

## Reducing Human Exposure to Mercury in the Sacramento-San Joaquin Delta

Lauren Baehner, California Department of Public Health, lauren.baehner@cdph.ca.gov  
Kathryn Kynett, Sacramento-San Joaquin Delta Conservancy, kathryn.kynett@deltaconservancy.ca.gov  
Brian Keegan, Sacramento-San Joaquin Delta Conservancy, brian.keegan@deltaconservancy.ca.gov  
Selina Cole, Central Valley Regional Water Quality Control Board, Selina.Cole@Waterboards.ca.gov  
Lori Copan, California Department of Public Health, Lori.Copan@cdph.ca.gov  
Alcira Dominguez, California Department of Public Health, Alcira.Dominguez@cdph.ca.gov  
Mariana Ponte-Cordova, California Department of Public Health, Lourdes.Ponte-Cordova@cdph.ca.gov

Elevated levels of mercury in fish are a concern in the Sacramento-San Joaquin River Delta (Delta). Those who eat Delta fish may be exposed to harmful mercury levels. Mercury is a toxic metal that poses serious health risks and is most harmful to infants, children, and the developing fetus. As it will take many years to reduce the levels of mercury in fish, the Central Valley Regional Water Quality Control Board, California Department of Public Health, Office of Environmental Health Hazard Assessment, and Sacramento-San Joaquin Delta Conservancy are taking action now to protect public health by implementing the Delta Mercury exposure Reduction Program (Delta MERP). This program aims to reduce human exposure to mercury through collaborative work with community-based organizations, community members, local agencies, and other entities. Delta MERP activities educate at-risk populations about mercury exposure from eating contaminated fish caught in the Delta and elsewhere. Following interviews with local social service, Tribal, and community-based organizations, the project team developed a multi-pronged approach for education and outreach based on the needs and interests of the organizations. The Delta MERP approach to reduce risk includes developing and distributing multilingual educational materials based on existing fish consumption advisories, building capacity of community-based organizations through small grants to promote culturally relevant outreach in their respective communities, developing and posting signs at fishing locations, sharing information through community stakeholder meetings, providing training, and supporting programs already operating in the Delta to educate about fish contamination.

**Keywords:** mercury, fish contamination, outreach, public health, environmental justice

**Poster Topic:** Outreach & Communication

## DTSC's Safer Consumer Products Program: Linking Data and Decisions

Anne Cooper Doherty, California Department of Toxic Substances Control, [anne.doherty@dtsc.ca.gov](mailto:anne.doherty@dtsc.ca.gov)  
Meredith Williams, California Department of Toxic Substances Control, [meredith.williams@dtsc.ca.gov](mailto:meredith.williams@dtsc.ca.gov)  
Daphne Molin, California Department of Toxic Substances Control, [daphne.molin@dtsc.ca.gov](mailto:daphne.molin@dtsc.ca.gov)

The Department of Toxic Substances Control's (DTSC) Safer Consumer Products (SCP) regulations outline a process for DTSC to identify product-chemical combinations on the basis of potential for exposure to a chemical in the product to contribute to adverse impacts to human health or the environment. Manufacturers who wish to continue selling the product-chemical combination in California may conduct an Alternatives Analysis to assess if the chemical is needed in the product and if a safer alternative exists.

The SCP program represents a new and transparent approach to regulating Chemicals of Concern in consumer products. SCP's regulations dictate that DTSC use a narrative standard to evaluate the potential for product-chemical combinations to have adverse impacts. This allows SCP to take a precautionary approach and integrate emerging data and approaches into the product-chemical prioritization process. This integration requires a collaborative relationship with entities collecting these data to ensure DTSC has access to data and that local researchers are aware of SCP's data needs. In turn, SCP can influence the reduction of Chemicals of Concern in the aquatic environments like the Bay-Delta ecosystem by requiring manufacturers to consider the full life cycle of their products when selecting alternatives to avoid regrettable substitutions.

This talk will present a case study to illustrate how the narrative standard works in DTSC's product-chemical identification, including the types of data that are utilized in this process. In doing so, data needs will be highlighted, including conceptual models for a wide range of products and science-based decision-support tools. The case study will also illustrate the need for collaboration between DTSC and Bay-Delta researchers and highlight where stakeholder input is necessary to inform DTSC's decisions and ensure the full potential of the program is realized.

**Keywords:** chemicals of emerging concern, chemical management, data, precautionary approach

**Poster Topic:** Outreach & Communication

## Effective at Any Scale: Watershed-Based Decision Support Tools

[Cristina Grosso](mailto:cristina@sfei.org), San Francisco Estuary Institute-Aquatic Science Center, [cristina@sfei.org](mailto:cristina@sfei.org)  
[Sarah Lowe](mailto:sarahl@sfei.org), San Francisco Estuary Institute-Aquatic Science Center, [sarahl@sfei.org](mailto:sarahl@sfei.org)  
[Josh Collins](mailto:josh@sfei.org), San Francisco Estuary Institute-Aquatic Science Center, [josh@sfei.org](mailto:josh@sfei.org)  
[Sarah Pearce](mailto:sarahp@sfei.org), San Francisco Estuary Institute-Aquatic Science Center, [sarahp@sfei.org](mailto:sarahp@sfei.org)  
[Tony Hale](mailto:tonyh@sfei.org), San Francisco Estuary Institute-Aquatic Science Center, [tonyh@sfei.org](mailto:tonyh@sfei.org)  
[Gemma Shusterman](mailto:gemma@sfei.org), San Francisco Estuary Institute - Aquatic Science Center, [gemma@sfei.org](mailto:gemma@sfei.org)  
[Shira Bezalel](mailto:shira@sfei.org), San Francisco Estuary Institute - Aquatic Science Center, [shira@sfei.org](mailto:shira@sfei.org)

The Wetland and Riparian Area Monitoring Plan (WRAMP) supports the watershed or landscape approach to aquatic resource monitoring and assessment, as well as the watershed approach to mitigation planning called for by [the US Army Corps of Engineers and State Water Resources Control Board](#). Recent innovations now facilitate broader application of the WRAMP toolset.

WRAMP incorporates tools for project siting and design, project tracking, project assessment, aquatic resource mapping, ambient monitoring design, and synthesis and reporting of aquatic resource condition, and includes tools and methodologies for assessing projects in the landscape or watershed context. Used independently, each tool has its critical function, but used collectively, they are powerfully integrated to address interrelated challenges and concerns that matter deeply to resource managers, policy makers, and the general public alike. For example, the [California Aquatic Resource Inventory \(CARI\)](#) is a common basemap for tracking and assessing wetlands and streams throughout the state. The [California Rapid Assessment Method \(CRAM\)](#) is a standard methodology for assessing wetland condition using rigorously tested modules, each fine-tuned to the type of wetland being evaluated. Project Tracker's online forms enable project managers to easily add new wetland projects and update information for existing projects for public display on the California EcoAtlas and other visualization tools. The [Landscape Profile Tool](#) summarizes information about the abundance, diversity, and condition of wetlands, streams, riparian areas and related information in automated reports for user-defined areas.

Collectively, the WRAMP toolset assists in delivering and visualizing accurate and timely data to implement the watershed- or landscape-approach to aquatic resource planning and protection.

**Keywords:** watershed context, landscape context, wetlands monitoring, and assessment tools

**Poster Topic:** Outreach & Communication

## California EcoRestore

Erik Loboschefskey, DWR Executive Program Office/DWR EcoRestore Program,  
erik.loboschefskey@water.ca.gov

Charlotte Biggs, DWR Executive Program Office/DWR EcoRestore Program,  
charlotte.biggs@water.ca.gov

Gardner Jones, DWR Executive Program Office/DWR EcoRestore Program, gardner.jones@water.ca.gov

Tim Smith, DWR Executive Program Office/DWR EcoRestore Program, tim.smith@water.ca.gov

Bill Harrell, DWR Executive Program Office/DWR EcoRestore Program, bill.harrell@water.ca.gov

Today's Delta looks little like it did 150 years ago. The Delta is a highly changed and engineered environment supporting threatened and endangered species, the state's agricultural industry, and water supply for millions. A key aspect of the Governor's Water Action Plan is aggressive ecosystem restoration to benefit fish and wildlife species recovery. Building on the goals set in California's Water Action Plan, the California EcoRestore initiative will coordinate and advance at least 30,000 acres of critical habitat restoration in the Delta over the next four years. The program aims to address the Delta's legacy impacts, as well as effects from the ongoing operation of the state and federal water projects. California EcoRestore is a California Natural Resources Agency initiative implemented with support from agencies including the Department of Water Resources, Department of Fish and Wildlife, Delta Conservancy, and Delta Stewardship Council.

Driven by world-class science, and guided by adaptive management, this initiative will pursue habitat restoration projects with clearly defined goals, measurable objectives, and financial resources to help ensure success. California EcoRestore's initial goal is to advance Delta habitat restoration associated with existing mandates, pursuant to federal biological opinions, as well as additional habitat enhancements. A broad range of habitat restoration projects will be pursued, including projects to address aquatic, sub-tidal, tidal, riparian, flood plain, and upland ecosystem needs, as well as fish passage improvement in the Yolo Bypass and other key locations.

Much of the costs of EcoRestore will be borne by the state and federal public water agencies currently required to mitigate the ecological impacts of the State Water Project and the Central Valley Project in the Delta. Funding for habitat enhancements unassociated with mitigation will come primarily from State Propositions, and local, federal, and private investment.

**Keywords:** Restoration, habitat, conservation, enhancement, delta, tidal, wetland, floodplain, fish passage

**Poster Topic:** Outreach & Communication

## **Funding Science and Restoration in Bay-Delta Ecosystems: An Overview of New CDFW Grant Programs**

Hildie Spautz, CDFW, hildegarde.spautz@wildlife.ca.gov  
Adam Ballard, CDFW, adam.ballard@wildlife.ca.gov  
Erin Aquino-Carhart, CDFW, Erin.Aquino-Carhart@wildlife.ca.gov  
Daniel Burmester, CDFW, daniel.burmester@wildlife.ca.gov  
Rebecca Fris, CDFW, rebecca.fris@wildlife.ca.gov  
Mitsuko Grube, CDFW, mitsuko.grube@wildlife.ca.gov  
Basil Ibewiro, CDFW, basil.ibewiro@wildlife.ca.gov  
Gena Lasko, CDFW, gena.lasko@wildlife.ca.gov  
Jason Roeh, CDFW, jason.roeh@wildlife.ca.gov  
Steve Rodriguez, CDFW, steve.rodriguez@wildlife.ca.gov

Numerous stressors have contributed to the decline in condition and function of key ecosystems throughout California, including the San Francisco Bay/Sacramento-San Joaquin Delta (Bay-Delta). The California Department of Fish and Wildlife (CDFW) is implementing three new competitive grant programs to provide funding for multi-benefit ecosystem restoration and protection projects that contribute to efforts to reverse the impacts of these stressors.

The *Wetlands Restoration for Greenhouse Gas Reduction Grant Program* was developed in response to the Global Warming Solutions Act of 2006 and supports projects that restore or enhance natural ecosystems in order to reduce greenhouse gas emissions and provide ecological co-benefits.

The *Watershed Restoration Grant Program* and *Delta Water Quality and Ecosystem Restoration Grant Program* were developed in response to the Water Quality, Supply, and Infrastructure Improvement Act of 2014 (Proposition 1). Proposition 1 provides funding to implement the three objectives of the California Water Action Plan: more reliable water supplies, restoration of important species and habitat, and a more resilient and sustainably managed water infrastructure.

These grant programs are contributing to implementation of the California Water Action Plan, State Wildlife Action Plan, California EcoRestore, federal recovery plans, and other relevant State and federal initiatives. Through the first grant cycles of these programs, as of June 2016, a total of \$52.4 million was awarded to 36 projects statewide, 13 of which (\$26.2 million) occur within the Bay-Delta. These Bay-Delta projects include scientific studies designed to address priority science needs consistent with the Delta Science Plan and projects to plan and implement habitat restoration actions. Key activities of the grant programs will include tracking implementation and communicating outcomes to inform future management decisions.

**Keywords:** Restoration, Funding, Ecosystem, Watershed, Habitat, Fish, Water, Wildlife, Science, Planning

**Poster Topic:** Outreach & Communication