

# Sediment Quality Assessment Collaboration Update

*Steven M. Bay*

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# Focus Areas

**SCCWRP-SFEI collaborations on sediment quality assessment involve two main categories**

- **Sediment Quality Objectives**

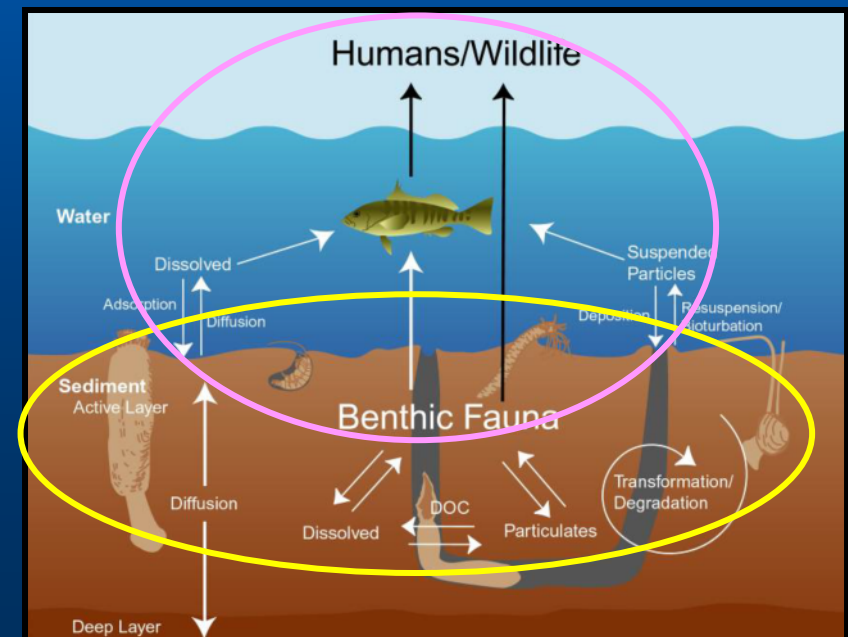
- Delta assessment tools
- Indirect effects assessment

- **Stressor Identification**

- TIE method improvement (previous talk)
- Molecular TIE method

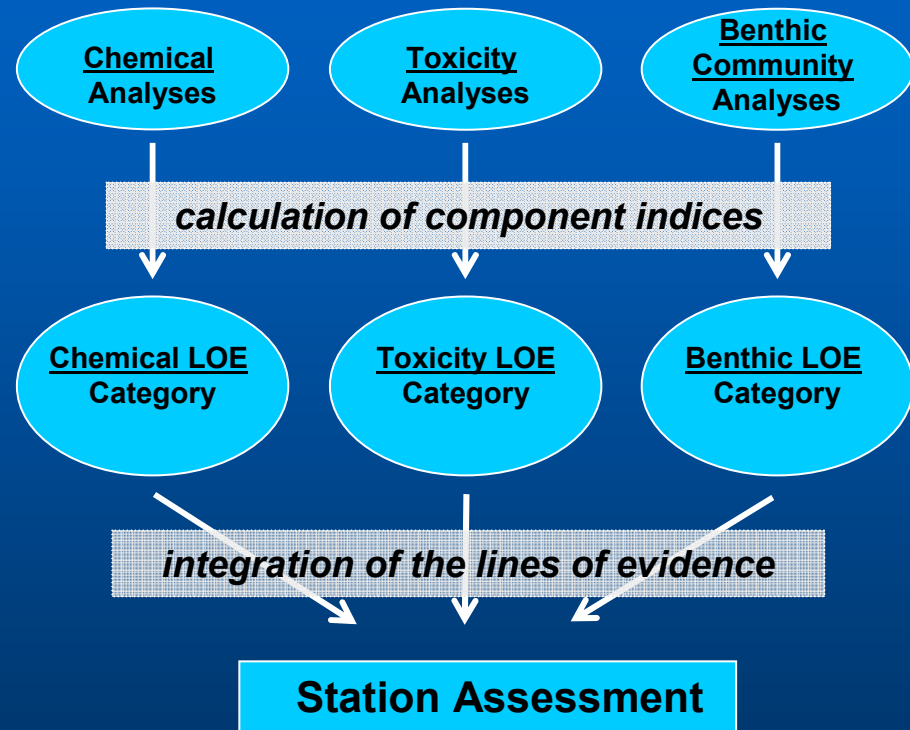
# Sediment Quality Objectives

- State Water Board is developing sediment quality objectives based on a multiple line of evidence approach
  - Direct effects from sediment contact (benthic infauna)
  - Indirect effects from bioaccumulation and biomagnification through food web
- SCCWRP is developing tools and interpretation frameworks for assessing direct and indirect effects
  - Phase I: Adopted August 2009
    - Direct effects in marine bays
    - Providing training for implementation
  - Phase II: In progress
    - December 2010 completion
    - Direct effects in estuaries
    - Indirect effects
- SFEI involved at multiple levels



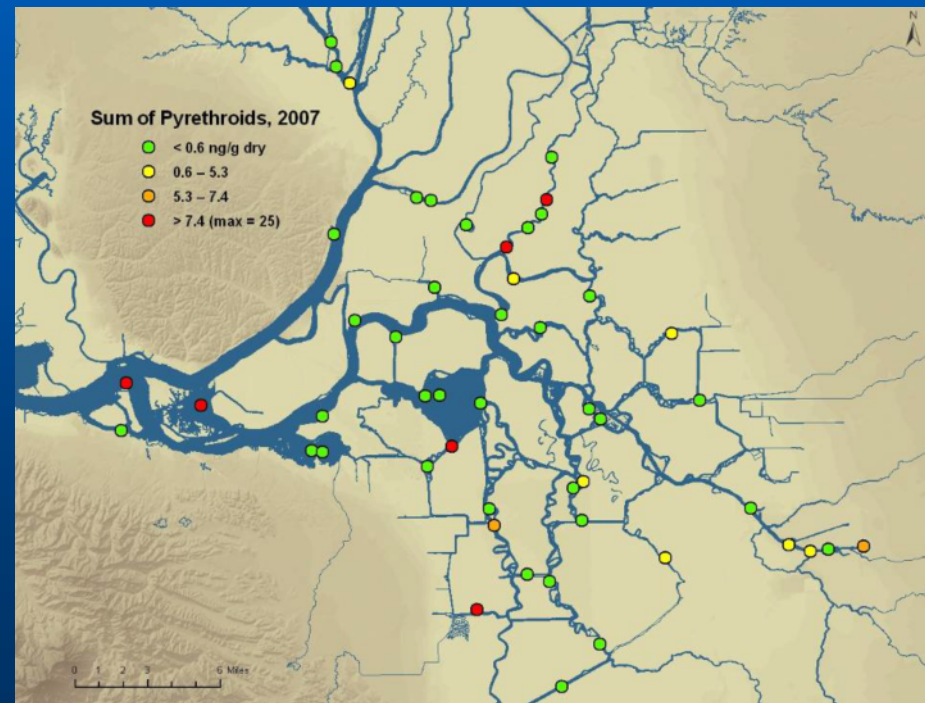
# Phase I: Direct Effects

- Conducting training workshops for regulatory and stakeholder agencies
  - SETAC regional chapters
  - SD and SF Bay regional boards
  - SCCWRP
- Focus on technical and management issues (permits, TMDLs, clean up)
- Limited SFEI collaboration



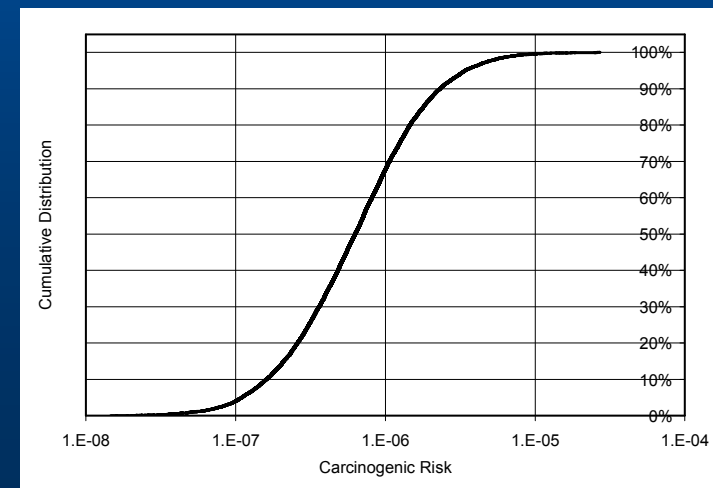
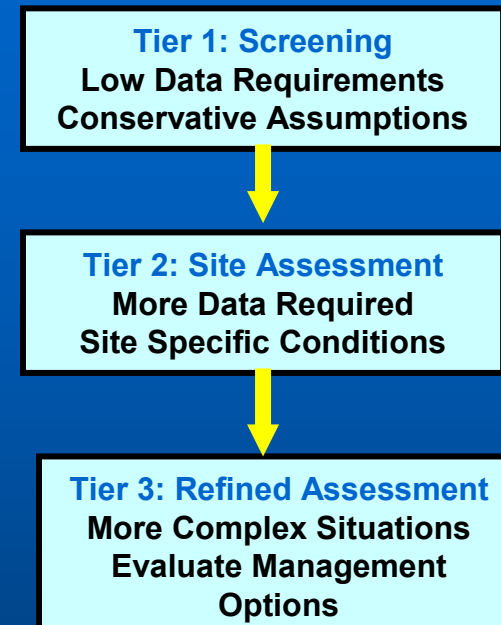
# Phase II: Estuary Direct Effects

- Development of assessment tools and framework for estuaries
  - Benthos (?), chemistry, toxicity
  - Data integration framework
- Collaboration ongoing
  - 2007/08 Delta sediment survey report (summer)
  - Opportunity to contribute to chemistry and toxicity tool and assessment framework development (Dec 2010)



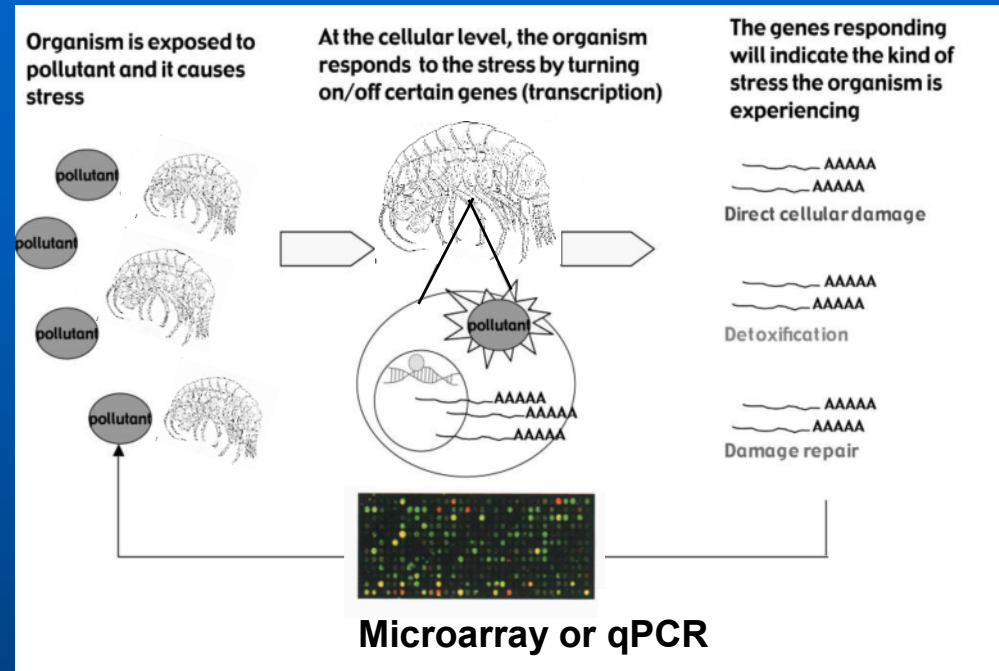
# Phase II: Indirect Effects Assessment

- Initial focus on PCBs and chlorinated pesticides
- Tiered assessment framework
  - Data requirements and complexity relate to situation
- Collaboration on multiple levels
  - Analytical approach
  - Decision support tool
  - User guidance



# Molecular TIE

- **SCCWRP-RMP project to evaluate use of gene expression as a TIE method**
  - Amphipod microarray developed
  - Starting to develop chemical-specific response profiles



- **Collaboration a direct result of last year's joint meeting**
  - RMP funding through Dec 2010
  - Sharing of samples from RMP survey and TIE projects
- **Additional collaboration with Hollings Marine Lab**

# Increased Collaboration Opportunities

- **Sediment toxicity stressor identification**
  - Continue sediment stressor identification workgroup past 2010
  - Additional coordinated research
  - Molecular TIE development/evaluation
- **Benthic community interpretation tools**
  - SF Bay mesohaline and Delta index development
  - Refinement of indices for other habitats
- **Sediment quality assessment and objectives**
  - Chemical index and toxicity methods development for Delta
  - Data exchange and web-based analysis tool development
  - Bioaccumulation modeling refinement/extension to other contaminants
  - Delta sediment quality assessment publications



# Additional Collaboration Opportunities

- Regional monitoring
  - Bight survey planning committees
  - Harmonization of methods
  - Integrated reporting
- New benthos assessment methods
  - Sediment profile imaging
  - DNA barcoding

