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Lead Scientist's Report

Summary: This report includes four items, 1) highlights from the recent UC Davis Center for Aquatic Biology & Aquaculture (CABA) Seminar, 2) the Independent Review Panel Report for the Bay Delta Conservation Plan (BDCP) Effects Analysis Phase 2 Review, 3) a recent article in *Nature* by Anthony D. Barnosky *et al*. (2012) on global environmental change, and 4) the Delta Science Plan.

CABA Seminar: Beyond Suisun - What are we Missing? Estuary Ecology of Juvenile Salmonids

The UC Davis Center for Aquatic Biology and Aquaculture (CABA) in conjunction with the Delta Science Program held a symposium May 22, 2012 on the ecology of juvenile salmonids westward of Suisun Bay. The aim of the seminar was to identify key issues in assessing the value and use of habitats for juvenile salmonids in the San Francisco estuary. Three of several seminar conclusions are: 1) the estuary-to-ocean transitions by juvenile salmonids past Suisun Bay are influenced by the availability and composition of marine food, 2) diverse habitats better support early salmonid life stages than less diverse habitats, and 3) a holistic view of the Delta estuary should be used in determining important habitat for juvenile salmonids. Professor John Largier of the University of California was the convenor of this CABA seminar. For more information and to view the seminar presentations and panel discussion visit: http://caba.ucdavis.edu/seminars/beyond-suisun-what-are-we-missing-estuary-ecology-of-juvenile-salmonids.

Independent Review Panel Report for the BDCP Effects Analysis Phase 2 Partial Review

The Independent Review Panel (Panel) for the BDCP Effects Analysis Review recently completed its Phase 2 report. This was a partial review of draft BDCP Chapter 5: Effects Analysis because BDCP had not completed work on all the associated technical appendices. Appendices 5.E: Habitat Restoration, 5.G: Fish Life Cycle Models, and 5.A: Climate Change Implications for Natural Communities and Terrestrial Species; Climate Change Approach and Implications for Aquatic Species were not complete in time for review by the Panel. The Panel's report provides review findings, recommendations and expectations for missing appendices. Among other conclusions, the Panel continues to find lack of clarity in the description of the Effects Analysis process and details. The Panel's 17 recommendations are intended for constructive advice for revising the BDCP Effects Analysis documents. The Panel's report partially fulfills the request from BDCP participants to the Delta Science Program to provide independent external scientific review of the BDCP Effects Analysis. To access the Panel's report visit: http://deltacouncil.ca.gov/event-detail/6144. For information about the multi-phase BDCP Effects Analysis Review visit: http://deltacouncil.ca.gov/science-program/independent-review-draft-bay-delta-conservation-plan-effects-analysis

***Nature* Article on Global Environmental Change**

Evidence of global environmental changes was recently summarized in an article by Anthony D. Barnosky *et al.* (2012), "Approaching a state shift for the Earth's biosphere." The authors argue that a major transition of the planet is likely to occur within decades or centuries as a result of drivers like human population growth, resource consumption, and habitat transformation and fragmentation. The article says evidence supports the hypothesis that human influences on Earth are irreversibly shifting the planet's ecosystems into a state unknown to human experience. Roughly 43 percent of Earth's land has been converted to agricultural and urban landscapes and about 30 percent of Earth's surface previously covered by glacial ice is now ice free. By 2025 it is projected that 50 percent of Earth's land will have undergone a state shift (crossing a threshold to a new configuration). Barnosky et al. conclude that better biological forecasting and remote sensing that anticipates critical global transitions and minimizes biological surprises on global and local scales are needed. The authors stress that society's willingness to incorporate expectations of biological instability into strategies for maintaining human well-being will be critical as unpredictable transformations approach. The Barnosky *et al.* (2012) article is part of a special issue of *Nature* intended to set the stage for the Rio +20 - United Nations Conference on Sustainable Development. To access this article visit:
http://www.nature.com/nature/journal/v486/n7401/full/nature11018.html
(You may need to cut and paste the url into your browser to access this article.)

The Delta Science Plan

The Final Staff Draft Delta Plan recommends that the Delta Science Program develop a Delta Science Plan that addresses among other items, a collaborative institutional and organizational structure for conducting science in the Delta (G R1). This is a priority for the Lead Scientist and DSP. The Lead Scientist will discuss the Final Staff Draft Delta Plan expectations for the Delta Science Plan with the Council (Attachment 1).

List of Attachments

Attachment 1: Excerpts from Final Staff Draft Delta Plan, Chapter 2

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Lead Scientist