

Draft Outline for the Margins Conceptual Model Report

1. Review of existing information
 - a. Local information
 - i. Inventory of available local datasets
 1. Site cleanup data: pollutant data, past and anticipated management actions (cleanup schedule)
 - a. Navy sites
 - i. Alameda
 - ii. Hunters Point
 - iii. Moffett
 - b. GE site – San Leandro Bay
 - c. Richmond Field Station
 - d. Etc.
 2. Watershed contamination and loads
 - a. Sediment data
 - b. Loads data
 - c. Prop 13 stuff
 - ii. Spatial patterns of contamination
 1. Differences among segments - brief
 2. Comparison of margins versus open Bay
 - a. Estimating nearshore ambient concentration
 - i. Is existing RMP sampling adequate?
 3. Linkage of tributary inputs with hotspots
 - iii. Observed rates of recovery at margin sites
 - b. Information from the literature on margin conceptual or quantitative models from other estuaries – short summary – discussion with some national experts could be informative
2. Summary of present conceptual understanding
 - a. The margins conceptual model
 - i. Inputs from the watersheds
 - ii. Transport into nearshore areas
 - iii. Fate on the margins
 1. important processes and state of knowledge on each
 - a. Tides
 - b. Wind
 - c. Waves
 - d. Bioturbation
 - e. Bathymetry
 - f. Sedimentation - flocculation, settling
 - g. Dredging
 - h. Shoreline characteristics, geomorph
 - i. Habitat
 - j. Sediment bed, grain size
 - k. Contaminant distributions and trends

- l. Atmospheric deposition
 - m. Biogeochemistry (e.g., degradation)
 - n. Watershed inputs - water, sediment, OC, contaminants
 - o. Ocean exchange
 - p. Biotic uptake
 - 2. consideration of different pollutants
 - iv. Food web uptake on the margins
 - v. Food web (trophic) transfer
 - vi. Release from margins to the open Bay
 - 1. Transfer to the margins from the Bay (in some cases)
 - b. Application to specific priority management questions
 - i. Linking margin pathways to impairment
 - 1. Key information gaps / questions
 - a. Particle-associated contaminants
 - i. Fate of different particle size fractions
 - ii. Spatial patterns of transport to nearshore environment and beyond
 - b. Dissolved contaminants
 - i. Brief mention of this
 - ii. Forecasting recovery on the margins
 - 1. Key information gaps / questions
 - a. Are sites still contaminated due to slow recovery processes, continued loading, or both?
 - b. Is monitored recovery a viable approach?
 - i. Degradation rates
 - ii. Natural attenuation of runoff loads
 - c. What are the high leverage pathways?
 - d. Where are contaminants entering food web (on their way to targets of concern – white croaker, shiner surfperch, sensitive wildlife)?
3. Recommendations for next steps
 - a. Desire for a general margin model
 - i. How do we get there?
 - 1. Site-specific modeling at “representative” sites?
 - b. Grid model development at selected representative margin sites
 - i. Link to watershed monitoring and modeling
 - ii. Link to Bay modeling
 - iii. Model should be informed by and set up to test our conceptual understanding of processes