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April 29, 2011

Ms. Nancy Sutley, Dr. John Holdren, and Members
National Ocean Council
c/o Council on Environmental Quality
722 Jackson Place, NW
Washington, DC 20503
Comments submitted electronically to WhiteHouse.gov/administration/eop/oceans/comment

Re: National Ocean Council Strategic Action Plan for Climate Change (Objective 5)

Dear Chairs Sutley and Holdren and National Ocean Council Members:

The California Coastkeeper Alliance (Alliance) represents 12 Waterkeeper organizations safeguarding the coast from the Oregon border to San Diego. The Alliance and its member Waterkeepers work daily to protect and enhance healthy marine habitats and coastal watersheds throughout the state, for the benefit of Californians and California ecosystems. On behalf of the Alliance, I am pleased to submit these comments on the National Ocean Council Strategic Action Plan for Objective 5: Resiliency and Adaptation to Climate Change and Ocean Acidification (Strategic Climate Change Action Plan or Action Plan).

The stated purpose of the Action Plan is to "strengthen resiliency of coastal communities and marine and Great Lakes environments and their abilities to adapt to climate change impacts and ocean acidification." The Alliance strongly supports the work of the National Ocean Council to develop an Action Plan to adapt our coast and oceans to climate change impacts. We commend the Council for establishing a goal of "resiliency" to climate change impacts, instead of merely aiming to reduce vulnerability. The term reflects the Council's vision of resilient coastal and marine ecosystems with the capacity "to absorb and utilize or even benefit from perturbations and changes that attain it, and so persist without a qualitative change in the system's structure,"[1] a vision that the Alliance shares.

The Council's development of a science-based, specific, and well-funded Strategic Climate Change Action Plan could significantly improve the ability of California[2] and other coastal states to develop strong adaptation policies. In order to accomplish this, we suggest the below actions, which are organized into two main issue areas: impacts to the coast, including sea level rise; and impacts to seawater quality and marine life, including ocean acidification.

[1] Holling, Crawford Stanley, "Resilience and Stability of Ecological Systems," *Annual Review of Ecology and Systematics* 4:1-23 (1973).
[2] The California Climate Adaptation Strategy, released in December 2009, summarizes the best known science on climate change impacts in California and outlines possible solutions that can be implemented within and across state agencies to promote resiliency. California Natural Resources Agency, "2009 California Climate Adaptation Strategy: A Report to the Governor of the State of California in Response to Executive Order S-13-2006," (CA Climate Adaptation Strategy), available at www.climatechange.ca.gov/adaptation.

THE COUNCIL MUST TAKE SWIFT ACTION TO PROTECT COASTAL COMMUNITIES, ECONOMIES, AND ECOSYSTEMS FROM SEA LEVEL RISE AND OTHER CLIMATE IMPACTS.

Approximately 85% of California's residents live or work along bay or coastal areas without the means to adjust to expected impacts.[3] Scientists estimate that sea level has risen seven inches since 1900, and is projected to rise 12-18 inches by 2050 and 21-55 inches by 2100.[4] Extreme weather events like storm surges will make these impacts more severe. Large numbers of people and extensive infrastructure will be at risk from inundation during coastal storms as higher sea levels, high tides and storm surges coincide.[5] Projected inundation will impact water supply canals, wastewater treatment plants, and power plants throughout California.[6] Increasing rates of coastal erosion, beach loss, and saltwater intrusion into groundwater basins are also projected.[7]

The Council should craft actions to address sea level rise and other climate change-driven impacts to the coast around three high-level goals, as described in detail below:

1. Reform federal policies and laws so that they protect the public, economy, and environment from sea level rise.
2. Identify significant sources of funding to support states' assessment, planning and implementation of adaptation strategies for sea level rise.
3. Promote coastal resilience by prioritizing adaptation strategies that enhance an ecosystem's natural adaptive capacity and limiting the use of structural barriers such as sea walls.

1. <u>Reform federal policies and laws so that they protect the public, economy, and environment from sea level rise</u>.

One of the biggest obstacles to climate change adaptation is a lack of institutional capacity to address sea level rise, ocean acidification, and other climate change-driven impacts to the coast and ocean. Agencies currently don't have the legal mandate, funding, and in some cases, the data to address emerging climate change impacts. We are facing environmental, economic, and public safety issues of unprecedented magnitude without laws and policies in place to ensure an informed, uniform approach. Federal,[8] state and local agencies, and the environmental and other laws that they administer, were put in place before the problem of climate change was recognized, and can at times actually operate counter to the pressures that climate change increasingly places on our people, infrastructure and environment.

Although significant federal regulatory reform and funding is needed to facilitate sea level rise adaptation, implementation will happen largely at the local level and will involve amending local coastal plans, general plans, and other local policy tools such as zoning laws and other ordinances. Accordingly, federal activities related to coastal adaptation should be coordinated closely with states by involving coastal zone management programs early in the planning process.

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[3] Ewing, L., "Considering sea level rise as a coastal hazard," Proceedings of Coastal Zone '07. Portland, OR, July 22-26, 2007; CA Climate Adaptation Strategy at p. 3.
[4] California Climate Change Center, Climate Change Scenarios and Sea Level Rise Estimates for the California 2008 Climate Change Scenarios Assessment (Draft Paper), available at www.energy.ca.gov/2009publications/CEC-500-2009-014/CEC-500-2009-014-D.PDF.
[5] *See* California Climate Change Center, "The Impacts of Sea-Level Rise on the California Coast," (May 2009), available at www.pacinst.org/reports/sea_level_rise/report.pdf; CA Climate Adaptation Strategy at p. 68.
[6] CA Climate Adaptation Strategy at p. 65.
[7] *Id.* at p. 69.
[8] Notably, the National Oceanic and Atmospheric Administration (NOAA) is restructuring to create a new Climate Service. *See* http://www.noaa.gov/climate.html.

Near-Term Action: Work with the Council on Environmental Quality (CEQ) to draft National Environmental Policy Act[9] guidance on the coastal impacts of climate change, including sea level rise. This work should expand upon CEQ's *Draft NEPA Guidance on Consideration of the Effect of Climate Change and Greenhouse Gas Emissions*,[10] providing agencies with detailed guidance on how to take action to implement the statement that "climate change effects should be considered in the analysis of projects that are designed for long-term utility and located in areas that are considered vulnerable to specific effects of climate change (such as increasing sea level or ecological change) within the project's timeframe."[11]

Near-Term Action: Conduct a review and analysis of federal ocean, coastal, and water quality laws, including the Clean Water Act, and Coastal Zone Management Act, to identify gaps with respect to climate change impacts, and recommend amendments that will facilitate climate change adaptation. The review and analysis should inform a formal recommendation, resolution, or report to Congress on how to amend the regulations of affected federal agencies.

Near-Term Action: Convene a Task Force to analyze sea level rise maps and projections to determine how public access to beach and coastal areas will be impacted nationwide. The Task Force should subsequently publish these maps online for ready public access.

Mid-Term and Longer-Term Action: Draft recommendations and strategies, in consultation with the Coastal States Organization and other entities, on how to preserve and enhance coastal public access nationwide through new regulations and other means. This is the mid-term action; the longer-term action should be to ensure the implementation of these new public access protections.

Mid-Term Action: Partner with state agencies to: (a) identify and evaluate coastal infrastructure (wharves, docks, levees, piers, seawalls, flood control structures) and other coastal structures subject to sea level rise for structural integrity and for hazards associated with potential removal, (b) map changes in property boundaries based on the projected changes in the elevation of the mean high tide line, and (c) post such maps online and make them readily accessible to the public.

Mid-Term Action: Survey state agencies' public trust responsibilities with respect to sea level rise; draft guidance or other formal documents that acknowledge federal and state agencies' public trust responsibilities with respect to sea level rise and that make recommendations as to the implementation of the doctrine's responsibilities.

2. Identify significant sources of funding to support states' assessment, planning and implementation of adaptation strategies for sea level rise.

States' coastal programs directly manage shoreline development; work closely with local governments on land use planning, habitat acquisition, and a variety of other coastal land use activities; play a key role in coordinating state and local agencies; and review and condition federal permits in the

[9] National Environmental Policy Act, 42 U.S.C. §§ 4321 et seq.
[10] Council on Environmental Quality, *Memo: Draft NEPA Guidance on Consideration of the Effect of Climate Change and Greenhouse Gas Emissions* (February 18, 2010), available at http://www.whitehouse.gov/sites/default/files/microsites/ceq/20100218-nepa-consideration-effects-ghg-draft-guidance.pdf.
[11] *Id.* at 7.

coastal zone.[12] Immediate funding is needed for coastal states impacted by sea level rise and other climate-driven changes to implement these mandates. Projected sea level rise, compounded by shifting precipitation and extreme weather events, will impact an estimated 480,000 residents and at least $100 billion in property throughout California.[13] If California does not take action to mitigate sea level rise impacts and other projected climate impacts, the costs will be crippling. A 2008 report estimates that if no adaptation actions are taken in California, damages across sectors could result in "tens of billions of dollars per year in direct costs and expose trillions of dollars of assets to collateral risks."[14]

Many other coastal states are already taking steps to address the potential impacts of sea level rise, but they need federal funding to support these efforts. A recent survey by the California State Lands Commission found that Governors of several states, including Florida, Louisiana, Maryland, New Jersey, New York, South Carolina, Virginia, and Washington, have issued Executive Orders establishing various climate change commissions and advisory committees to consider and act on the potential effects of global climate change, including sea level rise.[15] A relatively modest but immediate infusion of federal dollars to help California and other coastal states adapt to projected changes will reap significant benefits. Conversely, doing nothing will result in crippling costs.

Near-Term Action: Dedicate federal funding to support regional, state, and local efforts to conduct detailed vulnerability assessments, identify and map climate change impacts, and develop and implement plans to deal with projected impacts in the climate corridor.

Near-Term Action: Explore, in the review of federal agencies and policies as described above, the extent to which Federal Emergency Management Agency (FEMA) resources can be used for proactive hazard management with respect to sea level rise and other sources of flooding. As one example, FEMA could condition its approval of states' Hazard Mitigation Plans, and thus funding, on the inclusion of climate change adaptation action plans. Ensure implementation of proactive hazard management by FEMA as appropriate.

Near-Term Action: Secure funding and direction for NOAA and other agencies to support the states in specific efforts such as technical assistance, mapping, modeling, data, forecasting products, and intergovernmental coordination.[16]

3. Promote coastal resilience by prioritizing adaptation strategies that enhance an ecosystem's natural adaptive capacity and limiting the use of structural barriers such as sea walls.

Decisions about how to deal with rising sea level, inundation, and associated impacts will have a profound impact on the future of the California coast, and on coastal areas across the country. Coastal managers will begin to either prioritize environmentally-destructive strategies such as coastal armoring,

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[12] *See* Coastal States Organization Climate Change Work Group, Second Annual Report: The Role of Coastal Zone Management Programs in Adaptation to Climate Change, at p. 23, (September 2008), available at http://www.coastalstates.org/wp-content/uploads/2010/07/CSO-2008-Climate-Change-Report2.pdf.

[13] Heberger, Matthew, Heather Cooley, Pablo Herrera, Peter H. Gleick, and Eli Moore, "The Impacts of Sea Level Rise on the California Coast," (2009) PIER Research Report, CEC-500-2009-024-D, Sacramento, CA: California Energy Commission.

[14] CA Climate Adaptation Strategy at p. 3, citing D. Roland-Holst and F. Kahrl, UC Berkeley "California Climate Risk and Response," (November 2008) available at: http://www.next10.org/research/research_ccrr.html.

[15] California State Lands Commission, "A Report on Sea Level Rise Preparedness, Staff Report to the California State Lands Commission," (December 2009) at p. 19.

[16] Coastal States Organization Climate Change Work Group, Second Annual Report: The Role of Coastal Zone Management Programs in Adaptation to Climate Change, at p. 23, (September 2008), available at http://www.coastalstates.org/wp-content/uploads/2010/07/CSO-2008-Climate-Change-Report2.pdf.

or more sustainable, "soft" protection solutions such as barrier beaches and wetlands, which are often more effective in the long term.[17] If structural methodologies, such as sea walls, become the default approach to deal with sea level rise, this choice would significantly alter the functioning of coastal habitats, which could in turn decrease the overall resilience of coastal ecosystems. Alternatively, with clear direction from the National Ocean Council, and with adequate time, data, and resources, coastal managers could pursue adaptation strategies that promote coastal resilience by protecting coastal areas from sea level rise with strategies that benefit both ecosystems and human infrastructure.

The National Ocean Council should ensure that the concept of resiliency,[18] which is referred to explicitly in the description of Objective 5, is used as a performance measure of the Action Plan. One fundamental component of strategies geared toward coastal resilience is the preservation of natural areas that contain critical habitat.[19] The California Climate Change Adaptation Strategy specifies that "the state should pursue activities that can increase natural resiliency, such as restoring tidal wetlands, living shoreline, and related habitats; managing sediment for marsh accretion and natural flood protection; and maintaining upland buffer areas around tidal wetlands."[20]

Near-Term Action: Emphasize coastal resilience in the face of sea level rise by issuing guidance that prioritizes state and local implementation of measures that enhance the natural adaptive capacity of ecosystems. Recommendations should include but are not limited to: (a) low-impact development techniques such as permeable pavement and vegetated buffers, which will slow and sink storm water runoff, mitigating flooding from storm surges and rises in sea level; (b) creating buffers of open space around beaches and wetland areas, which similarly increases the amount and diversity of coastal habitats and allows beaches and wetlands to migrate inland as the ocean advances; (c) restoring tidal wetlands, eelgrass beds, oyster beds and other natural coastal ecosystems, which both creates aquatic habitats for threatened species and establishes a natural buffer against extreme weather.

Mid-Term Action: The Council should prioritize funding for the recommendations outlined above, and for projects to identify, buffer, and protect critical habitats and allow the inland migration of rising seas in a manner consistent with protecting those habitats through habitat buyout programs, such as the Robert T. Stafford Act[21] and the Coastal Estuarine Land Conservation Program.[22]

THE COUNCIL MUST TAKE SWIFT ACTION TO ADDRESS OCEAN ACIDIFICATION AND OTHER CLIMATE CHANGE-DRIVEN IMPACTS TO WATER QUALITY.

In addition to sea level rise and associated impacts, California's coast and ocean are experiencing dramatic changes such as ocean acidification, warming, and changes to freshwater inputs. The ocean and dependent marine life are of prime importance to California, and to coastal communities and economies across the country. California's ocean-dependent economy generates an estimated $46 billion per year.[23]

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[17] CA Climate Adaptation Strategy at p. 75.
[18] *See generally* Beatley, Timothy, *Planning for Coastal Resilience: Best Practices for Calamitous Times.* Washington DC: Island Press (2009) (Planning for Coastal Resilience).
[19] *See* CA Climate Adaptation Strategy at p. 74.
[20] *See* California Climate Adaptation Strategy at p. 74.
[21] Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C. §§ 5121-5207 (2007).
[22] National Oceanic and Atmospheric Administration, Coastal and Estuarine Land Conservation Program Final (2003), *available at* http://coastalmanagement.noaa.gov/land/media/CELCPfinal02Guidelines.pdf.
[23] *See* review of economic assessments of the value of beaches in Pendleton, Linwood, Philip King, Craig Mohn, D. G. Webster, Ryan K. Vaughn, and Peter Adams, "Estimating the Potential Economic Impacts of Climate Change on Southern California Beaches," (2009) PIER Research Report, CEC-500-2009-033-D, Sacramento, CA: California Energy Commission.

California invests heavily in a healthy ocean, engaging in an exhaustive multi-stakeholder process and spending an estimated $60 million over five years to designate networks of marine protected areas along the California Coast.[24] The State is projected to spend an additional $24 million every year to manage these marine protected areas.[25] But these investments are threatened by climate-driven changes such as ocean acidification, particularly if no preparations are made to adjust coastal and ocean management practices. The Council should craft its Strategic Climate Change Action Plan in order to monitor and mitigate the impacts of ocean acidification, as described below.

Near-Term Action: Work with NOAA to cultivate Congressional funding and other support for the NOAA Climate Service.[26] The reorganization would enable NOAA to more efficiently and effectively respond to the increasing demand for easily accessible and timely scientific data and information about climate change.[27]

Near-Term Action: Solicit existing and readily available information on ocean acidification and environmental baselines, and identify data gaps and research needs to guide coastal state management and regulation of water quality and marine life. Combine this research into a report on ocean acidification that includes recommendations for next steps for both research and monitoring, and provide estimates of the funding needed to implement these recommendations. Work with universities to make this research a new, coordinated priority for scholarship.

Near-Term Action: Building on ongoing efforts, such as CEQ's *Draft NEPA Guidance on Consideration of the Effect of Climate Change and Greenhouse Gas Emissions*,[28] create guidance for federal agencies to use in their review of coastal and ocean projects, funding requests and policies that would contribute significant amounts of greenhouse gas emissions. This guidance should specifically direct agencies to analyze and report on the greenhouse gas emissions associated with their decisionmaking. For example, agencies should restrict the approval of projects that would lead to increases in greenhouse gas emissions, unless all alternatives have been exhausted (*e.g.*, funding for ocean desalination facilities, which are energy intensive, should be directed toward conservation and localized, low-energy water sources such as stormwater capture).

Mid-Term Action: Ensure that the NOAA Climate Service, in partnership with the National Ocean Observing System, provides a reliable source for climate data, information, and decision support services and effectively coordinates with other agencies and partners, including regional frameworks and/or networks charged with housing, organizing, distributing and summarizing for the public, ocean acidification data. Work to secure funding for these efforts as needed.

Mid-Term Action: Work with U.S. EPA to ensure that water quality regulations, permits and policies protect the water quality of near-coastal areas from climate-driven water quality impacts, such as ocean

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[24] California Department of Fish and Game, "Estimated Long-Term Costs to Implement the California MLPA Master Plan Appendices," (January 2008) Appendix L., Page L-1, available at http://www.dfg.ca.gov/mlpa/pdfs/revisedmp0108l.pdf.

[25] *Id.*

[26] *See* National Oceanic and Atmospheric Administration, Proposed Climate Service in NOAA (February 15, 2011) available at http://www.noaa.gov/climateresources/resources/ProposedClimateServiceinNOAA_Feb15rev.pdf.

[27] *Id.* Note that at the time of this comment letter, NOAA was engaged in a formal appropriations process for the Fiscal Year 2012 Budget, which includes a reorganization that brings together its existing widely dispersed climate capabilities under a single line office management structure, the Climate Service.

[28] Council on Environmental Quality, *Memo: Draft NEPA Guidance on Consideration of the Effect of Climate Change and Greenhouse Gas Emissions* (February 18, 2010), available at http://www.whitehouse.gov/sites/default/files/microsites/ceq/20100218-nepa-consideration-effects-ghg-draft-guidance.pdf.

acidification and warming. For example, U.S. EPA should be identifying and restoring water bodies whose use is impaired, or threatened with impairment, by climate change, pursuant to Section 303(d) of the Clean Water Act.

Mid-Term Action: Create and implement nationwide a set of best practices for ocean acidification monitoring, including physical and biological indicators, ecosystem changes and carbon dioxide sources, in conjunction with U.S. EPA and other relevant federal agencies and research institutions. These practices will feed into the monitoring framework described above.

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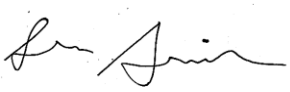
Thank you for the opportunity to provide these comments on an issue of critical importance to the health and well-being of current and future coastal residents and ecosystems. If you have any questions, please do not hesitate to contact us.

Regards,



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