One Delta—One Science

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The 2009 Delta Reform Act established a new oversight and coordination entity in the Delta (the Delta Stewardship Council or DSC), and directed the DSC to develop a management plan (the Delta Plan) that would use science to achieve the coequal goals of water supply reliability and to protect, restore and enhance the Delta ecosystem. The Delta Plan is a long-term management plan that recognizes the important role of science to inform implementation of actions and includes recommendations and requirements for the expanded use of best available science and adaptive management. It also acknowledges the need for improved science coordination.

The Delta Plan recommends that a Delta Science Plan be developed to organize shared learning and integrate ongoing science in the Delta. This Delta Science Plan, developed by the Delta Science Program, lays the foundation for achieving the vision for Delta Science as '*One Delta, One Science'* – an open Delta science community that works together to build a shared body of scientific knowledge. The Delta Science Program would augment and build on already existing efforts and work with others to improve the existing science infrastructure by identifying where synergies within the science community can be achieved.

The Delta Science Plan is the first element of a three-part planning, implementation and reporting strategy. The overall Delta Science Strategy includes three elements: 1) *The Delta Science Plan,* 2) *The Science Action Agenda (Action Agenda),* and 3) *The State of Bay-Delta Science (SBDS)*.

The Delta Science Plan creates a framework for making scientific information relevant and available to decision makers. It addresses several key needs: synthesis of research and data into useful scientific information, improved communication among scientists, managers and policy makers, guidance for the use of science in adaptive management, and the "infrastructure" needed to support the science enterprise.

Keywords: Delta Science Plan, Science Action Agenda, State of Bay-Delta Science

Session Title: The Delta Science Plan—Working Together to Build an Open Science Community

Speaker Biography: Peter Goodwin is the Lead Scientist for the Delta Science Program (DSP). He works with DSP staff, the Delta Independent Science Board, and others to promote and coordinate the use of peer-reviewed science. The DeVlieg Presidential Professor in Ecohydraulics and professor of civil engineering at the University of Idaho, he also founded and directs the Center for Ecohydraulics Research. He is recognized internationally for his research in the field of modeling flows, sediment transport, and river channel evolution. He is a former CALFED Independent Science Board member and the director of Idaho's Experimental Program to Stimulate Competitive Research (EPSCoR), a federal-state partnership intended to build research infrastructure. He earned his undergraduate degree in civil engineering from the University of Southampton, England, and his Master of Science degree and Ph.D. from UC Berkeley.

Panel Discussion: Moving Forward with a Joint Science Agenda

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Successful implementation of the Delta Science Plan will require a commitment by all parties involved in scientific activities in the Delta to increase collaboration and integration. Current efforts by programs such as the Interagency Ecological Program, the Ecosystem Restoration Program, My Water Quality Portal, State Water Resources Control Board workshops and others provide an excellent foundation. However, despite the close working relationships of many individual scientists and collaborative efforts, it is difficult to track all activities related to data generation, model development and calibration, or new results and insights gained.

The Delta Science Plan is proposing a framework that will enable scientists to engage in greater interagency collaboration, integration and the use of common tools. The Plan builds on existing organizational structures to provide coordination, synthesis and communication. Key issues addressed by the Plan include a shared process for prioritizing research, managing conflict, building trust, science synthesis, science-policy communications, effective adaptive management, and identifying, maintaining, and advancing the state of Delta knowledge.

Implementation of the Delta Science Plan will rely on the cooperation and partnership of the Delta policy, science and management communities. This panel discussion between scientists actively working in the Delta and agency managers (state and federal) will focus on processes for defining the critical issues ("grand challenges") that need to be addressed and how work priorities can be established, available funding can be leveraged, and other resources can be shared to maximize the effectiveness of scientific efforts in the Delta.

Keywords: Delta Science Plan, collaboration, coordination, integration, synthesis, building trust, priorities

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Moderator Biography: Rainer Hoenicke has been Deputy Executive Officer for Science at the Delta Stewardship Council since March 2013. Prior to working for the Council, he was Executive Director at the San Francisco Estuary Institute, lead scientist for the Santa Monica Bay Restoration Project at the Regional Water Quality Control Board in Los Angeles, and a lecturer and postdoctoral fellow at Moss Landing Marine Laboratories. A native of Germany, he received a

Bachelor of Science degree at the University of Bonn. He then moved to the United States and received a Ph.D. in ecology working with zooplankton at the University of California at Davis.

Panel Member Biography: Dr. Anke Mueller-Solger serves the Delta Stewardship Council as Lead Scientist for the Interagency Ecological Program (IEP), a 42-year old State and Federal program that conducts cooperative monitoring and research in the Delta and, in collaboration with the Delta Science Program and others, provides ecological information and scientific leadership for use in management of the San Francisco Estuary.

Panel Member Biography: Paul Helliker has worked in environmental and resource management programs for 26 years, with experience at the federal, State and local levels. He is currently Deputy Director, Delta and Statewide Water Management at the Department of Water Resources (DWR). In that role, he oversees DWR's Bay-Delta Office, FloodSAFE Environmental Stewardship and Statewide Resources Office, and Division of Environmental Services. He holds a Bachelor of Arts degree in Philosophy, a Bachelor of Science degree in Civil Engineering, and a Master of Science degree in Environmental Engineering, all from Stanford University. He is a registered civil engineer in California.

Panel Member Biography: Carl Wilcox is the Delta Policy Advisor to the Director of the California Department of Fish and Wildlife, which includes directing the Department's involvement in the Bay Delta Conservation Plan. Prior to his assignment as Policy Advisor, he managed the Department's Bay Delta Region and was responsible for fisheries and wildlife management, lands management, and habitat conservation planning and permitting programs. He has a Master of Science in Biology from New Mexico Highlands University and a Bachelor of Science in Biological Conservation from California State University Sacramento.

Panel Member Biography: Mike Chotkowski has more than a decade of experience working on fish and wildlife issues in the Delta. He is currently Field Supervisor for the San Francisco Bay-Delta Fish and Wildlife Office of the U.S. Fish and Wildlife Service (USFWS). Prior to working for USFWS, he worked for the Mid-Pacific Region of the Bureau of Reclamation, the California Department of Fish and Wildlife, and the Illinois Natural History Survey. He has a Ph.D. in Biology and a Master of Science in Mathematical Ecology from the University of California, Los Angeles.

Panel Member Biography: Maria Rea has over 14 years of experience in managing environmental issues and natural resources at the federal and State levels. She is currently supervisor of the Sacramento Area Office for the National Marine Fisheries Service. Prior to her current assignment, she served as Senior Policy Adviser at the U.S Environmental Protection Agency in San Francisco, overseeing a number of complex water quality investigations, cooperative agreements, and regulatory decisions. She holds a Master's Degree in Public Policy from the Goldman School of Public Policy/U.C. Berkeley and a Bachelor of Arts in Environmental Studies from Brown University.

Panel Member Biography: Susan Fry, the Bureau of Reclamation's Mid-Pacific Region Manager for the Bay-Delta Office (BDO) in Sacramento, manages numerous critical programs for the San

Francisco Bay/ Sacramento-San Joaquin Delta Estuary including implementation of the current biological opinions and development of new biological opinions for the coordinated operation of the CVP and SWP, implementation of the Suisun Marsh Preservation Agreement, management of the Bay Delta Conservation Plan process, and engagement with the Science Task Force and Interagency Ecological Program. Prior to becoming the BDO Office Manager, Fry was the Area Manager for the Region's Klamath Basin Area Office in Klamath Falls, Oregon, served as the Mid-Pacific Region's Environmental Officer and Special Assistant to the Regional Director, worked as a private consultant, and spent 12 years with the U.S. Army Corps of Engineers. Fry holds a Bachelor of Science degree in Wildlife Biology from the University of California at Davis.