

Meeting Summary
FISH WORK GROUP
Tuesday January 14, 2020
TRRP Office, Weaverville, CA

Tuesday, January 14, 2020: 9:30 AM

Participants

Core members: Kyle DeJulio (YTFP), Steve Gough (USFWS, via phone), Brandt Gutermuth (USBR/TRRP), George Kautsky (HVTFP), Ken Lindke (CDFW, coordinator), Seth Naman (NMFS)

Other participants: Todd Buxton (USBR/TRRP), Kyle Hopkins (YTFP), Brian Lester (HVTFP), Oshun O'Rourke (YTFP), Eric Peterson (USBR/TRRP), Shane Quinn (YTFP), Luis Santana (YTFP)

Action Items Outstanding from Previous Meetings

Action Item 3 (29 July): Kyle will coordinate with the physical work group to incorporate the concepts of proposed target 2.2 from his juvenile food production presentation into targets being developed by the physical work group.

Summary of Meeting by Agenda Item

TRRP website: fish and environmental data that could be posted on the website

Eric Peterson led the solicitation for ideas on additional information that could be regularly posted on the TRRP website to keep the public informed about anything fish-related, including possible real time reporting of catch data from adult and juvenile monitoring efforts. Derrick Rupert had worked on posting weekly redd counts but did not finish before he left the program.

Eric showed the group examples of other public agency websites, including www.cbr.washington.edu/dart, www.coralreefwatch.noaa.gov, and earth.nullschool.net. The Program currently uses highcharts.com to display flow data on the TRRP website.

Highcharts.com provides a lot of options for customization and can be dynamic, as demonstrated by the flow data currently on the TRRP website. Photoviewer3D is currently being used for the RiverView application on the TRRP website. Potree.org provides applications that can use lidar, 3D photogrammetry, and point cloud data. The statistical program R has web-based applications that can conduct and present statistical analyses on web pages.

Ken asked how many people on average view the website, and Eric responded that approximately 50 unique people per day and up to 200 during the flow-scheduling period. The group then discussed current data collection efforts and what would be useful or appropriate to

post on the front page of the TRRP website. Obvious candidates were weir counts from Willow Creek and Junction City weirs, Trinity River Hatchery returns, juvenile fish counts from Pear Tree and Willow Creek rotary screw traps, and redd count data. Ken suggested considering whether there are data that should not be made publicly available due to privacy or resource protection concerns. The only example he could think of was the locations of holding spring Chinook Salmon. Eric was apprehensive to post weekly counts from adult or juvenile trapping efforts because they could easily be misinterpreted by the public as abundance estimates. However, several attendees pointed out that some counts are already distributed to the public on a regular basis (e.g., weekly weir and hatchery fish counts distributed by CDFW) and providing disclaimers with posted data should be sufficient. George suggested posting data that measures progress toward meeting TRRP goals/objectives. The group agreed that all weekly adult and juvenile trapping data mentioned above could be added to the website, starting with adult abundance data because we have a clearly defined quantitative target to compare it to.

Presentation: thermal diversity and juvenile salmonid use of off-channel features in the Trinity River

Kyle H. provided a presentation on temperature and fish presence monitoring in off-channel features of the restoration reach conducted in summer of 2019. The 2019 effort was a continuation of a pilot study conducted by Lindke and De Julio in 2017, with the addition of the fish presence component. Intermittently connected off-channel features that connect to the mainstem between 2,500 and 5,000 cfs were monitored with vertical strings of temperature loggers to document thermal diversity and stratification. Temperature loggers were deployed before the first scheduled flow release in April. Snorkel surveys for juvenile salmonids were conducted at the time of logger deployment and between each peak in the spring dam release hydrograph, then during logger retrieval in the fall. Temperatures within the optimal range for juvenile salmonid growth (13.5°C – 16.0°C) were observed in some off-channel features as early as late April, but not observed in the mainstem until early July. Thermal diversity and stratification were documented in several features. Juvenile Chinook or Coho were observed in every feature.

Review fish-centric flow management pre-proposals approved for funding by TMC during their December meeting

The group discussed the four pre-proposals listed in the meeting agenda. Nobody had comments on the off-channel juvenile fish growth study. The future of the outmigration timing and survival study (using S3 modeling) was uncertain because the Principal Investigator listed on the pre-proposal has since left USFWS. Kyle D. agreed to coordinate with Nick Som (USFWS) to discuss a possible path forward, but he did not expect that a full proposal would be completed by the 31 January deadline. Regarding the thermal stratification study, Seth asked why only the South Fork Trinity was considered as a surrogate to evaluate conditions under which stratification could occur and suggested also considering the North Fork Trinity, tributaries

upstream of Trinity Reservoir, or the lower Trinity River mainstem. Kyle D. suggested that the study should document the amount of spring Chinook holding habitat that is currently available. Several people expressed confusion about the methods for the food limitation study using S3, noting that insufficient details were provided in the pre-proposal to evaluate whether the study could meet the needs of the Program. Kyle D. agreed and explained that the project is essentially a sensitivity analysis of the S3 model specifically for the food consumption parameter. The current implementation of S3 assumes one fixed consumption level for a year, which is not useful for understanding how consumption varies seasonally. Weekly consumption values would be more useful.

Discussion on synthesis reports submitted to date

The only fish-centric synthesis reports submitted to date were the juvenile fish habitat report and the juvenile Chinook production report. There were no substantive comments on the fish habitat report, other than several people noting that the analysis was straightforward and well done. Kyle D. noted that there are two juvenile production reports, and only the one completed by Thomas Gast & Associates for the Yurok Tribe had been submitted by the time of the meeting. George noted that an assertion in this report about no increase in spawning coincident with an increase in juvenile production did not seem to be supported by the analysis presented in the report. Kyle D. responded that this information is in another synthesis report that has not yet been submitted. George suggested that the report seems to be getting ahead of itself in terms of the process of data compilation, synthesis, new analysis, new conclusions, and the adaptive management loop, noting that the current phase of synthesis reporting has largely been understood to be a data compilation effort with some limited new analyses. Ken noted that Objective 3 in the report looks a bit like data mining, or at least the logic of comparing so many abundance and temperature relationships in an effort to evaluate the HDAT model is not sufficiently described for the reader to think otherwise. Several people noted that the report is comprised largely of qualitative descriptions of the numerous figures presented in the report, rather than quantitative analyses of the data used to generate the figures.

Means objectives and targets: final versions of juvenile food and juvenile rearing temperature targets

Kyle D. presented the final version of the juvenile food target. The flow threshold for defining successful “resetting” of the benthic macroinvertebrate population was changed from 4,500 to 6,000 cfs. The spatial component was changed to be 90% of the linear distance of the 40-mile restoration reach instead of using a single point of compliance. Seth presented final updates to the juvenile salmonid rearing temperature target, which included a method to quantify deviations from the target and a discussion of the timing of juvenile emigration relative to the temperature targets.

Means objectives and targets: update on juvenile flow-to-habitat target

Ken gave an update on this target, which wasn't much of an update at all. Not much work had been done other than reviewing a habitat report by Josh Boyce (USFWS) that quantified the long-term evolution of habitat availability at restoration sites from pre-construction to several years post-construction. Ken had also presented the concept to the Design work group and requested that area-under-the-curve of habitat Capacity for existing conditions and design conditions, as well as the percent change, be required content for all future design reports. Increases in area-under-the-curve of the flow-to-habitat relationship using Capacity will be the basis of the target.

Means objectives and targets: spring Chinook Salmon harvest

George shared with the group his initial thoughts on this target, but he did not yet have a write-up to share. The approach will be essentially the same as for the fall Chinook harvest target, but it will start with the spring Chinook escapement targets.

Means objectives and targets: brown trout

Justin Alvarez presented a brief write-up describing targets for reducing predation on and competition with juvenile salmonids. To address predation, he proposed a target of less than five brown trout >35 cm per day at Junction City weir and carcass surveys combined. To address competition, he proposed a target of less than 200 1+ brown trout (approx. 10 cm) captured at the Pear Tree screw trap between January 1 and August 31. Ken asked where the 35 cm size cutoff and the numbers of fish had come from: what justified these values? Justin responded that brown trout have been shown to be more piscivorous when >35 cm. The five fish >35 cm was based on looking at counts in previous years, and five was on the low end, while recognizing that it is likely not possible to completely eliminate the species. Pear Tree catches of juvenile brown trout typically range from 50-1000, so he was shooting for the low end of that range.

Means objectives and targets: pre-spawn mortality

This was not agendaized, but Kyle D. led a brief discussion on the topic. Further progress will wait until juvenile and adult synthesis reports are complete, and his approach will likely link a targeted pre-spawn mortality rate to escapement abundance. Ken suggested that there should be some upper limit to the "acceptable" pre-spawn mortality rate. When abundance is very high, we don't want to have such a high target that something like a fish kill could occur and still be below our maximum target rate.

Means objectives and targets: new subgroups if warranted

No new subgroups were formed because most work group members are already in a subgroup actively working on new targets.

3:30 PM Adjourn