

TRRP Fish Workgroup Meeting Summary
TRRP office, Weaverville, CA
Tuesday, April 19, 2016

Participants

Core members: Todd Buxton (FWS), George Kautsky (HVT), Seth Naman (NOAA), Mary Claire Kier (CDFW), Kyle De Juilio (YT)

Others in attendance: Shane Quinn (YT), Billy Matilton (HVT), Nate Harris (YT), Bill Pinnix (FWS), Wes Smith (NOAA)

Note taker: Todd Buxton

New Actions Items

- Shane Quinn will attend the Trinity Hatchery meeting and discuss the potential for using salmon carcasses from the hatchery to plant in riparian areas in the Trinity River.
- Todd Buxton will provide TRRP partner representatives in the FWG a list of Bradford and Hankin/SAB recommendations for adult salmon monitoring project(s) they operate.
- TRRP partners will rank Bradford and Hankin/SAB recommendations in descending order of perceived importance and an explanation will be given for each ranking. Ranking lists from each partner will be discussed and finalized for implementation in the next FWG meeting.

Work Group recommendations/decisions

- None

Notes

The FWG accepted the version of the fine sediment memo that was provided to Damion Ciotti (acting Science Coordinator) et al. as final.

Nate Harris shared the presentation he gave to the flow workgroup regarding hydrograph effects on juvenile salmon outmigration. Specifically, Nate presented evidence for accumulated water temperature degrees (beginning April 15) being a strong predictor of outmigration timing. This correlation is then used to predict the influence of proposed hydrographs on outmigration timing after flow effects on water temperatures are modeled. Discussion on ways to improve the model, and Buxton asked what temperature represents in the analysis. De Juilio responded fish growth and Buxton countered that can't be true because you can place a fish in distilled water and raise the water temperature and the fish will not grow. Pinnix offered that temperature drives multiple biological processes in streams, including primary productivity, food availability, and fish growth, so is a good parameter to generally represent biologic functioning in stream systems.

Bill Pinnix shared a presentation on juvenile fish production estimates made with catch data at the Willow Creek screw traps that he had previously given at an American Fisheries Society conference. An outstanding finding in the time series of population estimates was that outmigrant populations increased dramatically after ROD implementation, perhaps due to the larger volume of water released during the juvenile salmon rearing periods. However, several dips in

population have occurred, and Bill reasoned that safety of dam releases from Trinity Dam made in January or February of years that population declines occurred *may have* reduced rearing habitat availability, feeding effectiveness, caused redd scour, or killed fry rearing in gravel near the active layer of the channel bed. Wes disagreed with these predictions and argued the causal mechanism was more likely egg or fry entombment or suffocation by sustained high flows than scour or displacement by peak flows. Buxton replied that he agreed with Wes' prediction but accepted Bill's explanation for the observed population declines as well because analysis in the presentation was not intended to identify a causal mechanism, but propose potential causes for the population declines. At the broad level of interpretation of data that Bill presented, all explanations are viable candidates for the truth.

The FWG discussed next steps for addressing suggestions by Bradford and Hankin (2012) and the SAB (BH/SAB) for improving adult salmon monitoring programs in the TRRP. Rather than schedule an executive meeting of program managers to discuss these suggestions, members chose to rank and give explanations for rankings of suggestions by these reviewers that projects have not already implemented. To facilitate the rankings, Buxton agreed to provide each partner a list of suggestions that are pertinent to their projects. Rankings will be vetted by the FWG in its next meeting so that prioritized changes to programs can be implemented when practical.

The FWG discussed the potential for reducing fish monitoring efforts (catch, escapement, outmigration, redds and carcasses) in 2016 if fish returns are low as currently projected. The majority of the group reasoned that projections are often imprecise and that basing reductions in effort on fish management forecasts, if attempted, should be done with caution. Moreover, when the object of investigation is scarce, more sampling may be needed, rather than less. Another perspective is that if fish numbers are low, a wiser application of effort may be towards improving riverine habitats rather than expending large effort to count relatively few fish. Buxton offered that specific reductions do not need to be targeted now, but that areas for reduced effort in fisheries monitoring should be contemplated if low fish returns occur so that other program work, such as implementing prioritized BH/SAB suggestions can be accomplished instead. Pinnix felt this is difficult, but not impossible, by explaining that fisheries crews that would be freed up on a project where effort could be truncated or curtailed are often not the best qualified personnel to address BH/SAB suggestions and technical issues. Pinnix continued that field projects are planned well in advance and is difficult (for federal agencies) to hire or divert staff on short notice. Buxton said that in his experience, if fish counters (a general, not derogatory term) don't have fish to count, they are kept busy doing other work or laid off. Naman explained that approach is not altogether possible in government work.

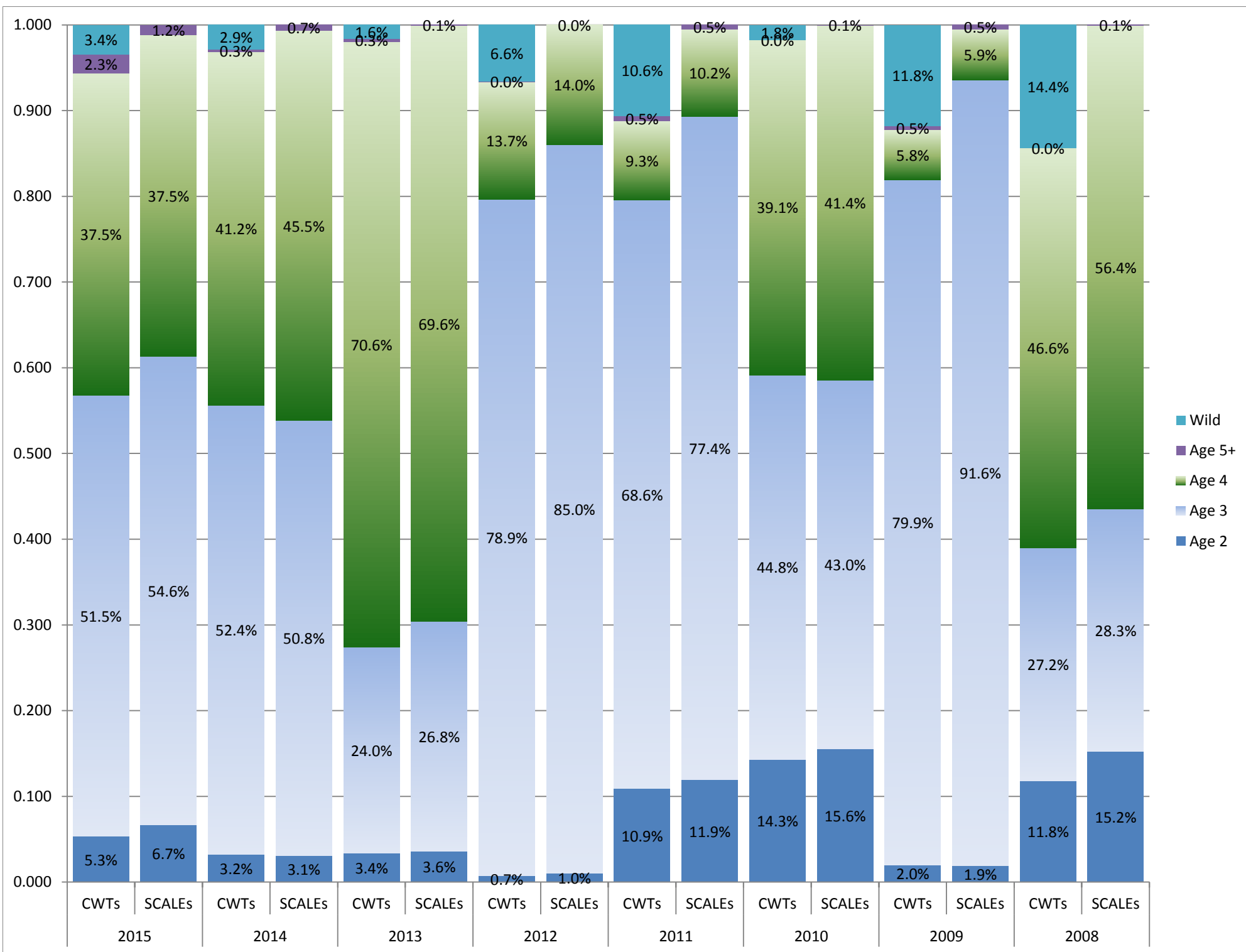
Shane Quinn presented information on disease concerns associated with using carcasses for enhancing marine nutrients in riparian areas (see attached notes). Quinn's findings were encouraging, but that a few concerns regarding the potential for spreading bacterial kidney disease from coho and spring Chinook carcasses to the river need to be avoided by only using fall Chinook in the carcass supplementation program, if it occurs.

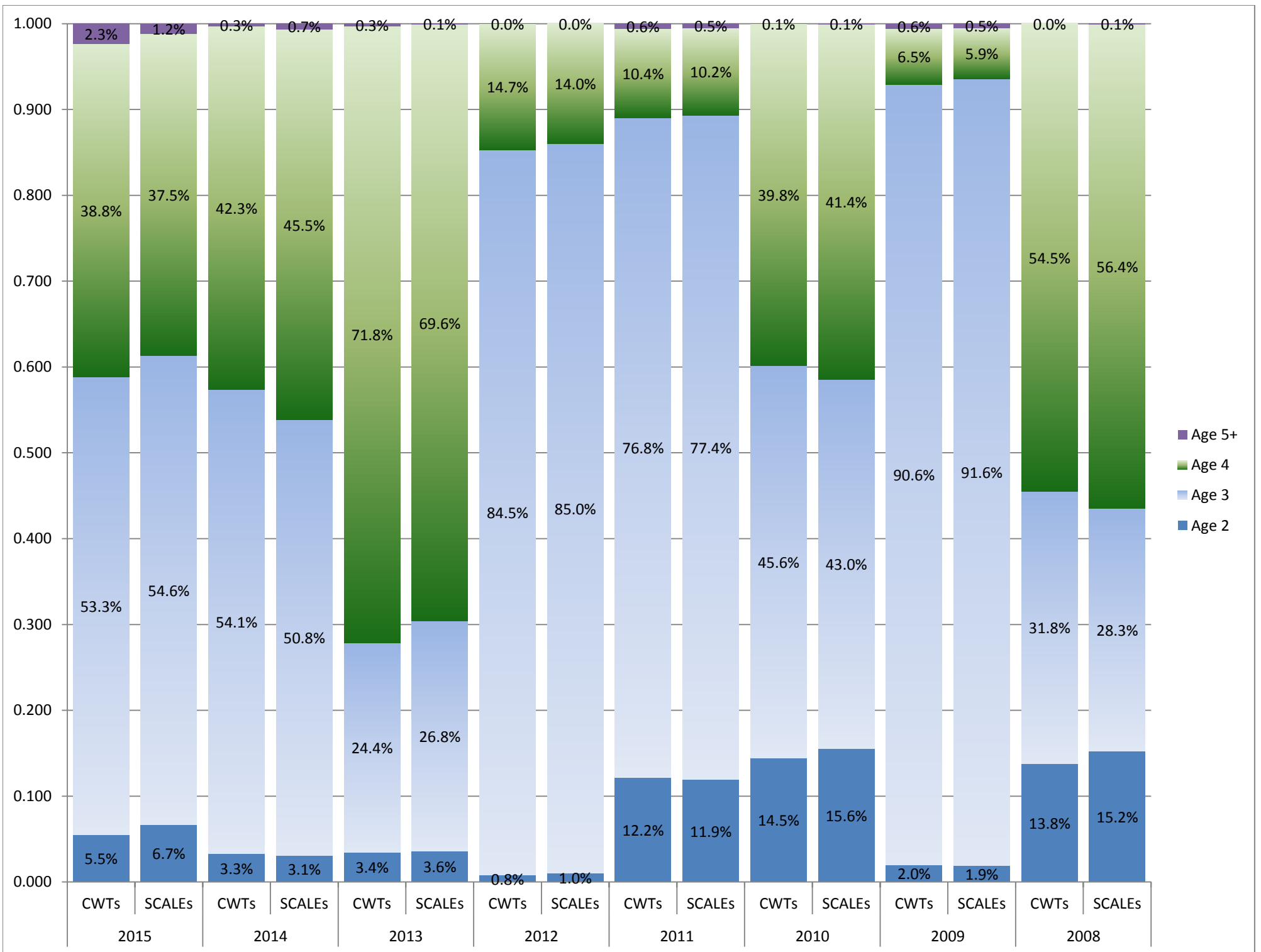
Mary Clair Kier presented results from a comparison of fall Chinook ages at Trinity River hatchery (TRH) that were derived from coded wire tags (CWT) and scale reads, which closely agreed. Kier also presented a figure showing the return of wild fall Chinook to the hatchery, which varied from zero to 14.4% between 2008-15 (see attached figures). Discussion regarding the need to continue scale reads at TRH followed. De Juilio and Buxton did not see a need to continue scale reads at TRH since fish age information is already provided by CWT. Kautsky

and Matilton explained that reading scales from fish at the hatchery was necessary because the age structure at the hatchery is a combination of hatchery and non-hatchery origin fish and the proportions of each cannot be predicted. Further, scale-based age structure at TRH is subtracted from the age structure obtained at Willow Creek weir (WCW) to estimate the age structure of the natural area return between WCW and TRH of both hatchery and natural origin fish. Finally, basin-wide CWT age composition is deducted from the basins age-structured run estimate to derive the proportions at age of non-hatchery origin Chinook. De Juilio and Buxton reasoned that there was a higher likelihood of collecting scales from hatchery origin fish at TRH than at the WCW, so adjustments should instead be made with the estimated number of wild Chinook entering the hatchery apportioned by the age composition determined at the weir. Kautsky and Matilton disagreed with De Juilio and Buxton's opinion, and the disagreement went back and forth, so was tabled, but will be discussed at the next FWG meeting.

George Kautsky did not give his presentation on cohort analysis that was planned because data were not available to him for the analysis. Instead, Kautsky gave a presentation on how adult salmon returns are projected for the Klamath basin, and used to address conservation and fisheries management issues.

The FWG closed the meeting with agreement that the next meeting should occur between the high flow peaks and monitoring benches in this spring's high flow release from Trinity Dam.





Update on carcass seeding using carcasses from TRH spawning facility

I) Background

- A) TRH Hatchery Coordination Team has not held a meeting since last TRRP FWG meeting (will be discussed at 4/27 meeting). As a result, the CA Policy Team was contacted and asked for input
 - 1) CA Policy Team – entity that coordinates hatchery practices throughout the state (including 2 federally ran hatcheries)
- B) No similar projects have been implemented at any other hatchery in California
- C) There is no statewide policy that currently exists restraining the use of carcasses from hatchery returns
- D) Need to consult and be permitted through NPDES (National Pollutant Discharge Elimination System)

II) Concerns From CA Policy Team Representatives

- A) Pathogens are a concern but would be minimized if they are used within drainage. Would also want to consult EPA's Clean Water Act to make sure no violations (Dr. William Cox)
- B) Pathogen concerns are valid. If program is implemented in the Trinity Basin, carcasses should be limited to only Fall Chinook returns. Both Spring Chinook and Coho populations are *R. sal* (bacterial kidney disease) positive and would not want to augment the levels already in the natural population (Dr. Mark Adkinson – Statewide Fish Health Coordinator)
- C) Group might want to investigate the use of "carcass analogs", which provide the same nutrients but without the pathogen risk. They are basically pasteurized carcasses. (Dr. Mark Clifford – Statewide Hatchery Coordinator)