# Challenges and pathways forward for climate governance in the Delta

## 2025 State of Bay-Delta Science

Delta Science Program

DELTA STEWARDSHIP COUNCIL

## What is climate governance?

Managing impacts of climate change and extreme events – such as heatwaves, droughts, and floods – involves numerous institutions, rules, and processes. Together, these elements form a region's **climate governance** system.

Climate governance is essentially about who makes decisions and how those decisions enable or constrain communities in preparing for, responding to, or recovering from climate impacts and extreme events. Climate governance systems manage issues ranging from global drivers of climate change like carbon emissions, to regional climate predictions, to local actions aimed at helping communities respond to or prepare for new conditions or extremes.

## What does climate governance look like in the Delta?

In the Sacramento-San Joaquin Delta (Delta), decision-making is spread across many institutions. It is also shaped by broader state, national, tribal, and international governance systems. The Delta's history of fragmented land ownership, loss of tribal knowledge, and diverse number of local governments have all contributed to how climate governance has developed in the region and how it functions today.

### Trends

Climate governance in the Delta increasingly involves communities and emphasizes learning and innovation in decision-making processes.

### Challenges

Governance "gridlock" in the Delta occurs when multiple institutions with overlapping authority conflict over resource needs.

### ? Uncertainties

Developing proactive governance approaches is complicated when impacts of climate change and extreme events are uncertain and may not be felt for many years.

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## What are we learning?

How effective climate governance systems are depends on their structure (who is involved) and their processes (how decisions are made). In the Delta, decision-making is spread across many institutions. This "polycentric" governance structure can foster innovation and resilience when well-coordinated, but can lead to gridlock when conflicts occur. It can also result in slow or uncoordinated responses to extreme events.

Climate change impacts do not affect all communities in the same way, and not all communities have the same capacity to prepare for or respond to these impacts. Therefore, climate governance systems must be proactive in recognizing where the greatest climate vulnerabilities exist and distributing resources to address these challenges.

Governance processes that are adaptive, data-driven, and equitable can help prepare us for challenges associated with a changing climate. Recent initiatives like Delta Adapts and CoEQWAL provide examples of anticipatory or adaptive approaches that contrast with historically reactive processes that addressed needs only after impacts were felt.

Moving forward, building relationships and trust with partners who haven't been engaged historically is critical, as is engaging across larger geographical scales. Future governance should consider flexibility and adaptation as conditions change and new information becomes available. It must also ensure decision-making is transparent, equitable, and inclusive while grounded in the best available science.

## Three key takeaways

The Delta's climate governance system involves many institutions that collaborate, compete, or conflict at different times.

Historically, Delta climate governance has primarily been in response to impacts but recent initiatives like Delta Adapts promote anticipatory governance.

Effective climate governance requires synthesizing across many intersecting climate issues, coordinating fair and transparent processes, and making decisions grounded in science.

## About the State of Bay-Delta Science

The State of Bay-Delta Science is a synthesis and communication project coordinated by the Delta Science Program to summarize the scientific understanding, or "state of the science," of important topics in the Bay-Delta system. For more information, visit the SBDS website at https://sbds.deltacouncil.ca.gov.

This summary is based on the 2025 State of Bay-Delta Science article by Rudnick et al. (2025).

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