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Discussion of *The Role of Tidal Marsh Restoration in Fish Management in the San Francisco Estuary*

Summary: Dr. Bruce Herbold (U.S. Environmental Protection Agency, retired) will discuss the outcomes of a symposium held at the University of California, Davis, on June 10, 2013, on the potential impact of tidal marsh restoration on native fishes.

Background

The Delta Science Program was established by statute to develop unbiased and authoritative scientific knowledge directly relevant to Bay-Delta actions. This mandate is implemented in a variety of ways including facilitation of scientific review panels, workshops, symposiums, scientific coordination, and funding research. On June 10, 2013, the Delta Science Program, in collaboration with the U.C. Davis Center for Aquatic Biology and Aquaculture (CABA), and the California Nevada Chapter of the American Fisheries Society, presented a symposium and workshop: *Tidal Marshes and Native Fishes in the Delta: Will Restoration Make a Difference?*

The release of the draft Bay Delta Conservation Plan (BDCP), intended to improve the reliability of water deliveries to parts of the Bay Area, Central Valley and Southern California while also improving conditions in the Delta for endangered species including native fishes, underscores the necessity to more fully understand how habitat in the Delta can be "restored" to benefit native fishes. A major assumption of current biological opinions and the BDCP is that restoration/construction of thousands of acres of tidal marsh habitat will have major benefits to fish, partly making up for the current adverse effects of south Delta water diversions, altered flows, and other stressors on these fish.

To address these issues, this seminar explored the ecological linkages between tidal marshes and fish in the Delta (upper San Francisco Estuary). The speakers focused on the historic and present linkages between tidal marshes and fish production, potential population level benefits of tidal marshes on fish, and identified the remaining key information gaps.

Following the seminar, the speakers developed a paper that synthesized the information presented. This paper (Attachment 1) was accepted for publication in the *San Francisco Estuary and Watershed Science* online journal (a journal supported by the Delta Stewarship Council). Dr. Herbold will present key findings from the paper including: 1) restoration of tidal marshes benefits many fish, mammals, and birds; 2) movement of plankton (minute plant and animal life) from a tidal marsh is likely to be limited and to decrease strongly with distance; 3) large areas with diverse physical structure will enhance habitat diversity and help meet various needs of targeted species; 4) effective

tidal marsh planning requires a landscape-level perspective at a decadal, or greater, scale; and 5) information gaps about functions and processes in Delta tidal marshes are large but can be filled by designing restoration projects as experiments.

List of Attachments

Attachment 1: *The Role of Tidal Marsh Restoration in Fish Management in the San Francisco Estuary*

Contact

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