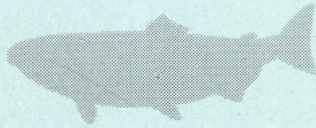


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**Report to the
Assistant Administrator for Fisheries**



**REVIEW OF THE STRUCTURE OF
THE FIELD ORGANIZATION OF
THE NATIONAL MARINE FISHERIES SERVICE**

by

Allen E. Peterson, Jr.

Director, Northeast Fisheries Center

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ASSISTANT ADMINISTRATOR FOR FISHERIES

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OF THE NATIONAL MARINE FISHERIES SERVICE



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ALLEN E. PETERSON, JR.
DIRECTOR, NORTHEAST FISHERIES CENTER

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ACKNOWLEDGMENT

This report puts forth a number of ideas and recommendations about the organization of the National Marine Fisheries Service and the proper management of that organization to ensure that its mission is carried out. To a large extent, the ideas presented are an outgrowth of discussions and debate with my fellow NMFS directors and with a task force of long-standing and well-respected NMFS employees whom I chose on the basis of their knowledge and experience.

Robert K. Crowell, David J. Mackett, J. Gary Smith and Robert J. Williams served on the task force and, in addition to contributing ideas and helping me sharpen mine, worked hard as a team to write and produce this report. I am grateful to these men and appreciate their thoroughly professional effort.

I am grateful also for the many excellent ideas and well-founded advice that I received from my fellow NMFS directors at two separate meetings of field directors in Denver and at a meeting of all the directors in Baltimore. All three of these meetings helped me immeasurably to identify the important issues, to develop the approach to the task and to form my final recommendation. I appreciate very much the time and energy my colleagues gave to this effort.

To Maryann A. Rodriguez, Jean Michalski, Margaret Navin and Mary Jane Smith, who were involved in the editing and typing of this report, a special thank you.

Even with all this help, I must, and do, accept responsibility for the final product.

A.E.P.

EXECUTIVE SUMMARY

This report was prepared at the request of the Assistant Administrator for Fisheries, National Oceanic and Atmospheric Administration. The assignment was to design a new field structure for the National Marine Fisheries Service (NMFS) which would meet certain specified objectives. Analysis of past events and current problems revealed the following:

- NMFS has been reorganized six times since its inception in 1970. The primary thrust has been to consolidate organizational components and to provide clearer lines of authority.
- While some improvements resulted, the abrogation of lines of authority tended to defeat the purposes of the reorganizations.
- Many of the problems affecting the Agency are external and cannot be resolved by reorganization, but must be considered as factors in evaluating alternatives.
- There are substantial differences in operations and constituencies between the East Coast/Gulf of Mexico and the West Coast.
- The Regional Directors need "real-time" scientific advice to improve management responsiveness.

Several alternatives for restructuring were considered, ranging from essentially the status quo with some formalized procedural improvements, to placing the science advice and research function under the authority of the Regional Director, to establishing a Regional Assistant Administrator with the full scope of NMFS responsibilities and direct line authority over the existing field directors, to a major change in the

mission of NMFS. Each alternative was evaluated in terms of the given objectives and other relevant factors.

It is recommended that the alternative of establishing Regional Assistant Administrators be accepted. This alternative was judged superior because it meets the objectives for restructuring and accommodates the other factors considered. It offers the greatest long-term stability to meet future fisheries science and management responsibilities. The geographical scope, and therefore the number, of the Regional Assistant Administrators would be determined in implementing the reorganization.

As an interim measure to provide immediate scientific advice capability to the Regional Directors, it is recommended that appropriate center personnel be detailed. A Senior Scientific Adviser should be attached to each Regional Director to (1) initiate formal planning to integrate research into the management process, and (2) provide "real-time" scientific advice and support.

INTRODUCTION

In September 1986, Dr. Anthony J. Calio, Under Secretary, National Oceanic and Atmospheric Administration (NOAA), requested a thorough analysis and evaluation of the National Marine Fisheries Service (NMFS) operations and organizational structure. He was concerned that NMFS lacked responsiveness, had no clear lines of authority and appeared to have a confused array of functional and sometimes non-functional responsibilities and relationships. He also noted concern about excessive time requirements and often ineffective, unclear communication within the Agency.

In response, Dr. William E. Evans, the NOAA Assistant Administrator for Fisheries, called for a comprehensive assessment of the NMFS organization. His objective was to design an organization that would be more effective and efficient in providing consistently high quality, timely advice and services to the Under Secretary, the Secretary of Commerce and the constituencies. The study was to be conducted in two parts, with separate recommendations: a headquarters committee to focus on the Washington Office, and a separate effort headed by Allen Peterson to examine the field structure. This report reviews the findings of the latter study.

With respect to the study of the field structure, the Assistant Administrator specified the following objectives:

- Integrate research into the management process.

The foremost objective was to enhance the role that scientific advice plays in fisheries management. The implication is that scientific research, advice and management are all elements of a system and must be

integrated in a fashion that ensures recognition and respect for the needs to develop each so that it is most effective in the overall management scheme.

- Improve responsiveness to management needs.

This objective grows out of the former and recognizes that there are unforeseen, critical management needs requiring scientific advice and results of research on a timely basis. It is understood that research must not be "abused" or sacrificed, but it is clear that some better arrangement must be worked out so that high-priority, short-term needs can be fulfilled using the best, most timely research results.

- Provide a regional focus and reduce the span of control.

This objective is directed at (1) providing an improved regional focus for policy and budget formulation and decision making, as well as (2) facilitating communication within the Agency and with constituents.

- Establish an ecosystem approach to research.

This objective seeks to establish, where not already in place, a system approach to research that recognizes that fish populations are affected simultaneously by environmental, biological and anthropogenic processes. The intent is to improve overall understanding of the interaction of these influences--the causes and effects--to increase our ability to predict and plan management strategies for living marine resources.

- Create a similar field organizational structure.

This objective is directed at establishing parallel field organizations down to the division level. It has three purposes: (1) to standardize functional

responsibilities, (2) to provide position comparability throughout the field, and (3) to make overall management of the several regions and centers more efficient, cost-effective and productive.

- Restructure laboratories as facilities.

This objective seeks to establish the role of laboratories as multipurpose facilities intended to provide appropriate working space for research as well as other NMFS activities. This implies that laboratories need not be considered as dedicated research facilities with discrete independent program activities, but will accommodate future programs and direction.

HISTORICAL PERSPECTIVE

Since the formation of NOAA in 1970, there have been five reorganizations of NMFS (Appendix A); the Service currently is in the process of the sixth reorganization or restructuring. Common themes driving each of these reorganizations have been the need to integrate better and to improve the coordination of the Agency programs, to reduce the span of control, to provide a better regional focus, and to clarify roles, responsibilities and lines of authority. In each instance, some form of restructuring was proposed to address these problems; i.e., to move and/or consolidate organizational "boxes." The outcome was more a response to political and personnel considerations than actual change in program detail or output. Overall functional responsibilities were not substantively changed. New boxes were created as new responsibilities were added; e.g., the Marine Mammal Protection Act and the Magnuson Fishery Conservation and Management Act. This resulted in an Agency operating with a field structure that, although changed and improved by previous reorganizations, still did not represent a design based

on a thorough, comprehensive analysis of the Agency mission, issues, needs, temporal differences and priorities. As a consequence, the Agency is still perceived to be organizationally inefficient.

CURRENT SITUATION

Authority for overall NMFS policy, budget and decision making rests with a directorate in Washington, D.C. The Deputy Assistant Administrator is responsible for field operations and the Executive Director is responsible for the six headquarters staff offices. In the field, Regional Directors presently are responsible for management operations and Center Directors are responsible for providing scientific advice for management as well as direction of research. There is no line authority relationship between Regional and Center Directors.

In addition to region and center operations, there are three activities (enforcement, inspection and financial services) that are managed and supervised directly by staff offices in Washington. This separation of management responsibility may diminish the effectiveness of the Regional Director in serving constituents in a timely way, cause confusion among the constituents and contradict one of the objectives of this field reorganization.

There is a perception that the dual lines of authority for science and management have created communication problems and ineffective response to management problems. A more careful analysis, however, indicates that communication problems, confusion and lack of responsiveness are more the result of the abrogation of current lines of authority. Although the organization is designed to be decentralized, it has operated in a centralized fashion with fragmented lines of authority. As a result, real communication channels are longer and

more time-consuming, and there are frequent differences in views between headquarters and the field which must be resolved at the highest levels.

From an external viewpoint, the seemingly fragmented lines of authority foster numerous informal, sometimes counterproductive, alliances with constituents. Parochialism can prevail. Fragmented, not well understood or unenforced lines of authority also permit, if not encourage, "end runs" where constituents seek the highest levels of authority (e.g., the Assistant Administrator, the Under Secretary or the Secretary) to appeal decisions. With this situation, the value of decentralization is lost. Politics tends to play a greater role in day-to-day decisions. Information is not as clear or as well understood as it should be. Field personnel become frustrated and demoralized.

FINDINGS

The primary thrust of all previous NMFS reorganizations has been to consolidate organizational components according to broad functional areas and to provide clearer lines of authority. Although some improvements have resulted, the abrogation of those lines of authority has tended to defeat the purposes of the previous reorganizations. It is obvious that many of the problems affecting the Agency are external and cannot be resolved by simple restructuring. Nevertheless, consistent with the Assistant Administrator's charge, several alternatives were evaluated to determine if operational improvements could be achieved through restructuring (Appendix B).

Each alternative was analyzed independently according to how well it would satisfy the objectives given by the Assistant Administrator. In addition, several other factors (e.g., political acceptability, time

requirements and cost of implementation, and industry, jurisdictional and attitudinal comparisons of the East and West Coasts) were used to evaluate the alternatives.

Although the analysis showed that one alternative was superior in meeting the stated objectives, it was apparent that factors other than the objectives needed to be considered in the evaluation. For instance, comparisons of factors affecting field operations in the East Coast and Gulf of Mexico and in the West Coast (Appendix C) indicated that, although the fishery management process is working fairly well on the West Coast, it is not the case on the Eastern Seaboard or in the Gulf of Mexico. Since the functional structure and lines of authority at the field level on the East and West Coasts are essentially the same, the question is, why are they perceived as having significantly different levels of effectiveness? Is it that the systems in the East and Gulf Coasts are burdened in terms of problems without adequate resources to address those problems? Are personnel or political considerations compromising the Agency? Are the several regional fishing industries so different as to require different approaches? Are the number of jurisdictions, councils, foundations and international commitments overwhelming in certain areas?

Although it is beyond this study to evaluate all of these questions fully, clearly NMFS would benefit from organizational and procedural modifications.

It is apparent that the need for real-time scientific advice and review capabilities at the Regional Director level is not always adequate. However, many NMFS activities involve political problems and considerations that current scientific information cannot resolve. This creates circumstances that lead to the questioning of the quality of the scientific

information and, even worse, the scientific integrity of the Agency itself. To help protect against the harmful effects of such allegations and ensure that the best scientific information is provided, it is important that the research function of the Agency be carried out in an environment that assures objectivity, fosters creativity and enhances productivity.

RECOMMENDATION

It is recommended that Alternative 3, which proposes a new field structure for the NMFS, be adopted as the most effective organization to meet the long-term research and management commitments of the NMFS. This alternative establishes a new field structure that considers combining existing regions and centers into single organizational units (e.g., East Coast unit, West Coast unit) directed by a Regional Assistant Administrator. The Regional Assistant Administrator would assume the broad responsibilities and certain functions currently assigned to the Assistant Administrator and to the Regional and Center Directors, whose positions would be restructured as Regional Directors and Regional Chief Scientists, respectively. Administrative functions of planning, budgets, personnel, etc., would be centralized under the Regional Assistant Administrator, as would certain functions currently assigned to the Washington Office.

The Regional Assistant Administrator would be an advocate for both research and management, preserving the balance between immediate management needs and the long-term research necessary for future management. Regional Directors would be responsible for regional management programs and would be the Agency's obligatory members on fishery management councils. Regional Chief Scientists would be responsible for scientific research programs and providing scientific advice for management. The Regional Assistant

Administrator would be the primary regional spokesperson for the Assistant Administrator on all issues and policy matters within his or her area, allowing the Assistant Administrator to concentrate on national issues affecting the Agency.

This field structure meets all of the objectives assigned by the Assistant Administrator and offers the greatest long-term stability to meet future science and management responsibilities. It should result in broad-based support at all levels of the NMFS and its diverse constituency.

Implementation of this recommendation, however, will require further evaluation to determine the most acceptable configuration (i.e., number of Regional Assistant Administrator positions) and logistical specifications (i.e., location of offices and reassignments of headquarters functions, positions, etc.), and will require additional time to develop a suitable implementation plan. To ensure the earliest implementation of this restructuring, it is imperative that active participation be obtained from the highest levels of NOAA and the Department of Commerce.

It is recognized that the urgent need for scientific advice to support immediate management decisions cannot be met while the new field structure is being established. To meet this need, it is further recommended that a Senior Scientific Adviser and, where appropriate, staff be detailed to each Regional Director from existing center staff to (1) initiate a formal planning process that begins the immediate task of integrating research with management, and (2) provide scientific advice and support to the Regional Directors. The detail of the Senior Scientific Adviser and staff would provide an effective transition until a new field structure is implemented. This interim measure would leave the present region and center

structures in place until the new field organization becomes operational.

APPENDIX A

CHRONOLOGY OF NMFS ORGANIZATIONAL RESTRUCTURING 1970 - 1987

The purpose of this paper is to sketch the history of the organizational development of the National Marine Fisheries Service (NMFS) during the period 1970 to 1987. It deals primarily with structure and structural change during the period with only passing reference to the programmatic dynamics involved. It should add something in the way of useful background information and perspective in dealing with current organizational issues.

1970 - 1973

The National Oceanic and Atmospheric Administration (NOAA) was established within the Department of Commerce by Presidential Order in October 1970. It combined the Environmental Science Services Administration (ESSA), which included the Weather Service, Coast and Geodetic Survey, Environmental Research Laboratories, National Environmental Satellite Service and Environmental Data Service, with the Bureau of Commercial Fisheries and portions of the Sport Fish Program from the Department of the Interior, small elements from the Corps of Engineers, and Sea Grant from the National Science Foundation. Dr. Robert M. White, the Administrator of ESSA and former chief of the Weather Bureau, was appointed the first Administrator of NOAA.

Nine months later, in July 1971, Dr. White announced his internal organization plan for the NMFS. That structure established the basic framework of the Fisheries Service, and subsequent reorganizations have

involved modifications and refinements to the initial organizational plan. It is important to understand the key features of the 1971 structure.

Dr. White cited several problems he hoped to solve by structural changes in the Fisheries Service. These were:

1. "The sports fisheries research program and research programs of the former Bureau of Commercial Fisheries must be integrated into a cohesive fisheries research program."

2. "The research efforts of the many laboratories which comprise the Fisheries Service have been considered by many to be too fragmented."

3. "We need to provide greater focus for our economics, marketing assistance and food technology effort."

The organization established was, in retrospect, a complex arrangement.

Three Associate Directors were established as follows:

- Associate Director for Resource Research, with direct line authority over the Offshore Fisheries Research Centers which were headquartered (1) in Seattle, a combination of laboratories in Seattle and Kodiak; (2) in La Jolla, a center made up of the La Jolla and Honolulu Laboratories; (3) in Woods Hole, a center consisting of the Woods Hole, Boothbay Harbor and Narragansett Laboratories; and (4) in Miami, a center consisting of laboratories located at Miami, Brunswick and Pascagoula.

Also reporting directly to the Associate Director for Research was the Mid-Atlantic Coastal Fisheries Laboratory at Beaufort, N.C.

- Associate Director for Resource Utilization, with responsibility for economics, marketing assistance and fishery products technology, and with direct line authority over Food Products Technology Centers located in Seattle, Gloucester, and College Park (later relocated to Charleston, S.C.)

- Associate Director for Resource Management, with responsibilities for State-Federal oversight, enforcement oversight and Columbia River program monitoring. This Associate Director had no direct line authority over field elements.

Regional boundaries were left essentially unchanged from what had existed prior to the establishment of NOAA. Regional Directors located in Gloucester, St. Petersburg, Terminal Island, Seattle and Juneau were to continue as representatives of the NMFS throughout their respective geographic regions, to serve as the "central points of contact and interface with all constituencies, commercial and sport," and to report directly to the Director of NMFS.

Coastal Fisheries Research Centers (as opposed to the Offshore Centers defined above) were to report directly to appropriate Regional Directors. This arrangement involved these elements:

1. The Middle Atlantic Coastal Fisheries Research Center, consisting of laboratories at Sandy Hook, Milford, Ann Arbor and Oxford and headquartered at Sandy Hook, reported to the Northeast Regional Director.

2. The Gulf Coastal Fisheries Research Centers, consisting of laboratories in Galveston, St. Petersburg Beach and Panama City and headquartered in Galveston, reported directly to the Southeast Regional Director.

3. The Auke Bay Coastal Fisheries Research Center (i.e., Auke Bay Laboratory) reported to the Alaska Regional Director.

The Tiburon Coastal Fisheries Research Laboratory reported to the Southwest Regional Director and the Columbia River Fisheries Development Program reported to the Northwest Regional Director.

NMFS headquarters in Washington consisted of a Director and Deputy, an International Affairs Staff, Plans and Policy Development Staff, an Executive Support Staff and the three Associate Directors, each with division level supporting elements.

Not surprisingly, the formative years for NMFS in the early 1970's were characterized by difficulties in communication and coordination, soon to be intensified by the pressures on the system brought about by responsibilities under the Marine Mammal Protection Act. A nationwide evaluation of the Fisheries Service by the Civil Service Commission at that time cited serious problems in organizational communications, employee confusion regarding the Agency's mission, and the need for policy guidance. Constituent groups and others dealing with the Fisheries Service had problems understanding the structure; this seemed especially true in the field.

In the summer of 1973, the Offshore Center Directors, meeting with the Associate Director for Research in a planning session, focused on identifying problems in organization, functioning and management. A report

from this session advised the NMFS Director regarding Center Director-Regional Director relationships that:

1. They saw no need for major organizational changes at that time and that the current system had not been in place long enough for a fair evaluation.

2. The Regional Director should be the ranking officer in a region and should be able to make quick decisions in the face of an emergency.

3. The Regional Director should be the major interface with user groups and point of contact with industry and recommend needed program changes to the Center Director.

4. The Center Director should serve as the major technical consultant and prime scientific adviser to the Regional Director.

While calling for organizational stability, the Center Directors nevertheless expressed their view that the split between Coastal and Offshore Centers was not consistent with the concept of integration and coordination of research through large ecological zones and indicated a preference for moving the Coastal Centers from Regional Director line authority to the Associate Director for Resource Research; they did not call for an immediate change, but rather suggested further evaluation.

Shortly thereafter, the Regional Directors met with the NMFS Director primarily to discuss organizational realignment of Research. The Regional Directors agreed in large measure with the earlier report of the Center Directors but offered a radically different solution. They cited:

1. General inadequate communication and coordination between the centers and regions.

2. Lack of participation of Regional Directors in planning and developing programs under the purview of the Associate Directors of Resource Research and Resource Utilization.

3. Difficulty in truly establishing the regional focus for interface with constituents.

4. Lack of flexibility in responding to immediate local needs if it involved commitments binding on staff and resources not under the Regional Director's authority.

Although the Regional Directors agreed that problems had been minimized by the cooperative efforts of all the principals in spite of the system, they recommended that the Offshore Centers (Seattle, La Jolla, Woods Hole, Miami) and Food Technology Centers be placed organizationally under the Regional Directors to report to Washington through the Regional Directors. Under this approach, the Regional Director would formally become responsible for the operational aspects (execution) of all the Service's programs in his region.

In the fall of 1973, a "blue ribbon committee" was established by the Director to evaluate the organization of NMFS in light of the views of the Regional and Center Directors and to recommend appropriate changes.

1974 - 1976

The blue ribbon committee consisted of an Associate Director, an Offshore Center Director, a Coastal Center Director, a Food Technology Center Director, a Regional

Director and the NMFS Executive Officer.

The committee's report and recommendations to the Director were essentially a compromise involving two key proposals which were subsequently accepted and implemented, in part, in 1974.

Organizationally, all fisheries research centers were consolidated under the Associate Director of Resource Research. Included in this realignment was the removal of the Auke Bay Laboratory from the line authority of the Alaska Regional Director and incorporation of this lab into the Northwest Fisheries Center. Similarly, the Tiburon Laboratory was moved from the regional office structure and included in the Southwest Fisheries Center. The resulting fisheries research organization looked at the time as follows:

- Associate Director of Resource Research

- Northwest Fisheries Center (including Auke Bay Lab)
- Southeast Fisheries Center
- Northeast Fisheries Center
- Southwest Fisheries Center (including Tiburon)
- Gulf Coastal Fisheries Center
- Middle Atlantic Coastal Fisheries Center
- Atlantic Estuarine Fisheries Center (i.e., Beaufort Lab)

These moves were seen as further consolidation of earlier progress in improving the coordination of research among centers and laboratories.

The Fishery Products Technology Centers continued to report to the Associate Director for Resource Utilization but with new nomenclature as indicated below:

● Associate Director of Resource Utilization

Northeast Utilization Research Center

Pacific Utilization Research Center

Southeast Utilization Research Center

The second part of the committee's recommendation dealt with a program planning, allocation and control system which gave the Regional Directors responsibility for involvement in program planning and implementation of all programs within their regions. Regional Directors were to review research programs formulated in the field, concur or comment on changes and adjustments in ongoing center programs, and evaluate these programs annually. Procedures for more effective communication between centers, regions and headquarters were outlined.

The NMFS Director, in announcing these management changes, recognized that they were broad, general statements of intent and concept requiring refinements of procedural detail, but stated that the "report should be viewed by all NMFS employees as a statement of management policy and is directive in nature regarding Regional, Center and Associate Directors relationships and responsibilities." In the months that followed, efforts were made to carry out the intent of these recommendations and improvements in field coordination/communication became evident. Problems in relationships and communications between the Washington headquarters and the field continued to cause concern.

By the summer of 1975, it was apparent that extended fisheries jurisdiction was close to becoming a reality. It also was clear that NMFS responsibilities would be greatly expanded and the balance of activities potentially changed significantly. However, it was not clear whether the existing NMFS organization and

management practices would meet the new challenges of managing the Nation's marine fisheries resources. The NMFS Director again established a select committee to examine the organization and recommend improvements to facilitate the implementation of its anticipated responsibilities under extended jurisdiction. The task was seen as urgent.

The committee, consisting of a Deputy Associate Director, a Center Director, a Regional Director, the Executive Officer, senior representatives of NOAA headquarters, and a consultant, provided a final report to the NMFS Director in November 1975. It presented recommendations for an organizational framework which differed significantly from the existing arrangement at the headquarters level and recommended further organizational consolidations of research elements in the field. The NMFS Director accepted the essential elements and recommendations of the report, and over the next several months worked out a reorganization plan with the NOAA Administrator.

In April 1976, the Fishery Conservation and Management Act of 1976 (P.L. 94-265) became law. The following month the NOAA Administrator submitted his plan for the reorganization of the Fisheries Service. The stated objectives of the 1976 reorganization were to:

1. Simplify and streamline the organization, better define lines of responsibilities and authority, and clarify lines of communications.
2. Strengthen the policy development and guidance capability and performance in the Office of the Director of NMFS.
3. Place greater emphasis on long-range planning and program review and evaluation by the headquarters staff.

4. Obtain closer integration of research, management and utilization activities.

5. Delegate more operational responsibility and authority to the field.

Three principal structural changes were made to accomplish these objectives. In headquarters, the Associate Director positions were abolished and their line authorities were reassigned to the Office of the Director, NMFS, thereby reducing the lines from headquarters to the field from three (Research, Utilization, and the Directors) to a single line of authority. A new position, the Associate Director, was added to the immediate Office of the Director to serve as a general manager, to implement policy decisions and to exercise day-to-day management of the Service. All regional, center and headquarters elements reported to and through this position. Headquarters elements were to function in a staff capacity, provide staff services to the field, assist the Associate Director in coordinating national programs, and perform inter-agency coordinating activities necessarily handled at the Washington level.

In the field, all regional research activities, including the former Coastal Centers Laboratories and Utilization Centers, were consolidated into the four major fisheries centers. The resulting field structure then consisted of five regions and four fisheries centers. That basic field structure has continued to the present.

1976 - 1982

No basic changes in the field organization structure were made during this period. In 1978, the Service did undergo a realignment at headquarters which involved,

most notably, the elevation of the marine mammals and endangered species component from division to office level. Similarly, the habitat protection element was moved up in the hierarchy from division to office level. The title Director of the NMFS was discontinued and replaced by Assistant Administrator for Fisheries. The title of the Deputy Director was modified accordingly. The Associate Director title was discontinued and replaced by Executive Director, and the Executive Director, while shown organizationally in a staff capacity to the Assistant Administrator, continued to serve as the day-to-day manager of the Service and in the same relationship to the regions and centers.

1983 - 1987

In December 1982, the Assistant Administrator for Fisheries made formal his reorganization plan. Again, the field structure was basically unchanged. The five regions and four centers arrangement continued but under revised lines of authority from headquarters. The Executive Director position was abolished and two new Deputy Assistant Administrators were established. The Deputy Assistant Administrator for Science and Technology exercised direct line authority over supporting headquarters offices and the four fisheries centers. The Deputy for Fisheries Resources Management directed supporting headquarters offices and the five regional offices. Research councils and management councils were established internally to facilitate policy review and communication.

In establishing this structure, the Assistant Administrator stressed the need to reduce the span of control of the Office of the Assistant Administrator and to keep day-to-day operational decisions at a lower level in the structure. He also emphasized the need to

focus attention on program evaluation activities and made it a high priority for the new Deputy level.

From a structural perspective, this organizational arrangement resembled the basic outline of the Service prior to 1976 and, although clearly and substantially reducing the span of control of the Assistant Administrator, introduced a more complex organizational environment (particularly at the headquarters level), which placed a high priority on effective coordination, communication and cooperation.

In February 1987, the Assistant Administrator for Fisheries announced a restructuring initiative to reduce layers and streamline the organization of the NMFS. This initiative, presently in the early stages of implementation, will abolish the Deputy Assistant Administrator for Science and Management level in the structure and reestablish an Executive Director position. The organizational goal in the field is to further integrate the regions and centers. The form and structure of this integration were under development as of May 1987.

APPENDIX B

ALTERNATIVES

This section describes four alternatives which were individually analyzed in terms of how well each would satisfy the stated objectives for restructuring the field. The alternatives range from the status quo, to substantive changes in organizational line authority and structure, to major reorientation of the NMFS mission. Options within alternatives also were considered.

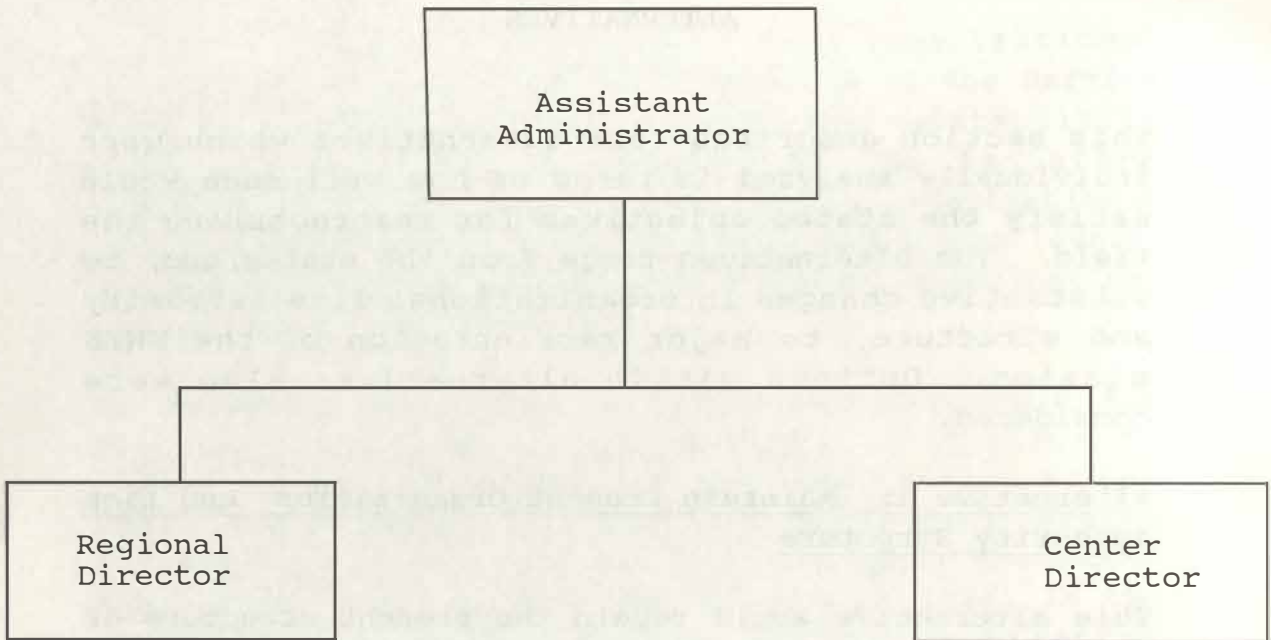
Alternative 1: Maintain Present Organization and Line Authority Structure

This alternative would retain the present structure of five regions and four centers operating as independent financial management centers (FMC). Each FMC would continue to be responsible for identifying its own program priorities and for planning, budgeting and evaluating its program activities. Lines of authority and responsibility would not change (Figure 1).

The Regional Director would continue to represent the Assistant Administrator and would be responsible for the planning and overall conduct of fisheries management, conservation and development programs within the region. The Center Director would continue to be the principal contact point with the scientific community, plan and oversee the Agency's research activities within the region, and serve as the primary scientific and technical adviser to the Regional Director and Assistant Administrator.

The Regional Director could be designated as the single spokesperson within the region. This would be

Figure 1. Organizational Alternative - Status Quo



principally directed at public contact, but would clarify the role of the Regional Director as the Agency spokesperson within the region for all matters, including management and research policies, etc.

Formal procedural arrangements would be established between regions and centers in developing, implementing, monitoring and evaluating budgets and program activities. Regional and Center Directors would coordinate program planning and would indicate to the Washington directorate their concurrence or specific objections on program and budget priorities and proposals.

Organizational changes down to the division level could be implemented to (1) clarify roles and responsibilities of region and center functions, (2) establish organizational compatibility among regions and among centers, and (3) assure grade/responsibility comparability.

Analysis (By Objective)

1. Integrate research into the management process.

More specific procedures, and rigorous compliance with those procedures, would lead to better integration of research into the management process. Coordination early in the budget process would lead to improved understanding (possibly changes) in priorities. Opportunity to comment on respective budget proposals would improve handling at the Washington level. Priority differences still would have to be resolved at the headquarters level instead of the region level, with all the attendant time and communication costs.

2. Improve responsiveness to management needs.

A comprehensive, systemwide assessment of Agency responsibilities, with particular attention to making distinctions between those responsibilities, could lead to a realignment of people and resources within the FMCs. This could provide needed staff to address management needs more quickly, but at the expense of some other activities within the FMCs. It does not provide for shifting expertise from one FMC to another.

3. Provide a regional focus and reduce the span of control.

From an external point of view, establishing a single regional spokesperson would provide a regional focus (i.e., one person would be identified as the principal regional contact for constituents). However, it would not provide a regional focus internally or reduce the span of control. Accountability would not be improved without authority commensurate with responsibilities.

4. Establish an ecosystem approach to science.

Realignment, particularly within the center structure, could contribute to and facilitate the establishment of an ecosystem approach to science by providing multidisciplinary units to address specific ecosystems. The transition to ecosystems could cause problems if different priorities cause delays in responding to the short-term management needs.

5. Create a similar field organization.

Following a comprehensive analysis of responsibilities and regional differences, a similar field structure could be established down to the division level. Flexibility should be allowed below the division level to accommodate regional differences.

6. Restructure laboratories as multidiscipline facilities.

Laboratories could be restructured under this alternative if the Center Director desired. The Center Director already has authority to do so.

Evaluation

This alternative would deliver some modest benefits with a minimum amount of personnel disruption and administrative complexity. Improvement could be accomplished in a fairly short time, probably within the fiscal year, and at little expense. This alternative would preserve the status quo politically, maintain current safeguards for science and sustain the present recognition of and response to regional differences.

The principal advantage of this alternative, with some clarification of functions, is that it could establish similar, easily understood field organizations between the regions, with comparable grades and responsibilities. Conformity would facilitate communication among regions and centers and reduce personnel complaints. Presumably, in analyzing the field structure, responsibility loads and areas of weakness would be identified that would enable realignment within FMCs so that priorities could be responded to more efficiently. This alternative would preserve regional differences.

The principal disadvantages of this alternative are: (1) efforts to increase the integration of scientific advice into the management process basically would be cosmetic, as authority commensurate with the responsibilities for a single focus is lacking; (2) it does not provide a real regional focus accountable for

Agency activities within the region; and (3) it does not reduce the span of control. The current problems associated with separate research and management functions would persist.

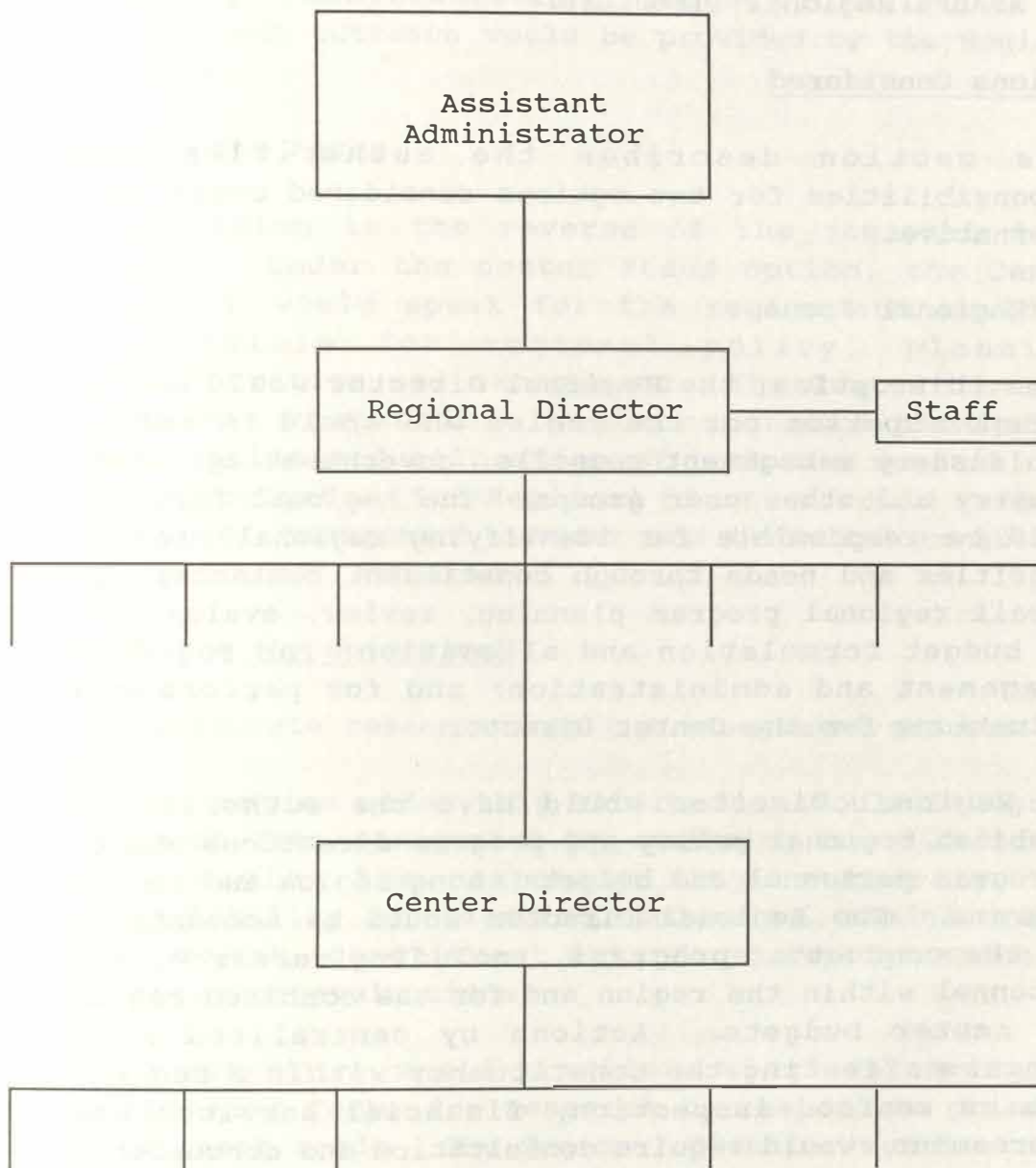
Alternative 2: Modify Lines of Authority Within Existing Field Structure

This alternative would retain the existing field structure of regions and centers (Figure 2). It would modify the intra-regional lines of authority within existing geographical and political boundaries to establish a single focal point for internal communication and official interaction outside the NMFS. It would consolidate region and center functions under a single authority and would incorporate functional improvements and efficiencies identified in Alternative 1.

There are two basic organizational structures considered under this alternative: (1) line authority for regional administration, management and program direction consolidated under Regional Directors (regional focus), and (2) line authority for regional administration, management and program direction consolidated under Center Directors (center focus).

The absence of a separate research center located in the Alaska Region presents a special consideration under this alternative. Under the existing organizational structure, the Northwest and Alaska Fisheries Center Director has two internal and two external constituencies (the Northwest and Alaska Regions and the Pacific and North Pacific Fishery Management Councils) that compete for the center's research products. For purposes of evaluating this alternative, it was assumed that some effective arrangement would be worked out between the Northwest

Figure 2. Organizational Alternative - Modify Authority



and Alaska Fisheries Center Director and the Northwest and Alaska Regional Directors.

Options Considered

This section describes the authorities and responsibilities for two options considered under this alternative.

1. Regional Focus.

Under this option, the Regional Director would be the key spokesperson for the region who would interface with fishery management councils, government agencies, industry and other user groups. The Regional Director would be responsible for identifying regional program priorities and needs through constituent contacts; for overall regional program planning, review, evaluation, and budget formulation and allocation; for regional management and administration; and for performance evaluations for the Center Director.

The Regional Director would have the authority to establish regional policy and program directions and to reprogram personnel and budgets among region and center programs. The Regional Director would be accountable for the conduct of programs, including research, and personnel within the region and for the combined region and center budgets. Actions by centralized NMFS programs affecting the constituency within a region, such as seafood inspection, financial services and enforcement, would require consultation and concurrence of the Regional Director prior to execution to maximize coordination and consistency between national and regional objectives.

Under this option, the Center Director would serve as the chief scientific adviser and technical consultant to the Regional Director. The Center Director would be

responsible for the management of research programs. Planning, administration, budget formulation and constituent outreach would be provided by the Regional Director.

2. Center Focus.

This option is the reverse of the regional focus option. Under the center focus option, the Center Director would speak for the region and would be responsible for regional policy, planning, administration and management. The Center Director would be responsible and accountable for budget formulation and allocation of both the regional and center budgets. The Regional Director would serve as the chief management adviser and technical consultant to the Center Director.

Analysis (By Objective)

1. Integrate research into the management process.

Either option under this alternative would integrate research into management by assigning one director in each region the responsibility, authority, and accountability for planning, budgeting, administrative management, constituent interface, reprogramming and performance evaluations.

This structure would provide a single planning and management focus for research to respond to priority management needs. The Regional Director would need to achieve a balance between short-term research and the long-term basic research needed to improve future management capabilities.

2. Provide a regional focus and reduce the span of control.

As indicated above, a regional focus would be achieved by consolidation of administrative and management functions and assigning authority commensurate with responsibilities to one director in a region. The span of control would be reduced by either four centers or five regions.

3. Establish an ecosystem approach to science.

This objective would be more likely achieved under a center focus where the Center Director has full authority to establish regional priorities. Under a regional focus, there could be a tendency to focus more on immediate management needs, which are generally species driven, and not on broader ecosystems-oriented priorities. In either case, a peer review system could be established to obtain the proper balance.

4. Create a similar field organizational structure.

This objective could be achieved under either option if a national framework was provided. Flexibility below the division level should be recognized, however, to accommodate regional differences.

5. Restructure laboratories as multidiscipline facilities.

Like Objective 4, this objective could be achieved within a national framework under either option. Consideration also could be given to applying this principle to regional field offices and to the collocation of NMFS research and management staff at other NOAA and state facilities.

Evaluation

This alternative would provide a regional focal point with identifiable authorities, responsibilities and accountability. Since it would retain the present structure and, for the most part, the current position descriptions, it could be accomplished fairly quickly and at minimum expense. It would also maintain the current geopolitical structure, minimizing political objection, and preserve the current ability to accommodate regional differences.

The principal advantage of this alternative is that it establishes a single regional focus with clear lines of authority to carry out regional responsibilities for both internal and external communication and coordination. Achievement of a single regional focus would require sign-off by the Regional Director to ensure coordination of actions by centralized NMFS programs (i.e., seafood inspection, financial services, and enforcement) that affect a region. This alternative also would reduce the span of control by either four centers or five regions.

There are several drawbacks to this alternative. It might conflict with the objective to establish an ecosystem approach to management because of the requirements imposed on regions to manage on a fishery (species) basis. It would require a splitting of the Northwest and Alaska Fisheries Center or treating it as an anomaly, which would in turn bring into question whether the need for the restructuring is real. The expanded work load that would be required of the Regional Directors could be difficult to handle. They would be confronted with the additional responsibility of managing and overseeing center operations. The personnel, facility, vessel operations, capital equipment, etc., needs of the research programs are much greater than those of the regions. Personal

involvement in these matters would be inescapable for the Regional Director. To merely shift this responsibility to the Center Director would be a charade, as the Regional Director would not be honestly accountable for research, and eventually this could lead to ineffective, if not difficult, interactions between the Regional Director and the Center Director.

Another disadvantage lies in the fact that the Regional Director positions are subject to high turnover. This is not conducive to planning and overseeing long-term research needs. Regional Directors would face the dilemma of having to make priority decisions between long-term research needs, from which they probably would never accrue the benefits, and short-term needs, for which they would be immediately accountable. That is asking a lot of anyone.

In many ways, this alternative can be summed up by likening it to the mahout controlling the elephant. Clearly, the mahout needs the elephant's strength and skills to do his job. Some mahouts accomplish this by building a close bond with the elephant for life, being a good keeper and provider in return for good work from the elephant. Other mahouts use intimidation, coercion and punishment to get the elephant to do what they want. Sometimes the elephant rebels, sometimes it is driven to death; rarely does it accept its job willingly.

The success of this alternative depends on interpersonal relationships and not structure.

Alternative 3: Amalgamate Lines of Authority Under a New Field Structure

This alternative would establish a new field structure by amalgamating existing regions and centers into a single organizational unit directed by a Regional

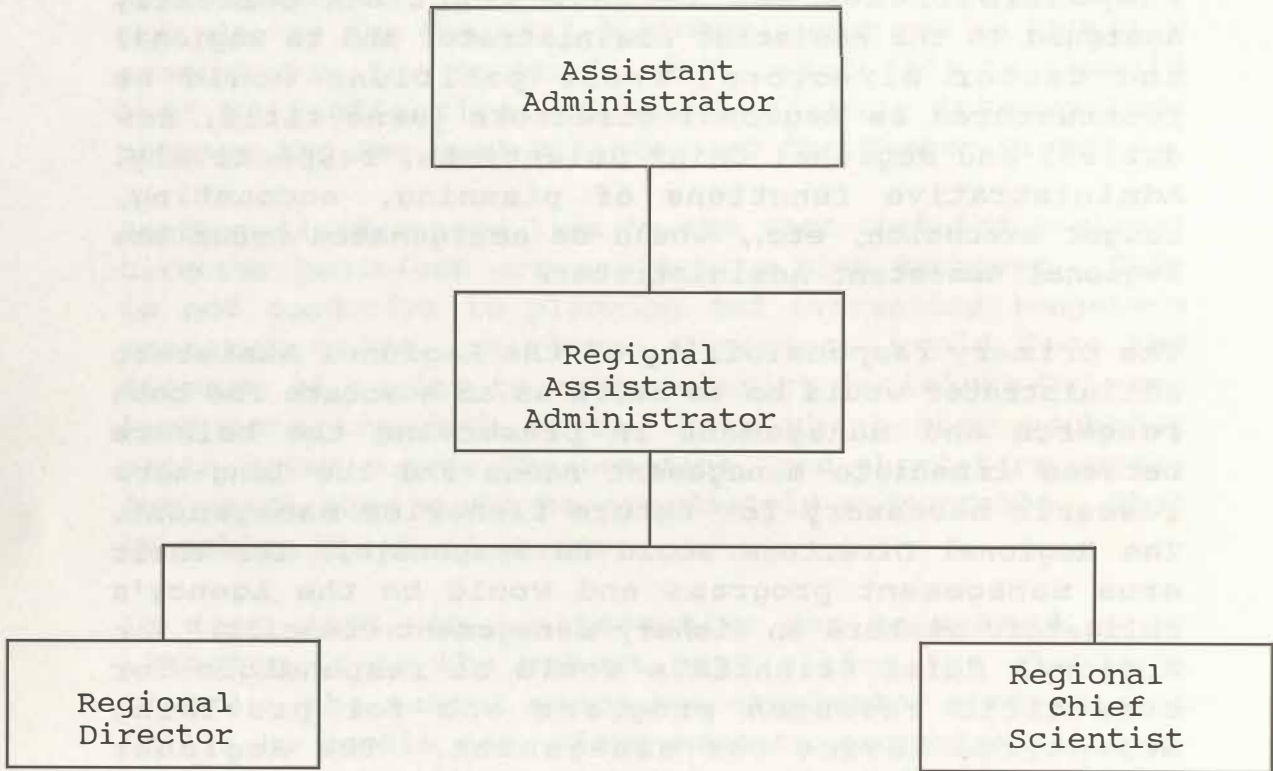
Assistant Administrator (Figure 3). The Regional Assistant Administrator would assume the broad responsibilities and certain functions currently assigned to the Assistant Administrator and to Regional and Center Directors, whose positions would be restructured as Regional Directors (same title, new duties) and Regional Chief Scientists, respectively. Administrative functions of planning, accounting, budget execution, etc., would be amalgamated under the Regional Assistant Administrator.

The primary responsibility of the Regional Assistant Administrator would be to serve as an advocate for both research and management in preserving the balance between immediate management needs and the long-term research necessary for future fisheries management. The Regional Directors would be responsible for their area management programs and would be the Agency's obligatory members on fishery management councils. The Regional Chief Scientists would be responsible for scientific research programs and for providing scientific advice for management. The Regional Assistant Administrator would be the primary regional spokesperson for the Assistant Administrator on all issues and policy matters in his or her area, allowing the Assistant Administrator to concentrate on national issues affecting the Agency.

Options Considered

The Regional Assistant Administrator organizational structure could apply to existing regional boundaries (i.e., a Regional Assistant Administrator over existing Regional and Center Directors) or to enlarged geographic areas such as the East and West Coast regions, with the Alaska and Gulf areas either included or treated separately. Since the responsibilities and authorities would remain the same in each option, the individual options are not treated separately in the

Figure 3. Organizational Alternative - Amalgamate Authorities
Dual Advocacy



following analysis but are discussed in the Evaluation section.

Analysis (By Objective)

1. Integrate research into the management process.

Any option under this alternative would result in the integration of research into the management process. The primary role of the Regional Assistant Administrator would be to manage the interface between research and management to ensure the timely delivery of priority research products without disrupting the long-term basic research necessary for future management.

2. Provide a regional focus and reduce the span of control.

A Regional Assistant Administrator would function as the Regional spokesperson, with line authority and responsibility for both research and management. The span of control would be reduced under any option by the combination of regions and centers.

3. Establish an ecosystem approach to science.

An ecosystems approach could be employed effectively within this alternative. Because explicit efforts would be devoted to interfacing research and management, feedback mechanisms from the fisheries could be explicitly developed to make the systems approach more efficient than current practices.

4. Create a similar field organization.

Under this alternative, similar organizations could be established in the field. Below the division level, the specific organization would reflect the status of

the research, the fisheries and the level of fisheries management.

5. Restructure laboratories as multidiscipline facilities.

Alternative 3 would allow for either multidiscipline or single discipline laboratories as needed in a particular region.

Evaluation

This alternative would provide a single regional focal point with authority and responsibility to maintain the balance between research necessary to meet immediate needs and to protect (continue) science necessary to meet long-term needs. The establishment of a Regional Assistant Administrator to represent a broader geographic region would accommodate East-West differences (Appendix C).

The primary advantage of this alternative is that it establishes a single regional focus with authority and responsibility to manage research and management functions under a single structure. This dual advocacy responsibility would protect science from undue political influences. The span of control would be further reduced if geographic boundaries were made broader than the existing regions. Also, a Regional Assistant Administrator would have greater flexibility in the allocation of people and dollars to priority programs. Ecosystem management could be established on other than existing political boundaries. This structure would provide an effective means for integrating research into management and improving the Agency's ability to respond to management needs.

Another advantage of this alternative is the potential for further reassignment of headquarters functions and

staff to the Regional Assistant Administrator. The December 12, 1986, "Review Committee Report on the Functional Analysis of NMFS Headquarters" identified several national operation programs involving 65 positions transferable to locations outside Washington, D.C., that are in addition to the 86 headquarters positions currently located in the field. The potential for reassigning these and any other positions to the field should be examined in detail during the implementation phase of this alternative if selected.

The major disadvantage of this alternative is the potential delay in implementation until several policy and logistical issues are resolved. The number and location of Regional Assistant Administrators must be determined. Further analysis of potential reassignments of headquarters functions and positions must be completed. Discussions with NOAA, Commerce, Congress and constituents would be necessary to create an understanding of the new structure. It is feasible, however, that with the full participation of the highest levels in NOAA and Commerce, this alternative could be implemented fairly quickly.

Alternative 4: Change in NMFS Mission With Reassignment of Major Functions to Other NOAA Components

This alternative would change the NMFS field structure as a result of a change in the NMFS mission. The alternative considers the reassignment of major functions within the existing organization to other components of NOAA. A restructuring of NMFS headquarters functions also would result from a change in the Agency's mission.

Options Considered

Two options were considered under this alternative: (1) reassign all current NMFS regulatory and enforcement

functions to the NOAA Office of General Counsel (GC) (Figure 4), and (2) reassign all NMFS research functions to the NOAA Office of Oceans and Atmospheric Research (OAR) (Figure 5).

1. Reassign NMFS regulatory and enforcement functions.

Under this option, the primary mission of the NMFS would be fisheries research and management, both in the field and headquarters. The preparation, review and approval of regulations would be carried out in GC. The Office of Enforcement also would be reassigned to GC.

The NMFS science and research functions would remain unchanged; the regions would continue to work with the fishery management councils, states and constituents to identify and select effective management measures but would not be responsible for preparing and implementing the regulations. The organizational structure in either Alternative 2 or Alternative 3 could be followed to establish the field structure.

2. Reassign NMFS research functions.

The primary NMFS mission under this option would be management and enforcement; research functions would be reassigned to OAR. The centers would not exist, and responsibilities in the regions would remain unchanged.

Analysis (By Objective)

1. Integrate research into the management process.

The reassignment of regulatory and enforcement functions to GC would not add to the integration of research into management. This structure would add another level of authority in the management process and require substantial communication and coordination

Figure 4. Organizational Alternative - Reassign Regulatory and Enforcement Functions

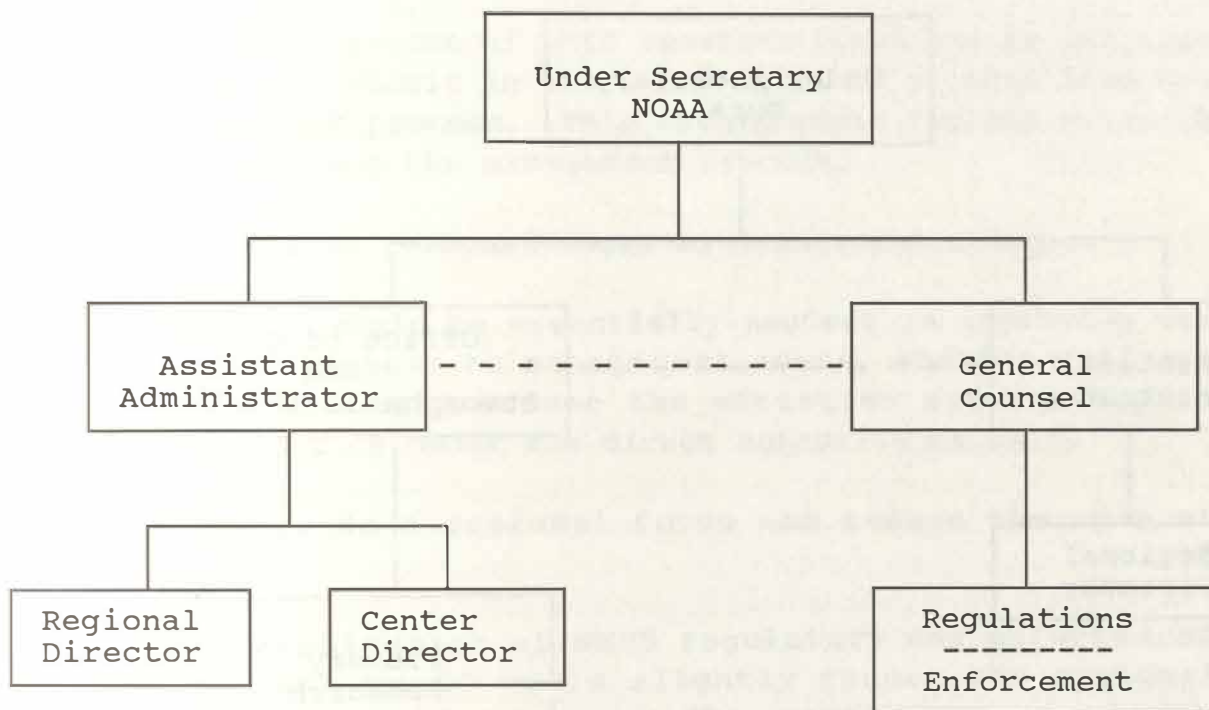
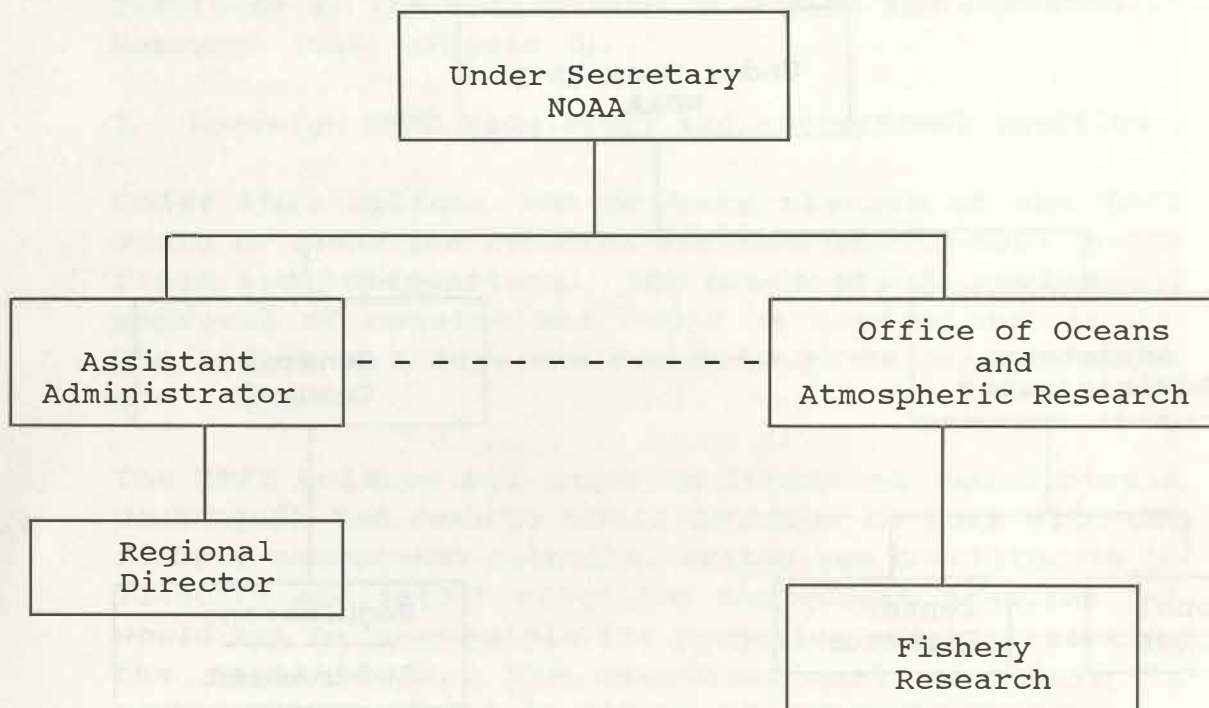


Figure 5. Organizational Alternative - Reassign Research Functions



to meet the rigorous schedule presently mandated by the Magnuson Fishery Conservation and Management Act.

The reassignment of NMFS research functions to OAR also would not result in the integration of science into the management process. This action would isolate research farther from the management process.

2. Improve responsiveness to management needs.

Option 1 would be essentially neutral in improving the responsiveness to management needs, whereas Option 2 would probably worsen the situation since research would not be under the direct authority of NMFS.

3. Provide a regional focus and reduce the span of control.

The reassignment of NMFS regulatory and enforcement functions to GC would slightly reduce the regional focus and would not change the overall span of control. The reassignment of science functions would reduce the regional focus and the span of control.

4. Establish an ecosystem approach to science.

The reassignment of NMFS research functions to OAR could contribute significantly to the establishment of an ecosystem approach to research. Without NMFS line authority, however, management needs could receive secondary priority unless some mechanism is established to maintain a proper perspective on research priorities. A reassignment of regulatory and enforcement functions is not related to the achievement of this objective.

5. Create a similar field organization.

A similar field organization could be created under either option.

6. Restructure laboratories as multidiscipline facilities.

Neither option under this alternative would affect this objective.

Evaluation

This alternative would entail a major change in the NMFS mission which probably would be politically objectionable and would require Congressional approval. Either option would isolate major functions essential to meet field responsibilities for management.

Alternatives: A Comparison

A comparison of the four alternatives with respect to the organizational objectives indicates that distinguishable differences exist among the alternatives for four of the six objectives (Table 1). When ranking the alternatives against each objective, a rank of 1 indicates that the alternative best achieved the objective (of the four considered). A rank of 4 means that the alternative was judged to be the least effective in achieving the objective. It was determined that authority exists under all four alternatives for establishing a similar field structure and restructuring laboratories, should those actions be deemed necessary.

Maintaining the existing organizational structure (Alternative 1) was judged the poorest in meeting the objectives. This conclusion supports the perception that the present field structure is not responsive to

Table 1. Comparison of Restructuring Alternatives with Stated Objectives.

ALTERNATIVES	INTEGRATE RESEARCH INTO MGMT	IMPROVE RESPONSIVENESS TO MGMT NEED	PROVIDE REGIONAL FOCUS	ESTABLISH ECOSYSTEM APPROACH	ESTABLISH SIMILAR FIELD STRUCTURES	RESTRUCTURE LABS
I STATUS QUO	3 . Satisfactory in some regions . Not adequate in others	3 . Satisfactory in some regions . Not adequate in others	4 . Worst focus due to separate Region and Centers	4 . Coordination limited by cooperation	. Authority exists without restructuring	. Authority exists without restructuring
II MODIFY AUTHORITIES	2 . Improved over status quo	2 Most responsive in short-term . May jeopardize long-term effectiveness	2 . Single focus with Region or Center bias dominating	3 . Coordination limited by regional need	. Authority exists without restructuring	. Authority exists without restructuring
III AMALGAMATE AUTHORITIES	1 . Insured under dual advocacy	1 . Insures proper balance responsiveness and quality of response	1 . Single focus with one view dominating	2 . Better coordination on regional basis	. Authority exists without restructuring	. Authority exists without restructuring
IV CHANGE MISSION	4 . Science isolated from management	4 . Worst responsiveness due to isolation	3 . Single focus with limited scope	1 . Best coordination on national basis	. Authority exists without restructuring	. Authority exists without restructuring

current management needs. Likewise, both options considered under Alternative 4 were ranked low in ability to meet the Assistant Administrator's objectives due to the extent to which carrying out the remaining Agency responsibilities would rely on the services of other components of NOAA and NMFS inability to retain direct lines of authority over interacting management-related responsibilities affecting the same constituency (i.e., no longer "one-stop shopping").

Alternatives 2 and 3 were judged the most likely to meet all the objectives. Both alternatives would provide a clear regional focus. However, Alternative 3 was judged superior to Alternative 2 primarily because it would protect science by maintaining research separate from management. Alternative 2 was considered subject to greater bias from the lead director, whereas Alternative 3 would assign responsibility to an administrator who would be a dual advocate for both research and management. The dual advocacy would ensure proper integration of research activities to provide scientific advice for immediate management decisions while maintaining the ability to continue long-term research with less disruption.

Both Alternatives 2 and 3 would reduce the span of control: from nine to four or five under Alternative 2, and from nine to possibly two under Alternative 3, if Regional Assistant Administrators are established for the West and East Coasts. The redelegation of certain headquarters functions and staff to the Regional Assistant Administrators also was considered an additional benefit in reducing the span of control within the Washington Office and reinforcing the regional focus in the field.

**COMPARISON OF FACTORS AFFECTING
EAST/GULF COAST AND WEST COAST OPERATIONS**

There is a perception that fisheries management processes and the interface between research and operations are working fairly well on the West Coast and not so well on the East Coast and Gulf of Mexico. A variety of factors, many of them beyond NMFS control, substantially influence the operational effectiveness on each coast. The following table contrasts some of the relevant factors.

	<u>WEST</u>	<u>EAST & GULF</u>
<u>NMFS FIELD OPERATIONS</u>		
Number of NMFS Regions	3	2
Number of NMFS Centers	2	2
Number of Coastal States	6	18
Congressmen and Senators	77	245
Major Island Possessions/Territories	4	2
Number of Fishery Management Councils	3	5
Number of Fishery Management Plans (FMPs) in Effect	12	15
<u>NMFS/COUNCIL INTERACTION</u>		
NMFS/Council Relationships	. Minor problems	. Major problems
Plan Development Teams	. NMFS center/region staff assigned directly to multi- disciplined plan development teams	. No NMFS staff on plan development teams

NMFS/COUNCIL INTERACTION

WEST

EAST & GULF

Scientific and

Statistical Committees

. Strong with
NMFS membership

. Weak or non-
functional (limited
NMFS membership)

Economic Analysis

. NMFS economic
analysis for FMPs

. Council generated
economic analysis

Constituent

Advisory Panels

. Strong advisory
committees with
diverse membership

. Advisory
committees in
place

State Participation

. State biologist
participation in
FMP development

. Variable partici-
pation by states

STATE PARTICIPATION

Data Collection Capability

. Strong (with NMFS
final help)

. Generally weak
(NMFS has lead)

Population

Dynamics Capability

4 of 6

NIL

U.S. MARINE CATCH - 1986

Commercial Catch

State Waters (0 - 3mi)

455,749 mt

1,065,093 mt

Federal Waters (3 - 200mi)

396,458 mt

720,571 mt

High Seas

230,157 mt

7,410 mt

Joint Venture Catch

1,300,777 mt

9,610 mt

Foreign Catch in Exclusive

Economic Zone

562,567 mt

25,786 mt

TOTAL

2,945,708 mt

1,828,470 mt

U.S. MARINE CATCH - 1986 (cont'd.)

	<u>WEST</u>	<u>EAST & GULF</u>
Marine Recreational Catch (est.)	55,312,000 fish	410,805,000 fish
Number of Marine Anglers (est.)	2,640,000	12,257,000
General Status of Fishery Resources/Fisheries	. Developing to fully utilized	. Fully or over- utilized to depressed in NE; some under- utilized in SE

U.S. FISHING INDUSTRY - 1985

(1986 data not available)

Number of Commercial Fishing Boats and Vessels	33,000	92,000
Fish Processors/Wholesalers	859	2,885
Number of Persons Employed (Excl. Puerto Rico and Am. Samoa)	28,300	43,800
Fishery Cooperatives: Number	63	59
Members	8,800	3,200
Boats	7,800	1,500