



Sacramento River Temperature Task Group Notes

March 23, 2023

Members Attending

- USBR: Elizabeth Kiteck, John Hannon, Emily Van Seeters, Tom Patton, Derek Rupert, Elissa Buttermore
- USFWS: Bill Poytress, Kaitlin Dunham, Matt Brown
- CDFW: Crystal Rigby, Vanessa Guzman, Tracy Grimes, Doug Killam, Tricia Bratcher
- NMFS: Cyril Michel, Eric Danner, Garwin Yip, Miles Daniels, James Gilbert, Seth Naman
- DWR: John Ford
- SWRCB: Claudia Bucheli, Diane Riddle, Jeff Laird, Kevin Reece, Matt Holland, Michael Macon, Craig Williams
- SRSC: Lee Bergfeld, Mike Deas, Roger Cornwell
- WAPA: Michael Prowatzke
- Yurok Tribe: Christopher Laskodi
- Hoopa Tribe: Veronica Yates

Topics/Actions

- Reclamation will share the draft Temperature Management Plan (TMP) before the April monthly Meeting.
- An update meeting will likely be held in mid-April to discuss Spring Pulse flow.

Action Items:

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Welcome, Agenda Review, and Purpose

Adam Fullerton, Kearns and West 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.” Reclamation provides “a draft temperature management plan to the SRTTG in April for its review and comment, consistent with WRO 90-5.”

Review Previous Action Items

- **Agency Leads** – Send the names of two designated agency representatives for the Shasta Planning Group breakout discussion to Mia Schiappi, K&W. The designated representatives can be changed as needed depending on the topic of discussion.
- Designated Representatives have been identified from NMFS, CDFW
 - USFWS: Craig Fleming will be USFWS’ standing representative.
 - SWRCB: Matthew Holland and Craig Williams will be SWRCB’s standing representatives.
 - DWR: Kevin Reece and Mike Ford will be DWR standing representatives.

Hydrology, Operations, Forecasts, and Temperature Management

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

- Precipitation:
 - Northern Sierra Precipitation 8 Station Index: Precipitation totals 56.3 inches in this water year, to date, which is above average (134% based on this time of year for this station index) and tracking to 2019 totals. Heavy precipitation is anticipated next week in northern California. Above average snowpack at Shasta and the Trinity basin.
- Snow Plots:
 - Northern CA basins at 178% of April 1 historical average and 181% for this time of year.
 - Central CA basins at 225% of April 1 average
 - Southern Sierra CA basins showing record snowpack. Flooding will continue throughout the spring and summer.
- Releases and Storage:
 - Keswick releases are common for this time of year.
 - Reservoirs and their accumulation of inflow are looking normal for this time of year except for Trinity storage

- Keswick releases increased for side flow management due to the last major precipitation event. Releases are scheduled to decrease back down to 3,250 cfs by Sunday. The goal is to hold 3,250 cfs as long as possible to increase storage at Shasta.
- Trinity winter vulnerability flows of around 1,500 cfs range. Looking for additional flows up to 3,500 cfs until mid-April and will move into ROD flows in the spring.
- A Public Notice was given for Trinity Dam refurbishment work: installing bulkhead gates allowed Reclamation to dewater that major conduit for the power plant and the hollow jet valves and then do work in a dry tunnel. Work has been wrapping up with installing flow meters. During the work, they have been releasing water via the auxiliary outlet; once work is completed next week, they will switch from auxiliary release to the powerplant.
- Shasta storage is currently at 3.5 MAF, which is over 100% of the 15-year historical average.
- Trinity is increasing storage but still on the low side at 58% of the 15-year average.
- Releasing 200 cfs at Clear Creek out of Whiskeytown. Potential for a pulse flow for the middle of next week. The Clear Creek team is looking at that, and the decision will be made in the next day or two.
- Water Temperatures:
 - Currently they are lower than average temperatures in California. There are also lower than average chances of precipitation in April for most of California. The summer season temperature outlook shows an above normal chance of a warmer summer.
 - Shasta temperatures are cold, which is expected during this time of the year. The Temperature Control Device (TCD) is currently utilizing all middle gates. Lake water levels will rise enough to switch from the middle gates to the upper gates next week, which will help preserve cold water pool management by taking warmer water off the top of the lake and preserving the cooler water below from the middle and lower gates.
 - The last Shasta profile was on March 15th and showed cold temperatures from top to bottom. Shasta storage is increasing and the temperature is looking good. Profiles have been updated every two weeks. Reclamation will provide profiles more often as the season continues.
 - Reclamation has been in the process of correcting Trinity data with USGS, especially the Lewiston temperatures.

- Trinity profile from late March was shared and will be updated soon to reflect new profile; temperatures are pretty cool. Trinity is more snowpack driven, and inflow is still gathering there, so the cold-water volume will peak later in the year. Performed some temperature runs (not included in the chart but will be included moving forward). Cool from top to bottom 44°F at surface, 41°F at the bottom of the lake.
- Whiskeytown: Reclamation decided not to pull the reservoir back down to the regular minimum range due to the increased storage from the last storm, resulting in an early fill in mid-April. The goal is to minimize any water diverted through Carr in order to fill the reservoir without using any Trinity water.
- Est. CVP Operations Forecast draft:
 - 90% forecast: This forecast is a conservative guess on how water levels may look. Projects the best estimates of what the inflows are going to be based on the California/Nevada Forecast Center as well as DWR's Bulletin 120. Northern CVP system forecast is set but more changes in the southern reaches of the CVP. Both the 50% and 90% forecasts assumed that Trinity was under the normal ROD flows, but the Trinity is more in line with a Wet ROD year, which would mean additional flows down the Trinity River. Flows will be determined by whether the April forecast shows a Wet ROD year.
 - Releases out of Keswick will remain at 3,250 cfs for the month of March and plan to hold that as long as possible. Releases will be ramping up to 4,000 cfs in April and 6,300 cfs in May to meet downstream needs.
 - Trinity Diversions: Not projecting any significant diversions through Carr Tunnel. No significant flows expected.
 - Trinity 50% forecast is on the lower side. Reclamation is expecting higher numbers than this. Projecting 3.7 MAF of Shasta storage at the end of March. Keeping an eye on inflow in April.
 - Projected Flows for Sacramento:
 - In 50% forecast, more creek side flow results from wetter conditions downstream and a smaller volume of releases needed from Shasta. Keswick releases pick up in May.
 - Accretions are meeting a lot of the needs downstream.
 - Projecting 3.6 MAF end of September. Storage needs to be at or below 3.2 MAF going into the next flood management season in February; therefore, Shasta may have higher than baseflow releases for the rest of the season to get down to that 3.2 MAF. After a wetter year, operations are more likely to go into flood control the following year.

- Temperature Results:
 - Reclamation did a preliminary March forecast modeling run based on Keswick releases from the 90% forecast, the February profile for Trinity and the mid-month March Whiskeytown and Shasta profiles, and assuming a target of 53.5°F at CCR. The modeling projected a side gate usage in mid-August, full side gate usage at the end of September, and a large volume of cold-water pool at the end of September.
- Coordinated Operations Agreement: Tom Patton, Reclamation, shared that there are no updates for the Coordinated Operations Agreement. Nothing has changed but will confirm and update the group at the next meeting.

SRTTG participants provided the following questions and comments:

- K&W asked if the draft TMP will be provided in April.
 - Reclamation shared that the timelines should work out. There should be enough information to discuss the draft TMP at the next monthly meeting.
- USFWS asked Reclamation if they anticipate a further increase of releases based on next week's storms.
 - Reclamation shared that the preliminary inflows are not too big for Shasta, and they do not see a need to increase releases from Shasta. The flood control curve takes into account run-off into Shasta. After March 20th, the max storage line goes up. Unless more storms are projected, will stay at a minimum release of 3,250 cfs at this point. We also have had a coordinating call request from ACID; discussion will include their diversion dam installation for which installation work may start next week and the spring pulse flow that might occur near the end of April or early May. Depending on the high flow, we will further coordinate with ACID once their dam is installed.

Spring Pulse Updates:

Elissa Buttermore, Reclamation provided an update on the Spring Pulse flow planning process.

- Reclamation anticipates releasing a Spring Pulse Flow in late April or early May.
- The Spring Pulse Flow is expected to have a beneficial effect on salmonids by mimicking the natural hydrologic cues that trigger juveniles to out migrate.
- Under the Proposed Action, Reclamation may release pulse flows of up to 150 TAF in coordination with the SRTTG Upper Sacramento Scheduling Team; the projected total for May 1 Shasta Reservoir storage has indicated there should be sufficient cold water to support summer cold water pool management and a pulse flow. The 50% March forecast does show storage in excess of 4 MAF. However, the 90% exceedance March forecast

does not indicate above 4 MAF Shasta May 1 storage yet, so it is not a guarantee that there will be adequate water to implement a pulse flow this year.

- The pulse should not interfere with ability to meet performance objectives or operations at Shasta reservoir.
- The Spring Pulse Flow team met on March 16th and will meet again on March 29th. The team reviewed a draft of the March 1st 50% forecast, and Tom provided an overview of the operations, Fish Monitoring Plan, Spring Pulse Guidance Document, Draft Operations Plan, and Study Plan.
- The team also discussed the process and reviewed a previous version of the Spring Pulse planning tool. Once finalized, scenarios for this year will be shared with the team and collaborators at the next meeting. Based on the scenarios, the spring pulse flow planning group will provide a recommendation on when to implement a pulse flow.
- Reclamation added that it may not take a lot of flow volume from Keswick releases to meet the pulse objectives. It is difficult to predict the impacts on the cold-water pool or do any modeling to identify the value of the impact.
- USFWS mentioned that there is a pulse flow proposed for Clear Creek that is set for around May 6th, peaking at 800 cfs from Clear Creek. Syncing up the Shasta and Clear Creek pulses may be helpful as an offset or to put additional volume down the river.

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

Doug Killam, CDFW provided River Fish Monitoring updates: the water is turbid, which makes it difficult to see the redds; they are instead doing a carcass survey, which has also been impacted by the turbidity of the water.

- CDFW asked when the carcass surveys end in the late fall.
 - The late fall carcass survey ends during sometime in the first two weeks of May. The winter-run carcass survey will begin on May 1, 2023. Aerial Redd surveys can go year round when weather and turbidity provide adequate viewing conditions in the area of active spawning. Dewatered redd surveys end when the minimum flows out of Keswick reach 3,250 cfs (no further possibility of flow decreases) and commence again when increasing flows and fish numbers warrant concern that future flow decreases could dewater redds before the juveniles emerge from the redd.

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, reported that there is not a lot to share at this time of year on preliminary fall-run juveniles and that this is not a management-oriented time. He noted that the Battle Creek jumpstart juvenile winter-run Chinook salmon are passing at this time and that there are low number of fall-run this year. They are getting our data over to Environmental Data Initiative¹ and will begin updating that biweekly with the next update on Monday.

Livingston Stone Hatchery Update:

- Kaitlyn Dunham, USFWS, shared that the Livingston Stone National Fish Hatchery is working on Keswick trapping. Turning back females to the river due to meeting female quotas. The hatchery is keeping all the males, which are a little behind. The hatchery has 14 adult jumpstart winter-run Chinook salmon that were transferred from Coleman National Fish Hatchery. Operating the trap twice a week on Tuesdays and Fridays.
- NMFS asked if the fish the hatchery is releasing back into the river are natural or hatchery fish.
 - USFWS shared that the hatchery is favoring releasing the natural female fish if they are available in the truck.
- Steelhead updates: NA

Additional Announcements:

- NA

Topics for Elevation to Shasta Planning Group:

- The agency caucus group discussed how a spring pulse fits into the Interim Operations Plan in different water years. The group felt there was not a need for a specific request/elevation to the Shasta Planning Group (SPG) at this time; however, members will brief the SPG on the discussion at the next SPG meeting.
- It was agreed that when a technical recommendation from the SRTTG regarding a spring pulse flow is ready, it will be sent to the SPG for consideration.

Adjourn

¹ For more information see

https://www.cbr.washington.edu/sacramento/data/query_redbluff_daily.html
<https://portal.edirepository.org/nis/mapbrowse?packageid=edi.1365.1>