

## Lead Scientist's Report

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**Summary:** This report provides information about a recent review of a federal plan for adaptive management and fall Delta outflow and a recent Delta Independent Science Board (Delta ISB) teleconference meeting. This report also features two articles that have particular significance to the Delta that were recently accepted to scientific peer-reviewed journals (Cloern et al. and Winder et al.) and provides highlights from the Lead Scientist's participation at the annual meeting of the North American Benthological Society (NABS).

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### **Independent Review of Plan for Adaptive Management of Fall Delta Outflow**

On June 13 and 14, the Delta Science Program organized an independent scientific review of a plan for implementation and adaptive management of the fall Delta outflow action described in the 2008 U.S. Fish and Wildlife Service Biological Opinion for the protection of delta smelt. The plan was developed by the Bureau of Reclamation in anticipation that the fall outflow action would be triggered this year. The independent review panel, comprised of national and internationally recognized experts, will provide its evaluation of the plan and recommendations for improvement July 1, 2011.

### **Delta ISB Teleconference Meeting**

The Delta ISB held a teleconference June 14. During this meeting, the board discussed its approach for reviewing the fourth and fifth staff drafts of the Delta Plan. The Delta ISB also determined its proposed schedule for reviewing and submitting comments.

### **Cloern et al. (in press)**

An article titled, "Perils of correlating CUSUM-transformed variables to infer ecological relationships (Breton et al. 2006, Glibert 2010)" by Dr. James Cloern (U.S. Geological Survey) and others, was recently accepted to the peer-reviewed journal, *Limnology and Oceanography*. The authors examined proper and improper uses of the statistical technique, cumulative sum (CUSUM) transformations. This statistical technique was used recently by Dr. Patricia Glibert in her analysis of the food web of the Delta and the effects of total ammonia on the food web. The use of the statistical technique to study change points in the phytoplankton community was not questioned, but inferring food web relationships (including fish) was challenged. The Cloern et al. article will be accompanied by a response from Dr. Glibert.

### **Winder et al. (in press)**

An article titled, "Synergies between climate anomalies and hydrological modifications facilitate estuarine biotic invasions" by Dr. Monika Winder (UC Davis) and others was recently accepted to the peer-reviewed journal, *Ecological Letters*. This article looks at important drivers of success for non-native species invasions in the San Francisco Estuary. Extreme climatic events (e.g., unusual dry periods) coupled with alterations in the flow regime have created conditions that favor the success of non-native zooplankton (small drifting animals) over native zooplankton species. Drought interacts with flow alterations to facilitate the establishment of invasive species.

Dr. Winder was a 2009 Postdoctoral CALFED Science Fellow and is a recent recipient of a 2010 Delta Science Program research grant to study the nutritional quality of zooplankton as prey for fish in the Sacramento-San Joaquin Delta.

### **NABS 2011 Annual Meeting**

Lead Scientist Dr. Cliff Dahm recently returned from his participation at the annual NABS meeting. Dr. Dahm served as the Co-Program Chair, along with Dr. Stuart Bunn of the Australian Rivers Institute, for this year's annual meeting. About 800 attendees participated in the weeklong event. Highlights from the annual meeting include renaming the society as the Society for Freshwater Science; a public lecture featuring Sandra Postel, founder of the Global Water Policy Project; the 2011 Award of Excellence by Dr. Patrick Mullholand; and five plenary talks surrounding the theme, "Responding to the Global Water Crisis." For more information about the meeting please visit: <http://www.benthos.org/Annual-Meeting/2011-Providence.aspx>.

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