



Sacramento River Temperature Task Group (SRTTG) Meeting Notes

October 27, 2022

Members Attending

- USBR: Elissa N. Buttermore, John M. Hannon, Lisa Elliot, Michael Wright, Tom Patton
- USFWS: Charles Chamberlain, Craig Fleming, James Early, Matt Brown,
- CDFW: Crystal Rigby, Doug Killam, Erica Meyers, Michael Harris
- NMFS: Stephen Maurano
- DWR: Kevin Reece
- SWRCB: Claudia Bucheli, Craig Williams, Diane Riddle, Jeff Laird, Matthew Holland, Michael Macon
- Yurok Tribe: Christopher Laskodi
- SWFSC: James Gilbert
- SRSC: Lewis Bair, Thad Bettner
- K&W: Adam Fullerton, Maria Bone

Topics/Actions

- All: Complete the poll for Shasta Site visit by Friday 10/28/22.
- Reclamation: during the SRTTG hiatus, Reclamation will keep the group updated on any monitoring changes. Reclamation is willing to hold ad-hoc meetings when necessary.

Welcome, Agenda Review, and Purpose

Adam Fullerton, Kearns and West welcomed all participants and mentioned the addition of the fall and winter flows update.

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.”

Prior Action Items

Action Items from the 9/22/22 SRTTG Meeting:

- All SRTTG - Send comments to Tom and the entire SRTTG group about:
 - Their interest and capacity to participate in a site visit
 - Potential dates for the site visit, and
 - What the group would like to see.
- Tom Patton, Reclamation, will send the meeting materials presented and discussed at the 9/22/22 meeting.
- Miles Daniels, SWFSC, will share the modeling presentation at today's meeting.
- Craig Fleming, USFWS, Livingston Stone Hatchery will designate a representative to provide updates at future meetings and send a status update. USFWS will provide updates from Livingston Stone Hatchery, but no new representative has been designated.

Shasta Dam Site Visit

Tom Patton, Reclamation reported Shasta Dam Site Visit updates.

- The current best available date for the site visit according to poll responses is 11/30/22.
- This site visit will not include a boat trip and instead focus on the dam, Temperature Control Device (TCD), Livingston Stone Fish Hatchery, and potentially other sites downstream.

Update from the Shasta Planning Group (SPG)

- There will be no SPG meetings until there is clarity on the Interim Operations Plan (IOP).

Update from Trinity River Temperature Task Group (TRTTG)

Tom Patton, Reclamation, shared that the latest TRTTG meeting was held on 10/21/22.

- The Trinity Reservoir releases are being made through the auxiliary outlet. CVO's current plan is that beginning 10/27/22, releases will be a 50/50 blend of water from the auxiliary outlet and the powerhouse.¹
- Trinity River profiles are received every other week and show that reservoir temperatures have not changed significantly.
- Air temperatures have started to decrease and are being regularly monitored.
- No expected changes in flows or operations now. If temperatures at Lewiston increase, operations may be switched back from bypass to full auxiliary gate releases.
- Releases from Trinity have been reduced from 450 cfs to 300 cfs, which is the minimum winter base flow. The extremely low flow is good for the cold-water pool
- The turnover is expected to happen sooner for Lewiston given the cold weather and a bit later for Trinity.
- A representative from the Yurok Tribe asked if the WRO90-5 requirements of 56° F in the North Fork Station will be followed or whether is the intention to keep the Lewiston temperatures below 53.5° F prior to Nov 1 and 50° F thereafter as recommended by the TRTTG.

- Reclamation shared that currently weather conditions are helping keep the temperatures low but if an issue is identified with maintaining the 53.5 ° F at the bypass, it will be shared and discussed with the group. If there is a need for an additional bypass to lower temperatures, the decision will have to be discussed at higher levels within Reclamation. Any concerns will be shared with the SRTTG and TRTTG.

Fall & Winter Flows Dewatering:

Elissa Buttermore, Reclamation and Doug Killam, CDFW provided updates on fall-run and winter-run Chinook salmon:

- Reclamation reported that most of the shallow winter-run Chinook salmon redds have emerged.
- CDFW mentioned that 3% of winter run redds have yet to emerge, all of which are in deeper water and should not be at risk for dewatering.
- CDFW reported that out of the 52 shallow winter-run redds, 4 were dewatered.
- They are monitoring shallow spring-run redds and measuring and monitoring shallow fall-run redds.

Hydrology, Operations, Forecasts, and Temperature Management

Tom Patton, Reclamation, presented the 10/26/22 operations and status report.

Current conditions included:

- Water Year 2023 began on 10/1/22.
- There has been no precipitation yet in October; however, this is often a dry month: the average precipitation is 2.5 inches in October. There may be a potential change in the pattern and with some showers and storms in the coming few days.
- It is hard to predict what this water year will look like, but currently there are low inflows and very low precipitation.
- Central Valley Operations are in a holding pattern and operating as close to their minimum releases as possible with no anticipated changes. Keswick releases will remain at 3,900 cfs, but ideally can be reduced to the 3,250 cfs minimum in the future. Delta operations are also operating at their minimum.
- Delta Cross Channel gates are cycling (open and closed) to help with the Rio Vista flow standard for October salinity requirements in the Delta.
- Storage
 - Shasta Reservoir is 66% of the historical average.
 - Trinity is at 44% of the historical average.
- Temperatures at the Shasta TCD have been increasing and the cold-water pool is steadily decreasing.
- The SAC gauge is near 57° F mark and holding steady around that temperature.
- There are no plans to increase diversions through Spring Creek.
- There are currently no diversions to Spring Creek due to maintenance at the Spring Creek tunnel, and flows will remain minimal when maintenance is completed.
- Diversions to Carr are also zero.
- The 200 cfs released from Clear Creek will continue to slowly lower Whiskeytown elevations. There may be a need to increase Spring Creek flows dependent on natural flow from storms in Clear Creek later in November.

- Reclamation is targeting 56° F at the IGO gauge, staying close to this but mostly reliant on air temperatures now.
- Sacramento River mean and daily air temperatures are much cooler and are forecasted to continue dropping.
- 2022 Shasta Reservoir temperature profiles are typical for this time of year.
 - Shasta Reservoir has been experiencing more cooling at the surface, recording mid to upper 60° F at the surface but remaining in the 50° F range at the lower outlets and side gates. The reservoir is slowly warming up and has exhausted the cold-water pool volume.
 - Shasta Lake's cold water pool volume is similar to previous dry years.
- Reclamation is receiving one profile per month for Whiskeytown. The profiles show how they compare to past years.
 - The 60° F profile is lower than past years.
 - 58° F profile comparable to other drier years.
 - 56° F volume is typical.

CVO's observations on the forecasted temperature and hydrology included:

- National Weather Service 30-Day Forecast's climate predictions show warmer than average temperatures in Northern California for November. For the precipitation outlook there is an equal chance of wet or dry weather patterns.
- The Winter Seasonal Temperature Outlook: for the Dec-Feb period, temperature and precipitation in Northern California are forecast as equal chances of above or below normal.
- The 50% exceedance forecast is based on historical data and starting conditions of the end of September. The forecast shows:
 - Getting over a million-acre feet at Trinity Reservoir
 - Shasta Reservoir is at 3.8 MAF by the end of May.
 - Based on this forecast, the releases for Trinity appear to be a normal flow year.
 - Typical Sacramento River flows expected this year.
 - Trinity diversion: no plans to divert a significant amount. The flow in April is to help fill Whiskeytown.
 - Delta Summary: could be more than one unit pumping for several of the months but would not start up until there is some precipitation and run-off.
- The 90% exceedance forecast inflows show lower levels: Trinity storage peaking out at 700 TAF and Shasta around 2.1-2.2 MAF.
 - Trinity is in a critical year for record of decision flows.
 - Trinity Diversions would be minimal.
 - Delta Summary is scheduled for one unit pumping for the whole 12 months.
- Starting in December DWR forecasts will begin, providing adjusted forecasts based on the hydrology on the ground.
- SRSC, asked why the April, May, and June numbers for Sacramento flows in the 50% exceedance is lower than the 90% exceedance. Does the forecast assume other side flows?
 - Reclamation responded that this often is the case. The wetter the system, the more the reservoirs can hold back and allow natural accretions to meet Delta standards and requirements on the river. This mostly impacts power customers who assume that a wetter system means more power, which is often not the case. A lot of

assumptions go into these forecasts, using historical hydrology and historical accretions and depletions. The forecasts may change.

Coordinated Operations Agreement Update:

Tom Patton provided a Coordinated Operations Agreement (COA) update:

- Reclamation shared that the COA debt is 35 TAF in the CVP's favor, but that does not include all the necessary adjustments from 2021 or 2022.

Temperature Management and Temperature Dependent Mortality (TDM) Modeling

- No modeling was presented

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

Doug Killam, CDFW presented the updated River Fish Monitoring report.

- No indication of fall-run or spring-run redd dewatering.
- Winter-run Chinook salmon spawning season is over.
- Winter-run Chinook salmon numbers are still draft pending some Livingston Stone Hatchery collection data; CDFW has still not received all the info needed to finalize the estimate.
- Escapement is estimated at a total of 6,000 winter-run Chinook salmon, including the hatchery, Battle Creek, and the mainstem Sacramento River.
- About 500 winter-run Chinook salmon went to Livingston Stone Hatchery, which left about 5,400 winter-run that spawned in river.
- Roughly 11% of total run was hatchery fish.
- There were about equal numbers of winter-run Chinook salmon 2,700 females and 2,700 males.
- Numbers will be finalized in the coming weeks. Tributary fall-run Chinook salmon counts as of 10/19:
 - Clear Creek has observed roughly 1,200 fall-run Chinook salmon, which is low.
 - Battle Creek has observed roughly 8,700 fall-run Chinook salmon, which is also fairly low.
 - Mainstem Sacramento River observed 226 fall-run Chinook salmon carcasses at the end of last week, which is low.
 - During an October flight this week, CDFW saw over 100 redds upstream of Bend Bridge. No redds were monitored between Redd Bluff and Bend Bridge. Surveys will continue for the remainder of the fall-run spawning period.

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

USFWS provided the most recent Fish Distribution/Forecasts:

- Charles Chamberlain reported that Kaitlyn Dunum from Livingston Stone Hatchery sent an update, which included:
 - They are tanking their last two Keswick females this week.

- Captive broodstock eggs are continuing to hatch.
- The first group of button up fry are going to be transferred this Friday.
- Chiller plant is working well. Hatchery is receiving a constant 50° F.
- USFWS added that Katelyn will send an update through Charlie Chamberlain or Craig Fleming to report to the group.

The group discussed having this be the last regular meeting of the SRTTG until the season resumes in February.

- NMFS asked that Reclamation notify the SRTTG when flows drop to 3,500 cfs, (i.e. or other winter refill flows).
- Reclamation added that website updates are provided daily but is open to scheduling any ad hoc meetings as needed.

Next Meeting

February 2023