

U.S. COMMISSION ON OCEAN POLICY



MINUTES

**Eighth Meeting of the U.S. Commission on Ocean Policy
Port of Seattle, Seattle, Washington
June 13 and 14, 2002**

Commissioners in Attendance

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

Commissioners Absent

Ms. Ann D'Amato
Vice Admiral Paul G. Gaffney II, USN

THURSDAY, JUNE 13, 2002

Welcome

The Chairman, Admiral James D. Watkins, USN, (Ret.), called the eighth meeting of the Commission to order at 12:30 p.m. He noted that the Commission has heard from over 175 witnesses and discussed the importance of local ownership of ocean and coastal issues, the need ensure the health of marine ecosystems and the need to develop workable solutions to ocean related problems. Admiral Watkins also emphasized the importance of witnesses identifying the obstacles that are hampering their efforts and to provide specific recommendations on how the Commission can address these issues. The Chair then

introduced Mr. Bob Edwards, Chair, Seattle Port Commission, who provided welcoming remarks

Mr. Edwards acknowledged the challenges facing the Ocean Commission and stated that the Pacific Northwest's heritage was closely tied to the oceans and rivers. He provided some examples of regional stewardship effort including the clean up of the Terminal 5 Superfund site and the ongoing efforts to restore Chinook salmon. He also addressed the importance of cooperation and partnerships among all stakeholders.

Upon the completion of Mr. Edwards' remarks, the Chair made a general announcement regarding the process for providing public comments to the Commission either in person at the meeting or in writing by mail, fax or via the Ocean Commission website (www.oceancommission.gov).

The Chair then introduced the next two speakers, Mr. Ron Shultz and Mr. Kurt Smitch, who represented Governor Locke of Washington. Ms. Louise Solliday, who was originally scheduled to testify on behalf of Governor Kitzhaber of Oregon, was unable to attend due to a special session of the legislature.

State Government Panel

Mr. Ron Schulz—Executive Policy Advisor for Natural Resources, Office of the Governor of Washington

Curt Smitch—Special Assistant to the Governor for Natural Resources, Office of the Governor of Washington

Following their presentations, the panelist commented on a number of issues raised by the Commission. The Chair expressed thanks to the witnesses for providing specific recommendations. He noted that too many witnesses highlight their programs instead of providing critical recommendations. He stated that the Commission will be in a position to make recommendations on over 150 federal laws that impact marine waters and that the Commission must understand what the major obstacles are on the regional and local level.

The former had of the Governor's salmon recovery office, Mr. Smitch was asked to draw on his experience and provide some recommendations. Mr. Smitch replied that coordination at the highest level was a key element in developing a successful recovery strategy. At the state level, he chaired the Joint Natural Resource Committee, which consisted of 12 agencies with direct natural resource management responsibilities. He indicated that there needs to be a similar effort at the federal level, organized and coordinated by the White House, to help sort out conflicting policies between agencies on issues involving the health of marine resource and the marine ecosystem. He recommended that the Commission support changes that will help reduce the number of existing statutory conflicts, such as those that exist between the Clean Water Act (CWA) and the Endangered Species Act (ESA).

The Commission acknowledged Mr. Smitch's extensive knowledge on these issues and request that he submit specific examples of the types of conflicts that need to be addressed.

The Commission then asked Mr. Smitch to clarify whether a regional cooperative effort to address invasive species issues would include Oregon, California and Canada, and whether such a regional cooperative approach has already been agreed to by these parties. Mr. Smitch replied that no such cooperative agreement was in place. He stated that the Washington legislature had passed a bill requiring ballast water to be treated on shore; however, the technology did not exist to support this mandate. The deadline associated with this mandate was subsequently extended and a task force was created to examine this issue in the Columbia River with the desire of establishing some uniform policies. He indicated that there has been informal communication with California regarding their policies, again to examine the opportunity for establishing a coast wide policy. The local concern is that funding for such a program would likely include fees imposed on shippers which could drive ships to California and/or Canadian ports if they do not participate in such a plan.

Members of the Commission expressed concern about the matter of federal preemption and the need for national and regional consistency in addressing ballast water policies, and then asked about research and technologies associated with onshore and offshore processing of ballast water. Mr. Smitch acknowledged that there is a requirement to report ballast water exchange to the U.S. Coast Guard (USCG), but that inspections and enforcement is rare due to limited resources. He also stated that additional USCG involvement in developing appropriate technologies is necessary. It was noted that there is a continuing debate within the shipping industry over the options of onboard verse offshore processing of ballast water and that additional research is necessary.

The Commission then asked whether the Coastal Zone Management Act (CZMA) needed to be amended to clarify expectations on states and local communities to help ensure consistent national policies along the coasts. Mr. Schultz replied that this approach would be helpful in addressing the issue of local verses state verses Federal control. He went on to state that the Shoreline Management Act in Washington declares broader public interest in coastal resources, and added that this aspect should be duplicated in the CZMA by clearly identifying issues and policies that are of national public interest. It was noted that communities with good planning enjoy long-term economic health.

The Commission then requested clarification regarding Mr. Schultz's recommendation to amend the Magnuson Stevens Fishery Conservation and Management Act (MSFCMA) to provide for improved research and monitoring. They requested clarification on whether his recommendation was directed at fishing activities specifically, or at a broader suite of activities that include basic biological and ecological research. Mr. Schultz replied that his comment was directed at both activities. He indicated that from his experience as an advisor to the Pacific State Marine Fisheries Commission, research and monitoring are a good way to channel regional funding. This approach helps fishermen anticipate shifts in fisheries population status and allows them to take the necessary conservation measures as well as make appropriate economic decisions in a timely manner. This line of

questioning concluded with Mr. Schultz indicating that a consistent coast-wide system for fisheries research and management is critical.

The Commission then asked what types of programs, if any, the state is supporting to educate its citizens on coastal and ocean issues. Mr. Smitch stated that the Puget Sound Action Team helps coordinate the activities of several state agencies, including education related activities. He credited the citizens of Washington State with being very attuned to Puget Sound and ocean environmental issues. He concluded by indicating that the state provides grants for public outreach and education, much of which is focused on pollution prevention, and that this effort is being pursued at the state, county and local level.

The panelists were then asked whether it was feasible to address the development activities occurring outside of the coastal zone which are impacting the health of marine waters. Mr. Smitch replied that it was valid to try and address these issues under the mantle of the CZMA. Washington currently receives \$2 to \$3 million per year in CZMA funds to address coastal management issues. He noted that these funds also should be available to address activities beyond the immediate shoreline that are impacting marine waters. He concluded by stating that thoughtful planning is the key to smart development and that the CZMA is a tool to develop national standards to assist the states in their efforts.

The Commission then stated that improved coordination requires better linkages among the local governments and Mr. Schultz replied that Washington pursues coordination among localities through the Shoreline Management Act. However, the issue of state versus local control is currently a matter of legal debate in Washington. Mr. Smitch then stated that a clear set of standards and expectations (ground rules) from the Federal government would improve the current process. The key is to provide the states with clear goals and objectives, and then let the states work out the best way to fulfill them. He went on to suggest that coastal development is a problem and that the federal government can provide some direction on how to balance competing economic and environmental priorities. However, he cautioned that too much federal oversight is not useful. He concluded by stating that while it is politically difficult to establish these ground rules, it is critical, especially if there is going to be a system with clearly defined authorities and responsibilities.

The Commission then inquired whether there were CWA waivers for secondary treatment of sewage in the Puget Sound region. Mr. Schultz replied that the principle sewage related problem was associated with the cities of Victoria and Vancouver, British Columbia, who regularly dump raw sewage into marine waters. The Commission then asked why the Federal government should be involved in and funding coastal zone management activities when the land-based activities in this zone are controlled by the state. Mr. Schultz replied that it has been established that there are significant national interests associated with the health of the coastal ecosystem and consequently the Federal government has established requirements on the states to address coastal activities impacting these ecosystems. He went on to state that was unrealistic and unfair to place this burden on the states without providing resources and guidance, particularly to rural communities with limited tax bases. Asked whether the need to make recommendations

regarding coastal zone management falls in the broader scheme of issues the Commission is expected to address, Mr. Smitch replied that ocean and coastal management related issues are a high priority that are unlikely to be acted upon if they are not addressed in the Commission's recommendations. When addressing land use management practices, Mr. Smitch requested assistance be in the form of incentives -- not regulations -- in the effort to restrain activities impacting marine waters. He concluded by stating that much more information about the oceans is need.

Questioning then shifted to proposed sources of funding to provide the incentives being discussed, and whether this was a reference to Conservation and Reinvestment Act (CARA) funding, or another source. Mr. Smitch replied that he was referring to a CARA-like bill recently introduced by Senator Hollings. He also referenced the U.S. Department of Agriculture's Conservation Reserve Enhancement Program (CREP), as another voluntary program where landowners receive financial support to address national and state-specific water quality, erosion and wildlife habitat issues. Mr. Smitch indicated that he would provide additional details in writing to the Commission.

The Commission then requested clarification on the panelist's request regarding the recent Supreme Court *Intertanko* ruling, with the understanding that Washington is requesting the right to establish its own vessel inspection and safety standards. Mr. Smitch replied that the court case supported federal preemption of state standards in order to maintain consistent standards around the nation. He clarified that Washington is requesting that the Commission recommend that Congress amend the Oil Pollution Act to allow states, with credible and proven programs, to develop local or regional criteria that meets or exceeds the federal standards. Asked whether this would lead to a patchwork of requirements among the different states, Mr. Smitch conceded that while there would be a degree of confusion, the Federal government would establish minimum criteria and then it would be up to the states to create requirements that would not impact competition between regional ports. This approach would also reduce the burden on the USCG to provide all the vessel inspections since the state would accept some of this responsibility.

The Chair thanked the panel for their participation and the specificity of their recommendations and requested that the panelists provide a list of activities and events that have been obstacles to state implementation of activities to protect and improve the health of marine waters.

VIP Speaker

Dr. Sylvia Earle -- Explorer-in-Residence, National Geographic Society and Founder, Deep Ocean Exploration and Research, Inc.

Dr. Earle made her statement and there was no time available for further discussion.

Living Resource Management in the Pacific Northwest Panel

Mr. Robert Lohn* (Regional Administrator, NMFS Northwest Region) and **Dr. Mary Ruckelshaus** – National Marine Fisheries Service, Northwest Region- *An Innovative Strategy for Recovery Planning* (*Mr. Robert Lohn was unable to attend the meeting. Dr. Usha Varanasi, Director, Northwest Science Center, National Marine Fisheries Service, participated on behalf of Mr. Lohn.)

Mr. Rod Moore – Executive Director, West Coast Seafood Processors Association - *Ocean Policy: An Outlook from a West Coast Fisheries Perspective*

Ms. Kathy Fletcher – Executive Director, People for Puget Sound - *A Call for Marine Ecosystem Restoration*

Dr. Dayton Lee Alverson – Senior Scientist, Natural Resources Consultants, Inc. - *Should There be Changes in Regards to the NMFS and/or to the Council structure?*

Mr. Ralph Brown – Commercial Fisherman and Member, Pacific Fishery Management Council

Following their prepared presentations the panelists addressed specific issues raised by the Commission. The Commission began by asking what lessons from the “shared strategy” approach could be applied in a broader national context. Dr. Ruckelshaus stated that the key point is to encourage and allow flexibility to engage local groups in the fishery management and the ESA recovery planning process. Dr. Varanasi indicated that one of the greatest problems is the lack of adequate scientific information to make timely management and policy decisions. This is due to both the limited availability of funding to support the necessary science (as indicated by the triennial groundfish trawl surveys on the West Coast), as well as the scientific peer review process, which is lengthy. She concluded that in spite of these problems it is critical to maintain an open scientific process since managers must work with the best available science. She noted that in a better world the science would all be peer reviewed and managers would make proactive instead of reactive decisions.

The Commission then asked Dr. Alverson to elaborate on how to strengthen the role of the scientific and statistical committee (SSC) in the fishery management council process, with an emphasis on making the process transparent and removing the potential for political bias and influence.

Dr. Alverson agreed that while the intent of the original legislation was that science would drive the management process, this has not been the case in all the fishery management councils. He noted that the most apparent problems are cases where councils have not always used allowable biological catch (ABC) as the guideline for setting harvest levels. However, Dr. Alverson stated that the SSCs should not be separated from the councils. Rather, they should be strengthened and the councils also should be required to use the scientific recommendations provided by the SSC as the basis for setting harvest levels. He stressed that the only way the councils should be able to exceed the ABC would be through an appeal to the Secretary of Commerce. The Commission requested that Dr. Alverson elaborate on his response and recommendations in writing to the Commission.

The Commission noted that it would be useful to establish standards for the councils regarding the use of their SSC's, as well as to examine the current limitation on the Secretary of Commerce to either approve or disapprove recommendations submitted by the councils. It was noted that council recommendations are frequently submitted just prior to the opening of a fishing season and that the Secretary is frequently put in a position of either accepting an inadequate plan, or — if they disapprove the plan — shutting down a fishery or allowing it to operate without any regulations.

It was then noted that a critical component of the shared strategy approach is to establish clear biological targets. However, this creates the challenge of explaining the scientific basis of these targets to the stakeholders who participate in the process. Dr. Ruckelshaus was asked to provide the Commission with advice on the process of translating science in such a way that it would be understandable to the stakeholders and, potentially, encourage more participation in the process. Dr. Ruckelshaus replied that the biggest factor is determining the line between science and policy. She also noted that the “packaging and delivery” of the science for the stakeholders is important. She explained that while you can cross the line from science to policy, you must understand when you are doing that, and be clear when you discuss a scientific issue versus a policy issue. The delivery of this information involves examining and translating the results from viability analyses and presenting ranges in viability estimates for different suites of recovery options. She noted that the translation of results is a difficult process to explain and added that patience and dedication are required as the group works through the process until everyone is comfortable.

The Commission followed up on this point by indicating that one of the keys is the commitment of resources to translate the science so that it is understandable to the general public and the participants involved in the recovery planning process. The Commission then requested more information on the importance of adequate support for basic science concurrent with ongoing management efforts so that there can be proactive actions taken in an effort to address potential listings and, ultimately, to reduce potential impacts associated with ESA recovery activities. Drs. Ruckelshaus and Varanasi were invited to provide additional replies in writing to the Commission on this subject.

The Commission then asked whether it is appropriate to apply the precautionary approach when the science is inadequate or the process is not working. Mr. Brown replied that it cannot be considered a precautionary approach if the process doesn't have adequate information to make an informed decision. He indicated his support for conservative management, including gear changes and fleet reductions. He stated that marine protected areas, or MPAs, may be a useful tool since they can provide protected area for fish. However, in the case of the West Coast groundfish situation, MPAs are not being discussed as an alternative approach but are suggested as being layered upon the existing management regime. He emphasized that a key piece of information is how these management regimes impact the fishermen and their communities. He stressed that socioeconomic information should be an integral part of any analysis of management options. Mr. Brown concluded by stating that the lack of information, both scientific and socioeconomic, has resulted in finger-pointing rather than responsibility and a

commitment to make the changes necessary to minimize the impacts on fishermen and to maximize the recovery of the species.

It was then noted that Dr. Alverson had cautioned the Commission to be careful about articulating principles for ecosystem management. He was asked to provide specific recommendations on how to implement an ecosystem management approach that has the best chance of being successful. Dr. Alverson indicated that a more holistic approach to fisheries management that protects both target and non-target species is essential. However, he went on to clarify that the Commission and Congress must be careful not to establish standards with vague dimensions. He noted that the biodiversity of the oceans is changing and the key is to come to agreement on an acceptable composition of the oceans and establish quantifiable measures which can be monitored. He reiterated that Congress has the ultimate say in what the oceans should look like and they should establish general standards to guide an ecosystem management approach, but allow each Fishery Management Council to determine the most appropriate method of fulfilling these standards. Another problem is the lack of agreement on what constitutes proper ecosystem management. The scientific community must develop consensus on the appropriate ecosystem principles and a process for implementing a comprehensive ecosystem management regime. This process must be transparent and include the participation and input of the public and other interested stakeholders.

The Commission asked whether an ecosystem management plan could be designed for the Pacific Northwest if the right people were brought together. Dr. Alverson replied yes. He noted however, that it would not be easy and would require the creation of an entity similar to that of the Ocean Research Advisory Panel (ORAP) of the National Oceanographic Partnership Program. That entity would be responsible for coordinating the activities of the various agencies. It was agreed that this action should be taken at the national level.

Mr. Brown then suggested that if there were a clear definition of ecosystem management and clear goals provided, an ecosystem plan could be developed. Mr. Moore also agreed that it was possible, but questioned whether it was likely to happen. He indicated that managing the marine ecosystem would require a reevaluation of the current regime. Mr. Moore indicated that some members of the public are advocating environmental policies that would in effect turn the oceans into a "blue zoo" designed to protect marine mammals and whales. Mr. Moore suggested that a more balance approach prevail and stated implementation of -- and funding for -- ecosystem management plans should be placed in the hands of regional entities. Ms. Fletcher agreed that it was critical to have the right mix of people around the table to deal with all aspects of the ecosystem but emphasized that this process should not revolve exclusively around fisheries management and the Fishery Management Councils as the forum for developing a regional ecosystem plan.

The Commission then asked for a clear explanation of what ecosystem management means. Dr. Fletcher replied that there are existing models that can be used however, they have little to do with fisheries harvest and management. Dr. Alverson stated that he had been to ecosystem management conferences all around the nation and said that no one is

looking at managing the entire ecosystem (e.g., managing whales and phytoplankton). Rather, he said, they are attempting to use ecosystem principles to broaden the scope of factors when addressing targeted fish stocks. The intent is to take a more holistic approach by applying ecosystem principles when addressing ongoing activities, particularly human activities, which impact the ecosystem -- such as setting fishery harvest levels.

The Commission then asked about the best approach to developing an ecosystem management plan, noting that the Northwest Straits Initiative makes sense since it was developed as a result of a bottom-up effort. However, the Commission expressed concern that some of the testimony suggested the process be driven by legislation, which is a top down approach, while most of the testimony the Commission has received support the bottom up approach. Ms. Fletcher responded that these two approaches can be reconciled based on the scale of the MPA under consideration. For an inland sea or watershed type of initiative, such as the Northwest Straits Initiative, or in the Nisqually watershed effort, the bottom up approach works well. However, she indicated that bigger coastal issues along and off the coasts will require greater federal leadership and involvement and suggested a need to marry the top down and bottom up processes. The Commission noted that the process must be based on sound science or it did not make any sense to set aside large areas for conservation purposes. Ms. Fletcher agreed that there is tension over the quality and quantity of the science available but asserted that MPAs offer a tool to save some parts of the ecosystem while better science and data are being collected.

The Commission's questioning then shifted to fisheries bycatch, its impacts on fish stocks and the associated waste. It was asked whether there was a solution to this problem by using new technologies, through new vessel techniques, by changing human behavior or through better enforcement. Mr. Brown replied that all of the factors mentioned offer potential. He highlighted his personal belief that technology could solve many of the bycatch problems, and that fishing gear can be endlessly modified to help avoid undesirable species. He suggested that another key is modifying where people fish and indicated that this is why the Pacific Fishery Management Council has supported observers, so there will be information on how effective – or ineffective – specific gear is, which in turn could lead to a gear certification program. Mr. Moore then indicated that it should not be overlooked that recreational fishing also results in bycatch. He indicated that one recommendation is to require full retention of all species harvested, with the non-marketable species (undersized, out of season, or not commercially desirable) being sold and the funds applied towards additional research. Dr. Alverson agreed that gear technology can help address bycatch, but that this process takes time and considerable effort. He indicated that the process of developing turtle excluder devices in the Gulf of Mexico took 20 years. He emphasized the importance of documenting bycatch since when and where bycatch is harvested is critical to developing technological fixes. He also expressed the need for caution in pursuing the full retention approach since it still results in fisheries mortality and can even result in the creation of new market demand for species.

The Commission then asked whether the small-scale volunteer habitat restoration movement has a future, or whether the Commission should be looking toward a more

industrial approach that favors a broader policy and increased funding. Ms. Fletcher stated that the small scale restoration movement makes a significant contribution at a meaningful scale. However, she clarified that this approach is not appropriate for all restoration activities and that partnerships between the large and small players is a critical factor since non-government organizations, or NGO's, and small community organizations cannot address all aspects of larger scale restoration projects. She cited the restoration project on the Duwaminsh River as a good example, noting that it involved many participants, made a significant addition to the sound and river, and has resulted in critical salmon habitat.

The Commission then asked whether grass roots organizations are the catalyst for the larger entities to act. Ms. Fletcher replied that Restore America's Estuaries (RAE) provided funding to support the Duwamish partnership, which grew to include federal and private sector stakeholders. This resulted in the necessary mix of scientist, planners and large scale developers required to make the project successful. Mr. Brown noted a similar example of a locally-initiated restoration effort in Oregon, where fishermen tried to develop a salmon hatchery with the idea of developing a terminal fishery. The project was eventually shut down because the state had difficulty quantifying the program's success however, this process helped stimulate the development of a state-wide watershed enhancement board.

The Commission concluded its questions and thanked the panel for their participant and recommendations.

Aquaculture Panel

- **Dr. Kenneth K. Chew** – Associate Dean, College of Ocean and Fishery Sciences, University of Washington, and Director, Western Regional Aquatic Center – *Perceptions and Recognized Changes Affecting Aquaculture Development*
- **Dr. Robert B. Rheault** – Board Member, National Aquaculture Association
- **Dr. William Daniels** – President, U.S. Aquaculture Society – *Integrating Aquaculture into U.S. Ocean Policy*

Following their prepared presentations the panelists addressed specific issues raised by the Commission, the first of which was an inquiry whether the U.S. Department of Agriculture (USDA) has been effective in its lead role as the coordinator of federal marine aquaculture policy. Dr. Rheault replied from two perspectives. First, as a board member of the National Aquaculture Association (NAA), he stated that aquaculture is agriculture and the NAA supports USDA as the lead federal agency. He indicated that USDA has provided extensive research support and is a strong advocate of marine aquaculture. He went on to say that a Sea Grant-funded working group which he is a member of -- and which is tasked to design a framework for aquaculture governance in the Exclusive Economic Zone (EEZ) -- has come to the conclusion that a new office of aquaculture should be created in NOAA, perhaps with a broader mandate to regulate all EEZ activities. He added that NOAA should therefore be the lead permitting and regulatory agency, while USDA retains its functions in research and advocacy. The Commission then asked what the National Marine Fisheries Service's (NMFS) role

should be in marine aquaculture in light of the agency's historically inconsistent attention to this activity. Dr. Chew indicated that NMFS has been sporadically helpful over the years – mostly due to the contributions of a few key individuals with a keen interest in aquaculture. He added that, consequently, USDA stepped in and took an active role in promoting aquaculture. He clarified that the Joint Subcommittee on Aquaculture (JSA) was established under the National Aquaculture Act, and that USDA leads this subcommittee, charged with federal coordination of aquaculture, albeit with a limited degree of success. He concluded by stating that there needs to be much greater coordination and cooperation between USDA and NOAA. Dr. Rheault indicated that one of the more difficult problems is NMFS's effort to regulate the aquaculture industry in the same manner that they regulate the wild harvest fishing industry, while the industry considers aquaculture an agricultural activity, thus requiring a different regulatory approach.

The Commission then asked whether it makes sense to have authority for the management of marine aquaculture split between USDA and NOAA. Dr. Rheault replied that one option is to have USDA take the lead in an advocacy role while NOAA maintains responsibility for permitting and regulatory actions. He expressed concern that the USDA may be ill equipped to deal with regulatory issues in marine environments, especially outside of state waters.

The Commission requested additional guidance on how the federal system can be organized to make it more effective and efficient and how much the U.S. spends on aquaculture research in comparison with foreign governments. The panelists agreed this was a hard number to determine since there are various grant and loan programs available however, all agreed that the level of Federal support for aquaculture was significantly lower in the United States than in other countries. The Commission indicated its desire to have these numbers for comparative purposes, both to determine the level of support being provided to foreign competitors, as well as to compare it to funding support for the domestic commercial fishing industry.

The Commission then referred to testimony provided in a prior hearing in Florida at which a representative from the seafood restaurant industry suggested that the U.S. aquaculture industry is unlikely to be competitive due to our nation's high land prices, labor costs and regulations. The representative suggested that the U.S. develop relationships with foreign aquaculture operations to develop products that meet U.S. stewardship requirements. The Commission asked whether the U.S. can have a competitive marine aquaculture industry, or whether it would be more cost effective to work with foreign marine aquaculture operators. Dr. Daniels suggested that the alternative is for the U.S. to lead the way in developing sustainable marine aquaculture standards, so that other countries can follow. Dr. Rheault indicated his belief that there is an economic opportunity for marine aquaculture in the U.S., and that many people want to invest in the aquaculture industry but the current regulatory maze is too convoluted and cumbersome.

The Commission then suggested that one of the more powerful arguments is that the aquaculture industry can have a minimal environmental impact while relieving pressure

on the harvest of wild stock, and asked how the industry addresses the issue of deterring or eliminating secondary species that prey on penned fish (e.g., birds, seals). Dr. Rheault indicated a need to manage the system holistically, including fish, birds and marine mammals, and noted that this approach goes beyond the aquaculture industry. He went on to state that the seal and cormorant populations have rebounded and are now significant predators on farm-raised and wild fish populations. We need to take our stewardship role seriously and manage these populations since we have upset the natural balances that once controlled these predators, he stressed. Dr. Rheault concluded by saying that the aquaculture industry has become much more environmentally conscious, however, it is still laboring under an adverse public perception from past practices and current activities in foreign countries.

The Commission then asked whether there were parallels between the growth of the agriculture industry and the aquaculture industries, particularly with respect to the development of agriculture research schools (Land-Grant Universities). It was suggested that the Commission could possibly use this model as the basis for its recommendations to Congress, the President and the public. It is also a way to harness the abilities of the academic research community in advancing the growth of the marine aquaculture industry. Dr. Rheault indicated that the NOAA Sea Grant program currently provides this type of service –albeit on a much smaller scale than the Land Grant Universities — to support the development of technology for offshore aquaculture. However, he emphasized that without a leasing regime in place the industry will not go offshore. Dr. Chew clarified that the Hatch Act created a system of agriculture research stations that also provide a research resource and ties to the academic community. Dr. Daniels acknowledged the historic involvement of the Land Grant Universities in promoting agricultural research, but noted that aquaculture is a relatively new industry and is competing with established terrestrial agriculture research priorities. He agreed with Dr. Rheault that resolving the complications surrounding the permitting and leasing process is the first priority, and that this must be done in a timely fashion if the marine aquaculture industry is to succeed.

The use of aquaculture to enhance depleted wild fish stock was briefly discussed, and while a few efforts undertaken on a small scale may have been successful, it was indicated that industrial scale enhancement efforts by the Scandinavian countries met with limited success and were terminated.

The Commission returned to the issue of the economic potential of the aquaculture industry and its parallel with other nonliving marine resource management industries. Dr. Rheault clarified that the aquaculture industry was interested in arrangements for leasing areas, similar to the current approach used for oysters, clams and scallops. He indicated that a Sea Grant-sponsored workgroup -- which includes lawyers, scientists, academics and one member of the aquaculture industry (Rheault) -- has been meeting for three years. The workgroup plans to release its interim report in October 2002, and will provide a copy to the Commission. The report will address governance structure, regulations and other needs of the industry. There was a brief discussion about the potential use of abandoned oil rigs as aquaculture platforms, however, concern over the financial liability for the removal of the rigs has limited interest in this option.

The Commission concluded the panel by inquiring about problems associated with the current permitting process, as well as requesting additional information for the record regarding the assertion that there is a pollution problem associated with the aquaculture industry. The Commission also noted the benefit an aquaculture clearinghouse would provide to the industry as it tries to make sense of the maze of federal permits and regulation it faces. The panel closed with the Commission noting its effort to invite representatives from organizations that were less supportive of expanding marine aquaculture in the EEZ. However, representatives from those groups were unable to attend the meeting.

FRIDAY, JUNE 14, 2002

Ocean Science, Exploration and Education Panel

- **Dr. Arthur Nowell – Dean, College of Ocean and Fishery Sciences, University of Washington – *Undergraduate and Graduate Education Oceanography* (Also Chair of CORE Public Policy Committee)**
- **Dr. Marcia McNutt – President and CEO, Monterey Bay Aquarium Research Institute (MBARI) – *President’s Panel on Ocean Exploration***
- **Dr. Robert Spindel – Director, Applied Physics Laboratory (APL), University of Washington – *Arctic Science and Investment***

The Chair opened the discussion period by stating that unlike the Department of Defense (DoD) agencies, there is no long-term strategy or funding base for scientific research in the federal government. He asked whether the Commission should recommend that such a program -- with a sustained focus on scientific research -- be established. Dr. Nowell indicated that the National Institutes of Health (NIH) has been successful in developing such a research strategy. NIH provides five year project research agendas, with an opportunity for an additional five years if the program review suggests the continuation is worthwhile. He added that no other federal agency has such a program in place and that this may have as much to do with managerial style as with the ability to make multi-year funding commitments. Dr. McNutt mentioned that increased funding for the National Science Foundation (NSF) is a promising signal and, hopefully, indicates a shift in an approach toward scientific research. She did note, however, that there is a concern by project managers that they may be precluded from requesting funding increases if they agree to long-term budgets. She added that NSF has been trying to move towards funding for longer-term projects. However, Principle Investigators (PIs) are not making long-term funding requests and members of review panels are reluctant to make such funding commitments since this approach will reduce funding opportunities for their own proposals. She concluded by stating that these same panels are pushing PIs to complete their work in a shorter timeframe than originally requested, reducing the likelihood of the success of projects. Dr. Spindel agreed that there is support for long-term funding, such as that provided by the Office of Naval Research (ONR). However, the ONR approach of providing funding on a year-by-year basis is not the most efficient use of funds and manpower.

The question of the academic community's acceptance of the oceanography discipline was discussed, with the Commission asking whether there was a perception within the academic community that an oceanography undergraduate degree may be too broad, whether an oceanographer had a chance of becoming a member of the National Academy of Sciences (NAS) and, finally, how many universities offer degrees in oceanography. Dr. Nowell replied that oceanographers are members of the NAS. However, they usually have degrees in another area as well, such as atmospheric sciences. He added that currently two universities offer undergraduate degrees in oceanography and that 20 percent of current oceanography undergraduates go on to get PhDs. He emphasized the importance of increasing the number of undergraduate oceanography programs or the oceans will be left out of the education curriculum. The Commission noted that it has a contract with CORE to go into greater depth on marine education – the pipeline for ocean sciences – and that the CORE report should provide a better picture of the status of the oceanographic education community.

The discussion then shifted to Arctic research and the question of whether the NSF Polar Section currently includes Arctic issues, or whether the Polar program is limited to the historic focus on Antarctic issues. Dr. Spindel replied that the Arctic and Antarctic programs are currently organized under the Polar program. The Commission asked whether the Arctic program will be moved back into the Geosciences program. Dr. Spindel stated that there is no agreement on that issue. The Commission noted that testimony has suggested that the current process is not working very well and that it was unlikely that the Arctic program would come back to life without some serious restructuring.

The point about the need for NOAA and other federal agencies to make a greater effort at partnering with academic institutions was raised. However, the Commission noted that it was also the academic community's responsibility to look for opportunities to partner with the Federal government. The panel was asked what could be done to help improve this relationship. Dr. Nowell suggested that one option was to expand the practice of offering faculty appointments to Federal and state scientists since this approach provides formal recognition of the Federal scientists' academic credentials. The Commission replied by asking if there were other ways to strengthen affiliate appointments, such that the Federal scientists have a say in the curriculum and the treatment of students and if there any cooperative institute models that should be brought to the attention of the Commission. Dr. Nowell noted that two models worth examining are those used by U.S. Department of Agriculture (USDA) and the U.S. Geological Survey (USGS). The Commission requested additional information on these models.

The discussion then focused on the growing acknowledgement of the need for real-time broad-based sharing of data. The Commission asked Dr. McNutt how this system might work. Dr. McNutt replied that there is a concern that information, if not shared, could be used to the disadvantage of other groups, such as conservationist finding out too late about industry-generated data that indicated the unsustainable nature of a commercial activity. She emphasized the importance of making data from exploration discoveries – after appropriate quality assurance and quality control – publicly available via the web

(with certain exceptions such as the location of key shipwrecks or national security concerns). She noted that by using this approach all stakeholders or interested parties would get to weigh in on the use of information collected from exploration projects.

The Commission then inquired about employment opportunities in marine-related fields over the next few decades. Dr. Nowell indicated that a wave of retirements is anticipated in the academic and public sectors in the next five to seven years. He noted that at the University of Washington, over 40 percent of the professors in the Oceanography Department are eligible for retirement in 2007. He added that a similar percentage of marine scientists in NOAA will also be eligible for retirement in this timeframe. Regarding a follow up question about opportunities in the industrial sector, Dr. Spindel pointed out that the offshore oil and gas industry is booming and the employment opportunities in this sector are great.

In an effort to get facts and figures the Commission asked about the change in the level of funding for oceanography since the 1950s and the Cold War. While no one suggested that this information was readily available, everyone agreed many of the activities supported during the Cold War had been terminated. They also agreed that the level of funding has dropped and that new funding for such an initiative could not be squeezed out of existing agency budgets and would require a new funding source.

The Commission then asked whether the U.S. Arctic Research Commission (USARC), which was established about 10 years ago, could be the vehicle for Arctic research funding. The Commission also asked whether or not the current funding priority for Antarctic research could be changed. Dr. Spindel replied that the USARC was created to prevent exactly the situation we face today, so this approach apparently has not been successful. Regarding funding priorities at NSF, Dr. Spindel stated that the Ocean Commission has the opportunity to make a recommendation to address this funding inequity. The panel was then asked if the real issue was the fact that Antarctica is not in any one country's Exclusive Economic Zone (EEZ), unlike the Arctic. The panel indicated that part of the reason the U.S. maintains a presence in Antarctic is to establish and protect our national interests.

The Commission asked how the Arctic component will fit into the proposed Ocean.US Integrated Sustained Ocean Observing System (ISOOS). The panelist agreed that the Arctic should be a major part of the ISOOS. Dr. Spindel clarified that the thrust of the ISOOS is coastal in nature, including the Arctic coast of Alaska, and that to the extent that the nation becomes involved in monitoring global systems, the Arctic will be of even greater importance due to its role in the global climate.

The Commission emphasized the importance of a strong agreement within the scientific community on the best approach to an ocean observing system so that the Commission recommendations would have the best chance of receiving support and funding. The Commission further emphasized that Arctic issues needed to be part of this agreement. The role of exploration was identified as being tremendously important in generating general support for Arctic research. Dr. McNutt was asked to give a sense of how Arctic issues could be integrated into the Ocean Exploration initiative. McNutt directed the

Commission to the President's Panel on Ocean Exploration which has stressed the need to explore Arctic issues. The panel also indicated that the National Academy of Science (NAS) should be releasing a report in the fall that is likely to highlight the importance of increasing Arctic research activities.

The Ocean Drilling Project (ODP) was brought up by the Commission as an example of an efficient and fiscally responsible federal research program. The panel was asked if ODP was an appropriate model for other discovery programs, such as global observations or space missions. Dr. McNutt replied that there were several aspects of the ODP that could be applicable to the ocean observing system, the most obvious one being the need for long-term funding. She emphasized that a critical element for any long-term research strategy was a steady hand on the helm, and that this was particularly important for ocean observations. She pointed out that an ISOOS and the Ocean Exploration programs were not going to spontaneously assemble out of individual programs, and that there has to be a driver and some overarching guidance. The Commission then asked if there were any disadvantages to centralizing an ocean observing system within a single agency. Dr. McNutt noted that one of the biggest concerns is the tendency for a mission driven agency to divert funding to its own labs and other internal programs, instead of distributing the funding throughout the entire scientific community. She pointed out that NSF does not have any in-house labs, so it is less susceptible to this potential diversion of funds.

The Commission then asked about the rationale for Russia's recent request for an extension of its EEZ to 300 miles in the Arctic. While no one on the panel had a specific reply, Dr. Spindel noted that Canada may also be contemplating an extension of its EEZ in the Arctic.

The Commission asked the panelists whether or not the marine scientific community could come together and provide the Commission with oceanographic research and education agendas, timelines and funding requirements, or if the Commission should instead be looking at developing a process for a common agenda. Dr. Spindel replied that the scientific community is a victim of the system and part of the problem since everyone has their own agenda. On behalf of the scientific community he accepted the Commission's challenge for the research community to put forth a coherent research and education agenda and noted that he considered NORLC and CORE as a potential vehicle for pursuing this objective. Dr. McNutt suggested that perhaps the scientific community was not using existing funding efficiently and that a possible model was the astronomy community, which works out a mutually agreeable research strategy that is then supported by the whole astronomy community. She noted that the difficulty in the marine world was the large number of agencies and institutions with varying interests in ocean issues. She agreed with Dr. Spindel that NOPP is an existing vehicle for coordinating an ocean research agenda. She noted however, that NOPP does not have funding authority and relies entirely on the goodwill of the participating agencies. The Commission emphasized that this is a key issue and again requested the research community provide the Commission with a relatively detailed breakdown of the cost and research objectives of the ISOOS.

Dr. McNutt confirmed that an initial cut at these cost was currently available. However, it was put together with a bottom-up approach which means that the numbers represent the cumulative individual interests of each agency – e.g., NOAA, NSF, etc. — and was not necessarily representative of a coordinated, negotiated agreement that integrates agency activities. The Commission acknowledged the problem of territorialism among entities competing for funding -- including the academic sector -- and maintained that the continuation of this approach will result in an overall loss of funding for all the interested stakeholders. The Commission asked for suggestions to improve this process. Dr. McNutt responded that one option would be to provide NOPP with funding authority, which it could then match with agency funding. She noted that this approach would encourage agency participation in the NOPP process and provide an incentive for developing and supporting a coordinated research and monitoring agenda. She noted that there is currently a disincentive to participate in the NOPP process due to the potential of losing control over the funding an agency contributes to the process. The Commission noted that it has been told to be bold, that its mandate includes breaking up the territorial mentality, and that the political system is receptive to an interdisciplinary approach. However, it was noted that the Commission needed to offer Congress and the Administration a clean and simple system. The Commission ended by emphasizing the importance of finding ways to incorporate the private sector into the ocean research and education initiatives, since the greatest potential for economic support lies in creating market demand.

The Commission then asked Dr. McNutt about the activities that would be supported by the \$75 million per year in funding she recommended for ocean exploration since it did not appear to include high resolution ocean mapping costs. Dr. McNutt replied that the proposed funding level would not address all high resolution ocean mapping needs, but was intended to coordinate major ocean exploration efforts. She added that base mapping is one of the program's key components, but due to its high costs, indicated that this work must be prioritized and scaled. She said she hoped that much of the funding for this activity would come through existing NOAA and DoD mapping programs.

Ocean Governance, Coastal Zone Management and Resources Coordination Panel

- **Ms. Nan Evans – Manager, Ocean-Coastal Resource Management Program, Oregon Dept of Land Conservation and Development**
- **Mr. John Berry – Executive Director, National Fish and Wildlife Foundation – *Public-Private Partnerships in Preserving Resources***
- **Dr. John Ehrmann – Senior Partner, Meridian Institute**
- **Mr. Eric Laschever – Attorney, Preston, Gates and Ellis**
- **Dr. Michael W. Beck – Director, Coastal Waters Program, The Nature Conservancy**

Upon the conclusion of oral statements the Commission asked the panelists to comment on proposals to restructure federal agencies with ocean-related mandates, including options for creating a new Department of Oceans as well as other consolidation and coordination alternatives. Mr. Berry suggested that the most effective approach would be to create a cabinet-level oceans agency because that would result in significantly improved negotiating positions during the budget process. Mr. Ehrmann wasn't

convinced that a new department was necessarily the right approach, but emphasized the need to focus on improving the dynamic interaction between key components of the various agencies. Ms. Evans agreed with this point and suggested that integrating the budget process was probably the best place to start since money is the key to making programs operate.

It was noted by the Commission that there is currently no mechanism that would allow for a central coordinating body, although this had been a frequent recommendation of panelists. The Commission then asked Ms. Evans if she had a draft of an Ocean Resource Management Act that laid out the framework for and elements of such an entity. Ms. Evans replied that she did not have the details requested, but reiterated that there are too many barriers in place that prevent proper coordination. She agreed that there was need for new statutory authority that would empower agencies to come to the table and work out solutions to cross-cutting problems.

The Commission then inquired about the process under way in Oregon — the Oregon Policy Advisory Council (OPAC) — and whether OPAC could be successful if it had federal agency representatives as members. Ms. Evans noted that Oregon state law cannot require Federal membership on OPAC. In the early years, of what was then called the Ocean Policy Task Force (now OPAC), Federal agencies were invited to participate and were part of the discussion leading to the major policies of Oregon's Ocean Program. Federal agency participation on the OPAC would probably be useful in the current environment as well. Further Commission inquiry about the nature of broad regional councils focused on the apportionment of authority, and whether there was a movement toward joint state/federal empowerment, such as a Compact. Ms. Evans replied that there was a need to get over the boundary issue and to start thinking on a regional scale. She added that this process would require incentives as well as both state and Federal parties to be empowered.

The discussion then briefly shifted to the Washington State effort to make its environmental impacts statements (EIS) more robust at the state level with the objective of allowing local officials to address basinwide air and watershed issues as part of their local planning analysis. Mr. Laschever indicated that this approach could help eliminate some of the financial burden placed on developers by reducing the scope and therefore the costs associated with drafting EISs. He noted that the key issue was providing funding for these large scale EISs. He mentioned permit fees and taxes as potential funding sources and agreed to provide additional information to the Commission on these recommendations.

The role of the Endangered Species Act (ESA), its implementation and its impacts were the focus of the next round of Commissioner questions. Mr. Ehrmann recommended that Federal agencies need to take a fresh look at their role and responsibilities for encouraging a collaborative decision making process. He explained that mid-level government employees receive mixed signals from their superiors about what is important and this creates a disincentive to take risks. He was asked how to resolve this dilemma. He replied that it is important for the participants to have a clear understanding of the statutory requirements, and to understand that the federal government has final

authority over the design and implementation of a recovery plan. He went on to emphasize that it was the Federal government's role to provide the parameters within which the local community must work out a solution, and then allow the local stakeholders a role in developing final recommendations. Mr. Laschever stated that the ESA has weak tools in place to support the recovery of an endangered species, that most of the Act emphasis is focused on the listing process, and that following through with the recovery process is particularly hard due to property rights issues. He declared that there is a fair amount of discretion whether to prosecute under various federal statutes and the Federal government must exercise this discretion along with a thoughtful approach to the recovery process. Mr. Berry agreed that there is considerable discretion under the ESA and if partners work on a voluntary basis the Act has lots of flexibility and multiple tools.

The land/water interface was identified as a crucial element in addressing the health of the oceans, and the Commission pointed out that any effort to address this complex issue would require the support and involvement of the local population. The Commission asked for examples of what it could recommend to test a watershed approach on a broader scale and to stimulate people to take an active interest their own watershed. Mr. Laschever replied that if the Commission was considering the creation of a new framework, one approach would be to look at the process from a reverse engineering perspective. He noted that the watershed approach requires the application of an ecosystem approach, which would require Federal legislation to implement. He went on to indicate that a key issue would be how such a multifaceted approach would mesh with current species-specific statutes, such as the ESA.

Land acquisition had been suggested as one method of addressing the growing problem of coastal development. The panelist were asked if there was an opportunity for the Commission to support some mechanism to fund land acquisition in the coastal zone. Mr. Beck indicated that one option was to target funding derived from leases in the marine environment to reduce impacts in the coastal zone, including land acquisition. Another option was to use *Conservation and Reinvestment Act* funds more judiciously. Mr. Berry expressed the opinion that this was a question of scale and urgency. He went on to say that there will not be adequate resource available in the Federal discretionary budget to deal with the scope of issues we are talking about in the coastal zone and that funding issues must be examined in the context of tax policy. He suggested the need for a national tax policy that reimburses and rewards conservation and protection actions. The Commission noted the lack of political support for modifying the tax policy to support environmental activities and asked whether there were any examples of critical places or issues that could help draw attention to the need for such a shift in the tax code. Mr. Beck indicated that a consortium of non-government organizations (NGOs) were working cooperatively to map the ecosystems around the nation that needed to be protected to maintain the integrity and viability of the whole system and that some of this information was available now.

The Commission then asked about opportunities to engage the private sector in conservation issues, expressing an interest in examples and suggestions about how to motivate this sector to become more involved in and supportive of these type of activities. Mr. Berry explained that the best arrangements come when you link market

and public interests and used the examples of Shell Oil's support of habitat restoration in the Gulf of Mexico, and Exxon's support for tiger conservation, which is linked to the company mascot. Mr. Beck agreed that the process proceeds on a case-by-case basis, when common interests between the public and business sectors can be identified. He went on to state that it is particularly vexing that more fishing groups and conservation organization were not working together towards the goal of improving the quality of coastal waters, a common interest of both parties.

The Commission then asked Ms. Evans to clarify her recommendation to amend the Outer Continental Shelf Lands Act and strengthen of the CZMA federal consistency provision. Ms. Evans clarified that Oregon was not suggesting a reversal of the Supreme Court decisions and the modification of jurisdictional authorities. Rather, she said the intent was to focus on the mechanics of communication so that state interests are both heard and addressed in the Federal process. She recognized that the Federal consistency provision of the CZMA had clearly been controversial. However, from a personal perspective, she indicated that it had provided the states with a seat at the table. She cited the U.S. Corps of Engineers' proposal to deepen the channel in the Columbia River. In that case the Corps was not adequately addressing the key issues of the state coastal management program, including local land use plans, as required by the federal consistency provisions. The Commission asked whether in its periodic review of the Oregon Coastal Zone Management plan, NOAA had commented on the Oregon's ocean stewardship idea of expanding the states interest beyond three nautical miles, to which Ms. Evans replied no.

Science and Policy Interface in Fisheries Management Panel

- **Dr. William Fox, Jr. – Director, Office of Science and Technology, National Marine Fisheries Service – *Developing Scientific Information for Fishery Management***
- **Dr. Ray Hilborn – School of Aquatic and Fishery Services, University of Washington – *Research in Fisheries Management – Who Decides, Who Pays, and How Much is Enough?***
- **Dr. Susan Hanna – Department of Agricultural and Resources Economics, Oregon State University – *Economic Investments to Improve Fisheries Management***
- **Dr. Bruce Leaman – Executive Director, International Pacific Halibut Commission**

Upon completion of the panelist's statements, the Commission initiated a discussion on Individual Fishery Quotas (IFQs). It was noted that while all the panelist currently before the Commission support IFQs as a fishery management tool, prior testimony indicated that others oppose this approach. The panel was asked to identify the benefits of IFQ programs. Dr. Hanna indicated that where IFQ programs have been implemented, such as in the Alaska halibut and sablefish fishery, the fisheries have become much more rational and stable, providing a much better business planning climate. She stated that applying a market-based approach, such as an IFQ program, reduces overcapacity, increases safety and improves the quality of consumer products. She noted that one way to overcome the

concern of granting “property rights” of a public resource was to lease harvest rights to the fishing industry for a set duration. Dr. Hilborn made the point that IFQs do not have to be an all-or-nothing approach, that only part of the quota can be allocated toward an IFQ regime, and the remainder left as an open-access fishery.

The Commission then asked whether IFQ programs could be applied to the recreational fishing industry. Dr. Hanna indicated that the IFQ concept can be adapted to the recreational charterboat industry; however, application to the individual recreational fishing industry is probably less likely and acceptable to the participants.

The Commission then asked whether there was unanimity among the panelist on the charging of fees in return for being granted harvesting privileges, similar to fees levied on other users of public resources, such as the oil and gas industry. In particular, the Commission requested the panelist to elaborate on the recovery of research and management costs through fees. Dr. Hilborn stated that five to 10 percent of the value of the total landings is a rough estimate of how much should be put back into fisheries research. He went on to say that methods of determining the most appropriate basis to collect these funds vary from the amount of net being fished to the dockside value of the fish landed. He added that you cannot impose this kind of financial burden on many of the existing U.S. fisheries due to their general lack of profitability. Dr. Leaman pointed out that cost recovery within the Alaska halibut/sablefish IFQ program did not start until well after the program was established. Dr. Fox suggested that there needed to be a balance in the level of fees generated versus publicly-funded research and management. The Commission then asked whether fees could be collected in an open access fishery. Dr. Hilborn agreed that while it was prudent to recover some of the costs associated with the government operations, this approach is more readily accepted if the fishermen feel they are getting something in return, such as quota share.

The Commission then asked Dr. Fox to clarify the objective of the independent peer review process and efforts by NOAA’s National Marine Fisheries Service (NMFS) to support independent peer review of fisheries science. Dr. Fox responded that NMFS has developed a pilot program called the Center for Independent Experts (CIE). In this case, NMFS has contracted with the University of Miami to oversee an independent peer review process. NMFS provides the university with funding and a general statement of work. The university develops the program and selects the review panel participants after applying a strong conflict of interest test. He noted that the pilot project has been completed and NMFS is now in the process of collecting bids for a five-year contract to operate the CIE. He also indicated that the NMFS Science Center must under go regular accreditation as a scientific research institution.

The focus of discussion then turned toward the status and cost of a coherent national strategy for fisheries data collection and analysis. Dr. Fox stated that NMFS issues a congressionally-mandate research strategy every two years. He added that the agency has a variety of other strategic plans as well, including one for a Fisheries Information System and another for the observer program. He noted that, collectively, all of the parts are there to build a coherent national plan to address all aspects of fisheries research and management. However, Dr. Fox agreed with Dr. Hilborn’s point that while the current

level of funding is adequate to maintain status quo, it is not sufficient to advance fisheries science to the level necessary to provide the virtually real-time data collection and analysis required to operate the current fisheries management system. Dr. Fox then explained that Congress' earmarking of funds to specific projects, program and labs, while not necessarily bad, does make the prioritization process more chaotic and hinders the development of a coherent research plan.

Dr. Hanna expressed her strong support for full funding of a comprehensive data collection system, stating that such a system currently does not exist, and therefore much of the data being collected is being driven by immediate allocation issues which does not allow the scientist to look at long-term trends.

The Commission focused more specifically on the NMFS budget process and asked whether the agency had a clear budget strategy when it approached Congress for funding, with clear goals, steps and costs. Dr. Fox replied that the development of the various strategic plans mentioned previously -- in combination with the current Administration's focus on priority setting and performance objectives -- will place NMFS in a better position to provide Congress with an integrated budget. He noted, however, that this is unlikely to stop Congress from earmarking funds. He added that while congressional earmarking of funds is not necessarily bad, what gets lost in the process is the ability to ensure that priority research issues within the larger research agenda are addressed. He noted that at times, local or personal research desires within particular institutions receive preference. The Commission noted that this problem was not unique to NMFS and asked Dr. Fox if he could plot NMFS strategic research priorities (ranked in order of priority) on a graph, overlay what was actually funded and show how much was diverted from agency funding priorities as a result of congressional earmarks. It was suggested that this approach would provide the Commission with the information necessary to clarify whether the agency's research needs were being met. Dr. Fox responded that this was a more difficult task than it appears, since much of the funding NMFS receive falls with research areas of interest. However, it is often out of focus due to congressional earmarks. The Commission again requested that an attempt be made at providing this information in the format recommended.

The Commission then turned its attention to the problem of recruitment of fisheries stock assessment scientists. Dr. Fox replied that the lack of trained fisheries stock assessment scientists and fisheries biologists was a serious problem because they are very specific to fisheries management. He indicated that there is a modest recruitment effort underway. He stressed that the infrastructure in the academic community that supports the development of new fisheries scientist is limited due to shifts in program focus and the difficulty in getting funding for fisheries-related research.

The Commission asked whether there also was a need to hire more economists and sociologists. Dr. Hanna replied that the level of hiring for these types of scientist depended upon how fisheries were managed. If the system shifted to a more market-based approach, using management tools such as IFQs, then the need for economists and sociologists would likely be reduced. Dr. Fox concluded the discussion by stating that NMFS supports various traineeship program such as the Minority Service Institute

initiative and the Sea Grant Fellowship program, however, the scope of this effort has been limited due to funding.

The panel discussion ended with a general question about how to deal with the Fishery Management Councils, to which Dr. Leaman replied that more direct control should be invested in the Scientific and Statistical Committees (SSC). He stated that the process is not fundamentally flawed. He added that many of the problems derive from the management process, not from the bad stock assessment data and recommendations. Dr. Fox agreed with this approach. He noted that he will be sending the Commission a paper that offers additional recommendations for improving the Council system.

Public Comment

Jim Ahrs (Oceana). Mr. Ahrs focused his comments on pollution and destructive fishing practices, expanding on Ted Danson's testimony provided in California. He discussed problems in the aquaculture industry, the need for Congress to address persistent organic pollutants and assert more control over the cruise ship industry. He noted the need for additional funding for research.

Kate Wing (NRDC-SF). Ms. Wing recommended making the Fishery Management Councils an advisory body, separating the science from the allocation process, developing language to support the consistent application of NEPA EIS requirements, creating zone areas in the ocean and revamping NMFS financial programs.

Fred Feldman (Ocean Advocates/Orca Conservancy) Mr. Feldman noted the need to enhance our salvage capacity.

Jay Inslee (U.S. House of Representatives, WA, First District). Rep Inslee stated that there was one issue overriding the world's ocean and that was global warming. He stated that unless this nation lead the world we'll be arguing over crumbs. He noted the need for systemic changes in our civilization use of natural resources and the current Administration's lack of response to the acknowledged problem of global warming. He was asked by the Chair to work with his fellow colleagues to support the recommendation from the Commission since they will begin to address some of the concerns the Congressman stated.

Paul Quay (Prof. WA School of Oceanography). Prof Quay focused on the critical role of carbon cycling in the ocean and the need for additional funding to support research in this area.

Glenn Spain (NWR Director PCFFA) Mr. Spain's comments focused on habitat loss and the need to shift from an industrial model to a sustainable model of development.

Shelia O'Keefe (Student at OSU) Ms. O'Keefe emphasized the need to expand our efforts to translate and apply scientific information from the oceans to the management process.

Jessica Hamilton (student at OSU) Ms. Hamilton supported the concept of regional ocean councils, emphasized the need to focus on habitat and invasive species issues, and to integrate ocean education into the curriculum.

David Ravell (OR Outreach Coordinator for Surfrider) Mr. Ravell supported additional funding for scientific research, more reliance on using local expertise and encouraged the development of an ocean ethic. He also supported an MPA network and support for coastal communities in transition to sustainable development and pollution abatement.

Christopher Evans (Executive Director of Surfrider Foundation) Mr. Evans provided a document on clean coastal waters from the Foundation, and addressed some question asked at the HI public hearing about CWA (304 H) waivers. He expressed concern over the claim for the waiver recipients that the blending of sewage is not harming the ecosystem and also questioned the validity of the self-monitoring requirements under the CWA.

Leslie Woodriff. Provided comments via email.

Nate Heasley (Taxpayers for Common Sense) Mr. Heasley comments focused on IFQ, expressed concern about the privatization of a public resource and referred the Commission to a document authored by David Bromley regarding the leasing of fisheries quota.

Lisa Ramiras. (NW Friends of the Earth) Ms. Ramiras' comments focused on Pacific salmon aquaculture and expressed concern over the use of genetically modified organisms, suggesting that the FDA should more carefully consider the classification of GMO's and allow other federal agencies to review proposals for GMOs before allowing their use, particularly salmon.

Evelyn Taylor (Outreach Coordinator for the OR Audubon Society). Ms. Taylor supported the creation of a limited network of MPAs as part of an ocean wilderness network. She indicated that OPAC was a good model, but that there's not a complimentary top down framework.

Dr. Mark Powell/Pete Knudsen & Kurt Sheldon (Puget Sound Harvestors) Mr. Sheldon indicated his organizations concern about he use of IFQ, opposed the establishment of processor IFQ shares and called for the immediate removal of aquaculture salmon from the Sound.

Phil Lansing (Institute for Agriculture and Trade Policy) Mr. Lansing stated that there was a policy vacuum in the management of aquaculture, that these operations externalize much of their costs, are the source of disease and sewage, and require excessive food to grow. Testimony to be emailed to the Commission.

Russell Scranton (OSU student) Mr. Scranton had two comments, one suggesting an expansion of coastal and estuarine research to improve ecosystem baseline information, and second to support the NERRS program.

Amber Himes (Representative from the Orca Relief Alliance) Ms. Himes requested more strict whale watching regulations and sited pollution as another principle cause of the decline of the Orca population.

Lisa Bronagan (Attorney with MaCally Lawfirm) Ms. Bronagan requested that agricultural interests in eastern Washington be given time to be heard, that the regulation being imposed in upland areas are significant and that the agricultural community is a significant stakeholder. She also requested consistency in invasive species policies.

Dave Schneider (Chair of Puget Sound Harbor Safety and Security Cmte) Mr. Schneider express an interest in promoting the safety of Puget Sound. He helped build common interests and pursue unanimous consensus before taking action. He stated that there is a voluntary initiative to do open ocean ballast water exchange and that there is high compliance.

Rich Berkowitz (Puget Sound Steamship Operators) Mr. Berkowitz indicated that the incidence of oil spills have dropped 50% since 1991, and offered examples of a wide variety of safety features and activities undertaken by the PSSO. However, he expressed concern about regulatory issues that may impact Seattle's competitiveness with Vancouver.

Dr. Jan Newton (Senior Oceanographer with State of WA., and Affiliate Prof at UW) Dr. Newton recommend funding ISOOS as put forward by Ocean.US, and emphasized the importance of regional observing system and the need to change the funding views of the federal agencies to allow this to occur.

Stephen Tuffin (Groundswell Fishing Movement) Mr. Tuffin focused on abusive transfer pricing being used by Japanese processors and other collateral activities harmful to the US fishing industry.

Robin Downey (Ex. Dir Pacific Shellfish Growers Assoc) Mr Downey supports marine aquaculture development by forming an aquaculture advisory committee to assist NMFS in its effort to develop a national aquaculture program. He suggested that federal investment in aquaculture research would result in a five-fold return in economic activity and emphasized the importance of clean water to his industry.

Walt North (Pres Karkee Park Community Watershed Project) Mr. North's comments focused on supporting strong in classroom salmon project as an educational approach.

John Fosse (Sustainable Fisheries Alliance) Mr. Fosse stated that he only sells sustainable caught fish and is responsible for starting the Copper River flyin campaign. He asked that the Seattle commercial fishing fleet not be push out of dock space by the recreational boating industry, criticized the Commission for it's lack of women members and lack of commercial fishing representation. He concluded by recommending against federal support for the aquaculture industry, instead focusing these funds to support wild capture fisheries.

Commission Business:

The Chair opened business by stating that the *Topics and Issues* paper should be on the Commission's web site in the near future. This document identifies and organizes the universe of ocean-related issues facing the Commission into nine topical areas and will be a reference for the Commission as it develops its final recommendations.

The Chair also stated that the Commission has contracted for the development of mid-term report that will summarize all the testimony provided to the Commission to date. The report will be published by late summer.

The Chairs of the individual working groups then reported out, with Commissioner Paul A. Sandifer, chair of the Stewardship Working Group, stated that his working group had made some changes to the *Topics and Issues* document. He added that he was pleased overall with the document. He noted that two Ocean Commission Science Advisory Panel (OCSAP) members, Dr. Susan Hanna, and Dr. Ray Hilborn, participated in the working group meeting. The working group was satisfied that the Commission is framing the right questions to solicit the information needed to make its final recommendations.

Commissioner Bill Ruckelshaus, chair of the Governance working group then reported that the Governance Working Group added a new topic to the document –coastal zone management— and consequently was in the process of making changes and reorganizing the question under the Governance working group purview. He stated that the working group had just begun the process of developing a primer of various governance models and would eventually submit this document to the Investment and Implementation Working Group. Governance also was making plans to engage its OCSAP members. He anticipated a teleconference in the near future. Commissioner Ruckelshaus concluded by stating that the final proposal for the Sea Grant Law Center to lead a group in the review of the principle ocean laws had been accepted, which is the second phase in the effort to identify conflicts, overlaps and other coordination and jurisdictional issues hampering the development of an integrated and coordinated national ocean policy.

Commissioner Jim Coleman, Chair of the Research Education and Marine Operations (REMO) Working Group, noted that REMO had realigned some of the topics under its purview and had edited several questions. Otherwise, REMO approved the document with changes. He noted that Commissioner Borrone joined the REMO group during its deliberations.

The Chair stated that the Investment and Implementation Working Group (I&I) did not meet. However, a meeting – including the I&I Science Advisory Panel members — was scheduled for Thursday, July 25, 2002, following the Northeast Regional Meeting in Boston. The Chair noted that the working groups are not working in isolation. He stressed that integration among the various group throughout the process was critical and that the analytical work necessary to complete the Commission's mandate was an monumental task.

The Chair went on to note that the *Topics and Issues* document was an organic document, subject to change and hoped that it would stimulate significant public input.

Commissioner Andrew Rosenberg indicated his support for the current process and recommended that the Commission solicit comments on the *Topic and Issues* document from the Federal government specifically. This proposal was accepted.

Commissioner Rosenberg then asked about the design of an analytical framework so that there would be a common format when the various working groups submitted their recommendations to the I&I group. The Chair indicated that the Commission and staff were considering structural options for submission to the I&I working group and that again the process was fluid and subject to change as the Commission's work progressed.

Commission business concluded with Commissioner Coleman commending Commissioners Ruckelshaus and Hershman for the organization and hospitality of the Seattle meeting.

Appendix 1
June 13& 14, 2002 Ocean Commission Meeting Attendees

<u>Name</u>	<u>Affiliation</u>
Craig H. Allen	University of Washington
E.J. Van Den Ameele	NOAA
Lisa Andrews	Pyramid Communications
Liam Antrim	NOAA/Olympic Coast NMS
Ellen Athas	CEQ
Jan Auyong	Oregon Sea Grant
Kris Balliet	Surfrider Foundation
Katie Barnas	NWFSC/NOAA
Joy A. Bartholomew	Estaurine Research Federation
Mike Beck	The Nature Conservancy
Liesje Bertoldi	University of Washington
Tanya L. Bevan	Cherry Creek Farm
Lisa A. Brautigam	McElroy Law Firm, PLLC
Ted Brockett	Sound Ocean Systems, Inc.
Ralph Brown	Fisherman/PFMC
Kassandra Brown	Oceanographer of the Navy
Barbara J. Cairns	Long Live the Kings
J. Frisbee Campbell	Seafloor Surveys International, Inc.
David B. Camplan	No Affiliation Given
Shawn Cantrell	Friends of the Earth
M. Elizabeth Clarke	NOAA/NMFS
Andrea Copping	University of Washington
Stephen Copps	NOAA/NMFS
Colleen Corrigan	No Affiliation Given
William Daniels	U.S. Aquaculture Society
John Davis	MPA News
Cynthia Decker	Oceanographer of the Navy
John R. Delaney	NEPTUNE/University of Washington
Yvonne deReynier	NOAA/NMFS
John Dohrmann	State of Washington, Puget Sound Water Quality Action Team
Robin M. Downey	Pacific Coast Shellfish Growers Association
Bruce J. Duffe	U.S. Army Corps of Engineers
Ardis Dumett	Senator Murray's Office
Paul Dye	The Nature Conservancy of Washington
Rebecca Ellis	UW, School of Marine Affairs
Kim Engie	University of Washington
Christopher J. Evans	Surfrider Foundation
W.S. (Bill) Evans	Media Arts, Inc.
Stacy Fawell	No Affiliation Given
Fred Felleman	Wildlife and Visual Enterprises

John Foss
Sean Fowler
Bruce Frost
George Galasso
Joseph Gaydos
Jim Gilmore
Jamie Goen
James Good
Bob Goodwin
Pete Granger
Tom Green
CDR Dave Grogan
Shari Gross
Jessica Hamilton
Stephanie J. Hanna
Eric Hanson
Suzanne Hartman
Nate Heasley
G. Ross Heath
Marilyn Heiman
Grant Hewlig
Patrick C. Higgins
Dennis J. Hill
Amber H. Himes
Sandra Hines
Frank E. Holmes
Congressman Jay Inslee
Jan L. Jacobs
Laura W. Jodice
Bruce Jones
Linda Jones
Janne Kaje
Helen M. Kennedy
Michael Kern
Jennie Kopelson
Jennifer Lamsen
Mitch Lesoing
Kristin Ludwig
Brian Lynn
Ross Lytle
Peter Malcolm
Linda Maxson
Sara Maxwell
Lyn McClelland
Robert McClure
Nancy McKay
Michael McPhaden

Sustainable Fisheries Alliance
Fugro Seafloor Surveys International, Inc.
University of Washington
NOAA/Olympic Coast NMS
University of California, Davis
At-sea Processors Association
NOAA/NMFS
Oregon State University
Washington Sea Grant Program
University of Washington
Port of Seattle
Department of Defense
Halibut Association of North America
Oregon State University
USGS
Port of Seattle
APCO Worldwide
Taxpayers for Common Sense
University of Washington
Oceana
No Affiliation Given
Canadian Consulate General
NOAA
Orca Relief Citizens Alliance
University of Washington
Western States Petroleum Association
U.S. House of Representatives
American Seafoods Company, LLC
Oregon State University
Quinalt Indian Nation
NOAA/NMFS
Steward & Associates
No Affiliation Given
Long Live the Kings
CORE
EMS West
Quileute Indian Tribe
University of Washington
State of Washington, Dept. of Ecology
No Affiliation Given
Fugro Seafloor Surveys International, Inc.
University of Washington
MCBI
Maritime Administration
Seattle Post-Intelligencer
The Russell Family Foundation
NOAA

Somrudee Meprasert
Mel Moon
Lance E. Morgan
Richard E. Moritz
James H. Morison
Sam Munn
Harriet Nash
Jan Newton
Diane Nielsen
Shirley WatersNixon

Carrie Nordeen
Walt North

Elena Neufeld
Sheila O'Keefe
Kimberly Nunes
Melissa B. O'Neill
CAPT Wayne L. Olsen
Joan Oltman-Shay
Andrew C. Palmer
Bob Parry

Nancy Penrose
Dennis J. Phelan
Stephen H. Phillips
Paul Quay
Kevin M.M. Ranker
David Revell
Dennis Robison
Suzanne Russell
Michael Schmidt
Reed Schuler
Keith Schultz
Ron Shultz
Capt. Daniel S. Schwartz
Russell Scranton
Janet Kaponolani Sears
Ali Senauer
Jennifer Senkler
Mitchell Shank
CAPT Kathy A. Shield
Frank Shipley
Nori Shoji
Brooke Simler
Doug Sipes
Curt Smitch

Oregon State University
Quilente Indian Tribe
MCBI
University of Washington
University of Washington
No Affiliation Given
Friends of the Earth
State of Washington, Dept. of Ecology
UW, School of Oceanography
Board of Trustees, NW Fund for
Environment
NOAA/NMFS
Carkeek Watershed Community Action
Project
No Affiliation Given
Oregon State University/COAS
Office of Congressman Jay Inslee
University of Washington
Pierce College
North West Research Assoc., Inc.
Ocean Policy Associates
Seattle District, U.S. Army Corps of
Engineers
NEPTUNE/University of Washington
Pacific Seafood Processors Association
Pacific States Marine Fisheries Commission
University of Washington
Surfrider Foundation
Surfrider Foundation, Oregon Chapter
U.S. Coast Guard, Pacific Area
NOAA/NMFS and UW/SMA
Long Live the Kings
Bu Hao Club
NOAA/NMFS
Washington Governor's Office
University of Washington
Oregon State University/ COAS
NOAA/NMFS
NOAA/NWFSC
Pale Quail Productions
Naval Oceanographic Office
Oceanographer of the Navy
USGS- Seattle
NOAA
COMPASS/PISCO (at Oregon State)
Fishermen's News
Washington Governor's Office

Glen H. Spain	Pacific Coast Federation of Fishermen's Associations
John E. Stein	NOAA
Sidney D. Stillwaugh	NOAA/NESDIS
Bridgette Stoffey	Oregon State University
Lori Swanson	Groundfish Forum, Inc.
Keith Sweeney	State of Washington, Dept. of Fish and Wildlife
Stephen Taufen	Groundswell Fisheries Movement
Avalyn Taylor	Audubon Society of Portland
Monika Thiele	UW/SMA
Cynthia Tomkins	University of Washington
Yasuko Tsuru	UW/SMA
Zdravka Tzankova	Sea Web
K. Scott Ulery	Sustain Fish/Small Family Fishers Assoc.
Usha Varanasi	NOAA/NMFS
Rob Walgren	Port of Seattle
Anne Walton	NOAA/ National Marine Sanctuaries
Derek Wang	KUOW Radio
Eli Weissman	The Ocean Conservancy
Curt Whitmire	Oregon State University/COAS
Steven Whitney	The Bullitt Foundation
Gary Wilburn	Washington State Senate
Doug Winge	No Affiliation Given
Kate Wing	NRDC
Krystyna U. Wolniakowski	National Fish & Wildlife Foundation
Lessie Woodruff	The Woodruff Company
James Youngren	Long Live the Kings