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The Past, Present, and Future of California's Coastal Act: Overcoming Division to Comprehensively Manage the Coast

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The Past, Present, and Future of California's Coastal Act

OVERCOMING DIVISION TO
COMPREHENSIVELY MANAGE THE COAST

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ABOUT THIS REPORT

Recognizing the importance of the coastline to the state's economy and our communities' well-being, California has long been a leader in protecting and managing the coast. Forty years ago, California enacted the California Coastal Act to enhance public access, protect natural resources, and balance coastal development in the public interest. Today, growing challenges such as surging seas and a rising population are testing that framework. This report draws from ideas discussed at a convening on coastal governance that explored the lessons of the past in order to chart a course for the next 40 years.

ABOUT THE AUTHORS

The authors of this report are Jordan Diamond, Holly Doremus, and Mae Manupipatpong (UC Berkeley), Richard Frank and Shauna Oh (UC Davis), Sean Hecht (UCLA), Deborah Sivas (Stanford), and Matthew Armsby and Jocelyn Herbert (Resources Legacy Fund). The report draws from the panels and conversations from California's Coastal Act: The Next 40 Years, a conference hosted on November 17, 2016 in Berkeley, California.

The symposium was co-hosted by the Center for Law, Energy & the Environment, UC Berkeley School of Law; California Environmental Law & Policy Center, UC Davis School of Law; Coastal & Marine Sciences Institute, UC Davis; Emmett Institute on Climate Change & the Environment, UCLA School of Law; Resources Legacy Fund; and Environment & Natural Resources Law Program, Stanford Law School.

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The Past, Present, and Future of California's Coastal Act

OVERCOMING DIVISION TO COMPREHENSIVELY MANAGE THE COAST

The coast is a California icon. It powers a robust economy, provides the home for vibrant communities, and draws visitors from across the planet to its beautiful beaches and sparkling waters. Recognizing the importance of this unique resource, California has long been a leader in coastal protection and management.

In 2016 California celebrated the 40th anniversary of the Coastal Act. This landmark legislation was enacted in 1976 to enhance public access to the shoreline, protect coastal natural resources, and balance development and conservation. Over the intervening decades, the state's coastal management program has evolved into a complex network overseen by the Coastal Commission and myriad local, state, federal, nongovernmental, and private partners. Though the road has not always been smooth, California's coastal management has enjoyed many collaborative successes and provided a model for other coastal states and nations.

Today, however, the California coast arguably faces the greatest challenges yet. From surging seas to a growing population, changing conditions stress the state's coastal governance systems and raise questions about the best path forward. How will California protect its coast against stronger storms and rising tides? How can the state ensure and support access to its coastline, including for underserved communities? And how can the state most effectively work with local, federal, and nongovernment partners to efficiently address these complex challenges?

These questions require holistic consideration of the complex array of factors that affect coastal governance. They cannot be considered

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in isolation, nor can a single sector solve them. To chart a sustainable path forward for coastal governance requires a multi-stakeholder, interdisciplinary conversation that combines our best available information about the coast with the concerns and priorities of those that work, live, and play there.

On November 17, 2016, we hosted a one-day symposium to explore these critical issues. We explored the lessons of the past, discussed today's challenges, and debated next steps for ensuring the future of the California coast. This report captures background information about the topics covered and takeaways from the discussions. Not all of the ideas are synergistic, nor do they represent consensus outcomes. Rather, our intent is to capture key themes, topics, and vectors of action.

One of our key takeaways concerned the need for a viable forum for ongoing conversation. Many coastal issues trigger oppositional viewpoints, where consensus can be difficult to find. A non-binding forum to facilitate and encourage meaningful debate around key challenges could stimulate pragmatic efforts to resolve tradeoffs and devise solutions. There are numerous options for what shape this forum could take, which we discuss in later pages. But the bottom line is that the state cannot solve these challenges with one-time answers – they require ongoing action as we move into a climatically uncertain future, which requires ongoing conversation. We look forward to engaging in these conversations together.

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Introduction:

The California Coastal Act

In 1972, California voters passed Proposition 20, “The Coastal Initiative.” Citizens placed Proposition 20 on the ballot at a time of rapid population growth – California had recently passed the 20 million-resident mark after growing by more than 25% over the 1960s – as well as rising property values and intensifying industrial, commercial, and residential development along the coast. Proponents were concerned about threats to the coast’s agricultural and fishing communities, ecological integrity, and special places, as well as affordable places for Californians to live and recreate.

To address these pressures, Proposition 20 established the California Coastal Zone Conservation Commission, the predecessor of today’s Coastal Commission, and charged it with regulating development in the Coastal Zone. Proposition 20 also required development of the California Coastal Plan – a detailed policy platform for long-range coastal management in the state. After four intensive years of research and stakeholder engagement to generate this plan, the California Legislature passed and Governor Edmund (Jerry) Brown signed the California Coastal Act in 1976.

The Coastal Act advances many of the recommendations of the Coastal Plan and addresses a range of issues. It prioritizes preservation of public access to the coast and enhancement of access where possible; conservation of natural resources; and careful planning for long-range development, particularly “coastal-dependent” development that, by nature, cannot be sited inland. Sections of the Coastal Act provide guidance on specific topics such as energy and industrial development, water quality, wetlands and sensitive habitats, management of coastal hazards, and preservation of agricultural lands.

The Coastal Act applies to government, businesses, and private individuals. All public agencies, including federal agencies to a significant extent, must comply with the Act’s policies. In addition, the Act requires “any person,” including a state or local agency, to obtain a permit before undertaking development, broadly defined, in the coastal zone. Local governments serve as the primary coastal planning and regulatory agencies within the physical boundaries of their jurisdictions, while the Coastal Commission approves local coastal plans, hears appeals of certain local decisions, regulates development from the high tide line out to the three-nautical mile boundary of state waters, and reviews federal actions to ensure they are consistent with the Act’s policies. The Coastal Act also provides for and protects strong public participation in coastal decision-making, specifying that coastal planning and management “should include the widest opportunity for public participation.”

Key Issues in Coastal Act Implementation

OVERVIEW

As California and its coast have changed, so has the Coastal Act itself. Debate, discussion, and controversy have led to statutory and regulatory changes, as California's policymakers recognized evolving coastal management needs and concerns. The changes, however, have been relatively minor, tweaking the law and its implementation without undermining its core vision.

Amendments to the Coastal Act have addressed issues such as evidence-based decision-making and environmental justice. For example, in 1993 the Legislature amended the Act to recognize that "sound and timely scientific recommendations are necessary for many coastal planning, conservation, and development decisions . . . especially with regard to issues such as coastal erosion and geology, marine biodiversity, wetland restoration, the question of sea level rise, desalination plants, and the cumulative impact of coastal zone developments." In 2016, the Legislature amended the Act to clarify that civil rights, equity, and environmental justice should factor explicitly into decision-making about the coast, and established environmental justice qualifications for one of the appointed Commissioners. In addition, at rare times the Legislature has reduced the Act's reach, most notably by removing its affordable housing provisions in the early 1980s and returning authority over affordable housing in the coastal zone to local governments.

Today, three overarching challenges are particularly important for the future of California's coast. They test our coastal management framework and raise the question of whether the current Act is suitable for management of the coast into a very different future.

The first challenge is population pressure. The state's population, which continues to grow, had reached nearly 39 million by 2015. Forecasters expect California to have more than 44 million residents by 2030. Nearly 70% of those residents likely will live in coastal cities and counties.

The second challenge is demographic change. California's population has grown younger and more ethnically diverse. Millennials – the generation born after 1981 – now compose close to the same share of the state's population as each of the two previous generations, Baby Boomers and Generation X, and are an increasing share of likely voters. Ethnically, whereas in the 1970s whites

composed a significant majority of California's population, today no ethnic group constitutes a majority.

Together, these two population trends suggest that California's coast will require smart planning, investment in necessities such as infrastructure and affordable housing, and thoughtful measures to protect coastal access, recreation, and resources in ways that benefit all state residents. California leaders will also need to understand the range of residents' evolving values and preferences for coastal resources and amenities, support their engagement in coastal management, and ensure that coastal policies and management practices are responsive to their needs.

The third challenge is rising atmospheric greenhouse gas levels, and associated changes in global conditions. Climate change and ocean acidification place increasing stress on coastal communities and natural resources. Sea levels are rising, coastal storms are getting stronger, and management of a limited water supply is increasingly difficult. California will need to address climate change-related stresses, even while it manages for population dynamics and other changes.

Fortunately, the Coastal Act includes many of the tools necessary to address these challenges. In order to achieve success, however, policymakers must apply, adapt, and supplement these tools effectively in the coming years.

TAKEAWAYS

To maximize coastal access and protection of ocean and coastal resources, coastal managers, stakeholders, and the public need to increase communication and engagement, in fora that encourage honest and open conversation, and to establish long-term partnerships with community groups. To maximize engagement, policymakers, organizations, and community groups should actively work to ensure inclusion of concerns relevant to people of different social, economic, and political backgrounds. This requires undertaking efforts to increase public participation in coastal decision-making processes, such as promoting attendance at Coastal Commission meetings to keep abreast of new developments and contribute input. Working with existing institutions within communities, such as local organizers and leaders, would allow for culturally competent delivery of services – that is, providing coastal access services that meet the social, cultural, and linguistic needs of all communities, including people who live far from the coast but visit the coast and care about the future of its resources. This collaboration must extend past individual state programs or initiatives and take root as an established component of

California's ocean and coastal policy. Key to success is the ability for parties to work together in nonpartisan, nonadversarial settings that promote open dialogue.

To effectively implement the Coastal Act, incentives and financial and technical assistance are needed to facilitate updates to or, in some cases, first-time certification of Local Coastal Programs (LCPs). A significant challenge in Coastal Act implementation is hesitation on the part of local governments to update their LCPs. At present, roughly two-thirds of existing LCPs are out of date. Some of the hesitation may be due to the tensions that cities and counties face around development restrictions. Policymakers and stakeholders should discuss possible tools, approaches, and resources that would encourage timely and substantive LCP updates to address growing demands on coastal resources.

To help address the challenge of competing uses, California could undertake a statewide master planning process that identifies key ocean and coastal management priorities, catalogs emerging challenges, and outlines potential paths forward. This process could involve a broad spectrum of interested parties, and encompass discussion of key places along the coast that deserve special attention, whether they are important for purposes of public access, resource protection, or wetlands restoration. The 1975 Coastal Plan, prepared by the then-Regional and State Coastal Commissions as mandated by Proposition 20, contained regional summaries that provided overviews of critical resources, economic and social concerns, and major local plans; it then described specific proposals for each area that would meet the Plan's policies. A modern take on this type of visioning document could be an important tool to help guide coastal management as California adapts to a growing and diversifying population coincident with rapidly changing climatic conditions.

Public Access to the California Coast

OVERVIEW

The goals of promoting and preserving public access to the California coast are central to the California Coastal Act. In the years leading up to the Act's passage, California's rapidly expanding population brought urbanization to new heights and focused development pressure on the coast. Growing public concern that development was encroaching on the public's ability to access the coast, and could eventually "wall off" the coast from public access altogether, contributed to the successful passage of Proposition 20 and, subsequently, enactment of the Coastal Act. Californians remain strongly supportive of coastal access: in a 2016 Field poll, 90 percent of California voters said the coast is personally important to them, nearly 75 percent say they visit the coast at least once per year, and 62 percent said that lack of adequate access to the coast is still a problem.

The California Constitution guarantees public access to California's coast (Art. X, § 4). The Coastal Act requires "maximum access, which shall be conspicuously posted" to carry out the constitutional requirements (Pub. Res. Code § 30210). It also directs the Coastal Commission to "[m]aximize public access to and along the coast and maximize public recreational opportunities in the coastal zone consistent with sound resources conservation principles and constitutionally protected rights of private property owners" (Pub. Resources Code § 30001.5(c)).

The Coastal Commission has tried hard over the past four decades to maximize public access to the California coast, with considerable success. Nonetheless, its efforts to increase access have often been controversial. In particular, public access goals have been in constant tension with private property rights. In several cases, Commission actions to ensure public access have triggered "regulatory takings" claims by affected private property owners under the Fifth Amendment to the U.S. Constitution and parallel provisions of the California Constitution. Most notably, the U.S. Supreme Court held in *Nollan v. California Coastal Commission*, 483 U.S. 825 (1987), that the Commission had not demonstrated a constitutionally required nexus between the effects of expanding a coastal home and a condition that the owner convey a public access easement along the beach. The Commission therefore was required to compensate the property owner for a taking. In *Nollan* and similar cases, the debate over the proper balance between public coastal access and private property rights has raged on, with the Commission steadily working to increase access over the course of its first forty years.

In recent years, the public access debate has expanded to take on new dimensions, such as environmental justice and the movement to remedy patterns of inequity and discrimination in coastal access. A key question today is how to provide all Californians, particularly people of color and those from low-income communities, with access to public beaches. This more recent iteration of the public access conversation recognizes that there is more to coastal access than the accessway – providing meaningful public access requires understanding the hurdles that prevent various segments of the population from utilizing and enjoying the coast.

Climate change also introduces new considerations to the public access conversation. The lateral boundary between public beach and private uplands is the mean high tide line. Sea level rise will affect this boundary, however, reducing beach extent, complicating coastal access, and potentially shifting the legal boundary between public and private interests landward. If and how the Commission incorporates this migration into its public access decision-making may dramatically influence future public access to the coast.

The Coastal Act's mandate to maximize public access to California's coast has always been controversial, even as it has been a source of strong political support for coastal management in the state. But these broadened access-related challenges will undoubtedly expand and amplify the debate. Four decades after passage of the California Coastal Act, the manner in which the Coastal Commission addresses these 21st-century access issues will profoundly affect the future of public access to the California coast.

TAKEAWAYS

Cumulative threats to public access include shoreline armoring, encroachments into physical access ways between the road and the beach, deliberate intimidation of people trying to use access ways, and scarcity of affordable visitor services. There are numerous challenges associated with maintaining adequate public access to the coast, and there have been many controversies caused by disputes with private landowners. To truly fulfill their mission of providing access, state and local agencies should seek ways to work cooperatively with private landowners to protect coastal and ocean resources against harmful uses on both public and private land.

Low income and underserved communities often lack access to the coastline. To ensure that ocean and coastal management initiatives and policies do not negatively impact environmental justice communities, policymakers and organizations must analyze the potential effects of their decisions on all constituencies. They must also identify reasonable alternatives, include environmental justice communities in the decision-making process, and emphasize equitable distribution of benefits and costs among those affected. The need to increase environmental justice considerations is reflected in the recently added requirement that one of the Coastal Commissioners “reside in, and work directly with, communities in the state that are disproportionately burdened by, and vulnerable to, high levels of pollution and issues of environmental justice” (AB 2616).

Sea level rise may change the shape of the coastline, cause upward migration of the public beach boundary, and otherwise impact public access to the coast. This triggers difficult questions, such as what impacts are likely to occur in what locations, and who should bear the costs of managing and adapting to them. How can localities balance competing interests when undertaking coastal armoring, planned retreat, and similar strategies? Conversation is needed to explicitly determine priorities to guide such decisions.

Coordination & Collaboration in Coastal Management

OVERVIEW

California's coast is a complex resource. Its governance system mirrors this complexity. The Coastal Act imbues the Coastal Commission with authority over development in the coastal zone, a geographic area defined by statute. This authority interacts with natural resource, economic development, marine conservation, land use, and other authorities held by a variety of local, state, and federal entities, as well as the work of numerous nongovernmental organizations. The result is a network of actors all working to manage the California coast. Sometimes, these actors communicate, coordinate, and collaborate effectively. At other times, they find themselves working at cross-purposes.

At the state level, the California Natural Resources Agency is a cabinet-level department that works to protect and manage the state's natural resources. Within the Agency, the Coastal Commission, the Coastal Conservancy, the State Lands Commission, and the San Francisco Bay Conservation and Development Commission all have coastal management responsibilities. Other state agencies manage coastal resources or threats to the coast. For example, the Ocean Protection Council coordinates state agency efforts affecting ocean and coastal resources. In addition, the Coastal Act reserves important roles for local governments, which exercise land use planning authorities and develop Local Coastal Programs to guide coastal zone development and planning.

At the federal level, the National Oceanic and Atmospheric Administration (NOAA) implements the Coastal Zone Management Act, which reinforces the Coastal Act's directive for coastal planning, provides federal funding to affected states and gives state and local plans considerable leverage over federal activities. NOAA, the U.S. Fish and Wildlife Service and the Environmental Protection Agency also protect and manage marine and coastal fisheries, protected species, water quality, and more.

Simultaneously, local and national nongovernmental organizations inform coastal management through efforts such as policy development, litigation, and public outreach and education. The table below provides additional detail on some of these important roles.

ENTITY

JURISDICTION

State Agencies

<p>California Coastal Commission (CCC) https://www.coastal.ca.gov/whoware.html https://www.coastal.ca.gov/lcps.html</p>	<p>The CCC is a coastal management agency that regulates land and water uses along the California coast, with the exception of San Francisco Bay. It administers the federal Coastal Zone Management Act (CZMA) in the areas under its jurisdiction and reviews local government Local Coastal Programs (LCPs) for approval.</p>
<p>San Francisco Bay Conservation and Development Commission (BCDC) http://www.bcdc.ca.gov/</p>	<p>BCDC is a state agency that has regional authority over the San Francisco Bay, the Bay's shoreline band, and the Suisun Marsh. It administers the CZMA in the areas under its jurisdiction.</p>
<p>California State Coastal Conservancy http://scc.ca.gov/about/</p>	<p>The Coastal Conservancy is a non-regulatory agency that works with the Coastal Commission, BCDC, local governments, and other partners to restore and enhance coastal resources and public access.</p>
<p>California Natural Resources Agency (CNRA) http://resources.ca.gov/</p>	<p>CNRA's mission is to "restore, protect, and manage the state's natural, historical, and cultural resources." It is an umbrella agency that houses the Ocean Protection Council, the State Lands Commission, and the Coastal Conservancy.</p>
<p>California Ocean Protection Council http://www.opc.ca.gov/about/</p>	<p>The Council is responsible for coordinating the work of California's ocean-related state agencies and recommending needed changes in both state and federal laws and policies.</p>
<p>State Lands Commission (SLC) http://www.slc.ca.gov/</p>	<p>The SLC is made up of two Constitutional Officers and the Governor's Director of Finance. It has jurisdiction over four million acres of tidal and submerged lands along California's coast, out to three miles offshore.</p>
<p>California Ocean Science Trust (COST) http://www.oceansciencetrust.org/about/ ftp://www.leginfo.ca.gov/pub/99-00/bill/asm/ab_2351-2400/ab_2387_bill_20000919_chaptered.html</p>	<p>COST is an independent non-profit organization created by statute to seek and provide funding – and encourage coordinated multi-institution approaches to– ocean resource science projects and to encourage coordinated, multi-agency, multi-institution approaches to ocean resource science. The Executive Director of COST is the Science Advisor to the Ocean Protection Council and co-chairs the OPC's Science Advisory Team.</p>
<p>California Department of Fish & Wildlife https://www.wildlife.ca.gov/Conservation/Marine</p>	<p>The Department's Marine Region covers California's entire coastline and three nautical miles out to sea. It manages fisheries and marine habitat, conducts environmental review, and monitors water quality statewide.</p>

Municipalities

<p>Local Governments https://www.coastal.ca.gov/lcps.html</p>	<p>Under the California Coastal Act, local governments are required to draft Local Coastal Programs (LCP) to guide coastal zone development, conservation, and planning. Pursuant to their LCPs, they issue permits for coastal development. LCPs only become effective upon approval by the Coastal Commission.</p>
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Federal Agencies

National Oceanic and Atmospheric Administration (NOAA) https://coast.noaa.gov/about/	NOAA's Office for Coastal Management is the federal agency that implements the CZMA. OCM's Coastal Zone Management Program gives states a say in federal decisions, provides states with incentives to "enhance their coastal management programs," assists states with nonpoint pollution control, and "purchases threatened lands for conservation purposes." NOAA is also responsible for the management of marine species under the Endangered Species Act.
U.S. Fish & Wildlife Service (FWS) https://www.fws.gov/coastal/	The FWS's Coastal Program covers 24 areas "along the Atlantic and Pacific Oceans, Gulf of Mexico, Great Lakes, and in the Caribbean." The FWS also manages coastal and marine wildlife refuges and is responsible for the management of land and freshwater species under the Endangered Species Act.
Environmental Protection Agency (EPA) https://www.epa.gov/aboutepa/about-office-water#wetlands	EPA's Office of Wetlands, Oceans and Watersheds (OWOW) coordinates EPA's "management and protection of inland and coastal watersheds."
Army Corps of Engineers http://www.usace.army.mil/Missions/Civil-Works/	The Army Corps has jurisdiction over "the construction of any structure in or over any navigable water of the United States."

These entities have worked to manage, protect, and restore coastal resources through their programs, projects, and other initiatives. They have successfully coordinated and collaborated to achieve results they could not realize independently. However, there are also times when they face coordination obstacles and roadblocks, such as when there is overlapping jurisdiction over an area or resource, a split in authority over interconnected resources, or procedural deadlines that limit coordination. As pressures on the coast increase, due to an expanding population and warming climate, effective collaboration becomes increasingly important. The ability to efficiently adapt to rapidly changing conditions and potentially unforeseeable impacts is greatest when there are established pathways for combining and coordinating resources and capacity.

Some of California's most innovative and precedent-setting coastal management actions have been the result of extensive, time-intensive coordination and collaboration between public and private actors at all scales. Identifying such successes, and the keys to replicate them, will maximize the probability of a sustainable future for California's coast.

TAKEAWAYS

Changing conditions and shifting coastal boundaries call for coordinated implementation of both short-term and long-term comprehensive management strategies. Ad hoc permitting decisions lead to uncertain outcomes. Successful management in the face of uncertain conditions requires cross-generational and cross-sector planning. For today's decisions to account for tomorrow's needs, coastal managers at all scales need to work together to manage at the ecosystem level, rather than focus on individual resources or uses. This requires coordinating to adopt consistent approaches to using science and to making ocean and coastal resource decisions. This also requires recognizing and addressing cross-sector interconnections; for example, adapting to sea level rise requires state emergency planners to work with coastal resource managers to develop integrated management strategies and plans.

Collaboration between federal, state, and local entities – collaboration across scales and across sectors – is critical to effective coastal management and should be institutionalized. The Coastal Act, together with other state and federal laws, describes the roles of federal, state, and local governments in statewide ocean and coastal management. There is overlap in responsibilities and authorities, necessitating frequent coordination, which often depends on individual relationships. Institutionalized mechanisms should be developed to promote sustained coordination efforts, regardless of personnel changes within an agency or organization.

Beyond public actors, private entities and public-private partnerships provide important engagement and funding opportunities. Private actors often can directly engage and organize communities, help rally people behind an initiative, and work to shape local and state management policies. Public-private partnerships can increase programs' public acceptance, chances of successful implementation, and access to funding.

California should think more creatively about partnering with and learning from other states to address key challenges. This includes working regionally with Washington, Oregon, and perhaps Baja California, as well as forming international alliances to combat climate impacts on the marine environment. For example, in December 2016, the state began working with regional actors through the Pacific Coast Collaborative, as well as with non-U.S. partners such as France, New Zealand, and the Canadian province of Quebec, on ways to address ocean acidification.

Rising Seas & Storms

OVERVIEW

Climate change is already impacting California’s coast. Over the next century, rising sea levels will increasingly threaten coastal communities. A 2012 National Research Council (NRC) study of sea-level rise along the Pacific Coast projects that rising sea levels will exacerbate coastal flooding and storm surges, increase inundation and storm damage, and accelerate coastal erosion and saltwater intrusion along the California coast. These impacts will result in loss of beaches and coastal access, threats to infrastructure such as roads, and challenges to the safe maintenance of coastal and blufftop property.

<i>Time Period</i>	<i>North of Cape Mendocino</i>	<i>South of Cape Mendocino</i>
By 2030	-2 – 9 in (-4 – 23 cm)	2 – 12 in (4 – 30 cm)
By 2050	-1 – 19 in (-3 – 48 cm)	5 – 24 in (12 – 61 cm)
By 2100	4 – 56 in (10 – 143 cm)	17 – 66 in (42 – 167 cm)



The NRC study projected that seas could rise up to two feet in some parts of the state by 2050, and as much as five feet by 2100. Based on advancing scientific knowledge, the California Ocean Protection Council recently released updated projections that Based on advancing scientific knowledge reflected in the California 4th Climate Change Assessment, the California Ocean Protection Council recently released updated analysis with less optimistic predictions for 2100. These projections include a high-end scenario of 94 inches (239 cm) and “an additional very low

probability worst-case estimate that exceeds 9 feet (274 m).” In general, the middle and high-end projections in this assessment are higher than those in the NRC study.¹

Coastal communities need to adapt to these foreseeable changes by minimizing vulnerability and enhancing resilience to adverse impacts. Climate change adaptation planning will require coastal communities to evaluate how expected sea-level rise impacts will affect people, structures, and natural resources within the community; articulate adaptation objectives; evaluate the suitability of various adaptation strategies to achieving local objectives, and take appropriate action to reduce vulnerability and increase resilience.

Sea-level rise adaptation strategies generally fall into three categories: protection, accommodation, and retreat. Communities might seek to protect densely developed areas or critical infrastructure using hard armoring techniques such as seawall construction or “soft armoring” techniques such as beach nourishment. In less developed or less vulnerable areas, communities may focus on enhancing the resilience of structures to accommodate projected sea-level rise impacts through updated building codes, land use designations, and floodplain regulations. Where the need to preserve coastal natural resources or reduce repetitive flood loss is paramount, or where it will not be feasible to maintain or rebuild infrastructure, communities may opt to retreat from rising tides using strategies such as setbacks, land acquisition, and limits on the rebuilding of structures damaged by storms.

Guidance about the steps involved in sea-level rise adaptation planning, tools for analyzing vulnerability, and potential adaptation strategies are plentiful. Most significantly, the California Coastal Commission recently released its Sea-Level Rise Policy Guidance to guide local governments’ sea-level rise adaptation efforts in the context of local coastal planning and coastal development permitting. In 2013 the Coastal and Ocean Working Group of the Governor’s California Climate Action Team (CO-CAT) also issued an updated State of California Sea-Level Rise Guidance Document with recommendations on how to incorporate sea level rise into project planning and decision-making. (The guidance is currently being undergoing another update, incorporating the Ocean Protection Council Science Advisory Team’s April 2017 Rising Seas in California: An Update on Sea-Level Rise Science, and is scheduled for finalization and adoption in January 2018.)

¹ California Ocean Protection Council Science Advisory Team, *Rising Seas in California: An Update on Sea-Level Rise Science*, at 36, available at <http://www.opc.ca.gov/webmaster/ftp/pdf/docs/rising-seas-in-california-an-update-on-sea-level-rise-science.pdf>.

Even local governments that have engaged in sophisticated adaptation planning face two significant challenges: legal complexity and lack of resources. First, the legal context for coastal land use regulation in California is intricate and complex. In order to be effective, local governments must implement new or amended local plans, ordinances, and decisions that put selected adaptation strategies into practice, and the policies must comply with various federal and state planning and management requirements.

Second, local governments have limited staff, expertise, and resources to devote to navigating this complexity. Staff engaged in coastal planning may have limited understanding of the scope of legal opportunities and potential liabilities. Resource limitations also make it difficult for local governments to respond to new guidance and continually evolving management requirements. It has been difficult for some local governments to keep abreast of changes, to ensure consistency in local policymaking, and to educate the public and build political will in support of climate change adaptation strategies.

Tailored technical resources and funding for adaptation planning have been available in recent years to enable local governments to engage in the necessary work. Nonetheless, local governments still need further resources and assistance to effectively implement adaptation strategies, and to incorporate sea-level rise adaptation strategies into the language of local plans, regulations, programs, and permits.

The Coastal Commission has already been a leader in addressing sea-level rise through the development of its policy guidance. Its future work on this issue, in cooperation with local governments, the State Lands Commission and other state and federal agencies, and other stakeholders, will be crucial to the future of California's coast.

TAKEAWAYS

In its Sea Level Rise Policy Guidance, the Coastal Commission has highlighted several strategies for local governments to address sea level rise. For example, local governments can incorporate zoning restrictions, buyout programs, transfers of development rights, and setback requirements into their Local Coastal Plans (LCPs) during updates. The Coastal Act and strong background principles of property law (e.g., the public trust doctrine) can serve as bases for protecting ocean and coastal resources. Success in protecting those resources will nonetheless depend on the political environment.

Local governments and other entities need funding to develop and implement sea level adaptation strategies. The uncertain magnitude of sea level rise complicates effective response efforts, but advances in modeling and forecasts provide starting points. Grant funding has been available through the Coastal Conservancy and others to assist with LCP update efforts. Local governments also need funding for and tools to guide planned retreat strategies and implementation of their updated LCPs.

Effective sea level rise adaptation requires the Coastal Commission to coordinate with other state and federal agencies. Partners should include the State Lands Commission and California Department of Parks and Recreation, as well as federal agencies like the Federal Emergency Management Agency. Each agency has its own mandate and jurisdiction; coordination ensures a holistic and consistent approach to adapting to climate impacts on the coastline. (See also the prior discussion about the broad need for increased coordination among coastal decision-makers.)

Climate change impacts such as changing temperatures, rising seas, increased storm surges, and related erosion and acceleration of coastal change may cause shifts in habitat distribution, which may necessitate changes to coastal conservation strategies. Sea level rise will require protecting habitat where it currently is located as well as where it will be, which may include restoring it where damaged by development. As climate change threatens existing habitat areas, California decision-makers will need to think carefully about how to strike a balance between coastal development and protecting migrating habitat.

Moving Forward

The California coast faces greater challenges today than ever in its past, in the form of a growing and diversifying population and a rapidly changing climate. The challenges cannot be addressed with one-time solutions. Rather, they require a process that facilitates inclusive, ongoing discussions of the tradeoffs involved.

By 2030, demographers expect California's coastal population to top 30 million residents. Coincident with that population surge, coastal ground will be lost to sea level rise, and coastal species and habitats will face accelerating threats. Managing the coast in the face of these stressors will require analyzing needs, identifying priorities, and making difficult decisions in order to balance benefits and harms. Success will depend on those deliberations and decision-making processes being transparent and inclusive.

At present, many coastal management conversations seem beset with adversarial posturing, or include only one side of important debates. During our November symposium, we received numerous comments about the unusual cross-section of participants at the event. We believe there would be benefit in establishing a regular, non-binding forum for this type of multi-stakeholder conversation and debate. The key is for the forum facilitator to be a neutral party without a stake in the conversations. An important aspect is that this forum could provide the seed for growing a more inclusive discussion about coastal management generally, as underrepresented constituencies and communities who have long been marginalized in these conversations could be invited and encouraged to participate.

As a starting point, these conversations could focus on three themes strongly present throughout the November symposium discussions, as summarized previously:

INTEGRATING CLIMATE ADAPTATION

The existing coastal governance framework was developed before climate change and its impacts were understood, accepted, and modeled. Now the state is working to incorporate adaptation efforts within the confines of a framework that did not anticipate it, and in a legal and policy environment already challenged by dynamic physical conditions on the coastline that have led

to armoring and other strategies to attempt to manage ever-changing conditions. We must act to identify and address potential unintended conflicts. For example, the state could look comprehensively at statewide adaptation needs – such as those identified in Safeguarding California: Reducing Climate Risk, the state's climate adaptation strategy, and specifically the Oceans & Coastal Resources & Ecosystems Sector Plan – to determine whether parts of the existing coastal governance framework require legislative action. A public convening to discuss key issues could facilitate needed conversations to identify the next steps and how to implement them. Such a convening could specifically address the range of existing tools both for dealing with climate change impacts and for facilitating public engagement, such as AB 1482 (requiring three public hearings between the draft and final updates to California's climate adaptation strategy) and SB 379 (requiring local general plans must contain adaptation elements).

INCREASING FINANCIAL & TECHNICAL ASSISTANCE FOR LOCAL AND STATE GOVERNMENTS

Managing the California coast is an immense task, which requires substantial resources. Many entities with significant management responsibilities face shortfalls in financial and technical capacity. At the state level, the Coastal Commission has faced significant challenges due to its limited budget, which can lead to significant delays in processing of applications, resolution of enforcement actions, and other nondiscretionary responsibilities. Local governments need assistance and incentives to support their efforts to regularly update and effectively implement Local Coastal Plans, which are critical tools for coastal adaptation to climate change. Increasing the efficiency and efficacy of state- and local-level decision-making, planning, and implementation efforts may require increasing financial and technical assistance for coastal management institutions. In a time of universally tightened budgets, this will be a difficult but potentially critical step.

IMPROVING COLLABORATION & COORDINATION

While strides have been made, additional collaboration is needed between the numerous federal, state, and local actors involved in California coastal management as well as the private sector, nongovernmental entities, and the public at large. Under the California Ocean Protection Act, the Ocean Protection Council coordinates efforts between state agencies with ocean-related responsibilities, but there is a broader spectrum of actors that should be engaged in coordinated

action. Today, cooperation is highly dependent on individual relationships. Strong institutional structures would provide certainty and sustained coordination efforts, regardless of personnel changes within an agency or organization. A strategic collaboration plan authored by more than the Coastal Commission – for example, developed through a multi-stakeholder workshop and signed onto by a diverse range of entities and authorities – may help provide overarching guidance to increase alignment and communication between the various actors involved in coastal governance and the public at large.

ADDRESSING ENVIRONMENTAL JUSTICE

Coastal management in California must respond to the challenges of providing environmental justice. Policymakers and managers should robustly implement existing tools for addressing barriers to full and equitable access to coastal resources, such as SB 1000 (requiring county and city planning agencies to consider environmental justice in their general plans). The state also needs better pathways for environmental justice communities to effectively engage in coastal management discussions. To this end, it is important to grow coalitions between diverse groups, such as urban communities, environmental organizations, and faith-based groups, to ensure a holistic set of priorities and concerns helps to shape coastal management processes. Low-income and underserved communities should play a role in shaping more inclusive coastal management policies.

There can be no doubt that California's coast faces immense challenges, and the state possesses limited resources to address them. But the past forty years demonstrate that the framework for managing the California coastline and the economic, social, and ecological resources it sustains is strong. Despite the difficulties, California has led the way nationally and internationally in coastal planning and protection efforts. We are confident that it will continue to do so in the decades to come if coastal management institutions are robust and inclusive, and decision-making processes are transparent about tradeoffs.

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