The Nature Conservancy
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August 11, 2011

Chairman John Laird and Council Members
California Ocean Protection Council
1330 Broadway, 13th Floor
Oakland, CA 94612-2530

Cc: Dr. Amber Mace, Sam Schuchat

Re: Comments on Draft 2011 Strategic Plan Update

Dear Chairman Laird and Members of the Council:

Thank you for your hard work, and for the attention of your staff, in developing the draft Strategic Plan Update. The Strategic Plan has been and will continue to be a vital tool to guide the California Ocean Protection Council (OPC) in its efforts to protect and manage our ocean resources by effectively prioritizing use of resources, even as the state grapples with significant financial challenges.

The purpose of this letter is to provide you with our initial comments on the substance and direction of three of the focal areas within the draft Strategic Plan Update. The Nature Conservancy (TNC) has substantial experience in these focal areas, and would welcome the opportunity to work closely with your staff to continue to refine the Strategic Plan Update in the coming months.

Climate Change Focal Area

Climate change will affect nearly every aspect of life on Earth in ways we are just beginning to understand, from rising seas to more intense storms and flooding to coastal erosion. People see the subtly evolving "new normal" all around, and in the coming decades, the world will adapt one way or another. Given the potential severity of the problems facing California's oceans and land-sea interface, the OPC should adopt a strong overarching vision and suite of goals for confronting these changes. The current Goal Statement is a step in the right direction, but could be strengthened by better articulating the magnitude of the challenge, the necessity of a strong response, and the primacy of natural resources in achieving success. Specifically, the Nature Conservancy recommends that the preamble and Goal Statement clearly state that OPC's primary concern is the protection and restoration of coastal ecosystems for the services they provide in decreasing human vulnerability to sea level rise and hazards and in supporting a robust coastal economy.

The draft Strategic Plan recognizes that – given the "urgency, need for action, ability to make a difference, and consistency with the OPC's mandate" – sea level rise (SLR) should be the central climate issue for OPC focus over the next five years. We generally agree with this focus, notwithstanding our support for promoting a better understanding of ocean acidification. Implicit in this focus on SLR is a focus on adaptation, which we also support. However, while its emphasis should be on adaptation, it is important for the strategic plan to recognize the full suite of ecosystem services that nature-based adaptation actions may produce including increased carbon sequestration and green house gas emission reduction and avoidance.

Accordingly, implementation of the California Climate Adaptation Strategy (CAS) should be central to the OPC's Strategic Plan for the next five years. The CAS makes several important recommendations that OPC should specifically work to advance and reference in the strategic plan, including:

- [I]dentify priority conservation areas and recommend lands that should be considered for acquisition and preservation [in the face of sea level rise];
- Establish decision guidance for protecting existing critical ecosystems, coastal development and future investments; and
- Support regional and local planning for sea level rise.[1]

The goals of the Strategic Plan regarding the climate change impacts on human communities (Climate Change Focal Area – Issue 1) are reasonably well balanced, calling for increasing scientific understanding, improving communication of the threat through mapping and other actions, and providing guidance to decisionmakers on how to reduce risk and protect resources. The latter goal – the provision of decision guidance for adaptation – is particularly important since state and regional agencies are starting to delve into adaptation strategies in their own planning, with very little coordination and mixed success.[2] However, it could be improved with explicit reference to impacts on ecosystems (Climate Change Focal Area – Issue 2). Specifically, the draft Strategic Plan should explicitly acknowledge the climate change impacts on tidal wetlands, rather than leaving this issue to be addressed, "… by other state agencies and regional collaboratives."[3] By leaving this out of its plan, OPC is missing the opportunity to make progress on one of its primary duties: to "[c]oordinate the activities of state agencies to improve the effectiveness of state efforts to protect ocean and coastal resources."[4]

Tidal wetlands are some of the most productive areas of the planet, supporting astonishing biodiversity, and supplying a range of natural assets that benefit human beings – including storm damage mitigation[5] and carbon sequestration.[6] Because tidal wetlands exist within one tidal

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[1] *Id.* at 74-78.
[2] Lauren Sommer, *Rough Waters for Sea Level Rise Planning*, KQED News (July 29, 2011), *available at* http://blogs.kqed.org/climatewatch/2011/07/29/rough-waters-for-sea-level-rise-planning/
[3] Draft Strategic Plan at 19.
[4] COPA § 35615.
[5] Costanza, R., O. Perez-Maqueo, M.L. Martinez, P. Sutton, S.J. Anderson, and K. Mulder (2008). *The Value of Coastal Wetlands for Hurricane Protection*. Ambio 37(4): 241-248.
[6] Crooks, Stephen, et al., Findings of the National Blue Ribbon Panel on the Development of a Greenhouse Gas Offset Protocol for Tidal Wetlands Restoration and Management (Restore America's Estuaries, Philip Williams & Associates, Ltd., and Science Applications International Corporation 2010), available at https://www.estuaries.org/climate-change.html.

range of mean sea level, they are the ecosystem at greatest risk of inundation from even modest levels of sea level rise. Given appropriate management, however, wetlands can migrate:

> Rising seas, however, may also inundate land that is now dry, thereby creating new wetlands. Wetlands may also be able to adapt to rising water levels over time by trapping sediment or building on the peat the sediment creates, a process referred to as vertical accretion. These compensatory mechanisms may be hindered by coastal development that limits wetland migration . . .[7]

This intersection between the sustainability of tidal wetlands and the actions of human communities on the coast merits close attention by the OPC. It is important that this cabinet-level agency, charged with coordinating agency action to ensure the sustainability of ocean and coastal ecosystems, commit itself to ensuring the long-term persistence of California's most critical and endangered coastal ecosystem – tidal wetlands.

Specifically, the draft Strategic Plan should be strengthened by integrating the important role tidal wetlands play in the protection of human communities. Indeed, the segregation of human community impacts and ecosystem impacts into two independent issues supports the common misconception that these interests are disconnected and mutually exclusive. Quite the contrary: adaptation strategies that incorporate natural resource values and management can result in positive feedbacks for both people and biodiversity.[8] Nature-based adaptation is an approach that simultaneously builds resilience and reduces the vulnerability of both human and natural communities to climate change. Nature-based adaptation approaches are based on the well-founded premise that both natural and managed ecosystems can reduce vulnerability to climate-related hazards and gradual climatic changes. The sustainable management of ecosystems can provide many social, economic and environmental benefits, both directly through a more sustainable management of biological resources and indirectly through the protection of ecosystem services.[9] The main objectives of nature-based adaptation are to promote community resilience through ensuring the maintenance of ecosystem services, support adaptation of different sectors, reduce disaster risks, and prevent "mal-adaptation" which may be the result of a lack of information and high levels of uncertainty. The Nature Conservancy espouses the use of nature-based adaptation as a key component of a comprehensive suite of actions to help communities manage the impacts of a changing climate.

One of the most promising and well-founded nature-based adaptation approaches is the protection and restoration of tidal marshes as a first line of defense against sea level rise. Actions to protect California's tidal marshes provide benefits for nature and human communities alike, by protecting coastal development and associated human communities from storms, enhancing water quality, slowing erosion, and other benefits. Accordingly, we strongly urge OPC to

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[7] California Climate Change Center. 2009. *The impacts of sea level rise on the California coast.* http://www.pacinst.org/reports/sea_level_rise at 27.

[8] CBD [Convention on Biological Diversity]. 2009. *Connecting Biodiversity and Climate Change Mitigation and Adaptation: Report of the Second Ad Hoc Technical Expert Group on Biodiversity and Climate Change.* Technical Series No. 41. Secretariat of the Convention on Biological Diversity (CBD). Montreal, Canada. 126 pp.

[9] World Bank. 2010. *Convenient Solutions to an Inconvenient Truth: Ecosystem Based Approaches to Climate Change.* World Bank. Washington DC, USA.

incorporate science, monitoring and management goals pertaining to the impacts of sea level rise on tidal wetlands into the Strategic Plan. We would be happy to work with your staff on refining these goals.

Sustainable Fisheries and Marine Ecosystems Focal Area

Around the globe, the mismanagement of fisheries and perverse economic incentives have promoted overfishing and destructive fishing that damage marine habitats, diminish fish populations, and greatly limit the supply of sustainable seafood. California has experienced the same trend in fishery degradation, but we have a tremendous opportunity to capitalize on our advancements in marine resource management, such as MLPA, to create innovative solutions to the problems and threats facing our local fisheries and establish new fishery reform approaches that can be adopted beyond our borders.

TNC strongly supports the fishery reform concepts of "Area Based Management" or scaling down fishery management to smaller and ecologically justified areas. Dr. Elinor Ostrom's Nobel Prize-winning analysis describes the ineffectiveness of single large government units managing complex natural resources and encourages a decision-making structure that takes place at the location of the resource and involves local actors.[10] TNC's strategy is to empower fishing communities with secure fishing rights tied to their local grounds through area based management. By connecting the performance of the local fishery economy to the stewardship of the resource, and by utilizing spatially specific fish stock and habitat assessments while monitoring all harvesting activities completely, this new strategy will position fishermen, scientists and regulators to use the best scientific information available to ensure the long-term sustainability of our marine resources. The table below highlights the key distinctions between the current management structure and Area Based Management:

Management Characteristics	**Status Quo Management**	**Area Based Management**
Size of Management Area	Coastwide or Statewide	Regional
Role of Scientific Information	Coarse data informing coastwide regulation	Locally derived fine-scale data informing place-based decisions
Fishing Rights	Allowed to migrate coastwide based on market forces. Often leads to industry consolidation. Can lead to depletion of species in one location, shutting down the coastwide industry.	Tied to an area. Provides greater community stability and reflects productivity of local fishery resources
Stakeholder Role	"Victim mentality" – frequently changing regulations that do not account for local factors	"Participant mentality" – local fishermen incentivized to both assist in data collection and regional regulation development

[10] *See, e.g.*,Elinor Ostrom. 2008. "Institutions and the Environment." *Economic Affairs* 28(3): 24–31.

The draft Strategic Plan rightly embraces novel approaches to advancing sustainable fisheries, but does not explicitly advance area based management. OPC should promote not only agency driven spatial fishery management, but also private efforts. Fishermen increasingly understand the benefit of planning harvest efforts with the aid of the best spatial information possible. We recommend that OPC incorporate this concept into the Strategic Plan in at least three places. First, area based management should be explicitly called out under the list of innovative approaches OPC will support as part of Action 1.1.2. Second, area based management should be evaluated as an approach to effective fisheries management in the face of climate change, in Action 2.1.4. Third, OPC should support the use of area based management and integration of fisheries management with MPAs by DFG and FGC, as part of Action 2.1.1.

Community Fishing Associations (CFAs) and Regional Fishing Associations (RFAs) will help implement area-based approaches. CFAs (also known as Community Quota Banks) can help anchor fishing rights in communities before they migrate away due to market forces. A local institution that provides stable fishing access is a first step towards increasing local interest in science and stewardship and also provides an organized community and industry partners for conservation. The draft Strategic Plan calls for OPC to oversee the establishment of guidelines for CFAs, but this – by itself – will not result in an increase in the number of CFAs and RFAs (as hoped for in the "measures of effectiveness"). We recommend the addition of an additional metric **for OPC** under Action 1.1.2 calling for the development of capacity and infrastructure to support CFAs and RFAs and promote local seafood.

We strongly support the high priority placed on collaborative research in the draft Strategic Plan, and encourage OPC to continue to fund and advance collaborative fisheries research projects using any means at its disposal. Collaborative fisheries research provides an opportunity to bridge the gap between the scientific community and the local resource users who have substantial knowledge to share. Furthermore, it gives fishermen an opportunity to play a critical role in the design and implementation of research projects, improving the likelihood they will support and accept the results and any management decisions based on them. Collaborative research is more effective and efficient because fishermen have intimate knowledge of their waters and the resource, have vessels well equipped and designed for fisheries-related work, and are willing to work hard to play a role in the research underlying management decisions.

Finally, collaborative research moves fishermen away from the currently pervasive "victim" mentality. Under the current research paradigm, fishermen are the target of regulation that is built upon science that they typically had no role in producing, and that sometimes seems to conflict with their real-world experience. Accordingly, they bridle against the management system and don't trust its science foundation. Collaborative research reverses this paradigm by putting the responsibility for the development of fisheries science partly in the hands of the local fishing industry.

Land-Sea Interaction Focal Area

The land-sea interface is one of the most ecologically rich and complex areas on Earth. However, coastal areas where estuaries are found are also home to more than sixty percent of humanity. Dense human habitation comes with a cost – temperate estuaries are some of the most degraded environments on the planet, making their protection and restoration a top conservation priority. Although significant progress has been made over the past few decades in protecting

and restoring estuaries, conservation planning for estuaries has not historically been well integrated across terrestrial, freshwater, and marine realms to address cross-realm threats to estuarine health, and there has been relatively little coordination among sites or across the region. Given the strong similarities in basic ecology and threats faced by many of the region's estuaries, coordinated conservation planning and development of integrated multi-site strategies makes good sense and should be included in the OPC strategic plan.

TNC has recently completed *A Conservation Assessment of U.S. West Coast Estuaries*,[11] in which we assembled a large collection of spatial data on ecological, physical and human use characteristics of estuaries; classified estuaries based on geophysical forcing factors; created a modified conservation planning process to better respond to inter-realm linkages and processes in estuaries; and, made recommendations for regional conservation and management. A geographic information system (GIS) database containing spatial data for 146 estuaries and their associated catchments in California, Oregon, and Washington is available to both technical and nontechnical users. The database includes 27 variables that characterize some key biophysical and human use parameters for West Coast estuaries. GIS analysts can download the entire database as an ESRI geodatabase or KML. Non-technical users can visualize the information using a web-based map viewer. The report, a spatial database, and map server based on this work can all be accessed at: http://conserveonline.org/workspaces/wcea/.

OPC's Strategic Plan update is the first opportunity for TNC to use the information we have collected to help an agency characterize threats and identify opportunities for highly-leveraged conservation investment at the land-sea interface. We would be pleased to brief you and your staff on the outcomes of this project and work with you on their application to the Strategic Plan. Our analysis could add significant, much-needed detail to the issues already identified in the strategic plan, and help identify additional priorities based on sound science. At a minimum, the Strategic Plan should address the following priorities, not currently included in the draft:

- The Strategic Plan update should develop an explicit water quality strategy with a focus on agricultural runoff and the development of collaborative strategies and research partnerships with farmers to manage runoff through buffers and other land management approaches. This could be an independent issue, or fall under the Integrated Water Policy Issue (Land-Sea Interaction Focal Area – Issue 1). In either event, it requires significant collaboration between DWR and SWRCB, and OPC could provide coordination among these agencies and a much-needed focus on ecosystems.
- Relatively little is known about the specific role of most estuaries as nursery habitat for species of biodiversity or commercial significance. There is clearly a need for a more focused scientific assessment of which West Coast estuaries are the most important providers of this valuable nursery function, which characteristics of those estuarine ecosystems are most critical for each species of interest, and how human use of lands within estuary watersheds may be impacting those characteristics. The Strategic Plan update should prioritize the support of research to fill this important gap in our knowledge.
- Exposure to flood hazards is a significant risk of living on the coast. According to one analysis, property owners in California filed 8,589 repetitive-loss flood claims against

[11] Gleason M.G., S. Newkirk, M.S. Merrifield, J. Howard, R. Cox, M. Webb, J. Koepcke, B. Stranko, B. Taylor, M.W. Beck, R. Fuller, P. Dye, D. Vander Schaaf, and J.. Carter (2011). *A Conservation Assessment of West Coast (USA) Estuaries*. The Nature Conservancy, Arlington VA. 65pp.

National Flood Insurance Policies (NFIP) from 1979 to 2010, an average of 268 claims per year.[12] According to the California Climate Change Center, with a 12 inches sea level rise, 100-year flood events may be expected to occur as frequently as once every 10 years,[13] substantially increasing pressure on the NFIP. The California Climate Adaptation Strategy estimates the insurance exposure for near shore properties in the state to be around $400 billion.[14] Vulnerable structures not only place people in harm's way, but also threaten natural coastal habitats that are already under constant pressure from increased urbanization and farming. One of the most potentially useful and cost-effective solutions to protect people from the impacts of climate change will be to preserve, enhance and restore the natural systems that deliver critical protection from the elements. OPC should work with the California Emergency Management Agency and the State Coastal Conservancy to support the development of projects that accomplish both natural resource restoration and hazard risk reduction using FEMA's hazard mitigation assistance programs.[15]

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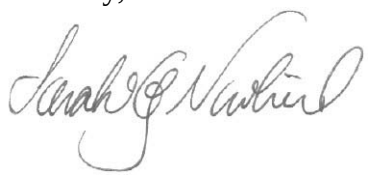
In the development of this Strategic Plan update, OPC should vigorously embrace its mandate to protect ocean and coastal ecosystems both as a provider of robust science and as a leader in policy. OPC's first five years were characterized by the development of an admirable body of science on a variety of issues related to the marine environment. As funding becomes increasingly scarce, OPC will need to be more strategic about how it prioritizes the scientific endeavors it funds, and should transition toward the use of existing science to guide the policy work of its member agencies and other state, regional and local entities. As stated above, TNC would be happy to work with your staff on further developing these important concepts.

Sincerely,



Sarah G. Newkirk
Coastal Project Director

[12] http://www.usatoday.com/news/nation/2010-08-25-flood-insurance_N.htm. Repetitive loss properties are insured properties that filed two or more claims of more than $1,000 within 10 years of each other since 1978.
[13] California Climate Change Center (2005). *Projecting future sea level.* http://www.energy.ca.gov/2005publications/CEC-500-2005-202/CEC-500-2005-202-SF.PDF
[14] 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* at 68 *available at* www.climatechange.ca.gov/adaptation.
[15] Federal Emergency Management Agency, *Hazard Mitigation Assistance Unified Guidance* (June 1, 2010) at 12, *available at* http://www.fema.gov/library/viewRecord.do?id=4225.