

TRANSCRIPTS
TRINITY MANAGEMENT COUNCIL

June 16-17, 2021
WebEx Virtual Conference

TMC Members

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

Other in attendance: Justin Alvarez, Shaun Green, George Kautsky, John Schlosser (HVT), Chad Abel, James Lee, Oliver Rogers (TRRP), Elizabeth Hadley, Brandt Gutermuth, (Reclamation), Seth Naman, Roman Pittman (NOAA), Kyle DeJuilio, Chris Laskodi, Max Ramos, Jon Guczek, (Yurok), Bill Pinnix, Steve Gough, Conor Shea, Josh Boyce, (USFWS), Ken Lindke, Wade Sinnen, Chris Ramsey, (CDFW), Seth Lawrence (CDWR), Eli Asarian (Riverbend Sciences), Chad Smith (Headwaters), Tom Swainson, John Bair (McBain)

Notes: Sabrina Kleinman (EPP)

¹Pinnix served as the USFWS representative during Day 2 until 9:30 due to a schedule conflict for Hetrick and Som.

²Sinnen served as the CDFW representative on Day 2 but was delayed due to a fire at the Weaverville Office. Seth Lawrence served as the representative until Sinnen could attend.

³Shoemaker served as the representative for Day 1. No USFS representative was present during Day 2

List of Motions

Justin Ly moved to approve the June 2021 agenda and March 2021 meeting minutes.

Lois Shoemaker seconded the motion.

Motion passed unanimously to approve the agenda. All members agreed to move approval of the March minutes to the next monthly conference call.

Keith Groves made a motion to accept the FY22 budget as presented by the TRRP Executive Director.

Justin Ly seconded the motion.

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

Justin Ly made a motion for TMC to write a letter to the Bureau of Reclamation Regional Director requesting studies (either an appraisal or feasibility) on the Trinity River Division infrastructure alternatives to provide increased flexibility on water temperature management for the Trinity and Sacramento Rivers.

Mike Orcutt seconded the motion.

Motion passed with 7 votes in favor. USFS was absent.

Action Items from the Meeting

- Dixon will contact Richard Kuhns to set up a time to meet with the Trinity County Board of Supervisors to discuss the Oregon Gulch project and recent TMC participation policies.
- Bader and Ly will draft a letter to the Regional Director requesting funding for a study (either appraisal or feasibility) to increase flexibility for water temperature management at Lewiston. They will determine other entities to forward the letter to.
- Hayden will see if Weitchpec can host the September TMC meeting.

DAY 1, JUNE 16, 2021, 9:00AM

Regular Business

Welcome and Introduction

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

Approval of Agenda

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

Shoemaker seconded the motion.

Motion passed with unanimously.

Bader noted the decision items in the agenda. He will allow time for staff to discuss. He recommended reviewing the March 2021 minutes to review the proposed Work Group Manual revisions. Dixon added the TMC can make motions at any time during the meeting, but the decision items are where the Executive Director anticipates a motion and would like the TMC prepared for potential discussion.

Approval of March TMC Meeting Minutes

Approval of the March 2021 TMC Quarterly meeting minutes was moved to the July TMC monthly conference call as requested by Orcutt for an additional day or two to review the minutes and clarify some items credited to him. All TMC members agreed to the change.

Public Forum

No comments were made.

ESGR Recognition of TMC Chair

Dixon presented the Employer Support of Guard Reserve (ESGR) Patriotic Employer Recognition award to Don Bader for his exceptional support of reserve service members. Dixon recognized Bader for his contribution to national security by supporting Dixon's participation in the reserve force, where he serves a Lieutenant Commander in the Coast Guard Reserves. Dixon noted an ESGR representative would have attended to present the award but was unable due to COVID restrictions. Dixon read a letter from the representative, which noted Bader's enthusiastic support for Dixon to take time for training and his support of Abel and Lee during the past few months while Dixon was on active duty. Bader appreciated the recognition and recognized Dixon's service and the efforts of Lee and Abel during his absence.

Report from Executive Director

Dixon highlighted the Trinity River will hit base flow today following the critically dry spring flow releases for this year. The FONSI for the Oregon Gulch EA has been signed. Construction for Chapman Ranch Phase B is on hold due to a hang up in the AFA review process. The Notice of Funding Opportunity for the third-party watershed grant administration has been posted.

Organizational Updates

Chris Laskodi is working as a Yurok Tribe Fish Ecologist at the Program office. The civil engineering technician position is still vacant and will advertise soon. In the meantime, the Program office is getting support from other Reclamation offices to backfill needs that would be covered by the technician once hired. The coordination specialist position is still vacant and will fly once other priority positions in the queue are flown.

TMC voted to move funds from salary savings and unspent SAB agreements to the revegetation work to Chapman Ranch Phase B to avoid the Hoopa Valley Tribe having to float those costs in advance.

Dixon has met with NFWF representatives regarding the watershed grant NOFO to answer some questions while they consider whether to submit a proposal.

This year's critically dry hydrograph is almost done. Dixon gave kudos to the operators for their precise management of flows and noting how closely flows were with the proposed hydrograph, with some changes requiring a millisecond of time to adjust.

Implementation Update

Abel reported all floodplain permitting and compliance is in place for Chapman Ranch Phase B. They are waiting to mobilize until Yurok receives their AFA modification. A few civil techs are assisting with on the ground monitoring over the summer. The Implementation Team has 3 staff, which is hard to cover construction needs and underlines the need for the civil engineering tech.

The FONSI was signed for the Oregon Gulch EA. The Yurok tribe is looking for additional soft funding. The Program intends to implement the initial phase in FY22, possibly in the fall.

Groves noted Gogan had grave concerns about the Oregon Gulch project and requested the Program engage the Trinity County Board of Supervisors directly to review the project and answer questions in an open forum. Groves mentioned Gogan had sent a message criticizing the TMC's new process for meetings and noted it could be addressed as well. Dixon explained that the Friends of the Trinity River sent an email to the board and to Bader and Dixon about the recent policy of only allowing primary representatives to speak during meetings which asked the Board to take action against the TMC for silencing Gogan. Dixon noted the policy is based on the TMC bylaws (Article III, § 302 and 303). He will contact Richard Kuhns to set a time to meet with the Board.

The 30-day scoping period for the Winter Flow EA will close on June 18. They have received more comments on this action than for recent channel rehab projects. Gutermuth has responded

and recorded comments and is assessing them to tailor the proposed action and methods. Abel commended Naman, DeJulio, and Lindke for developing modeling outputs quickly and attended meetings for this effort, which has kept them on schedule. An interagency draft should be ready by Aug 1 with a public draft EA ready by mid-Aug. The Program expects a FONSI by mid Oct.

Outreach

For the flow EA scoping period, the Program advertised with an article in the Trinity Journal, information on the Program website, letters to landowners, fliers in the communities, and announcements with various listservs. They received numerous comments, which they are still working through, but have not noted any complications.

Dixon highlighted the pre-construction stakeholder meeting held for Chapman Ranch Phase B. Attendance at this year's meeting was higher than previous years with constructive input. These meetings give landowners realistic expectations of what construction should look like. The landowners noted a power pole near a planned meander that was missed during previous analysis. The Program was able to work with the Trinity Public Utilities District to address it. Dixon recognized landowner meetings take substantial time outside of the normal workday and appreciated attendance by Program partners, including several who came over from the coast. Abel noted the Program is planning future projects in the same neighborhood for the next several years and these meetings maintain relationships with landowners and residents.

Science Update

Lee reported the 2019 hardwood recruitment monitoring report is in final edits. Two new synthesis reports were posted since the last meeting: the vegetation encroachment and the Yurok Tribe's outmigrant report, which will be presented. The Sheridan Creek / Deep Gulch effectiveness monitoring report was also posted. The TRRP has set up a separate website for the synthesis reports on the Program website.

The Yurok Tribe has posted its 90% design report for the Oregon Gulch project along with the EA and FONSI. Three post implementation reports were also posted. One is the West Weaver Creek resilience report, and the other is for the Yurok Tribe Indian Creek connectivity and restoration project completed last year. The Dutch Creek as-built report is also available.

Work Group Updates

Fish – Ken Lindke – The Fish work group has not met since the March TMC meeting.

Design – Justin Alvarez – The Design Work Group held a series of conference calls to review products developed for Upper Conner Creek, Sawmill, and Evans Bar. The group discussed how the design teams and the group could improve updates to the TMC while allowing adjustments to projects based on budget and planning concerns. The issue is projects are planned 5-10 years before budgets are set and they may scale items based on unknown constraints. The group decided they would present the 30% designs to the TMC along with Value Engineering studies and then return with the 60% design to highlight how TMC input and the engineering studies

were incorporated. The work group has also worked on the Evans Bar design due to concerns about on landowner access, who boat in from the opposite side of the river. They are working on potential designs for landowner review to get buy-in for monitoring reports and the 30% design.

Flow – Seth Naman – The Flow work group met on June 9 to discuss updates to hydrology, reservoir levels, and fish health. They reviewed dam operations for the current year hydrograph. The group discussed potential hypotheses to test should the science funding be approved and discussed how to rank and evaluate potential proposals. The Group also planned for this year's flow report and discussed the winter flow EA.

Watershed – Chad Abel – The group met once on April 28. They discussed the TMDL for fine sediment based on Buxton's fine sediment synthesis report. The entirety of the Trinity River has a 303(d) listing, and the group is discussing with the Water Board whether to remove the TMDL at areas immediately below the dam, which are deprived of fine sediment. The Water Board is hesitant to remove the TMDL in middle habitat areas but is willing to work with the TRRP to modify their permits to allow fine sediment with gravel augmentations during the in-channel work period. The group also discussed developing objectives and targets for the Science Plan.

Lee noted the fine sediment report is an example of how Science is informing Implementation. While discussions with the Water Board are on-going, the TRRP is using scientific findings to adjust projects.

Physical – Lee – The work group did not hold any formal meetings but has formed a subgroup to formulate fine sediment recommendations for future gravel augmentation projects. They are coordinating with Implementation on the hatchery reach gravel augmentation project this summer.

Riparian and Aquatic Ecology - Chris Laskodi – The group is in a holding pattern. They met in May and provided updates on their objectives and targets. They are planning the science symposium. The symposium is currently planned as a series of online sessions during the late summer and with an in-person meeting in the fall contingent on COVID restrictions.

IDT –Lee – The IDT met on June 8. They have worked on next steps for updating the objectives and targets and the Science Plan Drafting Committee. They are outlining the future role of the SAB, which overlaps with the Science Plan. Discussions focus on better defining their role and improving engagement. The IDT discussed how to scope, select, and define research projects to inform the adaptive management process based if proposed funding is approved. The funding would allow more flexibility and responsiveness for studies outside the normal funding cycle.

Lee noted that the 2019 Riparian Vegetation Mapping Technical Memorandum was not in the Director's report. The report has analysis on the changes in vegetation and channel revegetation work since 2003. The report was prepared by Hoopa Valley and McBain & Associates and is a great resource for assessing revegetation performance and changes in vegetation in response to the Program's actions. The report should be posted before the September Meeting.

Orcutt asked if the Program had sent information on the winter flow variability EA to the SAB for review. Lee explained the SAB is aware of the proposal and has seen several of the documents on the basis for the proposed action, but the Program has not sent them the white paper. Abel is drafting the white paper for SAB review and plans to have it ready in a week or two. He offered to send it to the TMC before the SAB to refine the document. Orcutt asked whether the white paper would be broad or narrow and thought the TMC should provide input. Abel explained the paper includes background information, a problem statement, and a discussion of proposed actions, but he is waiting until scoping is done before finishing. There is a justification section covering benefits to juvenile salmonids, food sources, redd scour, and timing, but is unsure if it will be included in the final draft. Orcutt explained Hoopa Valley is concerned about where the volumes would come from and if that would be included in the paper. Dixon explained the Program can only consider flows covered by the ROD. Orcutt requested an affirmative response from Reclamation on that position as the courts have offered a different opinion through Provisos 1 and 2. Previous opinions from the Solicitor have only been through word of mouth and Hoopa Valley would like to see a policy or rationale in writing. Bader agreed to consider it. Lee noted Orcutt's advice on using the best available science for the proposed action, specifically in reference to the synthesis reports. Lee and Abel explained they cited the reports as much as possible and are consulting with authors for unfinished reports to determine what data and information to use.

Orcutt understood the rationale for the proposal but was concerned about other potential legal and administrative concerns that could be met with increased scrutiny and legal challenges. The winter flow proposal could head the Program on a path for either a decision, a reconciliation, or a potential dispute and noted that previous concerns on the issue resulted in the SAB review of the proposal.

Hetrick added his concern that the current reforming of the SAB could take two years, and having the SAB review the white paper may increase scrutiny of the Program given its current limited status. He noted that some folks in the Basin do not trust the TRRP and having an outside review of the proposal from experts not affiliated with the Program could go a long way. Lee explained the IDT and the Science Plan Drafting Committee are working on reforms to the SAB as part of the Science Plan. The committee is drafting questions to learn more about the SAB and what they could offer in the future to reformulate the group. He anticipated it would be a few months to figure out the new organization and then they could update the SAB scope of work and budgets and refocus on recruitment to bring on five new members before the remaining three end their terms. Abel added that support from the Hoopa Valley Tribe would be important moving forward with a winter flow proposal as they have a valuable role as protectors of the water.

CVP Operations Update

ROD releases have ended, and the river is returning to base flow with a current flow of 474 cfs. Storage at Trinity Reservoir is at 1.2 maf, which is 70% of the 15-year average. Cumulative

inflows are at 327 kaf, which is half the threshold needed to move out of a critically dry water year and only 35% of the 15-year average. Cumulative precipitation is at 16", which is 53% of average. Equally troubling, the Sacramento River at Shasta Dam has 23" of cumulative precipitation, which is 39% of average for the year.

Bader compared the current water supply to the worst on record for 1977. That year, the Trinity River received 12.76" of precipitation. At Shasta, precipitation that same year was recorded at 17", but a series of late summer storms primed the supply and refilled the reservoir. A similar scenario is needed this year to get the water supply back on track. Currently, storage at Trinity Reservoir for the end of September is estimated at 611 kaf, which considers the required augmentation flows. Reclamation will start discussions in July with the tribes as conditions will likely be dry.

CVP-wide, conditions in April and May have been bad on the other side of the basin.

Temperatures at Shasta were ok at the beginning of April, but the snow pack projected for the river (800 kaf) did not materialize. Reclamation has done some things to meet their temperature requirements, such as bypassing Shasta Power Plant for a 6-week period and running water from the top to skim off the reservoir. Power customers have to buy power elsewhere, which will result in a multi-million-dollar impact but will provide a month of temperature compliance in September and October. Reclamation is trying everything to meet its ESA compliance requirements by providing steady releases. Bader noted the new temperature plan approved by the State Board gave some relief for Delta outflows to save water in the lake. He added that while 1977 was the worst year in the basin, Reclamation did not have the same regulatory requirements in place and Reclamation is concerned that next year could be equally as bad without a decent winter.

Orcutt asked if changes in hydrology and expectations in the Central Valley would result in changes or modifications to operations out of Trinity this year. Bader explained they will not change operations and water is currently diverting through Carr Power Plant with no plans to increase the diversions. Orcutt asked if operations on the other side of the Valley are paying attention to temperature during the summer. Bader explained they are monitoring it with the plan to use the auxillary valve in the summer if temperatures get too high in the river, which holds water at a lower elevation in the lake.

Dixon announced he is planning to make an order of TRRP attire soon for the new staff. Since the Program cannot spend federal funds on attire, all orders are paid out of pocket. He will circulate the order form to TMC members and submit it when they reach a critical mass.

BREAK

Temperature Synthesis Report

Naman presented the findings of the Temperature Synthesis report, which reviews temperature for 87 years on the river. He thanked Eli Asarian for his work on data collection, analysis, and

database management and appreciated the high level of expertise from the report authors. The report has not been peer-reviewed and all data covered in the presentation is provisional.

The authors constructed a temperature database for the Trinity River to evaluate patterns between flow and temperature. The authors assessed how ROD flows affect the river's thermal regime and their understanding of temperature dynamics. The analysis broke the temperature records into four time periods: pre-dam (1911 – 1961), full diversion (1963 – 1978), transitional (1978 – 1999), and ROD flows (2000 – 2019) with data sets from USFWS, USFS, USGS, Hoopa Valley, Yurok, and others. Modeling evaluated how flow changes may affect temperature and biota.

Results indicate a substantial portion of the Trinity River flows occurred before June in the pre-dam period. Starting in the diversion era, the flows shifted to later in the summer with a pronounced reduction in the winter when a lower portion of flows were released. When comparing temperature results to the pre-dam era, there is a natural warming pattern in the spring that climaxes in July and decreases in the winter. Compared to the actual temperatures from Lewiston, there is little fluctuation. The difference between the ROD and pre-dam temperature graphs shows a large difference in June and July with limited warming, especially during critically dry years, indicating temperatures are warmer in the winter and cooler in the summer now than the pre-dam era.

The shift in ROD flow volumes to the spring result in a kink in the natural warming trend of the river. The kink is most pronounced at Lewiston, Douglas City, and Pear Tree with the effect tapering off downstream. While the kink is present at Lewiston, it is less pronounced due to lower temperature variation in general there as a result of consistent dam release temperature and lack of warming in the summer months.

The biometrics analysis showed faster salmonid growth rates, frog metamorphosis, and invertebrate generation with warmer water temperatures in the spring than is currently provided. When compared to the temperature targets for salmonid growth (13-16.5°C), water temperatures at Douglas City are almost always colder than the optimal growth rate during the juvenile salmonid rearing period (April to August) and there is a noticeable drop in water temperatures with the ROD flows below the juvenile growth target. The effect diminishes further downstream and during critically dry and dry water years. But water temperatures only reach the optimum rates consistently in June when fish enter the Klamath River.

Fall flow modeling show that flows affect temperature targets on the Klamath using specific release volumes. Fall flows do not affect Lewiston but have the largest effect at Weitchpec, which is a warmer site. The models could also estimate what volumes to release to hit specific temperature targets.

Storage levels at Trinity Reservoir also affect flow release temperatures at Lewiston. Given current drought concerns, changes in storage levels could affect temperature management. Modeling at the main outlet works indicates that at storages greater than 1.2 maf, the relationship

between temperature and reservoir storage is not significant. However, when storage is below 1.2 MAF, temperatures at the main outlet works begin to increase. At the auxiliary outlet, where the water is stratified, there is less of a change in temperature with reduced storage.

Major findings of the report are: (1) ROD flows affect river temperatures and biological processes, (2) Flows and temperatures from Lewiston dam cannot be manipulated separately, as flow is the only method for manipulating temperature, (3) The cold-water pool cannot be managed in a nuanced manner to conserve cold water pool volume and release flows at the appropriate time of year (4) Warming the river for salmonids and eggs will be more challenging in the future as climate change becomes an even greater threat.

The authors recommend: (1) more robust monitoring for the Upper Trinity River to monitor flow and how it affects temperature dynamics. (2) Receding spring flows earlier than proposed under the ROD to maintain optimal temperatures until a temperature control device can be installed. (3) Reduce emphasis on smoltification temperature targets at Weitchpec to balance growth and other temperature needs for juveniles. (4) Install a temperature control device in Trinity Reservoir to better manage flow and temperature needs. (5) Implement an end of September storage target of 0.75 MAF and a multi-year drought contingency plan if storage is less than 1.25 MAF. (6) Conduct a multi-year drought assessment to better manage temperatures on the Trinity River. (7) Develop a tool to improve temperature predictions in the summer for flows below 350 cfs.

Naman explained the report was not saying Lewiston was too cold or less water should be released, but a more nuanced approach is needed to manage temperatures both to benefit growth of juvenile salmonids in the spring and the river ecosystem including invertebrates and wildlife, and conserve the cold water pool to benefit adults returning in the late summer and fall. Cold water is still needed for returning adults in the fall, but a less simplistic approach is needed to manage the biological resources in the river. Dixon agreed decoupling flow from temperature would be a good investment. He noted that there is a temperature control device at Shasta Dam, but that is a concrete gravity dam and not earthen and sloped like Trinity; he inquired if anyone knew of a temperature control device on a large earthen dam. Naman noted a report prepared by Marilyn Bender in 2012 that looked at options but was unsure if they were explored further.

Hetrick asked if the temperature models used predicted temperatures from the RBM10 model Naman explained they used a linear regression model based on water year type. Asarian added they relied heavily on RBM10 and used statistical models to update flows for the tributaries and unimpaired flows before routing them through the RBM10 model. Hetrick asked how to balance the temperature needed in the fall with those of juveniles in the spring. Naman explained one of the key recommendations was to evaluate the effect of pool stratification and whether spring flows could be reduced below 350 cfs but noted they did not tackle the spring run issues or pool stratification. DeJulio added they did not consider the summer months due to limitations in the RBM10 model to accurately predict temperatures beyond July and August, noting it was an outstanding issue for spring Chinook management. Asarian explained cold water coming from Lewiston still forms a zone good enough to support spring-run chinook salmon, but the question

is how far downstream that zone travels. The team did not have the tool to answer that question. DeJulio added none of the recommendations include warming temperatures in the spring, which conflicts with existing temperature targets for adult fish.

Lee asked if the analysis could influence hydraulic characteristics, barriers, and temperature cues that affect spring and summer Chinook migration. Naman explained they did not look at the effect of temperature on adult migration. In general, the timing of upstream migration occurs when Lewiston is at 450 cfs, which does not create much of a temperature effect at Weitchpec.

Orcutt asked whether the results could be related to the winter flow variability proposal given that modeled conditions could not get low enough to model spring Chinook holding temperatures. Naman explained the Flow EA does not address or change the minimum flow required in the summer. Abel added the proposal would look to shifting water from spring flow releases to the winter without modifying spring/summer baseflow, contingent on the outcome of scoping. They would still base releases on the forecasted water year type to synchronize with winter storm events. Orcutt noted the Hoopa Valley Tribe still questioned where the water would come from since it was so cold. Naman explained the synthesis report and the winter flow EA both note that the Program releases large volumes of water after April 22, which slows salmonid growth. The proposal would move some of the water to the winter to synchronize winter flows and to speed the recession of the river to baseflow with the tributaries.

Orcutt was curious from a regulatory and compliance standpoint if the CVP OCAP BO would reconsider an in-depth analysis of the Trinity River Division and its impact to species given the current litigation. Ly explained NOAA encouraged Reclamation to include the Trinity River in the OCAP CVP consultation. However, Reclamation decided to exclude it due to time constraints for the consultation. He said the litigation and new administration's review of the action may result in a more inclusive action. Regarding excluding the Trinity River from the recent CVP reinitiation, it was Reclamation's decision.

Sinnen noted there was data that spring Chinook could tolerate flows below current baseflows and the State has previously operated under that level. Naman asked the TMC to wait on making decisions until the document completes peer-review. The authors do not expect the data or analysis to change much, but the reliance of the document would be more robust if the TMC waited for a peer-review from the SAB and others on its draft findings.

Klamath 2021 Harvest Quotas

Sinnen reviewed the 2021 harvest quotas for fall Chinook in the Klamath Basin, which includes the Trinity River. The Pacific Fishery Management Council (PFMC) uses river monitoring and age structure to forecast ocean abundance and project river returns adjusted for escapement objectives and *de minimus* provisions. This year excluded surveys on the Lower Trinity and Klamath rivers, which were not funded. Data from all partners is compiled and QA'd to develop a total river run estimate. Last year's total river run estimate was 54,484 fish, below the long-term average of 120,000 fish. Ocean abundance was estimated at 181,432 adult fall Chinook,

which is a lower ocean abundance estimate. The number is further reduced by natural mortality, age-based maturation, and fish that stray to other river systems. While the number includes hatchery fish, they are not counted as part of the natural area escapement. For 2021, escapement is estimated at 42,098.

The harvestable surplus is based on the number of fish over 40,700. However, when the surplus fall below the minimum tribal and non-tribal fishery limits, the *de minimus* rule can be applied. The harvestable supply is then split between tribal and non-tribal fisheries 50:50 with the non-tribal share split between California and Oregon. In-river recreational fisheries typically receive 15%. In 2021, under *de minimus*, forecasted escapement is 31,574 natural area adult spawners. Tribal fisheries were allocated 8,135 and in-river recreational fisheries were allocated 1,221.

The in-river quota of 1,221 will now go through California's Fish and Game Commission regulatory process. Based on the small quota, CDFW recommends a daily bag limit of 2 fish and a possession limit of 6 fish, with no more than 3 adults.

Dixon asked to clarify two questions he receives on the harvest targets. The first is how Trinity targets are compatible with Klamath targets as the TRRP's target for fall Chinook is 20k fish higher than the Klamath. Sinnen explained the Trinity River's goal is 62,000 naturally produced adults, while the Klamath Basin targets (40,700) are for natural area escapement which are different. He noted the Klamath Basin target combines results from Trinity. While the TRRP has a large escapement goal, the PPMC's focus is a regulatory target. Kautksy noted the Fish work group developed a spring harvest metric that demonstrates how the PPMC's control rule is compatible with TRRP objectives, noting that until the river is restored, the objectives for the two entities will not align. Sinnen explained the PPMC numbers are based on stock recruitment analysis. If the Trinity becomes productive, it would be similar in the rest of the Klamath, which would increase the conservation limit but allow for more robust harvest opportunities.

LUNCH

Pinnix was designated as the USFWS representative at 2:30.

Sinnen reported the Fish and Game Committee was meeting to determine listing spring Chinook. He will give an update on Day 2.

The State's will update its TMC representatives at the September meeting. Connor is taking a new position at CDWR and CDFW is working on filling Tony LaBanca's position.

Refinement: Progress and Schedule

Chad Smith gave an update on the TRRP Refinements process. He reviewed the current project schedule. They have finished Task 2 and are in the middle of Tasks 3 and 4. Smith is currently reviewing science plans from other programs to determine if there are tools or language on managing science needs and adaptive management for the TRRP to adopt. The goal is to have a final document by December 2021. The Science Plan is being developed based on foundational items outlined in the Program Document. Once the documents are completed, Smith will help the TRRP move them through the agencies to get the high-level support.

The Program Document meetings have been on track. The Drafting Committee plans to meet in the fall to prepare the final draft for December. They developed a new goal statement for the project and are working on edits. They aim to keep the size of the document small to highlight the Program's purpose and goals, how they determine progress, how they move to different phases, and contingencies if the Program is dissolved. The group is working through a series of attachments to address more complicated issues. These include the Law of the Trinity, which will outline the history of the Program; a Milestones document to outline commitments and metrics for determining progress; an organizational structure document to smooth out how partners work together; a Finance document to sort out base funding, conflicts of interest, and building capacity; and lastly the Science Plan. The attachments are larger to capture more details. The Science Plan will be smaller and will be a road map for the TRRP over the next several years.

Right now, the group is writing summaries of what the Program has learned through implementation, why they went through refinements, and what the Program document and Science Plan should do to remedy those issues. The document will describe Phase 3 over the next 10 years with milestones and a 10-year budget. They are ironing out milestones, which describe what the Program is committed to over the next 10 years and how it contributes to the goal. While it may be tough to restore to pre-dam fisheries, the Program should be able to talk about how they are working to get there.

They are also working on stakeholder engagement through a Stakeholder Advisory Committee, with a drafted charter and ideas for how to better engage stakeholders. The Finance document is working on capacity vs. base funding needs, how to take advantage of surplus and voting on items where there may be conflicts of interest.

The organization chart will keep the TMC at the center with day-to-day responsibilities on the Executive Director and TRRP Staff. The Stakeholder Advisory Committee would be at the same level as the TMC, but the group is working out how to utilize their input and membership. The committee will reconsider the SAB and an oversight committee to improve communication and decision-making at the Regional Director or Tribal Chair level.

The Science Plan committee will meet all day at the end of June. The Committee will use the milestones in the Program Document to guide the Science Plan to serve decision making needs of the Program. They hope to develop an annotated outline during the meeting. The objectives and targets metrics should organize the objectives for the Science Plan and help prioritize and sequence them, so they are achievable. Smith is reviewing science plans used by other restoration groups. However, his findings mirror the Program reviews as most programs are purpose built for their unique situations. While they can look at how other groups address challenging issues, the Program should not try to copy other approaches developed for different circumstances.

Orcutt recalled the Committee came up with the idea of a Joint Directorate to address issues that fall outside of the scope of the TMC that could be strengthened by Solicitor involvement and other

legal reviews. However, the TMC will need to promote for that arrangement, which was not captured in Smith's draft organizational schematic. Orcutt added the conflict-of-interest issue is also a challenge and recommended addressing that one-on-one. Smith said that the Joint Directorate issue had not been discussed much as they focused on stakeholder involvement. In terms of conflict of interest, a smaller group has been tackling the issue to build capacity and recommends they define the term better. He anticipates they will discuss it more in the coming weeks.

Work Group Manual Revisions; IDT Co-Coordinator

Lee continued discussion from March on changes to the WG manual. Lee proposed to change the wording of the manual for the IDT Coordinator (changes underlined):

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 has historically been co-coordinated by the Implementation Branch Chief and the Science Coordinator. When the Science Coordinator moved back from USFWS to Reclamation, no change was made to the manual or the IDT. The change would give USFWS more engagement with the TRRP. During the last meeting, the TMC discussed exploring other coordinator options, but no decision was made. Absent a motion, the IDT would maintain its current structure with both Reclamation TRRP branch chiefs coordinating the IDT.

Dixon asked if other edits were proposed. Lee explained the other edits were minor and did not require TMC input. Dixon recalled the Science Coordinator position was previously under Reclamation before moving to USFWS. Orcutt asked why the funding agencies were the ones filling the coordinator and leadership roles. Lee explained the USFWS lost their role as an IDT Coordinator when the position moved agencies. Other work groups rotate coordinator roles annually among its members. For the IDT, having the coordinator work at the TRRP office is beneficial. The IDT historically ranks projects funded by the science budget. They also facilitate communication more efficiently. Hayden thought the role should be open to all partners, so long as they practice good science and implement a successful program.

Connor reiterated the IDT was formed to integrate Science and Implementation, with the Branch Chiefs leading. She thought the Branch Chiefs should continue to do so. The role shifted away from USFWS because they were no longer in the Program Office. Hetrick understood the benefit of having the Branch Chiefs lead the IDT but thought other partners could fill those roles too. USFWS and Reclamation are in the unique position of co-funding the Program. Since losing the Science Coordinator position, USFWS is struggling to meet its ROD obligations and asked where the line was limiting partners from filling other Program positions. Orcutt recommended

drafting a memo to address USFWS's concern but thought the IDT should utilize the unique skill sets of all partners and not limit the role to two agencies. He did not see a need for action.

Hayden asked if the IDT included members from all partner agencies. Lee explained every agency has a representative along with the Work Group Coordinators. The Coordinator is responsible for running the meetings and coordinating the schedule. No motion was made for the work group manual. The IDT Co-Coordinator roles will continue to be filled by the Implementation and Science Branch Chiefs.

BREAK

Riparian Encroachment Synthesis Report

John Bair (McBain Associates) presented the Riparian Encroachment synthesis report. During the pre-dam era, woody plant encroachment and sediment berm formation was limited. Once constructed, stable flows increased encroachment and sediment berms and reduced available habitat. Since the ROD, encroachment remains a large issue while sediment berm management has improved.

Encroachment occurs when vegetation rapidly establishes along channels, making them narrower and deeper. Some species were favored under pre-dam conditions, which has shifted with post-dam flows. The report focuses on species recruited in the spring, which were prevalent in the pre-dam era and have life histories associated with the receding limb of the ROD flows. These species have environmental constraints influenced by flow and a specific window when they are most likely to establish.

As plants get older, they gain root depth, which is used to determine their vulnerability to scour and their potential location in the river cross section. Different riparian seedling scour and establishment objectives were created for the different water year hydrographs. Overall, the Program wanted frequent scour along channel bars to promote establishment on the bars, terrace, and floodplain. The group investigated whether the spring ROD peaks limited encroachment.

Pre-dam summer flows were historically variable and did not recede until August 1. After the dam, flows decreased to 150 cfs on average, increased to 300 cfs after the Andrus decision, then shifted to 300 cfs in the winter and 450 cfs in the summer since 1991. The IAP hypothesized that three years of dry conditions would lead to encroachment and conditions where peak flows could not kill seedlings. Since the 1900s, there were three instances with three consecutive dry water years. The IAP also hypothesized that coarse sediment facilitated bed movement, restricting establishment. When ROD flows began, projects focused on removing riparian berms to create functional floodplains. During this period, they learned residual vegetation from scraping the berms made it difficult to determine establishment as root sprouts could regrow, though they looked different than seedlings. Band transect monitoring began to monitor seedling cohorts and scour related to peak flows and life span. From 2005 to 2009, monitoring indicated flows were largely effective at removing young seedlings.

In 2009, the monitoring design shifted to a rotating panel of 400 m long segments along the floodplain and replaced age classes with size classes to separate root sprouts and seedlings. Each age class was also assigned a level of risk. In 2011, the TRRP conducted an 11,000 cfs peak flow large enough to kill the 2008 cohort. However, there were not enough gravel bars to sample to determine if the flow killed the plants anticipated.

In 2012, monitoring focused on gravel bars and adjacent floodplains to evaluate elevation and seedling density. Also, 2012 was the start of a 3-year drought period which would test the dry year establishment hypothesis. While there were efforts to address scouring with peak flows during that period, the focus was keeping fish healthy. Instead, the Program did an 8,500 cfs peak in 2015 with the goal of scouring young seedlings, knowing it would not scour the 2012 cohort. This flow did eliminate two cohorts.

In addition to the 2015 peak, the Program conducted a 9,600 peak flow the following year. Sampling indicated more mobility in the transient gravel berms and flows scoured the 2012 seedlings, even at channel rehab sites with stable bars. The results indicate that two back-to-back peak flows over 8500 cfs could do more work than one 11,000 peak flow, which could be a useful management tool when an 11,000 peak is less feasible. Additionally, the TRRP's flexibility under the ROD hydrograph allowed them to rearrange water volumes to create higher peak flows more frequently than expected, which limited encroachment.

Going back to the IAP hypotheses, it is unclear if sediment augmentation is impacting detrimental encroachment as fining of the bed is inconclusive. The data suggests that while there are periods with three dry water years, flood frequency is more effective at managing encroachment. The report recommends revising the vegetation encroachment hypothesis to include flooding frequency and volume on woody seedling establishment and revisiting the influence of coarse sediment management. They also recommended a census of exposed gravel bars related to sediment storage combined with an annual encroachment risk assessment to inform flow scheduling. Finally, the authors recommend conducting an experiment to establish flows lower in the channel to restrict seedlings rather than relying on peak flows.

Dixon asked if shifting ROD flows to the winter would affect riparian scour. Bair thought it would be more effective at achieving peaks more frequently with less water. While springs peaks do much of the work now, historically winter flows were responsible. Using tributary accretion could allow more flexibility at achieving bigger peaks than the outlets alone.

Lee highlighted the report's use of riparian dynamics to inform peak management as an example of adaptive management. Bair added that adjusting the peaks considers recruitment needs by using flows to encourage where plants are in the channel. He recommended testing hypotheses using the adaptive management steps so it is clear how the work informs the management action. Hayden asked how Refinements could close the gap between evaluating the monitoring and if the results indicate channelization as riparian vegetation comes back and alternative bars form. Bair explained it was too soon to tell. He recommended separating encroachment concerns from

the sediment berms as encroachment occurs without the berms. Frequent disturbance to the vegetation is needed to keep the desired channel dynamics.

Public Forum

No comments submitted.

Adjourn for Day 1 – 3:56

DAY 2, JULY 22, 2020, 8:30AM

Bill Pinnix served as the primary until 9:30.

Bader started the meeting with roll call. Dixon reported the CDFW building in Weaverville burned last night so it was uncertain if Sinnen would be present. Seth Lawrence joined the meeting to represent the State.

Dixon suggested adding an update from Sinnen on the FGC's decision to list the spring Chinook, if time allowed.

Public Forum

Orcutt asked if Bader could review the current primary and alternative TMC representatives since as they have changes in recent months. Agency representatives for June are:

Agency	Primary	Secondary
Yurok	Tim Hayden	Kyle DeJulio
Hoopla Valley	Mike Orcutt	Justin Alvarez
USFWS	Nick Hetrick	Nick Som (Bill Pinnix for this meeting)
USFS	Kari Otto	Lois Shoemaker
NOAA Fisheries	Justin Ly	Seth Naman
State of California	Teresa Connor	Wade Sinnen
Trinity County	Keith Groves	Liam Gogan
Reclamation	Don Bader	Elizabeth Hadley

Bader noted representation for the State would change at the next meeting due to staffing.

Orcutt noted most partners have 2 to 3 people sitting in on the meeting and the recent change in protocols and operating procedures was disorienting. He supported flexibility by the TMC with less focus on the procedural requirements. Dixon explained the bylaws prioritized the primaries speaking for their agencies. The change emphasized the responsibility of partner agencies to discuss decision items beforehand but recognized staff do provide technical input. Primaries can ask the TMC chair to recognize other staff. However, lately staff discussions have derailed TMC discussion. Bader added agencies are welcome to designate a third person before hand to serve in their place if the primary and alternate are not available.

FY22 Budget

Dixon highlighted his proposed items for the FY22 TRRP Budget. Overall, the budget is flat compared to FY21 funding levels, but with inflation adjustments it does represent a reduction due to year-on-year cost increases. However, the changes do not reflect a status quo. Some tweaks are proposed to ensure the program continues to refine its tools through adaptive management..

The budget proposed assumes \$11.49 million from Reclamation and an estimated \$500,000 from USFWS, but the actual figure from USFWS will not be determined until September. In addition to the annual AFA funding for the tribes, all multi-year agreements, except for CDFW will be renewed this year. This offers the Program a chance to review what the Program needs from its partners. Dixon requested the TMC identify its funding priorities in case funds are available,

which could be revisited in the future. The proposed budget reflects TRRP staffing needs, understanding that some positions may remain vacant for a period, resulting in some indeterminate savings. While the TMC directed the Executive Director to start multi-year budget planning, Dixon has held off until there is further development in the Program Document and Science Plan on Program priorities and monitoring projects or needs for funding agencies. He did plan to start the process this year as it is built-into the Program Document process.

The FY22 budget maintains support for all program partners with similar funding for TMC members for technical assistance and staff time. The budget will continue on-the-ground restoration by funding the remainder of Chapman Ranch Phase B revegetation work and initial excavation work for Oregon Gulch. Dixon explained Chapman Ranch Phase B was originally planned across two years and the request during the last TMC meeting was not due to project overruns. The issue was how to spread the costs across two years with the revegetation work as the final component. He added that Oregon Gulch is also a multi-year project but that it is scalable based on available funding. Funding for watershed grants is included along with funds to rebuild the gravel augmentation supply as it will be depleted after this year's augmentation projects. Finally, implementation funds are proposed to resolve the River Acres House in Junction City, which is the last infrastructure project in the floodplain.

The FY22 budget includes funds to review the Phase 2 channel rehabilitation work and design development to get external feedback and recommendations on what the Program has learned to inform Phase 3. There is also funding for science and modeling projects. By setting aside funds, Dixon hopes to develop a suite of projects, reviewed by the SAB and ranked by the IDT to have ready once funding is available. Setting aside the funds could motivate preparation of projects or studies the Program could implement in case certain conditions like a certain water year type are met. Funding also continues the highest priority long-term fisheries monitoring projects funded last year.

Pinnix asked if the RFP funds for science and modeling projects would be set aside for partners. Dixon explained they are still discussing whether to solicit projects from organizations inside or outside the program and suggested the IDT would discuss. Pinnix asked if the funding was to develop projects or implement them. Dixon explained it would implement them as development should come from internal funding.

The Program anticipates similar funding from the USFWS as last year and noted the program also received \$1 million in mitigation funds from CalTrans last year. The result is \$145,000 less in discretionary funds compared to FY21. Dixon asked the TMC not to compare funding between administration, implementation, and science as funds have moved between the three budget categories based on how tasks are broken down or categorized. The administration budget included funds for technical staff and on-the-ground implementation work. Additionally, Implementation and Science tasks included overhead costs that could be attributed to Administration. The items are separated based on how best to understand and organize them but there is overlap that is hard to parse out to keep the three categories equal.

Dixon advised that the budget proposed reflected priorities rather than strict dollar amounts because most interagency agreements need to be renegotiated and there are items proposed for which the actual cost is not yet known.

Project Admin

Reductions to the Program Office Personnel funding were from adjustments to the Indian Self-Determination Specialist, who has reduced her time with TRRP. Office operations are lower as TRRP has not required as much support from other Reclamation offices, resulting in reduced overhead costs for budget management, acquisitions, and other outside tasks. Fleet costs are also down as more staff telework. Funding for the note taker is status quo. EnviroPlan provides an important service as part of the Program's transparency and does a stellar job in the role. Funds for TCRCD reflects the second year of two-year grant as part of the Program's outreach work. While the TCRCD's work is separate from the county and its boundaries are based on the county, Dixon is working with Orcutt to better engage other down river communities with TCRCD to be more inclusive.

Dixon recommended adjusting the TMC line items in the budget as, per the bylaws, TMC members are not compensated for their participation. The Interagency Agreement funds listed contain funds for technical assistance and other needs beyond travel reimbursements for TMC members and those should be captured in the technical assistance line items. Dixon noted that funding for USFS is reduced because their previous funding level was higher than the support they could realistically provide. The current funding levels were discussed with USFS to develop a more accurate budget. The technical assistance agreements were increased by 3% based on previous year funds, except for Trinity County. In previous years, the County was understaffed and could not engage enough with the Program. Dixon met with the County's Planning Director, County Administrative Officer, and the TMC representatives and developed a scope of work for what they could provide if they recruited a technical specialist to respond to the Program's permitting needs and participate in technical meetings. If hired, the County would increase their funding to somewhere between \$80,000 to \$100,000.

Science

The Science Budget did not include many changes. Personnel funds are based on the proposed cost for the riparian ecologist and scaled costs for the fish biologist plus 3%. Funding for the SAB is maintained as they develop new position descriptions and scopes of work for the Science Plan, which should be clarified later in the year. Stream gage monitoring costs also reflect year on year costs, which are fixed.

Orcutt asked why the SAB costs were maintained when the SAB will not be fully formed. Dixon explained there are currently three members on the SAB and the \$115,000 to maintain the funds was developed for the FY21 budget, but we were asked by SAB not to fill them yet. Two members are using residual funds, and another is working pro bono. Some members consider it part of their professional work and are fine not receiving funds as long as the TRRP is looking for new members.

Status and trend monitoring is maintained at FY21 levels plus cost adjustments for inflation. All the FY21 projects are funded at similar levels noting that some costs reflect new agreements. The actual dollar amounts may vary, but the projects are proposed as a priority for the Program. The Lower Klamath Sport Harvest and Lower Trinity Creel Sport Harvest surveys will remain unfunded. Effectiveness monitoring work is not funded; they were funded in FY21 to collect data which informs the 40-mile mode but data collection cannot happen due to the water year type; funds will be moved to next year. Orcutt asked if this change was based on the results on flow and the hydrograph. Those tasks receive quite a bit of funding and Orcutt wonder if that consideration should be discussed for the Science Plan. Dixon explained the 40-mile hydraulic model is used for habitat and capacity calculations and was funded in the FY21 budget. Data is collected every 5 years to capture changes from flow and channel rehab work. Dixon suggested reviewing it at the December meeting.

Instead of effectiveness monitoring, Dixon proposed \$250,000 for an RFP for research and modeling needs. Since the science budget has tightened over time, some sampling has dropped off and opportunities to test new or existing hypotheses may arise. No mechanisms exist to fund such research and Dixon proposed setting aside some funds for studies based on ranking and external peer review. The studies would be based on triggers like flow or gravel augmentation. Setting aside the funds would show the Program is willing to fund such projects. Dixon noted the funding level is negotiable.

The FY20 flow-related science projects did not receive additional funds as they were fully funded in FY20. The hatchery tasks are also no longer funded by the Program as Reclamation will support those tasks through other hatchery O&M funds from now on.

Implementation

Program Office Personnel are fully encumbered but the Program anticipates salary savings from two vacant positions. Funds are added for the Denver TSC to update the FEMA flood compliance modeling needed for CLOMR filings. The Program lost the engineer trained in the model, but Dixon would like the new engineer or civil tech to perform this task in the future.

Dixon added funding to elevate the River Acres House based on bids from four contractors. The work would require a binding agreement to release the government from liability for any flood-related damage. Dixon noted the costs may be higher as the bids costs for materials have since increased. While the cost is considerable, it would be well spent by allowing the Program to increase flows down the river and meeting a critical ROD requirement. Orcutt asked if the agreement would exist in perpetuity for the property. Dixon explained it would be recorded with the deed and apply to any buyer, heir, or successor. It would state the owners assumes the risk if their house is flooded.

No realty acquisitions are proposed for FY22 as Oregon Gulch work this year is on BLM and Yurok Tribe land so agreements are not anticipated. NEPA/CEQA funding is for the third option year with Ironwood. Dixon recommended internalizing some of the compliance work to reduce contractor costs in the future. The funds currently cover wetland delineations, native seed costs,

and one EA and permitting package each year. Revegetation supplies are unfunded as it was funded for Chapman Ranch last year and is not needed for Oregon Gulch this year. The BLM technical assistance funds cover anticipated BLM work for the year. Geophysical support was higher last year due to aerial LiDAR and bathymetric survey data collected for the new 40-mile hydraulic model. FY22 funds would cover annual aerial photography. Dixon proposed a pause in design funding to set aside money to review the Phase 2 projects to inform Phase 3 work. He asked the TMC and Reclamation to develop a scope of work for a contractor to conduct the review. Orcutt thought it was a large amount of money for the review and the proposed science RFP. He suggested refining the amounts based on direction from the Science Plan and the Program Document development.

Construction

FY22 sets aside \$500,000 for watershed grants managed by the 3rd party grant administrator. Construction costs include maintenance costs for Hoopa Valley at Chapman Ranch for irrigation, \$250,000 for coarse sediment processing to rebuild the supply in case of a wet year, and \$43,000 for a value engineering study for either Upper Conner Creek and/or Evans Bar. Remaining funds as identified would go towards construction projects, which are about \$2.4 mil if all proposed items are funded, which is lower than the \$3 mil running average. Dixon noted the budget provides an opportunity to make progress on other tasks that inform on-the-ground projects.

BREAK

**Groves made a motion to accept the FY22 budget as proposed by the Executive Director.
Ly seconded the motion.**

Orcutt was not comfortable with setting side several hundred thousand dollars for various studies, reviews and RFPs and thought it was premature under Refinements to designate funds towards those things. He preferred to use potential salary savings to pay for them instead. Dixon explained it is uncertain when the Implementation vacancies could be filled and advised the TMC to consider the most conservative way to allocate those funds so that we would not overspend. Orcutt added he was uncomfortable allocating \$500,000 for items without clear information on what it includes or how it would be spent. Hetrick asked how Dixon would involve the TMC on how to spend the money for science and monitoring. Dixon explained there have been staff level discussion with Lee and Som at the Work Group level. He would like all the agencies to develop a similar list of priorities as it did in September 2021 for Chad's scope of work so there is buy-in from the TMC. If Dixon develops a scope of work, he needs money to fund it or there would be no follow through. Hetrick requested the partners comment on the scope of work for the channel review work as well. He recalled there was a watershed fund used as a slush fund for water year type studies with little tracking. Orcutt agreed that if the path forward would address those issues, he was ok, but asked Smith if Refinements should address these needs before they're funded.

Smith explained a smaller group discussing the milestones recommended a channel rehab review of Phase 2 projects to inform how to measure progress on milestones. The group thought it

would be beneficial with the caveat that they develop a tight scope of work and the review provide guidance on future projects. Smith thought a channel rehab review would marry nicely with the Program Document needs for milestones and metrics. Hayden thought it was a good time for a Phase 2 review and the partners should develop the SOW for both the RFP work and the review. Hetrick thought a channel rehab review would not necessarily lock the TRRP into following it for the next ten years but would shed light on the adaptive management process developed by the Refinements process. Dixon explained the Program has been criticized in the past for not following review recommendations and would like buy-in from the TMC to incorporate its findings and not put it on the shelf if it does not get the desired answers.

Orcutt recommended a more conservative approach if they are considering moving away from the 47 priority sites, which were based on Reclamation budgets and priorities. Orcutt was willing to fund one of the two or exploring funding the options with salary savings or combining the two items into one for less than \$500,000. Dixon explained the budget as proposed would reallocate funds from salary and other savings to FY22's channel rehab projects and asked if Orcutt would instead reallocate the \$500,000 to channel rehab. Orcutt was thinking some portion could go to the two proposals but wanted to wait until the costs were clearer. Orcutt explained he was concerned agencies were advancing findings prematurely and there needed to be more work among the TMC to understand the ramifications and come to agreement before moving forward, given criticism from the public.

Motion passed with six votes in favor. Hoopa Valley opposed and USFS was absent.

Hatchery Reach Gravel Augmentation Plan

Conor Shea presented on the proposed gravel augmentation plan for the summer. The proposal would add gravel to the Hatchery reach directly below Lewiston Dam to reduce the gravel deficit from below the dam down to the weir hole to enhance spawning habitat. This area has historically been one of the largest salmon production sites in the 40-mile reach. Lastly, augmentation would enhance hydraulic diversity and juvenile rearing habitat.

Prior to the current program, gravel was added frequently in large amounts at this site. Reclamation stopped adding gravel due to concern about hatchery fish spawning in the reach. The Fish Work Group reviewed the proposal and thought it could improve spawning recovery in the hatchery reach and enhance spawning capacity. Implementation developed a plan to move gravel on the road adjacent to the road on opposite side of the hatchery. The proposal calls for 5,500 cy of gravel placed between July 15 – Aug 15. A diversion berm would be placed to push flow to the left bank. Placement is based on ROD flows only and gravel will be suitable for spawning by next season. Dixon noted funding for the augmentation project was approved in the FY21 budget. Hetrick asked if the August 15, cut off date coincided with fall flows under FARS. Abel explained it was based on the in-channel work period for turbidity requirements.

LUNCH

Infrastructure Funding Opportunities for Trinity

Orcutt discussed an opportunity for the TMC to request funds for temperature control needs on the Trinity River through the current infrastructure proposal considered by Congress. For years, the TMC has reviewed reports that the infrastructure at Lewiston Dam limits their ability to control water temperatures during impoundment and outflow events. Technical reports prepared by Reclamation and the Denver TSC presented alternatives for improving temperature control and the TMC has pursued further action with the Reclamation Regional Director on several occasions. A formal feasibility study is needed but must be authorized by Congress.

Congressman Huffman is aware of the problem, and it has been raised with Senator Feinstein. Hoopa Valley is interested in getting a study funded. Orcutt discussed it with Ernest Conant and he indicated a feasibility study depends on where the funds come from. Orcutt recommended the TMC express a position to DOI to advocate addressing outdated infrastructure as part of the legislation being considered by Congress.

Bader confirmed Congress needs to authorize Reclamation to prepare a feasibility study, but he did not know how the TRRP would be involved if it was authorized. He offered to provide an update at the next meeting to outline what a feasibility study would entail if authorized and discuss it further with the Regional Director and the Solicitor. Orcutt explained the TMC supported further investigation into infrastructure improvements but were stalled because of funding requirements. He recommended a motion to show support for additional investigation and for further engagement at higher levels. Hetrick shared he was contacted by the Green Infrastructure Development Team looking for information on the Trinity River Program, but he was not sure how they were using the information. Hayden supported the idea given climate change concerns and recent synthesis report findings. Ly noted an appraisal study was needed before a feasibility study and was not sure if an appraisal had been completed. Hayden thought an appraisal study was done in 2012. Ly noted that Reclamation's TCS's 2012 report authored by Bender was not titled as an appraisal study. Bader explained modifications to a CVP project requires a feasibility study, which needs to be project specific. He thought the 2012 study did not meet the requirements for an appraisal study. Orcutt did not think the TMC had the capacity or expertise to prepare an appraisal or feasibility study but thought Reclamation needed to narrow down potential options to a preferred alternative.

Sinnen recalled a 2012 report that gave some options for temperature management and asked if the group was advocating for a specific one or trying to identify projects, so they are ready if the bill is passed. Hayden thought it would be wise for the TMC to advance to the next step to move toward a potential modification to manage temperature. Sinnen asked for more information on the bill, how it works, and how to provide input for potential projects. Bader explained Reclamation would ask the Commissioner's Office for hatchery upgrades.

Orcutt explained the issue was raised with the Commissioner, the Regional Director, and Congressman Huffman, who have expressed interest. The ask should emphasize the Program

would benefit by controlling temperatures better as water moves from the storage reservoir through Lewiston and downriver or into Carr.

Ly made a motion for the TMC to write a letter to the Reclamation Regional Director requesting studies (appraisals or feasibility) on Trinity River Division infrastructure alternatives to provide increased flexibility on water temperature management for the Trinity and Sacramento Rivers.

Orcutt seconded the motion.

Hayden noted the TMC sent letters before and wanted to make sure this effort would advance the need. Orcutt explained his discussions indicated a feasibility study was the next part but required authorization. Bader explained the Regional Director could only respond to an appraisal study, which the 2012 report may not suffice. If an appraisal study was done, Congress would need to authorize a feasibility study. Orcutt recommended copying the request to Congressman Huffman and the Senators to inform the Regional Director that TMC is requesting moving the infrastructure studies to the next step. Hayden recalled Naman, serving as TMC Chair, sent a letter on June 6, 2016, to the Regional Director, but was unsure if the TMC received a response. The letter requested Reclamation narrow down potential options identified in the 2012 report. Kautsky and Naman forwarded the letter and Reclamation's response. Regional Director Murrillo responded that Reclamation would do modeling to advance potential alternatives and water management improvements as a next step. Ly looked at the [Reclamation Manual](#) on Water and Related Resources Appraisal and Special Studies, which states if a special study recommends a feasibility study, it will be deemed an appraisal study. However, the 2012 report, which was a technical study, did not mention an appraisal or feasibility study so it likely does not meet the criteria to be an appraisal study. Ly recommended the letter include a specific request for an appraisal study to move it forward. Groves noted that letters since the 2016 request focused more on cold water pools and holding water.

Motion passed with seven votes in favor. USFS was absent.

Ly and Bader will discuss others to include on the Letters as Bader will review the request with his supervisor.

BREAK

Juvenile Outmigrant Synthesis

Chris Laskodi presented the long-term evaluation of outmigrant data at Willow Creek synthesis report. The Willow Creek site has been in operation since the late 1980s and is the longest continuously operating trap in the area. The data informs population trends for outmigrant timing and duration. The data is collected for two models: flow-based and mark-recapture, which provide estimates based on when 50% and 80% of juveniles have passed through the trap. In 2016, Yurok requested assistance on statistical modeling to analyze long-term datasets, hiring Thomas Gast & Associates.

The report had four objectives: (1) evaluate the influence of temperature on outmigrant timing, (2) compare flow-based and mark-recapture estimates in the RT80 and RT50 models, (3) quantify the predictive ability of the HDAT model, and (4) evaluate the difference between Chinook abundance and populations pre- and post-ROD.

For the first objective, RT50 and RT 80 indicate that since the ROD, outmigration is occurring a bit earlier but with less variation. Using the Wisconsin Bioenergetics model, which simulates daily juvenile growth, consumption declines precipitously in late April with ROD flows.

For the second objective, mark-recapture modeling indicates higher abundance, but flow-based estimates indicate longer durations. Laskodi noted the two methods do not always align and there are instances where mark-recapture studies are not feasible such as during high flows or when fish abundance is low. Both estimates rely on certain assumptions. Mark-recapture assumes fish are not lost from the trap while flow-based estimates assume fish are spread evenly throughout the river. Generally, mark-recapture gives good results and is a more realistic estimate. Other methods to explore include 3D tracking or acoustic modeling to address the validity of those assumptions.

The third objective tests the predictive ability of the Hoopa Daily Accumulated Temperature model (HDAT), first developed in 2013. The model uses linear regression to predict outmigration timing based on water temperature. The model is useful for small datasets but less reliable when used for longer time series. The model worked better with flow-based estimates than mark-recapture. The team compared the estimates to several other models using various temperature thresholds and accumulations. Most fit better with the flow-based estimates and were based on regression models using temperature, redd counts, and median emergence dates. The Pear Tree ATU stood out but was only based on 12 years of data. The team recommends revisiting the model once they obtain a few more years of data.

Finally, when looking at differences between pre- and post-ROD, the analysis indicates the number of post-ROD juveniles is significantly higher than pre-ROD. They used parametric and non-parametric methods with flow-based estimates showing significantly better alignment and mark-recapture estimates somewhat lower. Comparing the relationship between redd counts and outmigrants, however, did not show any significant relationship, but the alignment improves when removing outliers.

Overall, the analysis indicates that juvenile Chinook abundance has increased in the post-ROD period, and warmer water temperatures could increase the potential for growth and earlier outmigration timing. However, bioenergetics vary more from February to April, which could affect growth. The HDAT model performed worse over a longer time series. Analysis indicates that the best explanatory model is the Pear Tree Accumulated Temperature models, which is passed first. However, the team recommends continued exploration of other multivariate models as the time series data is not long enough. While flow-based estimates are consistently lower than mark-recapture, mark-recapture is generally more accepted.

Dixon asked how the results could inform restoration implementation. Laskodi recommended increasing flow variability earlier in the year and allowing warmer water to help the fish migrate at the right times, which is consistent with the other reports. Hayden recalled that when the HDAT model was developed there was concern that higher spring flows were delaying migration, as indicated by the RT80 models, which could increase mortality and disease when the fish entered the Klamath. Hayden asked if the TRRP was getting closer to improving the predictive ability of models or other tools to evaluate flows based on temperature or bioenergetics to maximize their returns. Laskodi explained the report was trying to find a better predictor model than RT80. Currently the Pear Tree ATU did better but needs more testing. In terms of growth, there are other studies to assess how the ROD has affect growth over time. For assessing growth, Laskodi was unfamiliar with any studies that looked at growth differences between trap sites as hatchery releases often interfere. Sinnen asked if the increase in abundance were due to using flow-based and then mark-recapture estimates. Laskodi explained both estimates were available back to 1989 and both showed significant increases post-ROD.

Fish and Game Commission Decision on Listing Spring Chinook

Sinnen reported the Fish and Game Commission met on June 16 and voted to list spring Chinook in the Upper Klamath-Trinity Basin. It is uncertain how this will impact harvest quotas for this year, but there may be changes due to the listing and emergency drought actions in discussion. Sinnen will distribute the information to the group as it comes out. He recommended visiting the FGC website to review the meeting transcripts. DeJulio added the decision was to list the spring Chinook as threatened under CESA. FGC also listed summer steelhead as endangered in the Eel River, which differs from its federal ESA listing.

Dixon asked if the steelhead listing would influence listing the Klamath steelhead populations since similar factors affect both populations. Sinnen speculated that previous federal reviews of the Klamath population have not led to listing as the populations in the North Fork are strong though they are losing ground geographically. Most of the discussion centers on genetic differences and how to delineate populations. Currently the two population have different gene types that relate to different traits and its uncertain if a certain ecotype radiated from the Klamath Chinook or if it was an originating population. The debate is whether genetic or morphological differences should define species and at what level.

Dixon asked how the listing would affect the spring Chinook season that starts in two weeks. Sinnen said it was up in the air. Candidate species are afforded some protection when considered for listing, which are very restrictive and makes take illegal. The Commission has directed CDFW to engage the public to find a compromise on how to allow fishing. Currently the July 1 opening date is still allowed as genetic studies indicate the Lower Klamath spring Chinook enter the river earlier than heterozygous populations and the date would now affect homozygous populations as they enter the South Fork. The listing gives FGC some authority to allow fishing, but it is uncertain what they will decide. There are also concerns about drought emergency measures. Kautsky suggested the FGC include Hoopa Valley leadership when developing the

recovery plan. Sinnen explained the timelines or organization for a recovery plan are uncertain since the listing just happened, but tribal partnerships are a high priority for CDFW.

Topics for September TMC Meeting

Bader would like to explore holding the September meeting in person. Hayden will see if Weitchpec can host as their restrictions were lifted. Dixon suggested that if it is unclear if agencies can attend, Weaverville could host a hybrid meeting so folks could join remotely as their internet is more consistent than in the Weitchpec conference room. Hayden and DeJuilio asked for the following agenda topics for September's meeting:

- Progress report on Chapman Ranch Phase B
- Update on the winter flow Draft EA
- Presentation from Reclamation on Infrastructure solutions for 2012 report
- Updated synthesis report Gantt chart and a list of which have been presented.
- USFWS or CDFW update on 2022 listing regulations.

Other suggestions include:

- Hetrick asked for a presentation on the adult synthesis report. Sinnen will check with Lindke on its status.
- Sinnen asked for a discussion on SAB composition, use, and program role going forward.
- Sinnen asked for an update on the scientific symposium organization.
- Dixon asked DeJuilio to provide an update on the systemic capacity model. DeJuilio suggested penciling it in for now.
- Dixon will present on the SOW for the channel rehab review established from agencies.
- Naman would like the TMC to weigh in on the recommendations from the temperature synthesis report.

Public Forum

No comments were brought forward.

Adjourn Day 2 3:05 pm