



Science Needs Assessment Integrating Science for a Rapidly-Changing Delta

Principal Science Recommendation - Interagency Forecasting

How We Got Here

The Delta is a complex and dynamic system that must be managed and studied holistically. Many drivers of change threaten the Delta's ecosystem health, California's water supply reliability, and Delta communities. These drivers of change include climate change, sea level rise, population growth, earthquakes, flooding, invasive species, increasing water diversion demands, land use shifts, infrastructure, and environmental regulation changes.

In 2019, the Delta Independent Science Board (Delta ISB) urged the Delta Plan Interagency Implementation Committee (DPIIC) to improve integration of Delta science and technology across agencies to address the Delta's rapidly changing and interlinked challenges. The Delta ISB was concerned that much of science planning for the Delta is fragmented and short term and does not adequately consider long range and irreversible trends in the Delta.

In November 2019, DPIIC endorsed forming a planning team to develop a Science Needs Assessment as part of the Delta Science Funding and Governance Initiative. During 2020, the Delta ISB and DPIIC hosted four panel discussions and a workshop on future science and integration for the Delta. Participants included scientists, managers, and policymakers from local, state, federal, and non-governmental agencies. These discussions concluded more scientific integration was needed to support Delta management as a complex changing system.

Focus for Multi-Agency *Science* Integration: Forecasting

The Delta ISB and the Science Needs Assessment planning team finds that a **forecasting system** for the Delta is the most promising approach for integrating and applying agency scientific efforts. A forecasting system also can best help integrate and apply interagency science for managers and policymakers and more systematically identify gaps and needs for Delta science.

A forecasting focus musters coordinated modeling, data collection, synthesis, solutions, and management. Forecasting system changes (such as harmful algal

blooms, fish recruitment and habitat quality, water quality and supply, invasive species) and management effectiveness will require collaborative institutional strategies to build and maintain expertise, platforms, and modeling for problems that span agency missions and Governor-level initiatives. [Chesapeake Bay](#) and the [Great Lakes](#) use integrated modeling systems for such forecasts and analyses.

Request to DPIIC

We ask DPIIC to identify agency staff for an *ad hoc* interagency forecasting task force to help complete the long-range Science Needs Assessment for the Delta. Assigned staff should have a background in modeling and forecasting capabilities and needs, and familiarity with long-range trends in the Delta. These agency staff will work with the existing planning team and Delta ISB to formulate an interagency forecasting proposal as a focus of the Science Needs Assessment. The Science Needs Assessment also will include a discussion of and recommendations for improved multi-agency integration and governance. The full Science Needs Assessment will be presented at the July 12, 2021 DPIIC meeting for discussion and endorsement.