

Draft Meeting Notes

TRINITY MANAGEMENT COUNCIL

March 10-11, 2021
WebEx Video Conference

TMC Members

Primary	Representative Seat
Don Bader ¹	Bureau of Reclamation, Chair
Justin Ly	NOAA Fisheries, Vice Chair
Nick Hetrick	U.S. Fish and Wildlife Service
James Lee ²	Trinity River Restoration Program, Acting Executive Director
Mike Orcutt	Hoopa Valley Tribe
Teresa Connor ³	California Department of Water Resources/Fish & Wildlife
Dave Hillemeier	Yurok Tribe
Lois Shoemaker	U.S. Forest Service
Keith Groves	Trinity County

Others in attendance: Seth Naman (NOAA), Elizabeth Hadley, Linsey Walker, Tom Schlosser, Paul Zedonis (Reclamation), George Kautsky, Justin Alvarez, Shaun Green, Bryan Lester, Bill Matilton (Hoopa Valley), Wade Sinnen, Ken Lindke, Chris Ramsey (CDFW), Kyle DeJulio, Chris Laskodi (Yurok), James Lee, Chad Abel, Eric Peterson, Todd Buxton, Oliver Rogers (TRRP), Bill Pinnix, Nick Som, Conor Shea, Steve Gough (FWS), Liam Gogan (Trinity County), Chad Smith (Headwater), Elizabeth Sandoval (Trinity RCD), Trent Tuthill, Tom Stokely, Maya Williams, Seth Lawrence (CA DWR - Day 2 only).

Notes: Sabrina Kleinman (EPP)

¹Bader left early on Day 2 with Ly taking over as moderator and Hadley serving as the Reclamation representative. On Day 2, Paul Zedonis served as the Reclamation representative after lunch.

²Lee served as the TRRP representative as Dixon is currently on active duty orders for 90-days.

³Connor left after lunch on Day 2 with Sinnen serving as the State representative.

List of Motions

Justin Ly moved to approve the March 2021 TMC Agenda.
Keith Groves seconded the motion.
The motion passed unanimously.

Justin Ly moved to approve the December 2020 TMC meeting notes.
Nick Hetrick seconded the motion.
The motion passed unanimously.

Dave Hillemeier made a motion to have TRRP technical staff work on a white paper regarding winter/spring flow variability to submit to the SAB along with draft and/or final synthesis reports that support that white paper to receive their feedback.

Groves seconded the motion.

Motion passed with 6 votes in favor. USFS was absent, Hoopa Valley opposed.

Hillemeier made a motion to open the Coordinator and Co-Coordinator positions for the IDT to all members of the IDT to be voted on an annual basis by the IDT

Groves seconded the motion.

Motion failed with USFWS, the State of California, U.S. Forest Service, and Trinity County abstaining.

List of Motions (con't)

Groves made motion to accept the changes to the IDT Coordinators as presented by James Lee.

Connor seconded the motion.

Shoemaker made a competing motion to use a hybrid approach where one Co-Coordinator would be a member of the IDT to be voted on annually by the IDT and the other Co-Coordinator would alternate between the TRRP Branch Chiefs.

Hillemeier seconded the competing motion.

The competing motion failed with USFWS abstaining, and the State of California and Trinity County opposing.

The original motion failed with USFWS abstaining, and Hoopa Valley, U.S. Forest Service, and Yurok opposing.

Hillemeier made a motion to adopt the Flow Work Group's recommendation for Water Year 2021.

Hetrick seconded the motion.

Motion passed unanimously.

Groves a made a motion to renew the discussion on the IDT Co-Coordinator at the June meeting.

Sinnen seconded the motion.

Motion passed with 7 votes in favor, USFWS abstained.

Action Items from the Meeting

- Reclamation will schedule Jared Bottcher from the Klamath to give the TMC an update on their operations adjustments in the Upper Basin at the April TMC call.
- Lee and Abel will work on comprehensive edits to the Work Group Manual to present to the TMC in June.
- TRRP will post the presentations from the meeting to the website. For future meetings, the TRRP will post the presentations to the websites a few days prior to the quarterly meeting.
- Lee will follow-up with Dixon on the total amount from CalTrans and whether the TMC made a motion to dedicate those funds to channel rehabilitation work.

Day 1, March 10, 2021, 9:00am

Welcome and Introductions

Bader opened the meeting with a roll call of TMC agencies, staff, and the general public.

Approval of Agenda

Ly moved to approve the March 2021 TMC Quarterly Meeting Agenda.

Groves seconded the motion.

Motion passed unanimously

Approval of Sept TMC Meeting Minutes

Ly moved to approve the December 2020 TMC Quarterly Meeting Minutes

Hetrick seconded the motion.

Motion passed unanimously.

Public Forum

Bader opened the meeting to comments from the public. No comments were given.

Report from Executive Director

Lee is serving as the Acting Executive Director. The report was prepared by Dixon before he left for active duty. Dixon is scheduled on 90-day order, but it could be extended. In the meantime, Lee and Abel would be switching off Executive Director duties at two-month intervals. They are acting as Co-Director now until Dixon returns. Dixon is currently in Oakland assisting with vaccination clinics.

Organizational Updates

The public comment period closed on the Oregon Gulch EA. They have started clearing and grubbing on BLM property for Chapman Ranch Phase B. The planning team has met regarding the ROD variable flow proposal to develop alternatives. Proposals for the hydrograph and gravel augmentation have also been prepared and will be presented later in the meeting.

Kevin Held left for a position in Colorado with the BLM as a park ranger. His position will enter the recruitment queue in the next few months. If TMC members know of qualified candidates with experience as a Realty and/or Outreach Coordinator, they should apply when it opens. The Program's Fish Biologist (which was formerly a physical science position) is being filled by the Yurok Tribe with memorandum on their AFA. The Program is waiting for the signed memo. The civil engineering position remains open but will open soon.

Orcutt asked if the position was for a fish biologist or a physical scientist because it was unclear and what the Program hoped to gain by using an MOA to fill it. Lee explained the position was for a fish biologist, but due to a vacant physical scientist position. The Program has a fair number of physical scientists, with training in fish biology, but no assigned fish biologist. The position would be similar to a riparian ecologist and would be managed, selected, and funded by the Yurok Tribe through their AFA. The Program needs someone to do the current modeling and build the Program's S3 modeling so they could be more responsive. Other potential benefits may be for public interactions, document reviews, scoping for projects, reviewing proposals, and other TRRP relevant tasks.

Orcutt thought it was unclear if the fish biologist position was a need for the Program and noted the TMC should have discussed it more. Orcutt asked how the proposed gravel augmentation at the hatchery fits in with the current permits and strategy for gravel introductions. Lee deferred the question to Shea's presentation on Day 2.

Som asked what the desired expertise would be for the fisheries biologist and if a hiring panel would be convened. Lee explained the position is being negotiated with the Yurok Tribe and would be under their purview. Abel added the hire would be from their existing staff, likely Chris Laskodi once the MOA is signed.

For the budget, some funds have been freed up from salary savings plus a major adjustment to funded hatchery tasks. These tasks were typically funded by the TRRP but will now be funded through a different DOI budget, freeing them up this year. More discussion is scheduled for Day 2 on the budget adjustments.

Implementation Update

The Yurok Tribe has started early vegetation removal for Chapman Ranch Phase B on the BLM and the US Forest Service has finished their objection period and can start clearing on their land. However, clearing will only be open for a limited window due to the start of the bird nesting season. The FEMA Conditional Letter of Map Revision (CLOMR) was submitted in December but is on pause until they upload the 100% design from the Hoopa Valley, which was just recently completed. FEMA has inquired about some of the data for the project, which appears to be due to confusion over the Phase A and Phase B projects. The Program is working with Trinity County to get the permit in place soon, as mobilization is scheduled to start the first week of May.

The Hoopa Valley Design Team recently sent conceptual designs for the Upper Conner Creek Project. Held had spoken with the private landowner before leaving, who appeared to be open to the approach but is now not in favor. Those parcels are in the middle of the Upper Conner Creek project and are important for the design moving forward.

The Program is moving forward with planning for gravel augmentation at the hatchery based on a recommendation from the Physical and Fish Work Groups. They are still figuring out the logistics for a low volume summer gravel placement. Conor Shea will discuss more on Day 2.

Public Outreach Update

They are close to finishing the 2020 Annual Report, which Held worked on before leaving. There is also an article on the Program in the next spring issue of Trinity County Conservation Almanac. The Trinity River Survey was recently distributed, which the Trinity RCD will manage with support from the Program. The Survey provides a review of public opinion on management of the River.

On January 15, the Program participated in the Shasta County Virtual STEM event with north state 9th graders. The Design Team is currently working with landowners and residents to develop options for temporary access and monitoring work.

The Program plans to send out postcards on April 9 to inform the public about the flow schedule for water year 2021. Abel is also working on public notices, mailers, and email notifications.

Science Update

There were a number of article submissions and postings over the last few weeks.

- The draft report for WY21 on hardwood monitoring recruitment is in peer review.
- The vegetation encroachment synthesis report is in final edits.
- The final effectiveness monitoring report was accepted.
- The WY2018 – 2020 report was resubmitted and has been accepted for posting.
- The history of fine sediment on physical processes report was posted to the website.

Lee received the synthesis report on long-term data collected at the Willow Creek outmigrant trap but has not had a chance to check formatting and submit for peer review. This will be part of the outmigrant synthesis report, which will be presented later. They will do an office review of the report and notify the TMC when the final is posted.

Eric Peterson has been managing content on the synthesis report webpage, but some reports, which were not funded as synthesis reports but are in a similar vein, have been added to the site. They are considering changing the name to something broader. For now, the link in the Director's report is the main collection of completed synthesis reports.

WG Briefings

Fish (Ken Lindke) – They met once last quarter on January 6. They finished the objectives and targets refinement, except for one target that will require additional information. Lindke prepared a memo on their efforts over the past 2.5 years with write-ups prepared by the sub-groups for each new proposed target. The memo was incorporated into an overall draft prepared by the IDT. The Fish Work Group also met with the Physical Work Group on gravel augmentation at the hatchery. The group agreed that augmentation could resume. Their next meeting has not yet been scheduled but will likely be within the next quarter.

Orcutt asked if the objectives and targets developed by the Fish Work Group looked across the standards and goals for the different species affected by the Program, which differ by state, federal, and other program requirements. He noted that the conservation objectives for Fall Chinook were different than Spring Chinook (PFMC had not adopted spring chinook conservation standards) and how Coho standards are driven by ESA while less so for steelhead. Lindke explained the group did not do anything with the escapement targets as they are well defined in the ROD and the 1983 EIS. The Program never had harvest objectives, which were developed for Fall and Spring Chinook based on the amount of harvest needed if full participation for the fishery was met. Kautsky and others prepared a write-up on the approach using the PFMC harvest control rule to back calculate how much harvest should occur at the maximum rate if the escapement target is met. Lindke agreed there are a lot of factors affecting the species goals outside of TRRP control, but they are in a good position to establish targets for what a fully restored fishery could look like. They did defer targets on Coho and steelhead until a control rule and/or other information becomes available.

Hetrick added that as a co-developer of the S3 model the Service will keep running the model as needed, but staff has difficulty responding to model run requests when only a day or two notice is given, which can be hard to fit into staff schedules. With regard to TRRP staff positions, he noted that the program seems to be moving in two different directions, which seem inconsistent. The organizational approach recommended in the Refinements process suggests that the Program partners work for the Executive Director whereas recent hires like the fish bio position have been making staff from select partner entities TRRP employees. These approaches are not consistent with each other and should be worked out in the Refinements process.

Buxton asked if they found someone to take over coordination of the Fish Work Group yet. They had not but will try to address at the next meeting. Lindke noted there are different levels of funding based on agency participation. Since Lindke is fully funded through the Program it is easy for him to serve as Coordinator, but it may not be easy for others. He plans to continue in the role if no one steps up but would like a break to focus on other work needs.

Hetrick asked if the Work Group manual gave direction on how to select Work Group Coordinators as he thought that Coordinators served for a fixed period of time and were selected by the individual groups. Lindke explained he has brought up nominations every year during the three years he has served, but no one has come forward. He enjoys the role, but has other items that need attention and would appreciate a break.

Design – They have been working independently on various channel rehabilitation projects. They completed a status check on their projects. Evans Bar is in the queue but is on hold as Sawmill is a current priority. All projects are in a different state of planning.

Flow (Seth Naman) – The group met in January, February, and March, with a combined meeting in March with the IDT. In January, they reviewed the current hydrological conditions and discussed objectives for this year's flow release and reviewed previous flow releases. They discussed the need for willow scouring flows but noted that the current year's hydrology was not promising. Members developed flow alternatives for dry and critically dry water years. In February, they reviewed four main alternatives: 2 for a dry year and 2 for critically dry year as it was possible for a dry year in February. Modelers were assigned alternatives for analysis. In March, they met with the IDT to review the modeling results and discuss concerns and benefits of each. Consensus was reached on hydrographs for a dry and a critically dry year, which will be presented on Day 2.

Orcutt asked if the modelers were looking at the same attributes discussed in the past. Naman explained the analysis uses the spreadsheet used in previous years with various objectives for fish, temperature, riparian habitat, and sediment. The modelers filled in the spreadsheet for their models. He reminded the group the spreadsheet works as their decision support system (DSS) to help them make clear structured choices.

Watershed (Chad Abel) – The group did not meet during the last quarter. Their last meeting was in November and they decided to wait until a third-party grant administrator was hired so they could discuss the request for proposals for FY21. It has been a slow process getting the NOFO out, which was part of the reason for hiring an administrator since Reclamation's process is not timely. Grantees from FY20 have started receiving their funds. Abel has been monitoring recent comments about the Program's lack of watershed work and he is looking at ways to improve the grant prioritization in light of recent studies, such as the fine sediment report, which could remove sediment inputs as a major concern in some areas. He suggested including information on in-kind contributions from projects to show how funds from the grants are leveraged.

Hetrick asked if they thought the third-party administrator would be hired in time to implement the FY21 grant program before the end of the year. Abel explained they have another six months and are making progress on getting the funds moved, but he will check-in with their contact next week if there are no developments.

Hillemeier noted that while the grant program is not a huge pot of money, it might be helpful to post information to other funding sources for applicants. It could help get projects successfully funded. He noted that TRRP funds are good to use for planning and NEPA work to leverage against other funds for on-the-ground work.

Abel explained the funding is also relative as the same amount would fund projects across three different states in the Midwest. Dixon had identified additional funds to pay for the third-party administrator to reduce the amount needed from the grant program. He liked the idea of posting other funding options to improve how they show the funds as part of much larger projects.

Gogan noted the public has been thrilled by the success of the Stage 0 design at Indian Creek. While it is not the Program's goal to address the impacts of cannabis on the watershed, many see the project as a worthwhile approach to keep some of the dying streams alive. He noted there are many drainages that are slowly collapsing and the public is supportive of similar projects. Since the project was under \$400,000, it seemed to use the funds efficiently and the public could immediately see the benefits. Lee agreed and thought the Yurok Tribe could present on the project.

Physical (Conor Shea) – The group met on March 3 and discussed the gravel augmentation needs for this year and the future. They finalized their objectives and targets and have a good understanding of what they are and what they will measure and are ironing out how to implement them and use the information.

Riparian and Aquatic Ecology (Chis Laskodi) – The group met on January 11 to focus on their objectives and targets. They discussed future projects with Justin Alvarez on where the future projects should head. They finalized four objectives and targets and are waiting on the results from the synthesis reports before finalizing some of the metrics. Lee asked if they were still working on the science symposium timeline. They are planning a series of lunch hour presentations starting in late April but haven't set dates as they are waiting for the synthesis reports. They hope to arrange an in-person meeting in the fall. Lee encouraged Laskodi to start scheduling the presentations now to set a deadline for the synthesis report authors to complete their reports.

IDT (Lee)– The IDT met on January 15 and March 1. The January meeting focused on the objectives and targets with all the Work Group Coordinators presented their progress. They identified what each has done, what the Program has moving forward, and what needs further improvement. The Work Groups summarized their work and developed a global report to review at the March 1 meeting. In March, the IDT felt comfortable recommending the objectives and targets outlined in Table 1 as a start to develop further through the Science Plan. They are

reviewing the supporting document, which includes background details and next steps and recommendations. They plan to share the document with the TMC in June.

They met with the Flow Work Group to discuss the hydrograph and the modeling results. They selected hydrographs for dry and critically dry water years and will make a recommendation on Day 2. They discussed a sediment augmentation proposal for the hatchery reach from the Fish and Physical Work Groups. The IDT was comfortable with adding gravel in the hatchery reach. Lastly, they discussed changes to the Work Group Manual. There were some minor word smithing, except for a change on IDT coordination to include representation from the USFWS. The IDT is proposing the group be co-coordinated by Reclamation and USFWS as it was in the past. Since the Science Coordinator position has moved from USFW to Reclamation, the IDT wanted to restore its previous role.

CVP Operations Update

The water inflow projection from CVO for the Trinity is about 30% of average with about 504 kAF, which is 150 kAF short of a dry year designation. Rainfall is at 60% of normal with 14” measured at the hatchery and more expected with the day’s storm. This indicates the Trinity will be in a solid critically dry year. Seth will provide the flow recommendations tomorrow. Paul Zedonis will also talk about the Lower Klamath fall augmentation flows as well.

The picture in Sacramento is similar with senior water holders receiving their initial allocation on February 12. As a critically dry year, the allocation was below 75% of their allotment for the year. Last year, the water levels bounced until it hit the normal water year levels. This year will likely stay in critically dry as there have not been enough inflows to overcome the deficit. The junior water holders were given their allocation on February 24, which was 50% of their allocation. For storage and expected releases, Reclamation is anticipating a record dry year for rainfall. More storms are expected next week that could pile up some late spring precipitation and it looks like Weaverville should get good precipitation over the next month.

DeJulio asked if the current dry year trend from the past two to three years had been compared to previous drought periods and if it would be wise to start planning for drought conditions. Bader explained Sacramento is doing a lot of planning with temperature management and planning such as adding a chiller to keep the water cool and using the temperature curtains at Shasta. While there has not been talk of declaring a four-year drought, they do anticipate there could be similar to the 2014-2015 time period.

Orcutt noted the Upper Klamath Basin hydrology has also not been faring well and planning some major deviations from major operations for the spring to reduce impacts to juvenile fish. He suggested comprehensive management of the two water supplies in the fall to provide some coordination between the two sides. Bader agreed to have Zedonis touch base with the Klamath and see if they could participate on the April TMC call with more information.

- Bader and Zedonis will coordinate with Jared Bottcher at the Klamath to give the TMC an update on their plans for the year.

BREAK

2020 Run Size Summary / 2021 Run Size Forecast

Kautsky presented results from the 2020 run size and abundance forecasts for 2021 with a focus on the Klamath Basin. Juvenile fish out-migrate to the seas and recruit into marine fisheries. Using monitoring, fish from the Klamath Basin contribute to marine fisheries as far north as Central Oregon and as far south as San Francisco before returning to the river. The fish that survive the marine habitat will come back to river as adult year 2 to year 5 fish. Monitoring is used to track each annual cohort to determine how many from each year are returning to the terminal fisheries. The TRRP collects data from the terminal fisheries and recreational monitoring for the Lower Klamath, Lower Trinity, and Willow Creek, as well as harvest from tribal fisheries.

These are broken down into age structures. At Willow Creek Weir on the Trinity, fish are tagged and recovered to see where the fish have migrated. Biological data and other monitoring program efforts provide information on fork length, gender, and potential hatchery marks. The hatchery, which is the terminus of the anadromous basin, also use coded wire tag (CWT) recoveries. The CWTs help validate the age analysis and information on hatchery origin and fish stock contributions. They also use the tags to determine ocean distribution, which adjust the harvest models, determine current fish distribution, and planning for returns to the Klamath. Fish scales are also analyzed as part of the age analysis. All this data is used to forecast the ocean populations and develop cohort reconstructions and the TRRP uses it to measure restoration success against pre-dam populations.

In mid-winter, the Klamath River Technical Team assembles the information from the current winter returns broken down by age, and then estimates the next year's return size by natural and hatchery origin spawners and the total run size. Calculating for each age cohort, they use a regression analysis with the September starting population to calculate the ocean population. Based on the PFMC (Pacific Fisheries Management Council) management standards for de minimis fisheries, they calculate the allowable catch relative to the pre-exploited abundance of fish from the expected return. Kautsky noted the Amendment 16 codifies inflection points to allow harvest at low levels of abundance with the understanding that the fisheries can not achieve the maximum escapement level. Using the population curve, they calculate the size of the pre-exploitation populations then apply the control rule of 0.25% to calculate the stock forecast and the estimated age distribution of the return.

In 2020, the natural spawner escapement was estimated at 36,206. Of that return, 50% of the de minimis harvest is allocated to non-tribal fisheries and 50% were allocated to the tribes. The actual returns for 2020 were around 26,000, which is 10,000 less than forecast. Kautsky explained the calculations are considered unbiased as there are times when numbers are underpredicted as well. For 2020, the Trinity River run was around 18,700 for hatchery and natural origin fish, and the average at Willow Creek between 4,000 – 4,200 for all fish combined.

Based on 2020 populations, the run size is projected around 54,400. For 2021, the escapement of natural fish will be around 36,200 after harvest (25%) with a 50% allocation for tribal fisheries. Kautsky noted that the projections are highly preliminary and the PFMC has come out with revised standards to estimate the size for each of the fishery allocations. Kautsky estimated it would fall close to 9,000, which is similar to last year's allocation.

Sinnen noted that stock management is pretty intensive and when fisheries are declared overfished, they are required to have geometric average of three years of natural adult escapement equaling 40,700 natural area adults to be considered "rebuilt", which would require approximately 128,000 natural area adults in 2021 to meet. While they are seeing poor numbers there is an understanding that salmon populations are cyclical as seen in 2012 with some of the most robust run sizes. They are hoping that they can get out of the negative trends as the allocations for recreational and tribes are small. Kautsky added that the "overfished" status is a bit of a misnomer as it places the blame on fishermen. But the situation is more complicated and harder for the PFMC to clarify, but it was seen in the boom population of 2012 which has now shifted.

Gogan commented that ocean abundance may be deceiving as it calculates numbers that can be off by a lot, with the allocations doled out before they're confirmed, which could contribute to overfishing. He asked if there were efforts for day counts using upgraded technology to evaluate the ocean abundance, noting other areas were using sonar counters. Kautsky explained the approach was not a guess but based on previous data dating back to 1978. He noted that half the population identified for the Klamath is already removed from exploitation. He was not sure if sonar would be the best approach as the information often gets stale relative to management actions. Gogan explained that the Program does have some control in addressing overfishing and wanted to see a better river counting system that relies less on ocean abundance.

Hillemeier added that the populations are in a downturn as the Yurok Tribe has not had a commercial fishery since 2015. While 2018 wasn't terrible, they have set records each year for how small their allocation is. It could be climate and other things and they need to look outside the box on how to help the fish. The Yurok Tribe is working on a pilot project in the Lower Klamath but are not ready to discuss it yet.

Pinnix asked if there were rules on how many back-to-back years they could use the de minimis fishing rule. Kautsky explained that once a fishery is declared overfished, the numbers are based on a three-year average. The PFMC's report has tried to address model bias through forecasting and evaluating ocean and river conditions. The PFMC also had a report with recommendations on how to address overfished stock, but without the de minimis rule, there would be no fishing for many years as abundance has been below 35,000 and 40,700 for natural spawners. Amendment 16 allows some permanent fishing to occur until the number is down to zero.

Juvenile and Adult Fish Synthesis Report

Steve Gough presented on adult spawning at fisheries. The analysis on adult salmon is based on weir data for Fall and Spring Chinook, Coho, and steelhead using annual escapement estimates from natural areas and the hatchery. Time series of natural area escapement from 1978-2018 shows TRRP escapement has not met the escapement targets set by the ROD nor were they met before the ROD unless the proportion were higher than normal. Spring runs of 6,000 were met for four years and runs of 1,400 for Coho were exceeded 7 years in the post-ROD period.

Hatchery returns show similar trends with Chinook hitting escapement targets six to seven times for both seasonal runs. Targets for Coho were met 17 times with steelhead only meeting the target 3 times.

Spawning ground surveys assess the spatial distribution of spawners and pre-spawn mortality. For redd abundance and distribution, natural area Chinook redds had a slight but not significant decrease at the system scale. In terms of total salmon redds, there is a decrease from 2002 to 2017 that appears driven by the number of hatchery origin redds. Geographically, redd abundance has migrated downstream from Lewiston over the past 16 years, with hatchery fish showing a similar but less dramatic migration. Based on reaches, Lewiston and Limekiln have a large proportion of redds in the years immediately after the ROD, which have shifted downstream by 10-15% by 2017, with proportions increasing at Junction City and Del Loma over time from 10 to 20%. For natural original Chinook, there are decreases at Lewiston and increases at Valdor Gulch and Deep Gulch over the same time period.

Pre-spawn mortality from the pre-ROD and post implementation periods indicate four years with greater pre-ROD values. However, when comparing mean and variance between the two time periods, there was no significant difference, which indicates other factors are influencing pre-spawn mortality such as water temperature or run size. They did see higher pre-spawn mortality rates lower in the river, but there are fewer fish in that section than in the upper reaches. In a paper by Aguilar from 1996, he hypothesized a positive relationship between pre-spawn mortality and run size. The data based on a generalized linear model comparing pre-spawn mortality and total escapement supports the hypothesis.

The redd superimposition analysis compared the distance between redd populations and their nearest neighbors from 2009 to 2016. The blue line indicates the distance at which redd distribution overlaps without affecting pits, while the red line indicates when redds become superimposed resulting in pit disturbance. The analysis indicates this occurs during large run years in Reach 1, with only minor overlaps in the reaches before the Restoration reach. Carrying capacity of redds is 220, with a positive relationship downstream between the number of redds and undisturbed pits. The redd dewatering study indicates that dewatering was not common. Areas with partially exposed redds were not exposed to extreme changes, but impacts are uncertain. There were very few severe dewatering events with 19 instances of fully exposed mounds and 2 instances of a fully exposed pits out of 67 dewatering events.

Over time there has been a 1% reduction in redds since the ROD with no change at Lewiston, Limekiln, Junction City, and North Fork, and an increase at Douglas City. Redd proportions have increased at 5 of 20 sites between the pre- and post-construction periods.

Pinnix presented the long-term analysis of juvenile Chinook salmon estimates at Pear Tree and Willow Creek monitoring sites. These look at naturally spawned age-0 juveniles using mark-recapture weekly stratified abundance estimates. The analysis looked at the number of individuals and individuals per spawner, with stock recruitment models to test for density dependence. Biomass and fork length were used to evaluate weekly mean weight and resource effects. Pear Tree abundance did not have much of a trend, however, the density-dependent Ricker model did show an increase in spawner abundance and a decrease in juvenile production. Juveniles per spawners were significantly positive. Biomass per spawner was weakly positive with some slight increases.

At Willow Creek, there were significant positive increases in juvenile abundance. Pre and post implementation did not show a significant trend over time, but the number of fish produced was 2.5 times higher during the post-ROD period. The density-dependent model showed an increase in juveniles produced per spawner, with no huge shift between the pre and post-ROD periods in spawner abundance. Juveniles per spawner showed no significant trends, but post-ROD mean is 2.3 times higher than pre-ROD, with some years in 1990 as high or higher than post-ROD abundance. Biomass per spawner also showed no significant trend with the post-ROD mean 2.2 times higher than pre-ROD.

The fork length data from 1993 and 2003 are significantly higher post-ROD in the early weeks, but switch around week 20, when pre-ROD fish are larger than post-ROD. There is also a dip after Week 24 due to the arrival of hatchery fish. However, comparing clipped to non-clipped fish indicate significantly smaller post-ROD non-clipped fish. There are significant increases in juvenile abundance per spawner and biomass per spawner, but no significant trends in biomass per juveniles. There are also significantly smaller fish after 2004. Pinnix recommended comparing the report to the Gast report on the influence of temperature and bioenergetic modeling on migration timing mechanisms which could relate these trends to the temperature concerns.

Gogan asked whether tributary spawning ground surveys were reported. Laskodi explained the surveys were done by the U.S. Forest Service in the fall and only captured a portion of the total spawners as they occur on private property, which can be flashy. They only capture the bare minimum number, are hard to judge over long periods, and only reflect a portion of Coho. Gogan asked if the tributaries were important for bringing back wild fish. Laskodi explained the surveys are largely focused on Chinook and are correlated with Mainstem populations, which they guess from there.

Gogan asked why the successes at five of the 20 restoration sites were not applied to the other restoration sites to modify them. Laskodi explained the analysis looked at how channel rehabilitation affected spawning habitat as a whole. Gough noted such comparison should set the

stage for exploring what is happening at each site and how to improve site success. Hillemeier added that spawning habitat is not a primary objective for the restoration, which is more focused on juvenile rearing habitat. He thought the analysis would be a core ingredient for adaptive management to move forward on management actions, especially for flow recommendations.

LUNCH

Update on EA for Shifting the ROD Peak Flows

Seth Naman gave an update on the peak flow synchronization NEPA work, along with background on its development. During normal years, in the tributaries above Lewiston Dam, about 50% of inflows occur before April 22, and the rest occur after April 22. However, below Lewiston, 19% of flows occur before April 22, while 81% occur after April 22 due to the ROD releases. The flows above Trinity Reservoir are similar to pre-dam conditions, but flow releases occurring below Lewiston Dam do not reflect either pre-dam conditions of the past, nor current hydrologic patterns.

Looking at water temperature, with Douglas City as a proxy, there is a natural water temperature warming trend from starting in March which would begin to shift water temperatures into the optimum growth range for salmonids. However, water temperatures drop by 6-10° F in April when ROD flows are released and remains until July when the river returns to base flow. Prior to ROD flows, there is a natural warming trend through the whole year that maxes out between July and August. There is concern whether these temperature shifts impact the juvenile growth period, which could slow salmonid growth, insect life cycles, and a decrease in the size of wild fish and hatchery fish, as seen in the rotary screw trap data. The temperature and fish synthesis report shows similar trends. This indicates that temperature decreases during the growth period may be having the same negative growth effect on hatchery fish.

At the December 2019 TMC meeting, the TMC directed the TRRP to initiate studies on the effects of synchronizing Lewiston flows with tributary flows. The team is currently developing alternatives for NEPA scoping. Three alternatives are being considered: (1) a No Action, (1) a option with a 60K flow event in winter during normal and dry years and a 120K flow event during wet or wetter years, and (3) a variable release alternative with water releases based on various triggers. As years get wetter, the amount available in spring would increase. The last would piggy-back on winter flow and geomorphological goals. Triggers would be based on the Junction City gage and February and March forecasts. They would work with the California Nevada River Forecast Center earlier in the year to determine odds for overspending the water for the year. They are incorporating back stops in case of the water year forecast changes. The Flow Work Group met on February 23 to discuss the alternatives and brief their members. They will present more developed alternatives at the June TMC meeting before scoping.

Pinnix clarified that while the hatchery fish did appear smaller than pre-ROD measures, they are only measured at Willow Creek. He noted the difference could be due to the temperature of water at the hatchery or from cooler river temps in the river during the growth period. Naman

thought it would be good to look at the hatchery data to compare with other trends. Pinnix agreed to look into it to see if they could include it as a follow-up analysis.

Gogan asked who would be developing the environmental documents. Abel, DeJulio, Lindke, Gutermuth, and Naman are working with the TRRP environmental consultant to develop drafts. Gogan asked if the TRRP would seek outside input on the project from agencies not currently involved in the Program but familiar with flow management concerns. Naman explained they were looking for public input during a series of public meetings to get buy-in. The synthesis reports that form the basis for the recommendation were also peer reviewed by outside professionals, which would serve as a check on the approach. Lindke added that part of the NEPA analysis would be a review of the proposal by other non-TRRP partners with less of a role in helping the fish. The EA would need to analyze potential impacts to power generation, water users, lake levels, and other related processes and concerns. That could provide an opportunity to hear from non-TRRP. The team understands the value of outside perspectives, especially for considerations that they may not think about or that do not fall in their wheelhouse.

Hetrick asked if Humboldt County's allocation 50 kAF would fit into the analysis. Naman explained the team is only considering the ROD flows. They are open to whatever water may be available but the process isn't set-up to decide where water comes from other than the ROD. Hetrick added that setting the water volume early in the year could affect whether water is available later. Naman explained the alternatives do consider potential shifts in water availability and whether there is still sufficient water available to meet base flows during critically dry years. Bader asked if the motion discussed shifting the water based on ROD volumes. Naman affirmed that the only water they are considering is the ROD water as any water beyond that was beyond the TRRP's control.

Orcutt explained that the motion, the foundation of the ROD, and the flow study report were based on strong science. While Hoopa Valley Tribe is not averse to exploring the idea, they want to use the best available information to find better ways to do things for the fish based on science and adaptive management. The concern Hoopa Valley has is that every drop of water added is based on administrative decisions, court decrees, and statutes. One of the statutes requires that fishery restoration needs to meet trust responsibilities to Hoopa Valley and that the cost for implementation need to come from the O&M as part of the toolbox for restoring and recovering the river. The courts established Proviso 1 and Proviso 2, with litigation on Proviso 1 on the Lower Klamath fish passage. Orcutt stated that the HVT need to concur with the decision and that any modification, change, or major shift needs to consult the tribes as part of the decision-making process. There is a lack of information from the Phase 1 Review and that as new information is emerging it seems premature to make any calls. He recommended having the SAB or another independent body look at the recommendation and the outcomes they've seen. Under NEPA, it is required that any changes to the hydrograph or the allocation require additional analysis and potentially an EIS.

Hillemeier agreed there is a responsibility to consult with the tribes, but he believed there is some flexibility in the ROD on when to implement the flows. When they consulted the Solicitor on the issue, they were told they could not move the flows and would need to examine it further. The decision is based on data-driven decision-making and is an important attempt to move in the direction the data is indicating.

Fine Sediment Synthesis Report Findings

Buxton presented the fine sediment analysis synthesis report, which looks at changes in fine sediment and its impact on physical processes. Historic activities in the area, such as hydraulic mining, dredger mining, logging, and road development accelerated sediment contributions in tributaries to the mainstem. The resulted in heavy inputs from tailings piles and a rejuvenated river system under natural flows. The river became braided due to the movement of so much sediment, which kept vegetation from establishing. After the dam closure, the river started to widen the valley and vegetation grew and stabilized the bank, probably at a higher level than before the sediment inputs. But when the dams were built, it also dramatically reduced flow volumes on the Trinity from 2.5 million AF to 30 kAF. As a result, the lack of flows transformed the river from a gravel channel to a sediment stream. The fine sediment would fill pools and a lack of floods caused development along the riparian fringe.

When fish populations declined, people tried to remedy the impacts by loosening gravel and tearing up boulders. Some efforts tilled the bed to flush the fines out, while others used excavators and dredgers with little help. There was an overabundance of fines that could not be remedied by solely mechanical means. Other measures included stabilizing hillslopes with tree plantings and rejuvenating the hill profile. Ponds were also constructed to collect sediment. Removing berms and flow reallocation under the ROD helped to move fine sediment out of the system.

The work done on the tributaries over time has decreased their contributions to the river, as seen at Hamilton Ponds where sediment has leveled off since the 1990s and was low until 2018 when the Carr Fire caused large sediment inputs. But in general, the rates have consistently declined, even with logging disturbances in the 2000s. The reduction in fine sediment has restored the gravel bed channel in the Trinity River Restoration Reach. The question now is whether the reversal of fine sediment impacts are still in progress or if they have been achieved.

Pebble count data from Lewiston, Limekiln Gulch, and Douglas City have decreased over time and sediment inputs before spring flows are not the same quantity as before. Spring flows flush fines while base flows store them. The sorting of fines on the bed has increased and has implications for gravel mobility. In the 1990s, the percentage of fines in the river was extremely high and has declined to around 30%, but not all from ROD flows. Experiments done in the 1980s were also able to reduce them. The mainstem flows have been key to managing sediment in the river and further stabilization work in the tributaries may be unable to make much difference in the future.

Fine sediment affects the mobility of the channel bed as fines disperse around gravel and make it easier to move larger cobbles. A deficit of fine sediment means that coarser gravel will need to move first to expose and allow fines to move. Increased gravel requires more flow. Looking at critical shear stresses on the Trinity River, the discharges and shear stresses required to move gravel and fines are pretty natural as well as mobilization thresholds. However, more discharge is needed at Lewiston because the slope is lower than the other stations. Buxton hypothesized that the difference at Lewiston is due to a lack of sediment in the system.

Based on monitoring data from spring flow releases, there is a disparity for finer class loads. The Spring flows transport 60-100% of the suspended load in the Trinity River. Tributaries are inputting much of the sediment in the winter and the spring flows are wiping them out. In the interim, the sediment is stored in the bed and where they could impact redds that may be capped by the silts in the restoration reach before mobilizing down stream.

Turbidity does have potential impacts for fisheries. Turbidity is highest at Limekiln Gulch than above the North Fork and it is uncertain whether this is due to a greater dilution at North Fork or lower flows at Limekiln. However, the elevated levels are still lower than what would damage fish. Buxton noted how the dilution in the lower river led to lower NTU values than in areas closer to the dams.

Buxton reviewed each sediment related target and indicator. In most years, the fine sediment target has been met, except for 2018 due to the Carr Fire. Other sediment related targets were also met most of the time with the exception of a few years for measures related to egg to fry survival, early measures for turbidity at Limekiln Gulch, and sum of discharge over fine sediment for a few years at LimeKiln Gulch and Douglas City. The only target not consistently met is coarse sediment mobility as there are not enough fines on the bed surface to facilitate coarse bed mobility. Buxton compared fine sediment to Goldilock's porridge: fines should not be overly abundant or deficit, but in just the right ratios.

Based on the report, Buxton has the following recommendations:

- Release flows in winter to route sediment inputs from tributaries and protect salmonids.
- Add fine sediment between Lewiston and Rush Creek.
- Delist the Trinity River as sediment impaired to simplify sediment augmentations and relax turbidity constraints that affect restoration projects.
- Monitor sediment transport and storage as part of adaptive management.
- Cease dredging of Hamilton Ponds and allow it contribute sediment based on a comprehensive restoration plan.

Naman asked what processes were contributing to the sediment from the tributaries that could be capping the eggs. Buxton explained salmon spawn in the fall during baseflows, while in the winter tributaries are flowing and contributing sediment to the river. The material is depositing

when there aren't discharges to move it downstream. Instead of moving, they are stored in the channel and overly abundant inputs can kill the fish. Lee thought the report was a great example of adaptive management and progress. Its reviewers were complimentary of the undertaking and recommendations, which include two active management (winter flow variability and fine sediment inputs), passive actions (cease dredging), monitoring, and regulatory based recommendations. The recommendations provide a lot to move forward and are well organized.

Gogan asked if the study included the results of the colored rock study from McBain and Associates. Buxton explained those results are included in the flow study and were published in the scour synthesis report. Gogan noted that Reo Stott Pool/Poker Bar Hold is refilling with sediment and asked how they could address the deposition with the holes. Buxton explained that the estimates and predictions show that coarse sediment only moves in the spring, with a few exceptions. Most years the suspended sediments and some fines are moving in the winter, but the coarse sediment is not due to lower flows

Pinnix thought that the study poses new questions for future analysis. At Willow Creek, juvenile production has increased, and it would be good to tease out what factors are causing the success for the salmon. Buxton thought the sediment success was low hanging fruit for them to address and that going too far in the other direction in some reaches and attributing cause and effect in rivers is incredibly difficult but a good challenge. DeJulio pointed out the downstream shift in spawning appeared in similar places where fine sediments were deficit.

Pinnix encouraged the TMC to attend the upcoming symposium presentations to think about how these reports link together and provide an understanding of the whole system. The reports represent findings from a variety of fields that could be used as part of an adaptive management approach moving forward.

BREAK

Lower Klamath Augmentation Flow Releases

Paul Zedonis, Reclamation NCAO Environmental Manager, provided an update on CVO Operations for the Lower Klamath to address ich infections. Since 2002, Reclamation has conducted flow augmentations to address fish die offs. When a disease outbreak occurs, flow augmentation is done from the Lewiston side to alleviate poor conditions lower in the river. Volumes used during these flows vary depending on the situation. As rates of infection increase, so do flow volumes. The flows were done this way until 2017, when they went to court and were forced to prepare an EIS. A ROD was signed in 2017 to provide coverage for the flow augmentation releases. Since then, they have done a few flow augmentations through an adaptive management approach to learn about the system and alleviate concerns on disease outbreaks.

Currently, 2021 is looking like a critically dry year and there are a few months to gain additional storage and improve accretion flows to see what happens. However, storage is needed at Trinity Reservoir to support the action. It also depends on the dynamics of dam operations as the auxiliary output port is used. The cold water supply is also important for needs down rivers.

They have a run size projection of around 62,000 fish, but they will wait and to see the environmental conditions. In the meantime, Reclamation will work with the Fisheries Technical Team to shape the decision on when and how much water to release. There is a projection that end of September storage between 1 million and 750 kAF may be held over for this use. Currently the team is balancing the risk to the fish versus storage needs. Additionally, the boat dance flows for Hoopa Valley fall in the same action window from the third week of August to September 21. This is also the period of interest for disease and mortality related risks in the Lower Klamath. Any channel rehabilitation projects should be aware of this so they know when flows may increase.

Sinnen asked if there was plan to do any of the Yurok Tribe surveys in the Lower River. Zedonis explained they commissioned the Yurok Tribe to survey the adults for gill condition to determine the level of infection. Typically, in years of concern, high disease rates manifest into higher levels of ich infection. The surveys are compared with information from other entities in the river to indicate the breadth of ich infections and the dynamics of the disease.

Hetrick asked if there was a plan to organize a workshop including outside expertise from river systems where ich infections are common. Zedonis explained it was a work in progress for the workshop and the compilation report. Orcutt noted he had requested the agenda topic as he was concerned that the 2002 fish kill in the Klamath River were Trinity-origin fish and they have advocated for the releases. He supported the workshop as it was unclear what approach to use in response to infection rates as in one instance the water was ramped up and ramped back down without much impact to the fish, while in other years when they were cautious the fish did not fare as well.

Gogan asked if the work the Yurok Tribe is conducting with the Aries system could mitigate the problems with water temperature flow or overcrowding. Zedonis confirmed they were using the system to monitor for spatial distribution and relative abundance. Hillemeier added there are two reaches with the Aries camera that will assess if the fish are crowding. They are also conducting a pilot project to use the Aries as a stationary tool to see what is migrating upstream.

Public Forum

Tuthill asked if the variable flow proposal was on a tight timeline and when the flows might be implemented. The goal would be to implement variable flows in WY22, about a year from now. Tuthill asked Buxton if other places would refill if more sediment was added to the river as some areas where filling back again. Buxton explained that fine inputs would be scale based on their benefits without detracting from pool depths and other considerations for a healthy river. He agreed to look at the Reo Stott Pool to determine if there are morphological changes influencing its refilling. Inputs would also be added at a certain rate and monitored to make sure detractions were not happening. Tuthill asked if the river needed more sediment with the winter tributary inputs or if the river just needed to move the sediment around more. Buxton explained more is needed in the upper reaches, though it looks drastic when input events occur.

Tuthill asked if the TMC could post the presentations prior to the Quarterly meetings on the website. Bader agreed and asked they be added to the website soon.

- The TMC Quarterly Meeting presentations will be posted to the website for each meeting.

Adjourn for Day 1 3:46 pm

Day 2, March 11, 2021, 9:00am

Public Forum

Hetrick reminded Bader that Tom Stokely left a comment in the meeting chat for Day 1 that was not addressed. Stokely asked why the SAB had not reviewed the flow variability proposal since it presents a new hypothesis under the ROD. Lee explained the SAB is aware of the proposal and has read it. The SAB has expressed their verbal support of the proposal, but they have not done a formal review as their scope of work does not specify reviews for decision documents. Lee supported having the SAB do a formal review since the flow proposal has been evolving and there will likely be changes over the next few months. Hillemeier noted the synthesis reports are going through peer review but thought it would be inappropriate to submit an EA to the SAB. He suggested a white paper that outlines the thinking for the EA along with the data and initial analysis supporting the decision. He thought the SAB would support the TMC and TRRP in this adaptive management approach. Lee anticipated they would get supportive feedback from them and they may suggest other items the TRRP has not considered. He thought it would be appropriate to loop them in when discussing monitoring for the effort. Orcutt suggested following up with Stokely on his concern. He thought NEPA should need to set strong guidelines rather than probing, noting that one of the alternatives evolved from a 60,000 flow in dry years to 120,000 in wet years, which is a substantial deviation. He supported talking about the approach as there are a range of opinions and everyone should be on the same page on the science.

Hetrick agreed that the SAB could provide some input on how to implement the process and having the SAB stamp of approval would be meaningful to the public and other folks watching the TRRP. He encouraged a white paper to provide an opportunity for SAB input and approval. Ly agreed. Orcutt asked how the proposal had changed since their earlier discussion, noting that some agencies were precluded from meetings where this may have been discussed. DeJulio explained part of the delay in developing the proposal was hesitation to commit time and resources without an assurance of what would be considered. Hetrick added he requested an invitation to the meeting launching the effort during a previous TMC call but the request was declined by Dixon. Hetrick thanked DeJulio for requesting the Service's participation soon afterward. Sinnen thought the main team had been actively trying to engage USFWS for the EA development and that no one was excluded from participating. Orcutt added that the meeting was the kick-off on January 18 and that as a project proponent they were not allowed to participate. Naman explained no one was trying to exclude anyone from participating and that anyone wanting to participate is invited to do so. Connor noted that the meeting was an internal one with

TRRP staff and Reclamation. She supported preparing a white paper and suggested looking at similar programs, like the Klamath, with resources and similar approaches that mimic nature. She did not expect the SAB to raise an issue from a nature standpoint.

Dave Hillemeier made a motion to have TRRP technical staff work on a white paper regarding winter/spring flow variability to submit to the SAB along with draft and/or final synthesis reports that support that white paper to receive their feedback.

Groves seconded the motion.

Orcutt preferred starting with a conservative approach by looking at the synthesis reports and the Phase 1 review to develop a DOI-driven Program that fully engages their expertise. His concern is that the NEPA process could further refine the proposal and how it relates to the synthesis report and that the action is a major shift in the hydrograph and water allocation. DeJulio restated that during the 2016 S3 workshop they saw repeated examples on how shifting the water to the winter could increase fish production. They have not been able to conduct more thorough analysis without additional time and resources. Developing a proposal of alternatives will allow for the analysis.

The motion passed. US Forest Service was absent. Hoopa Valley voted against.

FY21 Budget Check-in and FY22 Initial Budget Discussion

Lee presented the current status of the FY21 budget and changes from the last quarter. In the Program section, an additional \$40,000 was added to the budget from savings from unfilled vacancies. An additional \$100,000 was saved through AFA agreements and significant savings in the CDFW technical assistance. These changes amount to around \$60,000 in total savings but are not enough to reallocate this early in the year.

For the Implementation budget, Chapman Ranch Phase B was initially budgeted for \$2.5 million, but the TRRP received \$1 million from CalTrans for mitigation for Coho related to the Big French Creek slide downstream of the restoration reach. The funds were initially proposed for the Dutch Creek project but were not received in time. This increases the funds for Chapman Ranch Phase B to \$3.4 million, which covers the civil work, but not the revegetation. Other changes include lower costs for the Program office staff as the Civil Engineering Tech and Outreach Coordinator positions are vacant. Funds were added to the revegetation supply line item due to an oversight with the environmental services contract. The geophysical support proposal was also \$100,000 less than budgeted. Additional funds were added to the Yurok Tribe support services contract. In total, the support services contracts are higher than budgeted for FY21. The budget appears \$800,000 short, but does not include the CalTrans funds.

For Science, personnel funds are lower than budgeted since the Physical Scientist position is vacant. They are still tracking the \$115,000 for the SAB budget and anticipate being below that by the end of the year. They reallocated extra funds back to the remaining science projects to fully fund them where appropriate based on timing and other considerations.

Lee noted the biggest changes are the funds budgeted for the hatchery that have historically come from the TRRP budget. This year they are being funded through a different Reclamation budget, which frees up the funds. They expect to see those funds reduced in future budgets, but for this year, they are available for other needs. Dixon and the Branch Chiefs are discussing proposals on how to reallocate the funds for TMC approval, but nothing is ready yet.

Hillemeier asked if there was flexibility in the budget to get Chapman Ranch Phase B implemented as planned and if they thought it was feasible to find the money to make it happen, with the understanding that the construction budget was still being negotiated. Lee explained the revegetation budget was not included in the cost estimate and anticipates it will be significant but is still under negotiation. There is a path forward for the civil work, but the whole package may not be feasible without using FY22 funds, which would limit implementation next year. Currently, the proposed budget is well above the available funding, but not out of reach. Lee asked why the funds added from CalTrans only reflect \$900,000 instead of the full \$1 million. Walker explained that CalTrans provided \$1 million and was unsure why the number was less. Lee noted that the CalTrans funds can only be used for channel rehabilitation projects.

Hetrick asked if the TRRP was planning to do a formal call for proposals in case of additional available funds. Lee had not considered doing that as they are still trying to determine how to fully fund Chapman Ranch and assumed that any additional funds would likely go to the project. There was also justification for reserving some funds for the flow variability work this winter. Lee saw some opportunity to decide how to spend the extra funds in other ways but was hesitant to start that process as they are unsure how much they would have to work with or what proposals should be considered. He was also unsure if there were options for using the CalTrans funds. The extra funds in the Science budget, however, are available. Lee suggested waiting until there was a proposal for the civil and revegetation work at Chapman so they have a better idea of what they need before discussing where to apply the extra funds.

Hetrick asked if the priority was to fund the Implementation side of the Program first before allocating the extra to the Science side. Lee thought the TMC needed to have more discussion before deciding how to allocate the funds. Abel added that based on the changes to the Implementation budget, \$130,000 was removed from personnel and \$11,000 from NEPA that was added to the revegetation and revegetation maintenance tasks. The \$3.4 million represents other funds they received that have to go back into a rehabilitation project to meet the funding mitigation requirements.

- Lee will follow-up with Dixon on the CalTrans funding and whether the TMC made a motion to dedicate the funds to channel rehabilitation work.

Orcutt thanked Bader for reprogramming the hatchery funds to the Reclamation O&M budget and for making the task a priority and lessening the burden on Program partners. In terms of developing the budget, Orcutt suggested using the process DeCarlo developed by reaching out to each of the partners to understand their priorities and needs for the fiscal year. He preferred to start with those discussion than shifting funds to construction projects. The science and

monitoring projects are often heavily scrutinized and picked apart while funding for construction projects is done without a blink of an eye. DeCarlo's process was clearer in terms of how much was available to reprogram.

DeJulio noted that the process was not done for FY21 because they were working with a significant budget shortfall that focused on cuts. He wondered whether it was possible to reallocate FY21 funds to FY22 to split the construction and revegetation costs to make more funds available for science. The budget questions highlight the need for a science monitoring plan and having shelf-ready effectiveness monitoring projects available in case of windfalls. DeCarlo usually held the budget discussion between January and March to present at the March meeting, but it appeared the discussion would move back to June before voting in September, which could delay funding agreements and distribution of resources.

Lee explained the budget discussions were delayed because the President's budget had not been released so they were unsure of how much funding to anticipate for FY22. The best they could do was prioritize remaining funds, but that amount is still uncertain. Abel added that currently there is \$376,000 that could be reprogrammed from the Science budget, while it was still uncertain whether to reprogram some of the other funds. While it would be easy to reprogram the funds from the hatchery funds to the Implementation budget, it may make sense to note those changes so the TMC can provide parity in the FY22 budget between the two branches. Orcutt asked when the TMC would need to decide how to obligate the funds and whether they could vote during the monthly calls as they had some suggestions they were interested in pursuing. Lee agreed June may be too late to reallocate the funds. They would also need to consider needs for Chapman as they have not sufficiently confirmed the budget and need to finalize the timeline. Ly asked that they vote on the hatchery funds whenever the costs for Chapman are determined. They could also schedule a special meeting to decide. Abel noted that Chapman Phase B is scheduled to start in May, which is earlier than normal, leaving little time for a decision.

Lee hoped to share the President's proposed budget soon but was unsure where to start the discussion without it. The Science Program has been cut as much as possible and the Implementation Program is no better. They are considering funding the revegetation work for Chapman Ranch in FY22 along with other discussions on what they have funded and how to reduce it. Orcutt thought the shifts to the O&M budget by NCAO could be a positive sign and suggested prioritizing the time sensitive FY21 decisions and then considering how those may affect FY22 to understand the lay of the land.

Work Group Manual Revisions

The IDT has been working on Work Group Manual revisions and wanted the TMC to weigh in on a decision about the IDT Coordinators. Previously, the IDT was co-coordinated by both TRRP Branch Chiefs, with the Implementation Chief employed by Reclamation and the Science Coordinator employed by USFWS. However, the Science Coordinator position recently switched to Reclamation, changing the leadership structure of the IDT. The IDT would like to reconnect

USFWS to its former leadership role. The USFWS contributed a lot to the scientific understanding of the program.

Lee suggested the following changes to the Work Group Manual for the IDT Coordinator:

Purpose: Coordinate the activities of the TRRP technical work groups and integrate multi-disciplinary assessments into comprehensive management recommendations. The IDT will be jointly led by a senior scientist from the U.S. Fish and Wildlife Service and by the TRRP Science Coordinator or Implementation Branch Chief, who will alternate their roles annually. The TRRP Branch Chief not currently serving as the IDT co-coordinator shall still be an active member of the IDT.

The IDT approved the change and would like the TMC to recommend changing the Work Group Manual to allow the USFWS to co-coordinate the IDT with the assigned Reclamation employee.

Hillemeier, while confident the USFWS could fill the role, thought the role should be open to any member without excluding the Tribe or the State, who are currently excluded from chairing the TMC under the ROD. Connor was concerned whether they should be restructuring the leadership of the IDT or the Work Groups under Refinements. Ly noted that Refinements would take another 1.5 to two years to finish and if the IDT has an idea of who could fill the Coordinator roles, it should be addressed sooner rather than waiting for Refinements. He asked if the ROD prohibited the Tribes from serving as the IDT Coordinator. Lee answered it did not and that the only change they were recommending was to specify USFWS and Reclamation leadership roles. Ly asked how long the coordinators served. Lee explained they change annually. Groves asked who could serve on the IDT. Lee explained that each Work Group coordinator and one additional member from each partner agency could serve. Groves noted that the County had not served but hoped to in the future.

Hillemeier made a motion to open the Coordinator and Co-Coordinator positions for the IDT to all members of the IDT to be voted on an annual basis by the IDT.

Groves seconded the motion.

Connor suggested the role be open to senior or management-level members since the IDT was coordinated by Branch Chief-level staff in the past. She was not sure about having it open to new people unfamiliar with the Program. Ly noted that they would need to be voted in to serve. Lee added that the IDT Coordinators were not voted on since they were the Branch Chiefs, but that Work Group Coordinators are voted on so it would be easy to implement for the IDT.

Hetrick noted that the USFWS is currently represented by Conor Shea, who would not be ready to serve as the IDT Coordinator and asked if Som would be considered even if he wasn't a Work Group lead. Lee explained Work Group members should be scientists, but the manual does not limit the number of Work Group participants. However, only one can serve as a core voting member. Som could serve on the IDT even if Shea is serving, but USFWS would have to

designate their roles. Core members and other members are only important for voting, which only really happens when choosing a coordinator as they try to reach consensus on matters.

Shoemaker asked if the motion was for both coordinator positions or just the non-Branch Chief coordinator position. Lee explained the original suggestion was that one Coordinator switch between the TRRP Branch Chiefs and the other be a USFWS member. Lee explained that previously the Branch Chiefs would switch off who would serve as the lead coordinator annually. The lead would send out the agendas and run the meetings, while the other coordinator would help support the lead with their work. Under the initial proposal, the USFWS would work with the TRRP Branch Chief to work out coordination roles and responsibilities. Hillemeier was fine with opening both coordinator positions to all parties. Connor thought the coordinators should spend most of their time in the Program, noting that some of the State's folks only devote some of their time to the TRRP. When the IDT started, the TMC wanted the Branch Chiefs to run the team.

The motion failed. USFWS, State of California, and the US Forest Service abstained. Four votes were in favor.

Groves moved to accept the motion as originally presented by Lee.

Connor seconded the motion.

Shoemaker made a competing motion to have a hybrid approach where the Co-Coordinator would be a member of the IDT and this position would be voted on annually by the IDT and the other Coordinator position would alternate between the TRRP Branch Chiefs.

Hillemeier seconded the competing motion.

Hetrick noted that if a Work Group coordinator was selected as the IDT Coordinator, they should serve in two conflicting roles - for example, one as a representative for the USFWS and the other as the representative of the Workgroup they were elected to represent. Lee suggested USFWS select who would serve as the core and alternate IDT members and Ly suggested the USFWS could also change their representatives to help fill the leadership positions. Hillemeier thought IDT and Work Group members should provide an interdisciplinary approach. If the IDT deems a member qualified to serve as Coordinator, they should allow it. Connor thought they should stick with the Branch Chiefs since the IDT coordinates with all the partners and asked why the coordinator position was being changed to have USFWS lead. When the Science Coordinator position switched from USFWS to Reclamation they did not consider that the IDT Coordinator position would be affected. While it has worked fine, the IDT has lost some of its connection with USFWS, which was a good resource. USFWS has expressed desire to return to that role. The TRRP office supports the shift as the USFWS has a long history of collaborating with external entities and the SAB. The change would bring back the work flow they had before.

The competing motion failed with five votes in favor. The State and Trinity County were opposed and USFWS abstained.

The original motion failed with four votes in favor. Hoopa Valley, US Forest Service, and Yurok were opposed and USFWS abstained.

BREAK

Water Year 21 Flow Release Proposal

Naman presented the WY21 Flow release proposal prepared by the Flow Work Group. The current year hydrology is about 30 – 60 % below average for snowpack with similar levels for precipitation. The forecast from CNRFC anticipates a critically dry year, about 150 kAF shy of the dry year cutoff. The 50% inflow forecast was originally around 769 kAF on January 7, but has become progressively worse since January, now standing at 504 kAF. Last year was also a critically dry year, and the Flow Work Group wanted to try to scour the willows to avoid multiple years without doing so. The group developed alternatives, modeled the results, and discussed their results and merits with the IDT to develop a consensus recommendation.

Six hydrographs were initially considered. The TB critically dry has a 3,600 cfs peak with recession limb out until July. The KD critically dry has flow spikes before the peak flow to discourage frog breeding, and the standard peak flow returning to base flow in mid-June. The ROD critically dry has a max peak of 1500 cfs that recedes for a month and a half. The TB dry was similar to the critically dry with a 6000 cfs max peak with slightly more volume that returns to base flow in July. The KD dry has a similar 6000 cfs peak flow with pre-flow increases to discourage frog breeding and a return to base flow in June. Finally, the ROD dry has a 4500 cfs peak for 5-7 days that returns to base flow by the end of June. Two other hydrographs were also analyzed using a scaled natural flow with water volumes patterned after the Trinity River above Coffee Creek gage that were not constrained by minimum flow. However, the IDT did not want to present those hydrographs as they represent results the TRRP does not have the ability to implement. They will be included in the water year report. The TB and KD critically dry and dry hydrographs were selected for analysis and modeling.

Since the water year is shaping into a critically dry year, Naman reviewed the critically dry year hydrographs. Neither hydrograph show a substantial difference than the others. The TB critically dry outperformed on temperature compliance and frog production while the KD hydrograph outperformed on black cottonwood recruitment and bed load transport. One concern is that the TB hydrographs have peak snowmelt 30 days later in the year. In the ROD, the peaks are shifted earlier in the year when the year is drier because in natural systems snow melt occurs sooner since there is less pack. While the TB hydrograph outperformed the other on some parameters, the timing would result in a greater degree of asynchrony with other tributaries by shifting releases out further in the summer. As a result, the Flow Work Group and IDT recommend using the KD critically dry hydrograph (and the KD dry hydrograph if the system receives enough inflows to establish a dry water year).

Hillemeier made a motion to adopt the Flow Work Group's recommendation for Water Year 2021.

Hetrick seconded the motion.

Orcutt asked if there was any possibility between now and the final forecast exceedances on March 31, for the year to shift from critically dry to dry since the long-range forecast estimate above normal rainfall. Naman noted that the CNRFC currently has Northern California inflow at 504 kAF making it highly unlikely to increase. Looking at the long-range forecast is showing an equal chance of normal to above normal precipitation. Currently the system needs another 150 kAF to make up the different by April 1, and that seemed unlikely to occur. However, if it were to occur, the motion as written would allow for a dry water year flow release as prepared by the flow work group. Orcutt asked what KD stood for. Naman explained they used the initials of the person who developed the hydrograph. The motion would capture any potential shift in the hydrograph if a dry year is determined.

The motion passed unanimously.

LUNCH

WY21 Sediment Augmentation Proposal

Conor Shea presented the Physical Work Group's gravel augmentation proposal for WY21. Currently, the TRRP has six sites permitted through the Water Control Board. These sites would likely not benefit from further augmentation. The Work Group has identified six new sites to permit and develop as augmentation sites. These sites would produce habitat benefits by adding gravel as there are not sources nearby. The sites are complex, which make it difficult to get material to the locations and require public outreach. The Implementation Branch is working on getting them permitted. The Work Group is also considered changing the gravel mix for augmentation. They would like to add fines to the mix to increase its mobility and create the features they are seeking. However, the current turbidity impairments prohibit this addition.

This year they are proposing gravel augmentation at the hatchery reach. There was a moratorium on gravel additions since 2014 due to concern about supporting hatchery/natural interactions on natural spawning grounds. The Physical Work Group coordinated with the Fish Work Group, who decided that augmentation could be beneficial, while there are still concerns about impacts to spawning.

The other issue is gravel processing at Lowden Meadows. The gravel is sorted through a bar screen to create a mix less than 6 mm in size, but it allows a large amount of flat large gravel to remain. When the gravel mix is placed in the river, the smaller gravel is moved, leaving a lag pile the river cannot move. There is a stockpile of oversized material and the Work Group and Implementation team recommend removing and reprocessing the material over the summer using funds in the Yurok Tribe MOA. The Implementation Team is developing a plan with the Yurok Tribe over the next few months.

As this year is shaping into a critically dry one, the recommendation is not to do gravel augmentation as there is not enough energy in the river to move the material. If it turns into a dry year, the recommendation is for limited augmentation. Currently the group is recommending a gravel augmentation at the hatchery reach prior to the boat dance flow release. The release would provide enough energy to move material during the summer. During the spring releases, there are higher restrictions on turbidity that limit how the gravel is placed, but those are less restrictive in the summer. If placed with the boat dance flows, there would be enough energy to move the flow, sort the fines, and create better spawning habitat. The group did not have an official recommendation yet but would come back in June with a plan for the proposed augmentations.

Gogan asked why gravel was needed since the river above Douglas City showed a good amount of gravel for adult spawning and noted that the flows in the spring would not go above 3000k, and the boat dance flows were even smaller. Shea explained the turbidity requirements in the spring only allow them to lay the gravel in wedges that stick above the water surface. In the summer, the limits are relaxed, and they could spread the gravel as a sheet below the water surface. That change in placement allows the lower boat dance flows to move the gravel. Movement is a matter of how deep the water is over the gravel. Gogan asked how far they would spread the gravel. Shea explained that Implementation was working on those details. Gogan asked how this fit in with Buxton's recommendation on fines. Shea explained one of the targets for the TRRP is to increase gravel transport as reaches below the dam wash out their gravel with few inputs to replace it. Spawning below the dam has dropped significantly since there is no material and adding it could create better conditions. Lower down the river, the tributaries input gravel and the deficit decreases. The TRRP's understanding of gravel placement has evolved from a conveyor belt model to one where the river spreads inputs downstream to diminish them. The plan is to address the area at Lewiston bridge in the reach below the dam as sediment inputs increased the banks and confined the river. The approach, however, should wait until the river has a chance to process the existing material. It comes from understanding inputs from natural events and how gravel augmentation can help those processes along, like adding oil to the works. That is also part of the reason for increasing fines portion as it will make it easier for the river to move the material.

Sinnen noted the area below the dam is a popular fly-fishing spot and recommended doing outreach or waiting until after September 15 to avoid conflicts. Orcutt asked if the approach was consistent with the permit and how the issue changed from gravel to the composition (hatchery or natural origin) of the fish using the gravel. Shea explained the permit is with the Water Control Board and the work is consistent with the permit for adding gravel at the permitted sites. The biological concerns were raised at the hatchery several years ago, but the Fish Work Group decided augmentation would provide habitat benefits, especially for spawning. Lindke explained that in 2011 spawning started shifting downstream after a big flow cut off a large spawning area just below the hatchery. The Fish Work Group also hypothesized that hatchery and natural-origin fish have increased their interactions since gravel augmentation near the hatchery ended, which happened less when more spawning happened near the hatchery. They believe hatchery fish are

selecting other areas for spawning, which could reduce the chances that natural-origin fish stray to the hatchery. This affects the level of genetic integration between hatchery and natural-origin fish in the hatchery. The hypothesis is that creating spawning habitat near the hatchery will decrease hatchery/natural interactions on natural spawning grounds and increase stray of natural-origin fish into the hatchery. DeJulio added that gravel had been added to the reach since 1976, immediately after the dam was installed, and then again until 1998, with 2007 being the last time it was added. Since then, they have seen a steady decline in spawning.

Orcutt asked if the volume of gravel proposed equates to the recommendation for a critically dry water year. Shea explained they would place the gravel using a different method which will affect how much they can add and when they can place it, which they will be part of the plan presented in June. Orcutt requested that the boat dance not be used to justify biological work since it is a cultural event. Gogan asked when they would place the augmentation since the reach could be inundated with redds at that time. The Work Group has not chosen a date yet and have noted the potential conflicts raised regarding fishing, redds, and the dance flows, but they do not expect the gravel to move much. They hope to place the gravel as a loose matrix that cannot be used for spawning until the river has moved it around to reduce void spaces.

The Monitoring Objectives and Targets

The IDT with the Work Group Coordinators compiled a current list of objectives and targets refined by the Work Groups for the TRRP. The IDT sought concurrence from the TMC on the current list with the understanding that the list would be further refined as part of the Science Plan development.

Previously, the TRRP used the Integrated Assessment Plan (IAP) to guide the Science Program, although it was never formally adopted by the TMC. The IAP provides an extensive list of objectives that the Work Groups used to guide the monitoring program. However, the IAP needed to be refined to pare down the objectives to a manageable number, remove redundancies, identify linkages and missing targets, and develop quantitative metrics. The Work Groups started reviewing the IAP objectives in 2013. The current Refinements process has elevated the process. While it has languished due to staff turnover, COVID-19 complications, and synthesis report development, the groups have a set list of objectives to move forward with for the Science Plan. The updated objectives and targets have come from the Fish, Flow, Physical, and Riparian and Aquatic Ecology Work Groups. The IDT reviewed the list from each group and agreed with their submittals. Each group prepared writes ups of their objectives and targets, their process for reviewing and selecting the updated ones, and next steps, which were compiled into a full report by the IDT. The IDT is in the process of reviewing the report and would like more time before submitting to the TMC for review. The IDT would like to have the set of objective and targets ready before starting development of the Science Plan, scheduled for May 5.

Ly clarified that the IDT was looking for the TMC to do a fatal flaw review of the current list at this stage. Hillemeier thought they compiled a good list and asked if they had started prioritization. Lee explained prioritization would occur as part of the Science Plan effort. Orcutt

asked how the work done by the IDT and Work Groups fits in with the process for developing the Science Plan and the Program document and whether those processes are contingent on approving the list. Smith thought developing the list was informative for developing the Science Plan. He saw the objectives in the Science plan as technical management objectives that would link to the mid- and higher-level objectives developed for the Program Document that are tied back to the new goal statement they've developed.

Laskodi noted that the last Riparian and Aquatic Ecology objective was missing from the list. The objective is RAE-4: maintain flow velocity over a broad temporal range to promote scour and inundation to promote habitat complexity. Targets: ensure sufficient mortality of riparian vegetation along the margins of the low-water channel and on the floodplain by ensuring only one surviving cohort of narrowleaf/dusky willow every decade. Flow releases: Ensure recession limb falls at a rate conducive for black cottonwood recruitment every 3-5 years. Reduce desiccation of FYLF egg masses by limiting recession rate to 0.03 m/d for 35 days after achieving 10° C for 10 days at the gage above NF (USGS 11526400).

Kautsky noted he suggested discussing one or two of the objectives with the IDT as part of the presentation to the TMC to give them an idea of what the objectives and targets cover. Lee thought it would be appropriate to present them in June when the TMC has reviewed the document. Kautsky, Gogan, and Ly agreed the TMC should have more time to review the document and the list of objectives and targets before voting on the list for the Science Plan.

There are 14 fish, 4 flow, 7 physical, and 4 riparian and aquatic ecology objectives. The IDT report outlines how the Work Groups developed their lists, how they reviewed the IAP objectives, and a crosswalk of their analysis. Lee was unsure if reviewing the table was sufficient without a review of the process each group went through to develop their lists. Kautsky thought the discussion should note that the process has had a rich history based on the Program's struggle with identifying its mission and goals and getting finer resolution on standards for performance. DeJulio clarified that the IDT was looking for confirmation that the format of the objectives and targets was suitable. Details would be presented later in June after the TMC reviews the report. The TMC was not being asked to adopt standards that had not been reviewed, but to move forward with the current list as part of the Refinements process for the Science Plan. Lee added they also wanted confirmation that the list was suitable for the Science Plan development.

Sinnen asked if the document could include status information on how well the program was meeting the stated objectives and targets. Lee explained there was data available for some of the targets, but not all and was unsure if that fit with the context of the report, which was to explain the objectives and targets instead of evaluating the Program's progress. He thought an analysis would be a good follow-up exercise. Hillemeier thought the list would be good for the Science Plan. Smith suggested starting with the list as part of the Science and Document drafting processes to wrestle with how these objectives fit in with higher level Program objectives and the synergistic work needed to sync them together. Lee thought it would be better to revisit the objectives and targets after the TMC can review the report.

BREAK

Gogan asked what thoughts were considered for the brown trout targets as they are a political landmine. He suggested having set numbers at the weirs or as part of the total runs. He suggested keeping all measurements as either metric or standard. Ly suggested discussing the objectives and targets in more detail at the next TMC meeting. Members should review the table and report so they understand their context. The IDT should prepare for a deeper dive at the next TMC. Kautsky noted that some TMC agencies do not have staff on the IDT and that a more in-depth transfer of knowledge would be helpful to explain the process and the objectives themselves. Lee explained he would have the IDT finish their review and prepare for a detailed review in June when the report and Objectives are ready.

Topics for June TMC Meeting

- Orcutt asked for the outcome of the Trump Administration's recommendations for closing certain CVPIA actions, including the TRRP. There has been conflicting input on whether the CVPIA will stop certain actions and what actions are considered final.
- Presentation on the objectives & targets metrics document
- Groves asked to hold the meeting in-person. Ly noted that many federal agencies have not authorized that option and likely would not in the coming months.
- DeJulio requested presentations on the temperature synthesis report and the third installment of the habitat synthesis report.
- Revisit the Co-coordinator issue for the IDT
- Orcutt requested discussion on the remaining budget items discussed earlier for FY21 and FY22.
- Gogan requested discussion on the recommendations from Chad Smith in the Headwaters report, and that it should be reviewed at each TMC meeting to evaluate Smith's recommendations and how they're addressing them.
- Ly asked for an update on development of a 3-year budget.
- Shea will give an update on the hatchery reach gravel augmentation proposal.
- Sinnen will give an update on two pending state actions and requested 1 from NOAA: (1) adoption of a quota and fishing regulations for fall Chinook. (2) status review by the Fish and Game Commission on spring Chinook and for NOAA (1) any federal decisions on their pending Spring Chinook petition. A federal action to list the species may affect changes to fishing or restoration permitting processes.

IDT Co-Coordinator Discussion (Cont.)

Ly reopened the previous discussion on the IDT co-coordinator. Lee explained the original logic for having Reclamation and USFWS lead the IDT was because both agencies fund the TRRP,

and the IDT screens a lot of information before it is presented to the TMC. Sinnen explained he and Connor believe the heads of the physical and science branches should coordinate the IDT for funding priorities because they have a lot of interaction with the Work Groups in their disciplines and coordinate issues the best. The role is gone from USFWS and USFWS does not currently have the staff to fill it. They thought it best to leave leadership with the Branch Chiefs as they have the most people working in the various disciplines. Lee agreed it was efficient to have someone at the Program Office who was in frequent contact with the Work Group Coordinators and the Executive Director. Orcutt thought they were making too much of the Coordinator role and thought it best to open the role to other people as there are no limits on who can fill the role. Lee and Abel agreed to continue with their suggested edits and changes for the Work Group Manual and provide a holistic set of edits and changes for the TMC as part of a more thorough review for consideration.

- Lee and Abel will develop a comprehensive set of edits for the Work Group Manual for the TMC to consider in June.

Public Forum

Ly open the meeting to the public. No comments were presented.

Adjourn Day 2 at 3:43 pm.