



## **INFORMATION ITEM**

### Delta Independent Science Board Update

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**Summary:** Delta Independent Science Board (Delta ISB) Chair Dr. Stephen Brandt, and Past-chair Jay Lund will provide an update on the activities of the Delta ISB, including the findings and recommendations from its most recent review: “The Science of Non-native Species in a Dynamic Delta.”

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#### **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 from the Delta ISB inform updates to and the implementation of the Delta Plan, the Science Action Agenda, the Delta Science Plan, and other Delta Stewardship Council (Council) projects.

As described in the Delta Science Plan, the comments, findings, and recommendations from 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. The last update was at the Council’s April 30, 2020 meeting.

Since the last update to the Council, Dr. Elizabeth Canuel, Dr. Tracy Collier, Dr. Richard Norgaard, Dr. Vincent Resh, Dr. John Wiens, and Dr. Joy Zedler concluded their term on the Delta ISB. On September 1, 2020, six new members joined the Delta ISB: Dr. James Cloern, Dr. Virginia Dale, Dr. Tanya Heikkila, Dr. Robert Naiman, and Dr. Lisa Wainger.

#### **DELTA ISB REVIEWS**

To meet its legislative mandate, the Delta ISB reviews programs that support adaptive management by “thematic” or topical areas. 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), and the Interagency Ecological Program (2019). In addition, 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.

*Findings and Recommendations from "The Science of Non-native Species in a Dynamic Delta"*

Since the last update to the Council, the Delta ISB completed a thematic review on non-native species (2021). This review aims to improve the scientific understanding needed to help agencies prevent and manage the threats and consequences of non-native, invasive species in Delta lands and waters. The Delta ISB conducted this review because the invasion of new non-native species threatens to compromise the Delta Plan's coequal goals. The importance of this issue was recognized in the Delta Reform Act, which stipulated that the Delta Plan should support restoration of a healthy ecosystem by promoting "self-sustaining, diverse populations of native and valued species by reducing the risk of take and harm from invasive species." Reducing the impact of non-native species is also a core strategy highlighted in the draft amended Ecosystem chapter of the Delta Plan.<sup>1</sup>

The information-gathering process for the non-native species review included an extensive literature review, two panel discussions, each composed of five experts who explored the state of science, and public comments. Additionally, Delta ISB members participated in several workshops, scientific sessions, presentations, and discussions with state and federal science managers. Based on the findings from this review, the Delta ISB's overarching recommendation is to encourage a broader, more forward-looking, integrated approach to non-native species science in the Delta with specific consideration of climate change. Non-native species are a fundamental part of the Delta ecosystem and a fundamental driver of ecosystem change. New invaders could disrupt essential services to Delta stakeholders. A high-level, coordinated approach to the science and management of non-native species would address this growing problem. To address the overarching recommendation, the Delta ISB offers seven specific recommendations:

1. Develop and test a comprehensive, spatially explicit, food-web model that is Delta-wide in scope and tied to environmental driving forces and conditions.
2. Define and prioritize detailed short-term and long-term science project needs to improve understanding and management of established invaders by conducting a series of focused workshops or syntheses.
3. Identify and prioritize species that pose the greatest immediate and long-term threats to the Delta and re-evaluate this list regularly.

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<sup>1</sup> <https://www.deltacouncil.ca.gov/delta-plan/amendments>

4. Go beyond individual species management and address how to set ecosystem-level goals that recognize an ever-changing species pool and high uncertainty.
5. Evaluate threat assessments for invasive species in the context of a changing environment and multiple drivers, especially climate.
6. Develop a comprehensive multi-agency invasive-species coordination and implementation plan that identifies authority that assigns responsibilities to include monitoring, rapid response, control, and science expertise.
7. Organize a Non-native Species Task Force or Non-native Species Science Center to complement or expand communication and coordination functions of the Delta Interagency Invasive Species Coordination Team by developing a single 'go to' science source of expertise and information with proper authorization and funding.

This review reflects that science can be used to better predict, detect, control, or adapt to non-native species and inform management to set priorities to minimize harm. However, science is only one element among many considerations, such as fiscal, sociological, and political that ultimately drive allocations of resources to deal with non-native invasive species. To read the full report, please see Attachment 1, which will be provided on the day of the Council meeting

#### *Ongoing Current Reviews*

The Delta ISB is in the process of completing two other thematic reviews and is providing input on the development of the Science Needs Assessment. This report is being developed in collaboration with the Delta Plan Interagency Implementation Committee (DPIIC). Progress on these efforts is described below.

1. Delta Monitoring Enterprise Review (started April 2017): The Delta ISB is in the process of reviewing how well monitoring programs are meeting the informational needs of management agencies. There are two components to this review. Component 1 was the development of a comprehensive inventory of monitoring programs in the Delta, completed by a contractor under the direction of the Delta ISB in March 2020. Component 2, currently underway, is the Delta ISB's evaluation and recommendations on monitoring programs.
2. Water Supply Reliability Review (started April 2018): This review focuses on the science and methods available, and employed, to estimate and evaluate water supply reliability. This review aims to further the science and technical practice of water supply reliability estimation and make it more relevant to policy and management. In January 2019, the Delta ISB hosted a public

workshop to learn about the different methods and models used by different agencies and identify priorities for research and areas for collaboration. Currently, the Delta ISB is in the process of drafting the report.

3. Science Needs Assessment (started April 2019): In February 2019, the Delta ISB made a recommendation to DPIIC to initiate and lead a bolder, forward-looking, and better-integrated science and management program that provides policy-makers and managers with better scientific information and management options for the Delta through the development of a Science Needs Assessment. DPIIC incorporated the development of the Science Needs Assessment as part of the Delta Science Funding and Governance Initiative in April 2019. In 2020, DPIIC and the Delta ISB co-hosted a well-attended four-part discussion series and a workshop to help inform the development of the Science Needs Assessment. Based on the feedback from these events, a draft Science Needs Assessment is being prepared with input from the Delta ISB.

In 2021, the Delta ISB hopes to continue to explore future review topics with a focus on forward-looking science. In addition, the Delta ISB will consider requests from the Council and other organizations.

#### **FISCAL INFORMATION**

Not applicable

#### **LIST OF ATTACHMENTS**

Attachment 1: The Science of Non-native Species in a Dynamic Delta by the Delta Independent Science Board (will be provided on the day of the Council meeting)

#### **CONTACT**

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