SQO Technical Update

January 26, 2006

Toxicity

- Indicator development complete
- Recommended list of species
- Recommended thresholds
- Technical report in development

Toxicity Test Methods

- Short-term survival
  - *Eohaustorius* 10 day survival
  - *Leptocheirus* 10 day survival
- Sublethal effects
  - *Neanthes* 28 day growth
  - *Mytilus* embryo development (SWI exposure)

Toxicity Categories

- **NonToxic:** Response not substantially different from that expected in sediments that are uncontaminated and have optimum characteristics for the test species

- **Low effect**: A response that is of relatively low magnitude; the response may not be greater than test variability

- **Moderate effect**: High confidence that a statistically significant toxic effect is present

- **High effect**: High confidence that a toxic effect is present and the magnitude of response includes the strongest effects observed for the test

Chemistry

- Indicator development nearing completion
- Chemistry-Tox: 95% complete
  - Evaluated 22 SQG variations
    - 2 new SQG approaches
    - 2 calibrated approaches
    - 4 standard approaches
    - North/South vs. statewide versions
  - Refined threshold development method (kappa)
- Chemistry-Benthos
  - Data under analysis
  - Will apply chemistry-tox methods

Evaluation Process

- Compare ability of candidate SQGs to describe biological effects
  - Correlation with magnitude of effects
  - Identify short list of best approaches
- Determine ability to classify samples into categories
  - Efficiency, sensitivity, specificity
- Compare statewide and strata SQG versions
- Validate performance results
  - Validation dataset
- Select recommended approaches
  - Performance, conceptual basis, adaptability

Benthos

- Identify key community assemblages in California
  - Complete
- Develop indicators of effect and thresholds
  - Nearly complete
- Investigate effects of differences in sampling methods
  - Data analysis underway

Benthic Indices

- Revised validation data set
  - Expert consensus
- Selected indicators for use
  - Use a combination of three indices
    - BRI, IBI, RBI
- Refinement of thresholds and data integration strategy nearly complete

Direct MLOE Framework Validation

Objectives:

- Evaluate performance of framework elements

- Demonstrate accuracy and reliability of approach

- Evaluate alternative approaches

Validation Approach

Only used data with all 3 LOE

- Classification accuracy
  - Does it correctly classify "good" and "bad" sites?
- Correspondence among LOE
  - What is the level of agreement among LOE?
- Repeatability
  - Is the classification stable over time?
- Sensitivity to incomplete data
  - Do the results change?

SSC Meeting

- Feb. 28 – March 2 at SCCWRP
- Recommendations for each LOE
  - Indicators
  - Thresholds
  - Data integration strategy
- MLOE assessment frameworks
  - Validation
  - Aternatives
- Advisory Committee input
- SSC comments