

A Report of the Regional Monitoring Program for Water Quality in the San Francisco Estuary

2010

THE PULSE OF THE ESTUARY



LINKING THE WATERSHEDS AND THE BAY

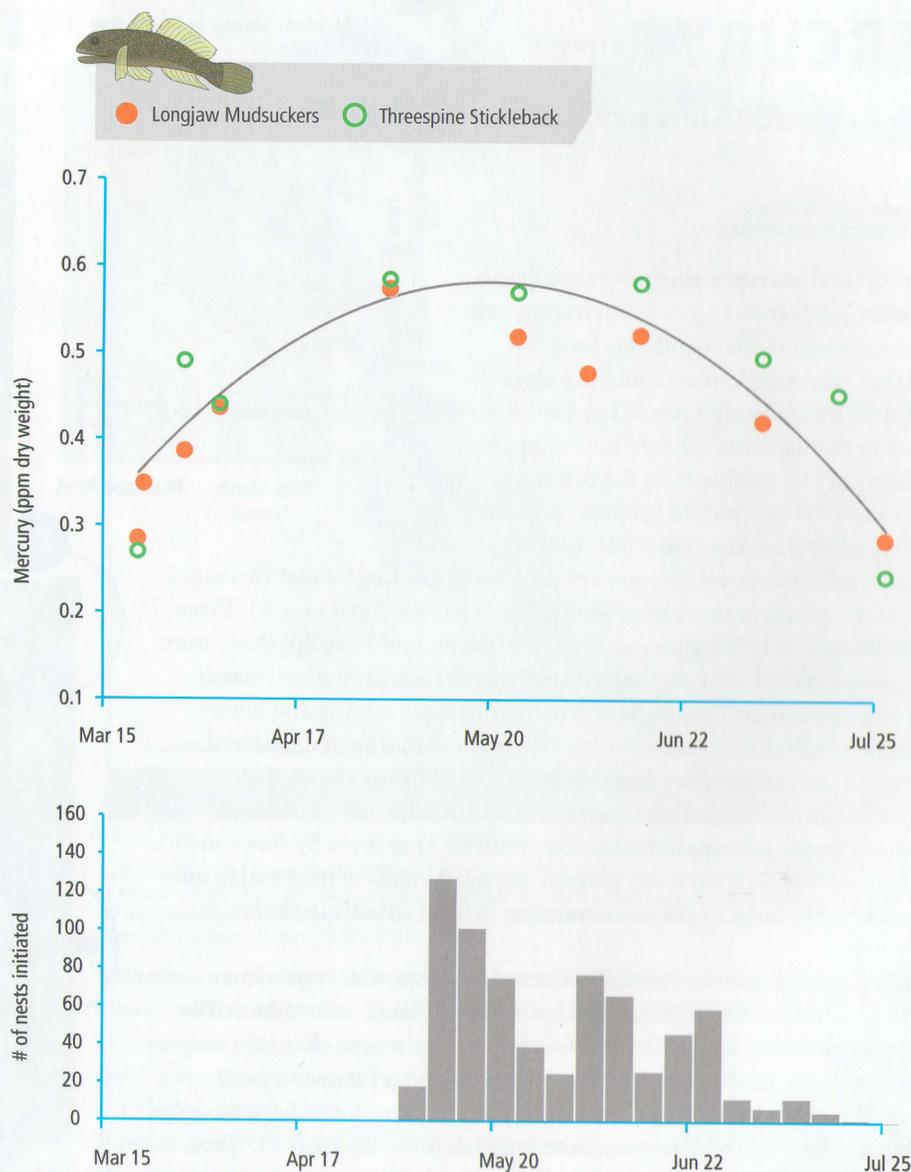
MERCURY CONTINUED

Small Fish: Seasonal Variation

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A U.S. Geological Survey study has documented striking seasonal variation in mercury in small fish. This study was part of a broader effort examining mercury accumulation and risks in Bay bird populations. Small fish were examined due to their importance as prey for Forster's Terns, a species at substantial risk from mercury contamination within the Bay (see 2008 Pulse, page 56). The investigators found that longjaw mudsuckers and threespine stickleback were the predominant prey fish, comprising 36% and 25% of the Forster's Tern diet. Mercury concentrations were found to vary substantially over short time spans, increasing by 40% between March and May and then decreasing by 40% between May and July. Importantly, Forster's Terns initiated 68% of nests and 31% of chicks hatched during the period of peak mercury concentrations in prey fish. These results illustrate the importance of short-term variation in small fish mercury concentrations for both monitoring mercury and assessing mercury risks to wildlife.



Reference: C.A. Eagles-Smith and J.T. Ackerman. 2009. Rapid changes in small fish mercury concentrations in estuarine wetlands: implications for wildlife risk and monitoring programs. *Environ. Sci. Technol.* 43, 8658-8664.