

**Investigations**

## San Francisco Bay Estuary Priority Ecosystem Study

**Diverse organic and inorganic contaminants** that vary widely in their environmental behavior, sources, and toxicity enter the San Francisco Bay estuary. Toxic substances enter the estuary in agricultural and urban runoff and in discharges from municipal wastewater facilities and industries. The study focuses on the movement, fate, and effect of contaminants from a variety of agricultural, industrial, and urban sources, such as pesticides and toxic trace elements, and on the effects of the highly varying hydrologic conditions in river--estuarine environments. Scientists are developing an approach to characterize the distribution of contamination and the resulting ecological effects that will be applied in similar environments elsewhere.

### Project Science Feature Articles

- [Sometimes the Question Is «Who Isn't Living There?»](#)
- [Phytoplankton in Coastal Waters and Global Climate Change?](#)
- [New Approach to Evaluating Selenium Toxicity in the Environment](#)
- [Climate-Driven Ocean Changes Affect Estuaries: Pacific Ocean Cooling Triggers Phytoplankton Blooms in San Francisco Bay](#)
- [Microscopic Phytoplankton Can Cause Big Problems for Estuaries](#)
- [Biodynamic Model is Unraveling the Complexities of Metal Bioaccumulation from Contaminated Sediments](#)
- [A Tool for Predicting the Effect of Invasive Species on Aquatic Food Webs](#)
- [Dr. Samuel N. Luoma Receives 2004 Presidential Rank Award](#)
- [New Method for Assessing Bed Sediment Contamination](#)
- [USGS Scientist Receives Fulbright Distinguished Scholar Award](#)
- [Silver can Affect Fish Reproduction in San Francisco Bay](#)

### More Information

- [San Francisco Bay Estuary Toxics Site Home Page](#) -- The San Francisco Bay research team maintains it's own home page that contains more up-to-date information.
- [Ecology and Contaminants Project](#)
- [Geochemistry of Riverine and Estuarine Waters](#)
- [Hydrodynamics and Mathematical Modeling of Circulation and Transport Phenomena in Tidal Estuaries](#)
- [Solute Transport Involving Biological Processes in Surface Waters](#)
- [Water Quality of San Francisco Bay](#)
- [Project Bibliography](#)
- [Project Photo Gallery](#)
- For additional information about the San Francisco Bay Toxics Site please send e-mail to Kathryn Kuivila at [kkuivila@usgs.gov](mailto:kkuivila@usgs.gov) or Michelle Hornberger at [mhornber@usgs.gov](mailto:mhornber@usgs.gov)

### Project Remediation/Restoration Related Activities

- [Nickel Cycling in the South San Francisco Bay](#)
- [Evaluation of Selenium Remediation Plans](#)
- [Yolo Bypass Studies](#)
- [Mercury Transport in the Carson River Basin](#)
- [Lake Coeur d'Alene Remediation Assessment](#)

### Additional USGS Information about San Francisco Bay

- [Access USGS San Francisco Bay and Delta](#)

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Inside the pilothouse of the USGS Polaris Research Vessel. The USGS water-quality measurement program in San Francisco Bay began in 1968. As the focus and objectives of the USGS programs of study in San Francisco Bay change from year to year, so do the [sampling frequencies](#).

#### [Project Homepage](#)

[maintained by project researchers]

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517 Publications

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