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Via email: science@deltacouncil.ca.gov

Dr. Clifford N. Dahm, Lead Scientist
Delta Science Program
Delta Stewardship Council
980 Ninth Street, Suite 1500
Sacramento, CA 95814

Subject: Comments on Draft 2017-2021 Science Action Agenda

Dear Dr. Dahm:

Thank you for the opportunity to comment on the above referenced Science Action Agenda (SAA).

Restore the Delta advocates for local Delta stakeholders to ensure that they have a direct impact on water management decisions affecting the water quality and well-being of their communities, and water sustainability policies for all Californians. We work through public education and outreach so that all Californians recognize the Sacramento-San Joaquin Delta as part of California's natural heritage, deserving of restoration. We fight for a Delta whose waters are fishable, swimmable, drinkable, and farmable, supporting the health of the San Francisco Bay-Delta Estuary, and the ocean beyond. Our coalition envisions the Sacramento-San Joaquin Delta as a place where a vibrant local economy, tourism, recreation, farming, wildlife, and fisheries thrive as a result of resident efforts to protect our waterway commons.

As Delta advocates, we rely heavily on scientific research output and synthesis to inform our positions. We have, for example, participated in commenting on the State Water Board's recent Scientific Basis Report for development of its Phase 2 Water Quality Control Plan. We have participated in debates with Tunnels advocates in a variety of venues, including the Senate Fellows Program in November 2015.

Our comments in this letter are focused on Action Area 4 of the Draft SAA. This Action area of the agenda would prioritize investing in "assessing the human dimensions of natural resource management decisions." We respectfully find these agenda items to be

premature. We do appreciate and applaud the Delta Science Program for using the SAA to recognize that:

- Humans are inextricably linked with the Delta ecosystem.
- Investments in social and behavioral science have been minimal compared with biological and physical sciences in the Delta.
- Investments in social and behavioral sciences are important for creating novel policies and durable natural resource management solutions.
- Investments in the human sciences applied to Delta-related management actions is important because the Delta Reform Act requires achievement of the coequal goals to be “achieved in a manner that protects the unique cultural, recreational, natural resources, and agricultural values of the Delta as an evolving place (Water Code Section 85054; SAA 2017: 7:19-23).
- The Delta Independent Science Board (DISB 2017: 7-8) offers suggestions for “synthesis opportunities” for primary research on the Delta as an evolving place to help inform achievement of the coequal goals while preserving the evolution of the Delta as a unique place in California.

The specific priority science actions contained in the SAA, however, hardly represent a down payment toward applying the best available science to Delta water supply reliability and ecosystem restoration actions that elucidate and apply the bases for protecting the unique cultural, recreational, natural resources, and agricultural values of the Delta as an evolving place. At present the Action Area 4 priority science actions for the next four years would:

- A. Investigate the most cost-effective methods to improve habitat for species of concern on working lands.
- B. Develop an evaluation and feasibility process for addressing fish passage at California’s rim dams to inform a rim dam solution plan that integrates economic and environmental goals.
- C. Determine how to coordinate and assist the application of adaptive management in the Delta. (SAA 2017: vi)

These three areas of scientific inquiry take as their cue the already quite narrow agenda of water management and ecosystem restoration issues without disclosing what that agenda’s goals are. We accept these presently proposed research priorities in the SAA under Action Area 4. But we also find them all too consistent with the narrow objectives of the recent Delta Plan amendments that seek to promote conveyance and storage options (and the operation of both), and performance measures that egregiously fail to require meaningful reduced reliance on the Delta for California’s future water needs. With the Council already failing to implement this latter state policy mandate, these priority science actions merely fall in line with the Council’s status quo.

We take seriously that the Delta Science Program acknowledges that minimal investments has occurred in social and behavioral science matters embedded in Delta place issues. Consequently, we recommend that the Delta Science Program expand its SAA in Action Area 4 to include several other urgent priorities we think are crucial to improving the Delta Stewardship Council's, and indeed the State of California's use of best available science and prospects for achieving the coequal goals in a manner that protects unique Delta values as an evolving place.

1. The Delta has crucial **common pool resources of fish species and fresh water** that must be studied and evaluated so as to establish a commons regime in which its common pool resources are treated coequally, sustainably and with respect for the Delta as an evolving place.

To date, there are no Delta-centered studies we are aware of that attempt to apply insights into collective action and practical aspects of commons regimes actively managing common property resources worldwide, including groundwater resources in California.¹ Researchers come from fields as diverse as anthropology, institutional economics, and social psychology. A wide range of practitioners may be found through the International Association for the Study of the Commons (<http://www.iasc-commons.org/>), and one of their leading researchers, the late Elinor Ostrom, won a Nobel Prize for Economics in 2009 for her research into polyarchy and commons regimes (Ostrom 2009). Research in this field is interdisciplinary, exactly the type of intellectual problem posed by the coequal goals that must be achieved in a manner that protects various dimensions of the Delta as an evolving place.

2. **Delta indigenous history, culture, ethnobotany, and economy** must be studied and synthesized for lessons on how the region was managed prior to European-American contact. Application of these knowledge domains have been of great value in forest and other plant community management throughout California, including for production of material culture and fire management (e.g., Anderson 2005). Similar lessons may be available for Delta ecosystem and water management.
3. **Current invasive species**, such as *Potamocorbula amurensis*, may have had predators in their original habitats, including human beings. If humans preyed on these clams, what human adaptations here in California might take advantage of what is now a major invading colonizer in the benthic food web of the Bay-Delta estuary?²
4. **Environmental justice** is a desperately needed priority research area that would fit neatly into Action Area 4. Recently, Restore the Delta has summarized demographic

¹ See attached Bibliography for a sampling of contemporary commons literature.

² This suggestion has stuck with us since it was suggested by William A. Bennett of the Bodega Bay Marine Laboratory to the State Water Resources Control Board during the 2010 Delta Flow Criteria proceedings.

data on environmental justice communities in the Delta region for inclusion in the evidentiary record of the California WaterFix change petition hearing before the State Water Board.³ Community members, to the extent they fish, swim, play, or work in or with waters of the Delta are legal beneficial users of water under state and federal clean water acts. Neither the Delta Plan nor recently-proposed Delta Plan amendments⁴ address or identify environmental justice communities, despite state anti-discrimination and human-right-to-water policy requirements to incorporate their concerns into state agency plans and policies.

Environmental justice communities are minority and impoverished groups of people who face a disproportionate level of risk or hazard from potential environmental harms. While environmental justice communities have been studied throughout California and the rest of the United States, little scientific attention has been devoted to their existence and concerns. The dearth of Delta-related environmental justice community research may contribute to, but does not excuse, the inattention of the Delta Stewardship Council and other state agencies to the reality and significance of environmental justice concerns. We are confident that vigorous attention to and investment in such research will pay long-term dividends to California on water policy, management and related matters in the long run, however.

We again thank you for the opportunity to comment on the SAA. If you have questions about this letter, please contact Barbara Barrigan-Parrilla at 209.479.2053 (or via email at barbara@restorethedelta.org), or Tim Stroshane at 510.524.6313 (or via email at tim@restorethedelta.org).

Sincerely,

 Barbara Barrigan-Parrilla Executive Director	 Tim Stroshane Policy Analyst
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Attachment: Selected Commons Bibliography

cc: Bob Wright, Friends of the River

³ Restore the Delta exhibits concerning environmental justice communities and concerns may be found at http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/california_waterfix/exhibits/restore_the_delta.shtml, Exhibits 20, 21, and 202-246. We summarized these exhibits and related issues in Attachments 1 through 5 of our joint letter with the Environmental Justice Coalition for Water to the Delta Stewardship Council of April 17, 2017, available at <http://www.restorethedelta.org/wp-content/uploads/20170417-RTD-EJCW-Letter-DSC-Storage-Conveyance-Operations.pdf>.

⁴ The recently proposed amendments under consideration address conveyance, storage and operation of both; performance measures; and Delta levee investment strategy priorities.

Bill Jennings, California Sportfishing Protection Alliance
Colin Bailey, Environmental Justice Coalition for Water
Randy Reck, Environmental Justice Coalition for Water
Tom Zuckerman, Central Delta Water Agency
Randy Fiorini, Chair, Delta Stewardship Council
Susan Tatayon, Vice-Chair, Delta Stewardship Council
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Osha Meserve, Soluri Meserve
Doug Obegi, Natural Resources Defense Council
Jon Rosenfield, The Bay Institute
Barbara Vlamis, AquAlliance
Kathryn Phillips, Sierra Club
Kyle Jones, Sierra Club
Conner Everts, Environmental Water Caucus
Jeff Miller, Center for Biological Diversity
Adam Keats, Center for Food Safety
Michael Brodsky, Save the California Delta Alliance
Carolee Krieger, California Water Impact Network

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