

The RMP Emerging Contaminants Program

A Cutting-Edge and Cost-Effective Strategy for Preventing Pollution



A global leader in the study of emerging contaminants, the Regional Monitoring Program (RMP) identifies emerging contaminants *before* they cause harm to San Francisco Bay.



RMP stakeholders believe that preventing a pollution problem is safer and more cost-effective than cleaning one up. For this reason, the RMP focuses on monitoring emerging contaminants, or CECs. Early identification of problem CECs and quick action to prevent their spread is the best way to protect water quality in San Francisco Bay.

What are contaminants of emerging concern (CECs)?

Also referred to as *emerging contaminants*, these include any chemical that is not regulated or monitored and that has the potential to enter the environment and harm people or wildlife.



Assessing the risks that emerging contaminants pose to Bay wildlife and surrounding communities requires information about the levels of these chemicals in the Bay, how they move and persist, and how toxic they are. The RMP's decade-long effort to identify CECs has produced a high quality body of knowledge on Bay contamination, making this one of the most thoroughly monitored aquatic ecosystems in the world. This information allows managers to develop sophisticated, rational approaches to solving emerging water quality issues.

The RMP's forward-looking approach has allowed it to meet pollution challenges effectively and efficiently. However, as the number of CECs rises, additional resources will allow the RMP to expand efforts to identify toxic contaminants before they harm the Bay.

The Emerging Contaminants Workgroup — These international experts guide RMP efforts.



Dr. Bill Arnold
University of Minnesota



Dr. Phil Gschwend
MIT



Dr. Derek Muir
Environment Canada



Dr. Lee Ferguson
Duke University



Dr. Kelly Moran
TDC Environmental, LLC



Dr. Heather Stapleton
Duke University

Priority CECs in San Francisco Bay

Surveillance has identified four emerging contaminants of *moderate concern*:

1. a stain and water repellent (PFOS)
2. a widely used insecticide (fipronil)
3. a class of detergent ingredients (nonylphenols and nonylphenol ethoxylates)
4. a once-common class of flame retardants (PBDEs)

Many additional CECs have been classified as *low concern*, while others—including microplastic—are of *possible concern*, where data gaps prevent a better understanding of the risks they may pose.



Case study: RMP response to PBDE flame retardants

The story of PBDEs in the Bay demonstrates the power of the RMP's CEC strategy. Alerted to the rapid and alarming rise in Bay PBDE contamination in the 1990s, the RMP began systematic monitoring, adding to the body of science that led to regulatory and legislative action. In 2004, a major manufacturer of commercial PBDE mixtures phased out production, ahead of a California ban that went into effect in 2006. Continued RMP monitoring showed dramatic declines in PBDE levels in Bay mussels, fish, and bird eggs.

RMP in the News — View a selection of media reports featuring RMP studies.

San Jose Mercury News

September 2015: Front page stories in the *San Jose Mercury News* and affiliates publicized the RMP's pilot study of microplastic pollution, which suggested that San Francisco Bay has higher levels than other major urban waterbodies in the US. Microplastic particles, which are less than five millimeters in size, were also observed in treated wastewater discharged to the Bay. These findings immediately influenced state and national decision-makers, leading to a nationwide ban on microbeads, a type of microplastic added to body care products.

San Francisco Chronicle

December 2014: Front page coverage in the *San Francisco Chronicle* detailed clear evidence from the RMP of widespread and rapid declines in PBDE flame retardant pollution in Bay wildlife following a nationwide industry phase-out. This success story was broadcast widely via local print, radio, and television news, as well as major publications like *Scientific American*.

For more information—contact Dr. Rebecca Sutton, RebeccaS@sfei.org or visit our web resources: <http://sfei.li/cec>