

Ocean Policies for the 21st Century

**Remarks prepared to the Commission on Ocean Policy by Robert M. White,
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Mr. Chairman and Members of the Commission, it is distinct honor to appear before you to discuss the issues raised in the Oceans Act of 2000. I appear before you with a multifaceted background in the fields of the earth's fluid envelope and in the field of engineering. I was the first Administrator of the National Oceanic and Atmospheric Administration (NOAA) when it was founded in 1970 in the Administration of President Richard Nixon. Prior to that I was chief of the Weather Bureau and the Administrator of the Environmental Science Services Administration, which combined the Weather Bureau and the Coast and Geodetic Survey and parts of the then National Bureau of Standards. I have represented the United States in many national and international oceanic, atmospheric and general environmental forums. I was for a number of years the U.S. representative to the Intergovernmental Oceanographic Commission of UNESCO and the International Whaling Commission. I have been a U.S. delegate to the First United Nations' Conference on Human Environment held in Stockholm in 1972 and have been a member of a number of presidential initiatives under both Republican and Democratic presidents in seeking agreements with countries including India, China, Australia, Brazil and others. I was a member of the previous presidential ocean commission known as the Stratton Commission in the late 1960's.

My most recent post was as President of the National Academy of Engineering and Vice Chairman of the National Research Council. I oversaw many studies of ocean and atmospheric issues at the request of many different

United States government agencies and the Congress. Today, I am associated with the Washington Advisory Group, a private consulting organization. I am also a member of the Advisory Committee to this Commission.

I welcome the opportunity to further share some of my thoughts with the Commission having already outlined some of them as a member of this Commission's Advisory Committee in a paper that I understand has been distributed to all Commissioners. The purposes and objectives specified by Congress in the Oceans Act of 2000 are very similar to those of the Stratton Commission, which examined them 30 years ago. That Commission conducted a comprehensive survey of ocean policy and programs of the United States in the late sixties. In fact, I cannot identify a single one that was not addressed by the Stratton Commission. However, the world has changed politically, technologically, scientifically and socially in the past thirty years. The convening of this Commission is timely as it examines the present status of ocean policy in the United States, and changes that are needed.

The Stratton Commission was in an enviable position compared to the one in which the Watkins Commission finds itself today. In the late 60's, we were faced with similar problems, but legislation addressing most of them had not been enacted:

- The depletion of the nation's fisheries, as result of foreign fishing fleets, had become a politically and scientifically sensitive issue.
- The Law of the Sea was in the process of formulation and had become a major national issue.
- The Stratton Commission spent much time debating what might be done to protect fisheries resources and recommended important steps such as maximum sustainable yield for all fisheries and management systems to combat the depletion of fishery resources.
- We were deeply concerned about the destruction of life and property from ocean-related natural hazards. The most prominent of natural

hazards were the hurricanes, floods and tsunamis, and indirectly, droughts. Though we continue to be plagued by them, scientific and technological developments of the past three decades, have radically improved the accuracy of warnings.

- Marine pollution was significant and ways to combat it were suggested.
- The expansion of human knowledge through increased funding of science and technology occupied us greatly. Science and technology developments have since outpaced our imagination.
- Management of the increasing conflicts in the coastal zone became a cause celebre for the Commission.
- In so far as institutional matters were concerned, the Stratton Commission came to several vital convictions. First is that the oceans are part of the fluid environment of the earth, consisting of the oceans, atmosphere, hydrosphere and the cryosphere and its problems could not be addressed successfully in isolation from the other parts of that environment. Secondly it came to view that a center of strength for both the oceans and the atmosphere were needed in the federal government. The net result was the recommendation that the National Oceanic and Atmospheric Administration (NOAA) be established as an independent agency. It ended up in the Department of Commerce.
- NOAA and the Environmental Protection Agency (EPA) were both formed at the same time in reorganization plans number 3 and 4 of 1970. The Congress enacted many of the Stratton Commission recommendations into law. The Coastal Zone Management Act, the Fisheries Management and Conservation Act, the Marine Mammal Protection Act, the Ocean Dumping Act, the Marine Sanctuaries Act and several Climate Program Acts are only some of the ocean legislation. About that time, there was appointed the Committee on

Ocean Science, Engineering and Research chaired by the Vice President.

This recitation of where I am coming from is a prelude to my views about the challenges now facing the Commission. I strongly recommend the following actions by the Watkins Commission.

- 1) Recommend the development and implementation of a comprehensive Ocean Observation and Prediction System. This would have to be developed in conjunction with the Atmospheric and Hydrospheric Observation and Prediction Systems. To achieve this requires full application of modern technology. This means observational devices such as the Argo floats, remote sensing systems for both oceans and atmosphere, and global observations of earth-orbiting satellites. The grand objective would be an earth systems observing and prediction system for all geophysical and biological aspects of the planet. Such a system is essential for improved prediction of natural hazards and other phenomena.
- 2) Recommend further development and protection of our coastal resources. The Stratton Commission foreshadowed the Coastal Zone Management Act that seeks a balanced use of the coastal zones. Today these zones are much improved as a result of the development of coastal zone management plans. The coastal areas, however, continue to be plagued by increasing population and increasing pollution from land sources and atmospheric deposition. Commercial and industrial uses of the coastal areas are vital but they must be implemented in a way that protects the natural areas of our coastal zones so essential as nurseries

for fish and for recreational purposes. Interaction among agencies of the Federal, State and local governments needs to be regularized and implemented.

- 3) Recommend arresting the further depletion and restoration of marine living resources. The Food and Agricultural Organization estimates that 100 million tons of fish are extracted from the world's oceans each year. This compares with about 50 million tons a half century ago. This extraction of the living resources of the sea is beyond the carrying capacity of the oceans. The recent U.N. Conference on Sustainable Development held in South Africa has urged that the nations of the earth attend to the global fisheries depletion issue. It needs to be reigned-in in multiple ways. There is global overcapitalization of vessels engaged in fishing. This must be attended by international agreements. There is a need to augment the present international agreements to take a census of marine life presently underway under the aegis of CORE. There is need for a major push in the area of aquaculture and mariculture so that ocean fisheries can be farmed much like we farm grains and livestock on land. Aquaculture has come a great distance in the last thirty years. Note that about half of the salmon now eaten in the United States is now pen grown.

- 4) Recommend strengthening and advancing present outstanding ocean scientific and technological capabilities. Understanding the ocean processes is the core of whatever is decided must be done for civilian and defense purposes. Ocean technology needs to be strongly supported so that we can more easily enter the oceans for multiple purposes.

Remotely controlled and autonomous underwater vehicles, buoys such as Argo, radar and earth-orbiting satellites have been responsible for spectacular progress in the past thirty years.

We are falling behind on computer and simulation facilities. If the United States is to retain its status as a world leader in oceanographic research, we need to note the example of the Japanese, who now proudly possess an Earth Simulator that exceeds U.S. capabilities. What is needed is a considerable investment in technological development so that thirty years from now, we can look back and say that the advancements in this period were also spectacular.

- 5) Consider recommending the establishment of a new institutional framework for the conduct of oceanic and related environmental activities. The Stratton Commission conceived NOAA. The present Commission can conceive a governmental institution that embraces the oceans and atmosphere but also elements of the solid earth. It should extend its jurisdiction to consider some terrestrial ecosystems in addition to marine ecosystems. The new institution would have the ability to address the hydrospheric disasters that face humanity, such as floods, droughts, and the availability of potable water for agriculture and human uses. Already there is a considerable imbalance in the availability of water for human consumption and agricultural use. An institution that can conduct assessments needed by policymakers both domestic and international, on issues of sustainability is essential to meet the problems of the 21st century.

I think this Commission might seriously consider wedding the Geological Survey and NOAA into an Ocean and Environment Administration. Serious consideration should also be given to divesting NOAA of certain conflicting regulatory functions. In this way the new institution would become the authoritative agency for observing, predicting, and assessing the environment, serving all governmental and private sector needs.

- 6) From an economic as well as an environmental point of view an essential thrust of the Commission must be to emphasize the ocean's effects on the weather and climate. The support for ocean research and development and ocean services, will be much enhanced if it can be emphasized that the ocean's effects extend well beyond coastal areas and affect all citizens, farmers and businesses. Hurricanes, droughts and floods are in real sense creatures of the oceans and such natural catastrophes require improved warnings, which implies improved understanding of the oceans and their interaction with the atmosphere. Today climate change is a major national and international issue. The climate change problem cannot be more precisely projected without knowledge of the oceans. If the Commission is seeking a cogent justification for increased funding, the climate issue alone will generate widespread support.

I have touched on many major policy issues that the Commission on Ocean's Policy is now considering. The Commission needs to be bold but sound in its recommendations. It cannot consider the oceans in isolation because they are an integral part of a global environmental

system. The proposed Ocean and Environmental Administration (NOEA) would have the ability to contribute to the grand 21st century issue of sustainable development that now plagues the world. It would be big enough and financially massive enough to become an independent agency along the lines of NASA, the National Science Foundation and the Environmental Protection Agency. NOAA has prospered over the years within the Department of Commerce but the new organization needs to speak clearly with its voice unmodulated by departmental considerations, modulated only at the level of the President of the United States.

Thank you.