

Delta Salinity Management Workshops 2022-2023

Information Sheet



Delta
Science
Program

DELTA STEWARDSHIP COUNCIL

Main Points

- **Ocean salt intrusion during drought is a serious problem** for Sacramento-San Joaquin Delta water exports and local water users and is expected to happen more frequently as climate change causes more severe and prolonged droughts in California and sea-levels rise.
- **Intrusion of salt into the Delta can have far-reaching impacts**, from affecting wildlife and ecosystems to affecting water quality for urban and agricultural users who rely on water from the Delta.
- **The Delta Science Program is convening workshops** in 2022 to understand the range of issues associated with salt intrusion to the Delta, discuss different salinity management tools and strategies, identify knowledge gaps that could be filled with future research and modeling, and demonstration scenario modeling exercise.
- **The long-term goal of the workshops** is to catalyze a collaborative, adaptive management approach to controlling salt intrusion in the Delta in the face of severe and sustained drought and sea-level rise. Taking a forward-looking, inclusive approach that transcends individual agencies is urgent for adaptation in a rapidly changing climate.

March 2022

Background

California relies on the Delta as the hub of much of its water supply, routing water from upstream reservoirs to communities, farms, and industries in and outside the region. Typically, water is released from upstream reservoirs so that freshwater flows push ocean salts far enough seaward to avoid significant intrusion into the Delta and maintain safety of water for urban, agricultural, and other water users.

Severe, multi-year droughts challenge water managers' ability to "keep salinity at bay" with reservoir releases and export curtailments, which has necessitated innovative solutions to salinity management. California has experienced multiple severe droughts in the past 22 years, marking a period drier than any in the historical record and putting extreme pressure on the water management system.

Intrusion of salt into the Delta can have far-reaching impacts, from affecting wildlife and ecosystems to affecting water quality for urban and agricultural users who rely on water from the Delta. Increased salinity can also alter the water supply available for users throughout much of the State, who must curtail water use to allow flow to exit the Delta to repel ocean salts. When salinity exceeds compliance conditions or changes too rapidly, it can have negative impacts on many beneficial uses of water. These impacts include but are not limited to, altered water taste and availability, crop damage and loss, and limitations for recharging groundwater.



Predictive models can help managers evaluate tradeoffs in managing Delta salinity in the face of climate change. Ultimately, adapting to the challenges imposed by climate change and drought may require expanding current modeling capabilities and evaluating management strategies beyond those currently in use. These workshops will utilize existing modeling tools for a demonstration exercise to explore different salinity management scenarios. An outcome of this exercise will be the generation of ideas for how to refine and build upon these modeling tools and demonstration scenarios to comprehensively evaluate tradeoffs associated with salinity management strategies and address concerns regarding Delta salinity that matter to all Californians.

Problem Statement

- **There is a need for anticipatory, creative planning** to manage salinity in the Delta under future severe, recurring and/or sustained drought conditions, sea-level rise, and other stressors from ongoing climate change. This planning should be grounded in science-based projections of the multifaceted impacts of potential management strategies.
- Substantial science and modeling have been done in recent years to inform salinity management strategies. However, **considerable uncertainty remains** about the variety of social, economic, and ecological effects and tradeoffs of different management strategies.
- **The Delta needs long-term, feasible approaches to salinity management** that maximize benefits while minimizing negative impacts. Developing these approaches requires evaluating the tradeoffs of different salinity management options among the affected individuals, communities, and organizations. Quantifying those tradeoffs will require work to integrate multiple types of models and to further develop existing and new models.

Workshop Goals

1. **Build a shared understanding** of the range of issues associated with ocean salt intrusion in the Delta and different salinity management tools and strategies that could be used in response to sustained and recurring drought conditions and other climate change factors, and what is known of their impacts and tradeoffs.
2. **Identify the knowledge gaps that must be filled** and scenario-based modeling work that could be done to evaluate socioeconomic and ecological impacts and tradeoffs of different salinity management tools and strategies.
3. **Lay the groundwork for a collaborative adaptive management approach** to salinity management. Discuss goals and metrics for evaluation and identify partners who will engage on an ongoing basis after the workshops to build an adaptive management framework.

Long-Term Goal

A framework to adaptively manage salinity in the Delta to maximize water supply reliability and minimize harm to humans and other species.

This goal guides the Planning Committee's approach to event agendas and discussion. The workshops and focused working groups in 2022-2023 are intended to contribute by catalyzing progress toward this goal.

Timeline & Focus Areas



Workshop 1: April 26-27, 2022

- Frame the challenge of future salinity management in the context of climate change, environmental justice, and current laws and regulations.
- Build toward shared understanding of how salinity management affects different people, industries, and ecological systems.
- Begin to identify knowledge gaps that could be filled with future research and scenario-based modeling.
- Start a conversation around goals for long-term adaptive management and lay the foundation for a scenario-based modeling exercise.



Focused Working Groups: Summer-Fall 2022

- Dive into the details of developing several management and climate scenarios that could be modeled for the demonstration exercise.
- Foster deeper discussions about impacts and tradeoffs of different management strategies.
- Provide input on demonstration scenarios to be evaluated with computer models, the outputs of which will be summarized for the second workshop.



Workshop 2: Spring, 2023

- Compare modeling outputs from the demonstration scenarios developed in the focused working groups.
- Discuss the tradeoffs apparent in different management strategies.
- Refine ideas about future research and scenario-based modeling needs.
- Identify partners and a plan for creating a collaborative adaptive management framework for Delta salinity management in the face of severe and sustained drought and sea-level rise.

Target Audience

The workshops seek to dive into the complex ways that science and local knowledge can inform decision-making and how different communities are affected by salinity management decisions. Therefore, **the workshops are designed to include broad representation** from those making water management decisions, those experiencing the effects of those decisions, and those with scientific or local knowledge to support future decisions. Specifically, we are targeting decision-makers, managers, and scientists from across local agencies, California and federal resource agencies, Tribal groups, academic institutions, and non-governmental organizations, as well as representatives of municipalities, growers, boaters, anglers, and other communities within and outside the Delta that rely at least in part on freshwater from the Delta.

Planning Committee

The Delta Science Program is leading this effort with assistance from a Planning Committee who serve as liaisons to their respective agencies or community constituencies to ensure that the workshop agendas and discussion questions reflect the needs of the broader public.



Learn More

To receive save the date announcements for this and other Delta Stewardship Council events, join our listserv at deltacouncil.ca.gov. For more information on these workshops, please email adaptivemanagement@deltacouncil.ca.gov.