

INFORMATION ITEM

Lead Scientist's Report

Summary: Dr. Louise Conrad, standing in for Delta Lead Scientist Dr. Laurel Larsen, will discuss a Union of Concerned Scientists technical report by *Persad et al.* (2020). The report accompanied the release of a synthesis of climate modeling results for California (Persad et al., *Climatic Change*, 2020) and highlights best practices for managing California water resources under projected climatic shifts and the need for infrastructural changes. Dr. Conrad will also provide an update on the Delta Science Solicitation Proposal and the 2022 – 2026 Science Action Agenda (SAA).

TROUBLED WATERS: PREPARING FOR CLIMATE THREATS TO CALIFORNIA'S WATER SYSTEM. UNION OF CONCERNED SCIENTISTS. OCTOBER. 2020.

Water is at the forefront of California's ecological, economic, and cultural prosperity, and its storage and distribution involves extensive infrastructure throughout the state. As it stands, the system in place to serve California's water needs is extremely stressed by rising demands, aging infrastructure, and the increasing extremes of flood and drought cycles as a result of climate change. On top of this, reservoir operation decisions are made based on historical data, which are increasingly outdated. An analysis performed by Geeta Persad and Juan Pablo Ortiz Partida of the Union of Concerned Scientists and Daniel Swain of UCLA shows that climate change is transforming when, how, and where California water resources will be concentrated. The study is highly relevant to the Delta Reform Act's coequal goal of water supply reliability. Critically, the study demonstrates a high degree of certainty in climate change-induced shifts in California's water climate (or "hydroclimate"). These changes will jeopardize water supply reliability, particularly without changes to water decision-making processes that take into account climate-related changes.

The authors quantified hydrological metrics across six categories, including precipitation, drought, flood, and snowpack. The analysis investigated the certainty of projected changes by comparing results across a suite of 10 climate models used in the Fourth California Climate Assessment. Models had strong agreement on increases in precipitation extremes, increases in the intensity of wet and dry years, and declining snowpack health. These climatic shifts will alter key aspects of how California acquires its water resources. For example, the article highlights the emerging challenge of managing reservoirs for both flood protection and water

supply in a future climate that has more frequent wet-dry extremes and diminished storage from snowpack.

In the face of these shifts, ensuring communities' resilience under the pressures of climate change in California necessitates dramatic but achievable changes in approaches to water resource management and policy. In particular, management decisions should be based on quantitative planning for long-term climate change impacts on hydroclimate. These changes are achievable because data are available for this type of planning.

Specifically, this study provides several suggestions for the management of California water resources.

- First, state and local water planning processes and tools should be updated to capture all projected hydroclimate shifts.
- Secondly, federal, state, and local water decision-makers should work together to ensure consistency in their analyses and to develop new planning models and tools.
- Crucial water sustainability regulations, such as the Sustainable Groundwater Management Act, should be updated to require and support improved climate planning.
- Finally, processes and platforms should be created to increase two-way collaboration between climate scientists and water managers in order to optimize the production and use of climate data and analysis for water resource management and policy.

DELTA SCIENCE PROPOSAL SOLICITATION

On November 9th, 2020, the Delta Science Program, in coordination with the U.S. Bureau of Reclamation (Reclamation) and California Sea Grant, announced a solicitation for scientific research proposals in the Delta (PSN). The PSN seeks to fund 12- to 31-month projects that directly inform management and advance the 2017-2021 Science Action Agenda. The total award amount is expected to be up to \$9 million, including up to \$5.5 million from the Council and up to \$3.5 million from Reclamation. Extensive outreach has been conducted by Council staff to raise awareness of this opportunity to researchers within and beyond the Delta.

Proposals are due by February 12, 2021, and interested applicants must have submitted a letter of intent by December 15, 2020. California Sea Grant and the Delta Science Program will host a virtual public informational webinar on January 8th, 2021, to answer questions about the application process. The first webinar was

held on December 2nd, 2020. For more details about the webinars and the solicitation, including a Frequently Asked Questions document, please visit the website: <https://deltacouncil.ca.gov/delta-science-program/delta-science-proposal-solicitations>

2022-2026 SCIENCE ACTION AGENDA UPDATES

A shortlist of top Delta management questions is now posted on the Council's website. This list of 110 management questions results from nearly ten months of collaborative and transparent work and will directly inform the update to the Science Action Agenda (SAA) for 2022-2026. The SAA prioritizes and aligns science actions on a four-to five-year timescale to inform pressing management needs. Responding to recommendations from the 2019 Science Funding and Governance Initiative and endorsed by the Delta Plan Interagency Implementation Committee, this update to the SAA started with a broad list of management questions to better ensure that science actions inform policy and management. Delta managers, scientists, and stakeholders submitted nearly 1,300 management questions to the Delta Science Program for this effort. The full list was then sorted, screened, merged, and further refined at a workshop in September 2020 with input from over 85 attendees. The next steps in the SAA update process are selecting a subset of the top management questions, drafting broader management needs, and then identifying science actions at a workshop in late Spring 2021. As with the current 2017-2021 SAA, the updated document will help to guide and fund critical, near-term Delta science efforts

ON YOUR RADAR

Adaptive Management Forum

Save the date for the Adaptive Management Forum, which will be held on February 3-5, 2021. The Delta Science Plan and the Delta Independent Science Board both call for regular Adaptive Management Forums to promote coordination, learning, and discussion about the implementation of adaptive management in the Sacramento-San Joaquin Delta. Hosted by the Delta Science Program, the biennial Adaptive Management Forum provides an opportunity for the Delta community to share knowledge and promote collaboration on adaptive management of the system.

Steelhead Trout Workshop

The 2021 California Central Valley Steelhead Workshop will be held over three half-days from February 16 - February 18, 2021. The workshop represents a collaborative effort between the Council, Reclamation, National Oceanic and Atmospheric Administration, Metropolitan Water District, California Department of Water Resources, California Department of Fish and Wildlife, and the U.S. Fish and Wildlife Service. The impetus for the workshop was the Biological Opinion on the Long-Term Operation of the Central Valley Project and the State Water Project-3.6.2, which requires that Reclamation coordinate with the Collaborative Science and Adaptive Management Program to sponsor a workshop on enhancing monitoring and science steelhead populations in the San Joaquin Basin. The scope will include steelhead and rainbow trout on non-project San Joaquin tributaries. To register for the meeting, visit the "Events" tab on the Delta Stewardship Council webpage. Please direct any questions to pascale.goertler@deltacouncil.ca.gov

11th Biennial Bay-Delta Science Conference

The call for abstracts for the 11th Biennial Bay-Delta Science Conference has been extended by one month to **December 28, 2020**. The conference will be held virtually from **April 6-9, 2021**, and is jointly sponsored by the Council and the U.S. Geological Survey. It represents a forum for sharing scientific information relevant to managing the connected San Francisco Bay and Sacramento-San Joaquin Delta systems. This year's conference theme is Building Resilience through Diversity in Science. Participants include, but are not limited to, natural scientists, engineers, resource managers, and stakeholders working on Bay-Delta issues. To learn more about the conference and submit an abstract, visit <https://deltacouncil.ca.gov/delta-science-program/11th-biennial-bay-delta-science-conference>

BY THE NUMBERS

Delta Science Program staff will provide a summary of current numbers related to Delta water and environmental management. The summary (Attachment 1) will inform the Council of recent counts, measurements, and monitoring figures driving water and environmental management issues.

LIST OF ATTACHMENTS

Attachment 1: By the Numbers Summary

Attachment 2: Visual Abstract of Article Summary 1

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