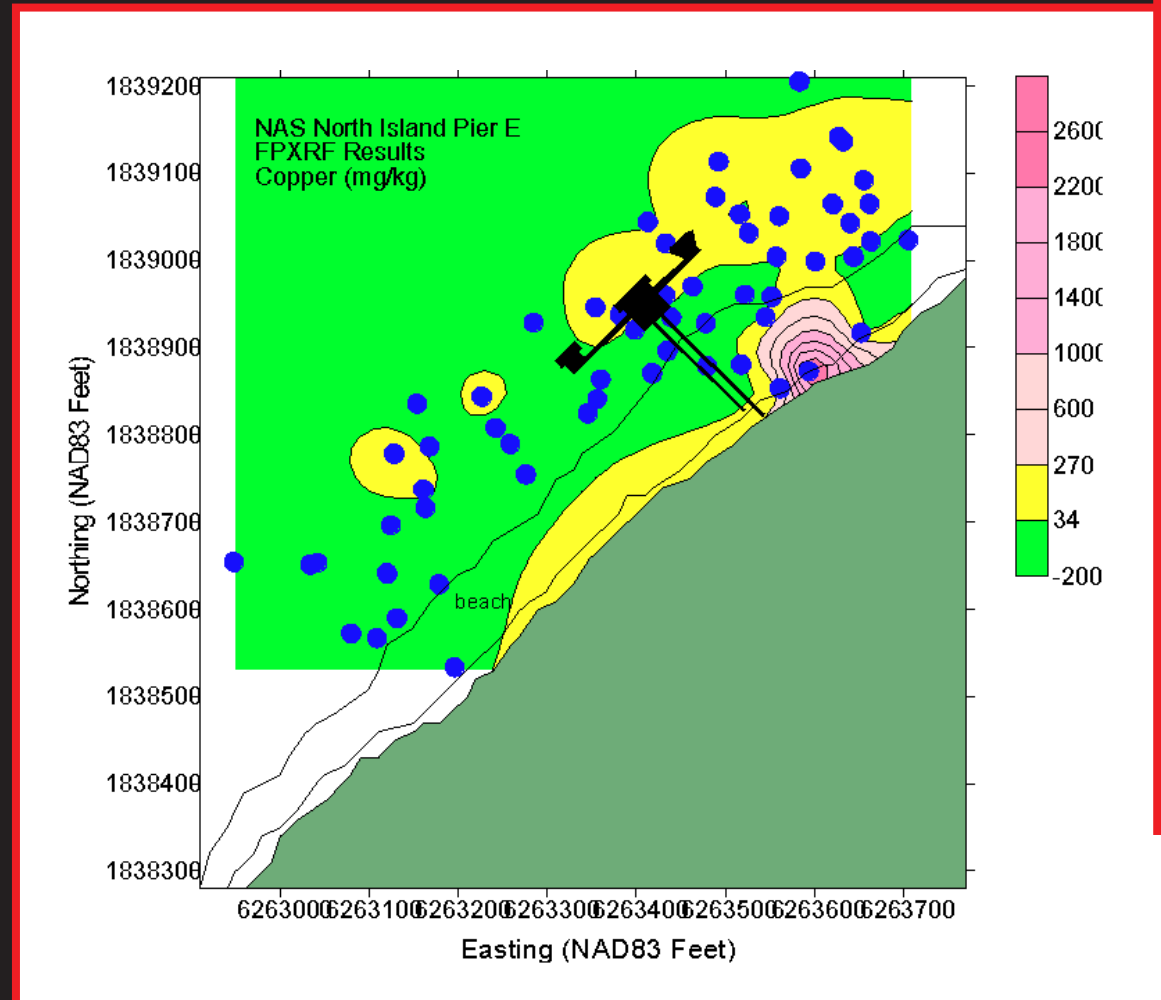


# Integrated Sediment Assessment Technology and Management Strategies

Supporting Cleanup and Compliance



Map of copper concentrations in surface sediments using x-ray fluorescence field-portable screening tool



Field portable x-ray fluorescence for on-site measurements of metals in sediments on board survey craft

## Sediment Screening Technology

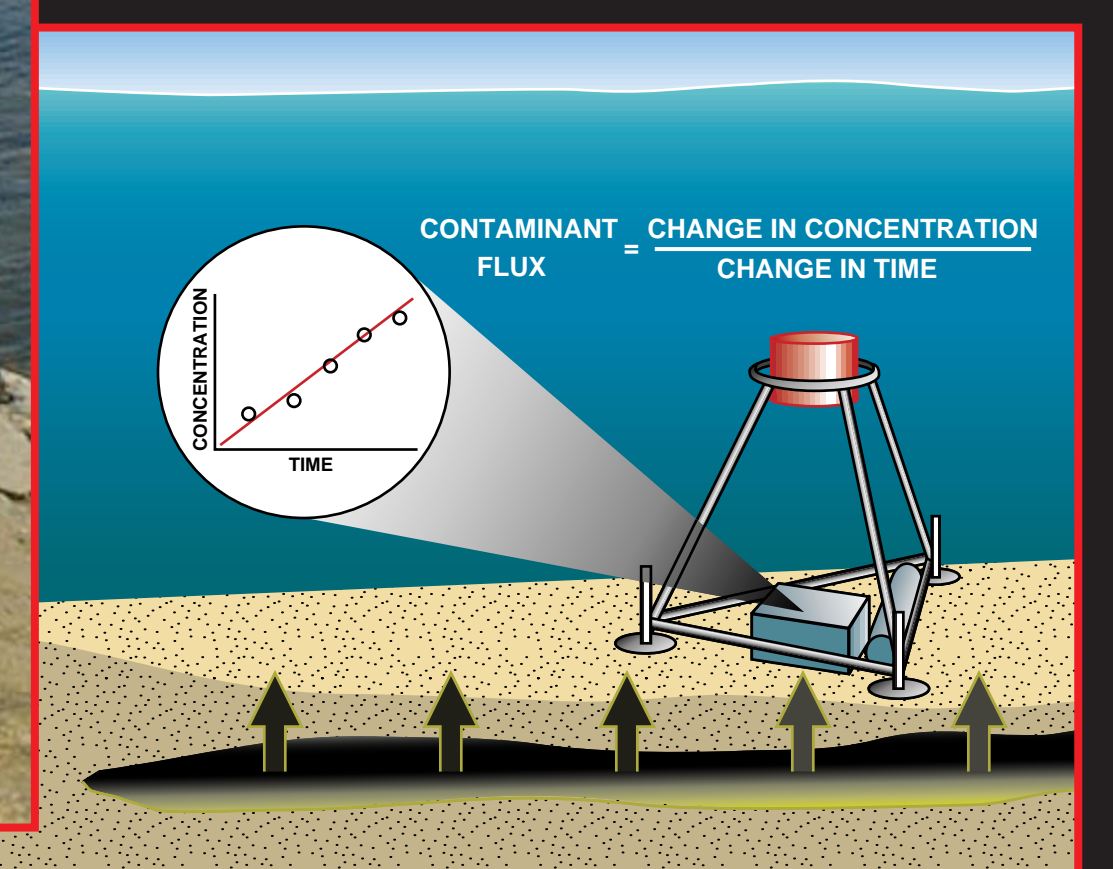
- Rapid chemical screening of PAH's and metals using field-portable x-ray fluorescence screening tools
- Low-cost biological screening (Qwiklite)
- Integrated approach to support ERA and remedial design

## Advanced Sediment Assessment and Characterization

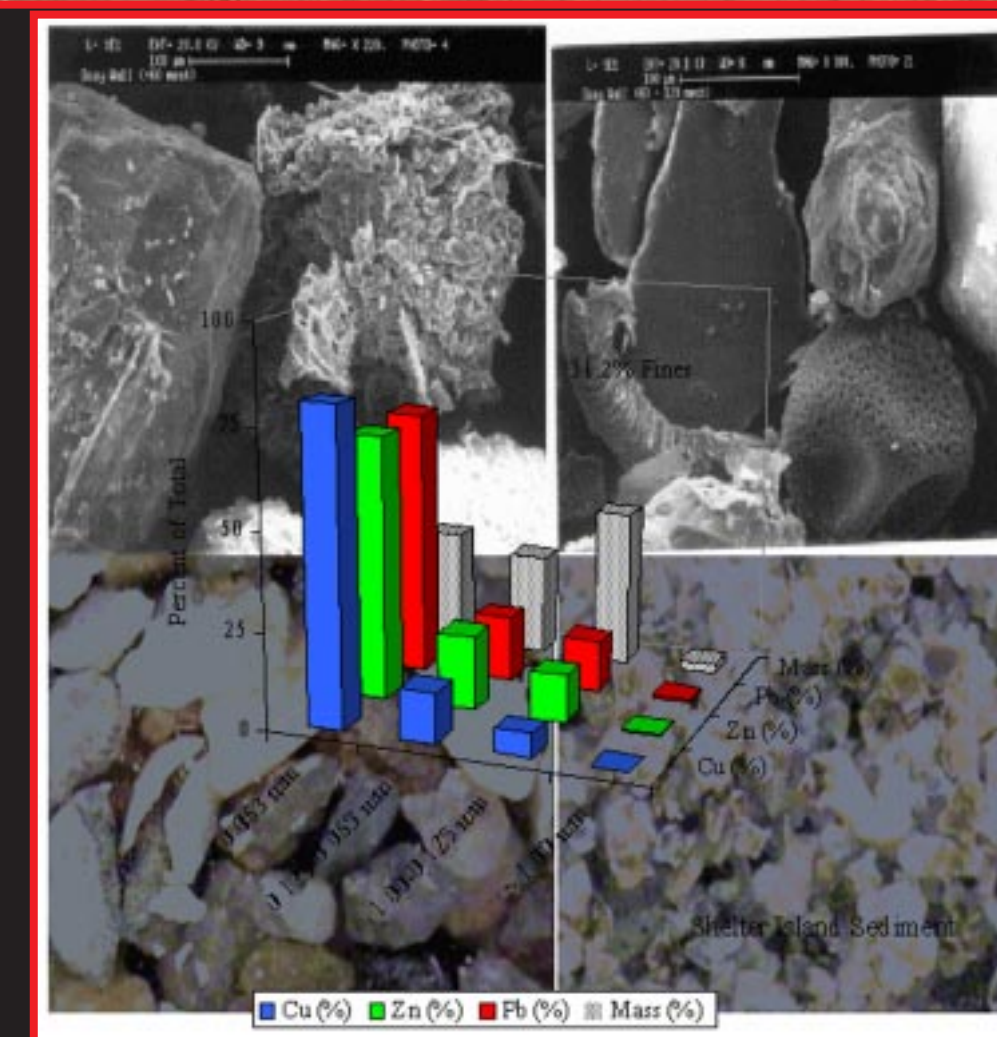
- Assesses and predicts site-specific contaminant behavior
- Understanding contaminant distribution and behavior within a sediment matrix provides insight into appropriate management decisions
  - In-situ contaminant sampling
  - Direct quantification of sediments as sources or sinks
  - Measures: Contaminant flux, ground-water seepage/migration and pore water concentrations
  - Characterizes contaminant distribution and integration with in the sediment



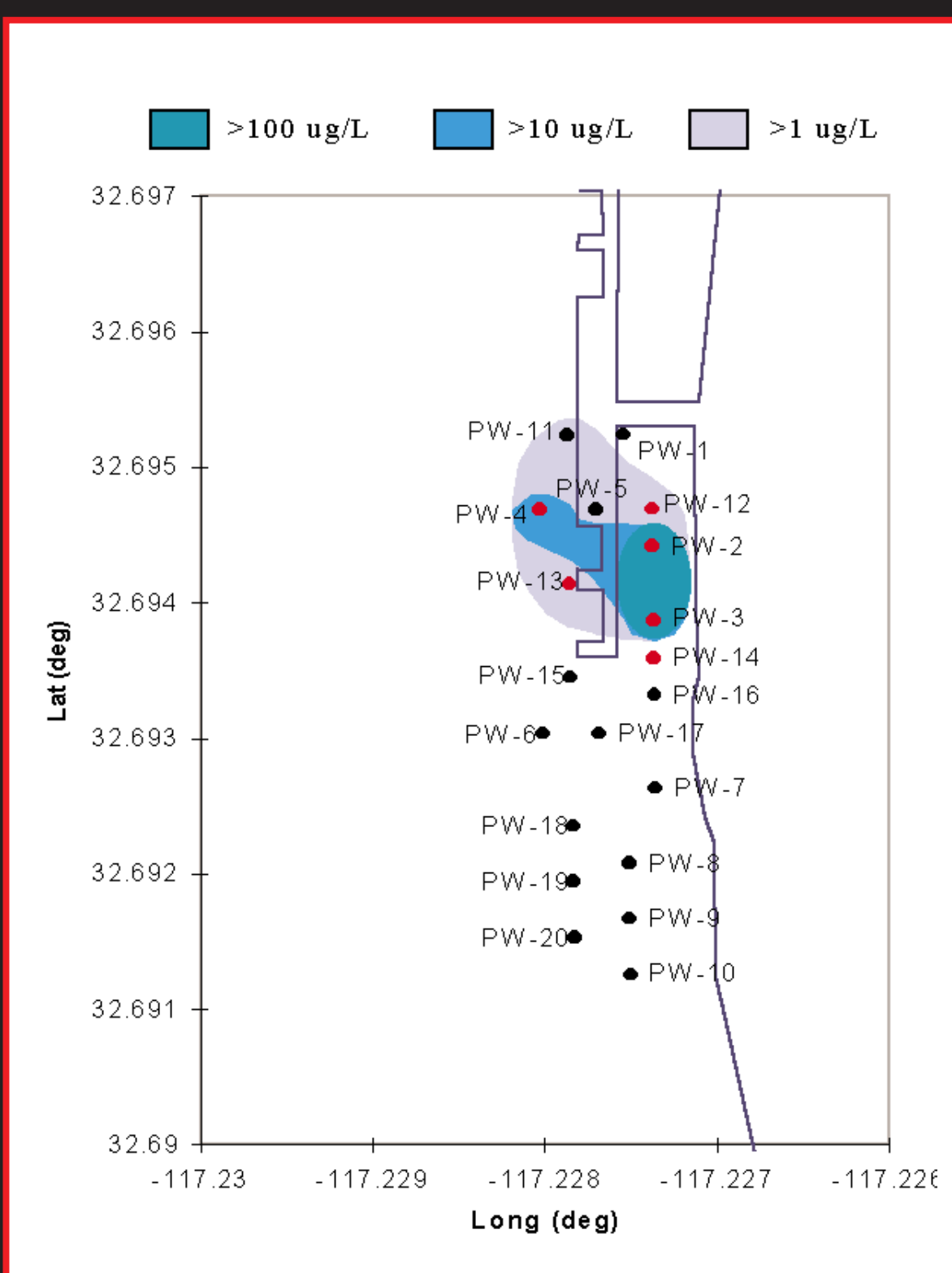
Commercialized Benthic Flux Sampling Device for in-situ measurement of contaminant transport into or out of sediments



Conceptual model of the Benthic Flux Sampling Device and its application for determining the remobilization of contaminants from sediment



SEM and video images of various sediment mesh sizes and their contaminant distribution



Pore water concentration of TCE, DCE and vinyl chloride adjacent to land-based HW source. Collected with in-situ pore water sampler



Clamshell dredge may cause contaminant suspension and release—sediment characterization can predict potential impact

## Sediment Management Strategies

- Integration of field screening and advanced sediment characterization improves site-specific remedial planning
- Dredging, cleanup, or site closure are expedited if sediment-appropriate management plans are developed