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before the

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Mr. Chairman and members of the Committee: Thank you for the opportunity to testify before you today concerning the future of U.S. ocean policy and the Commission's view on H.R. 4368, the Weather and Oceans Resources Realignment Act. I am Andrew Rosenberg, a member of the U.S. Commission on Ocean Policy and a Professor of Natural Resources in the Institute for the Study of Earth, Oceans and Space at the University of New Hampshire.

The Ocean's Act of 2000 formed the U.S. Commission on Ocean Policy and directed us to "make recommendations for coordinated and comprehensive national ocean policy..." The Act set out eight specific objectives for this policy paraphrased here:

1. protection of life and property;
2. responsible stewardship of ocean and coastal resources;
3. protection of the marine environment;
4. enhancement of marine-related commerce, resolution of conflicts among diverse users of the marine environment and engagement of the private sector in developing approaches to the responsible use of marine resources;
5. expansion of knowledge of the marine environment and the advancement of education in fields related to the ocean and coasts;
6. development and improvement in technological capability for ocean related activities
7. cooperation among all government agencies to ensure coherent regulations, appropriate use of funding, efficient operation of federal agencies, and enhancement of partnerships with state and local governments; and
8. leadership by the United States in ocean and coastal activities.

I believe our recommendations truly meet the spirit and intent of the Oceans Act. Further, I, and my fellow Commissioners, believe that the oceans are in trouble and that the current management regime and the science supporting it are inadequate to address the growing suite of complex and interrelated problems facing these economically, ecologically and aesthetically valuable ocean resources. These concerns, voiced by virtually every stakeholder that appeared before the Commission, clearly indicate that we must immediately begin to make changes in U.S. ocean policy to reverse the distressing, widespread degradation in the health of the oceans and coasts, vital living marine resources, coastal communities, leadership in ocean science and the life-support system of the earth. Our ocean environment is at risk and a change of course is needed to reduce that risk.

The invitation was to provide the Commission's views on H.R. 4368, however; before I discuss the legislation it is important to put my remarks into context. The Commission's report focus on four overarching themes; the adoption of the principle of ecosystem-based management for the oceans; the governance structure we use for managing our activities and impacts on the ocean; the availability of credible and useful scientific information to decision makers at all levels; and the importance of promoting interdisciplinary education and improving public awareness of ocean and coastal issues. My testimony will focus

predominantly on the themes of ecosystem-based management and changing governance structures since I believe that they are most pertinent to today's discussion. However, I want to be clear that the recommendations put forward by the Commission are based on the need for changes in and support for all four areas.

The Commission recommends four components for a new governance framework to implement Ocean Policy: 1) national coordination and leadership, including 2) a strengthened and streamlined federal agency structure, 3) the development of regional solutions to national problems, and 4) the establishment of a coordinated offshore management regime. In my opinion, these four elements should be included in a National Ocean Policy Act that also sets national goals for managing our ocean and coastal activities and helps knit together the extensive and often confusing framework of statutory mandates and policy direction we now have. These national goals should be based on the guiding principles in the report of the Commission. In particular, I would like to highlight: stewardship, resources are held in the public trust for all Americans; ecosystem-based management, understanding and mitigating the cumulative impacts of human activities on the ecosystem as a whole; adaptive management, continuously re-evaluating management as new information becomes available and making adjustments as needed to meet the goals; understandable, clear rules, making the rules that govern various activities coherent for the public; accountability, to ensure that government and the public do what is needed to conserve marine ecosystems; and international responsibility, working cooperatively on ocean issues and meeting our responsibilities for global ocean policy. Using these and the other principles an overarching ocean policy can be articulated for the nation.

The Commission found that federal level coordination and leadership is fragmented at best and inconsistent in too many cases. I had the privilege of working for NOAA for ten years, and served as Deputy Director of the National Marine Fisheries Service. The NOAA personnel are talented and dedicated but they don't have all the tools they need to do the job. Nor do they have an overarching framework for all of the conflicting mandates that the various statutes and demands of the day bring. The Commission calls for a National Ocean Council to coordinate across the agencies. The Council can help resolve conflicting mandates, improve the leverage that programs can obtain from one another, and present a more coherent leadership for the nation on ocean policy. The Council should be chaired by an Assistant to the President for Ocean Policy, not by any one agency head. The goal of the Council should be to work toward a coherent national policy with regard to management, science and education, with agencies working together, not in opposition to one another.

While Councils may seem just another layer of bureaucracy, I think this Ocean Council must do much more than just oversee ongoing activities. Its mandate, following on from the Oceans Act mandate to the Commission, should be to implement a more coherent and efficient national governance system. The starting point for the Council should be planning and coordinating the implementation of the Commission's recommendations. Somewhat analogous to current discussions in the intelligence realm, the Council must have the authority to make real change in ocean governance through the budget process, resolving conflicting mandates and streamlining of programs across the federal government. However, note that it will still be the agencies that have responsibility for implementing specific actions to address mandates. The Council serves as a planning, coordinating and conflict resolution body for the implementing agencies, as well as a monitor for progress toward national goals.

The call for the establishment of a National Ocean Council represents a significant change in how the federal agencies with ocean and coastal responsibilities operate, and has bearing on the recommendation to move NOAA to the Department of Interior. Regardless of where the lead ocean agency, NOAA, is located in the federal government structure there is an urgent need to consolidate and coordinate federal activities but there is currently no clearly established mechanism to do so. While the White House can pull together teams to address specific issues, such as Northwest salmon, the lack of a permanent high-level entity responsible for coordinating policies, programs and strategies across the spectrum of federal agencies with mandates and authority to function in marine systems, has perpetuated and even exacerbated the operations of the existing dysfunctional system. Additionally, the lack of a clear mandate, or Organic Act, for NOAA, has hampered the agency's ability to take a leadership role in helping set a national ocean policy.

Recognizing these problems, the Commission recommends a phased approach, one that begins by establishing a National Ocean Policy Framework --which includes the creation of a National Ocean Council-- while simultaneously taking a close, hard look at the operation and structure of NOAA. It is crucial that this process includes the careful scrutiny of NOAA and the initiation of institutional changes necessary to ensure its resources are focused on its three core functions --which I will discuss shortly. Once completed, the next step is an evaluation of federal ocean and coastal activities government-wide, consolidating, eliminating

or modifying programs as needed to develop a more responsive and coordinated national ocean and coastal science and management regime, which is a role for the Council and the Assistant to the President. After these two actions have been taken policymakers and stakeholders will be in a better position to consider future actions, which may include making NOAA an independent agency or the eventual unification of federal natural resources functions, a final phase envisioned by the Commission. The Commission believes that the first priorities are strengthening the agency and establishing a strong coordinating mechanism within the Executive Office of the President if we are to develop a coherent national ocean policy.

The Commission recommends a stronger NOAA as the lead ocean science and management policy agency for the nation. We recognize that many ocean related activities are going to remain in various agencies across the government and the National Ocean Council will need to coordinate between these agencies. NOAA was created in response to the Stratton Commission recommendations and has done an enormous amount for the nation. However, in my view NOAA has remained a collection of agencies rather than a lead ocean agency. In some ways, within NOAA there is a mirror of the problem that we found across the federal "ocean" agencies, that is, program fragmentation and conflicting authorities. The National Ocean Policy Act should serve as an organic act, taking the opportunity to strengthen NOAA by drawing programs together from across the government to reduce program fragmentation. It should also take the opportunity to focus NOAA on its core competencies and mandates; assessment, prediction and operations, ecosystem-based management of ocean and coastal areas and resources, and science, research and education. The current NOAA line structure reflects the agencies they were created from rather than the tasks they will need to undertake in the 21st century. Again, I have high regard for the people and mission of NOAA and in many ways feel a part of the agency. But I also know it is hard to change the way business is done without a change in structure because working patterns become set. But as new imperatives come forward, such as the implementation of a new integrated ocean observing system, the implementation of an ecosystem-based approach to management, and increasing demands for research and scientific advice, NOAA must be restructured in order to grow into these programs in stride. To take another example, the Commission recommends as a guiding principle the integration of atmospheric, land and water related science and policy. Unfortunately, the "wet" side of NOAA still struggles to talk to the "dry" side of NOAA.

Restructuring organizations can be a tricky process to say the least. There is still however an urgent need for the overall agency to act as a corporate whole. Several principles must be kept in mind. NOAA must remain a science-based agency as one of its core attributes. Prediction and monitoring functions for weather to climate to ocean observations, or the management functions for ocean and coastal areas and resources including sanctuaries, fisheries, aquaculture or habitat protection rely on the science and research enterprise of NOAA and its external partners. There has been much discussion of separating the research in NOAA from management and operations. As a former NMFS scientist and a former NMFS Regional Administrator and serving on the recently completed NOAA Research Review Team, I strongly believe that research and the provision of the science advice for management and operations must remain together. Separating out research from the advisory functions will leave the other parts of NOAA without the best scientific basis for decision-making. The science advisory function is a fundamental job for the best scientists in the agency as part of the science and research enterprise. Then, if the science and research enterprise is to be structurally separate from management and operations, the linkage between these lines needs to be strong enough to ensure science advice of the highest quality is available to respond to management and operational needs on a timely basis. To put it bluntly, researchers can not refuse a call for science advice because they are more interested in something else. If this linkage can not be reliably made then the science and research enterprises must remain within the operational lines.

Overall, I believe there are a couple of clear restructuring options for NOAA. One possibility is to restructure the agency into three lines according to the core functions of ecosystem-based management; operations and prediction services; and scientific advice, research and education. This would require the linkage of science with the other two lines as discussed above. Another alternative is to structure along mission lines, coastal and marine ecosystem services, weather and climate services, research, operations and data services. In this case the research and science functions would remain distributed across all the lines with the research, operations and data services line serving an integrating function for the science program. Clearly there are other configurations, but, to me, breaking down some walls is necessary to open the architecture of the agency and create a new NOAA. The budget must then follow this structure and allow programs to be streamlined and consolidated. Such restructuring will then provide the basis for NOAA to grow and strengthen through consolidation of programs from across the government. The end result may be that the stronger, bigger NOAA logically becomes an independent agency, in order to fully meet the challenges of changing ocean policy. The Commission report doesn't recommend an independent NOAA,

but as stated in the hearing upon release of the report, that remains an option. It is the function, structure and strength that must be addressed in order to make the decision on the appropriate location and stature for the agency.

A major challenge for governance of ocean activities is changing to a perspective of ecosystem-based management. Ecosystem-based management means managing human activities within a large marine ecosystem in concert, rather than separately, and considering the cumulative impacts of those activities on the functioning of the ecosystem as a whole. The perspective is that the natural system sets the bounds for management, rather than political boundaries. This is because within an ecosystem, effects on one component can logically be expected to impact other components. Therefore, as we seek to manage across the full range of human activities and mitigate their impacts on the natural environment, we need to consider the interactions between different management actions. For example, coastal development interacts with pollution abatement programs and affects the productivity of the coastal ocean in salt marshes and nearshore areas such as along the New Hampshire coast. In other words, fisheries are affected by more than just fishing and pollution is affected by more than just controlling the amount of discharge. Because humans are an integral part of the ecosystem, social and economic impacts are part of the ecosystem-based management perspective.

Ecosystem-based management does not mean that we don't have to manage each of the sectors of human activity. Fishing still needs to be managed to prevent overfishing or restore overfished resources for example. But the management of the fishery should be linked to the management of other sectors to provide a more coherent set of policies. The focus for ecosystem-based management should be to maintain the function of coastal and marine ecosystems including both their goods and services. We want to maintain the ability to harvest fish as goods from the ecosystem, but we want to ensure the ecosystem services provided by overall productivity and ocean health isn't undermined. In other words, we want to enjoy a healthy ocean for many other reasons than just fishing.

In order to implement ecosystem based management five changes are needed; creating regional councils and information management systems, developing the capability for the federal government to manage on a ecosystem basis, structuring science programs to support ecosystem-based management, having an overall set of policy goals to guide the management process and developing a comprehensive offshore management regime to deal with gaps in current management authorities. I have already commented on the needed changes in NOAA to support ecosystem level science and management. For the federal government to have the capability to bring together the various sector activities and mandates, and provide the needed flexibility for ecosystem-based management a stronger NOAA and a National Ocean Council with substantial authority are needed. Regional councils must be developed in order to plan and coordinate across the various sectors of human activities that impact an ecosystem. Large marine ecosystems are generally on a regional scale such, as the Gulf of Maine, or the South Atlantic Bight. Multiple jurisdictions are involved and many types of human activities occur within each ecosystem. The Commission recommends setting up regional councils on a pilot program basis (voluntary with substantial flexibility to start) as planning and coordination bodies. The National Ocean Council needs to facilitate their work. Each region may choose different issues to begin work on ecosystem based management and this flexibility is essential. Further, these activities must be funded in order to foster real change. This means funding data and information management so policy makers have the science to develop management plans, funding ecosystem assessments to bring everyone onto a common footing for planning and impact analysis, and funding the management actions themselves.

Regional ocean councils have a difficult task, fitting together the pieces of management across the sectors. This means, for example, making the fisheries management program work in concert with coastal zone management programs, pollution abatement programs and protected species programs. The goal is management plans that specifically include consideration of the cumulative impacts of all of these actions, creating a system where they leverage one another. The federal government must provide sufficient flexibility to allow this to happen but also ensure that the primary goal of maintaining functioning ecosystems is met.

Finally, there are major gaps in the current set of authorities for management particularly in offshore (federal) waters. There is no real governance structure for newly emerging activities such as energy production, aquaculture, and bioprospecting to name a few. Also included are specific conservation measures such as marine protected areas. Delineating rights and privileges in offshore areas held in the public trust is complex. For offshore oil and gas there is a well developed management system in place, but for other activities that result in exclusive access to areas there is no such system. Without an overarching

policy framework that sets goals for ecosystem-based management, ensures that analysis considers impacts across the sectors and specifically sets criteria for deciding protection or access privileges, development will be poorly managed.

Ecosystem-based management is not some theoretical construct. It is common sense. It means looking at all the parts of the machine to understand how they can work together. The goal is a more effective management system that does a better job of protecting the oceans from unwanted changes and further degradation.

The Commission applauds the Chairman's efforts at prompting a national dialogue on ocean and coastal issues and his recognition of the need for a careful and thorough evaluation of our existing governance structure. Progress towards an ecosystem-based management approach is heavily dependent upon changes in this structure.

Mr. Chairman and members of the Subcommittee, thank you for the opportunity to testify today. I have only touched on a few of the important issues in the Commission report. I would be pleased to discuss these and other matters with you further at your discretion.