Management Questions Guiding the Regional Monitoring Program for Trace Substances—First Edition, 1998

Contents

The specific management questions listed below are intended to provide a basis for developing and implementing both the Base Program and Pilot/Special Studies during the next five years. This development should address the Regional Board's information needs, reflect a coherent perspective on the Estuary and its management, and fit within the RMP's mission and objectives.

These specific management questions also incorporate key agreements among all parties about the future direction of the RMP. These include maintaining a viable Base Program to track patterns, continuing and expanding the commitment to Special Studies that can elucidate important processes, and making better use of available data by expanding SFEI's role in data syntheses and interpretation.

The following sections describe several different sorts of management questions, including:

- the Regional Board's information needs that spell out an overall organizing perspective
- overall RMP objective that focus the RMP on particular aspects of the Board's needs
- more detailed management questions related to the RMP objectives

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Regional Board's information needs

This is the set of questions that are asked on a continuing basis at the Board. As a representation of the Boardä¸□s information needs and its overall perspective, it does include items that are not the purview of the RMP (e.g., to determine pollutants of concern or define what is and is not controllable). RMP activities should be designed to fulfill one or more of these information needs.

Focusing questions

1. What are the pollutants and pollutant groups of concern?
   1a. of the national priority pollutants, which ones are found in the Estuary system and of those, which ones are at levels that may be causing effects?

   1b. of pollutants identified through local (as opposed to national) monitoring, which ones have been identified through TIE analyses or are found at levels above those

known to cause effects in estuarine ecosystems?

2. What are the overall loadings and mass balance budgets for pollutants of concern?
   2a. what is the implication of historic discharges for mass budgets and fluxes?

   2b. what is the relative contribution of point source outfalls, storm drains, large and small tributaries, harbor activities including dredging, atmospheric deposition, historic deposits, and natural sources?

3. Of the pollutants of concern with ongoing inputs
   3a. what are the sources to the point of discharge?

   3b. are these sources controllable? and if so, under what existing regulatory framework? and at what level of government?

4. What is the general pattern of levels, fate, and transport of pollutants of concern within embayments?
   4a. do the general patterns suggest different levels of risk/ concern within embayments (i.e., are mid Estuary conditions generally good but shallow areas closer to shore more problematic?)

   4b. how are these patterns changing in response to natural processes and progressive management actions?

5. Of the pollutants of concern for which ongoing, controllable inputs still exist, which of the controllable source reductions provides the greatest benefit in terms of preventing further degradation and restoring ecosystem function and human health?

6. How effective are management actions?
   6a. how have past management actions affected the overall patterns of levels, fate, and transport of pollutants of concern?

   6b. are current management actions achieving effective control of ongoing, controllable sources?

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Assumptions underlying the focusing questions

Perhaps just as important as the focusing questions is a description of where Board staff are in the process of answering those questions. The Board has essentially been asking these questions in the process of designing regulatory control programs for nearly thirty years and the organization has developed a particular viewpoint based on that experience. It is important to note that these viewpoints incorporate what weä¸□ve learned though the RMP over the past five years. The following working assumptions generally describe that perspective.

1. We have a good sense of what the pollutants of concern are and how a progressive series of management actions have changed the input of those pollutants of concern from point sources

2. We have a good sense of which national criteria are decent approximations of levels of concern and which situations merit site-specific measures

3. Mass and system-based regulatory strategies are more likely site specific measures than site-specific objective in most cases

4. Most of measurable adverse effect on Estuary organisms found to date are due to flow

alterations; flow alterations increase the susceptibility of the system to pollutant related effects

5. Many of the pollutants of concern found in the Estuary system are from historic inputs
6. Most of the ongoing inputs of pollutants of concern come from diffuse, multiple sources (i.e., cars, erosion, small spills, etc.)
7. No one of these multiple sources is a huge percentage of ongoing loadings
8. The remaining controllable sources of pollutants of concern are likely to be found in the arena of non-point source control, pollution prevention, and general watershed management

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RMP objectives

The RMP's overall goal is to provide data and interpretation that helps to address certain of the Boardä¸s information needs. In general, these efforts fall under five major objectives:

1. describe patterns and trends in contaminant concentration and distribution;
2. describe general sources and loading of contamination to the Estuary;
3. measure contaminant effects on selected parts of the Estuary ecosystem;
4. compare monitoring information to relevant water quality objectives and other guidelines;
5. synthesize and distribute information from a range of sources to present a more complete picture of the sources, distribution, fates, and effects of contaminants in the Estuary ecosystem.

These objectives provide a framework for efforts to respond to the following, more specific management questions.

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Specific management questions

Current issues of concern for the RMP are grouped below in relation to each proposed RMP objective.

1. Compare Monitoring Data

1a. Which contaminants should be monitored?

1b. How do RMP data compare with relevant water, sediment, and tissue quality guidelines?

1c. How do the various Estuary reaches compare to each other,

in time and space, relative to water, sediment and tissue guidelines?

2. Describe patterns and trends

2a. How do contaminant levels change over the long term?

2b. Can those changes be linked to changes in inputs to the Estuary?

2c. What is the relationship between pollutant trends and patterns seen in the "spine" of the Estuary and those in the shallower margins?

2d. How are spatial patterns and long-term trends in contaminants affected by estuarine processes?

3. Describe general sources and loadings

3a. What proportion of the contaminants in each Estuary reach are contributed by point source outfalls, storm drains, large and small tributaries, harbor activities including dredging, atmospheric deposition, and historic deposits? 3b. How do contaminants move and transform after they enter the Estuary? 3c. At what spatial and temporal resolution should loadings to the Estuary and changes in upstream contaminant inputs due to pollution prevention efforts be monitored? 3d. What are the background concentrations of contaminants in the Estuary from natural sources?

4. Measure contaminant effects

4a. Which contaminants bioaccumulate in estuarine organisms to levels of concern? 4b. What is the spatial and temporal extent of toxicity in the Estuary? 4c. Which contaminants cause effects in the Estuary?

5. Synthesize information
5a. Provide periodic interpretation and synthesis on selected contaminant-related topics. 5b. Describe and distribute key RMP findings to a variety of audiences. 5c. Assess the use of RMP data and information in decision making.

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Summary Table Relating Focusing Questions to Management Questions

Focusing Questions	Management Questions
1. What are the pollutants and pollutant groups of concern?	
1a. Of the natl. priority poll., which ones are found in the Estuary and of those, which ones are at levels that may be causing effects?	1a,b,c; 4a,c
1b. Of pollutants identified through local monitoring which ones have been i.e. through TIEs or are found at levels above those known to cause effects in esturaine ecosystems?	4a,c
2. What are the overall loadings and mass balance budgets for pollutants of concern?	
2a. What is the implication of historic discharges for mass budgets and fluxes?	3a,b,d
2b. What is the relative contribution of point source outfalls, storm drains, large and small tribs, harbor activities, atmospheric dep., historic deposits and nat. sources?	3a
3. Of the pollutants of concern with ongoing inputs:	
3a. What are the sources to the point of discharge?	N/A
3b. Are these sources controllable and if so, under what existing regulatory framework and at what levels of gov.?	N/A
4. What is the general pattern of levels, fate and transport of pollutants of concern within embayments?	

4a. Do the general patterns suggest different levels of risk/concern within embayments?	2c; 4a,b,c
4b. How are these patterns changing in response to natural processes and progressive mgt. Actions?	2a,b,d; 3c,d
5. Of the pollutants of concern for which ongoing, controllable inputs still exist, which source reductions provide the greatest benefit in terms of preventing further degradation and restoring ecosystem function and human health?	4a,b,c
6. How effective are management actions?	
6a. How have past management actions affected the overall patterns of levels, fate, and transport of pollutants of concern?	5a
6b. Are current mgt. actions achieving effective control of ongoing controllable sources?	2b;3b,c; 5c

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