Order Code RL30215

CRS Report for Congress

The Magnuson-Stevens Fishery Conservation and Management Act: Reauthorization Issues for the 107th Congress

Updated January 10, 2001

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ABSTRACT

The authorization of appropriations for the Magnuson-Stevens Fishery Conservation and Management Act expired at the end of FY1999, although the Act's requirements continue in force. At issue for the 107th Congress are the terms and conditions of any provisions designed to reauthorize and amend the Act to address the concerns of various interest groups. CRS queried numerous interest groups to identify issues likely to arise in reauthorization debate. This document outlines a number of potential issues, including: individual quota management programs; regional council decisions; bycatch; marine protected areas; essential fish habitat; fishery management data collection; the definition of *fishing community*; the fishery management plan review process; highly migratory species; fees; and ecosystem health and long-term resource productivity. This report will be updated periodically as the reauthorization debate progresses to include and discuss legislative proposals and additional issues that arise. Information on legislation related to the Magnuson-Stevens Fishery Conservation and Management Act in the 106th Congress can be found in CRS Report IB10010, *Fishery, Aquaculture, and Marine Mammal Legislation in the 106th Congress*.

The Magnuson-Stevens Fishery Conservation and Management Act: Reauthorization Issues for the 107th Congress

Summary

Fishery policy, guided by the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA), originally focused on mandates to identify fisheries, encourage underdeveloped fisheries, and establish databases for socioeconomic variables. Since that time new issues have emerged, including a recognition of the need to identify, measure, and respond to overfishing and to incorporate an ecological perspective in fishery management through increased attention to habitat. The MSFCMA was last reauthorized and extensively amended in 1996. Although the authorization of appropriations under the MSFCMA expired at the end of FY1999, the Act's requirements continue in force. At issue for the 107th Congress are the terms and conditions of any provisions designed to reauthorize and amend the Act to address the concerns of various interest groups.

To identify potential reauthorization issues, CRS queried commercial harvesters, recreational fishermen, fishery managers, fishery scientists, fish processors, fishery unions, and environmental organizations to identify matters that they expect to be discussed during a reauthorization debate. Identified issues include: 1) whether to rescind the present moratorium on individual quota management programs; 2) how to implement and finance fishing capacity reduction programs; 3) whether to require or designate marine protected areas; 4) how to assure that regional council decisions are fair and balanced; 5) whether to further specify approaches to address bycatch and bycatch mortality; and 6) whether to authorize user fees and other charges which could be used for conservation, management, and enforcement. Other prominent issues may include whether and how to increase fishery management data collection, how to define *fishing community*, whether to revise the fishery management plan review process, how best to manage highly migratory species, and whether to increase emphasis on promoting ecosystem health and long-term resource productivity. Because of the major changes that have occurred in marine fisheries since the MSFCMA originated in the mid-1970s, some suggest that the underlying management structure of U.S. fisheries should be overhauled to address the tension over whether fisheries should be managed at the regional or national level.

Potential participants in the reauthorization debate anticipate extended negotiations on some of these new issues and over how the 1996 amendments to the MSFCMA in the Sustainable Fisheries Act have been implemented. In the House, the Committee on Resources would have jurisdiction over any MSFCMA reauthorization legislation. In the Senate, the Committee on Commerce, Science, and Transportation would have jurisdiction on this issue. Although oversight field hearings were held and three MSFCMA reauthorization bills were introduced near the end of the 106th Congress, no bills were reported and no further action was taken. However, most of these issues are not time-sensitive, and both House and Senate Committees are likely to resume consideration of MSFCMA reauthorization as well as implementation and management issues early in the 107th Congress.

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Introduction

The Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) (P.L. 94-265, as amended, 16 U.S.C. 1801 *et seq.*) provides authority for federal fishery management in the waters of the U.S. Exclusive Economic Zone.[1] It was reauthorized and extensively amended in 1996 by the Sustainable Fisheries Act, P.L. 104-297. Although the MSFCMA's authorization for appropriations expired at the end of FY1999, the Act's requirements remain in force and funding is likely to be provided, even without reauthorization. At issue for the 107th Congress are the terms and conditions of any provisions designed to reauthorize and amend the Act to address the concerns of various interest groups. Congress will be asked to review the direction and criteria provided by the MSFCMA for allocating fish and shellfish harvest among domestic interests in an era of mounting private and public demands for these resources.

To identify the breadth of issues that might be brought before Congress during the upcoming reauthorization debate, CRS asked commercial harvesters, recreational fishermen, fishery managers, fishery scientists, fish processors, fishery unions, and environmental groups about their concerns and expectations for the debate. This report discusses the concerns of a broad cross-section of federal marine fishery management and conservation interests, to facilitate understanding the differing positions and to outline options for addressing policy concerns.[2]

To date, the Administration has not released any proposals related to MSFCMA reauthorization nor formally commented on many of the issues raised in this report. Congress has been active in and supportive of fishery conservation and management issues for many years, responding primarily to balancing concerns of environmental interests, Native Americans, and commercial and recreational fishing groups. Congress generally views the Act as working well, possibly needing only minor

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[1] The MSFCMA defines this zone as contiguous to the territorial sea of the United States and extending seaward 200 nautical miles measured from the baseline from which the territorial sea is measured. Generally, the federal government, through the National Marine Fisheries Service, has jurisdiction in waters from the outer boundary of state waters out to 200 nautical miles offshore.

[2] Respondents were guaranteed anonymity to facilitate a candid discussion of issues. Presentation of constituent opinion in this report represents a sampling, not a quantitative assessment.

changes to address concerns that have arisen since the 1996 amendments were enacted. In the House, the Committee on Resources would have jurisdiction over any MSFCMA reauthorization legislation. In the Senate, the Committee on Commerce, Science, and Transportation would have jurisdiction over any legislation on this issue. These Committees both held oversight hearings during the 106th Congress to review MSFCMA implementation and issues. Subsequently, three reauthorization bills (H.R. 4046, S. 2832, and S. 2973) were introduced, but none were reported and no further action was taken by the 106th Congress.

Constituency Groups

An array of groups and individuals hold common and conflicting interests in our nation's fisheries. Despite their diversity, they generally share the goals of ensuring sustainable fisheries and maintaining healthy ecosystems. These groups, however, often disagree about how best to achieve these goals and use our common resources, and thus, conflict is inevitable. The following descriptions are general characterizations. There is enormous variability and cross-over of membership among these groups, which often blurs the distinction among the concerns within each group. For example, fishery scientists may act as objective independent analysts or serve as advocates for a specific sector, with the same scientist performing such multiple roles on different issues. As Congress considers reauthorization of the MSFCMA, these diverse groups will advocate a wide variety of policies.

Recreational Fishing Interests.[3] In 1999, more than 7.8 million anglers fished in marine recreational fisheries, accounting for 56.9 million fishing trips.[4] The marine finfish catch was estimated to be almost 330 million fish, of which more than 59% were reported to have been released alive.[5] The estimated weight of the total harvest was almost 200 million pounds.[6] The overall economic impact of marine recreational fishing in 1996 was $25.1 billion,[7] angler expenditures totaled $8.7 billion,[8] and marine recreational anglers supported 287,707 jobs.[9] Components of the recreational sector include extractive (*e.g.*, individual fishermen) and non-extractive users (*e.g.*,

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[3] Many marine recreational fisheries occur entirely within state waters. Therefore, depending on the fishery, federal management under the MSFCMA may not be an issue.

[4] NMFS. *Fisheries of the United States, 1999*. Current Fishery Statistics No. 9900. October 2000. p. 26.

[5] *Id.*, p.26. NMFS does not provide an estimate of mortality after release. Several respondents note that, in some instances, mortality may be quite high.

[6] *Id.*, p.32.

[7] NMFS. *Accomplishment Report under the Recreational Fishery Resources Conservation Plan*. 1997. [http://www.nmfs.noaa.gov/irf/recaccmp97.html]

[8] U.S. Dept. of the Interior, Fish and Wildlife Service; and U.S. Dept. of Commerce, Bureau of Census. *1996 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation*. Washington, DC: Nov. 1997, p. 11.

[9] *Supra* note 8. This estimate is based on a series of "multipliers." Depending on the assumptions used in the calculation, the estimated economic effects may vary widely.

divers who do not spear, gather, or otherwise harvest marine life) as well as charter and other commercial operations catering to sport anglers.

A principal objective of this group is to receive equal consideration (relative to the commercial fishing sector) in decisions affecting access to and participation in U.S. fisheries. They are concerned that the substantial economic benefits to the nation of recreational fishing are not adequately recognized. Moreover, for fish conservation and habitat protection, recreational interests would like federal managers to distinguish between the impacts of recreational fishing and those of commercial fish harvesting. The balance between commercial and recreational interests varies widely among issues, species, and regions, with many regulations that restrict the activities of commercial fishermen, such as closed areas and quotas restrictions, having little parallel for the recreational sector.

Commercial Fishing Sector. In 1998, there were more than 75,000 commercial fishing vessels and fishing boats operating in U.S. marine fisheries,[10] and 4,733 processor and wholesale plants, employing 85,735 individuals.[11] In 1998, the total catch of marine fish in the 50 states was 9.3 billion pounds, with an estimated ex-vessel value[12] of $3.5 billion.[13] For 1998, the overall economic contribution of commercial fishing to gross national product (in value added) was estimated to be $27.2 billion.[14]

This sector is chiefly concerned with ensuring sustainable fisheries that balance environmental protection with the continued viability of their industry. Within this sector is a diverse group of interests, each with specific concerns regarding the rational use of living marine resources and the allocation of resources among user groups. These sectors divide according to scale of operation; type of activity (fishermen, catcher-processor, processor); type of fishing gear used (trawl, longline, gillnet, pots, seine); and location (inshore or offshore), with most of these subdivisions represented by an association that seeks to communicate constituent values and influence policy.

Environmental Groups. More than 50 national and many more regional and local U.S. environmental organizations focus primarily or largely on marine fishery issues or some aspect thereof. Membership in these groups ranges up to the millions, including many recreational and commercial fishermen. Relative to the MSFCMA, environmental groups are principally concerned with overfishing of certain fish stocks, the lack of assessment data for many managed stocks, the direct and indirect harm to other marine species (including marine mammals, sea turtles, and sea birds), the failure

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[10] *Supra* note 4, p. 94.

[11] *Id.*, p. 95. This number represents individuals employed by processors and wholesale plants. It does not include catching, transporting, or retail marketing of commercially caught fish, nor does it include jobs supported by commercial fisheries.

[12] Ex-vessel value is the money paid to the harvester for fish, shellfish, and other aquatic plants and animals, *i.e.*, dollar value of the harvest as it is offloaded from the boat.

[13] *Supra* note 4, p. iv.

[14] *Id.*, p. v.

of current methods to report bycatch[15] accurately, the protection of marine biodiversity, the continuing loss of essential habitat, and the nationwide failure to protect essential habitat from fishing and non-fishing impacts.

Native Americans. Because of their culture, tradition, and subsistence[16] needs, many tribes and indigenous groups are deeply concerned about the management of marine fisheries. Some are represented by Fishery Commissions that coordinate management with federal agencies. The long-term goals of tribes and indigenous groups generally include economic stability, resource sustainability, and regulatory certainty. Of particular concern during MSFCMA reauthorization will be cooperative management of marine fisheries, which they believe fosters economic vitality, environmental health, and rational management of natural resources.

Fishery Scientists. Scientists from academia, the private sector, and state and federal agencies are principally involved in analyzing the ecological, social, and economic effects of MSFCMA provisions and fishery management policy. Like the other groups, they are concerned with the health and integrity of marine ecosystems and the rational use of marine resources. Specifically, they are interested in the availability of adequate funding and accurate data to perform the necessary analyses. Many a fishery scientist, at some point in his/her career, may be employed as a fishery manager.

Fishery Managers. Federal and state fishery managers are charged with implementing the MSFCMA and complementary state programs. Because of this responsibility, their interests and concerns are more keenly focused on the pragmatic aspects of the MSFCMA. Specifically, they are interested in clarity in the intent of management requirements and in authorizations to fund data collection and research. Appointed members of fishery commissions and councils also act as managers when they determine fishery policy.

Fish and Seafood Consumers. Individuals and families seek to maintain access to a wide range of fish and seafood products in the marketplace in response to perceptions that these products are tasteful, nutritious, and healthy sources of protein. The stability, sustainability, safety, and diversity of supply, including international trade relationships, are important issues for these consumers.

The Magnuson-Stevens Act

Background

The 1945 Truman Proclamation, claiming U.S. jurisdiction over U.S. continental shelf resources adjacent to the U.S. coast, has been viewed as the advent of coastal

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[15] Bycatch is the incidental catch of non-targeted species, which are typically discarded (often dead) either because they are illegal to retain or an undesirable species, size, or sex.

[16] Some contend that subsistence is a non-issue, because no groups or communities in the United States are starving or are likely to starve as a result of fishery harvest restrictions.

nations extending territorial seas and declaring fishery and economic zones.[17] On September 28, 1945, President Truman issued a proclamation aimed at implementing conservation measures outside and adjacent to American territorial waters.[18] President Truman did not declare an "exclusive economic zone" nor claim rights to exclusive fishing, but his unilateral proclamations (on the seabed, its subsoil, and certain "conservation zones") served as the conceptual underpinnings of subsequent extensions.[19]

In the late 1940s and early 1950s, several Pacific Coast Latin American nations proclaimed marine jurisdictions extending 200 miles offshore. This was denounced by those within the United States and other distant-water fishing nations who sought to preserve access for far-ranging fishing vessels.

Beginning in the 1950s (Atlantic) and 1960s (Pacific), increasing numbers of foreign fishing vessels steamed into waters offshore of the United States to catch the substantially unexploited living marine resources. Since the United States then claimed only a 3-mile jurisdiction (a 12-mile U.S. contiguous fishery zone was proclaimed in 1966), foreign vessels could fish many of the same stocks caught by U.S. fishermen. U.S. fishermen deplored this "foreign encroachment" and alleged that overfishing was causing stress on, or outright depletion of, fish stocks. Unsuccessful Law of the Sea Treaty negotiations in the 1970s provided impetus for unilateral U.S. action.

The enactment of the Fishery Conservation and Management Act (FCMA) in 1976 (renamed in 1980[20] to honor the late Senator Warren G. Magnuson, and in 1996[21] to include Senator Ted Stevens) ushered in a new era of federal marine fishery management. The FCMA was signed into law on April 13, 1976, after several years of debate. Under the Act, on March 1, 1977, marine fishery resources beyond state jurisdiction but within 200 miles of all U.S. coasts came under federal jurisdiction. A new regional management system began allocating fishing privileges, with priority given to domestic enterprise. Primary federal management authority was vested in the National Marine Fisheries Service (NMFS) within the National Oceanic and Atmospheric Administration of the Department of Commerce. The FCMA's 200-mile fishery conservation zone was superseded by an Exclusive Economic Zone (EEZ), proclaimed by President Reagan on March 10, 1983.[22]

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[17] CRS Report IB95010. *The Law of the Sea Convention and U.S. Policy: Issue Brief*.

[18] *Policy of the United States with Respect to the Natural Resources of the Subsoil and Sea Bed of the Continental Shelf*, Proclamation No. 2667, 3 CFR. 67 (1943-1948).

[19] Jamison E. Colburn. "Turbot Wars: Straddling Stocks, Regime Theory, and a New U.N. Agreement." *Florida State University Journal of Transnational Law & Policy*. Vol. 6, No. 2, 1997. Footnote 73. [http://www.law.fsu.edu/transnational/issues/6-2/colb.html]

[20] P.L. 96-561 §238.

[21] P.L. 104-208 §208.

[22] Presidential Proclamation 5030. *Exclusive Economic Zone of the United States of America*. 3CFR Comp. 1983. p. 22.

The FCMA created eight regional fishery management councils. Based on provisions in the FCMA and guidelines provided by NMFS, the councils prepare fishery management plans (FMPs) for those fisheries that they determine require active federal management.[23] After public hearings, revised FMPs are submitted to the Secretary of Commerce for approval. Approved plans are implemented through regulations published in the *Federal Register*. Together these councils have implemented 34 FMPs for various fish and shellfish resources, with 11 additional plans in various stages of development. Some plans are created for individual or a few closely related species (*e.g.*, FMPs for red drum by the South Atlantic Council and for shrimp by the Gulf of Mexico Council). Others are developed for larger species assemblages inhabiting a similar habitat (*e.g.*, FMPs for Gulf of Alaska groundfish by the North Pacific Council and for reef fish by the Gulf of Mexico Council). Many of the implemented plans have undergone subsequent amendment (one more than 30 times), and three plans have been developed and implemented jointly by two or more councils.

Initially, a substantial portion of fishery resources in federal offshore waters was allocated for foreign fishing. However, foreign allocations diminished as domestic fishing and processing industries expanded. Under the FCMA, foreign catch from the U.S. EEZ declined from about 3.8 billion pounds in 1977 to zero since 1992. Commensurate with the decline of foreign catch, domestic offshore catch increased dramatically, from about 1.56 billion pounds (1977) to more than 9.8 billion pounds (1997). Thus, the share of fish caught by foreign nations from the U.S. EEZ declined from 71% in 1977 to 0.0% in 1992; foreign fishing has not been permitted in the U.S. exclusive economic zone since 1992. Total offshore fishery landings from the U.S. EEZ increased about 76% between 1977 and 1986-1988 to 6.65 billion pounds. In 1997, the marine recreational finfish catch was 234 million pounds, while the commercial sector landed 9.8 billion pounds of finfish and shellfish, an increase of about 32% in the past decade.

Reauthorization in 1996: The Sustainable Fisheries Act

In 1996, Congress approved and President Clinton signed the Sustainable Fisheries Act[24] (SFA; P.L. 104-297), amending the MSFCMA with new requirements to: 1) conserve fish stocks and restore overfished populations, 2) assure that membership on regional councils was fair and balanced, 3) impose a moratorium on the creation of new individual fishing quota programs, 4) increase emphasis on social benefits that might better preserve traditional small-scale fishermen, and 5) strengthen provisions to minimize bycatch and restore and protect habitat.

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[23] Subsequent to the 1996 revisions of the MSFCMA, fishery management plans for Atlantic highly migratory species are prepared by the Secretary of Commerce (NMFS) under consultation with relevant regional councils, advisors to international agreements, and advisory panels. See MSFCMA §304(g).

[24] For a summary of the evolution and passage of this law, see archived CRS Report IB95036, *Magnuson Fishery Conservation and Management Act Reauthorization*; for details on issues and concerns in 1993, see CRS Report 93-88 ENR, *The Magnuson Fishery Conservation and Management Act: Reauthorization Issues*.

The SFA established requirements that each fishery management plan (FMP) include a definition of overfishing, a plan for rebuilding overfished stocks (including stopping overfishing within 2 years and developing a rebuilding plan to rebuild overfished fisheries within 10 years), conservation and management measures to minimize bycatch, and a description of essential fish habitat for the species involved (including conservation and management measures to protect habitat).

Bycatch is the incidental catch of non-targeted species. These species are typically discarded (often dead) either because they are illegal to retain or an undesirable species, size, or sex. Such discards trigger concerns about environmental harm and economic waste. The SFA mandated that FMPs include standardized reporting to assess the amount and type of bycatch in managed fisheries. The Act also mandates conservation measures to minimize bycatch and unavoidable mortality of bycatch to the extent practicable.

Based on concerns that certain fish stocks had declined due to habitat loss,[25] the SFA established a national program to facilitate long-term protection of essential fish habitat (EFH).[26] The SFA requires councils to: identify and describe EFH for each managed fishery; identify and assess the harm and potential harm caused by fishing and non-fishing activities; minimize as much as possible the harm caused by fishing, which may include gear restrictions or time/area closures; identify harm to habitat of proposed fishing and non-fishing activities requiring federal or state approval or permits; and assist NMFS in recommending measures to conserve, enhance, and restore EFH.

Councils were given 2 years (until October 11, 1998) to revise or write FMPs to meet all the new requirements. The following section reviews progress toward implementing the SFA provisions and highlights areas of continuing concern.

Status of Implementation. NMFS and the eight regional councils are responsible for implementing the provisions and requirements mandated in the SFA. To comply with SFA requirements, NMFS drafted a strategy detailing the necessary implementation tasks.[27] Through this process, NMFS and the councils have addressed many of the SFA requirements. The NMFS *Implementation Activity List* indicates that much has been accomplished. However, environmental interests, fishery scientists, and some Members of Congress have expressed concerns over delays in implementation, about those tasks yet to be completed, and over how NMFS and the councils have interpreted the intent of Congress.

The Secretary of Commerce and NMFS. The MSFCMA requires the Secretary and NMFS to establish guidelines for regional councils in preparing FMPs.[28] Plans

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[25] See MSFCMA § 2(a)(2)(C); 16 U.S.C. 1801(2)(a)(2)(C).

[26] See MSFCMA § 305(b); 16 U.S.C. 1855(b).

[27] NMFS. *Sustainable Fisheries Act Implementation Plan*. 1996. This and other key NMFS documents are available at: [http://www.nmfs.noaa.gov/sfa/]

[28] MSFCMA § 301(b); 16 U.S.C. 1851(b). Guidelines. "The Secretary shall establish (continued...)

are approved by the Secretary and implemented by NMFS through regulations published in the *Federal Register*. The SFA established a number of requirements for the Secretary and NMFS. Tasks completed by the Secretary and NMFS include:

- revising national standard guidelines, including adding National Standard 9 (bycatch) and amending guidelines to strengthen bycatch regulations;
- revising 50CFR §§600.310 and 600.315 to redefine *optimum*, address the rebuilding of overfished stocks, specify criteria to identify and end overfishing, and establish programs to rebuild stocks;
- developing guidelines to assist councils in describing and identifying EFH;
- providing councils with recommendations and information on identifying threats to EFH, and conservation and enhancement measures for EFH;
- completing evaluation of gear used in EEZ fisheries and guidelines for notifying a Council or the Secretary on use of a non-listed gear;
- reporting to Congress policies and proposals to develop and implement a standardized fishing vessel registration and information management system;
- revising highly migratory species (HMS) FMPs and FMP regulations to conform to SFA definitions;[29] and
- interpreting overfishing and stock rebuilding provisions for catch and release recreational fishing.

NMFS has yet to complete several major tasks. These tasks include:

- providing guidelines for fishing capacity reduction programs;
- developing agreements with federal agencies for consultations on specific federal activities that may damage EFH; and
- reviewing programs administered by the Department of Commerce to ensure that relevant programs further the conservation and enhancement of EFH.

Regional Councils. Tasks that have been completed by the councils include: 1) preparing conservation and management measures to lower economic discards in North Pacific fisheries; and 2) preparing management procedures and regulations for measuring the entire catch in North Pacific fisheries, which must include a plan to Congress for weighing catch by processors and processing vessels. Among the major tasks not yet completed by the councils are: 1) revising management plans to make them consistent with SFA definitions; and 2) updating management plans to include required action on EFH, fishing communities, overfishing, and bycatch.[30] Many of the fishery management plan amendments required by the SFA have been completed by

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[28](...continued)
advisory guidelines (which shall not have the force and effect of law), based on the national standards, to assist in the development of fishery management plans."

[29] Some assert that NMFS failed to include measures to reduce bycatch.

[30] Some note that there is a distinction between completing tasks and submitting plan amendments to NMFS for final approval. They suggest that, rather than measuring "completion of work" by the number of plan amendments approved by NMFS, a better measure is the number of plan amendments adopted by regional councils within the time period specified by the MSFCMA.

the councils and submitted to NMFS for approval. As of March 25, 1999, the status of these amendments was[31]:

- Western Pacific Council: 4 plan amendments required; all have received partial approval from NMFS.
- Pacific Council: 3 plan amendments required; 1 has received partial approval from NMFS; 1 is under NMFS review.
- North Pacific Council: 10 plan amendments required; 9 have been approved by NMFS.
- Caribbean Council: 8 plan amendments required; 4 have received partial approval from NMFS.
- Gulf of Mexico Council: 14 plan amendments required; 7 have received partial approval from NMFS.
- South Atlantic Council: 14 plan amendments required; all are currently under NMFS review.
- Mid-Atlantic Council: 4 plan amendments; 3 are currently under review.
- New England Council: 8 plan amendments required; NMFS has approved 4; 2 have been partially approved; and 1 is currently under NMFS review.

Concerns About Implementation. The provisions and requirements of the SFA reflect significant changes to the goals and objectives of the MSFCMA, and full implementation of these provisions is of great concern to many groups. Accordingly, there is considerable interest in the actions of regional councils and NMFS in implementing the SFA.

Of particular concern to environmental groups and some Members of Congress is the progress of NMFS and councils in implementing SFA requirements. In their review of proposed FMP amendments, these interests suggest that councils have instituted only incremental changes to current management practices. They contend that councils have satisfied only the minimum requirements and, in some cases, failed to comply with the law, rather than fully embracing the new goals and objectives. Moreover, they suggest that NMFS precipitated the poor performance of councils by delaying implementation guidance and by allowing substantial latitude in how councils implement the SFA provisions. Some commercial fishermen contend that the standards established by NMFS guidelines are unrealistic, given the dearth of scientific information. They contend that this has resulted in assumption-based and model-based goals that are at odds with implementing meaningful protection measures. Moreover, some commercial fishing interests contend that, given the magnitude of tasks set before councils and NMFS, the timetables established by the SFA were unrealistic, hence, delays were inevitable. NMFS has not formally commented on these criticisms. Their efforts to date have focused on accomplishing the myriad tasks set forth in the SFA and implementing the law, rather than on addressing the concerns of citizens who may disagree with their strategy or progress thus far.

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[31] In some instances, the number of plan amendments in review or approved do not equal the number of plan amendments required. This may be because councils have yet to submit plan amendments to NMFS or plan amendments have been submitted, but are not currently under review.

Overfishing. Environmental groups expressed concern over regulatory exemptions to the national standard that requires conservation and management measures to prevent overfishing.[32] They suggest that, by allowing overfishing to continue, NMFS's interpretation weakens the law and endangers depleted stocks, and that economic returns are being valued over ecological concerns. Congressional concern has also been expressed over what is perceived as NMFS permitting councils to miss deadlines and delay actions to end overfishing and rebuild stocks.[33] Environmental groups contend that, rather than using 10 years as an upper limit on stock recovery, councils have uniformly adopted 10 years as a standard recovery period. Environmental groups also suggest that fishery rebuilding plans, in some instances, do not account for overfishing caused by recreational fishing.[34] The Mid-Atlantic Council's FMP for summer flounder, for example, contains no additional management measures to address overfishing in the recreational fishery.

Other concerns include: 1) continued fishing above the rate that produces maximum sustainable yield; 2) lack of status assessments for many managed species; 3) failure of some councils to establish criteria to identify when a stock is overfished; 4) failure of some councils to ensure overfished stocks will be rebuilt within the time frames established by the MSFCMA; 5) delay of rebuilding plans for stocks needing immediate protection; and 6) lack of overfishing definitions that are based on the biology of each stock.

Additional comments include: 1) the only way to rebuild a stock is to declare a moratorium and wait for the natural rebuilding cycle to occur, and then resume fishing; and 2) councils should be penalized for failure to meet targets to curb overfishing.

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[32] 50 CFR part 600.310(d)(6). NMFS explains that, because harvesting one species in a mixed-stock complex at its optimum yield may result in overfishing of another stock in the complex, councils may permit overfishing only if all of the following conditions are satisfied: (i) it will result in long-term net benefits to the nation; (ii) mitigating measures have been considered and a similar level of long-term net benefits cannot be achieved by modifying fleet behavior, gear selection/configuration, or other technical characteristic in a manner such that no overfishing would occur; and (iii) the resulting rate or level of fishing mortality will not cause any species or evolutionarily significant unit thereof to require protection under the ESA.

[33] For example, the Pacific Fisheries Management Council has proposed a groundfish fishery FMP that would arguably continue overfishing the mixed-stock groundfish fishery. Others state that this argument is an oversimplification of a complex management plan, contending that substantial harvest reductions have been made for two of the three species designated as overfished. The third (Pacific ocean perch) is a long-lived species, whose biomass estimate is uncertain, but may take more than 10 years to rebuild. Thus, they argue that the Pacific Council's harvest policy complies with the National Standards under the MSFCMA.

[34] Some contend that, in the South Atlantic and Gulf of Mexico fisheries, anglers far outfish commercial harvesters for those species targeted by sportfishermen.

Bycatch and bycatch mortality. Environmental groups assert that councils' draft FMPs generally do not meet the SFA requirements.[35] They charge that, at best, councils have concentrated their efforts on developing strategies and procedural measures, rather than taking direct action to minimize bycatch and bycatch mortality. Environmental interests also contend that many councils (*e.g.*, New England, Mid-Atlantic, Gulf of Mexico, and Caribbean Councils) neglected to submit FMP amendments that addressed SFA bycatch requirements.

Some environmental groups contend that most councils have failed to assess the adequacy of current bycatch reporting methods and identify what is necessary to establish standardized bycatch reporting methods. Specific recommendations include: accurate quantification of bycatch of target species (fish discarded because they are not marketable) and non-target species (fish caught incidentally); accounting for catch and bycatch before catch is sorted; and expanding the use of NMFS observers to measure total catch.

Essential Fish Habitat. Environmental groups commend the councils for their success in identifying and describing EFH. However, these groups suggest that, while there have been some strides in addressing the harm caused by fishing and non-fishing activities, most councils have yet to establish measures to reduce the harmful effects of fishing activities on habitat. Some environmental groups view this lack of action as a major shortcoming of EFH implementation, and suggest that congressional action might be required to force regional councils to act.

Fishing capacity reduction. NMFS has been criticized for delays in developing guidelines for fishing capacity reduction programs. The proposed rule for fishing capacity reduction programs was published February 11, 1999 (64 *Fed. Reg.* 6854). Critics suggest that these delays have resulted in the implementation of inconsistent fishing vessel and license buy-back programs, and that NMFS has a duty to provide an overall framework to guide capacity reduction programs. In contrast, other respondents note that: 1) there is no statutory mandate requiring NMFS to produce capacity reduction guidelines, and that priority is given to producing statutorily mandated guidelines; 2) no buy-back programs have been implemented under MSFCMA §312; and therefore, delays could not have resulted in inconsistent implementation; and 3) the MSFCMA does not require national consistency and provides for a variety of mechanisms to fund capacity reduction programs.

Additionally, some fishery scientists and environmental groups state that efforts should be made to reduce effort in fisheries before they reach overfished status. They suggest proactive reductions in capacity, aimed at preventing further declines, rather than waiting to react to stock collapse.

Subsequent Developments

On October 23, 1998, the President Signed into law modified language from S.1221 (the American Fisheries Act — AFA) as part of the Omnibus Consolidated

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[35] The Marine Fish Conservation Network and The Center for Marine Conservation. *Missing the Boat*. Washington, DC: 1999. p. 2.

and Emergency Supplemental Appropriations for Fiscal Year 1999 (P.L. 105-277). These provisions: 1) require owners of all U.S.-flag fishing vessels to comply with a 75% U.S.-controlling interest standard; 2) identify eligible participants for the Bering Sea and Aleutian Islands walleye pollock fishery; 3) include a vessel buy-back program for nine catcher/processor vessels financed by federal and private sector funds; 4) establish pollock allocations for three separate industry sectors; and 5) establish protocols for fishermen's and fish processor's cooperatives in the Bering Sea and Aleutian Islands walleye pollock fishery. The AFA prohibits the entry into any MSFCMA managed fishery[36] of any new fishing vessels exceeding 165 feet in length, or 750 tons, or with engines that produce greater than 3,000 horsepower, unless the Secretary of Commerce and the relevant fishery management council approve the use of the vessel.

In the 106th Congress, P.L. 106-31 included language in §3025 making permanent a one-year moratorium (included in P.L. 105-277) on operating large fishing vessels in the north Atlantic herring and mackerel fisheries until regional action is taken. In addition, Title VI of P.L. 106-450 authorized the Secretary of Commerce to acquire and equip fishery survey vessels (Title VI), and P.L. 106-557 prohibited shark finning in U.S. waters. Although three bills (H.R. 4046, S. 2832, and S. 2973) were introduced late in the 106th Congress proposing to amend and reauthorize the MSFCMA, no action was taken on any of these measures.

Issues for the 107th Congress

The remainder of this report discusses issues which may be considered during any reauthorization debate on the MSFCMA in the 106th Congress. However, few fishery issues are national in scope, and regional concerns vary greatly; what may be a major concern in one region may be inconsequential in another. Thus, many of these issues are likely to be debated in a regional, rather than national, context. Some of the more controversial issues which may be addressed during reauthorization include: 1) whether to rescind the moratorium on individual quota management programs in §108(e) of the SFA; 2) how to implement and finance fishing capacity reduction programs; 3) whether to legislate the designation of marine protected areas; 4) how to assure that regional council decisions are fair and balanced; 5) whether to further specify the approaches to address bycatch and bycatch mortality; and 6) whether to remove the restriction on fee collection to permit user fees and other charges, which could be used for conservation, management, enforcement, and other purposes. Many of these issues were addressed in 1996.

Another matter of likely debate is the current management structure of regional councils and agency regulation and how they affect fisheries management. The issue before Congress is whether fisheries management could be improved through increased legislative control over council decision-making or by providing councils greater autonomy over their management activities. Those in favor of increased

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[36] Except for vessels fishing in the U.S. EEZ under the authority of the Western Pacific Fishery Management Council or purse seine vessels engaged in tuna fishing in the Pacific Ocean outside of the U.S. EEZ, see P.L. 105-277§202(a)(5).

legislative control argue that it could quiet criticisms that fishery managers misinterpret the intent of Congress and decrease perceived conflict of interest in council decision-making. Conversely, local communities would likely be concerned that national management would lose sight of local issues. Others contend that increased congressional involvement in managing fisheries could lead to increased politicization and further increase the time it takes to respond to problems and concerns.

Other prominent issues may include whether and how to increase fishery management data collection efforts, how to define "fishing community," whether to revise the FMP review process, how best to manage highly migratory species, and whether to increase emphasis on preserving ecosystem health and long-term resource productivity. Some of these issues have arisen repeatedly, and the MSFCMA often has been amended in attempts to resolve them.

To increase the usefulness and readability of this report, the issues and concerns that follow are grouped according to similarity in subject matter. The order in which this information is presented does not represent a ranking or hierarchy of importance.

Essential Fish Habitat

Section 305(b) of the MSFCMA establishes requirements for identifying, describing, conserving, and enhancing EFH. Section 303(a)(7) requires FMPs to minimize the harm to EFH caused by fishing. Section 303(a)(8) establishes requirements for scientific data needed to implement FMPs. Section 3(10) defines EFH.

Fishery scientists, environmental groups, and commercial and recreational fishing interests are concerned about how NMFS, the regional councils, and others have interpreted these EFH provisions. Additionally, the lack of tangible scientific data has been widely viewed as a hindrance to identifying, describing, and conserving essential habitat.

Definition. The MSFCMA defines EFH as "those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity." There is considerable debate about how to distinguish between essential and non-essential habitat. The aquatic environment has few clearly defined boundaries. Thus, habitat necessary to support fisheries is not easily recognizable or quantifiable. For example, salmonids use a wide range of aquatic environments, from open ocean to estuaries to inland rivers and lakes. It has been argued that each of these areas is essential to salmon during some point in their life. Therefore, any activity that occurs in this range of habitat could harm "those waters and substrate necessary to fish," including fishing, shipping, farming, timber harvesting, and hydropower production. If regulations to protect EFH were deemed necessary,[37] they could possibly result in broad economic effects. Others contend that only portions of these environments may

[37] Currently, EFH provisions under the MSFCMA are not regulatory. As noted previously, these provisions require regional councils (and NMFS for highly migratory species) to identify, describe, conserve, and enhance EFH.

be essential to salmon. This would require regulators to examine ways to distinguish between essential and non-essential habitat.

This distinction, however, is problematic. Managing an unbounded natural environment often necessitates drawing imaginary lines to regulate human activities within that environment. To protect fish and other marine life from harmful human activities, the MSFCMA required councils to describe and identify essential habitat. However, the unlimited ocean environment combined with limited scientific information about fish life histories and habitat needs can result in somewhat arbitrary definitions of *essential*. This ambiguity raises concerns among constituents about how regional councils are to define EFH.

Some fishery scientists express concern that regional councils have defined EFH for some species in overly broad terms. For example, the Pacific Council defines essential habitat for salmonids to include all waters of the EEZ and all freshwater areas that do contain or have contained salmon. These scientists are concerned that councils have not distinguished between *essential* and *non-essential* parts of a range of habitat, choosing instead to define all habitat as essential. These scientists suggest that by perhaps modifying the definition of EFH, Congress could better direct how councils are to make EFH determinations. Some scientists suggest modifying §305(b) to include a simple statement that fish habitat is divided into those areas that are essential and those that are non-essential; that an explanation is to be included in the FMP of the criteria by which these determinations are made; and that actions that damage EFH be described. Other scientists believe that attempts to divide habitat into essential and non-essential components would be unworkable (most notably because of the lack of scientific data) and create further delays in implementing EFH provisions. They support EFH designations based on available scientific data.

In addition, scientists from the environmental community contend that the definition of EFH is not the problem, rather it is the lack of data. They believe that NMFS and councils have appropriately used a precautionary approach in identifying EFH. In their opinion, councils did not define EFH arbitrarily, rather councils used fish distribution as a proxy for essential habitat in defining the EFH boundaries. They assert that the controversy lies in where, within the bounds of EFH, should fish distribution be defined as *essential*. Because data are not available to ascertain the exact relationship between fish and habitat, they believe that most councils have correctly used stock distribution and density data to identify EFH. Moreover, they note that as more and better data become available, EFH can be narrowed through revisions to the EFH provisions in fishery management plans.

Other suggestions for identifying and describing EFH include: 1) because of its critical importance to fish survival, include all substrate areas that a demersal[38] or non-demersal species uses during any part of its life history as EFH, and, where possible, divide into primary, secondary, tertiary, *etc*. habitat; 2) distinguish between essential habitat and critical habitat, with critical habitats defined as those areas where

[38] Living near, deposited on, or sinking to the bottom of the sea.

significant ecological harm could imperil the species or stock in question;[39] and 3) increase the strength of EFH provisions relating to state waters, non-fishing activities, and land-use practices that influence EFH.

In addition to addressing the definition of essential habitat, some commercial fishing interests recommend that Congress define the context for judging *harm*.[40] They note that, in the North Pacific Fishery Management Council discussions about EFH, each species may be viewed as *habitat* for another species (because of predator-prey relations and other life history needs). Thus, they contend that plankton is habitat for herring, herring is habitat for salmon, salmon is habitat for sea lions, *etc*., and harvest of any species might constitute *harm* to another species. Moreover, they note that successful predators inevitably modify their environment to some degree, and fishermen function as predators in the marine environment. Fishing is not a benign activity: it causes change within the marine environment. In their opinion, these changes inevitably harm some species and benefit others. These commercial fishing interests believe that sustainability of the overall system should be the goal, and that Congress might consider clarifying the definition of *harm*, especially in terms of harm to EFH caused by fishing, as referred to at §307(a)(7).

Research Needs. While not specifically addressed in the MSFCMA, data are critical for identifying, describing, and conserving EFH. Whether constituencies perceive the EFH provisions as beneficial to fishery management or as restricting fishing opportunities, virtually all believe more research is required to better define the linkages between habitat and fishery productivity, determine the extent of harm caused by fishing and non-fishing activities, and assess the need for "protected areas" to protect habitat and conserve fish stocks.

Various interests commend ongoing efforts to describe and identify EFH, but note that additional research is needed to learn the habitat requirements of fish at various life history stages; the role of submerged aquatic vegetation, reefs, "cover" in salmon streams, mangrove forests, and wetlands; and the linkages between habitat, fishery production, and ecosystem health; and to map habitat areas. Thus, it is likely that fishery scientists, environmental groups, and commercial and recreational fishing interests will ask Congress to consider authorizing research focused on habitat and its role in ensuring sustainable fisheries.

Marine Protected Areas

A marine protected area (MPA) is a part of the marine environment that has been set aside to protect the plants, animals, and cultural features in that area. An MPA could include underwater areas close to the coast or offshore; reefs and seagrass beds; and shipwrecks and archaeological sites. MPAs could also include estuarine and intertidal areas, including tidal lagoons, mudflats, saltmarshes, mangroves, and rock platforms. Marine protected areas are not specifically addressed in the MSFCMA, but

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[39] For example, the EFH regulations encourage regional councils to identify Habitat Areas of Particular Concern (*i.e*., rare or ecologically important areas of EFH) to focus EFH protection efforts.

[40] Section 303(a)(7) requires FMPs to minimize harm to EFH caused by fishing.

may be discussed as one possible means for rebuilding fisheries and protecting essential fish habitat (see §§304(e) and 305(b), respectively of the MSFCMA).

MPAs may enhance fisheries by protecting fish breeding and nursery areas, such as seagrass beds, mangrove communities, and reefs. MPAs may replenish fisheries by providing a haven for fish to grow and reproduce. Adult fish may then move from MPAs into adjoining areas, enhancing fishery production. Proponents of MPAs claim that protected areas may be beneficial in curbing overfishing, rebuilding depleted stocks, preserving ecosystem integrity, and protecting EFH. Specifically, they suggest that MPAs can prevent overfishing by providing a hedge against uncertain stock assessments, rebuilding depleted stocks by allowing older and more reproductive individuals to survive, alleviating the impacts of fishing on habitat, providing reference sites to assess fishing and non-fishing impacts, and providing a refuge for bycatch species.[41]

Some believe that MPAs are a promising management tool, but one highly subject to political manipulation. They assert that for MPAs to be effective, a significant portion of essential habitat should be included in a protected area. They contend, however, that commercial and recreational fishing interests will use political pressure to restrict MPA classification to *suboptimal* habitat. To ensure that MPAs provide real benefits in terms of fish production and habitat protection, they recommend that exploitation of fish stocks in protected areas be eliminated or limited to catch-and-release sportfishing.

Other respondents suggest that all seagrass beds, mangrove areas, and reefs should be considered for listing as MPAs. They believe that "core" areas can be identified and should be closed to all activities, except limited scientific purposes. With respect to coral reefs, some respondents contend that one of the most detrimental activities to fish populations is spear fishing with the aid of scuba gear. They recommend that this activity be eliminated if heavily fished coral reefs are to recover.

Some commercial and recreational fishing interests are likely to counter proponents claims by noting that there is no scientific proof that MPAs accomplish what their supporters contend. They and other opponents are likely to ask Congress to consider the economic losses that may result from designating MPAs and closing areas. These groups will likely ask for more scientific research before closing areas, reducing fishing opportunity, and imposing economic costs on users. They also note that while MPAs may be a useful tool within a management system, councils should not be mandated to use MPAs, and that the MSFCMA currently does not prevent councils from designating marine protected areas.

Moreover, some critics of MPAs contend that, while establishing a reserve to protect and maintain sessile or largely non-mobile stocks or species may be prudent,

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[41] Some fishery scientists note that the scallop closed area on Georges Bank provides an excellent example of the benefits of MPAs. In this area, fishing has been prohibited for several years and recent bottom trawl survey data indicate a buildup of yellowtail flounder and large numbers of scallops.

highly mobile animals will not recognize protected area boundaries. Thus, protective measures, such as no-take zones, will be ineffective at best. At worst, they assert that ecosystem balance may be jeopardized.[42]

Finally, some scientists note that although MPAs may initially benefit depleted stocks by allowing rebuilding, additional research is needed on the problems created from overcrowding and increased density of fishing vessels when areas are closed for an extended period of time. They note that scientific studies already suggest that overcrowded and high density fishing can lead to health problems and poor reproduction in marine species. They conclude that periodic and monitored fishing in closed areas may be appropriate after rebuilding has occurred.

Other comments include: 1) MPAs will not end the race-for-fish; 2) managers should also consider the broad array of economic benefits and costs, including the potential growth, of non-extractive ecotourism industries in association with MPAs, *e.g.*, displaced fishermen might become involved in non-extractive dive trips; 3) closures should affect all sectors equally (in the opinion of some commercial fishermen, current closed areas have resulted in highly unequal treatment among gear sectors); and 4) designations of MPAs should be made by councils, not Congress.

Discussions about EFH may lead to debate over whether MPAs are a means to conserve stocks and protect habitat. The level of protection may vary between MPAs. Some MPAs could allow a wide range of activities (including fishing) while others might have more stringent restrictions, possibly prohibiting all human activities. The size of an MPA would depend on its intended purpose. MPAs created to protect shipwrecks could be quite small, while those that aim to protect whole ecosystems may need to be much larger.

Issues that Congress may face include the rationale for creating MPAs and methods for selecting areas to protect, the types of activities that would be permitted or prohibited and why, a review of existing closed areas[43] (including assessing their effectiveness), and research to determine the benefits and costs of creating MPAs.[44]

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[42] These individuals offer as an example potential closures in the Bering Sea walleye pollock fishery because of a presumed effect on Steller sea lions. "Pollock is about the only thing available, but there is evidence pollock isn't a very good food source for the sea lions. It seems the sea lions really do better on a diet of small fatty fish, which need kelp beds as habitat, which are being decimated by skyrocketing sea urchin populations, which are not being kept under control by sea otters, because the sea otters are being eaten by killer whales, which are eating sea otters because they can't find sea lions, because the sea lions can't find the forage fish that live in the kelp beds."

[43] Areas of the marine environment have been closed to all or specific activities for a variety of reasons; *e.g.*, marine sanctuaries designated under the Marine Protection, Research, and Sanctuaries Act (16 U.S.C. 1431 *et seq.*); regulatory closures in the Bering Sea and Aleutian Islands to protect crab, salmon, herring, and marine mammals [http://www.fakr.noaa.gov/npfmc/closures.pdf]; Oculina Banks Experimental Reserve established by the South Atlantic Council; and the Tortugas Shrimp Sanctuary.

[44] The creation of MPAs was promoted by President Clinton's signing of Executive

(continued...)

The difference between *no-take* marine reserves (areas closed to all resource extraction) and *mixed-use* areas (areas with gear-type or time/area restrictions, but where limited fishing is permitted) may also become an issue in the debate over the merits of designation MPAs. Fishing groups would be likely to ask for consideration of the differences between recreational and commercial fishing, and the relative effects of various types of commercial gear and operational characteristics.

Bycatch

Section 2(c)(3) of the MSFCMA encourages development of measures to minimize bycatch to the extent practicable and avoid the unnecessary waste of fish. Section 301(9) establishes a national standard that requires conservation and management measures to minimize bycatch and bycatch mortality.

The Definition of Bycatch. Some fishery managers suggest that the definition of bycatch may need to be reviewed as it is important to the practical implementation of bycatch controls in the MSFCMA. The MSFCMA currently contains definitions (MSFCMA § 3; 16 U.S.C. 1802) for bycatch,[45] economic discards,[46] and regulatory discards.[47] These managers assert that, while these definitions may seem clear, in practice they are quite problematic. Bycatch, in essence, pertains to fish and non-fish species that are discarded. Thus, one direct way for regional councils to reduce discards would be to require retention and utilization of all catch. However, these managers and others suggest that this does not address the incidental catch of non-targeted species. Moreover, these individuals suggest that the definition of economic discards is of little practical use, contending that it might better be described as "any discard that is not a regulatory discard." They also note that in many fisheries it is difficult to accurately determine the amount of regulatory discards. For example, NMFS fishery observers in North Pacific groundfish fisheries collect data on total catch weights and estimate the percent of catch retained (the difference being an estimate of the amount discarded). The accuracy and reliability of these estimates are often questioned. As a means to better estimate total fishing mortality, the SFA mandated standardized reporting to assess bycatch. These managers assert, however, that collecting accurate data may pose a substantial financial burden and may be infeasible.

As an alternative, these individuals suggest that bycatch, by definition, should include retained and discarded incidental catch of fish and non-fish species (*e.g.*, sea birds), and that the terms *economic* and *regulatory* discards should be eliminated.

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[44](...continued)
Order 13158 (May 26, 2000) on Marine Protected Areas.

[45] Bycatch is fish harvested in a fishery, but not sold or kept for personal use, and includes economic discards and regulatory discards. The definition explicitly excludes fish released alive under a recreational catch-and-release fishery management program.

[46] Economic discards are fish targeted by the fishery, but which are not retained because they are of an undesirable size, sex, or quality, or for other economic reasons.

[47] Regulatory discards are fish harvested in a fishery which fishermen are required by regulation to discard whenever caught, or are required by regulation to retain but not sell.

Additionally, congressional consideration of how best to discourage bycatch might also include initiating and monitoring full retention of catch, with requirements for donating prohibited species to charitable organizations.

Similarly, some commercial fishing interests contend that the concept of regulatory discards needs to be addressed, especially if the commercial sector is to support fishery management strategies. They assert that the principle that "fish are better discarded dead than brought to market" undermines any possibility of industry support for management actions. They point to the summer flounder fishery, where as much as half of the total allowable catch quota is discarded because of regulation.

Considerations for Reducing Bycatch. Despite the legislative and regulatory efforts of Congress, NMFS, and the regional councils to address bycatch and waste, these issues are still of great concern to the public, environmental organizations, recreational anglers, and commercial fishermen. During reauthorization, these groups may suggest that Congress consider:

- creating additional incentives for commercial and recreational fishermen to avoid bycatch or reduce bycatch mortality of incidentally caught species (*e.g.*, individual or vessel bycatch allowances)[48];
- directing NMFS to implement increasingly stringent regulations that close fisheries or penalize individuals for high levels of bycatch and bycatch mortality, and increase funding for enforcement;
- funding research for innovative fishing gear that reduces bycatch and/or bycatch mortality;
- creating tax incentives for using bycatch reduction devices;
- allowing non-profit utilization of fish that would otherwise be discarded; and
- increasing funding for NMFS to research and develop bycatch reduction measures.

Some additional options to create incentives for avoiding bycatch might be to:

- increase funding for NMFS observers onboard vessels to obtain reliable bycatch data;
- strengthen the definition of bycatch to directly address the problems of non-selective fishing practices, and correct the misinterpretation that equates dead discards of non-target fish with voluntary release of target fish; and
- require all sources of mortality, including dead discards, be counted against total allowable catch quota.

Incentives for Developing Innovative Gear and Techniques. Some fishery scientists suggest that the use of new fishing gear could greatly reduce bycatch and

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[48] Two specific comments about vessel bycatch allowances (VBAs): 1) some fishermen contend that VBAs are both efficient, in that they provide the proper incentives for reducing bycatch, and equitable, in that they reward individuals who avoid bycatch or reduce bycatch mortality; and 2) conversely, some environmental groups and other fishermen assert that VBAs provide no guarantee that bycatch will be reduced below what is currently allowed because, once a certain amount of bycatch is allocated, it might be difficult to reduce it.

bycatch mortality. Currently, the use of new gear is regulated by the *List of Fisheries and Gear*, and *Notification Guidelines* (50 CFR 600.725(v) and 50 CFR 600.747(H), respectively).[49] The *Notification Guidelines* establish a process for notifying councils (or NMFS, in the case of Atlantic HMS) of the intent to use new gear[50] and guidelines for approving new gear.[51] Some fishery scientists are concerned that this process is burdensome and discourages the development and use of new fishing gear. They may suggest that Congress review the process by which regional councils authorize the use of new fishing gear, and consider ways to encourage the development and use of innovative fishing technologies.[52] Specific to the development of innovative fishing gear, Congress may also be asked to require councils to include several additions to FMPs, including:

- requirements for developing and implementing bycatch reduction plans;
- specific funding to study gear that reduces bycatch;
- fishing credits while developing bycatch reduction devices; and
- technical assistance programs to help design and conduct statistically valid studies for assessing the effectiveness of bycatch reduction devices.

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[49] 64 *Fed. Reg.* 4030, Jan. 27, 1999.

[50] No person or vessel may use fishing gear or participate in a fishery (commercial and recreational) not included in the list without giving 90 days advance notice to the appropriate council or the Secretary (64 *Fed. Reg.* 4031, Jan. 27, 1999).

[51] If a regional council finds that the new gear or fishery would not compromise the effectiveness of conservation and management efforts under the Magnuson-Stevens Act, the council will recommend to the regional administrator that the authorized list of fisheries be amended (64 *Fed. Reg.* 4031, Jan. 27, 1999).

[52] Experimental fisheries are regulated under 50 CFR 679.6, which allows regional administrators to authorize experimental fisheries for groundfish in a manner that would be otherwise prohibited. Some note that NMFS's centralized control of scientific, experimental, and exempted permits has resulted in long delays in processing applications. They recommend making permits available on a regional basis.

Fishing Capacity Reduction[53]

Section 312(b)-(e) of the MSFCMA describes the use of fishing capacity reduction programs as a means to prevent overfishing, rebuild stocks, or improve conservation and management. The objective of capacity reduction programs, as stated in §312(b)(2), is "to obtain the maximum sustained reduction in fishing capacity at the least cost and in a minimum period of time."

Reducing fishing capacity, especially vessel buy-back,[54] is likely to be a major issue during reauthorization. Some recreational and commercial fishermen as well as environmental groups want buy-back programs that effectively and completely remove a vessel from all U.S. fisheries.[55] Without this, these groups fear that individuals or groups of individuals could receive compensation for exiting one overcapitalized fishery and then entering another fishery in which entry is not limited. This movement from one fishery to another displaces current participants and could result in other overcapitalized fisheries. Other fishermen favor the buy-back of only fishing permits, allowing vessel owners to continue using permits they own for other (non-buy-back) fisheries.

Additional considerations for vessel buy-back programs include:

1. benefits may be minimal if only marginal operations (*i.e.*, least-efficient operators or fishermen who fish only occasionally) are bought out;
2. individuals who hold fishing permits but do not currently use them (latent effort) may enter into the fishery as others exit, offsetting reductions in capacity;
3. whether the benefits to the resource outweigh the social and economic costs to the community, and other requirements under the Regulatory Flexibility Act (P.L. 96-354);
4. compensating a boat owner does not financially help the captain or crew, nor their family members, who have now lost a source of income;
5. educational and vocational programs for the newly unemployed or bought-out maritime personnel;
6. broader unemployment and other economic implications for the community, *e.g.,* marine businesses that may suffer substantial income loss as the number of fishing vessels and processing plants declines; and

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[53] Excess fishing capacity decreases economic efficiency and often leads to overfishing. Reductions in fleet capacity would help to reduce overfishing and greatly improve the ability to deal with uncertainty and unexpected events in fisheries. National Academy of Sciences. *Sustaining Marine Fisheries*. Washington, DC: 1999. p. 119.

[54] Vessel buy-back is one means to reduce capacity in fisheries. Harvesters are paid to surrender their fishing permits and/or withdraw their vessels from fishing. See CRS Report 97-441 ENR, *Commercial Fishing: Economic Aid and Capacity Reduction*.

[55] Environmental groups argue that, to effectively reduce fishing capacity, "bought-out" vessels should also be prevented from entering fisheries outside of the United States. In their opinion, exporting domestic capacity leads to global fisheries depletion, which ultimately affects U.S. interests beyond the U.S. border.

7. the effectiveness of past buy-back programs, which critics contend have generally been inefficient at reducing fishing capacity.

NMFS notes that capacity reduction costs could be paid by harvesters that remain in a post-reduction fishery, or by taxpayers or others. Additionally, Congress may consider whether a portion of the proposed Lands Legacy Initiative funding could be used to fund vessel reduction programs.[56] In essence, there are three funding options that could come before Congress for capacity reduction programs: 1) government funding (tax payer), 2) industry funding, or 3) joint government-industry funding.

Some in the fishing industry strongly believe that, because government subsidy programs encouraged vessel construction, which lead to the overcapitalized fishery, the government should subsidize the buy-back.[57] That is, fishermen should not have to pay to remove capacity (effort) that the government was partly responsible for creating. Fishermen are divided as to whether or not the program should be industry- or government-funded. Fishermen who support an industry-funded program argue that more control would then have to be given to the industry regarding the procedures for a vessel-reduction program. Fishermen who support a government-funded program argue that it "adds insult to injury" to make fishermen pay for programs designed to "put them out of business."

Other respondents posit that, because harvesters reap benefits from improving the fishery and contributed to the depleted condition of some stocks, harvesters should bear the brunt of the cost for reducing fishing capacity. They contend that many of the vessels used to exploit U.S. marine resources were subsidized through the Capital Construction Fund. As such, the government should not be expected to pay for vessels a second time and pay owners not to fish.[58] They assert that, because buy-back programs will chiefly benefit those who remain in the fishery after capacity is reduced,[59] post-reduction harvesters should fund the buy-back.

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[56] This initiative contains a provision to "develop a new program in NOAA's National Marine Fisheries Service to restore declining fisheries in most coastal areas, including areas that participate in EPA's National Estuary Program or have multiple threatened or endangered species. The cost would be $25 million in FY2000." See CRS Report IB10015, *Conserving Land Resources: the Clinton Administration Initiatives and Legislative Action*.

[57] Some believe that this argument defies logic, contending that the industry lobbied in favor of the subsidy programs, *i.e.*, subsidies were not foisted on an unwitting industry.

[58] Some argue that fishermen are largely responsible for overcapitalization. Contending that, while NMFS did administer capital construction programs, the decision to build or modify vessels were business decisions of the owners, and to blame the government for overcapitalization is nonsense, particularly for the New England fleet. New England's groundfish fisheries were declared a "conditional fishery" in the early 1980s, and no longer eligible for the Fisheries Obligation Guarantee program authorized by Title XI of the Merchant Marine Act of 1936, (CRS Report 95-460 ENR *Summaries of Major Laws Implemented by the National Marine Fisheries Service*). They also contend that less than 3% of New England's groundfish vessels are the result of this loan program.

[59] For example, these operators will benefit from 1) increased catch, both as a percent

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Recreational fishing interests suggest that, in considering the capacity reduction issue, the law should distinguish between commercial and recreational fishing. They contend that recreational fishing is distinctly different from commercial fishing in that recreational fishing is tied to the experience of fishing rather than catching fish. Reducing fishing mortality and bycatch in recreational fisheries might be better achieved through public education and outreach initiatives, such as catch-and-release programs, use of hooks that ease release of fish and increase survivability (*e.g.*, barbless, wide-gap, circle), and other ways of reducing harm and stress to fish (*e.g.*, hook extractors and handling techniques that minimize harm by avoiding removal of the protective mucous layer and scales and by eliminating pressure on internal organs). Conversely, other respondents believe that owners of recreational fishing vessels (*e.g.*, charter boats) are under enormous pressure to provide their customers with successful experiences and that recreational fishing does have a significant impact on sustainability in some fisheries. They contend that reductions in recreational capacity, funded by the recreational industry, also should be considered.

Individual Fishing Quotas

Section 303(d) of the MSFCMA established a moratorium, until October 1, 2000, on the creation of new individual fishing quota programs. Section 108(f) of the SFA, directed the National Academy of Sciences (NAS) to produce a report about a national policy on individual fishing quota programs.

The NAS report[60] recommended that the moratorium on individual fishing quota (IFQ) programs be lifted and suggested that Congress consider:

- permitting fees for initial quota allocations, first sale of IFQs, and leasing of initial shares, as well as an annual tax on quota shares;
- recognizing differences among regions and allowing regional councils flexibility in designing new (and adjusting existing) IFQ programs;
- requiring councils to define "excessive share" and put limits on accumulating quota shares; and
- ensuring that funding is available to NMFS and the states for collecting socioeconomic data.[61]

In detailing its recommendations to Congress, the NAS committee states its belief that most decisions about IFQs are appropriately made at the regional level. The committee recommends to Congress that the design of any limited entry program in relation to concentration limits, transferability, and distribution of shares will

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[59](...continued)
of the total allowable catch and more total catch for their firm; and 2) the likely increased value of their permit or license.

[60] National Research Council. *Sharing the Fish: Toward a National Policy on Individual Fishing Quotas.* Washington, DC: 1999. p. 189.

[61] In implementing IFQ programs, NAS notes that other factors include: carefully developing management structure and initial allocation formula, involving stakeholders in program development, and including fishing communities in initial allocations.

depend on the objectives of each specific fishery management plan, which underscores their recommendation to provide flexibility to regional councils in designing IFQ and other limited entry programs.

Some commercial fishermen and fishery scientists are concerned that problems such as overcapitalization, waste, and bycatch can only be remedied through individual quota management. If Congress does deliberate on lifting the moratorium, recreational fishermen are likely to seek assurances that the recreational sector is considered in the development of IFQ programs, especially in initial quota allocation.

Other commercial fishermen suggest that Congress allow regional councils to use alternative approaches to IFQs, *e.g.*, cooperative arrangements.[62] Some commercial fishermen have formed fish harvesting cooperatives in an effort to address overcapitalization and to avoid the wasteful race for fish. A fish harvesting cooperative represents a contractual agreement among eligible participants in a fishery to divide up the available harvest quota and to catch the fish in a tempered manner. While cooperative fishing is evidence of the benefits of individual quota management, there are significant differences between federally mandated IFQ programs and private cooperative arrangement. Congress might study the benefits and costs of cooperatives in considering lifting the moratorium on new IFQ programs. Moreover, if Congress decides not to lift the moratorium, some commercial fishermen suggest that NMFS and the councils be authorized to allocate quota to cooperatives based on a percentage of catch history or fleet size.

Some environmental organizations, while currently neutral on the issue of lifting the moratorium, assert that enhanced conservation measures must be incorporated into IFQ programs as they are developed. These groups do not wholly accept the belief that IFQs will result in enhanced conservation, and are likely to seek stricter measures. They posit that IFQ programs should be held to higher standards for monitoring and accountability to ensure that conservation is enhanced. Additionally, some environmental and fishing groups have several concerns with IFQ programs and argue that: 1) the federal government should not award the right to exploit a national resource without appropriate compensation to the public; 2) allocation of an IFQ may engender a property right, which may be difficult to reduce or rescind in the future without compensating the quota holder (*i.e.*, subject to the constitutional "takings" clause); 3) quota consolidation may drive smaller operators out of business; 4) IFQs will reward "dirty" fishermen (those with high levels of bycatch and discards) because initial allocations are often based on catch history; and 5) IFQs may encourage fishermen to high-grade their catch, keeping only the most valuable fish.

Several respondents note that the nature of the rights available through an IFQ programs should be carefully specified if the moratorium is to be lifted. For instance, if IFQs were issued for an area, would that mean that IFQ holders would become eligible for compensation for the loss of their rights to harvest if the area was reduced by the establishment of an MPA or through major port developments and

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[62] Also, some fishery scientists suggests that Congress replace the list in the American Fisheries Act (contained within P.L. 105-277) of vessels eligible to form cooperative arrangements with a regular transferable license limitation or individual quota program.

reclamations? Would Native American fishery claims need to be settled before issuing IFQs? Should IFQs be permanent rights or temporary privileges? Similar questions have arisen about permits and leases for federal lands grazing. The federal government has explicitly stated that private livestock grazing on federal lands is a privilege and not a right nor interest in property. Nonetheless, ranches with access to federal forage often sell for a higher price than they would without access to federal rangeland. The result is that the value of the grazing preference is capitalized into the net worth of the ranch base property and is considered an asset by the rancher.[63]

Other comments include: 1) IFQs could be a useful tool for managing certain recreational fisheries, such as Atlantic bluefin tuna, where a long history is available and the fishing constituency well known; 2) coastal communities should be given priority over corporate fishing and processing companies in initial allocation of quota shares; and 3) reductions in processing capacity may also be necessary to match reductions in fishing capacity; thus, fishing processors may seek a "processor quota" program and other means to allow paced reductions in processing capacity without a sudden or excess economic impact on local communities.

Fees, Cost Recovery, and Economic Rent

Section 303(b)(1) of the MSFCMA establishes requirements for collecting fees for fishing permits. Section 304(d) authorizes the Secretary of Commerce to establish fees. The level of fees charged may not exceed the administrative costs of issuing fishing permits, except in individual quota and community development quota (CDQ) fisheries, where fees are collected to recover management and enforcement costs.

The MSFCMA currently allows fees to be charged for: 1) foreign fishing permits and NMFS observer costs; 2) administrative costs of issuing fishing permits; 3) enforcement and management costs in IFQ and CDQ fisheries; 4) administrative costs for the limited access system registry; 5) fishery reduction program assessments (including vessel/permit buy-backs); and 6) the North Pacific observer program.[64] Other than fisheries managed under IFQs and CDQs, the MSFCMA does not allow for management and enforcement cost recovery.

Cost Recovery. Cost recovery could be an important issue during reauthorization. The overall performance of a fishery is often influenced by how

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[63] CRS Report IB96006 (Archived), *Grazing Fees and Rangeland Management*. p. 8.

[64] Some commercial fishermen notes that: the NPFMC has authority for a fee-based observer program, but has not yet implemented the program. The authority for a fee-based program includes a cap on observer fees at 2%. Under the current "pay as you go" system, many smaller vessels are paying in excess of 2% of revenues, while other larger operations pay a fraction of that amount. This lack of equity undermines support for the observer program. They suggest that NMFS should develop the best observer program they can within the budget constraints of a 2% fee, equitably distributed over the whole fleet. This could be a model for how user fees could function, but until this program is implemented successfully, authority for further fee-based programs will meet significant resistance from commercial fishermen

fishery management is financed. The typical practice where 100% of management and enforcement costs are borne by the General Treasury[65] is alleged to result in inefficient use of research, decision-making, and enforcement resources. For example, when resource users do not share some of the cost for resource management, they are less attentive to the need for efficiency. The cost of this inefficient use accrues to the management agency and increases the overall cost of managing the resource. Fishery economists suggest that such inefficiencies are reduced when users of natural resources, especially commercial users, bear some costs for managing the resources. Thus, they suggest that Congress consider user charges to recover a significant portion of management and enforcement costs.

Some fishery managers assert that the cost recovery authority currently in the MSFCMA (Section 304(d)) for IFQ and CDQ systems is too restrictive. They contend that statutory specification of when, where, and how fees are collected introduces administrative inefficiencies that reduce the benefit of the fees, and actually prevents consolidation of fee collection with existing state fees. Further, specific limitation of the fees to a percent of ex-vessel value and the specific deductions and exceptions, in their opinion, also prevent NMFS from recovering reasonable management and enforcement costs. They recommend that the language at §304(d) allow NMFS more flexibility in working with the industry to develop a simple, low cost but effective fee collection system.

Economic Rent. Some fishery scientists suggest that, beyond recovering the costs of management and enforcement, the public should receive a share of the economic rents garnered from use of a public resource. Those advocating this position maintain that Congress should consider imposing fees on quota or harvest to provide a source of revenue and compensate the public. They believe that establishing a fee system for harvesting fish would put fisheries on par with other public resources (*e.g.*, water, timber, minerals, and oil and gas).[66] These funds could be dedicated to recovery of management and enforcement costs (as discussed above). They go on to note that rent extraction, beyond cost recovery, could support fishery research or be used to assist fishing communities or fishermen displaced by IFQ programs.[67] Those supporting this approach explain that, in an IFQ fishery, compensation could occur

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[65] Government expenditures on U.S. fisheries currently run about $1 billion a year. These government expenditures are directed at an industry generating about $3.5 billion in ex-vessel revenue. That is, government expenditures are roughly 30% of landed value. At the federal level, the proportion of expenditures to landed value is 50%. The landings value of fish caught in federal waters (*i.e.*, from 3 to 200 miles) averages $1.8 billion in recent years while the amount of federal government expenditures is approximately $ 0.9 billion. See Andersen, P., K. J. G. Sutinen and K. Cochran. *Paying for Fishery Management: Economic Implications of Alternative Methods of Financing Management*, presented to the IXth Conference of the International Institute of Fisheries Economics and Trade. Tromso, Norway: July 8 - 11, 1998. By inference, these estimates imply that ex-vessel revenues from state waters are about $1.7 billion per year, while state government expenditures are roughly $100 million, *i.e.*, approximately 7% of landed value.

[66] National Research Council. *Sharing the Fish: Toward a National Policy on Individual Fishing Quotas*. Washington, DC: 1999. p. 208.

[67] *Id.*, p. 209.

through capturing a portion of the "windfall gains" generated from the initial transfer of the public resource into private hands, *i.e.*, the initial allocation of fishing quota shares.[68]

Some commercial fishermen claim that extracting economic rent from fisheries managed under open-access fisheries will impoverish fishermen. Because there are no incentives to constrain effort, open-access fisheries tend toward overcapitalization, which dissipates economic rent and, on average, reduces profit. They suggest that economic rent should be extracted only from fisheries where access is limited and harvesters have a secure right to a certain quantity of the total allowable catch, *e.g.*, individual fishing quota programs.

Additional comments about fees, cost recovery and economic rent include:

1. NMFS has a history of using funds collected from a specific region or a specific purpose for general expenditures. Therefore, fees, cost recovery, and economic rent should be used in the region that generates the funds, specifically, for data collection, management, and enforcement.
2. User fees should be tied to co-management of the resource. If a user pays, the user should have a say about how the money is used and how the resource is managed.
3. By tying user fees to research, those paying may have a stronger say in how research is conducted, potentially reducing the independence and quality of the scientific advice.
4. Quota sales typically underestimate the long-term value of resource rights and only a fraction of the discounted value of expected future economic profit is realized by the first transaction.
5. If the moratorium on individual fishing quota programs is lifted, there will likely be an emphasis on fees and economic rent capture. Thus, Congress might consider fees and rent capture in discussions about lifting the IFQ moratorium.

Fishery Subsidies

Section 312 of the Sustainable Fisheries Act of 1996 (P.L. 104-297 §312(b)(note)) directed the Secretary of Commerce to establish a task force to study and report to Congress on the role of the federal government in subsidizing the expansion and contraction of fishing capacity. The report of the Federal Investment Task Force is scheduled to be published in June 1999. (Findings from the Task Force report will be incorporated into future updates of this CRS Report.)

Environmental organizations active in the federal investment study note that fishery subsidies have emerged as a significant fishery management issue. As evidence, they note that policymakers are increasingly recognizing the direct relationship between subsidies, fleet overcapacity, and overfishing, as well as their effects on international trade in fish products. For example, in February 1999, the United Nations Food and Agriculture Organization (FAO) adopted the International

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[68] *Id.*, p. 207.

Plan of Action (IPOA) for the Management of Fishing Capacity, which recognizes fishery subsidies as an important driver of overcapacity.[69] Moreover, the need to address the problem of fishery subsidies has been recognized by the World Bank, the Asian Development Bank, the U.N. Commission on Sustainable Development, the World Trade Organization (WTO), the Organization for Economic Cooperation and Development (OECD), and the Asia-Pacific Economic Cooperation forum (APEC).

In the months and years ahead, the management of fishery subsidies will likely be the subject of continuing technical and diplomatic discussions within FAO, OECD, WTO, and APEC. Environmental groups note that the United States has played a leading role in bringing attention to the fishery subsidies issue, and add that fishery subsidies in the United States are far smaller than in many other major fishing nations. In their opinion, Congress will likely be called upon to act on this issue, through U.S. domestic policy and international efforts to reduce fishery subsidies.

In addition, some fishery scientists suggest that a subtle relationship exists between subsidies and the collection of fees (as discussed above). By not recovering the costs of management and enforcement, the United States, in their opinion, is subsidizing fishing operations. In essence, the standard economic definition of "subsidy" is a sale or transaction for a good or service by a government at less than the fair market price (where "fair market" is defined as a willing buyer and willing seller). Thus, they contend that, because the nation's fishery resources (managed by the federal government) are more easily available than if a private owner controlled access, the "market" is by definition not fair. Hence, a subsidy exists. Moreover, others note that the Uruguay Round of World Trade Organization negotiations defined subsidies as having three basic elements: 1) a financial contribution; 2) by a government or any public body within the territory of a Member; 3) which confers a benefit.

Decision-Making by Regional Councils

Section 302 of the MSFCMA establishes eight regional fishery management councils, and defines requirements for membership, council functions, transaction of business, and disclosure of financial interest and recusal.

Conflict of Interest. Subsection 302(j) describes the disclosure of financial interest and recusal requirements. As in previous reauthorizations of the Act, perceived conflicts of interest among regional council members is cause for concern among recreational and commercial fishermen. Some groups believe that because of the close relationship with the fishing industry, councils are unable to take the necessary steps to prevent overfishing, rebuild stocks in a timely manner, and properly regulate gear known to catch large amounts of bycatch and damage essential fish habitat. At issue is whether decision-making by individuals with a vested financial interest in a fishery can be impartial.

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[69] United Nations, Food and Agriculture Organization, Fisheries Department. *The International Plan of Action for the Management of Fishing Capacity.* Feb. 1999. The IPOA is available at [http://www.fao.org/WAICENT/FAOINFO/FISHERY/IPA/capace.htm]

In addition to current disclosure and recusal requirements, Congress may be asked to consider other measures. Suggestions for preventing financial conflicts of interest range from prohibiting individuals with financial interests from making fishery management decisions to requiring regional council members to swear compliance with federal tax and banking laws. Commercial fishermen suggest that regional council membership be limited to individuals with an "on the grounds" knowledge of fishing operations, specifically excluding industry representatives such as executive directors, lawyers, and lobbyists. However, increasing financial disclosure requirements or limiting the type of individual allowed to serve on regional councils, however, could make it difficult to obtain knowledgeable and willing nominees for council membership.

Some fishery scientists contend that conflict of interest is not the problem; rather it is that private and public interests are in conflict. Instead of mandating an unattainable impartiality, they suggest empowering decision-makers who share the public interest. That is, decision-makers should bear the consequences of their decisions in ways consistent with the public interest. This can be achieved, they suggest, by reconfiguring the incentive structure faced by decision-makers. In their opinion, the misalignment of public and private interests is, in large part, due to: 1) shortsightedness on the part of resource users, elected representatives, and agency heads; and 2) the decoupled costs and benefits of fishery policies and programs. They contend that shortsightedness on the part of resource users can only be overcome by giving them more secure claims to future outcomes in fisheries (*i.e.*, some form of property rights). The effects of shortsightedness by politicians and agency heads, they contend, can be overcome by insulating fishery decision-making from political influence. Finally, they suggest that the benefits and costs of fishery policy can be more closely coupled by the use of cost-recovery mechanisms, such as fees and taxes.

Council Representation. Some also support a review of MSFCMA provisions relating to council membership to ensure that all parties interested in U.S. fisheries are given adequate representation. Specifically, environmental groups expressed concern that their interests are inadequately represented on most councils, and suggest that Congress should consider legislative changes to the MSFCMA to ensure that councils are more broadly representative of the public interest in making fishery management decisions that benefit the nation. Others suggest that there is a need for greater representation for non-fishing interests as well as increased oversight by independent scientists.

Establish Full-Time Regional Councils. Closely related to the issue of financial conflict of interest is the issue raised by some commercial fishermen who questioned whether council members, who work only part-time on council matters, are able to make impartial and knowledgeable decisions affecting management of the nation's marine fisheries. They contend that council members who work in the fishing industry are likely to make decisions that favor the interests of their employers. To prevent this bias, they suggest making council membership a full-time position, with members solely dedicated to managing fisheries.

Conversely, other fishermen argue that council membership should not be a full-time position. They assert that individuals actively employed in the fishing industry tend to be the most knowledgeable. Concern was also expressed regarding who the

pool of potential council members would be if membership became a full-time profession. It is suggested that successful fishermen and businessmen would not be as interested in becoming council members were it a full-time job. Another concern is that full-time council members would become too worried about keeping their position on the council and that this might cloud their judgment. Furthermore, social scientists suggest that there is greater likelihood of compliance if user groups participate in the regulatory process. They suggest that making council membership a full-time position would preclude user groups from participating on the council. Moreover, council membership is currently limited to a term of 3 years. This term-limit, some suggest, provides sufficient means for different perspectives and experience to be involved in the fishery management process.

General Counsel for Regional Councils. The MSFCMA provides for NMFS to have a voting seat on each regional council, with the NOAA General Counsel participating in regional council business. However, the Act lacks provisions for independent legal advice or counsel for regional councils. Some commercial and recreational fishermen express concern that the NOAA General Counsel, which represents the interests of NMFS, often dictates fishery policy in its legal advice to councils on measures under consideration. They contend that the public interest would be better served by independent legal advice, and suggest that Congress amend the MSFCMA to authorize independent legal counsel for regional councils.

Others doubt that authorizing independent legal counsel would lead to better decision-making. They assert that this could unnecessarily delay decision-making and increase the involvement of the courts in fishery management. They also contend that it could be costly to change the process, and that NOAA General Counsel provides objective legal interpretations. Some also noted that councils are not currently prohibited from hiring lawyers to work on the council staff, providing legal advice as necessary.

Additional Comments About Regional Councils. Additional comments include: 1) governors should have a smaller role in the council appointment process, and at-large nominations could be made through an application process directly to the Secretary of Commerce; 2) many user groups feel that they are under-represented and that their expertise is under-used; 3) fishermen should act as paid consultants to the councils, providing advice, but not voting; and 4) councils are not adequately funded for their workload, and need more staff.

Review of Fishery Management Plans

Section 304(a) of the MSFCMA establishes the process whereby the Secretary of Commerce and NMFS review and approve FMPs.

Some fishery managers and commercial fishermen express concern about the accuracy and efficiency of the FMP approval process. They contend that frequent and lengthy delays in approving and implementing FMPs have damaged both the industry and fish stocks, and reflect poorly on the performance of NMFS. These groups may ask Congress to give regional councils final authority on FMP approval to streamline the process. Others counter that improving the review process is an administrative concern, and thus legislative action is not appropriate. Additionally, others suggest

that it may be unconstitutional for regional councils, which are non-governmental agencies, to have final decision-making authority about how best to use and manage the public's marine fishery resources.

Some federal fishery managers note that some delays in the approval process are the result of the regional council's failure to produce FMPs that satisfy all of the legal requirements. Specifically, they note that the time between council action and final rule publication can be attributed to: 1) assuring compliance with other applicable laws; 2) inadequately prepared supporting documentation from council staff primarily related to compliance with other applicable laws; and 3) insufficient legal review staff in NOAA General Counsel. Another problem, in their view, is the separation of review of FMPs and amendments from the review of regulations.

As possible solutions these managers suggest: 1) requiring councils to take final action votes only on fully completed analyses (including the preferred alternative) and draft proposed rule notices; 2) exempting fishery regulations from certain laws (*e.g.*, the Regulatory Flexibility Act, P.L. 96-354); 3) linking FMP and plan amendment review with review of implementing regulations; and 4) providing more funding for NOAA General Counsel.

Some environmentalists contend that NMFS review of FMPs is crucial to statutory compliance. They suggest that NMFS be authorized to modify an FMP to bring it into compliance with the MSFCMA if a council has not acted within a reasonable period to revise their FMP. They assert that providing councils multiple opportunities to comply with the Act delays implementation, and note that currently the Act imposes no deadline on councils to revise FMPS that are partially approved or rejected, furthering delays.

Others suggest that FMPs should be exempt from many of the requirements of the National Environmental Policy Act (42 U.S.C. 4321-4347) and the Paperwork Reduction Act (44 U.S.C. 3501-3520), which they believe delay the review process unnecessarily.

Highly Migratory Species

Section 304(g)(1) of the MSFCMA authorizes the Secretary of Commerce to prepare or amend FMPs for Atlantic highly migratory species.

Management Authority. Currently, NMFS is responsible for implementing MSFCMA provisions that apply to highly migratory species (HMS).[70] Management actions seek to "ensure conservation and promote the achievement of optimum yield of such species throughout their range, both within and beyond the exclusive economic zone."[71] FMPs for Atlantic HMS are developed by NMFS in consultation

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[70] Highly migratory species include tuna, marlin, oceanic sharks, sailfishes, and swordfish.

[71] MSFCMA §102.

with advisory panels created by NMFS and composed of constituents from the recreational, commercial, environmental, and scientific communities.

Some recreational fishermen and environmental groups are concerned about the effectiveness of the current management system. They observe that Secretarial management has allowed continued declines in Atlantic HMS. This concern stems from the perception that NMFS lacks the funding and staff to properly manage Atlantic HMS, and that management priorities favor commercial fishing. These groups may suggest that Congress review the effectiveness of NMFS management of highly migratory species. Others in the recreational fishing community may suggest returning management of all HMS fisheries, especially billfish, tuna, and swordfish, to regional council jurisdiction. Some fishery managers note that, if Congress decides to return HMS management to the councils, more efficient and effective guidelines for developing joint council FMPs might be needed.

Others suggest that Congress authorize a Council-like process for managing HMS. They assert that NMFS routinely ignores the advice of the advisory panels and non-NMFS scientists. They also contend that giving authority back to the councils would be problematic as well, given how poorly the councils have worked together in the past, in their opinion.

Management Areas. Some recreational fishermen and environmental groups express the need for special management zones along the entire Atlantic and Gulf of Mexico coast, where longline gear would be prohibited for a specific distance from shore. This is necessary, in their opinion, because longline fisheries have depleted Atlantic HMS. Moreover, they stress that the dimensions of the management zone should be set by fishery scientists, not fishery managers. Commercial fishermen would likely oppose such management zones, stressing that fishery declines are the result of foreign fishing and environmental factors. Additionally, gear/area prohibitions could cause economic harm to commercial fishermen.

Improvements in Data Collection

Section 402 of the MSFCMA provides authority for councils to develop and implement information collection programs that would be beneficial in developing fishery management plans or determining if a fishery is in need of management.

Recreational and commercial fishing interests express the need to collect more data to improve fishery management. In their view, the lack of information prevents a sufficient understanding of the economic contributions of commercial and recreational fishing enterprises as well as the businesses and industries that support both sectors and makes it difficult for fishery managers to make fair and equitable decisions about matters that economically affect commercial and recreational fishing.

Some environmental groups believe that the present state of information regarding catch in recreational fisheries and bycatch in all fisheries is poor and needs to be greatly improved to prevent overfishing and minimize bycatch. These groups assert that many councils use the lack of data to justify lack of action in a number of areas such as identifying maximum sustainable yield (MSY) or optimum yield (OY); determining the status of many stocks, and proposing measures to minimize bycatch

and the harm caused by fishing gear on essential fish habitat. These groups suggest that funding is necessary to support these research efforts so that the MSFCMA can be properly implemented and fisheries can be sustainably managed. These environmental groups are specifically concerned with identifying and quantifying the amount and type of bycatch occurring in all fisheries.

Fishery managers suggest that if more information is going to be collected, particularly on social and economic aspects, creative ways will need to be developed to collect useful information with minimal additional burden. They believe that data collection programs that collect unverified data from the industry are likely to impose a high burden but result in low-value information (*i.e.*, data of questionable validity). They assert that the Paperwork Reduction Act (44 USC 3501-3520) often hinders efficient collection of information. Moreover, in their opinion, because the MSFCMA ties the collection of data to a specific FMP, fragmented and inconsistent data collection results. They posit that future versions of the MSFCMA would do well to encourage interagency and inter-regional cooperation on data collection, satisfying specific FMP needs within an overarching plan that results in useful information.

Another source of information, suggested by some commercial fishermen, is fishermen themselves. They believe that fishermen offer a largely untapped source of information, especially for data about how many of what species are found when and where. They contend that this real-time information is just as useful as annual or triennial trawl surveys, and that fishermen should be integrated into data collection and management efforts.

The types of information collection and analysis that all of these groups may request include: 1) a needs assessment of the types of data required to manage recreational and commercial fisheries; 2) a needs assessment of the types of economic and social data (including data on industries that support recreational and commercial fisheries) needed to make management decisions; 3) increased collection of commercial and recreational fishing data; and 4) increased collection of information to support development, implementation, and management of individual fishing and bycatch quota programs. Moreover, recreational fishing interests are likely to ask Congress for increased attention to collecting information on the indirect but significant impacts of fishery management policy on businesses that support recreational fishing.[72] Contrary to these suggestions, many commercial and recreational fishermen may object to expanded data collection, citing their belief that fishing is already heavily regulated and that increasing reporting requirements would add unnecessary costs and other burdens.

Fishing Communities

Section 3(16) of the MSFCMA (16 U.S.C. 1802(16)) defines *fishing community* to mean "a community which is substantially dependent on or substantially engaged in the harvest or processing of fishery resources to meet social and economic needs,

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[72] Congress might consider targeting increases in NMFS appropriations such as money provided to NMFS under the proposed Lands Legacy Initiative to fund data collection. The Lands Legacy Initiative proposes $25 million for NMFS in FY2000.

and includes fishing vessel owners, operators, and crew and United States fish processors that are based in such community."

The NOAA General Counsel has interpreted fishing community narrowly in finding a "near consensus that it includes any *place* where vessel owners, operators, and crew or U.S. fish processors are based" (italics added).[73] Some commercial fishermen are concerned that this geographically-based interpretation could harm fishing communities that are based on shared interest rather than a shared place.[74] Congress may be asked to modify this definition to clarify how this term should be used in social and economic analyses of fishery management actions. Specifically, commercial fishermen and fishery scientists may suggest that Congress include "virtual communities"[75] in the definition of fishing communities.

In support of recognizing virtual communities, some fishery and social scientists note that more businesses depend on fishing activities than just fishing vessels, processors, and wholesale plants. For instance, businesses that sell ship supplies and gear and those which are devoted to marine services such as financial settlements and bookkeeping, often depend totally on fishing activities and could be considered part of the fishing community. These scientists assert that every change in mesh-size regulations changes the inventory value in ship supply stores; every reduction in the number of vessels reduces bookkeeping services. They opine that the fishing community extends beyond actual fishing activities and the processing of product, that social and economic problems associated with the decrease in support services can seriously degrade the quality of life and economic health of communities, and that these problems have not been sufficiently recognized.

Conversely, recognition of virtual communities may be opposed by rural communities, which are likely to favor a geographic definition. These groups, tied to a place and often with limited economic opportunities, may feel threatened if virtual community groups displace what they perceive to be their traditional fisheries.

Small Boat Fleets and Family Fishermen

Although small boat fleets and family fishermen are not given general consideration in the MSFCMA, these individuals are mentioned specifically in the section of the law that governs aid in financing the acquisition of individual fishing quota (§303(d)(4)(A)(i)).

Some commercial fishing interests suggest specific provisions to foster and support small-boat and family fishing operations. These interests are alleged to have

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[73] NOAA General Counsel. *A Guide to the Sustainable Fisheries Act*. Washington, DC: 1997.

[74] For example, fishing cooperatives in the Bering Sea walleye pollock fishery and Pacific whiting fishery may be considered communities of individuals who share interest in these fisheries, but are drawn from a diverse geographic base.

[75] National Academy of Sciences. *Sustaining Marine Fisheries*. Washington, DC: 1999. p. 97.

a strong commitment to resource sustainability and possess culturally derived desires to pass along "their" fishery to future generations. One proposal to provide additional support for small boat and family fisherman is to restrict U.S. imports to fish harvested by fishing fleets that use conservation measures comparable to those required in the United States. However, some fishery scientists note that providing additional support to small fishermen by constraining imports might violate World Trade Organization obligations and international law by restricting access to U.S. markets, and violate U.S. commitment to remove subsidies that support overcapitalization.

Transfer Pricing

Commercial fishing interests are concerned about transfer pricing, especially in North Pacific fisheries. This is not currently addressed in the MSFCMA. "Transfer price" is the price charged by one company to a related company, for allocating income and expenses among themselves. These "intra-firm transfers" are covered under the Internal Revenue tax code at 26USC482. Some U.S. fishing companies allegedly are not properly reflecting income attributable to their operations within the United States, while some foreign parent companies may be using pricing strategies to avoid higher U.S. taxes. In addressing "abusive" transfer pricing, Congress could consider amending the MSFCMA to require full disclosure of all financial documents and transfer pricing criteria to U.S. authorities.

Others believe that this issue is not germane to reauthorization of the MSFCMA, suggesting that this "tax and trade" issue is more appropriate to the jurisdiction of other congressional committees — such as Ways and Means, and Finance.

Reliability of Management Models

Section 404(c)(1) of the MSFCMA establishes requirements for the Secretary to initiate and maintain fishery research to carry out the purposes, policy, and provisions of the Act.

Some fishery managers note a concern regarding the need for additional data to verify the assumptions used in stock assessment models. Particularly, they assert that the management analyses garnered from Virtual Population Analysis (VPAs) Models could be improved by expanding the use of age-growth[76] information.

To address these concerns, some fishery managers suggest that Congress might consider authorizing funds for expanded age and growth research. For example, regional age and growth research centers could coordinate information among state

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[76] Age-growth analysis uses fish scales and otoliths ("ear" bones used for balance and orientation) to assess age relative to length. These hard structures have annual growth rings, much like rings in a tree trunk, that can be used to estimate the age of a fish. However, some fishery scientists note that traditional age-growth research, using hard parts to discern fish age, is not applicable in tropical regions because fish growth is not subject to discrete seasonal changes. In tropical regions, "length-based" methods are used, where age is estimated from length modes.

agencies. Fishery managers suggest that a central clearinghouse for data management would provide consistent fishery data, avoid duplication of effort, and reduce costs.

Some environmental groups are concerned that fishery managers do not have the necessary information to determine valid MSY values and the status of many stocks. They are concerned that assumptions made by councils may not be scientifically justifiable and may, therefore, result in risk-prone management that increases the likelihood of overfishing.

Some fishery scientists note that it is not just biological or population dynamic models that are problematic, but that social and economic impact assessment models also have serious deficiencies.

The National Academy of Sciences' Committee on Fish Stock Assessment Methods conducted a review of existing stock assessment methods and considered alternative approaches.[77] The Committee found that, while simple models are useful, more complex models are needed to better quantify unknown aspects of the system and to address the long-term consequences of specific decision rules. Their retrospective analyses showed that persistent over- or under-estimation can occur over a number of assessment years, regardless of the assessment model. In their simulations, model performance became more erratic as more variability or errors were introduced into the data. They recommended that different assessment models should be used to analyze the same data as a means to identify poor quality data. In addition, the committee suggests that greater attention should be devoted to including independent estimates of natural mortality and its variability in assessment models. Specifically, they recommend: 1) using Bayesian methods and other statistical techniques to incorporate realistic uncertainty into stock assessment models; 2) developing better assessment models for recreational fisheries and methods to evaluate the impacts of the quality of recreational data on stock assessments; 3) accounting for effects of directional changes in environmental variables (*e.g.*, climate change) in new models; and 4) developing new means to estimate changes in average "catchability," selectivity, and mortality over time, rather than assuming that these parameters remain constant.

Management Issues

Commercial and recreational fishing interests, environmental groups, and fishery scientists voiced concern regarding the need to clarify and/or modify the scope and goals of fishery management under the MSFCMA. These concerns range from narrow suggestions for improving fishery management to broad commentary on the overall goals of MSFCMA management.

Coordination and Oversight of State-Managed Fisheries. Section 306 of the MSFCMA states that the Act neither extends nor diminishes the authority or jurisdiction of any state within its boundaries. Prior to enactment of the MSFCMA

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[77] National Research Council, Committee on Fish Stock Assessment Methods, National Academy of Sciences. *Improving Fish Stock Assessments*. National Academy Press. Washington, DC: 1998.

in 1976, states had management authority over all fisheries in waters adjacent to their states, there was little or no federal jurisdiction over living marine resources in these waters. With enactment of the MSFCMA, marine fishery resources within the U.S. EEZ came under federal jurisdiction, states retain jurisdiction of marine fishery resources from their coastline out to the U.S. EEZ, generally three nautical miles. The MSFCMA attempts to balance state's authority with federal conservation and management goals, principally through coordination activities and the advice of the Secretary and NMFS rather than direct oversight of state fishery management.[78]

Fishery managers suggest strengthening the relationship between federal and state fishery management. They assert that greater federal oversight is needed to improve decision-making by interstate fishery commissions. Currently, the practice of managing interstate fisheries is based on "equivalency provisions," wherein states choose management measures they prefer, as long as the measures comply with federal conservation requirements. Fisheries in which management is coordinated by interstate commissions are often very diverse, and approaches vary from state to state. Commissioners from one state often know little about another state's fishery. Fishery managers suggest that this hinders a commission's ability to make informed decisions about state conservation plans. The result, they allege, is continued overfishing and delays in stock rebuilding. Some interests suggest that Congress authorize an independent committee either to oversee or to directly manage interstate fisheries. One suggestion for strengthening coordination with states is through delegation of FMP management authority to states, specifically, deleting the last sentence in §306(a)(3)(B):

> "For a fishery for which there was a fishery management plan in place on August 1, 1996, that did not delegate management of the fishery to a State as of that date, the authority provided by this subparagraph applies only if the Council approves the delegation of management of the fishery to the State by a three-quarters majority vote of the voting members of the Council."

Decentralized Fishery Management. Some commercial fishing interests would oppose more centralized management at the federal level. They perceive the need for increasingly decentralized management at the local level (consistent with federal objectives) because they believe local individuals are more knowledgeable about the specific environmental and economic conditions of their areas. Fishing communities in this view are readily able to adapt management to prevailing conditions and often are best suited to manage local fisheries. These interests may suggest that Congress amend the management authority in the MSFCMA to emphasize local management and decision-making.[79] Such a dramatic change from the current management

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[78] A specific issue relevant to state-managed fisheries that may arise during reauthorization of the MSFCMA involves a provision in §112(d) of the SFA which granted interim authority for Dungeness Crab management to the states of Washington, Oregon, and California. The authority provided under this subsection terminates on October 1, 1999. At issue is whether to extend or modify this provision.

[79] Additionally, some note that the jurisdiction over the 200 mile EEZ of some of the Pacific Island Insular areas is disputed between federal and local governments. In some (continued...)

structure likely would require major amendment to the MSFCMA, and additional funding at the state and local level.

Some environmental organizations and other commercial and recreational fishing interests, while recognizing the need for local expertise, would oppose further decentralization of "the nation's fisheries." Generally, these groups oppose an increased emphasis on decentralized management, especially if it decreases the ability of those interested in fishery management, but unable to attend regional council meetings, to participate in the decision-making process. They are also concerned that management of fisheries could become a local issue, controlled and managed to maximize benefits to local interests, rather than benefits to the nation. Decentralized management, in their opinion, might put short-term economic needs above long-term sustainability and productivity.

Ecosystem vs. Single-Species Management. Fishery scientists suggest adopting ecosystem-based management, notably for defining essential fish habitat. They argue that habitat use by various species is a composite and involves more than the life cycle of a single species. These scientists see the need to develop fundamentally new concepts for dealing with trans-boundary fishery management and EFH issues. In moving toward ecosystem management, scientists suggest that Congress transform EFH regulations into guidelines for instituting ecosystem-based management.

Currently, the MSFCMA divides the U.S. EEZ into eight regional management areas. These areas generally extend from 3 miles from the coast out to 200 miles and are managed by the eight regional councils. Fisheries within 3 miles of the coast are managed under state authority. Fishery scientists suggest that, because of the difficulty in subdividing ecosystems for management purposes, Congress should redefine these management zones. These scientists suggest that unifying management of state and federal waters is the most important step in moving toward ecosystem-based management. Additionally, they suggest that artificial boundaries, such as those dividing the Atlantic portion of the nation's EEZ into three management areas, impair management of trans-boundary stocks. Redefining regional fishery management areas to adopt an ecosystem-based approach would require major amendment of the MSFCMA. Sections applicable to such amendment could include §303(a), fishery management plans; and §305(b), essential habitat.

A more formal approach for introducing ecosystem considerations into fishery management is described in the final report of the Ecosystem Principles Advisory Panel.[80] In 1996, Congress requested an assessment of the extent to which ecosystem principles are currently applied in fishery research and management, and recommendations for how best to integrate ecosystem principles into future fishery

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[79](...continued)
instances, federal jurisdiction spans the entire 200 miles, in contrast to other regions of the United States, where the first 3 miles of coastal water is generally under state jurisdiction. They contend that decentralization is the favored option in these disputed areas.

[80] Ecosystem Principles Advisory Panel. *Ecosystem-Based Fishery Management: A Report to Congress*. Nov. 1998. [http://www.nmfs.noaa.gov/sfa/EPAPrpt.pdf]

management and research.[81] The advisory panel notes that "a comprehensive ecosystem-based fishery management approach would require managers to consider all interactions that a target fish stock has with predators, competitors, and prey species; the effects of weather and climate on fishery biology and ecology; the complex interactions between fishes and their habitat; and the effects of fishing on fish stocks and their habitat."[82] The Panel considers full implementation of the overfishing, bycatch, and essential fish habitat provisions of the Sustainable Fisheries Act a prerequisite to ecosystem-based fishery management.

In their report, the panel describes the enormity of managing at the ecosystem level and recognizes that, in most cases, the data are insufficient. However, they stress that there are practical ways to use the information that is available and recommend the use of fishery ecosystem plans (FEPs) to further incorporate ecosystem principles into fishery management plans. The FEP would document the structure and function of the ecosystem in which fishing activities occur, and provides information to managers about the effects of other components of the their decisions on the ecosystem and the effects of other components of the ecosystem on fisheries.[83] The primary purpose of the FEP would be to allow councils to prescribe how fisheries will be managed from an ecosystem perspective.[84]

The panel recommends that Congress require NMFS to develop FEP guidelines and each Council to develop an FEP for the ecosystem(s) under its jurisdiction. They state that each FEP should require, at least, eight Council actions:

1. Delineate the geographic extent of the ecosystem, including the biological, chemical, and physical dynamics, and use a zone-based management approach to designate geographic areas for prescribed uses.

2. Develop a conceptual model of the food web.

3. Describe the habitat needs of different life history stages for all plants and animals that represent the "significant food web" and how the habitat needs are considered in conservation and management measures.

4. Calculate total removals (including incidental mortality) and show how they relate to standing biomass, production, optimum yields, natural mortality, and trophic structure.

5. Assess how uncertainty is characterized and what kind of buffers against uncertainty are included in conservation and management actions.

6. Develop indices of ecosystem health as targets for management.

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[81] Mandated by the 1996 SFA amendments to the MSFCMA, §406, fishery systems research.

[82] *Supra* note 81, p. 1.

[83] *Id.*, p. 3.

[84] *Id.*, p. 28.

7. Describe available long-term monitoring data and how they are used.

8. Assess the ecological, human, and institutional elements of the ecosystem which most significantly affect fisheries, and are outside Regional Council/Department of Commerce authority. Included should be a strategy to address those influences to achieve both FMP and FEP objectives.[85]

One of the panel members describes the FEP as a mechanism that facilitates learning about the ecosystem and provides for iterative and adaptive management to produce long-term sustainable harvest. To provide a better understanding of the FEP concept, this fishery scientist stresses three points:

- This is not marine ecosystem management, rather it is a way to formally include ecosystem knowledge and document how this information is used to manage living marine resources;

- The FEP is a way to achieve the requirements of the Sustainable Fisheries Act, to develop a comprehensive understanding of the limits of a renewable resource, and to use that knowledge to design a socially and economically stable fishery, balancing short-term minuses with long-term pluses; and

- Recognizing that a great deal of knowledge about how fisheries function within an ecosystem is currently under-utilized, the FEP is a way to better use what is known and to incorporate what is learned over time.

The advisory panel believes that, while much of what it recommends could be accomplished under current mandates, directives from Congress would hasten application of these principles and ensure universal application by the regional councils. The advisory panel concluded that, "if fishery management is to further incorporate ecosystem principles, Congress must provide a specific mandate to NMFS and the Councils to do so and must fund the scientific infrastructure required to support the decision-making process. Requiring councils to prepare FEPs provides a mechanism to focus and inform fishery management, to measure progress toward implementation of ecosystem-based fishery management, to identify research needs and ultimately to insure healthy and productive ecosystems."[86]

Some environmental groups believe that ecosystem-based management of fish stocks, rather than single-species management, is necessary to promote sustainable fisheries and to protect non-commercial species that may be affected by fishing. As a means to protect marine ecosystems, these groups might request that Congress require councils to prepare ecosystem management plans and to ensure that fishery management plans are consistent with ecosystem plans.

Additional comments include: single species management, especially with different daily allowable catch rates, increases regulatory discards. Also, the

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[85] *Id.*

[86] *Id.*, p. 37.

definition of *fishery*[87] should be amended to "one or more stocks, *or inter-related species*, of fish which can be treated as a unit." Some believe that this modification would facilitate the shift from single-species to ecosystem-based management

It should be noted that the National Academy of Sciences concluded that single-species assessments currently provide the best approach for assessing population parameters and providing short-term forecasting and management advice.[88] The NAS committee states that recent interest in bringing ecological and environmental considerations and multi-species management interactions into stock assessments should be encouraged, but not at the expense of reducing the quality of stock assessments.[89]

Management Based on Maximum Sustainable Yield. Currently, the MSFCMA requires fishery management plans to achieve the optimum yield from each fishery. Optimum yield is defined as MSY as "reduced" by economic, social, and ecological factors.[90] Some fishery scientists suggest that Congress modify this definition. They argue that the concept of MSY is ineffectual for management and decision-making, because MSY is a long-term average yield, while the politics of fishery management tend to focus on much shorter-term results.

As an alternative to MSY, some fishery scientists suggest that the MSFCMA incorporate the concept of an "ecosystem sustainable yield." These scientists suggest that an ecosystem-based yield is preferable to attempting to simultaneously manage at MSY for several species. At a minimum, Congress might acknowledge or recognize the multi-species tradeoffs in interacting food webs within marine and aquatic ecosystems.

Some in the commercial fishing industry suggest that Congress should return the term *optimum yield* to its pre-1996 definition.[91] This group believes that the current definition that "reduces" rather than "modifies" MSY hinders management, especially when contending with variations in stock size caused by environmental conditions. They state that, while MSY is difficult if not impossible to estimate, industry groups likely would support maintaining the use of long-term averages.

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[87] MSFCMA § 3(13)(A) — The term fishery means one or more stocks of fish which can be treated as a unit for purposes of conservation and management and which are identified on the basis of geographical, scientific, technical, recreational, and economic characteristics.

[88] *Supra* note 78.

[89] *Id.*, p. 4.

[90] MSFCMA §3(28).

[91] The term "optimum" with respect to yield from a fishery, means the amount of fish — (A) which will provide the greatest overall benefit to the nation, with particular reference to food production and recreational opportunities; and (B) which is prescribed as such on the basis of the maximum sustainable yield from such fishery, as modified by any relevant economic, social, or ecological factor. Magnuson Fishery Conservation and Management Act §3(21) (Aug. 1994).

Conversely, some environmental groups and fishery scientists support the 1996 definition of OY, believing that linking OY to MSY, ideally, prevents overfishing. They assert that the prior definition allowed councils to set OY above MSY for short-term economic reasons, at the risk of overfishing. In their opinion, this approach led to "boom-bust" cycles and pulse fishing in many fisheries.

Other fishery scientists and managers suggest that neither MSY nor ESY are practical concepts in terms of optimum yield. They suggest that OY be defined in terms of the optimum level of fish removal that takes into account the long-term reproductive capacity of the stock, species composition of the catch, ecosystem concerns, catch capacity of the fleet, operational characteristics of the fishery, economic concerns, and how the fishery is managed.

Additionally, many environmental groups believe that linking OY to MSY would facilitate ecosystem-based management. However, they contend that many councils have not implemented the statutory requirements to reduce OY based on economic, social, and environmental factors (*e.g.*, predator-prey relationships or the role of fish in the ecosystem). In their opinion, councils have set OY with little justification except for maximizing catch. This group may request that Congress require councils to consider ecosystem relationships in establishing optimum yield.

Scientific Basis for Management Decisions and Regulations. Commercial fishing interests suggest that a lack of fishery data hinders decision-making and results in flawed regulations. While protecting habitat and ecosystems are reasonable objectives, they assert that there is no way to objectively implement management with inconclusive scientific information about ecosystems and the impacts of fishing on habitat. They suggest that Congress modify the MSFCMA to focus on gathering more tangible information upon which to base regulations. The environmental community would likely use this same argument to promote even more stringent fishery regulations, noting that the "precautionary approach" prescribes more conservative management in the face of uncertainty.[92] The crux of the issue is, what is meant by this phrase, and how precautionary management ought to be when dealing with imprecise data and variable fish stocks.

Some in the environmental community agree that there is a serious lack of fishery data and that steps should be taken to obtain more and better data. However, they generally are concerned that the lack of data is being used as an excuse to delay conservation measures. In their opinion, this approach has caused declines of managed fish and other marine species to population levels requiring Endangered Species Act protections. They believe that inaction premised on lack of information is unsound. They contend that the data are sufficient for NMFS and councils to take steps to protect EFH and ecosystems, and conclude that a precautionary approach makes the use of the best available scientific information. Others contend that NMFS currently advocates risk-averse decision-making; nonetheless, they recommend that Congress specifically endorse risk-averse decision-making, especially where limited data and information are available.

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[92] Others believe that the time has come to shift the burden of proof to the resource users and away from fishery managers and scientists.

Finally, other scientists note that best available scientific information should also include social scientific information. However, in their opinion, there are no rigorous social and culture impact assessments in the current fishery management plans. They assert that there is a critical need for socio-cultural and socio-economic data, and that this information must be collected before social impact analyses are conducted. Therefore, these scientists might ask Congress to consider authorizing research programs to collect and analyze social scientific information.

Co-Management and the Role of Native Americans. Previous reauthorizations of the MSFCMA added significant language to encourage exploration of the role of indigenous people in fishery management.

Fishery scientists suggest that a greater emphasis be placed on incorporating traditional ecological knowledge into fishery management. These scientists suggest that Congress consider ways to incorporate indigenous cultures into contemporary management protocols. Examples of this approach include the Community Development Programs, which benefit Native Alaskans and Hawaiians and create a role for them in their respective regional councils. These interests suggest that Congress add language to the MSFCMA to ensure the longevity and success of these ventures.

In considering co-management of marine fisheries, Congress could look to co-management provisions in the Marine Mammal Protection Act (16 U.S.C. 1361 as a model. These provisions authorize the Secretaries of Commerce and the Interior to enter into cooperative agreements with Alaska Native organizations to conserve marine mammals and co-manage Native subsistence use. Through these cooperative agreements, Native organizations may receive grants to facilitate data collection and analysis, monitor subsistence harvests, participate in research projects, and develop co-management arrangements with federal and state agencies.

Adequacy of Appropriations

An issue that NMFS might raise during reauthorization discussions is that, in an era of dramatically reduced federal appropriations, their responsibilities and duties continue to expand. Specifically, implementing the provisions of the Sustainable Fisheries Act is a major undertaking, requiring the coordination of NMFS headquarters and regional offices, the eight regional fishery management councils, and state agencies. NMFS may claim that delays in implementation are directly tied to budgetary constraints. Congress might consider a number of options to address these concerns. As noted previously, fees or other forms of rent extraction could be used to fund at least some management and enforcement. Congress might also consider increasing appropriations to NMFS or including specific instructions about how funds are to be used.

For FY1999, the National Oceanic and Atmospheric Administration requested about $450 million for fisheries. The U.S. Coast Guard is estimated to spend approximately $400 million on fishery law enforcement (mostly for domestic fishery regulations), and these expenditures are projected to grow rapidly. Expenditures on other federal fishery programs are conservatively estimated to be in the neighborhood of $50 million per year. While these other programs are not fishery management *per*

se, they do indirectly affect management efforts (*e.g.*, fishing vessel compensation, fishing vessel contingency fund, trade promotion). Coastal states are estimated to spend between $100 to $150 million annually on fishery management.[93]

Additional Miscellaneous Issues

Several issues were not easily assigned to the sections of this report, and approaches to addressing these issues are not well formulated. Because these issues concern at least a few constituency groups, they are presented below. Note that the order in which these issues are presented does not convey rank or hierarchy of importance.

Review of American Fisheries Act Provisions. Some commercial fishermen may seek a review of the provisions of the American Fisheries Act aimed at protecting fishermen who do not belong to a cooperative from preemption by those who do. They suggest that Congress consider instructing regional councils to modify, expand, or limit the role of cooperatives depending upon the results of this review.

International Management of Highly Migratory Species. Recreational and commercial fishing interests note that a major issue at NMFS HMS Advisory Panel meetings during the past 18 months, and one that continuously seems to be at odds with domestic management to rebuild HMS stocks, was the lack of a clear relationship between the MSFCMA and existing international treaties (*e.g.*, International Convention for the Conservation of Atlantic Tuna, the United Nations Convention of the Law of the Sea). Specifically, these groups question the practicality of domestic efforts to rebuild North Atlantic swordfish stocks in 10 years or less when the U.S. fisheries account for only 22 % of fishing mortality.

They suggest that it would be beneficial to have a study of international fishing treaties and their relationship, precedence, and impact on and with the MSFCMA, the National Standards, and the precautionary approach. Moreover, they contend that a definitive domestic fishery policy is needed to decide on action in the period between recognizing that an international fishery is overfished and the implementation of international management to rebuild those stocks.

Federal Assistance to Fishermen. Some environmental groups believe that many commercial fishermen share their interest in rebuilding overfished stocks and long-term resource sustainability. To rebuild fish stocks, these groups would like Congress to consider significant reductions in fishing effort, coupled with federal assistance to fishermen to relieve the economic burden of reduced fishing opportunities.

The Definition of Recreational Fishing. Some note that clarifying the definition of recreational fishing would be beneficial to fishery management. They suggest that Congress define recreational fishing as any fishery for which catch is not sold. In their opinion, this small change would clarify the distinction between commercial and recreational fisheries.

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[93] Andersen, Sutinen, and Cochran, *supra* note 66.

The Role of Market Demand in Fisheries. Some in the commercial fishing industry assert that public demand for fish products is driving the exploitation of marine resources, contending that sustainability is not a "local" or "coastal" problem, but rather that national, long-term solutions are needed. They suggest that the development of methods to provide the required quantities of fish products to meet U.S. demands should be encouraged, especially the development of aquaculture and hatcheries. For example, they point to the production of salmon in Maine and oysters in Long Island Sound. They contend that this production is almost equal in value to each of the highest value offshore fisheries: groundfish, scallops, and lobster. Moreover, they assert that aquaculture operations require a very small fraction of the area devoted to "wild" fisheries.

Harmful Non-Native Species. While not an immediate fishery issue, some believe that prevention and control of harmful aquatic non-native species, such as the European green crab (*Carcinus maenas*), should be given some consideration during reauthorization of the MSFCMA. (For more information on non-native species, see CRS Report RL30123, *Harmful Non-Native Species: Issues for Congress*.)

National Research Agenda. Some suggest that a "national research agenda" is needed to effectively coordinate and fund fishery research. They suggest that Congress consider authorizing a "Research Council" specifically focused on marine resource issues.

Fishing Vessel and Crew Safety. Some contend that it is imperative that fishery management explicitly considers whether or not regulations will compel fishing captains and crew to work under unsafe conditions. They suggest that congressional action is necessary to address this issue relative to the national standards in the MSFCMA.

The Private Cost of Resource Management. The MSFCMA requires that overfished stocks be restored within 10 years. Some assert that 10 years is a long time for an individual, dependent on a fishery, to endure substantially reduced earnings with no guarantee of ever recovering those losses. A viable consideration, in their opinion, is the promotion of certainty for those vessel owners, operators, and crew who forgo earnings today for potential gains tomorrow. They note that current analyses examine the potential long-term yields and earnings streams, but that these analyses rarely incorporate risk assessment. In their opinion, harvesters, processors, and others dependent on fisheries must contend with large uncertainties about their potential future earnings.

Congressional Outlook

Interested constituencies feel that Congress has been generally very supportive of measures to conserve and manage living marine resources, including specifically the Magnuson-Stevens Fishery Conservation and Management Act. While the history of the Act includes court challenges to agency interpretation of congressional intent, these groups believe that Congress has been generally understanding of the difficulties in balancing resource conservation, sustainable resource use, and protection of the marine environment. The issues discussed in this report set before Congress a varied

array of concerns, with little clear focus as to which will gain prominence in the reauthorization debate. Recent public sentiment, always a strong factor in fishery conservation and management issues, has focused on concerns for protecting fish habitat, restoring depleted fish stocks, minimizing bycatch and bycatch mortality, and reducing fishing capacity. Specific interests of environmental protection groups, Native Americans, and commercial and recreational fishing industries may call attention to additional issues. Although congressional oversight in the early stages of the reauthorization process focused attention on numerous issues, no issues appear to demand immediate action. Since the requirements of the Act did not expire when the authorization of appropriations was not extended beyond FY1999, the reauthorization process could be delayed until sufficient congressional will is mustered to deal with the various issues. It is possible that, because the MSFCMA was reauthorized in 1996 and implementation of those provisions is ongoing, Congress might delay action at this time. The rationale for this delay could be to allow for full implementation of the amendments contained in the Sustainable Fisheries Act of 1996 before consideration of additional changes to the Magnuson-Stevens Fishery Conservation and Management Act. Conversely, delays in implementation could impel more immediate congressional action.