

4. Management of New U.S. Fisheries Zone

Background

The Fishery Conservation and Management Act of 1976 (P.L. 94-265) is potentially the most significant institutional change in the history of U.S. fisheries management. The law extends the limits of U.S. jurisdiction out to 200 miles and incorporates some advanced ideas about ways to manage marine fisheries in the United States. Implementation of this law will require a level of understanding about the infrastructure of the fishing industry that has never before been attempted by the U.S. Government. Eventually it will require a thorough description of the entire cycle from spawning fish to fish on the dinner table. In the past, each section of the fishing industry—i.e., fishing, processing, retailing, etc.—was concerned only with its own aspects of the cycle. There has been little correlation of information and no in-depth analysis of the interdependence and the interrelatedness of the various segments of the industry. A better understanding of the fishing industry as a whole will be necessary in order to implement the management theories put forth in the new law.

Management, according to the law, means the use of “rules, regulations, conditions, methods, and other measures (A) which are required to rebuild, restore, or maintain, and which are useful in rebuilding, restoring, or maintaining, any fishery resource and the marine environment; and (B) which are designed to assure that:

- (i) a supply of food and other products may be taken and that recreational benefits may be obtained, on a continuing basis;
- (ii) irreversible or long-term adverse effects on fishery resources and the marine environment are avoided; and
- (iii) there will be a multiplicity of options available with respect to future uses of these resources.”⁵²

Public Law 94-265 implies that proper management of U.S. fisheries will result in

conservation of fish stocks, which means a reduction in overfishing of some species, increased fishing of underutilized species, and enhancement of stocks which are currently overutilized or depleted.

International pressures now exist to take the last available ton of some popular species from the ocean each year. For example, in its latest report to Congress under the terms of the Marine Protection, Research and Sanctuaries Act of 1972, NOAA concludes that about 10 to 15 major finfish and shellfish stocks have been overfished, primarily by foreign fleets; other stocks are in danger of being overfished, and numerous others are “intensively exploited.”⁵³

In this study, OTA examined many elements of fisheries management that are contained in Public Law 94-265—elements that many people believe have been neglected in the past and that seem to be of great importance in effectively managing fishery resources in the future. The major elements of fishery management which were examined by OTA are:

- . development of and use of the concept of optimum yield;
- . establishment and operation of fishery management councils;
- preparation of preliminary management plans for foreign fisheries;
- preparation of final management plans for domestic fisheries; and
- . evaluation of management effectiveness.

This section describes the status of these management elements, discusses some of the planning which is needed for future management, and describes specific information which will be needed for adequate management. The information needs were determined by special studies commissioned by OTA. These studies are referenced throughout this report as working papers and are being published separately.

Optimum Sustainable Yield

One of the most important management principles set out in the law is that management plans should result in optimum yield. Optimum yield, according to the broad definition in the Act, is the allowable catch which (A) will provide the greatest overall benefit to the Nation, with particular reference to food production and recreational opportunities; and (B) which is determined as such on the basis of the maximum sustainable yield (MSY) as modified by any relevant economic, social, or ecological factors.⁵⁴

Implicit in optimum yield is the idea that the concepts and data from all the fields indicated in the Act should be integrated and not treated as separate entities. Management plans based on the finest concept will do little good if their implementation results in dangerous depletion of the fish stocks or massive social disruption with attendant political agitation. Unfortunately, integration of biological, economic, and social information poses major problems.

In the past, it was considered adequate to analytically determine the total allowable catch that each species could sustain without damage to the parent stock. That figure was known as the maximum sustainable yield (MSY). However, most fishery experts would now agree that MSY cannot be determined for any species because there are too many unknown biological factors which influence the size and health of fish stocks. This situation is further complicated by the traditional common-property nature of fish resources and incomplete knowledge of the entire marine ecological system.

In addition, social and economic factors are of considerable importance in a free society and do, in fact, have a major effect on actual utilization of each species. The concept of optimum as opposed to maximum (or "best" as opposed to "most") is to take these social and economic factors into consideration.

Like an MSY figure, a precise optimum-yield figure for each fishery is not attainable at this time. However, a process can be sought for considering all factors and reaching a compromise set of guidelines to follow for good management.

Such optimum yield concepts should be adaptable to changes in resource priorities, knowledge about the resource, information about its use, and the trade-offs that result from management. Optimum yield is the core of each management plan which will probably include such other items as: quantities and types of fish to be harvested; methods and techniques to be used; and measurements and evaluations to be conducted.

No specific process for seeking optimum yield for a fishery has been established yet. The yield figures used by the National Marine Fisheries Service in drawing up preliminary management plans are estimates based on existing data, which is mostly biological in nature. However, NMFS and the Regional Councils are wrestling with the problem of how to pursue optimum yield. A workshop of council members and Federal officials is being planned for purposes of devising a method of seeking the optimum yield for each fishery. New concepts need to be developed and much new information must be gathered in order to obtain an integrated view of the fisheries of the United States and to determine the optimum yield of a fishery. In the meantime, it is clear that at least the following factors should be considered:

Regional Fishery Management Councils

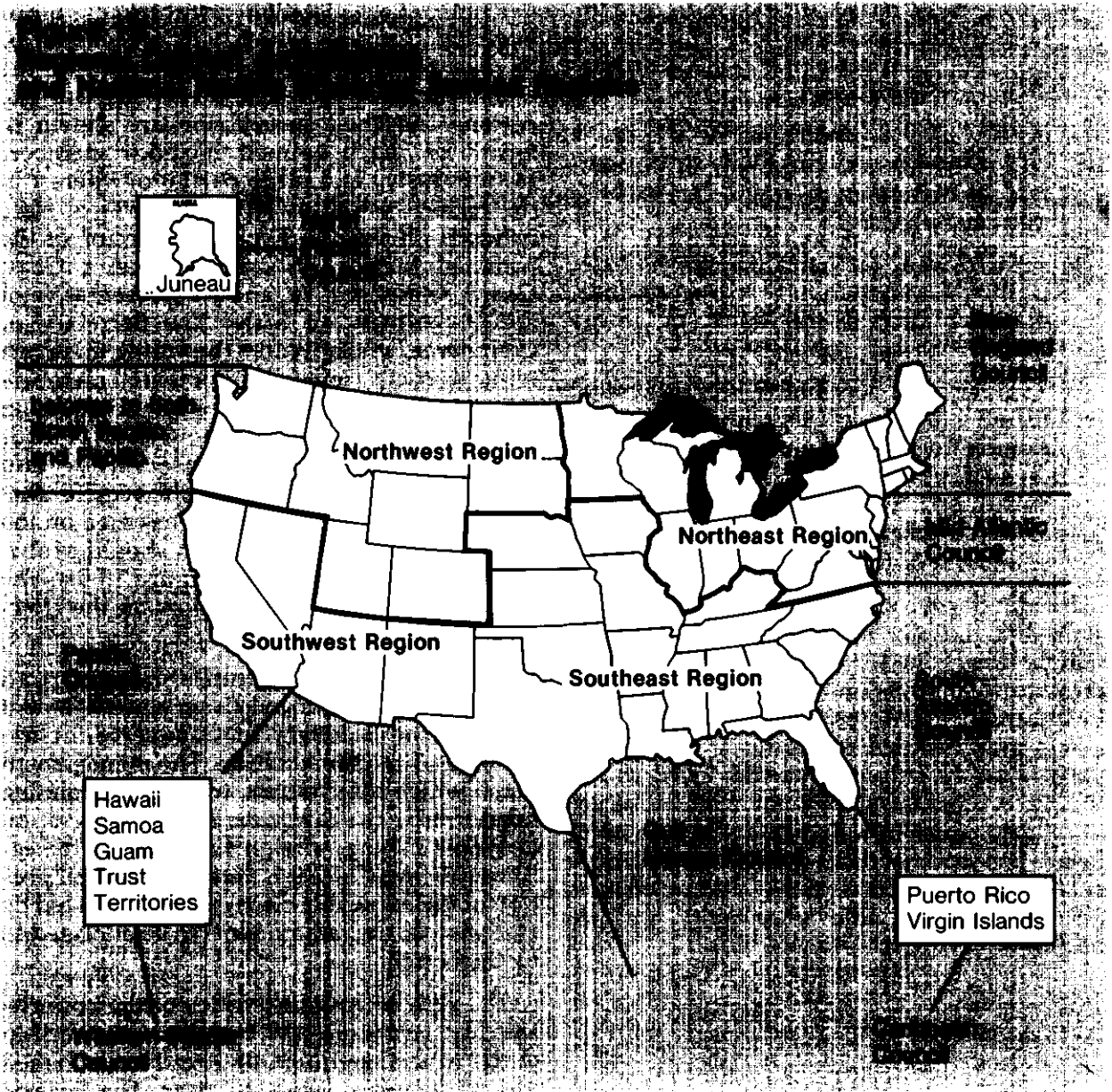
- . biologically based estimates or predictions of the maximum yield which can be expected from each stock without future depletion of that stock;⁵⁵
- . quality of the predictions or the range within which they are likely to be accurate so that safety margins can be built into catch figures;⁵⁶
- such relevant ecological factors as water quality, destruction of breeding grounds, disasters such as oil spills or severe weather; and
- . economic and social factors of individual fisheries which will be relevant in determining the effect of management options on such interested parties as commercial fishermen, sport fishermen, food processors, marketing groups, fish-food consumers, and the general public.⁵⁷

In reality, the exact meaning of optimum yield and the best method of determining it will be determined by the Regional Councils through their decisions in the coming years. In the absence of an analytical method, judgments may be used to modify a maximum-yield figure to reflect the factors listed above. If data on these factors are not available or are unreliable, further judgments may be used. Even with an analytical method and reliable data, there will be uncertainty and techniques for dealing with that uncertainty will be necessary.

Public Law 94-265 establishes eight Regional Councils which will set standards, develop plans, and prepare regulations for the management of fisheries in each region. The regions and their jurisdiction are shown in figure 17. Each council includes members from industry and other parties of interest in the region as well as representatives of State fisheries offices, the Regional Director of the National Marine Fisheries Service, a Coast Guard representative, and a representative of the Department of State. The Secretary of Commerce, who appoints the voting members of the councils from lists of potential members submitted by the Governors of the States in each region, has been asked to seek an amendment to the Fishery Conservation and Management Act which would require that environmental interests be represented on the councils. Similar consideration should probably be given to consumers. Figure 18 lists the councils and their memberships on the effective date of Public Law 94-265.

The Regional Councils have broad authority to recommend fishery management plans to the Secretary of Commerce for approval and implementation. The management plans which the councils will be formulating must, under the law, take into consideration domestic fishing, foreign fishing, and recreational fishing. Once it is determined what portion of the allowable catch can be harvested by U.S. vessels, the remainder is to be allocated as foreign catch.

The general responsibilities of the councils are clear (see figure 19), but their relationship to the future operation of already established Federal agencies is not so clear. The Federal agency with the major responsibility in fishery management is the National Marine Fishery Service in the Department of Commerce. The National Marine Fishery Service (NMFS) has a dual-role of providing services to the councils, mostly in the form of biological stock



Source: OTA

**Figure 18
Appointed Voting Members of Regional Councils***

New England	<p>Spence Apollonio Executive Director</p> <p>John Burt New Bedford Fishermen's Union</p> <p>Jacob J. Dykstra Point Judith Fishermen's Cooperative Association</p> <p>Henry Lyman The Saltwater Sportsmen</p>	<p>Edward J. MacLeon Lipman Marine Products</p> <p>Thomas A. Norris Old Colony Trawling Club</p> <p>Virgil J. Norton University of Rhode Island</p>	<p>Thomas P. Ricci Block Island Bluefish Invitational Tournament</p> <p>Charles B. Stinson Stinson Canning Co.</p> <p>Richard F. Wadleigh</p>
Mid-Atlantic	<p>John C. Bryson Executive Director</p> <p>John H. Burger, Jr. Burger Construction Co.</p> <p>L. Eugene Cronin Center for Environmental and Estuarine Studies</p> <p>William M. Feinberg Attorney</p>	<p>Nancy K. Goell Group for America's South Fork, Inc.</p> <p>Elliott J. Gokman Atlantic States Marine Fisheries Commission</p> <p>William J. Hargis, Jr. Virginia Institute of Marine Science</p> <p>David H. Hart Marine Fisheries Consultant</p>	<p>Allen W. Haynie Zapata-Haynie Corp.</p> <p>John L. McHugh Marine Sciences Research Center</p> <p>William R. Fell, III Fell's Fish Market</p> <p>Alan J. Ristort Garcia Corporation</p> <p>Ricks E. Savage Commercial Fishermen</p>
South Atlantic	<p>Emmet D. Premetz Executive Director</p> <p>Norman B. Angel North Carolina Fisheries Association, Inc.</p> <p>Gerrude W. Bernhard</p>	<p>Allen F. Branch</p> <p>J. Ray Duggan King Shrimp Company, Inc.</p> <p>Eoger C. Glene, Jr.</p>	<p>George B. Gross Red Lobster Inns of America</p> <p>Benjamin T. Hardesty Shakespeare Company</p> <p>Ernest A. Lentz Department of Administration</p>
Gulf of Mexico	<p>Wayne E. Swingle Executive Director</p> <p>George A. Brumfield Zapata-Haynie Corporation</p> <p>Thomas H. Clark Sun Circle Resort</p> <p>Theodore B. Ford, III Louisiana State University</p>	<p>John M. Green Miller-Vidor Land Company</p> <p>Robert P. Jones Southeastern Fisheries Assoc., Inc.</p> <p>C. Walton Kraver Seafood Haven Inc.</p> <p>Robert G. Mauermann Texas Shrimp Association</p>	<p>Nicholas Mavar, Jr. Mavar Shrimp and Oyster Co., Ltd.</p> <p>John A. Mehos Liberty Fish and Oyster Company</p> <p>Billy J. Putnam</p> <p>Edward W. Swindell Wallace Menhaden Products, Inc.</p>

Figure 19
Duties of Regional Councils and National Marine Fisheries Service

Required by P.L. 94-265

Regional Councils	Department of Commerce (NMFS)
<p>Modify preliminary management plans prepared by NMFS for foreign fisheries</p> <p>Prepare fishery management plans for domestic fisheries.</p> <p>Determine information, data and analysis needed to prepare management plans</p> <p>Test and evaluate techniques for determining optimum sustainable yield and other management factors</p> <p>Secure needed information from NMFS or other regional sources as necessary to complete management plans</p>	<p>Prepare preliminary management plans for fisheries with foreign allocations</p> <p>Establish general regulations and guidelines for preparation of all management plans</p> <p>Provide the councils with data and information necessary to prepare management plans</p> <p>Develop analytical methods for determining optimum yield and other factors needed for effective management</p> <p>Review and approve council prepared plans</p> <p>Work with Coast Guard on enforcement of regulations</p> <p>Work with Department of State to determine foreign fishing allocations and regulations</p>

Suggested Additional Duties

<p>Interpret scientific data and advice about stocks for interested public</p> <p>Provide opportunity for access to information and debate of issues by interested parties</p> <p>Prepare projection of enforcement activities needed within each jurisdiction, including possible compliance inducements</p> <p>Study needs of fishing industry, synthesize existing studies, provide missing data and recommend legislative and administrative changes which would be helpful</p>	<p>Prepare prioritized list of domestic fisheries where management plans are most needed</p> <p>Expand existing information services to reach more people with wide range of information from variety of sources</p> <p>Prepare management model with cooperation of Coast Guard on enforcement component</p>
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Source: OTA

estimates and other data, and of assuring that management plans adequately reflect the national interest and are consistent with national management standards. The Council and NMFS will also work with two other Federal agencies—the Coast Guard and the Department of State—in enforcing regulations and determining foreign fishing allocations and regulations to control foreign fishing.

With all this complex organizational and procedural set-up, it will undoubtedly take some time to develop a smooth operation. It appears that an important aspect of smooth operations is close-working arrangements between the Federal and regional levels. To date, there are no written requirements for work to be done by the councils and no firm criteria for use by NMFS in judging the plans developed by the councils.⁵⁸ At present it appears that communications between Federal groups and the Regional Councils will be through NMFS regional offices when services or data are needed but through the NMFS Washington office when management plans are submitted for approval.

Presently, the NMFS representative on each council is the Regional Director. However, it is possible that better liaison with the councils could be accomplished if the director of the regional fisheries research center were the representative instead or in addition to the present appointee. The research centers conduct the service function of NMFS and will be supplying the councils with scientific and other types of data to be used in drawing up management plans. Presently the councils have no mandatory policy-level link with these centers and must work instead through nonpolicy-level representatives to the councils or through the Regional Director who has no authority at the centers. Placing the center director on the Regional Council could force the centers to be more accountable for the existence and reliability of data requested by the

councils and improve working relations between the two groups.

Close coordination will be required in three areas of major problems which have not yet been resolved:

1. What budget allocations will the councils receive from NOAA and how much discretion will they have in spending funds for collection of regional data not available from NMFS and data not considered reliable enough for management decisions?

Roughly \$30 million are programmed in the fiscal year 1978 Department of Commerce budget for implementation of the 200-mile fishery zone. Of this, about \$10 million will go to NMFS for its work, the work of its regional laboratories, and the work of the Regional Councils. The rest of the moneys go to NOAA for administration; Sea Grant for research by member universities; and the National Ocean Survey for operation of research vessels.

The councils' requests for funds must be approved by NMFS and NOAA before the moneys are made available. According to an NMFS spokesman, there is presently no conflict between the councils and the NMFS laboratories over funding for research work. However, conflicts over the division of the funds between NMFS laboratories and the Regional Councils can probably be expected in the future because of some local fishermen's lack of confidence in national NMFS operations and council desires to break out of the traditional NMFS research pattern. According to NMFS, "every consideration" will be given to the councils' requests for research funds; however, council funding will reflect NMFS decisions on who can best conduct specific research in the most cost-effective way.⁵⁹ Presumably, the councils will be more successful in requesting money for research into social and economic areas, where little expertise now exists within NMFS, and less successful in requests for funds to conduct

Preliminary Management Plans for Foreign Fisheries

biological research which is already well-developed by the NMFS labs. However, NMFS is already buttressing each of its four regional research staffs with the addition of a seven-man economic and statistical team. Conflicts may evolve over who does specific research tasks. There is presently no framework, other than informal negotiations between NMFS and the councils, for resolving such conflicts.

2. What national data and methods or analysis will NMFS undertake to collect and publish for the use of all councils in management planning?

When this report was written, no decisions had been made within NMFS as to how research and development of analytical methods would be divided. There was a division of opinions among NMFS professionals as to whether recommended data and methods should flow from NMFS to councils or from the councils to NMFS. Early work was of necessity under the constraints of a March 1, 1977, deadline undertaken by NMFS, but no firm guidelines have been drawn-up yet as to who, in the future, should do what specific types of tasks.

3. How will optimum yield be determined and can an analytical method be applied which will improve management planning?

As noted earlier, it was not possible to determine the optimum yield for foreign fisheries in time to include the figures in preliminary management plans. Some judgments regarding social, economic, and ecological factors were used in determining optimum yield for the two domestic plans which have been proposed. Although a workshop is planned jointly by NMFS and the councils for mid-1 1977 to investigate methods of determining optimum yield, there is now—as the councils prepare their first domestic plans and prepare to modify the preliminary foreign plans—no agreed-upon method.

Since the Regional Councils were not able to develop management plans for those fisheries with foreign fishing in time for the March 1, 1977 deadline for implementation of the Act, these plans were prepared by NMFS. The plans have been termed “preliminary” until they are approved or modified by the councils. Plans were prepared for 16 fisheries⁶⁰ in four general regions covered by six councils. However, only two regions have the major significant foreign fishing effort—the Northeast region, covered by New England and Mid-Atlantic Councils, and the Northwest and Alaska Region, covered by the Pacific and North Pacific Councils. Figure 20 lists the plans prepared for these regions.

In the preparation of these plans, no attempt was made to consider all the factors specified in the Act or to determine optimum yield which takes into account the economic, social, and ecological factors. Most of the preliminary plans state that the councils will determine the specific factors to be used to calculate optimum yield sometime in the future. In the meantime, NMFS has used total-allowable catch figures determined, for example, by the International Commission on North Atlantic Fisheries in the place of optimum yield figures which have not yet been determined by the councils.

The preliminary management plans establish a total allowable catch for species which are subject to foreign fishing effort, estimate the share of that catch which U.S. fishermen could harvest, and set a surplus figure which is available to foreign fishermen. It is this surplus which is allocated among those countries applying for permits to fish within the 200-mile zone. Allocations contained in the preliminary management plans (as of January 1977), excluding allocations for species under 10,000 tons and species with no allocations, are shown in figure 21.

Figure 20
Fishery Management Plans
As of February 1977

Preliminary Management Plans Have Been Prepared by NMFS for the Following Fishery Units Which Are Subject to Foreign Fishing:

Pacific and North Pacific Council Regions:

Trawl Fishery of the Bering Sea and Aleutian Islands
Trawl Fishery of the Gulf of Alaska
Trawl Fishery of Washington, Oregon and California
Sablefish of the Bering Sea and Northeastern Pacific
King and Tanner Crabs of the Eastern Bering Sea
Shrimp of the Eastern Bering Sea and Gulf of Alaska (No foreign surplus)
Troll Salmon Fishery of the Pacific Coast (No decision on foreign surplus until new treaty with Canada)
High Seas Salmon Fishery of Japan (Present treaty prevails for at least one year and new treaty recommended)
Snails of the Eastern Bering Sea (No restrictions except no increase in catch)

Western Pacific Council Region:

Seamount Trawl Fishery of Hawaii, Guam and American Samoa
Precious Corals of Hawaii, Guam and American Samoa
(No foreign surplus)

New England and Mid-Atlantic Council Regions:

Hake Fisheries of the Northwest Atlantic
Squid Fisheries of the Northwest Atlantic
Atlantic Mackerel Fishery
Atlantic Herring Fishery
Finfish Caught Incidental to the Trawl Fisheries of the Northwest Atlantic

In addition to the above, the following Draft Fishery Management Plans for Domestic Fisheries have been issued by two councils:

Pacific Council:

Commercial Troll and Recreational Salmon Fisheries off the Coasts of Washington, Oregon and California

New England and Mid-Atlantic Council:

Atlantic Cod, Haddock and Yellowtail Flounder Fisheries

Source: OTA

**Figure 21
Preliminary Management
Plan Allocations**

Fishery	Metric Tons	
	Total Allowable Catch	Foreign Allocation
Northwest and Alaska Region		
Trawl Fisheries* (Includes pollock, sole, mackerel, flounder, ocean perch, rock fish, pacific hake)	1,783,000	1,672,000
Sable Fish (not in above)	36,000	25,000
King and Tanner Crabs	142,000	10,000
Shrimp	50,000	None
Region Total	2,014,000	1,710,000
Northeast Region		
Red and Silver Hake	164,000	128,000
Squid	79,000	41,000
Mackerel	55,000	50,000
Herring	40,000	16,000
Other Finfish	150,060	72,000
Region Total	488,060	307,000

● These are listed in three separate plans according to area.

Source: Preliminary Management Plans

The total foreign allocation for the year 1977 will be about 2.04-million metric tons. This compares to about 2.72-million metric tons which was harvested by foreign fisher-

men in the same areas in 1974 and about 3.63-million metric tons in 1972. While some reduction in foreign allocations is contained in the preliminary plans in order to reserve certain stocks for US. fishermen, the overwhelming reduction in allowable catch is assumed to be for the purpose of conserving stocks which have been substantially overfished in the past (see figure 22).

As in enforcement of fishery regulations, the Department of State may, in some cases, exert a practically unquestioned influence on foreign allocation figures. For example, foreign allocations for pollock were increased 100,000 metric tons by NMFS this year in response to State Department comments on the environmental impact statement relative to trawl fishery management plans for the Bering Sea.

As with enforcement, the foreign policy implications of some management actions and allocations may at times be more important than the fishery implications. However, some mechanism should be established to assure that fisheries managers are not intimidated by the Department of State and that Department of State requests are based on clear evidence that the allocations or other aspects of the management plans would be harmful for some reason.

These preliminary management plans are the first step in a complex process aimed at regulating foreign fishing. Because they are the prime management tool, they are of great importance and need careful scrutiny. As written and published before the March 1, 1977, implementation date, the preliminary management plans prepared by NMFS for regulation of foreign fisheries are not coordinated in content or format. In fact, NMFS has reserved the task of writing and publishing regulations for the presentation of management plans until after the law has gone into effect. Other rules and regulations for opera-

tion of the councils and preparation of management plans, in very general language, were published in the Federal Register in draft form in September, 1976.⁶¹ This failure to standardize operations within NMFS before the initial plans were written may have complicated the councils' job of preparing succeeding plans by failing to give them a model after which to pattern their work. It may also perpetuate regional differences within NMFS and complicate the national review process.

As the councils consider the preliminary plans and attempt to develop the management process, much must be learned about the effectiveness of management techniques and presentation of plans. The most pressing need for improvement, however, is in the area of developing and considering economic, social, and biological data to be used to modify the catch figures presented in the preliminary plans.

Figure 22
1977 Northeast Stock Assessment and U.S. and Foreign Quotas
(In Metric Tons)

Resource and Production Area	Optimum Stock Possible Under Strict Mgmt.	Max. Yield From Opt. Stock	1977 Total Adult Stock (est.)	1977 U.S. Allowable Catch (prop.)	1977 Foreign Allowable Catch (est.)	1977 TAC As Proposed	U.S. % Of Total Catch	% Difference Of U.S. Quota To 1976 Data	1976 U.S. ICNAF Quota	1976 Foreign ICNAF Quota	1976 ICNAF TAC**
Atlantic Herring ICNAF Div. 5Z-SA6 Div. 5Y	500,000 110,000	125,000 35,000	204,000 55,000	15,000 5,000	15,000 1,000	30,000 7,000	54.5% 55.7%	+34% 0%	12,400 5,500	47,600 1,000	60,000 7,000
Long-Finned Shad (Loligo Paste)	75,000	44,000	76,000	25,000	16,000	44,000	66.9%	+37.5%	5,500	21,500	30,000
Short-Finned Shad (Max. Recruitment)	(110,000)	(35,000)	(110,000)	12,500	22,500	35,000	55.7%	+10.7%	7,500	38,500	44,000
Red Hake (Urophycis affinis)	95,000 47,000	40,000 20,000	35,000 (90,000)	7,000 1,500	21,000 14,500	28,000 16,000	25.5% 5.0%	-12.5% + 5.2%	5,000 1,500	10,500 25,500	15,000 25,000
Silver Hake (Merluccius bilinearis)	245,000 480,000	35,000 65,000	245,000 480,000	15,500 16,000	37,500 55,000	60,000 75,000	51.0% 51.5%	+ 4.1% + 4.6%	5,500 8,500	34,000 41,500	43,000 50,000
Atlantic Mackerel (Scomber scombrus) U.S.-designated zone in ICNAF Div. 5 and 6	1,280,000	(513,000)	374,000	5,000	50,000	55,000	9.1%	+ 7.3%	4,700	249,500	254,000
Other Finfish [†] (incl. 50-60 species) ICNAF Div. 5 and 6	(550,000)	(150,000)	(550,000)	78,000 [†]	72,000 ^{**}	180,000	52.0%	+ 8.7%	58,000	82,500	150,000
Totals	(3,405,000)	(847,000)	(2,131,000)	180,500	307,500	448,000	35.5%	+17.6%	131,900	548,400	680,000

* Includes 10,000 MT Quota of Blue Herring for U.S. Fishery
 ** No River Herring (Atlantic or Blackish Bay) is harvested by Foreign Vessels
 *** TAC (Total Allowable Catch)
 † Includes Arctid, Cusk, Ocean Pearl, Sculpin, Snow Sculpin, Tautog, Winter Hake, Wolffishes, Bluefish, Butterfish, Atlantic, Argentine, Croaker, Black Sea Bass, Dogfish, American Shad, Starfish, Sand, Sanddancer, Winter Flounder
 ‡) Denotes Consecutive Data

NOTE: Quotas for 1977 are proposed only. Management plans developed by NMFS setting quotas are preliminary and each time the regional councils are able to establish their own plans, Northeast fisheries not listed (including ocean perch, cod, haddock and yellowtail flounder) will be 100% U.S. and no foreign fisheries (except incidentally) will be allowed.

Final Management Plans for Domestic Fisheries

As the councils become operational, they will assume their principal responsibility of developing management plans for domestic fisheries. There is no deadline for issuing specific plans. However, serious problems with heavily fished species have been recognized in two areas and emergency domestic management plans have been prepared to take effect simultaneously with the preliminary management plans for foreign fisheries. These plans were prepared by NMFS and there is some concern that they will not be well received by domestic fishermen because of the lack of local input to the regulations.

This possibility could have been avoided—and can be avoided in the future if additional emergency plans are deemed necessary before the councils are working fully—if NMFS were to detail or loan personnel to the councils for preparation of the plans. Such an arrangement would put the councils in charge of the preparation and ensure the input of industry and other interested segments of the public.

Although there are well-known administrative problems and costs in detailing personnel, such a system should be investigated because of its potential for making professional staff members available to the councils on an as-needed basis without the necessity of building up bureaucracies within the councils themselves.

Two draft domestic management plans were prepared by NMFS. One of the New England fishery for haddock, cod, and yellowtail flounder and one for the Pacific fishery for salmon.

For New England, some judgmental increases and decreases were made in maximum sustainable yield figures supplied by the NMFS lab and an attempt was made to set an optimum yield which reflects economic and social factors. The draft plan determines that there is to be no foreign catch and allocates the domestic catch between commercial and

recreational fishermen. The plan also recommends that the stock be protected by some fishing regulations such as ones on mesh size, minimum catch size, and tying the allowable catch to the number of crew members per boat.

In the Pacific, the domestic catch is allocated among commercial, recreational, and native American fishermen and regulations are set, including fishing season, area closures, and bag and size limits.

Beyond these two emergency plans, there is no priority list of domestic fisheries for which management plans should be prepared. Since NMFS now has the most information on U.S. fisheries and the status of stocks in general, and since NMFS has the power to prepare domestic management plans if the councils do not do so, it would be helpful if NMFS would compile a listing of fisheries where management plans are needed. Such a listing should be a priority ranking and should delineate the needs for management plans in each case. Such a list would help focus the councils' early work and would be helpful in projecting their information needs.



National Oceanic and Atmospheric Administration Photo

Small net handling boats close the purse seine around the catch before transferring it aboard a larger vessel

Evaluation of Management Effectiveness

Both the councils and the Federal Government have the responsibility of measuring the effect of the new management systems that are being developed. In its interim regulations for the operation of the Regional Councils, NMFS has slightly expanded on the standards set forth in the law to be considered in evaluating management plans. These standards are:⁶²

1. Conservation and management measures shall prevent overfishing, while achieving on a continuing basis, the optimum yield from each fishery.
2. Conservation and management shall be based upon the best scientific information available.
3. To the extent practicable, an individual stock of fish shall be managed as a unit throughout its range and interrelated stocks of fish shall be managed as a unit or in close coordination.
4. Conservation and management measures shall not discriminate between residents of different States. If it becomes necessary to allocate or assign fishing privileges among various U.S. fishermen such allocation shall be (1) fair and equitable to all such fishermen, (2) reasonably calculated to promote conservation and (3) carried out in such manner that no particular individual, corporation, or other entity acquires an excessive share of such privileges.
5. Conservation and management measures shall, where practicable, promote efficiency in the utilization of fishery resources; except that no such measure shall have economic allocation as its sole purpose.

6. Conservation and management measures shall take into account and allow for variations among and contingencies in, fisheries, fishery resources, and catches.

7. Conservation and management measures shall, where practicable, minimize costs and avoid unnecessary duplication.

However, scientific data are not available to backup these standards and it would be desirable to establish a baseline for evaluation as soon as possible. Later sections of this report and Working Papers Nos. 1, 2, 3, and 4 describe the lack or unreliability of necessary data for fisheries management. Until such data and analytical methods are developed, it is unlikely that management plans can be evaluated in any way which meaningfully reflects whether the plans have been effective in the past and what measures will be effective in the future.