



## INFORMATION ITEM

### Social Science Integration Team

#### Summary

Integrating the social sciences into environmental science and management in the Sacramento-San Joaquin Delta (Delta) can contribute to a better understanding of the people who live, work, and recreate in and around the estuary, how the region impacts their health and well-being, and how their behaviors influence environmental issues, in furtherance of the coequal goals.

Today, staff on the Council's Social Science Integration Team will present the accomplishments of 2022 and ongoing efforts that aim to increase interdisciplinary science that will advance the coequal goals.

#### Background

Efforts to integrate the social sciences within the Council's work and the Delta more broadly aim to build better understandings of the interactions between the social and ecological dimensions of the Delta, a knowledge gap that has gained increasing awareness over the past ten years (e.g., 2016 Delta Science Enterprise Workshop, the Delta Independent Science Board's 2017 Review of Research on the Delta as an Evolving Place, the Council's 2019 Delta Plan Five-Year Review, and the Social Science Task Force's 2020 Report.)

The social sciences encompass a broad set of academic disciplines (e.g., anthropology, economics, geography, psychology, political science, sociology) and methodological approaches (e.g., interviews, surveys, participant observations, document analysis) that broadly aim to understand social processes and human behavior. In the context of natural resource management and conservation, the social sciences can: (1) help investigate why social phenomena, processes, or individual behaviors are occurring around an environmental issue; (2) *anticipate* social or economic future trends through modeling; (3) *inform* the design of planning or governance processes that are participatory and inclusive; and (4)

*evaluate* the efficacy or equity implications of different policy and management approaches. Furthermore, effective integration of social scientific tools by natural resource governing entities can lead to the following:

- more efficient management and governance approaches (e.g., determining what approaches will alter incentives appropriately to result in changed behavior or by informing the most culturally appropriate or socially-acceptable interventions);
- more robust justifications of stewardship actions or policies (e.g., determining the social and economic values of nature or evaluating trade-offs and identifying optimal solutions for people and nature); and
- increased attention to addressing power and resource inequalities prevalent in environmental resources challenges (e.g., supporting representative data collection or evaluating historical law and development that produced modern-day environmental injustices).

The Delta Stewardship Council has identified opportunities for greater integration of social sciences within the Council's work and the Delta more broadly. For example, staff has developed a Social Science Integration Team that reaches across the agency's divisions to identify opportunities and support the integration of social science approaches into the Council's science, planning, communication, and public participation activities. Additionally, the inclusion of science actions that integrate social components in the 2022-2026 Science Action Agenda creates a foundation for interdisciplinary and social science research to be funded in the Delta. These efforts aim to advance participatory governance and science approaches implemented across the Delta that consider human behavior and well-being at the core of their design. This involves integrating new partners, types of knowledge, and strategies for tackling the "wicked" management challenges facing the estuary, that are inherently social-ecological in nature.

### Information about the Topic

The Council continues to set an example and make progress in integrating social and natural sciences in the Delta. Key accomplishments made in 2022 include (1) continued efforts to build and organize the Bay-Delta Social Science Community of Practice; (2) increased outreach and education on integration by hosting virtual and

hybrid events that bring together interdisciplinary and cross-sector audiences; (3) review and synthesis of available literature on integrating Traditional Knowledge and Western Science to inform estuary management; (4) integrated social science knowledge and best practices into the Ecosystem Amendment for the Delta Plan, Delta Adapts planning effort, and the Environmental Justice Issue Paper; and (5) development of the Delta Residents Survey. In-depth highlights on a few of these efforts are the focus of today's presentation.

### [Bay-Delta Social Science Community of Practice](#)

In 2021, the California Sea Grant and the Delta Science Program initiated the Bay-Delta Social Science Community of Practice (CoP) as a network of nearly 75 scholars and professionals committed to advancing research on the human dimensions of the Delta and San Francisco Bay. In 2022, the Delta Science Program and the CoP hosted a training and workshop on interdisciplinary research (more details below). In 2023, the community will continue to meet regularly to exchange research needs, share and provide feedback on ongoing efforts, and share opportunities and ideas for collaboration. At each meeting, students and early career scientists will present research talks, which is an excellent opportunity to get feedback from the community, broaden professional networks, and gain practice for upcoming conferences.

### [Advancing Interdisciplinary Research: Training and Workshop](#)

In October 2022, the Council and the CoP hosted a two-part event on interdisciplinary research in the Delta. The goals were to: 1) share knowledge between social science and natural science communities, 2) provide examples of interdisciplinary research in the Delta, and 3) establish new relationships among scientists from different disciplines. The event was attended by over 80 participants from agencies and academia; two-thirds had backgrounds in natural science, and over half had backgrounds in social or interdisciplinary science. The training portion of the event provided a broad introduction to the environmental and social sciences, with lectures and case studies delivered by invited speakers from across the country. This was followed by an interactive workshop where participants worked in small groups to develop mock proposals for hypothetical interdisciplinary projects that respond to management needs identified in the 2022-2026 Science Action Agenda.

### Science for Communities

The Science for Communities initiative (<https://bit.ly/3YX4NEo>) was developed to connect scientists and community-based organizations to support more community-engaged science in the Delta. In October 2022, the Council hosted a forum to boost Delta communities' awareness of and access to the environmental data and technical tools available to them. The workshop aimed to connect those who live, work, and recreate in and around the region with Delta scientists, and foster opportunities for communities to voice scientific needs and questions and for scientists to learn from and support communities. Many topics support the development of social science in the region. These topics included:

- Supporting tribal engagement in science and policy.
- Messaging about and data collection related to harmful algal blooms (HABs)
- Improving climate adaptation by integrating disability communities
- Histories of racial disparity in flood management
- Public surveys on policy and public health
- Environmental Justice
- Unhoused Californians and the human right to water

Staff is exploring how lessons from the event can inform the Council's work and guide future projects.

### Delta Adapts

The Delta Adapts (<https://bit.ly/3k1C02v>) climate adaptation effort has integrated social sciences throughout the development of the vulnerability assessment. For example, it incorporated the social vulnerability index (<https://bit.ly/3K9Y2ul>) and economic estimates (<https://bit.ly/40ZqVzN>) to measure the total economic effects of flood exposure in the Delta if the region fails to adapt its flood management system to climate change. For the current adaptation strategy, Council staff are building on these efforts using economic data, considering climate impacts through an environmental justice lens, and incorporating stakeholders' values and attitudes on climate issues into developing climate change adaptation strategies. In its final form, the adaptation strategy will integrate and build upon the region's best available climate and social science.

### Traditional Knowledge and Western Science

Traditional Knowledge is a term of Western academic origins that generally refers to the place-based knowledge and associated land stewardship practices of Indigenous Peoples. Indigenous Peoples and their Traditional Knowledge have supported diverse, flourishing communities of human and non-human beings and holistic approaches to landscape stewardship across time and ecological contexts. With the violent displacement of Indigenous peoples from their homelands by Western colonial settlers, Indigenous Peoples across California and around the world have been obstructed from using their Traditional Knowledge. Native American Tribes have resisted and combatted these legacies of colonial settlement by preserving, adapting, and revitalizing their Traditional Knowledge.

Supporting these efforts by Tribes is integral to advancing broader social and policy goals around environmental justice. Therefore, with direction from the Governor's office and the California Natural Resources Agency, state agencies are seeking ways to promote California Native American Tribes using and revitalizing their Traditional Knowledge. To support these efforts, the Delta Science Program is conducting a baseline assessment of recent, current, and planned activities within DPIIC agencies that serve as inroads for Native American Tribes to use their Traditional Knowledge to inform the stewardship of the Delta watershed. The assessment integrates web-based research, interviews with agency staff and managers, and partnerships with regional Tribes to catalog, synthesize, and evaluate opportunities for Native American Tribes to apply their Traditional Knowledge in the stewardship of the Delta watershed. The results will be summarized in a report and aim to be released by the end of 2023.

### Delta Residents Survey

For decades, scientists in the Delta have monitored the health of the estuary's plants, animals, and environmental conditions. However, significantly less research has focused on human communities in the Delta and people's livelihoods, well-being, priorities, and concerns. The Delta Residents Survey is a collaborative research effort led by California Sea Grant Delta Social Science Extension Specialist and California State University, Sacramento (CSUS), with funding from the Delta Science Program and collaborators from the Bay-Delta Social Science Community of Practice. This effort aims to help address this information gap by developing and

fielding a household survey to better understand Delta residents' attitudes, values, and perspectives on the estuary's critical environmental and social issues. The survey was sent to 80,000 households across the rural, urban, and suburban Delta in late January 2023. It included questions to understand residents' livelihoods, well-being, experiences with environmental and climate impacts, priorities, and regional concerns. Results from the survey will be analyzed and shared with respondents, community groups, the Council, and other interested local and state agencies later in 2023.

### The future of social and interdisciplinary science at the Council

The Council is committed to supporting more integration of the social sciences into science-based water and environmental decision-making and furthering the coequal goals. In addition to making progress on the efforts highlighted above, the Council is pursuing meaningful ways to support social science integration in the year ahead, including:

- As part of the 2023-24 Proposal Solicitation Notice, the Delta Science Program encourages social science and interdisciplinary proposals to address the 25 pressing science actions identified in the 2022-2026 Science Action Agenda. The DSP science funding program and Delta Lead Scientist are working to make science funding equally accessible to all disciplines relevant to management in the Delta.
- The Delta Science Program is planning a synthesis working group with the National Center for Ecological Analysis and Synthesis (NCEAS) (<https://bit.ly/3k3Y64x>) for summer and early fall 2023. NCEAS trainers and facilitators will provide data science, reproducibility, and statistics lessons at UC Davis. In addition to providing training, a key goal is to support participants in completing data-centric interdisciplinary synthesis projects, publications, and presentations on multi-benefit approaches to managing the Delta as a social-ecological system.

## Fiscal Information

Not applicable.

## List of Attachments

*Attachment 1: Advancing Interdisciplinary Research Symposium Summary*

## Contact

Beck Barger

Manager of Public Participation

Phone: (916) 275-6824