

OCT 28, 2025

Five perspectives to advance science-informed decision-making in the era of climate change and extreme events

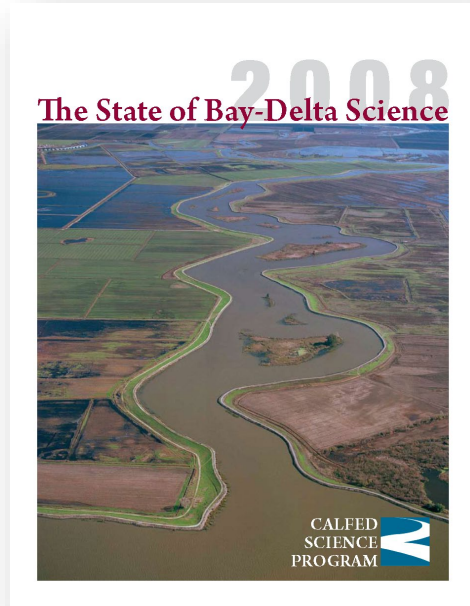
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**Delta
Science
Program**

DELTA STEWARDSHIP COUNCIL

The State of Bay-Delta Science (SBDS)



What have we learned?

What is still unknown?

Where do we go next?

EXTREME EVENTS EDITION



Introduction

SF EW The San Francisco Estuary & Watershed Science & Policy for the Delta

The State of Bay-Delta Science: An Introduction to the 2025 Extreme Events Edition

Authors: [List of authors]

KEYWORDS
Climate change, freshwater, drought, wildfires, atmospheric rivers

ABSTRACT
Climate change affects nearly every aspect of the environment, from physical and social systems to ecosystems and human health. The State of Bay-Delta Science 2025 Extreme Events Edition provides a comprehensive overview of the current state of science and policy related to extreme events in the Bay-Delta region. This report highlights the latest research and findings, and provides a framework for future research and policy development.

Governance

SF EW The San Francisco Estuary & Watershed Science & Policy for the Delta

Assessing the State and Efficacy of Climate Governance Research and Practice in the Sacramento-San Joaquin Delta

Authors: [List of authors]

ABSTRACT
Climate change effects are rapidly and increasingly being felt across the globe. The Sacramento-San Joaquin Delta is no exception, with rising sea levels, increased flooding, and other impacts. This report assesses the current state of climate governance research and practice in the Delta, and identifies key areas for improvement. The report also provides a framework for future research and policy development.

Heatwaves

SF EW The San Francisco Estuary & Watershed Science & Policy for the Delta

Heatwaves and Rising Temperatures in the Upper San Francisco Estuary: Trends and Effects on Ecosystems and Humans

Authors: [List of authors]

ABSTRACT
Heatwaves are becoming more frequent and intense in the upper San Francisco Estuary, with significant impacts on ecosystems and humans. This report examines the trends and effects of heatwaves in the region, and provides a framework for future research and policy development. The report also discusses the potential for adaptation and mitigation strategies.

Droughts

SF EW The San Francisco Estuary & Watershed Science & Policy for the Delta

Drought in the Delta: Socio-ecological Effects, Responses, and Tools

Authors: [List of authors]

ABSTRACT
Drought in the Delta has significant socio-ecological effects, including impacts on ecosystems, agriculture, and human health. This report examines the effects of drought in the region, and provides a framework for future research and policy development. The report also discusses the potential for adaptation and mitigation strategies.

Floods

SF EW The San Francisco Estuary & Watershed Science & Policy for the Delta

Atmospheric Rivers and Floods in California's Changing Hydroclimate

Authors: [List of authors]

ABSTRACT
Atmospheric rivers are a key driver of extreme weather events in California, including floods and droughts. This report examines the role of atmospheric rivers in California's changing hydroclimate, and provides a framework for future research and policy development. The report also discusses the potential for adaptation and mitigation strategies.

Wildfires

SF EW The San Francisco Estuary & Watershed Science & Policy for the Delta

Recent Findings and Future Prospects for Water Quality Impacts from Catastrophic Wildfires in California, USA

Authors: [List of authors]

ABSTRACT
Catastrophic wildfires in California have significant impacts on water quality, including increased sedimentation and nutrient loading. This report examines the recent findings and future prospects for water quality impacts from catastrophic wildfires in California, USA, and provides a framework for future research and policy development. The report also discusses the potential for adaptation and mitigation strategies.

Synthesis

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Five Perspectives to Advance Science-Informed Decision-Making in the Era of Climate Change and Extreme Events

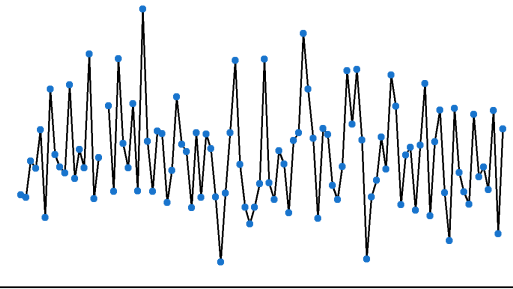
Authors: [List of authors]

ABSTRACT
This report provides five perspectives to advance science-informed decision-making in the era of climate change and extreme events. The perspectives are: 1) Understanding the science of extreme events, 2) Integrating science into decision-making, 3) Building resilience to extreme events, 4) Improving communication and public engagement, and 5) Advancing research and policy development. The report also discusses the potential for adaptation and mitigation strategies.

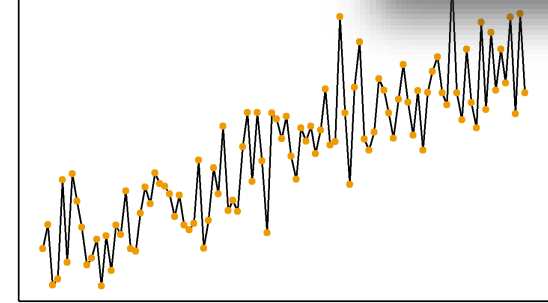
“Stationarity is dead.”

Milly et al. 2008

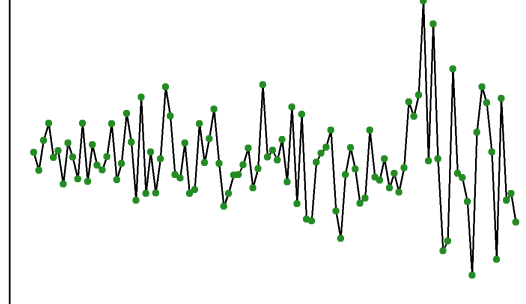
A) Stationary mean and variance



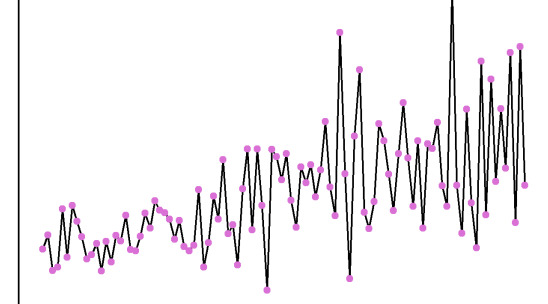
B) Increasing mean, stationary va



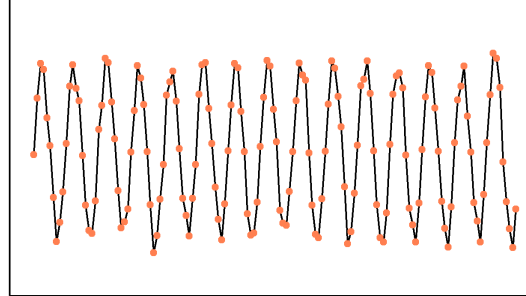
C) Stationary mean, increasing variance



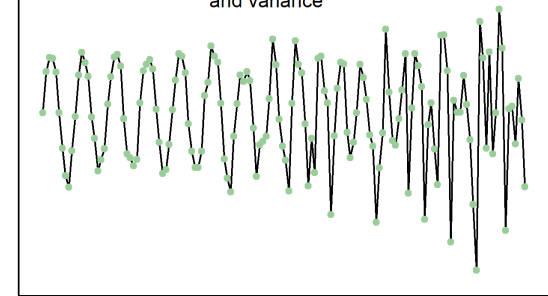
D) Increasing mean and variance

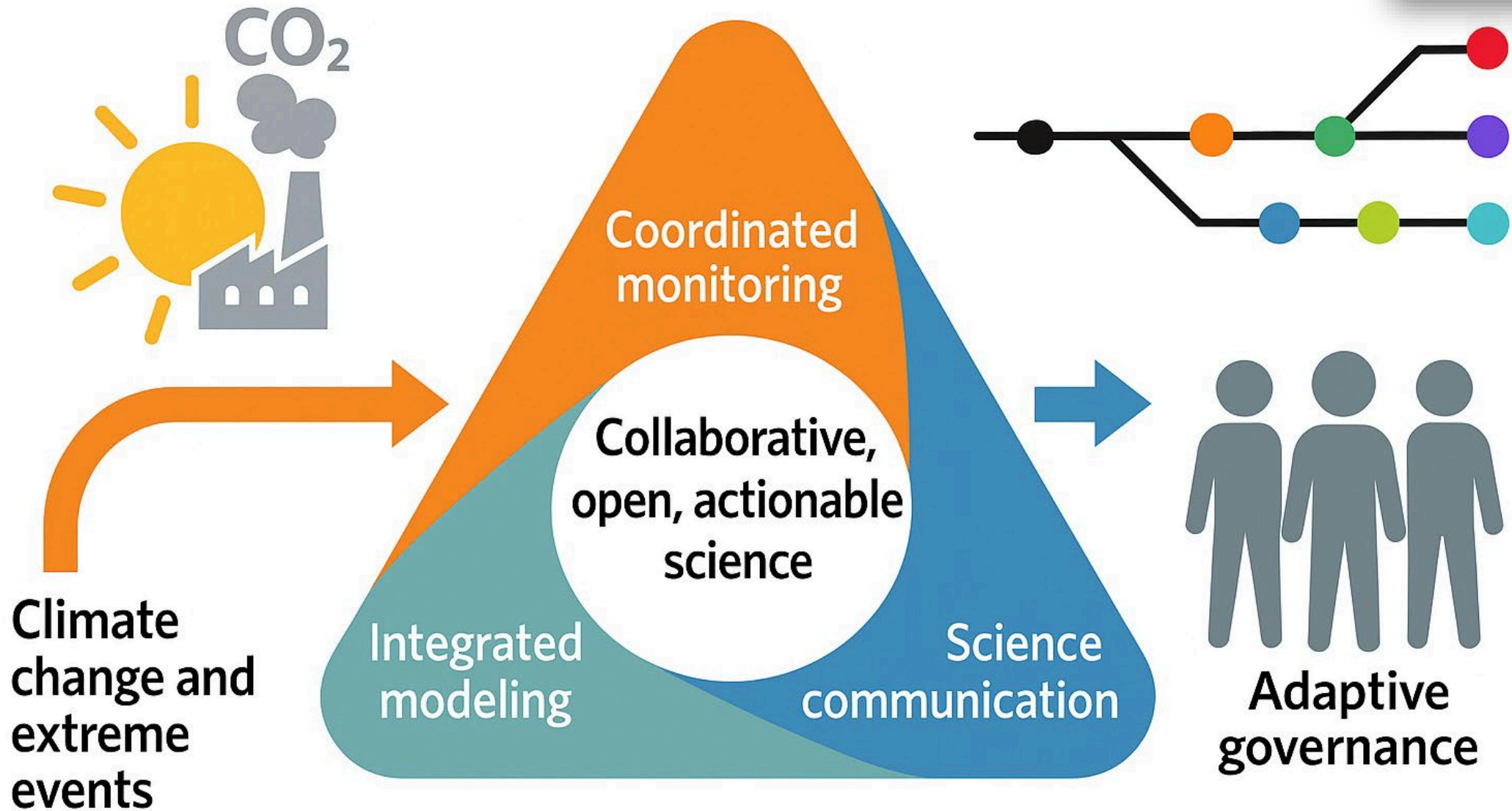


E) Stationary periodicity and variance



F) Increasing periodicity (accelerating cycles) and variance







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