

To: California Water Quality Monitoring Council
From: Bioaccumulation Oversight Group (BOG)
Subject: Summary of a Draft Bioaccumulation Strategy

1) Background

The BOG is developing a “Strategy for Coordinated Monitoring, Assessment, and Communication of Information on Bioaccumulation in Aquatic Ecosystems in California. A detailed outline of the document has been developed. This memo outlines two parts of the Strategy: 1) recommendations and 2) key obstacles to implementing the recommendations. The goal of presenting this to the Council at this time is to obtain feedback on the direction that the Strategy is taking prior to preparation of a final document.

2) Recommendations

MONITORING AND ASSESSMENT

1. **Promote enhanced general coordination of monitoring, assessment, and communication** to optimize use of limited financial resources.
 - a. Promote consistency across monitoring programs to optimize comparability and usability of monitoring data
 - b. Promote coordinated management of data across programs to allow easy access in support of synthetic assessment efforts
 - c. Promote consistency in application of assessment thresholds across the state to improve assessment, management, and communication
 - d. Enhance coordination of communication of information on fish contamination across agencies
2. **Conduct monitoring to support advisory development.** Largely due to methylmercury contamination, safe eating guidelines are needed throughout the state. Many areas are currently not covered. This is a significant public health concern.
 - a. Provide OEHHA the data they need to develop safe eating guidelines
3. **Continue performing statewide assessments** of bioaccumulation impacts on fishing and aquatic life beneficial uses. Statewide sport fish assessments have helped define the extent of impacts of bioaccumulation on the fishing beneficial use in California. Studies of bioaccumulation in aquatic life with a statewide perspective are helping define the extent of impacts of bioaccumulation on aquatic life beneficial uses in California. Statewide assessments of biotoxins and emerging contaminants are needed.
 - a. Periodically perform statewide assessments (a 10 year cycle) to track broad trends and to further define the status of bioaccumulation impacts on beneficial uses
4. **Conduct regional trend monitoring.** Factors including changes in global atmospheric emissions, climate change, and local or regional management

actions could cause changes in bioaccumulation. Monitoring of trends in bioaccumulation is currently very limited in California.

- a. Conduct regional-scale monitoring at a higher frequency than 10 years to assess general trends across the landscape
 - b. Conduct fine-scale local monitoring to assess trends in response to specific management actions
5. **Perform statewide studies to support pollution reduction**, including TMDLs
- a. Support development of TMDLs or other cleanup plans to address bioaccumulation problems across the state
 - b. Generate information needed to support TMDL development, including how concentrations in TMDL target species relate to concentrations and risks in other species (to ensure the targets are protective of all species) and how monitoring should be conducted to support TMDL implementation
6. **Perform source identification and mitigation studies**
- a. Conduct studies to identify the sources that are driving bioaccumulation problems at a local and regional scale
 - b. Conduct monitoring to evaluate the effectiveness of source reduction and mitigation efforts (including, for example, reservoir aeration or other manipulations)
 - c. Conduct studies to understand the ecological factors that lead to net methylmercury production and accumulation

COMMUNICATION

7. **Support exposure reduction efforts.** Methylmercury contamination of California aquatic food webs is going to persist for decades. Exposure reduction is an avenue for reducing human exposure and risk in the near-term.
- a. Safe eating guidelines should be developed for all water bodies where they are warranted. This should be expedited as much as possible. The effectiveness of the guidelines should be assessed, and improvements made if needed.
 - b. In addition to safe eating guidelines, a coordinated effort should be made using a suite of communication techniques to raise awareness and reduce human exposure. Media coverage should be coordinated. The Safe to Eat Portal should continue to be developed and refined as part of a package of communication products. Effectiveness evaluation should be included. Environmental justice concerns should be considered.
8. **Enhance communication of bioaccumulation information** to regulators, scientists, decision-makers, and the public
- a. Communication of bioaccumulation information (regulatory developments, monitoring results) to regulators and scientists should be continued and improved, including technical reports synthesizing monitoring results, workshops, and training.
 - b. Communication of bioaccumulation information (monitoring results, status of cleanup efforts) to decision-makers and the public should be

continued and improved, including fact sheets, media releases, and presentations.

3) Obstacles to Implementing the Strategy

1. Funding

- a. Priority items where additional funding is most needed
 - i. Continued, secure funding for SWAMP
 - ii. Funding for expedited development of safe eating guidelines
 1. Monitoring
 2. Assessment

2. Participation

- a. We need to ensure active participation by key groups.
 - i. State Agencies
 1. All relevant State Water Board departments (SWAMP, TMDL, Standards, FERC, NPDES)
 2. Regional Water Boards
 3. OEHHA
 4. DPH
 5. DWR
 6. CDFG
 7. DTSC
 - ii. Federal Agencies
 1. USEPA
 2. USFWS
 3. USACE
 4. USBR
 5. US Forest Service
 6. National Park Service
 7. USGS
 - iii. Other Groups
 1. Tribes
 2. Utilities and Water Districts
 3. PGE
 4. Others

3. Inconsistencies among agencies

- a. Assessment thresholds
- b. Communication