Draft Meeting Notes

TRINITY MANAGEMENT COUNCIL

Quarterly Meeting
September 2-3, 2020
MS Teams Video Conference

Day 1, Sept 2, 2020 10:00am

TMC Members

Member	Representative Seat
Justin Ly	NOAA Fisheries, Chair
Dan Bader	Bureau of Reclamation, Vice Chair
Dan Everson	U.S. Fish and Wildlife Service
Michael Dixon	Trinity River Restoration Program, Executive Director
Mike Orcutt	Hoopa Valley Tribe
Teresa Connor/Wade Sinnen*	California Department of Water Resources/Dept of Fish & Wildlife
Dave Hillemeier	Yurok Tribe
Keith Groves	Trinity County

Others in attendance: Josh Boyce (USFWS), James Lee (Reclamation), Justin Alvarez (Hoopa Valley Tribe), Liam Gogan (Friends of the Trinity River), Nick Som (USFWS), Roman Pitmann (NOAA Fisheries), Trent Tuthill (Friends of the Trinity River), Ken Lindke (CDFW), Brandt Gutermuth, Kevin Held (TRRP), Kyle Sipes (McBain Associates), Fred Meyer (McBain Associates), Chad Abel (TRRP), Seth Naman (NOAA Fisheries), Elizabeth Hadley (Reclamation), George Kautsky (Hoopa Valley Tribe), Key DeJuilio (Yurok Tribe)

Notes: Sabrina Kleinman (EPP)

*Wade Sinnen served as the CA State representative in the vacancy of Tony LaBanca and on the second day when Teresa Connor was unable to attend. USFS was unable to attend due to limited staff resources from current fires in the region.

List of Motions

Mike Orcutt made a motion to approve the meeting Agenda.
Keith Groves seconded the motion.
Motion passed with 7 votes in favor. USFS was absent.

Keith Groves moved to accept the July 2020 TMC Meeting Minutes.
Mike Orcutt seconded the motion
Motion passed with 7 votes in favor. USFS was absent.

Dave Hillemeier made a motion to forward the Flow Work Group's memo to the appropriate Reclamation staff at NCAO and CVO to evaluate the concept to determine its feasibility and potential obstacles. If initial review by CVO indicates it is feasible, then the TRRP should begin development of the appropriate environmental documentation to implement such releases.
Dan Everson seconded the motion
Motion passed with 5 votes in favor, one opposed, and one abstention. Hoopa Valley Tribe opposed. Reclamation abstained. USFS was absent.

Action Items from the Meeting

- Michael Dixon will meet with Trent Tuthill and Friends of the Trinity River, along with Josh Boyce and Todd Buxton to go over the Channel Habitat Synthesis report findings.

Welcome and Introductions

Justin Ly opened with a roll call of TMC members, agency participants, and the general public. Due to travel restrictions related to COVID-19, the meeting was held on MS Teams.

Approval of Agenda

Mike Orcutt made a motion to approve the meeting Agenda.
Keith Groves seconded the motion.
Motion passed with 7 votes in favor. USFS was absent.

Approval of July TMC Meeting Minutes

Ly noted he submitted a last-minute change via email this morning. Michael Dixon was able to incorporate the change and the new clean copy of the minutes was posted to the TRRP website.

Dixon clarified that Seth Naman's discussion topic later on Day 1 may or may not be a decision item, depending on how the discussion proceeds.

Keith Groves moved to accept the July 2020 TMC Meeting Minutes.
Mike Orcutt seconded the motion
Motion passed with 7 votes in favor. USFS was absent.

Orcutt asked about the protocol for the number of votes needed to pass a motion when one TMC member is absent. Dixon displayed the TMC bylaws and noted that in Section 603 it states that when 6 to 7 members are present, six affirmative votes are needed to pass a motion. Orcutt clarified that with eight members present, two no votes were needed to prevent passing a motion and if the same was true when 7 members were present. Dixon stated it was true, but that one abstention would not prevent a motion from passing.

Public Forum

Liam Gogan from Friends of the Trinity River thanked the TRRP for their continued work with Chad Smith on the Refinements Process. As a member of the Friends of the Trinity River, he would like to see more inclusion of other stakeholders. He also thanked Yurok and Hoopa Valley Tribe members for reaching out to the Friends of the Trinity River recently to meet with them.

Report from the Executive Director

Construction of Dutch Creek is currently consuming much of the Program's time as they are in a big push to complete the project. Access limitations and equipment break downs have been the biggest hurdles. The pool stratification study is underway, and staff are currently working to get AFAs and cooperative agreements in place before the new fiscal year starts. TRRP did receive the new BO from NOAA Fisheries. Dixon has been in the office to welcome new staff, but the majority of the staff are on a work-from-home arrangement for the foreseeable future.

Organizational Updates

TRRP hired Chad Abel as the new Implementation Branch Chief. He started on Monday but will be unable to attend the meeting as he is in the field with the on-site representative to look at project sites. Oliver Rogers started two weeks ago as the Civil Engineer. He is also serving as the On-Site Government Representative.

There are still a few remaining vacancies. The Hoopa Valley Tribe has made an offer on the Riparian Ecologist position and the TRRP is in discussions with the Yurok Tribe about the vacant physical scientist position, now reclassified as a fish biologist. The TRRP has agreed to hold the position vacant on the federal side and have someone from the Yurok Tribe serve in that role through an MOA. Orcutt asked if the physical scientist position was still being reclassified as a fish biologist and then hired through the Yurok Tribe. Dixon confirm it could but was contingent on a few factors. He explained that previously there were two physical scientist positions in the office and after a review they decided that it would be more advantageous to fill that position as a fish biologist.

Justin Alvarez reported that the Hoopa Valley Tribe has made an offer to Shawn Green for the Riparian Ecologist position with a start date of October 1.

Implementation Update

Dutch Creek is on track to finish by Sept 15. They've had recurring problems due to equipment breakdowns. The crew was able to make up time lost from the brief shutdown due to a positive COVID-19 case. However, because of the recent outbreak on the reservation, the Hoopa Valley Tribe revegetation technicians are behind schedule and have limited availability. They will continue to work through October with seeding and mulching. There is limited access due to the crossing limitations on the river. However, the site is looking great and they anticipate the new design will open up the floodplain. Dixon hoped to get the TMC out to the site for a visit post-COVID.

The Environmental Assessment for Chapman Ranch Phase B is done. They are waiting for the USFS Wild and Scenic River determination before signing the FONSI so they can sign the two simultaneously. The determination is imminent but later than anticipated. The project is ahead of schedule and once the permits and CLOMR are in place, construction may be able to start earlier than currently estimated.

Sky Ranch is currently in limbo as they are still waiting for the federal land transfer. Half the project is on land owned by Trinity Public Utilities District and there is a legislated land transfer that would shift those areas into public ownership. Without the transfer, TRRP will not be able to implement the project as designed. Oregon Gulch is moving ahead with NEPA. There are a few outstanding questions about mineral rights brought up by the BLM and the Program is discussing them with the Solicitor's Office. An administrative review of the project's EA is planned is planned to start at the end of September.

Evans Bar will serve as a pilot project with the newly merged Yurok and State Design teams. The Yurok Tribe is currently working on the Sawmill site design and the State was assigned the

Evans Bar design. The joint team will now finish the Sawmill design first to allow for completion of the gravel excavation. Evans Bar is currently planned for next year. The Upper Conner Creek Design team is working on the 30% design report. Fred Meyer will present on their design on the second day.

The non-flow related Biological Opinion was issued by NOAA Fisheries and will allow the TRRP to adopt non-TRRP projects and provide additional incidental take coverage as long as they abide by the BO. Roman Pittman will present on the BO on Day 2.

Outreach

The 2019 Annual Report has been finalized, but no print copies are available yet. An electronic version is available on the TRRP website. TRRP has updated their program's overview brochure on what the Program has accomplished since the ROD was issued. Orcutt asked if the revision was for the green document the TRRP produced about 10 years ago. Dixon explained that it was a 6-page document that provided just a brief overview of the project. Orcutt explained that there had been discussions on revising the green document to update conditions, perspectives, and approaches and wondered why the TMC had not been asked about updates while it was being produced. Dixon explained that Kevin Held had reviewed proposed updates with technical staff to update technical content. The brochure has not been published yet and they could send drafts to TMC members. Orcutt added that there had been a Phase 1 review and different discussions about the how the ROD and flows have performed, and if there is a shift in approaches based on the analysis, Hoopa Valley would like to see what's being produced.

Held worked with RCD to produce a virtual nature hike video which is available on the website. The TRRP also sponsored the annual photo contest. The Program held several meetings with landowners to conduct monitoring and surveys. Some items that will be out soon include a video on the Dutch Creek project in early December. The TRRP is planning some river clean up events for National Public Lands Day and producing some materials for the Weaverville Farmer's Market.

FY20 Budget Updates

After reviewing prior year fiscal funds, TRRP identified some additional funds set aside for relocation of new staff that weren't being used. They were able to spend out the previous year's unobligated funds, about $200,000, towards next year's construction.

Additionally, they identified funds from a bank error that allowed them to forward fund CDFW's agreement to cover the proposed FY21 cuts. The overestimation of CDFW's option year resulted in a modest reduction of funds going to CDFW and allowed them to fully fund the three highest ranked projects for FY21 rather than the proposed reduced amount. These are reflected in the updated FY21 budget handout that Dixon emailed earlier in the week.

Science Update

James Lee discussed recent updates to the Science Program. The Fine Sediment synthesis report has been submitted and will go to peer review. They are still waiting on final edits for the vegetation encroachment and outmigrant synthesis reports. The Riparian vegetation monitoring report has been finalized and submitted. There have been several final reports received, including the Upper Conner Creek existing conditions report, the BO from NOAA Fisheries, the 2019 Annual Report, and the BA on Essential Fish Habitat. The Synthesis report on fine sediment has not been submitted yet.

The attending Work Group Coordinators provided brief updates on work completed in the last quarter. The Design Work Group (Justin Alvarez) met once and visited the Dutch Creek site and Chapman Ranch. The Flow Work Group (Seth Naman) met once to advance the studies on synchronizing flows with dam flows and drafted a memo, which will be discussed later on Day 1. The Physical WG (Lee) met in July to review gravel augmentation at six new sites. They also reviewed the physical process monitoring metrics. Water, Fish, and Riparian and Aquatic Ecology Work Groups did not meet during the last quarter.

The IDT met twice to discuss the FY21 Work plan and to form a subgroup to manage work at Hamilton Ponds. They are also coordinating efforts to finalize the Objectives Refinements exercise, which will be discussed on Day 2. The IDT did consider changing the structure of the team. Formerly the IDT was co-coordinated by the USFWS and Reclamation Branch Chiefs. However, now that the Science Coordinator is a Reclamation employee, there is no longer a USFWS staff person in that role. They want to recommend that the IDT be co-coordinated by one Reclamation and one USFWS Staff person from the Arcata Office. The Reclamation staff could alternate between the Science and Implementation Branch Chiefs while the USFWS would assign a person.

Orcutt asked about Hoopa Valley's role on the IDT and noted that the ROD required concurrence with Hoopa Valley. He asked that the tribe be considered for that role based on Hoopa Valley's long-standing involvement with the IDT. Lee clarified that the IDT was asking to update the Work Group manual and that there had not been discussion on how partners would be represented. He explained the Coordinators set-up the meeting agendas and facilitate discussion. Orcutt added that as a co-signer of the flow study, Hoopa Valley has standing on the IDT and should be considered during discussions when renaming or reorganizing things. Dave Hillemeier asked if the Coordinator had to be from a DOI agency and asked that it would be helpful to clarify the Co-manager role as Yurok tribe as the same standing as Hoopa Valley and would like to work at a similar level as the Hoopa Valley. Dixon answered that the Implementation Plan was not specific on the structure of the IDT and that the change was proposed for the Work Group manual only.

Lee continued that the IDT met to review the Flow Work Group's synchronized flow memo. There were also discussions about SAB member selection and the Objectives Refinements exercise. Their next meeting is scheduled for October. Ly asked where the flow synthesis report was on the synthesis report progress table. Lee noted that it had not been added yet as funding

had not been awarded when it was put together. However, the AFA has been finalized and awarded and the project can be added based on the proposed report schedule.

CVP Operations Update

Don Bader provided the CVP operations update, stating that he would provide a 1-page summary of the numbers at future meetings. Trinity storage is currently at 2,302ft, about 67.5ft from the top and under 1.5 million acre-feet. Trinity is anticipated to continue to drop another 22 ft, or to 1.2 million-acre feet, which is on track with the 15-year average. Shasta Reservoir is 91 ft below the crest and will likely drop another 20 ft to 1.9 million-acre feet or 89% of average. To summarize storage, everything is looking about average, but it is nowhere near last year's carryover. The region will need normal winter precipitation to get back where they want to be.

Call #5 on the Lower Klamath Fall Flow Augmentation was held last Friday, and no actions were taken. The Yurok augmentation flows are at 3,000 – 3,060 cfs and water temp is at 22.5C. Call #6 is scheduled for Friday.

Overall, the CVP is still doing maximum diversions through Carr, which will be curtailed soon. They are still meeting their temperature objectives for the Sacramento and Trinity Rivers. The new operations are working out well and they are gaining a little more storage than expected but have high temperatures predicted for the weekend.

Major overhaul work is still being done. The Spring Creek unit was back in service about three weeks ago. California is now in high energy demand with the second highest day of megawatt use on record and Northern California is being asked to supplement generation. The next job is to do the last runner replacement at Trinity #2. Reclamation will keep Trinity on power generation through September due to the current energy demand rather than in late April. If they receive questions about why the unit won't be ready until next year, it's because the energy is more valuable now than it will be in the Spring based on demand. CVP will end up with average carryover storage and they haven't heard any forecasts for what next year will look like. Orcutt asked how much water was being diverted to the Central Valley based on it being a critically dry year. Bader answered that it was probably double the ROD flows as it is extremely high. Orcutt asked if it averaged over time, and Bader stated it was. Orcutt noted in the assumptions and criteria for the 2017 Lower Klamath Fall Augmentation Release long term plan ROD, water needed to be released for the Hoopa Valley Tribe's boat dance releases as they are cultural and not part of the biological needs. Bader agreed that Paul's summary on the report was along those lines. Orcutt asked if the deferment of work from September to April would affect ROD flows. Bader stated they would not as once flows are at 3,600, they perform bypass flows through the dam and in the spring, they are required at 1,800 when Trinity Power Plant is at full capacity. He noted that his comment about prioritizing power generation was for power customers who may ask why the unit was not back online. The work should not affect the flow releases.

BREAK

How Physical Monitoring Informs Restoration Progress

Todd Buxton presented on the use of physical monitoring data for the TRRP based on a request in July by George Kautsky. Buxton prefaced the presentation that it was based on his use of the data and that the presentation was not an exhaustive overview of how data was used. Other studies that use the data can be found the TRRP Data port. Buxton reviewed the suite of survey methods used, including bed material sampling, cross section surveys, bed load measurements, topographic models, and aerial photography. He related how the measurements were used to calculate a variety of sediment related measures for mobility, habitat quality, sediment movement, and gravel augmentation. His presentation is available on the TRRP website.

To elaborate on what the data and calculations were indicating, he used the example of deltas and bars at Rush and Indian Creek. In both areas, aerial photo analysis indicates that deltas have been progressively returning to pre-dam conditions. At Indian Creek delta, the stream channel is constrained by Highway 299 and between the bridge and the river, along with a parking area. It is likely that sediment will begin to impact the highway. Rush Creek, meanwhile, is unconstrained, and they are seeing that flow regulation followed by restoration is restoring more natural flow regimes. Since the mid-70s, the delta has increased in size while the bar has remained low. The increase in the delta is because flow has mobilized sediment but isn't strong enough to move the bar. It's throwing the channel in a southern direction and will eventually threaten a few homes.

In terms of topography, others have used the data to look at bed and bar complexity. Currently Buxton uses it for topographic differencing to determine changes in elevation and sediment volume. Deltas can serve as both sources and sinks for sediment. There was 14,000 cubic yards of additional storage that is now down to a loss of 10,000 cubic yards as the river mobilized sediment out of the reach. These changes can be drastic during bank erosion because it mobilizes the delta itself. In Rush Creek, where it dumps out, there's a pile of sediment which is mobilized as a result.

Looking at bed load and suspended sediments show that discharges needed to move fine sediment are increasing overall but slightly decreasing at Lewiston. Higher flows are needed to move the fine grains because larger grains in the bed surface store the fine grains underneath. Thus, the large grains need to be moved to get to the fine sediments. It's not common in gravel bedded streams that support salmon populations. Coarse and fine grains have remained equally mobile through time without increasing in complexity. The results indicate a limitation of fine sediments in the Trinity River that could impact their success. While shield stress measurements along the river are within the expected range compared to normal rivers at Limekiln Gulch and Douglas City, they are lower than normal at Lewiston. There is slightly higher discharge needed to mobilize the bed at Lewiston than the other stations because the channel has a lower slope.

This field data helps with the hydrograph development and informs decisions made to disperse sediment downstream. Without it, they don't' know what gravel augmentation is doing. More recently, they've used the information to see that large loads of augmented gravel are stuck in

Lewiston reach which could be from the lack of fine sediment needed to promote movement of coarse sediment.

Looking at the distribution of particle size and bed transport, they've seen at the Limekiln and Douglas City, the size distribution is increasing while the percent fines is decreasing, meaning the bed is becoming coarser. At Lewiston, in comparison, it's stayed the same likely because it's more heavily managed. Differences start appearing at lower stations and the mobile samples show that the percent fines in and on the bed have markedly decreased since 1990. At Lewiston there was a lowering of the percent fines, but it went back up with the Carr Fire. The fines rapidly evacuated but are returning to pre-disturbance levels within 1-3 years after the event. There is no fine sediment supply in the Lewiston reach, creating an unnaturally functioning streambed that may suppress physical and biological functions that impact the goals for fish.

Based on the fine sediment percentages, it's clear that the spring flow releases are depleting the fine sediment, which are cumulative over time and result in progressively fewer fines in the river. While that was a goal, it appears to be overdone and the river is in a deficit that is a detriment to its functioning. Fine sediments aren't bad for rivers. At high amounts they do interfere with salmon productivity. But a few fines are needed for spawning and incubation success. There is a level of fines for egg transport that you want to remain under. Under the normalized rate of transport, they can cap redds and suffocate them. Some turbidity is advantageous for juvenile rearing as it provides cover from predators, depending on the time of year. Physical processes also need fine sediment to transport coarse sediments.

The targets for stream biology are being met but maybe overly so. In terms of turbidity, only in 2006 and before Limekiln Gulch was it exceeded while at all other stations the goal has been met. In terms of % egg and fry survival, the results top 80% almost every year. It's a healthy channel environment for egg incubation and juvenile rearing but different for the processes that target fine sediment. Targets for the surface and bed are almost never met because there are too few fines and we're seeing a lack of balance in fine sediment available for biological and physical processes.

The effect of the decrease of fines can be measured in a single hydrograph. As fines evacuate from flow releases, the coarse grains are more exposed and more easily mobilized. But this wouldn't be seen without the data we've collected which allows us to understand the trajectory of the environment for fish production.

Based on these results, the following are recommended in the fine sediment synthesis report:

- Release flows for sediment routing and salmonid protection to replicate natural timing during sediment transport events to prevent smothering of eggs in bed.
- Add fine sediment to channel between Lewiston Dam and Rush Creek.
- Conduct analysis to remove the Trinity River listing as sediment impaired which restricts turbidity during channel construction and sediment augmentation and restore fine sediment as a component of the river.

- Stop dredging Hamilton Ponds as it provides fine sediment to Grass Valley Creek.
- Monitor sediment transport and storage in the Trinity River

There is also concern as funding for sediment monitoring has been cut and the consequences of that include:

- Lack of contemporary information needed to augment design and sediment augmentations. TRRP would have to guess at how much or how little to add.
- Lack of information on how to adjust flow releases to exceed mobility threshold which could lead to wasted flows or releases that are inefficient at moving sediments.
- Lack of data needed to assess the effectiveness of flow releases to meet geomorphic objectives and less clarity on how of the channel and floodplain change.

In the FY21 budget, there is money available for flow and temperature monitoring at fisheries but nothing for hatcheries, physical, and primary production. While there are low returns over time, the TRRP is making a choice to count the fewer fish, rather than identify the limiting factors that could inform how to better address the population needs. As a restoration program, the goals are not being met and a restoration approach using the information they have should guide the work rather than the populations themselves. Buxton noted that while the members of the Science Plan Drafting Committee have a broad range of experience in river restoration, the discipline expertise of its members is mostly in fishes without one physical scientist on the list. Physical science can help guide the habitat restoration approach and it may just be an oversight that could be remedied easily.

Orcutt asked whether the Douglas City site was the lowest one used in the sediment studies. Buxton explained that it was, and that it combined the lower and upper Douglas City sites. Orcutt asked why the sediment studies were not extended down further to see if more sediment was moved with more accretion downstream. Buxton added that there is downstream data at Junction City, but channel data and sediment transport data stops at Douglas City. Orcutt asked if other pre-dam information was available to include in the analysis. Buxton posited that large flows could be examined from some of the aerial photographs but noted that they tried using aerials from 1944. However, the photos were grainy and the pixelization made it difficult to detect changes. The aerial photography analysis has not extended beyond 1960 but could be done if error was a consideration in the grainer photos.

Hillemeier asked if the TMC and TRRP should reconsider minimizing sediment import on the Trinity River, which is currently a primary objective. Buxton stated the TMC should consider it when funding sediment abatement as sediments are needed in Trinity River. Hillemeier asked if removing focus from tributary fine sediment production would be adequate to limit sediment transport. Buxton did not think so and that sediment is needed right at the base of Lewiston. He suggested continuing the sediment work as it benefits the tributaries and ease the deficit by augmenting right across from the hatchery. Buxton added that the photos indicate the Program has done well addressing the sediment problem and that the river has had a deficit for the last ten years. Monitoring has stopped because there hasn't been anything to monitor. Hillemeier

supported adding a physical scientist to the Science Plan team but was unsure if the TMC needed to make a motion.

Dixon added that the TRRP has known, based on Buxton's and others analysis, that the program did not need to focus on fine sediments as much. As a result, they shifted focus for their grants to a more nuanced watershed approach that's more site-specific based on the conditions of each tributary, incorporating more resolution.

Dan Everson commented that he was not surprised that there was a lack of fine sediment problem when he started as the dam would tend to coarsen the river over time. Everson asked if Buxton could provide a recommendation on how frequently monitoring should occur based on current budget constraints. Buxton thought that transport monitoring should be done annually, except for dry and critically dry years. Bed material sampling could be done every five years along with the 40-mile topographic survey rather than just focusing on delta and rehabbed areas. He added that missing a year of transport modeling does throw the whole budget off for the flows. Similar to the fish populations, the relationships change annually and using old data does not tell you what current conditions are.

Ly asked how the hydrophones and acoustic monitoring would complement data collection efforts. Buxton explained that the hydrophone project was funded, and the equipment would be installed next year for use annually. They use the acoustic signal of the moving sediment to calculate bed load and particle size details. Physical sampling would still be required. While that hasn't been funded, they are proposing to use previous data to get within the ballpark. To fully develop the hydrophone method, though, a few physical samples are needed from the same time period. The savings is in the number of samples, as fewer are needed for the hydrophones than when calculating total loads.

Orcutt was hopeful that a physical scientist would be part of the Science Plan team. Orcutt commented that he was not convinced that the TRRP was having an effect on fine sediment but that the change was driven by other factors. Buxton explained that he did not indicate that there were fewer fines coming from the tributaries but that the flow releases were more effective at transporting a higher amount of fines than the tributaries were contributing. Hillemeier asked whether they were thinking of looking at bedload and sediment in the tributaries and further downstream than Douglas City. Buxton said they had but had cut funding for a stream gage already. While they would like more data, there have not been any ideas on how to move towards that given the current budget environment.

Wade Sinnen asked how fine sediment may be limiting production. Buxton explained that benthics may become more homogenized and less available as they would have areas further in the bed to reside. Early flow releases may deplete fine sediment in the bed, which could affect ammocoetes and decrease the lamprey population. More fines on the floodplain are better, as it creates rooting media for plants and keeps groundwater levels higher during the warmer months. As the river coarsens there could be a decline in riparian plant success that affect wood and plant

availability. Sinnen asked if coarsening of the river could also contribute to recent algae increases. Buxton deferred to Eric Peterson's presentation later in the day.

LUNCH

Flow Variability Through a Trigger-Based Hydrograph

Seth Naman presented a draft memo prepared by the Flow Work Group recommending that flow releases allow for synchronization with flows at Lewiston Dam based on a December motion from the TMC. While the ROD resulted in significant improvement in water quality and quantity, it simplified the hydrograph, which may have led to mis-timed changes in temperature that affect juvenile growth success. In 2012, 50% of the flow into Trinity Reservoir occurred prior to April 22, with the remaining flowing in after April 22. Downstream, only 19% of the annual volume was in the river prior to April 22, while 81% occurred after the April 22. Based on stream temperature, temperatures increase from March to May and then decline (~7-8º F) when the flows are released before the water begins to warm again. That change may move the river outside of the optimal temperature for salmonids and may make the fish grow slower.

In Appendix O of the Trinity River Flow Evaluation Study, the team hypothesized that synchronizing flows in the winter may benefit fish but coordinating those releases would be hard. Other benefits may include fine sediment transport. In the ROD, it states that the TMC should monitor the flows and that the water release schedule may be adjusted daily while the annual flow volume remains the same.

The Flow WG drafted a memo for Reclamation as a primer on the issue and a jumping off point for additional NEPA analysis to provide legal coverage for releasing the water in the winter. The memo's goal is to provide a brief and succinct overview of the approach and determine if Reclamation is supportive of the TRRP pursuing the issue. The memo would be sent to Reclamation's CVO and NCAO offices.

Naman noted that there was not consensus on the issue in the Flow Work Group and the IDT. Hoopa Valley commented that they did not want the memo to specify where the water would come from. The current document states that 60,000 AF of ROD water would be used to perform winter releases regardless of water year. The technical analysis conducted for the NEPA document would determine time periods, volumes, and trigger levels at Junction City for releases. In most cases, the spring peak would be moved earlier in the hydrograph and smaller to shift water earlier in the year to improve juvenile water temperatures and bolster rearing. Moving the peak could maximize geomorphic benefits and pair tributary events with Lewiston events.

Kautsky explained that as the Hoopa Valley representative on the Flow Work Group and the IDT, they did not believe it was the purview of the Work Group to assume where any volume of winter flow came from. By doing so, the group would be making a policy recommendation instead of a technical one and would adjust volumes without knowing if they were in their driest water years as the timing with the water year determination would be off. Dixon noted there was a difference of opinion on the IDT regarding the policy questions. The TRRP was directed by the

ROD to only consider water based on the ROD volume. Groves added that the TRRP should do what they can with the water they have access to rather than waiting for other water to appear. Buxton agreed with Kautsky about the volume concern and added that if the Program's objectives could not be met using 60,000 AF of water, they should conduct analysis to determine what amount of water was needed.

Naman explained that whether the water came from the ROD or other sources, the approach would shift the proportion of water used prior to April 22. Adding and finding more water would be outside the ROD. Sinnen asked if the memo that would preclude the TMC from adding more water in the future. DeJuilio commented that discussing more water was confusing since the Work Group and the Program was designated to manage a defined volume of water for the fish. In terms of the volume, the approach would move towards a 50/50 division of when to release the water. The limitation is in determining the water year and assurances for annual run-off, which happen mid-year. If the Flow Work Group is successful with the water they control now, it may be possible to advocate for more water for the fish.

Orcutt commented that there were several factors to consider regarding the seasonality of the river's hydrology and flow variability, like rain on snow, and saturation. He thought the TMC needed to consider the 50,000 AF of water from the Proviso 2 decision as a potential volume. Additionally, in 2017, the ROD was challenged based on the assumption that it was capped under CVPIA. However, courts found under Proviso 1 that the ROD was not capped. Those scenarios could allow for more water and the tribe would vote against the motion that isn't open to where the water comes from. Orcutt further explained that the government and the Justice Department determined that the water volume was not capped as the 1955 TRD Authorization Act allowed Reclamation under Proviso 1 to alter the water for fisheries. Hillemeier asked if the TMC ever received a formal Solicitor's opinion on whether NEPA was required for adjusting the flow releases.

Naman explained that since there was not consensus in the IDT and Work Group on the direction for the memo, they needed the TMC to provide it. The motion would direct the TRRP to send the memo to Reclamation's NCAO and CVO offices. The memo asks staff to evaluate the concept and determine if they were supportive of implementing analysis on it. If they approve, then the TRRP would develop NEPA for potential impacts on the human and natural environment. Hillemeier noted that in FY19, the TMC explored a September flow bump but Reclamation did not feel they could do it because they did not have environmental coverage despite potential flexibility in the ROD.

Ken Lindke commented that the TMC could agree that the Program is not where they would like to be and there is a growing awareness based on personal experiences and literature that the Program needs to do something different with flow management to achieve the results they're after. The Program has authority over the ROD water, and while the volume may not be as set as some believe, they can make some changes now with what they have. Lindke was concerned that the TMC would get tied up in a policy debate while the river suffers, and the Program continues

to not meet its goals. Som added that there have been numerous indications that adjusting the flows would benefit fish and the TMC should open its knowledge base toward directions that would be more impactful for the fish.

DeJuilio added that the approach would increase flow variability and geomorphic work in the winter while decreasing geomorphic flow and temperature suppression in the spring. Both aspects are equally important. Having flows in November to April would accomplish the geomorphic objectives without harming juvenile salmonid growth or interfering with temperature. While new flow volumes may come from Proviso 1 or 2, there is uncertainty about whether the TRRP or the Flow Work Group would have a say in how the water was used given that they did not for a fall flow event.

Groves added that Trinity County still has claim over half the water in the Proviso 2 decision and that the water would likely be tied up for a while. Orcutt is right about the ruling, but the water was not for restoration but to save over heated fish. There is a set amount for restoration and while the ROD may cover changes when its released, there isn't environmental coverage for that use. Groves thought there shouldn't be fear of losing the water but holding a policy fight over where the water comes may be foolhardy and there is evidence now that releasing the water earlier would benefit the fish.

Orcutt explained it would better to discuss when the flow synthesis report is done and the TMC has all the technical information done and on the table, as these processes go slowly. He noted that when Proviso 2 was considered, the TRRP staff declined to participate in Humboldt County's effort. His point was that the tribe will defend and utilize the other volumes of water based on legal and scientific evidence. He noted that in September, when flows flat lined for spawner attraction flows, Reclamation was able to step in and modify it. Ly responded that while Proviso 1 of the 1955 Act did allow for additional volume, the TMC needed to maximize the ROD allocation they have. Whatever the TMC decides to do with the ROD allocation should not preclude future efforts based on Proviso 1 or 2.

Dave Hillemeier made a motion to forward the Flow Work Group's memo to the appropriate Reclamation staff at NCAO and CVO to evaluate the concept to determine its feasibility and potential obstacles. If initial review by CVO indicates it is feasible, then the TRRP should begin development of the appropriate environmental documentation to implement such releases.

Dan Everson seconded the motion

DeJulio asked that the motion and the hydrograph examples at the end of the memo remain conceptual and that water be managed in the same manner it is now. Orcutt asked if the approach would use the total volume. Naman explained that the examples were just concepts and are not exactly how the water would be released that could allow the Program to shift releases to the winter. Orcutt thought the examples should be explicit and that a worse-case scenario modeling needed to be done. Naman explained those instances would be determined with further analysis.

The document would put the concept forward with the understanding that more robust technical analysis is needed to describe the action for the environmental documents. Orcutt asked that the memo include a discussion regarding their dissenting opinion. Hillemeier explained the memo was to determine if there were insurmountable obstacles towards this approach from the NCAO and CVO. The memo would not ask them to support the approach or enforce it but provide the TMC and TRRP with the ability to explore it. Orcutt thought that the analysis should have been ground-truthed before asking for Reclamation approval. Ly thought it was appropriate for the Program to have the preliminary technical analysis at this stage. To require the Program to provide more in-depth analysis at this stage was premature and all that effort may be wasted if shifting the Trinity River peak flows was rejected by Reclamation as infeasible.

Connor added that it might be good to reword the specification on the 60,000 AF to keep them from being limited. She suggested that the Flow Work Group could look at other ways of controlling the temperature ifs it really harming fish in the meantime, such as adjusting the ramping rate. DeJuilio explained it was considered by moving the peak forward in time to get closer to when the lake starts stratifying, but it would require moving the water in the April to October time period. Naman agreed to massage the language to provide some flexibility on the amount of water in the flows.

Motion passed with 5 votes in favor, one opposed, and one abstention. Hoopa Valley opposed. Reclamation abstained. USFS was absent.

Channel Rehabilitation Habitat Synthesis Report

Josh Boyce presented on the habitat effectiveness monitoring work done by the TRRP with a focus on site evaluation surveys. Boyce's presentation is on the TRRP website. The river is divided into different areas based on a variety of criteria and then analyzed for optimal, suitable, and unsuitable habitat. The sites are then modeled at five different flow rates. The team compares the sites from pre-construction, post construction, and then again during a revisit survey 5-8 years later. Findings were summarized in figures available in the presentation.

Boyce provided a closer look at the Lewiston and Upper Bucktail sites to see what occurred in terms of changes in suitable habitat. At Lewiston, there were smaller eddies and slower, shallower water that reduced habitat. The point bars were originally conceived as gravel augmentation sites but were eroded away over time. The result is that the bank between the side channel and the main site did not become inundated and lost habitat over time.

By comparison, Upper Bucktail gained habitat. In 2011, a large flow event deposited a large amount of sediment at the site. As flows increased, the large floodplain became inundated after construction, creating more habitat. Overall, the results indicate that construction matters but the full post-construction benefits may not be sustained over time at some sites, though they maintain more habitat than pre-construction. The results indicate that habitat may also dip at intermediate flows, while increasing with higher ones. At Bucktail, the side channel became faster and deeper with increasing flows, and then there were large areas of inundation as the

flows increased again. The team is working on two more reports that look at a systemic estimate of habitat changes in relation to summer-based flows across the restoration reach and the 40-mile habitat capacity report. The systemic estimate will cover about 50% of the restoration reach and 23 rehab sites and looks at the influence of gravel and large wood augmentation on habitat levels. Damon Goodman is working on the report and it is close to peer review and he can present it next year to the TMC. The capacity synthesis report uses hydraulic modeling outputs to look at capacity of habitats. There is also on-going work to develop hydraulic models at Deep Gulch, Sheridan, Upper Deep Gulch, and Junction City sites. They are also proposing a 40-mile hydraulic model using the updated 2021 topography which could look at spawning habitat and give the TRRP the ability to look at a broader range of flow levels.

Buxton asked if the team found any statistical correlations on why habitats declined in some areas but not in others. Boyce explained that no statistical analysis was done, but they did see some patterns for geomorphic changes in habitat to determine what happened. At Hocker Flats, the loss of habitat was due to the loss of an alcove when a large sand deposit there mobilized. At the Reading Creek, there were five channel widening sections installed for channel deposits that were lost either due to encroachment or downstream losses. Kautsky asked if the analysis indicated a net gain in habitat. Boyce explained the overall patten is that channel rehabilitation increases habitat but at some sites over time, some of that habitat gain is lost. There is more habitat now than without rehabilitation, which is largely related to sediment mobilization, as it is eroded away at some spots and aggregated in others. At Upper Bucktail and Dark Gulch in 2011, there were large losses a few meters upstream that contributed to the large increases at those sites. Currently the patten is to increase with construction and then some reduction in that additional habitat over time. He recommended that in additional to the 40-mile model, it might be worth it to go back to some of the rehab sites and physically map what's there. Kautsky asked if the analysis identified any approaches in the restoration designs that are working in terms of aggregation and scour and if the Program should revisit them to determine more practical methods for restoration. Boyce explained that some sites do need a revisit for maintenance or maybe to modify specific aspects. The Program has been trying to create elaborate channel rehab designs versus others that just lower the floodplain and install some gravel. It might be worth considering not having elaborate channel designs and getting rid of some of the berms and off-channel sites.

Lee asked if Boyce was aware of any efforts to relate habitat on a systemic scale to trends in outmigrant abundance over a 10-year period. Boyce explained that the new capacity metric may have the potential to get at that question but may require reprioritizing other means objectives. DeJuilio pointed out that the analysis indicates an inverse relationship between evolved states at low and high flow. At low flow there would be a loss of habitat, but by looking across flows there is a tremendous change that looks like a linear increase. DeJuilio cautioned against putting emphasis on the work done by the Phase I review and the index flow calculations, which infer a reduction or low of habitat across flows. With advances in monitoring and technology, the Program is getting a clearer picture of how sites evolve across flows and by site. He supported

the work on the 40-mile model and additional site monitoring to prevent biased sampling designs. As these relationships develop across flows, it will better inform designs, hydrographs, and management and maybe include temperatures, depth, velocity, and cover. Boyce agreed that it could also aide in determining what restoration design functioned better.

Hillemeier asked if the analysis provided insight into the amount of gravel introduced to the river. Boyce suggested looking at Dave Gaeuman's work on sediment mobility and habitats they've surveyed at Lowden Ranch, which is downstream from an augmentation site. He recommended that they should keep gravel augmentation for some habitat benefits. Som added that the Program should not run away from evaluating habitat at base flow since the fish spend most of their time with water at that level. Until the Program accomplishes the necessary flow changes, they need to know what the fish are experiencing now.

BREAK

Algae Monitoring on the Trinity River

Eric Peterson gave a presentation on a study he is conducting on algae growth in the restoration reach in the river. The study will focus on periphytons, which attach to substrates and rocks. In 2018, the TRRP received several reports from the public about a major bloom developing on the river. There were concerns about water quality potentially related to marijuana production, changes in river management, and oxygen depletion in the river. The bloom occurred all the way to dam, which likely eliminates the potential influence from marijuana growers.

Algae is a primary producer on the river and many samples indicate the presence of *Cladophora*, which is the basis of many riverine food webs. Based on research done by Dr. Mary Powers, *Cladophora* emerges when geomorphic flows remove the grazing macroinvertebrates from areas, allowing them to proliferate in the spring and summer. They form the basis of a successional pattern with other, more nutrient rich algae species. *Cladophora* itself is nutrient poor for macroinvertebrates but is colonized by diatoms and other organisms over time that provide nutrition for fish.

While the Trinity River is believed to be well mixed, there are a variety of potential causes and limited information on what is causing the blooms. As a critically dry year, the flows may not flush out the algae, especially in the backwaters. Other causes could include the recent wildfires, delays in flows, and water temperatures in 2017 that scoured the grazing macroinvertebrates, resulting in the blooms in 2018. Another bloom was also recorded this year, raising questions about potential tributary inputs, changes in chemistry, relation to other hydrological or geomorphic events, or other factors. Given the current budget and staff limitations, Peterson put together a proposal to look along the mainstem and tributaries of the river over the next three years. Each site will be photographed every two months and in July, when the river is the warmest. The photos will be ranked to denote changes in growth. Sites will be sampled for biodiversity twice a year in February and August. Water will also be tested, but that portion has

not been funded. Peterson has put in a proposal with the Reclamation Science and Technology grant for FY21 and FY22 to look at total phosphorous and nitrogen at each site.

The monitoring results indicate higher algal growth closer to the dam, with growth increasing in the river in July and settling back down in August. Tributaries above the dam and lower in the reach were also high in July and August. Biodiversity sampling includes around 50 taxa, including filamentous algae, diatoms, and cyanobacteria. One interesting finding is the presence of *Didymoshenia*, which is native to the Trinity but invasive in the southwestern United States. It tends to expand in cold water and may need to be monitored to ensure its not causing problems. It was found at a few sites in February, but less so in August. Peterson plans to continue the study for the next three years and determine if there are patterns in across geography and time.

Orcutt noted that the cyanobacteria found in 2014 sampling of the Hoopa Valley Tribe's domestic water a toxic taxon. He offered to get Peterson in touch with his water quality staff as they did work with the fisheries and have data that may help the study. He noted that when there is heavy moss, it affects fishing. He also offered that the Hoopa Valley may be able to help with funding the water quality concern if possible with Reclamation as part of its health and safety concerns. Peterson agreed he needed to reach out to various groups to look at their findings on different algae groups. He noted that while cyanobacteria are known to produce toxins, a few do so consistently based on the situation. In terms of funding, there are opportunities to do some collaboration. He explained that there is a conundrum related to the amount of algae in the river. Large quantities of *Cladophora* are good for food web development but could have mixed value. When it gets dark Greek to brown, while it doesn't look great, its due to the development of nitrogen fixing algae that provide carotenoid pigments. However, diatom diversity may also include a number of intestinal parasites. Boyce asked if other unmanaged or dammed rivers in the region had similar algae outbreaks. Peterson was not aware but referred the group to Mary Power's work on the Eel, Mad, and Russian Rivers. Based on her research, the algae growth in the Trinity is considered normal in these areas.

Public Forum

Trent Tuthill from Friends of the Trinity River commented on Josh's presentation on channel habitat. He was encouraged that the TMC and the Program was evaluating mainstem projects as only 50% of the projects have been effective towards juvenile habitat rehabilitation. Based on recent budget reductions, mainstem projects may not be as costs effective as originally planned and Tuthill was encouraged to see analysis on it. He noted that as point bars are reduced or eliminated as material moves down the river and spreading out, it would create a shallower river that would affect temperature. Tuthill believed it was a trend in the wrong direction. Augmenting gravel doesn't make sense when there is no scientific rationale for continuing it. He wondered what the effect on adults would be when juvenile habitat is offset and encouraged the group to look at it in the future. Dixon asked Tuthill to meet with him and Dr. Boyce to discuss the analysis so they could review the details of the study. Buxton asked to join that discussion based on his fine sediment presentation.

Liam Gogan from Friends of the Trinity River thanked the TMC for considering the alternative flow pattern between October and April. He believed it should be explored. He looked forward to how the changes turn out and about increased flow in the winter.

Adjourn for Day 1; 4:12 pm

Day 2, July 22, 2020, 8:30am

Public Forum

No comments were provided by the public.

TRRP Biological Opinion

Roman Pittman from NOAA Fisheries gave a presentation on the recent TRRP Biological Opinion for mechanical channel rehabilitation work, sediment management, watershed restoration, and monitoring work. Ly and Naman did much of the pre-consultation work to cover as much restoration work as possible in the basin. The new consultation was needed to cover a variety of new techniques and project designs that have evolved over time. Reclamation is the lead agency funding activities in the Basin with USFWS, US Army Corp of Engineers, BLM, and the U.S. Forest Service (Shasta-Trinity National Forest) signed on as participating agencies.

The presentation covered a variety of methods and techniques used by the TRRP to address restoration of the Trinity River. The new BO includes sides boards and limits to prevent annual cumulative effects from such work, with much of the concern focused on sediment mobilization and limiting incidental take. There are defined limits on how many types of projects can be done annually, along with dredging of Hamilton Pond every 5 years. Pittman outlined a number of projects and activities that would not be covered by the BO.

A major feature of the BO is the ability of the TRRP to adopt actions that they may not fund or implement that are consistent with the BA and BO and abide by limits on project activities and incidental takes. Coordination would be required for such projects to ensure that annual limits are not exceeded. If a project is deemed to have No Effect, NMFS does not need to be notified prior to implementation. Projects with a not likely to adversely affect will require tracking and reporting. Projects that require notification and reporting include those with a potential to harm fish, significant sediment delivery or turbidity, changes in flow, full spanning structures, extended work windows, and streambank stabilization or in-channel excavation. The TRRP and participating agencies will be responsible for their own reporting to NMFS.

By using a programmatic approach, participating agencies will have ESA coverage for a variety of activities, which prevents piecemeal opinion, as long as those actions are consistent with the biological opinion and the incidental take limits. Participants will not have to prepare additional BAs. It will streamline the rapid completion of projects by multiple agencies, getting valuable work done quickly in the basin.

Orcutt was uncertain if the BO would allow federal agencies to complete their consultations quickly as the Hoopa Valley has been in consultation with NOAA since 2015 and it has taken over 5 years to complete. Ly explained that the section 7 process is NOAA's fastest way of providing ESA coverage compared to other mechanisms like 4(d) or Section 10. Orcutt noted that while Section 7 may be quicker, the other mechanisms are more directed and that when BIA is included in their consultations, they do go quicker.

Sinnen asked if there were numerical take limits for coho broken down by project and if the BO would be modified if other species are listed, such as the spring-run Chinook. Pittman explained there are percentage limits for captured fish for each activity, while research and monitoring have specific numbers listed by research activity in a table. If other species are listed, then the TRRP would reinitiate. The Final BO is available on the TRRP dataport.

Kautsky asked if the BO and BA contained consideration for the hydrographs and why it was not considered. Dixon explained the reinitiation was done to address restoration work on the mainstem and tributaries, gravel augmentation, and monitoring work. Flow was not included as it is a more involved process and they wanted to keep the BO focused on on-the-ground activities. Flow will be considered in the future. Orcutt asked whether the Junction City and Willow Creek weirs were included. Ly explained that CDFW has a 4(d) permit and they go through a different process which is why it was not included in the BO. Sinnen explained the 4(d) permit is an annual process, so the state can adjust locations when the permit window opens. He noted the redd carcass surveys was included even as a joint federal/state project. Ly explained that a BO is issued to federal agencies and not state agencies, with an exception for CalTrans, which has delegated authority from FHWA. For projects with the state, NOAA goes through a 4(d) permit and issues a BO for federal partners. He explained that a BO was issued for Trinity Hatchery because Reclamation had federal involvement.

Dixon emphasized that Reclamation now has the capacity to adopt projects from non-partners. So, if the state or an NGO has a restoration project that isn't funded by TRRP, it can be adopted under their take limits as long as there is a federal nexus. Orcutt added that the process could provide innovative and creative ways to get more done outside of the TRRP. Ly agreed and noted that if a federal nexus exist, NOAA can consult through a Section 7 process. Orcutt and Sinnen asked why only select projects were included when the TRRP funds all monitoring. Ly explained NOAA consulted on the activities TRRP included in their proposed action. Sinnen noted that the state prefers the 4(d) process because it allowed for annual engagement. The BO will remain in place until there is a need to reconsult.

Don Bader, as Vice Chair, took over moderating duties for the meeting 10:00 am due to a schedule conflict with Ly.

Upper Conner Creek Channel Rehabilitation Design

Kyle Sipes from McBain Associates presented on the current Upper Conner Creek Design for Fred Meyer and created by Hoopa Valley Tribe. Upper Conner Creek is on the mainstem of the river, downstream from Junction City. The design team has completed data collection on topography at dynamic bars and mapped large wood distributions. They developed an existing conditions report and concept designs and narratives, which were presented to the Design Work Group for review. From the concept designs, three proposed alternatives were selected for further development:

1. Meander Alternative**:** The design has new planform geometry of the mainstem in the upper and lower floodplains and spoils areas. The floodplains have target inundations at 2500, 3000, and 4500 cfs to meet riparian targets. The idea is similar to Chapman Ranch. The old mainstem will be filled to create new floodplain, point bars, and channel habitat. The remaining floodplain between river miles 77.9 and 77.7 would be lowered and a side channel would convey about 15% of summer flows. Mine tailing areas would be used for upland spoils.
2. Stage 0 Alternative: The Stage 0 concept would be applied upstream near old Hocker Flat, which will cut down the floodplain and fill in the main channel to 800 cfs with a pilot channel excavated through the area and microtopography features in the excavated floodplain when above 800 cfs. Downstream are constructed point bars with channel expansion to move away from the freeway and allow migration on the left bank.
3. Off-Channel Alternative: This approach would not include a major planform adjustment. There are high-flow side channels and scour channels between river miles 78.1 and 78.4. A beaver dam analog would be added downstream to create backwater and some existing habitat. There would be some floodplain lowering, along with more side channels and high flow channels. Point bars would be constructed towards the left bank floodplain by the river to encourage migration and erosion and get water on the floodplains more often.

The design team is currently working on the design report and will select an alternative before presenting to the Work Group and moving towards a 30% design surface and hydraulic model with supporting analysis.

Dixon asked if the design team had worked with Kevin Held on the design footprint, as the land ownership in the reach was complex. He wanted the team to consider it before making a selection. Sipes explained they had reached out to Held and were looking to do landowner outreach soon, but it had been a while. Sinnen asked if the Design teams had learned anything about how to keep side channels open and flowing as they provide the biggest bank for the buck except when they disconnect. Sipes explained that side channel concepts are developed with the expectation that they will change over time. They look at hydraulic modeling to estimate the probability of them filling up. Alvarez added that the Design Work Group recently finished an analysis on different features constructed over the last ten years, which included side channels. Based on their report, they've made some updates to the channel design guide to address how to keep them open and functioning based on where they are and how flows are directed. Sipes added that the channels do include metrics on angles on where to place things.

BREAK

Work Group Objectives Update

Lee presented on the current status of the Work Group Objectives Refinements Process. The TRRP has been using the Integrated Assessment Plan (IAP) to guide monitoring work for the program, despite never being fully endorsed by the TMC. The IAP contains 70-80 assessment

with leveled objectives ranked 1 -5. Each objective has at least one assessment associated with it and a brief study plan description. The perception was that the IAP was too complicated.

In 2013, the Phase I Review was completed and led to an Objectives workshop to reduce the redundancies between the objectives, review the conceptual models report, identify linkages between objectives and management actions, and develop quantitative metrics for each.

Salmonids are limited by a lack of rearing habitat. The TRRP has implemented projects to try to solve that issue and monitored the outcomes. Currently they are trying to evaluate their approach and make adjustments. The review of target objectives is part of that exercise to adjust TRRP actions and reassess the problem. The process has been on-going since 2013 and stalled out over the last few years but has gained recent momentum. Som presented a review of the Work Groups' efforts a year ago. Since then there hasn't been much progress due to staffing turnover, COVID-19, and other priorities, but the Work Groups are looking to renew that effort and finish the refinements. Currently the groups would like to complete it as a lead up to the development of the new Science and Monitoring Plan developed during the TRRP Refinements process. To do the plan, the TRRP needs to complete the target objectives.

Currently there are four groups involved: Flow, Fish, Physical, and Riparian and Aquatic Ecology Work Groups. Flow has completed their target objectives and the rest are 80-90% completed. For the remaining groups, the objectives are refined but they are developing the targets and metrics to go with them. The IDT is focused on not letting the perfect be the enemy of the good. For some objectives, it's difficult to come up with good targets that make sense, are appropriate, and are practical for monitoring. Some Work Groups, like Physical, want to implement them first to determine if they are complete. Such work is fine within the exercise as it will improve the targets, which should be adjustable.

The Work Group are preparing summaries to present to the IDT in January 2021. The IDT will review the summaries against the IAP to ensure there are no gaps or objectives that were overlooked for unknown reasons. The IDT will present the updated objectives list to the TMC but they should be ready in February. The timeline will allow the TRRP to incorporate the updated objectives into the new Science and Monitoring Plan. Kautsky asked why the objectives refinements was a precursor to the new Science and Monitoring Plan rather than developing the plan first. Lee explained they wanted to get the objectives finished around the same time that development of the Science and Monitoring Plan would start. The current timeline would allow the IDT sufficient time to review the objectives and work with the Work Groups in case adjustments were needed, allowing the effort to sync with the Refinements process.

FY20 Savings from COVID-19 and other Challenges

In July, the TMC had a brief discussion on how work adjustments for COVID may have impacted various agency budgets to potentially free up funds to cover the FY21 budget gap. Bader reported that Reclamation had finished negotiating AFAs with both tribes and were ready for the Solicitor's review. Both tribes have agreed to negotiate any reprogramming of COVID

related savings at a later date. Any unused funds from CDFW's IA would remain there and reapplied to other areas. Sinnen added that CDFW anticipates completing all their funded work. COVID only caused minor delays and issues along with small increases for transportation. They did not see any real savings from COVID. They are planning to move forward with their work and the two projects they have are either completed or on-going. Hillemeier reported that Yurok also does not anticipate any savings as all their work has also been conducted. Everson reported that USFWS is still working through their final budget numbers and are fairly spent out. There has not been much cost savings. Som is working on the final budget numbers and figuring out what they can pass along to the tribes, but the funds are not much different from current estimates. Groves reported that the County also did not have much coming back save a few hundred dollars, which are essentially savings from reduced travel. Naman reported similar savings from travel for NOAA, as they are not as heavily involved in monitoring or research. Bader reported the same for Reclamation as he had only attended one in-person meeting. Overall, there may be some savings but not a lot to cover the shortfall. He credited the agencies for getting the work done safely during COVID. Seth Lawrence added that CDWR would not be affected as they were supplementing their own time for the Dutch Creek project.

Bader also discussed the letter the TMC sent to Reclamation in February 2020 requesting consideration for inclusion on the Region's unfunded needs list. The Region has some excess funds and will work on prioritizing it with the list to keep the funds in northern California. Dixon added that the TRRP was able to come up with $200,000 that was moved into the gravel processing for next year's channel rehab projects. Bader added that there may also be savings since the construction inspector was pulled of the Dutch Creek site. Dixon explained they were working on getting those savings rebudgeted but were unsure if it would happen in time. They are estimating $39,000 in savings from having Rogers fill the inspector roll.

Topics for December Meeting

- Trinity River Hatchery Chinook Return Size and Age Analysis Presentation – Naman will coordinate with the NOAA intern, Dominic. Review of new research on a consistent trend in younger and smaller sizes of Chinook salmon in the Pacific based on Trinity River hatchery returns. The presentation could look at ramifications for fisheries management and the ability to generate juvenile fish.
- Revisit the FY21 budget discussion to prioritize projects if funds become available. This would be similar to last year's prioritization exercise.
- Check status of the Flow Work Group memo and discussions with Reclamation leadership in NCAO and CVO.
- Everson requested a discussion and update on communication with the community and different approaches that are proposed following the loss of the TAMWG.
- Bader requested a recap on the Dutch Creek project with photos and modifications.
- DeJuilio requested a similar recap for the Indian Creek project, if completed.

- Sinnen requested an update on the Refinements process. Dixon offered to give the update as Headwaters has a limited budget for meetings and they are trying to conserve their hours for Refinements-specific meetings.
- DeJuilio asked if they could present on the fisheries monitoring and redd carcass survey results to see preliminary results of this year's run, noting that the results would not be finalized. Kautsky cautioned that it may not provide well-concluded summaries and that mark-recapture work may not be completed. He asked to defer the summary until the Spring.

Dixon commented that the December meeting may not be in person. The USFS typically hosts the meeting in Redding. He will keep the TMC informed of meeting arrangements.

Public Forum

Liam Gogan commented about dissolving the TAMWG. Since the group was dissolved, the TMC is the main body comprised of government officials. Chad recommended in the Headwaters report that a group of true stakeholders from the area needed to be formed as soon as possible. The TRRP needs public input from other entities. There are great people with great input that they would like to give. Dixon explained that they will go through that discussion with the development of the Program document. Reforming the TAMWG would have to go through DC to reauthorize a FACA committee, so it's not a simple process which Gogan is aware of.

Adjourn Day 2; 11:30 am