



INFORMATION ITEM

Delta Independent Science Board (ISB) Update

Summary

Dr. Lisa Wainger, Delta ISB Chair, will provide an update on the Delta Independent Science Board's (ISB) current activities and reviews on food-webs, decision-making under deep uncertainty, and subsidence. To help inform Delta Stewardship Council (Council) efforts, the Delta ISB provides the Council with independent scientific advice on the Delta Plan and reports findings and recommendations from Delta ISB reviews of scientific activities that support adaptive management in the Delta.

Background

As mandated by the Sacramento-San Joaquin Delta Reform Act of 2009, California Water Code sections 85000, et seq., (Delta Reform Act), the Delta ISB is responsible for providing oversight of the scientific research, monitoring, and assessment programs that support adaptive management in the Delta (Water Code Section 85280(a)(3)) and providing independent advice on the Delta Plan (Water Code Section 85308(a)). The findings and recommendations of the Delta ISB inform updates to and the implementation of the Delta Plan, the Science Action Agenda, the Delta Science Plan, and other Council and Delta Science Program efforts.

The Delta ISB reviews programs that support adaptive management by "thematic" or topical areas to meet its legislative mandate. To date, the Delta ISB has completed and presented the following thematic reviews to the Council: restoration (2013), fish and flows (2015), adaptive management (2016), levee hazards (2016), Delta as an evolving place (2017), water quality (2018), the Interagency Ecological Program (2019), non-native species (2021), the monitoring enterprise (2022), and water supply reliability estimation (2022). The Delta ISB also reviews specific science documents related to adaptive management or the Delta Plan. These reviews can be either self-initiated or based on a specific request from an individual or entity. In addition, the Delta ISB may develop "call-to-action" memos and letters to specific

agencies, including the Council, which are meant to share the Delta ISB's emerging insights, key findings, or recommendations that require action.

As described in the Delta ISB's operating guidelines, the comments, findings, and recommendations of the Delta ISB are expected to increase scientific credibility, improve research clarity, advance the debate about Delta issues, and seek better connectivity between science, management, and policy. The communication and relationship between the Council and Delta ISB are critical for helping to inform the Council's work.

Recently Completed Review

Since the last update to the Council in January 2024, the Delta ISB submitted a comment letter on the draft Cyanobacterial Harmful Algal Bloom (CHABs) Monitoring Strategy for the Sacramento-San Joaquin Delta (<https://deltacouncil.ca.gov/pdf/science-program/2024-02-23-draft-delta-chab-monitoring-strategy.pdf>). The development of this strategy was facilitated by the Delta Science Program. The Delta ISB found that the strategy provides a good review of many of the environmental drivers impacting the occurrence and severity of CHABs and of current programs that monitor CHABs in the Delta. The draft strategy also provides a valuable overview of the diversity of conditions across the Delta system as they pertain to the incidence and severity of CHABs.

However, the Delta ISB noted several elements that could strengthen the draft strategy and encouraged the authors to consider incorporating these elements as they prepare the final version of the strategy. For example, the draft strategy is quite general and is not sufficient for forming the basis of a detailed monitoring plan. The phased approach for developing and implementing the strategy over a 5-year period also seems to be mismatched with the rapidly increasing frequency and severity of CHABs and the general urgency of addressing the extremely high concentrations of toxins that have been observed in some locations in the Delta. For the full comment letter, please see Attachment 1.

Current Reviews

In 2024, the Delta ISB will be working on completing its three thematic reviews on food-webs, decision-making under deep uncertainty, and subsidence, and may start scoping out additional reviews, such as on water quality contaminants.

Exploring Scientific and Management Implications of Upper Trophic Level Interactions in Delta Food-webs

Food-web interactions may directly influence how environmental drivers and management actions affect the abundances of individual species, as changes in one species can affect the abundances of other species. This review will assess the importance of upper trophic level food-web interactions in the Delta and to identify where improved understanding and tools (e.g., food-web models) might substantially improve predictions of an individual species' response to environmental drivers and management actions. This review will evaluate the degree to which the inclusion of food-web interactions can benefit and facilitate multi-species management in the Delta and whether available data and science can support the development of such tools. To help inform this review, the Delta ISB hosted a workshop on November 8-9, 2023, in Sacramento, California (see day 1 here: https://cal-span.org/meeting/disb_20231108/ and day 2 recording here: https://cal-span.org/meeting/disb_20231109/).

In 2024, the Delta ISB is in the process of releasing a draft review for public comments based off this workshop. A representative from the Delta ISB will be presenting preliminary findings and recommendations from this review at the Interagency Ecological Program Workshop from April 23 to 25, 2024, and at the UC Davis Coastal & Marine Sciences Institute and Delta Science Program food-webs symposium on May 31, 2024. For more information, please refer to the final prospectus (available here: <https://deltacouncil.ca.gov/pdf/isb/meeting-materials/2023-06-19-isb-prospectus-food-webs.pdf>).

Science Supporting Decision-Making Under Deep Uncertainty

This review will build an understanding of the scientific tools and concepts that can inform management and policy decision-making under rapid change and the associated increasing uncertainty of future forecasts. Deep uncertainty is system variability that cannot be well characterized with existing data, models and understanding, such as impacts from climate change. Activities will include public seminars, a survey and analysis of current uncertainty and scenario planning efforts in the Delta, and discussions with members of the Delta scientific and management communities. Insights gained through these activities will be summarized in a report with recommendations to help the Delta science and

management community better characterize, prepare for, and adapt to uncertainty for a range of management needs. In 2024, the Delta ISB will work on completing the review. For more information, please refer to the final prospectus (available here: <https://deltacouncil.ca.gov/pdf/isb/meeting-materials/2023-08-04-isb-final-prospectus-dmdm.pdf>).

Managing Subsidied Lands in the Sacramento-San Joaquin Delta

Subsidence is particularly pronounced in the Central Delta where approximately 50,000 acres of agricultural land lie several meters below sea level, protected by over 1,000 miles of levees. A broad cross-section of stakeholders, including both public agencies and private sector parties, are developing approaches to mitigate subsidence. The purpose of this review is to support ongoing and future subsidence management efforts by summarizing, examining, and assessing the existing or planned programs, barriers and opportunities, state of scientific understanding, and the scientific gaps and deficiencies of interconnected areas of subsidence. This review will be primarily based on synthesizing information from panel presentations and public discussions with invited experts at a two-day public workshop, which occurred in October 2023 (see day 1 here: https://cal-span.org/meeting/disb_20231019/ and day 2 recording here: https://cal-span.org/meeting/disb_20231020/). In 2024, the Delta ISB will work on completing the review. For more information, please refer to the final prospectus (available here: <https://deltacouncil.ca.gov/pdf/isb/meeting-materials/2023-08-04-isb-subsidence-prospectus.pdf>).

List of Attachments

Attachment 1: Review of draft Cyanobacterial Harmful Algal Bloom Monitoring Strategy for the Sacramento-San Joaquin Delta (available here: <https://deltacouncil.ca.gov/pdf/isb/products/2024-03-28-isb-comments-chab-monitoring-strategy.pdf>)

Contact

Lisa Wainger, Ph.D.

Chair, Delta Independent Science Board

Phone: (916) 902-6571