

# Water Quality Report Card

<b>Regional Water Board:</b>	Central Valley, Region 5
<b>Beneficial Uses Affected:</b>	REC-1, COMM, WILD
<b>Implemented Through:</b>	NPDES Permit, WDR, <a href="#">Grant</a> , <a href="#">401 Certification</a> , Stakeholder Action
<b>Effective Date:</b>	October 20, 2011
<b>Attainment Date:</b>	2030

## Methylmercury and Mercury in the Sacramento-San Joaquin Delta

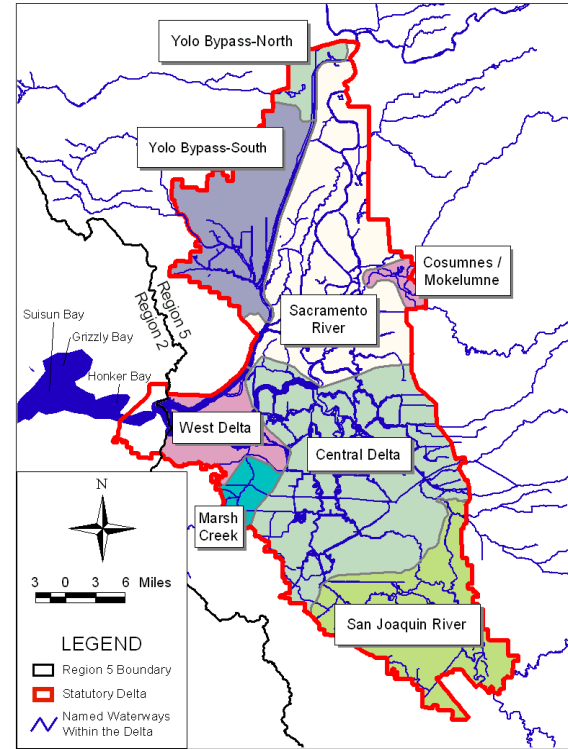
<b>STATUS</b>	<input type="checkbox"/> Conditions Improving
	<input type="checkbox"/> Data Inconclusive
	<input checked="" type="checkbox"/> <b>Improvement Needed</b>
	<input type="checkbox"/> Targets Achieved/Waterbody Delisted

**Pollutant Type:**  Point Source  Nonpoint Source  Legacy

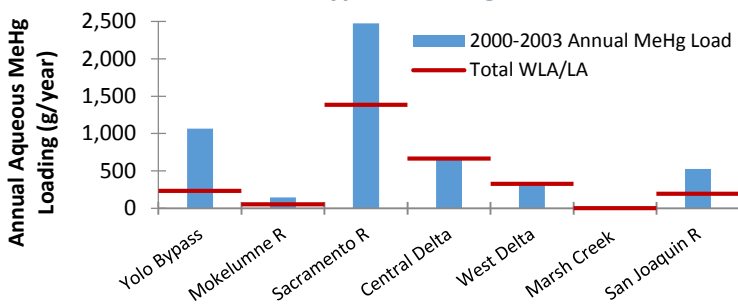
### Water Quality Improvement Strategy

The Sacramento-San Joaquin Delta and Yolo Bypass are impaired due to elevated levels of mercury in some fish. Sources of mercury include legacy of the State's gold and mercury mines, naturally-enriched soil, deposition from air, springs, urban runoff, and wastewater. Methylmercury (MeHg), which accumulates in fish, is made in wet, oxygen-depleted environments. Sources of MeHg include wetlands, tributaries, Delta channel sediments, and point sources. To address the impairment, Region 5 adopted the [Sacramento-San Joaquin Delta Methylmercury TMDL](#) in 2011. The TMDL is intended to reduce concentrations of MeHg in fish by controlling sources of both MeHg and total mercury. Because MeHg levels in fish are strongly correlated with those in water, load and wasteload allocations (LA/WLA) are in the form of annual aqueous MeHg loads. The TMDL is proceeding in two phases. Major Phase 1 (2011-2020) activities are: (1) studies to develop and evaluate MeHg control measures; (2) mercury pollution prevention by municipal wastewater and storm water permittees, and development of upstream mercury TMDLs; and (3) a mercury exposure reduction program to protect people eating Delta fish. At the end of Phase 1, Region 5 will review the TMDL and adjust based on the MeHg control studies. During Phase 2 (2020-2030), dischargers must meet allocations.

### Delta and Yolo Bypass



### Delta and Yolo Bypass Loading Allocations<sup>a, b</sup>

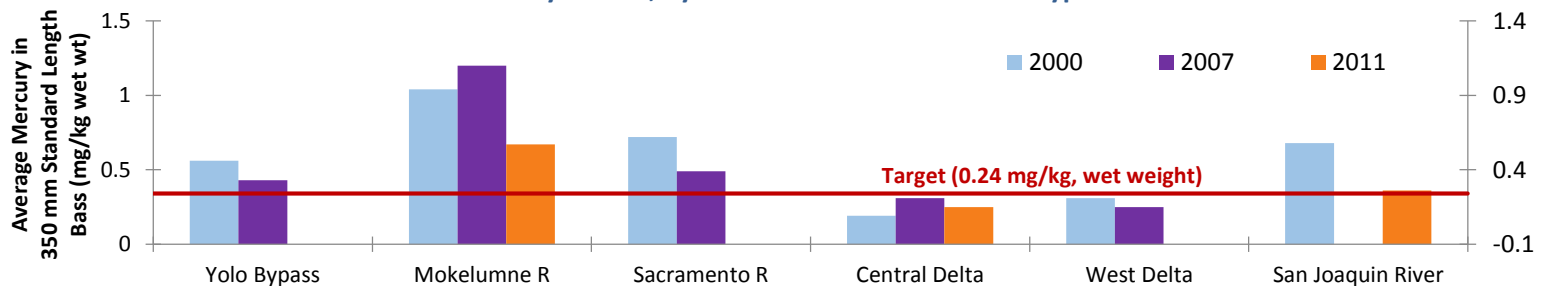


<sup>a</sup> Allocations apply within the legal Delta boundary and the Yolo Bypass.  
<sup>b</sup> Wastewater treatment facilities that have done major process changes are now close to meeting facility-specific WLA.

### Water Quality Outcomes

- Monitoring data demonstrate that there are no significant trends in concentrations of mercury in fish sampled before (2000 and 2007), and since (2011), the TMDL was adopted.
- Studies to improve MeHg control are underway for all major source types, including managed and tidal wetlands.
- Hydrodynamic models are being developed that will predict the effects of flow changes and large restorations on MeHg.
- Significant MeHg controls within the Delta are not expected until after the 2020 TMDL review. Major tributaries (which contribute 60 percent of MeHg loads) will be addressed by the [Statewide Mercury Control Program](#), and in future TMDLs.

### Mercury in Bass, by Subareas in Delta and Yolo Bypass<sup>c</sup>



<sup>c</sup> Recent data are available on the ["Are Fish Safe to Eat" portal](#).

Publications relating to TMDL implementation activities:

Alpers, C.N., et al. 2013. [Mercury cycling in agricultural and managed wetlands, Yolo Bypass, California: Spatial and seasonal variations in water quality](#). Sci Total Environ.

Eagles-Smith, C.A., et al. 2014. [Wetland management and rice farming strategies to decrease methylmercury bioaccumulation and loads from the Cosumnes River Preserve, California](#). U.S. Geological Survey Open-File Report 2014-1172, 42 p.