

# Managing Subsided Lands in the Sacramento-San Joaquin Delta Workshop

Panelist Profiles

October 19th-20th, 2023 Workshop

## **Panel 1: Overview of current land rewetting practices and experiments**

Steven Deverel | Hydrofocus Inc.

Steve Deverel is co-founder of HydroFocus Inc., a consulting and applied research firm specializing in land and water challenges, and a Licensed Professional Geologist and Certified Hydrogeologist and Professional Hydrologist. Steve has authored numerous publications about chemical and physical processes related to subsidence and agricultural and wetland management strategies for mitigating subsidence in the Delta. Steve has also led and participated in key investigations into impacts of subsidence on Delta ecosystem processes, agriculture, and levees. Recently, Steve began evaluating the potential of floating peats to contribute to wetland restoration efforts. During the early 1980s, Steve worked as a Research Associate on Delta soil chemical and physical processes and received a Ph.D. in Soil Science from the University of California at Davis in 1983. He then worked as a Research Geochemist and Supervisory Hydrologist at the USGS for 10 years before transitioning to the private sector.

Gil Cosio | River Delta Consulting

Gilbert Cosio has been working as an engineering consultant to Delta reclamation districts for 40 years. He has worked as the district engineer for 46 reclamation districts in the Delta. In his capacity as district engineer, he assisted reclamation districts with levee maintenance, levee rehabilitation, drainage and irrigation. All of these areas are affected by subsidence. Over the past 40 years he has supervised the development of dozens of geotechnical studies and analyses in order to account for the effects of peat. He has also

participated in design and construction of habitat enhancement projects and many erosion repair mitigation projects.

#### Russ Ryan | Metropolitan Water District of Southern California

Russ Ryan, a Senior Engineer with the Metropolitan Water District (MWD) oversees the planning and restoration of its Delta Islands, which includes Bouldin/Bacon Islands and Webb/Holland Tracts as part of the Delta Islands Landscape Restoration Collaboration through a CDFW grant. A key aspect of Russ' research is understanding different opportunities and methods in converting lands to non-tidal wetlands and promoting native tule vegetation to rebuild organic peat soils to reduce carbon and greenhouse gas emissions. As part of his work with MWD, Russ balances different alternative solutions in the continuation of promoting sustainable agricultural practices and evaluates the potential of managing lands to generate carbon credits.

#### David Julian | DWR

David Julian is a Senior Engineer with the Department of Water Resources (DWR) and has a background in water resources engineering, levee inspections and flood fight methods, and hydrological computer modeling. With DWR, David manages the West Delta program, which manages subsidence mitigation activities on Sherman and Twitchell Island. These activities include planning, construction, and maintenance of wetland and rice projects and researching as pathways to building land surface elevations, increasing levee stability, and generating carbon credits.

#### Cathleen Jones | [NASA Jet Propulsion Laboratory](#)

Dr. Cathleen Jones is a Senior Research Scientist with the NASA Jet Propulsion Laboratory. Her research focuses on the application of radar remote sensing to natural and anthropogenic hazards, in particular seeking to improve infrastructure integrity and coastal resilience. Her research includes using synthetic aperture radar interferometry (InSAR) to measure subsidence and changes in land elevation in deltas, including the Sacramento-San Joaquin Delta, and in coastal wetlands. Cathleen's research is critical to the management of water infrastructure in California such as levees, aqueducts, and other water conveyance structures.

## **Panel 2: Biogeochemistry of Carbon Sequestration and Greenhouse Gas Emissions in Peat Soils**

Lisamarie Windham-Myers | United States Geological Survey

Lisamarie Windham-Myers is a USGS Research Ecologist with expertise in wetland and estuary carbon, nutrient, and trace-metal biogeochemistry. Lisamarie was the lead author on the 2023 State of Bay-Delta Science article on carbon sequestration and subsidence reversal, which described three different hydrological interventions to manage greenhouse gas emissions in the Delta. From maps to models to measurements, Lisamarie leads multiple collaborative projects to harmonize ecosystem data across multiple scales (molecular to landscape) and across a wide variety of historic and managed conditions.

William Horwath | University of California Davis

Will Horwath is a Professor in soil biogeochemistry and focuses on the science related to sustainable agriculture. His work spans farm and regional scales in California and has informed natural resource management and climate change mitigation. Will's research includes the cycling of nutrients and the impact of soil processes on soil fertility, water quality, and crop systems. His expertise on rice as an alternative crop led to the development of a California Air Resources Board protocol for awarding carbon credits for rice agriculture in the California compliance market.

Dennis Baldocchi | University of California Berkeley

Dennis Baldocchi is a native of the Delta and a Biometeorology Professor. He is researching the impact of management actions on greenhouse gas fluxes in wetland and agricultural systems. His research includes measuring the physical, biological, and chemical factors that impact gas fluxes between terrestrial processes and the atmosphere. The range of his work includes experiments on crops, wetlands, woodlands, and grasslands across climatic and ecological gradients. Within the Delta, Dennis has worked to understand the balance between inundating soils while trying to maximize carbon sequestration and minimize methane emissions and water use by evaporation. Dennis has also evaluated greenhouse gas emissions among different land uses such as rice cultivation, alfalfa, corn, pastures and wetland restoration.

Scott Neubauer | Virginia Commonwealth University

Scott Neubauer is an Associate Professor focusing on wetland biogeochemistry and microbial ecology within the context of understanding how ecosystems respond to climate change. One aspect of his work is how wetlands respond to environmental changes such as sea level rise and saltwater intrusion. Scott has emphasized the importance of new metrics to better understand the impact of greenhouse gas fluxes on the climatic role of wetlands and other ecosystems.

### **Panel 3: Considerations for Inundated Agricultural Practices**

Jessica Rudnick | University of California San Diego California Sea Grant

Jessica Rudnick is a Social Science Extension Specialist with California Sea Grant and the Delta Stewardship Council, focusing on better understanding and integrating the human dimensions of the Delta into science and management across the estuary. Through her research and extension activities, Jessica focuses on understanding individual and institutional decision-making in response to social-environmental change. By engaging people through focus groups, surveys, and interviews, Jessica studies people's attitudes, beliefs and behaviors on agriculture, water management, and climate change issues.

Michelle Leinfelder-Miles | University of California Cooperative Extension

Michelle Leinfelder-Miles is the Delta Crops Resource Management Advisor with the University of California Cooperative Extension. Her research and extension program is focused on agronomic crop production and water and soil resource management. A key aspect of her work is cooperating with local farmers and landowners to solve problems, developing projects that address local issues. Michelle has expertise in cropping systems, including rice, as well as soil health and salinity management.

Jerred Dixon | Conservation Farms & Ranches

Jerred Dixon is the Director of Conservation Farms & Ranches and leads research and management of Staten Island. Staten Island is described as a "living laboratory" to evaluate management approaches to reduce subsidence rates and support wildlife-friendly farming while maintaining economic viability. Jerred conducts research and manages various

projects on Staten Island to evaluate sustainable solutions to practice challenges of farming in the Delta.

#### Benjamin Leacox | Zuckerman Farms

Ben Leacox is the General Manager of Zuckerman Farms and is experienced in managing a variety of crops grown in the Delta. His expertise includes balancing the different factors that influence crop choice and land use management. Long-term land and economic sustainability are key considerations in Ben's work and these inform the range of management options examined.

### **Panel 4: Science Needs to Inform Landscape-scale Implications of Peat Soil Inundation**

#### Steve Deverel | Hydrofocus Inc.

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#### Karen Buhr | Sacramento-San Joaquin Delta Conservancy

Karen Buhr is the Deputy Executive Officer of the Sacramento-San Joaquin Delta Conservancy and has been concurrently serving as the Interim Executive Officer of the San Joaquin River conservancy. Prior to her work here, she served for 12 years as the Executive Director of the California Association for Resource Conservation Districts serving RCDs around the state. Her work emphasizes working with landowners and diverse stakeholders to develop solutions for complex environmental challenges. Karen facilitates restoration

projects and evaluates various factors related to implementing different management actions, including socioeconomic impacts.

### Jay Ziegler | Delta Watermaster

Jay Ziegler is the Delta Watermaster who manages Delta water rights to protect water quality and related objectives in the Delta. Previously, Jay was the Director of Government and External Affairs in the California office of The Nature Conservancy and has worked extensively around the Delta in his career. Jay's work has helped advance scientific monitoring of California's water supply, and he's worked actively in developing environmental funding initiatives, endangered species regulations, and natural resource management actions across various agencies.