

ACTION 27

Implement Total Maximum Daily Load projects in the Estuary, including projects to reduce mercury, methylmercury, pesticides, and areas of low dissolved oxygen

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Develop and fund projects to reduce mercury loads from the Guadalupe watershed into San Francisco Bay. Reduce pesticide impacts to the region's urban streams. Explore opportunities to manage low dissolved oxygen and methylmercury in Suisun Marsh.

TASK 27-1 Develop and implement a multi-media outreach campaign aimed at reducing household indoor and outdoor pesticide use.

BY 2017 Complete final report on outreach campaign.

TASK 27-2 Evaluate Best Management Practices (BMPs) in Suisun Marsh to improve marsh water quality and address dissolved oxygen and methylmercury impairment. Characterize managed wetland responses to BMPs through water quality modeling.

BY 2018 Develop water quality model.

TASK 27-3 Address the Guadalupe River mercury TMDL by implementing RMP monitoring of mercury loads during flood conditions, and by undertaking remediation projects within the Almaden Quicksilver County Park.

BY 2020 Complete monitoring.

BY 2021 Complete remediation projects.

BACKGROUND

Total Maximum Daily Loads (TMDLs) are action plans to restore clean water. Section 303(d) of the federal Clean Water Act requires states to identify water bodies that do not meet water quality standards, and their associated pollutants. TMDLs examine water quality problems, identify pollutant sources, and specify actions that create solutions. They are adopted by the Regional Water Quality Control Boards as amendments to the region's Water Quality Control Plan.

Currently the San Francisco Bay Regional Water Quality Control Board has 22 TMDLs completed or under development. Two TMDLs are Bay-wide (mercury and polychlorinated biphenyls, or PCBs) and an additional TMDL covers all the urban streams in the region for pesticide toxicity. This CCMP action focuses on current tasks to address the region's TMDLs for mercury and methylmercury (Bay-wide and Guadalupe River Watershed specific), as well as for dissolved oxygen and pesticides. Taken together, this and other CCMP actions provide an integrated approach to reducing pollution to the Estuary.

Mercury contamination remains a priority concern in the San Francisco Estuary and its watersheds. The South Bay's Guadalupe River

Watershed is the location of a legacy mercury mining district and several reservoirs and lakes that generate methylmercury, a chemical form of the metal that can bioaccumulate in higher level predators and fish consumers.

One tool that has been shown to reduce both mercury and PCB loads to the Estuary is green infrastructure (GI). This greening and softening of the urban hardscape is identified as a priority strategy for TMDLs in the current Municipal Regional Stormwater Permit, and is the focus of related CCMP actions. Another tool supported by this action is remediation of contaminated soils and landscapes in former mining areas.

To address pesticide toxicity, this CCMP action supports outreach promoting consumer behavior change. Research has shown that pesticides applied around homes — even when applied according to label instructions — lead to toxicity in local water bodies and urban streams. Outreach can reduce this threat.

In the upper Estuary, about 52,000 acres of wetlands managed to attract ducks in Suisun Marsh present a specialized suite of pollution problems. Vegetation manipulation, in conjunction with flooding of these areas for hunting in the fall, periodically results in discharges of water with low levels of dissolved oxygen from the diked marshes. The discharges, laden with decaying plant matter, can cause severe dissolved oxygen depletion in the adjoining channels and sloughs, which often leads to fish kills. The prolonged periods of flooding and drying, together with a buildup of organic carbon in the soils, can also enhance methylmercury production. This CCMP action supports the development of BMPs to tackle these water quality issues in Suisun Marsh.

OWNERS

SF Bay Regional Water Quality Control Board (Tasks 27-2, 27-3)
SF Estuary Partnership (Tasks 27-1, 27-2, 27-3)
Suisun Resource Conservation District (Task 27-2)

COLLABORATING PARTNERS

CA Department of Pesticide Regulation, Santa Clara County Parks and Recreation Department, Santa Clara Valley Water District, SF Estuary Institute, US Environmental Protection Agency, various municipalities

NEXUS

Actions 6, 20, 21, 24, 25
Goals 1, 3, 4
Objectives a, c, i, j

