



**State & Federal Contractors  
Water Agency**

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Dr. Peter S. Goodwin  
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[Delivered via email to science@deltacouncil.ca.gov](mailto:science@deltacouncil.ca.gov)

SUBJECT: Comments on first draft Delta Science Plan

Dear Dr. Goodwin:

The State and Federal Contractors Water Agency (SFCWA) thanks you for the opportunity to provide comments on the first draft of the Delta Science Plan ("Plan"). In this letter we provide you with a summary of the comments we received from our member agencies. We see much to commend and some areas of concern related to the structure and details of the Plan. We have discussed some areas of concern with your staff and are encouraged by staff responses. We look forward to engaging with you further in the development of the next draft to ensure that the Plan and its contents reflect the vision of collaborative synthetic science you intend to promote in the Plan.

SFCWA members have prioritized five comment areas, and believe that small, but substantive, changes in language and specification within the current draft plan would go far toward articulating a science program that will meet the needs of Delta planners, resource managers, and policy makers.

**1. The Delta Science Program should serve as the clearinghouse for science in the Delta - identifying existing reliable knowledge, providing guidance to resource managers and policy makers, and identifying focal areas for future inquiry.**

SFCWA appreciates that the Plan anticipates the program's role in synthesizing the available science into a common and trusted body of science for decision-making (p. 10), including providing forums for regular scientific briefings and information exchange (conferences, workshops, etc.), facilitating various science efforts (such as development of the shared action agenda), and recognizing the need to improve data management and accessibility. These will definitely assist the Delta Science Program (DSP) with achieving its overarching goal of "one Delta, one science."

The phrase "one Delta, one science" appears throughout the Plan and is described as an inclusive and interactive science community that works together to build a shared body of scientific knowledge (p. 1). SFCWA believes "one Delta, one science" should mean achieving a shared understanding of the areas of scientific agreement and disagreement, the reasons for disagreement, the uncertainties, and the steps to be taken, including adaptive management, for narrowing disagreements and lessening uncertainties.

In this regard, besides “facilitating” development of the shared action agenda, on occasion the DSP may be called upon to facilitate science more in the role of adjudicating scientific disagreements for the purposes of informing policy decisions that cannot remain paralyzed by such conflicts. SFCWA promotes that true collaborative efforts be the basis for resolving such scientific disagreements. Hence, the Plan should explicitly recognize the occasional need to arbitrate “one Delta, one science” as a basis for taking action in the face of uncertainty. The Plan should add a description of how such efforts to reconcile divergent scientific perspectives in key areas would be carried out, addressing such things as how science issues for arbitration are selected and defined, how participants and facilitators are selected, and the nature of the products of such processes. The shared action agenda and independent peer reviews are elements of such a structure. Other methods can and should be employed as appropriate as well, such as shared learning (at times requiring facilitation; see Karl et al. 2007<sup>1</sup>) and issue-specific technical summits (e.g., ammonia summit) or workshops. If this level of detail is planned for the action agenda, more detail should be provided in the Plan on the elements to be included in that agenda.

The Plan also envisions an open and interactive science community, which SFCWA strongly supports. Science in the Bay-Delta system, as with most systems, is distributed among many parties, including regulatory agencies, which have various missions and purposes. The key role of the Plan should be to assist in melding those efforts into a more efficient, effective, and informative effort, while respecting the independence of the various science programs. As the Plan notes, it will not supersede or replace current efforts or usurp existing statutory authorities. What is needed is a structure to bring the many efforts together in ways that create “one Delta, one science” while eliminating needless duplicative processes to free resources needed elsewhere.

In this regard, SFCWA supports the Plan’s aim to use science “rotators” to supplement core career staff (from state and federal agencies, local government, universities, stakeholders, and non-governmental organizations) to help implement the Action Agenda, coordinate updates to the *State of Bay-Delta Science* report, or participate in other responsibilities of the Delta Science Program. Rotators will help ensure a continuous infusion of new ideas, ensure the staff facilitating “one Delta, one science” is representative of the community the Delta Science Program serves, and contribute to building trust that processes used are open and transparent.

The specific role of independent scientific review and advice, as well as the process for determining the need for its solicitation and the charge to be provided to panels should be clearly articulated. Figure 4.6-1 (p. 34) is missing a box for independent review panels. As currently drafted, the role of independent review panels could be inferred to be that these will be the *de facto* interpreters of best available science for the Delta. SFCWA believes an appropriate role is to help resolve technical or scientific areas of controversy or uncertainty. Such uses of independent review would not negate the DSP’s in-house efforts to facilitate adjudication of occasional scientific disagreements.

The DSP’s draft policy and procedures for independent scientific review (Appendix 1 to the Plan) is a step in the right direction, but could better define the various roles of independent review such as ensuring appropriate project design, program evaluation, or problem resolution. When the services of an independent review panel are determined to be warranted, the science synthesis team should collaborate with the Review Planning Group to identify what relevant information should be provided to the independent panel. This approach will better assure that all relevant information is thoroughly represented from both science and policy perspectives.

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<sup>1</sup> Karl HA, Susskind LE, Wallace KH. A dialogue, not a diatribe: Effective integration of science and policy through joint fact finding. *Environment* 49(1):20-34.

**2. The science program should emphasize and prioritize the generation and dissemination of science that addresses the critical uncertainties that inhibit the success or timely implementation of management actions.**

The science action agenda (pp. 6-7) is envisioned by the Plan as the mechanism for identifying priorities for addressing the “grand challenges.” The science action agenda (pp. 6-7) is an opportunity for the entire Delta science community to take a great step forward on collaboration. SFCWA appreciates that the program will be developed using an open process, utilizing high-level guidance from the Policy-Science Team (PST) to identify topics to be addressed based on key scientific uncertainties pertinent to policy making and regulatory processes. Hearing from the policy makers regarding the specific scientific matters they believe need to be addressed will be critical to developing a responsive action agenda and its related work plans.

**3. The science program should contribute to a better understanding of the ecological processes that shape and sustain the Delta’s ecosystems by providing an open science forum in which alternative hypotheses are vetted and uncertainties reduced or eliminated.**

SFCWA appreciates the collaborative approach to the development and mobilization of science reflected in the Plan. The PST and Science Synthesis Team constitute fresh ideas for bringing together different science perspectives, including those of the Public Water Agencies. In that vein, SFCWA offers the following ideas:

The Science Synthesis Team appears to have an incomplete charge (p. 13). We recommends the charge be broadened to: “This team will integrate and synthesize relevant research and current knowledge to [improve the overall understanding of Bay-Delta ecosystem structure, processes, and functions, while reducing agency bias. It is expected that emerging new knowledge will beneficially](#) inform ecosystem restoration and water management decisions.” At least part of SFCWA’s concern on this point is what is meant by “water management decisions” (p. 13). The history of water management decisions and the experience of SFCWA’s member agencies is that the phrase most often means flow-related restrictions regardless of their effectiveness. As the Delta Plan articulates, a much more comprehensive approach is necessary to address all stressors in furtherance of the coequal goals.

The Policy-Science Team does not include non-agency entities with science programs (p. 12), even though such entities include those that are likely to be affected by many PST decisions. The objective of the PST (p. 12) is to ensure there is a high level of trust and understanding between decision makers and the community of scientists on whom they depend. There would be value to the PST in having participating scientists from independent non-agency programs. SFCWA recommends modifying the PST accordingly. Doing so can help assure that results and findings drawn from research, monitoring, and modeling are better integrated into the policy arena with broader understanding and acceptance. SFCWA also believes there is value to including members on the PST that have specific expertise in operating large water systems. These members can assist with fully achieving the PST’s purpose (p. 10) to “*Facilitate shared understanding of policy priorities and scientific information and the direct communication of new understanding into actionable alternatives for management and policy changes.*”

**4. The science program should contribute to an effective and efficient Delta science agenda that addresses the most pressing uncertainties that confront policy makers in implementing effective management actions.**

The Plan envisions developing a common, integrated monitoring framework that is responsive to management questions for which answers are needed (Section 4.2). Of course, monitoring is a central component of any successful science program, and SFCWA appreciates that the science program anticipates the need to address both current and future monitoring protocols and programs. Such a monitoring infrastructure effort has potential to radically improve our understanding of the science of the Delta. An important aspect of developing a new monitoring framework includes monitoring for environmental attributes and food web components concurrently with (both spatially and temporally) monitoring for fish abundance and distributions. This should be included as both an objective and an action under Section 4.2.

**5. The science program should engage the expertise necessary to draw parsimonious and key findings from research, monitoring, and modeling, and convey those findings to resource managers and policy makers.**

The *State of Bay-Delta Science* report has potential to become a primary source for findings and their interpretations drawn from research, monitoring, and modeling, and to convey those findings to resource managers and policy makers. This will require the science program to engage explicitly the necessary expertise to examine the research, monitoring, and modeling data and draw these together in one place to describe all viewpoints, and the complexity of the science and its uncertainties. Without such an institutional commitment, resource managers and policy makers are left on their own to determine how the current science fits into their management prerogatives and actions.

The Plan calls for “relevant experts” to be used to write the *State of Bay-Delta Science* (p. 7, line 16); however, there is no discussion of what is meant by the phrase (though presumably what is meant is experts with pertinent skill sets and a track record of independent analysis and competent interpretation of available data). More details regarding what is envisioned as the process for developing the *State of Bay-Delta Science* will be helpful. Including out-of-area scientific experts in conservation biology will be beneficial.

**Concluding Comments**

SFCWA greatly appreciates your leadership in the effort to develop the Delta Science Plan. We look forward to continuing to collaborate in the development of a flexible and reputable Delta Science Plan that better informs and thus improves management decisions related to the Delta in achieving the coequal goals.

Sincerely,

*Valerie Connor*

Valerie Connor, Ph.D.  
Science Program Manager

cc: SFCWA member agencies

## RECOMMENDATIONS FOR SPECIFIC WORD CHANGES

### Chapter 1, P. 11, Lines 5-15

***Identifying, Maintaining, and Advancing the “State of Delta Knowledge”***- The state of knowledge of the Delta system is advancing rapidly and distributed across many institutions, which makes it difficult to assimilate in a timely manner. This plan will facilitate the maintenance and growth of Delta-wide knowledge through the activities of the Science Synthesis Team, Policy Science Team, and the Delta Science Program. The Science Synthesis Team and Policy Science Team will play key roles in establishing Delta-wide approaches for prioritizing research (Ch 4.1), integrating monitoring and associated research (Ch 4.2), and conducting targeted and ongoing synthesis activities (Ch 4.5). The Delta Science Program with others will facilitate Delta-wide approaches to data management and accessibility (Ch 4.3), shared models (Ch 4.4), and independent peer review (Ch 4.6). To more effectively inform policy and management decisions and the public, this plan develops a number of information sharing avenues (Ch 4.7). Recognizing that there may occasionally arise a need to reconcile focused scientific disagreements in order to get to one Delta, one science, the Delta Science Program will play a key role in establishing forums for open discussion and reconciliation of such disagreements using a suite of available tools (Ch. 4.8).

### Chapter 2, P. 12, Lines 37-38, P. 13, Line 1

Membership will include the Directors of federal and State agencies with water and environmental decision-making responsibilities in the Delta and science leaders appointed by the Delta Lead Scientist, which will include members of independent non-agency science programs and, as appropriate, members of USBR and DWR with understanding of system operations.

### Chapter 4, P. 27

Add a new objective.

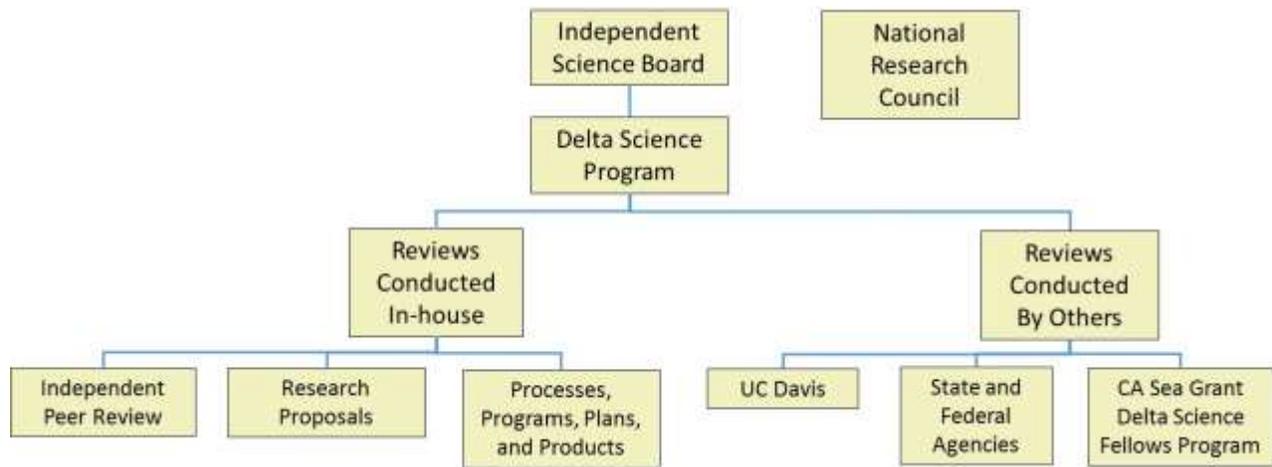
- ◆ Assure that monitoring for environmental attributes occurs concurrently, both spatially and temporally, with monitoring for fish abundance and distribution.

### Chapter 4, P. 27, Lines 19-24.

4.2.3 Initiate a two-year comprehensive assessment to identify performance measures and construct a comprehensive and coordinated common monitoring framework which will, among other things, concurrently collect data on fish distribution and abundance and relevant environmental attributes. This will build from successful examples of monitoring design, earlier work on a unified monitoring, assessment and reporting framework for the Delta (Luoma et al. 2010), and published studies suggesting key performance measures (e.g. Cloern et al. 2012; Golet et al., in press; Luoma et al. 2010).

### Chapter 4, Figure 4.6-1

(Includes independent peer review.)



Appendix 1, P. A1-2

*Materials for Review*

Materials to be reviewed by the Independent Scientific Review Panel include the review document or documents, and pertinent background materials. When the services of an independent review panel are determined to be warranted, the Science Synthesis Team should collaborate with the Review Planning Group to identify what relevant information should be provided to the independent panel. Background materials will not be limited to the (specific) technical questions and issues in the Charge to the Panel, but can include documents describing the legal and regulatory context of the review questions and tasks, and consider the management implications of materials provided to the review panel and relevant to the review report. Other study materials or information identified as pertinent to the review introduced by panel members during the panel meeting can be used at the discretion of the panel. Panels are encouraged to request any additional information or other materials that might facilitate their deliberations and report production. Stakeholders and other interested parties may submit materials to be considered by the review panel; however, final decisions relating to any materials to be provided to the review panel rest with Lead Scientist.