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American River Group

Monthly Meeting Notes 5/21/20

1) **Action Items**
   - Peggy Manza will send out the 90 percent exceedance outlook temperature model results to the ARG for review and comment.
   - Spencer Marshall will coordinate with Ben Barker and Ansel Lundberg on scheduling a "Power Ops 101" Presentation for an upcoming ARG meeting.
   - Levi Johnson will distribute the American River guidance documents soon.

2) **Introductions**
   - **USBR**: Carolyn Bragg, Matt Di Loreto, Zarela Guerrero, 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, Greg Zlotnick
   - **CDFW**: Morgan Kilgour, Jeanine Phillips, Tanya Sheya, Paige Uttley. Jonathan Williams
   - **NMFS**: Barb Byrne
   - **USFWS**: Craig Anderson, Paul Cadrett
   - **SWRCB**: Michael Macon
   - **EBMUD**: I-Pei Hsiu
   - **Cramer Fish Sciences (CFS)**: Avery Scherer
   - **City of Folsom:** Marcus Yasutake
   - **City of Sacramento:** Brian Sanders
   - **Kearns & West**: Terra Alpaugh

3) **Fisheries Update**

   a. **CDFW**

   For details on the five releases that have occurred since the April ARG meeting, see page two of the handout packet. The last two releases (May 20 and 21) were in San Pablo Bay.

   This year's plant of fish in the Bay was large; usually more fish are released in-river. There was also an early release of 200,000 in-river, which was intended to test fish survival when released at a smaller size.

b. CFS

For details on the 2020 Spawning and Stranding surveys, see pages three to seven of the handout packet. Key insights included:

- No steelhead (SH) redds have been seen since early March. Lamprey redds, which were seen later, have also tapered off; only one was identified in the last survey, April 14-16 (Table 1).
- This year's SH redds were concentrated in the higher reaches on the river; this is not as high as SH would have migrated historically, but they tend to get as high as possible given existing barriers (Figure 2).
- SH redd counts in 2020 were low, another in a series of low counts since 2014. There could be a small downward trend among the already low counts of the past three years, but it is too early to tell. Because of this year's low turbidity, CFS is confident that this year's counts are an accurate reflection of actual conditions (Figure 3).
    - NOTE: Redd surveys were not conducted in 2006 or 2008 because of poor visibility. There were redds observed in 2009 and 2010, but they were not listed in the table used as a source for the bar graph in Figure 3.
- CFS uses a discriminant function analysis (DFA) to differentiate between Chinook (CH) and SH; the function is updated with additional data every year, so it does have the potential to influence what fish end up labeled as a SH year-to-year, but given that there were so few redds in general this year, CFS staff believe the low number of redds is a real trend, not an artifact of the DFA.
- Fish were stranded in several larger pools in March, but conditions in the pools were not threatening; fish stranded in smaller pools in April experienced stressful or lethal temperatures, prompting fish rescues (Tables 2 & 3).[1]

c. **PSMFC**

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

- Traps this year have caught a total of 152,000 CH, 96 SH, and 1,100 pacific lamprey macrophtalmia.
- The efficiency of the mark-recapture trials dropped throughout the year, likely due to changes PSMFC staff made to the location of the traps.
    - One reason for the change in location was to allow for boater and floater passage. With the traps closer to the shore, they capture more debris, which can increase mortality.
    - In addition, when the anchor lines broke last year, the traps were unintentionally moved 10 to 15 feet closer to the Watt Bridge at the base of a ripple, resulting in the capture of more aquatic weeds. The trap closest to the bank was raised today because it was capturing too much aquatic duckweed;

[1] The timing and number of fish rescues this year should also be understood in the context of COVID-19 shelter-in-place orders and social distancing recommendations, which reduced the number of staff in the field.

PSMFC staff will try to erect a barrier to prevent the weeds from hitting the trap, but similar preventive measures have not been very effective in the past. PSMFC staff plan to move the traps downstream about 20 feet where the river is wider.

- The daily variability in observed Chinook lengths has decreased over the course of the year, with most lengths now between 60 and 80 mm.

4) Operations Forecast

a. SMUD

For details on the SMUD Operations on the upper American River, including May precipitation, reservoir storage, releases, and runoff forecast, see pages 11 and 12 of the handout packet.

b. PCWA

For details on PCWA operations, including precipitation, reservoir storage, and snow survey information, see pages 13 and 14 of the handout packet.

c. Central Valley Operations

For details on May CVO operations, including precipitation, releases, and temperature management measures, see pages 16 and 17 of the handout packet.

CVO staff clarified that the numbers in the daily report provided in the handouts were from Monday, May 18. As of May 25, releases are 1,250 cfs, storage is 765.9 thousand acre feet (TAF), and inflows are just slightly above 50 percent of average.

CVO staff noted that given high air temperatures in the next week, they anticipate making the first shutter pull in the first half of June. Staff prefer several days to a week notice prior to making a pull in order to arrange logistics, though the shutters can be pulled faster in event of an emergency. In addition, CVO staff try to time shutter pulls to minimize using the cold water until necessary.

5) Central Valley Operations

a. Temperature Management

CVO staff referred to pages 18 through 22 in the handouts in discussing temperature management. The LAR temperatures are rising after a colder precipitation event cooled them at the beginning of the month.

The reservoir is now fully stratified and a similar profile is consistent throughout the lake: the surface of the reservoir (currently around 450 feet elevation) is 69 to 70 degrees F; 415 to 420 foot elevations around the reservoir are around 67 degrees F; temperatures then

decrease gradually to about 50 degrees F at the 380 feet elevation below which temperatures plummet.

372.8 TAF of the reservoir is still less than 58 degrees F, and most of the remaining volume is below 65 degrees F. That water between 58 and 65 degrees F is what will be used for temperature management in early summer; the coldest water will be saved for later in the season. Temperature of the water being released from Folsom at the penstock is approximately 50.5 degrees F.

b. **Exceedance Forecasts**

For the 90 and 50 percent exceedance forecasts and associated temperature schedules, refer to pages 23 through 25 of the handouts. One caveat in comparing the two forecasts is that the 90 percent draft outlook was updated with the May 19th Bulletin 120 hydrology, whereas the 50 percent did not have a corresponding update; as a result, the 90 percent has a slightly higher peak storage. The group focused on the 90% forecast for discussion.

90 percent runoff exceedance outlook: May started with storage of 697 TAF and is forecasted to peak at 767 TAF. The reservoir will likely peak higher than that, possibly close to 780 TAF when additional data are incorporated. End-of-year storage in the 90 percent outlook is 305 TAF.

Forecasted monthly releases for May are as follows: 1,500 cfs and 2,100 cfs for June, driven by Delta needs; 3,353 cfs for July and 3,243 cfs for August, intended to meet both Delta and export demands; and 1,742 cfs for September and 1,276 cfs for October, again higher than the MRR to meet Delta needs. The forecast anticipates November and December flows being closer to the MRR at 725 cfs.

The 90 percent outlook results in the use of Temperature Schedule 35 (see page 24 of the handouts) , which targets[2] 67 degrees F at Watt before July, 68 in July and August, 67 in September, 65 in October, and 59 for November. Compared to the Schedule 41 anticipated last month, this temperature schedule targets cooler temperatures on the shoulders rather than 68 degrees F throughout the season.

USBR staff recognized that these are less than desirable early fall temperatures for Chinook and observed that there is no power bypass built into this projection. A power bypass may be an option to discuss later in the summer when there is better information on late summer reservoir conditions.

50 percent runoff exceedance outlook[2]: The 50 and 90 percent outlooks are relatively similar this month. The 50 percent outlook peaks lower at 749 TAF. The 50 percent outlook reflects a wetter hydrology; in those conditions, more local runoff is anticipated in the system as a whole, which means slightly less demand. As a result, fall storage is slightly

[2] While the 90 percent draft outlook was updated with the May 19th Bulletin 120 hydrology, the 50 percent did not have a corresponding update; as a result, the 50 percent has slightly more water.

higher with an end-of-the-year storage at 389 TAF.

The forecasted river releases are relatively similar to the 90 percent except that they maintain 1,500 cfs throughout the fall to December, which is significantly above MRR.

The 50 percent outlook results in the use of Temperature Schedule 29, which targets 66 degrees F in May and June, 67 in July, 66 in August and September, 65 in October, and then down to 59 for November. For May through September, this schedule targets temperatures one degree less than Schedule 35 in the 90 percent outlook and limits the highest temperature (67 degrees F) to a single month, because the 50 percent hydrology provides modest cooling opportunities throughout the summer. However, the fall temperatures are the same in both temperature schedules because the same amount of cold water pool (measured as the volume of water below 58 degrees F) is left in the fall to address the temperature.

For now, CVO will operate to temperature Schedule 35, based on the 90 percent outlook. In the meantime, CVO staff will send out the 90 percent exceedance outlook temperature model results to the ARG for review and comment. CVO staff will take ARG comments into consideration , when considering potential adjustments. CVO staff will also produce a statement identifying the temperature schedule they plan to operate to; this will undergo regular updates through the summer if conditions change (e.g. reservoir conditions, air temperature, cloud cover, fires). Temperature profiles are taken twice a month (usually the first and third Monday or Tuesday of the month), and the temperature model is rerun a day after that. If an updated temperature model run results in a different temperature schedule, CVO will make adjustments to operate to the new schedule and notify the ARG.

NMFS noted that the BA's proposed action (page 4-52) states that USBR will target 65 degrees F at Watt (or other temperature as determined by the temperature modeling); if it cannot meet the defined temperature target, the target may be increased incrementally to as high as 68 degrees F. The BiOp (page 805, in the Incidental Take Statement) states that "the anticipated level of take will be exceeded if temperatures at Watt Avenue exceed 68°F from May 15 to October 31 for more than seven consecutive days unless it is a critical year based on the Sacramento Valley index or a year following one or more critical years." Therefore, while temperatures above 68 degrees are outside the proposed action, short-term higher temperatures do not exceed take, based on the "seven consecutive days" provision. If the hydrology trends toward the 90 percent forecast, they will have to watch temperatures carefully USBR reminded the ARG that the proposed action reflects the fact that it has not been able to stay below 68 degrees all the time in the past; if temperatures exceed 68, close coordination is needed with the fisheries agencies. NMFS also noted that exceedance levels are relaxed in critical water years or years after critical years – the temperature limit of 68 degrees F applies at Hazel rather than Watt.

6) Discussion

USBR staff identified two potential presentations for upcoming ARG meetings– one on the 2019 Salmon Season by Dana Lee and one by Mark Curney, the CCAO project manager of

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the Nimbus Fish Ladder Project. NMFS staff stated interest in understanding more about power dynamics (e.g. "Power Ops 101"). SMUD and PCWA staff indicated that they could put together a presentation identifying their operational considerations and constraints.

PCWA staff asked about a May 18th Press Release that indicated increased south-of-Delta allocations to agriculture and M&I were coming from Folsom and the American River Basin. USBR staff explained that there is more water in the system as a whole right now, so USBR was able to increase allocations by five percent.

Finalized summaries and materials are now available on the BDO ARG website at https://www.usbr.gov/mp/bdo/american-river-group.html. USBR will also be distributing the American River guidance document soon; it describes USBR's intent for how it will implement the proposed action, including temperature management and flow management.

7) **Next Meeting:** Thursday, June 18, 2020 from 1:30 PM – 3:30 PM