

DRAFT Water Quality Questionnaire

DELTA INDEPENDENT SCIENCE BOARD

REVIEW OF SCIENCE USED IN ASSESSING WATER QUALITY AND MAKING MANAGEMENT DECISIONS ABOUT WATER QUALITY IN THE DELTA

The Delta Reform Act of 2009 charges the Delta Independent Science Board (Delta ISB) with providing "oversight of the scientific research, monitoring, and assessment programs that support adaptive management of the Delta through periodic reviews of each of those programs" so that "all Delta scientific research, monitoring, and assessment programs are reviewed at least once every four years" (§85280 (a)(3)). Rather than reviewing individual programs one-by-one, we are conducting reviews based on broad thematic areas. This questionnaire is the first stage of our review of the science underpinning the management of water quality in the Delta.

We want our review to be constructive and helpful. To probe more deeply into the responses to this questionnaire, we will follow up with in-person interviews with some respondents. After preparing a report on our findings, we will be available to engage in further discussions to help explain any recommendations that are included in the report, and suggest paths for implementation. Throughout our process, respondents and interviewees can be assured of confidentiality. Responses will not be identified by an individual nor their entity (agency, division, program, or other).

Managing water quality in a system as complex as the Delta is not easy or straightforward. By thinking about the following questions and then providing brief responses, you'll help us suggest ways in which science can be better used in assessing water quality in the Delta and informing management actions to best protect and improve water quality. The questionnaire is in three parts. **Please provide links to or copies of documents that you think would help us better understand how you are thinking about water quality in the Delta.**

It would be most helpful if you could return the completed questionnaire to **Annie Adelson** (Annie.Adelson@deltacouncil.ca.gov) by **August xx**.

I. A QUICK SURVEY

We'd like to develop a semi-quantitative understanding of how water quality is currently viewed and managed in the Delta. For this review, the Delta ISB is not considering salinity, temperature, or dissolved oxygen as attributes of water quality that we are reviewing the

scientific basis for, because those attributes have a strong science basis already. However, in the future, we may assess how those water quality parameters are managed in the Delta. For this review, we are focusing on chemical contaminants (including mercury, methylmercury, selenium, and pesticides, as well as other chemical contaminants such as pharmaceuticals, personal care products, and contaminants of emerging concern), nutrients, and drinking water constituents of concern. Please keep those attributes in mind as you consider the following questions.

Assign a value from 1 (strongly disagree) to (5 strongly agree) to each of the following statements. Following the statements there is an opportunity for more detailed answers, and there is also a short set of separate questions following this section.

I'm responding for (name of entity) _____. The entity is an agency, division, program, or other (please specify).

1. The water quality parameters currently being measured in the Delta are the most important ones, and few if any additional measures are needed.

1 2 3 4 5 [Check one]

If you think additional parameters are needed, please list them here. [Click here to enter text.](#)

2. The spatial and temporal scales at which water quality is being measured are appropriate for supporting management decisions.

1 2 3 4 5 [Check one]

If spatial and temporal scales are not adequate to support management decisions, describe what parameters need to be measured at higher resolution. [Click here to enter text.](#) Conversely, if you think some parameters are being measured at higher density and/or frequency than needed, say what those parameters are here. [Click here to enter text.](#)

3. Water quality is sufficient to support the recovery of species listed as threatened or endangered under the Endangered Species Act.

1 2 3 4 5 [Check one]

If some aspects of water quality are hindering recovery, or are not sufficiently understood to determine if they might be hindering recovery of threatened or endangered species, please describe those aspects here. [Click here to enter text.](#)

4. Water quality in the Delta is sufficient to support overall ecosystem recovery, including important ecosystem functions.

1 2 3 4 5 [Check one]

If some aspects of water quality are hindering recovery, or are not sufficiently understood to determine if they might be hindering recovery, please describe those aspects here. [Click here to enter text.](#)

5. Water quality data are readily shared between entities.

1 2 3 4 5 [Check one]

If you feel that data sharing could be improved, please give suggestions, using specific examples if possible. [Click here to enter text.](#)

6. What data sources does your agency rely on when making management decisions? Does your agency collect the water quality data it requires, or does it rely on data collected by others?

5. There is considerable duplication of effort in water quality monitoring in the Delta.

1 2 3 4 5 [Check one]

If you know of water quality monitoring efforts that duplicate others, or where efficiencies could be found, suggest those here. [Click here to enter text.](#)

6. Water quality entities in the Delta collaborate on site selection.

1 2 3 4 5 [Check one]

7. Compliance monitoring data are being used in the design and interpretation of the effectiveness of monitoring and other decision-making processes.

1 2 3 4 5 [Check one]

8. There is integration among physical, biological and chemical monitoring being conducted in the Delta.

1 2 3 4 5 [Check one]

If you disagree please recommend ways that integration could be improved.

9. How familiar are you with the California Water Quality Monitoring Council's (CWQMC) actions in the Delta? 1 2 3 4 5 [Check one]

With additional resources, could the CWQMC be the best group for coordinating water quality monitoring programs? If so, what is needed?

10. Sufficient research has been done on water quality issues in the Delta.

1 2 3 4 5 [Check one]

If you disagree please suggest where more research on water quality is needed.

II. QUESTIONS SPECIFIC TO YOUR ENTITY

Here are a few additional questions that we'd like you to think about and tell us what you think, especially the last question.

1. Describe in broad terms whether, and how, you use an adaptive management approach in collecting water quality data and using it to inform management decisions. [Click here to enter text.](#)
2. What data sources does your entity rely on when making management decisions? Does your entity collect the water quality data it requires, or does it rely on data collected by others?
3. Do you have water quality data within your entity that could be useful to other agencies but are currently not available to others who might be interested in it? If so, do you have plans to make the data available, and if so, how? What are the constraints in making these data available? In addition to more funding, what other resources would be most useful for enabling better data sharing among users in the Delta? [Click here to enter text.](#)
4. If you are a manager, do you have a process for highlighting the science and research needs that would lead to improved management of water quality? Do you think that this is an important issue? If you currently lack a process for highlighting needs, what would enable you to do this or to do it better? [Click here to enter text.](#)
5. If you are conducting research, how are your research priorities in the area of water quality determined?
[Click here to enter text.](#)

6. If you are conducting research, what are key areas within water quality issues that need to be investigated further, or research that needs to begin?

7. What question(s) should we have asked but didn't? Also, your answer to those additional question(s) would be helpful!
[Click here to enter text.](#)

III. Needs of your agency.

Please indicate in terms of relative importance (1 most important, 5 least important) if and how each of the issues below are part of the activities of your agency.

Ecosystem Health

- Focus on water quality to support ecosystem health
- Assess the nature and extent of pollution-control needed in different water bodies
- Understand the environmental fate of different pollutants
- Understand the relations between WQ conditions and the natural landscape, hydrological processes, the subsurface and the human activities that take place on the landscape within watersheds
- Early warning of accidental pollution events

Trends in Water Quality

- Monitoring trends over long timescales, taking care to place measurements in a historical and hydrological context
- Determine trends in the quality of the aquatic environment and how the environment is affected by the release of contaminants, by other human activities, and/or by waste treatment operations, often known as "impact monitoring"

Decision-Making

- Enable assessments of the current state of water quantity and quality, and its variability in space and time
- Develop composite indexes to assess source WQ across a range of inland water types, globally and over time
- Support decision-making and operational water management in critical situations
- Provide the basis for science-based environmental policies, and conduct evaluations of whether a policy has resulted in the desired effect and been cost-effective
- Identification of management and policy information needs, and rational planning for pollution-control strategies and their prioritization

- Establish water-quality standards
- Respond to unexpected problems and emerging issues

Outcomes

- Evaluate effectiveness of pollution-control, water management, and remedial measures
- Advance from monitoring to prediction and applying the understanding of the hydrological system and water-quality conditions to non-monitored, yet comparable areas
- Obtain reliable and timely data, and reporting
- Define data and information needs, and subsequent design of the monitoring network to meet them

Technical Development, Coordination, and Improvement

- Assess assimilative capacity of a water body, thereby reducing costs of pollution control
- Advance monitoring technology, such as that for measuring WQ in real-time
- Coordinate activities among organizations involved in water, sanitation and ecosystems and human health
- Strengthen existing network infrastructure and institutions rather than creating new ones
- Build capacity and empowerment among different agencies
- Determine adequate number of monitoring stations and their strategic locations to result in an accurate and reliable basin coverage;
- Promote free access to information
- Calibrate interoperability and comparability of methods
- Keep systems kept up to date (IT, analytical etc.) for data sharing.
- Other(s)—please list and score