

Meeting Summary
FISH WORK GROUP
Thursday March 14, 2019
TRRP Office, Weaverville, CA

Thursday, March 14, 2019: 9:30 AM

Participants

Core members: Bill Brock (USFS, via phone), Kyle De Juilio (YTFP), Steve Gough (USFWS), Brandt Gutermuth (USBR), George Kautsky (HVTFP), Ken Lindke (CDFW, coordinator)

Other participants: Justin Alvarez (HVTFP), Josh Boyce (USFWS, via phone), Damon Goodman (USFWS, via phone), Eric Peterson (USBR), Oshun O'Rourke (YTFP)

Summary of Meeting by Agenda Item

Introductions, agenda review and meeting objectives and outcomes

During the agenda review Kautsky requested the Information Gaps for Flow Variability agenda item be moved to immediately after lunch to accommodate a scheduling conflict. The group gladly obliged by moving the Habitat Team recommendations to 11:15 and breaking up the objectives/targets refinement discussion into morning and afternoon sessions.

Means objectives and targets

Discussion focused primarily on water temperature objectives/targets because these were the only ones that the work group had not yet worked on. Based on the IDT guideline that we can have multiple targets for a single objective, the group agreed to reorganize the objectives and targets such that there is one adult and one juvenile temperature objective each with multiple targets. Language for each of these objectives were modified slightly. The existing temperature targets for Douglas City (for adults) and Weitchpec (for juveniles) were maintained, but the group acknowledged that all of these targets need to be revised. The group agreed that the adult temperature objective should have two targets, one for limiting pre-spawn mortality, and one for improving in-vivo egg survival. The pre-spawn mortality target will likely have overlap with the target for adult holding habitat.

The rest of the objectives/targets discussion was focused on the juvenile and adult habitat targets proposed by the Habitat Team. This discussion is summarized under that agenda item below. The results of all objectives/targets discussions can be found in a separate Excel spreadsheet maintained by the fish work group and used to track the refinements. The Google Docs spreadsheet shared by work group coordinators was also updated following this meeting.

Habitat Team recommendations for juvenile and adult holding habitat targets

Lindke introduced the discussion by informing the group that he had asked the Habitat Team to propose objectives and targets for juvenile and adult habitat because they are the Program experts on the subject. Recognizing that the Program has struggled to develop habitat targets, he described the Habitat Team's recommendations as starting points, and stated that we will continue to refine these targets in the coming year. He recommended that the group accept the targets as-is unless there were major objections.

The group generally accepted the Habitat Team's recommendations with a few modifications. We accepted De Juilio's recommendation to add wetted area to the list of candidate models that we will consider using to quantify juvenile habitat. De Juilio also pointed out that the Habitat Team recommendations only considered physical habitat, then quickly convinced the group that an additional target needs to be developed to quantify food resources. Kyle suggested that duration, frequency, and time of year need to be integrated into quantifiable targets the group develops for both juveniles and adults over the coming year. Lindke then noticed that in the 19 December 2018 fish work group meeting we had decided that a target for adult spawning habitat was not needed. We had agreed that the objective should be kept, but the Program should not quantify adult spawning habitat to measure Program success. In response, the group agreed that we should keep the Habitat Team's recommendation if we decide in the future to develop a target for this objective.

Information gaps for flow variability

Lindke started this discussion by reviewing the list of information gaps developed by the flow work group in their recent meeting, several of which were fish-focused. The discussion was a mix of expanding upon items identified by the flow work group and adding novel fish-focused information gaps. A list of information gaps can be found below.

At some point in the discussion Kautsky asked for clarification on what this exercise was intended to accomplish, stating that it appeared to be just a laundry list of study questions that have not yet been explored by the science program. Lindke stated that the task had been given to work groups by IDT and was intended to solicit information gaps that would need to be filled to make a case for releasing water (above baseflow) earlier in the year, citing real-time flow management as an example. He also pointed out that the information would be needed if the Program pursued a new EIS for flow management. Kautsky responded that the Hoopa Tribe does not support pursuit of a new EIS and believes that water releases at a different time of year than ROD releases (exempting 300 and 450 cfs baseflows) should only be in addition to ROD volumes. De Juilio clarified the discussion by stating that we should be focused on flow management generally and information we need to more effectively manage flows at any time of year.

1. Juvenile use of intermittently connected off-channel habitat. This should include a seasonal component that is species-specific and relates to when we release water. For example, how is accessibility of these features affected by our current timing of high flow releases vs. (hypothetical) earlier releases synchronized with tributary events.
2. What is the relationship between temperature and pre-spawn mortality? Fish density should also be considered, which may have an interactive effect with temperature.
3. What would be the potential consequences of synchronizing releases with tributary flow events on redd scour?
4. What effect would temperature have on egg development if high flow releases occurred in winter. Presumably high flow releases would increase water temperatures in winter compared to existing conditions.
5. How would changes to flow management affect fish production? The group proposed S3 model runs to evaluate the relative merit of various flow management scenarios. This could also be used to identify limiting factors (e.g., physical habitat) through sensitivity analysis. De Juilio expressed concern that the assumed constant ration in the food component of S3 is unrealistic.
6. How does the timing of high flow releases affect turbidity, and in turn affect foraging success of juvenile salmonids? First high flows generally have higher turbidity, which occurs in spring under current flow management. In unregulated rivers the highest turbidity is associated with early season high flows, then turbidity is lower by spring when juvenile fish are foraging.
7. Does the timing of arrival of juvenile Chinook at the Klamath River affect survival from the Klamath/Trinity confluence to the mouth of the Klamath, and how can flow management affect migration timing?

Juvenile salmonid outmigration survival study proposal

De Juilio briefly summarized the effort to date. A group of interested staff from various agencies had met to gauge interest and flesh out some details. The study question was refined to: how does the timing of entry to the Klamath River affect survival to the Klamath River mouth. Chinook seemed to be the most likely candidate species, and screw traps at Pear Tree and Willow Creek are possible sites for capturing fish and applying acoustic or radio tags. This study was added to the list of information gaps for flow management, and De Juilio will continue to work with interested staff to develop a proposal.

4:00 PM Adjourn