

Meeting Notes

TRINITY MANAGEMENT COUNCIL

March 30, 2022
WebExVideo Conference

Day 1, March 30, 2022 9:00am

TMC Members

Primary	Representative Seat
Justin Ly	NOAA Fisheries, Chair
Don Bader	Bureau of Reclamation
Tanya Sommer	U.S. Fish and Wildlife Service
Michael Dixon ¹	Trinity River Restoration Program, Executive Director
Mike Orcutt	Hoopa Valley Tribe
Brett Kormos	California Department of Water Resources/Fish & Wildlife
Tim Hayden	Yurok Tribe
Eric Wiseman ²	U.S. Forest Service
Liam Gogan	Trinity County

Others in attendance: Justin Alvarez, George Kautsky, Karl Sietz (Hoopa Valley Tribe), Wade Sinnen, Ken Lindke (CDFW), Radley Ott (CDWR), Nick Hetrick, Bill Pinnix (USFWS), Seth Naman, Roman Pittman (NOAA Fisheries), Chad Abel, James Lee, Oliver Rogers (TRRP), Elizabeth Hadley (Reclamation), Kyle DeJuilio, Chris Laskodi (Yurok Tribe), Keith Groves (Trinity County), Michael Raneri, Madison Peters, Jordan Pritchard

Notes: Sabrina Kleinman (EPP)

¹Dixon joined the meeting after lunch

²Wiseman participated as the U.S. Forest Service representative in place of Kari Otto and Keli McElroy.

List of Motions

Don Bader moved to approve the March Quarterly Meeting Agenda.

Tanya Sommer seconded the motion.

Motion passed unanimously.

Tim Hayden moved to approve the meeting minutes from the December Quarterly TMC Meeting and the February Special Meeting

Tanya Sommer seconded the motion.

Motion passed unanimously.

Tim Hayden moved for TMC to recommend Reclamation implement operation to meet water temperature objectives (53.5°F daily max, 50°F daily average, and optimal 46.5°F) at Lewiston Dam for the benefit of Coho Salmon incubation, with a recommendation made to state and federal regulatory agencies accompanied by a more descriptive letter drafted by TRRP Staff.

Michael Orcutt seconded the motion and offered a friendly amendment.

Motion passed with 6 votes in favor and 2 abstentions. Reclamation and U.S. Fish and Wildlife Service abstained.

Motions (cont.)

Brett Kormos made a motion that TMC send a letter to Reclamation requesting they initiate the Trinity River Division separate consultation under ESA and that both Reclamation and NMFS include the necessary water temperature thresholds specific to all Coho salmon life histories in the resulting opinion, similar to what was conducted in 2000.

Liam Gogan seconded the motion.

Michael Orcutt offered a friendly amendment.

Motion passed with 6 votes in favor and 2 abstentions. Reclamation and U.S. Fish and Wildlife Service abstained.

Tim Hayden moved for TMC to adopt the recommended Critically Dry 1 hydrograph as developed by the Flow Work Group for water year 2022.

Brett Kormos seconded the motion.

Michael Orcutt made a friendly amendment.

Motion passed unanimously

Tim Hayden moved for the TMC to implement the proposed FY22 science work plan as recommended by the IDT.

Eric Wiseman seconded the motion.

Michael Orcutt made a friendly amendment.

Motion passed with 7 votes in favor and 1 abstention. Hoopa Valley Tribe abstained.

Action Items from the Meeting

- Lee will meet with Mike Raneri to discuss the gravel augmentation proposal.
- Hetrick will find the USFWS study on intergravel temperature variability for salmonid eggs.
- Ly will find the results for the Trinity River Hatchery eggs provided for the Southwest Fisheries Science Center thiamine study in 2020.
- Bader will line up speakers for the June TMC meeting on the CVP reinitiation, the Water Temperature management plan approved by the State Board, flow augmentations and *ich* sampling, and the updated use of the radio gates at Trinity Dam.
- Dixon and Hetrick will secure a location for the June TMC meeting in Eureka, CA.

Welcome and Introductions

Ly opened the meeting and noted some organizational changes in the agenda. The meeting format will provide more distinct periods for public input and TMC comment throughout the meeting on topics. The intent is to provide more opportunities for public engagement and comment.

Dixon was not available during the first half of the meeting but joined prior to the discussion on the FY22 Science Proposals. Abel served in his place until then.

Ly did a roll call of all TMC representatives, agencies, and members of the public.

Approval of Agenda

The most current agendas are posted to the TRRP website. Orcutt asked if the March TMC meeting was shortened due to the February Special Meeting and how agenda items were prioritized. Ly explained he and Dixon solicited agenda topics for the March meeting from TMC members but did not get many suggestions. They decided to shorten the meeting given the limited number of topics.

Don Bader moved to approve the meeting agenda.

Tanya Sommer seconded the motion.

Motion passed unanimously.

Approval of Sept TMC Meeting Minutes

Tim Hayden moved to approve the meeting minutes from the December TMC meeting and the February Special Meeting.

Tanya Sommer seconded the motion.

Motion passed unanimously

Non-Agenda Comments

Public Forum

No comments were provided by members of the public.

TMC Entities

Orcutt noted today was the deadline for comments on Reclamation's Notice of Intent to prepare an EIS on the Central Valley Operations ESA reconsultation. This analysis will be important for the restoration program. Orcutt asked to hear from Reclamation on the recently released FY23 Budget and whether there were any departures or changes from Reclamation's Green Book. Orcutt also asked to discuss Reclamation's plans under a third year of critically dry conditions, which is cause for concern (as recently noted in a letter from Congressman Huffman), even for Lower Klamath augmentation flows. Orcutt wanted to know whether Reclamation is evaluating how flows will be managed under the 2017 Lower Klamath ROD and hatcheries. Ly noted Bader would give an update on Reclamation's operations later in the morning with a follow-up from Naman on drought concerns for fish. Bader added Congressman Huffman's letter was addressed to the Commissioner, so the Assistant Secretary will prepare the response.

Report from Executive Director

Abel reviewed the Executive Director's report from Dixon. Hydrographs for 2022 have been developed and will be presented to the TMC after lunch. NFWF released the NFO for the watershed grant program, with the pre-proposal window closing in three days. Committee members should have received information on the next steps. The Program is in the scoping period for new gravel augmentation planning until April 17.

Organizational Updates

The civil engineer technician position closed on March 14 and the Program is waiting for the list of eligible candidates. Hoopa Valley Tribe has offered the riparian ecologist position to Veronica Yates. She met with TRRP staff, Alvarez, and Orcutt earlier during a field tour to upper Trinity River in early March. She will start on April 4 and start with the Hoopa Valley Tribe Fisheries Department office before moving to the Program office later.

The Program office is out of COVID restrictions. Masks are no longer required.

The FY23 Budget has been released and all Interagency Agreements are in progress and/or completed. There is room to add more funding to Oregon Gulch and Abel responded to another

call from Reclamation for more infrastructure funding. Bader added the TRRP will get the usual \$1.5 million from CVPIA and U.S. Fish and Wildlife Service will increase their funding to \$1.2 million, adding \$1.3 million to what was funded in FY22. Abel noted the budget also added a few hundred thousand dollars for disaster mitigation funds for the Monument Fire. Orcutt advised TMC members to review Reclamation's FY 23 budget and posted the weblink.

The scope of work for the Phase II Channel Rehab Review contract is in place and is being reviewed by the Solicitor. It should be posted soon.

Implementation Update

The team conducted a visit with the BLM in February for the Sky Ranch design. They worked on final details and goals for public access, fire camps in Junction City, and boat ramp placements in the field. They have been in close contact with the private landowner, who is on board with the project and offered timber on the property, which could extend the project boundary. The Program is still waiting on the land transfer from USFS.

They have posted notices to the public for the Oregon Gulch project and will start preliminary hauling. Yurok and Hoopa Valley Tribes have provided preliminary estimates, and the Program is working on costs negotiations, with the plan to finish estimation by April.

The Yurok Tribe Design team is moving forward with existing conditions for Evans Bar and the Program has established footing with the neighborhood. No updates for Sawmill or Upper Connor Creek.

Outreach

The Program has published FAQs on tribal nets, which will be posted to the RCD Conservation Almanac, with an abbreviated version in local papers. The Trinity River Survey is currently available on the RCD website and Facebook.

Scoping for the gravel augmentation EA has been released for 30 days, opening on March 17. The Program has had lots of participation at stakeholder meeting to discuss potential gravel augmentation sites, which were held prior to the scoping period.

RCD and TRRP hosted a backyard bird count in February and an invasive weed pulling event in March with several staff in attendance.

The first Science on Tap was held at Trinity County Brewing on March 23. Ken Lindke gave the talk with other partners from CDFW. The event was a success in terms of attendance and the Brewery was happy hosting the event. Next one is scheduled for April 27, with a talk from Josh Smith on Indian Valley Creek.

River Week is coming up and the Program has several youth activities planned, which will be reported on in June.

Science Update

Since the last quarterly meeting, three reports have been in peer review. These include the draft synthesis report on 87 years of scientific inquiry into Trinity River water temperatures, the draft

synthesis report on Trinity River juvenile salmonid physical habitat capacity at restoration site and reach scales, and the draft report on temperature regimes and juvenile Chinook salmon growth in Trinity River off channel and mainstem habitats.

Other reviewed reports include a report from Eric Peterson on periphyton monitoring, the draft synthesis report on coarse sediment storage and its correlations with juvenile Chinook Salmon rearing habitat, and the draft synthesis report on long-term estimates of abundance of juvenile Chinook salmon on the Trinity River; all of which were reviewed and are now in final edits.

Finalized reports include the Trinity River systemic riparian mapping report (which is updated every five years with a technical memorandum) and the annual flow implementation report for WY21. Both are posted to the dataport. Lee encouraged TMC members to use the dataport to sort and find items, which include TMC meeting notes and Executive Director's reports.

WG Briefings

Fish (Bill Pinnix) – The group met earlier in March to come up with a strategy to finalize their Objectives and Targets, which will be presented in June. The group will wrap up their items and provide recommendations on changes and finalize the language for the report.

Design (Oliver Rogers) – The group met on January 12 to hear updates from the Hoopa Valley, Federal, and Yurok-State Design Teams. They provided general updates on their projects and presentations on their designs, including status updates for Sky Ranch and Upper Connor Creek. They are working to update the TRRP design process and channel design guide from 2011. The update will align with the current needs and provide input to the Science Branch on program-wide unit standardization. The Chapman Ranch Phase B post-implementation report is being developed by the Hoopa Valley Tribe and is nearly complete.

Flow (Seth Naman) – The group met three times since December. They focused on developing hydrographs for WY22. During the first meeting they selected members interested in developing the flow scenarios for analysis. The second meeting narrowed down the hydrographs for modeling and selected modelers. The last meeting was in late February and early March, where members reviewed the modeling results.

Watershed (Chad Abel) – No meetings were held this quarter. However, members were selected for the watershed grant review committee and should have received information from NFWF on the review process.

Physical (Lee) – The group met a month ago to discuss sediment augmentation sites. They also finalized their list of objectives and targets and are working on clarifying their results. They are next working on delineating the physical process for the river corridor.

Riparian (Lee) – Did not meet this quarter but working on finalizing their objectives and targets.

IDT (Lee) – IDT met twice in the last quarter on January 24 and March 21. Main topics included the FY22 science proposals, the science symposium, the science management plan, prioritizing objectives, and the WY22 flow scheduling.

Orcutt asked for a status update on the flow synthesis report and who provided input in the budget document which referred to the winter flow proposal and the synthesis report. He asked about the current status of the winter flow variability proposal and if there would be disclosure to the TMC if there was a change. Abel explained the language came from Dixon's accomplishments report for the past year and mentioned that the winter flow EA is being formatted into a report. The report is in draft phase and being reviewed by Lindke, Alvarez, Naman, and DeJulio, along with Lee, Abel, and Gutermuth. The final should be completed by April 2021 with the intention of having the TMC consider a variable winter flow release for next winter. Lee added there was no plan to re-present the flow proposal but to instead look at the uncertainty and scientific questions associated with the proposal. There is a flow synthesis report being prepared which could provide a springboard to reinstate an approach to winter flow releases in the future.

Orcutt asked to see how the uncertainty and science concerns were being address as well as an explanation from Reclamation on why an EA was no longer needed. He suggested looking at hindcasting due to concerns about volumes and flow recommendations. Abel explained the proposed winter flows would not have included a flow event following the first release in February, since conditions were veering towards critically dry by March.

Public Comments

Raneri, who owns property in Lewiston near one of the proposed gravel augmentation sites and channel rehab sites, wanted to learn more about how TMC operates. He had received the notice on the gravel augmentation but had missed the landowner outreach meetings as he recently purchased the properties. He would like to submit a comment but wanted to learn more about the approach used by the Program so he could understand what was proposed. Lee agreed to meet with him to go over the details and show him the video and aerial imagery on gravel augmentation. Raneri agreed and noted his concerns are the proposed boat ramps and the Upper Bucktail augmentation site as well as plans for egress.

Agency Comments

DeJulio asked if there was any talk about limiting allocations on the river or if discussions were solely on limiting diversions over the hill to preserve the cold-water pool. Bader explained Reclamation was only discussion limiting diversions through Carr, which would not reduce volumes down Trinity River.

BREAK

Ly asked Lee to provide an update on the synthesis reports with blank status. Lee explained the cohort reconstruction study was held up due to issues with the modeling software being used, which will take some time. Lindke added the team is using a cohort reconstruction model that will align with the Klamath model so that outputs are consistent with a broader understanding of the stock. However, the software used for the model is outdated and was rewritten in R. The R version is in beta phase and has some inconsistencies. Lindke is working with the Ocean Salmon Project in Santa Rosa to get the R codes in a final operational phase. There has also been staff

turnover causing some delays. Lindke has a meeting Friday and intends to have an update by June. He understood the TMC's frustrations but hopes to finish the analysis soon. The outputs from the model are necessary when looking at juvenile productions that meets the TRRP's goals. Since the Program only has control over that life history phase, the targets and cohort results will project some insight on those.

Alvarez, who is the lead author of the flow synthesis report, is working on the report, and plans to have a draft ready this summer. The report did begin a few years after the rest. Lee thought the timeline for the report was reasonable and thought it could be useful for the winter flow variability proposal.

Lee explained the channel complexity report is almost completed and Robert Franklin intends to finish it soon. There is still some editing to do on the draft, but Franklin did not provide a timeline for completion. The report could inform some of the Physical Work Group's targets and objectives. A few of the reports were delayed due to difficulty with review volunteers. Some reports, like the water temperature report, are data intensive and not many experts were willing to review them for free. The Program used a DOI blanket purchase agreement for peer reviews, which took a few months to get bids and contracts set-up. Now that the contract is in place, reviews should be faster.

Ly asked if there was a plan to present the reports to TMC. Lee explained the authors provided their initial recommendations as part of the science symposium last fall. The intent is to follow-up with a close-out session where Program scientists would review the report recommendations, categorize them, and present them. However, the uncertainty with the report timelines has made it a challenge to schedule the last session. IDT is working on recommendations for the TMC. Ly suggested sharing the findings in presentations to the TMC so the TMC members can digest and understand them. Lee noted the authors have already presented several over the past few years as they were finalized.

Abel was concerned about the timeline for the flow synthesis report and whether it could inform next year's winter flow. Orcutt explained the report was delayed even before it was assigned to the Tribe, while the cohort reconstruction was also delayed while being requested and pushed for by the Hoopa Valley Tribe. He noted that the only way to assess what has happened with the Trinity fish populations is through the cohort reconstruction report. Abel clarified he was not trying to criticize the authors for the delays but wanted to note the value of the report for looking at winter flows in the next water year. Ly noted that all the agencies are working collaboratively together and he just wanted to check on their status to see how close they are to being done since they are behind schedule.

Trinity River Division Flow Operations This Year

Bader gave an update on Reclamation's water plan this year for the Sacramento River. The current plan would limit releases at Keswick Dam. Flows are typically 8-10,000 cfs, but will be halved on the Sacramento. Central Valley Operations determines the allocations, which is

currently 4 million acre-feet below normal, which further contracts flows to 75% of allocations. Reclamation and the State have discussed and agreed to drastic reductions for the valley in this unprecedented year. Most water service contractors are junior contractors who will be down to public health and safety allocations (i.e. municipal drinking water) with essentially no water for irrigation.

While Naman will cover the water conditions for Trinity, Reclamation is drafting its temperature management plan for the Sacramento, which will have a section on the Trinity River. The temperature management plan will be submitted to the State and the Sacramento River Temperature Task Force for review next week. Bader had not seen the plan but was open to comments and feedback and did not anticipate approval from the State Board until early May. Conditions are changing daily and Reclamation is trying to limit mortality as best they can, especially on the Sacramento side as there is less water there.

Orcutt asked who did the analysis for the plan and noted Reclamation will need to manage temperatures to comply with CWA and other state and federal laws. It is unclear if there will be a separate ESA consultation for the Trinity River Division. Orcutt just submitted HVT comments on the NOI for the CVP OCAP ESA reconsultation which emphasize that integrating the TRD with the CVP was misguided, given Congressman Huffman's comments on temperature management and survival of coho.

Groves asked whether Whiskeytown Lake would be kept full or stay at its current low level. Bader explained it would be filled as normal. They hold the level down by 10 feet in April as they prepare the flow schedule and then fill it. The lake will be filled in April to mid-May. Last year the lake was pulled down 10 feet early to help with temperature needs, but they are unsure if they will do that again.

On the Trinity-side of the hill, conditions are not much better. It will be another critically dry year. The temperature plan is currently modeled to meet the State's temperature requirements for Junction City and building in the anticipated volumes for fall flows. They are planning to minimize diversions through Carr. End of September storage is below 500 kaf and heading into a bleak fall for both systems. Reclamation has initiated informal discussions with NMFS to get through the water year on the Trinity River. CVO will submit its temperature plan to the Board for the Sacramento River. Kristin White is working on full models for the Trinity River portion which everyone can review and provide feedback.

Orcutt asked who drafted the interim CVP operations plan and whether it will meet the CWA, ESA, and other temperature standards. Bader explained Reclamation will meet the regulatory requirements and was unsure who provided input, but speculated it was internal.

For the initiation on CVP's long-term operations plan, the NOI went out in February. They held six virtual public meetings, with comments closing today. Trinity is included in the plan but there have been no decisions on whether the Trinity River will be included or addressed through

a separate consultation. Reclamation will decide based on the feedback received. Bader hoped to have an idea on the consultation by June.

Groves noted the water being spent this year is more than what's available and asked if it was better to lower the flow levels this year so there is something available in case similar conditions occur next year or just hope water comes next year. Bader noted the release plans will test both ideas. On the Trinity side, the full allocation amount will be used while they are reducing flows on the Sacramento side in hopes of having some for next year. If there is a fourth critically dry year, they will have to adjust on the Trinity side. Naman noted the last time the reservoir was at this level was 2015 and it might drop even lower, but it was followed by a wet and an extremely wet year. That avoided the worst-case scenario but Groves' concern is not unfounded. Even if next year is an average year, there will be serious temperature and flow issues. Bader agreed that under a normal year, flow volumes would be larger, but it would hinder storage. However, the ROD doesn't address that. DeJuilo added that the reservoir level was managed to end around 600 kaf last year and perhaps managers should have had these same concerns then.

Orcutt asked for someone from Operations to present on Reclamation's plan for both sides of the hill. The consultations should consider carryover storage, but such considerations were previously dismissed by DOI legal counsel.

Gogan asked what measures would be taken if there was a fourth critically dry year or if there were five years of dry conditions. Bader explained no measures have been brought forward and current protocol is to look at the year ahead. He will bring those considerations forward to start looking at scenarios for next year. DeJuilio asked if there was anything TMC could do to engage Reclamation on this issue as previous efforts have had little movement. Bader advised using reinitiation to provide input. Orcutt added there is an opportunity under the current budget to address some of the infrastructure issues TMC has weighed in on through the Bipartisan Infrastructure Law (BIL).

Drought and Coho Salmon Concerns

Given predicted drought conditions, Naman reviewed how water temperature releases from Lewiston to the Trinity impacts coho salmon production and embryo development. Initial inflow predictions have decreased estimates to 466 kaf. Current predictions track the minimum inflow line at the 90% exceedance forecast, which incorporates the weather forecast over the next two weeks. After that, historic conditions are used. Without additional rain or a return to historic conditions, inflow will fall back to the 90% exceedance forecast with dire critically dry conditions.

The current drought is unprecedented. Looking at Basin yields at Lewiston Dam, the last three years represent the lowest running average, outpacing even the Dust Bowl during the 110-year data set. The recent drought outpaces previous lows in 2015 and the early 90s by almost 200 kaf. There is also a significant downward trend since 2000 indicating a considerable step change.

The temperature synthesis data indicates changes in the reservoir. At 1.2 million af, the water temperatures are similar for water coming out of the main and auxiliary outlet valves. But as storage reduces, temperatures from the main valve quickly increase nonlinearly. When comparing temperatures between 1973-1990 and the current time frame, the coldest water at the bottom of the reservoir has increased by roughly 1°C.

Current storage projections are lower than in 2015 with water release temperatures varying at different carryover elevations. Normally all river systems in the West have the warmest water in July or August when air temperatures are the hottest. However, 2021 saw a heating of the water until the middle of November before it started to cool off. Salmonids are not adapted to warm water in November. They have features adapted to cooling off in the fall. Additionally, water temperatures geographically upstream should be colder, but that also didn't happen, which creates significant challenges fish are not adapted to.

The current water temperature requirements are based on Water Order 90-5 and the North Coast Water Quality Control Board orders, which were developed based on Central Valley Chinook. However, coho salmon egg survival drops off rapidly after 12°C and embryo survival drops off at 14°C, whereas Chinook are more tolerant at those temperatures. These same temperature standards were also adopted by the Trinity River Flow Evaluation Study and were not reassessed to look at effects on coho. As a result, there are no water temperature objectives for Lewiston and a tacit assumption that releases would be colder than Douglas City or the North Fork, but that is not happening under low storage.

Last year, there were high temperatures at the hatchery with poor egg survival when temperatures were even at 12°C. These results can skew the run timing distribution at the hatchery as staff take more adults from the run since there is more mortality at the beginning of the season. This also occurred in 2015 and there was a decline in the coho return. While the marine heatwave has exacerbated the problem, coho in the mainstem are experiencing poor production and poor offspring survival throughout November, which only starts to improve in December.

This year will likely be worse based on the forecast. There was significant mortality last year and storage is estimated at 200 kaf less than last year. If inflow ends up near 400 kaf, it could mean 300 kaf of carryover storage. Substantial steps are needed to ensure survival for coho salmon returning this fall.

Naman recommended the following based on the temperature synthesis analysis and analysis of future storage and release temperatures. The Fish Work Group is working on a new water temperature objective for coho which will be informed by peer-reviewed literature and hatchery data. The recommendations include:

- Meet the following water temperatures objectives at Lewiston Dam: 53.5°F (12°C) daily max, 50°F (10°C) daily average, and optimal at 46.5°F (8°C).

- Reduce Carr diversions in water year 2022 to maximize Trinity Reservoir end of September storage.
- Conserve Trinity Reservoir cold water pool for use in the fall to the maximum extent possible.
- Forego power generation this fall from October to December and use the auxiliary outlet to release the coldest water.
- Reduce Carr diversions in WY23 until hydrology indicates the reservoir will refill substantially from precipitation and snow pack.
- Reinitiate consultation for the Trinity River Division.

Naman also recommended TMC members and agencies engage by:

- Comment on the Draft Sacramento Temperature Management Plan in April. While no public comment period is expected, TMC members could submit comments via email to delta@waterboards.ca.gov.
- Request modeling of different scenarios through the Sacramento Temperature Task Group.
- Request NMFS adopt new temperature thresholds for coho salmon as part of its upcoming ESA consultations.

Kormos supported the recommendations and asked why there were no recommendations to improve infrastructure at the hatchery, such as chillers. Naman noted the hatchery technical team did discuss improvements but were concerned about the feasibility of chilling the entire hatchery. They were not included as the TMC has historically steered clear of hatchery issues since they are out of their purview. However, TMC could write to Reclamation on the concern for fish in the hatchery as its possible Chinook could have poor survival even when they return. Kormos asked if the concerns were about whether the chillers were cost prohibitive or logistically impossible. Bader explained the hatchery team should have a full assessment by September on multiple infrastructure needs and have secured \$3 million in RAC funding and upwards of \$10 million in infrastructure funds for upgrades. At Livingston, there are two chillers using 750mW and 550mW, which are incredible power needs. While the power is available at Trinity, the recommendations depend on funding and needs, which should be covered in the consultant's report. The hatchery is funded separately from the TRRP, which is also proposed for a budget increase. He noted the chillers cost several million apiece, with \$10 million for the temporary chiller at Livingston.

Hetrick asked whether anyone had linked the low survival of hatchery fish with the thiamine deficiency observed at Feather River and Coleman related to ocean salmon diets. USFWS also did studies on intergravel water temperatures that saw significant temperature differences between areas where eggs were laid, with cooler temperatures in the gravel [DeJulio clarified that the report found warmer temperatures in the gravel at the time of year in question: <https://www.trrp.net/library/document?id=2350>]. He noted the report had been taken down when USFWS revamped their website but offered to find it. Naman noted CDFW did provide eggs

from the Trinity Hatchery to the Southwest Fisheries Science Center for the thiamine study. Kormos added the research team saw a prevalence of thiamine deficiency at Trinity and Iron Gate in the Central Valley for Chinook. However, the ocean distribution differs by species, with Chinook distributing further south and it has been less of an issue recently. Naman added that without modeling or statistical analysis there appears to be an anecdotal connection between water temperature and egg survival. If thiamine was the culprit, the relationship would not be as strong. Another issue is the decline in fecundity at Iron Gate Hatchery. During the marine heatwave, females had reduced body size and the eggs were not as large or as many, which resulted in poor survival when they returned.

Hetrick thought the TMC should consider the results of the thiamine study. Ly agreed to find the results of the hatchery eggs provided in 2020. Wade asked if the chillers at Livingston were flow through or recirculating. Bader stated they were flow through, which are similar to the current ones used at Trinity.

Orcutt shared his opinion that the long list of different items to address and consider could benefit from reconsultation and the TMC should not wait for a Trinity-specific opportunity. He noted the Klamath has a summit and Congressional oversight hearing focused on the Trinity that TMC member agencies should take advantage of to bring these concerns forward.

Tim Hayden moved for TMC to recommend Reclamation implement operations to meet water temperature objectives, 53.5°F daily max, 50°F daily average, and optimal 46.5°F, at Lewiston Dam for the benefit of Coho salmon incubation, with a recommendation made to state and federal regulatory agencies accompanied by a more descriptive letter drafted by TRRP staff.

Michael Orcutt seconded the motion

Hayden hoped the conditions were compelling to the TMC to make a unified recommendation to take action for operational measures to support meeting the temperature objective. Kormos asked why the other recommendations were not included in the motion. Sommer asked if the recommendations were being aligned with the new objectives and targets the Fish Work Group is developing. Naman explained the Work Group is trying to expedite the updated objectives and targets for the June meeting with a new adult salmonid temperature objective for coho. They wanted to get this recommendation out ahead of the upcoming ESA consultation for the USFWS and NMFS to consider. Reclamation should take steps right now to ensure the best chances of providing water temperatures for coho and recommended the TMC not wait another three months until the objectives and targets are presented to act.

Orcutt suggested Reclamation should determine if the temperature standards are flawed in its proposed interim plan being submitted to the State Board, as the current standards meet their regulatory requirements. The federal government is required to comply with ESA and CWA and their permits with the state. Reclamation provides enforcement and the laws are rigid in terms of what can be put in place. Bader agreed noting Reclamation has an obligation to meet the

regulations and are conducting an informal consultation with NMFS, but Reclamation will do what's needed to meet their current requirements.

Ly asked Sommer asked if USFWS would be involved in the consultation. Sommer stated that USFWS would be involved for any ESA listed species affected by changes in operations that are under the USFWS' jurisdiction. Kormos asked if there was any value in TMC asking NMFS to reinitiate consultation for a particular project to establish a temperature compliance standard for coho. Ly explained NMFS has recommended Reclamation reinitiate for the Trinity, but Reclamation must make the request as NMFS cannot require other agencies to reinitiate (i.e., NMFS can't issue a biological opinion to an action agency without the action agency requesting initiation of section 7 consultation). Kormos asked why NMFS can reinitiate on some projects while others NMFS cannot. Ly agreed to explain the difference offline.

LUNCH

Orcutt thought the motion and request should be sent in a letter to include the background information and specifics of the recommendation. Hayden recommended addressing the letter to NMFS, the State Water Control Boards, and Reclamation to adopt coho-specific temperature requirements. Kormos asked if the motion should include reinitiating consultation under ESA. Orcutt recommended having that as a separate action since the current motion is for an immediate need.

Orcutt made a friendly amended as noted in italics.

Hayden accepted the amendment.

Motion passed with 6 votes in favor and two abstentions. Reclamation and U.S. Fish and Wildlife Service abstained.

Kormos made a motion that the TMC send a letter to Reclamation requesting they reinitiate the Trinity River Division as a *separate* consultation under ESA and that both Reclamation and NMFS include the necessary water temperature thresholds specific to all Coho salmon life history in the resulting opinion, *similar to what was conducted in 2000*.

Gogan seconded the motion.

Orcutt noted Bader outlined two separate approaches for consultation: an integrated one with CVP and a separate Trinity River Division approach. He recommended supporting a separate consultation.

Orcutt offered friendly amendments highlighted in italics above.

Kormos and Gogan accepted the amendments.

Motion passed with six votes in favor and two abstentions. Reclamation and USFWS abstained.

WY22 Spring Hydrograph Proposals

Naman presented the Flow Work Group's recommendations for the WY22 spring flow releases. Annually, the work group develops recommendations for ROD flows in the spring based on the projected water year conditions. The North Pacific High, which is normally semipermanent, is becoming more permanent and shifting north where it is increasing global circulation changes. Snowpack is also currently low, with snowpack reductions starting in January and lasting through February. The snow stations in the Trinity Basin are projected to be between 10-28% of normal by April 1. Precipitation shows a similar story as rainfall was good in the fall with some good storms in December, but then no precipitation since then.

As presented earlier, inflow forecasts continue to decline with current levels falling from 503 to 466 kaf during the last week and median inflow predictions for Trinity dropping by 48 kaf. The Work Group has been monitoring the declining inflow projections, with current inflow close to the lowest on record and trending close to 90% exceedance. Unless rain starts again in April, inflow will likely be less than 466 kaf, making the current drought unprecedented.

There have also been discrepancies in forecasting methods. Reclamation uses historic inflow data earlier in the season. For example, February's projections used the inflow forecast for 50%, which projected almost 200 kaf more than the other agencies. The Work Group wanted to bring these discrepancies to the TMC's attention so agencies could be coordinating and use the same information.

The Flow Work Group met three times in the last quarter to develop the hydrographs. The first meeting selected members to develop hydrographs and assess current conditions. During the second meeting, the group reviewed the proposed hydrographs and selected four along with the standard ROD hydrographs to model and who would run the modeling. A set of hydrographs for a normal water year were also developed but based on current projections none were selected to move forward. During the last meeting, the modelers reviewed their outputs and selected their recommendations.

The first hydrograph, Crit 1, has a peak flow above 6,000 cfs, as it has been several years since the last scouring event. Willow age determines the flow classes needed to scour their root systems. The older the trees, the higher the flow needed. The Crit 1 peak has a sufficient peak to scour 1-year old willows. There is also a small bump before the peak flow to deter frog breeding, which is preferred in the descending limb of the peak. It has also been several years since the Program collected data for hydrologic modeling. It was put off last year due to a lack of high flows, but the longer it is delayed the more the data becomes outdated. Crit 1 would allow flows to drop quickly to stay in the natural flow regime while collecting data for the hydrologic model. Since snowpack has already melted, releases from Lewiston would be similar in timing to snow melt from other river systems. Returning to base flow sooner would also keep temperatures in Lewiston in range for salmonid growth.

The second hydrograph, Crit 2, has similar objectives but does not include the bump for frogs and is not high enough to allow for willow scour. There is a longer descending limb before returning to base flow but still relatively similar to Crit 1.

The third hydrograph, ROD Crit Dry, is standard with a peak flow of 1,500 cfs and a long bench that reaches base flow in July, three months later than other streams in the region. Two other hydrographs, Dry 1 and Dry 2 were also prepared. Dry 1 has a peak flow of 7,000 cfs, a bump for frog deterrence, and smaller peak features to mimic changing weather patterns during the late spring. Dry 2 has a peak flow of 9,000 cfs for a 2-year willow scour event. The Trinity Evaluation Study found that bank hardening and channel entrenchment were the result of riparian growth and recommended using flow releases to address the problem. However, this sequence of critically dry water years has never happened before and is a concern among Program staff. This represents a new hydrologic regime, but scour events can help the channel adjust. Dry 2 hydrograph also has a 2,000 cfs bench with a fast recession to meet temperature objectives for salmonid growth. Finally, the ROD Dry hydrograph includes 4,500 cfs peak and reaches base flow by the end of June.

Since the water year will be critically dry, Naman skipped the modeling results for the dry hydrographs since they are not recommended this year. Overall, the results for all three critically dry hydrographs were fairly similar. There was no difference between models for adult temperature objectives as all the model return to base flow by the time adults are in the basin. The ROD did show fewer exceedances at Weitchpec for outmigrant targets since the ROD hydrograph has a 1,500 cfs bench until June. While the other two hydrographs return to base flow sooner, they will also warm earlier at Weitchpec. From a salmonid perspective, it's ideal to keep the temperatures as cool as possible as late as possible. However, temperatures in the Klamath are extremely warm, and will be warm this year, and there are several in the Program that feel keeping the temperatures so low for so long is slowing fish growth. When they get to the Klamath, however, they're smaller and there is discussion on the utility of the temperature objectives. The priority should be to get the fish as big as they can as soon as they can as conditions warm and increase the risk of disease on the Klamath.

Juvenile temperature objectives for all hydrographs were similar. Black cottonwood initiation was not modeled as they are not considered during critically dry years. Crit 1 was the only hydrograph that would reduce the risk of encroachment for 1 year willow. There were some differences in the frog data, with Crit 1 having the greatest number of froglets due to the bump before the baseflow. Reducing flows earlier also increased the optimal time for frog production. The metamorphosis date was still early enough for frogs under Crit 1 and Crit 2. Crit 1 and Crit 2 also outperformed the ROD hydrograph on bedload transport due to their larger peaks, with both having double to triple the tons of sediment transported. None of the hydrographs showed any impacts to construction as they all return to baseflow prior to construction start dates.

Overall, there were little variations in fish and temperature results between all three hydrographs. With less water to work with in critically dry years, such results are expected. Crit 1 did

outperform the other hydrographs for riparian encroachment, frog production, and sediment transport. Also the bench will allow for data collection for new hydrodynamic models. Thus, the Flow Work Group and the IDT recommend implementing the Crit 1 Hydrograph. Naman thanked Buxton, Lindke, Ashton, Bair, Laskodi, Som, Perry, and Plumb for their modeling work.

Naman added the window for flow releases is very small, with flows occurring between April 17 and May 17 before returning to base flow, which compresses water management efforts to a small portion of the year. In a natural system, storms start in October providing more water through Lewiston. But the Program is now only managing flow for a small fraction of the water year. With the alternatives looking similar each year, staff and agency representatives are frustrated by doing the same modeling each year knowing the results will be similar.

Tim Hayden moved for the TMC to adopt the recommended Critically Dry 1 hydrograph as developed by the Flow Work Group for water year 2022 ~~and continue supporting analysis to support and implement year round water management on the Trinity River.~~

Brett Kormos seconded the motion.

Orcutt made a friendly amendment to strike the second part of the motion as indicated above. Hayden accepted the changes.

Motion passed unanimously.

FY22 Science Proposal Recommendations

Lee reviewed the Executive Director's recommendation for science funding. The discussion is a continuation from the February Special Meeting. Since then, Lee went back to the SAB to clarify some of the questions raised by the TMC and reviewed the process for how the projects were selected and recommended.

The budget for the science proposals initially allocated \$250,000 for short-term modeling and research projects, with the intent to address emerging questions in the TRRP. Since then, another \$100,000 was added from salary savings. The IDT met a few times to refine the selection and review process. The IDT received and ranked 8 pre-proposals and then asked for feedback from the SAB and their rankings as well. Lee iterated the SAB is not involved in decision-making on funding and their role is to provide long-term advice and input on specific projects. While their rankings did not influence the selection process, they were used to advise the IDT. From there, the IDT selected their top five proposals to develop into full proposals. Based on the proposals, a few would be selected for funding, with 1-2 projects on standby if funding was available.

The full proposals were reviewed and then sent to the SAB for review. The IDT recommends funding four projects in FY22 and prioritizing one for funding in FY23. Lee reviewed all eight projects and noted that none were seen as irrelevant by the SAB but most recommendations came down to timing or funding concerns.

1. Trinity River Turbidity Monitoring – This would monitor impacts from the Monument Fire, which would be underway or done once the project received funding. IDT and SAB

ranked it lower and no full proposal was requested. Cost estimated at \$40,000. Reviewers thought the project was more of a long-term monitoring project and were unclear how the information would be used for adaptive management.

2. Development of a surface grain map – Project would provide an update to the 2014 map. IDT was highly supportive of the work but the SAB had several caveats. SAB recommended reframing the project as a pilot project or as a long-term monitoring strategy. The Executive Director recommends funding in the next fiscal year. Cost estimated at \$178,000.
3. Mainstem Trinity River Bar Area Mapping – Project would map gravel bars exposed during late summer base flows. Ranked fairly low by the IDT and did not request a full proposal. Cost estimated at \$38,000. Reviewers suggested incorporating it as part of long-term monitoring.
4. **Effects of Scour and Inundation on Aquatic Communities** – Project would look at how scour impacts benthic macroinvertebrates and food supply for juvenile salmonids, which was a major assumption in the winter flow proposal. Project would not lock the Program into a long-term monitoring strategy and was highly ranked IDT with only minor comments from SAB. Cost estimated at \$152,228.
5. **Update and Improve RBM-10** – The model is used for S3, FYFAM, and bedload models. SAB ranked the project lower as they were unaware how it was used. Lee communicated with them on its use and the SAB agreed that updates and improvements are important. Cost estimated at \$106,860.
6. **Comparing physical and bioenergetic metrics of juvenile salmonid habitat at channel rehabilitation sites in the Trinity River** – Project will evaluate new method of salmonid rearing habitat with intent on refining current methods. Top ranked by IDT and SAB with cost estimated at \$27,400.
7. **Developed of SRH-2D as a tool used to inform site design and performance** – Project would develop a new temperature model for water temperatures and would validate modeled temperatures with logged temperatures. Ranked 4 of 8 by IDT and SAB with cost estimated at \$26,346.
8. Wildfire and stream temperatures – Project is a desktop analysis on historic relationships between fire and water temperatures. Ranked lowest by SAB and IDT as link to management was unclear. Cost estimated at \$40,000 to 50,000.

The IDT recommends funding projects 6, 5, 4, and 7 in fiscal year 2022 and funding project 2 in fiscal year 2023 by incorporating it in the Science Plan.

BREAK

Dixon explained how funding these projects has required a long-term look at how proposals are solicited, ranked, and evaluated along with on-going conversations about how to address conflicts of interest, all of which were not intended to be addressed as part of this process. The intent was to fund one-off proposals to expand the utility of existing tools or answer important questions. Because of the intersection of these concerns and the proposal process, there were

some hiccups. The IDT could have been clearer on how the proposal writers needed to present their projects based on the SAB's feedback, and there could have been a larger conversation on how to include the SAB. These issues resulted in changes that, while well-intentioned, created confusion. There are now opportunities to learn moving forward on how to solicit proposals in a more structured and timely manner. All the proposed projects are ones the Program and independent scientists thought were important. Dixon hoped it would keep dynamism in the Program while they continue long-term planning for bigger issues.

Orcutt appreciated Dixon's background and thought the linkages went further back. He had voted against the concept in general due to concerns about having pots of money available that TMC was unaware of how the funds were being spent. He thought the criteria for providing funding should be tightened as it is unclear if the project funding fits with the standard budget process. He was curious how much the funding was being used to address inadequate studies associated with winter flow and thought the TMC could do better with soliciting smaller proposals in the future.

Lee explained several projects were based on the winter flow proposal but none directly address it. A better place to discuss winter flow variability is through monitoring of smolt abundance, characteristics, and sizes to understand the influence of winter flow temperatures. Orcutt noted none of the criteria for the proposals were based on pressing needs or a systemic approach but did want to hear how conflict of interest was addressed, noting that Hoopa Valley Tribe submitted a few proposals and how they were vetted or addressed since it is something that needs to be resolved. Ly did not agree that there were insufficient studies on winter flow to support the NEPA analysis.

Orcutt asked what would happen if the studies were not funded or approved. Dixon explained the funds would go toward the FY22 channel rehabilitation project at Oregon Gulch. The intent of the funding was to try to fund more science as the Program started experiencing a higher burn rate related to higher costs. Orcutt thought it would have been more appropriate to reallocate the funding for the channel rehabilitation review than the science project funding towards construction.

Hayden moved for the TMC to approve funding for the proposed *FY22* science work plan as recommended by the IDT from the Executive Director's memo. (see below)

Wiseman seconded the motion.

Executive Director's Recommendation: I recommend that the program fund the following proposals (Table 4) for a total of \$312,839. Proposal 2, which was well received by both SAB and IDT, should not be funded through this one-off research and modeling effort because it supports what should be a recurring long-term monitoring strategy. I recommend that Proposal 2, or a version of it, be incorporated into the Science and Monitoring Plan and prioritized for funding in FY23.

Orcutt made a friendly amendment to specify that the proposal is for 2022 only (as indicated in italics)

Lee explained the recommendation regarding the grain size map does not commit the TMC to funding the project but merely prioritizes adding it to the Science Plan

Motion passed with 7 votes in favor and 1 abstention. Hoopa Valley Tribe abstained.

Agenda Topics for June TMC Quarterly Meeting

- Report from the Science Coordinator on the work groups annual work plans for FY23.
- FY23 budget including information on the President's budget changes and potential increases (Dixon)
- Presentation from CVP Water operations (Reclamation)
- Reinitiation on CVP/Trinity Update (Bader or Reclamation)
- for the year and it will be approved in June.
- Objectives and Targets Update – (Lee)
- Refinements documents update – (Smith)
- Retrospective look at WY22 winter flow variability – (Flow Work Group)
- Water temperature objectives from the Board – (Don will coordinate) topic could be done in May if ready.
- Fisheries/PFMC update along with information on spring Chinook listing – (CDFW coordinates)
- Adult coho and embryo water temperature objectives – (Fish Work Group)
- Final list of watershed grant proposals – (Abel) there are currently \$1.3 million in proposal requests with \$900,000 in available funds. Only one project was proposed from a new entity.
- Gravel augmentation relocation sites and scoping comment review – (Abel)
- Trinity River Hatchery infrastructure analysis – (Derek Rupert)
- Flow augmentation release update – (Bader or Megan Simon)
- Trinity Dam radial gates update for Lewiston Dam – (Bader) Bader explained the current plan is to park the radial gates and automate the outlet tables downstream of the hatchery. Reclamation wants to see if that will release the stress on the outlet valve as it's a separate valve that can do upwards for 400-450 cfs to make the small changes for the year. Bader will provide an update on how the approach worked.

June TMC will be planned in Eureka. However, the Humboldt Bay Aquatic Center is not available. Dixon and Hetrick are working on securing an alternative meeting location.

Any additional changes can be sent to Ly or Dixon for consideration. Ly noted this quarterly meeting was shortened after he and Dixon received few suggestions for the agenda. Ly and Naman added each TRRP entity can use their discretion to make recommendations to other regulatory agencies responsible for water temperatures and ESA compliance as it is not solely a

TMC responsibility. Finally, Ly and Kormos connected during lunch about the confusion regarding NMFS' ability to reinitiate without the action agency's request. Ly reiterated that NMFS does not have the authority to initiate or reinitiate consultation unilaterally and issue a biological opinion without the request of the action agency. Kormos was aware of NMFS reinitiating consultation on the Pacific Fisheries Management Council's ocean salmon fisheries. Ly clarified that NMFS was the approving agency for ocean salmon fisheries (PFMC makes the recommendation to NMFS to approve, and is not the federal action agency), so NMFS can reinitiate consultation with itself.

Adjourn at 4:00 pm