# Report on the EWA 2005 Workshop

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## Statement of Task

This document satisfies Task 4 of the Scope of Work. Task 4 is described below.

Task 4. Subsequent to the workshop individual panel members will submit written comments, suggestions and recommendations regarding continued operation of the EWA, specifically with regard to the science underlying EWA fish protection actions. The written comments should address the questions contained in the panel's charge.

## My Overall Impressions and Miscellaneous Comments

The 2005 workshop differed from the previous workshops in several ways. Unlike the prior four years, this year was not a formal review. Also, there were only four invited experts, rather than the larger formal panel. The four experts had previously served on the official review panel in the past. The format of the workshop also differed from past years. Background material on the EWA actions taken was provided prior to the workshop and relatively less time was spent on agency people verbally describing what was in the material. The one and one-half day workshop this year involved much more time devoted to presentations by non-agency people (invited experts, stakeholder scientists). These presentations included two by me on the topic of population modeling.

I thought the new format for an off-year workshop (not a formal review) was interesting and useful. I doubt whether the workshop will have an affect on next year's EWA activities, but the workshop did encourage communication on technical issues that are central to the future evaluation of a long-term EWA. There was much honest and open discussion as to how to evaluate the ecological benefits of the EWA. The water supply and peace aspects of EWA are pretty clear. The remaining thorny question is "Should the EWA be evaluated on whether it results in demonstrable population benefits to salmon and especially to delta smelt?" This ecological benefits question has haunted EWA from its inception and has been a constant theme throughout the previous 4 years of EWA reviews. This issue will not go away, and the issue will only get more attention as delta smelt are at record lows numbers and as the funding for EWA switches to other than public sources.

It is somewhat unfair that EWA carries this burden alone and under such intense scrutiny. The amount of environmental water available to EWA is really quite small compared to the dynamics of water in the system. Where is the accounting and scientific

scrutiny of the other programs in CALFED designed to benefit fishes? If EWA is to carry the major portion of the burden, then EWA should be given the monetary resources to purchase enough water to really impact the ecosystem. Otherwise, we have set the bar very high (expect population effects) and have not given EWA the amount of water needed to make a difference. This is both unfair and a recipe for failure when ecological benefits are evaluated. The current situation with the POD just increases the attention paid to EWA, which cannot be expected to "solve" the POD issue alone.

I was again disappointed (but no longer surprised) when I read the material about this past year's EWA activities. After 5 years, I am convinced that the agencies communicate regularly and strive to make decisions they feel would most protect the species at risk. There is a lot of science that underlies this decision-making (decision matrices; give and take among the working groups, interpretation of monitoring data, etc.). Indeed, the expert knowledge that is used may, in fact, result the maximum practicable benefits that are possible. The two reports (Poage on delta smelt; Brandes and White on salmon) are well-written and provide clear documentation of the EWA activities and their rationale for 2005. They should be commended for preparing these reports. They are honest and clear documentation of EWA actions.

Both reports provide the basis of my disappointment and the fodder for my two major criticisms of EWA: (1) Poage states that "…the performance measures (for EWA actions on delta smelt – added by me) do not include meaningful biological indicators.", and (2) the report by Brandes and White is devoted to Delta Action 8 and VAMP. EWA has made some, but in my opinion, not enough progress towards assessing EWA actions on biological metrics. The salmon portion of EWA is too married to Delta Action 8 and VAMP. I cannot tell for sure, but it seems that these actions are taken each year because they were taken last year (i.e., it is a given there will be Delta Action 8-related and VAMP-related actions).

## My Short-Answer Responses to the Fundamental Questions Posed to the Invited Experts

- Are the justifications for fish protective actions taken in 2005 sufficiently well described so that an impartial science panel would conclude that expenditure of EWA water provided demonstrable benefits to target fish populations and their environment?

***The actions taken were very well described and documented. I think the actions benefited individuals of the fish species at risk, but I cannot determine how many individuals were saved or if the actions had demonstrable benefits beyond the saving of individuals.***

- Are assumptions clearly stated and reasonably based on current scientific thinking?

***The actions, and how they were arrived at, were clearly described, and I think there is a lot of good science that underlies these deliberations. While the actions were well***

***documented, the assumptions were more often implied and less often explicitly stated. I suspect some of the assumptions are based on inherited information, rather than a careful examination of the available (and perhaps newly obtained) data and information. Some actions, and the reasons for some actions, appear to be based on historical precedents and tradition, rather than careful, thorough scrutiny of the available data. It appears that almost all of the information used is from the agencies' own information and data bank. A broadening of the information (consideration of the analyses performed by the stakeholder's scientists is but one example) would greatly help the scientific underpinnings of EWA actions and give additional credibility to the assumptions underlying these decisions. The idea that a broad range of feasible alternative assumptions were considered would help the integrity of EWA.***

- Do the data, analyses, results and conclusions presented lead one to a thorough understanding of the benefits of the actions to targeted fish populations?

***The documentation describing 2005 EWA actions allows one to understand the actions taken, but stops short somewhere before allowing one to appreciate the ecological benefits obtained for the fish.***

- Are the analytical techniques used capable of determining the significance of project benefits for targeted fish populations? If not, what additional or alternative analytical techniques are recommended?

***The analytical tools used to determine the benefits to fish have improved a little since the first years of EWA (e.g., some of statistical analyses have improved), but the analytical tools still fall short of being able to quantify ecological metrics of benefits beyond water spent or numbers of individual fish likely affected. I am convinced (as I was by year 2) that the current personnel working in the EWA do not have the time or skills to develop and use the analytical tools needed to push the analysis to the next level. This is clearly recognized by most involved, as a major theme of the 2005 workshop was the invited experts giving talks on some of these more sophisticated analytical tools. I think the EWA team deserves some credit for taking a chance on this year's workshop and trying to get past rehashing reports and more emphasis on increasing the awareness about these more sophisticated analytical tools. Also, the inclusion of stakeholder analyses also broadened the pool of information.***

- Were uncertainties considered in describing the benefits of proposed fish actions? What uncertainties and limitations were not addressed?

***The major uncertainties (e.g., type of water year) were likely considered because the EWA people involved know the system and are well aware of importance of considering these uncertainties. Few of the uncertainties were explicitly discussed in the written reports, but most were discussed during the workshop. Most all of the uncertainties that were discussed were treated in a qualitative manner, and not in a quantitative manner. I will mention one major (non-scientific) uncertainty that was***

***extensively discussed was the expectations placed upon EWA with respect to ecological benefits (i.e., whether EWA should be expected to have population responses or not).***

- Are the CALFED Science Program and EWA agencies embarking on an overall program of monitoring, research and modeling that will lead to consensus conclusions about the benefits of the EWA to target fish species and their environment? This is of particular importance should the CALFED agencies decide to pursue a long-term EWA.

***I think slow progress is being made towards a coordinated scientific program that would enable consensus conclusions about the ecological benefits of EWA. I am involved in a PSP-funded project to develop delta smelt population models, and other PSP projects will provide new tools and interpretations to data that will increase our collective abilities to quantify the ecological benefits of EWA. The synthesis being performed as part of the POD analysis will also help. However, EWA involves a relatively small amount of environmental water, so while these tools may be useful to help in allocation questions about where and when to spend EWA assets, hoping they somehow will provide the magic answer that EWA is having population level effects is unfounded. I can almost say right now that the amount of water involved with EWA, overlain on the dynamics of this complex system, likely implies that EWA is not having population level effects. But this is more my opinion than a scientifically arrived at conclusion, and the analytical tools and monitoring data are still needed to defend this type of statement and to ensure that the environmental water used is being used optimally.***

- What specifically are the CALFED Science Program and EWA agencies doing in response to recommendations by the 2004 (and earlier) EWA Review Panel? Are the activities likely to increase the information base that can be used to allocate EWA water and evaluate the benefits of these allocations?

***As in previous years of formal reviews, some of the specific recommendations from the 2004 review were implemented. Small victories can be claimed over the years, such as revising the JPE and tweaks and formal documentation of the decision matrices. During the past year, results from particle tracking model simulations were used, a formal review of the CALSIM-II was conducted, and the workshops (Delta Action 8; Predation at CVP and SWP intakes, Salmonid Monitoring) again appeared to be very useful exchanges of information. These workshops are good and should be continued. For most of the other recommendations, the response seemed to be that the EWA agencies were waiting for CALFED Science Program to do something of substance. This is both good and bad: it illustrates the need for the Science Program but also implies slow progress. Current personnel do not have the time, and sometimes the skills, needed to really implement many of the more important past recommendations. This is not a criticism of the individuals involved, who are hard working and sincere scientists, but more a criticism of upper management who have not provided the needed resources or organizational opportunities to get outsiders involved. Finances are tight in California, and the investment in the early years that would have paid off now, was not made.***