remains cold at 49 degrees F. 293.54 TAF of the reservoir is still less than 58 degrees F.

**b. Exceedance Forecasts**

For the 90 and 50 percent exceedance forecasts and associated temperature schedules, refer to pages 14 through 16 of the handouts.

This forecast does not include potential transfers. The transfer water will all enter and be released from the reservoir, so it will impact releases but not storage. USBR is in on-going conversations with the transfer agencies about the potential temperature impacts of the transfer water, which could arrive as warmer water than that already in the reservoir.

90 percent runoff exceedance outlook: June started with storage of 790 TAF and is forecasted to end the month at 724 TAF; CVO staff reported that storage could actually be slightly higher than that. End-of-year storage in the 90 percent outlook is 300 TAF. Boat slips have to be pulled from the water at lake elevations of 312 ft; that elevation is now forecasted to occur the last week of August.

The 90 percent outlook results in the use of Temperature Schedule 36 (see page 15 of the handouts), one schedule worse than forecasted in May. CVO staff found this surprising so they are having Chris Hammersmark review the forecast; until he weighs in, CVO will consider it draft. The new schedule targets temperatures 1 degree higher in September (68 degrees F rather than 67). A one degree temperature for a key fall month could have significant impacts from a fisheries perspective.

50 percent runoff exceedance outlook: The 50 percent outlook also results in the use of a less desirable temperature schedule, Temperature Schedule 30. Schedule 30 differs from last month's Schedule 29 by targeting higher temperatures in August, 67 degrees F rather than 66 degrees. October and November remain the same since there is the same amount of cold water left at that time.



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## 7) Discussion

CVO staff acknowledged that the temperature forecasts reflect temperatures that can be achieved without a power bypass. A power bypass is an option but will need supporting justification more robust than a blanket assumption that colder temperatures are better for fish. For instance, USBR will want to know how much temperature change can be anticipated with the proposed bypass and what the result in increased survival would be. CVO suggested that the ARG discuss what analysis will be needed for a power bypass starting in July.

CDFW staff shared that they are already doing related analysis internally and have peer-reviewed documentation showing percentage differences in fish survival with one degree of temperature difference. They asked when they could anticipate the release of a USBR white paper on the criteria USBR uses to evaluate power bypasses (referenced last year as being in development); the white paper would assist the fisheries agencies in preparing all the relevant information come fall.

USBR stated that they are working to finalize the paper and hope to have it ready by August, but they cannot commit to that timeline. CDFW and NMFS asked that USBR provide a presentation on their thinking about criteria for a power bypass even if the formal paper is not ready by late summer. The Fisheries agencies want to understand what constitutes a substantiated request, rather than see their request fail on a technicality. CVO staff committed to discussing with USBR management how to ensure the fisheries agencies understand the kind of justification USBR will want, and to continuing the power bypass conversation at next month's meeting. USBR suggested that they and the fisheries representatives consider scheduling a more detailed meeting this summer to share the biological justifications for a power bypass, the takeaways from which could be shared at the next full ARG meeting. CDFW was open to a more focused meeting and also reiterated that it would be useful to have an anticipated date of delivery for the white paper.

EBMUD staff asked for clarification on the difference between the Nimbus bypass done last year and a Folsom power bypass. CVO explained that the Nimbus bypass executed last year was also a power bypass, but it was smaller and less impactful on operations. To do a bypass at Folsom, USBR forgoes power generation in order to release colder water from a lower elevation. At Nimbus, they also forgo power by shifting water through a different gate but the water is not any colder; instead, the release is made immediately next to the hatchery to stimulate movement in the stagnant and warming water at that location. While the water was not colder, the release and associated movement resulted in a degree temperature difference at the intake to the hatchery. USBR now understands more about the hydrodynamics of the river at that location, and the ARG could consider replicating that Nimbus bypass this year, either alone or in combination with a Folsom bypass.

NMFS asked whether there would be any way to leverage the water transfers as a tool for temperature management in the fall. USBR reiterated that just because water transfers are allowed in the fall does not mean they will actually be feasible in that season.



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Current CVO operator at Folsom, Peggy Manza, stated that the operators will begin to transition positions in October and then overlap for several months. She will be taking over New Melones operations and Thuy Washburn will be taking on Folsom. Peggy is currently on a detail but will still be covering Folsom operations through the transition period.

8) **Next Meeting:** Thursday, July 16, 2020 from 1:30 PM – 3:30 PM