Sacramento River Temperature Task Group Notes

July 25, 2024

Members Attending

- Bureau of Reclamation (Reclamation): Derek Rupert, Elizabeth Kiteck, Elissa Buttermore, John Hannon, Karissa Bridges, Peggy Manza
- U.S. Fish and Wildlife Service (USFWS): Bill Poytress, Charles Chamberlain, Craig Fleming, Kaitlin Dunham, Matt Brown
- California Department of Fish and Wildlife (CDFW): Doug Killam, Colby Hause, Crystal Rigby, Mallory Boro, Marelle Arndt, Matt Johnson, Ryan Revnak, Vanessa Guzman Costa
- National Marine Fisheries Service (NOAA, NMFS): Stephen Maurano
- Southwest Fisheries Science Center (NOAA, SWFSC): Miles Daniels
- California Department of Water Resources (DWR): Kevin Reece, Mike Ford
- California State Water Resources Control Board (SWRCB): Claudia Bucheli, Craig Williams, Diane Riddle, Matt Holland
- Sacramento River Settlement Contractors (SRSC): Catherine Morales-Sandoval, Mike Deas, Lewis Bair
- Yurok Tribe: Christopher Laskodi
- The following SRTTG members did not have a representative present: Hoopa Tribe and Western Area Power Administration.
- Facilitation Team: Victoria Pebbles and Jack Hughes, Kearns & West

Topics

Welcome, Agenda Review, and Purpose

Victoria Pebbles, Kearns & West, welcomed all participants. The objective for the meeting 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 Update

Liz Kiteck, Reclamation, provided the latest forecast and implications for the Sacramento System and reported on current hydrologic conditions including flows.

Northen Sierra Precipitation as of July 23, 2024

- There has been no measurable precipitation since the June SRTTG meeting.
- The air temperature had been high, and July was on track to be the warmest on record in many places in California.
- The long-range forecast predicted warmer than average temperatures in August and September across California.

California Snow Water Content as of June 28, 2024

- Snowpack had completely melted across the Sierras.
- Snowpack was slightly above normal at its peak in the Northern Sierras this year. There was average snowpack in the Central and Southern Sierras this year.
- Precipitation in the San Joaquin and Sacramento Valleys was classified as below normal this year.

Current Storage, Releases, Water Temperatures and Current Operations: Daily CVP Water Supply as of July 22, 2024

- Storage in the reservoirs was still at decent levels with 1.9 MAF in Trinity Lake, 3.6 MAF in Shasta Reservoir, and 0.5 MAF in the Federal share of San Luis Reservoir.
- One small peak release occurred in the previous week to meet requirements under the Trinity River Record of Decision (ROD). Flows at that time were at 750 cfs. Reclamation planned to decrease releases by 50 cfs every other day to achieve a base flow of 450 cfs by August 4, 2024.

Temperature Management

- On July 7, 2024, Reclamation had all middle gates open on the Shasta Reservoir Temperature Control Device (TCD). Reclamation opened one of the TCD lower (pressure relief) gates on July 25, 2024 because the temperature at the Clear Creek River (CCR) control point on July 24 was 53.1°F and water temperatures were gradually increasing. The cold water from Shasta had not reached Keswick at the time of the meeting but would arrive soon.
- Sacramento River mean daily water temperatures were still cool on July 22 with water at Balls Ferry warmer than the upriver stations but still below 56°F. Reclamation was

releasing 13,000 cfs, which was helping keep the water cool.

- The Trinity River mean daily temperatures were cool coming out of Trinity Dam. Redding air temperatures were expected to cool over the weekend and then warm during the next week.

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

- Shasta Reservoir:
    - Storage remains high. There was an increase in warm water temperatures near the surface of the lake, which is to be expected with the high air temperatures. There was still a sizeable cold-water pool volume as of mid-July.
    - Shasta Lake cold water volume of 52°F and lower and 50°F and lower were above average for this time of year. The cold-water volume of 48°F and lower was near average.
- Trinity Lake:
    - Trinity Lake also had a sizable cold-water pool. The cold-water volume of 52°F and lower, 50°F and lower, and 48°F and lower were all above average for this time of year.
- Whiskeytown Lake:
    - Whiskeytown lake water temperatures were warming. Reclamation reduces diversion this time of year as water warms.

Seasonal Temperature and Precipitation Outlook

- The current 30-day forecast shows an equal chance of temperatures being above and below average in coastal California. The interior of the state was forecasted as leaning above normal.

90% Exceedance Forecast: Estimated CVP Operations. This forecast relies on a conservative inflow scenario, 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. Shasta Reservoir storage is forecasted to have a total end-of-September (EOS) storage of 2.67 MAF resulting in a November through January release of 4,000 cfs

- Fall X2 Outflow Action requirements will take effect in September and October, and Reclamation was trying to export water but had issues with an explosion at the intertie pumping plant. They are investigating this incident and repairing the unit. Releases are 5,000 cfs on the American River to address high delta salinity. The outflow requirement for July is 8,000 cfs but was averaging 10,000 cfs to meet salinity requirements. Reclamation expected a reduction of depletions to begin the week after the meeting and to decrease releases on the American River and then Sacramento River.

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

- Shasta Reservoir storage is forecasted to have an EOS storage of 2.8 MAF and 4,500 cfs release for November through February.

Temperature Modeling

- These temperature modeling results were similar to those Reclamation did in June.
- The first side gate operation was projected for August 22 and full side gate operation was projected to open on September 3.

TDM Modeling

Miles Daniels, SWFSC, presented Temperature Dependent Mortality modeling results for one scenario ran May 24, 2024, and again on July 24, 2024. SWFSC presented this scenario at the May 30, 2024, ad hoc SRTTG meeting as Run 2: Temperature management (53.5°F at CCR) with a pulse flow using a 90% May forecast and 25% May meteorology. The July 24 modeling run included the hindcast with observed temperature exposure. The July 24 run had a 4% mean and a 1% median TDM estimate, and the May 24 run had a 5% mean and 1% median. The observed cooling in the hindcast might have reduced TDM between the two results, but the 1% difference is not significant enough to know for certain.

USFWS Fish Conditions, Forecasts and Hatchery Updates

Bill Poytress, USFWS, presented on winter-run and spring-run Chinook salmon. USFWS saw small numbers of winter-run Chinook salmon fry, a rough estimate of 500 fish, which represents 0.25 percent of the run for the year. They are testing the fry's genetics. The juvenile spring-run Chinook salmon outmigration is over.

Kaitlin Dunham, USFWS Livingston Stone National Fish Hatchery, stated that Livingston Stone Hatchery had spawned 110 females to date and is nearing the end of their spawning with only 10 more females to spawn. They started tanking winter-run Chinook salmon, placing the first female spawned on May 6, 2024, in a tank. Keswick trapping will conclude at the end of the month. They will collect two more females and one more male. Keswick trap will then be dewatered and ready for Reclamation repairs. They also have a Battle Creek female that they are waiting to be ready to spawn.

CDFW Sacramento River Fish Monitoring Update: 1) carcass surveys 2) Redd counts 3) stranding and dewatering surveys

Ryan Revnak, CDFW, provided river fish monitoring updates noting CDFW collected 170 winter-run carcasses, which is the second lowest on record to date. The carcass surveys will end after two full survey periods end with no carcasses, which is usually in September.

CDFW was unable to conduct a winter-run Chinook salmon helicopter flight since June 26, 2024, due to ongoing maintenance issues. There was a flight scheduled for July 29, 2024. If that is not possible, CDFW will secure a plane to fly. As of the week of the meeting, CDFW had counted 16

winter-run redds in aerial surveys and eight shallow water winter-run redds from boats. CDFW helped handle 49 steelhead at Livingston Stone this season during trapping.

Additional Announcements & Review Action Items

Victoria Pebbles, Kearns & West, made two announcements. The first was that the next Upper Sacramento Scheduling Team meeting will be on August 6, 2024. The second announcement was that the draft SRTTG meeting schedule indicated a potential in-person meeting and field trip for September. CDFW noted that they were in a budget deficit so may not be able to travel for a meeting. NMFS expressed enthusiasm for meeting in person but noted that they were working on consultations that required time. Also, the Sacramento River Science Partnership had a workshop in the fall that would also require people to travel and therefore making it difficult to have two separate in-person meetings close together. NMFS said that Sacramento or a central meeting place might make it easier. Pebbles noted that it may be possible to have a hybrid meeting format so participants could join in person or virtually. This topic will be revisited at the August meeting.

Adjourn