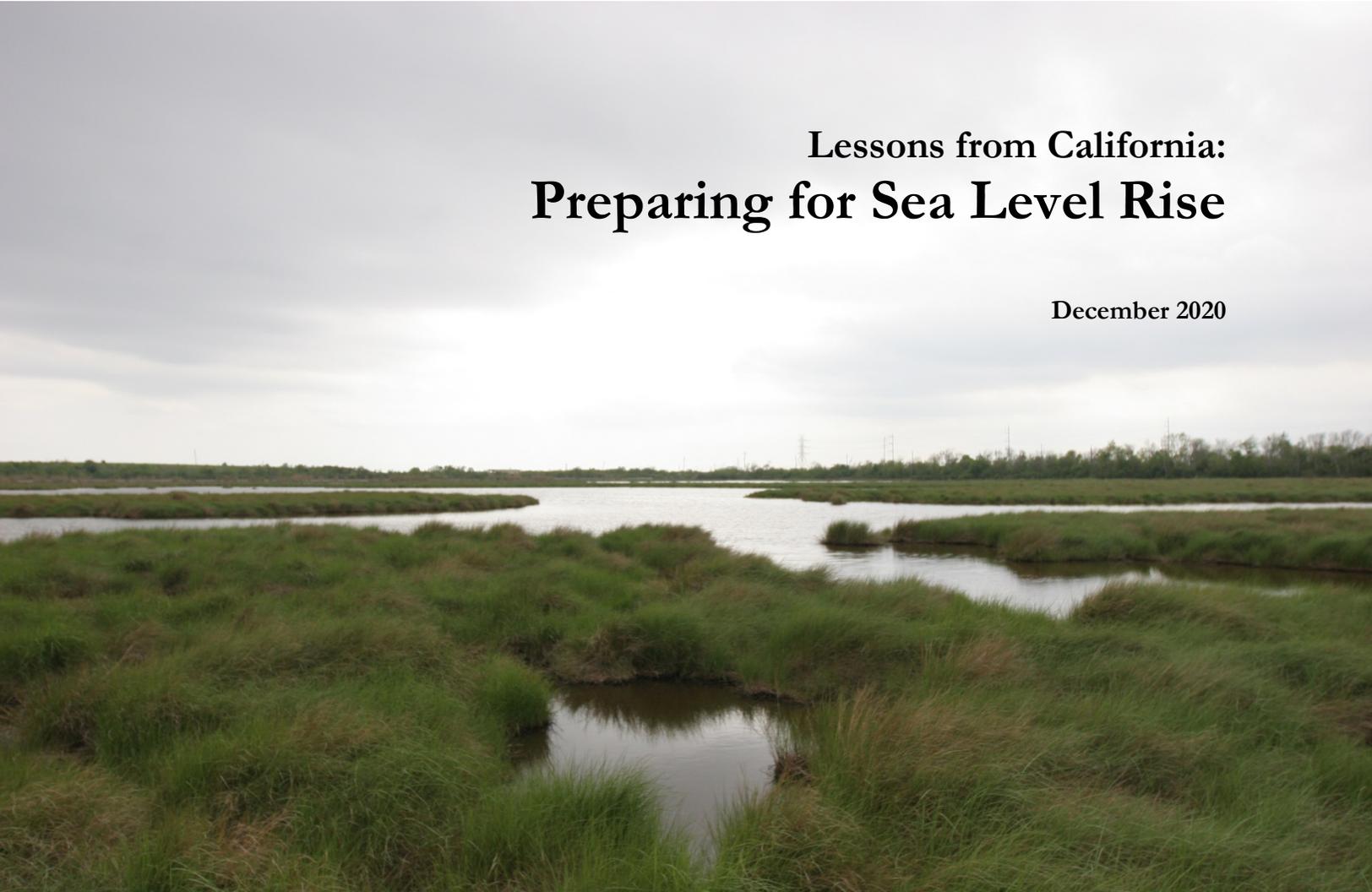




Lessons from California: Preparing for Sea Level Rise

December 2020



© Sara Thomas/Ocean Conservancy

Long regarded as a leader in climate policy and ocean conservation, the state of California has become a pioneer in the intersection of these fields. Over the past two decades, California has developed a comprehensive vision for ocean-climate action that can serve as a model to both subnational and national governments seeking to protect the ocean and use its power to combat climate change.

This series highlights some of the key actions California has taken on mitigation, adaptation, and climate finance. For more information on the suite of actions, see the California Ocean-Climate Guide (1).

Communities around the world—including U.S. communities from Florida to California and from Louisiana to Alaska—are already facing the impacts of sea level rise. California has seen early and disproportionate effects of sea level rise due to the earth's gravitational and rotational effects. For every 30 cm of global sea level rise resulting from the melting of the West Antarctic Ice Sheet, California's coast rises 38 cm (2). This is particularly concerning given the vulnerability of the West Antarctic Ice Sheet to climate change. But California is likewise a leader in addressing the effects of these changes on its coastal communities.

Sea Level Rise

As a result of warming ocean temperatures and the melting of the Earth's land ice, the globe has seen a rise in sea level. Data suggest a likely range of sea level rise of 3.1 mm/year to 6.2 mm/year between 2010 and 2030 in California. One of the main causes for the increase in global sea level rise is the accelerated melting of the Greenland and Antarctic Ice Sheets.

California's Action

California has engaged in comprehensive preparation for sea level rise, including investment in projections, strategies, and research; factoring sea level rise into state decision-making processes; and supporting local governments in planning for sea level rise.

Context and Detail

California began preliminary research into sea level rise in 2001, developing early projections of dramatic effects on coastal regions. Based on these projections and other reports that highlighted the threat to the state's economy, infrastructure, and natural resources, Governor Arnold Schwarzenegger in 2008 required state agencies to coordinate a plan to manage sea level rise. In response, state agencies produced the first California sea level rise guidance, which directed the agencies to support development of and rely on best-available projections and incorporate adaptation into decision-making.

In response to new projections from the National Resource Council and the United Nations Intergovernmental Panel on Climate Change, in 2015 Governor Jerry Brown established new statewide greenhouse gas reduction goals and ordered state agencies to factor climate change into planning and investment decisions. That same year the Legislature passed SB 379, requiring local governments to conduct risk and vulnerability assessments, create adaptation and resilience goals, and design implementation strategies (3). California has several tools to assist local governments with their vulnerability assessments, including Cal-Adapt (4), a visualization tool that shows potential climate change impacts on local communities. California also published two planning documents for local and regional climate change adaptation, including

details on how to conduct a vulnerability assessment and develop a resiliency strategy (5, 6).

To update the sea level rise guidance, the California Ocean Protection Council (OPC) in 2017 requested that its science partner, California Ocean Science Trust, synthesize the best available sea level rise science to date, and gathered stakeholder feedback to ensure the updated guidance would meet diverse needs. In 2018 OPC adopted the updated guidance document, which provides a synthesis of the best available California projections; a step-by-step approach for state agencies and local governments to evaluate those projections in decision-making; and preferred coastal adaptation approaches (7).

How is it funded?

The SB 379 local climate action plan requirement can cost local governments millions of dollars. However, local governments have authority to charge fees to cover the costs. Furthermore, the state administers federal grant funds for certain hazard mitigation projects and planning activities, and has several state grant programs aimed at assisting local communities, including from voter-approved bonds.

Lessons Beyond California

California owes much of its success in preparing for sea level rise to three factors: dedicated state agencies, access to scientific research, data, and information, and funding available at the state and local levels. Best practices include:

- Considering the unique hazards SLR presents to communities and resources, given that all jurisdictions have unique issues to face in preparing for sea level rise;
- Striving for a coordinated approach across sectors and jurisdictions;
- Developing a suite of tools to assist local governments in their planning efforts;
- Providing access to best available science and requiring it as a basis for decision-making; and
- Identifying funds or funding mechanisms to allow ongoing support for research and on-the-ground projects that address sea level rise.

Citations

(1) Ocean Conservancy. Ocean-Climate Guide to Action. 2020. Available from: <https://oceanconservancy.org/climate/publications/ocean-climate-guide-action/>

(2) Griggs G, et al. Rising Seas in California: An Update on Sea-Level Rise Science. California Ocean Science Trust. California Ocean Protection Council Science Advisory Team Working Group. 2017. Available from: http://www.oceansciencetrust.org/wp-content/uploads/2017/04/OST-Sea-Level-Rising-Report-Final_Amended.pdf

(3) SB-379 Land use: general plan: safety element. 2015-2016. State of California. Available from: https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201520160SB379

(4) Exploring California's Climate Change Research. CalAdapt. 2011. Available from: <https://cal-adapt.org/>.

(5) CNRA and California Emergency Management Agency (Cal EMA). 2014. California Adaptation

Planning Guide. Available from: http://resources.ca.gov/docs/climate/01APG_Planning_for_Adaptive_Communities.pdf.

(6) California OPR. 2018. Planning and Investing for a Resilient California. Available from: http://opr.ca.gov/docs/20180313-Building_a_Resilient_CA.pdf.

(7) State of California Sea-Level Rise Guidance: 2018 Update. 2018. Available from: http://www.opc.ca.gov/webmaster/_media_library/2017/11/State-of-California-Sea-Level-Rise-Guidance_draft-final_11.15.17.pdf.

Contact

For more information, please contact:

Anna Zivian, Senior Research Fellow, Ocean Conservancy, azivian@oceanconservancy.org

Lisa Suatoni, Deputy Director, Oceans Division, Natural Resources Defense Council, lsuatoni@nrdc.org

