INFORMATION ITEM

Lead Scientist Report

Summary

The Delta Lead Scientist will provide updates on recent activities of the Delta Stewardship Council's Delta Science Program, including the 2025 Delta Invasive Species Symposium, a new Delta Synthesis Working Group data synthesis publication that describes floodplain contributions to food webs, and insights from staff participation in the 2025 American Geophysical Union annual meeting.

Delta Science Program Activities

Delta Invasive Species Symposium

On December 4, the 6th Biennial Delta Invasive Species Symposium brought 100 attendees to the California Natural Resources Agency (CNRA) building with an additional 100 people joining online. The goal of the symposium was to provide an opportunity for Delta managers, researchers, and decision-makers to meet and share information about invasive species management in the Delta, including best practices and lessons learned. This year's theme was "Modelling and Managing Invasive Species for Tomorrow's Delta." Sessions included "Management Paradigms," "Invasive Mussels in the Delta," "New Tools and New Conditions," and short Lightning Talks. The symposium was organized by the Delta Invasive Species Interagency Coordination Team, which includes Senior Environmental Scientist Dr. Elizabeth Brusati from the Council. Delta Lead Scientist Dr. Lisamarie Windham-Myers provided opening remarks, and members of the Delta Independent Science Board were also in attendance. Council-funded research was highlighted in several presentations.

New publication highlights importance of Yolo Bypass flooding for the estuary's food web

The Delta Science Program, in partnership with the National Center for Ecological Analysis and Synthesis (NCEAS), facilitates data science trainings for work teams

comprising early- and mid-career scientists at state and federal agencies and universities. The purpose is two-fold: (1) to build foundational skills in data science and statistics, and (2) to gain new insights from the exploration and synthesis of long-term monitoring data from Delta sampling programs. Dr. Shruti Khanna and others from the first cohort, which formed in 2021, recently published a peer-reviewed article titled, "Floodplain inundation and lateral connectivity promote productivity in a managed river system" in the journal Ecological Applications (https://esajournals.onlinelibrary.wiley.com/doi/epdf/10.1002/eap.70146).

The synthesis team first combined 20 years of data - from multiple sources - on water temperature, floodplain inundation, flows, and phytoplankton abundance (measured as "chlorophyll a" concentrations) into one continuous dataset. They then used statistical models to better understand how flooding in the Yolo Bypass, a large managed floodplain, affects the aquatic food web. Floodplains typically have relatively shallow, warm, nutrient-rich, and slow-moving water; these are ideal conditions for phytoplankton to grow. Phytoplankton are important because they form the base of the food web and create food for the estuary through photosynthesis.

The study found that phytoplankton growth in the Yolo Bypass was affected by how connected the floodplain was to the river, which was different during wet versus dry periods. They also found that high river flows are important for flushing phytoplankton downstream and into the estuary where it can provide food for fish, zooplankton, and other wildlife. Based on their findings, the authors developed a conceptual model to describe how flood pulses affect food production and transport on floodplains like the Yolo Bypass. The results highlight how both water management actions and floodplain design can influence how much food is available for fish and other wildlife of the Sacramento-San Joaquin Delta.

2025 American Geophysical Union Annual Meeting and special session on collaborative science

From December 15-19, the Delta Lead Scientist and Delta Science Program staff participated in the 2025 American Geophysical Union (AGU) annual meeting in New Orleans, Louisiana. AGU is a global scientific community dedicated to advancing solution-oriented science for the benefit of people and the environment, with a mission that emphasizes collaboration, education, and communication among

scientists, decision-makers and the public. The conference theme of "*Where Science Connects Us*" was reflected across hundreds of oral sessions, poster presentations, town halls, and other networking events.

Delta Lead Scientist Dr. Lisamarie Windham-Myers organized and moderated a special session titled, "*Navigating the Crosswinds for Collaboratory Wins*" to explore development of "collaboratories" aimed at advancing collaborative science to address complex socio-ecological problems. Collaboratories have emerged in many regions as a new way to address natural resource management challenges by bringing together diverse partners, disciplines, datasets, and approaches. They reflect a growing emphasis on shared data, multi-institutional networks, and engagement of a broad range of participants in developing solutions, as well as the need to respond more quickly to changing conditions. The goal of collaboratory-based science is to make research more transparent and actionable for decision-making.

Dr. Maggie Christman from the Delta Science Program participated as a panelist in the session to highlight current initiatives underway in the Delta alongside other panelists that included representatives from the University of California's Collaboratory for Equity in Water Allocation (CoEQWAL) project, the University of Maryland's Chesapeake Global Collaboratory, the Consortium of Universities for the Advancement of Hydrologic Science (CUAHSI), and several other collaboratories from across the nation. Overall, the conference provided a valuable opportunity for staff to engage in discussions directly relevant to Delta science and management, including emerging research on topics as broad as weather forecasting and risks associated with sea level rise, groundwater depletion, and salinity intrusion; lessons learned from a range of science communication strategies and approaches; and inclusive methods for engaging diverse communities in science for natural resource management.

On Your Radar

Bay-Delta Blue Carbon Symposium coming up – March 5, 2026

The Delta Science Program is collaborating with UC Davis's Coastal and Marine Sciences Institute to host a symposium titled "Accounting for Blue Carbon in the

Bay-Delta: Science, Policy and Practice" on March 5, 2026. "Blue carbon" is a simple term for carbon captured and stored in marine, coastal and aquatic ecosystems such as wetlands and rice paddies in the Delta. The symposium will convene leading researchers, policymakers, natural resource managers, practitioners, and other interested parties to explore the science and policy of blue carbon in the Bay-Delta. The event will highlight the current state of the science on topics like greenhouse gas atmospheric flux, subsidence, and carbon crediting. It will also provide a platform for diverse perspectives on carbon management in the Delta and an opportunity to discuss the socio-political factors that influence this complex system.

The symposium will be a hybrid event located on the UC Davis campus on Thursday, March 5, 2026. There will also be a field trip led by Conservation Farms & Ranches at their Staten Island Preserve the following morning, Friday, March 6. More details on the agenda and registration are coming soon.

Save the date! IEP Annual Workshop – March 16–18, 2026

The Interagency Ecological Program (IEP) 2026 annual workshop will be held at the CNRA building March 16–18, 2026. This free three-day event is designed to share recent advances in Delta science and includes presentations from invited speakers, interactive sessions, poster sessions, and more. See here for more information as it becomes available: https://iep.ca.gov/Public-Engagement/Annual-IEP-Workshop.

By the Numbers

Science Program staff will summarize current numbers related to Delta water and environmental management. The summary (Attachment 1) will inform the Council of recent counts, measurements, and monitoring figures driving water and environmental management issues.

List of Attachments

Attachment 1: By the Numbers

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