

LSB—IMPACT OF PROPOSED EPA SELENIUM STANDARDS

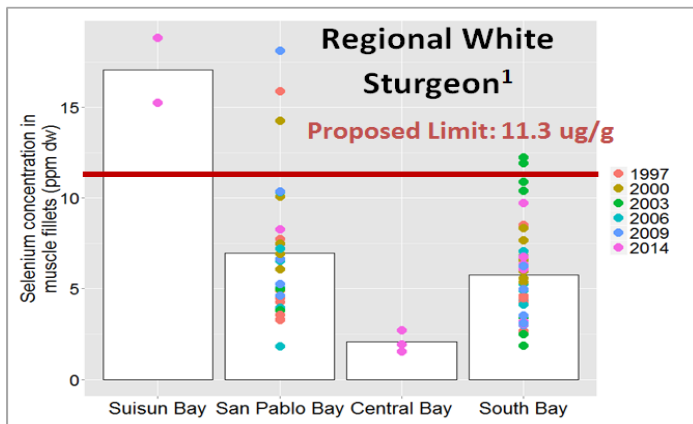
August 2016

The Environmental Protection Agency (EPA) has proposed lower selenium water quality (WQ) criteria for the San Francisco Bay and Delta:

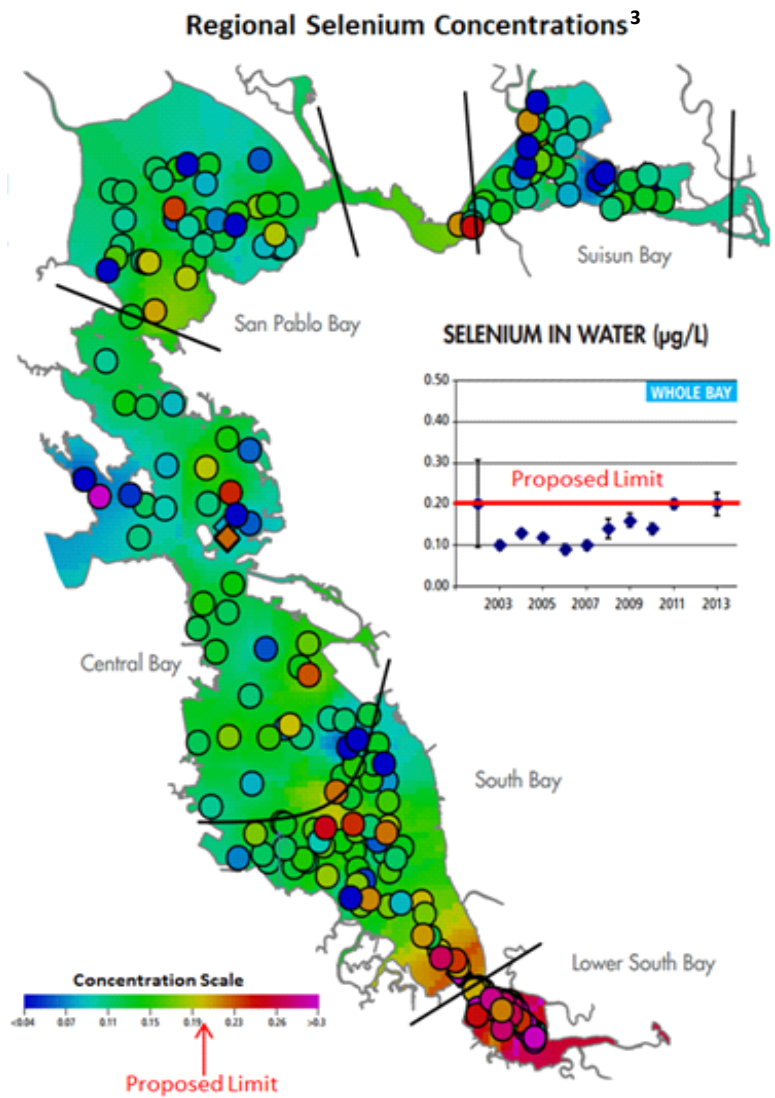
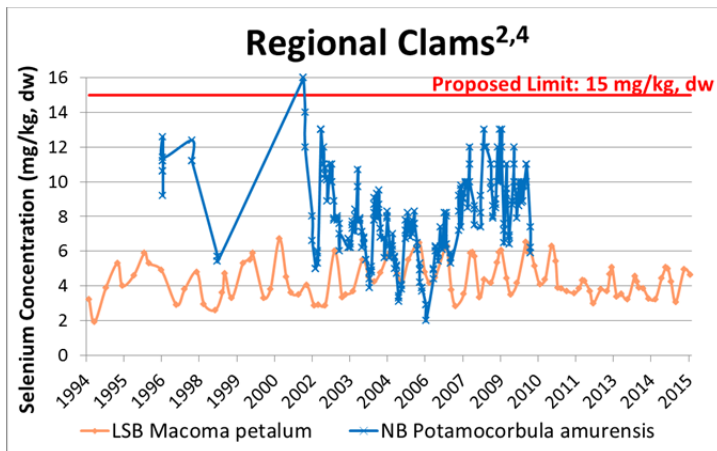
- Current WQ criteria of 5 ppb would be reduced to a **30-day average concentration of 0.2 µg/L** (based on North Bay food web)
- **Proposed fish criteria:** 11.3 µg/g dry weight (muscle); 8.5 µg/g dry weight (whole body)
- **Proposed clam tissue criteria:** 15 mg/kg dry weight
- These are recommendations for states and regional water boards to consider for implementation
- SF RWQCB expressed interest in developing metrics for selenium monitoring and early warning indicators of potential worsening selenium impacts as well as a South Bay TMDL

Despite higher WQ concentrations than the proposed criteria, clam and fish tissue concentrations do not suggest impairment at current Lower South Bay (LSB) WQ levels.

- Data suggests that selenium sources in wastewater effluent are mainly from inflow/infiltration and potable source water



- **Proposed criteria do not account for varying food webs in subembayments. LSB clams accumulate Se at lower rates than *P. amurensis*.**
- **Exceedance in proposed WQ criteria is not indicative of bioaccumulation in LSB food web.**
- **Weight-of-evidence approach would rely on direct indicators (fish or clam) to fully protect beneficial uses.**



Top 10 most abundant benthic species near Palo Alto do not include *P. amurensis*.²

¹SFEI. Se Work Group Data. Received by Jennifer Sun, 8 Aug. 2016.

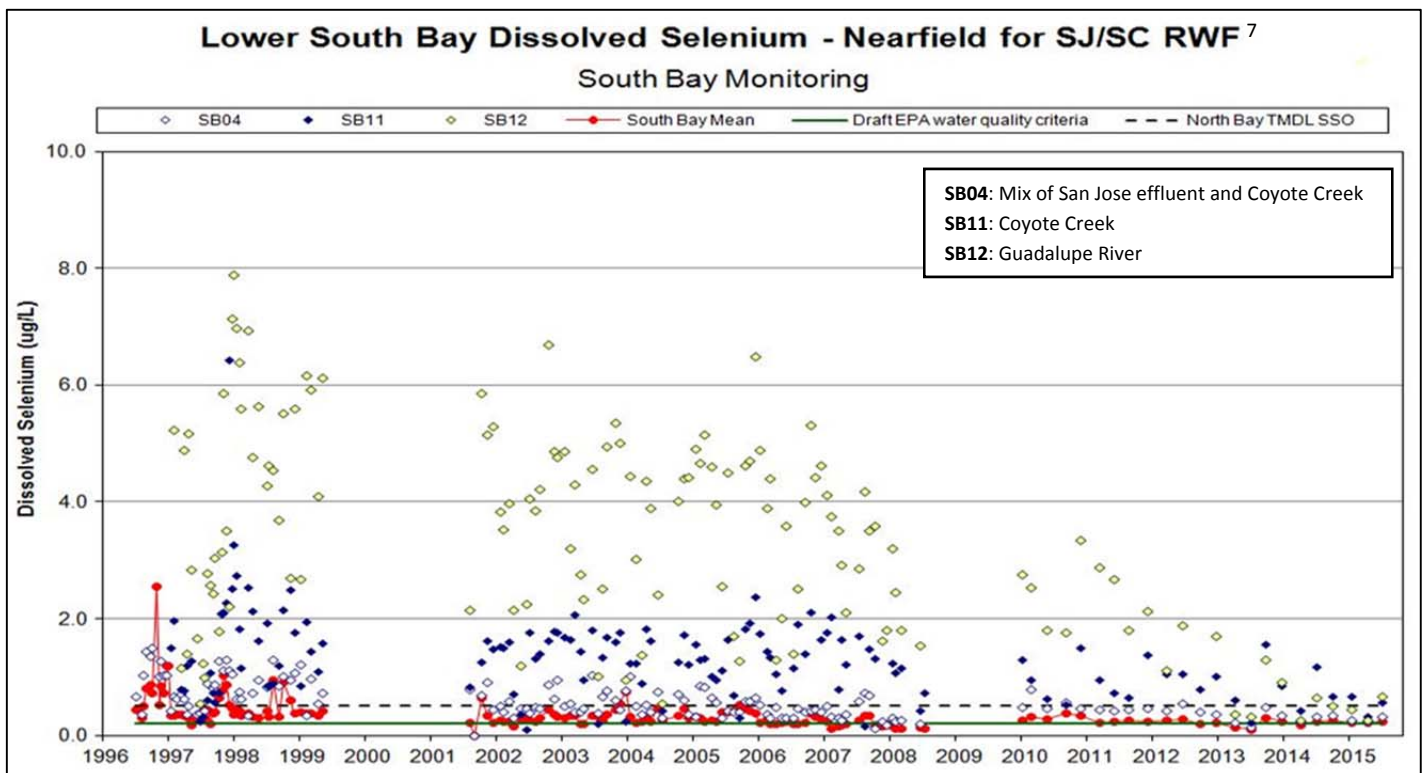
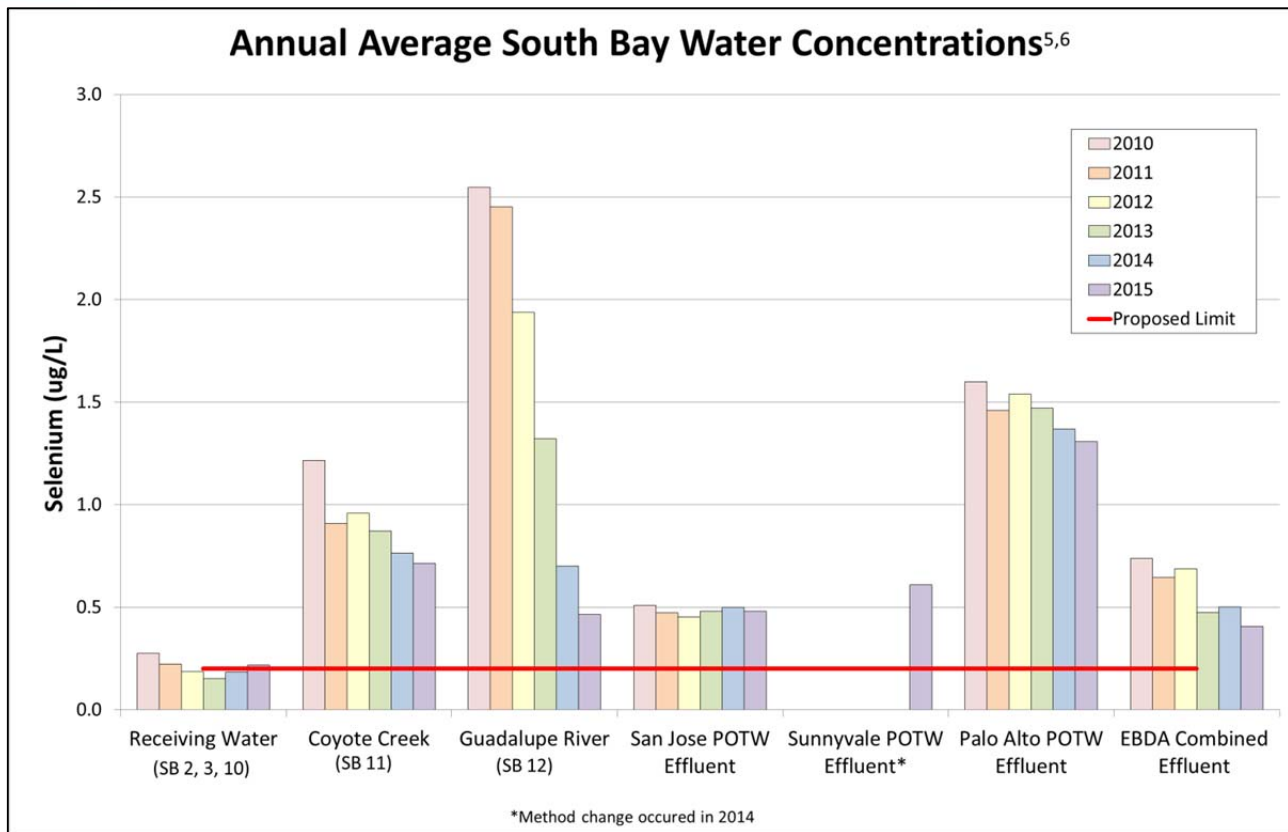
²USGS. (2016). U.S. Geological Survey Open-File Report 2016-1118. U.S. Geological Survey, Reston, VA.

³Adapted from SFEI. 2015. The Pulse of the Bay: The State of Bay Water Quality, 2015 and 2016. SFEI Contribution #759. San Francisco Estuary Institute, Richmond, CA.

⁴USGS. (2010). U.S. Geological Survey Open-File Report 2010-1252. U.S. Geological Survey, Reston, VA.

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⁵Data obtained from San Jose, Sunnyvale, Palo Alto, & East Bay Dischargers Authority (EBDA) POTWs.

⁶East Bay Dischargers Authority (EBDA) discharges effluent from City of Hayward, City of San Leandro, Oro Loma Sanitary District, Union Sanitary District, Dublin San Ramon Services District, and City of Livermore.

⁷San José-Santa Clara Regional Wastewater Facility. Lower South Bay Selenium Data. Received by Eric Dunlavey, 7 July 2016.