



# TRINITY RIVER RESTORATION PROGRAM

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To: Trinity Management Council (TMC)

From: Scientific Advisory Board (SAB)

## **Subject: SAB Comments on Peer Review of FY13 Preliminary Science Workplan**

As described in the attached peer review report, the Trinity River Restoration Program (TRRP) retained the services of an independent, expert panel to conduct a review of its Fiscal Year 2013 (FY13) Preliminary Science Workplan (FY13 Workplan). This review was initially requested to be conducted by the SAB; however, we are currently engaged in a high-priority and time-sensitive comprehensive review of past channel rehabilitation actions (“SAB Phase I Review”). We felt that our role as an advisory board was better served by supporting an outside peer review of the FY13 Preliminary Science Workplan by recognized experts, followed by SAB overview of peer review comments and specific guidance for implementing the most relevant recommendations. We are pleased with the peer review recommendations and the panel’s recognition of the more proper role of the SAB as an advisory group. We intend to give specific attention to the peer review comments where appropriate in the SAB Phase I Review. We have individually reviewed the panel’s peer review report and overall we endorse their findings, with the caveat that in most cases we have not yet reviewed the individual activity proposals in great detail. Our individual comments follow (without attribution) and include more details on the areas in which we are in most agreement with the panel, along with areas in which we have additional, or slightly differing, comments. Areas where we differ from the panel, specifically relating to prioritization of FY13 Workplan activities, are described below:

- We maintain that revisions to Activity 13-3 (*Rehabilitation Site Effectiveness Monitoring & Analytical Framework*) be postponed until after the completion of the SAB Phase I Review so that they can be informed by the review’s recommendations.
- We recommend reconsidering the priority of Activity 13-27 (*Integrated Flow and Sediment Modeling to Predict Planform Dynamics*) and postponing it in its present form. Because Activity 13-27 is essential for assessing channel response to management actions, it should be informed by recommendations forthcoming from the SAB Phase I Review.

We recommend that the TMC incorporate the panel’s proposed adjustments to the prioritization of the FY13 Workplan, with our additional comments, as well as carefully consider the panel’s broader comments regarding the Program as a whole.

## **SAB Member 1:**

The panel has done an excellent job in a short amount of time, and I commend their efforts, both in terms of evaluating the FY13 Workplan and in providing insightful programmatic review. I endorse the panel's General Comments and Overall Conclusions, which are right on target and echo recommendations being prepared by the SAB as part of the Phase 1 Review.

I accept the panel's evaluation of the FY13 Workplan, with the caveat that I have not reviewed the individual activity proposals because of being tasked with the Phase 1 Review. This is a somewhat unusual situation, as the SAB would normally be actively engaged in the review process and would provide scientific advice to the program regarding the workplan and peer reviews.

Regarding Activity 13-3 (*Rehabilitation Site Effectiveness Monitoring & Analytical Framework*), I think the panel and the SAB are in agreement that this is an important topic that deserves immediate attention, but the current proposal is insufficient and needs revision before it can be recommended. It is unclear whether a revised proposal could go forward in FY13, and I think revisions would benefit from seeing the SAB's Phase 1 Review recommendations regarding the development of a decision support system for implementing an adaptive management framework. This was why our prior comments indicated that the proposal was premature. I also disagree with the panel regarding Activity 13-27 (*Integrated Flow and Sediment Modeling to Predict Planform Dynamics*). This topic is an essential element for assessing channel response to management actions, but I have not evaluated the strength of the proposal.

Finally, the panel might consider the following editorial revisions:

- pp. 5-6, Sections. 3.2.1-4: This is more of a comment than an edit. Referencing the Integrated Assessment Plan (IAP) objectives at the start of these subsections is very useful, but past workplans had a tendency to invoke IAP objectives without clearly stating how the activity would specifically meet the objectives. I wonder if this was also the case in FY13 and, if so, the panel might consider commenting on this issue.

*[Response from peer review panel: The key deficiencies that identified in Section 3.3.3 of the peer review report speak to the fact that the workplan does not make the link between the IAP objectives and the proposed work sufficiently. Specifically, hypothesis-based conceptual models are missing for all of the major subsystems--geomorphology, fish populations, and riparian processes--and a first priority is to develop or update these.]*

## **SAB Member 2:**

The peer review largely meets the purpose and follows the comprehensive scope as provided by the TRRP. The document synthesizes a considerable amount of information very well. The individual plans are typically quite long and vary in detail and clarity, so it is especially commendable that several plans were evaluated in a small amount of time. The overall structure and presentation of the peer review is excellent, and I endorse it. However, I have comments about it that could improve it or at least lend some context.

The TRRP has a complex organizational structure that mirrors the complex life history of its prime beneficiary – anadromous salmonids. In order for both to be successful, all the separate requirements must be yet integrated. The TRRP has had some difficulty in mensurative and adaptive management tasks (e.g., sampling, metrics, hypothesis formulation, management targets, modeling and analysis) as well as integrating and prioritizing them. The scope for the review leans more towards integration and prioritization and the peer review reflects this.

The peer review panel suggests that performing the core activities of an adaptive management program should be integrated in the TRRP. The review's section on this (Section 3.1) is very well written and instructive. Their reluctance to simply "add to the current list of reporting obligations" is especially astute.

The panel further addresses integration and individual aspects in Section 3.1. I disagree with the implication that efforts to quantify habitat are high given that the most compelling evidence to meet the fundamental question is adult run size and smolt out-migration. Imagine, someday, a 15 minute presentation in front of a harried Congress that could involve just two questions: "Have fish numbers increased", and "How come"?

Of course, the TRRP's mission is focused on improving the salmonid fishery, but a primary way chosen to do this is via habitat improvement. The main ways deemed to improve habitat are to build it directly, facilitate river processes via streamflow and gravel augmentation, and the anticipated synergy between these two approaches. Fish numbers may be the bottom line, but knowing what influences it is important from an adaptive management perspective as well as simply justifying resource expenditures.

The review mentions the development of a salmonid population model (e.g., SALMOD) and its importance and I concur, but I don't think it is "overarching" or has been over-shadowed by the various sub-objectives. Many products of the sub-objectives are needed for building such a model (and there are still data gaps), and the habitat-enhancement objectives, as well as others, requires activities that are extraneous to a salmon population model.

We were not expected to review the individual plans, so detailed comments on each plan could duplicate the efforts of the panel members. However, I briefly read the Activity 13-13 work plan "Map and quantify riparian vegetation" and initially planned on incorporating my specific comments about it here. Based on what I know about past efforts and the 2013 plan, the peer review panels comment about it largely match my own, and the differences are minor and best addressed elsewhere.

**SAB Member 3:**

I agree with the assessments of SAB Members 1 and 2 of the report and would like to add that Atkins and the review panel have done an admirable job. In addition to SAB Member 1's suggested edits, I think that it should be made clear on page 4 paragraph 2 (i.e., "This activity -- which is at the core of adaptive environmental assessment and management -- appears to be currently accomplished via outside reviews and the SAB.") that the synthesis is only being done by SAB through the Phase I review. My understanding is that this (the synthesis) is a unique, one-time task by the SAB and is not part of SAB's traditional role.

#### **SAB Member 4:**

I reiterate the feelings of other SAB members - the external review panel has done an impressive job of consuming and summarizing a large amount of information represented by the FY13 Workplan in a very short time. I appreciate the review panel's work and fully support their General Comments and Overall Conclusions. Similarly to SAB Member 1's comments, I accept the panel's evaluation and programmatic comments, but also must note that I have not reviewed all of the FY13 Workplan components covered by the panel's report.

Of most particular note in the external review panel's report is the programmatic thread that the panel weaves between individual activity evaluations. The panel notes that the current plan development and work proposal system is not sufficient to support the TRRP's adaptive management needs. The panel found that they could not identify the core components of a program-wide adaptive management framework, in particular, the analysis and interpretation of monitoring observations. This shortfall in the Program is seen to be so critical that the panel goes beyond their specific task of reviewing a single year's suite of proposed actions to suggest that the TRRP would be well served to consider broad reorganization, structuring the TRRP "around consistent, integrated synthesis and analysis that links cause and effect, action and response, assessment and management..." Programmatic reorganization would build specific analytical capacity within the TRRP rather than relying on the SAB and external reviewers. The panel notes that it is only through adopting a formal, complete adaptive management process that the management loop would actually be closed.

A key component of a programmatic adaptive management framework for the TRRP are predictive models - models of sediment dynamics and salmonid population dynamics that are incorporated into the Adaptive Environment Assessment and Management framework as identified in the IAP, models of riparian vegetation dynamics and models that link project feature performance with the design of future projects. The review panel identified a common weakness across the proposed work for FY13 and within the TRRP in general that there was the need for "basic strengthening of the analysis, interpretation, and adaptive management core of the program."

While it may seem overreaching and none too constructive for a FY13 workplan review to focus on programmatic issues, I see it as encouraging that structural weaknesses within the TRRP are clear to external reviewers. The reviewers find that many of the necessary pieces are in place, that much of the required data collection is proposed or underway, but to make the Program function as its mission holds, additional work that is fundamentally different from that proposed in the FY13 Workplan is required. That the external review panel could see beyond the set of proposed actions and place the work in the context of the overall program is the hallmark of a thorough and insightful review.

## **SAB Member 5:**

The Peer Review is very well done and the process was conducted and documented in a timely and professional manner. Atkins and the expert panel members are to be congratulated on a job well done.

I agree with comments submitted by SAB members 1, 2 and 3. I agree with SAB Member 3 that the Phase I Review synthesis is a unique one-time task by the SAB. This task appears to have resulted from observations by TRRP partners and stakeholders that the Adaptive Management part of the Program was not being accomplished, and they requested that the SAB Phase I Review actions and make recommendations to the Program for going forward.

The recurring theme of the Peer Review is a lack of integration and identified linkages among monitoring, analyses, interpretation, and subsequent revised management actions. The Peer Review agreed with the Bradford and Hankin (2012, p.21) recommendation that integration and synthesis "be elevated to be a significant component of the adult assessment program." I agree and the SAB Review will place considerable emphasis and give specific recommendations on developing this integration process as part of an internal, centralized Decision Support System.

The review mentions development of anadromous salmonid population dynamics model to be incorporated in the Adaptive Environmental Assessment and Management framework. This is an important component of a much needed Decision Support System. Not only may this component (e.g., SALMOD II) be "overshadowed by numerous sub-objectives," but the integration of flow, sediment and physical construction actions is overshadowed as well by numerous sub-objectives.

The Peer Review section Sediment and Geomorphology, also recommends "development of a model...to focus and evaluate monitoring actions and, more importantly, to provide the analytical structure required to link management actions....but the linkage between these continuing observations and local channel response providing desired habitat must be more explicitly defined and tested." Both these linkages are necessary components of a much needed Decision Support System for the Program.

Collectively, the above integration efforts are expected to greatly increase understanding of the river morphology within the geomorphic context, e.g. process domains, and how the system may be expected to evolve, producing improved habitats and increased freshwater anadromous fish production.

For these reasons both activities 13-3 and 13-27 should be postponed until better developed and informed by the SAB Review.

The Peer Review is right on in recognizing that an integration effort is clearly needed, and should be considered a core activity, rather than conducted by outside reviewers, contractors, and advisors. This appears to have been the intent of the original TRRP organization design, namely the Adaptive Environmental Assessment and Management Team (Appendix C Implementation Plan for the Preferred Alternative of the Trinity River EIS/EIR). With such a core activity in place, the SAB would perform the more advisory role of reviewing the Program's approach to incorporating science (peer reviews and program responses) in assessing system response, adjusting monitoring activities to evaluate predictions, inform models and suggest modifications to future management actions along with adjusted monitoring to test those actions. In this role the SAB would provide periodic

advice on how well the science supports the Adaptive Management aspects of the Program and offer recommendations for improvement.

While the request for proposal process was not fully developed and proposals were poorly documented, in some cases, it has provided an important template for future workplan reviews. The Program should improve the process by requiring proposals to include better documentation, focus on specific IAP objectives, and identify linkages to other workplan activities, using the Peer Review Panel comments as guidance to build a science supported management program. In addition, I recommend that this process of outside peer review, followed by SAB oversight, be continued in the future.

The insights provided by the reviewers provide a firm basis for much of the discussion by SAB to date, and reinforce recommendations forthcoming from the SAB Phase I Review.