Staff Follow-up Report by the

NATIONAL ACADEMY OF PUBLIC ADMINISTRATION

For the Congress and the National Marine Fisheries Service

February 2005

IMPROVING FISHERIES MANAGEMENT:

ACTIONS TAKEN IN RESPONSE TO THE ACADEMY'S 2002 REPORT

The views expressed in this report are those of the staff study team. They do not necessarily reflect the views of the Academy as an institution.

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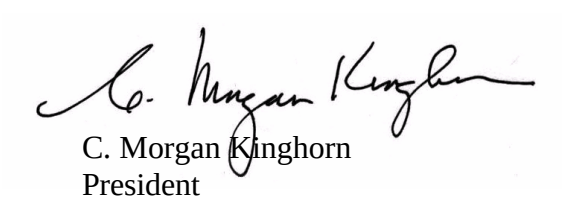
FOREWORD

In 2002, Congress asked the Academy to conduct an independent study of the National Marine Fisheries Service (NMFS) and its ability to meet its legal missions and requirements. At that time, an increasing number of fishery management actions were being challenged in federal courts, legislated mandates had created increased and sometimes conflicting responsibilities, and fishery productivity had leveled off at about ten percent below its high in the early 1990s. An Academy Panel, along with the National Research Council (NRC) of the National Academy of Sciences, made numerous recommendations to improve fisheries management, including recommended changes in management and regulatory processes, constituent relations, and NMFS' program budget and science activities.

This follow-up report summarizes key actions that NMFS has taken to address the Academy Panel and NRC recommendations, as well as its approach to improving fisheries management. The information should be very useful as Congress considers reauthorization of the Magnuson-Stevens Fishery Conservation and Management Act and the Administration takes action to respond to reports of the Pew Oceans Commission and the U.S. Commission on Ocean Policy.

Academy staff identified numerous fundamental changes underway in NMFS that directly address many of the concerns the Academy and NRC reported in 2002. NMFS management has expended considerable effort in developing and implementing new management approaches aimed at improving the timing and quality of fisheries management decisions, the agency's ability to set priorities and devote appropriate resources to many mission goals, and interactions with its constituencies and partners. However, it remains to be seen whether NMFS can successfully implement all of the planned changes, especially in light of what agency officials see as limited resources. Success will depend on the continued support of Congress and the Administration, the fishery management councils, NMFS' constituents and partners, as well as NMFS' own strong and determined leadership.

The Academy is pleased to provide this staff follow-up report to Congress, the National Oceanic and Atmospheric Administration (NOAA) and NMFS. We are grateful to NOAA and NMFS headquarters and regional staff for their support and cooperation. Special thanks and appreciation go to Dr. Cynthia Jones, chair of the committee responsible for the 2002 NRC study, for reviewing and assessing information gathered by Academy staff related to NMFS' scientific capabilities and accomplishments. I also want to express my appreciation to the council members and stakeholders who contributed their views and experiences.



C. Morgan Kinghorn
President
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APPENDICES

ACRONYMS

AOP	Annual Operating Plan
FMP	Fishery Management Plan
FY	Fiscal Year
JEA	Joint Enforcement Agreement
MAFAC	Marine Fisheries Advisory Committee
MSA	Magnuson-Stevens Fishery Conservation and Management Act
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NRC	National Research Council
OCS	Office of Constituent Services
OGC	Office of General Counsel
OLE	Office of Law Enforcement
PBA	Program Baseline Assessment
PPBES	Planning, Programming, Budgeting and Execution System
RSP	Regulatory Streamlining Project
SSC	Scientific and Statistical Committee

EXECUTIVE SUMMARY

A number of fundamental changes are underway at the National Marine Fisheries Service (NMFS). Many of these changes directly address concerns the National Academy of Public Administration (Academy) reported in its 2002 Panel report, entitled, *Courts, Congress and Constituencies: Managing Fisheries by Default*. This Academy staff follow-up report summarizes the agency's progress in planning and undertaking these changes.

NMFS management has expended considerable effort in developing and implementing new management approaches aimed at improving the timing and quality of fisheries management decisions, the agency's ability to set priorities and devote appropriate resources to its many mission goals, and its interactions with its many constituencies and partners. Changes are being implemented in how NMFS and councils prepare and review fisheries management actions, how NMFS conducts planning and budgeting, the information NMFS has to monitor and assess field and headquarters office actions, and how it interacts with constituents and partners. NMFS is also taking steps to expand the nature of its scientific work and to improve the role of science in fisheries management.

If fully implemented, these initiatives hold promise for improving fisheries management, though it is difficult at this point to judge the full nature and extent of the impact they will have. Of key concern is the extent to which implementation is dependent on availability of adequate funding. NMFS has identified many areas where additional funding is needed: implementation of aspects of its Regulatory Streamlining Project (RSP), implementation of training and quality assurance programs, and creation of management databases, in particular. Also, NMFS has identified a need for significant new resources to develop the scientific analyses needed to effectively carry out its key fisheries and protected resources missions.

It is important that, as NMFS continues along the path it has set, it continuously monitors the progress being made. In coming years it will be imperative that an in-depth assessment be made to determine the extent to which these changes accomplish the goals of improving quality, timeliness, and effectiveness of fisheries management actions.

Fisheries Management Process

NMFS is seeking to make a dramatic change in its approach to fisheries management, moving from a laborious, sequential rule-making process to a more collaborative, transparent one. This approach addresses many of the problems associated with the fisheries management process the Academy Panel identified in 2002. Some of the Academy's specific recommendations were made in the context of the then existing, sequential process and their relevance is reduced under this new approach.

One area in which NMFS has made significant progress is in carrying out its responsibilities under the National Environmental Policy Act (NEPA), a key stumbling block identified in 2002. NMFS has hired NEPA coordinators, provided training, and directed funding for NEPA activities to regional offices and councils. Progress also has been made in delegating authority to

regions, and increasingly regions and councils are using a "frontloading" approach to involve key personnel and identify and resolve issues early in the rulemaking process.

However, the timing and extent to which RSP will be fully implemented is not clear. It is unclear what actions will be taken absent the additional funding NMFS believes is needed. If RSP is not fully implemented, many of the Academy's recommendations may need to be addressed more directly. If NMFS is unable to implement the full process outlined in its draft Operational Guidelines, but continues to implement RSP "to the extent possible," it could cause confusion in terms of which procedures are to be used for which actions. And, because the new approach is more reliant on having final actions taken in the region, related headquarters efforts, such as training, quality assurance, development of baseline measures, and development of electronic databases to allow tracking and assessment of progress, as well as the regional "critical feedback points" included in the Operational Guidelines, take on increased importance. It is important that these oversight and quality assurance mechanisms proceed in tandem with implementation of processes that devolve more responsibility to the field offices.

Finally, the goal of "getting it right the first time," rather than finding problems as proposed management actions "move up the review chain" is appropriate. Again, NMFS needs to monitor the new process carefully to determine the impact, not only on quality of fishery management actions, but on the time it takes for those actions to be finalized.

Planning and Budgeting

The National Oceanic and Atmospheric Administration's (NOAA's) new corporate approach to planning and budgeting represents a substantial change in NOAA and, specifically, in NMFS. NMFS has expended considerable effort in implementing this new approach and should continue improving its efforts to conduct the analyses at the core of the process. NOAA's new Planning, Programming, Budgeting, and Execution System (PPBES) directly addresses many of the Academy's concerns about NMFS' ability to look globally at its actions and set priorities through more comprehensive and integrated planning. Both NMFS and NOAA officials see the process as forcing a comprehensive view of agency programs, facilitating an alignment of science and management, and helping to ensure that related resources, e.g. data and the scientists to analyze them, are ramped up at a complimentary rate. Another goal is to help NOAA and NMFS better explain to Congress and other non-scientific stakeholders what the agency is doing and why it needs the resources it requests—one of the specific concerns underlying the Academy's 2002 recommendations.

PPBES is still evolving and NOAA is taking steps to help improve the consistency and accuracy of the data used, as well as the alignment of key activities within individual programs and goals. If successfully implemented, the Annual Operating Plan system NMFS has been developing will significantly improve the agency's ability to provide input into PPBES and to set internal priorities.

Program Monitoring

NMFS has not established a clear policy to assign one person responsibility for monitoring field implementation of spending plans or other actions. This could continue to hamper its ability to confidently report to Congress and constituents how specific funding initiatives are used. However, the agency is increasing the information it has available to monitor field activities through various databases and actions of headquarters program coordinators. It does appear that an increased emphasis on accountability, including the appointment of program managers, created as part of the PPBES process has resulted in some increased headquarters monitoring of field activities. However, the extent to which this fairly high level of monitoring will address the field offices' success in implementing more specific actions is yet to be seen. It also is not clear how headquarters offices will take advantage of the improved data available to oversee field office activities.

Constituent Relations

Overall, NMFS is heading in the right direction with regard to constituent and partner relations at the headquarters and regional levels. One 2003 initiative set the tone for future efforts: the Assistant Administrator held eight constituent sessions around the country, attended by a wide variety of constituents. NMFS has expanded its efforts to reach out to constituents and partners, and these efforts are seen as effective by the constituents and partners the Academy contacted. NMFS' Office of Constituent Services (OCS) has grown in both the number of staff and initiatives, significant effort has been exerted to obtain input from several key constituencies, strategic plans have been developed or are planned for specific issues and constituencies, NMFS has begun to clarify responsibilities below the OCS level, and OCS has plans to increase monitoring of field office activities.

However, OCS is a relatively new office and funding and staffing constraints have prevented a comprehensive approach to policy and program development. NMFS officials acknowledge that, given the agency's many critical missions, they may not be able to give constituent services high priority for funding. No overall strategy exists for OCS, and OCS is just beginning to obtain comprehensive, on-going information about the regional staffs' constituent activities and the extent to which they respond to constituent needs. Though not yet developed, NMFS has indicated that it will implement a methodology to conduct periodic surveys of constituents and partners to help it assess and improve its efforts.

Science

In conjunction with the Academy's 2002 study, the National Research Council (NRC) of the National Academy of Sciences studied the scientific foundation, data, models and processes used by NMFS to meet it regulatory requirements and respond to litigation. NRC's recommendations were reported by the Academy, as well as by NRC in its 2002 report: *Science and Its Role in the National Marine Fisheries Service.*

To follow up on the NRC's recommendations, the Academy staff obtained written information from NMFS highlighting the agency's actions and progress, and provided that information to the

Chair of the NRC committee that oversaw the 2002 NRC study. Appendix A presents the summary information and the Committee Chair's related observations. Overall, progress is being made, but the size and nature of NMFS' scientific mission continues to present significant challenges.

IMPROVING FISHERIES MANAGEMENT: ACTIONS TAKEN IN RESPONSE TO THE ACADEMY'S 2002 REPORT

INTRODUCTION

The National Marine Fisheries Service's (NMFS) Fiscal Year (FY) 2004 appropriation identified funding for follow-up work related to the National Academy of Public Administration's (Academy) July 2002 Panel report entitled, *Courts, Congress and Constituencies: Managing Fisheries by Default*. The 2002 report highlighted problems associated with several aspects of the fisheries management process and made forty-four recommendations aimed at improving the existing fisheries management system. The report also contained the results of a companion study by the National Academy of Sciences' National Research Council (NRC) that made twelve recommendations for improving fisheries science.[1]

This follow-up report summarizes the key actions NMFS has taken, as of December 2004, to address the intent of the Academy and NRC recommendations. Legislative action on reauthorization of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) is expected in the 109th Congress. The information in this report concerning the approach and extent of actions NMFS is taking to improve fisheries management should inform that debate. Additionally, both the Academy and NRC made recommendations directly to Congress; these are briefly discussed at the end of this report.

Key Findings of the 2002 Report

The specific objective of the Academy's 2002 Panel report was to thoroughly review NMFS' regulatory and legal defense capabilities, financial management capacity, constituent relations, and organizational structure. NRC reviewed the adequacy of the data, scientific foundation, models, and processes used by NMFS. The study was conducted in response to a provision in the report accompanying the Department of Commerce's FY 2001 Appropriations Act, in which Congress called for an independent study of NMFS and its ability to meet its legal missions and requirements.

The Academy's study built on several earlier reports, most significantly a June 2000 National Oceanic and Atmospheric Administration (NOAA) internal report entitled, *An Independent Assessment of the Resource Requirements for the National Marine Fisheries Service*. That report assessed NMFS' resource needs and planning and budgeting process. It concluded that, in spite of significant funding increases for some activities, the agency was struggling to manage an increasing workload in most areas and had reached a point where additional resources and reprioritized programs were needed. The report also raised concerns about NMFS' planning and budgeting process and its ability to communicate what it does and what it accomplishes. The report found weaknesses in these areas to be a key cause of diminishing trust in NMFS among constituents and Congress.

[1] *Science and Its Role in the National Marine Fisheries Service*, National Academy Press, 2002.

The overall theme of the Academy's 2002 Panel report was that NMFS needed to take the lead in fisheries management, rather than leaving this to Congress, the courts, and NMFS' constituencies. The Academy found that, over time, the legislated fisheries management system had become increasingly bogged down and NMFS had lost the lead in fisheries and marine issues. Program policy and priorities were increasingly dictated by Congress (largely through appropriation actions) and the courts, where stakeholders on "both sides" continued to air grievances. The Academy Panel concluded that NMFS needed to take back control. To do that, the report recommended changes to clarify fisheries management responsibilities and rationalize the management processes, allow NMFS to better plan how to accomplish its mission and better track progress in doing so, ensure science capabilities can address future needs, and, finally, to improve NMFS' constituency relations to restore trust among all the stakeholders.

Scope and Purpose of the Staff Follow-Up Study

The purpose of this Academy staff follow-up study is to examine what progress NMFS has made in carrying out the recommendations made in the 2002 report. For the most part, information was obtained through interviews of headquarters officials, review of NMFS documentation, when available, and review of headquarters and regional websites. The Academy staff also met with officials from one regional office, one science center, two fishery management councils (councils), and several "outside" stakeholders. The relatively limited nature of this follow-up effort did not allow a complete assessment of the extent to which the agency's actions had been implemented or of their probable impact. Information was collected from September through December 2004.

The Academy staff obtained information concerning NMFS' actions related to the NRC recommendations through interviews with NMFS officials and from written information NMFS prepared in response to questions. Summaries of that information were provided to the Chair of the NRC Committee that conducted the original NRC review, and she provided her comments on the efforts NMFS had taken as described in the summaries. This information is provided in Appendix A.

As discussed below, some broad changes are being made in NOAA and NMFS management, and in some cases the recommendations made in 2002 are no longer directly applicable to the new processes, or the new processes seek to address the underlying causes of problems in a way different from that recommended. Consequently, for the most part, this report does not cite agency actions for specific recommendations. Instead, it addresses efforts aimed at the types of problems identified. Appendix C provides a listing of the earlier recommendations organized by the problem areas discussed below.

NMFS was given the opportunity to comment on a draft of this report. The Academy incorporated the comments received where appropriate.

CHANGING CONTEXT FOR FISHERIES MANAGEMENT

In its 2002 report, the Academy Panel pointed out that the fisheries management structure that worked well in the 1970s, when the primary goal was to allocate an abundant resource, is, despite some successes, proving less effective in allocating a scarce and declining resource and in protecting the marine environment and the fish and marine species that depend on it. The issues involved in fisheries management have become increasingly complex as multiple goals and environmental issues complicate the scientific and political landscape. These factors, coupled with the increasingly recognized need to manage fisheries in a larger environmental and economic context, may all work to constrain the ability of the existing structure to meet the legislative mandates placed on it. Neither the Academy nor NRC had the time or resources, in the 2002 studies, to fully assess the existing fisheries management structure to determine whether fundamental changes are needed. Therefore, both the Academy and NRC recommended that a complete assessment be done. The Academy noted that two opportunities to do such an assessment existed with the U.S. Commission on Ocean Policy's study, discussed below, and the reauthorization of MSA.

Report of the U.S. Commission on Ocean Policy

In September 2004, the U.S. Commission on Ocean Policy (Commission) released its report, *An Ocean Blueprint for the 21st Century*. The Commission's recommendations seek to drive the nation toward a comprehensive approach to managing the oceans, not just fisheries or specific habitats. To do so, the Commission focused on the need for an ecosystem-based management approach. The report stated that:

> *U.S. ocean and coastal resources should be managed to reflect the relationships among all ecosystem components, including humans and nonhuman species and the environments in which they live. Applying this principle will require defining relevant geographic management areas based on ecosystem, rather than political, boundaries.*

While the Commission made recommendations aimed at improving the current fisheries management process, it did not recommend fundamental changes in the underlying structure of that process. Some of the most directly related changes recommended by the Commission include an altered federal agency structure, regional ocean management, and increased resources dedicated to science.

The Commission identified a need for a more cohesive, centrally guided approach to oceans management. One key to this central guidance would be realignment of NOAA.

> *Some restructuring of existing federal agencies will be needed to make government less redundant, more flexible, more responsive to the needs of states and stakeholders, and better suited to an ecosystem-based management approach. Because of the significant hurdles involved, a phased approach is suggested. As an initial step in a phased approach, Congress should pass an organic act that codifies the existence of NOAA. This will strengthen the agency and help ensure*

that its structure is consistent with three primary functions: assessment, prediction, and operations; management; and research and education.

The Commission also recommended enhanced regional coordination among the many stakeholders, including states, territories, Tribes, and local entities. Noting that many of the nation's most pressing ocean and coastal issues are regional in nature, the Commission concluded that "[o]ne of the priority tasks…should be to develop and promote a flexible, voluntary process pursuant to which groups of states could create regional ocean councils." The existing fishery management councils would be part of this regional approach.

The Commission recognized a need for a substantial increase in our knowledge of oceans and ecosystems. It made recommendations to improve scientific knowledge and, in support of those recommendations, for substantial increases in funding dedicated to science, much of which is within NMFS' area of responsibility.

The Administration's December 2004 response to the Commission report indicated that the Administration will continue to work toward an ecosystem-based approach to managing the oceans. The report pledged to take improvement actions, including changes to achieve a more coordinated approach to managing the oceans (supporting among other things the NOAA Organic Act) and to encourage and support more regional, multi-partner efforts (pointing to ongoing efforts in the Great Lakes, Gulf of Mexico, and other places). The report also outlined numerous efforts underway or planned to improve the science on which ocean management is based, including developing an Ocean Research Priorities Plan and Implementation Strategy. It did not specify what, if any, additional funding would be sought to implement the efforts described.

These and other changes place the existing councils and NMFS' fisheries management efforts in a much wider context and would clearly impact how fisheries management is conducted. The Commission's recommendations can be expected to be a major focus of Congressional deliberations on MSA in the 109th Congress.

Organizational and Management Context[2]

Since the Academy's 2002 report, NOAA and NMFS have made some organizational and management changes that directly impact how NMFS is approaching many of the Academy's recommendations.

Over the last several years NOAA has been implementing management changes designed to transition the agency to a more corporate and integrated organization. Implementation of its Planning, Programming, Budgeting and Execution System (PPBES) is a key effort in this transition. Through matrix management, it moves planning and budgeting efforts away from the traditional line-office focus toward agency-wide goals; it links strategic planning and budgeting; and is intended to ensure that all programs work to support the agency's strategic goals. NOAA

[2] NMFS recently created a 6th region—the Pacific Islands—and is in the process of staffing the regional office and science center there.

began implementing portions of the PPBES in FY 2004; the FY 2006 budget cycle is the first for which it has been fully implemented.

The process is directed through the existing NOAA-level management structure, including (1) the NOAA Executive Council, which is chaired by the Undersecretary for Oceans and Atmosphere and includes the head of all major organizations in NOAA, including the Assistant Administrator for Fisheries, and (2) the NOAA Executive Panel, chaired by the Deputy Undersecretary for Oceans and Atmosphere and includes the deputies of all major NOAA organizations, including the NMFS' Deputy Assistant Administrator for Operations. A number of NOAA-wide subject matter Advisory Councils also support the system, again emphasizing the NOAA-wide nature of the process. One key advisory council is the Ocean Council, which is co-chaired by the Assistant Administrator for Fisheries and the Assistant Administrator for the National Ocean Service. Each of the five agency-wide goals is supported by a goal team and team lead. Each goal encompasses a number of programs, each led by a program manager. Some of the programs are contained wholly within a line office while others are "matrixed" programs, supported by multiple line offices. (The PPBES is more fully discussed in a later section.)

Since the Academy's report, NMFS has had consistent leadership. The Assistant Administrator, who had been recently appointed at the time of the Academy's original study, has remained at the head of the agency for over 3 years, and many in NMFS headquarters and regions, as well as constituents, praise his leadership and direction. Also, Congress has maintained the increased level of funding appropriated in FY 2001. The agency's Operations, Research, and Facilities funding[3] increased from about $421 million in FY 2000 to about $635 million in FY 2001. The FY 2005 appropriation was about $674 million.[4] The appropriations also maintained an increased funding level for most of the priority activities identified in the *2000 Independent Resource Requirements Report*, including improving stock assessments, protecting threatened and endangered species, carrying out responsibilities for economic analyses, enforcement, observers, and cooperative research.

NMFS officials stated that the NOAA management changes have directly impacted the way the agency conducts planning and budgeting. They pointed to other changes as well. One key management change was the September 2002 reorganization of the field structure. Under this change, the science centers report to a newly created Director for Scientific Programs in headquarters, rather than through the directors of the regional offices.[5] Officials said that this change, in part, was to avoid what some stakeholders outside NMFS saw as the possibility that "management" would influence "science" in regional fishery management activities. The practical impact, according to many of the NMFS officials the Academy staff interviewed, has been minimal. Nonetheless, "management" and "science" now appear to be on a more equal footing, at least in the headquarters organizational structure, in which the Deputy Assistant

[3] This category of funding is the largest of three accounts in which NMFS funds are appropriated. It supports most of the agency's operating programs and personnel.

[4] The FY 2002 and 2003 levels were somewhat lower, about $580 million in each year; the FY 2004 appropriation was $640 million.

[5] As will be discussed later, both NRC and the Ocean Commission addressed issues related to the relationship of management and science in the fisheries management process.

Administrator for Regulatory Programs (to whom the regional offices report) and the new Director for Scientific Programs both report directly to the Assistant Administrator for Fisheries.

Overall, NMFS officials say that the agency has begun to better balance its management and science efforts, where in the past fisheries science was, perhaps, the more dominant focus. This increased attention to management efforts is perhaps most clearly demonstrated in the efforts to improve the fishery management process, embodied primarily in implementation of NMFS' Regulatory Streamlining Project (RSP). This streamlining effort, which will be more fully discussed in later sections, was originally undertaken at the direction of Congress and has been at the forefront of the agency's management agenda for the past several years. One aspect of streamlining is to delegate more responsibility to the field, which in turn, should allow headquarters staff to focus more on policy and quality assurance.

Also, in August 2004, NMFS created a new Policy Office, which has implemented a process for creating new policies in NMFS and is implementing a Policy Directives System. Previously, agency policies were promulgated in a variety of forms, such as official statements, issuances, and memos, and by NMFS offices at various levels in the organizational structure, from the Assistant Administrator's office to individual headquarters offices. In January 2005, the office began operating a searchable, web-based system which covers all aspects of NMFS management, from basic administrative issues, such as "alternative work schedules," to program policies, such as those related to enforcement and fisheries management. NMFS intends to make appropriate parts of the website available to the public early in 2005.

In spite of the changes that have occurred, some things have remained the same in NMFS since 2002. NMFS budgets continue to be heavily impacted by line item appropriations. Though many of those line items directly support agency priorities, many do not, either in substance or in the level of funding. NMFS managers noted that line items reduce their flexibility. Additionally, staff turnover continued. For example, the Office of Management and Budget, which was headed by an acting director at the time of the Academy's report, has since that time been headed by yet another acting director and, since June 2003, by a new director. Agency officials pointed out that 15 of 27 of the Academy's key contacts during the 2002 study are either no longer with NMFS or have changed positions within NMFS. Likewise, the region the Academy staff visited had experienced almost a total turnover at the Assistant Regional Administrator level in the last year. Other positions have remained vacant; for example, the Deputy for the Office of Constituent Services was not appointed until January 2004. However, NMFS officials emphasized that they now have filled all of the senior executive positions, and that these individuals will provide the leadership to move the agency forward.

The Litigation Record

A key impetus behind the Congressional request for the Academy's 2002 study was concern about NOAA's fisheries litigation record. An increase in both the number of suits brought and the percent of cases lost was seen by many as evidence that major constituents were dissatisfied with the federal fisheries management system, and raised questions about the adequacy of the processes and data NMFS used to respond to litigation.

NOAA's fisheries litigation record has improved markedly since the Academy report was published. The Academy reported that although NOAA won 83 percent of its fisheries cases prior to 1997, it won only 45 percent of these cases between 1997 and 2001. NOAA reported improvement since then: it won approximately 64 percent of its fishery cases in 2002 and 2003 and 90 percent in 2004 (as of November 3, 2004).[6] NMFS officials were extremely encouraged by the improved litigation record. They emphasized that, although NMFS issues an average of about 250 final regulations annually, Federal courts set aside or invalidated only four fisheries regulations between January 1, 2002 and November 3, 2004.

The Academy did not review the causes of the improved litigation record. However, NMFS officials believe that this improvement can be attributed to the management changes the agency has begun to make, especially initial implementation of RSP, improved environmental analyses, improved coordination with the councils, and increased collaboration between NMFS and NOAA's Office of General Counsel (OGC) and the Department of Justice. These changes are discussed more fully in the following sections.

IMPROVING THE FISHERIES MANAGEMENT PROCESS

Academy's 2002 Recommended Improvements

In 2002 the Academy reported that as NMFS and the councils struggled to develop and implement management plans and other management actions, the process had bogged down. Decisions were slow, late, and often successfully challenged in court. NMFS and the councils had resorted to a myriad of "patchwork" and default procedures that, while initially expedient in getting decisions made, had over time eroded confidence in those decisions among all of the stakeholders. The Academy's study confirmed many problems that had already been identified from internal and external assessments, including lack of clarity in responsibilities among NMFS regional offices, centers, and the councils; lack of timeliness in decisions on management actions; lengthy layered reviews; excessive delays; outdated policies and guidance; inadequate analyses; and unpredictable outcomes.

At the time of the Academy's study, NMFS was developing RSP as an approach to "regulatory streamlining" and was attempting to improve its capabilities to meet its responsibilities under the National Environmental Policy Act (NEPA). The Academy supported those efforts and made several recommendations that focused on implementation of RSP,[7] improving NEPA efforts, and revising NMFS' Operational Guidelines.

[6] NOAA's data are based on the criteria referred to in the 2002 Academy report. Specifically, the number of fisheries decisions includes those that are final, non-enforcement decisions concerning the management of federal fisheries subject to MSA and other fisheries statutes administered by NOAA. In addition, only the decision of the highest court is included in these statistics.

[7] NMFS completed the final draft of the report to Congress on regulatory streamlining in April of 2002. The report was sent in final form to Congress in December of 2002.

The Academy also made some more specific recommendations with regard to improving some of the existing procedures under which Fishery Management Plans (FMPs) and other actions were developed. Those recommendations covered the following key areas:

- Clarify and agree upon responsibilities for key efforts related to management and science. The Academy recommendations sought to have the Assistant Administrator and/or regional administrators clarify responsibilities—between regional offices and councils, for analytical support of council actions, and for preparation and review of documents—as well as create a process in each region for regional offices, councils and science centers to agree on priorities for issues to be addressed and analyses to be done.

- Make the process between NMFS and the councils more seamless. The Academy recommendations included, for example, reducing the extent to which regional administrators abstained from council votes rather than clearly stating a NMFS position, setting timeframes for regional administrators to review council submissions, explicitly providing opportunities for councils to close meetings to obtain legal advice from NOAA Office of General Counsel, and creating regulatory calendars accessible by council members as well as other stakeholders.

- Improve the support for and documentation of council decisions. Some of the recommendations were to require supporting analyses be done before councils make final decisions; establish a standard format for administrative records; and require a clear explanation for council decisions, especially when scientific information could result in more than one action.

- Clarify roles of states and interstate commissions in the process, especially where fisheries exist primarily in state waters but also reach into areas of federal responsibility.

The Ocean Commission also made recommendations addressing these issues. The Commission recommended, for example, a clear prioritization of research needs to be jointly developed by the councils and the Scientific and Statistical Committees (SSCs),[8] which would then be incorporated into NMFS research, analysis, and data collection programs. It also raised concerns about the timeliness of fishery management actions, recommended timeframes be set for certain scientific actions and council proposals, noted that NMFS would have to seek ways to improve timeliness, and sought to clarify the roles of states and NMFS where fisheries overlapped.

NMFS Actions

NMFS has directed considerable resources and effort toward improving the fisheries management process in the last few years, chiefly in developing and implementing RSP, and may be on the brink of a fundamental change in how it operates. Once fully implemented, NMFS envisions a process that is much more open and transparent and less sequential and

[8] SSCs assist the councils in development, collection and evaluation of statistical, biological, economic, social and other scientific information relevant to development of FMPs. SSC membership can include individuals with expertise in these areas from diverse backgrounds, including federal and state governments, academia, and non-profit agencies.

hierarchical, placing high expectations on the regions. As envisioned, RSP would address most of the Academy's concerns about clarifying responsibilities, making the process more seamless, and improving support and documentation for decisions. Key components of RSP, which are discussed in more detail below, are:

- Improving the agency's ability to meet its responsibilities under NEPA
- Reducing the levels of review and relying more on regional expertise and authority
- Frontloading the regulatory process, ensuring participation by all responsible parties early and throughout the process to better ensure that all important issues are identified and dealt with early in the process, not after a final regional or headquarters review
- Revising the Operational Guidelines and guidance for content and form of administrative records
- Setting up a national training program and a quality assurance program
- Using electronic rulemaking and permit administration
- Redistributing existing resources as prudent and identifying new resources needed

NEPA Responsibilities

NMFS has made significant progress with regard to NEPA capabilities. Difficulties in complying with NEPA were seen as a primary factor slowing the rule-making process and contributing to many of the judicial challenges to NMFS actions.[9]

Largely funded through specific appropriations, the agency now has twenty-one positions dedicated to NEPA responsibilities, two of which are currently vacant due to transfers, and two which were recently created for the new Pacific Islands Office.[10] These twenty-one include NEPA coordinators in headquarters and in each of the regions. In each year since 2001, NMFS has allocated over $100,000 of the NEPA appropriation to each of the eight councils to improve their NEPA expertise. Academy staff spoke to two Council Executive Directors who said that funding has been instrumental in allowing their councils to hire staff; one specifically noted that the funding allowed completion of several NEPA analyses that, otherwise, probably would not have been done. One regional administrator also noted that the additional funding allowed a critical increase in NEPA staff. The Academy's 2002 report noted that thirty (of forty-two) FMPs had not had comprehensive NEPA-required Environmental Impact Statements conducted within the last 5 years. In 2004, NMFS officials said that all impact statements for FMPs had been updated, with the exception of two that had been in process for over five years.

[9] As discussed later, some NMFS officials raised concerns, however, about the agency's ability to meet NEPA responsibilities for protected resources, as opposed to those supporting fisheries management.

[10] NMFS received $8 million for NEPA activities in FY 2001. Appropriations were reduced to $5 million in FY 2002 and 2003, and again to $3 million in FY 2004 and 2005.

NMFS has established a training protocol for NEPA, specifying key subjects to be covered in a variety of classes for NMFS and council staff, as well as council members. Over 1,000 people have received training in the last 2 years. Though specific subjects to be covered have been decided, there is no curriculum for the classes in the training program. Officials indicated that the knowledge, capabilities and needs vary by trainee and region, and flexibility is important. NMFS has recently signed contracts for outside trainers to be available to provide additional training as needed. Officials believe that relying on a single cadre of trainers (contractors and NEPA coordinators) should help ensure consistency in the training. Additionally, NOAA's NEPA webpage provides "how to" information as well as examples of NEPA documentation. The NEPA national coordinator has monthly conference calls to monitor progress and identify issues that need to be resolved.

Reducing Levels of Review

Several actions have already been taken to delegate authority and thereby reduce layers of review and streamline the process for approving fishery management actions.

- In October 2001, signature authority for fishery management actions was delegated from the Under Secretary for Oceans and Atmosphere in NOAA to the Assistant Administrator for Fisheries.

- In April 2002, NMFS delegated signature authority to regional administrators for most Endangered Species Act Section 7 consultations and for some research permits issued by the Office of Protected Resources.[11] In October 2003 the process for issuing Exempted Fishing Permits was streamlined. Applicants for permits now apply directly to the appropriate regional office or NMFS headquarters office.

- More recently, in May 2004, NOAA's OGC implemented a policy eliminating routine review of fisheries regulatory packages by the headquarters OGC for Fisheries.[12] Instead, the regional OGC will review packages for legal sufficiency and sign off, effectively removing one level of headquarters review for most fisheries management actions. In the region the Academy visited, officials said there was significantly less headquarters review of the actions the region had approved.

Additionally, recognizing the anticipated decrease in responsibilities for regulatory package review, the Office of Sustainable Fisheries is planning to create a workgroup within the

[11] Section 7 of the Endangered Species Act requires that federal agencies ensure that their actions will not jeopardize the continued existence of threatened or endangered species or adversely modify or destroy their designated or critical habitats. Agencies must consult with the US Fish and Wildlife Service or NMFS to determine if there are any listed species or critical habitats in the proposed action area, and whether they may be adversely affected. If there is a determination of likely adverse effects, a formal consultation is required, and the consulted agency prepares a biological opinion in which it makes a determination about whether the action is likely to jeopardize, and if so, identifies any reasonable or prudent alternatives.

[12] OGC officials expect that the elimination of routine legal review of fisheries regulatory packages will allow OGC for Fisheries to participate more closely with headquarters NMFS personnel to develop and disseminate national guidance on cross-cutting legal issues and ensure that it is fulfilling, among other things, its national coordination function.

Regulatory Services Division early in calendar year 2005. This group will be responsible for processing and tracking rulemaking packages. The Domestic Fisheries Division will shift its focus to more direct participation in the regional and council management process, and to providing policy guidance, training, and quality assurance.

NMFS is also taking steps to develop electronic databases to improve headquarters' ability to track actions and to facilitate concurrent review of actions in the regions and headquarters. Two have been completed: one for Section 7 consultations and another for litigation. The latter was specifically recommended in the Academy's 2002 report, and will allow NOAA OGC to, among other things, track the status of litigation and identify trends in litigation, such as who brings suits most often or issues the agency is having difficulty defending in court that may warrant changes in agency guidance.

Two other databases are under development: one for regulatory actions and one for NEPA actions. Both databases are designed to allow the agency to track the status of actions and to assess the workload, and both will also allow NMFS to track the impact of improvements to the process. Ultimately, the databases will also provide a repository for electronic copies of all regulatory documents to facilitate concurrent review during the NEPA analysis and rule-making process.

NMFS is advertising for a coordinator for the regulatory database and hopes to have someone on-board by early in calendar year 2005. It will take at least another year to put this system into operation. The Northeast NEPA coordinator initially took the lead in developing the NEPA database, but lack of resources caused the task to be shifted to headquarters. According to officials, the FY 2005 appropriation did not include sufficient funds to complete the NEPA database. Until sufficient funding is available, they will collect basic management data from regions twice a year, and attempt to implement a limited system during FY 2005. Eventually all of the databases will be "hot linked" to allow easy access to all related efforts.[13]

Frontloading the Regulatory Process

Frontloading the regulatory process is fundamental to the RSP design. Conceptually, frontloading is intended to ensure that all parties with responsibility for issues addressed in fishery management actions—those responsible, for example, for legal issues, fisheries, habitat, and protected resources—are involved in the process from the beginning and on a continuing basis. This broad and early involvement is intended to ensure that all policy and legal issues are dealt with early in the process, not at the end. The goal is to "get it right the first time." NMFS used the NEPA goals and process requirements as the foundation for developing procedures for RSP. NEPA serves as the umbrella for considering all impacts of a range of regulation options, including socioeconomic impacts and effects on endangered species and marine mammals.

[13] The Academy recommended that regions establish electronic regulatory calendars available to council and other stakeholders and tied to a national calendar. Currently, NMFS does not plan to make these national databases available to the public (other than documents officially released for comment). Officials see such calendars more appropriately at the regional level. No guidance has been issued to regions to establish such calendars. Regional websites are discussed more fully below, in the section on constituent services.

In late 2001, prior to the completion of the Academy's report, NMFS had emphasized the need for all issues to be identified early in the process, required NEPA analyses to be completed before councils made decisions, and encouraged regions to identify streamlining opportunities. NMFS officials believe the concept is taking hold throughout the agency, even though a formal process for frontloading has not yet been implemented—see discussion of Operational Guidelines below. They said that in addition to the original 2001 message to the regions, the "word" has been disseminated through a variety of methods, such as training, workshops, meetings and newsletters. They noted, for example, instances in which headquarters has received calls from regional administrators asking for guidance on specific issues at early stages of council consideration. In support of their contention that the process is already showing signs of improvement, they stated that they are receiving fewer "problem" rulemaking packages from the regions and that the agency's litigation record in the last two years is much improved.

NMFS officials identified two regions that had begun using the interdisciplinary action teams that are a key part of the formal RSP frontloading. Academy staff visited one of those regions, and found that the region had been making wide use of these teams for developing fishery management plans and other key actions. Officials were highly satisfied with the frontloading approach. These teams had worked on several completed actions; there were 15 teams working at the time of the Academy's visit. The officials saw the process as more timely and efficient, and said through the process, they had been effective in identifying and dealing with issues early. Academy staff also spoke to the Executive Director of one the region's councils. He was very pleased with the team approach, and said the council had adjusted to the requirement to have all analyses (and documents) completed before it made final decisions about proposed actions, even though it usually required at least one more council meeting before final action could be taken.

But there is a question about whether NMFS will have sufficient resources to fully implement RSP. Headquarters officials have cautioned that more staff and funding are needed, especially in the OGC, the regions and councils. Field office officials that Academy staff spoke with were also concerned. They said that this frontloading approach added considerably to the staff workload. All three organizations (regional office, science center and council) had received some additional funding and staffing (largely through the specific appropriations for NEPA and socio-economic analysis) and officials saw these funds as critical to their success thus far in implementing RSP. They all also indicated that, though the teams were working well, staffing was stretched and more personnel were needed. The region specifically noted that they originally had been able to hire 10 additional staff; but three left. Because of the Congressional cut in FY 2004's NEPA funding (from $5 million in FY 2003 to $3 million in FY 2004), they could not refill those positions. The region believes the staff is being stretched thin and signs of burnout are evident.[14]

[14] Officials in the offices visited also cautioned that the use of dedicated access privileges (such as individual fishing quotas or individual transferable quotas) to manage fisheries may increase significantly in the near future. Indeed, the Ocean Commission recommended that Congress amend MSA to affirm use of this management approach, and that NMFS issue national guidelines for implementation. Such an approach, officials said, would increase field offices' workload in terms of monitoring, which would stretch their staff even further—reinforcing the need for additional resources.

NMFS requested additional funding for NEPA as well as funding specifically to implement RSP in the FY 2005 budget submission. The FY 2005 appropriation for NEPA activities remained at $3 million, $5 million less than requested, and the RSP funding request was fully met with $2.5 million. As the Academy was completing this staff follow-up study, NMFS officials were still working to allocate the appropriation. Officials indicated, however, that these levels would not meet the full needs for RSP, especially with regard to the need for increased staffing.

Revision of Operational Guidelines

NMFS Operational Guidelines set forth detailed procedures and standards for fishery management and other actions. Revising these guidelines is a critical step in formalizing the frontloading process—to ensure all policy and legal requirements are met throughout the process—and moving most of the responsibility for review and approval of council-proposed fishery management actions to the regional level. The guidelines were last revised in 1997; NMFS has been in the process of revising them again since 2002.

Current drafts of the Operational Guidelines incorporate the delegations and other steps discussed above that NMFS has already taken. They also set forth agency policy related to many aspects of the process addressed in the Academy's specific recommendations. Some of the key provisions include:

- Creation of Fishery Management Action Teams for each major action undertaken. The teams will include representatives of all offices with review responsibility, including regions, centers, councils and various headquarters offices. An action plan will specify who is on the team and key steps to be completed. Headquarters reported that although two regions are piloting these teams for several management actions, the concept has been in use in several regions on an "ad hoc" basis for some time.

- Establishment of at least four "critical feedback points" at which the regional OGC will certify the record to that point is "legally sufficient" and the regional administrator will prepare an assessment statement that the "process and documents support and provide a rational basis for decision-making and that the process can move forward." These feedback points are the formal quality control points to ensure the decisions are adequately supported by the record. One such critical feedback point is after identification of the preferred NEPA alternative and adoption of draft analyses.

- Issuance of a decision memorandum from the regional administrator at the final critical feedback point. The memorandum forwards the proposed rule for secretarial signature. It is anticipated that the NMFS Office of Sustainable Fisheries will no longer be heavily involved in reviewing rulemaking packages once submitted to headquarters, but will at that point serve a more administrative role of routing the package through the remaining clearance steps.

The draft guidelines are intended to provide flexibility in regions, allowing the field offices to apply them as dictated by local circumstances. In this regard the guidelines establish some basic responsibilities for regional offices, science centers, councils, OGC, and headquarters offices, but

require that more specific responsibilities be agreed on and clearly set forth at the regional level. As outlined in the draft guidelines:

- Councils and regional offices, at least annually, must jointly identify and prioritize upcoming needs and actions.

- Councils and regional offices must enter into written regional operating agreements specifying responsibilities and steps that will be taken to prepare documentation for fisheries actions.

- Regional offices and science centers must enter into written regional operating agreements specifying their respective roles and responsibilities, and also must establish specific responsibilities for expected actions in the region's annual and strategic plans.

But NMFS officials are not sure when the revised Operational Guidelines will be issued. They explained that they have used a very inclusive process to develop the guidelines, including many discussions with regional, center, and council staffs, as well as all involved headquarters offices. The process has taken longer than expected; NMFS originally hoped to issue them in 2002, then estimated issuance in 2003, then 2004; as of this report, they expect to issue them in the spring of 2005.

Currently NMFS is working out several key issues. One is council concerns about the relative authority of NMFS and the councils. The key issue, according to officials, is how to "front load" the protected resources issues. Decisions have to be made about the extent and form this should take—e.g. "should there be a draft Endangered Species Act Section 7 decision before the preferred alternative under NEPA is decided?" More generally, and perhaps more problematic, is the question of resources. As noted above, officials said that frontloading will require significant resources from many offices—especially regional offices, councils, and OGC. Officials indicated that the guidelines contain a lot of generic information that staff needs to have, such as the sequence of steps in the process. But they also noted there may not be sufficient resources to do some of the "more challenging" things in the guidelines, such as interdisciplinary teams.

NMFS officials indicated, however, that they do not believe the delay in formal issuance of the guidelines has significantly impacted progress in implementing regulatory process improvements. They noted that regional and council officials had been briefed on the draft guidelines and that the process changes that are occurring, such as delegation of OGC review and use of management teams, are consistent with provisions in the draft guidelines. It should be noted, however, that although progress may continue in implementing RSP, the process is operating without the "critical feedback points" and, as discussed below, without an operational quality assurance program, training program, or development of baseline measures.

Progress has also apparently been made on two related efforts. NMFS is preparing guidance on the content of the administrative records that support management decisions, to better ensure adequacy of these records as well as provide more uniformity among regions. (The Academy specifically recommended development of a standardized format for administrative records.)

The agency expects to distribute the new guidance early in calendar year 2005. Additionally, NMFS has prepared a revised set of example documents needed for many types of fishery management actions. The "examples package" was formerly part of the Operational Guidelines. These documents have now been put in a web-based format, allowing regions and councils to download needed forms—complete with the current signature authority.

Training and Quality Assurance Programs

NMFS is currently drafting a curriculum for the first course in an overall training program for rulemaking. The program will be both classroom-based and web-based and will provide training for council members and staff as well as NMFS field office and headquarters staff. The first course, a "regulatory overview," covers the wide array of laws that mandate NMFS responsibilities (MSA, NEPA, Administrative Procedures Act, Coastal Zone Management Act, etc.), as well as an overview of the revised Operational Guidelines. Once the final Operational Guidelines are issued, NMFS will determine whether there is a need for specific training on them, or whether the existing course should be updated to reflect specific guideline requirements. Late in 2004, significant changes were being made to the original draft curriculum based on input from adult education consultants.

NMFS also was analyzing data from a survey of regional offices, science centers, and councils concerning training needs, and anticipates developing other courses in the future. Some high ranking needs not being covered in detail in the first course include detailed training on National Standards 1 and 2,[15] and refresher training on the Regulatory Flexibility Act.

Staff members selected to conduct the training have attended a "train the trainers" course to develop classroom and other training skills. Officials anticipate that the revised curriculum for the first course will be pilot tested in March 2005. Regional training sessions will be scheduled thereafter. However, officials also noted that the speed at which the training program is developed and the extent to which training is provided will depend in part on the availability of resources. As stated earlier, allocation of the FY 2005 appropriation had not been made at the time of this study.

Ultimately, NMFS envisions a headquarters-based quality assurance program for regional implementation of RSP. Officials noted that the Office of Protected Resources has developed a quality assurance program relative to the April 2002 delegation of Section 7 authority. The Section 7 Quality Assurance review is to ensure that regions have measures for quality assurance and quality control for the consultations and supporting documents, and that decision documents comply with the standards of the Endangered Species Act and the Administrative Procedures Act. Selected biological opinions signed at the regional level will be reviewed, as will regional mechanisms for quality assurance and quality control. The methodology, staffing and approach to conducting the reviews are being finalized. The first two reviews, originally scheduled in 2004, are now planned for calendar year 2005.

[15] MSA lists 10 national standards that FMPs must meet. Standard 1 requires FMPs to "prevent overfishing while achieving, on a continuing basis, the optimum yield from each fishery for the United States fishing industry." Standard 2 mandates the use of "the best scientific information available."

The quality assurance program for fisheries management is not as far along. NMFS is adapting a business-based quality assurance program to the regulatory process. The ultimate program will include on-site review of selected projects along with a feedback loop, and the program will also allow "third party" reviewers/auditors to assess quality. NMFS intends to develop baseline measures to allow an overall assessment of quality, in addition to the individual quality checks the system will conduct. A draft quality protocol has been produced and steps are underway to select personnel to form one or more Quality Management Teams. Officials did not know, at the time of this study, how soon this quality assurance program could be implemented.

Electronic Rulemaking

As planned by NMFS, electronic rulemaking involves online public access to rules and supporting documents open for comment; online public commenting and posting of comments received; online access to an interactive, web-based e-Docket containing all publicly available parts of the administrative record; and IT tools facilitating agency rulemaking procedures, including handling public comments. NMFS is developing its e-rulemaking methods in conjunction with the government-wide e-rulemaking initiative being managed by the Environmental Protection Agency.

NMFS began accepting e-mail comments on rules published in the Federal Register in early 2004. The agency is piloting an e-comments system to receive comments via a web-based system that facilitates organization and review of comments by NMFS staff. NMFS intends to refine the e-comments system and deploy it agency-wide, but doing so is dependent on availability of resources. NMFS has been tasked by the Department to develop a system that can be used by the entire Department.

Redistributing Resources and Identifying New Resources

As discussed above, NMFS has said that additional resources will be necessary to fully implement all aspects of RSP. NMFS has indicated that implementation of frontloading, training, databases, e-rulemaking, and quality assurance are all dependent on availability of funding. NMFS is reluctant to provide specific information on costs for fully implementing RSP beyond information contained in the department-approved budget submissions. Clearly, the officials in the regional office, science center and council the Academy staff visited see increased resources as critical to successful RSP implementation. NMFS received $1 million for implementation of RSP in 2004. The FY 2005 appropriation included the requested $2.5 million for RSP implementation. Additional funding will be needed, however, according to NMFS officials, who noted that the NOAA PPBES process will guide distribution of the agency's resources.

Recognizing that increased effort is being required in the field offices as RSP is being phased in, NMFS has, according to officials, directed almost all of increased appropriations applicable to fisheries management to its field offices and councils. NMFS officials also pointed out that the additional funding they have received for NEPA activities has allowed them to significantly increase their capabilities in that area.

Clarifying the Role of the States

Both the Academy and the Ocean Commission identified a need to better clarify the roles of states, especially where fisheries overlap. The Academy also recommended that NMFS pursue consolidation of permitting with the states, to avoid confusion and duplication. RSP does not alter or clarify the role the states in the fisheries management process. Officials said that NMFS has always had a policy to consider relative roles of states when developing each FMP. Beyond that, no new directives have been issued. They doubt whether most states could take on more responsibility (if roles are clarified in that way) because of the fiscal strain most states have been under in recent years. Officials said, however, that they have been concentrating on increasing interaction with the states, including establishing state coordinators in the regions and working to improve the data available from states.

While consolidation with state permitting systems is being studied, officials point to significant obstacles to full consolidation. These include, for example, the extent to which states rely on permit fees for income, as well as the usefulness of having permits at both the federal and state levels as an enforcement sanction. Additionally, there are differences in the kinds of permits traditionally issued; that is, the federal government permits vessels—under FMPs—and states permit individuals, although this is changing somewhat. But without consolidating permitting programs, actions to share permitting information between states and the federal government could have positive results, for example allowing applicants to enter information into the system only once and improving use of the data for management and research purposes. This has been a topic of discussion within NMFS and the various regional Fisheries Information Networks for some time.

However, NMFS does plan to undertake changes that allow this kind of data sharing within NMFS and that could ease the burden of federal permitting on permitees. A December 2004 Policy requires development of a more consistent agency permit program that recovers, to the extent allowed by law, administrative expenses related to permitting. In conjunction with that policy, the Assistant Administrator has required that within 18 months,

- All NMFS regional permitting program data bases be linked—allowing current data on active operators to be accessed by NMFS staff

- Standardized electronic submission of permit application and renewal information be accepted from applicants and shared among programs—requiring permitees to submit recurrent data only once

- Applicants be allowed to submit fees electronically

IMPROVING PLANNING TO ACCOMPLISH COMPETING MISSIONS

Academy's 2002 Recommended Improvements

The Academy reported that NMFS needed to better plan how it would accomplish its competing missions, such as sustaining the nation's fisheries, protecting marine resources, and restoring marine habitats. Especially since passage of the 1996 amendments to MSA, the agency's mission has included competing and expanded goals. NMFS had taken the initiative to assess the resources needed to accomplish some of those goals and had developed plans to move the agency toward successful mission accomplishment. But much was still unclear in terms of which goals were more important, how the needed resources would be obtained, and, indeed, what resources were needed to accomplish some of the agency's missions, especially those related to protected species. The growing recognition of the need to move from "species-by-species" management to a more ecosystem-based approach only made this uncertainty worse.

As is true for most agencies, the resources needed to fully accomplish all of NMFS' missions far exceed those that are available, or are likely to be made available. Additionally, many of NMFS' mandates, such as rebuilding fisheries, may take several decades to accomplish, even with "full funding." The Academy made several recommendations that recognize the critical role only NMFS can play in defining and prioritizing its mission, goals and resources.

The Academy's recommendations were directed at the following key areas:

- More fully assess resources needed to accomplish key missions. The Academy's recommendations were directed at developing reliable estimates of resources needed to carry out its many missions, especially with regard to protected resource activities and implementing RSP.[16]

- Improve planning and prioritization of competing missions. Recommendations included better integrating related scientific improvement plans and developing a comprehensive management plan; setting priorities among all missions, objectives and administrative resource needs; and setting hiring priorities. Among other things, NMFS needed to put more resources towards accomplishing its protected resources mission, which had taken a back seat to fisheries management.

- Make budgeting and allocation decisions based on total available funding, rather than focusing on incremental changes.[17] Recommendations supported NMFS' ongoing efforts to develop a system to allow it to conduct a base budget review and better allocate funding and monitor spending, especially spending by regional offices and science centers.

[16] NRC also made recommendations related to Fisheries Information System and the need to develop estimates of the resources needed to carry out NMFS' scientific missions. These are discussed in later sections of this report.
[17] The Academy found that NMFS did not have adequate information on its "base" funding, that is, ongoing funding as opposed to new funds appropriated for specific purposes.

NMFS Actions

NMFS' approach to planning and budgeting has been significantly altered by NOAA's implementation of PPBES. The new NOAA approach directly addresses, though at a level higher than NMFS, the Academy's concerns about assessing needed resources, prioritizing competing missions, and making budgeting and allocation decisions from a viewpoint of the entire budget rather than focusing on incremental changes. A key aspect of PPBES, relative to the Academy's concerns, is an analysis of all NOAA missions and requirements, an assessment of all currently available resources (essentially a base budget review), and a planning process that directs resources in accordance with agency-developed goals and priorities.[18]

NMFS also has taken several other steps, especially in relation to protected resources, that address the Academy's earlier concerns.

PPBES

The PPBES process is guided by the NOAA Strategic Plan and an annual guidance memorandum that sets out specific directions and a road map for how goal and program teams should proceed in the planning and budgeting process. Planning and programming are carried out under a framework of agency-wide goals and supporting programs. Almost all of NMFS' programs are included in the goal to Protect, Restore, and Manage Coastal and Ocean Resources Through an Ecosystem Approach to Management.[19] In the FY 2006 budget process, this goal included eleven programs, seven of which included NMFS activities; and NMFS activities accounted for about half of the funding covered in the goal. The Goal Team Lead was from NMFS. Some of the individual programs, such as Fisheries Management and Protected Resources Management, were essentially NMFS' responsibility. Others, such as Habitat Restoration and Ecosystem Research, were "matrixed," with responsibilities shared among two or more line offices. In addition to the Goal Team Leads and Program Managers, staff working on program and goal activities are supplied primarily through the line offices, and line offices coordinate throughout the process.

An early step in the system is preparation of a Program Baseline Assessment (PBA) for each program. According to one of the guidance memos for the FY 2006 process, this assessment is designed to "clearly delineate the complete requirement for each of NOAA's programs to achieve NOAA's strategic goals as detailed in the agency's strategic plan, as well as assess each program's current ability to meet this requirement for the planning years." For each of the individual programs the PBA identifies the total mission responsibilities and the "capabilities"

[18] In 1999 the Academy recommended that NOAA develop a base-budget review process. During the Academy's 2002 NMFS study, NOAA was beginning to consider how such a process should be designed. (See: *Improving the NOAA Budget and Financial Management Processes*, National Academy of Public Administration, December 1999.)

[19] The other four goals are Understand Climate Variability and Change to Enhance Society's Ability to Plan and Respond; Serve Society's Needs for Weather and Water Information; Support the Nation's Commerce with Information for Safe, Efficient, and Environmentally Sound Transportation; and Provide Organizational Excellence and Mission Support.

available and needed to carry out those responsibilities.[20] The PBAs then identify the total "capacities," essentially resources, needed and those currently available to achieve 100 percent of each capability. The PBAs also identify the gaps between needed and available capabilities and capacities—both excesses and deficiencies. The most recent guidance (in preparation of the FY 2007 budget) requires that each PBA identify what the priorities would be to accommodate a 10 percent increase or decrease in program resources. It also requires identification of alternatives to meet the 100 percent requirement, which could include, for example, changes in legislation, policy, procedures or personnel practices.

In August 2004, NMFS issued what officials termed a "roadmap" for NMFS' achievement of ecosystem-based management: *NOAA Fisheries' Requirements for an Ecosystem Approach to Management of Living Marine Resources.* This effort is essentially a strategic plan, arraying the advances in data acquisition, analysis and research, management (policy) changes, and enforcement NMFS sees as necessary to effectively carry out its responsibilities under the PPBES ecosystem management goal. It provides an NMFS-wide view of overall direction and priorities for use as the agency provides input and advice to the NOAA-wide planning process.

Some other key steps leading from the PBA for individual programs to the final budget proposal include:

- Programming and fiscal guidance for use by goal teams in developing goal-wide program plans. This guidance is based on NOAA's review of the individual PBAs and represents senior management's decisions on priorities for existing and increased resources across programs.

- Goal-wide program plans developed by the goal teams. Because requirements to meet 100 percent of the agency's mission far exceed resources currently available or reasonably anticipated in the future, program plans must prioritize capabilities and resources to ensure the most critical program needs are met. Plans must identify strategies linked to achieving the NOAA mission goal (e.g., the ecosystem goal). Instructions note that the plans must employ cost-saving measures and creative solutions, including efficiencies and integration of capabilities across programs. It indicates that plans must justify all program funding, not just funding increases.

- Program Decision Memo issued by NOAA. Based upon review of the goal-wide program plans, this memo provides senior management's specific guidance on program priorities and funding levels and feeds directly into the budget preparation process. The budget structure and process is still organizationally based, allocating program, capability, and capacity priorities among the line offices in NOAA and the offices within NMFS that carry out the agency's responsibilities.

Ultimately, PPBES is designed to allow NOAA to effectively prioritize spending among all of its programs—an ability that is key to making the best use of limited resources. Officials the Academy staff spoke to in both headquarters and the field offices saw PPBES as moving NMFS

[20] For example, for the Protected Resources Program capabilities include: Proactive Conservation, Listing of Species in Need of Protection, Recovery and Conservation, Outreach and Education, and International Efforts.

to a much greater focus on planning and priority setting; forcing them to ask questions about "who is doing what, and why" and about whether and how those activities support the agency's strategic goals. However, it appears that developing the input for PPBES, especially for the PBAs, has required considerable effort on the part of the NMFS staff. Existing databases do not supply sufficient information in the correct format and managers must "tease out" needed information from available data and their own program knowledge. In its 2002 report the Academy expressed concern that NMFS management did not have sufficient data to allow it to effectively assess all of the ongoing activities and therefore to set priorities among them—precisely the information needed under PPBES. Both NOAA and NMFS are working to improve the consistency and accuracy of the data as the PPBES system evolves.

At the time of the Academy's original study, NMFS was developing a system, based on its financial data system's Annual Operating Plan (AOP), that was intended to provide consistent data from all regional offices, science centers, and headquarters offices, and allow it to clearly assess the relative priority of all of its on-going activities. The Academy reported that the new system "should have the information necessary for NMFS to determine which programs, e.g. stock assessment in a given region/center, need more resources and to identify funding being used for lower priority functions that could be redirected." The Academy also reported that the agency intended to obtain this information on "sub-organizations" within regions and centers, and that officials believed this structure would be useful to them for, among other things, highlighting different emphases among field office programs. These are important management issues for NMFS, but generally would fall below the level of programming and budgeting guidance key to the NOAA-level PPBES system.

For a variety of reasons, one being the need to develop information quickly in support of NOAA's data needs for PPBES, the AOP system has not yet been completed. But NMFS is still working to develop and implement it. In response to the new PPBES requirements, the system is now being configured to include identification of programs and capabilities supported by each funding source for each organizational activity. The system is intended to, for the first time, link spending to programs and to performance measures. Officials in headquarters and the field believe a fully implemented AOP system will significantly improve NMFS' ability to assess its programs and facilitate development of the PBAs supporting the PPBES process. They note that the system will provide more uniform and more detailed information about field and line office use of funds and facilitate more effective management of funds, including redirecting funds within agency programs to meet key priorities. Officials said they will be able to use the new AOP system to track use of the FY 2005 appropriation.

Other NMFS Actions

The agency has taken some important steps in enhancing its efforts with regard to its protected resources mission. Perhaps the most significant is the completion, in September 2004, of an assessment of requirements needed to carry out the science relative to its protected resources responsibilities. This was a critical first step to focusing more attention in this area.

The assessment, *A Requirements Plan for Improving Understanding of the Status of US Protected Species,* includes the data and research requirements for stock assessments as well as

other types of research—life histories of species, etc.—needed to support protected resources management. It describes the staffing, fiscal and logistic resources the agency needs to fulfill its mandates under the Marine Mammal Protection Act and Endangered Species Act. It also presents a framework for assessing the status of marine turtles and mammals with respect to these mandates, and provides the results of the application of this framework to assess the status of all U.S. stocks of marine mammals and turtles. In addition, it includes an assessment of the resources currently dedicated to protected species research and assessments, and identifies the additional resources needed (1) to maintain the status quo level of knowledge (Tier I), and (2) to fully meet NOAA's legislative mandates, which involves improving the information of the status of all stocks (Tier II).

Additionally, in August 2004, the agency, working with the Fish and Wildlife Service, completed draft guidance for legislatively required five-year status reviews of endangered and threatened species. The draft was distributed to NMFS regional offices for review. The Fish and Wildlife Service is in the process of reviewing the document, and NMFS is incorporating comments. NMFS will begin the review process in FY 2005 with the goal of completing five-year reviews for all species within five years.

However, as with the fisheries stock assessment improvement plan, the protected species requirements plan identifies a need for a dramatic increase in resources to fully meet the agency's responsibilities. In total, the plan identifies 377 additional personnel (137 employees, 234 contractors, six others) to achieve Tier I, and another 510 personnel (120 employees, 386 contractors, four others) to reach Tier II. The agency intends to seek these resources over a ten-year period, using the assessment as a guide as it works through the PPBES system to achieve the necessary departmental and Congressional support. Among other increases sought for protected resources in the FY 2005 budget submission was $1 million to expand protected resources stock assessments. While the FY 2005 appropriation did not specifically fund that request, there was a $10 million increase for marine mammal activities under the Senate's Marine Mammal Initiative. NMFS' draft spending plan for this funding includes $2 million for implementation of the protected species requirements plan.

Additionally, NMFS officials have raised concerns about their ability to meet NEPA responsibilities. They commented that although substantial progress has been made on NEPA relative to fishery management actions, there are substantial protected resources NEPA needs that have also been identified over the past two years and that still need to be addressed. There are numerous Environmental Impact Statement documents that are still needed for headquarters programs and actions, including the Marine Mammal Health and Stranding Response Program, Scientific Research Permit Programs, and Marine Mammal Incidental Take Authorization Program actions.

IMPROVING MONITORING AND OVERSIGHT OF ONGOING ACTIVITIES

Academy's 2002 Recommended Improvements

The Academy's study highlighted NMFS headquarters' difficulties in successfully tracking how funds were actually used, especially in the largely independent regional offices and science centers (field offices). Limited monitoring was especially evident with regard to spending plans[21] and improvement plans, such as the stock assessment improvement plan. Expected goals or activities were established but existing accountability measures did not directly address field offices' implementation of those plans.

Field offices have considerable flexibility in how they spend allocated funds to meet unique regional needs. At the time of the Academy's original report, NMFS field offices were held accountable for budget execution (spending down funds in a timely manner and in accordance with authorized object classifications—salaries, contracts, grants, etc.). Field offices also reported periodically on whether they had accomplished specified milestones, such as completion of specific fishery management actions. And each field office reported annually on progress against performance or outcome goals established in relation to agency-wide outcome goals.

But these accountability measures did not provide headquarters with consistent and reliable information about how funds were actually spent. In 2002, the Academy found instances in which spending plans were not carried out. While the field offices may have been making the best use of the funds given a local situation, headquarters was not aware of the alternative actions. For example, in some cases, "new" directed funding, allocated in a spending plan for increased efforts in a given area, was used to pay salaries for staff already working in that area; not contributing to the expected increased activity in the area. Likewise, when hiring set forth in a spending plan was not possible, regional offices and science centers sometimes used the unused salary funds for "related" purposes, such as funding observers to obtain data for stock assessments rather than hiring a scientist. Headquarters office directors also reported that there was no formal process to monitor field implementation of programs and that, even when requested, field reports sometimes provided only general information.

The Academy concluded that the agency's inability to report how funds were actually used and to define the progress it had made was working against it in seeking the increased resources it needed. Recognizing that headquarters offices in NMFS, such as the Office of Sustainable Fisheries, have no line authority over regional offices and science centers, the Academy made several recommendations directed to better monitoring and performance assessment. Generally, the Academy recommended that headquarters identify a specific person to monitor implementation of spending and improvement plans. Even this would provide only a limited amount of monitoring since these plans apply to a relatively small portion of NMFS funding.

[21] Spending plans are used in NMFS to specify expected use and allocation of funding among headquarters offices, regional offices, and science centers. They generally cover specific "line item" appropriations and are used where Congress directs such a plan, or where management sees a need for one because of the sensitivity of the issues involved or because the appropriation represents new or significantly increased funding.

The Academy made several other more specific recommendations related to monitoring. One of these, related to assessing the Office of Law Enforcement's Joint Enforcement Agreement Program with states, is addressed below. The second, related to assessing field efforts to develop Environmental Impact Statements, is discussed in an earlier section of this report.

NMFS Actions

NMFS has not established a general policy of direct headquarters monitoring of field office implementation of spending plans and other expected actions. NMFS officials continue to rely primarily on accountability achieved through monitoring budget execution and performance measures. Although individuals have been assigned responsibility for overseeing certain of the science improvement plans, their responsibilities seem to focus more on obtaining added resources than assessing progress to date. For example, without specifically polling the science centers, NMFS headquarters officials were unable to provide national data concerning the progress made in several of the science improvement plans, such as the number of stock assessment scientists hired and the extent to which economic data needs had been fulfilled.

There are indications, however, that headquarters is moving toward increased monitoring. The agency has taken some significant, though narrowly focused steps, to begin monitoring certain types of activities in regional offices and science centers. More broadly, some see PPBES as encouraging more monitoring and oversight. Additionally, in the future, better data may be available for headquarters use in monitoring, if headquarters officials choose to use it in that way.

Specific Actions

In at least in two key areas—NEPA and constituent services—headquarters office directors have begun to interact on a regular basis with regional and/or center staff. The headquarters NEPA coordinator, for example, holds monthly conference calls with regional NEPA coordinators, as well as more frequent contact when necessary. Likewise, the Office of Constituent Services recently hired a national program coordinator, hosted the "first annual" meeting of regional constituent service contacts in November, and plans to begin conducting monthly conference calls with these field contacts.

The Office of Law Enforcement (OLE) has not yet assessed its Joint Enforcement Agreement (JEA) Program, but as discussed below, is taking steps to enable it to do so. Under this program, first funded in FY 2001, state enforcement agents are authorized to take action under federal laws. The Academy's 2002 report recommended the program be assessed to determine its impact, something OLE at the time intended to do, and that OLE use that assessment to help determine the relative usefulness of JEAs as compared to other enforcement efforts, most specifically use of Vessel Monitoring Systems. Congress has continued to fund both of these approaches.

However, OLE has not been able to do the recommended assessment. In general, OLE officials report that the program is beneficial, both in terms of expanding overall enforcement efforts and in having state agents available to provide backup to NMFS' agents. They also noted that they

have made efforts to make sure states are focusing more on gaps in federal enforcement efforts as opposed to state priorities, and have had some success with that. However, an overall assessment is not practical at this time. Currently, states report actions taken under the program, but in many different formats, so no "national" picture can be developed on program activities, such as the extent to which state actions support state or federal enforcement. Also, current systems do not allow officials (without considerable manual effort) to identify which enforcement actions were initiated through which activities (federal agents, state agents, Vessel Monitoring System, etc.).

According to officials, an unexpected reduction in JEA program funding in 2003 set activities back, and they have been focusing their efforts on getting the program up and running. Officials are, however, taking steps to facilitate the recommended assessment. First, they plan to hire a program coordinator at headquarters to help oversee the program. Second, they are developing a data reporting system to allow them to determine what states have accomplished under the program. OLE is also planning a conference in FY 2005 with the state directors to discuss reporting, performance, expectations, and consistency.

PPBES

From a broader perspective, NMFS and NOAA officials see PPBES as putting greater emphasis on accountability at all levels. NMFS officials pointed to program managers' responsibilities under PPBES, for example, assessing existing and needed resources and expectations for achieving program goals. They further explained that NOAA is holding NMFS and all of the other line offices accountable for achieving established performance measures, some of which are almost wholly within NMFS' authority. Overall, NMFS officials see this emphasis as encouraging significantly increased headquarters oversight of field activities, as well as encouraging increased field cooperation with headquarters, since NMFS headquarters offices staff the workgroups that help set priorities under PPBES, including those related to field programs.

Officials pointed to an increased emphasis on monitoring milestones as evidence of increased accountability. Milestones set annual expectations for specific accomplishments for each NMFS field and headquarters office. Line offices now meet quarterly, rather than reporting only annually, with NOAA officials to report on the status of efforts related to milestones and the impact of any missed (or likely to be missed) milestones on the agency's ability to achieve established performance goals. While line offices have always reported to NOAA on milestones, NMFS officials clearly see an increased emphasis on them.

NMFS officials are working to make milestones somewhat more meaningful by reducing the number of milestones each office is expected to accomplish, while at the same time making sure that each milestone directly relates to NOAA's performance measures. For example, under the Fisheries Management Program (part of the ecosystem goal) one performance measure is "Reduce number of stocks with 'unknown' status." Milestones set for each of the field offices relate to completion of specific actions, such as "present draft Dover sole stock assessment and fishery evaluation to appropriate council" or "present Gulf of Mexico red snapper stock assessment to region's Data Assessment Review Group." However, even with these

improvements, milestones do not necessarily address the various field offices' success in achieving goals of specific improvement plans, such as increasing the number of stock assessment scientists, or of specific spending plans, such as obtaining specific types of data for which funding is provided.

Other Data

Several other ongoing initiatives could improve NMFS headquarters' ability to monitor field activities, if those offices responsible for policy and program implementation choose to use the data for that purpose.

- As described above, NMFS is establishing several administrative databases. If fully implemented, these databases will allow NMFS headquarters to identify types of actions or specific offices that might be experiencing difficulties, in addition to monitoring the progress of specific actions. This information could enable headquarters to take steps to facilitate completion of actions or develop needed changes in policies or procedures.

- The AOP system being developed will also significantly improve the quality and the level of information available to headquarters for use in monitoring field activities.

- In October 2004, NMFS elevated the Office of Management and Information in each regional office and science center to a Division level. Doing so, officials said, will, in most cases, raise the grade level of the head of the office, allow better qualified staff to be hired, and increase the office's relative authority. This will improve field office ability to monitor spending plans and other budgeted actions and will also, officials maintain, better enable headquarters to obtain information from regional offices and science centers.

- As described above, NMFS is developing a quality assurance system for the agency's fishery management processes. According to officials, when implemented, the system will review selected regional actions and assess quality against performance standards relative to RSP objectives.

IMPROVING RELATIONSHIPS WITH PARTNERS AND CONSTITUENCIES

Clearly NMFS cannot fulfill its mission in a vacuum. Federal, state and academic partners play key roles in fisheries management. Likewise, NMFS' actions affect a broad range of constituents beyond the obvious commercial and recreational fishers. Other stakeholders include those with interest and expertise in areas such as the environment, seafood processing, consumer needs, and community economies.

Academy's 2002 Recommended Improvements

The regulatory process is designed to be participatory and includes hundreds of public meetings and hearings each year. Nevertheless, the Academy's 2002 report noted that the relationships

between NMFS and the councils and their constituents had grown increasingly tense as the abundance of resources diminished and environmental concerns heightened. Indicators of this tension included the growing number of lawsuits filed against NMFS, the degree to which constituents were seeking Congressional action when dissatisfied with NMFS' responses, and the frustration and criticism openly expressed by constituents. In interviews with the Academy, representatives of the commercial fishing industry questioned NMFS' science, and felt distanced by lack of communication with NMFS. Representatives of the recreational fishing industry felt that they did not receive as much attention from NMFS as commercial and environmental interests, and wanted to see more outreach at the regional level. Representatives of environmental groups complained of lack of response and feedback from NMFS, and wanted to work with NMFS to avoid litigation. And finally, state representatives wanted to be viewed as partners in fisheries management and desired more consultation with NMFS. All the constituent groups wanted to be more involved in the problem-solving process from the outset.

The Academy's recommendations were directed at the following key areas:

- Establishing explicit programs for public affairs and constituent/partner relations in coordination with NMFS' Office of Constituent Services (OCS) and regional components.

- Including certain key elements in those programs. For example, the Academy recommended that the public affairs program be designed to portray NMFS as the authority on fishery management issues, including use of the internet to develop a public education webpage; and that the constituent/partner relations program be designed to include the principles of effective consultation—including facilitation of stakeholder participation, promotion of information exchange, and feedback to stakeholders about how their input was used.

- Expanding cooperative programs.

The Ocean Commission report supported the above recommendations. It emphasized, for example, the importance of educating the public, including appropriate evaluations of these efforts. It also recommended creating an expanded, regionally based cooperative research program, and expansion of cooperative enforcement efforts.

NMFS Actions

Establishing Explicit Programs

NMFS has taken several key actions in support of the recommendation to establish programs in constituent relations and public affairs, including expanding OCS, increasing coordination with regional offices, and defining roles and responsibilities for field and headquarters offices.

OCS was formed in 2001 from several existing offices in NMFS, and today consists of a Division of Constituent Affairs and branches responsible for trade and commercial services, public outreach and education services, and recreational fisheries services. OCS is part of the

communications team headed by NMFS' Deputy Assistant Administrator for Operations and consisting also of the outreach staff of key headquarters offices. The team meets weekly to discuss current issues in terms of outreach and public affairs; otherwise there is no formal coordination between OCS and the other offices' outreach staff.

Both the Deputy of OCS and the Chief of the Constituent Affairs Division were hired in January 2004. The positions were vacant to that point. Since 2001, OCS has established several other positions focused on specific issues and constituencies. Responsibilities include serving as a liaison between the agency and constituencies and administering outreach programs. Most of these positions have been filled, and additional hiring is imminent.

- OCS recently hired a national outreach coordinator. That person will—through monthly conference calls—coordinate the efforts of the regional outreach coordinators, who came together for a first annual meeting in November 2004. The primary focus of the meeting was to learn what outreach activities are being conducted across NMFS, and also to begin developing a strategic plan for outreach. The draft strategic plan is being developed in coordination with anticipated outreach expansion NOAA-wide, and agency leadership will begin review of the draft in late spring 2005.

- A recreational fishing coordinator was hired in September 2004. There is one vacancy for a regional recreational fishing outreach specialist to be located in headquarters. This person, in addition to the two existing regional specialists, will be required to report quarterly on implementation of the Recreational Fisheries Strategic Plan (discussed below).

- Other new positions in OCS are the Environmental Liaison hired in 2004 and the Marine Fisheries Advisory Committee (MAFAC)[22] Executive Director. The new aquaculture program is housed in OCS, and is also increasing staffing for outreach.

NMFS has taken steps to ensure that field and headquarters office responsibilities in this area are clearly defined. NMFS now requires written Operating Agreements between headquarters, regional offices and science centers. They specify certain specific responsibilities, including some related to constituent relations. Among other things, the agreements require that (1) the headquarters and field offices have a designated communications liaison to coordinate between offices and serve as a point of contact for public relations matters, (2) feedback channels be established and methods for addressing feedback be developed in order to be responsive to constituents' needs, and (3) offices ensure routine communication, including public meetings, between NMFS offices and constituents. The agreements also require that, in each region, more specific roles and responsibilities of each office (headquarters, regional office, and science center) in meeting constituents' needs be clearly defined and understood, and continually improved.

The Academy was not able to determine how these responsibilities are being defined or the extent to which they are being carried out. NMFS officials reported that all of the regional

[22] The MAFAC represents a broad range of constituents and advises NMFS on issues. It meets twice a year.

offices have at least one outreach person, though officials believe these positions are mainly focused on media relations rather than constituent services. Some regions also have a designated constituent services staff person, but in some cases this is a part-time duty. The regional office the Academy staff visited had designated a public affairs officer focused on media, an outreach coordinator that represents NMFS at public events, and a recreational fishing coordinator. In addition, officials there stated that constituent relations is a part of everyone's job description, and, with that in mind, a criterion for every recent hire in that office has been "people skills."

The August 2004 document in which NMFS outlined its overall requirements for ecosystem-based management[23] identified a need to assess constituent relations programs. One of the performance metrics listed for the new RSP approach is "better relationships with and service to our constituents as measured by customer satisfaction surveys." If NMFS follows through on this metric, it will demonstrate a concerted, comprehensive effort to receive feedback from constituents.

Key Elements

Much of what NMFS is doing addresses the intent of the Academy's recommendations to portray NMFS as the authority on fisheries issues and to use approaches that conform to the principles of effective consultation, especially obtaining input and providing feedback. NMFS is making increased use of the internet, both to establish its expertise and to inform interested constituents. NMFS has also consulted constituent groups and partners on specific initiatives.

Public Education

NMFS has taken steps to portray itself as the authority on fisheries management issues and provide information to constituents and partners. The NMFS website includes a species identification feature and "Cyber.Fish," an application that allows individuals to email questions and requests regarding NMFS' programs and activities. The latter is a popular feature, and OCS is challenged to keep up with requests. OCS is currently working to identify subject matter experts to develop answers to the twenty-five most commonly asked questions. OCS has also continued to send out weekly emails with news and regulatory actions to interested parties through its FishNews listserv, which now has 4,000 subscribers. In addition, the outreach and education branch provides staff and materials for exhibits—thirteen in 2004, and in many cases works with the regions to staff exhibits. Control of the exhibits helps to ensure a consistent NMFS image. Also, artwork on the NMFS webpages has been used on posters and other media, contributing to the consistent image, and that artwork has been supplied for use agency-wide.

The Academy staff's review of the regional websites found that all of the regions have websites that are kept current and complete with information about programs and policies, current science and management issues, and Fishery Management Plan and regional regulatory activities, as recommended by the Academy. For example, they have current announcements of federal register notices, hearings, research results, regulations, permitting information and forms, management actions and programs, statistics, analysis documents, and so on. The region the

[23] *NOAA Fisheries Requirements for an Ecosystem Approach to Management of Living Marine Resources,* August 2004.

Academy visited reported that the website and news releases have helped to get the word out, resulting in fewer phone calls and considerably less time spent fielding individual, specific questions from constituents. In addition, they found that putting more on the web has reduced Freedom of Information Act requests.

Alaska is the only region that has created a formal "regulatory calendar" on its website, as the Academy recommended. Entitled "Status Report of Regulations Governing Federal Fisheries Off Alaska," the chart summarizes the status of management actions in one place on the website, including the status of emergency rules and actions on FMP amendments and regulatory amendments. There are dates for council action, the start of regional review, transmittal to NMFS headquarters for review, publication of notice of availability of proposed FMP amendments, and publication of the proposed and final rules in the Federal Register. If this information is available on other regional sites, it is dispersed in many locations and much more difficult to access. There is no such calendar at the national level.

Constituent and Partner Engagement

NMFS has spearheaded a number of initiatives to engage constituents in NMFS' strategic planning and policy development, reaching out to a broad range of constituents in constituent sessions and through MAFAC, and to specific groups in areas including conservation, recreational fisheries, the shrimp industry and aquaculture. Consultation with state partners has also been enhanced.

In 2003, the Assistant Administrator for Fisheries held a series of eight constituent sessions around the country. The purpose was to gather input on ways to improve the effectiveness of NMFS. The objectives were to assemble and analyze the views of marine resource stakeholders as related to fisheries management, and identify possible performance measures. Over one thousand stakeholders participated either in person or via email, representing fishery management councils, commercial and recreational fishers, tribes, environmental organizations, federal and state government, and the public. Input was compiled in a synthesis report, and NMFS developed a report responding to each of the areas of concern identified.

NMFS officials noted that they have actively engaged MAFAC more directly in some high-priority initiatives, and constituents agreed, commenting positively, for example, on MAFAC's involvement in the development of a policy on individual quota legislation and a document to explain the fisheries management process.

An early effort with regard to specific constituencies, which the Academy reported in 2002, is the Assistant Administrator's initiative to hold regular meetings—every six weeks—with the Marine Fish Conservation Network. The network is a coalition of over 110 national and regional environmental organizations, commercial and recreational fishing groups, aquariums, and marine science groups. One constituent noted that NMFS has initiated scheduling these meetings when the network has not, and that headquarters is very open and responsive to their concerns.

Recreational fishers are NMFS' largest constituent group (besides seafood consumers), and in 2002 those the Academy spoke with were clearly dissatisfied with their ability to be heard in

NMFS. NMFS has begun to place greater emphasis on this constituency. The Recreational Fisheries Strategic Plan, which had not been updated since 1996, is being revised. Early in 2004 the thirteen programs within NOAA involved in recreational fisheries formed a working group to discuss the 1996 plan and develop a new strategic plan for the years 2005 to 2009. The Assistant Administrator held a meeting with the NOAA external Recreational Fisheries Advisory Panel in March 2004 to get initial feedback on the draft, which resulted in revisions to the plan. NMFS then held nine regional workshops to get additional feedback from constituents and to discuss local priorities and how NMFS could be more responsive. A summary report of the views expressed in the workshops was issued in August, and NMFS hopes to incorporate these and have a final plan in 2005. The next step is to organize regional implementation teams to roll out the plan. NMFS feels the strategic plan process has resulted in a new level of partnership. One constituent stated that he believed recreational fishers were being heard more in NMFS and was hopeful that these recent efforts marked a change in recreational fishers' relationship with NMFS.

Other efforts to get public input have included regional meetings related to aquaculture issues and to a shrimp industry issues and options paper developed by OCS.

NMFS also has put more emphasis on state relations in the last year and a half. There is a new division of State-Federal Fisheries in the Office of Sustainable Fisheries and state coordinators in each region that meet regularly. According to a representative from an interstate fisheries commission, the overall trend in NMFS' relations with states has been positive. In his opinion, NMFS has made a good faith effort to address states' concerns and engage them as partners. He pointed out that at the headquarters level, two key officials—the Assistant Administrator and the Director of Sustainable Fisheries—have backgrounds at the state level, and are therefore sensitive to the need to communicate with states. The Assistant Administrator averages two meetings per year with the interstate commissions, and is hosting the 3rd biennial meeting of state fisheries management directors in April 2005. In addition, the Chief of the State-Federal Fisheries Division communicates frequently with the interstate commissions.

The NMFS State Communications Policy calls for acknowledging and strengthening the relationship with the states, which it characterizes as NMFS' primary partners in marine resources conservation and management. Each headquarters and regional office has developed a State Communications Plan in support of that policy. The plan for the regional office the Academy visited states, for example, that the regional administrator will meet with the State Marine Fisheries Directors during one of the state commission meetings each year to discuss proposed agency actions and status reports on current activities.

Some of the councils, without guidance from NMFS, are also doing things to enhance constituent relations. Both of the Council Executive Directors the Academy staff spoke with indicated that they were trying to increase constituent outreach. In one council, the communications specialist, hired in July 2002, has prepared background documents for meetings, organized a communications committee, and prepared a guide to the council process. In the opinion of the council's Executive Director, these efforts have improved constituent relations significantly, especially in terms of informing stakeholders about current issues. The second council

anticipates hiring a public relations/information and education specialist in 2005 if funding is available.

Councils are also sharing information about constituent programs. The Pacific Fishery Management Council hosted a communications meeting in May 2004 attended by council and NMFS regional and headquarters outreach and communications staff. The purpose was to discuss shared interests, concerns, and plans regarding outreach and education. Some regions have already independently begun to draft regional outreach plans, and one agenda item was to discuss incorporation of those plans into the national plan, which is currently being developed. This meeting followed a meeting in D.C. in November 2002 organized by NMFS headquarters to share ideas and develop better working relationships, and another meeting will probably be held next summer in Boston, organized by the New England Fishery Management Council. Such meetings can serve to facilitate a more thorough and consistent approach across regions and ensure coordination at the national level.

Expansion of Cooperative Programs

Cooperative programs offer NMFS an opportunity to work with constituents and partners to accomplish NMFS' missions. One important outcome of well-implemented cooperative efforts is better relationships between NMFS and its constituents and partners. The Academy recommended NMFS expand its efforts with regard to cooperative research, cooperative statistics, and use of dockside agents, and suggested increased joint enforcement with the states could also be beneficial.

Cooperative Research

A wide range of partners can be involved in cooperative research, including states, academic institutions, non-profit groups, and commercial and recreational fishers. And the role of partners and constituents in research can cover a wide continuum, from simply providing ships for NMFS scientists to collaborating in the full design and carrying out of specific studies. The primary focus of the Academy's recommendation was research in which NMFS scientists work directly with other constituents as part of the research effort, anticipating that this direct contact could work to improve mutual understanding.

NMFS officials report that cooperative research programs are an integral part of NMFS' science enterprise. Their definition, however, is a broad one that includes funding efforts by and with states and academic institutions, as well as efforts that fund industry "research" efforts, but do not necessarily result in NMFS and constituents working together in the research. Because many of NMFS' efforts are "cooperative" in this broad sense, it is difficult to identify all such activities, or even those more directly related to the Academy's intent. Within the scope of this study, therefore, the Academy could not determine whether the extent or nature of such efforts have changed since the 2002 report.

However, Congress has continued appropriations specifically for cooperative research since at least 1999. Funding was substantially increased in FY 2001, from about $6 million in FY 2000 to about $12 million in FY 2001 and has increased somewhat since then, as shown below:

FY 2002 - $14.5 million
FY 2003 - $13.2 million
FY 2004 - $16.8 million
FY 2005 - $19.5 million

In each of these years most of the funds were appropriated for specific NMFS science centers or other organizations, and between $1 million and $3 million were appropriated for a "National Cooperative Research Program." Officials reported that proposals received for the national program have totaled twice the amount of money available.[24]

Cooperative research is also funded through the relatively new Research Set-Aside Programs administered through the New England and Mid-Atlantic Fishery Management Councils. These programs allow a percentage of total allowable landings of several species to be used for cooperative research efforts, including compensating vessel owners, through the sale of fish harvested under the research quota. Researchers can also apply for competitive grants from the NOAA Grants Office to supplement these funds. One criticism of this program is that fisheries that do not have quotas that can be sold may have higher research needs, but there is no source of funding for them through Research Set-Aside.

Beyond this somewhat increased funding, there is evidence that NMFS has devoted more attention to cooperative research since the Academy's 2002 report. Most notably, NMFS contracted with the NRC to conduct a study of cooperative research focused on the effective design and implementation of such programs. The resulting report, issued in 2003, confirmed the potential for cooperative research to improve NMFS' relations with constituents, as well as further its scientific mission. The report also made a variety of recommendations intended to ensure NMFS' cooperative research efforts are effective. The recommendations addressed issues such as setting priorities for research, overcoming liability issues, streamlining permitting procedures for research efforts, ensuring scientific standards are met, and recognizing that cooperative research requires additional efforts by NMFS scientists.

Also, in April 2004 NMFS hired a National Cooperative Research Coordinator to coordinate with science centers in setting research priorities and establishing and meeting standards for science quality. The coordinator also manages the National Cooperative Research Program and works to ensure a balanced national portfolio.

Anecdotal accounts also suggest that there has been an expansion of cooperative research efforts. As one constituent said, NMFS has "gotten the word that cooperative research is a good thing." One constituent, however, indicated that he believed NMFS should make a more conscious effort to ensure opportunities for all sectors to participate. He was specifically referring to recreational fishers who, he said, are generally not involved in cooperative research, either from lack of opportunity or lack of knowledge about opportunities.

[24] Science centers as well as other entities can compete for the national program funds.

Cooperative Statistics

NMFS also works with states to obtain needed data. NMFS participates in five regional fishery information networks,[25] which operate under cooperative agreements with states and interstate commissions for coordinating collection, management, and dissemination of a variety of commercial fisheries statistics. There is also a national network to collect recreational fisheries data. These efforts are funded through specific line item appropriations and funding has remained essentially stable over the last several years. There has not been any significant expansion of these efforts.

In FY 2002, for the first time, Congress appropriated funding for a national "Fisheries Information System" intended to, among other things, provide a link among the regional networks. The Fisheries Information System is further discussed below, in the section on Congressional recommendations.

Dockside Extension

The Academy's 2002 report noted that NMFS' field extension officers, or dockside presence, had been seriously eroded, and fishers' contact with NMFS at the docks was limited to enforcement agents. In FY 2002, the Sea Grant program—a nationwide network of university-based programs that work with coastal communities, administered through NOAA—dedicated $3 million in special projects to enhance fisheries extension presence in U.S. coastal and Great Lakes communities. In FY 2004, $2 million of Sea Grant funds were directed to hiring 15 coastal and three Great Lakes fisheries extension agents. These infusions of funds have helped to expand the extension program, but the scale of the impact is unclear.

Cooperative Enforcement

NMFS officials expect efforts under the JEA program to continue and have created liaison positions to the states in each region. However, whether the program will be expanded depends largely on Congressional appropriations. They noted that funding was significantly reduced in FY 2002 and FY 2003, which in turn reduced the level of state efforts.

Further, as discussed above, although enforcement officials in headquarters and in the region the Academy visited believe the program is beneficial, no formal assessment has been done. It was difficult for officials to clearly articulate the extent to which the program has contributed to enforcement or to their relationship with state enforcement officials. Officials hope the national coordinator, when hired, will be able to focus more directly on an assessment of the program, which will help them determine more clearly what the benefits of the program are and in what capacities states can be most useful.

Constituent and Partner Views

Comments from constituents and partners that the Academy interviewed indicate that constituent relations are improving. As one constituent said, it seems that for all the "hot-button issues,"

[25] The regional areas are Alaska, the Western Pacific, Pacific, Gulf of Mexico, and the Atlantic.

NMFS is now willing to call a meeting to involve constituents. Another constituent agreed that there is a concerted effort on "almost everything" to get buy-in, and believed this has resulted in even fairly restrictive council actions being supported by all parties. Those interviewed noted specifically that NMFS is giving more weight to constituent input, while at the same time sticking more firmly to scientific findings and not bending to pressure from any one group.

Access to NMFS by individuals with questions or concerns also appears to have improved in some cases. For example, environmental organizations appreciate the addition of the Environmental Liaison. One representative commented that if his organization has a concern that is highly time sensitive, top headquarters officials are very accessible; if the issue is not so pressing, the liaison now serves as the point of contact. NMFS officials in the region the Academy visited noted that fishers are increasingly requesting meetings, and feel comfortable coming to the regional office to discuss issues. Representatives of several constituencies the Academy staff interviewed said that they know who to go to in the regions to get information. They cautioned, however, that they are closely involved with NMFS efforts and were uncertain whether the average fisher or other constituent would know who to contact. Some of those Academy staff spoke with were, in fact, unaware of specific outreach staff in the regional offices, and instead would contact the regional administrator or program area staff with questions. Clearly it is not enough to designate the individuals; those individuals must be identified to the public as a resource.

Overall, constituents and partners are hopeful that the positive trend will continue, contributing to an enhanced relationship between NMFS and its constituents and partners.

RECOMMENDATIONS TO CONGRESS

MSA authorization expired in 2000. The Administration has prepared reauthorization legislation, but it has not been introduced. Outside of appropriation bills, there has been little Congressional action on fisheries-related issues in the last few years. Subsequent to issuance of the Ocean Commission's report, however, various bills have been introduced, and it seems likely that the 109th Congress will take up the issue of MSA reauthorization.

The Academy, as well as NRC, made several recommendations for Congress to consider as it debates reauthorization of MSA. The Ocean Commission report, while charting a much broader course, addressed some of the specific issues the Academy and NRC raised, sometimes with similar recommendations, sometimes with different recommendations clearly aimed at resolving the same core problems. During this follow-up study, Academy staff spoke to NMFS and NOAA OGC officials about the recommendations for congressional action. The agency was preparing an Administration proposal for reauthorization of MSA, as well as preparing the agency response to the Ocean Commission report. Officials, therefore, could not state an agency position on these recommendations.

Use of Science in the Management Process

As briefly discussed at the beginning of this report, both the Academy and NRC recommended that the fisheries management governance structure be reviewed. A key motivation behind the NRC recommendation was a concern that the structure resulted in a mismatch between authorities and responsibilities related to science. The report specifically referenced instances in which solid scientific advice was ignored by the councils, and subsequently by NMFS in approving the council action. NRC recommended that Congress review the governance structure, especially the role of science in the structure.

The Ocean Commission also addressed the need for a clear separation in the roles of science and management. The Commission made more specific recommendations, including that the SSCs set maximum allowable catch and the councils be required to set harvest limits at or below that level. Part of the concern here is that final management actions do not always address the biological risk identified by the science. Some believe this happens because the councils won't vote on measures that are so restrictive that they imperil the economic health of fishers or the community, and/or the agency is reluctant to make hard, unpopular decisions. One key problem is that often, by the time NMFS receives the proposed action for approval, the option is to accept it or to close down a fishery.

The Administration's response to the Ocean Commission's report includes many references to facilitating and guiding the use of science in ocean management policies and ecosystem-based management of ocean resources. Key references are in regard to the functions of several new committees and panels established to oversee and guide national ocean policy. More directly, however, the report states that the "President directs NOAA to establish guidelines and procedures for the development and application of scientific advice for fisheries management decisions… Standard review procedures and guidelines will increase the efficient use of the best available scientific information for management considerations."[26]

As discussed earlier, NMFS has reorganized to separate the science and management arms of the agency. The science centers now report to a new Director of Scientific Programs, who is at the level of Deputy Assistant Administrator. Previously, the centers reported to the regional offices, who reported to the Deputy Assistant Administrator for Regulatory Programs. The practical impact of this is not clear, but one objective was to clarify the independent role of science. The NRC Committee Chair called this a significant step in clarifying the distinct role of science in fisheries management.

NMFS officials also have indicated that the agency intends to take a much harder line in making sure council actions are fully supported by science. They speak of it in terms of "sticking to their guns." They believe the new RSP process will facilitate, and they say already has facilitated, this. The "frontloading" process will make clear the pros and cons of actions and NMFS' position on various issues early in the process. Problems should be ironed out early and, if not, the council at least will know if a particular action is likely to be rejected. At this point, the Academy cannot determine what, if any, impact NMFS' changes will have on the use of science

[26] U.S. Ocean Action Plan: The Bush Administration's Response to the U.S. Commission on Ocean Policy, Dec. 17, 2004, p.19.

in the management process. The NRC Committee Chair reiterated concerns about the need to clearly delineate the responsibilities of NMFS science and better ensure that all fishery management actions are in accord with solid scientific recommendations.

Council Membership

Both the Academy and the Ocean Commission recommended broadening council membership. There is a perception that councils are overly influenced by fishing interests, and inclusion of other interest groups would enhance credibility. NMFS officials said that they have worked to encourage governors to nominate a broader slate of nominees from which the Secretary can select council members. These officials said they have been somewhat successful with regard to achieving more balance among commercial and recreational fishers. The Administration will seek to amend MSA to require governors to submit a slate of nominees for council seats that represents a balanced apportionment of marine fisheries in their respective states.

NMFS officials also said they have encouraged nomination of environmentalists and other stakeholders, stating that all nominees should have a strong conservation ethic, but that the Department's mandate is only specific with regard to the commercial/recreational balance. [27] Officials did note, however, that mandating representation by other groups could be problematic. For example, there could be disputes concerning the definition of "environmentalist" or "conservationist;" it could be difficult to select specific organizations to be considered since, for example, not all environmental groups share the same viewpoints; or council progress could be prevented if no one from those groups was willing to serve. They also noted that it may be counterproductive to increase the size of councils to broaden representation. One constituent reiterated this concern, noting that large councils are unwieldy and make consensus difficult. That constituent suggested that another vehicle for broadening representation is the council advisory panels.

The Academy raised concerns about conflict of interest on the part of council members. The Academy sought to have Congress tighten the requirements for recusal of council members with a financial interest in the decision being voted on. According to NMFS and OGC officials, council members follow the general requirements for recusal applicable across the government with regard to members of government advisory groups. NMFS has not mandated any requirements specific to the councils. The Ocean Commission also raised concerns about potential conflict of interest in the management process, but addressed its recommendation to the SSC members. That is, in making recommendations to increase the authority of the SSCs, the Commission also recommended that they meet more stringent conflict of interest requirements.

[27] An analysis of current council membership shows, nation-wide, commercial fishers represent about 51%, recreational fishers 37%, and other 12%. In 2002, the Academy reported that the distribution was 44% commercial, 36% recreational, and 19% other. Of course, representation on individual councils varies significantly. For example, in 2002 the Gulf of Mexico council consisted of three commercial, seven recreational and one "other" representative. In 2004, membership is more balanced: five commercial, four recreational, and two other.

Timeliness of Fisheries Actions

The Academy made two recommendations to Congress specifically intended to improve timeliness of fishery management actions. Similarly, the Ocean Commission indicated a clear need for improved timeliness and made recommendations addressing that point, though none to Congress. One of the Academy's recommendations was to specifically allow framework adjustments.[28] At the time of the Academy's report, a recent court decision had raised concerns about NMFS' use of these actions. NMFS and NOAA OGC officials the Academy staff spoke with said that NMFS prefers to obtain comments on proposed rules whenever possible. However, they said, framework adjustments are an important tool and noted that, in fact, an earlier draft administration legislative proposal did include a legislative change to specifically allow framework actions in some cases. They also emphasized that subsequent court actions have generally upheld the use of framework adjustments under certain circumstances and thus have reduced concerns about their use.

The other Academy recommendation to Congress aimed at improving timeliness was to allow regional administrators to propose amendments to council proposals. Under current legislative provisions, the regional administrator can only recommend the Secretary approve or reject council actions, and cannot formally propose alternatives. This lack of flexibility was seen as increasing the time involved in what in many cases became a lengthy process of informal regional office review and communication with the council. NMFS officials believe that the new frontloading provisions under RSP will help ensure collaborative agreement between councils and regional management on council proposals, thus reducing the need for the recommended change.

Funding for Vessels and Data

NRC recommended that Congress continue to fund acquisition and employment of new vessels and the Fisheries Information System (as NRC had recommended in earlier reports). The Ocean Commission also recommended that congress support infrastructure and technology needs related to ocean and coastal management, operations and enforcement; it also recommended that Congress ensure a dedicated funding stream for critical ocean science infrastructure and technology.

Fisheries Survey Vessels are crucial tools in meeting the agency's at-sea data requirements. The NOAA Marine and Aviation Operations' 10-year ship plan is guiding NMFS' actions in acquiring new vessels. The 10-year ship plan, prepared in 2003, is based on the NMFS Data Acquisition Plan (1998).[29] It calls for construction of six new fisheries vessels and conversion of two other ships by FY 2010. Progress has been slower than is called for in the plan, but four new vessels are expected to come on line in the next few years. The Fisheries Survey Vessel OSCAR DYSON is currently undergoing acceptance trials and is expected to be commissioned in FY 2005. Construction of the HENRY B. BIGELOW is underway and it is expected to enter service

[28] Councils and NMFS have adopted the use of these adjustments in order to make the frequent changes that are sometimes necessary to carry out management regimes. Through these actions, the agency publishes a final rule without going through the proposed rule and comment process required for most regulatory actions.
[29] The plan is currently being revised.

in FY 2006. Initial planning is underway for a third ship, funded through a $17 million appropriation for long-lead-time procurement; the FY 2005 appropriation included $34 million to complete funding for the construction of the third fisheries vessel. The FY 2005 appropriation also included $5.6 million toward early efforts on a fourth vessel.

As discussed above in the section on constituent relations, NMFS participates with states and interstate commissions in six networks to collect fishery-dependent data. In FY 2002, for the first time, Congress appropriated funds specifically for a national Fisheries Information System. Among other things, the system's goals include better integrating the existing data and standardizing data systems across regions. NMFS estimated the cost of a fully implemented program to be $51 million; Congress appropriated about $2.5 million in FY 2002 and FY 2004; there was no appropriation in FY 2003. NMFS plans to sponsor a workshop of collaborators to establish priorities for the FY 2005 funding, which was again $2.5 million. Officials commented that more funding is needed for the Fisheries Information System, and that they hope to be able to make a better case based on the strategic planning they are doing through the workshop and other efforts related to PPBES.

The NRC Committee Chair reiterated the critical need for fishery research vessels. Much of the current fleet lacks the needed technology and, in fact, there are safety questions given the age of some of the vessels. She said data must be a priority.

The Administration's response to the Ocean Commission's report indicated that it is currently developing a National Oceanographic Fleet Renewal Plan that will define an interagency strategy for federally-owned oceanographic ships, setting a vision for the composition and size of the fleet required to meet future needs for research and operations.

The Total Cost of NMFS' Science Mission

NRC recommended that Congress examine the cost of collection, analysis, and management of data required by NMFS to fulfill its current mandates. NRC was clearly concerned about "indications" it found that NMFS did not have sufficient funds to carry out all of the mandates it faces. NRC identified several areas that it believed clearly needed additional funding, though in the limited time it had it could not determine if new funding was needed or if reprogramming would suffice. Another clear concern was the extent to which Congressional earmarking limited NMFS' ability to redirect funds to high-priority research needs.[30] NRC concluded that the full cost of meeting NMFS' mandates, including for example full observer coverage and full use of the Vessel Monitoring System, should be determined and thus made this recommendation to Congress.

NMFS officials said that though not requested by Congress, this information is available in internal planning documents.

[30] In its original study the Academy found that some of the earmarks did address NMFS priorities; some earmarks were broad enough that NMFS could use them for its priorities; and others clearly did not meet what NMFS had identified as scientific priorities.

NMFS' EFFORTS RELATED TO RECOMMENDATIONS TO IMPROVE SCIENCE

Background

In conjunction with the Academy's 2002 study, the NRC reviewed the quality of the science that underpins NMFS' fisheries management decisions. While finding that the science was of high quality, the report made recommendations to NMFS and/or Congress to improve NMFS science, especially with regard to moving the agency toward an ecosystem-based management approach. In several cases Academy recommendations addressed similar issues.

The Academy's approach relative to these science-related recommendations is somewhat more limited than the approach used to follow up on the Academy's recommendations. The broad scope and technical nature of the NRC recommendations made it impractical to develop a complete picture of NMFS' actions in headquarters and all of the science centers. Consequently, to follow up on the NRC recommendations, the Academy staff obtained information from NMFS through interviews with officials and from written information NMFS prepared in response to questions. The responses provided general information on the approach the agency is taking as well as some specific examples of progress.

Summaries of that information were provided to the Chair of the NRC Committee that conducted the original NRC review to obtain her comments on the efforts NMFS has taken to date. Neither the NRC Committee Chair nor the Academy staff attempted to assess the extent of NMFS' success in meeting the intent of NRC's recommendations. The following sections summarize the agency's actions to date, as described in the information it provided, and include, in some cases, observations by the Academy staff and the NRC Committee Chair.

Recommendation: NMFS should maintain and advance its tradition of excellence in fisheries science.

The NRC Committee concluded that NMFS had been attacked on science unfairly. This recommendation was an admonition to "safeguard" what the agency was already doing. One concern was the agency may be spread too thin and that earmarks in appropriations reduce the agency's ability to direct efforts at the most important areas.

<u>Progress</u>

NMFS has continued to request funding for science and is hoping, in part through better-supported and more convincing budget submissions through the PPBES process, to reduce the number of congressional earmarks that limit the agency's flexibility. The agency has received significantly increased discretionary appropriations for "expanding stock assessment" in recent years, up from about $2 million in FY 2001 to about $19 million in 2005.

Recommendation: NMFS must balance its traditional emphasis on sustainable exploitation with its duty to protect vulnerable species and habitat harmed by fishing. (The Academy recommended that NMFS conduct a needs assessment for protected resources stock

assessments and other research to determine what resources it needed to carry out its protected resources mission.)

In 2002, NRC noted that several of the lawsuits NMFS had lost concerned bycatch and the impact of fishing on marine mammals. In addition, there are mandates in MSA and the Endangered Species Act to protect essential fish habitat and threatened and endangered species. NRC asserted that these were areas in which NMFS' expertise and analyses were deficient. The Academy also reported that in 2002 take-reduction plans were being implemented or developed for only half of the marine stocks that needed them and that only18 of 25 recovery plans deemed necessary for non-Pacific salmon species were completed.

The Ocean Commission made several recommendations related to environmental protection and protected species, including recommendations to NMFS related to essential fish habitat, bycatch, and gear research.

Progress

In September 2004 the Office of Protected Resources completed a needs assessment for protected resources science, and NMFS has embarked on a 10-year effort to obtain those resources through the PPBES process. This is a critical first step in enabling the agency to increase its efforts related to its protected resources mission in a strategic way. Officials indicated that the plan will guide decisions made in PPBES to enable balanced science and management programs to be developed. Supported by this assessment, the FY 2005 budget request included an additional $1 million to further protected resources science. While the FY 2005 appropriation did not specifically fund that request, there was a $10 million increase for marine mammal activities under the Senate's Marine Mammal Initiative. NMFS' draft spending plan for this funding includes $2 million for implementation of the protected species requirements plan.

NMFS reported that the funding for protected resources science has been reduced slightly in each year since FY 2001, from about $96 million to about $94 million in FY 2004. The FY 2001 level essentially doubled funding in this area from FY 2000. However, both NMFS officials and the NRC Committee Chair expressed concern that the proportion of the funding represented by earmarks has increased and that these earmarks limit the agency's ability to address some key areas. NMFS noted, for example, that in FY 2004 Congress significantly decreased funding for base marine mammals activities and those activities targeted at "other species"(e.g. white abalone, shortnose sturgeon, smalltooth sawfish, and Johnson's seagrass) while increasing earmarks for bottlenose dolphins, Puget Sound orcas, and Alaska harbor seals. In 2004 NMFS reported that, since 2002, three take-reduction plans had been completed and three additional recovery plans had been completed or published in draft.

In March 2003, NMFS published a National Bycatch Strategy, intended to further reduce bycatch through fishing gear improvements, standardized reporting, and education and outreach. The Assistant Administrator for Fisheries noted that "[m]inimizing bycatch is one of the most important things we can do to conserve fish and other marine species." The strategy is based on a 1998 NMFS report, *Managing the Nation's Bycatch*, which sets a national goal of

implementing conservation and management measures for living marine resources that will minimize, to the extent practicable, bycatch and the mortality of bycatch that cannot be avoided. Among other actions taken to implement the strategy, NMFS:

- Issued, in December 2003, a Draft Final Report: *Evaluating Bycatch: A National Approach to Standardized Bycatch Monitoring Programs*

- Developed Bycatch Priorities and Implementation Plans for each region and for highly migratory species, which include priorities and expected actions related to research, monitoring, management, and education and outreach

- Issued *NOAA Fisheries Objectives, Protocol, and Recommended Precision Goals for Standardized Bycatch Reporting Methodologies*

- Supported new gear development research, including $1.8 million in grants in the northeast and several gear competitions with monetary prizes for the winners

NMFS also reported efforts to make better use of its limited funds. One such effort was a workshop, held in November 2001, *Bridging the Gap Between Fisheries and Protected Resources Professionals in NOAA Fisheries*, which discussed, among other things, how to leverage funding through technology exchange and piggy-backing vessel use. A workshop report was issued. NMFS comments did not indicate what action, if any, was taken as a result of the workshop.

The Administration's response to the Ocean Commission report specifically supported implementation of the bycatch strategy, and stated an intention to propose updated legislation reauthorizing the Marine Mammal Protection Act and enhancing federal enforcement authorities under the act.

Though it is difficult to gauge the full extent of NMFS' efforts from this brief discussion, NMFS is clearly taking steps to focus more on its protected resources responsibilities. The NRC Committee Chair, however, reiterated the need for continued increased efforts in this area.

Recommendation: The importance of social and economic data and analysis to marine fisheries management should be recognized in the reauthorization of [MSA], resulting federal regulations, fishery management plans, NMFS budget requests, and Congressional appropriations.

Social and economic data are critical for the development and implementation of effective management measures, and for examining the impacts of measures on industry and communities. NRC concluded that inadequate funding and restrictions in MSA are factors that contribute to the lack of data.

Progress

NMFS is legally mandated to undertake cost-benefit analysis of regulatory actions under MSA, the Regulatory Flexibility Act, and several other mandates. In a 1999 plan to improve its capabilities in socioeconomic analysis, NMFS identified the need for 114 more sociologists and economists, and set a target of FY 2007 to reach that goal. It also set forth a need for about $8.5 million to fund data collection. Since FY 2001, in response to continued NMFS budget requests, Congress has continued to appropriate funds for these activities. The annual appropriation of $3.5 million was increased to about $5 million in FY 2004 and FY 2005. In addition, NMFS reports that it has continued to annually direct $4.4 million of its discretionary funding to these data collection and analysis efforts. Since FY 1999 the number of economists and social scientists employed by NMFS has increased from 34 to 67. This includes six anthropologists who, to meet requirements in MSA that the impact on communities be considered in undertaking fisheries actions, have undertaken community profiling in all regions. NMFS reports, however, that to date, it has only received $1.3 million of the $8.5 million the 1999 plan identified as required to fully meet data collection needs.

NMFS officials stated that the increase in staff economists has enabled the agency to develop a significant number of new economic surveys including implementing economic data collection programs in the Southeast (snapper group and Gulf shrimp FMPs); Southwest (longline, purse seine and drift gillnet observer program); Pacific Islands (bottomfish and longline observer programs); Alaska (crab FMP); and Northeast (herring observer program). In addition, it has conducted a national employment survey (results are expected to be available May 2005) and will undertake a national seafood consumption survey in January 2005. NMFS economists have also undertaken analyses of salmon habitat (Northwest and Southwest) and of marine protected areas in all regions. All regions have undertaken analyses to determine excess capacity in their fleets for the majority of FMPs. Under the RSP "frontloading" approach, economists sit on the teams to develop FMPs and other actions. This adds to the workload but may help to ensure economic issues are fully considered as actions are being developed.

NMFS is currently updating its 5-year Plan for Economic & Social Research. Included in this document are detailed plans for economic data collection required for analyses related to commercial fisheries, recreational fisheries, habitat, and protected species, as well as the economic and social data required for community profiling and social impact analyses. The goal for the number of scientists needed will be increased from 114 to between 120 and 126 to include needs identified in the September 2004 Protected Species Requirements Plan. The agency cautions, however, that as it evolves to ecosystem-based management it may need to revise the requirements further. In FY 2005, NMFS intends to begin a scoping exercise to determine additional data collection and modeling needs that will be required for ecosystem-based management and to evaluate the impacts meeting these requirements may have on staffing needs.

NMFS officials pointed out, as did NRC in its 2002 report and in earlier reports, that NMFS faces legislative limitations on the kinds of information it can collect. One example they cited is that under MSA Sec. 303(b)(7), it is not possible to collect economic data from processors. In addition, the authority to collect economic data on harvester operations is somewhat ambiguous

because while collecting information on landings revenue is a required provision of an FMP under Sec. 303(a)(2), Sec. 402(a) states that a council cannot request that the Secretary collect any financial information. The conflicting guidance of Sec. 303(a)(2) and Sec. 402(a) has resulted in some councils and NMFS regions giving more weight to Sec. 303(a)(2) (it is required to collect economic information from harvesters) while others have given more weight to Sec. 402(a) (it is not possible to collect economic information from harvesters). Officials we spoke to stated that, in their opinion, MSA should be amended to remove language that makes it difficult to collect economic data from processors and harvesters, as well as to specify the type of economic and social data the agency has the authority to collect. In addition, they recommended providing the Secretary with the authority to require this data, should voluntary collections be deemed ineffective. Some fishers have expressed concern about the confidentiality of such data, and it would be important to provide for appropriate protections.

NMFS, supported by continued Congressional funding for these activities, has shown commitment to this area and appears to have made real progress, though much is yet to be done. The NRC Committee Chair noted that legislative limitations still present impediments. Amending MSA, as NMFS officials have suggested, would facilitate the kind of economic and social analysis NRC and others deem critical to effective fisheries management.

Recommendation: NMFS should create an atmosphere that encourages innovation and rewards excellence (as recommended in previous NRC reports).

NRC warned that scientists can become demoralized in an agency that is given conflicting mandates, is often sued, or if scientific expertise is not used to guide management decisions. NRC stressed that NMFS should continue to encourage and reward scientific excellence. It also noted that innovation could be fostered by improving conditions for conducting science in NMFS.

Progress

NMFS officials identified a number of ongoing practices designed to promote innovation and reward scientific excellence. These include maintaining strong ties to academic research partners through joint institutes, faculty and scientist exchanges, post-doctoral programs, continuing education programs, and cooperative education programs in each science center. NMFS' participation in two of these efforts—the Sea Grant program and links to Minority Serving Institutions—are discussed in later sections. Officials said they continue to look for other opportunities to link with innovative research.

NMFS officials also reported taking several actions directly related to improving the circumstances under which scientists are hired and work. In FY 2004, NMFS expanded participation in a Department of Commerce Personnel Management Demonstration Project to most of its employees, including most of its scientists. The purpose of the demonstration project is to strengthen the contribution of human resources management in supporting the missions of specific operating units of the Department. To accomplish this goal, the demonstration project introduced certain changes in personnel management systems that include greater delegation of human resources authority to management; simplifying the current position classification system

for greater flexibility; establishing a pay-for-performance management and rewards system that will improve individual and organizational performance; offering greater pay-setting flexibility; improving recruiting to attract highly qualified candidates; and getting new hires aboard faster. NMFS officials the Academy staff spoke to in headquarters and in the field see significant potential in this new approach for hiring and promoting high quality/high achieving scientists.

Another important initiative that may improve the conditions under which scientists work in NMFS is the Science Accreditation Program. Under this new program, NMFS will accredit science centers with an aim toward "placing science above reproach," providing a productive working atmosphere, and helping to attract and retain scientists. The program will be headed by the NMFS Science Board, and has set standards in areas such as how scientists are spending their time (for example, limiting the time allowed for giving advice as opposed to conducting research), the quality of the equipment available, and the scientist-to-technician ratio. The science centers have agreed to the standards and they will begin implementing them in January 2005. No date has been set for the first accreditation reviews. No new funding is currently available for this program and it will be up to the science centers to find additional funds, if needed, to meet the standards.

NMFS reported other actions to address this recommendation. For example, the agency established the National Committee on Scientific Stature, charged with evaluating promotions from the GS-14 (Pay Band IV) to the GS-15 (Pay Band V) level based on scientific productivity. Creation of the committee established a nationally-standardized process for recognizing exemplary scientists for their work. Another example is that, in 2004, NMFS scientists received a total of 27 group and 21 individual awards in a variety of Departmental and NOAA-level recognition programs.

The NRC Committee Chair commented that NMFS has clearly paid attention to this issue and is taking meaningful steps to ensure a positive working atmosphere. The Academy notes, however, that in future years, additional funding may be needed for science centers to meet the new accreditation standards and to promote all of the high-performing scientists.

Recommendation: NMFS should develop and implement a plan for rapid response to research needs identified in recovery and conservation plans.

NRC raised concerns about NMFS' inability to provide needed research information on marine mammal and fishery interactions in a timely fashion, noting that this may have been because it was not a high priority or because NMFS did not have sufficient funding for the types of data collection needed to produce such analyses. It also noted that a key problem was that, although in some cases new research needs may require rapid response, budgets are prepared years ahead.

Progress

NMFS officials indicated that the agency is currently able to address research needs identified in recovery and conservation plans through the annual allocation of funds for high priority needs. They stated that much of the needed research takes significant advance planning, use of ship time, etc., making it difficult in many cases to switch quickly from one planned activity to

another. However, they also indicated that the limited amount of discretionary funding severely limits the scope of research that can be conducted quickly and comprehensively, and that an increased source of flexible funding would help by allowing them to target these high-priority science needs on an annual basis, while still conducting long-term planning to fill future monitoring and research needs. The NRC Committee Chair agrees that NMFS needs more discretionary funding in the protected resources area.

Recommendation: NMFS should continue to use and seek advice and review from independent sources.

NRC concluded that even though NMFS employs some of the world's best fisheries scientists, independent review should be a fundamental component of developing stock assessments. NRC noted that NMFS' development of the Center for Independent Experts (CIE), which was operating as a pilot in 2002, was an important first step, but noted that as NMFS moves to broader models, such as ecosystems research, participation by other disciplines may be necessary.

Progress

NMFS officials stated that the CIE remains the primary source of independent review of stock assessment and other key scientific work. CIE is NMFS' scientific peer-review program, which is intended to improve the science upon which management decisions are based by obtaining independent peer reviews on specific scientific or technical issues. The most significant action taken since NRC's recommendation is that the CIE, which was initiated in 1998 as a pilot program, was expanded to full, nation-wide operational scale in FY 2003.

NMFS officials noted that the independence and integrity of the CIE's reviews are of paramount importance. The University of Miami, which ran the pilot, won the contract to run the national program. According to officials, the University has implemented a process that ensures all reviewers are insulated from external pressures and financial conflicts of interests. To ensure independence, many of the reviewers contracted by the CIE are university or government scientists from overseas.

The CIE typically conducts about 15 review projects per year, with 1 to 5 individual reviewers used on each. Subjects include fish stock assessments, protected species, fisheries biology, and gear design and sampling methods. Also, CIE reviewers are now routinely included in most of the regional stock assessment processes conducted by the science centers. Since 2002, all of the science centers have had a process to obtain outside review of major stock assessments and other major scientific work. For those efforts not reviewed by CIE, most involve CIE experts in some way.

Independent advice and review are also obtained, on an as-needed basis, through periodic studies by the NRC. For example, in FY 2004, at NMFS' request, the NRC began a study evaluating current recreational fisheries data collection methodologies.

The NRC Committee Chair sees expansion of CIE to a national program as a significant step, as is continuance of systems in use in the individual science centers. As NMFS' scientific work evolves, efforts will be needed to ensure a broader range of expertise on the review panels.

Recommendation: NMFS and the Councils should develop quantifiable management goals and collect data to measure progress toward those goals.

NRC concluded that although FMPs include some quantitative goals, such as biological reference points, setting and monitoring additional quantitative goals would improve fisheries management. One specific area cited in which such goals—and related data collection and analysis—would be beneficial was the impact of management actions on fishing communities. NRC also noted that work needed to be done to determine which fishery management actions are effective or ineffective, for specific plans, as well as nationwide.

Progress

NMFS has not taken specific action with regard to this recommendation. However, as noted above, progress is being made with regard to the socio-economic data and expertise available, which could allow more attention to be given to goals and monitoring of progress in this area, both for individual FMPs and nationally. While it is not clear that individual FMPs set management goals beyond those directly related to status of fish stocks, NMFS reports that it does track several measures related to economic analysis at the national level. These include

- Number of FMPs for which net benefits and economic impacts can be assessed
- Number of coastal states and/or territories for which community profiles are complete
- Number of protected species valuations conducted

The NRC Committee Chair emphasized the importance of this recommendation, indicating that it is essential for NMFS to set quantifiable management goals and to monitor progress toward them.

Recommendation: NMFS must build a scientific workforce to meet the future needs of the agency. The Academy also recommended that NMFS take aggressive action to find and hire the scientists it needed, including, where appropriate, contracting for services.

NRC reiterated findings and recommendations it made in a 2000 report concerning the adequacy of NMFS' scientific staff. Significant improvements are needed, both in terms of the number and the specific expertise available. In the 2000 Fisheries Stock Assessment Improvement Plan NMFS identified a need for 104 additional full time stock assessment scientists. And, according to officials, the annual reassessment required through the PPBES process confirms that estimate. Additionally, the recently completed requirements report for protected resources identified significant additional resource needs, including scientists, though the exact number was not specified. NRC noted that the agency faces an aging workforce, many of whom are nearing eligibility for retirement; significant competition for some relatively rare specialists; and a need

for expanding the expertise of its workforce as it moves to support ecosystem-based management.

Progress

NMFS' ability to find, hire, and retain high quality biological scientists remains a critical concern. As discussed above, although there is still a long way to go, NMFS has made good progress with regard to meeting its needs for sociologists and economists. Much less progress has been made in the area of biological science to meet fisheries and protected resources needs and, more seriously, the evolving mission of ecosystem-based management. In recent years Congress has substantially increased discretionary appropriations for "expanding stock assessments," appropriating over $16 million in FYs 2003 to 2005, compared to about $2 million in FY 2001. Also, as noted earlier, some of the FY 2005 funding under the Senate's Marine Mammal Initiative will be used to hire biologists needed to expand protected resources activities.[31]

NMFS officials stated that the agency continues to implement a variety of programs to train and obtain needed scientific expertise, including offering graduate fellowships, funding faculty positions, offering postdoctoral positions, sponsoring programs to reach undergraduates, placing NMFS employees in academic institutions, creating opportunities for university faculty to take sabbatical leave at NMFS, and advertising open positions more broadly. NMFS officials pointed specifically to several ongoing programs which they described as follows:

> The Sea Grant/NOAA Fisheries Fellowships in Population Dynamics and Economics Program was begun in 2000. The program provides funding and [NMFS] mentors to students in these disciplines, critical to [NMFS'] mission. Since then, the program has funded 15 population dynamics students. Both of the students who completed the program thus far were hired by NMFS. Eight economics/social science students have been funded. One of the two who have completed the program has been hired by NMFS, and the other by a university.
>
> Six advanced technology specialists, one for each [s]cience [c]enter, were hired to set priorities and coordinate activities among the [c]enters. Ecosystem approaches to living marine resource management can be data hungry. Improvements in monitoring efficiency are a means of improving assessments in a fiscal environment of level or slow growth. Advanced technologies are being explored to increase the efficiency and effectiveness of existing monitoring practices and to develop new methodologies.
>
> Another program invested in by NOAA to help groom the next generation of marine scientists is the Educational Partnership Program with Minority Serving Institutions. [The program] focuses on building the capacity of [these institutions] to conduct research in NOAA mission-related disciplines and to generate a

[31] NMFS officials expressed concern, however, that the funding from the Marine Mammal Initiative may not be permanent. They said this tends to slow the progress for a few years until it becomes clear that such funds are a part of the permanent funding base needed to recruit high quality biologists.

> pipeline of highly qualified students with education and training in disciplines relevant to NOAA. [NMFS] partners with the Living Marine Resources Cooperative Science Center, comprised of the host university, University of Maryland-Eastern Shore and five other institutions.

A key concern cited by NMFS during the Academy's 2002 study was the critical shortage of qualified scientists coming out of US schools and the resulting difficulties in filling vacant positions. NMFS officials say in recent years they have been able to hire all of the scientists for which they have funding. This was not the case in 2002. Officials cautioned, however, that there remains a critical shortage of scientists with strong quantitative skills that are up to the rigors demanded by stock assessment and modeling. While it is fair to say that assessment vacancies are being filled, because of the dearth of fully qualified individuals, many of these hires are into lower-level positions with the intention to train them to the full performance level. Also, officials have indicated that they are making some efforts to help reduce the need for staff, for example by improving technology and improving sharing of resources between the fisheries and protected resources sides of the agency, but the extent of these efforts is not clear. Nonetheless, overall, there is an extensive gap between identified needs and progress toward filling them.

Since 2001, only 15 new stock assessment positions have been created. Other data appear to highlight the problem of attrition, a key concern addressed by NRC. That is, officials indicated that although only 15 new positions were created, over 50 scientists have been hired since 2001, many of whom were hired to backfill existing stock assessment vacancies. At the rate of 50 scientists over 3 to 4 years, NMFS will be hard-pressed to fill its need to increase the number of scientists while backfilling positions left empty through retirements and other attrition.

One way to obtain needed expertise, at least in the short run, is contracting. Both the Academy and NRC pointed to the potential of contracting to help meet needs for scientific expertise. While NMFS officials said they agree that contracting is sometimes appropriate to augment the core team of government scientists, NMFS still seems reluctant to do this. Officials said that they have been able to hire all those they have funding for and therefore have not seen a need to contract. They also said that they are concerned that contracting too much could jeopardize NMFS' control and oversight of the science.[32] NRC still believes contracting is an appropriate way to hire some of the expertise NMFS needs. While cautioning that the extent of contracting must be monitored to assure governmental control, the NRC Committee Chair noted that many of the highly trained quantitative scientists currently available are not U.S. citizens. These scientists are not eligible to be hired, but NMFS could contract to obtain their services.

In 2002, NRC concluded that NMFS needed to undertake additional efforts and offer both monetary and non-monetary incentives to obtain the needed scientific workforce. The efforts discussed above can all have a positive impact. However, given the extent of unmet need and the relatively slow progress being made in increasing the scientific workforce, NMFS may need to "think outside of the box."

[32] The protected resources requirements plan identifies a need for 30 scientists to conduct assessments to reach the first two levels of quality that provide the framework for the plan. Only 1 of those is identified as a contractor. For the longer-range third level, however, the plan identifies a need for 138 such scientists, 125 of which are contractors.

Progress in stock assessments

In spite of the relatively slow progress in increasing the scientific workforce, NMFS reported making some headway in improving its stock assessments. According to NMFS, "[M]uch progress has been achieved in (1) *increasing the number* of NMFS stock assessments for previously 'unknown' stocks, and (2) *elevating the analytical levels of assessment models* to provide more comprehensive scientific advice for fisheries management. Improvements in both will advance the agency to the long-term goal of providing ecosystem-level assessments."

Since 2000, the agency reports that the status of 17 additional major stocks[33] is now known with respect to being "overfished;" the status of 14 additional major stocks is now known with respect to being subjected to "overfishing."[34] Nine new stock assessments were completed in FY 2004 alone. NMFS plans to complete 4 new stock assessments every year through 2010.

The Fisheries Stock Assessment Improvement Plan identified three levels of stock assessment. Model assessment levels relate to the degree of sophistication of the stock assessment. A low-level assessment primarily describes the historical trend in catch and perhaps relative abundance; this is the minimum requirement for all major and minor stocks. A second level involves application of simple quantitative models that improve the understanding of historical trends and provide a basis for simple predictions and forecasts; this is the target for all major stocks. A third level involves more detailed types of data to improve forecasts and include spatial, climate and ecosystem factors.

All of the nine new stock assessments completed in FY 2004 included assessment model improvements and new analyses that at least began moving them to the second level. Eight of these assessments were completed by the Alaska science center, the ninth by the Northwest science center. Most often the improvements included age-structured assessments. Other types of improvements include, for example:

- A new modeling approach implemented through the Assessment Model for Alaska. The analysis included a reanalysis of historical walleye pollock data along the Aleutian Islands.

- A new species-specific assessment for shortspine thornyhead, which had been grouped in an "other rockfish" complex in previous years.

- A new assessment for two species of Gulf of Alaska skates (big skate and longnose skate), which were formerly part of the "other species" group.

[33] Major stocks are defined as stocks with landings over 200,000 pounds annually; minor stocks have smaller annual landings. The major stocks constitute approximately 99 percent of U.S. landings. The numbers of stocks in each category vary over time, depending on landings and other factors. The 2002 numbers are 269 major stocks and 673 minor stocks.

[34] In 2000 NMFS reported that the status for 101 major species was unknown with respect to being "overfished," and the status for 120 species was unknown with respect to being subject to "overfishing."

- The first quantitative assessment of the southern stock of cabezon off California.

Recommendation: Five areas of science, identified in previous NRC reports, should receive increased emphasis.

NRC identified several areas of science that were inadequate and that it concluded may have been responsible for litigation. It reported that Congressional earmarks do not necessarily reflect NMFS' needs, as dictated by legal mandates, and reduce NMFS' ability to adjust to new scientific priorities. NRC also concluded that additional sources of funding for these areas may need to be identified.

Progress

Area 1: Development of research plans and analysis relevant to [Marine Mammal Protection Act] and [Endangered Species Act] mandates.

NMFS reported that the key accomplishment in the area was completion of the Protected Resources Requirements Plan which will guide efforts to increase NMFS' protected resources activities. This plan is more fully discussed in the report section on planning. Other protected resources efforts are described above, in response to the recommendation concerning balancing efforts with regard to sustainable resources and protecting species and habitats.

NMFS' response for each of the other 4 areas is quoted below:

Area 2: Collection and analysis of spatial data to meet needs of managing using spatial models, marine protected areas and essential fish habitat designations.

> In 2004, NOAA sponsored a workshop on GIS Tools Supporting Ecosystem Approaches to Management (EcoGIS). The purpose of EcoGIS was to define the spatial data and analysis tools needed by scientists and managers implementing four Ecosystem Pilot Projects on the Atlantic Coast and Gulf of Mexico. The input of all participants, especially the Fishery Management Councils, was valuable in developing priorities for the EcoGIS project, intended to capitalize on existing agency resources and expertise to enhance regional capabilities for using spatial data and models.[35]
>
> Examples of increased attention to spatial detail in our stock assessment data collection and modeling are widespread in NMFS. These include, but are not limited to: effect of fishing effort on fish aggregations near Stellar sea lion rookeries in Alaska; restructuring yellowtail flounder stock units off New England using new biological data; collection of habitat-specific rockfish abundance using submersibles off the west coast; investigating the consequences of concentration of fishing effort around New England closed fishing

[35] The workshop summary concluded that, "[t]he next step is the formation of a steering committee to guide development of the EcoGIS project. In conjunction with the steering committee…NMFS and [National Ocean Service] staff will define the scope of the project, develop a detailed project plan, flesh out the initial GIS tool requirements compiled in the workshop, assess data needs, and inventory and evaluate existing data sources."

areas. There is increasing use of habitat maps developed for [essential fish habitat] in the analysis and design of trawl surveys. A workgroup has been formed by NMFS and the National Marine Protected Areas Center at Santa Cruz, to investigate "Science Integration of [Marine Protected Areas] and Fishery Management." The workgroup includes agency and academic scientists with expertise ranging from the ecology of [marine protected areas] to population modeling for stock assessment.

Areas 3, 4, 5:

- **Development of new models with multi-species interactions trophic structure and ecosystem effects**

- **Development of analytic techniques that link social and economic data to biological data**

- **Linking market and non-market values with management scenarios**

  [About $800,000] was provided in FY04 to develop decision support tools for ecosystem-based fisheries management. Twenty-three proposals were received in response to a Request for Proposals, and the following projects were funded, based on competitive review:

  - A Spatially-Explicit Ecosystem Model to Examine the Effects of Fisheries Management

  - Ecosystem-Based Decision Support Toolbox

  - Development of Quantitative Performance Indicators for Ecosystem Management

  - Ecosystem Attributes and Adaptive Approaches During Stock Rebuilding

  - Analytical Framework Development for [Essential Fish Habitat]

  - Critical Evaluation of Ecopath and Ecosim Modeling Approaches

  [NMFS will use about $200,000 to fund] three technical workshops [that] were/will be held in late FY04/early FY05 to advance Ecosystem Approaches to Fisheries Management (EAFM). The first workshop, EcoGIS, is described above. In early FY05 a workshop will be held to produce an integrated overview and needs assessment of science in support of ecosystems approaches to fisheries. Such an overview is a necessary follow-up to numerous policy reviews that have advocated for an ecosystems approach, as opposed to governance systems primarily concerned with individual stocks or fisheries-by-fisheries management plans. In order to support regional ecosystem governance models for fisheries, there are numerous monitoring, assessment and research needs required to assure that relevant goals are achieved.

> The specific tasks of the workshop are to: (1) review the state-of-the-art in quantitative ecosystem-based decision support tools applied to fishery management, and (2) develop a comprehensive research agenda for advancing ecosystem approaches to fisheries. It is envisioned that the product of the workshop will have broad international applicability to ongoing EAFM discussions, and publication of the proceedings of the workshop will be sought in a prominent fisheries-related journal. In the United States, the report will be used when developing implementation strategies following the ecosystem theme emphasized in the report of the US Ocean Commission.
>
> Another workshop will focus on developing a survey instrument to help determine what types of issues should be addressed in ecosystem planning, what are issues of concern to individuals and what questions may exist. Surveys of stakeholder groups and broader constituencies can help shape the discussion of what needs to be included in quantitative decision support tools. Also, the types of social science data requirements, models of functional relationships between human activities and biological resources, and indicators of performance from social perspectives will be discussed.

NMFS also reported that

> Steady progress is being made on ecosystem and environmental modeling. In regions where substantial amounts of food habit data have been collected (principally New England and Alaska), holistic models of marine food webs have been built and are being evaluated as tools to assess and predict effects on ecosystems. These holistic models complement, but do not substitute for, the single-species fishery assessment models that are optimized more for precise short-term assessments rather than holistic, long-term ecosystem assessments. Inclusion of environmental data in fishery stock assessment models can improve the calibration of historical data and the precision of stock forecasts. A workshop on Building Environmentally Explicit Stock Assessments was held in October 2003 and followed up in the NSAW of March 2004. The current generation of assessment models is generally capable of incorporating environmental covariates and there is a growing number of examples (Pacific sardine, sablefish, Bering Sea flatfish, pollock, coho salmon). In addition, research programs … continue to collect time series of environmental data and conduct research to elucidate the relationship between environment and fish dynamics so that these relationships can then be built into the assessment models.

NMFS also is now a member of the Coordinating Council of the Cooperative Ecosystem Studies Units Network, which involves university consortia and federal agencies. There are 14 units nationally, consisting of a host university, federal scientists, partner universities, state agencies, tribes and other organizations. The goal of these units is to provide timely research to resource managers. NMFS is working to become a member of a unit.

The Academy also notes that NOAA's newly implemented PPBES is now focusing planning and budgeting in NMFS—and all of NOAA—on an ecosystem approach to accomplishing the agency's overall mission.

In the opinion of the NRC Committee Chair, the efforts NMFS is taking are responsive to the recommendations. But she emphasized that meeting the intent of these recommendations will require a long term effort and NMFS will need the on-going support of NOAA and Congress.

STAFF STUDY TEAM

J. William Gadsby—*Responsible Academy Officer*.
Vice President for Academy Studies, National Academy of Public Administration. Former Senior Executive Service; Director, Government Business Operations Issues, Federal Management Issues and Intergovernmental Issues, General Accounting Office; Assistant Director, Financial Management Branch, Office of Management and Budget.

Ruth Ann Heck—*Project Director*.
National Academy of Public Administration. Has participated in Academy studies in areas such as federal transportation, wildfire mitigation, marine fisheries, and military sex crimes. Former Assistant Director, Health, Education and Human Services Division of the U.S. General Accounting Office. Oversaw studies in a wide range of government programs, including elementary and secondary education grant programs and veterans benefits. Served in staff capacities as co-director of GAO's entry-level training program and as Division Director's report reviewer.

Jennifer L. H. Blevins—*Senior Research Associate*.
National Academy of Public Administration. Has participated in Academy studies on wildfire mitigation and administrative restructuring within the National Institutes of Health. Former Intern in the environment division of the Overseas Private Investment Corporation; former Intern in the Government Relations Office at Defenders of Wildlife. MA in Environmental Policy, American University; BS in Forestry and Wildlife, Virginia Tech.

Martha S. Ditmeyer—*Senior Administrative Specialist*.
Project staff on past Academy studies: Airport Security, Federal Bureau of Investigation, National Marine Fisheries Service, Patent and Trademark Office, and Wildfire. Former staff positions at the Massachusetts Institute of Technology and the Communications Satellite Corporation.

NATIONAL ACADEMY OF PUBLIC ADMINISTRATION AND NATIONAL RESEARCH COUNCIL JULY 2002 RECOMMENDATIONS

Some broad changes are being made in NOAA and NMFS management, and in some cases the recommendations made in 2002 are no longer directly applicable to the new processes, or the new processes seek to address the underlying causes of problems in a way different from that recommended. Consequently, for the most part, this report does not cite agency actions for specific recommendations. Instead, it addresses efforts aimed at the types of problems identified. Listed below are the 2002 recommendations, organized by the issue areas covered in this report.

Improving the Fisheries Management Process

The Academy Panel recommended that:

- The NOAA General Counsel maintain an up-to-date litigation docket and conduct periodic analyses of the litigation record and pending caseload. The litigation docket should include all cases for which NMFS is the primary defendant, and it should identify the status and statutory basis for each. For decided cases, the docket should clearly identify the judgment rendered on each statutory claim and, for MSA cases, each national standard challenge.

- NMFS improve its administrative record keeping by employing standardized methods uniformly throughout the councils, regions, and centers. The administrative record should contain all required analyses, and officials involved in the process—including the councils and the Secretary of Commerce—should ensure through inspection that the record supports the actions being proposed prior to approval.

- Regional administrators only abstain from council votes on issues that transcend regional interests that would impact national policy, or require extensive coordination between other regions, councils, and government agencies.

- Regional administrators and the councils establish guidelines and procedures for closed council meetings to receive legal advice and briefings on litigation, including pending cases and proposed settlements.

- The Assistant Administrator for Fisheries and the councils amend guidelines to require that councils submit a statement outlining the reasons and rationale followed when approving management actions.

- The Assistant Administrator for Fisheries allocate a limited amount of discretionary funds to the councils to address unmet needs and analytical voids when information is not available from NMFS.

- The Assistant Administrator for Fisheries review and redefine, wherever possible, the division of management responsibilities with the states.

- NMFS, with the states, should investigate consolidation of permitting regimes to eliminate the cost and confusion of multiple permit requirements.

- NMFS regional administrators have the lead for assigning responsibility for completing analytical requirements associated with council actions.

- NMFS regional administrators clearly separate the assignments of preparing documents related to council proposals and approving them.

- NMFS regional administrators formally review and take action on council proposed actions within specific timelines.

- The Assistant Administrator for Fisheries update Operational Guidelines periodically, probably annually, to reflect the changes taking place, particularly those related to litigation.

- The Assistant Administrator for fisheries, wherever possible, specify the responsibilities of NMFS offices and the councils.

- NMFS identify actions in the RSP that can be taken immediately within available resources and establish a specific timeline to implement them.

- The Deputy Assistant Administrator for Regulatory Programs expeditiously hire a headquarters NEPA Coordinator, clarify to regional and council staff what must be done to prepare a programmatic EIS, and establish a mechanism to assess the status of field efforts with regard to EISs.

Improving Planning to Accomplish Competing Missions

The Academy Panel recommended that:

- The Deputy Assistant Administrator for Operations establish hiring priorities for those personnel required to support the initiatives discussed in this chapter.

- The Director of the Office of Science and Technology develop an integrated program that links the various existing improvement plans.

- The Director of the Office of Protected Resources conduct a needs assessment for protected species stock assessment and other needed research, similar to that done for fisheries stocks.

- The Assistant Administrator develop a comprehensive management plan integrating NMFS' competing objectives. The plan should prioritize the many competing goals and

objectives contained in the strategic and other plans within reasonably attainable resources.

The Deputy Assistant Administrator for Operations expedite implementation of the AOP process.

- The Assistant Administrator undertake an initial agency-wide program review using the initial AOP data as soon as possible.

- By FY 2004, the Assistant Administrator allocate resources based on a full program review process guided by the principles discussed in this report and the content of the comprehensive management plan.

Improving Monitoring and Oversight of Ongoing Activities

The Academy Panel recommended that:

- The Deputy Assistant Administrator for Operations designate a responsible program official to monitor how field and headquarters units spend funds.

- The Assistant Administrator designate a responsible official for each of the current, and any future, improvement plans and direct this official to assess progress, at least annually, toward the resource and outcome objectives set in the various plans.

- The Office of Law Enforcement complete an assessment of the JEA program, compared with others such as VMS, to better determine future funding needs and how they can be most effective.

Improving Relationships with Partners and Constituencies

The Academy Panel recommended that:

- Regional administrators establish electronic regulatory calendars in conjunction with planned council actions, and make them accessible to the councils, states, and public.

- The NMFS Assistant Administrator pursue the development of explicit public affairs and constituent/partner relations programs, involving coordination between OCS and regional components.

- The public affairs program be designed to portray NMFS as the authority on fishery management issues.

- The design of the constituent and partner relations program include the Academy's principles of effective consultation as a basis for external interactions.

- The NMFS Assistant Administrator design and implement processes for developing and evaluating programs and updating policies that involve constituents and partners when they have expertise or will be affected.

- Regional administrators create an electronic clearinghouse mechanism to provide constituents and partners with access to clear and concise information about programs and policies, current science and management issues, and FMP and regional regulatory actions.

- Regional administrators designate individuals to respond in a timely manner to information requests by constituents and partners.

- The NMFS Assistant Administrator issue a policy requiring responses to constituents' and partners' concerns and recommendations as part of the decision process.

- The NMFS Assistant Administrator adopt policies that promote direct contact and knowledge exchange between NMFS and council officials and their constituents and partners.

- Regional administrators take the lead to initiate dialogue with groups of constituents and partners on new or updated programs and policies.

- Regional administrators lead the regions and science centers in collaborating with the councils to provide forums—including open houses and conferences at least annually to promote discussion and exchange visions with their constituents and partners.

- The NMFS Assistant Administrator, in collaboration with regional administrators, substantially expand cooperative programs in the areas of research, statistics, and dockside extension services to improve external relations.

Recommendations to Congress

The Academy Panel recommended that:

- Congress amend MSA to provide for broader representation of fishing and conservation interests on the councils, including consumers, marine trades, and environmental and conservation groups.

- Congress amend MSA to require a council member to recuse him or herself from voting upon management actions affecting his or her personal financial interest.

- Congress amend the MSA to explicitly provide for framework adjustments and annual specifications to facilitate their rapid processing.

- Congress amend the MSA to provide regional administrators with the authority to propose amendments to council proposals.

The National Research Council recommended that:

- Congress should fund continued acquisition and deployment of new vessels and the Fisheries Information System, as recommended in previous NRC reports.

- Congress should initiate a review of the fisheries governance system and the use of science in governance. (The Academy also pointed to the need for a full assessment of the fisheries management structure.)

- Congress should examine the cost of collection, analysis, and management of data required by NMFS to fulfill its current mandates.

Recommendations to Improve Science

The National Research Council recommended that:

- NMFS should maintain and advance its tradition of excellence in fisheries science.

- NMFS must balance its traditional emphasis on sustainable exploitation with its duty to protect vulnerable species and habitats harmed by fishing.

- The importance of social and economic data and analysis to marine fisheries management should be recognized in the reauthorization of the MSA, resulting federal regulations, fishery management plans, NMFS funding requests, and Congressional appropriations.

- NMFS should create an atmosphere that encourages innovation and rewards excellence, as recommended in previous National Research Council reports.

- NMFS should develop and implement a plan for rapid response to research needs identified in recovery and conservation plans.

- NMFS should continue to seek advice and review from independent sources.

- NMFS and the councils should develop quantifiable management goals and collect data to measure progress toward these goals.

- NMFS must build a scientific workforce to meet the future needs of the agency.

- Five areas of science, identified in previous NRC reports, should receive increased emphasis.

The Academy Panel recommended that:

- The Director of the Office of Science and Technology take aggressive action to expand the number of stock assessment scientists and resource economists working in support of NMFS' missions.

- The Assistant Administrator direct line office, regional, and center directors to actively seek opportunities to contract for services.

- The Deputy Assistant Administrator for Operations reviews program officials' contracting efforts to determine if additional opportunities exist.

APPENDIX D

INDIVIDUALS INTERVIEWED OR CONTACTED

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

Office of Program Analysis and Evaluation
Kevin Amos, Deputy Director

Office of the General Counsel
Sam Rauch, Assistant General Counsel for Fisheries, Office of General Counsel for Fisheries
Leila Afzal, Deputy Assistant General Counsel for Finance and Management, Office of General Counsel for Fisheries
Shepherd Grimes, Staff Attorney, Southeast Region
Mariam McCall, Deputy Assistant General Counsel for Sustainable Fisheries, Office of General Counsel for Fisheries
Mike McLemore, Regional Attorney, Southeast Region
Sam Rauch, Assistant General Counsel for Fisheries, Office of General Counsel for Fisheries

NATIONAL MARINE FISHERIES SERVICE

Headquarters
Rebecca Lent, Deputy Assistant Administrator for Regulatory Programs
John Oliver, Deputy Assistant Administrator for Operations
Michael Sissenwine, Director for Scientific Programs and Chief Science Advisor
Laurie Allen, Director, Office of Protected Resources
John Bortniak, Program Analyst, AOP, Office of Management and Budget
Brian Brown, Acting Deputy CFO, Office of Management and Budget
Rick Brown, Fisheries Executive Officer
Linda Chaves, Director, Office of Constituent Services
Jim Cohen, Performance Measures Analyst, Office of Management and Budget
Doug DeMaster, Acting Director, Office of Science and Technology
Jack Dunnigan, Director, Office of Sustainable Fisheries
Brian Fiedler, Coast Guard Liaison Officer, Office of Law Enforcement
John Hansel, National NEPA Coordinator
Gordon Helm, Deputy Director, Office of Constituent Services
Dale Jones, Chief, Office of Law Enforcement
Michael Kelly, Division Chief, Constituent Affairs, Office of Constituent Services
Bruce Morehead, Chief of Regulatory Services Division, Office of Sustainable Fisheries
Mark Paterni, Branch Chief, Office of Law Enforcement
Brian Pawlak, Division Chief, Planning and Budget Formulation, Office of Management and Budget
Bonnie Ponwith, Deputy Director, Office of Science and Technology
Gary Reisner, Chief Financial Officer
Alan Risenhoover, Deputy Director, Office of Sustainable Fisheries
Ron Scheltens, Senior Budget Analyst, Office of Management and Budget

Mark Spurrier, Deputy Chief, Office of Law Enforcement
Galen Tromble, Chief of Domestic Fisheries Division, Office of Sustainable Fisheries
Bob Ziobro, Chief, Program Planning and Evaluation Division, Office of Management and Budget

Southeast Regional Office
David Bernhart, Assistant Regional Administrator, Protected Resources Division
Roy Crabtree, Regional Administrator
David Dale, Essential Fish Habitat and NEPA Specialist, Habitat Conservation Division
Tracy Dunn, Deputy Special-Agent-in-Charge, Southeast Division, Office of Law Enforcement
Ginny Fay, Assistant Regional Administrator, Sustainable Fisheries Division
Hal Robbins, Special-Agent-in-Charge, Southeast Division, Office of Law Enforcement
Buck Sutter, Deputy Regional Administrator
Jim Weaver, Assistant Regional Administrator, Operations, Management and Information

Southeast Fisheries Science Center
Theo Brainerd, Economist, Science Planning and Coordination Office
Alex Chester, Deputy Director
Joe Powers, Chief Stock Assessment Scientist
Peter Thompson, Chief, Science Planning and Coordination Office

FISHERY MANAGEMENT COUNCILS

Don McIsaac, Executive Director, Pacific Fishery Management Council
Wayne Swingle, Executive Director, Gulf of Mexico Fishery Management Council

OTHERS

Bob Jones, Executive Director, Southeastern Fisheries Association
Cynthia Jones, Chair of NRC Committee; and Professor, Center for Quantitative Fisheries Ecology, Old Dominion University
Phil Kline, Senior Fisheries Policy Advisor, Oceana
Rod Moore, Executive Director, West Coast Seafood Processors Association
Vince O'Shea, Executive Director, Atlantic States Marine Fisheries Commission
Bob Zales, Owner/operator, Zodiac Charter Fleet