BUREAU OF RECLAMATION

Sacramento River Temperature Task Group Notes

July 27, 2023

Members Attending

- USBR: Derek L. Rupert, John M. Hannon, Elizabeth G. Kiteck, Elissa Buttermore, Michele V. Pacheco, Mary B. Suppiger
- USFWS: Charles D. Chamberlain, Bill Poytress
- CDFW: Crystal Rigby
- NMFS: N/A
- SWFSC: N/A
- DWR: Kevin Reece
- SWRCB: Michael Macon
- SRSC: Anne Williams, Mike Deas
- WAPA: N/A
- Yurok Tribe: Kyle De Juilio

Topics/Actions

- K&W to share the notes to the group that were provided by Doug Killam (Note: provided as part of summary below).
- Reclamation will distribute the updated plots next week once they become available.

Welcome, Agenda Review, and Purpose

Nahal Ipakchi, Kearns & West (K&W) welcomed all participants.

Purpose and Objective

The purpose of the SRTTG is to "share operational information monthly and improve technical dialogue on the implementation of the temperature management plan (TMP)." Reclamation provides "a draft temperature management plan to the SRTTG in April for its review and comment, consistent with WRO 90-5."

Hydrology, Operations, Forecasts, and Temperature Management

Reclamation presented the hydrology, operations, and temperature management updates.

Northern Sierra Precipitation and Snowplots:

- Snowpack in the Northern Sierras is at 0%.
- Snowpack in the Central Sierras is at 2%.
- Snowpack in the Southern Sierras is between 0-2%.
- Snowpack data are based on what is detected by the snow sensors. Snow sensors are typically in an open area so that they are accessible, which also means the snow on top of them melts fastest. Despite the numbers above.
- Snow is still detected in the high Sierras.
- Inflows are continuing to enter the reservoirs.
- Reservoirs in the Southern Sierras have reached their maximum and all reservoirs are cutting back on releases right now.
- San Joaquin river flows are down to 5,000 cfs and are projected to go down to 3,000 cfs by August 1st. This is a sign that the flood releases have stopped for the season.
- After the recent few weeks of hot weather, air temperatures have now decreased and returned to seasonal average temperatures.
- Predict little precipitation for the rest of the summer and for the rest of the water year.
- This season has been an above average year for precipitation, at 122% average for the state.

Current Storage, Releases, and Water Temperature Forecasts Releases:

- Shasta storage is down below 4 MAF. Currently Shasta reservoir is at about 87% of capacity.
- Water temperatures are looking good for July despite the warm weather.
- Reclamation has maintained temperatures below 53.5° F at CCR throughout July.

- Performed a gate switch: three middle gates are open now. Observed cooling since the last change on July 18th. Another middle gate will be opened if the temperatures increase, to continue to maintain downstream temperatures.
- All indicators show that the Sacramento River mean daily temperatures are below 53.5° F at CCR. Balls Berry has been below 56 ° F.
- On the Trinity River, the Douglas City gage continues to experience technical issues and is currently offline. The gage is out but USGS plans to remediate the issue next week.

Profiles and Cold-Water Pool:

- Shasta Lake:
    - New plots will be available by next week. Refer to Reclamation's website for updates. Above average cold-water pool remaining. The volume under 50 ° F is above average. All key temperature volumes (50, 52, 48 degrees F) are exceeding the 5% exceedance.
- Trinity Lake:
    - Surface water is warming. There is a decent cold-water pool at Trinity Lake, but the cold-water pool volume is not as good as Shasta and remains below average, likely due to the lack of inflow this past winter compared to the rest of the reservoirs in the state. Cold water pool volumes (52, 50, 48 degrees F) are all below average. The exceedance plots are between 50% and 75 %.
- Whiskeytown:
    - The surface water is experiencing some warming, which is typical for this time of year at Whiskeytown Lake. There is a decent cold-water volume, which is also typical during the summertime. Because not as much water is being moved from Trinity Reservoir through Carr and will likely see more warming than usual. Cold water pool volumes are below average (50, 48, 52 degrees F).

Monthly Air Temperature Outlook:

- Temperatures are projected to be above normal for the month of August.
- Seasonal temperature outlook for the fall shows a chance of above normal temperatures.

July River Temperature Modeling:

- On the Sacramento River, there is still no forecasted use of the side gates into the fall in the 50 or 90% forecast. Because the reservoir has been cool, there has been less need to conduct gate operations thus far throughout the season.
- Updated model runs will be provided by the end of the week or beginning of next

week.

- The forecast shows an end of September storage at 3.35 MAF in the 90% forecast. Reclamation does not anticipate getting into flood control based on the 90% historical inflows. For October, November, and December we used 75% historical inflows to avoid unrealistically simulating dry conditions after coming out of a wet year and went back to 90% starting in January.

- Releases averaged about 10,700 cfs for July; they increased briefly to 11,000 cfs and then decreased to 10,750 cfs. July is typically the high point of diversion season. Diversion reductions are typically conducted in August, so expecting to drop flows in August.

River Fish Monitoring: 1) carcass surveys 2) Redd counts 3) stranding and dewatering surveys.

K&W presented Doug Killam's, CDFW, notes on River Fish Monitoring updates from his update email provided on 07/27/2023.

- Carcass Survey: The peak carcass season has now passed, and counts are slowly descending to the end of the season in early September. This year's counts are at the fourth lowest on record since 1996 and are currently at 456 compared to an average of 2,189 for this date. Typically, by this date 78% of the annual carcass count totals are completed. Updated carcass and redd information for this year and previous years is available on the CALFISH website with updated information posted every two weeks or upon request from doug.killam@wildlife.ca.gov. To download the winter-run data Excel file, visit:
  CalFish: CDFW Upper Sacramento River Basin Salmonid Monitoring

- Aerial redd counts are made weekly to identify spawner distributions. Currently, redd counts stand around 62 new redds observed from the helicopter flights for the brood year. Distribution of the redds is concentrated in the upper river near Redding with about one quarter above the ACID Dam, half in the section from ACID to Highway 44 (downstream from Turtle Bay), and the other quarter downstream to the mouth of Clear Creek.

- Shallow winter-run spawner redds are monitored from "birth to expiration" to provide protection against dewatering later in the season. Currently there are 34 shallow water redds being monitored to provide information on potential for dewatering, as flows are decreased later in the irrigation season. Current water temperatures near the redds are resulting in egg-to-fry development time from deposition on day one to gravel emergence of near 90 days. These shallow redd data are also included in the Excel file mentioned above.

Fish Distribution/Forecasts: 1) Estimated percentage of the population upstream of Red Bluff Diversion Dam for steelhead, winter-run, and spring-run Chinook salmon 2) Sampling at rotary screw traps at Red Bluff Diversion Dam 3) Steelhead update 4) Livingston Stone Hatchery

Bill Poytress, USFWS, presented on the most recent Fish Distributions/Forecasts.

- USFWS caught the first juvenile winter-run Chinook salmon on 07/19/2023 at Red Bluff Diversion Dam.

Livingston Stone Hatchery Update:

Bill Poytress, USFWS, provided Kaitlin Dunham's, USFWS, Livingston Stone National Fish Hatchery (LSNFH) updates.

- On track to spawn 180 females.

Topics for Elevation to Shasta Planning Group:

- No topics to elevate to the Shasta Planning Group

Adjourn