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Cleaner Waters and Broader Benefits: Lessons from the Convergence of Physical, Biological, and Chemical Restoration

Location: Capitol Event Center
at the MAY Building
1020 11th St, Sacramento

Date: June 23, 2026
9:00 am to 4:15 pm
with a social hour to follow

Workshop Goal:

Advance a more integrated approach towards co-managing contaminants for broader ecosystem benefits in the Bay-Delta and watersheds.

Problem Statement:

Is our current approach to protecting listed fish in the Bay-Delta leaving ecosystem benefits on the table?

We know from research in the Bay-Delta and watersheds that contaminants are part of fish habitat and are present at levels that are harmful to aquatic life. However, much of that research has been done in silos, often with researchers studying one contaminant at a time. While this can be effective in reducing the presence of specific contaminants, new chemicals are developed faster than the corresponding research, and we are playing a losing game.

To achieve more holistic contaminant management with ecosystem-wide benefits, we need an integration of water quality and ecosystem protection. This workshop will highlight research and conversations that we hope will be the essential building blocks of that new framework.

Presenters will highlight insights and lessons from both traditional and integrated contaminant management practices, such as those used by practitioners of green infrastructure, urban planning, and organic farming.



Workshop Audience:

This symposium will be helpful for practitioners and managers working on species conservation and restoration, staff from regulatory agencies, chemists, toxicologists, Tribes, and environmental NGOs.

Agenda

9:00 – Welcome

Darcy Austin, *State Water Contractors (SWC)*

9:10 – Getting Back to an Ecosystem Approach

Stephanie Fong, *California Department of Fish and Wildlife (CDFW)*

9:30 – The DISB Contaminant Monitoring Review and Lessons Learned in Europe

Inge Werner, *Delta Independent Science Board (Delta ISB)*

10:00 – A Case Example Of Source Control Mitigation: Fipronil In Outdoor Structural Products

Robert Budd, *California Department of Pesticide Regulation (DPR)*

10:30 – Break

10:45 – Operational Invasive Plant Management in the California Delta

Jeffrey Caudill, *California Department of Boating and Waterways (DBW)*

11:15 – Collaborative Golden Mussel Research: Supporting Water Agency Mitigation Efforts

Lu Han, *Contra Costa Water District (CCWD)*

11:45 – The Ecological Tradeoffs Among Chemical and Non-chemical Vegetation Management Approaches

Krista Hoffmann, *Department of Fish and Wildlife (CDFW)*

12:15 – Lunch (provided)

1:30 – 6ppdq-A Cautionary Tale With A Silver Lining

Tracy Collier, retired *National Oceanic and Atmospheric Administration (NOAA)*

2:00 – Cleaning Water With Co-Benefits: Case Studies Of Beavers And Pavement

Katie Holzer, *City of Gresham, Oregon*

2:30 – A Voluntary, Incentivized Strategy to Benefit Salmon and People

Kevin Scribner, *Salmon Safe*

3:00 – Farming in Partnership with Nature: Clean Water, Biodiversity, and Regenerative Agriculture

Gabrielle Katanic, *Lundberg Family Farms*

3:30 – Synopsis and the Path Forward

Tracy Collier, retired *National Oceanic and Atmospheric Administration (NOAA)*

3:45 – Open Discussion

4:15 – Adjourn To Social Hour

Speaker Bios



Inge Werner, Delta Independent Science Board

Dr. Inge Werner has a master's degree in limnology and a Ph.D. degree in aquatic ecotoxicology. Her professional experience ranges from academic research in aquatic toxicology to a broad applied approach to environmental risk and impact assessment in both aquatic and terrestrial environments, from 1999 to 2010. Dr. Werner was on the faculty at UC Davis, where she served as Director of the Aquatic Toxicology Laboratory from 2005 to 2010. She was appointed Director of the Swiss Centre for Applied Ecotoxicology in 2010 and retired in 2021. Currently, she serves as Chair of the Delta Independent Science Board. She has published over 160 scientific articles.



Robert Budd, California Department of Pesticide Regulation

Robert received his Ph.D. in Environmental Science from the University of California at Riverside. He has been with the Department of Pesticide Regulation since 2009 as a Research Scientist within the Surface Water Protection Program. His primary duties include serving as a lead scientist coordinating monitoring projects to determine the status and trends of pesticide concentrations in California surface waters. His interests include evaluating the ecological relevance of pesticide loading within watersheds and developing mitigation strategies to reduce the deleterious effects on aquatic ecosystems.



Jeffrey Caudill, California State Parks

Jeffrey Caudill is currently a Senior Environmental Scientist Supervisor that serves at the Aquatic Invasive Plant Control Program Supervisor for California State Parks. Jeffrey has been working with CA State Parks for 10 years, focusing on controlling aquatic invasive plants in the California Delta through the use of herbicides and other control tools as a toxicologist and supervisor. Prior to that, Jeffrey spent 13 years in the chemical industry working with regulatory compliance and toxicology around chemical products.



Lu Han, Contra Costa Water District

Lu Han, Ph.D., serves as an Associate Water Resources Specialist at Contra Costa Water District (CCWD), where she focuses on water supply and hydrodynamic modeling, water rights reporting, and operational coordination. She also contributes to CCWD's response to golden mussels by coordinating mitigation efforts, collaborating with academic researchers, and monitoring interagency efforts. She holds a Ph.D. in Physical Oceanography from the University of North Carolina at Chapel Hill.



Krista Hoffmann, California Department of Fish and Wildlife

Krista Hoffmann is a Senior Environmental Scientist (Specialist) with the California Department of Fish and Wildlife (CDFW). Krista holds an undergraduate degree in Evolution and Ecology from UC Davis and a PhD in Pharmacology and Toxicology. Krista has worked and conducted research in the California Bay-Delta region for over fifteen years and also spent three years working on environmental outreach and monitoring as a Peace Corps volunteer on the Pacific island of Palau (Micronesia). Krista's PhD research investigated the toxic effects and interactions of aquatic contaminants in mixtures. She is currently the IPM Coordinator with the Lands Program at CDFW, focusing on effective and ecologically sound methods for vegetation control across CDFW's Wildlife Areas and Ecological Reserves.



Katie Holzer, *City of Gresham, Oregon*

Katie Holzer is a Senior Environmental Scientist with the City of Gresham in Oregon, where she studies stream pollutants and water-quality treatment technologies. She has a Ph.D. in Ecology from UC Davis and has been researching ways to manage contaminants in waterways for 19 years.



Kevin Scribner, *Salmon Safe*

Kevin brings extensive experience in natural resource planning and management, community cultural development, food systems, ecological restoration and commercial fishing. He worked as a commercial salmon fisherman in the Pacific Northwest and Alaska from 1976 to 1996. From 2001 to 2009, Kevin was the Coordinator and Basin Advocate for the Walla Walla Watershed Alliance, which included the Confederated Tribes of the Umatilla Indian Reservation (CTUIR). From 2009 to 2019, he managed Vinea Sustainable Trust, a vineyard and winery organization in the Walla Walla Valley. He also consults for Salmon-Safe, a third-party certifier of sustainable and fish-friendly land management practices. Kevin owns and operates Forever Wild Seafood, which develops value-added wild salmon products, that is now available at Eva's Wild. Kevin co-founded The Wave Foundation, which aims to strengthen community health, regional economies, and environmental sustainability by creating equitable and resilient food systems, as well as The Wave Marketplace. Kevin serves as Board President or Chair for the Marine Fish Conservation Network, Sustainable Fisheries Foundation, Global Ocean Health, and the Slow Fish North America Oversight Team. He is also Vice-President of the Walla Walla Basin Watershed Council and a member of the Columbia Basin Collaborative, representing the Conservation Community.



Gabrielle Katanic, *Lundberg Family Farms*

As Farm Operations Business Manager at Lundberg Family Farms, Gabrielle Katanic is an expert in both soil and spreadsheets. What do spreadsheets have to do with soil? Quite a bit, as it turns out. Gabrielle leverages data analytics, soil mapping technology, and precision farming techniques to improve on-farm decision-making for the triple bottom line: people, planet, and profit. Gabrielle's background in natural resource conservation includes training in Ecology, Fisheries Science, and Watershed Restoration and Management. With a deep passion for places where agriculture and environmental stewardship overlap, she is dedicated to proving that regenerative organic farms like Lundberg's can be both high-yielding and essential to healthy ecosystems and communities. Beyond her role at Lundberg, Gabrielle is a nature educator who helps people connect with local landscapes and understand how food and ecosystems are linked. Learn more at www.lundberg.com.

Planning Committee



Tracy Collier, retired *National Oceanic and Atmospheric Administration (NOAA)*

Dr. Collier spent over 35 years working for NOAA Fisheries until he retired in 2010, then held several part-time positions. These included 10 years on California's Delta Independent Science Board, where he was chair for 2 years; 3 years as Science Director for Washington State's Puget Sound Partnership; 5 years as Science Advisor to NOAA's Oceans and Human Health Initiative; and 9 years as an Associate for Research Planning, Inc and Ocean Associates, Inc. Tracy has extensive experience as a technical consultant on oil spills for First Nations in Canada and for natural resource damage assessment cases nationally. He also supported the U.S. Dept. of Justice and the WA State Attorney General on legal cases involving chemical releases in aquatic environments. Dr. Collier's expertise includes environmental toxicology, especially in fish, sea turtles, and marine mammals; applying science to protect and restore complex ecosystems; and the effects of environmental conditions on human health. Tracy has worked in nearly all coastal areas of the United States and has a broad portfolio of international consulting experience. He has over 180 scientific publications and earned his PhD from the University of Washington's College of Fisheries (a long time ago).



Stephanie Fong, *California Department of Fish and Wildlife*

Stephanie Fong is the Interagency Ecological Program Coordinator Chair. She leads multi-agency science collaboration in the Sacramento–San Joaquin Delta, coordinating large-scale ecological monitoring, strategic planning, and multi-million-dollar scientific initiatives. With over two decades of experience in aquatic science and water quality, Stephanie has held senior roles at the CA Department of Fish and Wildlife, the State and Federal Contractors Water Agency, the Central Valley Regional Water Quality Control Board, and the University of California, Davis. Her career focuses on advancing collaborative science, strengthening environmental monitoring, and supporting data-driven natural resource management.



Shawn Acuña, *Metropolitan Water District of Southern California*

Dr. Shawn Acuña is a Principal Resource Specialist for the Bay Delta Initiatives group at the Metropolitan Water District of Southern California (MWD). He has over 25 years of experience in fish biology and environmental science. He received his B.S. in Aquatic Biology at the University of California, Santa Barbara. After years of working in environmental science and aquaculture, he returned to continuing education and received his M.S. in Animal Biology and his Ph.D. in Ecology from the University of California, Davis. His research spans a wide range of laboratory and field studies, including the impacts of toxins such as environmental pollutants and toxin-producing cyanobacterial blooms, physical stressors (salinity and temperature), and nutritional stress. He has experience with gross pathology, histopathology, and nutrition and health biomarkers. His current work with MWD has focused on assessing responses of listed fish species in the San Francisco Estuary to environmental stressors to better inform water project management and promote sustainable management of these species.



Nat Scholz, retired *National Oceanic and Atmospheric Administration (NOAA)*

Nat Scholz is a marine conservation biologist whose graduate studies included a master's at Boston University's marine program in Woods Hole and a doctorate in marine zoology from the University of Washington. He completed a postdoctoral fellowship with the National Academy of Sciences (National Research Council). In 1999, he joined NOAA's Northwest Fisheries Science Center in Seattle and became lead of the Ecotoxicology Program in 2004. Over the past 25 years, he led research on urban stormwater threats to Pacific salmon, including field, laboratory, and modeling studies that identified 6PPD-quinone as the cause of a severe mortality syndrome in coho salmon. He has published extensively on pollution impacts to coastal, estuarine, and open-ocean habitats. He retired from federal service in May 2025.



Darcy Austin, *State Water Contractors*

Darcy Austin has been working on San Francisco Bay-Sacramento-San Joaquin Rivers Delta (Bay-Delta) issues for over 20 years, combining her background in contaminants with a love for California water issues and an appreciation of the nexus between ecology and water supply. Darcy holds a B.S. in Biology with an emphasis in Microbiology and Parasitology from Colorado State University, and a Master of Public Health with an emphasis in Environmental Health from San Diego State University. She has spent most of her career working on systems and processes that apply best-practice science to management issues across California. As the Science Manager for the State Water Contractors, Darcy has overseen the funding of over \$16m in research projects, tools, and communication forums focused on reducing uncertainties around ecosystem function and water supply reliability. Outside the office, Darcy enjoys spending time with her family, playing with her three-dog army, teaching yoga, gardening, and traveling.