

Lead Scientist's Report

Summary: This report includes five items, 1) the recent independent scientific review of the Fall Low Salinity Habitat (FLaSH) Report and 2012 Draft Adaptive Management Plan, 2) the Delta Science Program's role in the State Water Resources Control Board's Public Workshops, 3) an update on the Delta Science Program Fellows selection and 4) a summary of the recent article entitled, "Restoring native fish assemblages to a regulated California stream using the natural flow regime concept" by Kiernan et al. (2012) in *Ecological Applications*, 5) an update on the Delta Science Plan.

Independent Scientific Review of the Fall Low Salinity Habitat (FLaSH) Report and 2012 Adaptive Management Plan

The 2008 U.S. Fish and Wildlife Service delta smelt Biological Opinion (BO) calls for implementation of adaptive management of Fall Delta outflow in above-normal and wet years to improve habitat suitability and contribute to higher average delta smelt abundances. The FLaSH adaptive management plan—an integrated set of studies initiated to provide better information regarding changes in the position of low salinity habitat in the fall and subsequent effects on delta smelt health and abundance—was implemented for the first time in 2011, a wet year. The Delta Science Program convened an Independent Review Panel (Panel) on July 31- August 1, 2012 to review the draft FLaSH report and the draft 2012 Fall Outflow Adaptive Management Plan. The same Panel had met the year before in July 2011 to review the 2011 draft FLaSH study plan. The Panel received presentations and participated in discussions with the proponents of the FLaSH studies and associated adaptive management plan. The Panel is currently preparing its independent scientific review report, due August 31, 2012. For more information on the FLaSH review please visit:

<http://deltacouncil.ca.gov/science-program/fall-low-salinity-habitat-flash-studies-and-adaptive-management-plan-review-0>

Delta Science Program's Role in State Water Resources Control Board's Public Workshops

Under the direction of its Lead Scientist, the Delta Science Program is organizing invited science panels for the State Water Resources Control Board's (SWRCB) three Comprehensive Bay-Delta Plan Workshops. The workshops' purpose is to receive information and conduct discussions regarding the scientific and technical basis for the SWRCB's comprehensive (Phase 2) review for considering potential changes to the 2006 Water Quality Control Plan for the San Francisco/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan). The three workshop topics are 1) Ecosystem Changes and the Low Salinity Zone; 2) Bay-Delta Fishery Resources; and 3) Analytical Tools for

Evaluating Water Supply, Hydrodynamics and Hydropower Effects. The Delta Science Program's invited science panels are comprising regional and national science experts on these topics. The panels will provide written and oral presentation materials to the SWRCB on the state of science and how to address key uncertainties for each workshop topic. Convening science panels for the SWRCB workshops is consistent with the Delta Science Program's mission to provide the best possible scientific information for water and environmental decision making in the Bay-Delta system and supports the SWRCB in making progress toward achieving ER P1 of the Delta Plan, which calls for the SWRCB to adopt and implement updated Bay-Delta Plan objectives by June 2, 2014. For more information about the SWRCB's public workshop visit:

http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/docs/pubnot_phs2wrkshps.pdf

Update on the Delta Science Fellows Selection Process

In late July, four postdoctoral and three doctoral fellows were selected for the 2012 class of Delta Science Fellows. The seven fellows will conduct applied research, undergo active mentoring by Bay-Delta State and federal agency staff and undergo training in science communication. A formal announcement of the 2012 Delta Science Fellows is forthcoming. For more information about the Delta Science Fellows Program visit: <http://csgc.ucsd.edu/EDUCATION/DELTA/DeltaIndx.html>

Restoring Native Fish Assemblages to a Regulated California Stream using the Natural Flow Regime Concept (Kiernan et al. (2012) in *Ecological Applications*)

A recent paper by Joseph Kiernan, Peter Moyle and Patrick Crain found that manipulating flows at biologically important times of the year had a very strong positive effect on native fish species in lower Putah Creek in California. The researchers found that restoration of native fish populations was facilitated by the creation of favorable spawning and rearing conditions, cooler water temperatures, maintenance of flowing conditions over the length of the creek, and displacement of nonnative species by naturally occurring high-discharge events. A more natural flow regime was effective in restoring native fishes into habitat where they had largely disappeared in this ecosystem. Restoration of native fishes in the studied ecosystem was largely achieved through manipulating stream flows at biologically important times of the year, only requiring a small increase in the total volume of water delivered downstream during most water years. The results of the Kiernan et al study supports that natural flow regimes can effectively restore native fish populations and reduce the abundance of nonnative fishes in regulated rivers. To access the Kiernan et al. 2012 paper visit:

<http://dx.doi.org/10.1890/11-0480.1>

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). The Lead Scientist

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will discuss the Final Staff Draft Delta Plan expectations for the Delta Science Plan with the Council (Attachment 2).

List of Attachments

Attachment 1: 2012 Delta Science Fellows
Attachment 2: A Delta Science Plan

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