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Comments on the
West Coast Governors' Agreement on Ocean Health
Draft Action Plan

Submitted by
The California Council on Science and Technology (CCST)
November 30, 2007

On behalf of the California Council on Science and Technology (CCST), we are pleased to provide comment on the West Coast Governors' Agreement on Ocean Health. Our comments and recommendations, below, focus on eight areas:

- Support for establishment of an Ocean Trust Fund
- Call for broad participation in a West Coast assessment of shoreline changes and impacts
- Increased emphasis on importance of habitat characterization and mapping
- Need for a core set of indicators and established standards
- Suggestion for a CCST-led external review of the integrated research plan
- Recommendation for synthesis of reports and development of a web toolkit for managers and policy makers
- Need to enable experimentation in protected areas, and
- Need for stable funding for integrated observing infrastructure

The California Council on Science and Technology is a nonpartisan, impartial, not-for-profit corporation established in California in 1988 by state legislation. Its mission is to provide expert advice to the state about science and technology related public policy issues. CCST is modeled in part on the National Academies' National Research Council, with whom it has developed a close working relationship. More than half of CCST's members and fellows are also members of the National Academies of Sciences and Engineering and Institute of Medicine, and several are Nobel Laureates. CCST's membership includes all of the major academic research institutions in the state, as well as the six largest federal laboratories housed in California, and many industry

sectors, such as aerospace, medicine/health/bioscience, systems infrastructure, communications and information technology, and energy.

We commend the Governors of California, Oregon and Washington for moving forward aggressively on the important challenges of our ocean's health through the development of this plan that will leverage and deploy our tri-states' considerable talents. The Governors' leadership in proposing such an approach is particularly noteworthy.

**Comments and Recommendations:**

**Support for establishment of an Ocean Trust Fund**

CCST joins the three states in urging the establishment of a national Ocean Trust Fund as recommended by the US Commission on Ocean Policy, the Pew Ocean Commissions reports and the Joint Ocean Commissions Initiative. The establishment of such a fund to support ocean and coastal management efforts, particularly in this time of climate change uncertainty, would be a critical step in assisting the states in addressing management and research needs to further our economic and national security well being.

**Broad participation in a West Coast assessment of shoreline changes and impacts**

We agree with the Governors' Action Plan draft that a coordinated and collaborative assessment of shoreline changes and anticipated impacts to coastal areas due to climate change is of utmost importance. We recommend that coordination extend beyond the coastal interests to include those in the state and federal arenas who are engaged with our state and national infrastructure planning and land management issues. Impacts of sea level rise will have far reaching effects that extend beyond our coastlines. It will be important to engage these different interests early in the process so that their concerns and issues can be included in the assessment.

**Increased emphasis on importance of habitat characterization and mapping**

CCST notes that ecosystem-based management (EBM) is an overarching principal that is inherently connected to each of the Governors' seven priority areas and we find reference to this in the body of the plan in several areas. However, understanding that habitat characterization

and mapping is an essential prerequisite to having the capacity to do ecosystem-based management, we would recommend that the Action Plan address, more directly, an investment in such characterization and mapping.

**Need for a core set of indicators and established standards**

A coordinated assessment and a tri-state research agenda are commendable goals and are potentially extremely valuable if the data can be collected in a way that ensures that it is usable for multiple purposes and over long time horizons. The plan references ocean health indicators as part of priority area 3. It also makes mention of standards with regard to sea floor mapping. We urge the three states to take this concept further to expand the identified core indicators and to set clear standards for data collection across many ocean issues before this work is underway. We recommend that these standards be broadly defined to include information technology and networking standards so that, one day, we would achieve a robust integrated network of monitoring and other data. We further urge that these indicators and standards be adopted by the three states as a required approach for all coastal studies done within their states, beyond those studies anticipated by this plan. By establishing a common approach that can be deployed beyond the immediate needs, California, Oregon and Washington can help lead the nation in developing valuable measures of critical coastal issues. Establishment of these indicators and standards should be done in consultation with federal and state agencies with ocean, coastal and waterways interests so that they have maximum value.

**CCST led external review of the integrated research plan**

The development of an integrated research plan by the Sea Grant programs in Washington, Oregon, and California is an important undertaking. We understand from the draft plan that the development of this integrated plan is being done with a broad reach to many stakeholders including the academic communities. Such a plan, a research roadmap, reflects an ambitious undertaking that may result in a large, multifaceted research undertaking. Given the expected resources that would eventually be invested in deploying the identified research, CCST proposes, as a neutral party charged by the state of California to serve such a science and technology

advisory role, that it be asked, along with our counterparts in Washington and Oregon[1], to convene an independent review of the research roadmap that is developed. This kind of peer review is undertaken by many federally funded research efforts. We would convene state and national leaders in ocean research and research administration from academia, the federal laboratories, and industry to provide constructive feedback on the research roadmap and the details of its implementation. We would help ensure that such a roadmap clearly identified the significant regional research issues facing our three state region and that it set forth a timely and strategic path for addressing them. We believe that such a review organized by CCST will help ensure public and legislative confidence in this large-scale undertaking. Such an open process would also enable Washington, Oregon and California to send a collective message from all of its research institutions to Congress and to the federal funding agencies about the importance of this kind of research at the regional level.

**Synthesis of reports and development of web toolkit for managers and policy makers**

Climate change is having a significant impact on land and oceans. As climate change and coastal use pressures on the west coast accelerate over the coming years the complexity of the natural systems, land use and regulatory environments will become ever more difficult to navigate. Ocean and coastal stewards will need access to clear and current information to help them make critical decisions on management, acquisition, and mitigation. With such an overload of information and complex issues, CCST proposes that the west coast Governors consider developing an effective system to identify and present relevant and current research findings to the practitioners that need readily accessible and usable information. CCST is currently in discussion with the California Biodiversity Council on such a project to assist the land management agencies as they face the myriad of complex issues related to climate change impacts on biodiversity. CCST will be convening a workgroup of relevant experts and will, with their help, develop an effective way to present the relevant information in a usable and accessible manner. CCST believes that a similar effort for coastal and ocean issues would be warranted and

[1] If the states of Washington and Oregon do not have CCST counterparts in their states we would propose to work with the states and, possibly, with the National Academy of Sciences to convene a peer review panel that could serve the regional peer review function.

CCST would be interested in exploring this option with those coordinating the West Coast Governors' action plan.

**Need to enable experimentation in protected areas**

To date, the majority of scientific inquiry of our oceans has been done by monitoring and observations. Now, in the face of climate change with rapidly changing ocean and climatic variables, scientists are finding value in introducing perturbations to better understand the ocean environment and systems (e.g., disturbing some component of the ocean dynamics or sea life to see how it responds to changes). This is a relatively new step for ocean science, but a necessary one, given the rapidly changing dynamics of our ocean environment. Proposed perturbations to support scientific inquiry are, however, often met with resistance, often by environmentalists. The requests for permission or permits to do such experiments in areas such as national marine sanctuaries or marine protected areas are sometimes difficult or impossible to obtain. The process of obtaining such permits can exceed the window of opportunity or need for the experimental data. Both the application process and the reporting requirements are often quite extensive and burdensome for all parties. CCST would urge the Governors' action plan to include a fact finding effort to identify and clarify the current inventory of required permits, the general state of the processes to obtain such permits, and the related reporting requirements. If the fact finding effort warrants it, CCST recommends that the states develop a streamlined, one stop shop, for required local, state and federal permits to increase the effectiveness of the process, to encourage scientific inquiry in areas of critical need, and to reduce unnecessary costs. Such an effort could enable easier access to these protected areas for valuable scientific inquiry that would result in meaningful and useful data to help us address the drastically changing oceans and climate; such new experiments may help tip the scale in understanding.

**Need for stable funding for integrated observing infrastructure**

Over the past decade or so there has been increasing investment of state and federal resources in establishing networks of coastal ocean sensing capabilities spanning the west coast region. Such efforts include the Central and Northern California Ocean Observing System (CeNCOOS), the Southern California Coastal Ocean Observing System (SCOOS), the Pacific Coast Ocean Observing System (PaCOOS), the Center for Integrative Coastal Observation, Research and

Education (Ci-CORE), the Coastal Ocean Currents Monitoring Program (COCMP), the Center for Integrated Marine Technologies (CIMT) and more. Investment in developing the technologies and establishing these state-of-the-art monitoring systems has been critical in developing new understanding of our oceans. However, it appears that already the investment in these systems is starting to dwindle. The operations and maintenance of such systems is expensive and without continued state and federal investment the systems already launched may need to be decommissioned or mothballed. At a time when the need for understanding the oceans is accelerating, our investment in ocean and satellite born systems for experimentation and monitoring should also be accelerated. CCST urges the Governors' action plan to give focused attention to this observing infrastructure need by coordinating with relevant agencies to develop a strategic plan to expand and update these important observation systems and to ensure a continuing and secure platform of support for the operation of the observing infrastructure.

There is much to be gained from fusing data from the federal agencies and the three states. CCST recommends that the states create a *separate, independently managed, and stable* funding source for the development, deployment, and maintenance of infrastructure that links observing subsystems together--not just coordination meetings, but the communication systems themselves; the creation of and maintenance of interoperability between agency and state systems, data fusion from the separate systems, and the creation of common and useful data products. It is often the case that funds for such linkages are on the margin of each participating agency's budget and these get cut first because "cooperation" is not a central mission of any agency. One suggestion would be that the funds, responsibility, and accountability be given to the California Ocean Science Trust (CalOST) or a comparable organization that might represent the three state interests. CCST would be interested in exploring how it could help facilitate this process by convening a workshop to help design and then later assess, what would be needed to create a secure and stable common ocean information network.

In closing we again commend the Governors for taking this bold step. We offer our services to help create a West Coast regional research program that reflects the full range of research and educational expertise the three states have to offer and one that is tied to rigorous program development that benefits from independent review by experts at the outset. We believe that

CCST, an organization established to provide independent advice to the state on critical issues of science and technology, should be engaged in this effort to help ensure that the program developed is consistent with the overall mission and goals and that continuing public investments will leverage the best possible outcomes.

We look forward to future involvement as this important endeavor evolves.

Respectfully Submitted,
California Council on Science and Technology

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