Implementing the Sustainable Fisheries Act

ACHIEVEMENTS FROM 1996 TO THE PRESENT

June 2003

NATIONAL MARINE FISHERIES SERVICE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
UNITED STATES DEPARTMENT OF COMMERCE

MESSAGE FROM THE ASSISTANT ADMINISTRATOR

It has been six and a half years since the Sustainable Fisheries Act (SFA) was signed into law and significantly changed the way we do business. The SFA mandated numerous science, management and conservation actions by the National Marine Fisheries Service (NOAA Fisheries), with the fundamental goals of preventing overfishing, rebuilding overfished stocks, protecting essential fish habitat, minimizing bycatch, enhanced research and improved monitoring.

This Report highlights NOAA Fisheries' accomplishments since 1996, in light of these far-reaching mandates. Preparation of this report is part of an ongoing NOAA Fisheries-wide review of SFA implementation. Some parallel efforts are also underway (e.g., a critical review of the guidelines for National Standard (NS) 1, the stock assessment improvement plan, and implementation of the national bycatch strategy).

Change frequently involves conflict and controversy. It was clear from the mandates of the SFA that the status quo of the mid-1990s would no longer be acceptable. The magnitude and speed of many of the changes required by the SFA were controversial, and in many cases remain so. National and local press headlines regarding litigation can cloud the picture of the progress that NOAA Fisheries and the Regional Fishery Management Councils (Councils) have made.

However, in many respects, conflict is to be expected when managing change on the scale mandated by the SFA. Much of the controversy is inevitable, as old practices are challenged, and adapted to the new requirements of the law.

Within this ocean of change there are many accomplishments and successes for which NOAA Fisheries, the Councils and all of our partners should be recognized. There are numerous activities that have steadily yielded positive results that we can be proud of. This Report reflects the efforts of people throughout NOAA Fisheries Headquarters, Regions, Science Centers, and the Councils, in partnership with our constituents, to meet the challenges of the SFA and ensure healthy, sustainable fisheries for current and future generations.

Many challenges still exist, and NOAA Fisheries will continue to refine and reexamine its guidelines, priorities, and policies. Some of our fisheries still present difficult management decisions for the Councils and for NOAA Fisheries. However, we will build on our earlier successes and continue to strive toward more effective fisheries conservation and management as envisioned in the SFA.

William T. Hogarth, Ph.D.

TABLE OF CONTENTS

INTRODUCTION 1

CHAPTER 1: PREVENTING OVERFISHING AND REBUILDING OVERFISHED STOCKS 2

CHAPTER 2: BYCATCH 7

CHAPTER 3: ESSENTIAL FISH HABITAT 15

CHAPTER 4: FISHERY RESEARCH AND MONITORING 19

CHAPTER 5: PROGRESS OF OTHER SFA ACTIVITIES 24

APPENDIX I: RELATED REPORTS TO THE UNITED STATES CONGRESS 32

APPENDIX II: TRENDS IN THE STATUS OF STOCKS FROM 1997 TO 2002 34

APPENDIX III: ACTIONS BY COUNCILS AND NOAA FISHERIES TO IMPLEMENT THE SFA 36

APPENDIX IV: LIST OF ACRONYMS 45

APPENDIX V: CONTRIBUTORS 46

INTRODUCTION

The passage of the SFA in 1996, reauthorizing and substantially modifying the Magnuson Fishery Conservation and Management Act to become the Magnuson-Stevens Fishery Conservation and Management Act (MSA), marked a significant change in NOAA Fisheries' legislative mandate to manage living marine resources. In particular, the SFA brought substantial changes in the requirements to prevent overfishing and rebuild overfished fisheries. Each fishery management plan (FMP) is required to specify objective and measurable criteria for determining when a stock is overfished or when overfishing is occurring, and to establish measures for rebuilding the stock. The SFA also added several new definitions, including definitions for overfishing and overfished, and for fishing communities.

The National Standards outlined in the MSA, which represent the overall principles by which fishery management programs are developed and judged, were revised by the SFA. Three new National Standards were added to address fishing vessel safety, fishing communities, and bycatch, and several existing standards were revised. The MSA, as amended, contains ten National Standards for fishery conservation and management, with which all FMPs must comply.

The new National Standards that were created in the SFA are:

NS 8: Conservation and management measures shall, consistent with the conservation requirements of this Act (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities in order to (A) provide for the sustained participation of such communities, and (B) to the extent practicable, minimize adverse economic impacts on such communities,

NS 9: Conservation and management measures shall, to the extent practicable, (A) minimize bycatch and (B) to the extent bycatch cannot be avoided, minimize the mortality of such bycatch, and

NS 10: Conservation and management measures shall, to the extent practicable, promote the safety of human life at sea.

In 1997, NOAA Fisheries proposed new guidelines for the amended National Standards. These guidelines interpret the National Standards, provide detailed guidance to assist in the development of management programs, and guide the review and approval of FMPs. The revisions to the guidelines for NS 1 were significant because, consistent with the new SFA rebuilding provisions, they required that overfished stocks must be rebuilt to levels consistent with producing the maximum sustainable yield as soon as possible, but in no case in more than ten years unless the biology of the species, environmental conditions, or international agreements dictate otherwise.

Implementation of the many new provisions in the SFA was an immense task for NOAA Fisheries and the Councils. The SFA called for improved fishery monitoring, enhanced research, greater consideration of fishing communities, identification of fish habitat, formation of constituent advisory panels, and analysis of fishing capacity, among other activities. SFA implementation was assigned the highest priority.

At the same time, an extensive outreach campaign was launched to educate the public about the new provisions in the SFA. NOAA Fisheries published *A Guide to the Sustainable Fisheries Act*, created a Web site (www.nmfs.noaa.gov/sfa/sfaguide/index.html), published a quarterly update that tracked implementation and a bi-monthly newsletter, and conducted numerous constituent briefings in Washington, DC, and throughout the nation. The SFA also mandated numerous new reports to Congress from NOAA Fisheries, the Councils, and the National Academy of Science. An inventory of these reports and their publication dates is provided in Appendix I.

This Report provides a retrospective look at NOAA Fisheries' activities resulting from the SFA. Several major themes of the SFA are covered (e.g., rebuilding overfished fisheries, essential fish habitat, bycatch, research, and monitoring) along with a number of other activities that NOAA Fisheries has undertaken to implement the SFA. Highlights from around the nation are included as examples of our challenges and accomplishments. The Report is designed to publicize these achievements to a wide audience.

CHAPTER 1: PREVENTING OVERFISHING AND REBUILDING OVERFISHED STOCKS

Overview

The SFA defines overfishing as a rate or level of fishing mortality that jeopardizes the capacity of a fishery to produce the maximum sustainable yield on a continuing basis. Based on the Agency's guidelines for implementing NS 1 of the Act ("Conservation and management measures shall prevent overfishing while achieving, on a continuing basis, the optimum yield from each fishery for the United States fishing industry"), "overfishing" of a stock is defined in relation to whether the fishing mortality rate is above a prescribed threshold as established within an FMP. A stock is determined to be "overfished" if the stock size is below a prescribed biological threshold. Determinations of "overfishing" and "overfished" are based on scientific stock assessments.

The SFA revised the Magnuson Fishery Conservation and Management Act to become the MSA. Revisions included the requirement that overfished stocks be rebuilt as soon as possible, but no longer than ten years, except under special circumstances relating to the biology of the stock of fish, environmental conditions, and whether the fishery is subject to an international agreement. If the Secretary determines that a fishery is overfished or approaching an overfished condition, the responsible fishery management council must be notified and must revise the management program to stop overfishing, if it is occurring, and rebuild the stocks. In this case, the council must prepare an FMP, FMP Amendment, or proposed regulations containing appropriate management measures within one year, with regulations to be implemented by NOAA Fisheries.

Although some stocks remain overfished, there has been steady incremental progress in the status of the nation's stocks. According to the most recent (April 2003) Report to Congress on the Status of the U.S. Fisheries (www.nmfs.noaa.gov/sfa/reports.html), over the period 1997 to 2002 overfishing has been corrected a total of 26 times and stocks have been rebuilt above their biomass thresholds a total of 20 times. Although the reverse has also occurred, the net result has been positive. The success stories include many valuable commercial or recreational species such as Atlantic (Acadian) redfish, Georges Bank winter flounder, Gulf of Mexico king mackerel, and South Atlantic and Gulf of Mexico gag grouper (see Appendix II). There are also several other successes, not included in the tables of the report, either because the fisheries were already rebuilt by the time an acceptable overfishing definition was developed (e.g., Georges Bank and mid-Atlantic sea scallops), or new assessment results were too late to be included in this report (e.g., Atlantic swordfish, sandbar shark, and blacktip shark).

Below are several examples of fisheries where concerted efforts on the part of NOAA Fisheries, the Councils and commercial and recreational fishermen have been made to eliminate overfishing and rebuild stock biomass, thus allowing the stocks to support more valuable commercial and recreational fisheries. In some cases, the economic and social benefits of the rebuilding efforts are already beginning to accrue regionally and to the nation as a whole. Many stocks have exhibited dramatic increases in biomass over the last few years. Some of the examples, particularly west coast groundfish, illustrate the dramatic changes to fisheries that have been necessary to reduce over-fishing and rebuild stocks in order to meet the objectives of rebuilding plans mandated by the SFA. The Atlantic swordfish rebuilding program demonstrates how NOAA Fisheries' experience in addressing overfishing since the passage of the SFA has helped the United States to play a strong leadership role in the international fisheries arena.

Sea Scallops

Sea scallops support important, high-value fisheries that take place off the New England and mid-Atlantic coasts. These fisheries are managed under the New England Fishery Management Council (NEFMC) Atlantic Sea Scallop FMP. This FMP was implemented in 1982 with the primary management control based on minimum size/weight of scallop meats. In 1994, the FMP was amended to

control effort in the fishery. Effort controls have included limited entry, restrictions on the number of days vessels can fish, gear measures, and crew limits. Closed areas implemented under both the Northeast Multispecies FMP and the Atlantic Sea Scallop FMP have also played a role in conserving the sea scallop spawning stock and reducing fishing mortality. Subsequent management measures have re-opened areas previously closed to scalloping. These area-based programs have resulted in more effective management of the scallop resource.

Sea scallop biomass on Georges Bank and in the mid-Atlantic has increased dramatically in recent years, and there is above average recruitment of young scallops. Between 1994 and 2002, biomass on Georges Bank increased more than 20-fold, while biomass in the mid-Atlantic increased more than four-fold. Biomass in both regions is now higher than the target rebuilding standards in the FMP. Recent (1999 - 2001) average landings for sea scallops were about 13,608 metric tons (mt) (30 million [M] pounds) per year, providing ex-vessel gross revenues of approximately $120M per year.

New England Groundfish

The total abundance of New England groundfish stocks included in the NEFMC's Multispecies FMP (19 stocks) declined substantially and rapidly in the early to mid 1960s, improved in the mid 1970s and early 1980s, declined again in the late 1980s and early to mid 1990s, and has improved since then. The overall abundance index for the groundfish complex approximately doubled between 1994 and 2000, and has now reached the levels of the early 1980s. This rebound in the resource is primarily due to lower exploitation rates, combined with improved recruitment for a number of species or stocks, particularly Georges Bank haddock, Georges Bank yellowtail flounder, redfish, silver hake in the Gulf of Maine, and witch flounder.

When a recent five-year period (1996 to 2000) is compared to a previous five-year period (1991 to 1995), the combined biomass for the 19 stocks has increased by an average factor of 2.5. On an individual basis, 13 of the 19 stocks increased in size, while six stocks (Georges Bank cod, Gulf of Maine cod, white hake, southern windowpane, halibut, and ocean pout) showed declines. Of the six stocks that have declined in abundance since 1991-1995, four (Georges Bank cod, Gulf of Maine cod, southern windowpane, and ocean pout) have shown recent increasing trends, though they are not yet back to the biomass levels of the early 1990s.

Most of the major stocks in the groundfish complex of species have responded positively to lower exploitation rates as a result of the implementation of effective management measures. For some stocks (especially Georges Bank haddock and yellowtail flounder), substantial progress has been made relative to long-term biomass rebuilding targets. The Georges Bank haddock spawning stock biomass increased from 11,000 mt in 1993 to more than 74,000 mt in 2001. The Georges Bank yellowtail flounder spawning stock size increased from a little over 2,000 mt in 1994 to 39,000 mt in 2001. For all of the five major groundfish stocks (Georges Bank and Gulf of Maine cod, Georges Bank and southern New England yellowtail flounder, and Georges Bank haddock), biomass has been increasing.

Summer Flounder

Summer flounder is one of the most sought after recreational and commercial species on the Atlantic Coast, primarily from Massachusetts through North Carolina. Management in federal waters takes place through a Mid-Atlantic Fishery Management Council (MAFMC) FMP, with complementary measures in state waters implemented through an Atlantic States Marine Fisheries Commission (ASMFC) FMP. After dropping to record low biomass levels in the early 1990s, summer flounder has responded to the MAFMC and ASMFC measures put in place to rebuild the stock.

Management of this fishery has been particularly challenging due to the need to initially restrict fishing activities, coordinate federal and state regulations, and address allocation issues. Conservation and management measures have increased mesh and size limits, lowered commercial quotas and recreational bag limits, and shortened seasons to meet the standards of the MAFMC and ASMFC FMPs. As a result of these efforts, fishing mortality for the stock has been reduced more than 80 percent since 1994, and the stock has increased substantially. Summer flounder now supports a viable and productive fishery, with commercial

landings in 2001 of approximately 5,000 mt with an ex-vessel value of $20M. In 2002, commercial landings increased to about 6,400 mt. A very active recreational fishery accounts for 12 percent of all marine recreational fishing trips coastwide.

Gulf of Mexico King Mackerel

The king mackerel is a migratory coastal pelagic species found in the western Atlantic Ocean from New England to Brazil and in the Gulf of Mexico. King mackerel eat voraciously and are relatively fast growing fish that form large schools. They mature quickly, as early as two years, and can live up to 20 years, although the majority of catches are younger than six years old. Their large size, appealing taste, and strong fighting ability when hooked make them a target for both commercial and recreational fishermen. Two groups of these fish are currently recognized in U.S. waters for management purposes: the Atlantic group and the Gulf of Mexico group.

Large catches by both commercial and recreational fishermen in the late 1970s and early 1980s, along with perceived declines in catch rates, were part of the reason for inclusion of Gulf of Mexico king mackerel in the Coastal Migratory Pelagic Resources FMP in 1985. The Gulf of Mexico Fishery Management Council (GMFMC) has mandated several regulatory measures designed to promote rebuilding. These measures include setting catch limits, quotas, a minimum size and bag limits for the recreational sector, and mandatory permitting and reporting requirements. Commercial closures and trip limits are also implemented as appropriate.

Since enactment of the SFA, successful maintenance of landings below the total allowable catch has accelerated the recovery of this resource. The introduction of bycatch reduction devices in the shrimp trawl fishery, which had a large bycatch of juvenile king mackerel, may also have had an impact.

As of 2002, management measures for the directed fisheries for king mackerel in the Gulf of Mexico have been successful in reducing the average fishing mortality rate and increasing the biomass of king mackerel. The stock is no longer being overfishing. However, maintaining this positive trend will take constant vigilance particularly as year classes with lower recruitment are now entering the fishery.

West Coast Groundfish

West coast groundfish are managed under the Groundfish FMP developed by the Pacific Fishery Management Council (PFMC). Managing the fisheries on this valuable complex of 82 species is one of the greatest challenges facing fishery managers. During 1999 - 2002, the abundances of nine west coast groundfish stocks were found to be below the overfished threshold, defined as 25 percent of the unfished level. This situation was a result of a long-term decline, in part due to low stock productivity, compounded by imprecise assessment and bycatch information. A fishery disaster was declared by the Secretary of Commerce in 1999. Managers had set the harvest rate for most assessed west coast groundfish stocks at a level that would preserve 35 percent of the life-time spawning potential from each recruit to the population (i.e., F35 percent). But by the late 1990s, it was clear that stocks were continuing to decline and, worse, recruitment had declined also.

The SFA mandate to prevent overfishing, and the growing concern that F35 percent was an overly optimistic harvest policy for these stocks, led the PFMC to convene a Harvest Policy Workshop. Scientific papers from the workshop have been published, and the results have been instrumental in reshaping the harvest policy for west coast groundfish. The PFMC adjusted its target harvest rates to lower levels: F50 percent for the rockfish species, which showed the most severe declines in recruitment and abundance over the past 20 years, and F40 percent or F45 percent for other species.

Since 2000, the PFMC has recommended acceptable biological catch levels based upon these new harvest rates, further reductions in optimum yield for those stocks that were below the target level of abundance, and annual and in-season management measures such as time/area restrictions to achieve the reductions in fishing mortality necessary for rebuilding. These strict management measures are implemented across commercial and recreational sectors to distribute the social and economic impacts for the long-term benefit of all. Since the official

classification of these stocks as a fishery disaster in 1999, the PFMC and NOAA Fisheries have reduced fishing mortality for west coast groundfish to below "overfishing" levels.

The long-term prognosis for these stocks is uncertain. Many of them have naturally low recruitment/spawner ratios so they will require some time to recover. Long rebuilding times were magnified by poor environmental conditions in the 1990s. However, recent indications of positive environmental conditions may help accelerate the process of rebuilding.

Western Pacific Fisheries

In the Western Pacific, except for the armorhead stock, none of the pelagics, crustaceans, precious corals, bottomfish, or seamount groundfish stocks managed under the various FMPs of the Western Pacific Fishery Management Council (WPFMC) are considered overfished. The domestic seamount groundfish fishery for pelagic armorheads at Hancock Seamounts in the far reaches of the Northwestern Hawaiian Islands (NWHI) was closed in 1986. The moratorium ends in 2004, at which time the WPFMC will determine whether closure of the fishery should continue. Although the fisheries in the Western Pacific are healthy, as a precautionary measure the commercial lobster fishery in the NWHI was closed in 2000 due to the uncertainty associated with determining precisely the exploitable population of lobsters.

In order to face the future challenges of stocks potentially becoming overfished, the WPFMC has prepared updated overfishing definitions and control rules, consistent with the SFA, for implementation by the Secretary of Commerce.

Atlantic Swordfish

In the case of highly migratory species such as Atlantic swordfish, the SFA recognizes that rebuilding plans may be created in cooperation with other harvesting nations. As a member of the International Commission for the Conservation of Atlantic Tunas (ICCAT), the United States has actively pursued international cooperation in the recovery of North Atlantic swordfish. In 1999, the U.S. delegation to ICCAT, comprised of the government, commercial and recreational industries, and environmental groups, united in a strong push to convince other nations to participate in rebuilding. U.S. efforts were instrumental in convincing ICCAT to establish an international ten-year recovery program to rebuild the stock of North Atlantic swordfish. The rebuilding program relies on international reductions in harvest to allow the stock to rebound, building on a series of quota reductions that were first begun in the early 1990s. In the United States, NOAA Fisheries regulates the commercial swordfish fishery through limited entry, seasonal and area closures to protect undersized fish, minimum size, and quotas. The recreational fishery is managed through retention limits and minimum size.

After several years of reduced global catches, the North Atlantic swordfish stock is almost rebuilt, according to a stock assessment conducted in 2002 by the scientific committee of ICCAT. The current assessment shows that growth in the biomass has surpassed expectation, increasing from a level of 65 percent of its healthy stock size to 94 percent in only four years. With the recovery plan on track to rebuild this stock in less than ten years, increased harvests will now be permitted within the limits adopted by the parties at the 2002 ICCAT meeting.

Perspectives for the Future

According to the most recent (April 2003) Report to Congress on the Status of the U.S. Fisheries (www.nmfs.noaa.gov/sfa/reports.html), 66 stocks are currently experiencing overfishing and 86 are overfished. Of those that are overfished, 70 are currently being managed under rebuilding programs. The remaining 16 stocks are either managed under other federal programs (e.g., the Endangered Species Act), have rebuilding plans under development, or have only recently been declared overfished.

Many of the stocks currently undergoing rebuilding have exhibited substantial decreases in fishing mortality, increases in biomass, or both. However, these "successes" are not always recorded in the tables of the Report to Congress because fishing mortality or biomass may not have yet crossed its respective threshold. With so many fisheries and stocks poised to cross these thresholds, it is

anticipated that forthcoming Reports to Congress will contain many more success stories. In fact, just as this report was going to press, a new stock assessment found that the commercially and recreationally valuable Atlantic summer flounder stock is no longer overfished, and overfishing is no longer occurring in this fishery. The spawning biomass of summer flounder increased eight-fold (from 5,200 mt to 42,200 mt) between 1989 and 2002.

NOAA Fisheries is undertaking numerous initiatives that will enhance success in these rebuilding programs and reduce the likelihood of future overfishing. Such initiatives, all developed since passage of the SFA, and most of which are discussed in subsequent chapters, include:

- *NMFS Strategic Plan for Fisheries Research* (www.st.nmfs.gov/st2/strategic_plan.html),
- the *Marine Fisheries Stock Assessment Improvement Plan* (SAIP) (www.st.nmfs.gov/st2/saip.html),
- the *NOAA Fisheries Data Acquisition Plan* (www.st.nmfs.gov/st2/omb_link.html),
- the *Science Quality Assurance Program* (summary in Appendix 2 of the SAIP),
- the *NOAA Fisheries Stock Assessment Toolbox* (Appendix 4 of the SAIP),
- the *Proposed Implementation of a Fishing Vessel Registration and Fisheries Information System* (www.nmfs.noaa.gov/sfa/401.pdf),
- *U.S. National Plan of Action for the Management of Fishing Capacity* (www.nmfs.noaa.gov/sfa/npoacapacity.pdf),
- other reports and plans for measuring and managing fishing capacity,
- a Plan for *Managing the Nation's Bycatch* including conservation engineering and associated initiatives (Executive Summary in Appendix 9 of the SAIP),
- development of *Fishery Ecosystem Plans* (www.st.nmfs.gov/st2/Eco-bas-fis-man.pdf),
- potential revisions to the Agency's National Standard 1 guidelines (www.nmfs.noaa.gov/sfa/domes_fish/121 002A.pdf),
- advanced technology initiatives (Terms of Reference in Appendix 12 of the SAIP),
- an integrated ocean observing program,
- fisheries oceanography studies (example given in Appendix 13 of the SAIP),
- the *National Observer Program Initiative* (www.st.nmfs.gov/st1/nop/index.html),
- the *NMFS Social Sciences Plan* (summary in Appendix 11 of the SAIP),
- cooperative research programs with the fishing industry and other partners (summary in Appendix 22 of the SAIP), and
- increasing use of electronic and web-based data recording and management systems.

Together, these initiatives will result in substantial improvements in the quantity and quality of fishery-dependent and fishery-independent data, improvements in the quality of stock assessments, inclusion of more species in assessment analyses, better estimates of management targets and thresholds, reduced harvesting overcapacity, improved conservation of bycatch species, consideration of secondary effects of fishing, more and better analyses of the impacts of alternative management actions on both fishing communities and stocks, and more efficient use and communication of fisheries information and analyses.

Future challenges include staying on course with rebuilding plans that are working, refining those plans that need amending to better achieve the goals of the SFA, distributing benefits accruing from rebuilding efforts fairly and equitably, and taking proactive steps to prevent overfishing in the future.

CHAPTER 2: BYCATCH

Overview

During the past 26 years, the Councils and NOAA Fisheries have taken a variety of actions to address the issue of bycatch. More recently, the SFA has focused additional attention on bycatch through NS 9, which states, "Conservation and management measures shall, to the extent practicable, (A) minimize bycatch and (B) to the extent bycatch cannot be avoided, minimize the mortality of such bycatch." The SFA defines bycatch as "fish which are harvested in a fishery, but which are not sold or kept for personal use," and includes economic discards and regulatory discards. It is important to note that the SFA definition of bycatch encompasses finfish and sea turtles, but not marine mammals or seabirds.

In the guidelines NOAA Fisheries developed for NS 9, the term "to the extent practicable" is defined to mean to the extent it makes sense to do so, considering the effects on the overall net benefit to the nation of a reduction in bycatch. Section 303 of the SFA, which requires all FMPs to "establish a standardized reporting methodology to assess the amount and type of bycatch occurring in the fishery" and include conservation and management measures that meet NS 9.

The SFA also recognizes that bycatch is a global problem. The challenges of reducing bycatch are impossible to address without international cooperation, since many species that are vulnerable to bycatch migrate across national boundaries. Section 202(h) requires: (1) the Secretary of State, in cooperation with the Secretary of Commerce, to secure bycatch reduction agreements and (2) the submission of an annual report to Congress on such actions to ensure that international bycatch standards are comparable to those applicable to U.S. fishermen. NOAA Fisheries is committed to using existing partnerships, and developing new international approaches, to minimize bycatch.

Following the enactment of the SFA, NOAA Fisheries established a national team that produced the 1998 report *Managing the Nation's Bycatch*. This comprehensive report identified a number of high-priority needs in the area of gear technology and selectivity and fish behavior research. *Managing the Nation's Bycatch* expanded the management concept of bycatch to include marine mammals and seabirds due to the similarities between the issues related to the bycatch of fish and sea turtles, and the incidental take of marine mammals and birds during fishing operations. Unobserved mortalities and retained target catch are also taken into consideration in this report.

NOAA Fisheries has followed up on these recommendations through activities in its Regional Offices and Science Centers. While it is beyond the scope of this document to summarize all of NOAA Fisheries' progress nationwide in addressing bycatch since passage of the SFA, this chapter will identify specific regional examples of progress.

Alaska Region

The bycatch of Pacific halibut, crab, Pacific salmon, Pacific herring, and non-target groundfish is an important management issue in Alaska groundfish fisheries. The at-sea observer program has been a critical element of bycatch management for the Alaska groundfish fisheries for almost 30 years.

Improvements in the estimation and measurement of fish catches also have been made steadily since the implementation of new MSA Section 313(h) under the SFA. Today about 75 percent of the groundfish harvested in the Bering Sea and Aleutian Islands (BSAI) and Gulf of Alaska are weighed on certified scales overseen by NOAA Fisheries-trained fishery observers. The North Pacific Fishery Management Council (NPFMC) began moving toward improving total catch measurement in 1992. Initial reliance on volumetric measurement and estimates by a single observer have been replaced largely by scale

weights and, in the Community Development Quota (CDQ) and pollock cooperative fisheries, two fisheries observers per vessel. The requirement to use scale weights by offshore processors as well as onshore processors in particular has dramatically increased the precision of total catch measurements.

Since the SFA was adopted, several amendments to the BSAI groundfish FMP have been developed to address bycatch, including:

1. Amendment 37, which modified red king crab prohibited species cap limits and established trawl closure areas in nearshore Bristol Bay;
2. Amendment 39, which established a license limitation system;
3. Amendment 46, which modified allocation of Pacific cod by gear type;
4. Amendment 40, which established prohibited species caps for snow crab in trawl fisheries and a bycatch limitation zone; and
5. Amendment 50, which allowed for donation of halibut to foodbanks.

Post-SFA amendments to the Gulf of Alaska groundfish FMP were also adopted to address bycatch, including:

1. Amendment 59 (Cape Edgecombe Pinnacle Closure); and
2. Amendment 60 (Cook Inlet Bottom Trawl Ban).

At the Alaska Fisheries Science Center, gear technology research and research on the behavioral responses of fish, both to fishing gear and to the stresses imposed by contact with fishing gear, have contributed substantially to reducing bycatch. Often the research is conducted in cooperation with industry and the states, including researchers at Oregon State University, the University of Alaska, and the Alaska Department of Fish and Game.

Species-specific differences in response to fishing gear have been identified and used to develop gear modifications that increase the escapement of juvenile fish and other fish that would be discarded if they did not escape. For instance, research has been conducted on differences in the responses of salmon and pollock to trawl gear.

Examples of the gear modifications that have been developed include:

1. *excluder grates to decrease halibut bycatch in the Alaska flatfish and Pacific cod trawl fisheries;*
2. *trawl modifications to decrease rockfish bycatch in West Coast sole fisheries;*
3. *grates and square mesh in trawl codends to reduce the bycatch of juvenile pollock in the Alaska pollock fisheries; and*
4. *excluders and large mesh to reduce skate bycatch in Alaska trawl fisheries.*

As new methods are developed for increasing the escapement of select species or sizes of fish, there is an increased need to estimate escapement mortality. If escapement mortality rates are very high, increased escapement simply replaces one type of bycatch mortality (e.g., discard mortality) with another type of bycatch mortality (e.g., escapement mortality), and the latter is unobserved and, therefore, often more difficult to estimate.

Examples of escapement and discard mortality research conducted by the Alaska Fisheries Science Center include research:

1. *to determine the escapement mortality rate for juvenile pollock and to develop methods and equipment for use in future survival studies,*
2. *on the factors that affect the escapement and discard mortality rates for halibut and several other groundfish species, and*
3. *on the injury rates of red king crab that encounter and escape bottom trawl footropes on the sea floor.*

Southwest Region and the Pacific Islands Region

NOAA Fisheries' Southwest Region has been supporting PFMC efforts to develop a FMP for U.S. West Coast Fisheries for Highly Migratory Species (HMS FMP). The management team and Advisory Subpanel are reviewing analyses of the interaction

of longline vessels and sea turtles obtained from recent observer data in the area east of 150° W. The PFMC is expected to submit the HMS FMP to NOAA Fisheries for review and approval in 2003.

The draft HMS FMP currently contains the following measures to address bycatch:

1. Maintains the bycatch reduction achieved by current controls on HMS fisheries through state and federal regulatory actions under other authorities (e.g., state laws and regulations, Marine Mammal Protection Act and Endangered Species Act);
2. Promotes additional reduction through a catch-and-release program for recreational fisheries, including promotion of fish handling and release procedures to minimize harm and mortality from catch and release of HMS;
3. Establishes mandatory observer programs for fishery sectors currently not observed in order to measure actual bycatch and ultimately develop new bycatch avoidance and bycatch mortality avoidance gear and fishing techniques;
4. Establishes a permit and logbook requirement for all vessels fishing for HMS in order to identify all participants in the various fisheries and improve assessments of bycatch;
5. Incorporates measures to minimize and control the take of sea turtles in the drift gillnet fishery for swordfish and sharks; and
6. Includes provisions requiring that U.S. longline vessels operating along the West Coast to employ seabird interaction avoidance gear and techniques, as required for U.S. longline vessels operating in the central and Western Pacific.

In the U.S. Pacific Island region, the WPFMC has developed regulatory amendments to address bycatch issues concerning protected resources in fisheries managed under the FMP for the Pelagic Fisheries of the Western Pacific Region. Measures to minimize or prevent injury to and mortality of sea turtles and seabirds accidentally caught by hook-and-line fishing, particularly longline operations, were implemented by NOAA Fisheries as final regulations in 2002. While seabirds are not defined as bycatch under the SFA, these regulations are consistent with the purpose and intent of NS9.

The seabird measures implemented were based on a NOAA Fisheries study in Hawaii that found that blue-dyed bait and weights added to baits reduced the number of black-footed albatross gear interactions by approximately 90 percent due to impairment of a seabird's ability to see the bait and a faster rate of bait submersion. In addition, a highly successful pilot study was recently conducted in Hawaii on an underwater chute-setting device. This study included the Hawaii Longline Association, NOAA Fisheries, the WPFMC, and the National Audubon Society. It found that underwater line-setting effectively reduced seabird bycatch, compared to a control of no deterrents, by 95 to 100 percent.

Western Pacific turtle mitigation measures include:

1. *prohibit targeting of swordfish north of the equator by Hawaii longliners;*
2. *prohibit all fishing by Hawaii longline vessels during April and May in a designated closed area south of the main Hawaiian Islands;*
3. *prohibit the landing or possession of more than ten swordfish per fishing trip by Hawaii longline vessels fishing north of the equator;*
4. *require Western Pacific domestic longline vessel operators to annually attend a protected species workshop; and*
5. *require utilization of sea turtle handling and resuscitation measures on both western Pacific U.S. longline vessels and non-longline pelagic vessels using hook-and-line gear.*

At the Southwest Fisheries Science Center, satellite tracking of sea turtles is revealing significant new information on sea turtle habitat, movement patterns, and post-hooking survival in pelagic longline fisheries. Approximately 50 turtles have been tracked with conventional ARGOS transmitters that indicate whether turtles survive for several months after release. About 20 turtles have been tracked with "pop-up" satellite tags that indicate whether post-release survival extends to six months

or longer. Post-hooking survival is being analyzed in comparison with the condition of released turtles.

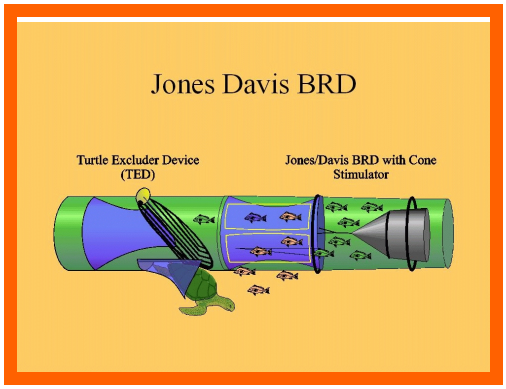
Southeast Region

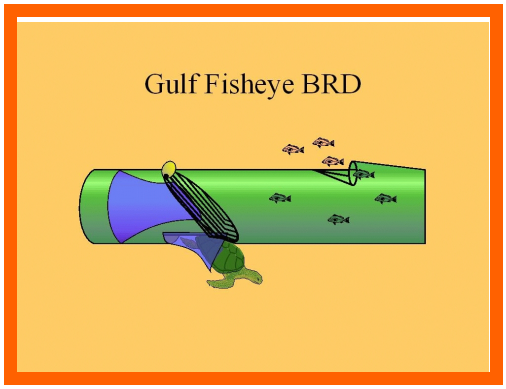
Section 405 of the SFA required NOAA Fisheries to report to Congress on information and studies related to bycatch in the Gulf of Mexico and the South Atlantic. To meet this requirement, NOAA Fisheries completed a study on the incidental mortality of shrimp fishing on stocks, the status of stocks, magnitude of mortality, and fishing effort (see Appendix I). The shrimp fishery is the most valuable commercial fishery in the Gulf of Mexico. Thousands of jobs are dependent on this fishery. However, shrimp trawls have a significant bycatch of non-target finfish and invertebrates. Most of the finfish bycatch, often in the juvenile stage, are discarded dead, and the ratio of the weight of finfish bycatch to that of shrimp caught is approximately 3.8 kilograms to 1 kilogram (4.2 pounds to 1 pound). If left to mature, these juvenile fish possibly could be harvested later and produce a significantly higher yield in weight as well as enhance the reproductive capacity of their stocks.

The GMFMC developed Amendment 9 to the FMP for the Shrimp Fishery of the Gulf of Mexico (Gulf Shrimp FMP) to reduce the bycatch of juvenile red snapper, to the extent practicable, while minimizing adverse effects on the shrimp fishery. Analyses indicated that even if the directed fisheries for adult red snapper were eliminated, the bycatch of juvenile red snapper in shrimp trawls would still need to be reduced significantly for the adult spawning stock to recover under the GMFMC's rebuilding schedule. Amendment 9 requires the use of NOAA Fisheries-certified bycatch reduction devices (BRDs) in shrimp trawls towed in certain areas of the Gulf of Mexico EEZ. To be certified, these BRDs, in conjunction with a vessel's turtle excluder device (TED), must reduce the shrimp trawl bycatch mortality of age 0 and 1 red snapper by a minimum of 44 percent from the average level of mortality on these age groups during 1984 - 1989. The Gulf Fisheye and Jones-Davis BRDs, which were developed by commercial fishers, met this criterion and were certified for use when the final rule implementing Amendment 9 became effective in 1998.

These gear modification devices have demonstrated the capability to reduce bycatch of managed species by 40 to 60 percent and up to 90 percent for other bycatch species, by allowing non-target species to escape the trawl. Even with the use of modified gear, shrimp landings have increased in recent years from 104,328 mt (230M pounds) in 1998 to 116,122 mt (256M pounds) in 2001. In addition to reducing the shrimp trawl bycatch of red snapper, use of the Gulf Fisheye BRD also significantly reduces the shrimp trawl bycatch of Atlantic croaker, spot, and butterfish.

Although mortality of certain sea turtle species and life history stages has been greatly reduced since TEDs have been required, NMFS found in 1999 that TED openings were too small to allow for the release of the largest loggerhead, green and leatherback sea turtles. With implementation of the new rule requiring larger TED openings (published on February 21, 2003), it is estimated that these mortalities will be reduced by 94 to 96 percent when implementation is phased in during 2003. The new requirements may necessitate the purchase of a new grid and the construction of a new flap, although the majority of fishermen already use grids that meet the new requirements.





Northeast Region

Partnerships between commercial fishermen and scientists in the Northeast have successfully developed fishing gear with greater selectivity for a particular species, thus decreasing bycatch of overfished stocks and allowing the commercial fishing industry access to areas that have been closed to fishing due to declining groundfish stocks or entanglement mortality of marine mammals.

Bycatch reduction research currently underway as part of the Cooperative Research Partners Initiative in the Northeast Region is focused on numerous otter trawl configurations that take advantage of fish behavior in response to the gear. The "headless trawl" and "separator trawl" are selective for species that either swim up or down as a reaction to the approaching trawl net and have shown promising results in some selectivity studies.

For example, on May 21, 2003, NOAA Fisheries published a proposed rule would allow a seasonal fishing opportunity for small mesh vessels in the inshore Gulf of Maine while minimizing bycatch of regulated multispecies, using the successful techniques that were developed through serveral years of cooperative research. The fishing experiments, conducted over the past eight years by the Maine Department of Marine Resources in cooperation with the fishing industry, tested different mesh configurations and gear bar spacing to determine the best way to minimize multispecies bycatch in a directed fishery for whiting. Since the northern stock of whiting has been rebuilt, there is an opportunity for some fishery expansion, provided that the incidental catch of groundfish is limited. Cape Cod and Massachusetts Bay fishers have also tested the raised footrope trawl's potential to protect flounder species while fishing for whiting during summer months. This innovative gear has been shown to reduce flounder bycatch in the whiting fishery by as much as 40 to 50 percent.

In addition, various configurations of fish excluder devices have been tested and proven successful for the northern shrimp fishery, which utilizes small-mesh net materials that are capable of catching groundfish species as bycatch. The Nordmore grate was introduced to the Northwest Atlantic shrimp fishery after successful deployment by northern European shrimp fishers. This grate allows large fish to slide up and out of the net, while allowing the smaller shrimp to pass through the grate into the codend for harvest. Shrimp fishing has been demonstrated to be more efficient using the grate. The pandalid shrimp fishery has been successful in reducing finfish bycatch, particularly bycatch of Atlantic cod, to less than five percent of total catch in most areas. Current research projects are looking at similar grates with horizontal configurations to allow harvest of flatfish while protecting round fish such as cod, haddock, and pollock.

Minimizing bycatch of protected species has also been a priority. In 1997, NOAA Fisheries issued regulations to implement the Atlantic Large Whale Take Reduction Plan (ALWTRP) to address incidental takes primarily of large whales, including the endangered North Atlantic right whale, in Atlantic lobster trap/pot and gillnet fisheries. Recent efforts adopted under the ALWTRP have included a number of broad-based gear modifications, including requiring that fixed gear with lines attached to nets and traps have "weak links." These devices are designed to break in the event that a large whale gets entangled in the line before the whale becomes more entangled. Atlantic lobster trap/pot and gillnet fisheries are now required to have weak links at various intervals on their fishing gear. Other measures have been aimed at reducing the overall amount of line in the water in the Northeast such as prohibiting floating lines at the surface, reducing the number of buoy lines, and connecting traps with neutrally buoyant or sinking ground lines. Non-regulatory measures (e.g., disentanglement procedures and gear research) are also an important part of the framework.

Also notable among bycatch reduction efforts for marine mammals has been the use of "pingers" in the sink gillnet fishery. Pingers – acoustic devices that emit intervals of high frequency sound – work well in deterring the harbor porpoise from being entangled in fixed sink gillnets. These measures have been implemented pursuant to section 118 of the Marine Mammal Protection Act, and are consistent with the general purpose of NS 9.

Northwest Region

Discards are a significant problem in the West Coast groundfish fishery due to the multispecies nature of many groundfish fishing activities, as well as management measures instituted to achieve year-round fishing and marketing opportunities. Although monitoring of retained, landed catch has been effective for this fishery through long-standing fish ticket programs administered by the states, the only information on discards came from two short-term, small-scale voluntary observer projects in the late 1980s and late 1990s. Significant reductions in harvest were implemented for the nine species from the West Coast groundfish fishery on preliminary rebuilding plans, and nearly all targeted fishing was eliminated for some of these species. In response to these reductions, the PFMC in 2001 began using a bycatch model to predict the total catch of some of the rebuilding species. In this new approach, rates of bycatch of overfished species are calculated for each target fishery sector from historical logbook and observer data. This approach allows estimation of total catch of these rebuilding species, even if much of that catch is discarded. This approach also provides a tool to calculate manage-ment measures for the target fisheries that will not exceed the total allowable catch of the bycatch species.

In August 2001, NOAA Fisheries implemented a mandatory coastwide observer program for vessels targeting groundfish. The Northwest Fisheries Science Center provided a report on the first year of observer program data (for August 2001 through August 2002) in January 2003. Initial trends in observer program data show higher bycatch and discard rates than those estimated in the bycatch model for most species. NOAA Fisheries and the PFMC have responded to those higher rates by implementing more conservative management measures inseason during 2003. For 2004 and beyond, the Northwest Fisheries Science Center intends to integrate observer program data into a re-designed bycatch model. Bycatch monitoring and bycatch reduction management will be investigated in the agency's Programmatic Environmental Impact Statement (EIS) on bycatch in the West Coast groundfish fisheries during 2003 and 2004.

Also, in 2001, Amendment 13 implemented an increased utilization program for the at-sea processing component of the Pacific whiting fishery. At-sea processors are not allowed to exceed the cumulative limit that applies for the period in which offloading occurs, which means that the vessel may not combine the cumulative landings limit amounts for more than one period. The increased-utilization program can be applied if a catcher/processor or mothership in the whiting fishery carries more than one NMFS-approved observer for 90 percent of the days on the grounds during a cumulative trip limit period; in that case, groundfish trip limits could be exceeded without penalty for that cumulative trip limit period. Any trip limit overage could not enter or otherwise compete in normal markets for that species, and overages would either be: (1) converted to meal, mince, or oil products, which could then be sold, or (2) donated to an approved food bank distributor. If a vessel chooses to deliver to a food bank distributor, state or federal enforcement representatives would have to have the opportunity to monitor any such offloading. This program has reduced regulatory discards in the offshore whiting fishery, given offshore fishery participants an incentive to carry more than one observer, and improved catch data. Although this program is voluntary, most of the processors have chosen to participate and have processed the overages into meal.

Atlantic HMS

The Atlantic HMS FMP, adopted in 1999, contains a variety of management measures designed to reduce bycatch in fisheries targeting tunas, swordfish, and sharks. Since that time, additional measures have been implemented to further reduce the bycatch of juvenile fish, sea turtles, marine mammals, and other non-target species. In 2000, a regulatory amendment implemented several pelagic longline time and area closures off the Atlantic Coast of the United States and in the Gulf of Mexico to reduce the incidental catch of marlins, sailfish and undersized swordfish. Preliminary analyses of pelagic logbook data indicate that overall effort, as measured by the number of hooks set, decreased approximately 5 percent in 2001. Significant decreases in the numbers of fish discarded and kept were reported in the pelagic longline fishery during 2001.

In 2002, NOAA Fisheries closed an area of the Grand Banks to pelagic longline gear and required pelagic longline vessels to adopt several gear and reporting modifications to reduce the incidental catch and post-release mortality of sea turtles. This regulatory amendment also required bottom and pelagic longline vessels to post, and abide by, sea turtle handling and release guidelines, and required shark drift gillnet vessels to conduct frequent net checks for bycatch that could be released alive. To decrease the post-release mortality of sea turtles, pelagic longline vessels are required to carry dipnets and line clippers.

The Southeast Fisheries Science Center, in cooperation with the U.S. pelagic longline fishing industry, the Southwest Science Center, the Northeast Fisheries Science Center, and the University of Florida, is conducting research to investigate the feasibility of gear modifications and fishing practices to reduce the incidental capture of endangered and threatened sea turtles by pelagic longline fishing gears. Mitigation techniques are being developed in controlled experiments. These studies include: (1) evaluation of de-hooker and line cutter prototypes to allow removal of fishing gear from turtles; (2) development of bait types and hook designs to reduce hooking of sea turtles; (3) satellite tags to determine survival, distribution, and behavior of sea turtles; and (4) operational changes in fishing practice to reduce turtle interactions.

These efforts have been effective in developing ways to minimize the potential for harming or catching turtles in pelagic longline fisheries. In May 2003, fishing gear specialists working at NOAA Fisheries' Mississippi Laboratory located in Pascagoula, MS, completed the first two years of a three-year research program in cooperation with the Bluewater Fishermen's Association. To date, the research – which tested five potential bycatch reduction techniques during 687 research sets on the Grand Banks in the Western North Atlantic – has indicated that longline fishermen can avoid unintentional catches of loggerhead sea turtles by reducing the time their hooks are in the water during daylight hours. Even more impressive was the sea turtle bycatch reduction achieved by using circle hooks instead of the J hook historically used in the fishery, and by using mackerel for bait rather than squid, the primary bait used in the fishery. This program is a good example of cooperative efforts between federal and state research organizations and private industry to solve a complex environmental problem. The development of effective measures to minimize interactions with sea turtles will help to ensure successful turtle conservation efforts and allow U.S. commercial fisheries to continue providing high-quality seafood while minimizing bycatch.

International

NOAA Fisheries has been engaged in ongoing activities, on a bilateral basis and through regional fisheries management organizations, to promote international bycatch monitoring and reduction. Annual reports to Congress assessing the need for international bycatch agreements required by section 202(h) of the MSA have been made since 1996. In addition, an International Bycatch Reduction Task Force (Task Force) was convened in January 2002. Although the initial focus of this group was to address the international issue of sea turtle bycatch in longline fisheries, the issues of incidental catch of seabirds in longline fisheries and the conservation and management of sharks were quickly added to the work of the Task Force. Pursuant to the Shark Fishing Prohibition Act, which amended the MSA, NOAA Fisheries implemented regulations in 2002 to prohibit shark finning by U.S. vessels and has taken steps to encourage similar measures by other fishing nations. A number of diplomatic cables have been sent out by the U.S. government to increase international awareness of these bycatch issues and seek cooperation from foreign governments to promote conservation and effective fisheries management.

Perspectives for the Future

Although NOAA Fisheries has made significant strides in reducing levels of bycatch in U.S. fisheries as required by the SFA, several challenges lie ahead. Ensuring compliance with NS 9 during the formulation of FMPs and FMP amendments is a critical, ongoing effort that is being enhanced through increased collaboration between the Councils and NOAA Fisheries during the early stages of rulemaking.

In March 2003, NOAA Fisheries published a notice of availability for a National Bycatch Strategy, based on the 1998 report *Managing the Nation's Bycatch*. This strategy outlines how NOAA Fisheries will improve upon and expand current bycatch reduction efforts and undertake new bycatch initiatives, such as: (1) assessing regional progress toward meeting national bycatch objectives and strategies, (2) developing a national approach that standardizes bycatch reporting, (3) implementing the national bycatch goal through regional implementation plans, (4) expanding international approaches to bycatch reduction, (5) undertaking new education and outreach efforts, and (6) identifying long-term funding requirements.

Specifically, a national working group on bycatch will soon make recommendations on the applicability of alternative methods for estimating the amount of discards, as well as recommending a statistical design for observer programs to cover all U.S. fisheries and standards of precision to be achieved for bycatch estimates. Additional bycatch efforts planned for 2003 include an evaluation of the progress of NOAA Fisheries and the Councils toward meeting the National Bycatch Goal and supporting objectives and strategies, as well as regional recommendations, in *Managing the Nation's Bycatch*. NOAA Fisheries is also working to develop better outreach and communication programs and to develop new international approaches to reducing bycatch. All of these efforts will be facilitated by a new online NOAA Fisheries clearinghouse for bycatch information, which can be found at www.nmfs.noaa.gov/bycatch.htm.

In addition, during the next several years, NOAA Fisheries will be focusing on a number of initiatives to minimize bycatch related to the agency's requests for new bycatch funding in FY 2004 and beyond. NOAA Fisheries will work to enhance and coordinate the national bycatch reduction expertise of gear specialists, fishery and protected species experts, socio-economic specialists, and outreach experts to more effectively reduce bycatch. This group will examine existing bycatch reduction methods, evaluate their effectiveness, and design and test new methods. Funding has been requested to expand and improve cooperative bycatch research activities. New bycatch funding would also be used to expand and modernize fisheries observer programs for the collection of bycatch data from commercial and recreational fishing vessels.

CHAPTER 3: ESSENTIAL FISH HABITAT

Overview

The Essential Fish Habitat (EFH) provisions of the SFA require councils to describe and identify EFH for all fisheries, and to minimize to the extent practicable the adverse effects of fishing on EFH. EFH is defined as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." In addition, the SFA requires that other federal agencies consult with NOAA Fisheries on actions that may adversely affect EFH. For its part, NOAA Fisheries is required to recommend measures that can be taken by the consulting federal agency to conserve EFH.

The EFH program has been successful in meeting the goals the agency established for EFH when SFA was originally passed. Councils have designated EFH for approximately 1,000 species managed under 43 FMPs. In addition, the effects of fishing for each species on EFH has been evaluated. For effects that are more than minimal and not temporary, the FMPs include management options to minimize those effects to the extent practicable. Agreements have been negotiated with all federal agencies that consult with NOAA Fisheries on a regular basis to ensure that the EFH consultation process is efficient and effective in addressing adverse impacts on EFH.

Implementation of the EFH provisions has been challenging. The task of assembling and analyzing data for the numerous habitats utilized by approximately 1,000 fish species throughout the Exclusive Economic Zone (EEZ) and state waters proved to be very difficult given the lack of spatially explicit information about species and their habitat associations in some areas. Decisions about designating EFH and implementing measures to protect EFH from the impacts of fishing gear often had to be made, sometimes based on very limited information. NOAA Fisheries has been legally challenged on some of the supporting documents prepared for the EFH FMPs and other aspects of the EFH program. As a result of one lawsuit, NOAA Fisheries is in the process of re-analyzing the EFH provisions of several FMPs.

Regardless of these challenges, EFH has not only helped focus attention on the importance of habitat considerations to sustaining fish populations, but it also has been used as a tool to develop ecosystem-based management measures to conserve valuable fish species and their habitats. Following are examples of how EFH information has been used in different regions to conserve habitat and fisheries. While many of these examples focus on the EFH consultation process, it should be noted that much of the information used to support these consultations was the result of data analyses and syntheses conducted to designate and evaluate EFH in FMPs.

Highway Projects in the Southeast

Before SFA provided a mandate to identify and minimize adverse impacts to EFH, NOAA Fisheries did not have a process to address fishery concerns during project planning developed by other agencies and thus provided comments only after public notice announcing the initiation of projects such as highway construction. Issues can now be addressed in the early planning stages of project design and development, rather than during permitting, when design plans are already established.

The NOAA Fisheries Southeast Region and the Federal Highway Administration developed an agreement to integrate EFH consultations into existing National Environmental Policy Act (NEPA) processes. These agreements are also called "Findings" and are described in 50 CFR Part 600.905. The Southeast Region's EFH/NEPA finding with the Federal Highway Administration allows NOAA Fisheries to be involved in the early planning stages of highway projects. The EFH finding has also served to support the Federal Highway Administration's environmental streamlining initiative.

Minerals Management Service (MMS) Projects in the Gulf of Mexico

NOAA Fisheries and MMS completed an EFH Programmatic Consultation with the MMS Gulf of Mexico Outer Continental Shelf Region in July

1999 (amended and expanded in 2002). The consultation addressed pipeline rights-of-way, plans for exploration and production, and platform removal. The primary success of completing the programmatic consultation is that MMS incorporated EFH Conservation Recommendations as a requirement of the Outer Continental Shelf Lands Act program. NOAA Fisheries recommended provisions to conserve EFH in seamounts, and MMS adopted these recommendations as mitigation stipulations. As a result, NOAA Fisheries recommendations are now part of the MMS Outer Continental Shelf Lands Act program, and MMS no longer needs to conduct individual EFH consultations with NOAA Fisheries for every action that would adversely affect EFH, as long as the EFH conservation recommendations are followed.

Delaware River Deepening Project

The Delaware River Main Channel Deepening Project is seeking to deepen the main channel from 12.2 to 13.7 meters (40 to 45 feet), and use the dredged material for beach nourishment projects in New Jersey. Through information provided in the EFH designations, NOAA Fisheries Northeast Region learned that important pupping grounds for sandbar sharks exist in portions of Delaware Bay. NOAA Fisheries and the U.S. Army Corps of Engineers agreed that placing the dredged sand on the beach during June through September could harm sandbar shark pupping activities due to resuspension of sediments in inshore waters. Both agencies recognized that the previously agreed plan required changes to ensure protection of the shark nursing grounds. Therefore, the two agencies decided to evaluate alternative dredged material management options to avoid impact to pupping grounds; these impacts would not have been recognized or addressed without an EFH consultation.

Similar consultations are ongoing and routine in the major eastern seaboard ports that require navigational maintenance or deepening to stay competitive in commerce, e.g., Boston Harbor, Providence Harbor, New York/New Jersey Harbor, and Baltimore Harbor. Through these consultations NOAA Fisheries' Northeast Region influences project design and operation to avoid and manage impacts to living marine resources and habitat associated with these high profile, economically significant projects. Often, habitat staff are able to identify restoration that will enhance functional habitat value for resources. Notably, habitat staff consulted with state and federal agencies for the New Jersey Intracoastal Waterway Assessment and identified 36 sites which will be evaluated for habitat restoration opportunities to benefit targeted species. The application of the designations and regulatory framework of EFH has made this progress possible.

Oil and Gas Platforms off California

The EFH consultation process has allowed NOAA Fisheries to review and provide recommendations on activities affecting its trust resources that were not typically reviewed by NOAA Fisheries in the past. For example, the U.S. Environmental Protection Agency (EPA) consulted with NOAA Fisheries for re-issuance of a National Pollutant Discharge Elimination System general permit for oil and gas platforms off the California coast. The general permit would cover 22 existing production platforms and authorize the discharge of produced waters and drilling muds. Through the detailed information provided in EPA's EFH Assessment, NOAA Fisheries became aware of discharges in the mixing zone immediately surrounding the platform that could potentially harm EFH and be toxic to fish.

NOAA Fisheries' EFH Conservation Recommendations asked that EPA include as a permit condition a requirement for operators to evaluate lethal, sublethal, and bioaccumulative effects of produced water discharges on federally managed fish species occupying the mixing zone. EPA must develop appropriate mitigation measures (e.g., moving discharge pipes away from platforms) if the analyses indicate that substantial adverse effects to federally managed species or EFH are occurring.

U.S. Navy/Pearl Harbor

The presence of EFH and Habitat Areas of Particular Concern (HAPC) provided protection for fishery habitat in the Hawaiian Islands that likely would not have occurred without the EFH and HAPC designation. HAPCs are a subset of EFH that merit particular conservation attention. NOAA Fisheries' early review and coordination with the

Navy regarding the Pearl Harbor sewage outfall extension provided for project changes during the planning phase of project development. The Navy proposed to extend the deep ocean outfall out from 9.1 meters (30 feet) of water to 30.5 meters (100 feet) of water. During regular scoping meetings, NOAA Fisheries informed the Navy that the extension would place the outfall's diffusers right near an escarpment designated as HAPC for bottom fish. The Navy agreed to pull the outfall back from the escarpment.

Environmental Protection Agency/Alaska

Through the EFH consultation process, NOAA Fisheries and EPA are beginning to confer and coordinate on a broader range of EPA actions that have the potential to affect fish habitat. For example, EPA submitted an EFH Assessment for its most recent triennial review of Alaska's revised water quality standards. Alaska's revised standards adopted new criteria for a number of pollutants, including total dissolved solids (TDS). NOAA Fisheries provided EFH Conservation Recommendations that asked EPA to review the TDS criterion before the next triennial review. This recommendation was based on recently available research indicating that the TDS criterion could prevent the successful fertilization of salmon eggs. Through the EFH consultation process, NOAA Fisheries became aware of water quality standards that might not be fully protective of managed species and gave the EPA an opportunity to consider this new information and develop appropriately protective water quality criteria prior to the next triennial review period.

Oculina Bank

As part of the process of designating HAPCs, the South Atlantic Council expanded the Oculina Bank HAPC and established two adjacent HAPCs off the coast of Fort Pierce, Florida. Oculina Bank, which lies in water ranging from 70 to 100 meters (230 to 330 feet) deep, consists of limestone pinnacles of up to 24.4 meters (80 feet) of relief covered with delicately branched *Oculina* coral. The extremely delicate and fragile coral grows slowly, less than a half inch per year, and forms spherical, branching thicket-like colonies that can stretch for hundreds of yards and reach heights of up to 4.6 meters (15 feet). The Oculina Bank restricted zone off Fort Pierce, Florida, was established in 1984 to protect a unique habitat area containing large communities of ivory coral, *Oculina varicosa.*

On July 14, 2000, a final rule implemented these closed areas. Because of its incredible biological diversity, the area has been subjected to intense fishing pressure since the early 1960s, and fishing gear has had a devastating effect on the fragile coral. The rule will be a major step toward expanding the protection that is essential to sustaining the Oculina Bank and facilitating its recovery.

Perspectives for the Future

Habitat conservation is a cornerstone of ensuring sustainable fisheries for the future. Through the EFH provision of the SFA, NOAA Fisheries has made great strides in identifying important habitats, communicating and coordinating with federal agencies whose actions may adversely effect those habitats, and working with the Councils to identify ways to minimize adverse effects of fishing, to the extent practicable. For more information about workshops and research that NMFS has supported to enhance our understanding of fishing effects on habitat, see Web site: www.nmfs.noaa.gov/habitat/habitatprotection/essentialfishhabitat10.htm. This website also provides information on many other aspects of the essential fish habitat program including information about EFH environmental impact statements and guidance on EFH consultations.

Much work remains to be done, both in refining our EFH descriptions and in identifying additional avenues to conserve EFH. Towards that end, NOAA Fisheries is partnering with the U.S. Geological Survey in a national initiative to conserve marine fisheries by assessing the relationship between benthic habitats and sustainable fisheries. Part of this collaboration involves biennial national meetings, the second of which was held November, 2002, to review the results of benthic habitat studies. For more information on this meeting and future national meetings, see Web site: walrus.wr.usgs.gov/bh2002.

In addition, NOAA Fisheries is working to restore marine habitat through the activities of the NOAA Restoration Center. The Restoration Center restores degraded habitats, advances the science of coastal habitat restoration, and transfers restoration technology to the private sector, the public and other government agencies thereby contributing to the sustainability of commercial and recreational fisheries. More information about NOAA Fisheries' habitat restoration programs can be found at Web site: www.nmfs.noaa.gov/habitat/restoration.

Efforts such as these demonstrate that the EFH provisions of the SFA provide an important context for the characterization and conservation of fisheries habitats. The EFH provisions provide a framework for classifying habitat and initiating the research needed to solidify a firm understanding of the connections between marine habitats and the Nation's fisheries.

CHAPTER 4: FISHERY RESEARCH AND MONITORING

Overview

A major initiative of the SFA was the establishment of a new title (Title IV) in the MSA dedicated to fishery monitoring and research. This title includes Sections on Registration and Information Management, Observers, a Fisheries Strategic Research Plan, and Fisheries Systems Research. In support of these requirements, NOAA Fisheries has made significant efforts to modernize the stock assessment process. These activities are discussed in greater detail below.

Implementation of Fisheries Information System

In December 1998, NOAA submitted a Report to Congress in response to Section 401 of the MSA that detailed an implementation plan for a national Fisheries Information System (FIS). The report provided a consensus plan based on input from states, councils, commissions, industry and NOAA, including a long-term $51.9M FIS funding profile. The plan expands the capability of existing regional systems to collect more and higher resolution data, while at the same time providing a nationwide structure with common goals, objectives and standards for data coverage, quality and data exchange.

The goal of the national FIS is to address current issues in three broad areas: (1) data quality, (2) technology and data integration, and (3) coordination and communication regarding data collected by state and federal agencies. National integration is essential for enhanced quality assurance and quality control, improved security, access, archiving services, and technological innovation. The national FIS will also help to provide NOAA Fisheries with the capabilities to measure the biological and economic performance of U.S. fisheries more fully.

Funding to date has focused on increased regional funding, and has already resulted in some improvements in the quantity, quality, and timeliness of regional data collection. For example, cooperative planning with States and Regional Commissions through the Atlantic, Pacific, and Gulf of Mexico regional information systems (ACCSP, Pacific RecFIN, and GulfFIN) has significantly improved the quality of marine recreational fishery catch and effort statistics by promoting more efficient coverage of marine recreational fisheries at higher levels of sampling. One of the primary objectives has been to standardize the survey sampling and estimation methods used to generate fishing effort and catch statistics. In addition, NOAA Fisheries has worked with Hawaii, Puerto Rico, and the U.S. Virgin Islands in recent years to expand survey coverage in recreational fisheries. Coordinated planning of state/federal data collection programs has been effective in eliminating unnecessary overlaps and gaps in coverage.

NOAA Fisheries continues to develop research projects to identify potential further qualitative and quantitative improvements to recreational fishery survey methods. For instance, the cooperative pilot studies initiated, designed, and evaluated by NOAA Fisheries in recent years have led to the successful development, testing, and implementation of a new specialized survey approach for charter and headboat fisheries that produces more precise and timely coastwide catch and effort statistics than have traditionally been available for monitoring purposes. This new for-hire survey is now being conducted on the Atlantic, Pacific, and Gulf coasts where it has gained support from both the Councils and for-hire industry leaders.

A significant effort is also underway to integrate vessel and dealer permit identification information across NOAA Fisheries' regions. This effort has resulted in the design and development of a new permits information and management system to support federal permits issued by the Southeast Regional Office. Further, the Northeast and Southeast Regions, in concert with the Office of Science and Technology, are exploring a collaborative dealer permit program to focus on providing on-line permit services for constituents along the Atlantic and Gulf coasts as part of the national FIS. System specifications have been provided to the States of Texas, Virginia, and Connecticut, which are considering upgrades to their

state registration systems to comply with FIS and regional data standards. These activities are providing enhanced opportunities for electronic reporting and access in a secure environment as well as data quality assurance and control.

Implementation of Fisheries Observer Programs

Observer programs are an integral part of NOAA Fisheries' efforts to monitor and minimize bycatch, as required by NS 9. Fishery observers provide the most reliable source of high quality, objective fishery-dependent data on all aspects of fishing operations. Observer data on the release of incidental catch help to provide the best possible estimates of total catch. In many fisheries, observer coverage is an important aspect of a standardized reporting methodology for bycatch that is consistent with Section 303(a)11. Data collected by observers may be essential for estimating total fishing-induced mortality. Observers also collect biological samples for life history studies, detailed spatial and temporal data relating to fishing strategies, oceanographic and climate data, and social and economic data.

NOAA Fisheries has doubled the number of fisheries with observer coverage, from 13 to 26, since the passage of the SFA. Further expansion is limited by a number of factors. Safety conditions and accommodations aboard smaller vessels may be inadequate to provide the conditions necessary for high quality data collection. Concern for vessel liability may cause observer provider companies to "over-insure" their observers to address vessel owners' concerns that observers will seek compensation from vessels in the event of an injury. These costs are passed on to NOAA Fisheries driving up sea day costs. The cost of observers can vary from $500 to $2000 per sea day, depending on the seasonal and geographic range of the fishery. Finally, high turnover rates and constant recruitment result in higher training and quality assurance costs.

There are also issues regarding observer coverage levels (sets or days observed). Coverage level targets depend on the frequency of the catch in question and the degree of confidence required for the total catch estimate. If species are only occasionally caught, a higher level of sampling may be required to estimate catch levels with a specified degree of confidence. Commonly caught species may require much lower levels of coverage. Some unique circumstances such as very rare species or quota monitoring could require near-100 percent coverage.

To meet these challenges, NOAA Fisheries established a National Observer Program office within the NOAA Fisheries Headquarters' Office of Science and Technology in 1999. The mission of this program is to provide a mechanism for NOAA Fisheries to develop policies, plans, and procedures that support observer programs. An intra-agency advisory team is comprised of representatives from each NOAA Fisheries headquarters office and region. The team identifies issues of national concern, recommends and establishes priorities for national research, and supports program implementation.

The National Observer Program has been a driving force in the development and tracking of budget initiatives to modernize and expand observer programs. The program also serves as a clearing-house for information on regionally-implemented observer programs. General information about NOAA Fisheries observer programs can be found on the National Observer Program's Web site: www.st.nmfs.gov/st1/nop.

In addition, in accordance with the SFA and to address observer health and safety, NOAA Fisheries published a final rule on May 18, 1998, (63 FR 27213) to establish the right of an observer to refuse to board an unsafe or inadequate vessel. NOAA Fisheries reinforced this provision by limiting, and in most cases, preventing the deployment of observers on vessels deemed to be inadequate or unsafe. The National Observer Program is also looking into alternative observation technologies (e.g., vessel monitoring systems and video monitoring) that may be more efficient in some cases.

Strategic Plan for Fisheries Research

The SFA requires the Secretary of Commerce to develop, triennially, a five-year strategic plan for fisheries research. The SFA requires that the plan address four major areas of research: (1) research to support fishery conservation and management, (2) conservation engineering research, (3) research on the fisheries, and (4) information management research. The SFA specifies that the plan shall contain a limited number of priority objectives for each of these research areas, indicate goals and timetables, provide a role for commercial fishermen in such research, provide for collection and dissemination of complete and accurate information concerning fishing activities, and be developed in cooperation with the Councils and affected states.

The Strategic Plan for Fisheries Research was first published in February 1998 and revised in December 2001. The Plan identifies five major fisheries research goals:

GOAL 1: Provide scientifically sound information and data to support fishery conservation and management.

GOAL 2: Through conservation engineering research, contribute to efforts that reduce bycatch and adverse effects on essential fish habitat, promote efficient harvest of target species, and improve the data from fishery surveys.

GOAL 3: Through economic and ecological research on marine communities and ecosystems, provide scientific data and information to increase long-term economic and social benefits to the nation from living marine resources.

GOAL 4: Improve the national fishery information system.

GOAL 5: Improve the effectiveness of external partnerships with fishers, managers, scientists, conservationists, and other interested groups.

Updated Plans for Fisheries Research build on elements of previous significant planning initiatives from NOAA while adopting further guidance from recent reports and external reviews (e.g., from the National Research Council). The plans describe ongoing research conducted by NOAA Fisheries and explain how the agency expects to enhance its future research efforts. This information guides the development of budget initiatives and informs Congress and the public as to the ongoing direction of NOAA Fisheries' research. The latest version of the Strategic Plan for Fisheries Research is currently available at Web site: www.st.nmfs.gov/st2/strategic_plan.html.

Fisheries Systems Research

Recognizing the potential of an ecosystem-based approach to improve fisheries management, the SFA directed NOAA Fisheries to convene a panel of independent experts to assess the extent to which ecosystem principles are currently applied, and recommend how best to integrate ecosystem principles into future federal management and research activities.

In response, NOAA Fisheries created the Ecosystem Principles Advisory Panel (Panel) in 1997. The Panel of 20 members, each with unique research and management experience, including diverse geographic perspectives, submitted its Report to Congress, *Ecosystem-Based Fishery Management* in April 1999. The report identifies eight principles and six associated policies for ecosystem-based management with the goal of maintaining the health and sustainability of marine ecosystems, and is available at Web site: ww.st.nmfs.gov/st2/Eco-bas-fis-man.pdf. The Panel's findings encourage ecosystem-based research through partnerships that enhance the quality of NOAA Fisheries' stock assessments. Also, the Panel suggests further linkage of MSA management objectives with collaborative ecosystem observations and ecosystem-based management goals focusing on the protection of coastal and marine habitat, maintaining species diversity, and fisheries sustainability.

Thus far, NOAA Fisheries' approach has been to conduct detailed single-species assessments and embed them in an ecosystem context. Refinements to this approach, along with the development of multispecies and ecosystem models are now being

pursued in all Fisheries Science Centers. Notable strides in ecosystem approaches include:

- The Marine Fisheries Advisory Committee (MAFAC) created an Ecosystem Approach Task Force in November 2001 to identify issues that must be addressed before meaningful ecosystem-based fisheries management is feasible. The task force has been working on a document entitled *Technical Guidance for Implementing an Ecosystem-based Approach to Fisheries Management* to assist the various marine management and regulatory agencies in long-term planning to transition towards ecosystem-based management. This technical guidance is expected to be finalized in 2003.

- Responding to key recommendations in the *Report to Congress: Ecosystem-Based Fishery Management*, the NOAA Chesapeake Bay Office convened a panel of experts to develop a prototype Fisheries Ecosystem Plan for the Chesapeake Bay. The advisory panel is conducting a peer review of the draft plan. The Chesapeake Bay Fisheries Ecosystem Plan will be published as a NOAA Technical Memorandum prior to its implementation.

- Augmenting the traditional single-species stock assessment advice the Alaska Fisheries Science Center routinely provides to the NPFMC, the Center now includes an Ecosystem Considerations Chapter in its annual stock assessment and fishery evaluation report. This chapter may be expanded to consider the aggregate effects of groundfish fisheries on the BSAI and Gulf of Alaska ecosystem, including forage fishes, marine mammals, and seabirds. These new assessments could lead to changes in aggregate catch levels (e.g., new caps on multispecies optimum yields), the species mix of the catch, discard amounts, and managed large areas (as opposed to closed areas that are designed for a specific fish or fishery).

- NOAA Fisheries' fishery-independent surveys collect data on stocks of economically and ecologically important species and support one of the most comprehensive *in situ* marine ecological observing systems in the world. Oceanographic and plankton data are also collected to monitor the health and status of ecosystem components, with the ultimate goal of characterizing the changing states of marine ecosystems and impacts on fisheries productivity. In FY 2003, as part of the multi-year Expand Stock Assessment initiative, the agency committed new fiscal resources to sustain and expand the California Cooperative Oceanic Fisheries Investigations inter-disciplinary field surveys, a 50-year partnership between the Southwest Fisheries Science Center, Scripps Institution of Oceanography, and California Department of Fish and Game. The California Cooperative Oceanic Fisheries Investigations, in turn, supports the innovative Pacific Coastal Observing System, a NOAA Fisheries initiative encompassing the waters off California, Oregon, and Washington. This joint effort with west coast state and academic partners strengthens existing biological sampling programs, brings together numerous regional activities, and links to oceanographic and meteorological sampling programs to provide ecosystem-level information on a coast-wide basis.

Modernizing Stock Assessments

In response to broad SFA mandates requiring increased data collection and analysis, NOAA Fisheries established a National Task Force for Improving Fish Stock Assessments. The task force conducted a detailed and comprehensive review of the agency's stock assessment capabilities and needs, resulting in the Marine Fisheries Stock Assessment Improvement Plan (SAIP). The SAIP identifies three "Tiers of Assessment Excellence" to which NOAA Fisheries should aspire. The first tier calls for improvements in stock assessments using existing data. This tier is the least demanding in terms of the need for additional resources, but is also limited in the scope of potential achievements. The second tier consists of elevating stock assessments to new national standards of excellence. Achieving this goal will require major new or expanded investments in data collection activities, data quality and management, assessment analyses and communication of results. The third and final tier concerns "next generation assessments" that will provide the basis for ecosystem-level assessments

and management. The *Marine Fisheries Stock Assessment Improvement Plan* is available at Web site: www.st.nmfs.gov/st2/saip.html

Perspectives for the Future

Since the adoption of the SFA, NOAA Fisheries has produced a comprehensive document that outlines long-term requirements for strategic improvements in science-based management. This document, the *Requirements for Improved and Integrated Conservation of Fisheries, Protected Resources, and Habitat* addresses long-term needs for improving the quality of scientific and technical advice to fishery management bodies. The document responds to numerous internal and external NOAA reviews including the *NOAA Fisheries Strategic Plan for Fisheries Research*, the *Report to Congress on Ecosystem-Based Fishery Management*, the *Marine Fisheries Stock Assessment Improvement Plan*, and the *NOAA Fisheries Data Acquisition Plan* (see the Web sites provided in Chapter 1). In enumerating critical shortfalls and needed investments, this requirements document will guide future plans for improved stock assessments, advanced sampling technologies, integrated ocean observing systems, more focused cooperative research activities and an expanded national observer program. Three examples of initiatives that will be receiving increased attention in the near future are highlighted below.

1. In FY 2003, NOAA Fisheries embarked on a new course to increase survey and field sampling efficiencies and acquire improved data for additional species and habitats through the efforts of the Working Group for Advanced Technologies (see Appendix 12 of the SAIP). Investments in technical programs and new staff support progress toward the SAIP's three tiers of assessment excellence: (1) to bring all fishery-independent data collection to the state-of-the art, (2) to harness off-the-shelf and emerging advanced sampling technologies, and (3) to invest in innovative remote sensing applications for *in situ* assessments.

2. Focused cooperative federal and non-federal field activities are a cost effective way to fill short-term information gaps without compromising long-term data collection from multipurpose fishery-independent surveys. Cooperative field programs provide expanded data sources with more precision, and geographic coverage, than self-reported fishing logbooks and are less costly than deploying additional scientific observers. The industry and local fishing communities offer valuable knowledge and experience that can make the difference between success and failure for some types of data collection. For example, cooperative tagging experiments have provided valuable information on fish migration patterns, local and seasonal availability, and the impact of fishing gear. Partnerships with recreational and commercial industries, academic researchers, and environmental organizations will continue to be an important tool for expanding research activities and communicating the results of scientific research. Collectively, these and other related initiatives highlight NOAA Fisheries' continuing commitment to improve the quality of scientific advice upon which effective resource management decisions are based.

3. New web-based species information databases are enabling in more efficient data archiving and reporting. NOAA Fisheries' Species Information System is a web-based data management and national reporting software initiative that provides species and stock-specific status information currently reported in the SFA-mandated *Report to Congress on the Status of the U.S. Fisheries*, and the *Our Living Oceans* report series for resources, economics and habitat. The anticipated benefits include timely updating of stock assessments and management status, and public access to the most recent and comprehensive information available from NOAA Fisheries. This work is under continuing development.

CHAPTER 5: PROGRESS ON OTHER SFA ACTIVITIES

Overview

In addition to the overarching requirements outlined in previous chapters, the SFA instituted numerous changes in the process and administration of fisheries management by NOAA Fisheries and the Councils. Other activities conducted under the SFA include the following: (1) establishment of advisory panels, (2) identification of allowable gear, (3) consideration of impacts to fishing communities, (4) safety at sea, and (5) reform of fisheries finance programs. Selected aspects of these activities are described in this chapter.

Advisory Panels for Atlantic Highly Migratory Species Management

The SFA required the establishment of several new constituent advisory panels. Most prominently, it required advisory panels for FMPs related to Atlantic highly migratory species (HMS). The law required the Secretary to establish advisory panels to assist in the collection and evaluation of information relevant to the development of any FMP or plan amendment for an Atlantic HMS fishery. NOAA Fisheries established advisory panels for the Atlantic billfish and Atlantic HMS (tunas, swordfish, and sharks) fisheries in 1997.

These advisory panels participate in all aspects of development of the plan or amendment. The panels are balanced in their representation of commercial, recreational, and other interests. Each consists at least seven individuals who are knowledgeable about the fishery for which the plan or amendment is being developed and are selected from among members of the ICCAT advisory committee and other interested parties. The same provisions apply to HMS advisory panels as to advisory panels established by the councils, including procedural requirements and exemption from the Federal Advisory Committee Act. These Advisory Panels played a significant role in the development of the Atlantic HMS FMP and the Billfish Amendment during 1999. The Panels convene at least once a year to provide advice and guidance on the development of new management measures for HMS fisheries.

Identification of Allowable Gear

The SFA added Section 305(a) to the MSA, requiring publication of a list of allowable fisheries and gear under the authority of each fishery management council and, in the case of Atlantic HMS, under the Secretary of Commerce. This list gives NOAA Fisheries a mechanism to guard against rapid establishment of a new gear or fishery that could lead to overfishing of a managed resource or an unmanaged resource, and to protect against the possibility that a new gear and/or fishery could have a major negative impact on the environment (e.g., bottom habitat).

A proposed rule was published in the *Federal Register* on June 4, 1998, inviting public comments on a list of allowable fisheries and gear and a set of proposed guidelines for determining when a fishery or gear is sufficiently different from an existing fishery or gear within a given fishery. The rule also contained a description of the application process for fishermen who wish to participate in a new fishery or use a new gear in an existing fishery. A final rule was published in January 1999; however, NOAA Fisheries decided to invite additional public comments. This proved beneficial in further refining the list of allowable fisheries and gear to provide a better reflection of actual fishing practices in the exclusive economic zone. Another final rule was published in the *Federal Register* on December 2, 1999 (64 FR 67511). These regulations have assisted NOAA Fisheries in rebuilding efforts for overfished stocks that may be unable to sustain new fisheries in the short-term.

National Standard 8 - Fishing Communities

Section 106(b) of the SFA included new provisions defining and related to "fishing communities." The term "fishing community" was added in NS 8 [Section 301(a)(8)]: "Conservation and management measures shall, consistent with the conservation requirements of this Act (including the

prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities in order to (A) provide for the sustained participation of such communities, and (B) to the extent practicable, minimize adverse economic impacts on such communities." The concept of fishing communities was also added in Section 303(a)(9) on fishery impact statements, in Section 303(b)(6) on limited access programs, in Section 304(e) on rebuilding programs, in Section 312(a) on disaster relief, and in the report required for individual fishing quota programs in Section 303(d) [SFA Section 108(f)].

A fishing community is defined as "a community which is substantially dependent on or substantially engaged in the harvest or processing of fishery to meet social and economic needs, and includes fishing vessel owners, operators, and crew and United States fish processors that are based in such community."

The national standard guidelines developed in 1998 clarified the definition of fishing community by noting that it referred to a place and the residents and fishery-dependent businesses and services therein. The guidance also outlined the forms of analysis that would satisfy the requirements of the MSA. Appendices 2(d) and 2(g) of NOAA Fisheries' Operational Guidelines were further revised and expanded to accommodate changes in other applicable laws. For economic impact assessment guidance, Appendix 2(d) was re-issued in April 2000, while Appendix 2(g) for social impact assessment guidance was re-issued in March 2001.

NOAA Fisheries has undertaken five main tasks to implement SFA provisions relating to fishing communities: (1) provide social science advice and encouragement to councils, (2) provide training and analysis assistance to NOAA Fisheries and council staff, (3) provide additional social science resources to NOAA Fisheries regions, (4) undertake data collection programs, and (5) further refine terms and methods of analysis. Through these efforts NOAA Fisheries is committed to improving social and economic surveys, improving economic analyses and fishery modeling, and initiating an employment survey supported by a national vessel inventory sampling frame.

In order to assist in the analysis of economic impacts, NOAA Fisheries formed the National IMPLAN Working Group in 2001. This group is working to help ensure that economic impacts are estimated consistently throughout the agency. Specific goals include training agency economists in the use of IMPLAN Pro (a widely accepted input/output (I/O) modeling software package), building a national level I/O model for commercial fisheries, and developing recommendations for the consistent development of regional, policy oriented I/O models. In 2002, the working group conducted an advanced training workshop with plans to conduct introductory training for beginner users in 2004 and for NOAA Fisheries to host the 2004 National IMPLAN Users Conference. Also, NOAA Fisheries is working closely with a contractor to develop a national I/O model for commercial fisheries and a set of recommendations for the creation of regional I/O models to be used for policy analysis.

Since passage of the SFA in 1996, NOAA Fisheries has enhanced the provision of social science advice to the councils during fishery management action development, and has encouraged the Councils to develop social science expertise. Through the use of contractors and council resources, there has been a measurable improvement in the quality of social impact assessments and data used in developing fishery management actions. Training workshops for council and NOAA Fisheries regional staff have been provided by the headquarters economist and sociologist.

Additional resources and expertise have been provided by hiring social science specialists in NOAA Fisheries headquarters, regions and fishery science centers. Funding for social science and economic data collection has been provided through the Office of Science and Technology. The regions decide on data collection priorities in consultation with Office of Science and Technology social science staff. Fieldwork by NOAA Fisheries' social scientists was initiated following the SFA and baseline community studies have been made in New England, and Alaska. Social science contractors are working in support of FMPs in the Gulf of Mexico,

Alaska, the Western Pacific, New England, Mid-Atlantic, and South Atlantic regions.

Finally, planning is underway for development of a relational database for fishing community and port profile data. The adoption of a single, standard database architecture will allow us to improve regional comparative research in support of fishery management actions. It will also allow NOAA Fisheries to carry out systematic national analyses that provide a significant challenge at this time.

National Standard 10 - Safety of Life at Sea

NS 10 of the SFA states that, "Conservation and management measures shall, to the extent practicable, promote the safety of human life at sea." This standard grew out of the concerns of many fishermen, their families, and friends that the continued "race for fish" associated with derby fisheries was endangering the lives of fishermen. Derby fisheries have extremely short open seasons, which are inflexible with regard to weather or sea conditions, requiring fishing vessels to go to sea regardless of environmental conditions and work at maximum effort for several days at a time. Vessel repairs might be postponed or neglected, crews may have inadequate rest, and attention to the safety of the vessel might be diverted or ignored in the effort to catch as much as possible during the season.

NS 10 recognizes that there are practical limits to safety in an inherently dangerous occupation, that the safety of the vessel itself is the first priority in safety, and that the master of the vessel must have the ultimate responsibility for the safety of the vessel and its crew. Factors influencing the safety of a fishing vessel and its crew include the environment in which the vessel operates, the gear and loading requirements of the vessel, and time constraints on the vessel's fishing. The national standard guidelines suggest that councils should consult with the U.S. Coast Guard and any Council Safety Committee in considering the impact of any proposed management measure on safety. Finally, the guidelines suggest mitigation measures such as adding flexibility to setting fishing seasons and tailoring gear requirements to consider their safety of use on fishing vessels.

The NS 10 guidelines were well received by the public and have been cited as the reason for several management modifications. One example is the management of the commercial red snapper fishery. The GMFMC recognized that participants in the fishery were engaged in a derby fishery and tried to minimize its adverse effects by creating a series of mini-commercial seasons. In 1996, the GMFMC developed a regulatory amendment that split the commercial season for 1996 and 1997. The concept worked; however, the second season lasted just 22 days in 1996. In a subsequent amendment, the GMFMC changed the second part of the season to open at noon on the first day of the month and close on the fifteenth day of each month at noon or when the portion of the commercial quota was taken. These mini-seasons were again reduced to the current ten-day mini-seasons. This concept has enabled the commercial fishery to operate in more favorable weather conditions throughout the year and reduce vessel safety concerns. Fishing vessel operators can use the closed fishery periods between the harvest periods for vessel repairs and maintenance.

Individual Fishing Quotas

In the half dozen years prior to passage of the SFA, the councils and NOAA Fisheries developed and implemented several individual transferable quota (ITQ) programs. ITQs were established in the surf clam/ocean quahog fishery in the Mid-Atlantic, the wreckfish fishery in the South Atlantic, and the fixed gear halibut and sablefish fisheries in the North Pacific. Although the GMFMC completed all the preparatory work for an ITQ program in the Gulf of Mexico red snapper fishery, passage of the SFA halted its implementation.

The movement toward ITQs prompted a heated debate and, responding to concerns about consolidation of quota ownership and other social impacts, Congress changed the name of this program from ITQ to individual fishing quotas (IFQ) and included a four-year (1996 - 2000) moratorium on new IFQs in Section 303(d) of the SFA (later extended to September 30, 2002). At the same time, the SFA did more than establish a moratorium on new IFQs. The SFA also:

(1) defined IFQs, (2) established that participants in IFQ programs are not conferred any rights, (3) authorized a loan program to assist the purchase of quota shares by small-vessel and entry-level fishermen, (4) mandated cost recovery fees in IFQ and community development quota programs, and (5) stipulated that post-moratorium IFQs must provide for "fair and equitable initial allocations, prevent the accumulation by individuals of excessive shares, and consider special arrangements for entry-level fishermen, small vessel owners, and crew members."

The term "international fishing quota" means a Federal permit under a limited system to harvest a quantity of fish, expressed by a unit or units representing a percentage of the total allowable catch of a fishery that may be received or held for exclusive use by a person.

To address the more contentious issues, the SFA also mandated a study of IFQs, to be prepared under the direction of the National Academy of Sciences. This 1999 report, entitled *Sharing the Fish*, essentially concluded that IFQs had by and large performed well in the United States, and should be made available to the councils to use in those fisheries where the councils wanted to adopt this approach. NOAA Fisheries endorsed this conclusion, recognizing that IFQs are one of many potentially useful tools that should be made available to the councils.

During the 2000 - 2002 period, when Congress deliberated on reauthorization of the MSA, many constituencies (including the Councils, the Marine Fisheries Advisory Committee, National Fisheries Institute, and some conservation organizations) supported an end to the moratorium. The major issues addressed by Congress were the standards, or sidebars, that would govern new IFQs after the lapse of the moratorium, not the moratorium itself. Prominent among these standards issues are eligibility, transferability of quota shares, industry payments (e.g., fees, auctions, etc.), and participation by processors. NOAA Fisheries followed and participated in this debate closely, through testimony before Congress and through organizing an IFQ workshop in May 2002.

With the lapse of the moratorium on September 30, 2002, and the absence of new legislation that addresses IFQ standards, the provisions relating to IFQs in MSA (as amended by the1996 SFA) apply. The NPFMC is considering an IFQ program (and other measures) in the Alaska crab fishery, and the GMFMC is considering an IFQ program for the red snapper fishery. In the years to come, more federally managed fisheries are likely to adopt IFQs, in some cases in conjunction with other exclusive quota programs, such as processor shares, community quotas, or cooperatives.

Community Development Initiatives

Alaska Region Community Development Quota (CDQ) Program

Section 111(a) of the SFA added a new Section 305(i) to the MSA providing specific statutory authority for the CDQ programs for pollock, sablefish, halibut, groundfish, and crab, already approved by the NPFMC, and authorizing the WPFMC to establish community development programs. The NPFMC originally created the CDQ program for pollock in 1991, in connection with the inshore-offshore allocations of pollock and for halibut and sablefish in connection with the IFQ program for those fisheries. The pollock CDQ program was first implemented in 1992, and fishing under the halibut and sablefish CDQ program began in 1995. Then, the NPFMC adopted an expansion of the CDQ program to include all other groundfish fisheries for which the NPFMC specified a total allowable catch. Implementing rules for the proposed multi-species CDQ program were being developed when Congress adopted the SFA, and final regulations were published in 1998 (63 FR 8356 and 63 FR 30381).

The CDQ program has been generally very successful in providing social and economic benefits to an otherwise remote and under privileged part of Alaska. Within the first four years of implementing the CDQ program (before implementation of the SFA amendments), it had generated about $93M in total revenues for the six CDQ organizations and 56 participating communities. For these communities that normally experience high unemployment and poverty rates, CDQ revenues provide wage income, training and development

opportunities not otherwise available. In 1996, the CDQ program provided employment for 1,229 persons and total wage income of $6.6M. Since implementation of the multi-species CDQ program in 1998, CDQ revenues have increased. The CDQ sector's assets have grown to over $190M as of 2001. Total CDQ revenues in 2001 grew to $80M of which royalties paid for fishing the CDQ allocations comprised $42.6M. During the period 1998 through 2001, the CDQ Program provided training for an average of 1,169 people per year, employment for an average of 1,561 people per year, and average annual wages for these four years of about $10.9M. Implementation of the CDQ programs has also contributed to the reduction of bycatch and wasteful discards in these fisheries by eliminating the "race for the fish."

Currently, 65 communities enjoy the benefits of the CDQ Program. The six CDQ organizations that represent these communities have invested heavily in vessels and companies that participate in the pollock, cod, and crab fisheries in the BSAI area and developed a variety of shore-based processing and fisheries infrastructure related facilities in their affiliated communities throughout Western Alaska. The training expenditures include money spent not only on training for fisheries-related work, but also for higher education and scholarships that provide people with professional opportunities beyond fisheries-related jobs.

Western Pacific Community Development Initiative

As amended by the SFA, the MSA provides the tools to facilitate optimal development of fishery resources within the EEZs of the Pacific insular areas. These areas are the self-governing Territories of American Samoa and Guam; Commonwealth of the Northern Mariana Islands; and the mostly uninhabited, U.S. Pacific remote island areas consisting of Baker Island, Howland Island, Jarvis Island, Johnston Atoll, Kingman Reef, Palmyra Atoll, Midway Island, and Wake Island located in the central Pacific Ocean. The Western Pacific EEZs encompass a total area of nearly 1.5 million nm^2, equal to all other areas of the U.S. EEZ combined.

Specifically, Section 204 of the SFA authorizes the Secretary of State, with concurrence of the Secretary of Commerce following consultation with the governors of American Samoa, Guam, or Commonwealth of the Northern Mariana Islands to enter into Pacific Insular Area Fishery Agreements (PIAFAs) with foreign nations that would enable vessels of those nations to fish in EEZ waters of the Pacific insular areas. Fees derived under a PIAFA are deposited into a Western Pacific Sustainable Fisheries Fund to be allocated by the WPFMC. The funds are to be used for purposes identified in Marine Conservation Plans developed by the governor of each of the self-governing U.S. Pacific island areas and by the WPFMC for the non-self governing U.S. Pacific Islands.

Four Marine Conservation Plans have been prepared and approved for implementation of PIAFAs. The WPFMC and governors of the Pacific insular areas are poised to engage in discussions and enter into PIAFAs with foreign fishing nations as the procedures, protocols, and criteria are mostly in place. In 2003, the WPFMC is expected to request the Secretary of Commerce to extend the duration of its Marine Conservation Plan governing the Pacific insular areas for another three years.

In addition, under Section 305(i)(2)(A), the Secretary of Commerce and WPFMC may establish Western Pacific Community Development Programs (CDPs) that would allow indigenous peoples of the U.S. Pacific islands to gain access to federally managed fisheries. The WPFMC developed and established eligibility criteria, approved by NOAA Fisheries, for island communities to participate in CDPs. These criteria were established in April 2002. An initial CDP program proposes the issuance of two bottomfish fishing permits to qualifying indigenous fishers for participation in the Northwestern Hawaiian Islands limited access bottomfish fishery. A similar CDP program is being contemplated for an American Samoa-based pelagic longline limited access fishery.

Finally, the SFA authorizes the Secretary of Commerce and the Secretary of the Interior to make direct grants to qualifying U.S. Pacific island

communities, for Western Pacific Demonstration Projects, to foster and promote traditional indigenous fishing practices. Projects that have been recommended for funding include: (1) restoration of a Hawaiian fish pond ecosystem, (2) establishment of a training program to start a skipjack tuna fishery on Molokai, (3) creation of fishing stations in remote areas of the Northern Mariana Islands, and (4) field testing of modern longline gear intended for development of an economically viable domestic pelagic longline fishery in Guam. It is expected that about three to five projects may be funded each year to assist U.S. Pacific island communities in achieving the goals of the SFA.

Finance Reform

The SFA enacted a number of measures impacting financial management services relating to fishery capacity and investment, including: (1) a program to finance IFQ purchases; (2) a fisheries disaster relief program; (3) amendments to Title XI of the Merchant Marine Act, 1936, (which changed fisheries financing from guaranteed loans to direct loans, added IFQ purchases to fisheries loan purposes, and added fishing capacity reduction to loan purposes); (4) a prohibition, until October 1, 2001, of new Fisheries Finance Program loans for new fishing vessels whose construction would increase harvesting capacity; and (5) a fishing capacity reduction program. Below is a brief summary of these measures.

IFQ Purchase Financing

Section 108(g) of the SFA required the NPFMC to develop, by October 1, 1997, a loan guarantee program to assist "fishermen who fish from small vessels" and "entry level fishermen" in purchasing IFQs for the halibut and sablefish fishery off Alaska. Congress provided $5M annual loan ceilings for this purpose for each of the fiscal years from 1998 through 2002. The Program fully utilized all available loan ceilings, and loan demand has each year exceeded supply.

The IFQ Loan Program is funded by 25 percent of the fees collected by the IFQ Cost Recovery Program required by SFA Section 109(c)) (MSA Section 304(d)(2)). Fees on the ex-vessel value of IFQ halibut and sablefish were required under this program beginning March 15, 2000 (final rule published March 20, 2000 at 65 FR 14919). Total cost recovery fees collected for halibut and sablefish IFQ fishing off Alaska in 2000, were $3.48M and in 2001, $3.3M. To date, the Program has made 242 loans totaling $24.98M for financing halibut/ sablefish IFQ purchases. All these loans have performed well.

Only two other national fisheries currently have IFQs, the wreckfish fishery and the Atlantic surf clam/ocean quahog fishery. The former is very small, and quota share ownership in the latter has already largely consolidated into the hands of a small group of major owners. When, and if, IFQ management is extended to other fisheries, similar financing authority could help vessel crewmen purchase quota share and, thus, preserve and improve their financial stake in these fisheries. Crewmen who purchase a quota share realize an equity interest in their fishery's future and receive additional harvesting income.

As noted above, the SFA limits this financing to: (1) fishermen who fish from small vessels, and (2) entry-level fishermen who are making a first-time purchase of quota share. This may, in the context of some future IFQ fisheries (e.g., Bering Sea crab perhaps), prove too restrictive. Some fisheries have no "small boats" and many crewmen in others are both experienced and professional.

Fisheries Disaster Relief

NOAA Fisheries immediately implemented these provisions, which involve making grants for up to 75 percent of the cost of providing relief for commercial fishery failures due to fishery resource disasters that could not have been mitigated by fishery conservation and management measures. Grants may be used to assess the economic and social effects of commercial fishery failures, restore fisheries, prevent future failures, or assist fishing communities affected by the failures.

To date, these provisions have resulted in NOAA Fisheries making 12 commercial fishery failure determinations and $119.25M in disaster grants (which, together with state matching funds, total $130.81M in fisheries disaster relief funding).

Provision Prohibiting Title XI Financing of New Vessel Constructions Increasing Harvesting Capacity

This SFA provision did not require implementation, because NOAA Fisheries had anticipated it by a 1996 amendment of its Fisheries Finance Program regulations. This regulatory amendment indefinitely prohibited the Program from financing the cost of constructing any new fishing vessel. The Program, nevertheless, continues to finance the transfer and refurbishment of used fishing vessels, as well as refinancing the construction costs of existing fishing vessels and financing and refinancing fisheries shoreside and aquacultural facilities.

Fishing Buyback and Capacity Reduction

The SFA required the establishment of a task force of interested parties to study and report to Congress on the role of government in subsidizing the expansion and contraction of fishing capacity and its influence on capital investment in fisheries. The report was transmitted to Congress in 1999. NOAA Fisheries implemented fishing buyback provisions on May 18, 2000, by publishing final framework regulations. To date, NOAA Fisheries has conducted one buyback, and is preparing to conduct another, partially under these provisions.

The concluded buyback removed $90M worth of fishing capacity from the offshore component of the BSAI pollock fishery at a cost to the taxpayers of only $15M. This capacity reduction paved the way for the rationalization of the entire BSAI pollock fishery, including increased harvesting allocations to, and a harvesting cooperative among, the fishery's inshore component. A Title XI loan from the Fisheries Finance Program (under another SFA amendment) financed 83.3 percent of this buyback's cost. The inshore component is presently repaying this loan with the proceeds of a landing fee equal to six-tenths of one cent per pound for all future inshore component pollock landings. The landing fee will continue until the inshore component fully repays the $75M loan. The pollock buyback required scrapping of all but one of the nine vessels that were bought back. The endorsement, licenses, and permits for all vessels were revoked.

NOAA Fisheries has proposed another buyback partially under the SFA provisions, a $100M capacity reduction in the BSAI crab fishery. This buyback would be 100 percent financed by a Title XI loan from the Fisheries Finance Program, and a post-buyback landing fee equal to up to five percent of the gross landed value of all crab involved in the buyback would repay the loan over the next 30 years. Congress has also recently authorized a $50M loan ceiling for a buyback in the New England multi-species fishery as well as a $36M loan ceiling for a buyback in the West Coast groundfish fishery.

In August 2001, the Northwest Region implemented a permit stacking program for West Coast limited entry groundfish permits with sablefish endorsements. The intended purposes of the stacking program are to improve safety, provide flexibility to the participants, improve product quality, and reduce capacity in the limited entry fixed gear fleet. All sablefish endorsed permits have an assigned tier level (1, 2, or 3) that correlates to an allocation of sablefish that may be harvested during the primary season. The stacking program allows vessel owners to register up to three sablefish endorsed permits to a vessel. Before the stacking program, a vessel could be registered to only one permit. Thus, each permit that is stacked results in a vessel being removed from the fishery.

The permit stacking program has achieved its goal of improving safety by revising the season from a previous week long open competition to a seven month season in which permit owners may fish at any time or speed they choose. With this longer season, permit owners have more flexibility in planning when they fish for sablefish, rather than having to concentrate all of the fishing activities in that one week period. Sablefish product quality has improved because the permit owners are able to fish at a pace that allows for more careful handling of their catch. Also, permit stacking has reduced the number of vessels participating in the fishery from the original 164 permitted vessels. At the beginning of the 2002 primary sablefish season, a total of 36 vessels participated in the stacking program. The total number of stacked permits (permits registered in addition to the "base permit") numbered 48, or

slightly less than 30 percent of the 164 sablefish endorsed permits, bringing the number of participants to 116 vessels.

Amendments to Title XI of the Merchant Marine Act, 1936

NOAA Fisheries has implemented the SFA's Title XI fisheries amendments. This has allowed the Fisheries Finance Program to make halibut/sablefish IFQ purchase loans totaling $24.98M over the last five years, make a $75M BSAI pollock buyback loan, and prepare to make a $100M BSAI crab buyback loan.

Perspectives for the Future

The SFA has greatly improved the mechanisms available for the conservation and management of fisheries resources. As a result, many stocks around the country have been rebuilt or are in the process of rebuilding, and NOAA Fisheries is working within both national and international arenas to address issues such as bycatch and harvesting overcapacity. The new tools made available through the SFA are being used every day to improve research and management programs for fisheries, protected resources and fishery habitat. In the future, the nation can expect accelerated improvements in fisheries science and management as the benefits associated with SFA initiatives continue to accrue.

NOAA Fisheries is also committed to continue developing better analyses of the impacts of management alternatives on managed fish stocks and the communities that depend on them. For example, planning has begun for development of a single database for fishing community and port profile data. This initiative will allow us to improve regional comparative research in support of fishery management actions. Overall, social science expertise within the agency has been greatly enhanced in the last few years, and this should continue to improve the quality of analyses required by the MSA and the National Environmental Policy Act (NEPA).

The Regulatory Streamlining Program (RSP) is another new development within NOAA Fisheries that promises to improve the fishery management process over the next several years. Building additional NEPA expertise within the agency, along with front-loading the consideration of complex legal and policy issues earlier in the rulemaking process, are key components of RSP. The program is designed to improve performance and efficiency. Electronic rulemaking initiatives, including a new database to track the progress of regulatory actions, and several pilot projects that will be accepting public comments on proposed rules via email, should also help to streamline the regulatory process and improve the connection to our constituents.

As described throughout this report, the SFA required significant modifications in the way U.S. fisheries are managed, both in terms of overarching themes (e.g., the National Standards and the definitions associated with them) and technical details. The sheer number of changes and their scope resulted in a long period of implementation, but positive results are already evident. NOAA Fisheries has worked diligently to ensure that SFA requirements are reflected in management measures throughout federal waters. We believe that these programs will enable us to continue the conservation and management of living marine resources in the United States for the long-term benefit of all, and to provide better services to our constituents in the process.

APPENDIX I: RELATED REPORTS TO THE UNITED STATES CONGRESS

Reports to Congress submitted by NOAA Fisheries

SFA REQUIREMENT	ACTIVITY
BYCATCH REDUCTION AGREEMENTS [Sec. 105(b); p. 14]: 2000 Annual Report to Congress and [Sec. 105(b); p. 14]: Prepare an annual report to Congress on actions taken	Report to Congress submitted 1/8/98 via letter from NOAA Fisheries AA. 1998 Report (covering 1997) submitted 12/14/98. 1999 Report (covering 1998) submitted 1/21/00. 2000 Report (covering 1999-Aug 2000) submitted 1/01. 2001 Report (covering 9/00 - 12/01) submitted in 2/02 2002 Report (covering 2002) submitted 1/6/03.
BYCATCH/INCIDENTAL HARVEST RESEARCH [Sec. 206; pp. 131-134]: Report to Congress and [Sec. 206; p. 131-134] collection of information on incidental shrimp harvest	Report submitted 12/8/98.
BYCATCH/INCIDENTAL HARVEST RESEARCH [Sec. 208; pp. 140-141]: Study of contributions of bycatch to charitable organizations	Report submitted by Secretary of Commerce 12/17/97.
PREVENT OVERFISHING AND REBUILD STOCKS: Status of Fisheries of the United States [SFA Sec. 109(e) pp. 64-68; M-SFCMA Sec. 304(e)]: 2001 Annual Report to Congress & Councils	1997 Report submitted 9/19/97. 1998 Report submitted 10/9/98. 1999 Report submitted 10/25/99. 2000 Report submitted 1/27/01. 2001 Report submitted 4/4/02. 2002 Report submitted 5/14/03.
HIGHLY MIGRATORY SPECIES: Comprehensive management system for Atlantic pelagic longline fishery [Sec. 109(h); 71-72]	Study of the feasibility of implementing a comprehensive management system for the pelagic longline fishery for Atlantic HMS published 12/30/97, and transmitted to Congress by NOAA Fisheries AA on 1/12/98.
STUDY OF FEDERAL INVESTMENT [Sec. 116(b); p. 112]: Establish a task force of interested parties to study and report to Congress on the role of government in subsidizing the expansion and contraction of fishing capacity and influencing capital investment in fisheries	Final report "Study on Federal Investment" submitted via letter from NOAA Fisheries AA to Congress 9/8/99.
STANDARDIZED FISHING VESSEL REGISTRATION AND INFORMATION MANAGEMENT SYSTEM [Sec. 201; pp. 116-122]	Report to Congress "Vessel Registration and Fisheries Information System" submitted to Congress 1/4/99.
STRATEGIC PLAN FOR FISHERIES RESEARCH [MSFCMA Section 404 (b) and (d)]	Initial Report submitted 2/17/98. Revised Report submitted 2/02.
STUDY OF IDENTIFICATION METHODS FOR HARVEST STOCKS [Sec. 209]: Submit a study to Congress of methods of identifying salmon	Report to Congress "Methods for Salmonid Stock-Specific Identification in Ocean Fisheries" submitted by Secretary of DOC to Congress on 5/6/97.

SFA REQUIREMENT	ACTIVITY
NEW ENGLAND REPORT [Sec. 402(b)]: 2001 Annual Report to Congress on New England capacity reduction	Report to Congress entitled "Report on Northeast Multispecies Harvest Capacity and Impact of Northeast Fishing Capacity Reduction". 1996 Report submitted to Congress 1/21/97. 1997 Report submitted to Congress 5/15/98. 1998 Report submitted to Congress 2/9/99. 1999 Report submitted to Congress 1/31/00. 2000 Report submitted to Congress 2/7/01. 2001 Report submitted to Congress on 3/26/02. 2002 Report submitted to Congress on 1/22/03.

Reports to the United States Congress - Prepared by the National Research Council (NRC) or the National Academy of Sciences (NAS)

SFA REQUIREMENT	ACTIVITY
FISHING COMMUNITIES: NAS study of community development quota [Sec. 108(h): NAS conduct study	Report from NRC, "The community development quota program in Alaska and lessons for the western Pacific," Committee to Review Community Development quotas, Ocean Studies Board, submitted to Congress and NOAA Fisheries on 12/17/98.
ITQ: NAS Study of ITQs [Sec. 108(f]	Report from NRC, "Sharing the Fish: Toward a national policy on individual fishing quotas," Committee to Review Individual Fishing Quotas, Ocean Studies Board, submitted to Congress and NOAA Fisheries on 12/17/98.
REVIEW OF NORTHEAST FISHERY STOCK ASSESSMENTS [Sec. 210]: National Academy to conduct and submit to Congress a study of Canadian and US stock assessments	Report to Congress "Review of Northeast Fishery Stock Assessments" prepared by NRC, Committee to Review Northeast Fishery Stock Assessments, Ocean Studies Board, submitted to Congress and NOAA Fisheries on 1/6/98.

APPENDIX II: TRENDS IN THE STATUS OF STOCKS OVER THE LAST FIVE YEARS

Table 1: Cases where *overfishing* has been eliminated or initiated between 1997 and 2002.

Stocks for which *overfishing* was eliminated	Stocks for which *overfishing* was initiated
Major stocks	**Major stocks**
Gulf of Maine haddock (x2)	Georges Bank cod
Atlantic witch flounder	Gulf of Maine haddock
Cape Cod yellowtail flounder	Atlantic witch flounder
Gulf of Maine/Georges Bank windowpane flounder	Cape Cod yellowtail flounder
Georges Bank winter flounder	Northern (Gulf of Maine) shrimp
Southern New England winter flounder	Atlantic loligo squid
Atlantic bluefish	Gulf of Mexico vermilion snapper
Atlantic loligo squid	Gulf of Mexico gag grouper
South Atlantic scamp	Gulf of Mexico red drum
South Atlantic white grunt	Pacific whiting
Gulf of Mexico king mackerel	Atlantic bigeye tuna
Gulf of Mexico gag grouper	Atlantic finetooth shark
Gulf of Mexico red drum	
Pacific darkblotched rockfish	
Pacific bank rockfish	
Minor stocks	
South Atlantic red porgy	
South Atlantic goliath grouper	
South Atlantic Nassau grouper	
South Atlantic wreckfish	
Gulf of Mexico goliath grouper	
Gulf of Mexico Nassau grouper	
Caribbean goliath grouper	
Caribbean Nassau grouper	
Pacific yelloweye rockfish	
Pacific silvergrey rockfish	

Notes on Table 1: Between 1997 and 2002, *overfishing* has been eliminated a total of 26 times including 16 commercially or recreationally valuable *major* stocks (one of which is a replicate) and ten *minor* species. Of this total, six stocks (goliath grouper and Nassau grouper from the South Atlantic, Gulf of Mexico and Caribbean areas) were declared to have improved to a status of *not subject to overfishing* in the year 2000 because these fisheries were closed to fishing in the EEZ. For three of the major stocks (Atlantic witch flounder, Cape Cod yellowtail flounder, and Gulf of Mexico red drum), *overfishing* was eliminated once during the 1997 - 2002 period, but has since resumed. For two major stocks (Atlantic loligo squid and Gulf of Mexico gag grouper), overfishing commenced during the 1997 - 2002 period, but has since been eliminated. Gulf of Maine haddock is the only stock for which *overfishing* has been eliminated twice (with *overfishing* in between). Exploitation rates have fluctuated around the overfishing threshold (based on the most recent stock assessment, not previous ones), but currently, the Gulf of Maine haddock stock is not experiencing *overfishing*. On the negative side, *overfishing* commenced a total of 12 times. In three cases (Gulf of Maine haddock, Atlantic loligo squid, and Gulf of Mexico gag grouper), the negative change in *overfishing* status occurred earlier in the 1997 - 2002 time period, and has since been rectified.

Table 2: Cases where stocks have transitioned from *overfished* to *not overfished*, and from *not overfished* to *overfished,* between 1997 and 2002.

Stocks that have transitioned from *overfished* to *not overfished*	Stocks that have transitioned from *not overfished* to *overfished*
Major stocks	**Major stocks**
Atlantic (Acadian) redfish	Southern New England/mid-Atlantic windowpane flounder
Gulf of Maine/Georges Bank windowpane flounder	South Atlantic black sea bass
Southern New England/mid-Atlantic windowpane flounder	Gulf of Mexico greater amberjack
Georges Bank winter flounder	Pacific whiting
Gulf of Maine/Northern Georges Bank silver hake	Atlantic bigeye tuna
(now fully rebuilt)	Atlantic albacore
Southern Georges Bank/mid-Atlantic silver hake	
Gulf of Maine/Northern Georges Bank red hake	**Minor stocks**
(now fully rebuilt)	
The northern stock of Atlantic monkfish	Atlantic ocean pout
Atlantic winter skate	
Atlantic scup	
Atlantic loligo squid	
Atlantic weakfish	
South Atlantic gag grouper	
Strait of Juan de Fuca coho salmon	
Pacific (chub) mackerel	
Pacific sardine	
Minor stocks	
Atlantic smooth skate	
Snohomish River summer/fall chinook salmon	
Pacific coast chum salmon	

Notes on Table 2: Between 1997 and 2002, a total of 20 *previously-overfished* stocks have been rebuilt sufficiently in biomass for their status to have transitioned to *not overfished*. This total includes 17 commercially or recreationally valuable *major* species and three *minor* species. Of these, Southern New England/mid-Atlantic windowpane flounder was recorded as having transitioned to a status of *not overfished* in 1999, but has since reverted to an *overfished* condition. Pacific sardine and Pacific (chub) mackerel were previously declared as *overfished*, but had already rebuilt substantially at the time they were brought under federal management. On the negative side, there were seven occurrences of stocks that had declined sufficiently in biomass to become classified as overfished.

APPENDIX III: COMPREHENSIVE LISTING AND UPDATE OF ALL COUNCIL AND NOAA FISHERIES TASKS AND ACTIVITIES RESULTING FROM SFA

All Fishery Management Councils

SFA REQUIREMENT
FISHERY MANAGEMENT PLANS and DEFINITIONS: Required provisions in FMPs [SFA Sec. 108(a) pp. 40-42; MSFCMA Sec. 303(a)] All new FMPs, amendments to existing FMPs and FMP regulations must include the following provisions, by October 11, 1998, as appropriate: Bycatch reports; bycatch measures; data and trends for each commercial, recreational, and charter sector; describe and identify essential fish habitat, and identify adverse effects on such habitat and adverse impacts from fishing and identify other actions to encourage the conservation of such habitat; fishing communities; overfishing objectives, criteria and rebuilding plans, restrictions and recovery benefits must be fairly allocated among harvesters, and, Amend FMPs and FMP regulations for consistency with SFA Section 102 definitions [MSFCMA Sec. 3] i.e., Need to incorporate SFA definitions in new FMPs and or FMP amendments where appropriate, and review and amend existing FMPs and FMP regulations where necessary, i.e., Bycatch; charter, commercial, and recreational fisheries; economic and regulatory discards; essential fish habitat; fishing communities; individual fishing quota; optimum yield and "overfishing" and "overfished".

Responsible Council	Activity
New England	1. Atlantic Sea Scallops Amendment 7 approved 2/18/99. 2. New England Omnibus EFH Amendment and EFH and SFA Amendments to Salmon FMP approved 3/3/99. 3. Monkfish FMP approved 3/3/99 (joint with Mid-Atlantic). 4. NE Multispecies Groundfish Amendment 9 partially approved 4/7/99. 5. Monkfish FMP Amendment 1 (EFH) approved 4/22/99 (joint with Mid-Atlantic). 6. Deep Sea Red Crab FMP approved 7/31/02. 7. Whiting Amendment partially approved 9/1/99. 8. Spiny Dogfish FMP partially approved on 9/29/99 (joint with Mid-Atlantic). 9. Atlantic Herring FMP partially approved 10/27/99.
Mid-Atl	1. Monkfish FMP partially approved on 3/3/99. 2. Monkfish FMP, Amendment 1 (EFH) approved 4/22/99. 3. Mid-Atlantic FMP Amendments 12 (Summer flounder, scup and black sea bass), 12 (Atlantic surfclam and ocean quahog), and 8 (Atlantic mackerel, squid and butterfish) (SFA and EFH) partially approved 4/28/99. 4. Atlantic Bluefish FMP Amendment 1 partially approved 7/29/99. 5. Spiny Dogfish FMP partially approved 9/29/99 (joint with New England). 6. Tilefish FMP approved 5/10/01.
South Atlantic	1. SFA omnibus (Shrimp, red drum, snapper/grouper, coastal migratory pelagics, golden crab, spiny lobster, and coral) Amendment partially approved on 5/19/99. 2. EFH omnibus (Shrimp, red drum, snapper grouper, coastal migratory pelagics, golden crab, spiny lobster, and coral, coral reefs, and live/hard bottom) Amendment approved on 6/3/99.
Gulf of Mexico	1. EFH Amendments partially approved 2/8/99. 2. SFA omnibus (spiny lobster and coastal migratory pelagics) Amendments to FMPs partially approved 11/17/99.
Caribbean	1. EFH omnibus Amendment partially approved on 2/18/99. 2. SFA Amendments for spiny lobster, queen conch, corals and shallow-water reef-fish disapproved 4/25/02. Notice of Intent to prepare Draft Supplemental Environmental Impact Statement 5/31/02.

Pacific	1. Pacific coast groundfish Amendment 11 partially approved 3/3/99. 2. Coastal Pelagics Species FMP (includes Pacific mackerel, Pacific sardine, Jack mackerel and market squid) FMP Amendment 8 partially approved 6/10/99. 3. Pacific coast groundfish Amendment 12 (rebuilding) approved 8/00; remanded by the Court. 4. Pacific coast groundfish Amendment 13 (bycatch) approved 8/00; remanded by the Court. 5. Ocean Salmon (WOC) FMP Amendment 14 for SFA approved 9/27/00. 6. Amendment 9 to Coastal Pelagics Species FMPapproved 3/22/01–addressed bycatch. 7. Amendment 10 to Coastal Pelagics Species FMP approved 12/30/02–addressed MSY for market squid.
North Pacific	1. Alaska EFH Amendments 55 (Groundfish fishery of the Bering Sea and Aleutian Islands), 55 (Groundfish of the Gulf of Alaska), 8 (Commercial King and Tanner crab fisheries in the Bering Sea/Aleutian Islands), 5 (Scallop fisheries off Alaska), 5 (Salmon fisheries in the EEZ off the coast of Alaska) approved on 1/20/99. 2. GOA/BSAI groundfish SFA Amendments 56 (Groundfish fishery of the Bering Sea and Aleutian Islands), 56 (Groundfish of the Gulf of Alaska) approved 1/27/99. 3. SFA Amendments 7 (Alaska crab) and 6 (scallop) FMPs approved 3/3/99. 4. Alaska High Seas Salmon Amendment 6 (SFA) approved 1/2/02.
Western Pacific	1. The consolidated SFA and EFH omnibus Amendment to the Western Pacific FMPs (crustacean fisheries, precious corals fisheries, bottomfish and seamount groundfish fisheries, and pelagic fisheries) partially approved 2/4/99. 2. Coral Reef Ecosystems Fishery Management Plan partially approved 6/14/02. 3. Precious Corals FMP Amendment 4 addressing fishing communities previously disapproved due to inconsistency with the SFA has been prepared by the WPFMC and resubmitted to NOAA Fisheries for review and approval by the Secretary of Commerce as of 3/03. 4. Pelagics FMP Amendment 8, Crustaceans FMP Amendment 10, and Bottomfish and Seamount Groundfish FMP Amendment 6 addressing "overfishing","overfished", bycatch, and fishing communities previously disapproved due to inconsistencies with the SFA were prepared by the WPFMC and resubmitted to NOAA Fisheries for review and approval by the Secretary of Commerce as of 3/03.

SFA REQUIREMENT

COUNCIL STANDARD OPERATING PROCEDURES (SOPPs):

Revise to reflect SFA requirements [SFA Sec. 107; MSFCMA Sec.302]. SOPPs to reflect the following SFA requirements; roll call vote, agenda for meetings, background information provided by persons appearing before Council, minutes of closed sessions at meetings, recusal of Council members, member term, Council charge, exemption, describe EFH. SOPPs to also reflect revised provisions of NOAA Council operations and Administration Handbook, i.e., state designees, display motions, locality pay, personnel recruitment, part-time employees, and sick leave benefit. Also revise SOPP policies regarding; maternity/paternity leave, performance evaluations, charge of Scientific Advisory Panels.

Responsible Council	Activity
All Councils	Completed - Councils notified on need to change SOPPs to conform with SFA requirements. Councils submitted SOPPs.
All Councils	Completed - *Federal Register* notice published 11/19/01 (66 FR 57885) "Magnuson-Stevens Act Provisions: Update of regulations governing council operations" which is basis for update of SOPPs.

Fishery Management Council Specific Requirements

RESPONSIBLE COUNCIL	SFA REQUIREMENT	ACTIVITY
Pacific	SHELLFISH FMP: Prepare a Report to Congress on progress in developing an FMP for shellfish fisheries especially Dungeness crabs [SFA Sec. 112(d); MSFCMA Sec 306]	Completed - Report sent to Congress in October 1997. Recommended that states be given authority to manage the fishery, except for limited access, in the EEZ (i.e., similar to the interim authority granted to the states in the SFA).
North Pacific	NORTH PACIFIC BYCATCH REDUCTION: Prepare conservation and management measures to lower economic discards [Sec .117(a)(3); p.113]	Completed - IR/UI measures are in force for the groundfish fisheries of the Gulf of Alaska and BSAI; scallops, salmon and crab are managed for the Council by the State of Alaska, which has bycatch monitoring (100 percent observer) program in place.
North Pacific	RUSSIAN FISHING IN THE BERING SEA: Prepare a report to Congress [Sec. 105(g); p. 27-28]	Completed - Report entitled "Russian Far East Fisheries Management" by Clarence G. Pautzke, Ph.D., Executive Director NPFMC, 9/30/97.
North Pacific	NORTH PACIFIC LOAN PROGRAM: Prepare recommendation on uses of fees in the halibut-sablefish fisheries [Sec. 108(g); pp. 53-54]	Completed - NOAA Fisheries approved the Council loan program on 3/26/98; *Federal Register* notice implementing the program was published 5/27/98; first loan application period was 6/10-14/98 and first loan decisions were completed by 9/30/98.
North Pacific	NORTH PACIFIC CATCH MEASUREMENT: Prepare management procedures and regulations for measurement of entire catch [Sec. 117(a)(3); p.115]	Completed - NOAA Fisheries published a final rule in *Federal Register* (63 FR 5835, 2/4/98) to amend the regulations implementing the FMPs for groundfish of Gulf of Alaska and BSAI to establish performance, technical, operational, maintenance, and testing requirement for motion-compensated scales that may be required by NOAA Fisheries to weigh catch at sea.
North Pacific	NORTH PACIFIC CATCH MEASUREMENT: Submit a plan to Congress for weighing catch by processors and processing vessels [Sec. 117(a)(3); p. 115]	Completed - NOAA Fisheries published final rules in *Federal Register* (63 FR 5835,2/4/98 and 67 FR 79692, 12/30/02). Ongoing - Council instituting weighing requirement as appropriate.
North Pacific	NORTH PACIFIC FULL RETENTION AND UTILIZATION OF CATCH: Submit a report to the Secretary on advisability of full catch retention by vessels and full utilization of landings by processors [Sec. 117(a)(3); p. 115-116]	Completed - Council submitted Report on Improved Retention and Improved Utilization in 5/97 as part of the package for Amendment 49 for the Gulf of Alaska Groundfish FMP and Amendment 49 for the Bering Sea and Aleutian Islands Groundfish FMP.
North Pacific	ALASKA COMMUNITY DEVELOPMENT PROGRAM: Establish western Alaska CDQ programs for all M-SFCMA fisheries [Sec. 111(a)(1); pp. 85-89]	Completed - NOAA Fisheries published in *Federal Register* final rules (63 FR 8356, 2/19/98 and 63 FR 30381, 6/4/98) establishing a multispecies community development quota program in the fisheries of the EEZ off Alaska.

RESPONSIBLE COUNCIL	SFA REQUIREMENT	ACTIVITY
Western Pacific	PACIFIC INSULAR AREAS: Develop marine conservation plans and regulations [Sec. 105(e)(4); pp. 21-23]	Completed - A Western Pacific Sustainable Fisheries Fund and Marine Conservation Plan for the U.S. Pacific Islands remote islands approved on 6/22/99. NOAA Fisheries approved the Marine Conservation Plans for the self-governing Territories of American Samoa (4/25/02), Guam (4/25/02), and the Commonwealth of the Northern Mariana Islands (9/7/01).
Western Pacific	WESTERN PACIFIC DEMONSTRATION PROJECTS: Develop criteria for project selection and establish an advisory panel [Sec. 111(b); p. 91]	Completed - WPFMC created an advisory panel for western Pacific demonstration projects in April 1998. Criteria for project selection and solicitation of project proposals published as a final rule, 4/16/02 (67 FR 18512).
Western Pacific	WESTERN PACIFIC DEMONSTRATION PROJECTS: Annual report to Congress [Sec. 111(b); p. 92]	Ongoing - Preparation of a report is pending until projects have been approved and funded. Funds have been made available and projects expected to be awarded in 2003.
Western Pacific	WESTERN PACIFIC COMMUNITY DEVELOPMENT PROGRAMS: Develop criteria for Western Pacific community development quota programs [Sec. 111(a)(2); pp. 89-91]	Completed - Criteria for community development quota program published as a final rule in the *Federal Register* on 4/16/02 (67 FR 18512).

NOAA Fisheries - Headquarters

SFA REQUIREMENT	ACTIVITY
FISHERY MANAGEMENT PLANS: Advise Councils of required provisions in FMPs [Sec. 108(a); pp. 40-42] and DEFINITIONS: Advise Council Chairmen and Executive Directors of need to review and amend FMPs and FMP regulations for consistency with SFA language	Completed - Councils notified.
HIGHLY MIGRATORY SPECIES: Advisory panels established by the Secretary [Sec. 107(e); p. 33-34]: Revise the HMS process, and availability of records of meetings and other documents for public inspection [Sec. 107(h)(8)]	Completed - HMS Advisory panels established in 1997. HMS AP members have 3-year terms and Billfish AP members have 2-year terms. Ongoing - HMS process in final rule development. Completed - Website construction completed 7/23/97 for the public to view documents.
FISHERY MANAGEMENT PLANS: Required provisions in HMS FMPs [Sec. 108(a); pp.40-42] and DEFINITIONS: Amend HMS FMPs and FMP regulations for consistency with SFA Section 102 definitions and PREVENT OVERFISHING AND REBUILD STOCKS: Assess type and amount of fish caught and released alive during recreational fishing and minimize mortality [Sec.108(a)(7); p.41]: Prepare interpretation of provision, and, HIGHLY MIGRATORY SPECIES: Prepare FMPs and Amendments for each HMS fishery in need of management [Sec. 107(f) p. 34; Sec. 109(g)(1) pp. 69-70]: Prepare new FMPs for any Atlantic highly migratory species not currently under M-SFCMA management	Completed - Atlantic HMS (Swordfish, Sharks, and Tunas) consolidated FMP and Billfish FMP approved (including overfishing definitions) on 4/23/99. HMS FMP and Billfish FMP Amendment 1 completed 5/7/99. HMS FMP final rule and Billfish FMP Amendment 1 published together on 5/28/99.

SFA REQUIREMENT	ACTIVITY
REVISE OPERATIONAL GUIDELINES	Completed - Final revised operation guidelines completed and distributed 5/8/97. Subsequent revisions and updates produced and distributed.
NATIONAL STANDARDS: Publication of revised policies as National Standard guidelines	Completed - Magnuson-Stevens Act provisions; National Standard Guidelines, final rule published in *Federal Register*, 5/1/98 (63 FR 24211). 7/17/98: NOAA Fisheries published "Technical Guidance on the use of precautionary approaches to implementing National Standard 1 of the Magnuson-Stevens Fishery Conservation and Management Act," (V.R. Restrepo et al: NOAA Tech Memo NMFS-F/SPO).
PREVENT OVERFISHING AND REBUILD STOCKS: Revise Section 600.310 regulations [Sec. 102(7); p. 9] re: "Optimum," and rebuild overfished stocks [Sec. 108(a)(1); p. 40] Revise Section 600.310 regulations, and requirement to establish programs to rebuild stocks [Sec. 109(e) p. 64-68; Sec. 110(b) p. 78]: Revise Section 600.310 and 600.315 regulations	Completed - Incorporated into final rule for National Standards Guidelines published in the *Federal Register* on May 1.
PREVENT OVERFISHING AND REBUILD STOCKS: Specify criteria to identify overfishing end overfishing and rebuild stocks [Sec. 108(a)(7); p. 41]; Revise Section 600.310 regulations	Completed - National Standard Guidelines, final rule published in *Federal Register*, 5/1/98 (63 FR 24211). 7/17/98: NOAA Fisheries published "Technical Guidance on the use of precautionary approaches to implementing National Standard 1 of the Magnuson-Stevens Fishery Conservation and Management Act (V.R. Restrepo et al: NOAA Tech Memo NOAA Fisheries-F/SPO).
FISHING COMMUNITIES: Add National Standard 8 and guidelines to Part 600 subpart E regulations [Sec. 106(b); p. 28], and National Standard 8: Interpret "sustained participation" [Sec. 106(b); p. 28], and National Standard 8: Interpret "substantially dependent" and "substantially engaged" [Sec. 106(b); p. 28]	Completed - Incorporated into final rule for National Standards Guidelines published 5/1/98 (*Federal Register* 63 (84):24212-24237).
BYCATCH: National Standard 9: Add National Standard 9 and guidelines to Part 600 subpart E regulations [Sec. 106(b); pp.28-29]	Completed - Incorporated into final rule for National Standards Guidelines published in the *Federal Register* on 5/1/98(63 FR 24211).
SAFETY AT SEA: National Standard 10: Add National Standard 10 and related guidelines to regulations at Part 600 Subpart E [SFA Sec. 106(b) pp 28-29; M-SFCMA Sec. 301(a)(10)]	Completed - Incorporated into final rule for National Standard Guidelines published in the *Federal Register* on 5/1/98(63 FR 24211).
COUNCIL HANDBOOK: Revise to include new requirements	Completed - Handbook eliminated based on letter to Councils from NOAA Fisheries AA dated 1/15/99. Published final rule that contained revised regulations governing Council Operations in the *Federal Register* on 11/19/01 (66 FR 57885).
ESSENTIAL FISH HABITAT: Actions by the Secretary and Councils regarding essential fish habitat [Sec. 110(a)(3)]: Promulgate regulations implementing guidelines to assist Councils in the description and identification of essential fish habitat, and provide Councils with recommendations and information on identification of essential fish habitat including threats and conservation and enhancement measures, and to conserve and enhance essential fish habitat.	Completed - Final rule published in the *Federal Register* on January 17, 2002 (67 FR 2343). Provides NOAA Fisheries guidelines for defining EFH, minimizing fishing effects on EFH to the extent practicable, and consultations on Federal agency actions that may adversely impact EFH. Schedule for Amendments of FMPs with EFH Sections completed and submitted to all councils. Regional NOAA Fisheries EFH teams established and recommendations provided to all councils. Agreements with NOAA, other DOC agencies, and Army Corps of Engineers completed 5/31/00.

SFA REQUIREMENT	ACTIVITY
TRANSSHIPMENT PERMITS [Sec. 105(d)(1-7) pp. 15-18; Sec. 105(e) pp. 26-27]	Completed - Final rule published in *Federal Register* 7/21/99.
COUNCILS: Changes in membership requirements [Sec. 107(b)-(c) p. 32]	Completed - Final rule published in the *Federal Register* on 11/20/98.
COUNCILS: Conflict of interest on the part of Council members [Sec. 107(i)(2)(8); p.37-39]	Completed - Final rule published in the *Federal Register* on 11/19/98 (63 FR 64182).
COUNCILS: Conflict of interest on the part of Council members [Sec. 107(i)(8); pp. 38-39]	Completed - NOAA GC determined that no additional financial disclosure items were required 10/15/98.
GEAR EVALUATION AND NOTIFICATION [Sec. 110(a); 73-74]	Completed - Final rule revising list of authorized fisheries and fishing gear was published in the *Federal Register* 64(231):16511-16524 on 12/2/99.
NEGOTIATED CONSERVATION AND MANAGEMENT PROCEDURES [Sec. 110(d); pp.]: Develop rule to establish procedures for negotiation panels	Completed - Final rule issuing implementing regulations for procedures governing establishment and operation of fishery negotiation panels published in the *Federal Register* 62 FR 23667 on 5/1/97.
CENTRAL REGISTRY SYSTEM FOR LIMITED ACCESS SYSTEM PERMITS [Sec. 111(c); pp. 81-85]: Establish a national/regional central registry system	ANPR published in *Federal Register* 2/27/97. Draft proposed rule suspended.
PROHIBITED ACTS [Sec. 113]: Review Section 600.725 regulations for all provisions in this Section	Completed - Report completed by GCEL dated 10/30/98.
CIVIL PENALTIES AND PERMIT SANCTIONS: Rebuttable presumptions [Sec. 114]: Review provisions	Completed - Report completed by GCEL dated 9/3/97.
ENFORCEMENT [Sec. 115]: Review provisions and take necessary action.	Completed - Report completed by LE dated 9/24/97.
TRANSITION TO SUSTAINABLE FISHERIES: Fisheries disaster relief [SFA Sec. 116(a-d); M-SFCMA Sec. 312(a)]	Ongoing - Draft proposed rule in development.
TRANSITION TO SUSTAINABLE FISHERIES: Fishing capacity reduction program [SFA Sec. 303; M-SFCMA Sec. 312 (b)-(e)]	Completed - Interim Final rule published on 5/18/00.
CONFIDENTIALITY OF INFORMATION [Sec. 203(b)]: Review Part 600 subpart E regulations and the Council Handbook for necessary changes	Completed - Final rule published in the *Federal Register* 11/99.
RESTRICTION ON USE OF CERTAIN INFORMATION [Sec. 203(c); p. 125]: Review regulations to ensure the confidentiality of information in tax returns	Ongoing - GCSE continues to do legal research on this action.
RESOURCE ASSESSMENTS [Sec. 203(e)(1-2); pp. 126-127]: Revise exempted fishing permit regulations to allow the compensation of private vessels for their conduct of resource assessment through exempted fishing	Ongoing - Issue under evaluation.
REVIEW OF NORTHEAST FISHERY STOCK ASSESSMENTS [Sec 210]: National Academy to conduct and submit to Congress a study of Canadian and US stock assessments	Completed - The National Academy of Sciences, National Research Council, Ocean Studies Board presented the results of the Northeast Stock Assessment review to NMFS and Congress on 1/16/98.
STANDARDIZED FISHING VESSEL REGISTRATION AND INFORMATION MANAGEMENT SYSTEM [Sec. 201; pp. 116-122]	Completed - Report completed and signed by NOAA on 1/8/99.

SFA REQUIREMENT	ACTIVITY
STUDY OF FEDERAL INVESTMENT [Sec 116(b); p.112]: Establish a task force of interested parties to study and report to Congress on the role of government in subsidizing the expansion and contraction of fishing capacity and influencing capital investment in fisheries	Completed - Final Report submitted to Congress on 9/10/99.
RESOURCE ASSESSMENTS [Sec. 203(e); p. 127]: Undertake efforts to expand annual resource assessments in all regions	Completed/Ongoing - Guided by NRC review recommendations as well as agency planning documents such as the NOAA Fisheries Data Acquisition Plan (1998) and the Marine Fisheries Stock Assessment Improvement Plan (2001), the agency has been working within the budget framework to: (1) enhance the quality of stock assessments on key species; (2) expand the numbers of species monitored or assessed; (3) increase the frequency of assessments; (4) expand collaboration with industry in conducting assessments; and (5) use economic and social data to assess the quantity and distribution of benefits and costs of management options.
OBSERVERS [Sec. 204; pp. 127-128] Publish program guidelines and implementing regulations to ensure health and safety of observers	Completed - Final rule published in the *Federal Register* 5/18/98 (63 FR 27213).
FISHERIES RESEARCH; Strategic Plan [Sec. 205; pp. 128-131]	Completed - NOAA Fisheries "Strategic Plan for Fisheries Research" published and distributed in 2/98 and in 12/01. Next publication is scheduled for 2/04.
FISHERIES ECOSYSTEMS RESEARCH [Sec. 207; pp. 134-136]	Completed - Report completed and placed on SFA website 4/11/99. Copies sent to Congress.
EMERGENCY ACTION BY THE SECRETARY: [M-SFMCA Sec. 305(c)] Develop Policy Guidelines for Use of Emergency Rules	Completed - Final rule published in the *Federal Register* 8/21/97 (62 FR 44421).

NOAA Fisheries - New England Region

SFA REQUIREMENT	ACTIVITY
DEFINITIONS: Review all existing definitions in FMP regulations for inconsistencies with SFA language	Completed - Project completed 12/16/96 and advised Councils of required provisions in FMPs on 2/12/97.
COUNCILS: New NC seat on MAFMC [Sec. 107(a)(4)]: Conduct appointment process for new seat on Mid-Atlantic Fishery Management Council for North Carolina representative	Completed - Secretary of Commerce announced appointment of Rick E. Marks on 3/5/97.
STATE JURISDICTION: Internal waters foreign processing [Sec. 112(c)]: 600.508(f) regulations for reporting requirements	Completed - Final rule published in the *Federal Register* 5/19/97 (62 FR 27182).
NEW ENGLAND HEALTH PLAN [Sec. 401(f); p. 149]	Completed - The Massachusetts Fishing Partnership Health Plan was officially implemented on 10/20/97 in ceremonies on Boston Fish Pier. "Fishing Partnership Health Plan Interagency Agreement" transmitted by NOAA Fisheries Office of Sustainable Fisheries to the U.S. Department of Health and Human Services, Health Care Financing Administration 5/22/98.
TRANSITION TO MANAGEMENT OF AMERICAN LOBSTER FISHERY BY ASMFC [Sec. 404(c); p. 152-155]	Completed - Final rule published in the *Federal Register*16/6/99 (64 FR 68228).

SFA REQUIREMENT	ACTIVITY
TRANSITION TO MANAGEMENT OF AMERICAN LOBSTER FISHERY BY ASMFC [Sec. 404(c)]: Establish monitoring of landings of American lobster and implement conservation regulations	Completed - Final rule published in the *Federal Register* 12/6/99 (64 FR 68228), plus the final rule published in the *Federal Register* on 3/27/03rule (68 FR 14902).
TRANSITION TO MANAGEMENT OF AMERICAN LOBSTER FISHERY BY ASMFC [Sec. 404(c)]: Revise current regulations to recognize validity of state permits in Federal waters	Completed - Final Rule published in the *Federal Register* 3/5/97 (62 FR 9993).

NOAA Fisheries - Southeast Region

SFA REQUIREMENT	ACTIVITY
DEFINITIONS: Review all existing definitions in FMP regulations for inconsistencies with SFA language	Completed - Project completed and advised Councils of required provisions in FMPs 1997.
BYCATCH/INCIDENTAL HARVEST RESEARCH [Sec. 206]: Establish a bycatch reduction program to develop devices to minimize bycatch mortality and evaluate ecological impacts benefits and costs and practicality of devices	Completed - Report to Congress completed on 12/8/98.
GULF OF MEXICO RED SNAPPER RESEARCH: Independent peer review [Sec. 207(b); pp. 136-140]	Completed - Report "Consolidated report on the Peer Review of Red Snapper (*Lutjanus campechanus*) research and management in the Gulf of Mexico" prepared by MRAG Americas Inc. for NOAA Fisheries 12/97.
GULF OF MEXICO RED SNAPPER RESEARCH: Year 2001 Referendum [Sec. 207(b); 138-139]: Prepare procedures for conducting a referendum on Red Snapper IFQ program and develop a mechanism for monitoring and closing the Gulf red snapper recreational fishery	Completed - Final rule establishing red snapper recreational quota and closure provision filed with the *Federal Register* on 8/28/97. Ongoing - On 3/18/02, GMFMC convened Ad Hoc Red Snapper Advisory Panel to develop an IFQ profile of the commercial red snapper fishery. This profile will assess strong and weak points about use of an IFQ system for commercial red snapper fishery. After approval by the panel and Council, it will be submitted for referendum to determine if the majority of participants favor the ITQ alternative. Ongoing - Red snapper recreational monitoring team assembled and ongoing.

NOAA Fisheries - Northwest Region

SFA REQUIREMENT	ACTIVITY
DEFINITIONS: Review all existing definitions in FMP regulations for inconsistencies with SFA language	Completed - Project review completed 1996 and advised Council of required provisions of FMPs on 1/3/97.
SPECIAL COUNCIL REQUIREMENTS: Letter from Northwest Regional Administrator advising Council of special requirements	Completed - Letter sent by Regional Administrator to Chair PFMC, 1/10/97.
COUNCILS: New Tribal seat on PFMC [Sec. 107; p. 29-32]	Completed - Final rule published in *Federal Register* on 9/5/97 (62 FR 47584).
COUNCILS: New Tribal seat on PFMC [Sec. 107(a)(5); pp. 29-30]: Conduct appointment process for new Tribal seat on Pacific Fishery Management Council	Completed - Secretary of Commerce announced appointment of James E. Harp on 6/30/97.

NOAA Fisheries - Alaska Region

SFA REQUIREMENT	ACTIVITY
DEFINITIONS: Review all existing definitions in FMP regulations for inconsistencies with SFA language	Completed - Project completed and advised Council of required provisions of FMPs on 2/20/97.
SPECIAL COUNCIL REQUIREMENTS: Letter from Alaska Regional Administrator advising Council of special requirements	Completed - Letter sent 12/14/97.
FEES UNDER IFQ AND CDQ PROGRAMS [Sec. 109(c); pp. 63-64]: Establish a program for the collection and use including procedures of fees in the ITQ/CDQ programs	Completed - Two separate programs created for CDQ and IFQs for implementation purposes. Final rule for IFQ fee program was published in the *Federal Register* on 3/00.
FINANCING OF PURCHASE OF INDIVIDUAL FISHING QUOTA [Sec. 302]: Revise guidelines or other documents to provide for the financing of IFQ	Completed - Congress appropriated funds as an advance of the costs for a quota share lending program in the North Pacific halibut and sablefish fisheries and NOAA Fisheries published *Federal Register* notice announcing availability of such funds.
BYCATCH/INCIDENTAL HARVEST RESEARCH: North Pacific Bycatch Reduction Incentives [Sec. 117(a)(3); 113-114]	Ongoing - Council evaluating cooperatives to address issue.

NOAA Fisheries - Southwest Region

SFA REQUIREMENT	ACTIVITY
DEFINITIONS: Review all existing definitions in FMP regulations for inconsistencies with SFA language	Completed - Project completed and advised Council of required provisions of FMPs on 1/10/97.
SPECIAL COUNCIL REQUIREMENTS: Letter from Southwest Regional Administrator advising Council of special requirements	Completed - Letter to be sent 12/19/96.

NOAA Fisheries - Pacific Islands Regional Office

SFA REQUIREMENT	ACTIVITY
PACIFIC INSULAR AREAS: Establish areas and associated programs [Sec. 105(e)(1) (2) (5)]	Completed - Marine Conservation Plans, developed by the governor of each self-governing U.S. Pacific island areas and by the WPFMC, were approved by the Secretary of Commerce. WPFMC submitted MCP to NOAA Fisheries for renewal 5/16/03.
PACIFIC INSULAR AREAS: Establish areas and associated programs [Sec. 105(e)(6) (7)]: Use of fees and establishment of fund prepare procedures and guidelines	Completed - Marine Conservation Plans identifying the use of fees by U.S. Pacific island area governments and WPFMC have been approved.
PACIFIC INSULAR AREAS: Establish areas and associated programs [Sec. 105(e)(8); p. 26]: Use of fines and penalties prepare procedures and guidelines	Completed - Procedures, protocols, and criteria are in place for implementation of Pacific Insular Area Fishery Agreements with foreign nations.

APPENDIX III: LIST OF ACRONYMS

AA - Assistant Administrator
ALWTRP - Atlantic Large Whale Take Reduction Plan
ASMFC - Atlantic States Marine Fisheries Commission
BRD - bycatch reduction device
BSAI - Bering Sea and Aleutian Islands
CDP - Community Development Program
CDQ - Community Development Quota
EEZ - Exclusive Economic Zone
EFH - Essential Fish Habitat
EIS - Environmental Impact Statement
EPA - U.S. Environmental Protection Agency
FIS - Fisheries Information System
FMP - Fishery Management Plan
FR - *Federal Register*
GMFMC - Gulf of Mexico Fishery Management Council
HAPC - Habitat Area of Particular Concern
HMS - Highly Migratory Species
ICCAT - International Commission for the Conservation of Atlantic Tunas
IFQ - individual fishing quotas
ITQ - individual transferable quota
M - million
MAFAC - Marine Fisheries Advisory Committee
MAFMC - Mid-Atlantic Fishery Management Council
MMS - Minerals Management Service
MSA - Magnuson-Stevens Fishery Conservation and Management Act
mt - metric tons
NEFMC - New England Fishery Management Council
NEPA - National Environmental Policy Act
NOAA Fisheries - The National Oceanic and Atmospheric Administration's National Marine Fisheries Service
NPFMC - North Pacific Fishery Management Council
NS - National Standard
NWHI - Northwestern Hawaiian Islands
PFMC - Pacific Fishery Management Council
PIAFA - Pacific Insular Area Fishery Agreement
RSP - Regulatory Streamlining Program
SAIP - Stock Assessment Improvement Plan
SFA - Sustainable Fisheries Act
TDS - total dissolved solids
TED - turtle excluder device
WPFMC - Western Pacific Fishery Management Council

APPENDIX IV: CONTRIBUTORS

Headquarters Offices	
Sustainable Fisheries	Mark Murray-Brown (coordinator), Lee Benaka, Bill Chappell, Barbara Comstock, Peter Fricke, Michael Grable, Matteo J. Milazzo, Mark Millikin, Angela Somma
Habitat	Karen Abrams, Susan-Marie Stedman
Science and Technology	Susan Abbott-Jamieson, Mark Chandler, Vicki Cornish, David Detlor, Dennis Hansford, John Hoey, Pamela Mace, Allen Shimada
Mgt & Budget	Neil Williams
Front Office	Rachel Husted
Alaska	
Science Center	Gary Duker, Pat Livingston, Joe Terry
Region	Jay J. C. Ginter
Pacific Islands	
Science Center	Christofer H. Boggs, Gerard T. DiNardo, David C. Hamm, Judith L. Kendig, Donald R. Kobayashi, Frank A. Parrish, Jeffrey J. Polovina
Region	Alvin Z. Katekaru
Northwest	
Science Center	Richard Methot
Region	Steve Copps, Kevin Ford
Southwest	
Science Center	La Jolla Laboratory - Rennie S. Holt, John R. Hunter, Russell D. Vetter; Santa Cruz Laboratory - Alec D. MacCall Pacific Fisheries Environmental Laboratory - Franklin B. Schwing
Region	Svein Fougner
Southeast	
Science Center	Shannon L. Cass-Calay
Region	Michael E. Justen
Northeast	
Science Center	Steve Murawski
Region	George Darcy, Deirdre Kimball, Earl Meredith, Paul Perra
NOAA GCF	Mariam McCall