

# U.S. COMMISSION ON OCEAN POLICY



## MINUTES

**Twelfth Meeting of the U.S. Commission on Ocean Policy  
U.S. Department of Agriculture  
14<sup>th</sup> St. & Independence Ave. SW  
Jefferson Memorial Auditorium  
Washington, D.C.  
October 30, 2002**

### **Commissioners in Attendance**

Honorable James D. Watkins, (Admiral, USN (Ret.)) – Chair  
Dr. Robert D. Ballard  
Mr. Ted A. Beattie  
Ms. Lillian Borrone  
Dr. James M. Coleman  
Mr. Lawrence Dickerson  
Vice Admiral Paul G. Gaffney II, USN  
Professor Marc J. Hershman  
Mr. Paul L. Kelly  
Mr. Christopher Koch  
Dr. Frank Muller-Karger  
Mr. Edward B. Rasmuson  
Dr. Andrew A. Rosenberg  
Dr. Paul A. Sandifer

### **Meeting Attendees**

A list of meeting attendees, including affiliation where provided, is included in Appendix 1.

### **Welcome**

Admiral Watkins called the meeting to order at 8:30 a.m. He informed the audience that this was the last information-gathering meeting of the Ocean Commission. As he expressed gratitude to the Department of Agriculture for housing the meeting, Admiral Watkins also noted that agriculture plays a big role in the life of the oceans - the interaction between land and water is so close that the issues cannot be separated.

**Mr. Bruce I. Knight** – Chief, Natural Resources Conservation Service, U.S. Department of Agriculture

Following Mr. Knight's presentation, Commissioners asked several follow-up questions for the written record. First, Commissioners noted the absence of the United States Department of Agriculture (USDA)

from the National Oceanographic Partnership Program. Commissioners suggested that Congress would have great receptivity to gaining the USDA as a partner in a multi-agency management regime having a terrestrial, atmospheric, and oceanic interface. Commissioners also observed that within the USDA, there is money set aside for incentive-based programs and there is also talk about ecosystem-based management techniques, but they thought that the research base of the USDA does not in fact seem to support this kind of management. For the record, Commissioners asked Mr. Knight to provide the budgetary allocation of USDA dedicated to ocean and coastal services and science, and also asked whether the USDA would support additional investments in science. Mr. Knight said that although the USDA is primarily an implementation agency with minimal focus on research, he shares the Commission's concern. He agreed to have the Agricultural Research Service (ARS) give a detailed written response to the Commission explaining the scope of ecosystem research currently in the USDA. When asked how the USDA garners scientific advice on ocean and coastal matters in order to execute its missions, Mr. Knight said that the USDA first looks to sharing the expertise and information of other federal agencies through Memorandums of Agreement and other mechanisms before it looks into investing scarce federal dollars in the research community.

Commissioners asked Mr. Knight to explain the mechanisms of USDA monetary incentives provided in the Farm Bill of 2002. Mr. Knight responded that there are three categories of programs. The first is a cost-share program, under which a farmer is given partial federal government financial assistance to build a structure or practice on land that also reaps a benefit for society. An example of this is a terrace put into place to control soil erosion, or moving a traditional feedlot out of the riparian area. The second is a three-to-five year incentive program, which encourages farmers to adopt certain conservation technologies or practices, such as tilling land in a manner that provides some ground cover for reducing soil erosion and nutrient run-off. The third type is a land idling, or easement, program. Some tracts of land are continually enrolled for idling, such as riparian buffer strips – others are designated for wetland conversion and restoration projects, and still others are set aside in farmland protection programs around large urban areas. Mr. Knight agreed to provide this answer in detail for the record. When Commissioners asked if there was enough money available to deal with nonpoint source pollution across the country (they observed that incentive based programs are often politicized and isolated in application), Mr. Knight responded that the USDA does its best to objectively allocate the money so that incentives provided are not income transfers or subsidies, but are instead providing direct conservation benefits. The allocation formula used by USDA is currently under review. Commissioners also questioned whether the Farm Bill of 2002 addressed the Gulf of Mexico hypoxic zone and efforts to ameliorate the problem, including specific practices and regulations to control nutrient production. Mr. Knight responded that the Farm Bill does not specifically address the Gulf hypoxic zone, but he believes that it does not need to do so because the USDA has priorities established for funding programs with the most conservation benefit. Mr. Knight reported that over 70% of administrative functions and about the same amount of money is allocated to the Mississippi River drainage area by USDA.

Mr. Knight was asked by Commissioners to provide an analysis for the record on the efficacy of water quality regulations based on Total Maximum Daily Load (TMDL), including an analysis of the ability to measure TMDL properly and interface with the Environmental Protection Agency (EPA) on nonpoint source pollution. Mr. Knight responded that the USDA works closely with the EPA on TMDLs and animal feeding regulations - working groups meet monthly to coordinate and compare notes, and the EPA has been receptive to fourteen major points of concern provided by the USDA on TMDLs. Commissioners also asked Mr. Knight to provide for the record: 1) any recommendations on the most effective mechanisms for interagency coordination and 2) any recommendations on bringing statutory mandates closer together to facilitate that coordination.

Mr. Knight was asked about USDA carbon sequestration efforts, and whether these efforts include removing and interrupting excess fertilizer before it reaches the waterways. Mr. Knight responded that the USDA has been asked to implement some programs before the proper data were available - global climate change and carbon sequestration efforts are prime examples in his opinion. However, he said that when professional staff at the USDA ranks a particular set of cost share proposals for funding, their instructions are to give those proposals that address multiple resource concerns the highest priority. For example, he said, if one proposal asks for a cost share to lay out a strip of grass while another wants a cost share to plant trees, the tree project will receive priority funding because it probably sequesters more carbon. This common-sense type approach will be used as a stopgap until the research comes in. Mr. Knight also said that the USDA uses carbon equivalents when evaluating projects – for example, cost share funding of a methane digester would be appropriate because it helps to control the total picture of greenhouse gases and does not limited sequestration to carbon dioxide.

Mr. Knight was asked to provide information regarding USDA investment to mitigate environmental effects of aquaculture in the coastal zone. He was also asked to provide the direction that the USDA intends to take with regards to aquaculture, particularly relating to recommendations for the current three-way agency split of aquaculture management. Finally, Mr. Knight was asked to provide any USDA recommendations for public education that the Commissioners may use in formulating their education recommendations.

**The Honorable Leon Panetta** – Chairman, Pew Oceans Commission

Following Mr. Panetta’s testimony, Commissioners echoed Mr. Panetta’s belief that it is important for both Commissions to exchange views and submit complementary recommendations to Congress and the President in their respective reports to the extent possible. Mr. Panetta had recommended the establishment of a national coordinating council, but Commissioners said that if such a recommendation were to come to fruition, the proposal should set forth a new way of doing business so as to accommodate the mission needs of all agencies involved. They were of the opinion that, without changing agency mandates and giving the recommendations teeth in some manner, there would not be a real change. Mr. Panetta responded that in order to give the national coordinating council teeth, it is necessary to establish it by law instead of by executive order. Mr. Panetta also responded that it is essential to have the support of the President – without the President’s support for ocean policy and without the Administration’s efforts to enforce the issues through Capitol Hill and the Office of Management and Budget, not much change will be effected. Commissioners asked how to capture the interest of the American public in the oceans so that the will of the people could speak through the polls - Commissioners and Mr. Panetta all agreed that addressing a change in ocean policy in a political manner that will appeal to the American people will be a challenge. Mr. Panetta replied that the quickest way to get public attention is through crisis, but he cautioned that crisis is a dangerous way to go – instead, he believes that public awareness will only be nurtured through a change in educational curriculum, a more time and labor-intensive process.

Commissioners also noted that Mr. Panetta discussed ecosystem management in his testimony and asked if he had a definition of the word “ecosystem.” According to Mr. Panetta, the Pew Commissioners had difficulty in defining an ecosystem – they had therefore agreed to recommend beginning the process of ecosystem definition by utilizing the established regional fisheries councils, allowing for refinement of the process through time. Commissioners then asked if Mr. Panetta’s Chesapeake Bay regional ecosystem council model, as set forth in the testimony, would have a narrow or broad mission. They wanted to know if the mission would be limited to ecosystem restoration or broadened to incorporate development and planning entities. Mr. Panetta responded that each region would develop a regional plan

similar to a forest management plan, focusing on the issues pertinent to an area and bringing together stakeholders to work towards certain management goals. These regional councils would include federal, state, and stakeholder representatives – the only aberration would be the Mississippi River drainage, for which an Upper Mississippi regional ecosystem council could be created because the area in question is so large. In this regional management model, structured after the Chesapeake Bay model, fishery management councils would act as stakeholders at the regional ecosystem management council table. When the question and answer session ran out of time, Commissioners asked Mr. Panetta to provide in written follow-up any ideas on a mechanism which would serve as the default or backdrop for the regional management councils such that, when the council would otherwise endlessly deliberate an issue without coming to a conclusion, forward progress is still made.

Commissioners also asked about marine protected areas (MPAs) and noted that MPAs were absent from Mr. Panetta's testimony. Mr. Panetta replied that MPAs should be one tool in the toolbox for the use of governing authorities, but that the creation of MPAs should be decided upon and developed at the local and regional council level. Commissioners also asked about Mr. Panetta's recommendation to establish the National Oceanic & Atmospheric Administration (NOAA) as an independent agency. They asked if NOAA could stand alone as it is, or if it would need to subsume some functions of the other twelve agencies. Mr. Panetta responded that in his opinion, it makes sense for NOAA to subsume some functions of other agencies, such as marine operations conducted by USDA or the broader Department of the Interior, but he recognized that some moves may not conform to political reality. He nevertheless encouraged the recommendation so that the debate can begin.

#### **Stratton Commission Panel**

- **Dr. Robert White** – Principal, The Washington Advisory Group; President Emeritus, National Academy of Engineering; First Administrator of National Oceanic and Atmospheric Administration; Former Member of the Stratton Commission
- **Dr. John Knauss** – Dean Emeritus, Graduate School of Oceanography, University of Rhode Island; Former Administration of the National Oceanic and Atmospheric Administration and Former Member of the Stratton Commission

In their testimonies, Dr. White and Dr. Knauss recommended modifications to the national ocean governance structure. One recommendation entailed melding the United States Geological Survey (USGS) and NOAA into one agency, particularly to consolidate water resource functions – there was a general sense that the atmosphere had been incorporated into ocean management by the Stratton Commission and that the Ocean Commission should now incorporate land issues to get a total picture for ocean management. Commissioners asked whether this recommendation for USGS would focus solely on marine survey functions or involve all types of surveys, and Dr. White responded that an Earth Systems Agency would represent a total incorporation of all survey functions. Dr. White also acknowledged, however, that reorganization of agencies is a matter of judgment, because in his opinion it is not possible to assemble all ocean related activities of the federal government into a single agency. There was also a recommendation to separate the regulatory and scientific functions of NOAA, particularly with respect to the fisheries and regulatory functions carried out by the National Marine Fisheries Service (NMFS). When Commissioners asked where to place the fisheries regulatory function if those duties of NMFS were taken away, Dr. White replied that the EPA was perhaps a better place for regulation. Commissioners were concerned that this proposed separation of research and policy would move the nation away from science-based management and create a technical class of scientists. They said that the challenge is to provide for research opportunities without isolating science from policy. Dr. White agreed that the separation had to be done carefully.

Commissioners also noted that there is a large array of small programs that often conflict in the coastal zone and asked if the Stratton Commission had broadly or narrowly conceived of coastal zone management – they asked if the concept was to have included not only the current focus on shoreline development, but also water quality, protection of habitat, and fisheries. Dr. Knauss responded that the Stratton Commission’s concept of the coastal zone was broad, giving the relevant agencies the authority to go as far inland or seaward as necessary to take care of closely related issues. Dr. White re-emphasized that coordination of state coastal zone management and regional fishery management councils is essential. Commissioners also asked for recommendations on sustaining the funding necessary to support the development of a comprehensive Integrated Sustained Ocean Observing System (ISOOS) as encouraged by Dr. White. Dr. White responded that the responsible agencies should ask for maintenance funds in their annual budget requests. Dr. Knauss added that Congress will supply the money once forecasts improve as a result of ISOOS, because it will be obvious that the amount of money spent will be small compared to the economic benefit gained. Commissioners noted that only those with internal scientific knowledge see the advantage of an ISOOS – Dr. Knauss responded that it is one of NOAA’s jobs to find such users and tell them to let Congress know what they want. Commissioners mentioned that ownership of ISOOS databases is key to deliberations. In their experience, data have to be integrated with standard protocol and with intellectual property rights upfront, and fused in such a way as to be of use to the national and international community.

**Major General Robert Griffin, USA – Director of Civil Works, U.S. Army Corps of Engineers**

Following Major General (MGEN) Griffin’s testimony, Commissioners requested the new Draft Strategic Plan of the United States Army Corps of Engineers (USACE). Commissioners asked if the plan takes into account legitimate criticisms directed at USACE. MGEN Griffin acknowledged that the USACE faces criticism because the agency has a reputation of promoting single purpose projects and excluding other interests and stakeholders in planning and implementation of those projects – he noted that economic modeling used by USACE was also experiencing some problems. He stated that a more watershed approach is needed, and that the USACE needs to “get back on board” with intensive planning improvements training of staff. MGEN Griffin reported that eight planners from the USACE Division have been selected to get Masters’ Degrees in water resources management. He also said that the USACE can no longer push projects through the system based on the strength of a constituency – when controversy arises, the USACE must instead work with stakeholders, including traditional customers and non-governmental organizations. The Strategic Plan proposes the development of a broad-based federal agency consortium for support and coordination, using the Upper Mississippi Navigation study as a model. Commissioners asked if this consortium would be a coordinated council or would consist of separate authorities. MGEN Griffin responded that coordination would be ideal, but that cooperation is a good start – sharing data in the proper format and having Congress provide a clearinghouse on how much authority different agencies should have would be helpful. Commissioners observed that discontinuity between the USACE regions and USACE headquarters is a problem; when progress toward an agreement is made at a local level, headquarters is often unwilling to support the agreement and also unwilling to include any negotiated mitigation monies in the annual budget request for USACE. MGEN Griffin stated that the USACE operates more regionally than in the past, but that District promises should still be consistent with headquarters policy. He said that the USACE is starting a process of vertical integration, putting people from the headquarters level to work at the local level during the formulation stage of projects before promises are made and broken, and before ill-will builds up. When asked how the federal agency consortium at the national level, as proposed in the Strategic Plan, would explicitly include others, MGEN Griffin emphasized the need for horizontal coordination at the local level – when issues reach a

point where they cannot be resolved at the local level, those issues can be referred to officials at the national level who may have a broader point of view.

Commissioners also asked if the USACE needs a fresh initiative to provide environmental restoration funding, noting the lack of mitigation money attached to projects. MGEN Griffin and Mr. Barry Holliday responded that the USACE has all the authority that it needs to implement environmental restoration – the challenge is coordination. MGEN said that part of this coordinated effort must include a cultural change so that USACE is not simply responding to “brushfires” but is instead looking further ahead, weighing local interests and looking for precautionary funds. According to MGEN Griffin, this change is occurring slowly with the regional sediment management concept – dredge material is starting to be used as soil, and treatment of contaminated dredge spoils is beginning with the electrical current process in the Great Lakes area. Commissioners asked if the USACE was the proper agency to exercise permitting authority for construction in the coastal zone and waterways. MGEN Griffin stated that there is a need for a “one-stop shop” in permitting where three interests – engineering, the environment, and economics – are balanced. Although the USACE “does not relish the role,” he believes that, based on the charge of balancing the three interests, permitting jurisdiction should remain with the USACE. Lastly, Commissioners asked about the public education efforts of USACE. MGEN Griffin responded that they have an outreach program where personnel tutor students at the grammar school level to get them to realize what engineering is – they also have a young engineers’ club for ages K-12 and a new educational website.

For the record, Commissioners asked MGEN Griffin to provide: 1) the size of the annual budget for dredge surveys and hydrographic/safety of navigation surveys and the information on who does those surveys (i.e. contractors, government employees, or government vessels), and 2) a description of the systems or collection of efforts used by USACE to monitor water in a USACE-maintained waterway, including flow, water level, water quality, and sediment load constituents, and a description of how those data could be brought into a national system for measuring water quality (this includes a description of how data are archived and distributed). Mr. Barry Holliday, responding for MGEN Griffin, said that the USACE contracts with NOAA and USGS to collect some monitoring information, but that there is not a consistent application of those systems. He said that the plethora of monitoring activities conducted or sponsored by USACE would be provided in the written response.

### **International Panel**

- **Mr. John Turner** – Assistant Secretary for Oceans and International Environmental and Scientific Affairs, U.S. Department of State
- **Dr. Patricio A. Bernal** – Executive Secretary, International Oceanographic Commission and Assistant Director-General, UNESCO, France
- **Dr. Ian McPhail** – Deputy Director-General, Environmental Protection Agency, Queensland Government, Australia

Following the testimony, Commissioners asked Mr. Turner for a summary of where the State Department is headed on science and technology in international affairs, and how national ocean policy might better connect with that international realm. Mr. Turner responded that Secretary of State Powell and the Bush Administration endorses scientific underpinning of international efforts including climate, oceans, and the forests. To this end, the various Bureaus of the State Department have brought in fellows from the American Association for the Advancement of Science program – in fact, the Bureau of Oceans and International Environmental and Scientific Affairs (OES) brings scientists from NOAA, USGS, and the National Science Foundation (NSF) to the table when working on international agreements. OES has

over thirty bilateral agreements with other nations to try to take American research and technology to other countries. Mr. Turner re-emphasized that science should be the focus for international affairs and that public and private efforts should be pulled together to strengthen that scientific base. Commissioners asked if it would help the State Department international efforts were they to recommend the establishment of a coordinated national body for oceans and atmosphere. Mr. Turner replied that coordinating bodies for ocean policy already exist and work relatively well, but he agreed that coordination and communication continue to be a challenge – he is not sure if improvements should focus on one coordinating body or should strengthen the groups already in existence. Commissioners noted that there is a need to implement policies agreed upon in the international arena, to provide more than mere words, and to get beyond advocacy, there must be a focus on investment in science and technology. Mr. Turner replied that he appreciated the sense of urgency and focus of the Commission, but responded that it is hard to convince Congress that an investment in science is needed, and that it is also a challenge to get the scientific community to participate in international affairs and natural resource initiatives in a relevant manner. Commissioners expressed the opinion that science, particularly ocean science, is an enabler of diplomacy particularly because of its non-provocative nature, allowing nations to come together that would not normally do so. Mr. Turner agreed that science is an important door-opener in relation building with other countries. At the World Summit on Sustainable Development in Johannesburg, he said, it became clear that the U.S. is building a relationship with the developing world, and the developing world wants access to science and technology. Mr. Turner stated that this should be an awakening to all that American science and technology can do a great deal to pave the way for a more stable and secure future for the globe.

Commissioners then asked Dr. Bernal if the Ocean Commission could do something that would help the International Oceanographic Commission (IOC) foster international connectivity and feel that the U.S. had made a commitment to follow through on issues as a reliable partner, particularly in the Global Ocean Observing System (GOOS) effort. Dr. Bernal gave some background on the issue - the IOC and its international partners have already set the specifications and requirements for GOOS and codified the work. He said that he would send this blueprint report to the Commission. Although the U.S. was a partner in building those requirements, according to Dr. Bernal, once the issue was brought inside the U.S., the problems with U.S. involvement began. When asked what went wrong in the U.S., Dr. Bernal said that the issue was new and that strong coordination had been hard for the U.S. to achieve. He said that it would “go a long way” if the U.S. was to recognize what it was doing in the international arena and provide a consistent national response. He suggested that there should be a mechanism established to set boundaries on the competitiveness between different agencies, perhaps including a centralized figure to foster a sense of obligation. The new challenge for GOOS and its players, according to Dr. Bernal, is how to create a universal platform for observing the ocean such that products can be tailored to the end user and shared with the public; negotiations to guarantee access to information will be difficult but necessary. Commissioners asked for Dr. Bernal’s comments for the record regarding GOOS, particularly providing concepts or models for the international arena on governance structure and data standards, formatting, and archiving.

Commissioners also stated that they had received several testimonies encouraging the Commission to recommend U.S. adoption of the United Nations Educational, Scientific and Cultural Organization’s (UNESCO) Convention on the Protection of the Underwater Cultural Heritage and to recommend implementation of a supportive national policy, getting rid of conflicting national admiralty and salvage laws. The Commissioners stated that they would like a reaction from the State Department on those recommendations, and asked the State Department to ensure that ocean exploration and discovery issues not be inhibited along with the valid efforts to stop desecration and looting. Dr. Bernal emphasized that it was important to facilitate ocean exploration, but said that a balance needs to be struck. He said that the

U.S. National Research Council's Ocean Studies Board is looking at the legal language of the Convention and that the U.S. is actively involved in discussions on these issues with UNESCO. Mr. Turner acknowledged concerns about the Convention and told Commissioners that the U.S. takes the signing of treaties very seriously, particularly with regard to implementation once ratified, while some countries ratify but lack the capacity or intent to implement. Mr. Turner agreed to provide additional information to the Commission regarding the stage of the UNESCO Convention within the State Department review process. He also agreed to provide the Commission with the status of Annex VI of the Marine Pollution Convention (MARPOL).

Commissioners also asked Dr. McPhail about ocean management in Australia. Dr. McPhail reported that most of the politics, pressures, and impacts of population, 85% of which lives on the coast, occurs in the coastal zone. The bigger cities such as Sydney, Melbourne, and Brisbane all have problems with sewage and storm water treatment and nonpoint source pollution. Dr. McPhail emphasized that the Commission should absolutely engage the states in any regional or otherwise coordinated management effort – institutions created should be formed to meet specific objectives and implement them, not merely created for categorical neatness and then assigned work. When Commissioners asked whether states were involved in the management of nonliving marine resources in Australia, Dr. McPhail replied that the states in Australia administer the offshore oil and gas program because it made sense to have a single jurisdiction when deciding how to connect pipelines to the shore. Fisheries are also managed by state governments, and there are shared transboundary management agreements.

#### **Satellite and Data Management Panel**

- **Mr. Gregory Withee** – Assistant Administrator for National Environmental Satellite, Data and Information Service, NOAA, U.S. Department of Commerce
- **Dr. Ghassem Asrar** – Associate Administrator for Earth Science, National Aeronautics and Space Administration
- **Dr. Michael Freilich** – Professor, College of Oceanic & Atmospheric Sciences, Oregon State University
- **Dr. Richard Spinrad** – Technical Director, Office of the Oceanographer of the Navy

Following the presentations of the Satellite and Data Management panelists, Commissioners expressed frustration about past roadblocks to data management and the establishment of an integrated sustained ocean observing system (ISOOS). Commissioners previously saw problems with data formatting and access, database ownership, and intellectual property rights, and observed that there has not been the sense of urgency needed to bring a program like the National Polar-orbiting Operational Environmental Satellite System (NPOESS), which currently has the National Aeronautics and Space Administration (NASA), the Department of Defense, and NOAA working together in a cooperative venture, into a program integrated across all twelve agencies. They asked if the oceanography community is ready to develop an ISOOS effort, including cooperation with international entities such as GOOS. Dr. Spinrad replied that the oceanographic community is indeed ready to develop an ISOOS. With regards to the data formatting and access issue, Dr. Spinrad observed that the IOC has similar issues in regards to data access, and emphasized that there are good models to follow, including the Arlie House report on the design of an ocean observing system, which he believes made great strides in defining parameters for multiagency needs. He said that products should be made available for operational use only after being defined to the satisfaction of all users.

Commissioners asked if the Navy could take data at the Naval Oceanographic Office in Stennis Space Center and convert it into a format available to everyone without running into classification issues. Dr.

Spinrad replied that there are no classification issues with respect to data format because there are no differences between military and civil operational oceanography formats – what works for the military should work for civil programs. Mr. Withee added that NOAA and Navy can work together to get the information to the public and that, while there are state and local proprietary issues with some coastal data sets and fisheries data distribution is restricted by law, most physical oceanography data sets are now available. Commissioners asked the panelists what they could do to support the ISOOS effort. Dr. Spinrad answered that he sees the Commission as a high-level requirements generation board. After 9/11, he said, our nation was essentially faced with a requirement for a pilot project to provide atmospheric dispersion products. This need was imposed on DoD and NOAA by the Office of Homeland Security and a capability was developed in response to that requirement - the Commission can formulate that kind of necessary high-level requirement. Commissioners expressed concern about the “sustainability” portion of the ISOOS - when asked if Navy was willing to allow other agencies to leverage the existing talent, databases, and infrastructures already resident at the Naval Oceanographic Office for a civil program, Dr. Spinrad replied that the Navy is willing to serve as a model for a similar civil system. Commissioners also expressed interest in the Navy’s data fusion capabilities, and asked about the possibility of fusing physical and socioeconomic data together to aid in coastal zone management, using an example of products that might overlap coastal erosion areas with land values. Dr. Spinrad acknowledged that socioeconomic data can in fact be fused into products - wargaming and development of scenarios for tactical mission planning in the DoD involves overlay of socioeconomic factors with environmental parameters. Commissioners then asked if there were models available to look at for civilian applications of this capability, and Dr. Spinrad replied that oceanographic forecasting abilities have been folded into demonstration models to transfer to civilian applications. Mr. Withee added that the National Ocean Service at NOAA has a development center in Charleston, South Carolina (the Coastal Services Center) at which they are looking at socioeconomic factors to incorporate that information into a coastal risk atlas. Commissioners responded that the use of data fusion products for coastal zone management is something that the Commission should look into.

Commissioners expressed concern about the strategy used for NPOESS, because their perception was that the NPOESS requirements strategy had a more operational focus than a research focus and may not therefore be ready for the upcoming increase in the data flow. Dr. Asrar responded that NASA is working with its sister agencies, DoD and NOAA – while the ability to generate products and make them available for operational use to customers is necessary, NASA can fulfill the role of the science team that assesses algorithms and products and works with providers to assess changes needed. NOAA and DoD will continue to plan for data and information management, making sure that stewardship of the record is maintained, according to Dr. Asrar. Mr. Withee encouraged Commissioners to “keep after them” on these important issues, and emphasized that NPOESS is a multiple mission organization based on broad-based requirements – the entire program has just begun to work in an integrated requirements fashion, but unfortunately still has to be sold on a year-to-year basis. NOAA is now selling the end-to-end strategy of integrating science from observation to archiving.

Commissioners asked Dr. Asrar why NASA retains an ocean remote sensing research element when it no longer has communications programs. Dr. Asrar responded that NASA supplies a unique research and development capability that is complementary and not redundant to sister agencies by utilizing and building upon what is already in space for space-based observations. Dr. Asrar had also described, at one point in the question/answer period, a three-layered system that had experienced some success integrating the diversity of users in the research community, including the formation of data standards, formats, and protocols. The first layer was the common layer that everyone agreed to, the second included the subdisciplines that needed more specific levels of the products, and the third layer allowed researchers the freedom to experiment. Dr. Asrar expressed concern about the efficacy of stringent requirements systems

– he believes that flexibility and diversity has to be incorporated into the system, allowing freedom to the researcher. Mr. Withee added that all parameters used by NPOESS today on which NOAA relies, including sea surface temperature, ocean color, ocean surface winds, and sea level, were based on NASA research – NOAA simply does not have the satellite research capability that NASA does. Dr. Freilich said that NASA made an early strategic decision that made it unique, involving the research community in requirements, design, calibration, and exploration of ocean measurements – he said that NASA should not stop its research involvement in satellites until someone else steps up to the table. Dr. Freilich used the Special Sensor Microwave Imager (SSM/I) on the Defense Meteorological Satellite Program satellites as an example. There was not a huge amount of input on the decision to fly the SSM/I from the research community, but once NASA flew it and funded the Pathfinder investigations, which involved calibration and analysis of those data, the investment paid many times over – it was not simply channeling data into operations. Commissioners then noted that it was clear that satellite research is important and deserves more funding, but that there has to be a strategy to generate interest, including building public support through informal and formal public education and the ability to develop products useful for the general public from high bandwidth information on ocean exploration – they pointed out that NASA would never have been the program that it is today if it did not transfer images of astronauts to the general public. Commissioners indicated that high bandwidth capability needs to be developed for satellites. Dr. Asrar responded that NASA is indeed building high bandwidth capabilities into an experimental, flexible and evolving system whose products will be delivered through diverse platforms, such as ships and desktop PC's, and is useful for even the novice user. When asked about similar plans for NOAA's future, Mr. Withee responded that NOAA's present capability has extremely low bandwidth. He stated that future plans call for some increase – for example doubling the bandwidth in the polar program. It was noted that this is not a significant increase, and the Commission asked if Mr. Withee could look into making more progress on this issue. Mr. Withee responded that there was a study ongoing to see what it would take to address this. Plans for the future are not being developed, unless a partnering effort is developed between commercial and agency interests, because NOAA cannot compete with commercial interests. He emphasized, however, that operational capability of these technologies should be on the agenda.

There was also some general discussion about incorporation of *in situ* data into an ISOOS along with remotely sensed data. Commissioners noted that *in situ* data are complex and have difficult accessibility issues, but are very important to advance understanding of the oceans – so while data streams from satellites are easier and cheaper to work with than fisheries survey data, for instance, those *in situ* biological data provide an insight for understanding the complex issues surrounding the ocean ecosystem. They wanted to know if there was an interest or commitment to meld *in situ* data into an ISOOS within the oceanographic community. Mr. Withee responded that, if the operational oceanographic users were demanding ecosystem data fusion products on a regular basis, the development of the ISOOS concept would evolve faster. Mr. Withee said that NOAA is committed to evolving an ocean services capability. In fact, he said that NOAA is developing a prototype right now in which a range of parameters, including waves, winds, temperature, and harmful algal blooms, are being incorporated into a model. Dr. Spinrad added that at present, we are unable to assess the product availability for sparse and complicated data sets such as those collected *in situ*. He suggested that there has not been enough reaching out to the operational research community in an effort to determine appropriate capability to incorporate such data sets.

## **Public Comment**

### **Mr. Mark Wolf-Armstrong** – President of Restore America’s Estuaries.

Mr. Armstrong offered the Estuary Restoration Act as a model for the Ocean Commission’s use – the Act sets up a council, and requires a national strategy to restore estuaries. Although regional councils were deleted during the legislative process, Mr. Armstrong recommended that the Ocean Commission include regional councils in their picture of a model. Mr. Armstrong also offered Restore America’s Estuaries strategy and principles documents to the Commission – the strategy document was the result of information gathered over a period of two years that analyzed the ability to set priorities and implement restoration planning on a regional basis, and the principles document illustrated a collaborative restoration process. Mr. Armstrong also notified the commission that a list of federal funding programs, some authorized and some unauthorized, and having a role in habitat restoration, is maintained at Restore American’s Estuaries website – <http://www.estuaries.org>.

### **Mr. Gilbert C. Radonski** – Recreational Fishing Alliance.

Mr. Radonski testified that the Recreational Fishing Alliance is a group of recreational fishing and fishing businesses – although a written statement was previously submitted to the Ocean Commission by the related Save a Fish Foundation, he wanted to highlight some of the major points. Mr. Radonski stated that the Recreational Fishing Alliance wants provisions for sustainable commercial infrastructure and economic growth in any reframing of the Magnuson-Stevens Fishery Conservation and Management Act. He also mentioned several points from various testimonies with which the Recreational Fishing Alliance is in agreement. First, he agreed with Dr. Hogarth of NMFS that world class fisheries science is available in NMFS and shares frustration with the rise of litigation. Mr. Radonski also agreed with Dr. Steve Murawski of NMFS, who said that improved stock assessments are too much to ask of a scientific community that has limited federal funding and Dr. Bill Fox, who pointed out the difference between good science and data collection. Mr. Radonski also believes that marine protected areas are valuable tools for use in fisheries management and are important to recreational fishing – the key thing is to use due process in the establishment of MPAs such that the necessary stakeholders and members of the public have input. He also stated that the separation of science from allocation processes within NMFS was a good idea, and that interactive outreach is critical because it explains the pathway and use of scientific findings to the end users, who may otherwise have a difficult time accepting the science.

### **Mr. Richard Schwabacher** – Washington Representative for The Cousteau Society

Mr. Schwabacher congratulated the Commission on its Law of the Sea Resolution and its support for biodiversity and climate change conventions and noted that national and international interests are tied together. Because Congress is the mechanism driving national ocean policy, Mr. Schwabacher believes that if there is to be a revamping of national ocean policy, those interests must be integrated within a legislative framework, including strong leadership and a call to Congress to provide a forum for debate and resolution of the conflicts inherent in ocean policy.

### **Mr. Mary Munson** – Director of Marine Programs for National Parks Conservation Association

Ms. Munson expressed her hope that the Ocean Commission will stress the urgency of the overexploitation happening in the oceans in their recommendations. She also hopes that the Commissioners will support MPAs because of their demonstrated success. Ms. Munson also urged the Ocean Commission to consider the role that the National Parks play in the oceans, because there are over fifty parks with ocean components, and the Organic Act for those parks provides one of the strongest protection mandates available. She said that national parks are microcosms of problems experienced all over, and wants them to be part of a national strategy – federal agency collaboration is a key component of any national strategy. Ms. Munson also recommended that the Ocean Commission ask the U.S. Army

Corp of Engineers and Major General Griffin for details on the Task Force and advisory commission working to restore the Everglades, which is a \$7.8 billion dollar project to restore two major estuaries – perhaps this is a model for federal and state agency, local government, and stakeholder cooperation.

**Dr. Reginald Beach** – Consortium for Oceanographic Research and Education (speaking in personal capacity, not as an employee of CORE)

Dr. Beach addressed international stewardship and capacity building. He worked as a liaison scientist for atmosphere and space in London, and visited several Global Ocean Observing System initiatives in Southeast Asia and Africa. He believes that the Intergovernmental Oceanographic Commission has a charter that can facilitate U.S. international engagement in international cooperation – the Global Environmental Facility focuses on biodiversity and climate change within international waters. Dr. Beach believes that the United States owes it to the world to reach out its capacity for problem solving to the greater international community. He noted in particular that infrastructure is not the only thing needed – he encouraged the Ocean Commission to promote U.S. outreach to international groups at the master science and technical levels, because that educational training is for life. Training and expertise investments have a greater longevity than hardware investment – once hardware breaks, the capacity is lost, but training is for life.

### **Commission Business**

The minutes for the August 21-22, 2002 Alaska Regional Meeting were approved. Admiral Watkins also announced that a format for the site visit write-ups had been established by the Ocean Commission staff, and that the write-ups will soon be posted on the website. He emphasized that the site visits have contributed greatly to the knowledge base of the Commissioners as they proceed toward deliberation to formulate recommendations for national ocean policy.

The meeting was adjourned at approximately 6:00 p.m.

## Appendix 1

### October 30, 2002 Ocean Commission Meeting Attendees

<u>Name</u>	<u>Affiliation</u>
James E. Andrews	Office of Naval Research
Larry Atkinson	Ocean.US
Constance C. Arvis	U.S. Department of State
Paul H. Bea, Jr.	The Port Authority of NY & NJ
Reg Beach	CORE
Norm Berg	Soil & Water Conservation Society
Stefano Belfiore	University of Delaware/NOAA
Jeff Benoit	J.R. Benoit Consulting
Carli Bertrand	NOAA
Glenn Boledovich	NOAA
Cynthia Brady	U.S. Department of State OES/EGC
Kassandra Brown	U.S. Navy
Bonnie Bruce	House Committee on Resources
Tom Chase	AAPA
Gonzalo Cid	NOAA/NOS International Programs
Lawrence Clark	USDA-NRCS
Rosalind E. Cohen	NOAA/NODC
Muriel Cole	NOAA
Marie Colton	NOAA
Gareth Cook	The Boston Globe
Catherine Cooney	Environmental Science & Technology
Lee Dantzler	NOAA
Cynthia Decker	Office of the Oceanographer of the Navy
Betsy Diaz	Island Press/Compass
Roberta Elias	NOAA
Andy Fedynsky	IFE
Peter B. Fippinger	Senate Subcommittee on Oceans, Atmosphere and Fisheries
Steve Ganey	Pew Oceans Commission
Cynthia Garman-Squier	U.S. Army-Civil Works
Suzanne Giles	Restore America's Estuaries
Susan Gregersen	U.S. Department of Energy
Clay Gregory	DOI-United States Bureau of Indian Affairs
Howard Hankin	USDA-NRCS
Maggie Hayes	U.S. Department of State
David Helvarg	Journalist
Natalie Henry	Greenwire
William Hohenstein	USDA
Kathy Hurld	EPA
John Justus	LOC/CRS/RSI
Tim Keeney	NOAA

James J. Kendall  
Fred Kenney  
Scott Kenney  
Angela Killian  
Francois Krodel

Gerhard Kuska  
Keith LaFoe  
Rebecca Lankey  
Jerry Lau  
Tom Laughlin  
Jen Lechuga  
Ralph Lopez  
Ron Marlow  
Gary Marqheim  
Bernard McShane  
Beth Millemann  
Ted Morton  
Raymond P. Motha  
Mary Munson  
Harriet Nash  
Linda E. Parker  
Roger Payne  
Gilbert C. Radonski  
Davida Remer  
Marc Safley  
David L. Schertz  
Amy Schick  
Carl Schmid  
Rick Schwabacher  
Larry Silverman  
Odin A. Smith  
Peter Smith  
Margaret Spring  
John Stierna  
Anne Tenney  
Liz Tirpak  
Vaughan C. Turekian  
Mark Wolf-Armstrong  
Eli Weissman  
Mary Beth West  
Dave Whaley  
Elizabeth White  
Douglas E. Williams  
Bee Wuethrich  
James A. Yoder

U.S. Department of Interior - MMS  
U.S. Department of State  
U.S. Department of Defense  
Perkins Cioe, LLP  
International Association of Drilling  
Contractors  
Senator Wyden  
Washington Nichibei Consultants  
Office of Science and Technology Policy  
NOAA/NOS  
NOAA  
NOAA  
NOAA/NMFS  
USDA-NRCS  
USDA-NRCS  
U.S. Department of HUD  
Clean Ocean Action  
Oceana  
USDA  
National Parks Conservation Association  
Friends of the Earth  
USDA  
Ocean Alliance  
Recreational Fishing Alliance  
NOAA  
National Resources Conservation Service  
USDA-NRCS  
Pew Oceans Commission  
TMS Inc. (for DoE)  
The Cousteau Society  
No Affiliation Given  
Perkins Coie, LLP  
USDA-NRCS  
Senate Commerce Committee  
USDA-NRCS  
NSF  
DOS  
U.S. Department of State  
Restore America's Estuaries  
The Ocean Conservancy  
U.S. Department of State  
House Committee on Resources  
NOAA/OMAO  
USDA-NRCS  
POC  
National Science Foundation