

**Testimony of Dr. William T. Hogarth, National Oceanic and Atmospheric Administration,
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Introduction

I want to thank the Commission for this opportunity to provide my perspective on the issues facing management of living marine resources in the 21st century and on contributions the Ocean Commission can make to future ocean policy. I am aware of some of the negative statements that have already been made before the Commission and in the media regarding NOAA Fisheries and its role in fishery management. Controversy is inherent in natural resource management that tries to balance conservation and wise use. With extensive data requirements for good decision making, an extremely public process, and existing mandates designed for the state of oceans resources over 30 years ago, not necessarily in an integrated fashion, the complexity of the Agency's mandate from the American people through Congress is clear. Today's testimony will provide my view on the real and perceived problems facing living marine resource management, identify what actions NOAA Fisheries is already undertaking to address the real and perceived problems, and identify what areas I believe the Commission's input would be of greatest value to living marine resource management over the next few decades.

State of Fisheries

First, I'd like to give you a few fishery facts to put the domestic fishing industry into perspective. In 2000, landings from 70,000 U.S. commercial fishing vessels totaled 9.1 billion pounds with a gross revenue of \$3.5 billion dockside and contributing \$27.8 billion to the Gross National Product (GNP). The commercial industry employs more than 170,000 people in the U.S., the majority of businesses are independently owned and family operated. The U.S. commercial fishing fleet is diverse and is the fourth largest in the world. In addition, ten million U.S. recreational fishers harvested 254.2 million pounds of fish and shellfish representing 75 million fishing trips and adding \$25 billion to the GNP.

The next important piece of background is a quick overview of the living marine resource management system. A unique feature of the federal fishery management system are the 8 regional fishery management councils. As positions become available, state governors are asked to submit a list of three candidates for the position. The only specific criteria is experience with fisheries. Current council composition around the country is generally dominated by the commercial industry, followed by recreational, with very few leaders from the environmental community. In addition, state directors of marine fisheries programs also sit on each council. Councils submit fishery management regulation recommendations to the Secretary, who is then ultimately responsible, through NOAA Fisheries, for promulgating and implementing regulations. The fishery management system is heavily influenced by Council recommendations.

When analyzing current fishery policies and developing recommendations for the future, it is

important to keep in perspective the evolution of federal fishery management and environmental policies over the past 30 years. In the years following the Stratton Commission Report, when many of our present-day mandates, systems, and processes for fisheries management were conceived and implemented, the emphasis was on building and reinvigorating U.S. fishing capacity, advancing harvest technology, and developing new fisheries, products, and markets. With the Sustainable Fisheries Act (SFA) in 1996, our mandate has changed dramatically to address overfishing and other adverse fishery impacts that were, in part, a result of those earlier initiatives. In partnership with the fishery management councils, we are now focused on reducing fishing capacity, establishing limited entry programs in almost all major U.S. fisheries, and implementing strong conservation measures to reduce bycatch, prevent overfishing, restore overfished stocks, and protect essential fish habitats. These efforts have necessitated substantial changes to the fisheries management status quo, which has created controversy among our constituents over the appropriate time frames and the best means of achieving these goals. Impacts to fishing communities under such a scenario are unavoidable; the monumental challenge is to keep adverse impacts as minimal as possible while meeting the legal requirements of current laws. Fishing communities are an important part of American heritage and NMFS must work with the Councils to make difficult management choices while considering the views of our constituents.

Protective legislation, like the Endangered Species Act of 1973 (ESA), as amended, and Marine Mammal Protection Act of 1972 (MMPA), as amended, have not diverged as much as M-S Act from their original goals. Those goals, in general are to recover depleted stocks, particularly those on the verge of extinction, and maintain these stocks as healthy, functioning parts of the ecosystem. There have been amendments to both the MMPA and ESA. For example, the 1994 MMPA amendments required a form of negotiated rulemaking to deal with fishery interactions with marine mammals. Other environmental mandates from the 1970's, such as the National Environmental Policy Act, were designed as decision tools for federal decision makers on discrete projects or to analyze programmatic/policy choices. Later, executive orders and additional analyses, such as the Regulatory Flexibility Act and the Paperwork Reduction Act, added further layers of socio-economic review required for every regulation.

Overall, the multiple mandates have become unwieldy, subjected the Agency to litigation on converging processes that are difficult to reconcile, and are not responsive to the current state of fisheries and related resources. While these multiple mandates were not designed to work together, they allow flexibility to coordinate. For example, guidance for NEPA does suggest early consideration of other laws to enhance its role as a decision making tool, but NEPA is not designed for the complexity of monitoring and assessment of fishery status and the dynamic nature of fishery management, where action often needs to be taken several times a year. Its timelines and requirements for public process and documentation create a cyclical environment where the baselines in documents cannot catch up with the actions. The statute's current structure does not work well with M-S Act requirements and there are many alternative ways to involve the public besides those presented in the Statute. Further, instead of looking at people, fish, marine mammals, endangered species, and their habitat together in a functioning ecosystem, these statutes often create situations where analyses are conducted in isolation. For example, legally implementing the ESA sometimes results in severe action on domestic fisheries, when the

impact of our fisheries are only a fractional component of what is clearly an international problem.

Many of these mandates from Congress have come with inadequate funding, particularly the 1996 SFA amendments. Lastly, for many mandates the intent of the language is not clear. Agency implementation added controversy among constituents and consequently, led to vulnerability in courts.

One of the key components of a management system is enforcement. NOAA fisheries relies heavily on the US Coast Guard for at-sea enforcement, but fisheries mandates are number four on their list of priorities. The USCG has been an outstanding partner in this effort but is underfunded for this important part of its mission. While modernization ideas like Vessel Monitoring Systems are vital for safety, management and enforcement, but they do not replace the need for core resources. One current innovative program to enhance our enforcement capabilities works through state partnerships. NOAA Fisheries Enforcement holds Cooperative Enforcement Agreements with twenty-two coastal states and several U.S. Territories. These agreements have provided for a working relationship that gives the authority to states to enforce federal laws and regulations. They also provide additional opportunity for the states to utilize federal management measures to support their enforcement needs that involve matters in their waters and adjacent federal fisheries. This cooperative enforcement program is an important milestone in State-Federal partnerships and in fisheries enforcement.

The remaining issue I will note in the current state of fisheries has been the phenomenal increase in litigation challenging NOAA Fisheries fishery management actions. In some cases, it led to injunctions that have shut down fisheries. Generally, NOAA Fisheries has been successful defending most legal challenges to its science, but has had problems with timelines and process, particularly under the National Environmental Policy Act.

In order to gain some perspective on the system over the last 30 years of fishery management and find some common ground recommendations for the future, we just concluded a meeting with 8 former Assistant Administrators for Fisheries going all the way back to the 1970s. The key areas of agreement were the necessity of partnerships with states and constituents, strong, balanced councils, open and transparent process, timeliness of decision making, regional empowerment, and annual state of fisheries workshops. All of them agreed that NMFS science has always been responsive and of high quality.

I. Real and perceived problems with U.S. fisheries and fisheries management

I appreciate the opportunity to offer a balance to the stories on the state of marine fisheries.

A. Science

One of the perceived problems has been NOAA Fisheries science. This is indeed a perception and not a reality. NOAA Fisheries is as much a science agency as it is a management and regulatory agency. There is virtually universal acceptance of the need for scientific information to be the foundation of wise stewardship. NOAA Fisheries is the primary steward of US living

marine resources and we must use scientific evaluations of societal benefits/costs and ecosystem impacts of the alternative decisions facing society. Science for public policy choices must be based on science that is responsive, relevant, respected, and reliable.

One of the common misconceptions is that NOAA Fisheries scientists simply “counts fish” for stock assessments. Like the benefits of a research hospital (that conducts several different types of research and also treats patients) over a general practitioner, living marine resource management benefits from a well-designed science program integrated into NOAA Fisheries. We collect long time series of consistent ecosystem observations (*monitoring*), conduct analyses and preparation of scientific advice tailored to the needs of decision makers (*assessments*) and make research investments specifically aimed at improving monitoring or the capability to conduct assessments (*strategic research*). NOAA Fisheries science supports quality research in all three areas. We live our mission. We are an ocean going research organization, totaling 4065 days at sea, on NOAA ships (1702), charters (2165), and cooperative cruises (198) in 2001.

In relatively few cases have science issues been the cause of adverse court decisions. Contrary to some of the criticism, NOAA Fisheries maintains full service science centers with scientists who in many cases are world-renowned in their field. Multiple National Research Council reviews have supported NOAA Fisheries science, particularly on stock assessment methods. As pointed out earlier, we have a system of science quality assurance and unbiased peer review built into the system through the Center for Independent Experts and other regional processes. The problem is not the quality of science or where it is located, but the fact that it is under-funded given the demands for data and analysis. In addition, science sometimes gives people the answers they don’t want to hear, which can lead to criticism.

Just to give you a few statistics demonstrating the breadth and quality of our program, we have a current staff of 2699, over half of which are professional-level scientists. For the professional staff, 22 scientific disciplines are represented and are presented in the following table:

Discipline	Number Employed
FISHERY BIOLOGY	859
GENERAL BIOLOGY	181
GENERAL FISH & WLDLIFE BIOLOGY	74
OCEANOGRAPHY	42
MATHEMATICS/STATISTICS	41
CHEMISTRY	40
ECONOMICS	36
WILDLIFE BIOLOGY	28
ECOLOGY	23
ENGINEERING [civil (8), general (4), mechanical (2), electronics (2), environmental (1), industrial (1)]	18
GENETICS	15
MICROBIOLOGY	14
ZOOLOGY	14
PHYSIOLOGY	6
GENERAL PHYSICAL SCIENCE	6
SOCIAL SCIENCES [social science (2), geography (1), sociology (1), anthropology	5

(1)]	
HYDROLOGY	4
CARTOGRAPHY	3
MUSEUM SPECIALIST/CURATOR	3
ENVIROMENTAL SCIENCE	1
FORESTRY	1
VETERINARY MEDICINE	1
TOTAL	1415

Our scientists are published in respected peer reviewed publications. For example, for 2001 alone, NOAA Fisheries contributions to peer reviewed journals totaled 679. Besides the external peer review process that occurs through publication, NOAA Fisheries has responded to the ever growing, increasingly sophisticated demands on our science programs, as well as the increased scrutiny by stakeholders and courts, and has developed a finely tuned Science Quality Assurance Program (SQAP). This has many components, established to document, formalize and, where appropriate, standardize these collective efforts. The primary objective of the SQAP is to ensure that NOAA Fisheries science is relevant, timely, objective and accurate. SQAP components include: a Strategic Plan for Fisheries Research, Stock Assessment Improvement Plan, NOAA Fisheries Data Acquisition Plan, Fisheries Science Center Accreditation, Fisheries Assessment Computational Toolbox, Center for Independent Experts, External, Independent Studies, and a Sea Grant Joint Graduate Fellowship Program in Population Dynamics and Marine Resource Economics.

Far from just counting fish, NOAA Fisheries works on exciting new discoveries that add important information for our stewardship mission (see presentation accompanying this statement). For example, a NOAA Fisheries researcher in our Honolulu lab is using a combination of electronic tags on animals and satellite remote sensing of the environment to identify habitat critical to the dynamics of pelagic animals. The chairperson of the U.S. Global Ocean Ecosystem Dynamics program (GLOBEC), a multidisciplinary research program to examine the potential impact of global climate change on marine ecosystems, is a Northeast Fishery Science Center scientist, Michael Fogarty. NOAA Fisheries scientists continue to be involved in implementation of regional research. There are many more examples around the country.

NOAA Fisheries conducts much science in close collaboration with university researchers around the country. We don't do our science in a vacuum; we're part of the international scientific community along with academics. For example, in 2002, 32 research projects were funded under the Marine Fisheries Initiative (MARFIN), just one of our cooperative programs, that covered projects for gear modification, bycatch, habitat, education, and technology transfer as well as species information needed to support management decisions. At least 19 universities, states and laboratories shared in these projects. In addition, under the Saltonstall-Kennedy program 30 projects covering approximately four million dollars will be funded throughout the U.S. to address fishery issues.

The increased demand for greater, more-timely and well-supported scientific information strains both our ocean observing capabilities and our human resources. Funding has not kept up with

demands on the system. In addition, federal workforce changes in the next few years will dramatically alter the texture of organization and the ability to meet even the expected demands.

A shortage of new scientists, particularly in assessment work, and the difficulty of recruiting and retaining qualified staff to public service at all levels will be a tremendous challenge.

B. Management

My last comments point out the many sources of data that go into management of living marine resources. The need for additional data and surveys is always an issue. However, our current science program is high quality and credible and using the data we do have available has led to some successful management strategies. Many recent and emerging success stories exist in marine fisheries management that clearly demonstrate that the outlook is encouraging under the existing regime. As noted above, the SFA amendments came into being in 1996. That is less than 6 years ago. Progress has been made. There are a lot of misperceptions about current fishery statistics. Harvest rates have been controlled since the 1996 amendments.

Out of a total number of 905 known stocks in the year 2000, 51 improved over 1999 to the point of now having acceptable harvest rates (i.e. overfishing was not occurring on those stocks) and 26 additional stocks were deemed not overfished (i.e. biomass increased to an acceptable level). Out of the total number of stocks in 1999 and 2000, 64 and 92, respectively, were listed as overfished. However, in some cases this is because we are making progress in obtaining better data and assessments so that we can make those determinations. For many of the new listings as overfished, the reason was because of new overfishing definitions or because sufficient data finally became available, not because biomass had declined.

The 905 stocks above are further categorized as major and minor. Major stocks are based on landings over 200,000 pounds in 2000. For the 287 major stocks, 47 stocks have overfishing occurring, 56 stocks are overfished, but 139 stocks *are not* being overharvested and 106 stocks *are not* overfished. There may be overlap between these categories. In 2000, 75 rebuilding plans have been implemented and approved for 92 identified overfished stocks. Many species with rebuilding plans in place will require 30 or more years to rebuild. The goal will not be reached overnight, but that does not mean that fishery management in the last 6 years has been a failure. There remain around 660 stocks with unknown or undefined status. Of those, 540 are classified as minor stocks. Its important to note that while we agree these stocks are important in an ecosystem context, they are not the primary target species of directed fisheries and therefore, based on our mandates, cannot assume the same level of importance in setting survey priorities under the current available budget. I agree wholeheartedly that we need a much larger and better-funded ocean data collection system that allows us to determine the status of these remaining unknowns, especially as we strive to implement ecosystem-based management.

On the other side of the coin, there is room for improvement in the current state of fisheries. In many cases, fisheries have not met their annual rebuilding targets and stronger action needs to be taken by the Council and NOAA Fisheries to keep these fisheries on their rebuilding schedules. Bycatch issues, including marine mammals and sea turtles, remain a problem in many fisheries because where technological solutions have not been developed, tough choices need to be made

that impact the target species fishery. The Council system and its mandate/authorities is unique among federal regulatory agencies. It provides a good forum for public involvement, and when used to its best advantage, as the intense Agency-Council-public cooperation on the Alaska groundfish fishery for the 2001 fishing year, it has often produced good results (although in this case, the years preceding 2001 were fraught with complications). The lack of sufficient separation of Council discretion on biological parameters from allocation concerns has likely contributed to some of the recent failures of fisheries to meet rebuilding plans. No external scientific panel, without a vested interest, has any legislative authority to set targets based on science free from allocation considerations. Hence it is not difficult to see how interest groups can levy varying levels of influence on decisions. While Secretarial action is always available to NOAA Fisheries, the involvement of the affected public in the Council system, particularly weighted to the commercial and recreational fishery constituencies, makes Secretarial action that does not support Council recommendations more problematic.

C. Southeast Atlantic Region perspective

Since the Commission is trying to get a regional perspective with this series of meetings, the following provides some examples of unique challenges and several success stories in the current state of living marine resources in the southeast region to illustrate some of my earlier points. There are many more examples around the country. The region has a comparably large recreational constituency, making allocation a contentious issue. The region has three fishery management councils, the Gulf, Caribbean, and South Atlantic, which sometimes need to work together. The southeast has a comparably large number of estuarine dependent species (e.g. shrimp and red snapper) that present challenges to data collection needed to fully evaluate stock status. The southeast fishery, in general, is composed of a large number of participants with small vessels, meaning big business ideas are often not part of individual decision making. To add to NOAA Fisheries management challenges in the southeast region, several species of marine mammals, including bottlenose dolphins, are found there most of the year and the most endangered Atlantic whale, the North Atlantic right whale, calves in the winter months off the coast of Florida/Georgia. Finally, because of its warm waters and beaches, the southeast region hosts large numbers of nesting sea turtles, of which all 5 species are threatened or endangered. All five species of sea turtles are found in southeast waters most of the year.

Far from the gloom and doom fishery scenario, the southeast provides a number of good examples of management success for fisheries and protected resources. Three out of the four Atlantic and Gulf stocks of both King and Spanish mackerel (distinct species) were overfished. Today, thanks to aggressive management measures by NOAA Fisheries, the states, and the Gulf and South Atlantic Councils, three out of four stocks are rebuilt and the last one is well on its way. Red snapper is rebuilding thanks to an agreement to stabilize management for five years (meaning harvest levels would not change) and improved bycatch reduction. Nesting populations of Kemp's ridley sea turtles have increased exponentially and loggerhead sea turtles are either stable or increasing at most Southeast nesting beaches. A very large part of this recovery is due to turtle excluder devices in shrimp nets, state-federal cooperation on fishing impacts and protection of nesting beaches, among other things. Finally, the quotas put in place and supported by NOAA Fisheries in International forums for swordfish stocks that are taken in

the Southeast fishery, have resulted in improved stock status.

In the mid-to south Atlantic, summer flounder now supports a strong fishery in both state and federal waters, and scallops off New England and the Mid-Atlantic are making a dramatic comeback. State/federal cooperative management efforts led to the recovery of summer flounder stock. Most recently, I established the “summer flounder roundtable” through the H. John Heinz III Center, where representatives of all the affected stakeholders, including representatives from states, commercial and recreational fishing groups, and non-governmental organizations met in facilitated discussions to determine how best to resolve quota and allocation issues. The long-term outlook for this fishery is very bright.

Most of these fishery management successes share common characteristics--they represent species that mature quickly, have high reproductive rates, and they occur primarily in relatively healthy marine habitats within U.S. waters. For species with different life histories (e.g. Pacific rockfish) that require long time frames to rebuild, we could not expect to see them rebuilt in 2002. My point is that this type of information needs to be considered when numbers are used to illustrate the current state of fisheries management. In contrast, many of the species that have been less successfully managed include species that range far into international waters, such as tunas and billfishes, species that are slow to mature and have low reproductive rates, such as large coastal sharks and Pacific rockfishes, and species that depend on habitats that have been altered or severely degraded, such as Pacific salmonids. Rebuilding these species' stocks is a long-term prospect that will take several decades or longer to accomplish. The most challenging recovery problem of all for the southeast and the Atlantic coast in general, is the N. Atlantic right whale; the population was so depleted by commercial whaling in the last century that, in combination with current threats from ship traffic and fishing gear, it remains precariously on the brink of extinction. While the agency is pursuing gear technology solutions the magic bullet have not yet been found and other management options present potentially significant impacts on fishing communities.

II. NOAA Fisheries efforts to address fisheries challenges

Now that I've given you my view of the state of fisheries, including real and perceived problems, I'll briefly highlight what we are doing within our current funding level and legislative mandates to improve our stewardship. In recent years there have been numerous internal and external reviews of the NOAA Fisheries and a National Academy of Public Administration (NAPA) review is ongoing. Many of these highlighted problems focus on process issues, such as too many layers of review on regulatory packages, budget design problems, and other administrative issues. At least one review (Kammer 2000) noted that NOAA Fisheries funding was completely inadequate to support its mission; while NOAA Fisheries budget has increased considerably over the last few years, a large portion of it is encumbered by earmarks that are not necessarily directed at key components of our mandates.

As noted earlier, lawsuits in recent years have risen dramatically, mostly due to problems with administrative processes. Based on our own analysis, it appears that the area we can most improve to reduce our vulnerability to escalating litigation is to evaluate and make changes,

where appropriate, to the regulatory process and administration through the regulatory streamlining project I will discuss shortly. Bounded by existing resources, there are significant steps we can take to streamline the regulatory process.

NOAA Fisheries has undertaken a major regulatory streamlining project aimed at reducing unnecessary layers of review. Some of the major components include: enhancing our NEPA program, evaluating the role of headquarters offices while further empowering the regional administrators, updating operational guidelines to reflect a front-loading of information, looking at alternative fishery management processes with the councils (e.g. multiyear instead of annual specification setting), commencing a marine fisheries dialogue to work with stakeholders, a workforce review, a science program review, and other initiatives. A detailed plan of the components of this initiative will be available this spring after the report is filed with Congress. This plan involves all our offices, regions and science centers and the regional fishery management councils.

We are particularly focused on trying to integrate the current statutes, as much as possible under their current structure, for fishery actions. This should ultimately lead to fewer surprises at the end of the long process and less impacts on our constituents with regard to last minute regulatory changes that severely restrict fishermen. We are also keenly focused on becoming more transparent decision-makers and integrating alternative collaborative processes where appropriate. We have several pilots ongoing to modernize fisheries management including electronic logbook reporting, vessel monitoring systems and electronic rulemaking and permit systems. We are also reaching out to other agencies like the Navy to coordinate mutual research interests and to improve permit processes while making the best use of our respective expertise. The focus of the Regulatory Streamlining Project has been on the regulatory process because the science problems appear to be primarily funding and perception issues. In short, within two to three years the NOAA Fisheries should have significantly fewer litigation losses on process issues and better relationships and service to our constituents.

Another regulatory area that we are addressing is state/federal management interactions. In many instances, the regulations implemented by NOAA Fisheries through the Council process have direct impacts on the state management of certain species. Also, the successful implementation of ESA and MMPA requires close coordination with state fisheries personnel. We have initiated an annual State Directors meeting to discuss and coordinate activities and have conducted protected species workshops. On the East Coast, the Atlantic States Marine Fisheries Commission (ASMFC) has management authority in state waters through the Atlantic Coastal Act (ACA). Since many marine species spend portions of their lifecycle in both state and federal waters, and in northern and southern regions at certain times of the year, the management regime can become complex. This has caused some management difficulties due to more flexibility under the ACA than under the M-S Act. For example, while the federal government must abide by the national standards in the M-S Act, in state waters, the states are not required to have equivalent standards. However, success stories such as summer flounder, striped bass, and weakfish, demonstrate that, in some cases, joint federal/state management has been successful.

To enhance our science program with regard to applied research, we are expanding our

cooperative research with fishermen, particularly on gear development issues. This initiative is an important tool to gather additional data while taking advantage of stakeholder expertise, which will also lead to improved relationships with those stakeholders. For a cooperative research program with fishermen to work, NOAA Fisheries scientists need to be involved in the design and management to insure that the results will withstand scientific scrutiny. This means adequate resources must be available to the agency to provide the support. Some examples of cooperative research projects include monkfish surveys in the northeast, where researchers teamed up with two commercial monkfish trawlers to learn more about monkfish stocks and a cooperative logbook program initiated in the Alaska sablefish longline industry. In the southeast, many important projects are underway, including a gear development experiment in the swordfish longline fishery to look for ways to reduce sea turtle bycatch, an experiment to look at fish trap modifications with regard to size and species selectivity in N.C., and a project with recreational fishermen to put archival tags on billfish, particularly marlin, to evaluate post release survivorship.

III. Where can the Ocean Commission help

Governance issues.

- As I've described, today's system for U.S. living, non-living, and cultural marine resource management includes several mandates that were not designed to work in unison, often with different goals, time lines, and processes. This is not just between federal mandates, but also a problem between conflicting state and federal mandates. Collectively, they are a source of various problems and inefficiencies. Additionally, these mandates are sometimes unclear in terms of what the nation desires to achieve, and they lack the analytical framework necessary to arrive at mutually acceptable actions under all the mandates at the same time. In many cases the mandates are too subjective, without clear Congressional guidance in the statute itself or in the legislative record. At the international level these laws sometimes force the United States to severely restrict domestic fishermen while not providing an effective mechanism for international action required to meet conservation goals. But most importantly, they are not designed to accommodate an ecosystem approach that includes people. Recommendations on how best to integrate an ecosystem or sustainable development approach would add much to furthering ocean policy for the next 30 years.
- Decision making authorities should be examined. Regarding the regional fishery management councils (councils) and the relationship between NOAA Fisheries and the councils, it has been suggested that separating allocation issues from conservation goals (that should be based on unbiased scientific advice), may help with problems like failure to reach rebuilding targets several years in a row. Under the existing system the councils develop fishery management measures and submit them for approval, disapproval, or partial approval to NOAA Fisheries (acting on behalf of the Secretary of Commerce). If management measures are disapproved they are sent back to the council for revision, but there is no statutory requirement for re-submission of those measures. For this reason, some of the conservation measures mandated by the 1996 amendments to the Magnuson-Stevens Act, such as identifying essential fish habitats, preventing overfishing, and restoring overfished

stocks, have not been fully realized. In the absence of effective management measures the default is ineffective management or no management. These are just a few issues NOAA Fisheries will also be evaluating for potential recommendations to Congress during the M-S reauthorization process this year.

Science

- NOAA Fisheries is a science-based agency. Our science is designed as an intricate link with our stewardship responsibilities. The future of successful fishery management rests on our ability to produce and deliver quality and timely scientific information. NOAA Fisheries science and research programs have been plagued by chronic under funding which includes funds for state of the art fishery research vessels and technological developments (i.e. modernization). Evaluating and recommending what is realistically needed to adequately support current mandates and to move towards an ecosystem approach is important.

Conclusion

In light of many challenges we are facing, NOAA Fisheries is working to modernize the Agency. Although limited in quantity by current resource levels, our science is of high quality, internationally recognized, and in most instances timely, within current resource constraints. There is an urgent need for additional state of the art fishing research vessels (FRVs), more stock assessment capability, socio-economic data, and the personnel to carry out the process.

We are addressing the regulatory process by working directly with the councils, regions, headquarters offices, and General Counsel to “front-load” the decision process to make it more efficient, effective, open and transparent, particularly with respect to the affected public. As mentioned, multiple reviews have been conducted on NOAA Fisheries and we have implemented many of those recommendations in addition to our own initiatives.

To further enhance the science-based decisions in ocean policy in the next 30 years, a comprehensive ocean observing system must contain living marine resource biological information. Ideally this should be an ocean *information* system that includes not only living marine resource components, but socio-economic data. Living marine resources need to be an integral part of an observing system that incorporates physical, chemical, and biological oceanographic data, as well as standardized fishery, sea turtle, and marine mammal surveys, and habitat mapping, monitoring, and assessment.