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## Delta Independent Science Board

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June 12, 2012

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To: Jerry Meral, Deputy Secretary, California Natural Resources Agency  
Dale Hoffman-Floerke, Deputy Director, Delta and Statewide Water  
Management, California Department of Water Resources

From: The Delta Independent Science Board

Subject: Initial Recommendations for Integrating BDCP Science and for Improving  
the Reviewability of Draft BDCP Documents

Please consider two initial recommendations for the Bay Delta Conservation Plan (BDCP or the Plan):

1. Structure the research and monitoring program in the Plan to promote scientific synthesis and consensus through integration with existing Delta science programs.
2. Provide informative chapter summaries in the draft environmental impact report (EIR/EIS) and the Plan itself to facilitate efficient and thoughtful review.

The recommendations are based on our initial examination of draft documents of the Plan and its EIR/EIS. The legislature has charged us, the Delta Independent Science Board, with oversight “of the scientific research, monitoring, and assessment programs that support adaptive management of the Delta” under Water Code Section 85320(a)(3). It has also mandated that we review a draft BDCP environmental impact report and report our findings to the Delta Stewardship Council and the Department of Fish and Game (85320(c)).

### 1. Integrated science

The BDCP process provides an unprecedented opportunity for building collaboration, consensus, and trust in Delta science. We encourage principals in BDCP to work toward these outcomes by improving on the draft Plan’s evolving structure for scientific monitoring and research.

BDCP entails vast amounts of new research and monitoring in the Delta. How these efforts would be managed is outlined in chapters 3 and 7 of the draft Plan. The draft highlights the capabilities of two existing Delta science programs – the Interagency Ecological Program (IEP) and the Delta Science Program (DSP). But the draft goes on to imply that most of the new research and monitoring would be done by a new BDCP science program “in coordination” with existing Delta science efforts (chapter excerpts are attached below).

We advise against this stand-alone approach. Coordination is not enough to build scientific consensus for integrated action. A new parallel research and monitoring program would be inefficient, detrimental

Jerry Meral, California Natural Resources Agency  
Dale Hoffman-Floerke, California Department of Water Resources  
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to existing programs, and lacking in the independence needed to build trust in adaptive management under BDCP.

We previously voiced these concerns on May 3, 2012, when we met with two BDCP representatives, Chris Earle of ICF International and Laura King Moon of the Department of Water Resources. They told us that the final structure of the research and monitoring plan remained undecided.

That structure will be fundamental to the conservation measures for habitats and natural communities under BDCP. Delta science needs coordinated institutional foresight, collaboration in research and monitoring, integration of the findings, consensus on implementation, and public trust in this process and its practitioners. Human behavior and organization will be key to building scientific and public understanding, as well as support, for adaptive management in the Delta.

The recent National Research Council report identifies scientific synthesis and consensus as essential to addressing challenges inherent in the adaptive management of Delta water and ecosystems ([http://www.nap.edu/catalog.php?record\\_id=13394](http://www.nap.edu/catalog.php?record_id=13394)). We encourage BDCP to strengthen Delta science as a truly integrated enterprise.

This recommendation dovetails with an ongoing concern about the state of Delta science. Writing to the Delta Stewardship Council on March 14, 2012, we reported that “Delta science programs, particularly those in state agencies, have difficulty retaining their best scientists, hiring new scientists, and providing support for science.” We noted that state agencies increasingly rely on science and engineering consultants, instead of expertise in-house. We advised helping state agencies rebuild the scientific capacity and institutional memory they need to develop and apply best available science for adaptive management. Such rebuilding could become a lasting and positive effect of a BDCP process that integrates with the future Delta Science Plan that we expect will be prepared as a part of the Delta Plan.

## **2. Reviewable documents**

We commend the writers of the Administrative Draft EIR/EIS for including, at the start of Chapter 5 (*Effects Analysis*), a summary of the chapter’s conclusions.

More such chapter summaries would have helped us scope our mandated review of the Draft EIR/EIS. We had hoped to get a head start on this review by examining the Administrative Draft. But we found that in most chapters, the main points must be sought among hundreds of pages. The same situation makes the draft Plan less transparent than it needs to be for use in evaluating the draft EIR/EIS.

For our mandated review we will evaluate the Public Draft EIR/EIS and the associated version of the Plan. We look forward to reading informative summaries in all their chapters. We hope to find, in each summary, an insightful abstract of the chapter’s main findings, uncertainties, and implications.

cc: Karla Nemeth, California Natural Resources Agency  
Laura King Moon, California Department of Water Resources  
Carl Wilcox, California Department of Fish and Game

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Dale Hoffman-Floerke, California Department of Water Resources  
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David Zippin, ICF International  
David Nawi, U.S. Department of the Interior  
Federico Barajas, U.S. Bureau of Reclamation  
Maria Rea, National Marine Fisheries Service  
Mike Chotkowski, U.S. Fish and Wildlife Service  
Joe Grindstaff, Delta Stewardship Council

Attachment

**Attachment: Responsibilities for research and monitoring as proposed in draft chapters of the Bay Delta Conservation Plan available May 8, 2012**

BDCP Chapter 3.6.1.5, Integration of Existing Sources of Information (dated February 29, 2012)

The reliance on information obtained from existing monitoring and research efforts in the Delta will be critical to the success of the BDCP. Under a variety of statutory mandates and/or cooperative agreements, multiple agencies and organizations are involved in resource management, monitoring, and research in the Delta. Several programs have some overlap with activities proposed by the BDCP. The BDCP Implementation Office [IO] will coordinate with the Interagency Ecological Program (IEP), Delta Science Program and other entities involved in monitoring programs and will use data collected through these programs, as appropriate, to support evaluation of the effectiveness of the BDCP Conservation Strategy in achieving the Plan's biological goals and objectives (Appendix 3.E, *Adaptive Management and Monitoring Program*). Details of the relationship between adaptive management and monitoring program and these programs, as well as others, are discussed in Section 3.6.2, *Adaptive Management Process*; Section 3.6.3, *Compliance Monitoring*; Section 3.6.5, *Effectiveness Monitoring*; and Section 3.6.6, *Directed Research*.

The IEP brings state and federal natural resource and regulatory agencies together to monitor and study ecological changes in the Delta. The IEP consists of ten member entities: three state agencies (DWR, DFG, and the State Water Resources Control Board [State Water Board]); six federal agencies (USFWS, U.S. Bureau of Reclamation [Reclamation], USGS, USACE, NMFS, and the U.S. Environmental Protection Agency [EPA]); and one nongovernment organization (The San Francisco Estuary Institute). These program partners work together to develop a better understanding of the estuary's ecology and the effects of the SWP/CVP operations on the physical, chemical, and biological conditions of the San Francisco Bay-Delta estuary.

The IEP has coordinated Delta monitoring and research activities conducted by state and federal agencies and other science partners for 40 years (Table 3.6-1). IEP monitoring activities are generally carried out in compliance with water right decisions and ESA permit and/or BiOp conditions. Most of the monitoring under the IEP focuses on open water areas and the major Delta waterways conveying water to the SWP/CVP facilities in the south Delta. The IEP produces publicly accessible data that include fish status trends, water quality, estuarine hydrodynamics, and foodweb monitoring. Until recently, the IEP maintained and hosted the Bay Delta and Tributaries System or the HEC-DSS Time-Series Data System. These systems have been archived. In 2012, DWR and IEP will release a standardized and modernized data system. This will make the data more easily accessible.

Research actions are also supported through the Delta Science Program. Their mission is to provide scientific information for water and environmental decision making in the Bay-Delta system. To date, they have done this by funding more than 30 research grants totaling more than \$15 million. The Delta Science Program's objectives are listed below.

- Support research. Initiate, evaluate and fund research that will fill critical gaps in the understanding of the current and changing Bay-Delta system.

- Synthesize scientific information. Compile, analyze, and integrate scientific information across disciplines.
- Facilitate independent peer review. Promote and provide independent, scientific peer review of processes, plans, programs and products.
- Coordinate science. Coordinate with agencies to promote science-based adaptive management.
- Communicate science. Interpret and communicate scientific information to policy-and decision makers, scientists and the public.

The Delta Science Program has particular expertise and experience organizing and facilitating independent scientific reviews.

Several organizations and agencies monitor species and ecosystem conditions that are relevant to the BDCP implementation. For example, a new regional monitoring program intended to coordinate Delta water quality monitoring in compliance with Clean Water Act permit conditions is currently under development by the Central Valley Regional Water Quality Control Board (Central Valley Water Board). A similar regional monitoring program already exists for San Francisco Bay and is carried out by the San Francisco Estuary Institute, a nonprofit research organization. It will be crucial to the success of the adaptive management and monitoring program to regularly communicate with and review the data collected from the other research and monitoring efforts.

#### BDCP Chapter 3.6.6, Directed Studies (dated February 29, 2012)

Chapter 5, *Effects Analysis*, and its associated appendices outline the use of various analytical tools that provide a framework for evaluating the effects of the conservation measures. The Implementation Office will use and maintain these analytical tools and may also develop, or support development and refinement of, models and other analytical tools to enhance the adaptive management process. To refine these analytical tools or develop new analytical tools, the BDCP Implementation Office will conduct directed studies to collect necessary information. All proposed studies will be prioritized and will be carried out according to their priority ranking. Results of research would be used to help direct and prioritize subsequent implementation of conservation measures through the adaptive management process.

#### BDCP Chapter 7.2.7, Coordinating with the Delta Stewardship Council, Delta Science Program, and Delta Conservancy (dated September 13, 2011)

The IO, through the Science Manager, will coordinate with the Delta Science Program and, as necessary, the Delta Independent Science Board, on matters regarding scientific assistance in the formulation and implementation of monitoring activities and research efforts to support the BDCP adaptive management process.

#### BDCP Chapter 7.3.4, Management of Biological Monitoring, Scientific Research, and Reporting Programs (dated September 13, 2011)

The Science Manager will identify technical staffing needs and requirements necessary to adequately implement the biological monitoring program. The Science Manager will enlist the assistance of the Interagency Ecological Program (IEP) in carrying out the monitoring program. The IO, through the Science Manager, will establish the framework for the monitoring program (e.g., scope, methodologies, and protocols), in coordination with IEP and the fish and wildlife agencies, Delta Science Program, and Supporting Entities, as appropriate. The IO, through the Science Manager and in collaboration with these entities, will develop and implement a process for compiling, evaluating, and synthesizing the results of monitoring activities, and will maintain databases and the results of data analysis obtained through the monitoring program.

The Science Manager will also manage the BDCP research program, as described in Chapter 3 *Conservation Strategy* (Section 3.6 *Monitoring and Research Program*), in coordination with the IEP agencies and the Delta Science Program. The BDCP Science Manager will identify research priorities to address specific uncertainties, and will administer a process to select and coordinate researchers who will be involved in the program. In addition, the Science Manager will be responsible for the compilation and synthesis of the results of studies and analysis undertaken by other entities and organizations that are assisting in the implementation of the Plan. The Science Manager will also coordinate BDCP funding for research by other entities and organizations, as described in Section 3.6 *Monitoring and Research Program*.

The Program Manager will look to the Delta Science Program and Independent Science Board for science support and review. As appropriate, the Science Manager will seek and obtain input and advice from independent scientists through the Delta Science Program and other science programs. Matters relating to the conduct of scientific reviews, and the acquisition of independent scientific advice to assist in the implementation of the BDCP, shall be conducted in a manner that ensures their independence and scientific integrity. The Science Manager will work with the Chief Scientist for the Delta Science Program and IEP Lead Scientist to ensure that BDCP science activities, reporting, and reviews are coordinated with other science activities being conducted in the Delta.