

## Central Valley Irrigated Lands Regulatory Program—Implementing the Pesticide TMDL

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The Central Valley Water Board adopted basin plan amendments to address diazinon and chlorpyrifos in the Sacramento, Feather, and San Joaquin Rivers, as well as the Delta in the early 2000's. Those amendments included TMDL allocations, implementation provisions, and monitoring requirements that were primarily implemented through the irrigated lands regulatory program. The primary challenges and successes associated with these efforts will be discussed, including: collaboration with the Department of Pesticide Regulation and the county agricultural commissioners; establishing an effective monitoring and assessment program; the potential substitution of one set of impacts for another; and the significant role played by agricultural water quality coalitions. An overview of available water quality and other information (such as surveys of management practices implemented) will provide context for evaluating the effectiveness of the TMDL and implementation efforts.

**Keywords:** Irrigated Lands Regulatory Program, Central Valley, TMDLs, Pesticides

**Session Title:** Bay-Delta TMDLs: How Can We Accelerate Water Quality Restoration?

**Speaker Biography:** Joe is the program manager of the Irrigated Lands Regulatory program at the Central Valley Water Board, which regulates discharges from over 7 million acres of irrigated agriculture in the Central Valley. Joe and his staff develop regulations, conduct outreach, oversee monitoring efforts, and ensure compliance with Board requirements. Staff in Joe's group also work on the CV-SALTS program, which is developing policies to address salinity management in the Central Valley, and his staff oversee the Surface Water Ambient Monitoring Program (SWAMP). Joe has 20 years' experience in the water quality arena with both the U.S. EPA and the Water Board. Joe is a registered professional engineer with a Bachelor of Science degree in chemical engineering from Michigan State University. He also has a Master's in Public Policy and Administration from CSU, Sacramento.

## Implementing the Urban Creeks Pesticide TMDL—Early Victories on the Long Road to Solutions

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California water quality monitoring data, including data from San Francisco Bay Area urban creeks, revealed previously unrecognized gaps in pesticide regulatory procedures intended to prevent water pollution. A single Bay Area TMDL involving a collaborative implementation strategy has started to establish pesticide regulatory programs and processes that have the potential to provide long-term water quality protections.

In recent years, numerous studies documented toxicity in waterways throughout California, particularly in urban watersheds, including those in the San Francisco Bay Area. This toxicity is almost exclusively caused by currently used pesticides. In the late 2000s, in response to the cessation of most urban uses of diazinon and chlorpyrifos in 2004, pyrethroid insecticides came to dominate the market—and to create a new type of toxicity in urban watersheds. Anticipating this change, the San Francisco Bay Water Board integrated a pesticide toxicity management strategy into its 2005 Urban Creeks diazinon TMDL.

To implement the TMDL, Bay Area municipal stormwater management agencies and wastewater treatment plants joined together with the Water Board to work with Federal and California pesticide regulators towards the goal of eliminating pesticide-related water pollution in California. This multi-agency collaboration, which now includes diverse partners across the state, has led to landmark changes at both the state and Federal levels, including California regulations coupled with special restrictions placed on bifenthrin (the most environmentally persistent pyrethroid) that are together expected to reduce pyrethroid-caused toxicity by 80-90%.

California monitoring data show rapidly increasing concentrations of fipronil, another insecticide associated with water quality impacts; additional work will be needed to end pesticide-related toxicity in urban watersheds, prevent transitions to other harmful products, and ensure that pesticides do not harm San Francisco Bay and aquatic ecosystems in the Bay watershed.

**Keywords:** Water Quality, Pesticide, Urban, TMDL Pyrethroid, Fipronil

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**Speaker Biography:** Dr. Kelly Moran is President of TDC Environmental, LLC, an environmental consulting firm specializing in water quality and pollution prevention. For the last 20 years, Dr. Moran has focused on linkages between consumer products and water pollution. She works with California water quality and pesticides regulators to address water pollution from urban pesticide use. Dr. Moran has served on the California Green Ribbon Science Panel and the City of San Mateo Planning Commission. Her work has been honored with numerous awards, including the U.S. EPA Region 9 Environmental Award for Outstanding Achievement (2004). She received a B.S. in Chemistry with Honors from Stanford University and a Ph.D. in Chemistry from U. C. Berkeley.

## **Watershed Restoration—Implementing the Napa River Sediment TMDL**

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In 1990, based upon declining populations of steelhead and salmon and a threat to aquatic habitat, the Napa River and its tributaries were listed as water quality impaired for excessive sedimentation. In 2009, a TMDL to reduce sediment and enhance habitat was adopted by the San Francisco Bay Regional Water Quality Control Board. For over 20 years Napa County citizens, through local regulatory programs and voluntary efforts, have been working to protect and improve water quality and to enhance fisheries habitat. Local erosion control requirements are among the strictest in the nation for agricultural land uses and the benefit of those regulations is evident in the landscape today. In addition, local watershed and industry groups and County officials have taken a leadership role in developing and implementing plans, programs, and projects to meet and exceed requirements of the TMDL. Thirteen miles of predominantly privately-owned Napa River frontage is being restored through public-private partnerships, removal of fish migration barriers is providing improved access to high-quality aquatic habitat, farm and sustainability plans have been developed for tens of thousands of acres of property, and land managers are implementing priority erosion control projects in tributary watersheds that support threatened steelhead. Results from five years of out-migrant fisheries monitoring demonstrate that steelhead in the Napa River are relatively large and that smolt production is fairly consistent. These are good signs for the Napa River watershed, but with over two decades of work and a large amount of public and private investment, more is needed to track and account for progress in a meaningful and coordinated way. With that in mind, Napa County, EPA, and other partners are investing in development of a TMDL tracking and accounting system, the success of which will depend upon cooperation from stakeholders, regulatory agencies, funders, and policy makers.

**Keywords:** TMDL Implementation, Watershed Restoration, Public-Private Partnerships, Fisheries Monitoring

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**Speaker Biography:** Leigh Sharp is Executive Director of the Napa County Resource Conservation District and has worked on water quality and habitat issues in the Napa River watershed since 2001. Before assuming the role of Executive Director in January 2006, Leigh was the RCD's Stewardship Facilitator, working with several watershed community groups to develop and implement water quality and habitat enhancement plans and programs. She and other RCD staff actively engage with public and private land managers in their efforts to implement cost-effective and scientifically sound projects and practices that conserve, protect and restore Napa County's natural resources in a landscape that supports agriculture, urban areas and wild spaces. Leigh has a Master of Science degree in Agricultural and Resource Economics from Oregon State University and a Bachelor of Science degree in Environmental Science from U.C. Riverside.