



Executive Summary

Task Force Charge

In the fall of 2018, a six-member independent Social Science Task Force (Task Force) was charged by the Delta Stewardship Council's Delta Science Program to develop a strategy for strengthening and integrating social sciences into the science, management, and policy landscape of the Sacramento-San Joaquin Delta (Delta). This document summarizes the findings and recommendations of the Task Force. The intended audience is the Delta science enterprise, the collection of science programs and activities that exist to serve managers and stakeholders in the Delta (Science Enterprise Workshop, 2016). The elements of the enterprise range from in-house programs within individual agencies and academic institutions to large-scale collaborative science programs.

The specific objectives of the proposed strategy are to identify: (1) Opportunities to strengthen the Delta science enterprise; to improve the integration of social sciences into the science, management, and policy institutions that address Delta issues; and to improve social science integration into decision-making about the Delta; and (2) Critical steps and priorities for establishing a social science research program that enhances our understanding of the values of an evolving Delta, and that considers both people and the environment.

The Task Force was not asked to conduct social science or recommend specific actions based on social science. That is, this report does not "do" or report empirical social science—rather it provides a strategy for how the Delta science enterprise can promote, guide, and obtain the social science necessary to meet management goals for the Delta.

What is Social Science and why do we need it in the Delta?

The social sciences encompass dozens of theoretical and applied disciplines and sub-disciplines, such as anthropology, geography, economics, public administration, psychology, and sociology. The disciplines vary in their methods, data types, and analyses. Many social sciences have organized sub-disciplines focused on environmental and natural resource management, such as natural resource economics and environmental psychology. Particularly in contexts where humans deeply impact and are impacted by the state of the natural system, the social sciences can help answer a myriad of questions related to ways in which human and natural systems interact to influence the outcomes (and side effects) of environmental policy and natural resource management. Fundamentally, the integration of social and natural science recognizes that humans are a central part of the system, as is the case in the Delta—and that overlooking this human component often leads to unintended consequences and management ineffectiveness.

An instructive example of the role and impact of social science is found in commercial fisheries, where an old adage states that managers manage fishermen not fish. That perspective has led to substantial gains in the effectiveness, efficiency, and equity of fishery policy over the last 50 years. The development of catch share programs, for example, have replaced the dangerous and wasteful race to fish with a race to create value that has led to both ecological and economic gains over time (see Case Study 1). Social scientists, including anthropologists, political scientists, and economists, were instrumental in the development of these programs and currently in evaluating their performance. More importantly, the focus on managing people not fish has led to a robust and growing body of interdisciplinary research on fishery management.

While protecting and enhancing the unique cultural, recreational, natural resources and agricultural values of the Delta as an evolving place is a critical component of how managers operate in the Delta, management efforts (e.g., as reflected in legislation and biological opinions for endangered species conservation) typically emphasize the management of habitats, water, and species. Less systematic emphasis is given to understanding and managing the *people and communities of the Delta* to achieve

the coequal goals. The framing of these issues primarily around biophysical rather than social dimensions reflects a paucity of social science input and capacity within the science enterprise.

Given the generally biophysical framing of Delta management, one might ask: why should my agency, project, or program invest in social science research? Such questions are often accompanied by arguments that full-time employee (FTE) caps, limited budgets, and other factors preclude significant new investments in social science. Yet given the imbalance currently devoted to biophysical versus social science, it may be optimal to make strategic tradeoffs between resources devoted to biophysical and social science. Social science input is critical to ensuring that rules and regulations are effective (and understanding why); understanding whether there are unintended consequences of management; improving the efficiency of management interventions; achieving management goals at the lowest costs to the public; and mitigating environmental justice implications, among many other priorities. When social science is overlooked or under-utilized, it implies a lack of attention to management effectiveness, efficiency, equity and social impact. Such a perspective is difficult to defend in a climate in which local, state, and federal agencies are increasingly asked to justify their actions and expenditures in terms of measurable outcomes and benefits to the public.

Task Force Methods

The Task Force engaged the scientific and regulatory community during our deliberations through two workshops, one with the regulator community and one with the academic community. Both workshops initiated a dialogue around social science needs for the Delta. The Task Force also met twice in person and over a dozen times remotely between January 2018 and March 2020 and a number of times with the Delta Science Program staff. The group reviewed a wide range of material, including the Delta Science Plan (2013 & 2019), Science Action Agenda (Interim 2014 & 2017-2021), Delta Independent Science Board's Review of Research on the Delta as an Evolving Place, the Delta Science Enterprise Workshop 2019 report, NOAA Science Advisory Board's 2009 report on "Integrating Social Science into NOAA planning, evaluation,

and decision-making,” social science academic literature, and additional publications related to science and management in the Delta. Comments and reviews were solicited on an earlier draft version of this report (December 2019), and this input was considered when composing the final report.

This report is only one product of the Task Force’s activities. We view the entire interactive process, including both workshops, as fundamental to generating and supporting conversations about key social science questions for the region and building a network of regional social scientists and champions.

Summary of Findings and Recommendations

Existing Delta Science Strategy documents already recognize the need for social science and many identify initial investments to address that need. The very act of putting together the Task Force, in fact, should be commended as a demonstration of the Delta Science Program’s genuine interest in integrating social science. The majority of documents, however, do not clearly define how the different social sciences are relevant to different types of management questions, and how investments in social science can be targeted effectively to achieve the co-equal goals in water supply and restoration.

Based on these reviews and conversations, the Task Force identified three main barriers to the integration of social science in Delta planning, and eight overarching recommendations for addressing these barriers (summarized in Table 1). These recommendations do not need to be implemented in a specific order – incremental and iterative efforts to address any of them when policy windows are open would contribute to broader system change.

Fundamental to these findings and recommendations is an observation that different types of social science are relevant to different questions and problems facing the Delta, and that consideration (and solicitation) of “social science” as a homogeneous and non-differentiated tool will not be sufficient to address the paucity of social science input into Delta management. More broadly, implementing these recommendations requires a recognition that the problems and solutions in the Delta involve people. People include not just those who live and work in the Delta, or people who visit the Delta, but also those involved in the Delta governance. Developing an understanding of all relevant people entails the incorporation of different forms of knowledge, which includes input from different social sciences, as described further in Appendix D.

Table 1. Summary of Findings and Recommendations

<p>Finding 1 There is a lack of social science capacity and investment.</p>	<p>Finding 2 Research activities are ongoing, but there is no long-term vision for social science integration.</p>
<p>Recommendation 1</p> <p>Invest in a broad array of social science studies.</p> <p>This includes fully integrating social science and scientists in the development of the next Science Action Agenda, RFPs, and in finding diverse mechanisms to fund social science research.</p>	<p>Recommendation 4</p> <p>Invest in a collaborative process to develop a conceptual framework for the Delta that includes social science.</p> <p>This includes collaboratively developing a single framework that identifies and demonstrates the interdependence of social and biophysical components of the Delta system. While several agencies have their own such conceptual models, a single Delta-wide model that makes transparent the social and biophysical priorities of Delta science can provide a framework for regional research and strategic planning.</p>
<p>Recommendation 2</p> <p>Invest in building an external network of social scientists.</p> <p>This includes actions to promote greater representation of social scientists, from different social scientific fields, on advisory boards and panels. It also includes the use of interdisciplinary workshops to involve external social scientists in research prioritization, and to improve the understanding of what the social sciences offer the Delta Science Enterprise.</p>	<p>Recommendation 5</p> <p>Secure funding for monitoring and reporting on social indicators.</p> <p>This includes collaborative development of indicators for the social outcomes that represent the science enterprise’s overarching goals. Although performance measures have been identified to evaluate the actual implementation of actions, indicators measure the things we care about (or, our overarching goals). These indicators should be continually monitored over time and used to evaluate the effectiveness of strategies and inform strategic decisions. A plan for data collection, synthesis, and reporting these indicators should be funded and institutionalized.</p>
<p>Recommendation 3</p> <p>Invest in internal social science capacity.</p> <p>This includes hiring senior and junior social scientists across different Delta science enterprise agencies, along with activities to train managers and staff on the integration of social and biophysical sciences to understand the complex Delta system.</p>	<p>Recommendation 6</p> <p>Integrate social and biophysical science to improve decision making.</p> <p>This includes creating pathways in which social science can inform decision making throughout the Delta, even though there is no explicit mandate to do so. One approach is to integrate social science with biophysical science to answer broader questions, such as “how can irrigation be managed to guarantee water quality, agricultural practices, and social justice?”</p>

Finding 3

The adaptive management process is not informed by the social sciences.

Recommendation 7

Continuously evaluate institutional, cultural and individual barriers to learning.

This includes involving various social scientists (including economists, psychologists, and/or public administration specialists) in identifying the individual, social, and institutional factors that influence learning and decision making in the Bay Delta.

Recommendation 8

Reduce barriers to integrating new knowledge in future management decisions.

This includes streamlining opportunities for learning about when adaptive management is appropriate. Part of this is recognizing when some barriers are so entrenched as to make adaptive management irrelevant.

 *Finding 1* pages 20-37: [R1](#), [R2](#), [R3](#)

 *Finding 2* pages 38-51: [R4](#), [R5](#), [R6](#)

 *Finding 3* pages 52-59: [R7](#), [R8](#)