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**Meeting Date: June 21, 2007**

## CALIFORNIA BAY-DELTA AUTHORITY

### Lead Scientist Report

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#### Introduction

Since this is my first report to the California Bay-Delta Authority and Bay-Delta Public Advisory Committee since taking on the position of Lead Scientist for CALFED I want to say a few things about the vision and the process we have been working to establish. Given the pace of events in California water management, there are many more science issues than the Science Program can effectively address in a timely manner. The vision and the process are intended to help us make strategic decisions about what to address and what to set aside for the present. In laying out our vision and process, I will illustrate how it is working by discussing progress in those issues we are currently addressing.

#### Vision and Process

We have identified three key elements of a vision for the Science Program: 1) The Science Program should take a broad synthetic view of the Delta and its science needs, including a landscape perspective of the Delta and its component ecosystems; 2) The Science Program should be at the center of the integration of science across agencies and across mandates; and 3) The Science Program should emphasize the importance of good science, provide an ecosystem perspective, and guide adaptive management to help yield better decisions about the Delta.

Within the context of this vision we determined that the Science Program should engage in activities related to integration of science among activities relevant to CALFED and its mandate (i.e., Delta Vision, End of CALFED Stage 1, Bay Delta Conservation Plan (BDCP), Delta Risk Management Strategy (DRMS), Interagency Ecological Program (IEP), Delta Regional Ecosystem Restoration Implementation Plan (DRERIP), Performance Measures), develop effective science communication tools and products, take the lead in scientific review of CALFED actions and products, and support targeted science to address questions relevant to CALFED. Most of the ongoing activities of the Science Program fit easily into these categories; however, we have established an executive committee to review ongoing activities and any requests for involvement in new activities to ensure that staff are fully engaged but not overcommitted and to ensure that we are focused on the highest priority activities.

We have also taken tentative steps toward developing a long-term vision and a strategic plan for the Science Program. We have not made as much progress on this as I had

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hoped. We have been preoccupied with pressing immediate needs for science. The future is also highly dependent on what comes out of the Delta Vision process. However, I hope to have the framework of our long term vision and strategic plan to present when next we meet. Key questions with regard to the future include whether our focus will continue to be the Delta or whether we will be expanding our geographic scope to include the watersheds or perhaps all of California and what the governance structure will be.

Part of our strategic planning includes how the Science Program will build on the foundation of excellence that previous Lead Scientists have established. We hope to work within the State budget process to establish a more certain foundation of financial support for the Science Program. We would also like to reestablish a stronger base of federal support. At present we receive financial support for the Lead Scientist, the Special Assistant to the Lead Scientist and some discretionary science funding from USGS. This support is crucial to the independence of the office of the lead scientist but is a comparatively small fraction of our overall budget. We hope that we will be able to secure additional federal support as we move toward the critical phase of strategic planning for the Delta Vision. Finally, we are reviewing the structure of our staff and administrative positions to ensure that we have the right balance of skills. With our present structure there is limited opportunity for advancement of technical staff within the program. I hope that we can establish some higher level scientific positions that will strengthen our capacity to analyze and synthesize scientific information about the Delta and provide the potential for scientific advancement for our technical staff.

#### Integrating Science Across Agencies

We regard the integration of science information across agencies and mandates as one of the Science Programs key responsibilities. At present, there are numerous major projects underway that require science input: IEP; BDCP; Delta Vision including DRMS; CALFED End of Stage 1 Report and DRERIP. The Science Program is working to establish a coordinated process for providing the necessary science input.

#### IEP Lead Scientist

At the suggestion of the Science Program, the IEP directors recommended that a new position of IEP Lead Scientist be established. This position would provide the scientific leadership needed by the IEP and would provide the scientific interface between the Science Program and IEP. The IEP Lead Scientist would split his/her time between Department of Fish and Game's office in Stockton, where he/she will work directly with the IEP Manager, and the CALFED Bay-Delta Program office in Sacramento. The CALFED Bay-Delta Program has committed to providing the position and salary funds for this position. Once this position is established it will provide direct and continuous connection between IEP science and the Science Program. As the IEP lead scientist will be a higher level technical position, it will also be a step toward establishing higher level positions and opportunities for promotion within the Science Program.

*Bay Delta Conservation Plan (BDCP)*

At the suggestion of the Science Program, the BDCP has also adopted a “lead scientist” model for addressing its science needs. Denise Reed was named lead scientist by the BDCP Steering Committee and the Steering Committee is in the process of establishing the team of advisors to work with Denise. Denise has expressed willingness to work with the Science Program to coordinate science advice to BDCP and the Delta Vision Task Force. We look forward to working with Denise in facilitating the flow of science information between these critical projects.

*Delta Risk Management Strategy (DRMS)*

As previously reported, the Science Program, under the auspices of the ISB, is coordinating an independent review of DRMS. Because of delay in completion of the DRMS Phase 1 report (analyzing impacts of levee failure) it will receive only a limited review before DRMS Phase 2 begins (assessment of risk reduction strategies). Both reports will now receive a thorough review later in the year. The delay in completing the DRMS reports reflects the extremely tight time lines that all projects are working on and illustrates the difficulty in providing thorough and timely scientific review and oversight during this critical planning year.

*Delta Regional Ecosystem Restoration Implementation Plan (DRERIP)*

DRERIP is currently focused on developing conceptual models of Delta ecosystems and life histories of key species. The DRERIP conceptual models are designed for scientific evaluation ERP restoration actions but have broader applicability to planning and conservation projects such as BDCP and Delta Vision. Additionally, the conceptual models will provide a scientific foundation on which to develop monitoring and performance measures. The Science Program has been heavily involved in planning and managing of logistics for DRERIP and in actual model building. The Science Program is also taking responsibility for converting the conceptual models into a web-based format so that they will be available to other users and for timely updating of the models as new information comes available.

**Science Communication**

Science communication is a critical activity for the Science Program. The Science Program conducts very little original scientific research. Our principal role is to synthesize and communicate science. Almost all our activities could, therefore, be considered science communication. However, we are also developing a number of specific communication tools aimed at scientists, decision makers and the public.

*State of Science for the Bay-Delta System (SOSBDS) Report*

Assembling the SOSBDS report is the number one staff priority for this year. The report is intended to summarize and synthesize our scientific understanding of the Delta in relation to the four pillars of CALFED (water supply, water quality, levee integrity and ecosystem viability). The report is intended to be a foundational document for strategic planning for CALFED Stage 2. Its target audience is planners and decision-makers

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within state and federal agencies as well as knowledgeable stakeholders. It is intended to be a living document that the Science Program will update, expand and modify from time to time to ensure that it remains a current and central document in California water and environmental management. Authors have been engaged and draft material for chapters is now coming in. We hope to begin making some of the chapter information available to Delta Vision soon so that the scientific information can also help inform the Vision process.

*On-Line Journal – San Francisco Estuary and Watershed Science*

The on-line journal is our principal tool for communicating science to other scientists. Management of the journal and its companion Archive will soon be moved to the Center for Watershed Sciences at UC Davis. The Science Program will continue to co-sponsor the Journal and be actively involved in operations. Once the contract with UC Davis is in place, the Watershed Center will begin searching for a new Editor in Chief and Managing Editor. Our objective is to publish 4 issues a year and gradually to increase both content and scientific quality.

*Science Program Website*

Our website is a primary access point to the Science Program for people outside government. In conjunction with a revision of the CALFED Program website, the Science Program is revising the Science Program web pages to make them more visible, more accessible and more useful. Revisions will be incorporated over the next few months with the new and improved websites to be unveiled later this summer.

*Other Communication Tools*

As a vehicle to communicate CALFED science to the general public, the Science Program launched the information leaflet, Science News, a few months ago. Three issues of Science News have been distributed via email. Our objective is to distribute Science News monthly or bi-monthly and to continually upgrade its content. We are also discussing if and when to reactivate two former science communication tools, Science in Action, and Management Cues, which provided summaries of recent scientific discoveries aimed at scientists and managers. Science Program Staff have also begun assembling material for a briefing book for legislators.

*CALFED Science Workshops*

CALFED Science Workshops are an important means by which the Science Program synthesizes scientific information for stakeholders and decision-makers. We are using this approach to explore and clarify the “Variable Delta Hypothesis,” which was outlined in the Public Policy Institute of California (PPIC) report “Envisioning Futures for the Sacramento-San Joaquin Delta.” This hypothesis suggests that increasing the variability of estuarine habitat attributes, like salinity and water residence time in the Delta, will improve habitat conditions for desirable estuarine fishes and decrease habitat suitability

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for undesirable invasive species like *Corbula amurensis* and *Egeria densa*. The Science Program has held two workshops to clarify more precisely what is meant by a variable Delta and the ecological implications of such variability; an internal science focused workshop on variable salinity in April followed by a public one-day technical workshop on June 11. Further workshops and discussion are likely to follow as variation in Delta attributes is an important consideration for Delta Vision.

### **Scientific Review and Oversight**

The Science Program has taken the lead in a number of important science reviews and science oversight activities. Following up on the last biennial review of the Environmental Water Account (2006), the Science Program worked with the implementing agencies to prepare a joint response to the concerns of the review committee. As already mentioned, the Science Program has implemented a science review of DRMS. The Science Program with the assistance of the Independent Science Board has been assisting the implementing agencies to develop scientifically credible performance measures. The Science Program will also be taking the lead in evaluating the various scenarios under consideration by the Delta Vision Task Force. This evaluation will focus on impacts (positive and negative) of various alternative visions on environment, economy and society.

### **Support for Science**

The Science Program has two principal ways of supporting new and innovative science, financial support for targeted research awarded through a competitive Project Solicitation Process (PSP) and the CALFED Science Fellows program, which supports relevant research by graduate students and postdoctoral fellows. To date we do not know if we have a budget for a PSP this year but we have initiated a solicitation for Science Fellows for 2007. Proposals are being received and a new slate of fellows will be selected in July. The Science Fellows program has a number of objectives including building stronger links between academic institutions and implementing agencies, expanding understanding of CALFED science beyond the local CALFED community, and educating a new generation of scientists about the importance and significance of water and environmental management in California.

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