BUREAU OF RECLAMATION

American River Group Notes

Conference Line: +1 (321) 209-6143; Access Code: 985 598 947#
Webinar: Join Microsoft Teams Meeting
Thursday, June 20, 2024

Action Items

Cramer Fish Sciences

1. Provide year edit to materials.
2. Begin including dissolved oxygen (DO) data and status in their July update.

USBR

1. Update meeting handout materials.

Kleinschmidt Group

1. Run the model to target cooler temperatures in the second half of October and present that output at the July ARG meeting.

Introductions

1. USBR: Carolyn Bragg, Drew Loney, John Hannon, Karissa Bridges, Mechele Pacheco, Spencer Marshall, Thuy Washburn, Zarela Guerrero
2. NMFS: Sam Pyros
3. USFWS: Craig Anderson, Paul Cadrett
4. CDFW: Crystal Rigby, Duane Linander, Emily Fisher, Gary Novak, Jennifer O'Brien, Mike Healey, Nick Bauer
5. DWR: John Ford, Kevin Reece
6. SWRCB: Claudia Bucheli
7. EBMUD: I-Pei Hsiu, Max Fefer
8. City of Sacramento: Anne Sanger, Ryan Palmer
9. Sacramento County: Gary Bardini
10. Environmental Council of Sacramento: N/A
11. City of Folsom: N/A

12. City of Roseville: N/A
13. Cramer Fish Sciences: Jamie Sweeney, Kirsten Sellheim
14. PCWA: Ben Barker
15. PSMFC: N/A
16. SMUD: Megan Peers
17. USACE: N/A
18. CBEC Engineering: Chris Hammersmark
19. Water Forum: Erica Bishop, Jessica Law
20. Water Districts: Deanna Sereno, Greg Zlotnick, Paul Helliker
21. Regional Water Authority (RWA): N/A
22. Shingle Springs Band of Miwok Indians: N/A
23. CSUS: N/A
24. BKS Law Firm: N/A
25. Kleinschmidt Group: Vanessa Martinez
26. WAPA: Jeff Trow

Announcements

- USBR shared that Amanda Snow, Melissa Vignau and Brad Hubbard have taken other positions and won't be participating in the ARG going forward.

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. N/A
5. Questions and Comments
    a. N/A

Cramer Fish Sciences Updates

1. Steelhead spawning surveys have been completed for Water Year (WY) 2024; the last survey occurred on 4/27/2024.
2. No steelhead redds have been observed after 4/2/2024.
3. The last stranding survey occurred on 5/28/2024.
4. A total of 62 steelhead redds were observed during WY 2024. The majority were observed during February, and the most common location for redd observation was the Nimbus Basin restoration site.
5. 15% of new redds were found at Upper Riverbend.
6. In comparing 2024 data to previous years, Cramer noted the following:
    a. Redd counts were not included for 2017 and 2023 due to high flows impeding accurate redd counts.
    b. Due to low visibility, redd surveys were not conducted in 2006 and 2008.
7. Stranding surveys were conducted after each flow reduction this year. They occurred on the following dates:
    a. 3/20 – 3/21/2024
    b. 3/25/2024
    c. 4/29 – 5/1/2024
    d. 5/28/2024
8. Approximately 7,306 Chinook salmon were observed as stranded in WY 2024, most of them at Paradise Beach. At the time, the Sacramento River was flowing very high and backed up the American River.
9. Very few steelhead were observed during the stranding surveys.
10. Unlike previous years, no stranding was observed in the Upper Sunrise side channel.

Questions and Comments

1. N/A

PSMFC Updates

1. PSMFC was tending to a debris issue at the Caswell trap site as of 6/20/2024. Any questions about this issue may be directed to Logan Day (lday@psmfc.org).
2. Sampling will conclude 6/26/2024.
3. As of 6/18/24, the following unmarked juvenile LAD Chinook salmon have been caught:
    a. 83,064 fall-run
    b. 84 late-fall-run
    c. 41 spring-run
    d. 12 winter-run
4. Please refer to the charts in the meeting handout for additional details.

Questions and Comments

1. N/A

Operations Forecast

SMUD

1. Precipitation totals are approximately 88% of average (49 inches) as of 6/17/2024.
2. Storage reservoir levels are expected to be full sometime in June. Total reservoir storage is 97% full at nearly 369 TAF.
3. SMUD is preparing to use hydro generation for high summer loads and FERC license summer requirements.
4. Chili Bar daily average releases are forecasted at the following flow rates:
    a. June: 2,112 cfs
    b. July: 770 cfs
    c. August: 916 cfs

Questions and Comments

1. N/A

PCWA

1. Inflows have tapered off and snow melt is complete.
2. Storage at French Meadows is currently 127 TAF, or 93% capacity. Approximately 100 cfs is still coming in daily at French Meadows.
3. Storage at Hell Hole is currently 184 TAF, or 88% capacity.

4. Combined storage totals 311 TAF, or 91% capacity. This represents 113% of the 15-year average.
5. Middle Fork American River (MFAR) daily average releases are approximately 700 cfs.
6. North Fork American River at the pump station below the confluence is releasing a daily average of 1,300 cfs.
7. Total precipitation for Lake Spaulding during WY 2024 is 58.37 inches, or 86% of average, as of 6/19/2024.
8. Mosquito Ridge Road is now fully open.
9. PCWA reminded the group that various Saturdays from June – September will be Class II Early Release Days. Also, 6/29/2024 (for the Western States Endurance Run) and 7/20/2024 will be Special Event Early Release Days. There will not be a Class IV release on 6/29/2024.

Questions and Comments

1. N/A

Central Valley Operations

USBR

1. As of 6/18/2024, Folsom storage levels are slowly decreasing.
2. Inflows into Folsom have been ranging from 1,400 cfs to 2,000 cfs.
3. Current releases from Folsom Dam are 3,500 cfs as of 6/20/2024 and are expected to increase to 4,000 cfs in late June or early July. Minimum Release Requirements (MRR) are set at 1,500 cfs for June.
4. The average water temperature at Watt Ave. was 57.6° F for the month of May. The average water temperature for June has been 61.4°F to date.
5. Air temperatures are forecasted to be 30-40% Above Normal.
6. Folsom Dam water temperatures have risen from 53.2°F on 5/14/2024 to 55°F on 6/5/2024.
7. All sets of TCD shutters at Folsom Dam remain lowered and will be raised on a TBD date in July.
8. Model results show that water in Folsom Reservoir is on track to not exceed the maximum target temperature of 66°F for the summer.
9. In the 90% exceedance operations forecast, the monthly release levels are anticipated to be 3,750 cfs for June; 5,200 cfs for July; and 4,400 cfs for August.

10. We are closer to the 50% exceedance than the 90%. At the 50% exceedance level, monthly release levels are anticipated to be 3,400 cfs for June; 4,154 cfs for July; and 4,226 cfs for August.
11. USBR expects that agricultural needs and water quality will be significant factors in determining release levels for July and August.
12. Higher July releases will assist with cooling the water temperatures at Watt Ave.
    a. NOTE: Higher releases may also require the shutters of the TCD to be pulled because of the lowering of the lake levels, as opposed to a need to access the colder water. Such a shutter pull would cause river temperatures to be lower than the targeted 66 deg and would risk depleting the coldwater pool ahead of the fall spawning season.

Questions and Comments

1. N/A

Discussion

The ARG received a presentation from Vanessa Martinez (Kleinschmidt Group) titled: "Water Temperature Modeling – Folsom Reservoir and the Lower American River (LAR)".

1. Modeling Scenario Summary – various scenarios were run, using the 50% exceedance forecasts for June for Folsom inflow and releases, using meteorological data from a previous warm year (2020) and a previous cool year (2017) with a starting profile of June 5.
2. Current average water temperatures at Watt Ave. are 60°F.
3. It appears that a 66°F target will be the best fit for 2024. The warmer ambient air temperatures that have been occurring are more similar to the meteorological conditions in 2020, the "Warm Met" runs presented. The 66°F targe model run shows that this target will allow for 66°F through September, get slightly cooler (65°F) in October, and that a bypass will be required in November. Even with the power bypass water temperatures are not expected to reach 58°F until the second half of November.
4. An initial shutter pull will likely not happen until mid-July depending on weather conditions.

Questions and Discussion

1. CDFW asked for clarification that operating to 67°F doesn't create any significant benefit when compared with operating to a target of 66°F.
    a. The Kleinschmidt Group confirmed that this is correct. By November, the alternate temperature target makes very little difference.

2. CDFW asked if setting a target for Hazel Ave. would save any cold-water pool rather than setting the target for Watt Ave.
    a. The Kleinschmidt Group replied that it depends on the target that is set for Watt Ave. and Hazel Ave. but confirmed that it can get slightly cooler due to the slightly different dynamics of the downstream releases.
        i. NOTE: Water Forum does not advocate for a change to using the Hazel Avenue compliance point (rather than Watt Avenue) since it is not consistent with the 2019 BiOp and it may risk temperature conditions in the habitat locations downstream of Hazel.
3. CDFW asked about modeling results without the bypass action.
    a. That scenario was run in May but is not included in the current presentation. In the 2020 modeled year, the data showed that it would require a significant bypass to get below 60°F at both Watt Ave. and Hazel Ave. by November.
4. CDFW asked about the possibility of modeling a lowered temperature by mid-October to allow maturation of fish and laying of eggs.
    a. The Kleinschmidt Group responded that yes, they can put together those scenarios to share at a future meeting.
        i. USBR proposed holding off until September to review these additional scenarios so that more data is available. CDFW noted that they would prefer to start earlier in case adjustments need to be made.
        ii. The Water Forum added that operations would be affected because the releases would have to decrease for June, July, and August in order to maintain enough cold-water pool for October.
    b. The Water Forum asked for clarification from CDFW about the magnitude of the power bypass. Typically, this amount is 500 cfs in order to preserve cool water as long as possible.
        i. CDFW clarified that the comment about a larger bypass does exceed the 500 cfs.
        ii. CBEC added that there's a limited amount of cold water that can be used, but less limit on the magnitude of the release. If a higher rate is released, the cold water pool will be depleted more quickly. Also, these are *not* proposed bypass scenarios, it's merely the automated output of the model to achieve desired temperatures.
        iii. The Kleinschmidt Group added that little-to-no temperature management will likely be taking place until late July. They are willing to run the model to target cooler temperatures in the second half of October and present that output at the July ARG meeting, with the caveat that air temperatures and weather can only be predicted for the next few months.

iv. USBR added that normally they do not support a power bypass when storage is full and the water year is not categorized as Dry. It was only approved last year because there was an issue with the temperature shutters early in the water year.

1. CDFW reiterated that this is why they would like to see modeling outputs in which the bypass is not factored.

2. CDFW and Water Forum noted that it appears a power bypass may be needed every year to achieve target water temperatures.

v. The Water Forum shared that seeing results next month will better inform the group as to what is possible in the system with operations as proposed, what a power bypass could achieve, and how those potential outcomes relate to the BiOp requirements.

c. WAPA asked if operational factors are included in the temperature modeling - i.e., are the hydrology models based on what would actually happen, or are they simply based on temperature and releases?

i. The Kleinschmidt Group clarified that the outputs shared today were all based on a single set of hydrology and meteorology, meaning they all assume the same inflows and outflows based on the most recent 50% exceedance forecast. A historically warm year, 2020, was used since the exact future conditions are not yet known for 2024.

ii. USBR added that these are merely estimates because future temperatures and downstream needs are still unknown, and therefore releases may be adjusted from what is being forecasted.

iii. CBEC summarized the modeling and inputs:

1. Inputs are inflow into the Folsom Reservoir and the temperature of the inflow; anticipated meteorology (e.g., warm conditions versus cooler conditions); the starting temperature profile in the reservoir; and a projected release pattern.

2. The temperature results seen in the modeling indicate operation guidelines for pulling the temperature control shutters if you're managing to different thermal regimes.

3. The output also includes the estimated resulting water temperatures later in the season as the cold-water pool has been depleted over time.

4. In order to potentially make temperatures colder over the whole temperature management season, the release pattern would have to be changed. This has been experimented with in the past – a redistribution of flows cold lead to a cooler thermal regime in the American River. However, due to the other demands on the system, this is likely not a possible option. Therefore, USBR's feasible release pattern is what is used in the modeling.
5. To summarize, the primary decision is whether to manage the release of cold water to provide warmer summer conditions while trying to save some cold water in the reservoir to for the fall, or to manage to a cooler summer that could potentially impact later-season water temperatures because the cold water pool has been used up. Subsequently, what temperatures are anticipated in late October and November, and are those temperatures warm enough to justify a power bypass.

5. CDFW asked if USBR has monitoring activities planned for this year. In October 2021 and 2023, there were problems with the decrease in dissolved oxygen (DO) levels due to vegetation overgrowth.
    a. The Water Forum responded that they are continuing to conduct continuous DO monitoring via data loggers in the river at Nimbus Dam and at Watt Ave.
    b. Cramer Fish Sciences said that the below-Folsom logger will be installed in early August. Usually at this time, DO levels are still good but starting to vary slightly.
    c. USBR shared that DO levels are now incorporated into every profile. This will help identify future DO issues in Lake Folsom.

Next Meeting

The next regularly scheduled ARG meeting is on Thursday, July 18. The meeting will be virtual.