

Meeting Summary  
**FISH WORK GROUP**  
Wednesday January 6, 2021  
WebEx

**Wednesday, January 6, 2021: 1:00 PM**

**Participants**

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

Other participants: Chad Abel (USBR/TRRP), Justin Alvarez (HVTFP), Todd Buxton (USBR/TRRP), Taylor Daley (USFWS), James Lee (USBR/TRRP), Oshun O'Rourke (YTFP), Eric Peterson (USBR/TRRP), Max Ramos (YTFP), Conor Shae (USFWS)

**Action Items Derived During the Meeting**

Action Item 1: Ken will try to obtain 2014 recommendations from David Hankin, Andrew Kinziger, and Carlos Garza regarding gravel augmentation and restoration in the hatchery reach and distribute to work group members for review.

Action Item 2: Ken will work with Chad and Justin to develop a concise request for feedback on the need and feasibility of future restoration sites, distribute the request to work group members, and provide compiled feedback to Chad and Justin

Action Item 3: Steve will discuss recommendation for gravel augmentation at the hatchery internally with USFWS and provide Ken with the USFWS position.

Action Item 4: Contingent on the position of USFWS, Ken will draft a memo of support for gravel augmentation at the hatchery. George will provide a dissenting opinion memo if he wishes.

**Action Items Outstanding from Previous Meetings**

Action Item 1 (26 Oct): Kyle and Bryan will work with the Trinity River hatchery technical team to develop a target for minimizing competition and predation on juvenile natural-origin salmonids by juvenile hatchery-origin salmonids.

**Summary of Meeting by Agenda Item**

**Outstanding action items from previous meeting(s)**

Action Item 1 (26 Oct 2020): Kyle and Bryan will work with the Trinity River hatchery technical team to develop a target for minimizing competition and predation on juvenile natural-origin salmonids by juvenile hatchery-origin salmonids

Kyle reported that the hatchery technical team only meets quarterly and is currently consumed with other issues. The next meeting is in March, at which they intend to begin discussion on rates and duration of migration of hatchery releases through the Trinity River as a surrogate for competition and predation risk to natural-origin juvenile salmonids. This will provide the foundation for development of a competition/predation target. The March meeting will only be the beginning of that work, so there is no anticipated date for completing that target.

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.

Kyle had again reached out to John Baer and Todd Buxton (see 10 October meeting summary). The three of them agreed that, while there is overlap of the food production target with the bed scour and riparian targets being developed by the physical and RAE work group, respectively, there is sufficient difference that they should not be combined. One example given was that there is no temporal component to the bed scour target being developed by the physical work group. Todd reiterated the need to keep them as separate targets as they are passed through IDT, where targets developed by the various work groups will be evaluated for overlap. The food production target developed by Kyle, Steve, and Justin will remain a stand-alone fish work group target, and the write-up describing it will be re-distributed to work group members for a final review before forwarding to IDT.

### **Means objectives and targets: review of progress to date and targets to complete before January deadline**

Ken informed the group that there is only one target that is still in development, the Weitchpec outmigration temperature target(s). Ken has been working with Kyle and Taylor on this target, and they have come up with a pretty good strawman with a solid justification. Essentially the target will define dates for 80% outmigration at the Willow Creek screw trap and/or temperatures in the lower Trinity River (possibly at Hoopa) that are meant to encourage juvenile Chinook to emigrate from the Trinity River with enough time to migrate through the lower Klamath before temperature conditions there become unsuitable. They intended to complete the target in time to provide to IDT by next week, but upon reflection realized that this target deserves more vetting and analysis of the effects before moving forward. Outmigration temperature targets have significant implications for flow management and fish survival, thus the additional work seemed justified. Unfortunately, Ken, Kyle and Taylor do not have the time needed to do this effort

justice, so they will have to defer for now. Ken agreed to prepare a memo describing the strawman they came up with, the rationale behind it, and recommended next steps.

Ken agreed to draft a memo from the Fish work group to IDT describing the objectives/targets refinement work that has been done over the past couple years and the set of targets that are complete and recommended by the Fish work group. This will serve as the deliverable for this work group task.

### **Gravel augmentation at Trinity River hatchery**

Conor introduced the discussion and provided some background. The proposed augmentation site is immediately adjacent to Trinity River hatchery. It has been an augmentation site since the early 1970's where augmentation occurred on a fairly regular basis until 2007. Augmentation was proposed there again in about 2014 but was suspended indefinitely based on a recommendation from the Fish work group, informed by much discussion and input from three independent experts. The recommendation was primarily concerned with genetic introgression of hatchery and natural salmon and steelhead stocks. The Physical work group is recommending augmentation at this site to resume in 2021 and has asked the Fish work group to revisit its earlier recommendation. Conor conveyed some of the reasons for revisiting this site: this reach is the most impacted because there is no coarse sediment input while at the same time experiencing geomorphic flows resulting in a substantial deficit in sediments; among the currently permitted site, this is the only one that needs gravel due to other sites being either full or having access issues. The motivation for coarse sediment augmentation at this site is to restore physical processes, recognizing that this will result in formation of habitat. Of greatest concern to the fish work group is the creation of spawning habitat very near to the hatchery and the consequences for hatchery and natural-origin interactions.

Todd assuaged perceived concerns of sediment augmentation blocking access to Sven Olbertson site channel complex by pointing out that the area was essentially cut off from spawning when the entrance was blocked in 2011. Augmentation this year is not expected to make it worse and the area would need rehab to reconnect it to the mainstem. He also pointed out that if the Program was ever permitted to add fine sediment to coarse sediment augmentations, the river in that area would benefit due the nearly complete lack of fines currently.

Kyle then led a discussion on the biological implications of creating spawning habitat through augmentation. The significant reduction in spawning habitat in the hatchery reach that occurred in and persisted since 2011 seems to have resulted mainly in the shift of hatchery-origin spawning downstream to more suitable spawning areas. Figures from the draft adult synthesis report were shared with the group that showed substantially less spawning overall, and much less hatchery-origin spawning in carcass/redd survey Reach 1, with a concurrent increase in hatchery-

origin spawning in Reach 2. The mean distance downstream from Lewiston Dam of both natural-origin and hatchery-origin redds has increased since 2011. This shift in location of spawning, and the resulting decrease in spawning activity close to the hatchery were hypothesized to have two effects on natural/hatchery interactions: 1) more hatchery-origin spawning downstream has increased natural/hatchery interactions downstream, decreasing the area where predominantly natural-origin spawning can occur, and 2) less spawning near the hatchery has decreased the potential for natural-origin fish to enter the hatchery and contribute natural-origin genetics to the spawning matrix.

Kyle referenced the 2012 CA Hatchery Scientific Review Group (CHSRG) report that clearly states Trinity River hatchery should be operated as an integrated hatchery, in which the hatchery and wild stocks are managed as one integrated stock. He argued that to do so we should be encouraging spawning adjacent to the hatchery so that, among other reasons, naturally produced progeny from spawning in that area, regardless of the origin of their parents, would be more available to return to spawn naturally in that area and/or stray into the hatchery and contribute natural-origin genes to the spawning matrix. Todd asked for clarification on this given that conventional wisdom has been that hatchery genetics are bad (e.g., domestication selection) and shouldn't be mixed with natural-origin genetics. Ken and Seth responded by explaining how some of that thinking has changed. First, some natural selection does occur on natural-origin fish even if both parents are hatchery-origin, so the progeny do not express domestication selection to nearly the degree that hatchery-origin fish do. Also, spawners in natural spawning areas select their own partners, so incest mating that can occur in the hatchery is unlikely. Integrated hatcheries are supposed to be operated to reduce straying of hatchery-origin fish to natural spawning areas and increase the use of natural-origin fish in the hatchery spawning matrix. Each of these have specific thresholds of the percent of hatchery-origin spawners in natural areas (pHOS) and the percent of natural-origin fish used in the hatchery spawning matrix (pNOB). The CHSRG describes several propagation and hatchery operation methods that should be employed when managing an integrated hatchery, only a few of which have been implemented at Trinity River hatchery.

George questioned whether replenishing spawning habitat adjacent to the hatchery would really have the presumably desirable effect of increasing natural-origin straying in the hatchery. Further he questioned whether we have the ability to influence pHOS and pNOB given current hatchery practices or if we even have the ability to measure either. Changes to hatchery practices would likely be needed to allow control of pHOS and pNOB, including 100% marking of hatchery releases to allow for intentional integration of natural-origin fish in the hatchery spawning matrix. Ken referred to a couple of Kyle's figures showing a dip in the proportion of hatchery-origin fall Chinook migrating upstream of Willow Creek weir that entered the hatchery following 2011 (indicating a higher proportion spawning in natural spawning areas), and one that showed a similar dip in the proportion of natural-origin fish entering the hatchery about the same time. He

argued that this provides some evidence that reduced spawning in the hatchery reach coincided with an increase in pHOS and decrease in pNOB. However, both of these trends seem to have returned to similar levels as before 2011, making any conclusions unclear. George stated that if gravel augmentation did resume, we should have in place specific monitoring to measure the effects on pHOS and pNOB.

During earlier discussion within the Program (around 2014), three independent experts were asked to weigh in on promoting spawning in the hatchery reach. Seth had dug up an old draft memo from this time summarizing their input, which was mixed. One was in favor, and two were not. Ken agreed to work with Seth to locate the original responses from these experts and share them with work group members for further consideration.

Ken shared his assessment of the discussion, that there was general agreement that gravel augmentation should resume, noting some objection from George and no clear opinion from USFWS. The group generally seemed to agree that we need as much area to be productive as possible, there was some evidence that returning spawning to the hatchery reach could decrease pHOS and increase pNOB, the hatchery should be operated as an integrated hatchery, but that recommendations from the CHSRG on hatchery operations and propagation need to be implemented to successfully operate as integrated. Ken suggested that the Program should write a letter to CDFW and USBR urging them to implement some or all of the recommendations from CHSRG. Some members agreed, others did not express an opinion. Ken asked Steve to confer with his USFWS colleagues and provide him with the USFWS recommendation on augmentation. Ken agreed to draft a memo recommending augmentation, depending on the opinion of USFWS, and invited George to provide a concurrent memo describing HVT's objection.

Kyle concluded the discussion by pointing out that augmentation at this site was an ongoing process for decades before the fish work group recommendation to stop. The rationale for that recommendation is poorly documented and input from independent experts is conflicting.

### **Feasibility and necessity of channel rehab at remaining sites**

Justin described the request from the Design work group to provide feedback on the feasibility and need for channel rehabilitation at the sites identified in the 2000 EIS that have not already been constructed and are not currently in the design phase. George asked how the list presented in the request related to the original 40+ sites identified in the EIS. Chad noted that this information was included in the request to the best of his ability. Since 2000, site boundaries have changed so the original set doesn't exactly reflect conditions today. Kyle suggested that it would be helpful to go through the conceptual design phase for the remaining sites because constraints and potential for habitat gain at individual sites are often identified at that stage. Chad

replied that USBR NCAO office didn't want to invest such resources in sites that will ultimately not be built. Some of the remaining sites can probably be eliminated from further consideration for various reasons without conceptual designs, and that's what is intended for this effort. George pointed out that the Fish work group should probably be more concerned with the need for rehabilitation at remaining sites from a fish habitat perspective, but he didn't fully understand what feedback was being requested. In addition, some work group members had not visited these sites in a long time, or ever, which would help inform recommendations. Ken agreed to work with Justin and Chad to further clarify the request, distribute a more pointed request to work group members, confirm a deadline for feedback, and compile responses to be delivered to Justin and Chad.

**3:10 PM Adjourn**