BUREAU OF RECLAMATION

Sacramento River Temperature Task Group Summary

October 24, 2024

Members Attending

- Bureau of Reclamation (Reclamation): Derek Rupert, Elissa Buttermore, Jo Anna Beck, John Hannon, Liz Kiteck, Emelia Barnum, Emily Van Seeters, Mechele Pacheco, Peggy Manza, Tom Patton
- California Department of Fish and Wildlife (CDFW): Colby Hause, Crystal Rigby, Gang (Gary) Zhao, Mallory Boro, Marelle Arndt, Tracy Grimes, Travis Apgar
- California Department of Water Resources (DWR): Claudia Bucheli, Ryon Kurth, Mike Ford
- California State Water Resources Control Board (SWRCB): Craig Williams, Jeff Laird, Matt Holland
- National Marine Fisheries Service (NOAA, NMFS): Sam Pyros
- Sacramento River Settlement Contractors (SRSC): Lee Bergfeld, Lewis Bair, Mike Deas
- Southwest Fisheries Science Center (SWFSC, NMFS): Miles Daniels
- U.S. Fish and Wildlife Service (USFWS): Brett Galyean, Craig Fleming, Kaitlin Dunham, Matt Brown
- Yurok Tribe: Chris Laskodi
- The following SRTTG members did not have a representative present: Hoopa Tribe and Western Area Power Administration.
- Facilitation Team: Victoria Pebbles, Trisha Madayag, and Jack Hughes, Kearns & West

Summary of Actions

- Reclamation will correct the storage capacity of Oroville Reservoir to 3.4 MAF in the Daily CVP Water Supply table in the meeting packet.
- The team decided that a November 2024 meeting was not necessary and that materials with relevant updates could be shared instead.

- The Kearns & West facilitation team will coordinate compiling update materials to send to the SRTTG around November 21 in lieu of a meeting.
- The Kearns & West facilitation team will continue planning a 2025 hybrid meeting and optional field trip with the group via email and phone conversations.
- The Kearns & West facilitation team invited the SRTTG to share any feedback on facilitation of the SRTTG through email after the meeting. The SRTTG will reconvene in February 2025.

Topics

Welcome, Agenda Review, and Purpose

- Victoria Pebbles, Kearns & West, welcomed all participants and began the meeting with two short announcements. The first was that Trisha Madayag was joining the Kearns & West facilitation team as notetaker. The second was that Peggy Manza was beginning as the new Reclamation operator for the Shasta, Trinity, and Whiskeytown Reservoirs.
- Manza introduced herself noting that it has been almost 15 years since she last operated the reservoirs and there have been many changes since then. She noted that she was learning about these changes and if anyone in the SRTTG had a topic they wished to educate her about, she welcomed it as appreciated hearing input and different points of view. She expressed happiness at the opportunity to work with the SRTTG over the next three years.
- Pebbles stated the objective for the meeting, which was to discuss the latest forecast and implications for the Sacramento River System and the implementation of the 2024 Temperature Management Plan for the Sacramento River. The purpose of the SRTTG is as follows:
    - Sacramento River Temperature Task Group (SRTTG) consists of agency representatives having direct interest in cold water pool management on the Sacramento River and meets at least monthly February through October. The purpose of the SRTTG is to "share operational information monthly and improve technical dialogue to inform the development and the implementation of an annual Temperature Management Plan (TMP) for the Sacramento River." The TMP is developed by the U.S. Bureau of Reclamation (Reclamation) in accordance with California State Water Resources Control Board Water Rights Order 90-5 to assist with improving and stabilizing Chinook salmon populations in the Sacramento River.

Hydrology and Pulse Flow Implementation Update

Manza provided the latest forecast and implications for the Sacramento System and reported on current hydrologic conditions including flows. Reclamation presented the information contained in the meeting packet shared with the SRTTG. Sections below correspond to groups of graphs, images and tables in the meeting packet provided by Reclamation.

Northern Sierra Precipitation as of October 23, 2024

- The precipitation was average for this time of year.

California Snow Water Content as of June 28, 2024

- The snow water content was low and nearly gone by the end of the 2024 Water Year (WY) which ended September 30.
- WY 2024 was a fairly wet one with numerous small storms that deposited snow.
- Since WY 2024 was a warmer year, the runoff started and ended early.
- WY 2025 will be a La Niña year, so precipitation and temperature will be hard to predict.

Current Storage, Releases, Water Temperatures and Current Operations: Daily CVP Water Supply as of October 23, 2024.

- Releases at Lewiston Dam were at 293 cfs, which is near the 15-year median.
- Keswick Dam was releasing 6,792 cfs. Reclamation is reducing this flow slowly to keep more water at higher elevations in the river because there are redds at higher elevations that they want to avoid dewatering.
- Storage at Trinity Reservoir was 1,647 TAF.
- Shasta Reservoir storage was 2,648 TAF and accumulated inflow for the water year to date was 120 TAF.
- Precipitation to date was .03 inches at Shasta Reservoir and .08 inches at Trinity Reservoir.

Temperature Management

- Shasta System
    - The water leaving the Temperature Control Device (TCD) was 51.8°F on October 22, 2024, and rose 0.5°F as it traveled to the KWK gage.
    - Water temperatures were likely to be cool through the end of temperature management season on October 31, 2024.
    - The mean daily release was 5,227 cfs on October 22 at Shasta, 1.1150 cfs at Spring Creek Power Plant, and 6,702 cfs at Keswick.
    - The Sacramento Mean Daily Temperature was below 53.5°F at all locations.
- Trinity System
    - Water temperature was 53.7°F at North Fork on October 22, which is a 4°F drop from the beginning of the month.
    - Mean daily temperature dropped to 55°F at NFH on the Trinity River and it was near 48°F at Lewiston.

Reservoir Profiles and Cold-Water Pool: Graphs on Isothermobaths-2024, Graphs on Cold Water Pool Volume, Percent Exceedances (1998-2023)

- Shasta Lake:
    - The cold-water pool has been depleted over the past few months, but there is still some left, which indicates that it was used effectively over the summer to meet the temperature target.
    - Shasta Reservoir cold-water pool volume of 52°F and lower and 50°F and lower were above the 15-year average. It was just below the average for 48°F and lower.
    - The 52 and 50°F cold water pool volume was just below the 25% exceedance for this time of year. The 48°F cold water pool volume was just above the 50% exceedance.
- Trinity Lake:
    - The warmest layer of water at the surface of Trinity Reservoir cooled in the month of September and the reservoir will likely rapidly cool overall.
    - The 52, 50, and 48°F cold-water pools are all above average and above the 25% exceedance.
- Whiskeytown Lake:
    - The warmest layer of water on Whiskeytown has also cooled in the month of September and the surface temperature is between 68 and 70°F.
    - The cold-water pool 60°F or less is above the average for 60°F and lower and 50°F and lower; is below average for the 56°F and lower and near the 25% exceedance.

50% Exceedance Forecast: Estimated Central Valley Project (CVP) Operations. This forecast relies on an average inflow scenario, i.e., there is a 50% chance actual streamflow volume will exceed the forecast and a 50% chance it will be less. The tables depict the resulting storages, releases and diversions under this forecast.

- The model run shows a July storage of 1.8 MAF in Trinity Reservoir.
- Shasta Reservoir begins near 2.8 MAF of storage in September and ranges to nearly 3.3 MAF in August 2025.
- The modeled Trinity releases are based on a Trinity River Record of Decision (ROD) volume based on a normal year type.
- The Sacramento River would be under flood control operations.
- Trinity diversions at Carr Powerplant take into account the outage at Carr Tunnel.
- There will also be an outage at Spring Creek Power Plant.

90% Exceedance Forecast: Estimated CVP Operations. This forecast relies on a conservative inflow scenario (e.g., drier years with lower-than-average precipitation), in which there is a 90% chance actual streamflow volume will exceed the forecast and a 10% chance it will be less. The tables depict the resulting storages, releases, and diversions under this forecast.

- The model run shows Trinity storage at 1.7 MAF at the beginning of the water year and ending August 2025 at 1.39 MAF.
- Shasta Reservoir storage estimates are 2.7 MAF for September 2024 and 1.9 MAF in August 2025.
- Trinity releases are based on a ROD dry-year type.

Seasonal Temperature and Precipitation Outlook

- The current 30-day forecast shows equal chances of above and below average temperatures in extreme Northern California, but the rest of the state is leaning above normal temperatures.
- The monthly precipitation outlook for November shows equal chances of above and below average precipitation, which is typical of a La Niña year.
- The seasonal outlook for the months of December, January, and February predicts equal chances of above or below normal temperatures and precipitation.

Tom Patton, Reclamation, gave an update on discussions at the Upper Sacramento Scheduling Team (USST). Releases at Keswick Dam were at 6,800 cfs with no plans to make changes until the remaining redd has emerged, estimated to be October 24. (Note: an additional winter-run redd is expected to expire around November 22-23 but Tom clarified that the USST decided to forego that redd and use the November 12 redd as the one to target managed releases.) After that November 12 redd emerges Reclamation intends to lower flows from 4,800 cfs to 4,000 cfs. If the redds emerge before that date, there is a potential to reduce releases sooner. Subsequently, Reclamation plans to reduce flows by 200 cfs per day until flow releases reach 4,000 cfs for the winter. Anderson Cottonwood Irrigation District will begin removing the diversion dam at Lake Redding Park during the week of October 28. They would benefit from lower flows but will manage working with higher flows that will be sustained to protect the last redd.

Questions and Comments

- CDFW stated that DWR reduced the storage capacity of Oroville Reservoir to from 3.538 (noted in the Daily CVP Water Supply table Reclamation shared) to 3.4 MAF effective July 1, 2024.
- DWR added that they had conducted the survey that resulted in this new capacity figure and explained that their survey work discovered that increased sedimentation had reduced the total storage capacity in Lake Oroville (more information on DWR's website).

- Reclamation noted that they would correct the Daily CVP Water Supply table for future meetings.
- CDFW asked if the cold-water pool temperatures of 52, 50, and 48°F had special significance.
    - Reclamation responded that drawing on different cold-water temperature layers using the temperature control device allows Reclamation to blend with other warmer layers to maintain river temperatures. Generally, the cold-water pool is considered any water below 52°F, but looking at colder temperatures is useful. There is nothing special about 50°F or 48°F and others could be used, but these two are the temperatures that were chosen for examining cold water pool.

USFWS Fish Conditions, Forecasts and Hatchery Updates

- Brett Galyean, USFWS, gave an update from Coleman National Fish Hatchery. USWS had 920,000 late-fall Chinook salmon and 673,000 steelhead at the hatchery. Both species of fish are approaching release size and have no health concerns. Late-fall Chinook salmon will be released in late November during a storm event and the steelhead will be released in mid-December through January during a storm event. The fall-run Chinook salmon spawning operations saw few fish. About 50% of the salmon were jacks (male salmon that mature and return to their home rivers to spawn earlier than other adult salmon) and there were few three- or four-year-old adults. At the time of the meeting, only 25% of the production goal was met, and there were only 100 fish left in the river. USFWS was discussing an egg transfer from CDFW to help meet production goals.
- Craig Fleming, USFWS, provided an update of monitoring upstream of Red Bluff Diversion Dam. Catches of winter-run Chinook salmon were decreasing. The current biweekly total passage estimate for winter-run Chinook salmon was 75,039 for the two-week period ending on October 20. The mean cumulative weekly passage of winter-run Chinook through October 21 for the last 21 years of passage data was 72.1% ± 16.7%. The spring-run Chinook salmon biweekly total estimate was 6,018. These fish are likely winter-run fry, but their length puts them in the spring-run category. USFWS will make the passage adjustments after they get genetic analysis back to confirm this assumption.
- Kaitlin Dunham, USFWS, gave an update for Livingston Stone National Fish Hatchery. USFWS has tanked 117 of the 120 female winter-run Chinook salmon that they spawned. The hatchery will inventory winter-run captive brood eggs starting October 25. The spring-run eggs from the three females spawned will be inventoried on October 28. The hatchery will begin tagging of winter-run Chinook salmon in mid-December with the arrival of the tagging trailer and release will occur in early February, hopefully in conjunction with a storm event. The hatchery the water temperature is around 51°F. The hatchery staff completed testing of the 750 foot-level pipeline valve with the contractors and it operated well. It will be stored until needed during warm water years.

CDFW Sacramento River Fish Monitoring Update

- Doug Killiam, CDFW, provided river fish monitoring updates via email which was conveyed to the group. CDFW completed the winter-run Chinook salmon carcass survey

on September 18 and data is being analyzed following. Counts were very low this year. In-river female numbers were estimated to be under 400. The final population estimates will be available shortly.

- The fall- and spring-run carcass survey was underway. Fall-run spawners were actively spawning in the main stem and tributaries. Early indicators were there would be low fall-run numbers this year. Spring-run spawning was mostly complete. Spring-run counts in the basin were also low this year and the mainstem spring-run carcass counts in September were low.
- Shallow redd surveying was ongoing on the mainstem, as well as shallow redd monitoring of winter, spring and fall-run active redds. The last winter-run redd is expected to expire around November 22-23. Aerial redd flights were not completed for spring-run due to helicopter mechanical issues and weather. CDFW hoped to have some fall-run flights soon. Flows were relatively steady recently and stranding surveys will resume as flows are reduced in November.

Additional Announcements

- The SRTTG discussed the necessity of having a November meeting. Reclamation noted that conditions seemed stable and offered to prepare an email update in lieu of a meeting. SRSC agreed and requested that Shasta cold-water pool and fish monitoring updates be included in the email update as well. The SWFSC stated that they could include the annual temperature dependent mortality estimate they were preparing in the email as well. CDFW and SWRCB also agreed that a November email update would be sufficient. No other SRTTG members present expressed opposition to canceling the November meeting and proceeding with an email update. The Kearns & West facilitation team will coordinate compiling the materials to send to the SRTTG around November 21.
- The SRTTG then revisited the topic of a field trip and in-person meeting in April 2025. The Kearns & West facilitation team proposed the following itinerary option for discussion: the first day would consist of touring restoration sites near Junction City in an afternoon. The following day would start with a hybrid in-person and virtual meeting in the morning at the Yurok Tribe and Reclamation offices in Weaverville followed by tours to Trinity Dam, Trinity River Hatchery, Lewiston Dam, and Whiskeytown Dam. Kearns & West asked the group whether this itinerary made sense or if they would prefer an alternative order of events. No comments were offered.
- Reclamation offered that the SRTTG might be interested in seeing the Trinity River Hatchery before it receives upgrades so that they can see the difference between the current and upgraded facility. A tour of the dam and hatchery would take an hour or two. Also, there is a good view of the beginning of the Carr Tunnels from the hatchery and driving along the Lewiston Reservoir is helpful to understand how water warming occurs long the reservoir. Reclamation also noted that timing the tour with peak flows would be helpful in visualizing what a specific ROD flow looks like.
- SRSC suggested seeing the temperature control curtains at Whiskeytown and Lewiston. Reclamation added that seeing the temperature control curtains would be good,

however, the curtain at Lewiston is only visible by boat. A representative of the Yurok Tribe said that the SRTTG was welcome to tour as many of the five restoration sites near Junction City as they like. The group would need 20-30 minutes per site, but the restoration work at the sites was similar, so it would be fine to not visit all of them.

- SWRCB stated that it was unlikely that they would get approval for overnight travel due to the status of the state budget unless the travel was mission critical. CDFW agreed with this statement. Reclamation stated that the field trips and in-person meetings are very useful, even if the number attending is smaller. The Kearns & West facilitation team will continue planning a hybrid meeting and option field trip with the group via email and phone conversations.
- The Kearns & West facilitation team invited the SRTTG to share any feedback on facilitation of the SRTTG through email after the meeting. The SRTTG will reconvene in February 2025.

Adjourn