

**CA Regional Water Quality Control Board
San Diego Region**

**Approach to Address
Contaminated Sediments at
NASSCO and Southwest Marine
Shipyards**

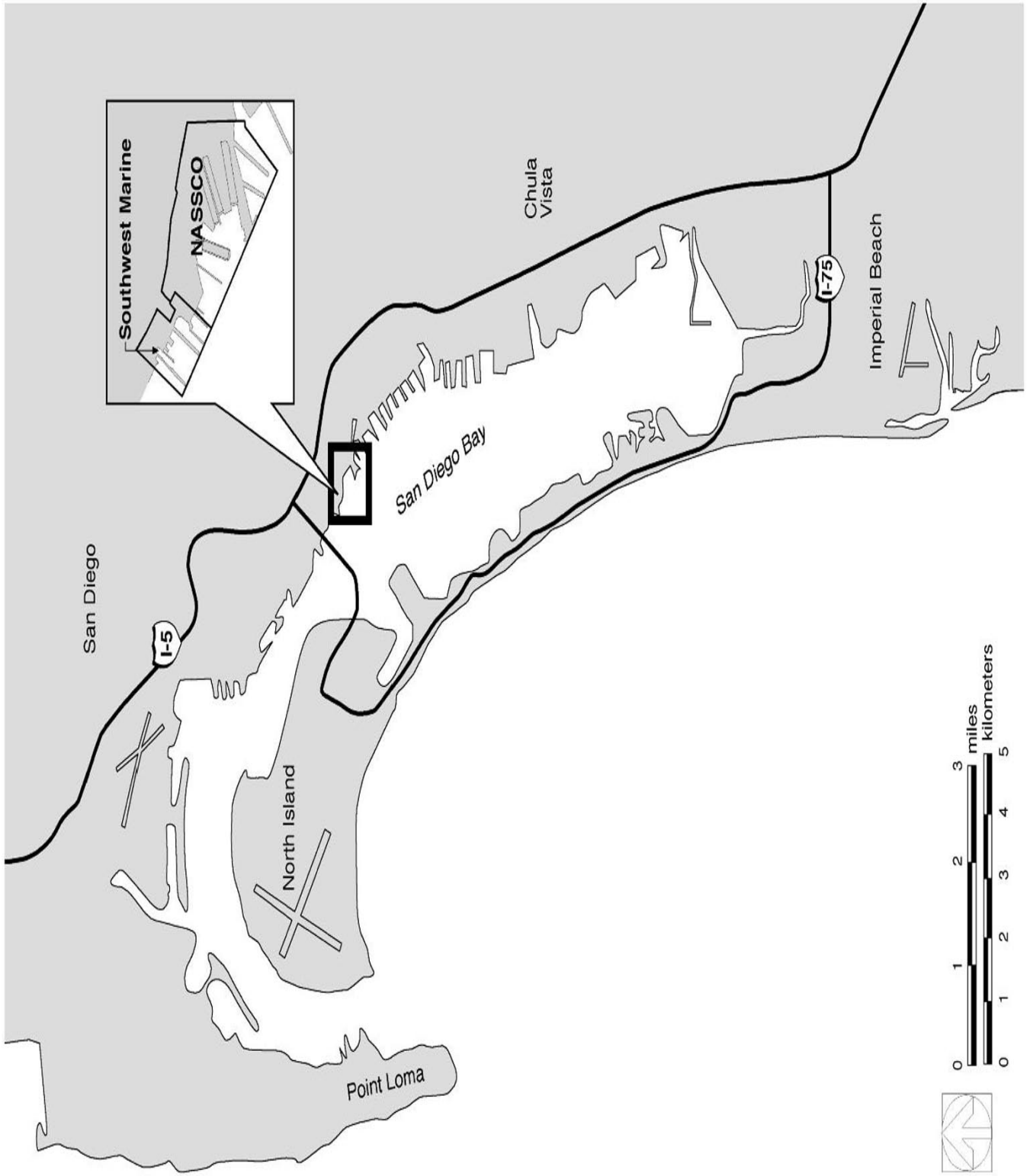
June 18, 2002

OVERVIEW

- ◆ **BACKGROUND INFORMATION**
- ◆ **REGIONAL BOARD GUIDELINES**
- ◆ **BENEFICIAL USES FOR SD BAY**
- ◆ **IMPAIRMENT OF BENEFICIAL USES**
- ◆ **RESTORING BENEFICIAL USES**
- ◆ **SELECTION OF CLEANUP LEVELS**
- ◆ **SD BAY COUNCIL ISSUES**

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◆ **BACKGROUND INFORMATION**

- **Detailed chronology provided in briefing package.**
- **Public meetings with stakeholders.**
- **Written response to SD Bay Council's comments.**
- **August 2001 public workshop.**

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◆ **REGIONAL BOARD GUIDELINES**

- **Resolution Nos. 2001-02 & 2001-03**
- **Water Code Section 13267**
- **Developed for NASSCO & SWM**
- **Modifications based on consultation with Natural Resource Trustee Agencies**
- **Update guidelines**

◆ **REGIONAL BOARD GUIDELINES (con't)**

- Natural Resource Trustee Agencies:

(1) Department of Fish & Game

(2) U.S. Fish & Wildlife Service

**(3) National Oceanic Atmospheric
Administration (NOAA)**

**(4) Office of Environmental Health
Hazard Assessment (OEHHA)**

**(5) Department of Toxic Substances
Control - Human & Ecological
Risk Division (HERD)**

◆ **REGIONAL BOARD GUIDELINES (con't)**

- Technical experts:

- (1) Southern California Coastal Water
Research Project (SCCWRP)**
- (2) Marine Environmental Quality
Branch, U.S. Navy**
- (3) Marine Pollution Studies
Laboratory, Monterey**
- (4) Moss Landing Marine
Laboratories, Monterey**

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AQUATIC LIFE BU's	AQUATIC-DEPENDENT WILDLIFE BU's	HUMAN HEALTH BU's	OTHER BU's
Estuarine Habitat (EST)	Wildlife Habitat (WILD)	Contact Water Recreation (REC-1)	Navigation (NAV)
Marine Habitat (MAR)	Preservation of Biological Habitats of Special Significance (BIOL)	Non-Contact Water Recreation (REC-2)	Industrial Service Supply (IND)
Migration of Aquatic Organisms (MIGR)	Rare, Threatened or Endangered Species (RARE)	Shellfish Harvesting (SHELL)	
		Commercial and Sport Fishing (COMM)	

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◆ **IMPAIRMENT OF BENEFICIAL USES**

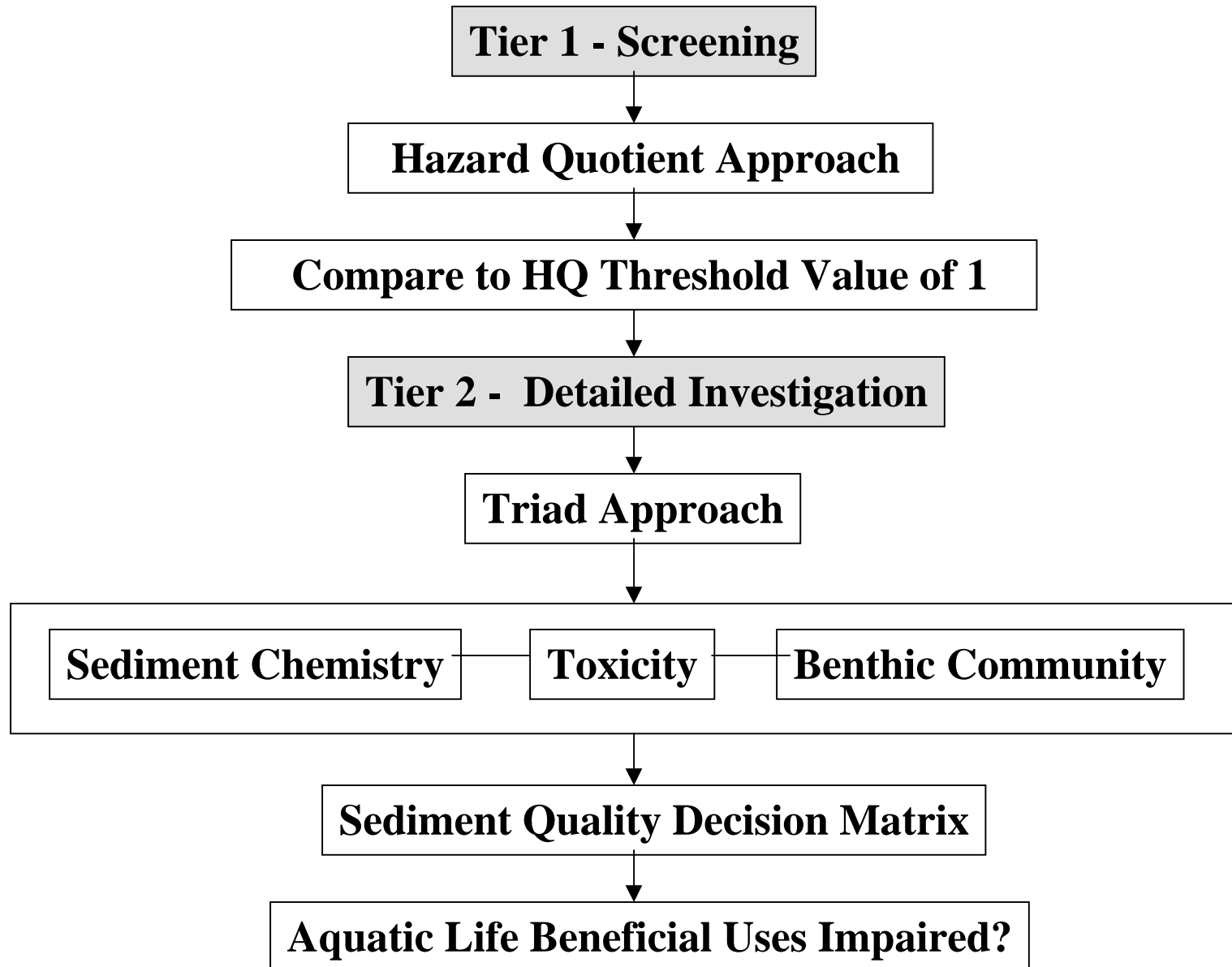
- **Phased approach for 3 categories of beneficial uses:**

(1) Aquatic Life

(2) Aquatic-dependent Wildlife

(3) Human Health

Aquatic Life Beneficial Uses



Sediment Quality Decision Matrix

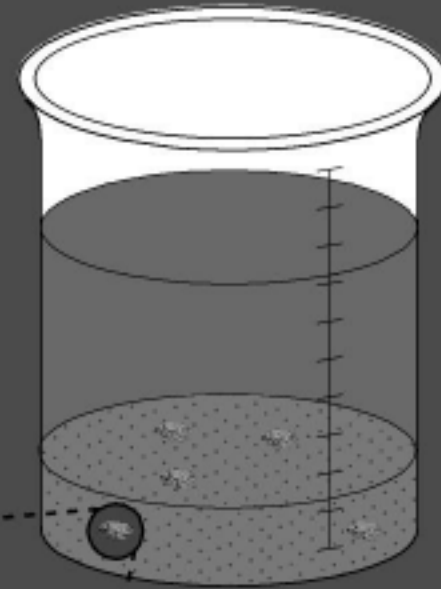
Sediment Chemistry	Toxicity	Benthic Community	Aquatic Life BU Impairment
+	+	+	Highly Likely
+	-	+	Likely
+	+	-	Likely
-	+	+	Possible
-	+	-	Possible
-	-	+	Unlikely
+	-	-	Unlikely
-	-	-	Highly Unlikely

(+) Contaminated or impacted

(-) Not contaminated or not impacted

Amphipod Mortality Test

Whole
Sediment



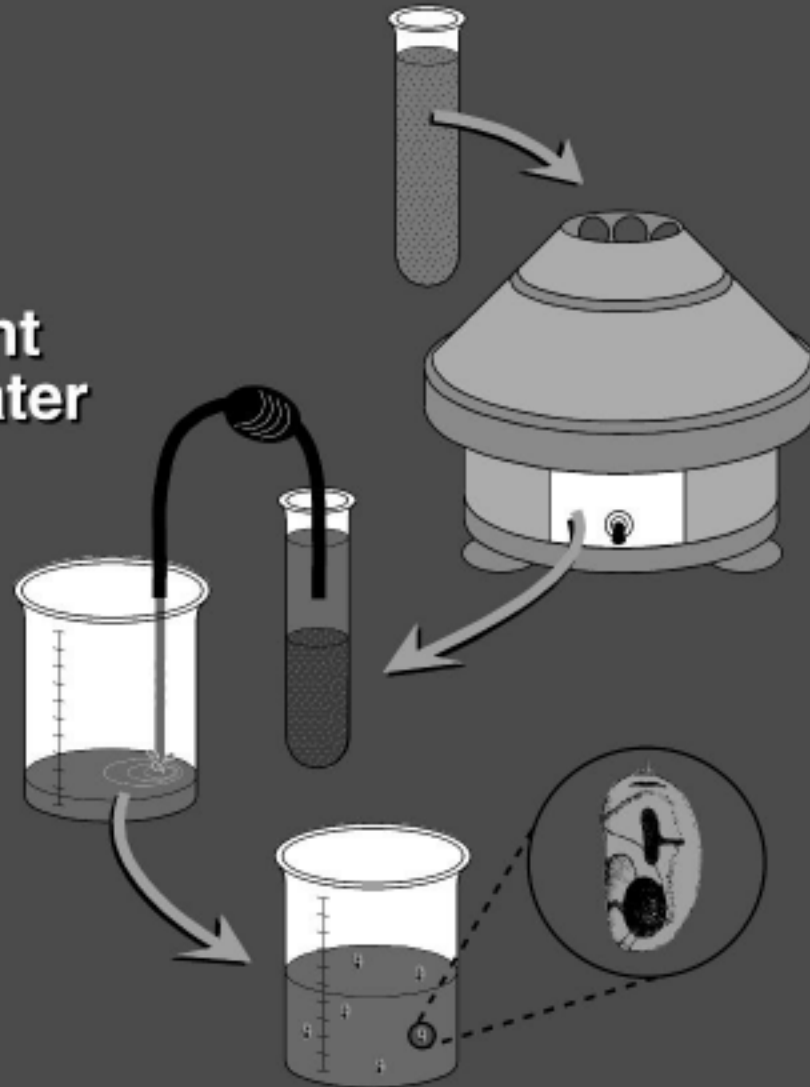
*Eohaustorius
estuarinus*
(amphipod)



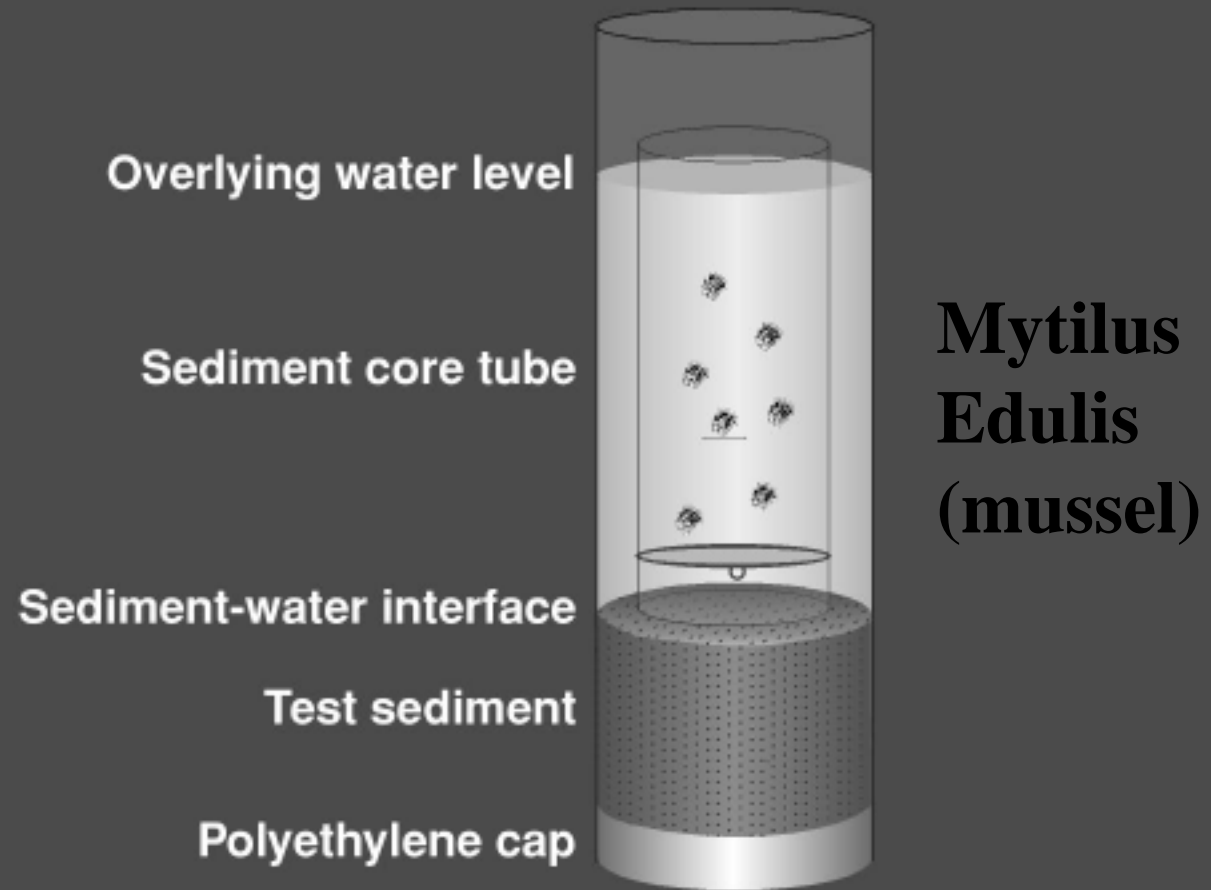
Echinoderm Fertilization Test

Sediment
Pore Water

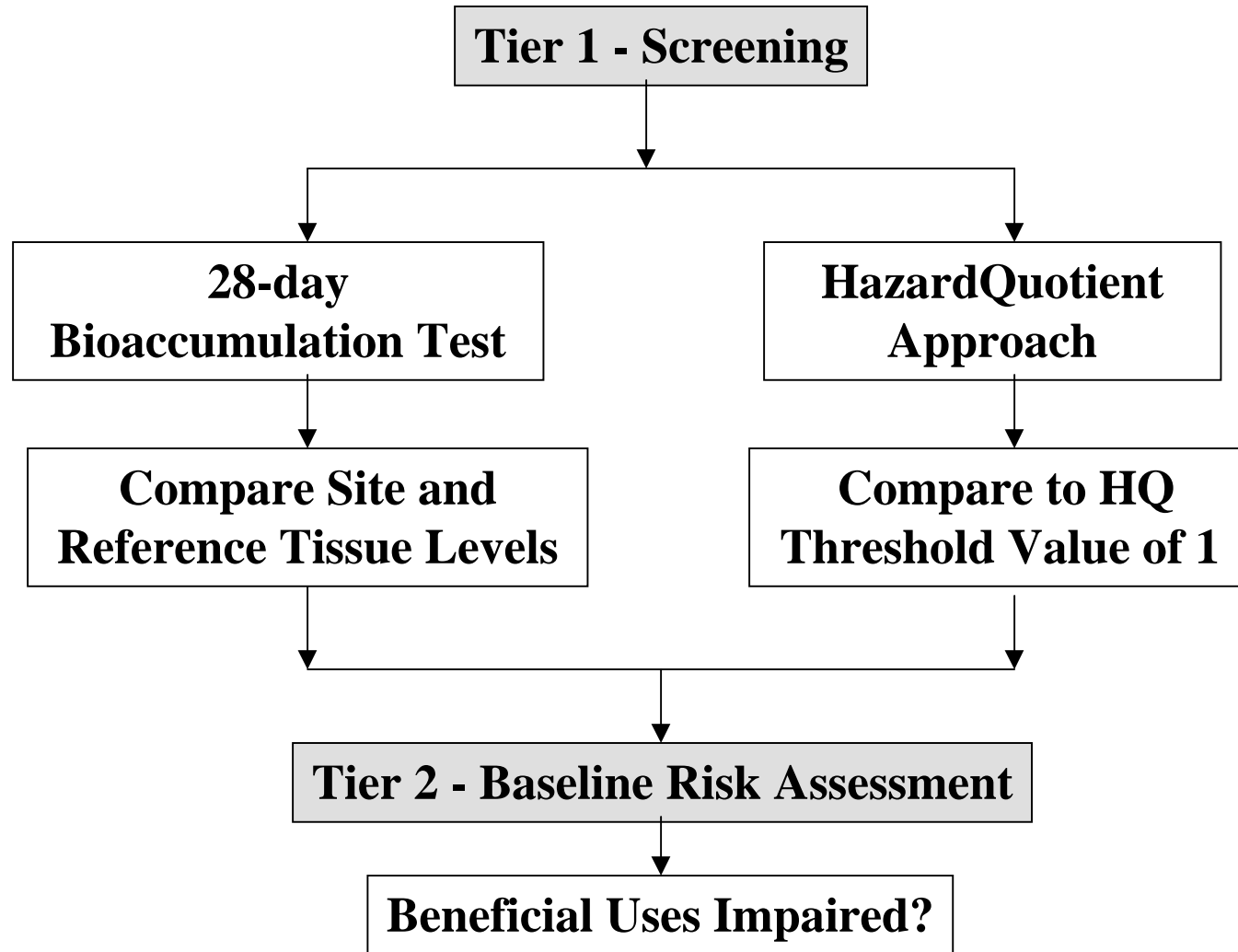
*Strongylocentrotus
purpuratus*
(sea urchin)



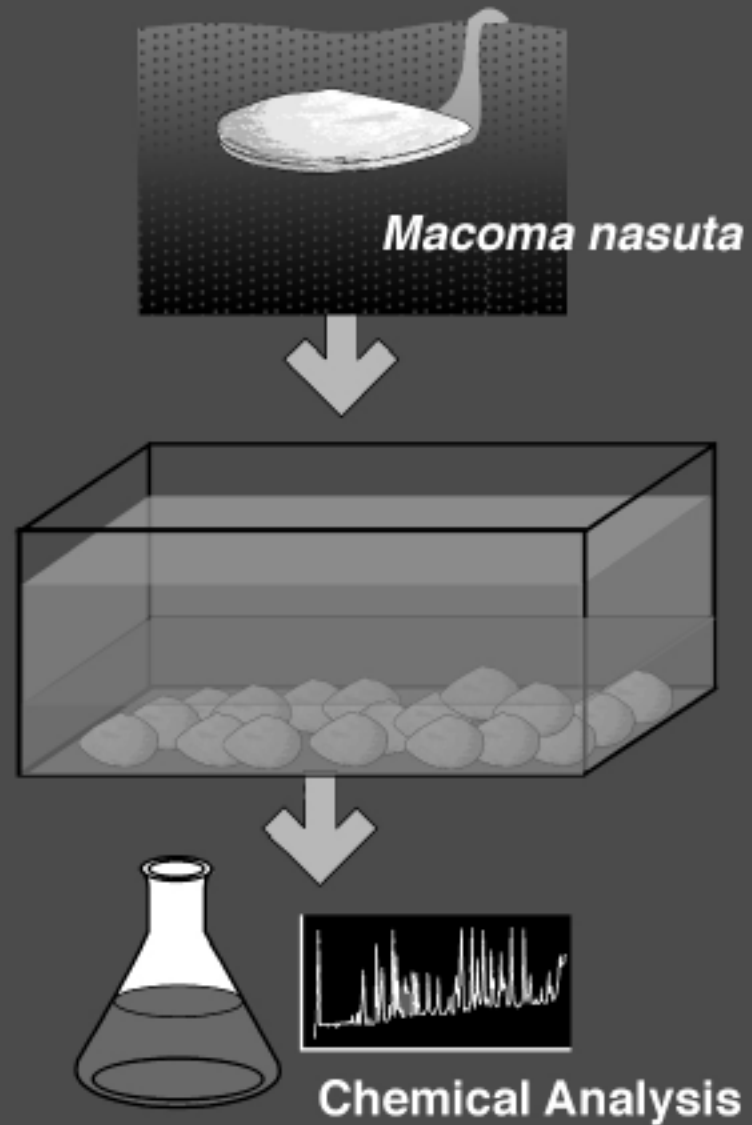
Bivalve Development Test (Sediment-Water Interface)



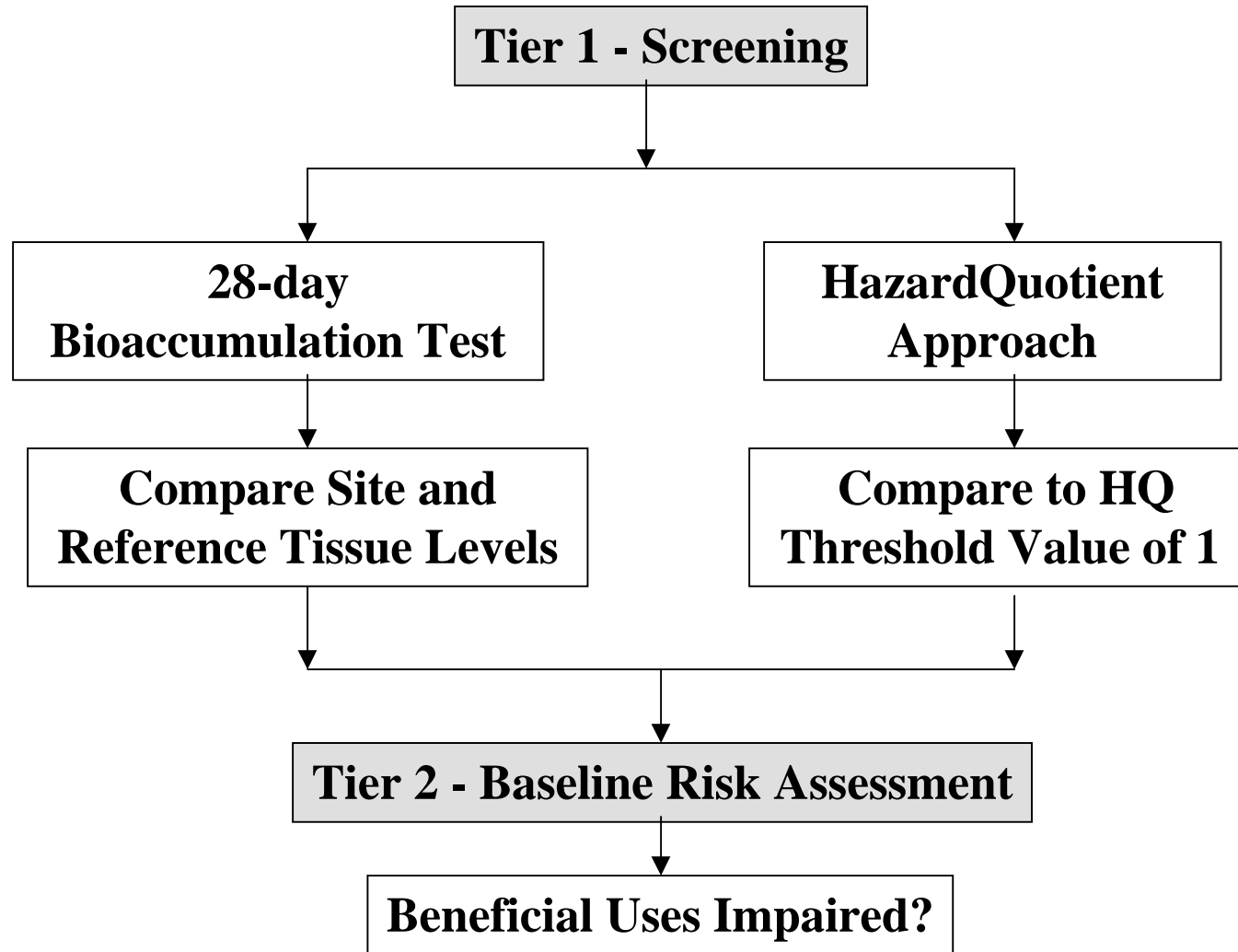
Wildlife Beneficial Uses



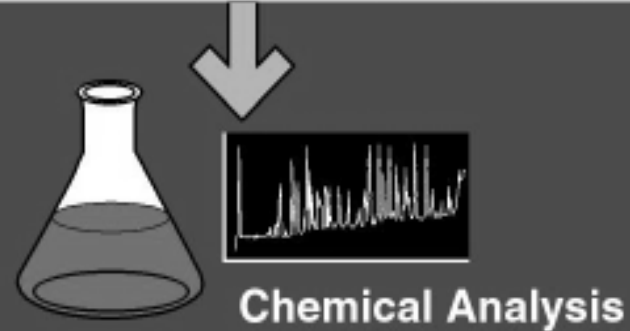
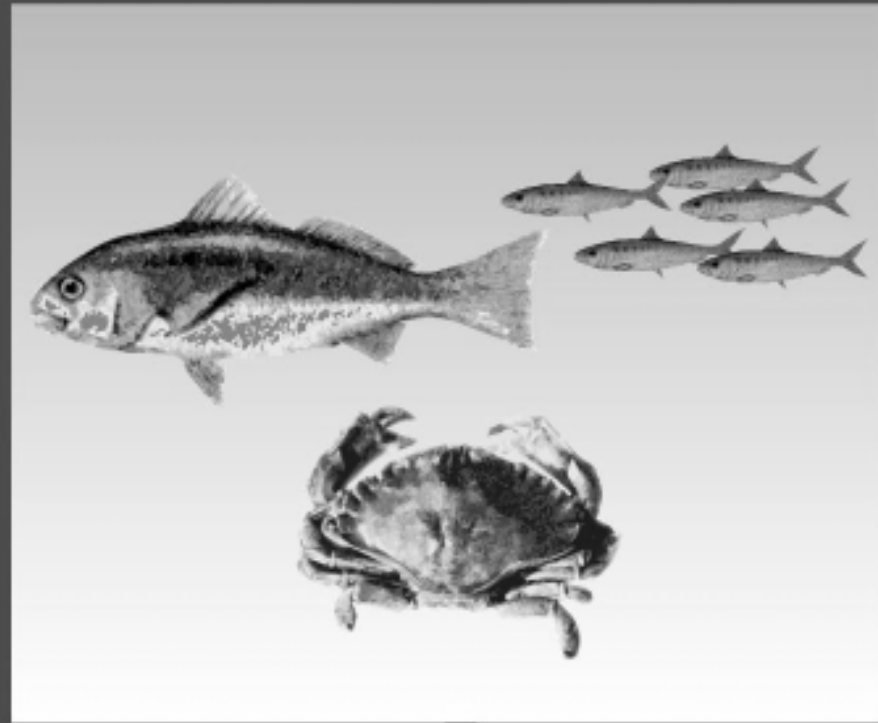
28-Day Laboratory Bioaccumulation Test



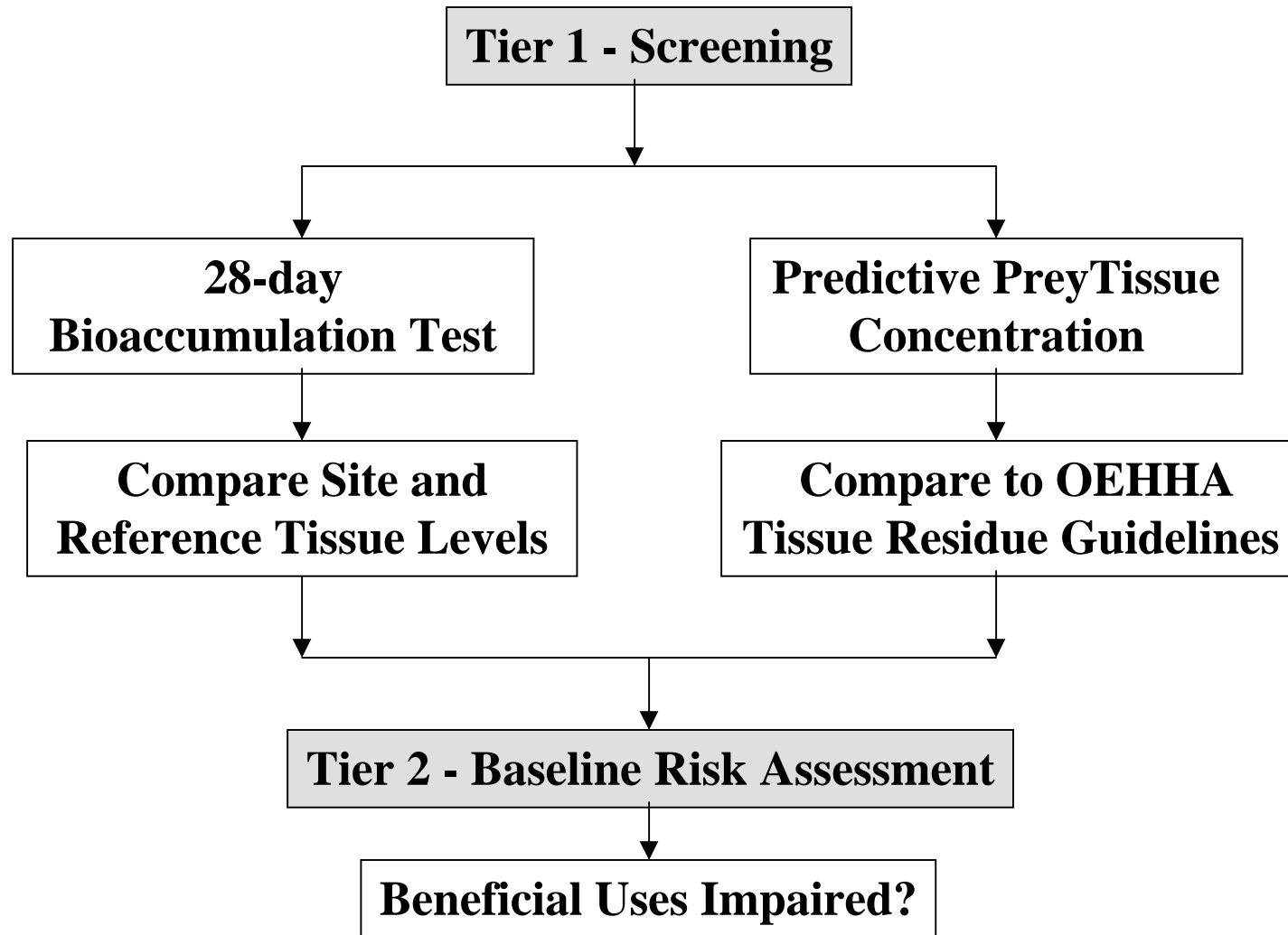
Wildlife Beneficial Uses



Tier 2 - Baseline Risk Assessment



Human Health Beneficial Uses



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◆ **RESTORING BENEFICIAL USES**

- **Aquatic Life:**

 - AET approach, EqP approach, and others**

- **Aquatic-Dependent Wildlife:**

 - Site-specific BSAFs**

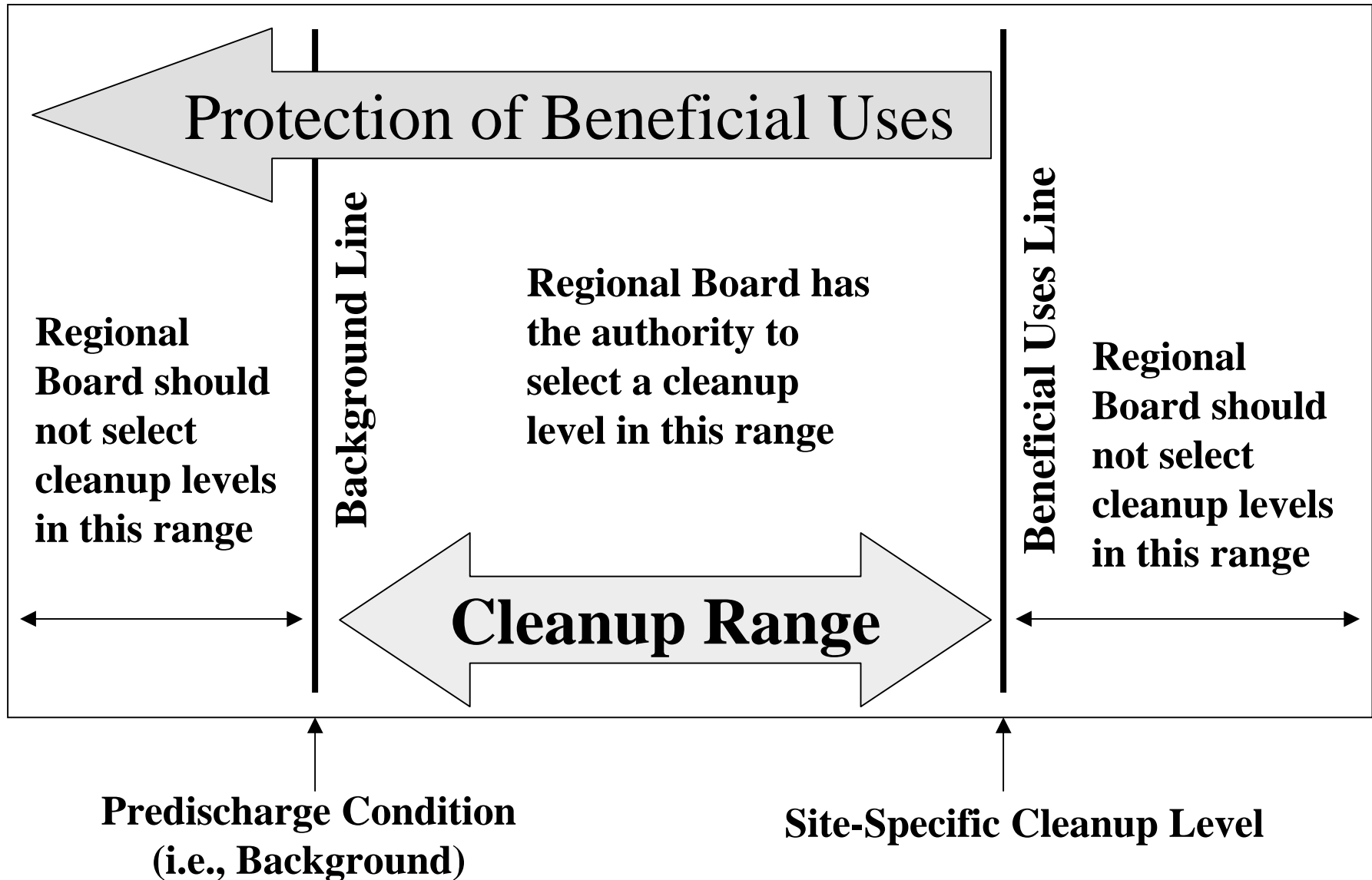
- **Human Health:**

 - Site-specific BSAFs**

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State Board Resolution No. 92-49



◆ **SELECTION OF CLEANUP LEVELS (con't)**

- Technological Feasibility:

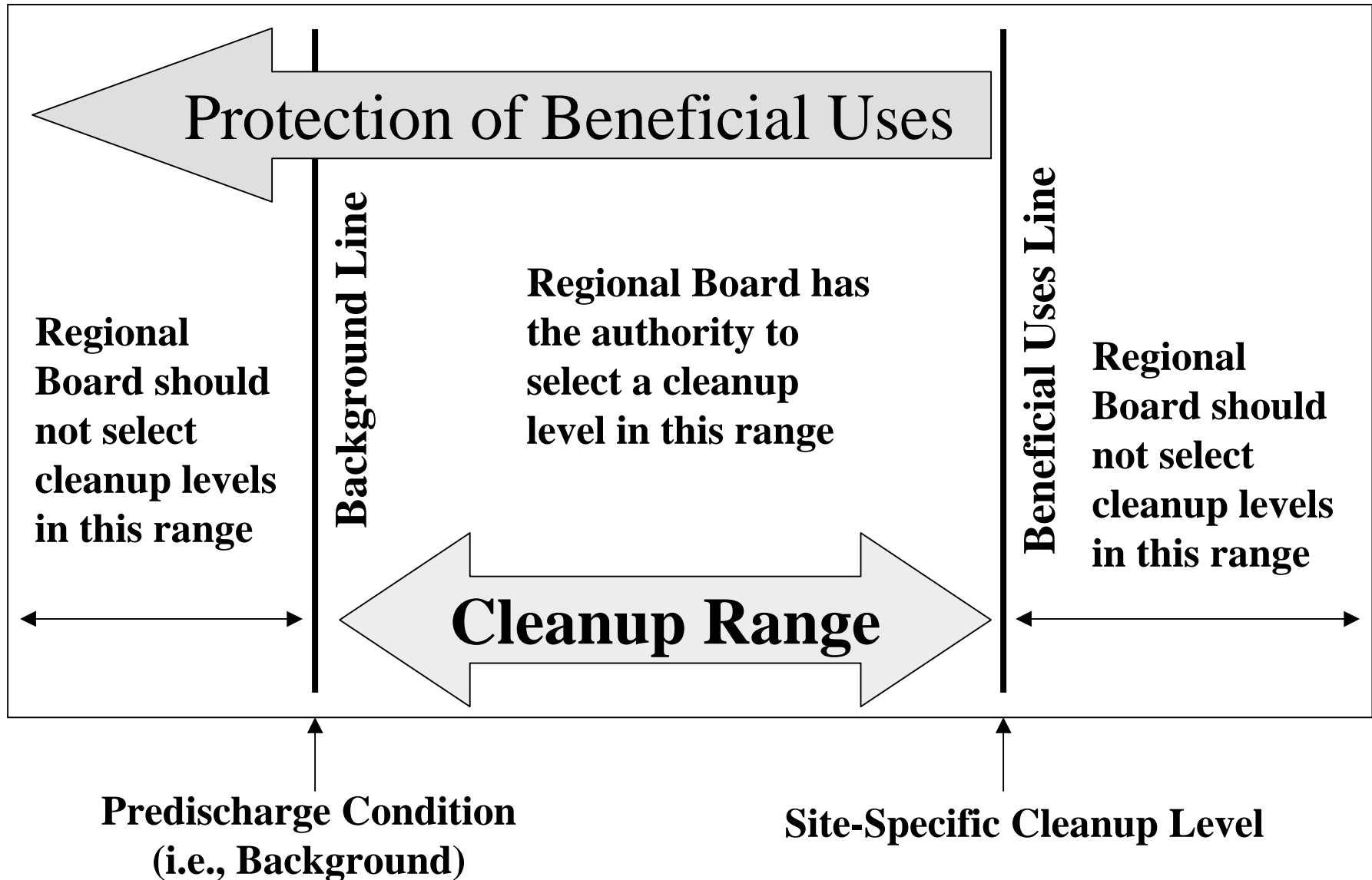
Assessing technologies effective in reducing contamination.

- Economic Feasibility:

(1) Balancing incremental environmental benefit with incremental cost.

(2) Not financial resources of discharger.

State Board Resolution No. 92-49



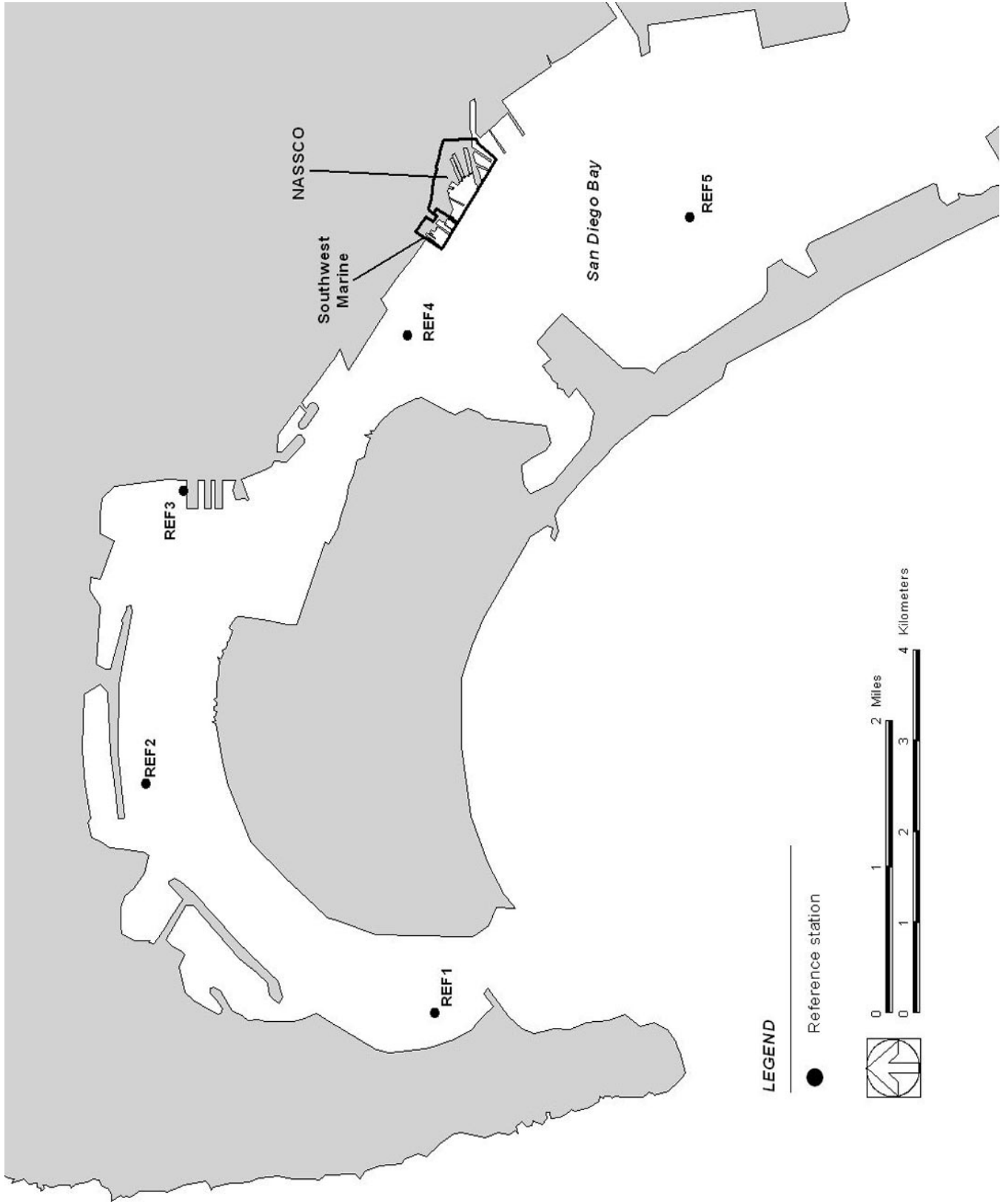
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◆ **SD BAY COUNCIL ISSUES**

- **Regional Board response to SD Bay Council's August 21 comments.**
- **Suitability of 5 Reference Stations:**
 - (1) Lack of physical similarity.**
 - (2) Significant contamination.**
 - (3) Simplistic approach in selection of reference stations.**

- ◆ **SD BAY COUNCIL ISSUES (con't)**
 - **Background Information on 5 Reference Stations**
 - (1) **Statistical comparison to shipyard stations.**
 - (2) **Selected based on comprehensive Bight'98 Study.**



LEGEND

● Reference station



◆ **SD BAY COUNCIL ISSUES (con't)**

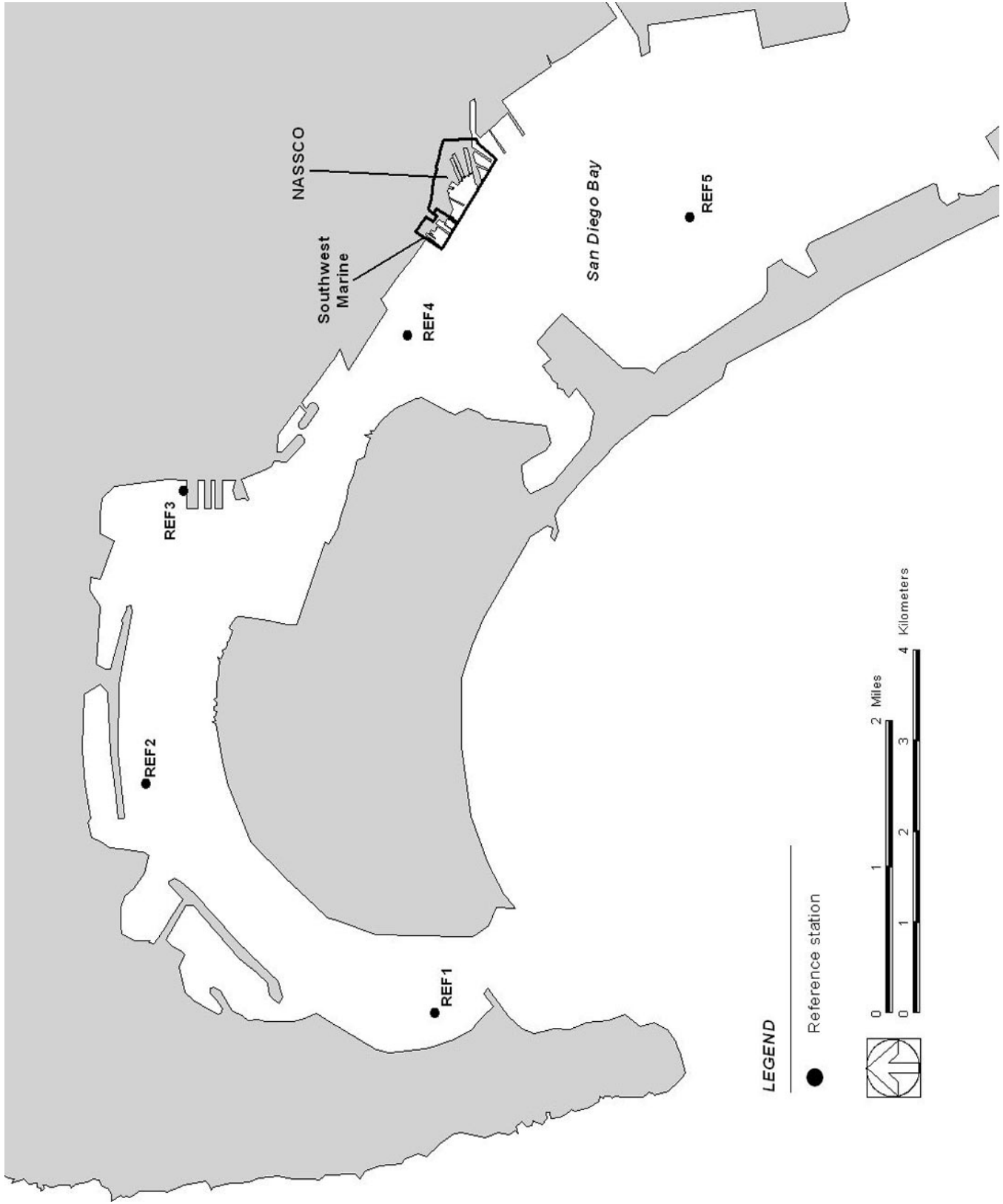
- Regional Board Evaluation of 5 Reference Stations

(1) Variability in sediment quality data when stations re-sampled.

(2) Develop issue paper.

(3) Consult with resource agencies & technical experts.

(4) Finalize issue paper & send to Bay Council.



LEGEND

● Reference station



0 1 2 Miles

0 1 2 3 4 Kilometers

Closing ...

- ◆ **Complex issue.**
- ◆ **Consultation with Resource Agencies & technical experts.**
- ◆ **Consider current & future issues.**
- ◆ **Consistent approach headed down right path.**

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